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# Ecological Studies at Oyster Creek Nuclear Generating Station

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## Progress Report

September 1980 – August 1981

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Prepared for

### Jersey Central Power & Light Company



ECOLOGICAL ANALYSTS, INC.

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ECOLOGICAL STUDIES AT  
OYSTER CREEK NUCLEAR GENERATING STATION,  
PROGRESS REPORT  
SEPTEMBER 1980 - AUGUST 1981

Prepared for

Jersey Central Power & Light Company  
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## EXECUTIVE SUMMARY

Aquatic monitoring was conducted at the Oyster Creek Nuclear Generating Station (OCNGS) and vicinity from September 1980 - August 1981. The program comprised four discipline elements: studies of fish and macroinvertebrates at four stations in Barnegat Bay, impingement of fish and macroinvertebrates on the OCNGS traveling screens, entrainment of ichthyoplankton and macroinvertebrates into the OCNGS cooling system, and commercial fish landings in Atlantic and Ocean counties. The monitoring programs were carried out pursuant to Appendix B Oyster Creek Nuclear Generating Station Technical Specifications, issued to Jersey Central Power & Light Company by the U.S. Nuclear Regulatory Commission, effective 6 June 1979. This is the fourth in a series of reports prepared by Ecological Analysts, Inc. for fulfillment of aquatic monitoring requirements of the OCNGS Technical Specifications.

Sampling in Barnegat Bay was carried out monthly, with each station sampled twice during day and twice during night with each of three gears: 45.7-m seine, 12.2-m seine, and 4.9-m otter trawl. Impingement collections were made for a 24-hour period once each week by securing all or known portions of the screenwash from all operating screens. Paired entrainment samples were taken two hours after sunset at both intake and discharge weekly in September and October 1980 and March through August 1981 and every other week from November 1980 through February 1981. Once each month a 24-hour entrainment study was conducted. Collections were made with 36-cm diameter bongo nets with 505- $\mu$ m mesh netting. In September and October 1980 and March through August 1981, entrainment samples were examined for live and dead fish larvae immediately after collection. Commercial fish landing data for the OCNGS environs were obtained from the National Marine Fisheries Service. Water quality measurements (water temperature, dissolved oxygen, pH, and salinity) were made in conjunction with all biological sampling.

All field collections were processed as dictated by the Quality Assurance Procedures Manual for the Oyster Creek Project and the Technical Specifications. Data were entered on field data sheets and subsequently key-punched and entered onto a PDP-11/70 computer system. Summary programs were run and the output from many of those are incorporated in this report. In addition, total impingement and entrainment abundance estimates were computed with 80 percent confidence intervals. The 12-month database was converted and appended to the previous data on GPU's data management system (OCEAN) in Reading, Pennsylvania. This system was then accessed via a Hewlett-Packard terminal to produce six-year abundance plots and a multiple regression analysis.

The majority of organisms captured in Barnegat Bay were macroinvertebrates, primarily sand shrimp, grass shrimp, blue crab, and xanthid crab juveniles. The most abundant finfish were Atlantic silverside, bay anchovy, and fourspine stickleback. Most species were captured in greater numbers in the warmer spring through fall period, but a few, e.g., sand shrimp, winter flounder and grass shrimp, were more abundant from late fall through early spring. Organism abundance varied among stations, but overall was highest at Oyster Creek and lowest at Cedar

Creek. Total catches were consistently greater at night at all stations, but certain species, e.g., Atlantic silverside and bay anchovy, were more abundant in day samples. Length-frequency analysis revealed that most organisms occurred in the catches as a mixture of young and adult forms, although the young frequently predominated. No evidence of serious parasitism or disease of fish or macroinvertebrates was noted. Water quality measurements provided typical seasonal ranges: water temperature 1-29 C, dissolved oxygen 3.8-15.5 mg/liter, pH 7.5-8.3, and salinity 14.9-28.0 ppt.

The analysis of catch data for key species during the September 1975 - August 1981 period revealed a variety of distributional patterns. Bay anchovy abundance declined from 1975 through 1981, but increased again in 1981. Catches of Atlantic silverside, summer flounder, sand shrimp, and blue crab were clearly greater during the second half of the six-year period. Annual catches were variable with no noticeable pattern for winter flounder, bluefish, weakfish, northern pipefish, and northern puffer. Annual catch variation was attributed to normal population cycles, response to environmental conditions, or unknown reasons. The increased catches of winter flounder young in 1977 and the decreased abundance of blue crab in that year were described as opposite responses to the severe winter of 1976-1977.

The multiple regression analysis of field-fisheries data involved testing the relationship of various environmental and plant-operating variables to catch rates. The regression coefficients were low, suggesting that the model explained little of the variation in the field-fisheries catches; thus the possibility of a strong relationship between abundance and plant-operating characteristics was ruled out.

Using 12.2-m seine data, an analysis was made of catches prior to OCNCS operation (1966-1970) and after operation began (1975-1981). Tabulations and plots of abundance data and Spearman's Rank Correlation procedure revealed some differences in abundance and composition at near-field (Oyster Creek and Forked River) and far-field (Cedar Creek and Double Creek) locations between preoperational and operational years. Decreases in abundance of some species, e.g., silver perch, blueback herring, and northern puffer, occurred both in Barnegat Bay and other nearby estuaries and were attributed to natural phenomena. Some changes occurred only at Oyster Creek and Forked River, such as reduction of northern pipefish numbers, and this probably was related to construction and operation of OCNCS. These changes were not unexpected because the near-field areas sampled form a part of the OCNCS cooling water canal system.

The impingement of organisms on the OCNCS traveling screens followed a pattern similar to the Barnegat Bay catches. The dominant organisms were macroinvertebrates with sand shrimp, blue crab, and grass shrimp constituting 90.1 percent of impinged organisms. Atlantic silverside and naked goby were the most abundant finfish impinged. Peak impingement catches occurred in November 1980 and April 1981. For some species, high impingement catches occurred at approximately the same time as high-field catches: weakfish, sand shrimp, and Atlantic menhaden. For others, peak periods of impingement did not always coincide with peak field catches, e.g., bay anchovy, blue crab, Atlantic silverside, northern pipefish, and

summer flounder. The latter condition was attributed to differences in impingement and field-gear vulnerability within a species related to swimming ability, habitat preferences or unknown factors. Night impingement catches were about five times higher than day catches. It was estimated that 10.3 million organisms were impinged from September 1980 - August 1981; 6.8 million of these were sand shrimp. Water quality data for impingement were similar to those described above for Barnegat Bay.

Comparison of annual impingement estimates over the last six years revealed patterns generally similar to those described above for most key species taken in Barnegat Bay, except for blue crab, bluefish, northern pipefish, and bay anchovy. Field and impingement catch discrepancies for the latter species were attributed generally to differing organism vulnerabilities and to the effect of plant shutdown at times when impingement of a given species is normally high.

In the multiple regression analysis of impingement data, variations in screen catch rates were primarily correlated with seasons, day-night period, field abundance and, in some cases, high winds. To a large extent, the statistical analysis confirmed that impingement rates are generally a function of abundance of organisms in the vicinity of OCNCS.

Ichthyoplankton entrainment samples were dominated by bay anchovy eggs and larvae, winter flounder eggs and larvae, unidentified eggs, goby larvae, American sand lance larvae, and labrid eggs. These forms accounted for 95.6 percent of all entrained ichthyoplankton. Bay anchovy eggs were most abundant (65.2 percent). Seasonal peaks in abundance of eggs were seen in February 1981, due to winter flounder spawning, and early June 1981, due largely to bay anchovy spawning. Peaks of larvae abundance occurred in March (winter flounder, American sand lance), and again through the summer 1981 (bay anchovy, silversides, and gobies). Little day-night difference in ichthyoplankton was evident, except for winter flounder eggs and larvae in January and February (greater at night) and bay anchovy eggs (greater at night during June, greater in day during July and August). Mortality of passage through the cooling system was determined for bay anchovy larvae and juveniles, northern pipefish juveniles, goby larvae, winter flounder larvae, sand lance larvae, and silverside larvae. Percent entrainment mortality ranged from 31.2 for sand lance larvae to 96.2 for bay anchovy juveniles. The estimated total number of entrained ichthyoplankton for the study period was  $13,930.61 \times 10^6$ . Water quality patterns are described above.

Comparison of ichthyoplankton entrainment data over the 1975-1981 period revealed different patterns of abundance for important species. Some forms, such as bay anchovy eggs and sand lance larvae, had one year of high density with the other five years having relatively low densities. Several forms (bay anchovy larvae and juveniles, winter flounder larvae, and northern pipefish juveniles) had two or more years of high densities interspersed with years of low density. Goby larvae showed a general decline in abundance over the years, whereas silverside larvae showed a general increase in abundance. The relationship of these year-to-year fluctuations with environmental data such as physical/chemical factors, meteorological phenomena, and OCNCS plant-operation parameters is not clear from the available data.

The impact of OCNGS operation on ichthyoplankton was examined in terms of mortality of organisms passing through the cooling system and the possible baywide consequences. Based on average mortality rates derived from up to six years of data and the 1980-1981 entrainment estimates, the estimated numbers of ichthyoplankters killed by the plant in 1980-1981 ranged from  $32.45 \times 10^6$  northern piepfish larvae to  $3,304.61 \times 10^6$  bay anchovy eggs, larvae, and juveniles. Despite these large losses, there is little evidence to indicate that entrainment has had a significant impact on most fish populations in Barnegat Bay. This is less certain for the bay anchovy, although factors other than OCNGS operation may be involved in the species decline in Barnegat Bay.

Although the multiple regression analysis revealed some correlation between ichthyoplankton densities and environmental variables, such as wind speed, ambient temperature, and salinity, the model explained little of the variation in densities. It is suggested that such (unmodeled) factors as abundance of spawning adults, competitors, or predators may, at times, be strong controlling factors on ichthyoplankton abundance.

Of the macroinvertebrates entrained, the mysid shrimp, Neomysis americana was most abundant (31.3 percent), followed by the amphipods Ampelisca sp. (15.5 percent) and Jassa falcata (8.9 percent), sand shrimp zoea (8.1 percent), the amphipod Gammarus sp. (8.0 percent), ostracods (6.4 percent), the mud crab, Neopanope texana sayi zoea (4.3 percent), and the amphipod Corophium sp. (2.0 percent). Generally, macroinvertebrate densities were high from early April through mid-June 1981 and low from mid-November 1980 through January 1981. Neomysis americana peaked in abundance in September 1980 ( $12,501/100 \text{ m}^3$ ) and was low in abundance ( $<600/100 \text{ m}^3$ ) in January and August 1981. The peak density of Ampelisca sp. ( $20,709/100 \text{ m}^3$ ) occurred in June 1981. High monthly densities of Jassa falcata occurred in January 1981 ( $2,035/100 \text{ m}^3$ ) and in February 1981 ( $2,505/100 \text{ m}^3$ ). An estimated total of  $139,696.74 \times 10^6$  macroinvertebrates were entrained during the study year. The estimates for N. americana and Ampelisca sp. were  $41,723.01 \times 10^6$  and  $16,739.98 \times 10^6$ , respectively. Water quality patterns are described above.

Patterns of annual abundance (density) for the 1975-1981 period were examined for entrained macroinvertebrates. For a number of species, annual abundance varied greatly. This may be a result of normal population fluctuation, but in some cases is attributed to OCNGS not operating during periods when certain organisms are normally abundant.

Impact of macroinvertebrate entrainment at OCNGS was addressed only in terms of immediate mortality resulting from condenser passage. Based on previous studies, most macroinvertebrate forms suffer 50-100 percent mortality when discharge temperatures exceed 35 C. This temperature was exceeded during periods in September 1980 and June, July, and August 1981. Organisms that were abundant at those times and may have suffered some mortality included Neomysis americana, Callinectes sp. megalopae, Corophium tuberculatum, and Jassa falcata.

Commercial landings of finfish and shellfish in Ocean and Atlantic counties were compiled and examined. In terms of landed weight, the top three species in Ocean County were summer flounder, bluefish, and weak-



fish. Hard clam (meats) produced the greatest dollar value (\$1,020,020), followed by summer flounder and weakfish (\$717,779 and \$208,649, respectively). The top three species in Atlantic County, in terms of both landed weight and dollar value, were hard clam meats (\$809,806), blue crab (\$46,301), and summer flounder (\$32,674). The total weight and value of all landings was 1,282,277 kg and \$2,266,166 for Ocean County and 278,473 kg and \$906,956 for Atlantic County. Separate Barnegat Bay data are no longer compiled, but based on data from previous years, it can be estimated that all of the blue crab and white perch, and substantial portions of the winter flounder and, to a lesser extent, hard clam landings for Ocean County, originated in Barnegat Bay.

The commercial landing data for 1975-1981 were compared to OCMGS impingement and entrainment data for several key species that are commercially important. The general analysis indicates that the effect of impingement and entrainment cropping of the various species cannot be identified in the commercial landings data. Rather, the year-to-year fluctuations in both impingement/entrainment and commercial fishing success appear to be controlled by those factors that bring about natural variation in the size of species populations.

## 1. INTRODUCTION

This report presents the results of the prescribed Non-Radiological Environmental Technical Specifications monitoring at Oyster Creek Nuclear Generating Station (OCNGS) for the period 1 September 1980 - 31 August 1981. This is the second annual report of aquatic biological monitoring conducted by Ecological Analysts, Inc. (EA) pursuant to Appendix B Oyster Creek Nuclear Generating Station Technical Specifications, issued to Jersey Central Power & Light Company (JCP&L) by the U.S. Nuclear Regulatory Commission (U.S. NRC 1978) to be effective 6 June 1979.

The generating station and surrounding area were described by Danila et al. (1979), based on literature reviews and their own studies. OCNGS is a 620-MWe boiling-water reactor, located 3.2 kilometers west of Barnegat Bay in Lacey Township, New Jersey (Figure 1-1). During station operation, cooling water is withdrawn from Barnegat Bay through the lower part of the south branch of Forked River, then into the dredged intake canal and into the plant. Heated water is discharged into a dredged canal and flows into lower Oyster Creek and into Barnegat Bay.

Barnegat Bay is a large, shallow estuary created by offshore barrier beaches. A limited exchange of bay and ocean water occurs through narrow Barnegat Inlet and the Manasquan Canal.

The interaction of OCNGS and Barnegat Bay has been under study since 1966 (Danila et al. 1979). Early, preoperational studies were conducted by Rutgers University and concentrated on benthic invertebrates, algae, and fish. These studies continued, with the inclusion of plankton, after commercial operation of OCNGS began in December 1969; most were carried out under the auspices of either Rutgers University or the New Jersey Division of Fish, Game, and Shellfish. The results of these studies were evaluated in the Final Environmental Statement published by the U.S. Atomic Energy Commission (U.S. AEC) in 1974. In 1978, Jersey Central Power & Light Company produced 316(a) and (b) demonstrations (JCP&L 1978) which evaluated the previous studies, including the first two years of aquatic monitoring studies done by Ichthyological Associates (IA) (Tatham et al. 1977). The IA studies continued until June 1979 when EA assumed the monitoring studies, both as a continuation of previous programs and as the first Environmental Technical Specifications aquatic monitoring. Data from April and May 1979 (IA collections) and June, July, and August 1979 were reported by EA (1980).

This report consists of data descriptions and interpretive discussions of each of the disciplines studied by EA for the 12 months ending 31 August 1981. After the description of field and laboratory methodologies in Chapter 2, Chapters 3 through 7 treat, in turn, the results of Barnegat Bay fishery studies, impingement, entrainment, and commercial catch data. A combined reference section is presented at the end of the report. Tabular presentations associated with each discipline are in consecutive order at the end of the appropriate chapter. Water quality data are presented for each appropriate discipline.

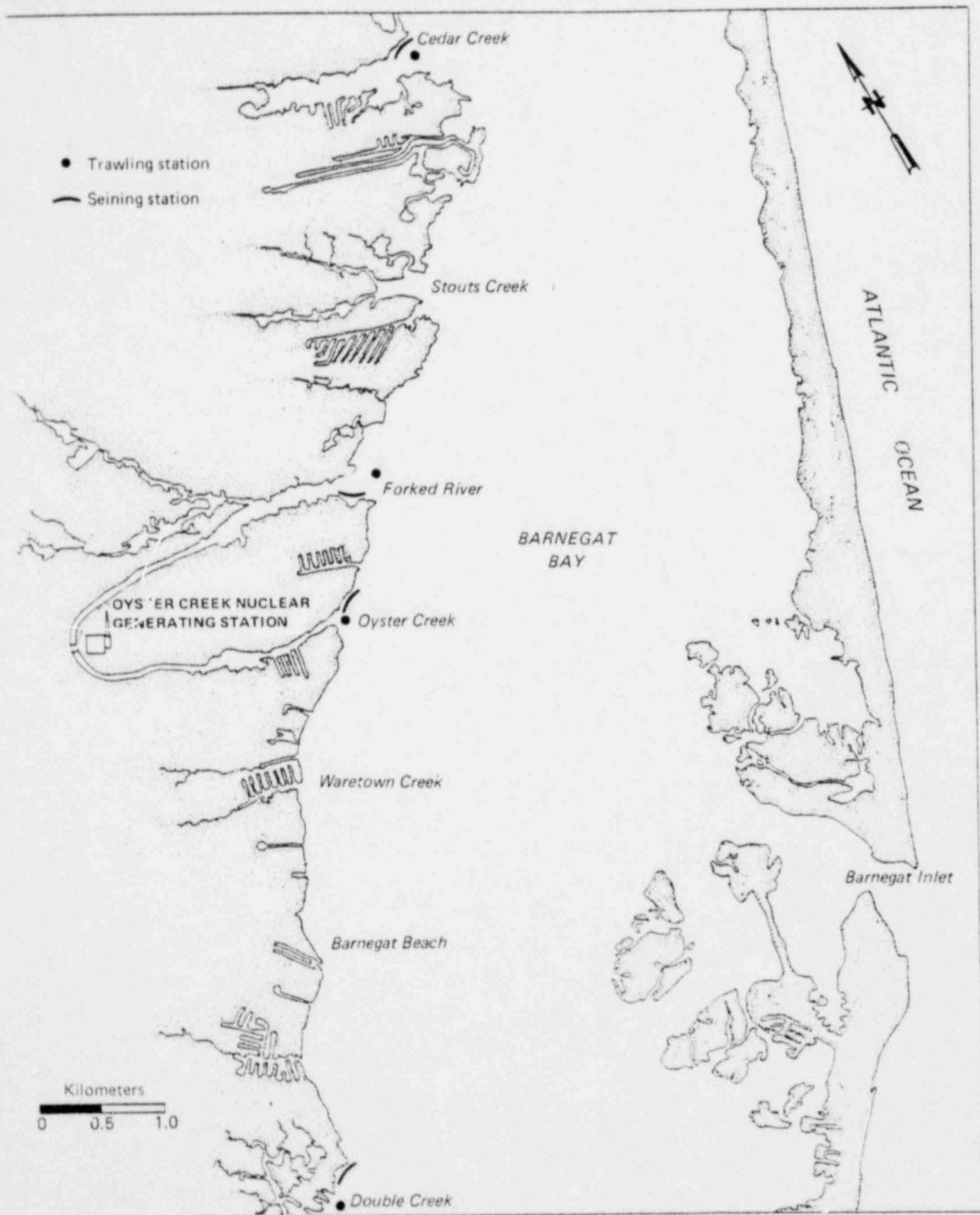


Figure 1-1. Map of the middle portion of Barnegat Bay showing trawling and seining locations (adapted from Tatham et al. 1978).

## 2. METHODS

### 2.1 BARNEGAT BAY FISHERIES

Sampling of finfish and shellfish was carried out once per month at the mouths of Cedar Creek, Forked River, Oyster Creek, and Double Creek (Figure 1-1). No samples were collected at Cedar or Double creeks in January due to ice cover. Three gears were employed: a 45.7-m x 2.4-m bag seine with 2.5-cm stretched mesh; a 12.2-m x 1.8-m straight seine with 0.6-cm stretched mesh; and a 4.9-m semiballoon otter trawl with a 1.3-cm stretched mesh codend liner. With each gear, two samples were taken once during the day and once during the night at each sampling station. The 45.7-m seine was deployed in a semicircle from a boat and pulled by hand. The 12.2-m seine was extended parallel to shore with one pole onshore and pulled in a semicircle. Trawl hauls were standardized at 5-minute tows at approximately 1,200 rpm.

After each sample, the catch was sorted and all organisms enumerated and identified. Key species, i.e., Atlantic menhaden, bay anchovy, Atlantic silverside, northern pipefish, striped bass, bluefish, weakfish, northern kingfish, summer flounder, winter flounder, northern puffer, sand shrimp (12.2-m seine only), and blue crab were measured to the nearest millimeter fork length (finfish), carapace width (blue crab), or tip of telson to tip of antenna scale (sand shrimp). A representative selection of 50 specimens of an individual species life stage was measured, if more than 50 were caught. If the same species life stage was encountered in the second haul, up to 50 were again measured. When large numbers of organisms, such as shrimp, small crabs, or anchovies, or large amounts of debris were encountered, subsampling was done and total counts were extrapolated. Any organism of questionable identity was preserved and returned to the laboratory for examination. Records were kept of any organisms that had external parasites, disease, or morphological abnormalities.

The American Fisheries Society recently published the fourth edition (1980) of A List of Common and Scientific Names of Fishes from the United States and Canada. In that work, the names of three species collected at OCNGS have been revised. However, to remain consistent with previous OCNGS reports, and thus avoid confusion in year-to-year comparisons of data, the present study continues to use the names provided in the third edition (1970): (Alectis crinitus, Rissola marginata, and Urophycis regius).

### 2.2 IMPINGEMENT

Impingement sampling was performed in the sluiceway pit, an open cuboid area downstream of all intake screens, at the point in the sluiceway where the screenwash conduit leads under the adjacent roadway to the adjacent discharge area (Figure 2-1). Samples were collected in a 101.6-cm x 101.6-cm x 121.9-cm wire basket with 10.7-mm mesh. When the larger basket was removed for emptying, a smaller basket with identical mesh was placed in the sluiceway pit.



Impingement collections were made over a 24-hour period once per week. Each collection consisted of a 2-hour time period in which

1. all organisms were collected (2-hour collection and screenwash cycle),
2. sample duration was reduced to one hour and the number of organisms caught was doubled to represent the 2-hour period, or
3. some fraction of organisms less than one-half were collected (continuous screenwash mode).

In the latter two cases, the total catch for the 2-hour time period was an estimate based on the ratio of the time period sampled to the entire 2-hour period.

This sampling approach was necessitated by the variation in the amount of organisms and debris encountered. Case 1 usually held for daylight hours when organism and debris loads were relatively light, and screens were routinely washed every two hours. Because of greater debris and organism loads at night, the screens normally were washed once per hour. Only one of the two screenwashes was collected in any nighttime 2-hour block (Case 2), because of the physical limitations of the sampling system. The Case 3 approach was necessary at times when the debris load was so great that the screens were operated continuously. At these times, attempts were made to obtain at least 1/2-hour subsamples for each 2-hour sample block.

Impingement catches were processed in a manner similar to that described for field fisheries in Section 2.1, except that no length measurements were taken. Also, the total weight of each species was recorded. Subsampling of shrimp was carried out when large amounts of debris were present. Any organisms of questionable identity were preserved for subsequent laboratory examination.

### 2.3 ENTRAINMENT

Entrainment samples were collected at both the intake and discharge (Figure 2-1). During September - October 1980 and June - August 1981, two samples were collected at each location two hours after sunset once each week. During November and December 1980, these samples were taken once every two weeks. Once each month, 24-hour sampling was conducted with four pairs of samples being collected--two during the night and two during the day.

Samples were collected with a frame-mounted pair of 36-cm diameter bongo nets of 505- $\mu$ m mesh. A General Oceanics flowmeter was secured in the mouth of each net and to the frame outside the nets. The gear was suspended by wire from a boom and operated by hand winch. Two consecutive oblique tows were made; each tow sampled the entire (discharge) or part (intake) of the water column. The recirculation tunnel blocked part of the water column at the intake; however, a minimum of two cubic meters of water was filtered at both locations. Discharge samples were collected 1-5 minutes after the intake samples to ensure that the same water mass was sampled. After each collection, the nets were carefully washed to concentrate the sample in the codend jars.

After collection, the samples were transported to the lab trailer where each sample was sorted in a water bath of the same temperature as the water from which the collection was made. All fish larvae were classified as either live, stunned, or dead and placed in labeled vials in 5 percent buffered formalin. After viability examination, the vials were placed in the jar with the remainder of the sample from which the larvae came. Ctenophores from the intake samples were counted prior to preservation.

In the laboratory, all samples were sorted under a dissecting stereomicroscope. Macrozooplankton and fish eggs and larvae were removed and placed in labeled vials according to gross taxonomic groups, e.g., Amphipoda, Annelida, Mysidacea, and fish larvae and eggs. When the number of organisms was large, subsampling was carried out using a Folsom plankton splitter. Sample fractions were sorted until 50 specimens of each major (abundant) macroinvertebrate group, and 100 specimens each of fish eggs and larvae, if present, were found. Intake samples were identified to the lowest practical taxon for ichthyoplankton. Crustacean zoeae were identified to species level with the exception of mud crab, which was identified to family. Other invertebrates were identified to major taxonomic groups, i.e., amphipods, mysids, isopods, cumaceans, and polychaetes. All organisms in discharge samples were identified to the lowest possible taxa.

#### 2.4 COMMERCIAL CATCH DATA

The commercial landing data for finfish and shellfish in Barnegat Bay, Ocean County, and Atlantic County, New Jersey, were obtained from Mr. Eugene LoVerde of the National Marine Fisheries Service office at Toms River, New Jersey.

#### 2.5 FISH-KILL MONITORING

No fish kills were reported or observed in the vicinity of the plant from September 1980 through August 1981; therefore, this aspect of the study was precluded.

#### 2.6 WATER QUALITY MEASUREMENTS

Water quality measurements were made in conjunction with routine biological sampling, and included water temperature, pH, salinity, dissolved oxygen (DO), and chlorine (the latter during entrainment sampling only). A Yellow Springs Instrument Company (YSI) Model 57 DO meter was used to measure dissolved oxygen; the instrument was calibrated weekly before each use. Water temperature and salinity were measured with a YSI Model 33 Salinity-Conductivity-Temperature (S-C-T) meter which was calibrated semimonthly. Measurements of pH were made with a Corning 610A meter, calibrated at least once per week. Chlorine concentrations were determined using a Fisher-Porter amperometric titrator.

During Barnegat Bay fisheries surveys, water quality measurements were made once at each seining station 0.5 meters below the surface; at each trawling station, they were made both before and after sampling just above the bottom. Measurements were made at the surface and bottom in

the OCNCS intake during each impingement collection. The entrainment sampling included surface and bottom water quality measurements between each oblique tow at the intake and surface measurements only at the discharge. Chlorine data were taken only at the discharge.

## 2.7 DATA PROCESSING

All field and laboratory data were recorded on standard data sheets and checked for accuracy. Data then were punched onto cards, entered on magnetic tape, and loaded into a PDP-11/70 computer. An initial data verification program was run and the output checked against the original data sheets. Various summary programs were then run to reduce the data for examination. Primary among these were a percentage abundance program and a station-date catch matrix.

### 2.7.1 Impingement Estimates

The impingement sampling program at OCNCS employed a multistage sampling design. In the first stage, sampling days were selected once a week and these sampling days were sequentially grouped into strata so that no stratum had fewer than two sample days. In the second stage, the sample day was partitioned into two 12-hour periods roughly representing day and night. In a third stage, the 12-hour periods were further subdivided into six 2-hour periods. In some cases, all fish impinged in the 2-hour period were collected and counted giving an exact count for impingement. During periods of heavy impingement, a fourth stage was employed whereby a subinterval of the 2-hour period was sampled.

Using data collected by this sampling design, impingement estimates were computed with the following formulas:

$$\hat{I} = \sum_{i=1}^L N_i \bar{Y}_i \quad (\text{Equation 2-1})$$

where

$\hat{I}$  = estimated total number (or weight) of organisms impinged

$L$  = total number of strata

$i$  = ordinal number for strata

$N_i$  = number of days in the  $i^{\text{th}}$  stratum

$$\bar{Y}_i = \frac{1}{n} \sum_{j=1}^{n_i} \hat{Y}_{ij} \quad (\text{Equation 2-2})$$

= average daily impingement for  $i^{\text{th}}$  stratum

where

$n_i$  = number of sample days in  $i^{\text{th}}$  stratum  
 $j$  = ordinal number for sample day

$$\hat{Y}_{ij} = \sum_{k=1}^2 \hat{Y}_{ijk} \quad (\text{Equation 2-3})$$

= estimated impingement for  $j^{\text{th}}$  sample day of  $i^{\text{th}}$  stratum

where

2 = number of diel periods  
 $k$  = ordinal number for diel period

$$\hat{Y}_{ijk} = \sum_{l=1}^6 \frac{T_{Bijkl}}{T_{sijkl}} Y_{ijkl} \quad (\text{Equation 2-4})$$

= estimated impingement of the  $k^{\text{th}}$  diel period  
of the  $j^{\text{th}}$  sample day of the  $i^{\text{th}}$  stratum

where

6 = number of blocks within diel periods  
 $l$  = ordinal number for block

$T_{Bijkl}$  = length (in minutes) of block

$T_{sijkl}$  = time sampled (in minutes) in block

$Y_{ijkl}$  = count of organisms for the sample collected in  
the  $ijkl^{\text{th}}$  block

The estimated variance of  $\hat{I}$  that was used for computing confidence intervals was computed by the formula

$$\text{Var}(\hat{I}) = \sum_{i=1}^L \frac{N_i}{n_i} \left[ (N_i - n_i) S_{li}^2 + \sum_{j=1}^2 \frac{n_i}{n_i} \sum_{n=1}^2 \sum_{l=1}^6 \text{var}(\hat{Y}_{ijn}) \right] \quad (\text{Equation 2-5})$$

where

$$S_{1i}^2 = \frac{1}{n_i - 1} \sum_{j=1}^{n_i} (\hat{Y}_{ij} - \bar{y}_i)^2$$

$$\text{Var}(\hat{Y}_{ijkl}) = \frac{T_{Bijkl}^2 - T_{Bijkl} T_{sijkl}}{T_{sijkl}^2} Y_{ijkl}$$

The 80 percent confidence intervals then were computed using the normal approximation

$$\hat{I} \pm 1.645 \sqrt{\text{Var}(\hat{I})}$$

The weekly impingement estimates were computed by multiplying the estimated impingement for the  $j^{\text{th}}$  sample day of the  $i^{\text{th}}$  stratum by seven.

$$\hat{I}_{ij} = \hat{Y}_{ij} \cdot 7 \quad (\text{Equation 2-6})$$

where

$$\begin{aligned} \hat{I}_{ij} &= \text{estimated impingement for } j^{\text{th}} \text{ week of } i^{\text{th}} \text{ stratum} \\ \hat{Y}_{ij} &= \text{as defined above} \end{aligned}$$

### 2.7.2 Entrainment Estimates

The entrainment sampling program at OCNCS employs two-way stratification with subsampling of experimental units as a sampling frame. The period of collection was stratified into months to allow for seasonal variations in abundances. The collections were further stratified into periods of day and night to allow for diel trends in abundance of some organisms.

Time delimiters for diel stratification were determined by the average sunrise and sunset times for latitude 40° N during each stratum. Each diel period (day or night) was divided into two equal sampling units, and the samples from a unit were considered representative of the entire unit.

Because entrainment is known to be greater at night, the night stratum of each month was allocated a greater number of samples to improve the precision of the estimate. In general, two samples were collected during the day stratum and six were collected at night. Each sample consisted of two sequential replicates to ensure that a sample of adequate duration was collected.

Using the data collected according to this sampling plan, entrainment estimates were computed for each species with the formula

$$\hat{E} = \sum_{i=1}^L N_i \bar{Y}_i \quad (\text{Equation 2-7})$$

where

$\hat{E}$  = estimated entrainment for period of collection  
 $L$  = total number of strata  
 $i$  = ordinal number for strata  
 $N_i$  = number of sampling units in the  $i^{\text{th}}$  stratum

$$\bar{Y}_i = \frac{1}{n_i} \sum_{j=1}^{n_i} \hat{Y}_{ij} \quad (\text{Equation 2-8})$$

where

$\bar{Y}_i$  = estimated average daily entrainment for  $i^{\text{th}}$  stratum  
 $j$  = ordinal number for sample within stratum  
 $n_i$  = number of sampling units sampled in the  $i^{\text{th}}$  stratum

$$\hat{Y}_{ij} = \left( \frac{T_{ui}}{1440} \right) \left( \frac{V_{ij}}{V_{sij}} \right) Y_{ij} \quad (\text{Equation 2-9})$$

where

$\hat{Y}_{ij}$  = estimated entrainment for  $j^{\text{th}}$  day of  $i^{\text{th}}$  stratum  
 $T_{ui}$  = duration in minutes of a sampling unit in the  $i^{\text{th}}$  stratum  
 $V_{ij}$  = volume pumped through plant (cooling water and dilution water) on  $j^{\text{th}}$  sample day of  $i^{\text{th}}$  stratum  
 $1440$  = number of minutes in 24 hours  
 $V_{sij}$  = volume sampled on  $j^{\text{th}}$  sample day of  $i^{\text{th}}$  stratum  
 $Y_{ij}$  = count of organisms collected in a sample

The variance of  $\hat{E}$  was computed as

$$\text{Var}(\hat{E}) = \sum_{i=1}^L \frac{N_i}{n_i} \left[ (N - n_i) S_{li}^2 + \sum_{j=1}^{n_i} \right] \text{Var}(\hat{Y}_{ij}) \quad (\text{Equation 2-10})$$



where

$$S_{1i}^2 = \frac{\sum_{j=1}^{n_i} (\hat{Y}_{ij} - \bar{Y}_i)^2}{n_i - 1}$$

and assuming  $Y_{ij}$  Poisson distribution

$$\text{Var}(\hat{Y}_{ij}) = \left[ \left( \frac{T_{ui}}{1440} \right) \left( \frac{V_{ij}}{V_{sij}} \right) \right]^2 Y_{ij} \quad (\text{Equation 2-11})$$

### 2.7.3 Ichthyoplankton Entrainment Mortality Estimates

Differences between ichthyoplankton mortality at the intake and discharge were statistically tested using the binomial proportion test (Downie and Heath 1965) when the number at each station was greater than 25. Effects of condenser passage were assessed in two ways. First, condenser passage percentage mortality was calculated by the formula

$$M_e(\%) = (M_d - M_i) \quad (\text{Equation 2-12})$$

where

$M_e$  = condenser passage mortality  
 $M_d$  = percentage dead at the discharge  
 $M_i$  = percentage dead at the intake

Second, percentage entrainment survival was calculated by the formula

$$S_e(\%) = S_d/S_i \times 100 \quad (\text{Equation 2-13})$$

and percentage entrainment mortality by the formula

$$M_e = 100 - S_e \quad (\text{Equation 2-14})$$

where

$M_e$  = entrainment mortality  
 $S_e$  = entrainment survival  
 $S_d$  = percentage surviving at the discharge  
 $S_i$  = percentage surviving at the intake

### 2.7.4 Multiple Regression Model

The Environmental Technical Specifications require statistical analysis of the effects of various environmental and plant-operating characteristics on the impingement, entrainment, and field-fisheries catch rates. Various statistical options were reviewed and it was ultimately determined that a multiple regression analysis was the appropriate approach to meet the requirement. Accordingly, a generic model was developed, refined, and applied to each discipline, with minor modifications as necessary.

The model was run using six years of data (September 1975 - August 1981) for each discipline. This is considerably more than required by the Technical Specifications which stipulate the current study year (in this case September 1980 - August 1981) for the statistical analysis. The decision to expand the analysis was based on two considerations:

1. It was hoped that the increased number of observations would strengthen the model and the resulting conclusions.
2. The 1980-1981 data sets were limited. There were no entrainment samples during November and December (not required).

The sequence of model development and the various parameters included are characterized below. For each discipline, catch rates and densities were examined quantitatively relative to changes in date, time of day, water quality, tide, atmospheric conditions, OCMGS cooling water flow, and heat rejection. These parameters were defined:

|                        |   |
|------------------------|---|
| Date                   | The Julian date from 8 September 1975 was used to group data and define seasons   |
| Time of Day            | The day was divided by sunset into day and night groups which were compared   |
| Water Quality          | The parameters used to define water quality were: water temperature, salinity, dissolved oxygen, pH, and Secchi depth (day only)        |
| Tide                   | Midtide was used to apportion time between high and low categories  |
| Atmospheric Conditions | The parameters used as indicators of conditions were: wind direction, wind speed, and air temperature                                   |
| Cooling Water Flow     | This was broken down into its components: circulation flow, dilution flow, and number of traveling screens operating                    |
| Heat Rejection         | Heat rejection (Q), in BTUs per day, was calculated from delta temperature ( $\Delta T$ ) and cooling water flow (F) using the equation |

$$Q = \Delta T * F * 3.966$$

A multiple regression was run using the SAS-GLM procedure and the model:

Catch = water temperature + salinity + dissolved oxygen + pH + Secchi  
+ wind speed + wind direction + total flow + heat rejection  
+ number screens running + air temperature + day-night + tide  
+ season + delta-T + pumps



Models of this type were generated for

- 10 impingement species
- 12 field-fisheries species
- 7 ichthyoplankton species/life stage combinations
- 9 zooplankton species/life stage combinations

Subsequently, due to lack of data or very low abundance, some species were dropped from the analysis and the final models were generated for

- 9 impingement species
- 8 field-fisheries species
- 6 ichthyoplankton species/life stage combinations
- 6 zooplankton species/life stage combinations

Catch was expressed as number per hour for impingement, number per collection for fisheries, and number per cubic meters for plankton (entrainment).

Contrast coding and separate models were run to minimize the number of discrete variables (season, tide, day-night period, wind direction, and screens) in any one model run. Separate models were run with and without Secchi data to include or exclude the night data.

The distribution of six years data for mean daily wind speed and median daily wind direction was examined and groups suspected of influencing catch rates were identified. Two groups, wind speed greater than 16.1 kph and wind speed greater than 16.1 kph with direction between 15° and 90°, were contrasted with prevailing weather conditions. These groups were designated Wind 1 and Wind 2 and composed 22.4 and 2.7 percent, respectively, of the total number of days in the six-year period.

The type IV sum of squares (variable of interest added to the model last) was examined using an F-ratio, and  $\alpha = 0.05$  was chosen to indicate statistical significance.

The field-fisheries data were included in one set of models to help explain impingement catches. In this case, monthly mean impingement rates were used because fisheries data were only taken monthly (in all other cases impingement catch per hour was used).

In the entrainment models, both intake and discharge data were used if the level of taxonomy was the same in both; otherwise, only the appropriate location was used (see Section 2.3 for differences in taxonomy between the two locations).

In the field-fisheries models, location was not used as a variable, and the data from all sampling stations were pooled by gear. The gear with the most consistent catches for a given species was used in the species model run.

As used in the various runs, seasons were defined as follows, based on ambient water temperature (C):

|                       | <u>Winter</u> | <u>Summer</u> | <u>Spring and Fall</u> |       |
|-----------------------|---------------|---------------|------------------------|-------|
| Fisheries/impingement | <10.0         | >21.9         | >10.1                  | <21.9 |
| Ichthyoplankton       | <4.0          | >20.0         | >4.0                   | <20.0 |
| Macroinvertebrates    | <6.0          | >24.0         | >6.0                   | <24.0 |

The temperature ranges that describe the seasons were selected by examining abundance plots with water temperature overlaid, and choosing the best match of organism abundance and water temperature. Thus, because times of organism abundance differ among the disciplines, the within-season temperature ranges also differ.

The advantage of constructing and running these models is viewed to be in the assignment of degrees of statistical correlation that might not otherwise be evident by simple data inspection. The coefficients of determination derived from the computational exercise of the models are valuable as guides to the prominent factors (independent variables) that have coincident trends with selected (or presumed) dependent variables that deserve interpretation. Cause-effect relationships are not definitely established when high coefficients of determination result from a model run. Rather, they indicate the existence of direct (positive) or inverse (negative) associations of data trends. Any inference of causal relationships between the dependent and independent variables must be based on the identification and logical explanation of biological, chemical, and physical mechanisms that link or affect a quantitative change. Functional relationships can be substantiated by statistically significant correlations but such correlations do not necessarily imply predictive capability in a quantitative sense. The results of the model runs are therefore considered exploratory and indicative of potential areas warranting further investigation.

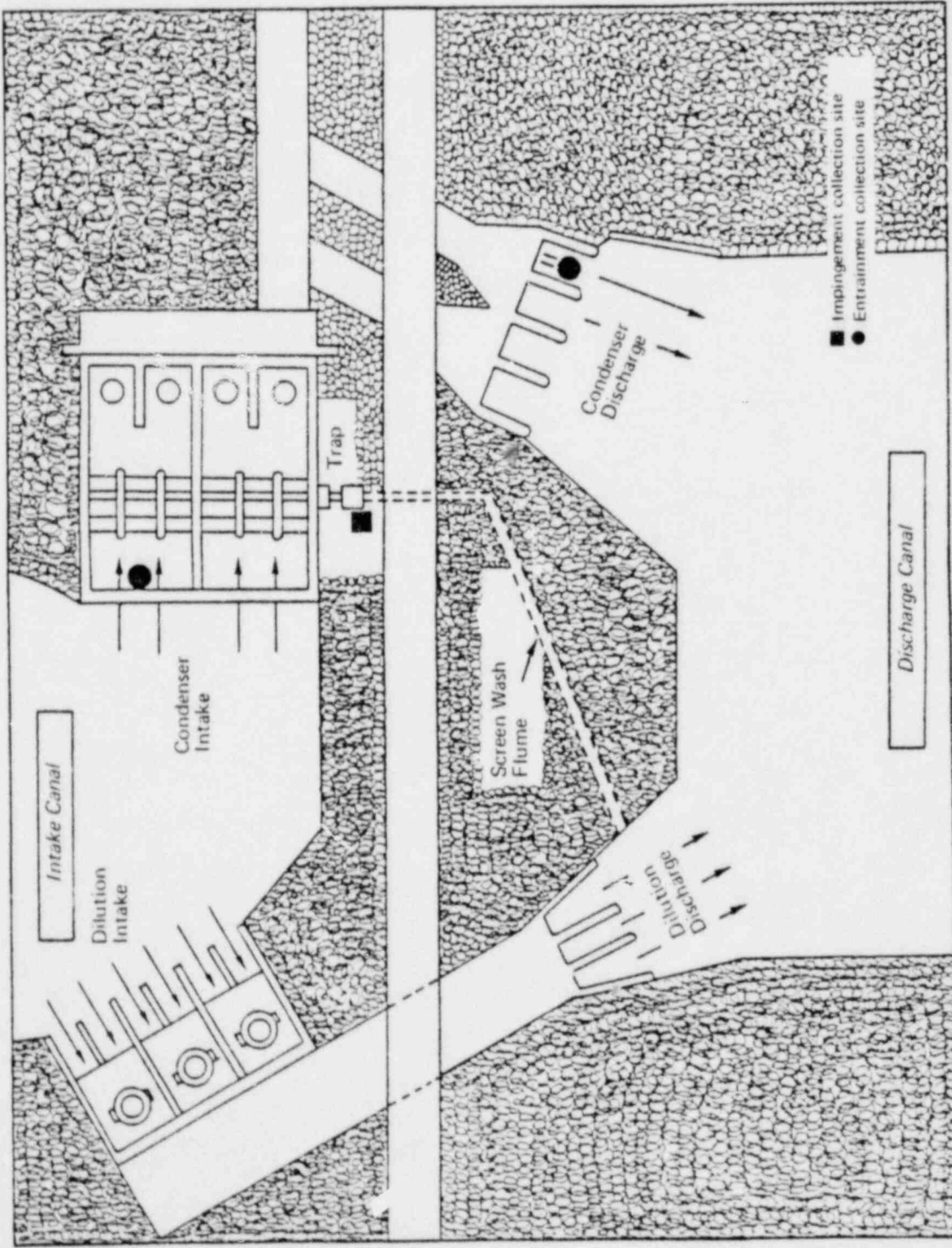


Figure 2.1. Diagram of the intake and discharge of the circulating water system and the dilution pumps at the Oyster Creek Nuclear Generating Station (adapted from Tatham et al. 1978).

## CHAPTER 3. COMPOSITION AND ABUNDANCE TRENDS OF FINFISH AND MACROINVERTEBRATES IN BARNEGAT BAY

Twelve monthly surveys (September 1980 - August 1981) were conducted with 45.7-m and 12.2-m seines and a 4.9-m trawl in the vicinity of the Oyster Creek Nuclear Generating Station. All surveys were completed, except in January when surface ice precluded sampling at Cedar Creek and Double Creek.

This results section addresses species composition and abundance, first in general terms, then in relation to key and abundant species. Length-distribution, parasite-disease, and water quality data are presented. The last section concludes with a statistical analysis of the relationships among catch data, meteorological phenomena, and plant-operating characteristics. The results then are discussed in terms of possible short- and long-term effects of OCNGS and meteorological phenomena on annual abundance and growth cycles of finfish and shellfish in Barnegat Bay.

### 3.1 RESULTS

#### 3.1.1 General Species Composition and Abundance

##### 3.1.1.1 Trawl Data (4.9-m)

A total of 114,385 specimens comprising 43 finfish species and 18 macroinvertebrate taxa were collected by trawling (Table 3-1). The sand shrimp (Crangon septemspinosus) composed 80.1 percent of the catch. Individuals of the mud crab family Xanthidae (unidentified juvenile and adult Xanthids, Neopanope texana sayi, and Panopeus herbstii) comprised 6.1 percent of the total, followed by grass shrimp (Palaemonetes vulgaris and unidentified specimens, 4.3 percent), and juvenile and adult blue crabs (Callinectes sapidus, 2.2 percent). The two prominent finfish were bay anchovy (Anchoa mitchilli, 3.1 percent) and fourspine stickleback (Apeltes quadracus, 1.5 percent).

The annual otter trawl catch is presented by sampling station and diurnal period in Table 3-2. Oyster Creek produced the largest catch (52,036 organisms), followed by Double Creek (31,419), Forked River (18,625), and Cedar Creek (12,305). Night catches of sand shrimp largely determined these ranks. Annual night catches were larger than day catches by factors ranging from 2.2 at Cedar Creek to 5.0 at Oyster Creek. Additional information on day-night catch differences is presented in Section 3.1.2.

Trawl catches are presented by sampling date in Appendix C. Catches ranged from about 3,500 organisms in September 1980 and August 1981 to 25,600 organisms in December 1980. The monthly fluctuations in total catch were influenced by the size of sand shrimp collections. Seasonal changes in abundance of key species are presented in detail in Section 3.1.2.

### 3.1.1.2 Seine Data (45.7-m)

Monthly sampling with a 45.7-m seine yielded 35,660 organisms that included 53 finfish species and 19 macroinvertebrate taxa (Table 3-3). Sand shrimp (56.9 percent), juvenile and adult blue crabs (9.5 percent), and grass shrimp (*P. vulgaris*, 1.7 percent) were the most abundant invertebrates; together they accounted for 68.2 percent of the total catch. Species of fish comprising more than 1 percent of the catch included juvenile and adult Atlantic silverside (*Menidia menidia*, 22.7 percent) and juvenile and adult bay anchovy (1.1 percent).

The annual catch is compiled by sampling station and diurnal period in Table 3-4. The largest catch (12,793 organisms) was obtained at Oyster Creek and the smallest (6,300) at Double Creek. Catches at Forked River and Cedar Creek (8,479 and 8,088, respectively) were intermediate in size. As with the trawl catches, annual night catches with the 45.7-m seine were always greater than day catches. Night catches ranged from 1.3 (Forked River) to 4.3 times (Cedar Creek) as large as day catches (Table 3-4).

The monthly catch with the 45.7-m seine varied substantially during the year (Appendix D). Peak catches were obtained in December 1980 (9,225 organisms) and in March (5,456) and June (6,798) 1981. Catches were low in January (302 organisms, but only Forked River and Oyster Creek were sampled) and in July and August 1981 (885 and 735, respectively). Fluctuations in seasonal abundance of total organisms were influenced mainly by the catch of sand shrimp and, to a lesser extent, blue crab and Atlantic silverside.

The contributions of key fish and macroinvertebrate species to spatial, temporal, and diurnal variations in total catches are presented in Section 3.1.2.

### 3.1.1.3 Seine Data (12.2-m)

A total of 102,439 organisms comprising 46 finfish species and 18 macroinvertebrate taxa were collected with the 12.2-m seine (Table 3-5). Unlike the catches by trawl and 45.7-m seine, which were dominated by sand shrimp, the 12.2-m seine catches were dominated by juvenile and adult Atlantic silversides (52.6 percent of the total catch). Additional fishes that accounted for at least 1 percent of the catch were juvenile and adult bay anchovy (3.1 percent) and fourspine stickleback (1.7 percent). The most abundant macroinvertebrates included sand shrimp (34.4 percent) and grass shrimp (*Palaemonetes* spp., 1.9 percent; *P. vulgaris*, 1.8 percent).

Annual catches among sampling stations ranged from 12,713 organisms at Cedar Creek to 43,481 organisms at Oyster Creek (Table 3-6). The size of catches at Forked River and Double Creek (24,341 and 21,904 organisms, respectively) were intermediate in this range. Annual night catches were larger at all stations, ranging from 1.2 (Forked River) to 3.8 (Cedar Creek) times as large as day catches. As with the trawl and 45.7-m seine data, larger night catches with the 12.2-m seine were mostly the result of the nocturnal abundance of sand shrimp.



The monthly distribution of catches made with the 12.2-m seine was distinguished by an extremely large catch in June of 44,580 juvenile Atlantic silversides (Appendix E). The total catch for June comprised almost half (49.8 percent) of the annual catch. Excluding this unique monthly value, catches fluctuated in no discernable pattern over the year; the highest catch was obtained in December 1980 (9,069 organisms) and the lowest catch in January 1981 (186 organisms, but only Forked River and Oyster Creek were sampled). During months other than June, the total catch primarily reflected the relative abundance of sand shrimp and, to a lesser extent, the abundance of Atlantic silverside and bay anchovy.

### 3.1.2 Key and Abundant Species

Key species, as designated in the Nuclear Regulatory Commission Technical Specifications are: summer flounder, winter flounder, Atlantic menhaden, Atlantic silverside, bay anchovy, bluefish, weakfish, striped bass, northern pipefish, northern kingfish, northern puffer, blue crab, and sand shrimp. Data were scarce or lacking for three species--Atlantic menhaden (only 23 specimens), northern kingfish (18 specimens), and striped bass (none caught)--so no presentation is made for these species. Some data are presented in Chapter 4 (impingement) for the Atlantic menhaden and northern puffer.

Two species, grass shrimp and fourspine stickleback, although not designated as key species, are included in the presentation because of their relatively high abundance.

#### 3.1.2.1 Sand Shrimp (*Crangon septemspinosa*)

Sand shrimp were collected with each gear in each month of the study (Table 3-7). The largest catches were obtained in winter (December 1980 - March 1981) and usually peaked early and late in this period. Midwinter catches with each gear were often much smaller, approaching the seasonal low levels of abundance observed in September 1980 and August 1981. The seasonal catch of sand shrimp by trawl was strongly influenced by the results obtained at Oyster Creek; 51.7 percent of all specimens were obtained at that station. Seasonal catches at individual stations sampled with the 12.2-m and 45.7-m seines, by contrast, were more similar to the seasonal patterns exhibited by the combined catch of each gear.

The percentage of the total sand shrimp catch obtained at each station (Table 3-7) is shown by gear.

| <u>Rank</u> | <u>Trawl</u> | <u>45.7-m Seine</u> | <u>12.2-m Seine</u> |
|-------------|--------------|---------------------|---------------------|
| First       | OYC (46%)    | OYC (40%)           | DBC (31%)           |
| Second      | DBC (25%)    | CDC (31%)           | CDC (26%)           |
| Third       | FKR (18%)    | FKR (16%)           | OYC (22%)           |
| Fourth      | CDC (11%)    | DBC (13%)           | FKR (20%)           |

These calculations exclude January data, when only Forked River and Oyster Creek were sampled, to remove the bias of unequal effort. The station rank order obtained for the trawl catch is the same as was found

for the previous year (Ecological Analysts 1981), but a comparison of each seine gear shows a virtual reversal of station ranks. In addition, as in the previous year, there was little similarity between the station abundance ranks of the two seine gears. These data indicate that in the shore zone there is no strong trend in the spatial distribution of sand shrimp, but in deeper water specimens seem to be concentrated near the mouth of Oyster Creek relative to other creek stations.

On an annual basis, night catches of sand shrimp at each station were always much larger than day catches (Table 3-7). The total night catch was larger than the day catch by a factor of 5.8 with the trawl, 7.4 with the 12.2-m seine, and 13.0 with the 45.7-m seine. The trend for larger catches at night is consistent with the observation of Danila (1979) that the sand shrimp is less active during the day, often burrowing into the substrate, and thus is less vulnerable to fishing gear.

Only those sand shrimp collected with the 12.2-m seine were measured for subsequent length-frequency analysis (Table 3-8). Juvenile shrimp, comprising specimens 20 millimeters or less in length (Modlin 1980), were not an important component of the population until June 1981. Small adults (20-40 mm) usually dominated catches and were most abundant from February through April. Adults larger than 40 millimeters were numerous during all months except September 1980 and July and August 1981.

#### 3.1.2.2 Blue Crab (*Callinectes sapidus*)

Catches of blue crab with each gear reflected a bimodal seasonal pattern of abundance of this species (Table 3-9). The initial peak was observed in September or October 1980 followed by another peak in April 1981. Catches were much lower during the interim cold-weather months, usually prevailing at a moderately high level after April.

The spatial distribution of the annual catch with each gear suggests that blue crabs were concentrated near the mouth of Oyster Creek, relative to other stations. The catch at Oyster Creek was largest by trawl (43.0 percent of the total) and by the 12.2-m seine (35.2 percent) and second largest by the 45.7-m seine (30.1 percent; the Cedar Creek station ranked highest with 32.6 percent of the total). Excluding Oyster Creek, annual catches by trawl were very similar at the three other stations (each was about 19 percent of the catch), although differences were observed in the seine catches. Overall, catches at Forked River were lowest.

Blue crabs were more abundant in the catches at night than during daylight, as revealed by the total catch during each period with each gear. Nocturnal catches were larger by a factor of 3.7 with the trawl, 3.6 with the 12.2-m seine, and 2.8 with the 45.7-m seine. The same trend was evident at each station (Table 3-9). There were, of course, sampling dates during which day catches were larger at particular stations; this occurred most frequently when seining at Double Creek during June through August. Large day catches were made with the 45.7-m seine at each station in July. These catches were also the largest made during the year in daylight at each station with this gear.

The size distribution of blue crabs collected with each gear is shown in Table 3-10. Specimens ranged in size (carapace width) from 5 to 197 millimeters. For each gear, immature organisms (<120 mm in width) constituted more than 94 percent of those measured. The average size of specimens was largest in the trawl catches, followed by those collected with the 45.7-m and 12.2-m seines, respectively. The monthly size distributions of specimens collected by trawl and the larger seine were quite similar relative to those of the smaller seine. Apparently crabs larger than 40 millimeters either were not present in the nearshore zone or were able to avoid capture by the smaller net.

#### 3.1.2.3 Grass Shrimp (Palaemonetes spp.)

Although not a key species as designated by the Technical Specifications, the grass shrimp was abundant in all three gear collections, and thus an important biotic component of the Barnegat Bay ecosystem. Three species of grass shrimp were identified (P. vulgaris, P. intermedius, and P. pugio) and are combined here to display temporal and spatial patterns of distribution.

Grass shrimp (Palaemonetes spp.) were collected throughout the year with each gear (Table 3-11); major peaks of abundance occurred in late fall (November - December) and late spring - early summer (April and June). Mean monthly catches were often much lower in September and October 1980 and August 1981. In addition, seine catches declined during midwinter whereas trawl catches remained at relatively high levels suggesting an offshore movement of grass shrimp during periods of extreme cold.

The only consistent ranking of stations, based on the size of annual catches with each gear, was the low catch at Cedar Creek (Table 3-11). Double Creek was the site of largest catches with the trawl and 12.2-m seine; Forked River ranked highest with the 45.7-m seine. Overall catches (sum of all gears) were highest near these two areas; Oyster Creek ranked third.

Considering stations individually, the annual night catch was higher than the day catch in 11 of 12 comparisons (Table 3-11). With each gear, the combined night catch was larger than the day catch by a factor of 2.9 (trawl), 4.1 (45.7-m seine), and 5.8 (12.2-m seine).

Length measurements of grass shrimp were not made.

#### 3.1.2.4 Summer Flounder (Paralichthys dentatus)

Few summer flounder were collected during the study period (Table 3-12). Ninety-eight were collected by trawl, twenty-one by 45.7-m seine, and two by 12.2-m seine. Trawl catches were made from September through November 1980 and from April through August 1981, and never exceeded a monthly mean catch of 2.0 per tow. The period of seine catches was more abbreviated (September - October and April - June) and the monthly mean was always less than 1.0 per haul. Specimens were slightly more abundant at the Oyster Creek Station, and during the night sampling period.

Specimens collected by trawl ranged in length from 76 to 355 millimeters (Table 3-13). The mean length of specimens increased monthly in 1980, and in 1981 until June when young of the year became vulnerable to collection by trawl.

#### 3.1.2.5 Winter Flounder (*Pseudopleuronectes americanus*)

Winter flounder (N = 493) were collected predominately by trawl. Specimens were obtained in every month but mean catches were markedly higher from December 1980 through May 1981 (Table 3-14). During this period catches ranged from 1.8 (April) to 7.2 (March) fish per tow. Fewer specimens were collected by 45.7-m seine (N = 102) and 12.2-m seine (N = 29) and only catches by the former gear are provided to illustrate temporal-spatial patterns (Table 3-14). Catches by both seines varied little seasonally but increased slightly in June. The trawl catch at Oyster Creek composed almost 75 percent of the total for that gear and thus had a major influence on the high winter catch rates, which peaked in March. Catches with both seines, however, were notably highest in Double Creek. At each station and with all gear, the annual night catch was always larger than the day catch, except for what may have been a fortuitous reversal at Oyster Creek with the smaller seine.

The length distribution of winter flounder sampled with the trawl and seine reveal the seasonal occurrence and, to some extent, the habitat preference of this species (Table 3-15). All size classes were collected by trawl. Specimens 50-100 millimeters long were present in all seasons, and were joined in the bay by larger individuals, up to 371 millimeters in length, from December through May. After the winter spawning season, young-of-the-year specimens (36-100 mm) were collected from June through August. A similar, though less distinct, pattern was observed in the catches with the 45.7-m seine (Table 3-15). A notable difference is evident between these two gears in the vulnerability to capture of specimens larger than 150 millimeters. In the trawl data this group constitutes 47 percent of all measured specimens but in the 45.7-m seine data they constitute only 4.9 percent. Larger specimens either are more abundant offshore, in deeper bay water, or easily avoid the seine used in shallower water.

#### 3.1.2.6 Atlantic Silverside (*Menidia menidia*)

The shorezone preference of Atlantic silverside is reflected in its prominence in annual catches by the 12.2-m (N = 53,869) and 45.7-m (N = 8,082) seines (Table 3-16), whereas trawl catches were low (N = 121). During the fall (September - November), larger mean monthly catches were obtained with the 12.2-m seine. During winter and spring catches with the two seines were more comparable in size, although catches with the smaller seine fluctuated monthly. Catches with both gear peaked in June and remained highest in the 12.2-m seine during the following two months. During night sampling at Oyster Creek in June, over 21,000 Atlantic silversides were collected with the small seine; this monthly sample constituted almost 40 percent of the annual catch.



If this very large night catch was excluded from the data, the annual day catch would exceed night catches at each station with both gears. In addition, the rank order of catches by station with each gear would be more comparable; Oyster Creek and Forked River catches would be highest, followed by Double Creek, and then Cedar Creek catches.

The length distributions of Atlantic silversides sampled by seine (Table 3-17) indicate the extent to which the smaller mesh (6-mm stretch) of the 12.2-m seine more completely samples the population compared to the larger mesh (25-mm stretch) of the 45.7-m seine. The former gear mostly collected specimens 60-100 millimeters in length whereas specimens in the latter gear were primarily 100-120 millimeters long. Young-of-the-year Atlantic silversides (12-60 mm long) were prominent in samples obtained with both gear from June through August. The fact that they were retained at all by the larger mesh may be attributable to the simultaneous collection of algae and other debris, which would effectively reduce the mesh size.

#### 3.1.2.7 Bay Anchovy (*Anchoa mitchilli*)

Bay anchovy catches in the trawl (N = 3,567) and 12.2-m seine (N = 3,224) were relatively large and provided the best temporal-spatial display of abundance of this species (Table 3-18). The seasonal pattern was similar for both gears; mean monthly catches were substantial in September 1980 and from May or June through August 1981. Few were caught in the fall and none were caught in winter and early spring.

This species was most abundant near Cedar Creek (trawl) and Double Creek (12.2-m seine); the fewest were obtained at the other two stations with both gears (Table 3-18). At each station, the annual daylight catches were larger than night catches in the trawl data but the reverse occurred in the seine data.

The length distribution of specimens collected by trawl and the 12.2-m seine (Table 3-19) appeared to differ substantially only with regard to specimens 12-40 millimeters long; many more were collected with the seine in July and August 1981.

#### 3.1.2.8 Bluefish (*Pomatomus saltatrix*)

Bluefish were collected almost exclusively in the 12.2-m (N = 32) and 45.7-m (N = 79) seines (Table 3-20); only one was taken by trawling. Catches were restricted to the fall and summer months--September and October 1980 and June through August 1981. Annual daylight catch rates were always higher than night catch rates at each station with both seines. Spatial trends in the abundance of bluefish, however, were difficult to discern given the small and sporadic catches.

Bluefish collected by seine ranged from 35 to 212 millimeters in length (Table 3-21). Most specimens were young of the year. In 1981, the earliest and smallest immigrant from the ocean was collected in June.



### 3.1.2.9 Weakfish (*Cynoscion regalis*)

Weakfish catches were limited to September and October 1980 and July and August 1981 (Table 3-22). Weakfish were most abundant in trawl catches (N = 332), compared to the 12.2-m (N = 46) and 45.7-m (N = 5) seines. The largest number of weakfish were obtained in August at Double Creek with each gear. Annual night catches at each station were usually larger than day catches.

The overall size range of weakfish was 80-226 millimeters in fall 1980 and 30-170 millimeters in summer 1981 (Table 3-23). The catch consisted almost exclusively of young-of-the-year specimens. In 1981, young were first collected in July (mean 73-93 mm) but the smallest specimens were obtained one month later.

### 3.1.2.10 Northern Pipefish (*Syngnathus fuscus*)

Northern pipefish were moderately abundant in annual catches by trawl (N = 119), the 12.2-m seine (N = 339), and the 45.7-m seine (N = 136) (Table 3-24). Monthly catch rates were low (usually <1 specimen per haul) during fall 1980 and winter and early spring 1981 and peaked with the various gears in May (2.4 per haul, 45.7-m seine), June (6.4 per haul, 12.2-m seine), and July 1981 (1.6 per haul, trawl). On a spatial basis, the largest annual catch with the smaller seine was made near Double Creek, but Forked River was the site of the largest annual catches with the other two gear. In general, catches near Cedar Creek were smallest with each gear but a uniquely large catch (N = 54) was made in two night hauls in June with the 12.2-m seine. There appeared to be no major difference in day versus night catch rates of northern pipefish.

A large size range of northern pipefish was evident in collections throughout most of the year (Table 3-25). Most specimens were between 100 and 250 millimeters until spring and summer when a large number of smaller fish were collected with the 12.2-m seine. The smallest specimen (12 mm) had only recently left a male brood pouch.

### 3.1.2.11 Northern Puffer (*Sphoeroides maculatus*)

The few northern puffer collected in the study were obtained in September 1980 and June, July, and August 1981 (Table 3-26). No specimens were collected at the Cedar Creek station. Specimens ranged in length from 7 millimeters (collected in June) to 192 millimeters, as illustrated by the trawl and 12.2-m seine results (Table 3-27).

### 3.1.2.12 Fourspine Stickleback (*Apeltes quadracus*)

Fourspine stickleback was equally abundant in catches with the trawl (N = 1,738) and 12.2-m seine (N = 1,715) and less numerous in catches with the 45.7-m seine (N = 254) (Table 3-28). The lower catch in the 45.7-m seine is probably a result of escapement of small fish through the larger mesh (25-mm stretch).

The seasonal pattern of catches with the trawl and 12.2-m seine were similar (Table 3-28); catches were markedly larger during the cold-weather months from November through March or April. A lower catch rate was observed in January, but this may have been the result of a reduced sampling effort. In contrast, catch rates with the 45.7-m seine did not peak until April and June. The combined catch with all gears was largest at Double Creek, followed by Forked River, and lowest at Oyster and Cedar creeks. Annual night catch rates were larger than day catch rates in 10 of 12 comparisons (Table 3-28).

### 3.1.3 External Parasites, Diseases, and Morphological Abnormalities

Of the thousands of fish and macroinvertebrates collected from Barnegat Bay stations during the study year, very few were afflicted with external parasites, diseases, or morphological abnormalities (Table 3-29). At least one specimen each, from six fish species and two invertebrate species, were observed to be afflicted in some fashion. Of the 109 observations of infestation by an external parasite, three genera were afflicted by either an isopod or a copepod. The parasitic copepod, Lernaeenicus sp., was observed on 60 bay anchovy; 40 grass shrimp were afflicted with the parasitic isopod, Probopyrus sp. Nine bluefish were afflicted with the parasitic isopod, Olencira praegustator. No fishes or macroinvertebrates were observed with parasitic leeches. Lesions and fungus were noted on only one fish species. Morphological abnormalities were infrequent and involved three fish and one invertebrate species. These abnormalities included missing and damaged fins, and deformed skeletal elements, such as one case of scoliosis in an Atlantic silver-side. Only two observations of morphological abnormalities were detected in an invertebrate--two blue crabs were found with malformed carapaces.

In light of the thousands of fishes examined from September 1980 to August 1981, those few incidences of parasitism, diseases, and morphological abnormalities described above do not represent any unusual conditions within the populations.

### 3.1.4 Water Quality Associated with Barnegat Bay Sampling

Measurements of water temperature, dissolved oxygen, pH, and salinity were taken just beneath the surface at each seining location (Table 3-30). Water temperature followed a typical seasonal pattern, ranging from a low of 1 C at Forked River in January to a high of 29 C at Oyster Creek in July 1981. Oyster Creek temperatures usually were higher than the other stations as a result of the discharge of heated water from OCNGS. Daytime temperatures averaged slightly warmer than nighttime temperatures at each station.

Dissolved oxygen values ranged from a low of 3.8 mg/liter at Double Creek in August 1981 to a high of 15.5 mg/liter at Oyster Creek in January 1981 (Table 3-30). The January 1981 value may have been an overestimate due to instrument malfunction (see Section 4.1.3). Daytime values averaged higher than nighttime values (except at Cedar Creek) reflecting diurnal community production-respiration cycles.

Monthly values of pH ranged from 7.5 to 8.3 on several occasions in more than one area. The range in pH was quite small and did not reflect any pattern among stations or day-night sampling periods.

Salinity values ranged from 14.9 ppt at Cedar Creek in March to 28.0 ppt at Double Creek in September 1980 and February 1981. Mean monthly salinity was consistently low during March - August 1981 due to higher precipitation and greater freshwater input to Barnegat Bay. Salinity values averaged markedly lower at Cedar Creek, compared to the other stations as a result of freshwater input from the Cedar Creek watershed and its greater distance from the more saline waters of Barnegat Inlet.

Water quality measurements were taken near the bottom in conjunction with trawl sampling (Table 3-31). Seasonal patterns were essentially the same as described for seine sampling. There were some slight differences in the water temperature and salinity data because of the different sampling locations. Lower temperatures were recorded at trawling stations in the winter; some negative values were recorded in January and February. Salinity measurements from trawling averaged slightly higher than those for seining, owing to the higher salinity of bottom waters.

### 3.1.5 Results of Statistical Analyses of Relation of Field-Fisheries Catches to Plant-Operational, Meteorological, and Water Quality Parameters

Table 3-32 presents the results of multiple regression analyses (GLM) on field-fisheries data. Few variables were determined to be significantly related to fisheries catch rates. There was a mixture of environmental and plant-operating variables, but the most important (Variable 1) was usually environmentally related, i.e., by some temperature variable.

The  $r^2$  values were generally low, suggesting that the models explained very little of the variation in field-fisheries catches. The highest  $r^2$  value was 0.22 for sand shrimp caught by 12.2-m seine in spring.

## 3.2 DISCUSSION

The results of the Barnegat Bay sampling are examined in light of two key requirements of the Environmental Technical Specifications (U.S. NRC 1978): (1) comparison of the 1979-1980 data with previous studies, and (2) the relationship of meteorological phenomena and plant-operating characteristics to seine and trawl catches. These are addressed in Sections 3.2.1 and 3.2.2, respectively. Data provided in Section 3.1 for abundance, distribution, and size are brought to bear within the framework of the two main topics.

### 3.2.1 Comparison of 1980-1981 Barnegat Bay Seine and Trawl Catches with Previous Studies

The 1980-1981 field-fisheries data are appended to data from previous studies (IA 1977, 1978, 1979a, 1979b; Ecological Analysts 1981) to provide a continuous, six-year database from September 1975 through August 1981 for the 12.2-m seine and otter trawl. The 45.7-m seine data are less extensive covering only the period from March 1977 through August

1981. For certain key species, the resulting data were reduced to monthly mean catch-per-effort and plotted (Figure 3-1 to 3-12). With the exception of winter flounder, only data from one gear were plotted for each species. This was done because the plots for a species were similar among gears and/or one gear was most effective for a given species. Winter flounder year-to-year data were different among the gears, so both the trawl and 45.7-m seine data are addressed. Striped bass and northern kingfish are not discussed; too few data were collected over the years to provide a meaningful evaluation.

#### 3.2.1.1 Bay Anchovy (*Anchoa mitchilli*)

Abundance of bay anchovy in Barnegat Bay declined steadily from 1975 through 1980, but catches in 1981 suggest a reversal of this trend (Figure 3-1). The decline was most marked in 1979, and again in 1980 when maximum mean monthly catches were reduced to about 60 fish per trawl haul, down from nearly 400 per trawl haul in October 1975.

Bay anchovy are present in Barnegat Bay from spring through fall. Adults enter the bay in spring and spawn during the summer. The adults and maturing juveniles leave the bay at the onset of winter (Kurtz 1978b). Although not documented in the present study, the movement of bay anchovy out of Barnegat Bay in winter is supported by the review of the species' ecology by Jones et al. (1978). Ecological Analysts (1976) documented the movement of bay anchovy down the Indian River (Delaware) estuary to the Indian River inlet at the onset of winter. This life-history pattern is reflected in the bimodal, annual abundance peaks in Figure 3-1. Adults usually entered the bay in May of each year (April of 1976) and are represented by modes in May, June, or July, depending on the year. The second mode in each year, either in September or October, represents the recruitment of that year's spawn to the gear. Despite decreasing modes of spring-caught adults from 1976 to 1978, juvenile abundances (fall modes) remained rather high in 1977 and 1978. Subsequently (1979 and 1980), spring-caught adults were low in abundance, and as a probable consequence, so were the fall juveniles.

The dynamics of the bay anchovy population in Barnegat Bay over the last six years exhibits contradictory components. The distribution of trawl catches (Figure 3-1) is not well-predicted by egg and larvae production (Figures 5-2 and 5-3). High egg production in 1976 (Figure 5-2) was followed in a few months by relatively low larval and juvenile abundances (Figures 3-1 and 5-2). In contrast, the relatively low egg production in 1977 (Figure 5-2) was followed by large abundances of larvae (Figure 5-3) and juveniles (Figure 3-1). Further, egg and larval production in 1978 were both low, yet juvenile abundance in seine catches was still rather high that year (Figure 3-1). A moderate production of eggs in 1979 (Figure 5-2) produced the highest density of larvae for the five-year period (Figure 5-3), yet seine catches of juveniles were quite low (Figure 3-1). In 1980, seine catches of all life stages were low and it is suggested (Chapter 5) that this may have been a result of predatory or competitive interaction with the ctenophore, *Mnemiopsis leidyi*.



The inconsistencies among life-stage abundances within a given year preclude the assignment of a causative factor for the decline in the bay anchovy population. It can only be speculated that the fortuitous coincidence of favorable environmental conditions was responsible for the success of given year classes, and that conditions were sufficiently deleterious, particularly in 1979 and 1980, to bring about the decline.

#### 3.2.1.2 Atlantic Silverside (*Menidia menidia*)

Atlantic silverside is a year-round resident of Barnegat Bay. It inhabits the shallow shoreline areas during spring, summer, and fall, and is believed to move to deeper waters during winter (Hoch 1978). This seasonal pattern of occurrence in the shore zone is evident in the six-year plot of 12.2-m seine catches (Figure 3-2).

Two modes of abundance are evident for each year for this species. The spring mode, representing the movement of adults into the shallows, occurs in March, April, or May (the April - May 1978 mode is barely evident). A second, often more-pronounced mode occurs during summer, either June or July. This second mode represents the appearance of large numbers of young of the year in addition to the adult population. Hoch (1978) also pointed out this bimodal length distribution of silverside taken from June through August. This same phenomenon can be seen in the Atlantic silverside length distributions from the 1980-1981 study (Table 3-17). A third mode is evident in December 1978, which is a result of an unusually large catch at Double Creek (Byrne 1979), and may be attributed to the schooling nature of the species. Despite the variable catch rates in the seines that month, the peak apparently is indicative of general abundance because the greatest number of impinged Atlantic silverside also was recorded during that month. The most successful production of Atlantic silverside had occurred in 1980, as evidenced by the peak in June and July (Figure 3-2); however, in June 1981 mean catches peaked at over 2,900 per haul.

The six-year distribution of catches of Atlantic silverside appears to be typical for the species, displaying substantial variation from year to year, apparently in response to natural environmental conditions. Marcellus (1972), in his study of Barnegat Bay fishes from 1966-1967 to 1969-1970, described the same year-to-year variability in seine catches of Atlantic silverside.

#### 3.2.1.3 Northern Pipefish (*Syngnathus fuscus*)

Northern pipefish catches were very low from September 1980 through August 1981 compared to the previous five years (Figure 3-3). Catches previously were lowest in 1976, with monthly mean catches consistently less than one fish per seine haul. The catch rates increased dramatically in 1977 and 1978, with peak mean catches of nearly five (1977) and four (1978) fish per effort. The year of greatest abundance was 1979, when the July mean was nearly nine fish per haul. The August 1980 catch of 6.5 fish per effort was the second highest mean recorded.



The annual period of northern pipefish availability extends from spring through fall of each year (Figure 3-3). Summer peaks are usual, but in 1977 the peak monthly catch occurred in November.

Marcellus (1972) reported a decreasing trend in catch rates of northern pipefish from 1966 to 1970. This, coupled with the trend of slightly increasing catch rates for the 1975-1980 period and the sudden recent decline, may be indicative of a natural, long-term population cycle.

#### 3.2.1.4 Bluefish (*Pomatomus saltatrix*)

Young bluefish characteristically enter Barnegat Bay from the ocean in early summer of each year and leave in late summer. This pattern of occurrence is believed to be influenced by water temperature (Metzger 1978a). Bluefish seasonal abundance is shown in terms of 45.7-m seine data for the period March 1977 through August 1980 (Figure 3-4). Summer peaks are nearly identical for each year, but in 1977 an additional major peak occurred in October, with a mean monthly catch per seine haul of 16 bluefish. Nearly the entire October 1977 catch was from Oyster Creek, apparently as a result of bluefish attraction to the warmer discharge waters. Metzger (1978a) pointed out that bluefish commonly are attracted to the OCNGS discharge in spring and fall.

Summer abundance of bluefish in Barnegat Bay near OCNGS has changed little from 1977 through 1980, but in 1981 catch rates were lower.

#### 3.2.1.5 Weakfish (*Cynoscion regalis*)

Based on otter trawl catches, the abundance of weakfish in Barnegat Bay has displayed two substantial year-to-year increases (1977 and 1981) and a long-term decline during interim years (1978-1980) (Figure 3-5). Catches were lowest in 1976; the peak mean catch rate was less than one fish per haul. Catches peaked at 5.5 fish per haul the following year and thereafter decreased to 1.5 fish per haul in 1980. In August 1981, the catch rate increased to over 23 per trawl haul.

Catches, which consist primarily of juveniles, display a pronounced seasonality of occurrence. Young enter the bay in summer and become most abundant in the trawl catches in late summer or early fall. They are absent from trawl catches by December (Figure 3-5).

The apparent decrease in weakfish catch since 1977 may be real, i.e., it may be attributable to year-to-year variation in abundance. The peak impingement catch in 1979-1980 and the August 1980 mean catch rate, which was similar to the previous year, appeared to forecast the catch of juveniles in 1981.

#### 3.2.1.6 Summer Flounder (*Paralichthys dentatus*)

Summer flounder were never abundant in trawl catches during the six-year period. This was apparently caused by a lack of the preferred sandy substrate in western Barnegat Bay (Metzger 1978b). Despite overall low catch rates, a marked increase in abundance can be seen from 1979 through 1981, compared to previous years (Figure 3-6). Mean monthly catches were

four to five times as great as previous ones. As the population of summer flounder in the bay is composed primarily of immature individuals (Metzger 1979b), the recent peak catches represent good spawning success in previous years.

Metzger (1978b) discussed fluctuations in summer flounder abundance in Barnegat Bay and cited Festa (1974) concerning large fluctuations in summer flounder populations in New Jersey waters over the past 20 years. The data in Figure 3-6 appear to reflect this characteristic variability.

#### 3.2.1.7 Winter Flounder (*Pseudopleuronectes americanus*)

For the winter flounder, six-year abundance plots are presented for both the otter trawl (Figure 3-7) and the 45.7-m seine (Figure 3-8). Both gear were effective in catching winter flounder, yet resulted in strikingly different year-to-year abundance distributions. Therefore, data from both gears are addressed.

The trawl plot (Figure 3-7) presents a picture of dramatic year-to-year variation in catch rates. To interpret this variation, the summer and late fall - winter periods must be examined separately. The spawning population of adult winter flounder enter Barnegat Bay in late fall and stay through winter. The size of the adult population has increased over the six years, as seen in increasing peaks through the November - March period of each study year. Summer catches are composed primarily of the young of the previous winter's catch; these have been much more erratic over the six years than the adult fall - winter catches. The greatest catches of young winter flounder were produced in 1977 and 1979. Young were much less abundant in the summers of 1976, 1978, 1980, and 1981, although abundance appears to have increased through each of the "intervening" years until 1981.

Through analysis of the abundance of winter flounder eggs and larvae (Chapter 5), the distribution of trawl catches of young of the year can be partially interpreted. Large catches of young in the summers of 1977 and 1979 were preceded by winters with high densities of eggs and larvae in the bay. The relatively low trawl catches of young in the summers of 1976 and 1978 were preceded by winters of low egg and larvae production. The summer 1980 data cannot be examined in this manner since OCNGS did not operate from January through May, and there are no entrainment data with which to assess egg and larvae production. However, catches of larvae in 1981 were not very large, relative to 1978 for example, although 1981 catches of young were much larger than those of 1978.

The year-to-year fluctuation in winter flounder abundance in Barnegat Bay is attributed to differential reproductive success among years (Danila 1978). Danila, following Jeffries and Johnson (1974), cited water temperature as the primary factor controlling year-class strength. The latter authors demonstrated a statistical relationship between low water temperatures and subsequent production of commercial-size winter flounder. They further described the advantage of lack of competition realized by winter flounder by spawning near shore in winter and their ability to produce large numbers of larvae despite severe conditions such

as ice cover. Such circumstances could explain the large year class produced in 1977, under severe temperature and ice conditions.

The 45.7-m seine data (Figure 3-8) provide a contrasting and enigmatic comparison to the trawl data (Figure 3-7). During summer, the seine captures young flounder, as does the trawl, yet the peak summer seine catches follow an opposite pattern to those of the trawl--seine peaks are low in years of high trawl peaks and high in years of low trawl peaks, except 1981. The seine plot is similar to the trawl plot with respect to periods of occurrence. Discrepancies between the years of peak catches among the gears may be the result of differences in inshore/offshore movement patterns among years.

#### 3.2.1.8 Northern Puffer (*Sphoeroides maculatus*)

The northern puffer was collected by trawl during the summers of 1976 through 1981, but only in 1978 was a relatively large production indicated (Figure 3-9).

Metzger (1979) speculated that the increase in Barnegat Bay catches of northern puffer in 1978 may indicate a future increase in the baywide population since most of those captured were young. This notion was not borne out in the following years (Figure 3-9). The relatively large production of young in 1978 did not result in increased population size in 1979 and 1980 as would be expected.

Marcellus (1972), conducting a fishery survey of Barnegat Bay from 1966-1967 to 1969-1970, reported high numbers of puffer in seine hauls in 1966-1967 (eight per haul), but in subsequent years catches decreased dramatically to less than one fish per haul. McClain (1973) (cited in Moore 1977a) reported collecting only five northern puffer in a fishery survey of the upper bay from December 1971 through November 1972. Moore (1978a), citing the above studies and the low densities of puffer in the 1975-1977 IA collections, postulated a 10-year decline in the population. Relatively high catches in 1978 were thought to indicate an increase in the bay population (Metzger 1979), but as already noted, this was not supported by the 1979-1981 data (Figure 3-9).

The reason for the decline in the northern puffer population is unknown, but is apparently a widespread phenomenon not limited to Barnegat Bay. Hamer (1972) and Thomas and Milstein (1973) reported a serious decline in the northern puffer population in Great Bay, New Jersey, based on sport-fishery data.

#### 3.2.1.9 Atlantic Menhaden (*Brevoortia tyrannus*)

Barnegat Bay is inhabited by both young and older Atlantic menhaden during warmer seasons. They enter the bay in the spring and leave in fall. This pattern is somewhat apparent in the six-year plot (Figure 3-10), although some winter catches are shown, particularly in 1976-1977. The January and February catches in 1977 were from Oyster Creek only, as the other stations were ice covered (Danila 1978). Thus, the population sampled during those months was that overwintering in the OCNCS thermal discharge, and not part of any general bay population. Discounting the

January and February means (Figure 3-10), the 1976 catches still remain the highest during the six-year study period. Since 1979, trawl catches of Atlantic menhaden have been incidental. Kurtz (1978) attributed the relatively large catches in 1976-1977 to a large year class produced in 1976; the majority of the 1976-1977 specimens were young of the 1976 year-class.

#### 3.2.1.10 Sand Shrimp (*Crangon septemspinosa*)

Sand shrimp are abundant in Barnegat Bay from fall through spring. Their numbers increase in the fall as they enter the bay to reproduce in October and November (Moore 1978b). Except during periods of extremely cold temperatures, they remain in the bay throughout the winter and a second reproductive period takes place March through May. With increasing summer water temperatures, most sand shrimp move away from shorezone areas.

This seasonal distribution of sand shrimp in Barnegat Bay is illustrated in the six-year plot (Figure 3-11). The greatest abundances occur from fall through spring of each year with lowest abundances in summer (except 1980). Winter peaks, however, are bimodal, with the first peak usually occurring in December. This is followed by a sharp reduction in January or February, and a second peak in February, March, or April. This pattern is consistent with the work of Moore (1978b) wherein sand shrimp were shown to avoid temperatures below 6 C. The second "winter" peak in each year represents the movement of sand shrimp back into the shallows of Barnegat Bay coinciding with moderating water temperatures.

The high density of sand shrimp present in July and August 1980 represents an exception to the normal pattern. Based on water temperatures measured during sampling with the 12.2-m seine, 1980 had the coolest summer of the six-year period of record. The mean temperature (of all sampling stations and day-night periods) in July 1980 was only 24 C and that in August about 28.5 C. In contrast, the mean water temperatures exceeded 30 C in at least one, and usually two, months in the four preceding summers. Apparently, the 1980 temperatures were not sufficiently high to cause sand shrimp to emigrate from the bay or at least from shallow shoreline areas.

Based on 12.2-m seine data, the overall abundance of sand shrimp has increased over the last six years although catches were slightly smaller in 1981 (Figure 3-11).

#### 3.2.1.11 Blue Crab (*Callinectes sapidus*)

Over the past six years, the blue crab has exhibited a typical pattern of seasonal abundance. Blue crabs live year-round in Barnegat Bay (Metzger 1978c), but are inactive in winter and usually are buried in the sediment; thus, trawl catches are low. They become active with the onset of moderating temperatures in the spring, and catches increase, usually peaking sometime during spring or summer (Figure 3-12).



In the six-year abundance plot, catches in 1976, 1978, and 1979 were roughly similar, whereas 1977 was quite low and 1980 the highest. Catches in 1981 may rival those of 1980. Low catch rates in 1977 resulted from high mortality of juvenile blue crabs in the winter of 1976-1977 (Metzger 1978c). This winter kill of crabs had a significant effect on impingement rates in 1977 (Chapter 4) and on the commercial crab fishery in the bay (Chapter 7). The commercial fishery did not begin to recover until the 1978-1979 study year and this is evident in the higher catch rates with the trawl in 1978 and 1979.

The blue crab is one of the most frequently impinged organisms at OCNGS (Chapter 4). It was estimated that over 5-6 million crabs were impinged in 1975-1976. Such impingement levels could potentially have an effect on the crab population in Barnegat Bay, as an additional source of mortality. However, the real effect of impingement is undoubtedly much lower than suggested by the total impingement estimates. As Hillman (1979b) noted, blue crabs suffered little immediate or delayed mortality upon passage through the OCNGS screening and trash diversion system. Whatever the actual mortality due to impingement, it does not appear to control population levels in the bay. The six-year plot (Figure 3-12) illustrates population fluctuations due to natural perturbation (i.e., 1976-1977 winter kill) and subsequent recovery despite the near continuous operation of OCNGS through this period.

### 3.2.2 Statistical Model

The multiple regression model provided little insight into the variation of fish and invertebrate catches in seine and trawl. This is partly a result of subdividing the analyses by seasons, a necessity to avoid many "zero" catches when certain species are not in the bay. However, in so doing, the ranges of environmental variables and the number of observations are greatly reduced, as are the chances of quantifying a strong relationship with, for example, water temperature. Although it is known that relatively minor changes in environmental characteristics such as temperature or salinity (as are the norm within seasons) can affect fish movement or vulnerability, the present model is not refined enough to isolate such conditions. Further, other factors known to affect fish catches, e.g., species-specific behavior patterns, are not in the model. As a result of these things,  $r^2$  values are low and the model results cannot be used to explain variation in fish catches.

Notwithstanding the results, the application of the multiple regression model has served a purpose. Through it, the possibility of a strong relationship between field fisheries abundance and plant-operating or other parameters has been ruled out. Thus, it has served as a cross check against the qualitative analyses provided earlier.

### 3.2.3 Comparison of 12.2-m Seine Data Between Preoperational Years (1966-1970) and Operational Years (1970 and 1975-1981)

Although the data collected between 1975 and 1981 (Section 3.2.1) represents a strong base for examination of impact of OCNGS, it does not include data collected before plant operation began. In order to further examine possible effects of OCNGS, 12.2-m seine data from the 1975-1981



period are compared to data collected by Marcellus (1972) during November 1966 - October 1970, before OCNGS began operation.

The preoperational and operational data sets, although collected with the same gear, were not derived in exactly the same way, so they had to be adjusted for purposes of comparison. A multitude of stations were sampled by the various investigators over the 10-year period. To obtain a consistent data set, the stations that were considered for this aspect of the study were:

Double Creek (constant throughout the various efforts)

Oyster Creek mouth (south shore by Marcellus, north shore by all others)

Forked River mouth (north shore by Marcellus, south shore by all others)

Potter Creek mouth (by Marcellus)/Cedar Creek mouth (by all others)

The rationale for switching shores at the Oyster Creek and Forked River mouths is based on the habitat changes that occurred as a result of dredging operations. The gradually sloping beaches sampled by Marcellus no longer existed so it was assumed that any species that exhibited a preference for those beaches would move to adjacent, similar areas. The mouth of Potter Creek is located about two miles north of the mouth of Cedar Creek; both areas are not influenced directly by operation of OCNGS and thus provide a source of reference samples in the northern portion of the study area. Double Creek station, south of the potentially affected area, also is considered a noninfluenced station. Forked River mouth is a station that is potentially affected by the currents that are induced by the cooling water flow of OCNGS and Oyster Creek mouth is affected by both the cooling water flow currents and the heat rejected by plant operations. Only samples collected during daylight hours were used in the assessment because Marcellus only sampled during the daytime. The number of replicate samples varied between preoperational years, normally always two in operational years and varying from one to seven in Marcellus' (preoperational) data. Notwithstanding the variation in replication and slight differences in sampling locations, the (adjusted) preoperational and operational data sets are comparable and can provide insight into temporal changes in important finfish populations in Barnegat Bay.

Two general approaches were employed to provide insight into the influences of OCNGS operation on the finfish of western Barnegat Bay. The first approach examines changes in species assemblages over the years and allows specific comparisons between the preoperational and operational years. Specifically, Spearman Rank Correlation Coefficients were generated for each station catch based on the relative ranking of the mean annual catch per unit effort (CPUE) of 23 species. The species chosen for this aspect of the study were abundant in one or more years of the 10-year period. Another aspect of species assemblage analysis was the enumeration of species in the use categories shown in Table 4-14 (i.e.,

resident, migrant, or visitor). The number of species in each category for a given sampling year was determined for each station. The mean number of species at the two OCNGS-affected stations also was calculated and compared with the mean for the unaffected stations.

The second approach to determine long-term effects examines the CPUE of particular taxa. For six taxa, seasonal CPUE plots were derived by calculating the mean monthly CPUE for the preoperational period and for the operational period for each station. Additionally, the mean annual CPUE for each of 24 abundant species was calculated for the nonthermally affected stations. Marcellus (1972) concluded that the thermally affected station at Oyster Creek showed differences in both seasonal distribution and species assemblage, therefore, this station was excluded from this analysis. Differences between the 1966-1970 data and the 1975-1981 data were compared nonparametrically (Mann-Whitney U-test) to assess which species exhibited significantly different changes in abundance during the intervening five years. In addition, the seasonal distribution of six species was examined at each of the four stations. Catch data was lumped as preoperational or operational and, based on mean monthly CPUE, cumulative percent catches were derived for those two conditions. Plots then were produced to graphically depict distributional changes between stations since OCNGS operation began. A final step involves the examination of data from other New Jersey estuaries to determine if changes seen in Barnegat Bay are localized or widespread.

The mean number of resident species collected each year at the noninfluenced stations were almost identical to the number collected at the influenced stations (Figure 3-13). The number of resident species collected annually during the preoperational period ranged from 9 to 13 species at uninfluenced stations compared with 9-14 species at influenced stations. During operational years, 5-13 species were collected at uninfluenced stations compared with 5-14 species at influenced stations. Generally, the number of resident species was consistently high from 1966 through 1970 and in 1975-1976. The lowest number of resident species was collected during the next study year (1976-1977) followed by four years of recovery back to values approximately the same as the preoperational numbers. This trend was generally followed at both the influenced and noninfluenced stations (Figure 3-13).

The mean number of migrant fish species collected each year has always been greater at Oyster Creek and Forked River mouths than at the remaining stations, Cedar Creek/Potter Creek mouths, and Double Creek. Catches of migrant species were fairly stable during the first five years of this investigation ranging from 11 to 16 species at Forked River and Oyster Creek and from 7 to 11 at the other two stations (Figure 3-13). During the sixth study year (1976-1977), however, the mean number of migrant species dropped fairly substantially at both the OCNGS-influenced stations and the noninfluenced stations (7.5 and 5 species, respectively). The following three years show a general recovery at all stations to levels approaching the initially high values from the first five study years. During the last study year, however, the number of migrant species collected at the influenced stations fell once again to low levels. The noninfluenced stations showed continued recovery. The reason the number of migrant forms is higher at the stations designated as influ-

enced is probably because of the proximity of these stations to Barnegat Inlet (Figure 1-1). This inlet provides the nearest access to the Atlantic Ocean from Barnegat Bay so the migrating forms could be more abundant at those stations.

For much the same reason, the number of species categorized as visitors has always been greater at the stations closest to Barnegat Inlet. As with the resident and migratory forms, the number of visitor species was consistently high until the sixth year, when a reduction occurred. Visitor species at OCNCS-influenced stations generally recovered during the next four years while the noninfluenced stations remained low.

Results of the Spearman's Rank Correlation procedure show that significant ( $p = .05$ ) changes in the species ranking (Table 3-33) occurred at stations most influenced by OCNCS operation (Figure 3-14). The changes in species ranking that occurred at the noninfluenced stations (Potter/Cedar Creek and Double Creek) do not appear to be significant except in two cases. At the Forked River station the periods of greatest species ranking changes appear to be concentrated between the four early study years of Marcellus (1966-1970) and four later years (1975-1976, 1976-1977, 1979-1980, and 1980-1981). Likewise, at the mouth of Oyster Creek, most of the significant changes in species ranking that occurred exist between the early Marcellus years (1966-1970) and three later years (1975-1976, 1978-1979, and 1979-1980). The species ranking of 1979-1980 appeared significantly different from all years prior to 1977-1978 at Oyster Creek. The number of significant differences in species abundance rankings between preoperational and operational years at Oyster Creek and Forked River (Figure 3-14) permit the inference of some change in community composition at those stations. Changes in ranking of some species from preoperational to operational years are noted (Table 3-33), but actual abundance data must be examined to determine what changes have taken place.

Figure 3-15 presents changes in mean monthly CPUE for certain species over the 10-year investigation period. Of the six species treated in this fashion, two (fourspine stickleback, Apeltes quadracus, and silver perch, Bairdiella chrysura) show reductions in monthly CPUE from the preoperational period to the operational period at all four stations. Two species (bay anchovy and Atlantic silverside) show an increase in mean CPUE at at least one station; the remaining two species (winter flounder and northern pipefish) have mean CPUE values of approximately the same magnitude. It is necessary to note that the peak catches of both the bay anchovy and the Atlantic silverside at Oyster Creek and Forked River are due to single year catches of great magnitude. Excluding peak catches, the mean CPUE during the operational period falls to values almost identical to the preoperational period.

Mean annual CPUEs by species for the unaffected stations are shown in Table 3-34. The median annual CPUE for 1966-1970 was compared to the median CPUE for 1975-1981 using the Mann-Whitney U-test (Snedecor and Cochran 1980). Five species were found to have significantly reduced CPUEs: bay anchovy, silver perch, northern puffer, Atlantic herring, and blueback herring. Three species were found to have significantly increased CPUEs: sheepshead minnow, spot, and weakfish.

Figure 3-16 presents the cumulative mean monthly catch of six species at each station both prior to and during OCNGS operation. The Oyster Creek station catch is of particular interest for this aspect of the investigation because it may be expected that the warmwater discharge could change the distributional characteristics of species that live in the area. Two taxa (silversides and silver perch) show no consistent change between the preoperational period and the operational period relative to station location. The remaining four species, however, do exhibit changes in their catch distributions at the Oyster Creek station. Northern pipefish and winter flounder were both collected earlier in the study year at at least one other station before being collected at Oyster Creek during the preoperational period. After OCNGS operation commenced, both these species are collected about a month earlier at Oyster Creek relative to the other stations. Fourspine stickleback and bay anchovy both appear much earlier at the mouth of Oyster Creek since OCNGS began operation. These two species generally appear at Oyster Creek anywhere from two to five months earlier in the study year since plant operation began relative to the remaining three stations.

The above analysis reveals a number of spatial and temporal differences between preoperational and operational years. The number of species collected dropped substantially in the 1976-1977 study year, to levels well below those recorded for preoperational years. The community analysis (i.e., Spearman's) revealed significant differences in the communities at Oyster Creek and Forked River between the preoperational and operational years. Catches of several species were lower in operational years: bay anchovy, silver perch, northern puffer, Atlantic herring and blueback herring. Sheepshead minnow, spot, and weakfish increased in abundance in operational years. The seasonal appearance at Oyster Creek of several species occurred earlier by one to five months in operational years compared to preoperational years. These species were northern pipefish, winter flounder, fourspine stickleback, and bay anchovy. The decline in number of species that occurred in 1976-1977 (into 1977-1978 for migrant species at the noninfluenced stations) occurred at both the influenced and noninfluenced stations. That such a relatively uniform change should occur is indicative of factors affecting species presence throughout Barnegat Bay. The winter period of 1976-1977 was one of the most severe of the last 10 years. Water temperatures recorded at the OCNGS intake for that year were the coldest of the last six years for the 10-week period from mid-October through late December. This corresponds with the biological season when summer forms exit the bay, winter forms enter the bay, and residents migrate to more favorable habitats within the bay.

In addition to the early decline of water temperatures during the 1976-1977 study year, the duration of the coldest part of winter was also much longer. The number of weeks in each year with water temperatures less than 1.5 C is listed below:



| <u>Study Year</u> | <u>Number Weeks With Mean Weekly Water Temp. &lt;1.5 C</u> |
|-------------------|--|
| 1975-1976         | 5  |
| 1976-1977         | 10   |
| 1977-1978         | 4  |
| 1978-1979         | 3  |
| 1979-1980         | 5  |
| 1980-1981         | 4  |

It is readily observable that the coldest period of the 1976-1977 year generally lasted more than twice as long as any of the other years. That this cold period had an effect on local biota has been hypothesized by Moore (1978), Miller (1978), and Metzger (1978); thousands of dead blue crabs were collected at the field stations during the spring of that study year. The conclusion possible from these observations is that the reduction in species in 1976-1977 was a result of severe climatic conditions rather than the OCNGS operation.

The reduction in abundance of northern pipefish at Oyster Creek and Forked River in operational years may be attributed to the changes in habitat brought about by construction and operation of OCNGS. Fourspine stickleback numbers also dropped at these locations, but were also reduced at the nonaffected stations, Cedar Creek and Double Creek. Regarding those species found to be less abundant at nonaffected stations after plant operation, available evidence suggests that this may have been part of a general reduction in New Jersey estuaries and not limited to Barnegat Bay. Data from Milstein et al. (1977) and Allen (1978) for nearby estuaries revealed population reductions from 1972 to 1974 of most of those same species reduced in Barnegat Bay, e.g., silver perch, northern puffer, Atlantic herring and blueback herring. In contrast, the reduction of fourspine stickleback at all four Barnegat Bay stations was not seen at the other nearby estuaries. The reason for its decline in Barnegat Bay is unknown.

The Spearman's Rank Correlation procedure provided evidence of some community compositional changes at the thermally influenced stations between the preoperational and operational years. These changes, such as the reduction in number of northern pipefish at Oyster Creek and Forked River mouths, may have been a result of changes in habitat brought about by construction and operation of OCNGS. For example, the formerly extensive eelgrass beds at the mouth of Oyster Creek (Marcellus 1972), which provided cover and forage for many species, have been much reduced as a result of plant activities (i.e., increased water temperature, currents and dredging). Although not directly affected by the heated discharge, Forked River was subjected to changes in currents after OCNGS startup and thus also exhibits a somewhat different community than before OCNGS operation began. These changes are not unexpected, given that the areas sampled (Oyster Creek and Forked River mouths) are now part of the OCNGS cooling water system, i.e., the bayward terminus of both the intake (Forked River) and discharge (Oyster Creek) canals.



Another near-field effect of OCNGS is the attraction of certain species to the Oyster Creek mouth one to five months earlier in operational years than in preoperational years. Although directly attributable to the heated discharge, it is a localized phenomenon that does not extend beyond the immediate area.

In summary, the foregoing analysis revealed some changes in community composition and species abundance at near-field (Forked River, Oyster Creek) and far-field (Cedar/Potter Creek, Double Creek) stations on Barnegat Bay after startup of OCNGS. Changes noted in unaffected areas of Barnegat Bay, and even outside Barnegat Bay in other nearby estuaries, appear to have been caused by natural phenomena, such as the severe winter of 1976-1977. Changes that occurred only at the near-field locations, e.g., reduction in northern pipefish numbers, were likely a result of increased water temperatures, currents, and/or dredging associated with construction and operation of OCNGS. These latter changes were not unexpected because the near-field areas sampled form a part of the OCNGS cooling-water canal system.

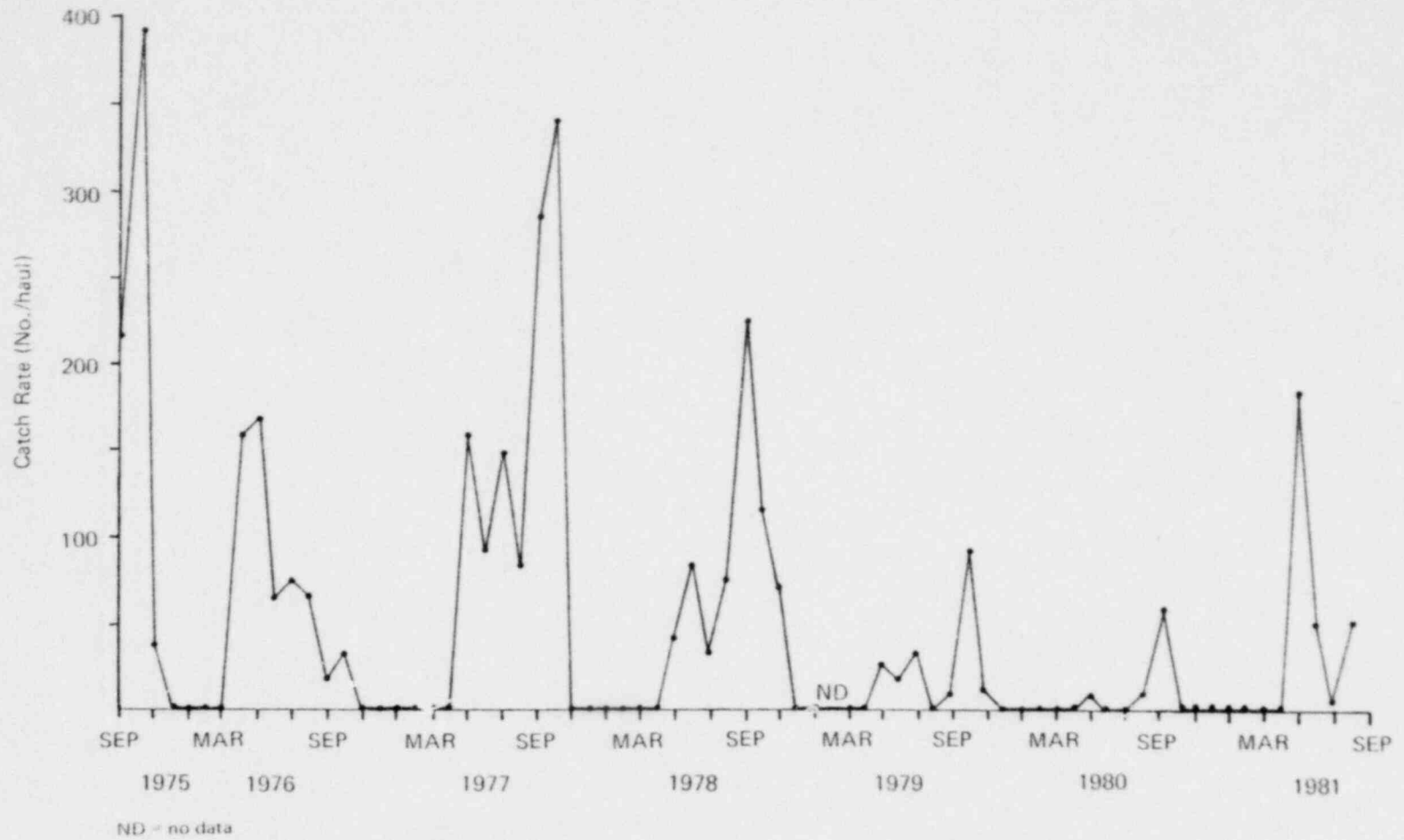


Figure 3-1. Mean number per haul of bay anchovy (*Anchoa mitchilli*) taken in the otter trawl in Barnegat Bay (all stations combined), September 1975 – August 1981.

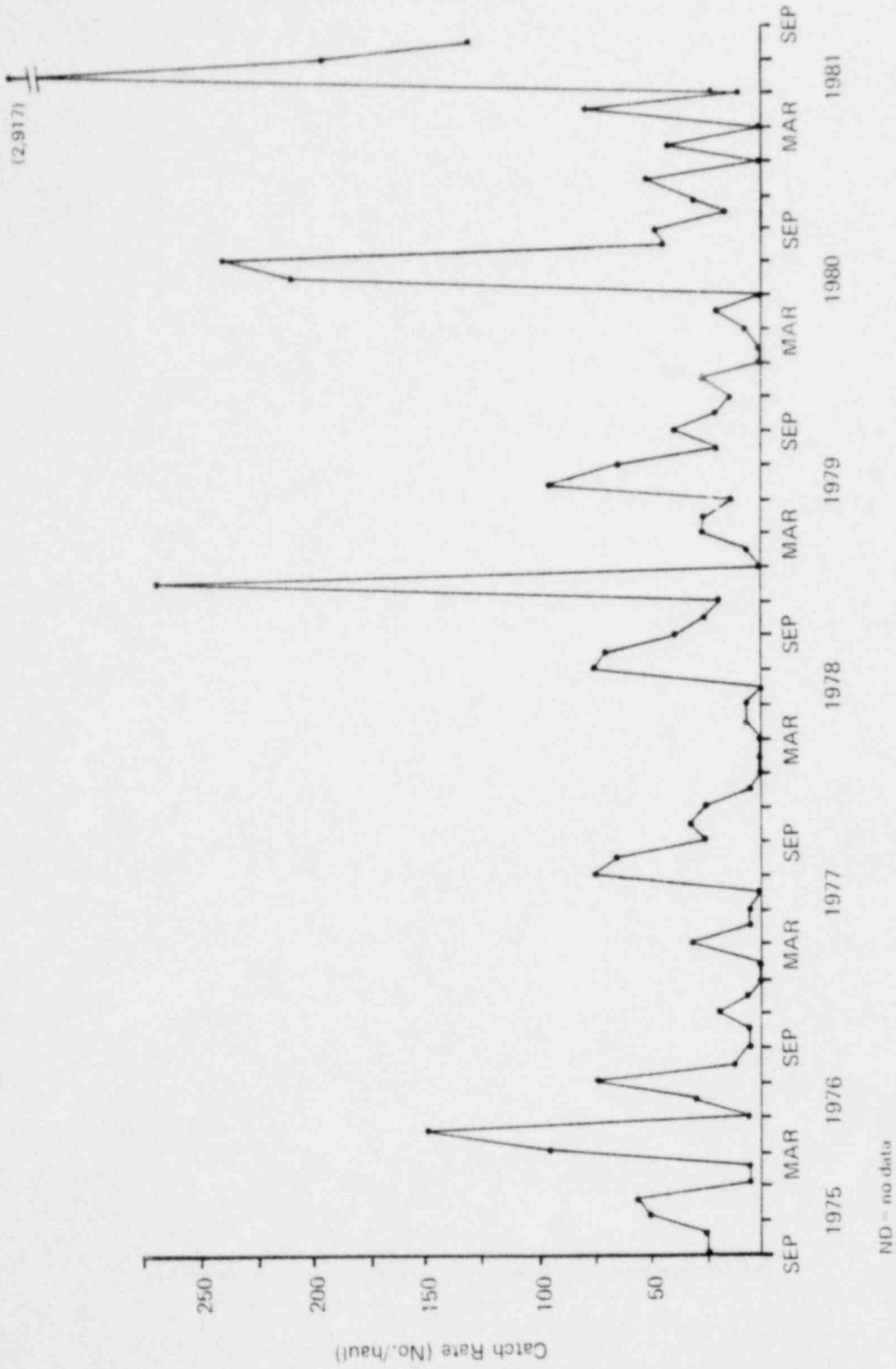


Figure 3-2. Mean number per haul of Atlantic silverside (*Menidia menidia*) taken in the 12.2-m seine in Barnegat Bay (all stations combined), September 1975 – August 1981.

ND = no data

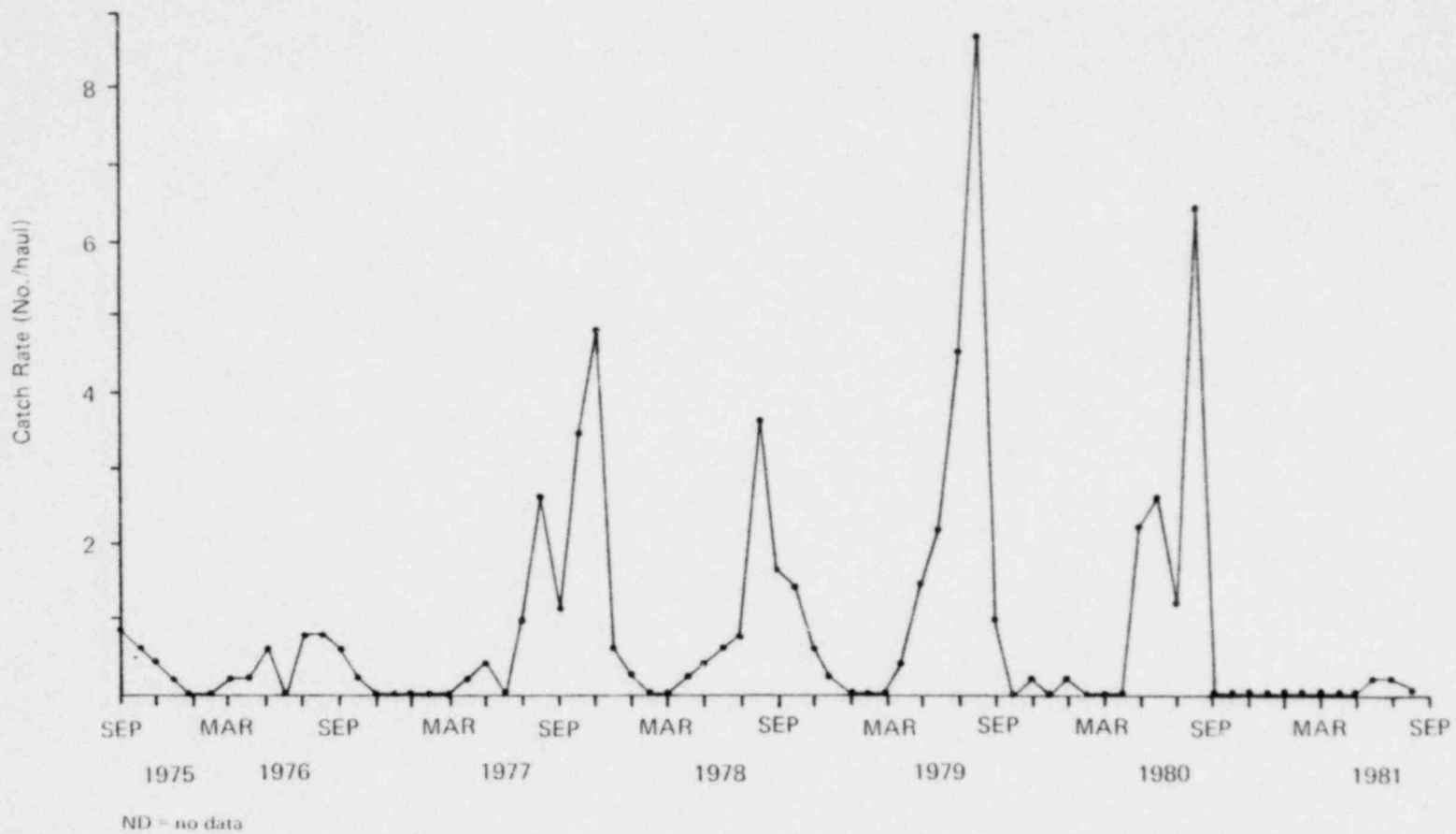


Figure 3-3. Mean number per haul of northern pipefish (*Syngnathus fuscus*) taken in the 12.2-m seine in Barnegat Bay (all stations combined), September 1975 – August 1981.

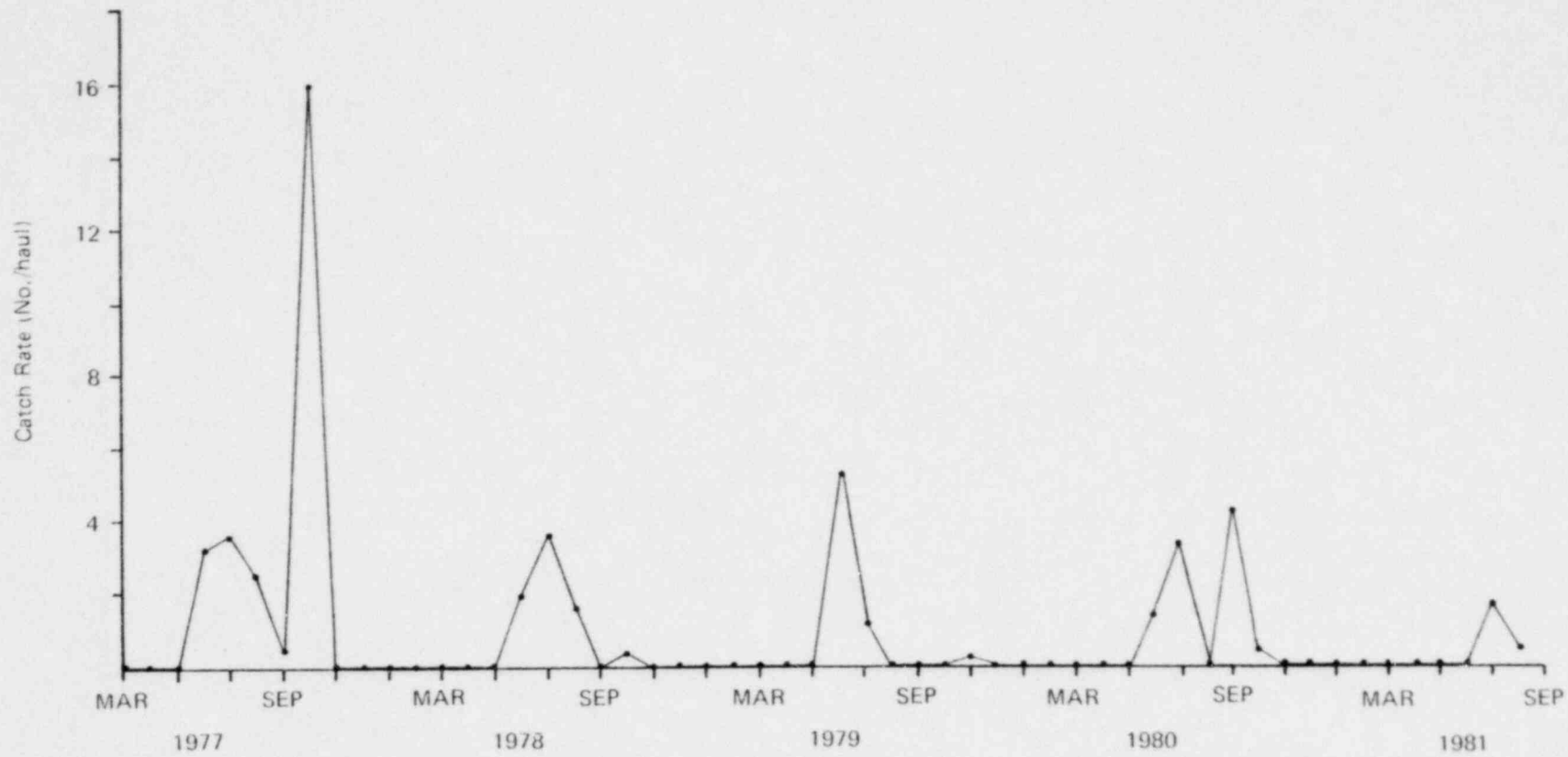


Figure 3-4. Mean number per haul of bluefish (*Pomatomus saltatrix*) taken in the 45.7-m seine in Barnegat Bay (all stations combined), March 1977 – August 1981.



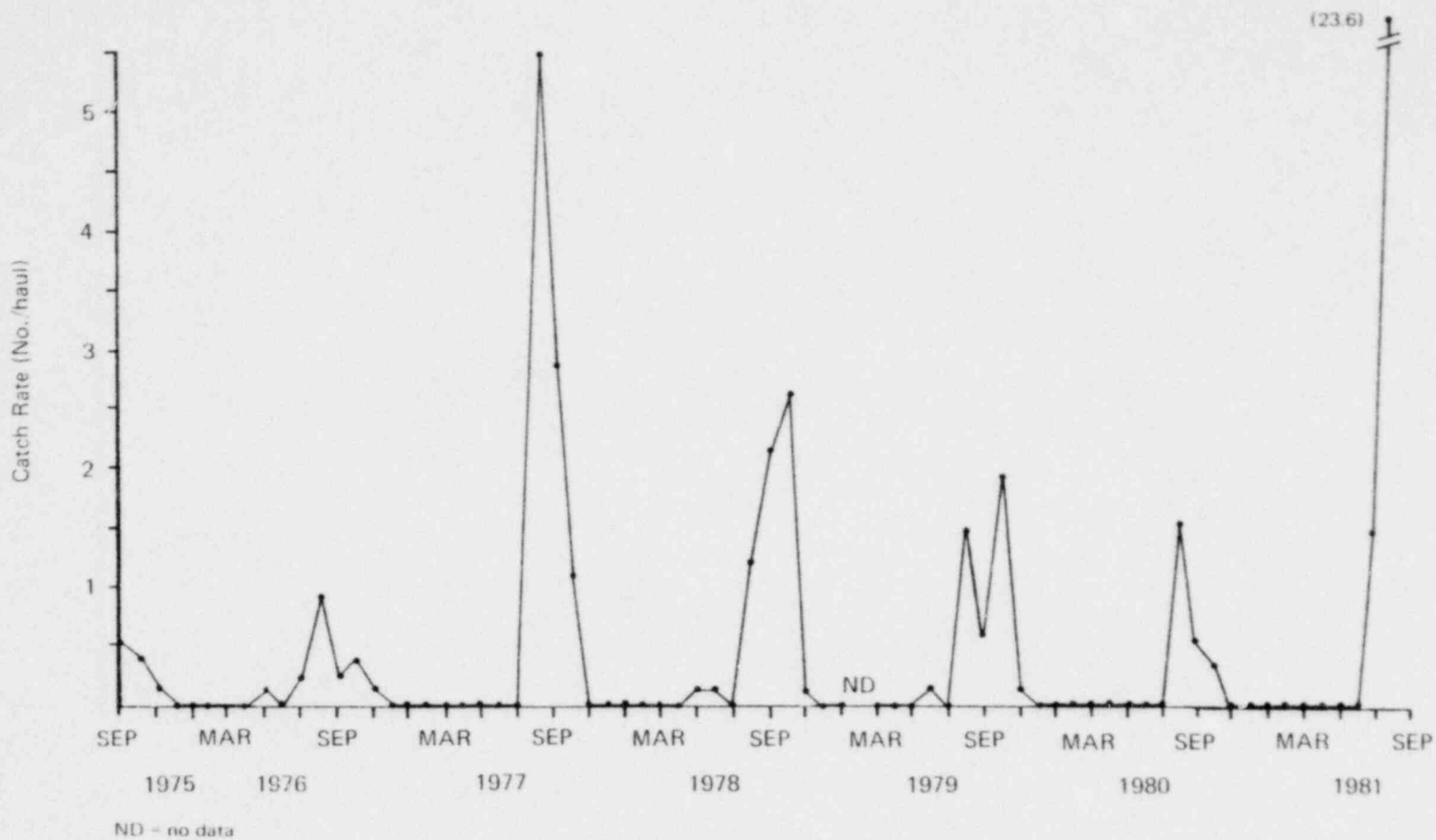


Figure 3-5. Mean number per haul of weakfish (*Cynoscion regalis*) taken in the otter trawl in Barnegat Bay (all stations combined), September 1975 – August 1981.

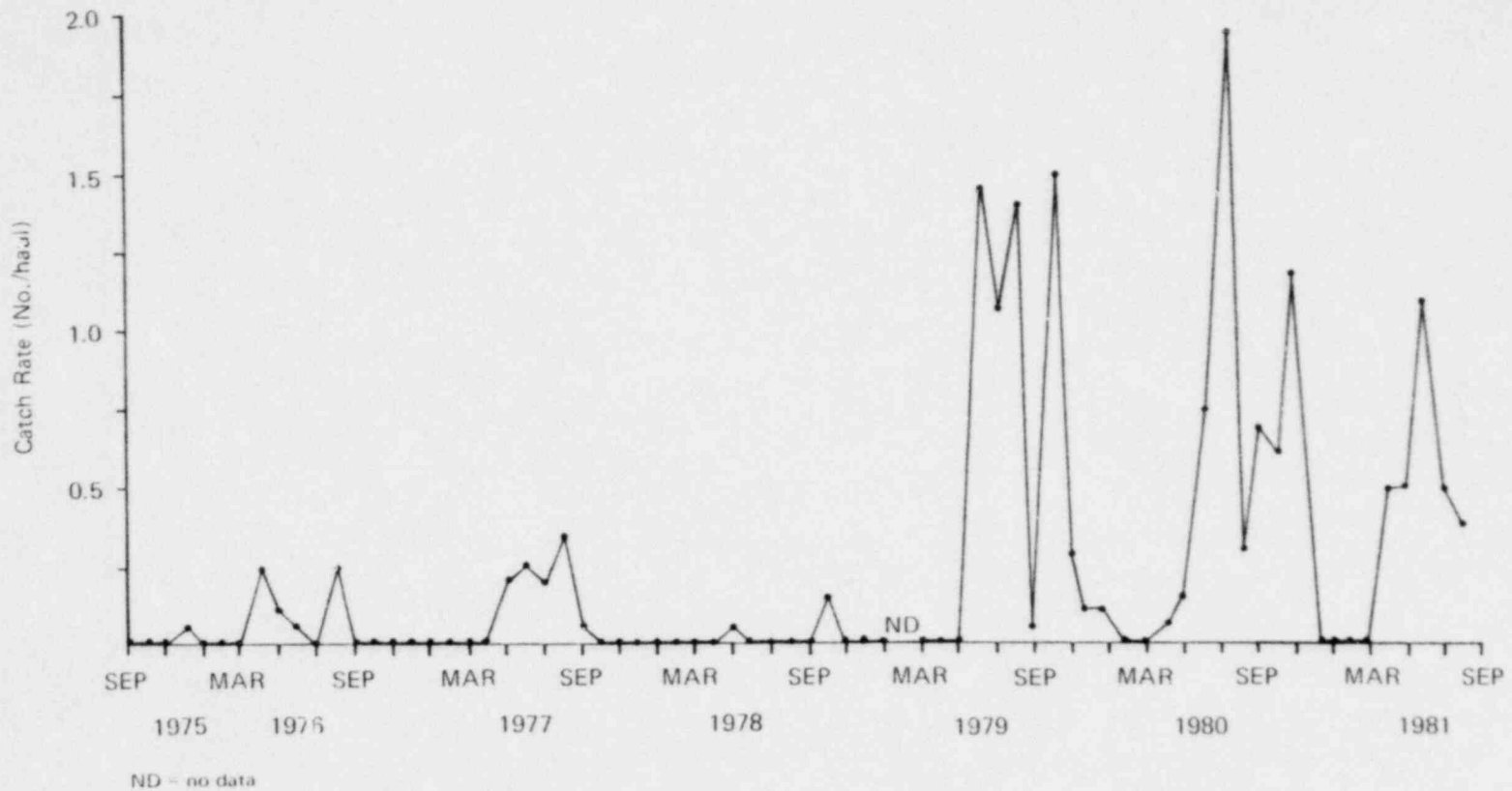


Figure 3-6. Mean number per haul of summer flounder (*Paralichthys dentatus*) taken in the otter trawl in Barnegat Bay (all stations combined), September 1975 – August 1981.



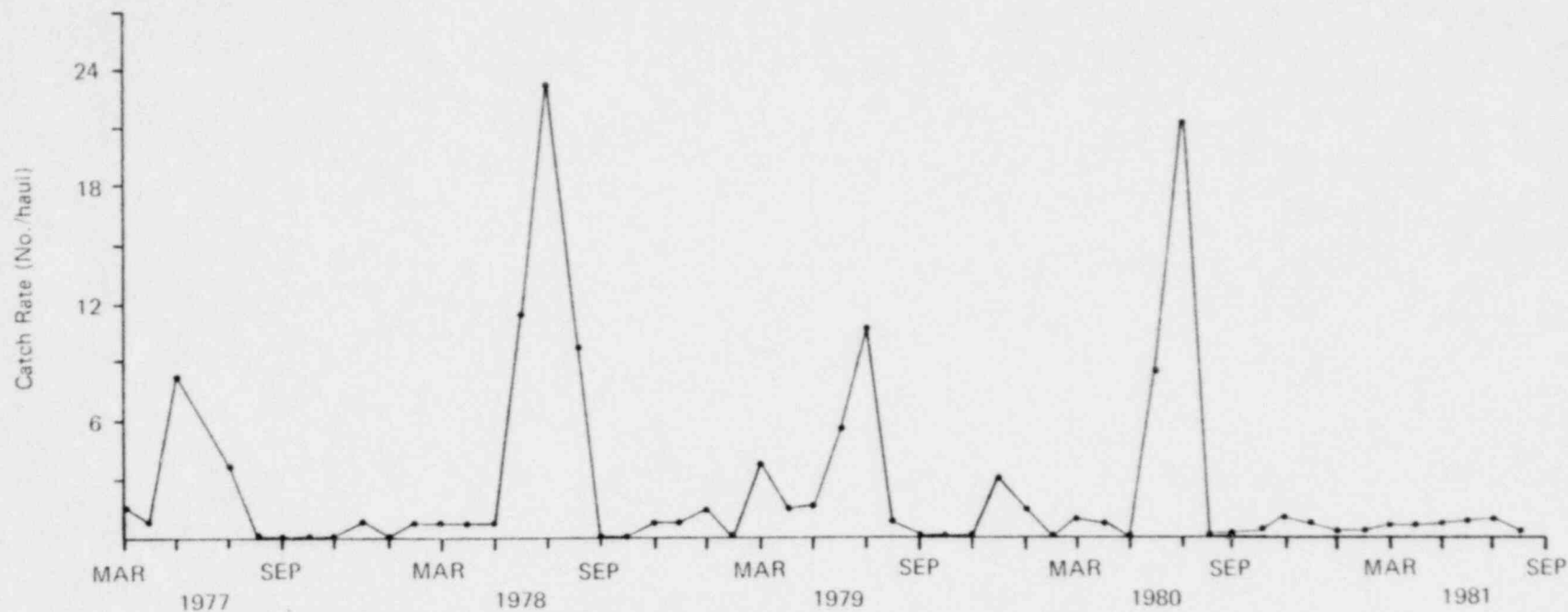


Figure 3-8. Mean number per haul of winter flounder (*Pseudopleuronectes americanus*) taken in the 45.7-m seine in Barnegat Bay, March 1977 – August 1981.

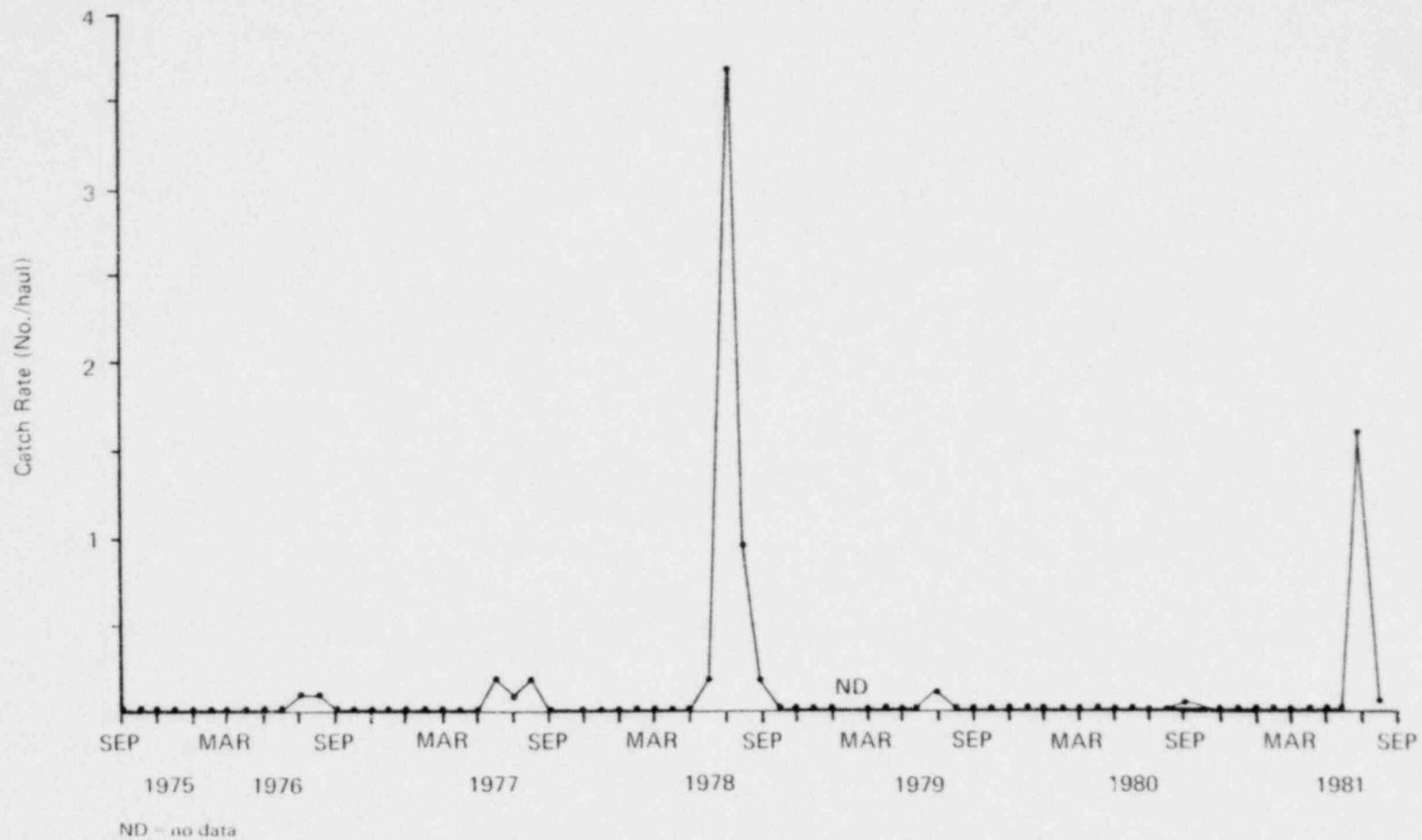


Figure 3-9. Mean number per haul of northern puffer (*Sphoeroides maculatus*) taken in the otter trawl in Barnegat Bay (all stations combined), September 1975 – August 1981.



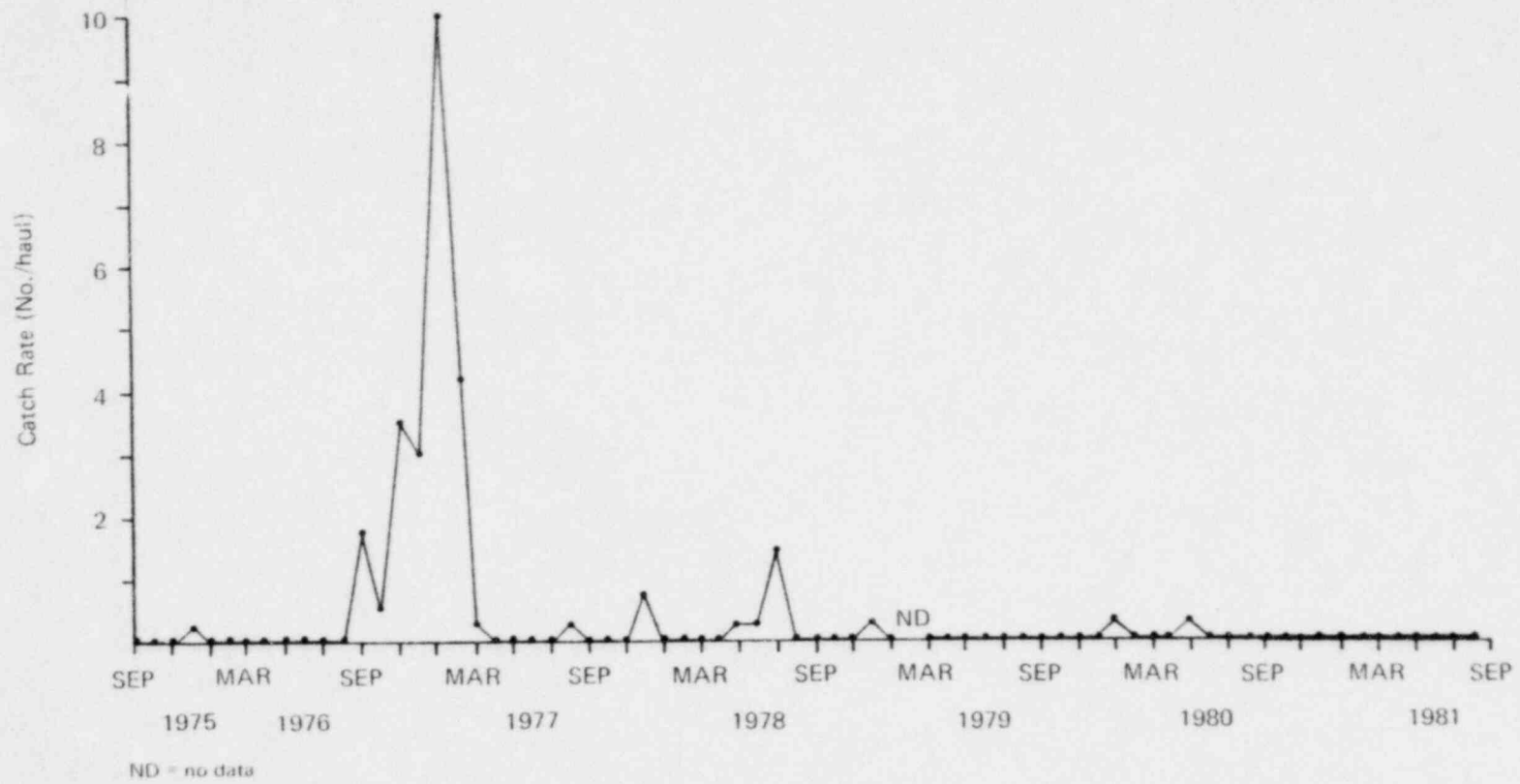


Figure 3-10. Mean number per haul of Atlantic menhaden (*Brevoortia tyrannus*) taken in the otter trawl in Barnegat Bay (all stations combined), September 1975 – August 1981.

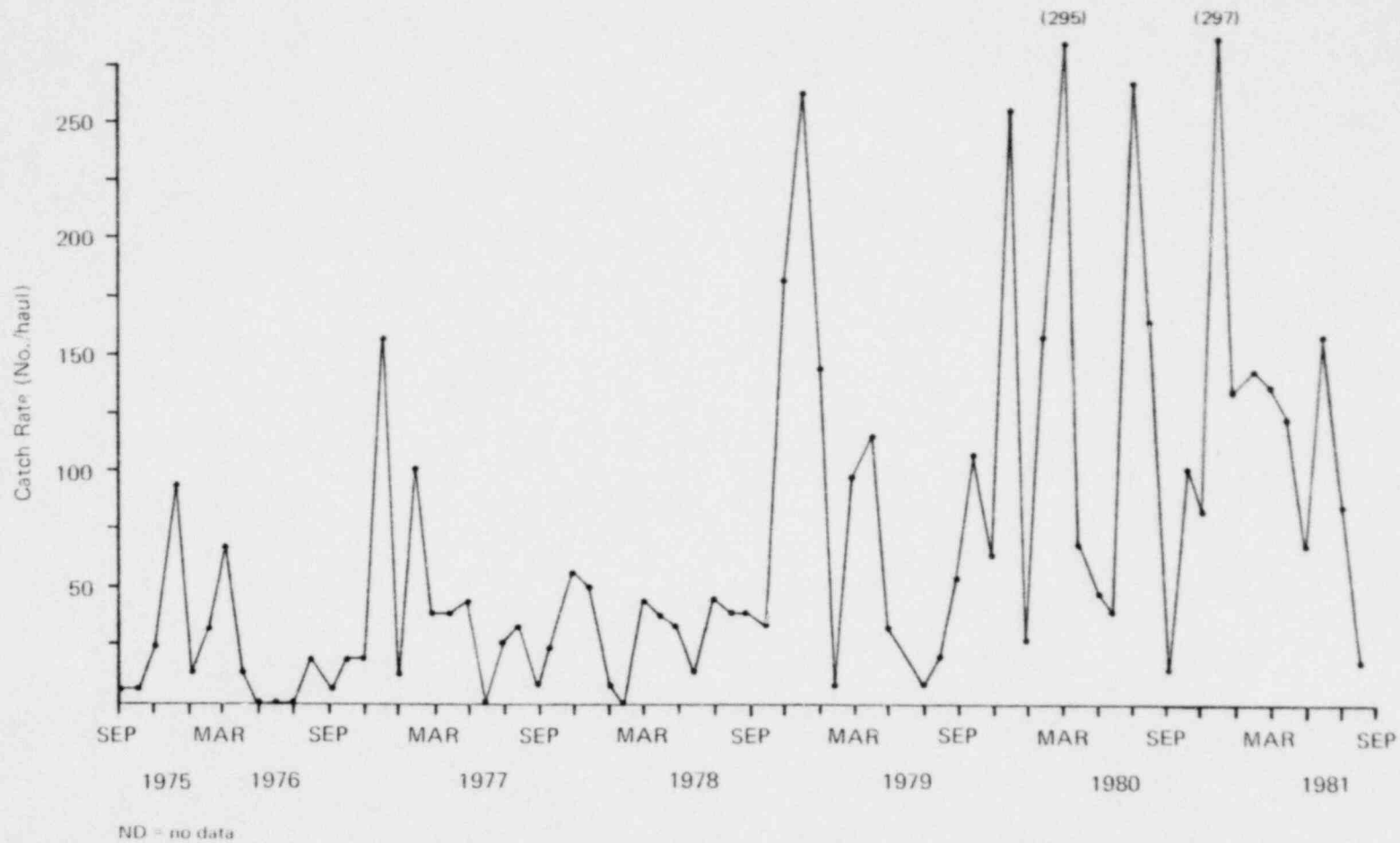


Figure 3-11. Mean number per haul of sand shrimp (*Crangon septemspinosa*) taken in the 12.2-m seine in Barnegat Bay (all stations combined), September 1975 – August 1981.

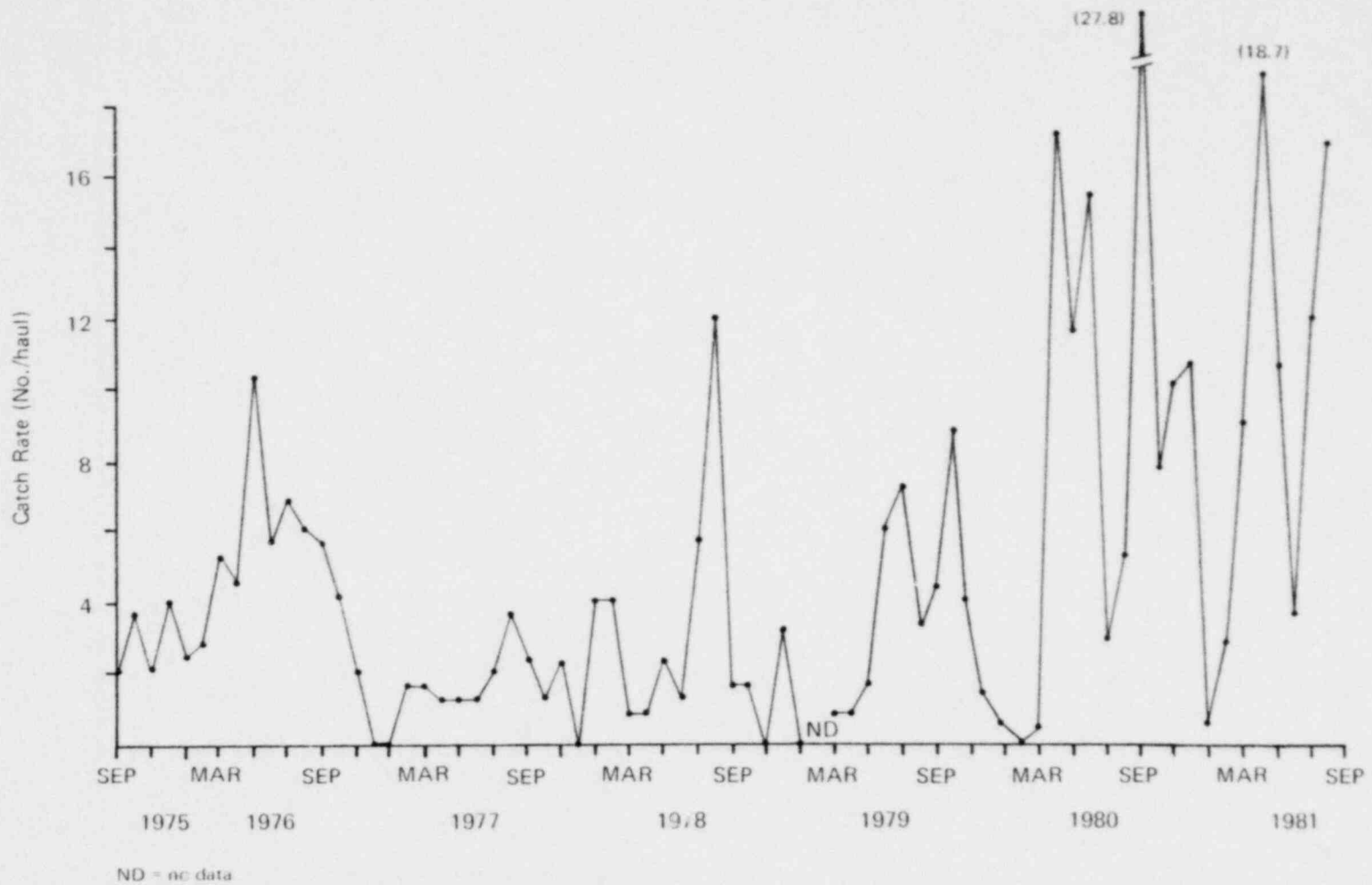


Figure 3-12. Mean number per haul of blue crab (*Callinectes sapidus*) taken in the otter trawl in Barnegat Bay (all stations combined), September 1975 – August 1981.

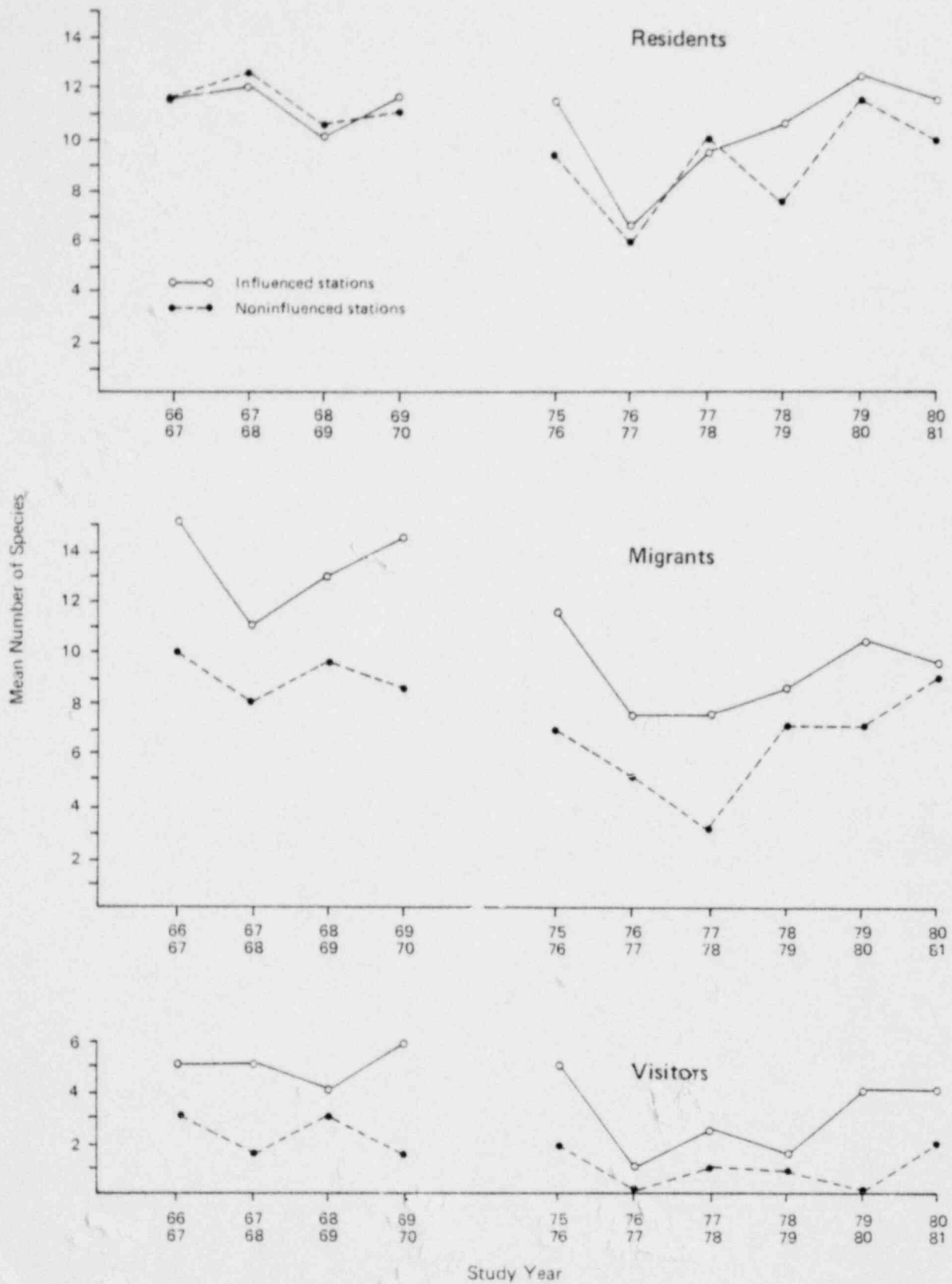


Figure 3-13. Mean number of fish species by use category collected by 12.2-m seine each year at OCNCS operation influenced stations (Oyster Creek and Forked River mouths) and at noninfluenced stations (Potter/Cedar Creeks and Double Creek).

### Forked River Mouth

|            |       | Study Year |          |          |          |          |          |          |          |          |          |
|------------|-------|------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
|            |       | 66<br>67   | 67<br>68 | 68<br>69 | 69<br>70 | 75<br>76 | 76<br>77 | 77<br>78 | 78<br>79 | 79<br>80 | 80<br>81 |
| Study Year | 66-67 |            |          |          |          |          |          |          |          |          |          |
|            | 67-68 | 0.74       |          |          |          |          |          |          |          |          |          |
|            | 68-69 | 0.87       | 0.81     |          |          |          |          |          |          |          |          |
|            | 69-70 | 0.83       | 0.79     | 0.85     |          |          |          |          |          |          |          |
|            | 75-76 | 0.17       | 0.46     | 0.42     | 0.39     |          |          |          |          |          |          |
|            | 76-77 | 0.36       | 0.39     | 0.23     | 0.17     | 0.75     |          |          |          |          |          |
|            | 77-78 | 0.76       | 0.72     | 0.74     | 0.58     | 0.46     | 0.53     |          |          |          |          |
|            | 78-79 | 0.76       | 0.82     | 0.63     | 0.64     | 0.53     | 0.69     | 0.84     |          |          |          |
|            | 79-80 | 0.49       | 0.61     | 0.42     | 0.41     | 0.46     | 0.69     | 0.67     | 0.80     |          |          |
|            | 80-81 | 0.32       | 0.57     | 0.28     | 0.45     | 0.45     | 0.58     | 0.54     | 0.70     | 0.69     |          |

### Oyster Creek Mouth

|            |       | Study Year |          |          |          |          |          |          |          |          |          |
|------------|-------|------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
|            |       | 66<br>67   | 67<br>68 | 68<br>69 | 69<br>70 | 75<br>76 | 76<br>77 | 77<br>78 | 78<br>79 | 79<br>80 | 80<br>81 |
| Study Year | 66-67 |            |          |          |          |          |          |          |          |          |          |
|            | 67-68 | 0.85       |          |          |          |          |          |          |          |          |          |
|            | 68-69 | 0.85       | 0.91     |          |          |          |          |          |          |          |          |
|            | 69-70 | 0.41       | 0.47     | 0.51     |          |          |          |          |          |          |          |
|            | 75-76 | 0.33       | 0.45     | 0.35     | 0.25     |          |          |          |          |          |          |
|            | 76-77 | 0.46       | 0.49     | 0.48     | 0.32     | 0.49     |          |          |          |          |          |
|            | 77-78 | 0.28       | 0.54     | 0.45     | 0.45     | 0.66     | 0.45     |          |          |          |          |
|            | 78-79 | 0.39       | 0.45     | 0.40     | 0.34     | 0.68     | 0.71     | 0.76     |          |          |          |
|            | 79-80 | 0.06       | 0.16     | 0.09     | 0.34     | 0.23     | 0.30     | 0.57     | 0.59     |          |          |
|            | 80-81 | 0.58       | 0.55     | 0.45     | 0.57     | 0.46     | 0.46     | 0.65     | 0.71     | 0.63     |          |

Note: Shaded area denotes year combinations of Spearman's Correlation Coefficient that are not similar at  $p = .05$ .

Figure 3-14. Results of Spearman's Rank Correlation Test on annual ranks of 23 selected species collected at four western Barnegat Bay stations by 12.2-m seine.



Potter/Cedar Creek Mouths

|            |       | Study Year |          |          |          |          |          |          |          |          |          |
|------------|-------|------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
|            |       | 66<br>67   | 67<br>68 | 68<br>69 | 69<br>70 | 75<br>76 | 76<br>77 | 77<br>78 | 78<br>79 | 79<br>80 | 80<br>81 |
| Study Year | 66-67 |            |          |          |          |          |          |          |          |          |          |
|            | 67-68 | 0.58       |          |          |          |          |          |          |          |          |          |
|            | 68-69 | 0.76       | 0.80     |          |          |          |          |          |          |          |          |
|            | 69-70 | 0.84       | 0.75     | 0.84     |          |          |          |          |          |          |          |
|            | 75-76 | 0.59       | 0.55     | 0.51     | 0.62     |          |          |          |          |          |          |
|            | 76-77 | 0.56       | 0.68     | 0.59     | 0.65     | 0.70     |          |          |          |          |          |
|            | 77-78 | 0.61       | 0.86     | 0.76     | 0.73     | 0.63     | 0.82     |          |          |          |          |
|            | 78-79 | 0.70       | 0.90     | 0.83     | 0.83     | 0.76     | 0.77     | 0.84     |          |          |          |
|            | 79-80 | 0.52       | 0.70     | 0.60     | 0.64     | 0.52     | 0.81     | 0.78     | 0.76     |          |          |
|            | 80-81 | 0.59       | 0.55     | 0.44     | 0.64     | 0.72     | 0.71     | 0.70     | 0.63     | 0.59     |          |

Double Creek

|            |       | Study Year |          |          |          |          |          |          |          |          |          |
|------------|-------|------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
|            |       | 66<br>67   | 67<br>68 | 68<br>69 | 69<br>70 | 75<br>76 | 76<br>77 | 77<br>78 | 78<br>79 | 79<br>80 | 80<br>81 |
| Study Year | 66-67 |            |          |          |          |          |          |          |          |          |          |
|            | 67-68 | 0.78       |          |          |          |          |          |          |          |          |          |
|            | 68-69 | 0.77       | 0.71     |          |          |          |          |          |          |          |          |
|            | 69-70 | 0.85       | 0.74     | 0.71     |          |          |          |          |          |          |          |
|            | 75-76 | 0.42       | 0.66     | 0.44     | 0.36     |          |          |          |          |          |          |
|            | 76-77 | 0.60       | 0.71     | 0.57     | 0.52     | 0.70     |          |          |          |          |          |
|            | 77-78 | 0.66       | 0.76     | 0.46     | 0.71     | 0.52     | 0.68     |          |          |          |          |
|            | 78-79 | 0.51       | 0.73     | 0.61     | 0.51     | 0.82     | 0.86     | 0.61     |          |          |          |
|            | 79-80 | 0.47       | 0.75     | 0.46     | 0.46     | 0.70     | 0.72     | 0.69     | 0.77     |          |          |
|            | 80-81 | 0.47       | 0.67     | 0.44     | 0.51     | 0.71     | 0.65     | 0.68     | 0.70     | 0.88     |          |

Note: Shaded area denotes year combinations of Spearman's Correlation Coefficient that are not similar at  $p = .05$ .

Figure 3-14. (Cont.)

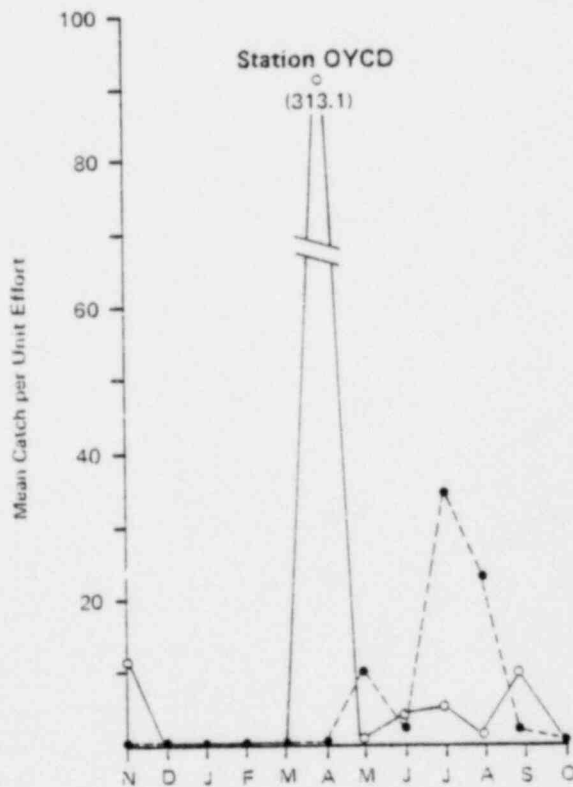
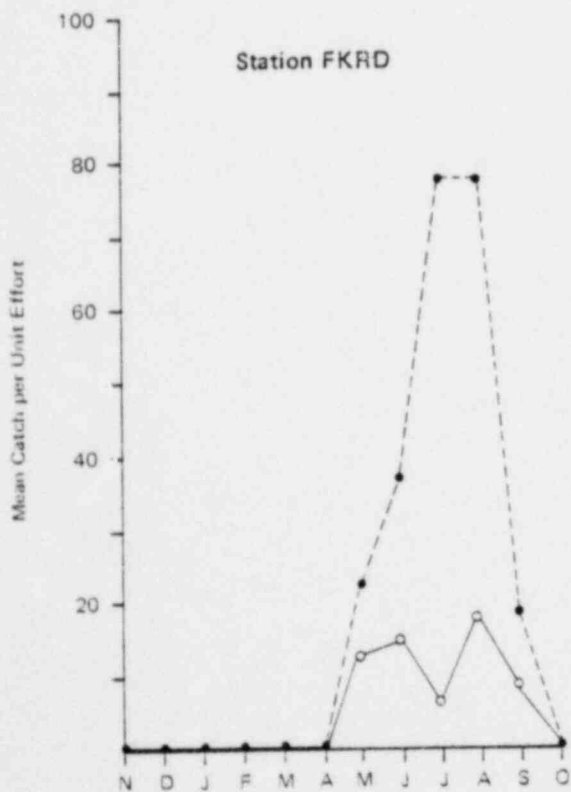
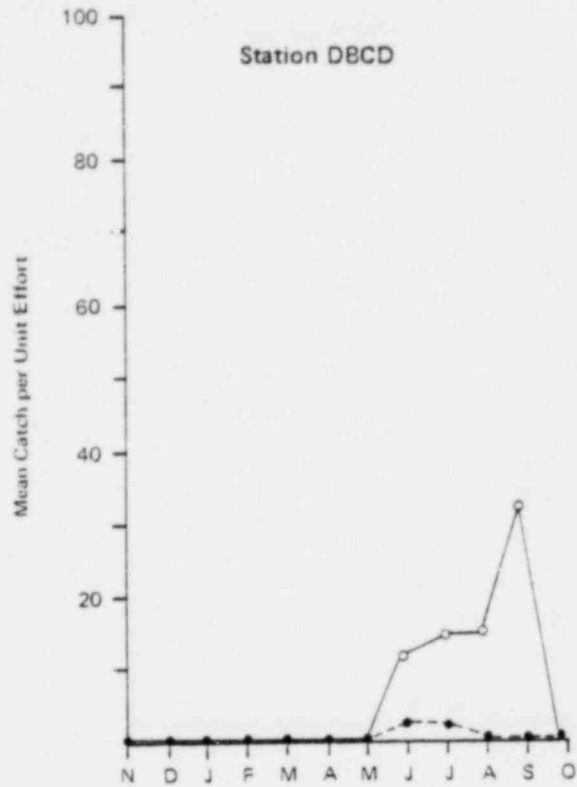
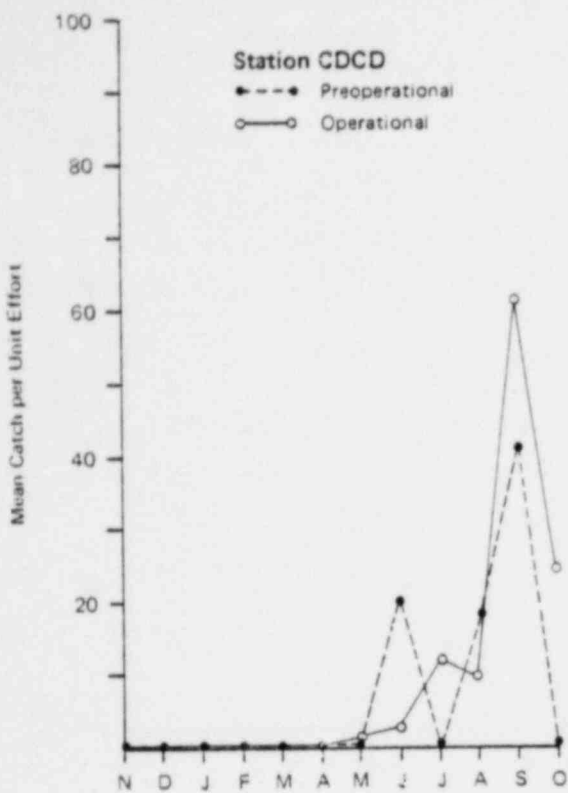


Figure 3-15a. Mean monthly catch per 12.2-m seine haul of bay anchovy (*Anchoa mitchilli*) at four stations in western Barnegat Bay prior to and during OCNCS operation.

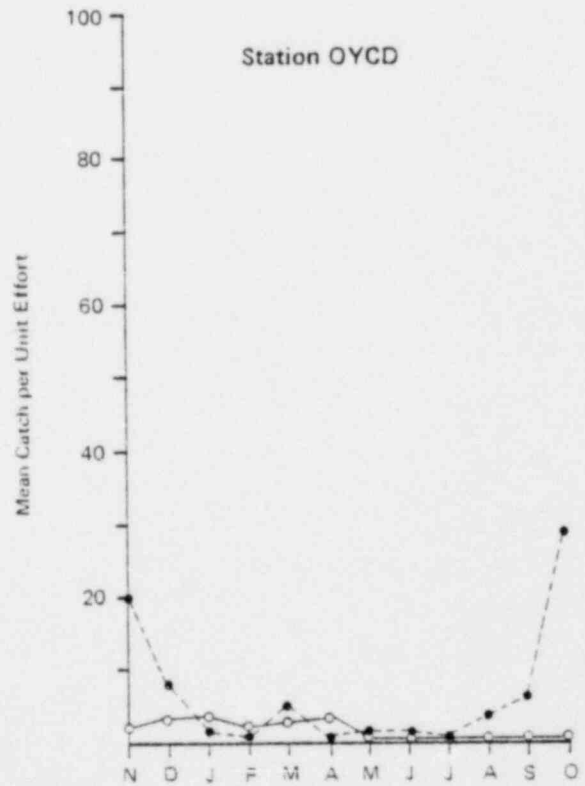
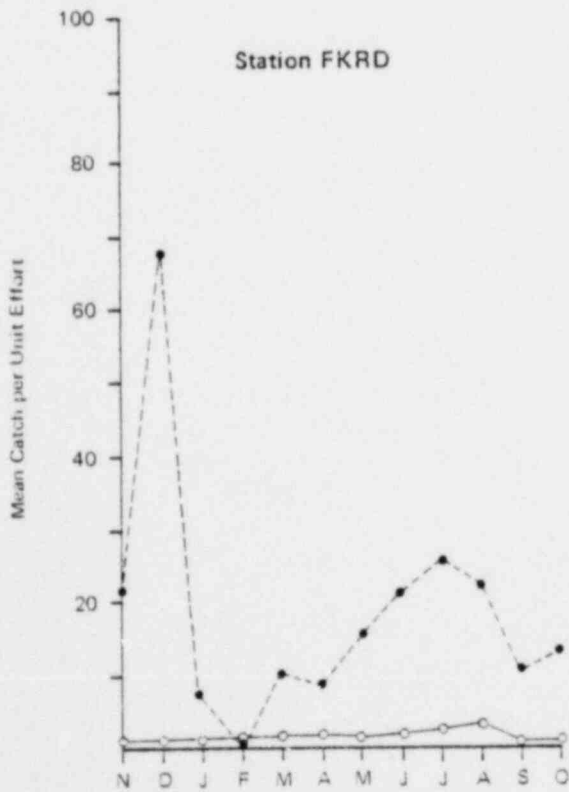
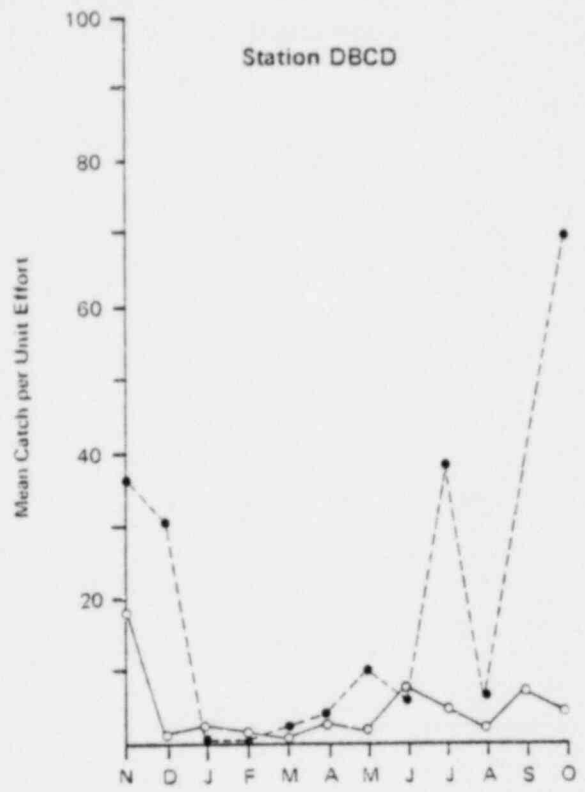
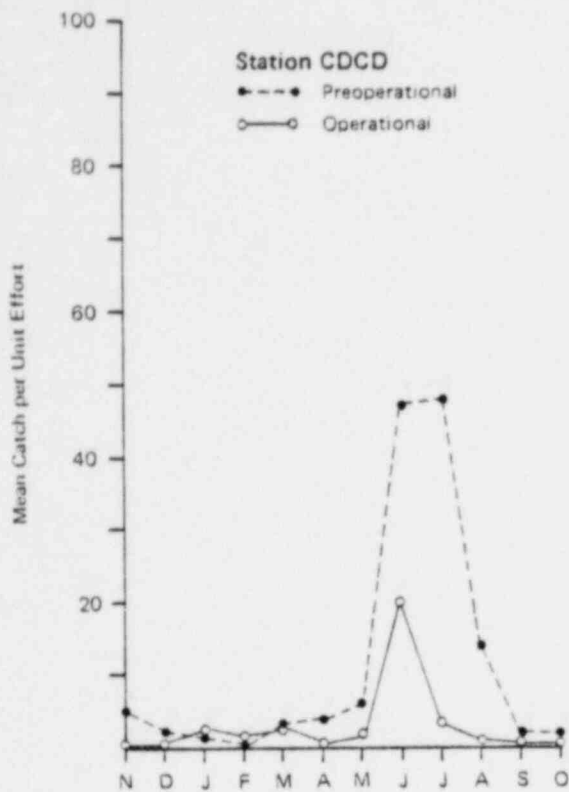


Figure 3-15b. Mean monthly catch per 12.2-m seine haul of fourspine stickleback (*Apeltes quadracus*) at four stations in western Barnegat Bay prior to and during OCNCS operation.

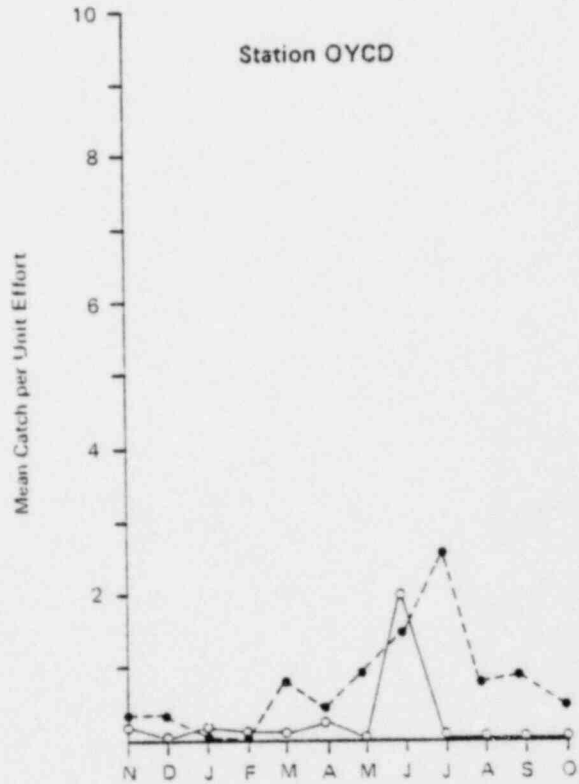
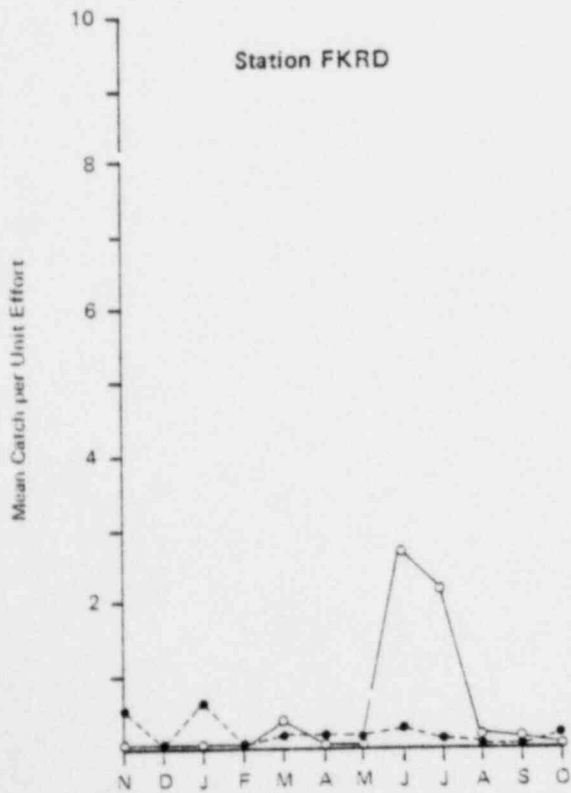
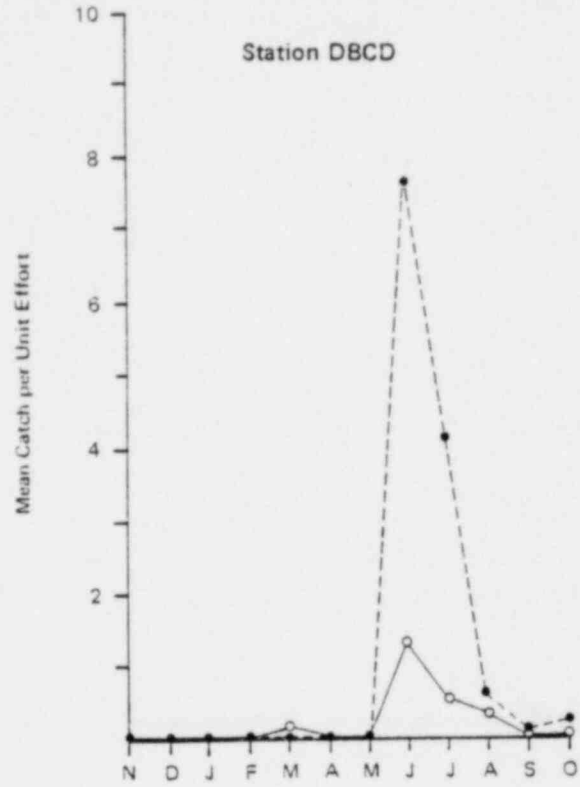
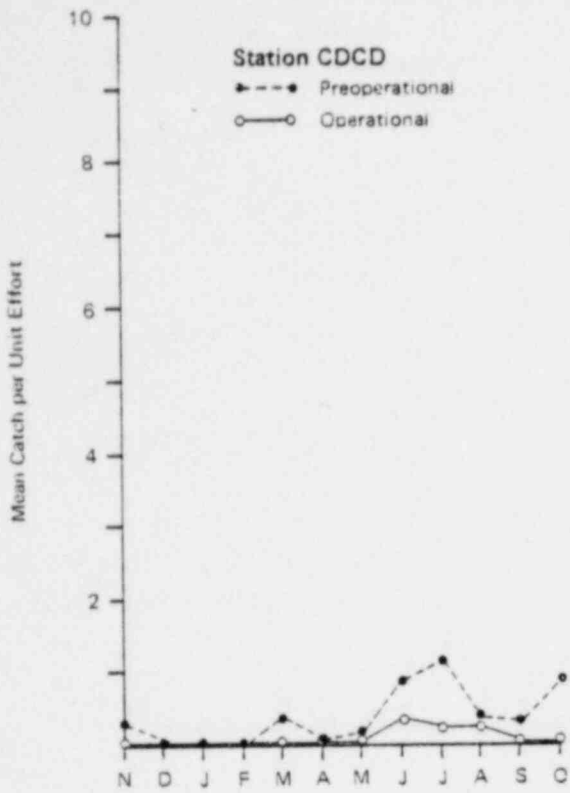


Figure 3-15c. Mean monthly catch per 12.2-m seine haul of winter flounder (*Pseudopleuronectes americanus*) at four stations in western Barnegat Bay prior to and during OCNCS operation.

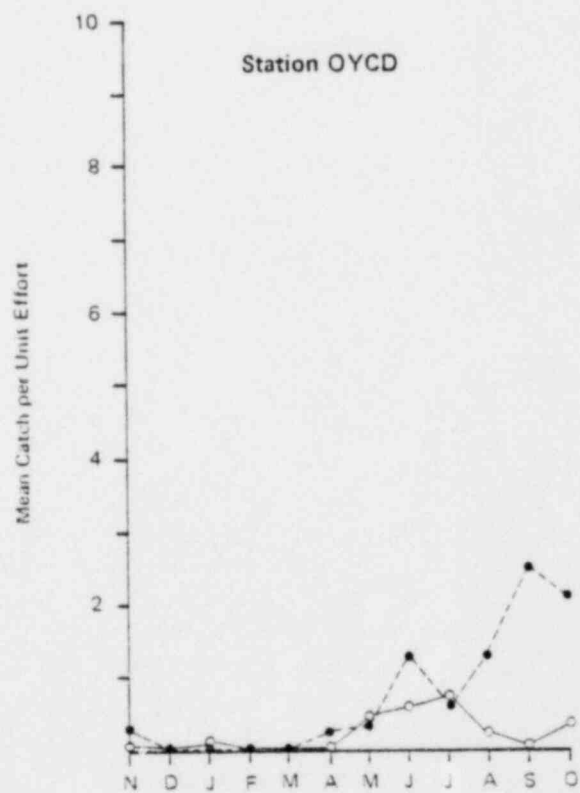
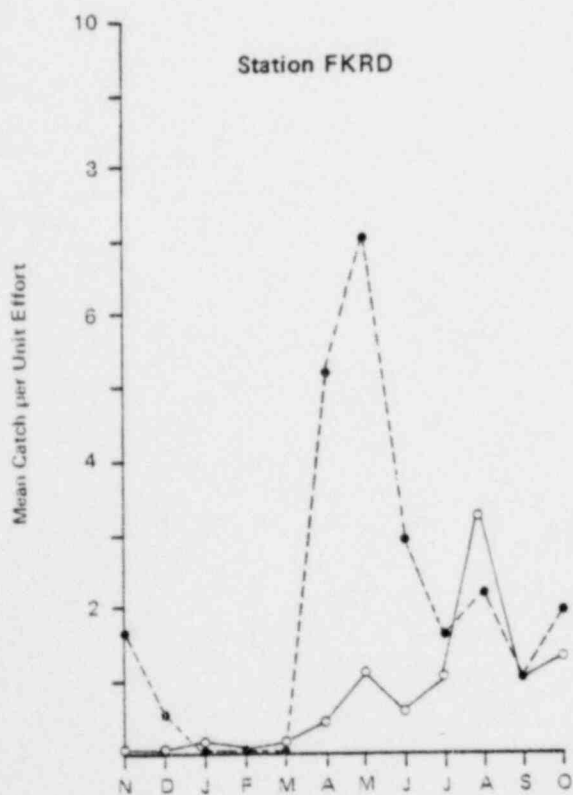
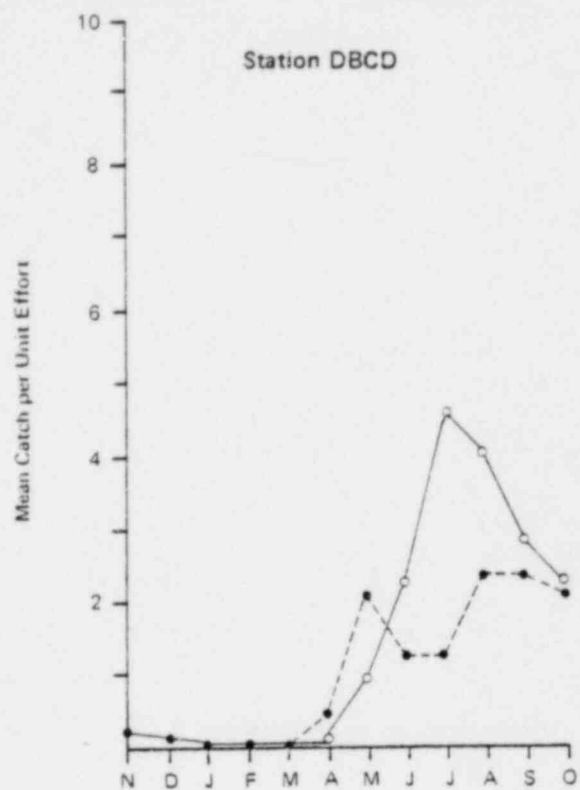
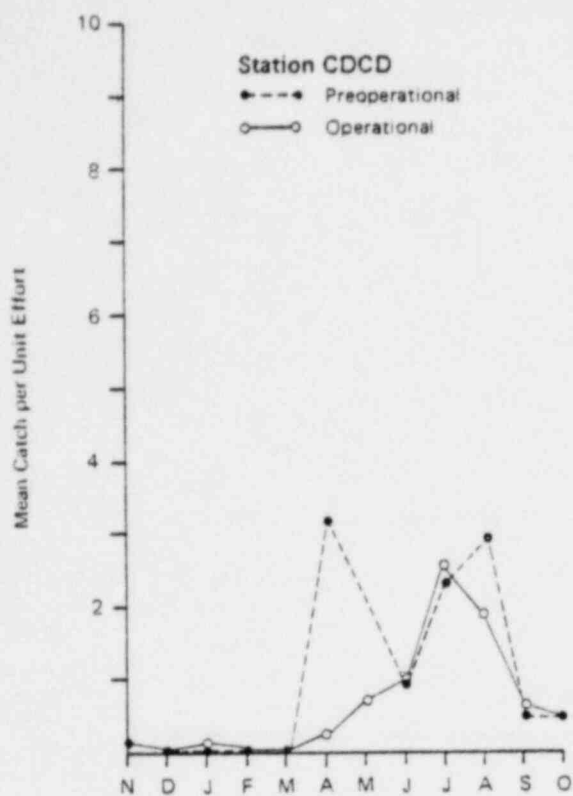


Figure 3-15d. Mean monthly catch per 12.2-m seine haul of northern pipefish (*Syngnathus fuscus*) at four stations in western Barnegat Bay prior to and during OCNCS operation.



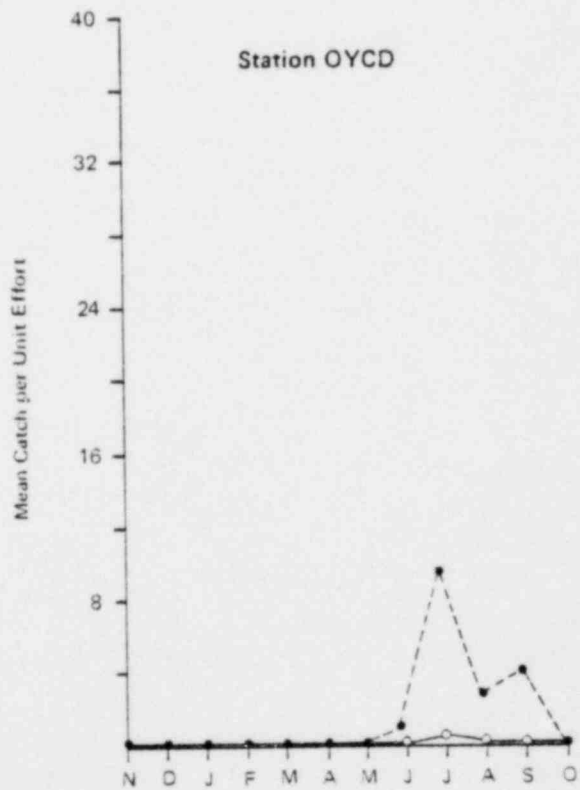
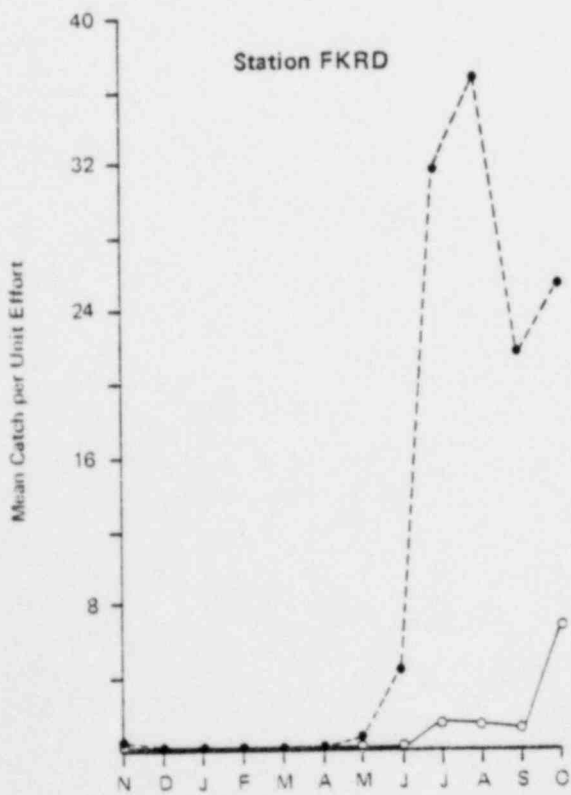
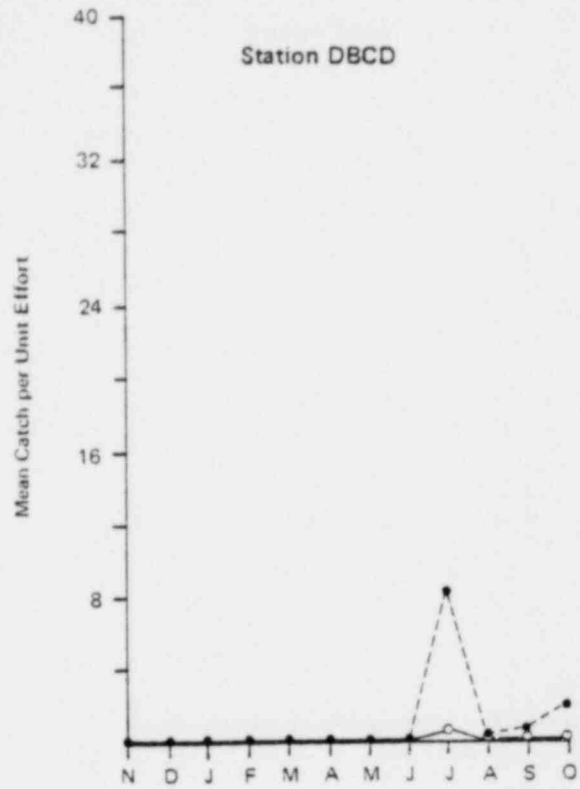
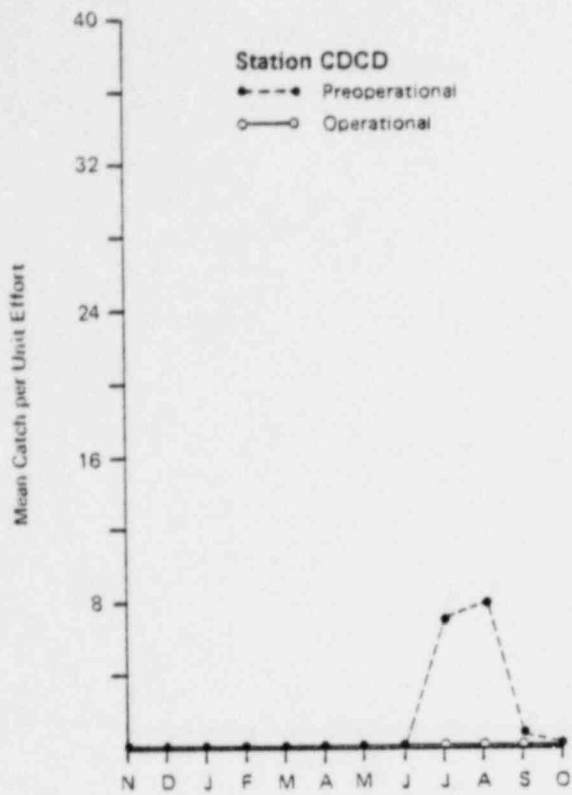


Figure 3-15e. Mean monthly catch per 12.2-m seine haul of silver perch (*Bairdiella chrysura*) at four stations in western Barnegat Bay prior to and during OCNCS operation.

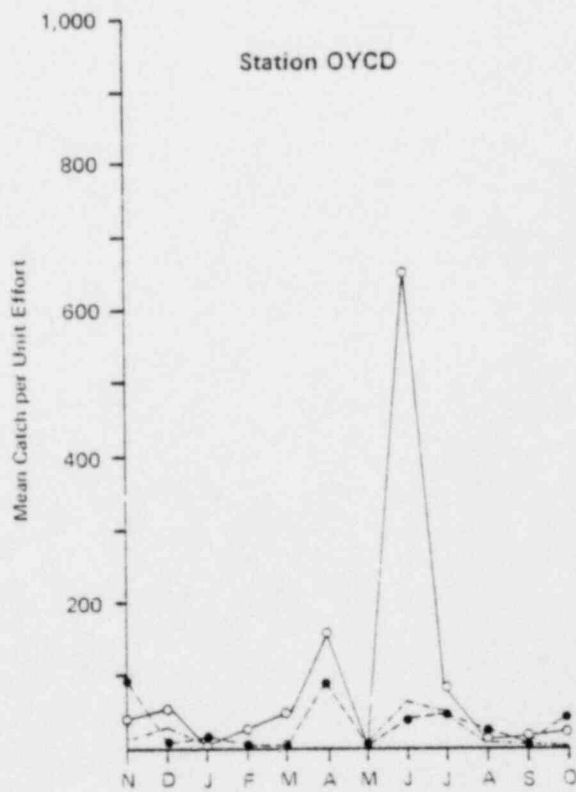
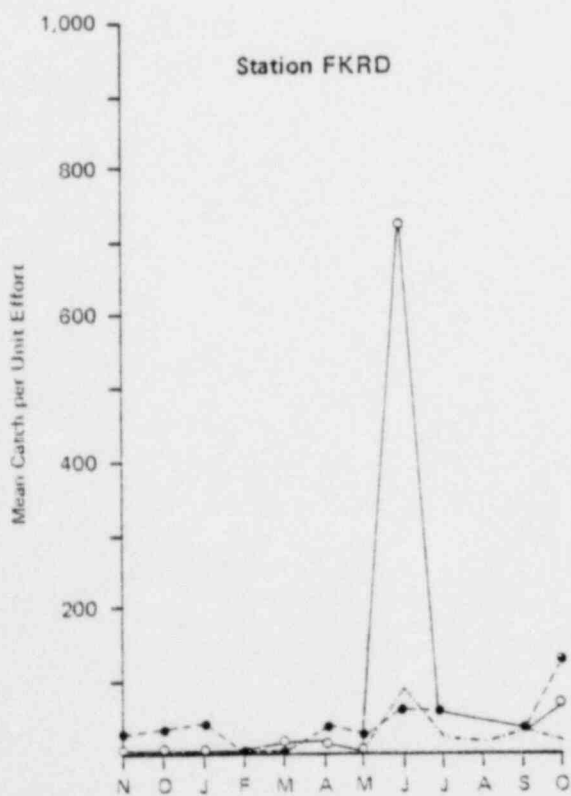
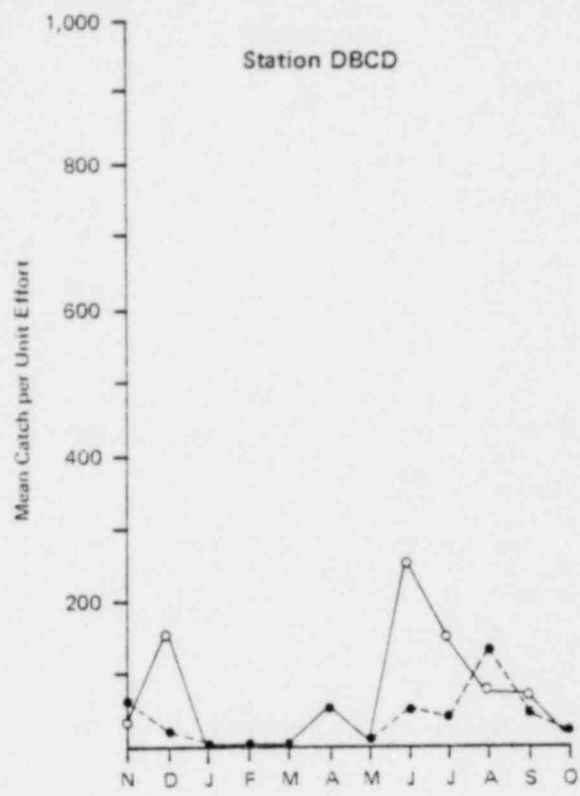
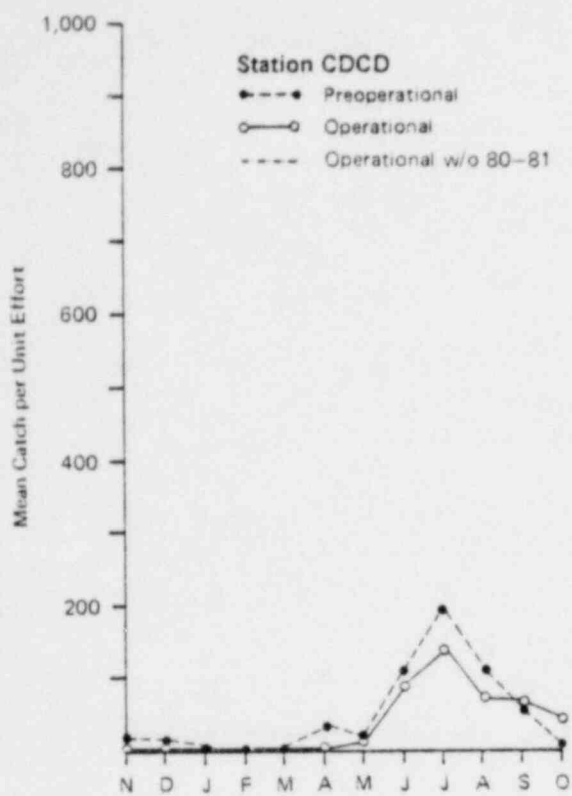
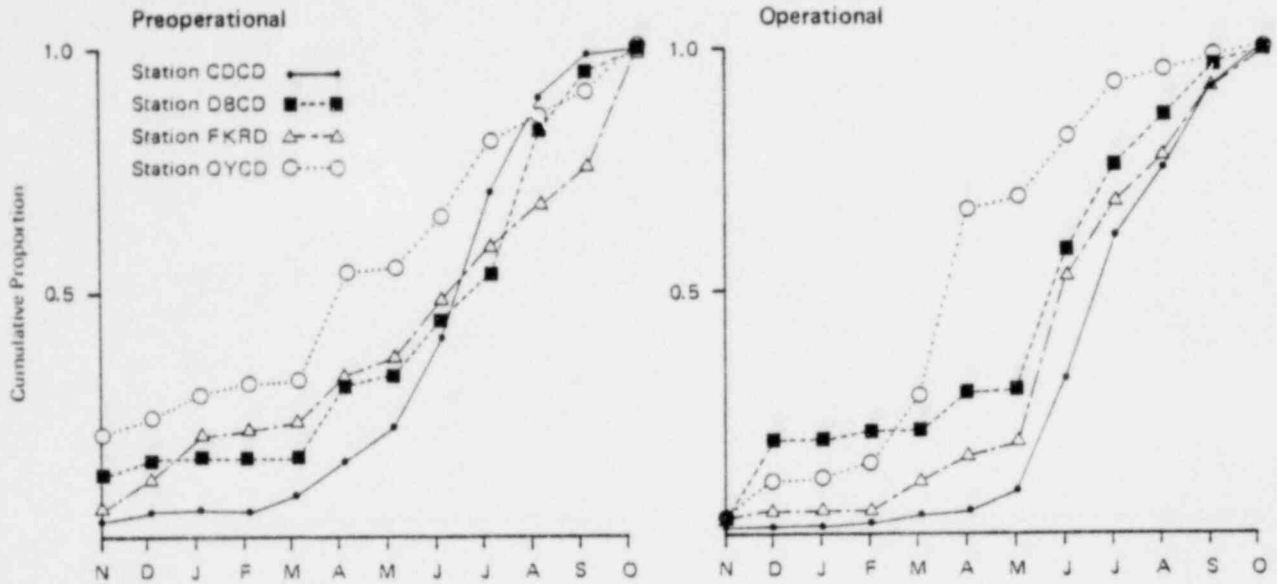


Figure 3-15f. Mean monthly catch per 12.2-m seine haul of silversides (*Menidia* spp.) at four stations in western Barnegat Bay prior to and during OCNCS operation.

Silversides (*Menidia* spp.)



Silver perch (*B. chrysura*)

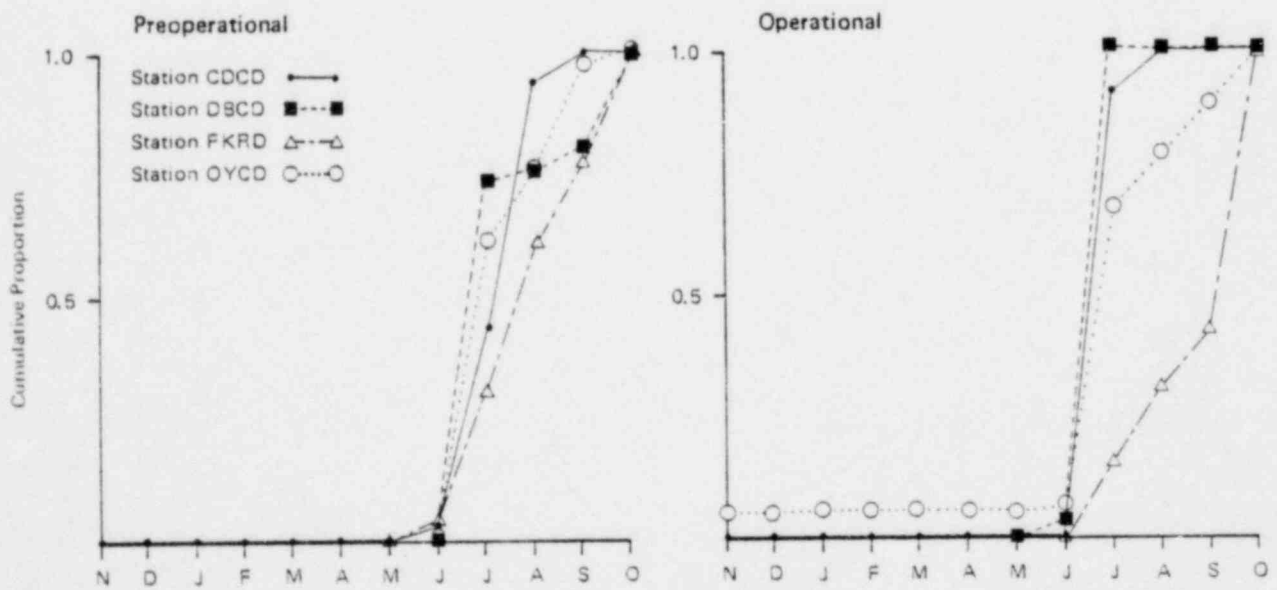
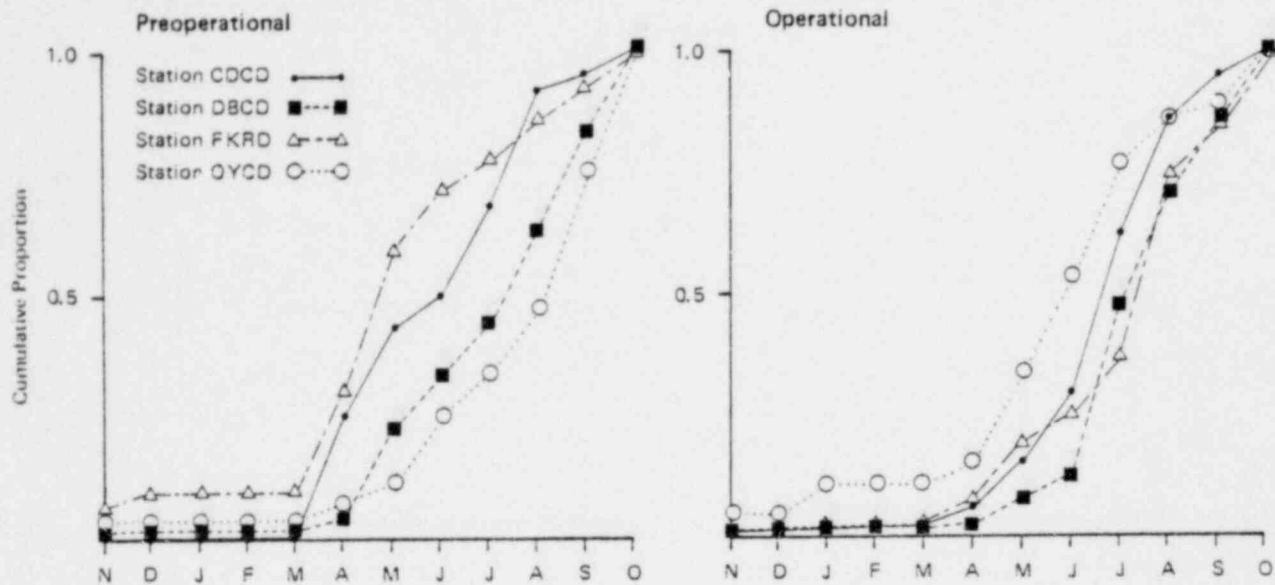


Figure 3-16. Cumulative catch proportions by month of six selected species collected by 12.2-m seine at four western Barnegat Bay stations prior to and during OCNCS operation.

Northern pipefish (*S. fuscus*)



Winter flounder (*P. americanus*)

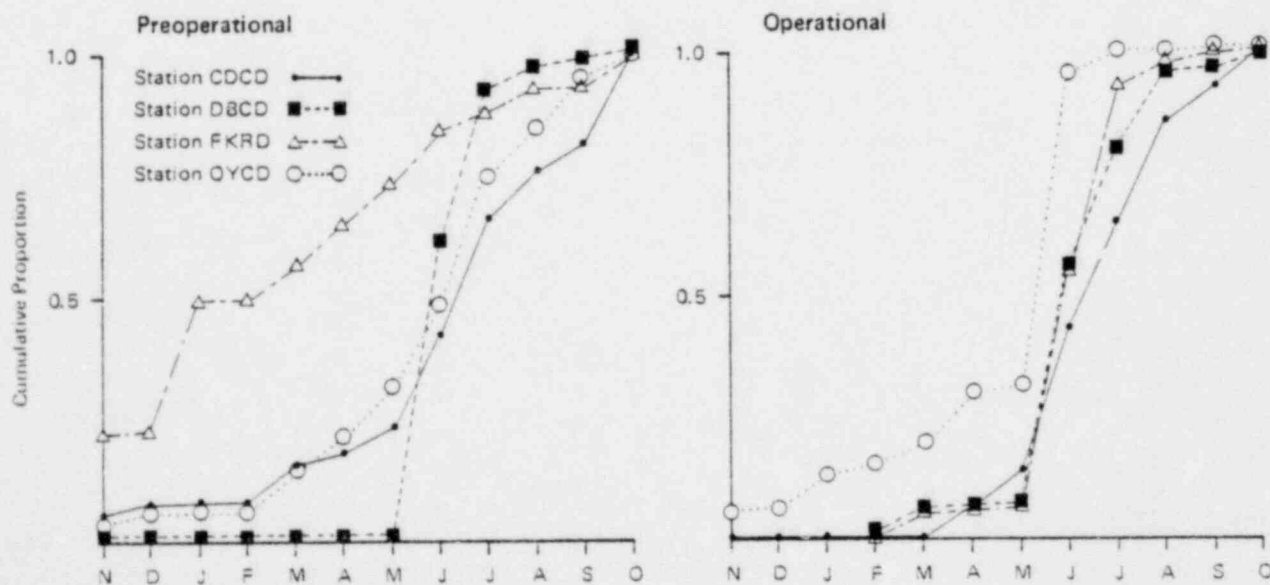
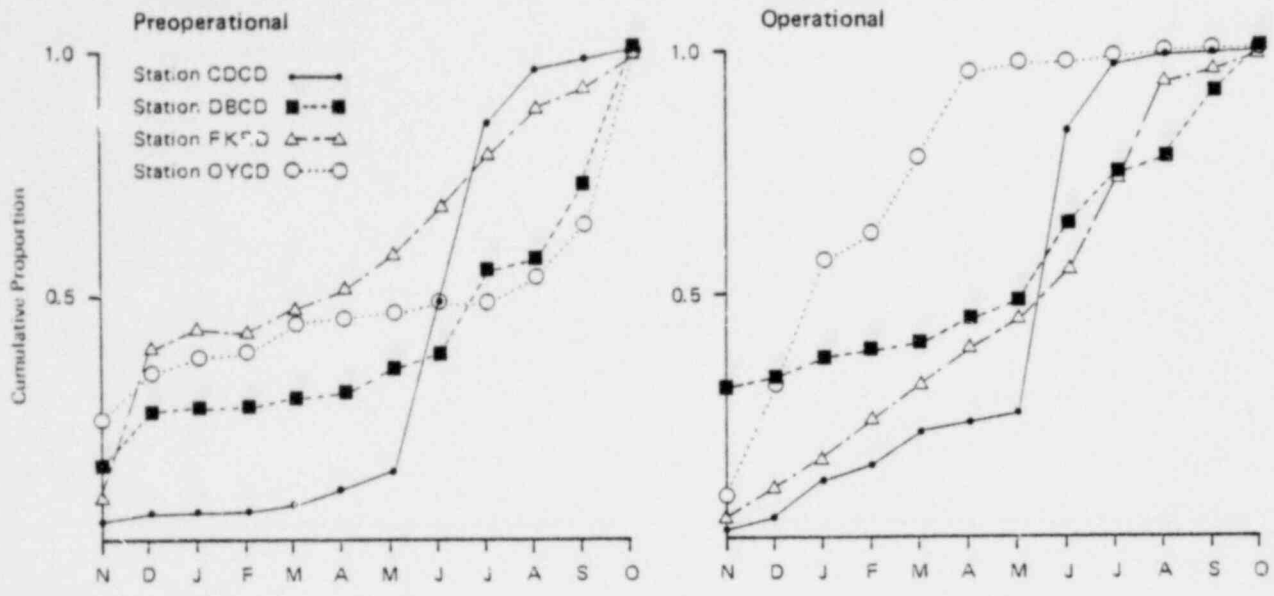


Figure 3-16. (Cont.)

Fourspine stickleback (*A. quadracus*)



Bay anchovy (*A. mitchilli*)

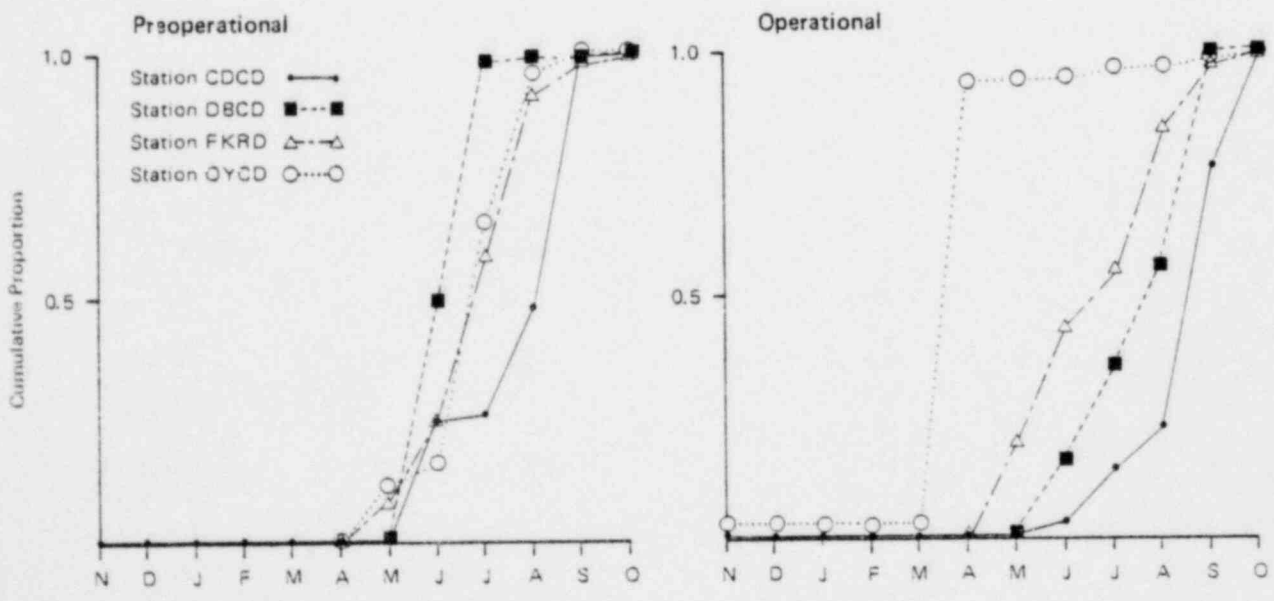


Figure 3-16. (Cont.)



TABLE 3-1 TOTAL NUMBER, PERCENT COMPOSITION, AND CUMULATIVE PERCENT OF FISH AND MACROINVERTEBRATES COLLECTED BY OTTER TRAWL IN BARNEGAT BAY, SEPTEMBER 1980 - AUGUST 1981

| SPP. NAME                | NUMBER    | %      | CUMU. % |
|--------------------------|-----------|--------|---------|
| CRANGON SEPTemspINOSA    | 91622.000 | 80.100 | 80.100  |
| FAMILY XANTHIDAE JUV.    | 6495.000  | 5.678  | 85.778  |
| ANCHOA MITCHILLI         | 3567.000  | 3.118  | 88.896  |
| PALAEMONETES VULGARIS    | 3127.000  | 2.734  | 91.630  |
| CALLINECTES SAPIDUS      | 2149.000  | 1.879  | 93.509  |
| PALAEMONETES SP.         | 1798.000  | 1.572  | 95.081  |
| APELTES QUADRACIJS       | 1738.000  | 1.519  | 96.600  |
| GOBIOSOMA BOSCI          | 563.000   | 0.492  | 97.092  |
| PSEUDOPLEURONECTES AMERI | 493.000   | 0.431  | 97.523  |
| FAMILY XANTHIDAE         | 380.000   | 0.332  | 97.855  |
| CALLINECTES SAPIDUS JUV  | 365.000   | 0.319  | 98.175  |
| CYNOSCIION REGALIS       | 332.000   | 0.290  | 98.465  |
| CLASS ASTEROIDEA         | 322.000   | 0.282  | 98.746  |
| LIBINIA DUBIA            | 208.000   | 0.182  | 98.928  |
| OPSANUS TAU              | 172.000   | 0.150  | 99.079  |
| TRINECTES MACULATUS      | 157.000   | 0.137  | 99.216  |
| MENIDIA MENIDIA          | 121.000   | 0.106  | 99.322  |
| SYNGNATHUS FUSCUS        | 119.000   | 0.104  | 99.426  |
| HIPPOLYTE SP             | 110.000   | 0.096  | 99.522  |
| PARALICHTHYS DENTATUS    | 98.000    | 0.086  | 99.607  |
| NEOPANOPE TEXANA SAYI    | 55.000    | 0.048  | 99.656  |
| PRIONOTUS EVOLANS        | 50.000    | 0.044  | 99.699  |
| MYOXOCEPHALUS AENAEUS    | 43.000    | 0.038  | 99.737  |
| SPHOEROIDES MACULATUS    | 33.000    | 0.029  | 99.766  |
| ANGUILLA ROSTRATA        | 32.000    | 0.028  | 99.794  |
| ETROPUS MICROSTOMUS      | 26.000    | 0.023  | 99.816  |
| CONGER OCEANICUS         | 25.000    | 0.022  | 99.838  |
| TAUTOGA ONITIS           | 25.000    | 0.022  | 99.860  |
| CHASMODES BOSQUIANUS     | 19.000    | 0.017  | 99.877  |
| CARANX HIPPOS            | 14.000    | 0.012  | 99.889  |
| FUNDULUS HETEROCLITUS    | 13.000    | 0.011  | 99.900  |
| ALOSA AESTIVALIS         | 9.000     | 0.008  | 99.908  |
| SCOPHTHALMUS AQUOSUS     | 9.000     | 0.008  | 99.916  |
| PANOPEUS HERBSTII        | 9.000     | 0.008  | 99.924  |
| HIPPOCAMPUS ERECTUS      | 8.000     | 0.007  | 99.931  |
| CYPRINODON VARIEGATUS    | 7.000     | 0.006  | 99.937  |
| LEIOSTOMUS XANTHURUS     | 7.000     | 0.006  | 99.943  |
| MENTICIRRHUS SAXATILIS   | 6.000     | 0.005  | 99.948  |
| CLASS HOLOTHUROIDEA      | 6.000     | 0.005  | 99.954  |
| UROPHYCIS REGIUS         | 5.000     | 0.004  | 99.958  |
| PEPRILUS TRIACANTHUS     | 4.000     | 0.003  | 99.962  |
| CLASS SCYPHOZOA          | 4.000     | 0.003  | 99.965  |
| OVALIPES OCELLATUS       | 4.000     | 0.003  | 99.969  |
| DASYATIS SAYI            | 3.000     | 0.003  | 99.971  |
| RISSOLA MARGINATA        | 3.000     | 0.003  | 99.974  |
| CENTROPRISTIS STRIATA    | 3.000     | 0.003  | 99.976  |
| CHAETODON OCELLATUS      | 3.000     | 0.003  | 99.979  |

TABLE 3-1 (CONT.)

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| SPP. NAME               | NUMBER | %     | CUMU. % |
|-------------------------|--------|-------|---------|
| ALOSA PSEUDOHARENGUS    | 2.000  | 0.002 | 99.981  |
| ALOSA SAPIDISSIMA       | 2.000  | 0.002 | 99.982  |
| UROPHYCIS CHUSS         | 2.000  | 0.002 | 99.984  |
| LUCANIA PARVA           | 2.000  | 0.002 | 99.986  |
| CANCER IRRORATUS        | 2.000  | 0.002 | 99.988  |
| ANGUILLA ROSTRATA JUV.  | 1.000  | 0.001 | 99.989  |
| BREVOORTIA TYRANNUS     | 1.000  | 0.001 | 99.989  |
| GADIDAE                 | 1.000  | 0.001 | 99.990  |
| POLLACHIUS VIRENS JUV   | 1.000  | 0.001 | 99.991  |
| MENIDIA SP              | 1.000  | 0.001 | 99.992  |
| MORONE AMERICANA        | 1.000  | 0.001 | 99.993  |
| POMATOMUS SALTATRIX     | 1.000  | 0.001 | 99.994  |
| LUTJANUS GRISEUS        | 1.000  | 0.001 | 99.995  |
| CHAETODIPTERUS FABER    | 1.000  | 0.001 | 99.996  |
| TAUTOGOLABRUS ADSPERSUS | 1.000  | 0.001 | 99.997  |
| BUSYCON CANALICULATUM   | 1.000  | 0.001 | 99.997  |
| BUSYCON CARICA          | 1.000  | 0.001 | 99.998  |
| LIMULUS POLYPHEMUS      | 1.000  | 0.001 | 99.999  |
| PENAEUS AZTECUS         | 1.000  | 0.001 | 100.000 |

TABLE 3-2 TOTAL NUMBER AND PERCENT COMPOSITION OF FISH AND MACROINVERTEBRATES COLLECTED AT EACH SAMPLING STATION BY OTTER TRAWL IN BARNEGAT BAY, SEPTEMBER 1980 - AUGUST 1981

| STATION                  | C02N          |            | C02D          |            | F02D          |            | F02N          |            | D02D          |            | D02N          |            | OY2D          |            | OY2N          |            | NUMBER TOTAL | PCT. COMP. |
|--------------------------|---------------|------------|---------------|------------|---------------|------------|---------------|------------|---------------|------------|---------------|------------|---------------|------------|---------------|------------|--------------|------------|
|                          | NUMBER INDIVS | PCT. COMP. | NUMBER INDIVS | PCT. COMP. | NUMBER INDIVS | PCT. COMP. | NUMBER INDIVS | PCT. COMP. | NUMBER INDIVS | PCT. COMP. | NUMBER INDIVS | PCT. COMP. | NUMBER INDIVS | PCT. COMP. | NUMBER INDIVS | PCT. COMP. |              |            |
| CRABGRN SEPTEMPINOSA     | 7324.00       | 86.31      | 1478.00       | 38.70      | 1588.00       | 55.88      | 12957.00      | 82.09      | 2243.00       | 30.93      | 17291.00      | 71.55      | 3152.00       | 94.07      | 40589.00      | 93.59      | 91622.00     | 80.10      |
| FAMILY MANTHIDAE JUV.    | 4.00          | 0.05       | 9.00          | 0.24       | 112.00        | 3.94       | 147.00        | 0.93       | 2526.00       | 34.83      | 3632.00       | 15.03      | 21.00         | 0.24       | 44.00         | 0.10       | 6495.00      | 5.65       |
| AMBIJA MITCHELLI         | 381.00        | 4.49       | 2085.00       | 53.55      | 110.00        | 3.87       | 56.00         | 0.35       | 711.00        | 9.80       | 206.00        | 0.85       | 37.00         | 0.43       | 21.00         | 0.05       | 3567.00      | 3.12       |
| PALAEONHELES VOLGARIS    | 38.00         | 0.45       | 47.00         | 1.23       | 437.00        | 15.38      | 829.00        | 5.25       | 551.00        | 7.60       | 926.00        | 3.83       | 9.00          | 0.10       | 290.00        | 0.67       | 3127.00      | 2.73       |
| CALHECTES SAPIIDUS       | 278.00        | 3.28       | 101.00        | 2.64       | 161.00        | 5.67       | 221.00        | 1.40       | 139.00        | 1.92       | 217.00        | 0.90       | 130.00        | 1.50       | 496.00        | 1.14       | 1798.00      | 1.57       |
| PALAEONHELES SP.         | 69.00         | 0.81       | 27.00         | 0.71       | 33.00         | 1.16       | 480.00        | 3.04       | 134.00        | 1.85       | 537.00        | 2.22       | 22.00         | 0.25       | 496.00        | 1.14       | 1798.00      | 1.57       |
| APPELLES QUADRACHS       | 85.00         | 1.00       | 18.00         | 0.47       | 35.00         | 1.23       | 456.00        | 2.89       | 318.00        | 4.38       | 665.00        | 2.75       | 27.00         | 0.31       | 134.00        | 0.31       | 1738.00      | 1.52       |
| GURUSOMA BOSECI          | 83.00         | 0.98       | 20.00         | 0.52       | 45.00         | 1.58       | 70.00         | 0.44       | 118.00        | 1.63       | 23.00         | 0.10       | 104.00        | 1.20       | 267.00        | 0.62       | 493.00       | 0.43       |
| PSEUDOPLEURONECTES AMERI | 8.00          | 0.09       | 5.00          | 0.13       | 16.00         | 0.56       | 56.00         | 0.35       | 90.00         | 1.32       | 156.00        | 0.65       | 30.00         | 0.35       | 30.00         | 0.09       | 380.00       | 0.33       |
| FAMILY MANTHIDAE         | 12.00         | 0.14       | 7.00          | 0.18       | 17.00         | 0.60       | 24.00         | 0.15       | 24.00         | 0.33       | 89.00         | 0.36       | 0.00          | 0.00       | 85.00         | 0.20       | 365.00       | 0.32       |
| CALHECTES SAPIIDUS JOV   | 79.00         | 0.93       | 0.00          | 0.00       | 0.00          | 0.00       | 115.00        | 0.73       | 0.00          | 0.00       | 89.00         | 0.36       | 0.00          | 0.00       | 85.00         | 0.20       | 365.00       | 0.32       |
| CYDROSCUM REGALIS        | 22.00         | 0.26       | 18.00         | 0.47       | 14.00         | 0.49       | 29.00         | 0.18       | 148.00        | 2.04       | 53.00         | 0.22       | 23.00         | 0.27       | 25.00         | 0.06       | 332.00       | 0.29       |
| CLASS ASTEROIDEA         | 0.00          | 0.00       | 1.00          | 0.03       | 188.00        | 6.62       | 124.00        | 0.79       | 4.00          | 0.06       | 3.00          | 0.01       | 0.00          | 0.00       | 2.00          | 0.00       | 322.00       | 0.28       |
| LIBERIA DUBIA            | 0.00          | 0.00       | 2.00          | 0.05       | 18.00         | 0.63       | 9.00          | 0.06       | 62.00         | 0.85       | 90.00         | 0.37       | 11.00         | 0.13       | 16.00         | 0.04       | 208.00       | 0.18       |
| OPSARUS FAU              | 23.00         | 0.27       | 5.00          | 0.13       | 8.00          | 0.28       | 45.00         | 0.29       | 22.00         | 0.30       | 33.00         | 0.14       | 7.00          | 0.08       | 29.00         | 0.07       | 172.00       | 0.15       |
| TRINCHES MACULATUS       | 24.00         | 0.28       | 5.00          | 0.13       | 1.00          | 0.04       | 15.00         | 0.09       | 0.00          | 0.00       | 4.00          | 0.02       | 11.00         | 0.13       | 97.00         | 0.22       | 157.00       | 0.14       |
| MENIDIA MENIDIA          | 15.00         | 0.18       | 12.00         | 0.31       | 3.00          | 0.11       | 2.00          | 0.01       | 22.00         | 0.30       | 18.00         | 0.07       | 29.00         | 0.33       | 20.00         | 0.05       | 121.00       | 0.11       |
| SYNGRAPHUS FUSCUS        | 18.00         | 0.21       | 1.00          | 0.03       | 13.00         | 0.46       | 31.00         | 0.20       | 21.00         | 0.29       | 5.00          | 0.02       | 6.00          | 0.07       | 24.00         | 0.06       | 119.00       | 0.10       |
| HIPPOLYTE SP             | 2.00          | 0.02       | 0.00          | 0.00       | 1.00          | 0.04       | 4.00          | 0.03       | 67.00         | 0.92       | 36.00         | 0.15       | 0.00          | 0.00       | 0.00          | 0.00       | 110.00       | 0.10       |
| PARALICHTHYS DEINATUS    | 5.00          | 0.06       | 4.00          | 0.10       | 7.00          | 0.25       | 22.00         | 0.14       | 17.00         | 0.11       | 17.00         | 0.07       | 16.00         | 0.18       | 19.00         | 0.04       | 98.00        | 0.09       |
| NEOPHOPE TEXANA SAYI     | 4.00          | 0.05       | 0.00          | 0.00       | 16.00         | 0.56       | 10.00         | 0.06       | 18.00         | 0.25       | 5.00          | 0.02       | 2.00          | 0.02       | 0.00          | 0.00       | 55.00        | 0.05       |
| PRISTIGASTER EOLARIS     | 1.00          | 0.01       | 0.00          | 0.00       | 0.00          | 0.00       | 33.00         | 0.21       | 0.00          | 0.00       | 13.00         | 0.05       | 0.00          | 0.00       | 3.00          | 0.01       | 50.00        | 0.04       |
| MYXODLEPHALUS ALBAEUS    | 0.00          | 0.00       | 0.00          | 0.00       | 1.00          | 0.04       | 4.00          | 0.03       | 0.00          | 0.00       | 1.00          | 0.00       | 0.00          | 0.00       | 37.00         | 0.09       | 43.00        | 0.04       |
| SPHONRHOLES MACULATUS    | 0.00          | 0.00       | 0.00          | 0.00       | 0.00          | 0.00       | 19.00         | 0.12       | 1.00          | 0.01       | 6.00          | 0.02       | 0.00          | 0.00       | 7.00          | 0.02       | 33.00        | 0.03       |
| ANGILLA ROSIRATA         | 5.00          | 0.06       | 2.00          | 0.05       | 2.00          | 0.07       | 4.00          | 0.03       | 3.00          | 0.04       | 10.00         | 0.04       | 1.00          | 0.01       | 7.00          | 0.02       | 32.00        | 0.03       |
| ETHEPUS MICROTOMUS       | 1.00          | 0.01       | 4.00          | 0.10       | 0.00          | 0.00       | 0.00          | 0.00       | 0.00          | 0.00       | 2.00          | 0.01       | 0.00          | 0.00       | 8.00          | 0.02       | 26.00        | 0.02       |
| COOPER OBLATIDUS         | 0.00          | 0.00       | 0.00          | 0.00       | 0.00          | 0.00       | 0.00          | 0.00       | 0.00          | 0.00       | 0.00          | 0.00       | 0.00          | 0.00       | 23.00         | 0.05       | 25.00        | 0.02       |
| FAULORA OBITIS           | 0.00          | 0.00       | 0.00          | 0.00       | 3.00          | 0.11       | 4.00          | 0.03       | 9.00          | 0.12       | 0.00          | 0.00       | 6.00          | 0.07       | 3.00          | 0.01       | 25.00        | 0.02       |
| CHRASOMES BOSPHTIARUS    | 0.00          | 0.00       | 4.00          | 0.10       | 4.00          | 0.14       | 0.00          | 0.00       | 3.00          | 0.04       | 2.00          | 0.01       | 1.00          | 0.01       | 4.00          | 0.01       | 19.00        | 0.02       |
| FUNDULUS HETEROCLITUS    | 0.00          | 0.00       | 0.00          | 0.00       | 0.00          | 0.00       | 1.00          | 0.01       | 0.00          | 0.00       | 0.00          | 0.00       | 0.00          | 0.00       | 12.00         | 0.03       | 14.00        | 0.01       |
| ALUSA AESTIVALIS         | 1.00          | 0.01       | 0.00          | 0.00       | 1.00          | 0.04       | 3.00          | 0.02       | 0.00          | 0.00       | 1.00          | 0.00       | 0.00          | 0.00       | 4.00          | 0.01       | 13.00        | 0.01       |
| SCOPHTHALMUS AGRIOSUS    | 0.00          | 0.00       | 1.00          | 0.03       | 1.00          | 0.04       | 1.00          | 0.01       | 1.00          | 0.01       | 1.00          | 0.00       | 3.00          | 0.03       | 1.00          | 0.00       | 9.00         | 0.01       |
| PARHEPUS HERSTII         | 0.00          | 0.00       | 0.00          | 0.00       | 2.00          | 0.07       | 0.00          | 0.00       | 2.00          | 0.03       | 0.00          | 0.00       | 2.00          | 0.02       | 2.00          | 0.00       | 8.00         | 0.01       |
| HIPPOLAMPUS BRETIUS      | 0.00          | 0.00       | 0.00          | 0.00       | 0.00          | 0.00       | 0.00          | 0.00       | 2.00          | 0.03       | 1.00          | 0.00       | 0.00          | 0.00       | 0.00          | 0.00       | 7.00         | 0.01       |
| CYPRINODON VARIEGATUS    | 4.00          | 0.05       | 0.00          | 0.00       | 0.00          | 0.00       | 0.00          | 0.00       | 0.00          | 0.00       | 3.00          | 0.01       | 0.00          | 0.00       | 1.00          | 0.00       | 7.00         | 0.01       |
| LEIUS TOMES XANTHIDUS    | 0.00          | 0.00       | 0.00          | 0.00       | 0.00          | 0.00       | 1.00          | 0.01       | 0.00          | 0.00       | 0.00          | 0.00       | 0.00          | 0.00       | 5.00          | 0.01       | 6.00         | 0.01       |
| MELTICHRIBUS SAMATILIS   | 0.00          | 0.00       | 0.00          | 0.00       | 5.00          | 0.18       | 10.00         | 0.06       | 6.00          | 0.08       | 13.00         | 0.05       | 11.00         | 0.13       | 11.00         | 0.03       | 59.00        | 0.05       |
| OTHER SPECIES            | 0.00          | 0.00       | 3.00          | 0.08       | 0.00          | 0.00       | 0.00          | 0.00       | 0.00          | 0.00       | 0.00          | 0.00       | 0.00          | 0.00       | 0.00          | 0.00       | 0.00         | 0.00       |
| STATION TOTAL            | 8486.00       |            | 3019.00       |            | 2942.00       |            | 15793.00      |            | 7753.00       |            | 24166.00      |            | 8666.00       |            | 43370.00      |            | 114305.00    |            |
| DATE                     |               |            |               |            |               |            |               |            |               |            |               |            |               |            |               |            |              |            |

Note: C02 = Cedar Creek, F02 = Forked River, M02 = Double Creek, OY2 = Oyster Creek, N = Night, D = Day

TABLE 3-3 TOTAL NUMBER, PERCENT COMPOSITION, AND CUMULATIVE PERCENT OF FISH AND MACROINVERTEBRATES COLLECTED BY 45.7-m SEINE IN BARNEGAT BAY, SEPTEMBER 1980 - AUGUST 1981

| SPP. NAME                | NUMBER    | %      | CUMU. % |
|--------------------------|-----------|--------|---------|
| CRANGON SEPTemspINOSA    | 20289.000 | 56.896 | 56.896  |
| MENIDIA MENIDIA JUV      | 4135.000  | 11.596 | 68.491  |
| MENIDIA MENIDIA          | 3947.000  | 11.068 | 79.560  |
| CALLINECTES SAPIDUS      | 2964.000  | 8.312  | 87.872  |
| PALAEMONETES VULGARIS    | 621.000   | 1.741  | 89.613  |
| PALAEMONETES SP.         | 488.000   | 1.368  | 90.981  |
| CALLINECTES SAPIDUS JUV  | 435.000   | 1.220  | 92.201  |
| ANCHOA MITCHILLI         | 381.000   | 1.068  | 93.270  |
| APELTES QUADRACUS        | 254.000   | 0.712  | 93.982  |
| MUGIL CEPHALUS           | 200.000   | 0.561  | 94.543  |
| OPSANUS TAU              | 189.000   | 0.530  | 95.073  |
| FUNDULUS MAJALIS         | 164.000   | 0.460  | 95.533  |
| FUNDULUS HETEROCLITUS    | 160.000   | 0.449  | 95.981  |
| SYNGNATHUS FUSCUS        | 136.000   | 0.381  | 96.363  |
| CARANX HIPPOS            | 111.000   | 0.311  | 96.674  |
| PSEUDOPLEURONECTES AMERI | 102.000   | 0.286  | 96.960  |
| MENIDIA BERYLLINA        | 86.000    | 0.241  | 97.201  |
| POMATOMUS SALTATRIX      | 79.000    | 0.222  | 97.423  |
| OVALIPES OCELLATUS       | 68.000    | 0.191  | 97.614  |
| GOBIOSOMA BOSCI          | 65.000    | 0.182  | 97.796  |
| FAMILY XANTHIDAE JUV.    | 55.000    | 0.154  | 97.950  |
| ALOSA AESTIVALIS         | 51.000    | 0.143  | 98.093  |
| STRONGYLURA MARINA       | 51.000    | 0.143  | 98.236  |
| CYNOSCION REGALIS        | 51.000    | 0.143  | 98.379  |
| CYPRINODON VARIEGATUS    | 50.000    | 0.140  | 98.519  |
| PRIONOTUS EVOLANS        | 45.000    | 0.126  | 98.646  |
| ANGUILLA ROSTRATA        | 44.000    | 0.123  | 98.769  |
| LEIOSTOMUS XANTHURUS     | 40.000    | 0.112  | 98.881  |
| MUGIL CUREMA             | 40.000    | 0.112  | 98.993  |
| CHASMODES BOSQUIANUS     | 30.000    | 0.084  | 99.077  |
| NEOPANOPE TEXANA SAYI    | 25.000    | 0.070  | 99.147  |
| LIBINIA DUBIA            | 24.000    | 0.067  | 99.215  |
| TRACHINOTUS FALCATUS     | 22.000    | 0.062  | 99.276  |
| FUNDULUS DIAPHANUS       | 21.000    | 0.059  | 99.335  |
| PARALICHTHYS DENTATUS    | 21.000    | 0.059  | 99.394  |
| SPHOEROIDES MACULATUS    | 21.000    | 0.059  | 99.453  |
| TAUTOGA ONITIS           | 20.000    | 0.056  | 99.509  |
| TRINECTES MACULATUS      | 19.000    | 0.053  | 99.563  |
| BAIRDIELLA CHRYSURA      | 13.000    | 0.036  | 99.599  |
| LUCANIA PARVA            | 12.000    | 0.034  | 99.633  |
| PENAEUS AZTECUS          | 12.000    | 0.034  | 99.666  |
| MENTICIRRHUS SAXATILIS   | 9.000     | 0.025  | 99.692  |
| ASTROSCOPUS GUTTATUS     | 9.000     | 0.025  | 99.717  |
| ETROPUS MICROSTOMUS      | 8.000     | 0.022  | 99.739  |
| FAMILY XANTHIDAE         | 8.000     | 0.022  | 99.762  |
| BREVOORTIA TYRANNUS      | 6.000     | 0.017  | 99.778  |
| SYNODUS FOETENS          | 6.000     | 0.017  | 99.795  |
| ALOSA SAPIDISSIMA        | 5.000     | 0.014  | 99.809  |

TABLE 3-3 (CONT.)

| SPP. NAME                | NUMBER | %     | CUMU. % |
|--------------------------|--------|-------|---------|
| MORONE AMERICANA         | 5.000  | 0.014 | 99.823  |
| MYOXOCEPHALUS AENAEUS    | 5.000  | 0.014 | 99.837  |
| CANCER IRRORATUS         | 5.000  | 0.014 | 99.851  |
| ANGUILLA ROSTRATA JUV.   | 4.000  | 0.011 | 99.863  |
| ALOSA PSEUDOHARENGUS     | 4.000  | 0.011 | 99.874  |
| CLASS SCYPHOZOA          | 4.000  | 0.011 | 99.885  |
| PHYLUM NEMERTEA          | 4.000  | 0.011 | 99.896  |
| LIMULUS POLYPHEMUS       | 4.000  | 0.011 | 99.907  |
| GASTEROSTEUS ACULEATUS   | 3.000  | 0.008 | 99.916  |
| SCOPHTHALMUS AQUOSUS     | 3.000  | 0.008 | 99.924  |
| HIPPOLYTE SP             | 3.000  | 0.008 | 99.933  |
| PAGURUS LONGICARPUS      | 3.000  | 0.008 | 99.941  |
| HIPPOCAMPUS ERECTUS      | 2.000  | 0.006 | 99.947  |
| SELENE VOMER             | 2.000  | 0.006 | 99.952  |
| AMMODYTES AMERICANUS     | 2.000  | 0.006 | 99.958  |
| DASYATIS SAYI            | 1.000  | 0.003 | 99.961  |
| BREVOORTIA TYRANNUS JUV  | 1.000  | 0.003 | 99.964  |
| ANCHOA MITCHILLI JUV     | 1.000  | 0.003 | 99.966  |
| UROPHYCIS REGIUS         | 1.000  | 0.003 | 99.969  |
| RISSOLA MARGINATA        | 1.000  | 0.003 | 99.972  |
| HYPORHAMPHUS UNIFASCATUS | 1.000  | 0.003 | 99.975  |
| TYLOSURUS ACUS           | 1.000  | 0.003 | 99.978  |
| CARANX CRYOS             | 1.000  | 0.003 | 99.980  |
| LUTJANUS GRISEUS         | 1.000  | 0.003 | 99.983  |
| PEPRILUS TRIACANTHUS     | 1.000  | 0.003 | 99.986  |
| LACTOPHRYS TRIQUETER     | 1.000  | 0.003 | 99.989  |
| LOLLIGUNCULA BREVIS      | 1.000  | 0.003 | 99.992  |
| CARCINUS MAENAS          | 1.000  | 0.003 | 99.994  |
| LIBINIA SP.              | 1.000  | 0.003 | 99.997  |
| CLASS ASTEROIDEA         | 1.000  | 0.003 | 100.000 |



TABLE 3-4 TOTAL NUMBER AND PERCENT COMPOSITION OF FISH AND MACROINVERTEBRATES COLLECTED AT EACH SAMPLING STATION BY 45.7-m SEINE IN BARNEGAT BAY, SEPTEMBER 1980 - AUGUST 1981

| STATION                 | SPECIES                    | CDCN          |          | CDCD          |          | FORD          |          | FERN          |          | DRCD          |          | DRCH          |          | DYCD          |          | DYCH          |          |          |       |
|-------------------------|----------------------------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|----------|-------|
|                         |                            | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP |          |       |
|                         | CRANGON SEPTENTRIONALIS    | 5493.00       | 83.80    | 686.00        | 44.75    | 195.00        | 5.32     | 3222.00       | 66.89    | 90.00         | 3.49     | 2554.00       | 68.62    | 468.00        | 12.92    | 7581.00       | 82.65    | 20289.00 | 56.90 |
|                         | MENIDIA MENIDIA JUV        | 5.00          | 0.08     | 271.00        | 17.68    | 2300.00       | 62.81    | 11.00         | 0.23     | 96.00         | 3.72     | 0.00          | 0.00     | 1428.00       | 39.44    | 24.00         | 0.26     | 4135.00  | 11.60 |
|                         | MENIDIA MENIDIA            | 85.00         | 1.30     | 193.00        | 12.59    | 403.00        | 11.00    | 108.00        | 2.24     | 1924.00       | 74.63    | 53.00         | 1.42     | 839.00        | 23.17    | 342.00        | 3.73     | 3947.00  | 11.07 |
|                         | CALIFRETTES SAPIIDUS       | 593.00        | 9.05     | 259.00        | 16.89    | 131.00        | 3.58     | 367.00        | 7.62     | 156.00        | 6.05     | 605.00        | 16.25    | 361.00        | 9.97     | 492.00        | 5.36     | 2964.00  | 8.31  |
|                         | PALAEONETES VILGARIS       | 2.00          | 0.03     | 2.00          | 0.13     | 6.00          | 0.16     | 562.00        | 11.67    | 19.00         | 0.74     | 16.00         | 0.43     | 9.00          | 0.25     | 5.00          | 0.05     | 621.00   | 1.74  |
|                         | PALAEONETES SPT.           | 12.00         | 0.18     | 24.00         | 1.57     | 125.00        | 3.41     | 176.00        | 3.65     | 16.00         | 0.62     | 90.00         | 2.42     | 15.00         | 0.41     | 30.00         | 0.33     | 488.00   | 1.37  |
|                         | CALIFRETTES SAPIIDUS JUV   | 215.00        | 3.28     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 435.00   | 1.22  |
|                         | AMMOCYTUS MICHILLI         | 3.00          | 0.05     | 1.00          | 0.07     | 143.00        | 3.90     | 3.00          | 0.06     | 70.00         | 2.72     | 11.00         | 0.30     | 142.00        | 3.92     | 8.00          | 0.09     | 381.00   | 1.07  |
|                         | APPELTES QUADRATUS         | 22.00         | 0.34     | 18.00         | 1.17     | 108.00        | 2.95     | 41.00         | 0.85     | 12.00         | 0.47     | 20.00         | 0.54     | 72.00         | 1.99     | 59.00         | 0.64     | 200.00   | 0.56  |
|                         | MIGIL CEPHALUS             | 1.00          | 0.02     | 12.00         | 0.78     | 11.00         | 0.30     | 7.00          | 0.15     | 17.00         | 0.66     | 21.00         | 0.56     | 17.00         | 0.47     | 17.00         | 0.18     | 164.00   | 0.46  |
|                         | OPSIAMUS TAU               | 15.00         | 0.23     | 8.00          | 0.52     | 12.00         | 0.33     | 59.00         | 1.22     | 5.00          | 0.19     | 30.00         | 0.81     | 43.00         | 1.17     | 17.00         | 0.18     | 199.00   | 0.53  |
|                         | FURCIBUS HETEROPOLYDUS     | 3.00          | 0.05     | 3.00          | 0.20     | 5.00          | 0.14     | 27.00         | 0.56     | 4.00          | 0.16     | 82.00         | 2.20     | 10.00         | 0.28     | 30.00         | 0.33     | 164.00   | 0.46  |
|                         | SYPHROSTICTUS FISCHS       | 14.00         | 0.21     | 7.00          | 0.46     | 22.00         | 0.60     | 36.00         | 0.75     | 6.00          | 0.23     | 52.00         | 1.40     | 8.00          | 0.22     | 15.00         | 0.16     | 160.00   | 0.45  |
|                         | CARANX HIPPOS              | 6.00          | 0.09     | 8.00          | 0.52     | 36.00         | 0.93     | 37.00         | 0.77     | 10.00         | 0.39     | 16.00         | 0.43     | 18.00         | 0.50     | 5.00          | 0.05     | 136.00   | 0.38  |
|                         | PSEROPLEUROBRETICIES AMERI | 0.00          | 0.00     | 1.00          | 0.07     | 1.00          | 0.03     | 1.00          | 0.02     | 5.00          | 0.19     | 2.00          | 0.05     | 21.00         | 0.58     | 80.00         | 0.87     | 111.00   | 0.31  |
|                         | MENIDIA BERYLLINA          | 22.00         | 0.34     | 2.00          | 0.13     | 1.00          | 0.03     | 17.00         | 0.35     | 8.00          | 0.31     | 32.00         | 0.86     | 3.00          | 0.08     | 17.00         | 0.19     | 102.00   | 0.29  |
|                         | PERALTIUS SALTATEX         | 1.00          | 0.02     | 11.00         | 0.72     | 4.00          | 0.11     | 2.00          | 0.04     | 42.00         | 1.63     | 7.00          | 0.19     | 17.00         | 0.47     | 2.00          | 0.02     | 86.00    | 0.24  |
|                         | OVALIPIES OCELLATUS        | 3.00          | 0.05     | 5.00          | 0.33     | 35.00         | 0.96     | 1.00          | 0.02     | 25.00         | 0.97     | 1.00          | 0.03     | 5.00          | 0.14     | 4.00          | 0.04     | 79.00    | 0.22  |
|                         | GLOBOSOMA BOSCI            | 0.00          | 0.00     | 0.00          | 0.00     | 11.00         | 0.30     | 1.00          | 0.02     | 10.00         | 0.39     | 40.00         | 1.07     | 2.00          | 0.06     | 4.00          | 0.04     | 68.00    | 0.19  |
|                         | FAMILY XANTHIDAE JUV.      | 19.00         | 0.29     | 3.00          | 0.20     | 2.00          | 0.05     | 6.00          | 0.12     | 1.00          | 0.04     | 5.00          | 0.13     | 12.00         | 0.33     | 17.00         | 0.19     | 65.00    | 0.18  |
|                         | AUSCA AESTIVALIS           | 1.00          | 0.02     | 0.00          | 0.00     | 21.00         | 0.57     | 14.00         | 0.29     | 5.00          | 0.19     | 9.00          | 0.24     | 3.00          | 0.08     | 2.00          | 0.02     | 55.00    | 0.15  |
|                         | SIBOGASTIA PARVA           | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 3.00          | 0.12     | 0.00          | 0.00     | 5.00          | 0.14     | 43.00         | 0.47     | 51.00    | 0.14  |
|                         | CYNOSCION PEGALIS          | 1.00          | 0.02     | 4.00          | 0.26     | 4.00          | 0.11     | 1.00          | 0.02     | 6.00          | 0.23     | 0.00          | 0.00     | 27.00         | 0.75     | 8.00          | 0.09     | 51.00    | 0.14  |
|                         | CYPRINODON VARIEGATUS      | 2.00          | 0.03     | 1.00          | 0.07     | 9.00          | 0.25     | 6.00          | 0.12     | 2.00          | 0.08     | 22.00         | 0.59     | 1.00          | 0.03     | 8.00          | 0.09     | 51.00    | 0.14  |
|                         | PERFORATUS FVLARIS         | 4.00          | 0.06     | 7.00          | 0.46     | 3.00          | 0.08     | 5.00          | 0.10     | 3.00          | 0.12     | 4.00          | 0.11     | 8.00          | 0.22     | 16.00         | 0.17     | 50.00    | 0.14  |
|                         | ANGUILLA ROSSTRATA         | 1.00          | 0.02     | 0.00          | 0.00     | 6.00          | 0.16     | 15.00         | 0.31     | 1.00          | 0.04     | 11.00         | 0.30     | 3.00          | 0.09     | 8.00          | 0.09     | 45.00    | 0.13  |
|                         | LEIOSOMUS XANTHURUS        | 4.00          | 0.06     | 0.00          | 0.00     | 2.00          | 0.05     | 11.00         | 0.23     | 2.00          | 0.08     | 11.00         | 0.30     | 9.00          | 0.25     | 5.00          | 0.05     | 44.00    | 0.12  |
|                         | MIGIL CEPHALUS             | 2.00          | 0.03     | 0.00          | 0.00     | 10.00         | 0.27     | 2.00          | 0.04     | 3.00          | 0.12     | 6.00          | 0.16     | 6.00          | 0.17     | 11.00         | 0.12     | 40.00    | 0.11  |
|                         | CHASMODON ROSSTRATUS       | 1.00          | 0.02     | 0.00          | 0.00     | 5.00          | 0.14     | 1.00          | 0.02     | 15.00         | 0.59     | 0.00          | 0.00     | 16.00         | 0.41     | 2.00          | 0.02     | 40.00    | 0.11  |
|                         | NEOPOMOPS TEXANA SAVI      | 7.00          | 0.11     | 3.00          | 0.20     | 1.00          | 0.03     | 4.00          | 0.08     | 1.00          | 0.04     | 1.00          | 0.03     | 7.00          | 0.19     | 6.00          | 0.07     | 30.00    | 0.08  |
|                         | LURIA DORSA                | 0.00          | 0.00     | 0.00          | 0.00     | 4.00          | 0.11     | 9.00          | 0.19     | 1.00          | 0.04     | 6.00          | 0.16     | 1.00          | 0.03     | 4.00          | 0.04     | 25.00    | 0.07  |
|                         | TRACHIRODUS FALCATUS       | 0.00          | 0.00     | 1.00          | 0.07     | 11.00         | 0.30     | 3.00          | 0.06     | 2.00          | 0.09     | 1.00          | 0.03     | 3.00          | 0.08     | 3.00          | 0.03     | 24.00    | 0.07  |
|                         | FURCIBUS BIAPICATUS        | 1.00          | 0.02     | 0.00          | 0.00     | 0.00          | 0.00     | 18.00         | 0.37     | 0.00          | 0.00     | 2.00          | 0.05     | 1.00          | 0.03     | 0.00          | 0.00     | 21.00    | 0.06  |
|                         | PARALICHTHYS OREATUS       | 4.00          | 0.06     | 0.00          | 0.00     | 0.00          | 0.00     | 3.00          | 0.06     | 0.00          | 0.00     | 2.00          | 0.05     | 4.00          | 0.11     | 8.00          | 0.09     | 21.00    | 0.06  |
|                         | SPHOROTIDES MACHILATUS     | 0.00          | 0.00     | 0.00          | 0.00     | 1.00          | 0.03     | 3.00          | 0.06     | 8.00          | 0.31     | 4.00          | 0.11     | 4.00          | 0.11     | 1.00          | 0.01     | 21.00    | 0.06  |
|                         | TAMOGA DRILLIS             | 0.00          | 0.00     | 0.00          | 0.00     | 5.00          | 0.14     | 3.00          | 0.10     | 3.00          | 0.12     | 0.00          | 0.00     | 1.00          | 0.03     | 6.00          | 0.07     | 20.00    | 0.06  |
|                         | HEMIRHAMPHUS MACHILATUS    | 6.00          | 0.09     | 0.00          | 0.00     | 0.00          | 0.00     | 2.00          | 0.04     | 0.00          | 0.00     | 0.00          | 0.00     | 1.00          | 0.03     | 10.00         | 0.11     | 19.00    | 0.05  |
|                         | OTHER SPECIES              | 7.00          | 0.11     | 2.00          | 0.13     | 28.00         | 0.76     | 30.00         | 0.62     | 7.00          | 0.27     | 5.00          | 0.13     | 35.00         | 0.97     | 42.00         | 0.46     | 156.00   | 0.44  |
| STATION TOTAL AND TOTAL |                            | 6555.00       |          | 1533.00       |          | 3662.00       |          | 4817.00       |          | 2578.00       |          | 3722.00       |          | 3621.00       |          | 9172.00       |          | 35660.00 |       |

Note: CD = Cedar Creek, FR = Forked River, DR = Double Creek, OY = Oyster Creek, N = Night, D = Day



TABLE 3-5 TOTAL NUMBER, PERCENT COMPOSITION, AND CUMULATIVE PERCENT OF FISH AND MACROINVERTEBRATES COLLECTED BY 12.2-m SEINE IN BARNEGAT BAY, SEPTEMBER 1980 - AUGUST 1981

| SPP. NAME                | NUMBER    | %      | CUMU. % |
|--------------------------|-----------|--------|---------|
| MENIDIA MENIDIA JUV      | 46911.000 | 45.794 | 45.794  |
| CRANGON SEPTMSPINOSA     | 22675.000 | 22.135 | 67.929  |
| CRANGON SEPTMSPIN JUV    | 12537.000 | 12.239 | 80.168  |
| MENIDIA MENIDIA          | 6955.000  | 6.789  | 86.957  |
| ANCHOA MITCHILLI         | 2953.000  | 2.883  | 89.840  |
| PALAEMONETES SP.         | 1901.000  | 1.856  | 91.696  |
| PALAEMONETES VULGARIS    | 1876.000  | 1.831  | 93.527  |
| APELTES QUADRACUS        | 1715.000  | 1.674  | 95.201  |
| CALLINECTES SAPIDUS      | 1021.000  | 0.997  | 96.198  |
| FUNDULUS HETEROCLITUS    | 832.000   | 0.812  | 97.010  |
| SYNGNATHUS FUSCUS        | 339.000   | 0.331  | 97.341  |
| FUNDULUS MAJALIS         | 299.000   | 0.292  | 97.633  |
| GOBIOSOMA BOSCI          | 296.000   | 0.289  | 97.922  |
| MENIDIA BERYLLINA        | 287.000   | 0.280  | 98.202  |
| HIPPOLYTE SP             | 284.000   | 0.277  | 98.479  |
| ANCHOA MITCHILLI JUV     | 267.000   | 0.261  | 98.740  |
| MUGIL CEPHALUS           | 186.000   | 0.182  | 98.921  |
| OVALIPES OCELLATUS       | 150.000   | 0.146  | 99.068  |
| CYPRINODON VARIEGATUS    | 138.000   | 0.135  | 99.202  |
| STRONGYLURA MARINA       | 115.000   | 0.112  | 99.315  |
| FAMILY XANTHIDAE JUV.    | 112.000   | 0.109  | 99.424  |
| ANGUILLA ROSTRATA        | 99.000    | 0.097  | 99.521  |
| LUCANIA PARVA            | 86.000    | 0.084  | 99.605  |
| CYNOSCION REGALIS        | 46.000    | 0.045  | 99.650  |
| PALAEMONETES INTERMEDIUS | 43.000    | 0.042  | 99.692  |
| OPSANUS TAU              | 32.000    | 0.031  | 99.723  |
| POMATOMUS SALTATRIX      | 32.000    | 0.031  | 99.754  |
| PSEUDOPLEURONECTES AMERI | 29.000    | 0.028  | 99.782  |
| TRACHINOTUS FALCATUS     | 28.000    | 0.027  | 99.810  |
| PRIONOTUS EVOLANS        | 19.000    | 0.019  | 99.828  |
| CARANX HIPPOS            | 18.000    | 0.018  | 99.846  |
| AMMODYTES AMERICANUS     | 15.000    | 0.015  | 99.860  |
| BREVOORTIA TYRANNUS JUV  | 14.000    | 0.014  | 99.874  |
| MEMBRAS MARTINICA        | 10.000    | 0.010  | 99.884  |
| CHASMODES BOSQUIANUS     | 10.000    | 0.010  | 99.894  |
| SPHOEROIDES MACULATUS    | 9.000     | 0.009  | 99.902  |
| LIBINIA DUBIA            | 7.000     | 0.007  | 99.909  |
| ANCHOA HEPSETUS          | 6.000     | 0.006  | 99.915  |
| ANGUILLA ROSTRATA JUV.   | 5.000     | 0.005  | 99.920  |
| FUNDULUS DIAPHANUS       | 5.000     | 0.005  | 99.925  |
| CLUPEA H. HARENGUS       | 4.000     | 0.004  | 99.929  |
| ANCHOA MITCHILLI ADULT   | 4.000     | 0.004  | 99.933  |
| RISSOLA MARGINATA        | 4.000     | 0.004  | 99.937  |
| LUTJANUS GRISEUS         | 4.000     | 0.004  | 99.940  |
| BAIRDIELLA CHRYSURA      | 4.000     | 0.004  | 99.944  |
| LEIOSTOMUS XANTHURUS     | 4.000     | 0.004  | 99.948  |

TABLE 3-5 (CONT.)

| SPP. NAME                | NUMBER | %     | CUMU. % |
|--------------------------|--------|-------|---------|
| TAUTOGA ONITIS           | 4.000  | 0.004 | 99.952  |
| MUGIL CUREMA             | 4.000  | 0.004 | 99.956  |
| MENIDIA MENIDIA ADULT    | 3.000  | 0.003 | 99.959  |
| GASTEROSTEUS ACULEATUS   | 3.000  | 0.003 | 99.962  |
| MENTICIRRHUS SAXATILIS   | 3.000  | 0.003 | 99.965  |
| TRINECTES MACULATUS      | 3.000  | 0.003 | 99.968  |
| CLASS SCYPHOZOA          | 3.000  | 0.003 | 99.971  |
| PAGURUS LONGICARPUS      | 3.000  | 0.003 | 99.974  |
| POLLACHIUS VIRENS        | 2.000  | 0.002 | 99.976  |
| MORONE AMERICANA         | 2.000  | 0.002 | 99.978  |
| ASTROSCOPUS GUTTATUS     | 2.000  | 0.002 | 99.980  |
| PEPRILUS TRIACANTHUS     | 2.000  | 0.002 | 99.981  |
| PARALICHTHYS DENTATUS    | 2.000  | 0.002 | 99.983  |
| PALAEONETES PUGIO        | 2.000  | 0.002 | 99.985  |
| NEOPANOPE TEXANA SAYI    | 2.000  | 0.002 | 99.987  |
| PANOPEUS HERBSTII        | 2.000  | 0.002 | 99.989  |
| BREVOORTIA TYRANNUS      | 1.000  | 0.001 | 99.990  |
| UROPHYCIS CHUSS          | 1.000  | 0.001 | 99.991  |
| HYPORHAMPHUS UNIFASCIATU | 1.000  | 0.001 | 99.992  |
| MENIDIA SP               | 1.000  | 0.001 | 99.993  |
| PRIONOTUS CAROLINUS      | 1.000  | 0.001 | 99.994  |
| ETROPUS MICROSTOMUS      | 1.000  | 0.001 | 99.995  |
| CARCINUS MAENAS          | 1.000  | 0.001 | 99.996  |
| CANCER IRRORATUS         | 1.000  | 0.001 | 99.997  |
| FAMILY XANTHIDAE         | 1.000  | 0.001 | 99.998  |
| RHITHROPANOPEUS HARRISII | 1.000  | 0.001 | 99.999  |
| CLASS ASTEROIDEA         | 1.000  | 0.001 | 100.000 |

TABLE 3-6 TOTAL NUMBER AND PERCENT COMPOSITION OF FISH AND MACROINVERTEBRATES COLLECTED AT EACH SAMPLING STATION BY 12.2-m SEINE IN BARNEGAT BAY, SEPTEMBER 1980 - AUGUST 1981

| STATION                     | CUDN          |          | CUCD          |          | FORD          |          | FORN          |          | URCD          |          | URCN          |          | UYCD          |          | UYCN          |          |          |       |
|-----------------------------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|----------|-------|
|                             | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP |          |       |
| MENIDIA MENIDIA JUV         | 476.00        | 4.73     | 612.00        | 23.16    | 9291.00       | 83.28    | 3417.00       | 25.92    | 2479.00       | 35.44    | 911.00        | 6.11     | 7927.00       | 67.98    | 21790.00      | 68.50    | 46911.00 | 45.79 |
| CRANGON SEPTENTRIONALIS     | 6826.00       | 67.79    | 1028.00       | 38.90    | 509.00        | 4.56     | 4591.00       | 34.74    | 822.00        | 11.75    | 4895.00       | 32.23    | 558.00        | 4.79     | 3546.00       | 11.14    | 22675.00 | 22.14 |
| CRANGON SEPTENTRIONALIS JUV | 766.00        | 7.61     | 318.00        | 12.03    | 0.00          | 0.00     | 2788.00       | 21.15    | 442.00        | 6.32     | 4551.00       | 30.53    | 456.00        | 3.91     | 3216.00       | 10.11    | 12537.00 | 12.24 |
| MENIDIA MENIDIA             | 265.00        | 2.63     | 319.00        | 12.07    | 830.00        | 7.44     | 398.00        | 2.94     | 1403.00       | 20.06    | 711.00        | 4.77     | 1914.00       | 16.42    | 1125.00       | 3.54     | 6955.00  | 6.79  |
| AMMOCYTUS SALTATRIX         | 374.00        | 3.71     | 76.00         | 2.88     | 38.00         | 0.34     | 205.00        | 1.55     | 753.00        | 10.76    | 1179.00       | 7.91     | 81.00         | 0.69     | 247.00        | 0.78     | 2953.00  | 2.88  |
| PALAEOMETES VOLGARIS        | 318.00        | 3.16     | 54.00         | 2.04     | 23.00         | 0.21     | 303.00        | 2.30     | 95.00         | 1.36     | 474.00        | 3.19     | 190.00        | 1.63     | 444.00        | 1.40     | 1901.00  | 1.86  |
| PALAEOMETES VOLGARIS        | 215.00        | 2.14     | 21.00         | 0.79     | 56.00         | 0.50     | 670.00        | 5.08     | 70.00         | 1.00     | 424.00        | 2.84     | 41.00         | 0.38     | 376.00        | 1.18     | 1876.00  | 1.83  |
| APLETES QUADRACUS           | 244.00        | 2.42     | 67.00         | 2.53     | 31.00         | 0.28     | 208.00        | 1.58     | 176.00        | 2.52     | 693.00        | 4.58     | 76.00         | 0.65     | 230.00        | 0.72     | 1715.00  | 1.67  |
| CALLINECTES SAPIDUS         | 179.00        | 1.78     | 41.00         | 1.55     | 36.00         | 0.32     | 92.00         | 0.70     | 60.00         | 0.86     | 240.00        | 1.61     | 82.00         | 0.70     | 291.00        | 0.91     | 1021.00  | 1.00  |
| FUNDULUS HEERDII            | 31.00         | 0.31     | 10.00         | 0.38     | 139.00        | 1.25     | 81.00         | 0.61     | 167.00        | 2.39     | 307.00        | 2.06     | 42.00         | 0.36     | 55.00         | 0.17     | 832.00   | 0.81  |
| SYNGNATHUS FUSCUS           | 66.00         | 0.66     | 7.00          | 0.26     | 31.00         | 0.28     | 22.00         | 0.17     | 77.00         | 1.10     | 69.00         | 0.46     | 21.00         | 0.18     | 46.00         | 0.14     | 339.00   | 0.33  |
| FUNDULUS MAJALIS            | 4.00          | 0.04     | 17.00         | 0.64     | 3.00          | 0.03     | 43.00         | 0.33     | 33.00         | 0.47     | 94.00         | 0.63     | 58.00         | 0.50     | 47.00         | 0.15     | 299.00   | 0.29  |
| GORGONIIDAE                 | 75.00         | 0.74     | 16.00         | 0.61     | 6.00          | 0.05     | 20.00         | 0.15     | 8.00          | 0.11     | 33.00         | 0.22     | 68.00         | 0.58     | 70.00         | 0.22     | 296.00   | 0.29  |
| MENIDIA MENIDIA             | 30.00         | 0.30     | 29.00         | 1.10     | 12.00         | 0.11     | 14.00         | 0.11     | 90.00         | 1.29     | 153.00        | 1.03     | 29.00         | 0.25     | 15.00         | 0.05     | 287.00   | 0.28  |
| HYPOLYTE SP                 | 2.00          | 0.02     | 1.00          | 0.04     | 7.00          | 0.06     | 17.00         | 0.13     | 6.00          | 0.08     | 25.00         | 0.17     | 2.00          | 0.02     | 15.00         | 0.05     | 284.00   | 0.28  |
| AMMOCYTUS SALTATRIX         | 140.00        | 1.39     | 0.00          | 0.00     | 0.00          | 0.00     | 127.00        | 0.95     | 73.00         | 1.04     | 25.00         | 0.17     | 16.00         | 0.14     | 41.00         | 0.13     | 186.00   | 0.18  |
| HIGILL CEPHALUS             | 6.00          | 0.06     | 0.00          | 0.00     | 0.00          | 0.00     | 6.00          | 0.05     | 6.00          | 0.08     | 9.00          | 0.06     | 0.00          | 0.00     | 0.00          | 0.00     | 150.00   | 0.15  |
| OVALIPES OCELLATUS          | 0.00          | 0.00     | 0.00          | 0.00     | 55.00         | 0.49     | 85.00         | 0.64     | 1.00          | 0.01     | 9.00          | 0.06     | 0.00          | 0.00     | 0.00          | 0.00     | 139.00   | 0.13  |
| CYPRINODON VAREGATUS        | 10.00         | 0.10     | 1.00          | 0.04     | 15.00         | 0.13     | 15.00         | 0.11     | 16.00         | 0.23     | 37.00         | 0.25     | 19.00         | 0.16     | 25.00         | 0.08     | 115.00   | 0.11  |
| SIRGUELLA MARINA            | 5.00          | 0.05     | 10.00         | 0.38     | 4.00          | 0.04     | 6.00          | 0.05     | 5.00          | 0.07     | 8.00          | 0.05     | 13.00         | 0.11     | 64.00         | 0.20     | 112.00   | 0.11  |
| FAMILY XANTHIDAE JUV        | 0.00          | 0.00     | 0.00          | 0.00     | 7.00          | 0.06     | 19.00         | 0.14     | 45.00         | 0.64     | 33.00         | 0.22     | 2.00          | 0.02     | 6.00          | 0.02     | 99.00    | 0.10  |
| ANGUILLA ROSTRATA           | 6.00          | 0.06     | 0.00          | 0.00     | 0.00          | 0.00     | 5.00          | 0.04     | 6.00          | 0.09     | 8.00          | 0.05     | 4.00          | 0.03     | 7.00          | 0.02     | 86.00    | 0.08  |
| LURANIA PARVA               | 12.00         | 0.12     | 8.00          | 0.30     | 4.00          | 0.04     | 5.00          | 0.04     | 23.00         | 0.33     | 23.00         | 0.15     | 4.00          | 0.03     | 7.00          | 0.02     | 46.00    | 0.04  |
| CYNOCTON REGALES            | 5.00          | 0.05     | 0.00          | 0.00     | 6.00          | 0.05     | 10.00         | 0.08     | 3.00          | 0.04     | 17.00         | 0.11     | 0.00          | 0.00     | 12.00         | 0.04     | 43.00    | 0.04  |
| PALAEOMETES INTERMEDIUS     | 6.00          | 0.06     | 0.00          | 0.00     | 2.00          | 0.02     | 2.00          | 0.02     | 4.00          | 0.06     | 2.00          | 0.01     | 6.00          | 0.05     | 9.00          | 0.03     | 32.00    | 0.03  |
| OPSARIUS TAU                | 1.00          | 0.01     | 1.00          | 0.04     | 7.00          | 0.06     | 2.00          | 0.02     | 13.00         | 0.19     | 7.00          | 0.05     | 3.00          | 0.03     | 0.00          | 0.00     | 32.00    | 0.03  |
| PSEUDOPLEURONCTES AMERI     | 2.00          | 0.02     | 0.00          | 0.00     | 0.00          | 0.00     | 7.00          | 0.05     | 3.00          | 0.04     | 12.00         | 0.09     | 4.00          | 0.03     | 1.00          | 0.00     | 29.00    | 0.03  |
| TRACHINOTUS FALCATUS        | 0.00          | 0.00     | 0.00          | 0.00     | 3.00          | 0.03     | 10.00         | 0.08     | 0.00          | 0.00     | 5.00          | 0.02     | 7.00          | 0.06     | 5.00          | 0.02     | 28.00    | 0.03  |
| PRELUDUS EVOLANS            | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 15.00         | 0.11     | 1.00          | 0.01     | 0.00          | 0.00     | 0.00          | 0.00     | 3.00          | 0.01     | 19.00    | 0.02  |
| CARAKI HIPPOS               | 0.00          | 0.00     | 2.00          | 0.08     | 2.00          | 0.02     | 0.00          | 0.00     | 1.00          | 0.01     | 0.00          | 0.00     | 4.00          | 0.03     | 9.00          | 0.03     | 18.00    | 0.02  |
| AMMOCYTUS AMERICANUS        | 0.00          | 0.00     | 0.00          | 0.00     | 1.00          | 0.01     | 6.00          | 0.05     | 0.00          | 0.00     | 1.00          | 0.01     | 1.00          | 0.01     | 6.00          | 0.02     | 15.00    | 0.01  |
| BREVIDENTIA VIRGARIS JUV    | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 14.00         | 0.12     | 0.00          | 0.00     | 14.00    | 0.01  |
| MELLAGUS MARINICA           | 0.00          | 0.00     | 0.00          | 0.00     | 2.00          | 0.02     | 5.00          | 0.04     | 0.00          | 0.00     | 2.00          | 0.01     | 1.00          | 0.01     | 0.00          | 0.00     | 10.00    | 0.01  |
| CHIROCENTRUS BOSQUIANUS     | 2.00          | 0.02     | 0.00          | 0.00     | 1.00          | 0.01     | 0.00          | 0.00     | 1.00          | 0.01     | 0.00          | 0.00     | 2.00          | 0.02     | 4.00          | 0.01     | 10.00    | 0.01  |
| SPHONOPUS MACULATUS         | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 4.00          | 0.03     | 2.00          | 0.03     | 0.00          | 0.00     | 1.00          | 0.01     | 1.00          | 0.00     | 9.00     | 0.01  |
| LIBINIA BOBIA               | 0.00          | 0.00     | 0.00          | 0.00     | 1.00          | 0.01     | 0.00          | 0.00     | 2.00          | 0.03     | 0.00          | 0.00     | 0.00          | 0.00     | 2.00          | 0.02     | 7.00     | 0.01  |
| AMMOCYTUS AMERICANUS        | 0.00          | 0.00     | 0.00          | 0.00     | 6.00          | 0.05     | 0.00          | 0.00     | 6.00          | 0.08     | 16.00         | 0.11     | 9.00          | 0.08     | 30.00         | 0.09     | 87.00    | 0.08  |
| OTHER SPECIES               | 3.00          | 0.03     | 2.00          | 0.08     | 5.00          | 0.04     | 16.00         | 0.12     | 6.00          | 0.09     | 16.00         | 0.11     | 9.00          | 0.08     | 30.00         | 0.09     | 87.00    | 0.08  |

STATION TOTAL AND DATE

Note: CDC = Cedar Creek, FFR = Forked River, BFC = Double Creek, NYC = Oyster Creek, N = Night, D = Day

102439.00

31821.00

11660.00

14909.00

6995.00

13185.00

11156.00

2643.00

10070.00

102439.00

TABLE 3-7 MEAN NUMBER PER HAUL OF SAND SHRIMP (*Crangon septemspinosa*) COLLECTED BY OTTER TRAWL, 12.2-m SEINE, AND 45.7-m SEINE IN BARNEGAT BAY, SEPTEMBER 1980 - AUGUST 1981

| Otter Trawl |         |        |       |        |       |        |        |        |        |
|-------------|---------|--------|-------|--------|-------|--------|--------|--------|--------|
| DATE        | STATION |        |       |        |       |        |        |        | MEAN   |
|             | CDCD    | CDCN   | FKRD  | FKRN   | DBCD  | DBCN   | OYCD   | OYCN   |        |
| 9 SEP 80    | 2.0     | 156.0  | 6.5   | 94.0   | 10.0  | 60.0   | 0.0    | 20.5   | 43.6   |
| 7 OCT 80    | 4.0     | 173.5  | 22.0  | 113.5  | 1.5   | 2166.5 | 0.0    | 0.5    | 310.2  |
| 5 NOV 80    | 347.0   | 52.0   | 94.5  | 24.0   | 602.0 | 71.0   | 23.0   | 498.0  | 213.9  |
| 4 DEC 80    | 13.5    | 706.0  | 30.5  | 459.5  | 86.0  | 2742.0 | 1961.0 | 5220.5 | 1402.4 |
| 7 JAN 81    | --      | --     | 2.0   | 126.5  | --    | --     | 65.0   | 6224.0 | 1604.4 |
| 4 FEB 81    | 96.5    | 201.5  | 1.5   | 270.0  | 50.5  | 383.0  | 43.5   | 816.5  | 232.9  |
| 3 MAR 81    | 20.0    | 278.5  | 1.5   | 225.5  | 18.5  | 91.0   | 1660.0 | 5398.5 | 961.7  |
| 7 APR 81    | 77.0    | 92.5   | 95.5  | 198.5  | 41.0  | 299.0  | 211.0  | 1526.5 | 317.6  |
| 5 MAY 81    | 45.5    | 90.5   | 510.0 | 2828.5 | 244.0 | 633.0  | 4.0    | 103.5  | 557.4  |
| 3 JUN 81    | 37.5    | 68.5   | 24.5  | 1334.5 | 59.5  | 1387.5 | 0.5    | 170.0  | 385.3  |
| 8 JUL 81    | 82.0    | 1143.0 | 5.0   | 715.5  | 7.5   | 618.0  | 108.0  | 311.5  | 373.8  |
| 5 AUG 81    | 14.0    | 700.0  | 0.5   | 88.5   | 1.0   | 194.5  | 0.0    | 4.5    | 125.4  |
| MEAN        | 67.2    | 332.9  | 66.2  | 539.9  | 102.0 | 786.0  | 339.7  | 1691.2 | 497.9  |

TABLE 3-7 (CONT.)

## 12.2-m Seine

| DATE      | STATION |        |      |        |       |        |       |       | MEAN  |
|-----------|---------|--------|------|--------|-------|--------|-------|-------|-------|
|           | CDCD    | CDCN   | FKRD | FKRN   | DBCD  | DBCN   | OYCD  | OYCN  |       |
| 16 SEP 80 | 7.5     | 137.5  | 0.5  | 44.5   | 1.5   | 24.5   | 0.0   | 80.5  | 37.1  |
| 14 OCT 80 | 239.5   | 463.0  | 21.0 | 253.0  | 8.5   | 879.5  | 2.0   | 78.5  | 243.1 |
| 19 NOV 80 | 187.5   | 191.5  | 15.5 | 107.0  | 46.0  | 178.0  | 42.0  | 74.0  | 105.2 |
| 10 DEC 80 | 66.5    | 1033.0 | 53.0 | 1048.0 | 12.5  | 613.0  | 147.0 | 765.5 | 488.7 |
| 14 JAN 81 | --      | --     | 8.0  | 456.5  | --    | --     | 1.0   | 88.5  | 138.5 |
| 12 FEB 81 | 21.0    | 830.0  | 17.0 | 206.0  | 161.5 | 325.0  | 67.0  | 521.5 | 268.6 |
| 24 MAR 81 | 106.5   | 330.0  | 10.5 | 318.0  | 100.5 | 468.5  | 197.5 | 191.5 | 215.4 |
| 15 APR 81 | 7.0     | 158.5  | 6.0  | 190.5  | 38.5  | 1116.5 | 36.5  | 688.0 | 280.2 |
| 12 MAY 81 | 1.0     | 22.5   | 18.0 | 281.5  | 12.5  | 108.0  | 5.5   | 260.0 | 88.6  |
| 9 JUN 81  | 3.5     | 95.5   | 22.5 | 591.0  | 2.0   | 696.5  | 81.5  | 599.0 | 261.4 |
| 15 JUL 81 | 25.5    | 135.5  | 26.5 | 146.5  | 244.0 | 72.5   | 0.5   | 0.5   | 81.4  |
| 12 AUG 81 | 7.5     | 399.0  | 56.0 | 42.0   | 4.5   | 196.0  | 0.0   | 33.5  | 92.3  |
| MEAN      | 61.2    | 345.1  | 21.2 | 307.0  | 57.5  | 425.3  | 44.1  | 281.8 | 192.4 |

TABLE 3-7 (CONT.)

## 45.7-m Seine

| DATE      | STATION |        |      |       |      |       |      |        | MEAN  |
|-----------|---------|--------|------|-------|------|-------|------|--------|-------|
|           | CDCD    | CDCN   | FKRD | FKRN  | DBCD | DBCN  | OYCD | OYCN   |       |
| 16 SEP 80 | 1.0     | 20.0   | 0.0  | 3.0   | 0.0  | 1.5   | 0.0  | 0.5    | 3.3   |
| 14 OCT 80 | 74.0    | 94.0   | 2.0  | 6.0   | 1.0  | 9.5   | 0.0  | 11.5   | 24.8  |
| 19 NOV 80 | 148.5   | 417.5  | 31.5 | 370.0 | 20.5 | 175.5 | 28.0 | 188.5  | 172.5 |
| 10 DEC 80 | 26.0    | 473.0  | 26.0 | 650.0 | 7.5  | 352.5 | 79.5 | 2630.0 | 530.6 |
| 14 JAN 81 | --      | --     | 5.5  | 117.0 | --   | --    | 0.0  | 16.5   | 34.8  |
| 12 FEB 81 | 11.0    | 255.5  | 2.5  | 66.0  | 4.5  | 224.5 | 32.5 | 156.0  | 94.1  |
| 24 MAR 81 | 25.5    | 1378.0 | 5.0  | 215.0 | 3.5  | 344.5 | 30.5 | 481.0  | 310.4 |
| 15 APR 81 | 49.0    | 62.0   | 5.0  | 37.5  | 3.0  | 86.5  | 60.5 | 182.0  | 60.7  |
| 12 MAY 81 | 3.5     | 24.0   | 12.0 | 127.0 | 4.0  | 56.0  | 3.0  | 119.0  | 43.6  |
| 9 JUN 81  | 2.0     | 17.5   | 8.0  | 11.0  | 0.5  | 23.0  | 0.0  | 5.5    | 8.4   |
| 15 JUL 81 | 0.5     | 2.0    | 0.0  | 6.5   | 0.5  | 2.5   | 0.0  | 0.0    | 1.5   |
| 12 AUG 81 | 2.0     | 3.0    | 0.0  | 2.0   | 0.0  | 1.0   | 0.0  | 0.0    | 1.0   |
| MEAN      | 31.2    | 249.7  | 8.1  | 134.3 | 4.1  | 116.1 | 19.5 | 315.9  | 110.3 |



TABLE 3-8 LENGTH-FREQUENCY DISTRIBUTION OF SAND SHRIMP (*Crangon septemspinosa*) COLLECTED BY 12.2-m SEINE IN BARNEGAT BAY, SEPTEMBER 1980 - AUGUST 1981

| DATE      | N    | X    | SD   | LENGTH INTERVALS (MM) |              |              |              |              |                |                |        | RANGE |      |      |      |
|-----------|------|------|------|-----------------------|--------------|--------------|--------------|--------------|----------------|----------------|--------|-------|------|------|------|
|           |      |      |      | 0.0<br>19.9           | 20.0<br>39.9 | 40.0<br>59.9 | 60.0<br>79.9 | 80.0<br>99.9 | 100.0<br>119.9 | 120.0<br>139.9 | >140.0 | MIN   | MED  | MAX  |      |
| 16 SEP 80 | 268  | 24.1 | 6.2  | 71                    | 195          | 2            | 0            | 0            | 0              | 0              | 0      | 0     | 13.0 | 23.0 | 41.0 |
| 14 OCT 80 | 663  | 29.4 | 8.8  | 59                    | 496          | 108          | 0            | 0            | 0              | 0              | 0      | 0     | 15.0 | 27.0 | 57.0 |
| 19 NOV 80 | 599  | 41.4 | 7.6  | 3                     | 243          | 350          | 3            | 0            | 0              | 0              | 0      | 0     | 15.0 | 41.0 | 63.0 |
| 10 DEC 80 | 610  | 37.4 | 8.8  | 10                    | 354          | 244          | 2            | 0            | 0              | 0              | 0      | 0     | 16.0 | 37.0 | 64.0 |
| 14 JAN 81 | 301  | 31.3 | 9.7  | 30                    | 219          | 52           | 0            | 0            | 0              | 0              | 0      | 0     | 13.0 | 30.0 | 59.0 |
| 12 FEB 81 | 1018 | 33.1 | 10.3 | 83                    | 644          | 288          | 3            | 0            | 0              | 0              | 0      | 0     | 14.0 | 33.0 | 65.0 |
| 24 MAR 81 | 1208 | 32.8 | 10.4 | 56                    | 797          | 349          | 6            | 0            | 0              | 0              | 0      | 0     | 14.0 | 30.0 | 63.0 |
| 15 APR 81 | 938  | 36.5 | 11.6 | 36                    | 539          | 347          | 16           | 0            | 0              | 0              | 0      | 0     | 14.0 | 34.0 | 63.0 |
| 12 MAY 81 | 648  | 37.7 | 11.1 | 8                     | 383          | 243          | 14           | 0            | 0              | 0              | 0      | 0     | 12.0 | 34.0 | 63.0 |
| 9 JUN 81  | 707  | 27.3 | 14.4 | 315                   | 220          | 161          | 11           | 0            | 0              | 0              | 0      | 0     | 12.0 | 21.0 | 67.0 |
| 15 JUL 81 | 438  | 22.6 | 5.8  | 147                   | 289          | 2            | 0            | 0            | 0              | 0              | 0      | 0     | 12.0 | 22.0 | 50.0 |
| 12 AUG 81 | 405  | 22.4 | 6.1  | 148                   | 255          | 2            | 0            | 0            | 0              | 0              | 0      | 0     | 11.0 | 22.0 | 40.0 |

N=NUMBER OF LENGTHS; MIN=SHORTEST LENGTH  
X=MEAN LENGTH; MED=MEDIAN LENGTH  
SD=STANDARD DEVIATION; MAX=GREATEST LENGTH  
NA=DATA NOT AVAILABLE

TABLE 3-9 MEAN NUMBER PER HAUL OF BLUE CRAB (*Callinectes sapidus*) COLLECTED BY OTTER TRAWL,  
12.2-m SEINE, AND 45.7-m SEINE IN BARNEGAT BAY, SEPTEMBER 1980 - AUGUST 1981

| Otter Trawl |         |      |      |      |      |      |      |       |      |
|-------------|---------|------|------|------|------|------|------|-------|------|
| DATE        | STATION |      |      |      |      |      |      |       | MEAN |
|             | CDCD    | CDCN | FKRD | FKRN | DBCD | DBCN | OYCD | OYCN  |      |
| 9 SEP 80    | 2.5     | 15.5 | 23.5 | 74.0 | 6.5  | 6.5  | 1.5  | 108.0 | 29.8 |
| 7 OCT 80    | 5.0     | 8.5  | 24.5 | 7.0  | 5.0  | 6.5  | 5.0  | 5.5   | 8.4  |
| 5 NOV 80    | 5.5     | 51.5 | 1.5  | 1.0  | 19.0 | 6.0  | 3.5  | 24.0  | 14.0 |
| 4 DEC 80    | 0.0     | 0.0  | 0.0  | 0.5  | 0.0  | 1.5  | 11.0 | 73.0  | 10.8 |
| 7 JAN 81    | --      | --   | 0.0  | 0.0  | --   | --   | 1.0  | 1.5   | 0.6  |
| 4 FEB 81    | 1.5     | 0.5  | 0.0  | 0.0  | 9.5  | 0.5  | 0.0  | 1.0   | 1.6  |
| 3 MAR 81    | 0.0     | 0.0  | 0.0  | 2.0  | 0.0  | 5.5  | 2.0  | 68.5  | 9.8  |
| 7 APR 81    | 4.5     | 53.0 | 5.5  | 26.0 | 3.5  | 61.5 | 10.0 | 92.0  | 32.0 |
| 5 MAY 81    | 3.0     | 13.0 | 5.0  | 8.5  | 7.5  | 19.0 | 8.0  | 47.5  | 13.9 |
| 3 JUN 81    | 4.0     | 1.0  | 2.5  | 6.5  | 2.5  | 5.0  | 1.5  | 6.5   | 3.7  |
| 8 JUL 81    | 5.5     | 15.0 | 4.5  | 24.5 | 6.0  | 22.0 | 14.5 | 29.0  | 15.1 |
| 5 AUG 81    | 19.0    | 20.5 | 13.5 | 18.0 | 10.0 | 17.5 | 7.0  | 37.0  | 17.8 |
| MEAN        | 4.6     | 16.2 | 6.7  | 14.0 | 6.3  | 13.8 | 5.4  | 41.1  | 13.7 |

TABLE 3-9 (CONT.)

## 12.2-m Seine

| DATE      | STATION |      |      |      |      |      |      |      | MEAN |
|-----------|---------|------|------|------|------|------|------|------|------|
|           | CDCD    | CDCN | FKRD | FKRN | DBCD | DBCN | OYCD | OYCN |      |
| 16 SEP 80 | 3.0     | 13.0 | 3.0  | 10.5 | 8.0  | 6.0  | 3.0  | 18.5 | 8.1  |
| 14 OCT 80 | 4.5     | 34.0 | 5.5  | 17.0 | 1.5  | 42.5 | 20.5 | 43.5 | 21.1 |
| 19 NOV 80 | 0.0     | 0.0  | 0.0  | 0.0  | 1.0  | 0.0  | 0.0  | 1.0  | 0.2  |
| 10 DEC 80 | 0.0     | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 4.0  | 0.5  |
| 14 JAN 81 | --      | --   | 0.0  | 0.0  | --   | --   | 0.0  | 0.0  | 0.0  |
| 12 FEB 81 | 2.0     | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 7.5  | 1.2  |
| 24 MAR 81 | 0.0     | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.5  | 0.1  |
| 15 APR 81 | 0.5     | 31.0 | 2.0  | 3.0  | 3.5  | 64.0 | 6.5  | 4.0  | 19.7 |
| 12 MAY 81 | 0.0     | 1.5  | 1.5  | 1.5  | 1.0  | 4.0  | 0.0  | 10.5 | 2.5  |
| 9 JUN 81  | 0.0     | 3.5  | 0.5  | 1.0  | 2.0  | 0.5  | 1.5  | 2.5  | 1.4  |
| 15 JUL 81 | 10.5    | 5.5  | 2.5  | 11.5 | 9.0  | 0.5  | 7.5  | 8.0  | 6.9  |
| 12 AUG 81 | 0.0     | 1.0  | 3.0  | 1.5  | 4.0  | 2.5  | 2.0  | 2.5  | 2.1  |
| MEAN      | 1.9     | 8.1  | 1.5  | 3.8  | 2.7  | 10.9 | 3.6  | 12.1 | 5.6  |

TABLE 3-9 (CONT.)

## 45.7-m Seine

| DATE      | STATION |       |      |      |      |       |      |       | MEAN |
|-----------|---------|-------|------|------|------|-------|------|-------|------|
|           | CDCD    | CDCN  | FKRD | FKRN | DBCD | DBCN  | OYCD | OYCN  |      |
| 16 SEP 80 | 12.5    | 115.0 | 10.0 | 47.0 | 8.5  | 27.5  | 29.0 | 49.5  | 37.4 |
| 14 OCT 80 | 22.5    | 142.5 | 2.0  | 38.5 | 9.5  | 94.0  | 7.0  | 24.0  | 42.5 |
| 19 NOV 80 | 0.0     | 1.0   | 0.0  | 3.5  | 0.0  | 0.0   | 3.0  | 31.0  | 4.8  |
| 10 DEC 80 | 0.0     | 0.0   | 0.0  | 8.0  | 0.0  | 1.0   | 0.5  | 28.0  | 4.7  |
| 14 JAN 81 | --      | --    | 0.5  | 0.0  | --   | --    | 0.0  | 0.0   | 0.1  |
| 12 FEB 81 | 0.0     | 1.0   | 0.0  | 0.5  | 0.5  | 0.0   | 4.0  | 15.0  | 2.6  |
| 24 MAR 81 | 0.0     | 0.0   | 0.0  | 0.0  | 0.0  | 0.0   | 2.5  | 21.0  | 2.9  |
| 15 APR 81 | 25.5    | 43.5  | 6.5  | 9.5  | 7.0  | 135.0 | 35.5 | 104.5 | 45.9 |
| 12 MAY 81 | 19.0    | 54.5  | 3.5  | 35.5 | 0.5  | 20.5  | 6.0  | 20.0  | 19.9 |
| 9 JUN 81  | 6.0     | 27.0  | 4.5  | 7.5  | 11.5 | 10.5  | 20.5 | 8.5   | 12.0 |
| 15 JUL 81 | 30.5    | 18.0  | 28.5 | 10.5 | 31.0 | 11.0  | 37.0 | 37.0  | 25.4 |
| 12 AUG 81 | 13.5    | 1.5   | 10.0 | 23.0 | 9.5  | 3.0   | 35.5 | 17.5  | 14.2 |
| MEAN      | 11.8    | 36.7  | 5.5  | 15.3 | 7.1  | 27.5  | 15.0 | 29.7  | 18.5 |

TABLE 3-10 LENGTH-FREQUENCY DISTRIBUTION OF BLUE CRAB (*Callinectes sapidus*) COLLECTED BY OTTER TRAWL, 12.2-m SEINE, AND 45.7-m SEINE IN BARNEGAT BAY, SEPTEMBER 1981 - AUGUST 1981

Otter Trawl

| DATE     | N   | X    | SD   | LENGTH INTERVALS (MM) |              |              |              |              |                |                |        | RANGE |      |       |
|----------|-----|------|------|-----------------------|--------------|--------------|--------------|--------------|----------------|----------------|--------|-------|------|-------|
|          |     |      |      | 0.0<br>19.9           | 20.0<br>39.9 | 40.0<br>59.9 | 60.0<br>79.9 | 80.0<br>99.9 | 100.0<br>119.9 | 120.0<br>139.9 | >140.0 | MIN   | MED  | MAX   |
| 9 SEP 80 | 295 | 41.1 | 38.7 | 114                   | 85           | 30           | 12           | 10           | 25             | 10             | 9      | 5.0   | 27.0 | 163.0 |
| 7 OCT 80 | 134 | 41.5 | 42.3 | 67                    | 18           | 25           | 2            | 5            | 4              | 5              | 8      | 6.0   | 19.5 | 182.0 |
| 5 NOV 80 | 210 | 43.7 | 30.2 | 51                    | 42           | 82           | 21           | 3            | 2              | 4              | 5      | 6.0   | 43.0 | 185.0 |
| 4 DEC 80 | 120 | 54.3 | 33.9 | 6                     | 36           | 47           | 14           | 3            | 4              | 4              | 6      | 9.0   | 47.5 | 163.0 |
| 7 JAN 81 | 5   | 30.8 | 14.2 | 1                     | 3            | 1            | 0            | 0            | 0              | 0              | 0      | 9.0   | 32.0 | 53.0  |
| 4 FEB 81 | 26  | 31.9 | 17.2 | 10                    | 5            | 9            | 2            | 0            | 0              | 0              | 0      | 13.0  | 25.0 | 68.0  |
| 3 MAR 81 | 124 | 39.8 | 19.6 | 10                    | 60           | 42           | 9            | 1            | 0              | 1              | 1      | 13.0  | 36.0 | 160.0 |
| 7 APR 81 | 363 | 42.5 | 26.4 | 63                    | 119          | 131          | 27           | 4            | 5              | 11             | 3      | 9.0   | 39.0 | 197.0 |
| 5 MAY 81 | 210 | 42.3 | 29.9 | 31                    | 93           | 58           | 5            | 5            | 11             | 2              | 5      | 7.0   | 33.0 | 161.0 |
| 3 JUN 81 | 59  | 60.8 | 32.3 | 2                     | 17           | 14           | 14           | 3            | 6              | 2              | 1      | 15.0  | 55.0 | 151.0 |
| 8 JUL 81 | 242 | 76.4 | 28.2 | 0                     | 13           | 63           | 67           | 42           | 39             | 13             | 5      | 22.0  | 69.5 | 154.0 |
| 5 AUG 81 | 280 | 80.5 | 28.0 | 3                     | 2            | 65           | 87           | 57           | 40             | 15             | 11     | 10.0  | 75.0 | 184.0 |

N=NUMBER OF LENGTHS; MIN=SHORTEST LENGTH  
 X=MEAN LENGTH; MED=MEDIAN LENGTH  
 SD=STANDARD DEVIATION; MAX=GREATEST LENGTH  
 NA=DATA NOT AVAILABLE

TABLE 3-10 (CONT.)

## 12.2-m Seine

| DATE      | N   | X    | SD   | LENGTH INTERVALS (MM) |              |              |              |              |                |                |        | RANGE |      |       |
|-----------|-----|------|------|-----------------------|--------------|--------------|--------------|--------------|----------------|----------------|--------|-------|------|-------|
|           |     |      |      | 0.0<br>19.9           | 20.0<br>39.9 | 40.0<br>59.9 | 60.0<br>79.9 | 80.0<br>99.9 | 100.0<br>119.9 | 120.0<br>139.9 | >140.0 | MIN   | MED  | MAX   |
| 16 SEP 80 | 130 | 22.6 | 16.5 | 72                    | 50           | 4            | 2            | 1            | 0              | 1              | 0      | 6.0   | 18.0 | 125.0 |
| 14 OCT 80 | 284 | 31.4 | 12.8 | 56                    | 139          | 82           | 6            | 1            | 0              | 0              | 0      | 7.0   | 30.0 | 80.0  |
| 19 NOV 80 | 4   | 36.0 | 5.5  | 0                     | 3            | 1            | 0            | 0            | 0              | 0              | 0      | 30.0  | 35.0 | 44.0  |
| 10 DEC 80 | 8   | 31.9 | 13.4 | 1                     | 6            | 1            | 0            | 0            | 0              | 0              | 0      | 10.0  | 33.0 | 59.0  |
| 14 JAN 81 | 0   | 0.0  | 0.0  | 0                     | 0            | 0            | 0            | 0            | 0              | 0              | 0      | 0.0   | 0.0  | 0.0   |
| 12 FEB 81 | 19  | 36.3 | 17.5 | 5                     | 5            | 7            | 2            | 0            | 0              | 0              | 0      | 10.0  | 35.0 | 74.0  |
| 24 MAR 81 | 1   | 32.0 | 0.0  | 0                     | 1            | 0            | 0            | 0            | 0              | 0              | 0      | 32.0  | 32.0 | 32.0  |
| 15 APR 81 | 246 | 26.8 | 13.3 | 87                    | 122          | 33           | 3            | 0            | 0              | 1              | 0      | 9.0   | 24.0 | 136.0 |
| 12 MAY 81 | 40  | 33.2 | 24.0 | 13                    | 14           | 11           | 1            | 0            | 0              | 0              | 1      | 10.0  | 26.0 | 150.0 |
| 9 JUN 81  | 23  | 38.2 | 24.6 | 6                     | 10           | 1            | 4            | 1            | 1              | 0              | 0      | 10.0  | 29.0 | 101.0 |
| 15 JUL 81 | 110 | 55.6 | 31.3 | 0                     | 47           | 27           | 12           | 9            | 11             | 2              | 2      | 21.0  | 44.0 | 153.0 |
| 12 AUG 81 | 33  | 58.8 | 44.9 | 12                    | 1            | 4            | 6            | 4            | 2              | 3              | 1      | 9.0   | 48.0 | 159.0 |

N=NUMBER OF LENGTHS;    MIN=SHORTEST LENGTH  
 X=MEAN LENGTH;        MED=MEDIAN LENGTH  
 SD=STANDARD DEVIATION;    MAX=GREATEST LENGTH  
 NA=DATA NOT AVAILABLE



TABLE 3-10 (CONT.)

## 45.7-m Seine

| DATE      | N   | X    | SD   | LENGTH INTERVALS (MM) |              |              |              |              |                |                |        | RANGE |      |       |
|-----------|-----|------|------|-----------------------|--------------|--------------|--------------|--------------|----------------|----------------|--------|-------|------|-------|
|           |     |      |      | 0.0<br>19.9           | 20.0<br>39.9 | 40.0<br>59.9 | 60.0<br>79.9 | 80.0<br>99.9 | 100.0<br>119.9 | 120.0<br>139.9 | >140.0 | MIN   | MED  | MAX   |
| 16 SEP 80 | 476 | 39.7 | 21.6 | 34                    | 288          | 103          | 15           | 18           | 12             | 5              | 1      | 10.0  | 34.0 | 145.0 |
| 14 OCT 80 | 403 | 41.1 | 14.8 | 25                    | 160          | 183          | 29           | 3            | 2              | 1              | 0      | 11.0  | 40.0 | 125.0 |
| 19 NOV 80 | 77  | 41.4 | 18.6 | 4                     | 34           | 31           | 6            | 1            | 0              | 0              | 1      | 13.0  | 40.0 | 155.0 |
| 10 DEC 80 | 75  | 39.0 | 17.7 | 1                     | 47           | 23           | 2            | 1            | 0              | 0              | 1      | 16.0  | 34.0 | 150.0 |
| 14 JAN 81 | 1   | 13.0 | 0.0  | 1                     | 0            | 0            | 0            | 0            | 0              | 0              | 0      | 13.0  | 13.0 | 13.0  |
| 12 FEB 81 | 42  | 40.7 | 12.2 | 2                     | 17           | 21           | 2            | 0            | 0              | 0              | 0      | 14.0  | 45.0 | 65.0  |
| 24 MAR 81 | 47  | 36.2 | 12.8 | 4                     | 28           | 12           | 3            | 0            | 0              | 0              | 0      | 18.0  | 35.0 | 65.0  |
| 15 APR 81 | 447 | 39.2 | 19.7 | 57                    | 178          | 171          | 31           | 2            | 2              | 3              | 3      | 9.0   | 37.0 | 155.0 |
| 12 MAY 81 | 304 | 47.0 | 19.0 | 26                    | 76           | 130          | 66           | 1            | 4              | 0              | 1      | 14.0  | 50.0 | 151.0 |
| 9 JUN 81  | 192 | 66.6 | 25.1 | 2                     | 39           | 20           | 64           | 52           | 11             | 4              | 0      | 16.0  | 70.0 | 137.0 |
| 15 JUL 81 | 407 | 72.6 | 27.8 | 0                     | 52           | 109          | 75           | 90           | 61             | 18             | 2      | 22.0  | 71.0 | 155.0 |
| 12 AUG 81 | 197 | 76.7 | 29.3 | 0                     | 11           | 54           | 50           | 33           | 31             | 10             | 8      | 25.0  | 72.0 | 152.0 |

N=NUMBER OF LENGTHS;    MIN=SHORTEST LENGTH  
 X=MEAN LENGTH;        MED=MEDIAN LENGTH  
 SD=STANDARD DEVIATION;    MAX=GREATEST LENGTH  
 NA=DATA NOT AVAILABLE

TABLE 3-11 MEAN NUMBER PER HAUL OF GRASS SHRIMP (*Palaemonetes* spp.) COLLECTED BY OTTER TRAWL,  
12.2-m SEINE, AND 45.7-m SEINE IN BARNEGAT BAY, SEPTEMBER 1980 - AUGUST 1981

| Otter Trawl |         |      |       |       |       |       |      |       |       |
|-------------|---------|------|-------|-------|-------|-------|------|-------|-------|
| DATE        | STATION |      |       |       |       |       |      |       | MEAN  |
|             | CDCD    | CDCN | FKRD  | FKRN  | DBCD  | DBCN  | OYCD | OYCN  |       |
| 9 SEP 80    | 0.0     | 0.0  | 1.0   | 10.5  | 2.5   | 7.5   | 0.0  | 17.0  | 4.8   |
| 7 OCT 80    | 0.0     | 1.0  | 12.5  | 4.0   | 3.5   | 21.0  | 0.0  | 3.5   | 5.7   |
| 5 NOV 80    | 20.5    | 1.5  | 22.5  | 31.5  | 152.0 | 10.0  | 0.5  | 8.5   | 30.9  |
| 4 DEC 80    | 0.5     | 7.0  | 135.0 | 312.5 | 24.5  | 389.0 | 0.0  | 82.5  | 118.9 |
| 7 JAN 81    | --      | --   | 31.0  | 40.5  | --    | --    | 2.0  | 15.5  | 22.3  |
| 4 FEB 81    | 1.0     | 1.5  | 16.5  | 14.5  | 91.0  | 7.5   | 2.0  | 11.0  | 18.1  |
| 3 MAR 81    | 0.0     | 2.0  | 0.0   | 87.5  | 13.5  | 41.0  | 2.5  | 67.5  | 26.8  |
| 7 APR 81    | 1.0     | 5.0  | 11.5  | 93.5  | 3.0   | 44.5  | 1.5  | 112.5 | 34.1  |
| 5 MAY 81    | 2.0     | 2.5  | 1.0   | 24.5  | 16.5  | 40.5  | 0.0  | 25.0  | 14.0  |
| 3 JUN 81    | 10.5    | 1.0  | 4.0   | 32.5  | 29.5  | 111.0 | 2.0  | 27.5  | 27.3  |
| 8 JUL 81    | 0.0     | 24.0 | 0.0   | 2.0   | 4.5   | 31.5  | 5.0  | 15.5  | 10.3  |
| 5 AUG 81    | 1.5     | 8.0  | 0.0   | 1.0   | 2.0   | 28.0  | 0.0  | 7.0   | 5.9   |
| MEAN        | 3.4     | 4.9  | 19.6  | 54.5  | 31.1  | 66.5  | 1.3  | 32.8  | 26.8  |

TABLE 3-11 (CONT.)

## 12.2-m Seine

| DATE      | STATION |      |      |       |      |      |      |       | MEAN |
|-----------|---------|------|------|-------|------|------|------|-------|------|
|           | CDCD    | CDCN | FKRD | FKRN  | DBCD | DBCN | OYCD | OYCN  |      |
| 16 SEP 80 | 0.0     | 6.0  | 0.0  | 17.0  | 3.0  | 29.0 | 0.0  | 7.5   | 7.8  |
| 14 OCT 80 | 6.0     | 4.0  | 2.5  | 12.0  | 14.5 | 23.0 | 1.0  | 6.0   | 8.6  |
| 19 NOV 80 | 3.0     | 90.5 | 1.0  | 96.5  | 7.0  | 78.5 | 14.0 | 15.5  | 38.3 |
| 10 DEC 80 | 1.0     | 4.5  | 3.5  | 198.0 | 0.5  | 8.5  | 2.0  | 40.0  | 34.3 |
| 14 JAN 81 | --      | --   | 0.0  | 9.0   | --   | --   | 0.0  | 0.0   | 2.3  |
| 12 FEB 81 | 0.5     | 1.5  | 3.0  | 1.0   | 7.5  | 21.0 | 2.0  | 9.0   | 5.7  |
| 24 MAR 81 | 0.5     | 10.0 | 1.5  | 35.0  | 0.5  | 15.0 | 0.0  | 12.0  | 9.3  |
| 15 APR 81 | 1.0     | 35.0 | 0.0  | 48.0  | 6.0  | 61.5 | 41.5 | 33.0  | 28.3 |
| 12 MAY 81 | 6.0     | 18.5 | 7.5  | 51.5  | 5.5  | 76.0 | 6.0  | 34.5  | 25.7 |
| 9 JUN 81  | 13.5    | 71.0 | 0.0  | 14.0  | 16.0 | 56.0 | 14.5 | 93.0  | 34.8 |
| 15 JUL 81 | 5.5     | 24.0 | 0.0  | 2.5   | 19.0 | 16.0 | 33.0 | 29.0  | 16.1 |
| 12 AUG 81 | 0.5     | 4.5  | 21.5 | 3.0   | 3.0  | 76.0 | 4.0  | 136.5 | 31.1 |
| MEAN      | 3.4     | 24.5 | 3.4  | 40.6  | 7.5  | 41.9 | 10.2 | 34.7  | 20.9 |

TABLE 3-11 (CONT.)

## 45.7-m Seine

| DATE      | STATION |      |      |       |      |      |      |      | MEAN |
|-----------|---------|------|------|-------|------|------|------|------|------|
|           | CDCD    | CDCN | FKRD | FKRN  | DBCD | DBCN | OYCD | OYCN |      |
| 16 SEP 80 | 0.0     | 0.0  | 0.0  | 0.5   | 0.0  | 1.5  | 0.5  | 0.0  | 0.3  |
| 14 OCT 80 | 0.0     | 0.0  | 0.5  | 0.5   | 5.0  | 0.0  | 0.0  | 2.0  | 1.0  |
| 19 NOV 80 | 0.5     | 1.0  | 0.0  | 49.0  | 2.5  | 0.5  | 2.5  | 0.5  | 7.1  |
| 10 DEC 80 | 0.5     | 0.0  | 2.0  | 228.5 | 1.0  | 1.5  | 0.5  | 0.0  | 29.3 |
| 14 JAN 81 | --      | --   | 0.0  | 1.5   | --   | --   | 0.0  | 0.0  | 0.4  |
| 12 FEB 81 | 0.0     | 0.0  | 0.5  | 0.5   | 0.0  | 0.5  | 1.0  | 0.0  | 0.3  |
| 24 MAR 81 | 0.0     | 0.0  | 0.0  | 8.5   | 0.0  | 0.5  | 0.5  | 0.5  | 1.2  |
| 15 APR 81 | 0.5     | 0.5  | 39.0 | 47.0  | 2.0  | 11.5 | 1.0  | 8.5  | 13.8 |
| 12 MAY 81 | 4.0     | 2.0  | 9.0  | 24.5  | 3.5  | 4.0  | 0.0  | 1.0  | 6.0  |
| 9 JUN 81  | 6.5     | 2.5  | 14.5 | 6.0   | 2.5  | 25.5 | 6.0  | 4.5  | 8.5  |
| 15 JUL 81 | 1.0     | 1.0  | 0.0  | 2.0   | 0.0  | 3.5  | 0.0  | 0.5  | 1.0  |
| 12 AUG 81 | 0.0     | 0.0  | 0.0  | 0.5   | 1.0  | 4.0  | 0.0  | 0.0  | 0.7  |
| MEAN      | 1.2     | 0.6  | 5.5  | 30.8  | 1.6  | 4.8  | 1.0  | 1.5  | 6.0  |

TABLE 3-12 MEAN NUMBER PER HAUL OF SUMMER FLOUNDER (*Paralichthys dentatus*) COLLECTED BY OTTER TRAWL AND 45.7-m SEINE IN BARNEGAT BAY, SEPTEMBER 1980 - AUGUST 1981

| DATE     | Otter Trawl |      |      |      |      |      |      |      |      |  |  |
|----------|-------------|------|------|------|------|------|------|------|------|--|--|
|          | CDGD        | CDCN | FKRD | FKRN | DBCD | DBCN | OYCD | OYCN | MEAN |  |  |
| 9 SEP 80 | 0.0         | 0.5  | 0.5  | 1.5  | 1.5  | 6.5  | 0.5  | 0.0  | 1.4  |  |  |
| 7 OCT 80 | 0.5         | 2.0  | 1.5  | 1.5  | 0.0  | 1.0  | 1.0  | 0.0  | 0.9  |  |  |
| 5 NOV 80 | 0.0         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 4.5  | 5.0  | 1.2  |  |  |
| 4 DEC 80 | 0.0         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |  |  |
| 7 JAN 81 | --          | --   | 0.0  | 0.0  | --   | --   | 0.0  | 0.0  | 0.0  |  |  |
| 4 FEB 81 | 0.0         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |  |  |
| 3 MAR 81 | 0.0         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |  |  |
| 7 APR 81 | 0.0         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 4.0  | 0.5  |  |  |
| 5 MAY 81 | 0.0         | 0.0  | 1.0  | 0.5  | 0.0  | 0.0  | 2.0  | 0.5  | 0.5  |  |  |
| 3 JUN 81 | 0.5         | 0.0  | 0.5  | 5.5  | 1.0  | 1.0  | 0.0  | 0.0  | 1.1  |  |  |
| 8 JUL 81 | 0.5         | 0.0  | 0.0  | 1.0  | 1.0  | 0.0  | 0.0  | 0.0  | 0.3  |  |  |
| 5 AUG 81 | 0.5         | 0.0  | 0.0  | 1.0  | 0.5  | 0.0  | 0.0  | 0.0  | 0.2  |  |  |
| MEAN     | 0.2         | 0.2  | 0.3  | 0.9  | 0.4  | 0.8  | 0.7  | 0.8  | 0.5  |  |  |

TABLE 3-12 (CONT.)

45.7-Seine

| DATE      | STATION |      |      |      |      |      |      |      |      |  |
|-----------|---------|------|------|------|------|------|------|------|------|--|
|           | CDGD    | CDCN | FKRD | FKRN | DBCD | DBCN | OYCD | OYCN | MEAN |  |
| 16 SEP 80 | 0.0     | 2.0  | 0.0  | 1.5  | 0.0  | 0.0  | 1.0  | 2.0  | 0.8  |  |
| 14 OCT 80 | 0.0     | 0.0  | 0.0  | 0.0  | 0.0  | 0.5  | 1.0  | 1.0  | 0.3  |  |
| 19 NOV 80 | 0.0     | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |  |
| 10 DEC 80 | 0.0     | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |  |
| 14 JAN 81 | --      | --   | 0.0  | 0.0  | --   | --   | 0.0  | 0.0  | 0.0  |  |
| 12 FEB 81 | 0.0     | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |  |
| 24 MAR 81 | 0.0     | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |  |
| 15 APR 81 | 0.0     | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.5  | 0.1  |  |
| 12 MAY 81 | 0.0     | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.5  | 0.1  |  |
| 9 JUN 81  | 0.0     | 0.0  | 0.0  | 0.0  | 0.0  | 0.5  | 0.0  | 0.0  | 0.1  |  |
| 15 JUL 81 | 0.0     | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |  |
| 12 AUG 81 | 0.0     | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |  |
| MEAN      | 0.0     | 0.2  | 0.0  | 0.1  | 0.0  | 0.1  | 0.2  | 0.3  | 0.1  |  |



TABLE 3-13 LENGTH-FREQUENCY DISTRIBUTION OF SUMMER FLOUNDER (*Paralichthys dentatus*) COLLECTED BY OTTER TRAWL IN BARNEGAT BAY, SEPTEMBER 1980 - AUGUST 1981

| DATE     | N  | X     | SD   | LENGTH INTERVALS (MM) |              |                |                |                |                |                |        | RANGE |       |       |
|----------|----|-------|------|-----------------------|--------------|----------------|----------------|----------------|----------------|----------------|--------|-------|-------|-------|
|          |    |       |      | 0.0<br>49.9           | 50.0<br>99.9 | 100.0<br>149.9 | 150.0<br>199.9 | 200.0<br>249.9 | 250.0<br>299.9 | 300.0<br>349.9 | >350.0 | MIN   | MED   | MAX   |
| 9 SEP 80 | 22 | 207.6 | 58.3 | 0                     | 0            | 6              | 1              | 11             | 3              | 0              | 1      | 116.0 | 230.5 | 355.0 |
| 7 OCT 80 | 15 | 241.0 | 29.9 | 0                     | 0            | 0              | 3              | 5              | 7              | 0              | 0      | 179.0 | 244.0 | 284.0 |
| 5 NOV 80 | 19 | 246.5 | 31.7 | 0                     | 0            | 0              | 3              | 8              | 7              | 1              | 0      | 190.0 | 242.0 | 301.0 |
| 4 DEC 80 | 0  | 0.0   | 0.0  | 0                     | 0            | 0              | 0              | 0              | 0              | 0              | 0      | 0.0   | 0.0   | 0.0   |
| 7 JAN 81 | 0  | 0.0   | 0.0  | 0                     | 0            | 0              | 0              | 0              | 0              | 0              | 0      | 0.0   | 0.0   | 0.0   |
| 4 FEB 81 | 0  | 0.0   | 0.0  | 0                     | 0            | 0              | 0              | 0              | 0              | 0              | 0      | 0.0   | 0.0   | 0.0   |
| 3 MAR 81 | 0  | 0.0   | 0.0  | 0                     | 0            | 0              | 0              | 0              | 0              | 0              | 0      | 0.0   | 0.0   | 0.0   |
| 7 APR 81 | 8  | 222.9 | 27.9 | 0                     | 0            | 0              | 2              | 5              | 1              | 0              | 0      | 175.0 | 232.0 | 254.0 |
| 5 MAY 81 | 8  | 243.3 | 27.2 | 0                     | 0            | 0              | 0              | 4              | 4              | 0              | 0      | 202.0 | 252.5 | 284.0 |
| 3 JUN 81 | 17 | 265.2 | 52.6 | 0                     | 1            | 0              | 0              | 2              | 11             | 3              | 0      | 76.0  | 278.0 | 314.0 |
| 8 JUL 81 | 5  | 255.4 | 48.0 | 0                     | 0            | 0              | 1              | 0              | 4              | 0              | 0      | 160.0 | 278.0 | 286.0 |
| 5 AUG 81 | 4  | 245.8 | 92.6 | 0                     | 0            | 1              | 0              | 1              | 0              | 2              | 0      | 115.0 | 265.0 | 338.0 |

N=NUMBER OF LENGTHS; MIN=SHORTEST LENGTH  
 X=MEAN LENGTH; MED=MEDIAN LENGTH  
 SD=STANDARD DEVIATION; MAX=GREATEST LENGTH  
 NA=DATA NOT AVAILABLE

TABLE 3-14 MEAN NUMBER PER HAUL OF WINTER FLOUNDER (*Pseudopleuronectes americanus*) COLLECTED BY OTTER TRAWL AND 45.7-m SEINE IN BARNEGAT BAY, SEPTEMBER 1980 - AUGUST 1981

| Otter Trawl |         |      |      |      |      |      |      |      |      |
|-------------|---------|------|------|------|------|------|------|------|------|
| DATE        | STATION |      |      |      |      |      |      |      |      |
|             | CDCD    | CDCN | FKRD | FKRN | DBCD | DBCN | OYCD | OYCN | MEAN |
| 9 SEP 80    | 0.0     | 0.0  | 0.0  | 0.0  | 0.0  | 0.5  | 0.5  | 0.0  | 0.1  |
| 7 OCT 80    | 0.0     | 0.5  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.1  |
| 5 NOV 80    | 0.5     | 0.0  | 0.0  | 0.0  | 0.5  | 0.5  | 0.5  | 0.0  | 0.2  |
| 4 DEC 80    | 1.0     | 1.5  | 0.0  | 1.5  | 0.0  | 0.0  | 18.0 | 17.5 | 4.9  |
| 7 JAN 81    | --      | --   | 0.0  | 0.0  | --   | --   | 4.5  | 6.0  | 2.6  |
| 4 FEB 81    | 0.5     | 1.0  | 1.0  | 3.5  | 0.0  | 0.5  | 3.5  | 33.5 | 5.4  |
| 3 MAR 81    | 0.0     | 0.0  | 2.0  | 1.0  | 1.0  | 0.0  | 9.0  | 44.5 | 7.2  |
| 7 APR 81    | 0.5     | 0.0  | 0.0  | 0.0  | 2.5  | 2.0  | 2.0  | 7.5  | 1.8  |
| 5 MAY 81    | 0.0     | 0.5  | 3.0  | 5.5  | 1.5  | 0.5  | 14.0 | 24.5 | 6.2  |
| 3 JUN 81    | 0.0     | 0.0  | 2.0  | 11.5 | 0.0  | 2.5  | 0.0  | 0.0  | 2.0  |
| 8 JUL 81    | 0.0     | 0.0  | 0.0  | 5.0  | 1.0  | 4.5  | 0.0  | 0.0  | 1.3  |
| 5 AUG 81    | 0.0     | 0.5  | 0.0  | 0.0  | 0.5  | 0.5  | 0.0  | 0.0  | 0.2  |
| MEAN        | 0.2     | 0.4  | 0.7  | 2.3  | 0.6  | 1.0  | 4.3  | 11.1 | 2.7  |

TABLE 3-14 (CONT.)

45.7-m Seine

STATION

| DATE      | CDGD | CDCN | FKRD | FKRN | DBCD | DBCN | OYCD | OYCN | MEAN |
|-----------|------|------|------|------|------|------|------|------|------|
| 16 SEP 80 | 0.0  | 1.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.1  |
| 14 OCT 80 | 0.0  | 1.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.1  |
| 19 NOV 80 | 0.0  | 1.0  | 0.0  | 2.5  | 0.0  | 0.0  | 1.0  | 3.5  | 1.0  |
| 10 DEC 80 | 0.0  | 0.5  | 0.0  | 1.0  | 0.0  | 0.0  | 0.5  | 3.5  | 0.7  |
| 14 JAN 81 | --   | --   | 0.0  | 0.0  | --   | --   | 0.0  | 0.0  | 0.0  |
| 12 FEB 81 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 1.0  | 0.0  | 0.0  | 0.1  |
| 24 MAR 81 | 0.0  | 1.0  | 0.0  | 0.5  | 0.0  | 0.5  | 0.0  | 1.0  | 0.4  |
| 15 APR 81 | 0.5  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.5  | 0.1  |
| 12 MAY 81 | 0.0  | 0.5  | 0.0  | 2.5  | 0.0  | 0.0  | 0.0  | 0.0  | 0.4  |
| 9 JUN 81  | 0.5  | 6.0  | 0.5  | 2.0  | 0.5  | 8.5  | 0.0  | 0.0  | 2.3  |
| 15 JUL 81 | 0.0  | 0.0  | 0.0  | 0.0  | 3.5  | 3.5  | 0.0  | 0.0  | 0.9  |
| 12 AUG 81 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 2.5  | 0.0  | 0.0  | 0.3  |
| MEAN      | 0.1  | 1.0  | 0.0  | 0.7  | 0.4  | 1.5  | 0.1  | 0.7  | 0.6  |

TABLE 3-15 LENGTH-FREQUENCY DISTRIBUTION OF WINTER FLOUNDER (*Pseudopleuronectes americana*) COLLECTED BY OTTER TRAWL AND 45.7-m SEINE IN BARNEGAT BAY, SEPTEMBER 1980 - AUGUST 1981

| Otter Trawl |     |       |      |                       |              |                |                |                |                |                |        |       |       |       |       |
|-------------|-----|-------|------|-----------------------|--------------|----------------|----------------|----------------|----------------|----------------|--------|-------|-------|-------|-------|
| DATE        | N   | X     | SD   | LENGTH INTERVALS (MM) |              |                |                |                |                |                |        | RANGE |       |       |       |
|             |     |       |      | 0.0<br>49.9           | 50.0<br>99.9 | 100.0<br>149.9 | 150.0<br>199.9 | 200.0<br>249.9 | 250.0<br>299.9 | 300.0<br>349.9 | >350.0 | MIN   | MED   | MAX   |       |
| 9 SEP 80    | 2   | 64.5  | 6.5  | 0                     | 2            | 0              | 0              | 0              | 0              | 0              | 0      | 0     | 58.0  | 64.5  | 71.0  |
| 7 OCT 80    | 1   | 253.0 | 0.0  | 0                     | 0            | 0              | 0              | 0              | 1              | 0              | 0      | 0     | 253.0 | 253.0 | 253.0 |
| 5 NOV 80    | 4   | 210.5 | 69.7 | 0                     | 0            | 1              | 1              | 0              | 2              | 0              | 0      | 0     | 107.0 | 226.5 | 282.0 |
| 4 DEC 80    | 79  | 185.9 | 96.7 | 0                     | 24           | 17             | 1              | 7              | 16             | 11             | 3      | 3     | 66.0  | 130.0 | 357.0 |
| 7 JAN 81    | 21  | 262.1 | 82.5 | 0                     | 0            | 4              | 1              | 2              | 4              | 9              | 1      | 1     | 105.0 | 297.0 | 360.0 |
| 4 FEB 81    | 87  | 225.8 | 84.9 | 0                     | 7            | 16             | 8              | 14             | 20             | 20             | 2      | 2     | 66.0  | 249.0 | 371.0 |
| 3 MAR 81    | 115 | 157.9 | 71.6 | 0                     | 10           | 69             | 6              | 6              | 18             | 6              | 0      | 0     | 83.0  | 119.0 | 336.0 |
| 7 APR 81    | 29  | 156.7 | 60.9 | 0                     | 0            | 21             | 3              | 1              | 3              | 1              | 0      | 0     | 101.0 | 138.0 | 320.0 |
| 5 MAY 81    | 98  | 156.6 | 18.5 | 0                     | 0            | 35             | 62             | 1              | 0              | 0              | 0      | 0     | 105.0 | 158.0 | 201.0 |
| 3 JUN 81    | 32  | 56.0  | 24.8 | 15                    | 16           | 0              | 1              | 0              | 0              | 0              | 0      | 0     | 36.0  | 52.5  | 184.0 |
| 8 JUL 81    | 21  | 65.6  | 25.7 | 3                     | 17           | 0              | 1              | 0              | 0              | 0              | 0      | 0     | 38.0  | 60.0  | 169.0 |
| 5 AUG 81    | 3   | 56.7  | 8.6  | 1                     | 2            | 0              | 0              | 0              | 0              | 0              | 0      | 0     | 46.0  | 57.0  | 67.0  |

N=NUMBER OF LENGTHS; MIN=SHORTEST LENGTH  
 X=MEAN LENGTH; MED=MEDIAN LENGTH  
 SD=STANDARD DEVIATION; MAX=GREATEST LENGTH  
 NA=DATA NOT AVAILABLE

TABLE 3-15 (CONT.)

## 45.7-Seine

| DATE      | N  | X     | SD   | LENGTH INTERVALS (MM) |              |                |                |                |                |                |        | RANGE |       |       |       |
|-----------|----|-------|------|-----------------------|--------------|----------------|----------------|----------------|----------------|----------------|--------|-------|-------|-------|-------|
|           |    |       |      | 0.0<br>49.9           | 50.0<br>99.9 | 100.0<br>149.9 | 150.0<br>199.9 | 200.0<br>249.9 | 250.0<br>299.9 | 300.0<br>349.9 | >350.0 | MIN   | MED   | MAX   |       |
| 16 SEP 80 | 2  | 66.5  | 5.5  | 0                     | 2            | 0              | 0              | 0              | 0              | 0              | 0      | 0     | 61.0  | 66.5  | 72.0  |
| 14 OCT 80 | 2  | 104.0 | 7.0  | 0                     | 1            | 1              | 0              | 0              | 0              | 0              | 0      | 0     | 97.0  | 104.0 | 111.0 |
| 19 NOV 80 | 16 | 101.4 | 50.6 | 0                     | 11           | 4              | 0              | 0              | 1              | 0              | 0      | 0     | 65.0  | 88.5  | 289.0 |
| 10 DEC 80 | 11 | 92.3  | 17.0 | 0                     | 8            | 3              | 0              | 0              | 0              | 0              | 0      | 0     | 63.0  | 88.0  | 122.0 |
| 14 JAN 81 | 0  | 0.0   | 0.0  | 0                     | 0            | 0              | 0              | 0              | 0              | 0              | 0      | 0     | 0.0   | 0.0   | 0.0   |
| 12 FEB 81 | 2  | 264.5 | 53.5 | 0                     | 0            | 0              | 0              | 1              | 0              | 1              | 0      | 0     | 211.0 | 264.5 | 318.0 |
| 24 MAR 81 | 6  | 132.0 | 61.6 | 0                     | 3            | 2              | 0              | 0              | 1              | 0              | 0      | 0     | 84.0  | 112.5 | 263.0 |
| 15 APR 81 | 2  | 107.0 | 1.0  | 0                     | 0            | 2              | 0              | 0              | 0              | 0              | 0      | 0     | 106.0 | 107.0 | 108.0 |
| 12 MAY 81 | 6  | 61.5  | 43.7 | 5                     | 0            | 0              | 1              | 0              | 0              | 0              | 0      | 0     | 38.0  | 42.5  | 159.0 |
| 9 JUN 81  | 36 | 59.5  | 8.4  | 2                     | 34           | 0              | 0              | 0              | 0              | 0              | 0      | 0     | 40.0  | 56.5  | 75.0  |
| 15 JUL 81 | 14 | 66.7  | 6.8  | 0                     | 14           | 0              | 0              | 0              | 0              | 0              | 0      | 0     | 54.0  | 67.5  | 78.0  |
| 12 AUG 81 | 5  | 67.4  | 8.5  | 0                     | 5            | 0              | 0              | 0              | 0              | 0              | 0      | 0     | 58.0  | 67.0  | 81.0  |

N=NUMBER OF LENGTHS; MIN=SHORTEST LENGTH  
 X=MEAN LENGTH; MED=MEDIAN LENGTH  
 SD=STANDARD DEVIATION; MAX=GREATEST LENGTH  
 NA=DATA NOT AVAILABLE

TABLE 3-16 MEAN NUMBER PER HAUL OF ATLANTIC SILVERSIDE (*Menidia menidia*) COLLECTED BY 12.2-m AND 45.7-m SEINES IN BARNEGAT BAY, SEPTEMBER 1980 - AUGUST 1981

| 12.2-m Seine |       |       |        |        |        |       |        |         |        |
|--------------|-------|-------|--------|--------|--------|-------|--------|---------|--------|
| STATION      |       |       |        |        |        |       |        |         |        |
| DATE         | CDCD  | CDCN  | FKRD   | FKRN   | DBCD   | DBCN  | OYCD   | OYCN    | MEAN   |
| 16 SEP 80    | 35.5  | 1.0   | 118.5  | 4.5    | 89.5   | 14.5  | 10.5   | 0.5     | 34.3   |
| 14 OCT 80    | 0.0   | 43.5  | 26.0   | 93.0   | 4.0    | 19.5  | 0.0    | 0.0     | 23.3   |
| 19 NOV 80    | 1.5   | 0.0   | 6.0    | 0.0    | 4.5    | 0.5   | 157.5  | 80.5    | 31.3   |
| 10 DEC 80    | 0.0   | 1.0   | 13.0   | 0.5    | 1.5    | 9.0   | 170.0  | 212.5   | 43.0   |
| 14 JAN 81    | --    | --    | 1.0    | 0.0    | --     | --    | 2.5    | 0.0     | 0.9    |
| 12 FEB 81    | 0.0   | 0.0   | 0.0    | 2.0    | 24.5   | 1.0   | 67.0   | 228.5   | 40.4   |
| 24 MAR 81    | 0.0   | 10.0  | 8.5    | 0.0    | 0.0    | 37.5  | 4.5    | 2.5     | 7.9    |
| 15 APR 81    | 0.5   | 7.5   | 15.5   | 26.0   | 273.0  | 0.0   | 53.0   | 0.0     | 46.9   |
| 12 MAY 81    | 0.5   | 3.5   | 28.5   | 2.0    | 18.0   | 1.5   | 0.0    | 11.5    | 8.2    |
| 9 JUN 81     | 94.0  | 210.0 | 4503.5 | 1531.0 | 1102.5 | 439.5 | 4261.5 | 10653.0 | 2849.4 |
| 15 JUL 81    | 213.0 | 69.5  | 144.5  | 189.5  | 178.0  | 69.5  | 241.0  | 232.0   | 167.1  |
| 12 AUG 81    | 121.0 | 24.5  | 196.0  | 54.0   | 245.5  | 219.0 | 38.0   | 40.5    | 117.3  |
| MEAN         | 42.4  | 33.7  | 421.8  | 158.5  | 176.5  | 73.8  | 427.9  | 955.1   | 294.4  |



TABLE 3-16 (CONT.)

## 45.7-m Seine

| DATE      | STATION |      |        |      |       |      |       |      | MEAN  |
|-----------|---------|------|--------|------|-------|------|-------|------|-------|
|           | CDCD    | CDCN | FKRD   | FKRN | DBCD  | DBCN | OYCD  | OYCN |       |
| 16 SEP 80 | 5.5     | 0.0  | 15.0   | 0.5  | 30.0  | 0.0  | 1.0   | 0.0  | 6.5   |
| 14 OCT 80 | 0.0     | 21.0 | 1.5    | 15.5 | 1.5   | 2.0  | 0.0   | 0.0  | 5.2   |
| 19 NOV 80 | 0.0     | 0.0  | 0.5    | 0.0  | 0.0   | 1.5  | 26.0  | 7.5  | 4.4   |
| 10 DEC 80 | 0.5     | 0.0  | 0.0    | 0.5  | 0.0   | 0.5  | 8.0   | 5.0  | 1.8   |
| 14 JAN 81 | --      | --   | 0.0    | 0.0  | --    | --   | 6.0   | 0.5  | 1.6   |
| 12 FEB 81 | 0.0     | 0.0  | 0.0    | 0.0  | 0.0   | 0.5  | 164.5 | 43.0 | 26.0  |
| 24 MAR 81 | 0.0     | 7.0  | 0.5    | 0.0  | 84.0  | 0.5  | 15.0  | 56.0 | 20.4  |
| 15 APR 81 | 0.0     | 4.5  | 105.0  | 23.5 | 101.0 | 2.0  | 16.5  | 1.5  | 31.8  |
| 12 MAY 81 | 9.0     | 6.0  | 60.5   | 2.0  | 35.5  | 1.0  | 103.0 | 13.5 | 28.8  |
| 9 JUN 81  | 186.0   | 1.5  | 1150.5 | 11.0 | 722.5 | 13.5 | 790.0 | 36.0 | 363.9 |
| 15 JUL 81 | 25.0    | 3.5  | 17.5   | 5.0  | 0.0   | 1.0  | 2.0   | 12.0 | 8.3   |
| 12 AUG 81 | 6.5     | 1.5  | 0.5    | 1.5  | 35.5  | 4.0  | 1.5   | 8.0  | 7.4   |
| MEAN      | 21.1    | 4.1  | 112.6  | 5.0  | 91.8  | 2.4  | 94.5  | 15.3 | 43.9  |

TABLE 3-17 LENGTH-FREQUENCY DISTRIBUTION OF ATLANTIC SILVERSIDE (*Menidia menidia*) COLLECTED BY 12.2-m AND 45.7-m SEINES IN BARNEGAT BAY, SEPTEMBER 1980 - AUGUST 1981

12.2-m Seine

| DATE      | N   | X     | SD   | LENGTH INTERVALS (MM) |              |              |              |              |                |                |        | RANGE |       |       |
|-----------|-----|-------|------|-----------------------|--------------|--------------|--------------|--------------|----------------|----------------|--------|-------|-------|-------|
|           |     |       |      | 0.0<br>19.9           | 20.0<br>39.9 | 40.0<br>59.9 | 60.0<br>79.9 | 80.0<br>99.9 | 100.0<br>119.9 | 120.0<br>139.9 | >140.0 | MIN   | MED   | MAX   |
| 16 SEP 80 | 333 | 78.6  | 10.9 | 0                     | 0            | 18           | 153          | 155          | 6              | 1              | 0      | 43.0  | 79.0  | 124.0 |
| 14 OCT 80 | 282 | 81.0  | 15.5 | 0                     | 0            | 30           | 93           | 128          | 29             | 2              | 0      | 43.0  | 82.0  | 129.0 |
| 19 NOV 80 | 218 | 78.2  | 19.6 | 0                     | 0            | 52           | 73           | 58           | 32             | 3              | 0      | 41.0  | 77.0  | 129.0 |
| 10 DEC 80 | 202 | 76.7  | 10.3 | 0                     | 1            | 6            | 133          | 56           | 6              | 0              | 0      | 37.0  | 76.0  | 113.0 |
| 14 JAN 81 | 7   | 83.4  | 8.0  | 0                     | 0            | 0            | 2            | 4            | 1              | 0              | 0      | 75.0  | 82.0  | 101.0 |
| 12 FEB 81 | 248 | 79.6  | 11.7 | 0                     | 0            | 9            | 120          | 105          | 16             | 0              | 0      | 51.0  | 79.0  | 114.0 |
| 24 MAR 81 | 126 | 90.0  | 11.0 | 0                     | 0            | 0            | 22           | 80           | 24             | 0              | 0      | 62.0  | 90.0  | 115.0 |
| 15 APR 81 | 250 | 98.7  | 57.9 | 0                     | 0            | 0            | 22           | 135          | 92             | 0              | 1      | 61.0  | 96.0  | 995.0 |
| 12 MAY 81 | 125 | 100.3 | 10.8 | 0                     | 0            | 0            | 6            | 53           | 64             | 2              | 0      | 76.0  | 101.0 | 125.0 |
| 9 JUN 81  | 976 | 36.1  | 30.2 | 248                   | 544          | 0            | 12           | 94           | 71             | 7              | 0      | 12.0  | 23.0  | 130.0 |
| 15 JUL 81 | 825 | 45.8  | 15.6 | 5                     | 281          | 456          | 54           | 8            | 20             | 1              | 0      | 14.0  | 45.0  | 124.0 |
| 12 AUG 81 | 717 | 54.5  | 12.6 | 12                    | 64           | 378          | 257          | 3            | 3              | 0              | 0      | 16.0  | 55.0  | 117.0 |

N=NUMBER OF LENGTHS; MIN=SHORTEST LENGTH  
 X=MEAN LENGTH; MED=MEDIAN LENGTH  
 SD=STANDARD DEVIATION; MAX=GREATEST LENGTH  
 NA=DATA NOT AVAILABLE

TABLE 3-17 (CONT.)

## 45.7-m Seine

| DATE      | N   | X     | SD   | LENGTH INTERVALS (MM) |              |              |              |              |                |                |        | RANGE |       |       |
|-----------|-----|-------|------|-----------------------|--------------|--------------|--------------|--------------|----------------|----------------|--------|-------|-------|-------|
|           |     |       |      | 0.0<br>19.9           | 20.0<br>39.9 | 40.0<br>59.9 | 60.0<br>79.9 | 80.0<br>99.9 | 100.0<br>119.9 | 120.0<br>139.9 | >140.0 | MIN   | MED   | MAX   |
| 16 SEP 80 | 104 | 77.9  | 15.2 | 0                     | 0            | 10           | 54           | 32           | 6              | 2              | 0      | 48.0  | 76.0  | 129.0 |
| 14 OCT 80 | 83  | 91.0  | 16.1 | 0                     | 0            | 2            | 17           | 41           | 19             | 4              | 0      | 45.0  | 92.0  | 129.0 |
| 19 NOV 80 | 71  | 102.3 | 18.9 | 0                     | 0            | 1            | 8            | 19           | 29             | 14             | 0      | 52.0  | 104.0 | 136.0 |
| 10 DEC 80 | 28  | 103.5 | 16.5 | 0                     | 0            | 0            | 3            | 8            | 12             | 5              | 0      | 75.0  | 102.5 | 137.0 |
| 14 JAN 81 | 13  | 92.2  | 10.7 | 0                     | 0            | 0            | 2            | 8            | 3              | 0              | 0      | 77.0  | 92.0  | 116.0 |
| 12 FEB 81 | 126 | 93.8  | 15.7 | 0                     | 0            | 1            | 23           | 58           | 35             | 9              | 0      | 54.0  | 93.5  | 133.0 |
| 24 MAR 81 | 198 | 99.7  | 11.4 | 0                     | 0            | 0            | 8            | 79           | 105            | 6              | 0      | 71.0  | 101.5 | 133.0 |
| 15 APR 81 | 292 | 107.8 | 6.5  | 0                     | 0            | 0            | 0            | 29           | 256            | 7              | 0      | 85.0  | 108.0 | 132.0 |
| 12 MAY 81 | 223 | 108.0 | 7.6  | 0                     | 0            | 0            | 1            | 29           | 180            | 13             | 0      | 79.0  | 109.0 | 130.0 |
| 9 JUN 81  | 558 | 43.9  | 35.6 | 58                    | 360          | 1            | 1            | 42           | 86             | 10             | 0      | 13.0  | 25.0  | 127.0 |
| 15 JUL 81 | 132 | 49.6  | 17.3 | 0                     | 31           | 85           | 10           | 0            | 4              | 2              | 0      | 25.0  | 48.0  | 124.0 |
| 12 AUG 81 | 106 | 53.8  | 11.3 | 0                     | 4            | 76           | 25           | 0            | 0              | 1              | 0      | 32.0  | 53.0  | 128.0 |

N=NUMBER OF LENGTHS;    MIN=SHORTEST LENGTH  
 X=MEAN LENGTH;        MED=MEDIAN LENGTH  
 SD=STANDARD DEVIATION;    MAX=GREATEST LENGTH  
 NA=DATA NOT AVAILABLE

TABLE 3-18 MEAN NUMBER PER HAUL OF BAY ANCHOVY (*Anchoa mitchilli*) COLLECTED BY OTTER TRAWL AND 12.2-m SEINE IN BARNEGAT BAY, SEPTEMBER 1980 - AUGUST 1981

| Otter Trawl |         |       |      |      |       |      |      |      |      |
|-------------|---------|-------|------|------|-------|------|------|------|------|
| DATE        | STATION |       |      |      |       |      |      |      | MEAN |
|             | CDCD    | CDCN  | FKRD | FKRN | DBCD  | DBCN | OYCD | OYCN |      |
| 9 SEP 80    | 0.0     | 27.0  | 16.0 | 8.5  | 244.5 | 27.0 | 0.0  | 3.0  | 40.8 |
| 7 OCT 80    | 0.0     | 3.0   | 0.0  | 4.0  | 1.5   | 13.0 | 0.0  | 1.0  | 2.8  |
| 5 NOV 80    | 0.5     | 0.0   | 0.0  | 0.0  | 0.0   | 0.0  | 0.5  | 0.0  | 0.1  |
| 4 DEC 80    | 0.0     | 0.0   | 0.0  | 0.0  | 1.0   | 0.0  | 5.5  | 0.0  | 0.8  |
| 7 JAN 81    | --      | --    | 0.0  | 0.0  | --    | --   | 0.0  | 0.0  | 0.0  |
| 4 FEB 81    | 0.0     | 0.0   | 0.0  | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  |
| 3 MAR 81    | 0.0     | 0.0   | 0.0  | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  |
| 7 APR 81    | 0.0     | 0.0   | 0.0  | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  |
| 5 MAY 81    | 721.5   | 7.0   | 15.5 | 3.0  | 1.0   | 8.5  | 0.0  | 0.0  | 94.6 |
| 3 JUN 81    | 131.5   | 108.5 | 0.0  | 4.0  | 61.5  | 15.0 | 0.0  | 2.0  | 40.3 |
| 8 JUL 81    | 9.0     | 31.5  | 5.5  | 5.0  | 6.0   | 21.5 | 7.5  | 3.5  | 11.2 |
| 5 AUG 81    | 160.0   | 13.5  | 18.0 | 3.5  | 40.0  | 18.0 | 5.0  | 1.0  | 32.4 |
| MEAN        | 93.0    | 17.3  | 4.6  | 2.3  | 32.3  | 9.4  | 1.5  | 0.9  | 19.4 |

TABLE 3-18 (CONT.)

12.2-m Seine

| DATE      | STATION |       |      |      |       |       |      |      |      |  |  |
|-----------|---------|-------|------|------|-------|-------|------|------|------|--|--|
|           | CDGD    | CDCN  | FKRD | FKRN | DBCD  | DBCN  | OYCD | OYCN | MEAN |  |  |
| 16 SEP 80 | 3.0     | 103.0 | 8.0  | 25.0 | 193.5 | 329.5 | 1.5  | 12.5 | 84.5 |  |  |
| 14 OCT 80 | 0.0     | 0.0   | 0.0  | 0.0  | 0.0   | 0.0   | 0.0  | 0.0  | 0.0  |  |  |
| 19 NOV 80 | 0.0     | 0.0   | 0.0  | 0.0  | 0.0   | 0.0   | 0.0  | 0.0  | 0.0  |  |  |
| 10 DEC 80 | 0.0     | 0.0   | 0.0  | 0.0  | 0.0   | 0.0   | 0.0  | 25.0 | 3.3  |  |  |
| 14 JAN 81 | --      | --    | 0.0  | 0.0  | --    | --    | 0.0  | 0.0  | 0.0  |  |  |
| 12 FEB 81 | 0.0     | 0.0   | 0.0  | 0.0  | 0.0   | 0.0   | 0.0  | 0.0  | 0.0  |  |  |
| 24 MAR 81 | 0.0     | 0.0   | 0.0  | 0.0  | 0.0   | 0.0   | 0.0  | 0.0  | 0.0  |  |  |
| 15 APR 81 | 0.0     | 0.0   | 0.0  | 0.0  | 0.0   | 0.0   | 0.0  | 0.0  | 0.0  |  |  |
| 12 MAY 81 | 0.0     | 0.5   | 0.0  | 0.0  | 0.0   | 0.0   | 0.0  | 0.5  | 0.1  |  |  |
| 9 JUN 81  | 0.0     | 1.0   | 0.0  | 2.0  | 79.0  | 6.0   | 36.5 | 27.5 | 19.0 |  |  |
| 15 JUL 81 | 5.0     | 10.5  | 0.0  | 55.0 | 15.5  | 10.5  | 2.0  | 31.0 | 16.2 |  |  |
| 12 AUG 81 | 30.0    | 72.0  | 11.0 | 20.5 | 88.5  | 243.5 | 0.5  | 27.0 | 61.6 |  |  |
| MEAN      | 3.5     | 17.0  | 1.6  | 8.5  | 34.2  | 53.6  | 3.5  | 10.3 | 16.1 |  |  |

TABLE 3-19 LENGTH-FREQUENCY DISTRIBUTION OF BAY ANCHOVY (*Anchoa mitchilli*) COLLECTED BY OTTER TRAWL AND 12.2-m SEINE IN BARNEGAT BAY, SEPTEMBER 1980 - AUGUST 1981

| Otter Trawl |     |      |      |                       |              |              |              |              |                |                |        |       |      |      |      |
|-------------|-----|------|------|-----------------------|--------------|--------------|--------------|--------------|----------------|----------------|--------|-------|------|------|------|
| DATE        | N   | X    | SD   | LENGTH INTERVALS (MM) |              |              |              |              |                |                |        | RANGE |      |      |      |
|             |     |      |      | 0.0<br>19.9           | 20.0<br>39.9 | 40.0<br>59.9 | 60.0<br>79.9 | 80.0<br>99.9 | 100.0<br>119.9 | 120.0<br>139.9 | >140.0 | MIN   | MED  | MAX  |      |
| 9 SEP 80    | 221 | 32.0 | 10.5 | 7                     | 157          | 53           | 4            | 0            | 0              | 0              | 0      | 0     | 16.0 | 29.0 | 68.0 |
| 7 OCT 80    | 45  | 35.6 | 8.1  | 0                     | 28           | 17           | 0            | 0            | 0              | 0              | 0      | 0     | 21.0 | 35.0 | 56.0 |
| 5 NOV 80    | 2   | 32.5 | 5.5  | 0                     | 2            | 0            | 0            | 0            | 0              | 0              | 0      | 0     | 27.0 | 32.5 | 38.0 |
| 4 DEC 80    | 12  | 45.1 | 11.2 | 0                     | 3            | 8            | 0            | 1            | 0              | 0              | 0      | 0     | 37.0 | 42.0 | 80.0 |
| 7 JAN 81    | 0   | 0.0  | 0.0  | 0                     | 0            | 0            | 0            | 0            | 0              | 0              | 0      | 0     | 0.0  | 0.0  | 0.0  |
| 4 FEB 81    | 0   | 0.0  | 0.0  | 0                     | 0            | 0            | 0            | 0            | 0              | 0              | 0      | 0     | 0.0  | 0.0  | 0.0  |
| 3 MAR 81    | 0   | 0.0  | 0.0  | 0                     | 0            | 0            | 0            | 0            | 0              | 0              | 0      | 0     | 0.0  | 0.0  | 0.0  |
| 7 APR 81    | 0   | 0.0  | 0.0  | 0                     | 0            | 0            | 0            | 0            | 0              | 0              | 0      | 0     | 0.0  | 0.0  | 0.0  |
| 5 MAY 81    | 120 | 61.5 | 6.4  | 0                     | 0            | 45           | 73           | 2            | 0              | 0              | 0      | 0     | 49.0 | 62.0 | 81.0 |
| 3 JUN 81    | 341 | 59.0 | 7.7  | 0                     | 2            | 182          | 153          | 4            | 0              | 0              | 0      | 0     | 34.0 | 59.0 | 86.0 |
| 8 JUL 81    | 149 | 52.6 | 16.8 | 0                     | 40           | 39           | 70           | 0            | 0              | 0              | 0      | 0     | 20.0 | 58.0 | 75.0 |
| 5 AUG 81    | 273 | 44.2 | 10.8 | 3                     | 75           | 161          | 34           | 0            | 0              | 0              | 0      | 0     | 16.0 | 42.0 | 78.0 |

N=NUMBER OF LENGTHS; MIN=SHORTEST LENGTH  
 X=MEAN LENGTH; MED=MEDIAN LENGTH  
 SD=STANDARD DEVIATION; MAX=GREATEST LENGTH  
 NA=DATA NOT AVAILABLE



TABLE 3-19 (CONT.)

12.2-m Seine

| DATE      | N   | X    | SD   | LENGTH INTERVALS (MM) |              |              |              |              |                |                |        |     |     | RANGE |      |      |
|-----------|-----|------|------|-----------------------|--------------|--------------|--------------|--------------|----------------|----------------|--------|-----|-----|-------|------|------|
|           |     |      |      | 0.0<br>19.9           | 20.0<br>39.9 | 40.0<br>59.9 | 60.0<br>79.9 | 80.0<br>99.9 | 100.0<br>119.9 | 120.0<br>139.9 | >140.0 | MIN | MED | MAX   |      |      |
| 16 SEP 80 | 341 | 35.1 | 7.8  | 0                     | 248          | 91           | 2            | 0            | 0              | 0              | 0      | 0   | 0   | 21.0  | 34.0 | 63.0 |
| 14 OCT 80 | 0   | 0.0  | 0.0  | 0                     | 0            | 0            | 0            | 0            | 0              | 0              | 0      | 0   | 0   | 0.0   | 0.0  | 0.0  |
| 19 NOV 80 | 0   | 0.0  | 0.0  | 0                     | 0            | 0            | 0            | 0            | 0              | 0              | 0      | 0   | 0   | 0.0   | 0.0  | 0.0  |
| 10 DEC 80 | 50  | 41.5 | 4.6  | 0                     | 17           | 33           | 0            | 0            | 0              | 0              | 0      | 0   | 0   | 31.0  | 41.5 | 53.0 |
| 14 JAN 81 | 0   | 0.0  | 0.0  | 0                     | 0            | 0            | 0            | 0            | 0              | 0              | 0      | 0   | 0   | 0.0   | 0.0  | 0.0  |
| 12 FEB 81 | 0   | 0.0  | 0.0  | 0                     | 0            | 0            | 0            | 0            | 0              | 0              | 0      | 0   | 0   | 0.0   | 0.0  | 0.0  |
| 24 MAR 81 | 0   | 0.0  | 0.0  | 0                     | 0            | 0            | 0            | 0            | 0              | 0              | 0      | 0   | 0   | 0.0   | 0.0  | 0.0  |
| 15 APR 81 | 0   | 0.0  | 0.0  | 0                     | 0            | 0            | 0            | 0            | 0              | 0              | 0      | 0   | 0   | 0.0   | 0.0  | 0.0  |
| 12 MAY 81 | 2   | 58.0 | 6.0  | 0                     | 0            | 1            | 1            | 0            | 0              | 0              | 0      | 0   | 0   | 52.0  | 58.0 | 64.0 |
| 9 JUN 81  | 225 | 54.6 | 8.6  | 0                     | 2            | 156          | 67           | 0            | 0              | 0              | 0      | 0   | 0   | 36.0  | 54.0 | 76.0 |
| 15 JUL 81 | 340 | 35.8 | 14.0 | 15                    | 259          | 19           | 46           | 1            | 0              | 0              | 0      | 0   | 0   | 12.0  | 32.0 | 81.0 |
| 12 AUG 81 | 457 | 37.3 | 12.9 | 39                    | 169          | 233          | 16           | 0            | 0              | 0              | 0      | 0   | 0   | 17.0  | 42.0 | 76.0 |

N=NUMBER OF LENGTHS;  
 X=MEAN LENGTH;  
 SD=STANDARD DEVIATION;  
 NA=DATA NOT AVAILABLE  
 MIN=SHORTEST LENGTH  
 MED=MEDIAN LENGTH  
 MAX=GREATEST LENGTH

TABLE 3-20 MEAN NUMBER PER HAUL OF BLUEFISH (*Pomatomus saltatrix*) COLLECTED BY 12.2-m AND 45.7-m SEINES IN BARNEGAT BAY, SEPTEMBER 1980 - AUGUST 1981

12.2-m Seine

| DATE      | STATION |      |      |      |      |      |      |      |      |     |  |
|-----------|---------|------|------|------|------|------|------|------|------|-----|--|
|           | CDGD    | CDCN | FKRD | FKRN | DBCD | DBCN | OYCD | OYCN | MEAN |     |  |
| 16 SEP 80 | 0.0     | 0.0  | 0.0  | 0.0  | 1.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.1 |  |
| 14 OCT 80 | 0.0     | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0 |  |
| 19 NOV 80 | 0.0     | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0 |  |
| 10 DEC 80 | 0.0     | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0 |  |
| 14 JAN 81 | --      | --   | --   | --   | --   | --   | --   | --   | --   | 0.0 |  |
| 12 FEB 81 | 0.0     | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0 |  |
| 24 MAR 81 | 0.0     | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0 |  |
| 15 APR 81 | 0.0     | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0 |  |
| 12 MAY 81 | 0.0     | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0 |  |
| 9 JUN 81  | 0.0     | 0.0  | 0.0  | 0.0  | 3.0  | 0.5  | 0.0  | 0.0  | 0.0  | 0.4 |  |
| 15 JUL 81 | 0.5     | 0.5  | 1.5  | 0.5  | 2.0  | 2.0  | 0.5  | 0.0  | 0.0  | 0.9 |  |
| 12 AUG 81 | 1.0     | 0.0  | 0.5  | 0.0  | 0.5  | 1.0  | 1.0  | 0.0  | 0.0  | 0.5 |  |
| MEAN      | 0.1     | 0.0  | 0.2  | 0.0  | 0.6  | 0.3  | 0.1  | 0.0  | 0.0  | 0.2 |  |

TABLE 3-20 (CONT.)

45.7-m Seine

STATION

| DATE      | CDCD | CDCN | FKRD | FKRN | DBCD | DBCN | OYCD | OYCN | MEAN |
|-----------|------|------|------|------|------|------|------|------|------|
| 16 SEP 80 | 0.0  | 0.5  | 15.0 | 0.0  | 9.0  | 0.0  | 0.0  | 0.5  | 3.1  |
| 14 OCT 80 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 1.0  | 0.5  | 0.2  |
| 19 NOV 80 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 10 DEC 80 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 14 JAN 81 | --   | --   | 0.0  | 0.0  | --   | --   | 0.0  | 0.0  | 0.0  |
| 12 FEB 81 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 24 MAR 81 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 15 APR 81 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 12 MAY 81 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 9 JUN 81  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 15 JUL 81 | 2.5  | 0.5  | 2.0  | 0.0  | 2.5  | 0.5  | 1.5  | 0.0  | 1.2  |
| 12 AUG 81 | 0.0  | 0.5  | 0.5  | 0.5  | 1.0  | 0.0  | 0.0  | 1.0  | 0.4  |
| MEAN      | 0.2  | 0.1  | 1.5  | 0.0  | 1.1  | 0.0  | 0.2  | 0.2  | 0.4  |

TABLE 3-21 LENGTH-FREQUENCY DISTRIBUTION OF BLUEFISH (*Pomatomus saltatrix*) COLLECTED BY  
 12.2-m AND 45.7-m SEINES IN BARNEGAT BAY, SEPTEMBER 1980 - AUGUST 1981

12.2-m Seine

| DATE      | N  | X     | SD   | LENGTH INTERVALS (MM) |           |             |             |             |             |             |        |     |     | RANGE |       |       |
|-----------|----|-------|------|-----------------------|-----------|-------------|-------------|-------------|-------------|-------------|--------|-----|-----|-------|-------|-------|
|           |    |       |      | 0.0-49.9              | 50.0-99.9 | 100.0-149.9 | 150.0-199.9 | 200.0-249.9 | 250.0-299.9 | 300.0-349.9 | >350.0 | MIN | MED | MAX   |       |       |
| 16 SEP 80 | 2  | 79.0  | 7.0  | 0                     | 2         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 72.0  | 79.0  | 86.0  |
| 14 OCT 80 | 0  | 0.0   | 0.0  | 0                     | 0         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 0.0   | 0.0   | 0.0   |
| 19 NOV 80 | 0  | 0.0   | 0.0  | 0                     | 0         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 0.0   | 0.0   | 0.0   |
| 10 DEC 80 | 0  | 0.0   | 0.0  | 0                     | 0         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 0.0   | 0.0   | 0.0   |
| 14 JAN 81 | 0  | 0.0   | 0.0  | 0                     | 0         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 0.0   | 0.0   | 0.0   |
| 12 FEB 81 | 0  | 0.0   | 0.0  | 0                     | 0         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 0.0   | 0.0   | 0.0   |
| 24 MAR 81 | 0  | 0.0   | 0.0  | 0                     | 0         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 0.0   | 0.0   | 0.0   |
| 15 APR 81 | 0  | 0.0   | 0.0  | 0                     | 0         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 0.0   | 0.0   | 0.0   |
| 12 MAY 81 | 0  | 0.0   | 0.0  | 0                     | 0         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 0.0   | 0.0   | 0.0   |
| 9 JUN 81  | 7  | 58.4  | 11.2 | 1                     | 6         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 35.0  | 58.0  | 74.0  |
| 15 JUL 81 | 14 | 104.9 | 17.8 | 0                     | 6         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 77.0  | 106.5 | 135.0 |
| 12 AUG 81 | 8  | 124.4 | 23.1 | 0                     | 2         | 5           | 1           | 0           | 0           | 0           | 0      | 0   | 0   | 81.0  | 131.5 | 154.0 |

N=NUMBER OF LENGTHS;  
 X=MEAN LENGTH;  
 SD=STANDARD DEVIATION;  
 NA=DATA NOT AVAILABLE

MIN=SHORTEST LENGTH  
 MED=MEDIAN LENGTH  
 MAX=GREATEST LENGTH

TABLE 3-21 (CONT.)

## 45.7-m Seine

| DATE      | N  | X     | SD   | LENGTH INTERVALS (MM) |      |      |      |       |       |       |       |       |       | RANGE |       |       |       |       |       |
|-----------|----|-------|------|-----------------------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|           |    |       |      | 0.0                   | 49.9 | 50.0 | 99.9 | 100.0 | 149.9 | 150.0 | 199.9 | 200.0 | 250.0 | 300.0 | 350.0 | 349.9 | 300.0 | MIN   | MED   |
| 16 SEP 80 | 50 | 94.9  | 22.8 | 0                     | 0    | 38   | 0    | 11    | 0     | 1     | 0     | 0     | 0     | 0     | 0     | 0     | 73.0  | 91.0  | 212.0 |
| 14 OCT 80 | 3  | 133.7 | 18.2 | 0                     | 0    | 0    | 0    | 3     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 168.0 | 145.0 | 148.0 |
| 19 NOV 80 | 0  | 0.0   | 0.0  | 0                     | 0    | 0    | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0.0   | 0.0   | 0.0   |
| 10 DEC 80 | 0  | 0.0   | 0.0  | 0                     | 0    | 0    | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0.0   | 0.0   | 0.0   |
| 14 JAN 81 | 0  | 0.0   | 0.0  | 0                     | 0    | 0    | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0.0   | 0.0   | 0.0   |
| 12 FEB 81 | 0  | 0.0   | 0.0  | 0                     | 0    | 0    | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0.0   | 0.0   | 0.0   |
| 24 MAR 81 | 0  | 0.0   | 0.0  | 0                     | 0    | 0    | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0.0   | 0.0   | 0.0   |
| 15 APR 81 | 0  | 0.0   | 0.0  | 0                     | 0    | 0    | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0.0   | 0.0   | 0.0   |
| 12 MAY 81 | 0  | 0.0   | 0.0  | 0                     | 0    | 0    | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0.0   | 0.0   | 0.0   |
| 9 JUN 81  | 0  | 0.0   | 0.0  | 0                     | 0    | 0    | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0.0   | 0.0   | 0.0   |
| 15 JUL 81 | 19 | 106.1 | 15.1 | 0                     | 0    | 8    | 0    | 11    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 78.0  | 105.0 | 136.0 |
| 12 AUG 81 | 7  | 153.3 | 12.0 | 0                     | 0    | 0    | 0    | 4     | 3     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 143.0 | 146.0 | 175.0 |

N=NUMBER OF LENGTHS;  
 X=MEAN LENGTH;  
 SD=STANDARD DEVIATION;  
 NA=DATA NOT AVAILABLE

MIN=SHORTEST LENGTH  
 MED=MEDIAN LENGTH  
 MAX=GREATEST LENGTH

TABLE 3-22 MEAN NUMBER PER HAUL OF WEAKFISH (*Cynoscion regalis*) COLLECTED BY OTTER TRAWL, 12.2-m SEINE, AND 45.7-m SEINE IN BARNEGAT BAY, SEPTEMBER 1980 - AUGUST 1981

Otter Trawl

STATION

| DATE     | CDGD | CDCN | FKRD | FKRN | DBCD | DBCN | OYCD | OYCN | MEAN |
|----------|------|------|------|------|------|------|------|------|------|
| 9 SEP 80 | 0.0  | 1.0  | 0.5  | 0.5  | 0.0  | 0.0  | 0.5  | 4.0  | 0.8  |
| 7 OCT 80 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 1.0  | 2.5  | 0.4  |
| 5 NOV 80 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 4 DEC 80 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 7 JAN 81 | --   | --   | 0.0  | 0.0  | --   | --   | 0.0  | 0.0  | 0.0  |
| 4 FEB 81 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 3 MAR 81 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 7 APR 81 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 5 MAY 81 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 3 JUN 81 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 8 JUL 81 | 2.0  | 5.0  | 2.5  | 0.0  | 0.0  | 0.5  | 4.0  | 3.0  | 2.1  |
| 5 AUG 81 | 7.0  | 5.0  | 4.0  | 14.0 | 74.0 | 26.0 | 6.0  | 3.0  | 17.4 |
| MEAN     | 0.8  | 1.0  | 0.6  | 1.2  | 6.7  | 2.4  | 1.0  | 1.0  | 1.8  |



TABLE 3-22 (CONT.)

12.2-m Seine

| DATE      | STATION |      |      |      |      |      |      |      |      |      | MEAN |     |
|-----------|---------|------|------|------|------|------|------|------|------|------|------|-----|
|           | CDCD    | CDCN | FKRD | FKRN | DBCD | DBCN | OYCD | OYCN | OYCD | OYCN |      |     |
| 16 SEP 80 | 0.0     | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0 |
| 14 OCT 80 | 0.0     | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0 |
| 19 NOV 80 | 0.0     | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0 |
| 10 DEC 80 | 0.0     | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0 |
| 14 JAN 81 | --      | --   | 0.0  | 0.0  | --   | --   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0 |
| 12 FEB 81 | 0.0     | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0 |
| 24 MAR 81 | 0.0     | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0 |
| 15 APR 81 | 0.0     | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0 |
| 12 MAY 81 | 0.0     | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0 |
| 9 JUN 81  | 0.0     | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0 |
| 15 JUL 81 | 0.0     | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.1 |
| 12 AUG 81 | 0.0     | 2.5  | 3.0  | 5.0  | 1.5  | 8.5  | 0.0  | 0.0  | 0.0  | 1.5  | 1.5  | 2.8 |
| MEAN      | 0.0     | 0.2  | 0.2  | 0.4  | 0.1  | 0.8  | 0.0  | 0.0  | 0.0  | 0.2  | 0.2  | 0.3 |



TABLE 3-23 LENGTH-FREQUENCY DISTRIBUTION OF WEAKFISH (*Cynoscion regalis*) COLLECTED BY OTTER TRAWL, 12.2-m SEINE, AND 45.7-m SEINE IN BARNEGAT BAY, SEPTEMBER 1980 - AUGUST 1981

Otter Trawl

| DATE     | N   | X     | SD   | LENGTH INTERVALS (MM) |           |             |             |             |             |             |        |     |     | RANGE |       |       |
|----------|-----|-------|------|-----------------------|-----------|-------------|-------------|-------------|-------------|-------------|--------|-----|-----|-------|-------|-------|
|          |     |       |      | 0.0-49.9              | 50.0-99.9 | 100.0-149.9 | 150.0-199.9 | 200.0-249.9 | 250.0-299.9 | 300.0-349.9 | >350.0 | MIN | MED | MAX   |       |       |
| 9 SEP 80 | 13  | 133.8 | 19.9 | 0                     | 1         | 9           | 3           | 0           | 0           | 0           | 0      | 0   | 0   | 80.0  | 137.0 | 156.0 |
| 7 OCT 80 | 7   | 176.6 | 30.5 | 0                     | 0         | 2           | 3           | 2           | 0           | 0           | 0      | 0   | 0   | 141.0 | 169.0 | 226.0 |
| 5 NOV 80 | 0   | 0.0   | 0.0  | 0                     | 0         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 0.0   | 0.0   | 0.0   |
| 4 DEC 80 | 0   | 0.0   | 0.0  | 0                     | 0         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 0.0   | 0.0   | 0.0   |
| 7 JAN 81 | 0   | 0.0   | 0.0  | 0                     | 0         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 0.0   | 0.0   | 0.0   |
| 4 FEB 81 | 0   | 0.0   | 0.0  | 0                     | 0         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 0.0   | 0.0   | 0.0   |
| 3 MAR 81 | 0   | 0.0   | 0.0  | 0                     | 0         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 0.0   | 0.0   | 0.0   |
| 7 APR 81 | 0   | 0.0   | 0.0  | 0                     | 0         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 0.0   | 0.0   | 0.0   |
| 5 MAY 81 | 0   | 0.0   | 0.0  | 0                     | 0         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 0.0   | 0.0   | 0.0   |
| 3 JUN 81 | 0   | 0.0   | 0.0  | 0                     | 0         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 0.0   | 0.0   | 0.0   |
| 8 JUL 81 | 32  | 73.0  | 6.0  | 0                     | 32        | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 64.0  | 72.0  | 90.0  |
| 5 AUG 81 | 197 | 70.6  | 26.2 | 23                    | 159       | 4           | 11          | 0           | 0           | 0           | 0      | 0   | 0   | 30.0  | 67.0  | 170.0 |

N=NUMBER OF LENGTHS; MIN=SHORTEST LENGTH  
 X=MEAN LENGTH; MED=MEDIAN LENGTH  
 SD=STANDARD DEVIATION; MAX=GREATEST LENGTH  
 NA=DATA NOT AVAILABLE

TABLE 3-23 (CONT.)

12.2-m Seine

| DATE      | N  | X    | SD   | LENGTH INTERVALS (MM) |           |             |             |             |             |             |        |     |     | RANGE |      |       |
|-----------|----|------|------|-----------------------|-----------|-------------|-------------|-------------|-------------|-------------|--------|-----|-----|-------|------|-------|
|           |    |      |      | 0.0-49.9              | 50.0-99.9 | 100.0-149.9 | 150.0-199.9 | 200.0-249.9 | 250.0-299.9 | 300.0-349.9 | >350.0 | MIN | MED | MAX   |      |       |
| 16 SEP 80 | 0  | 0.0  | 0.0  | 0                     | 0         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 0.0   | 0.0  | 0.0   |
| 14 OCT 80 | 0  | 0.0  | 0.0  | 0                     | 0         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 0.0   | 0.0  | 0.0   |
| 19 NOV 80 | 0  | 0.0  | 0.0  | 0                     | 0         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 0.0   | 0.0  | 0.0   |
| 10 DEC 80 | 0  | 0.0  | 0.0  | 0                     | 0         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 0.0   | 0.0  | 0.0   |
| 14 JAN 81 | 0  | 0.0  | 0.0  | 0                     | 0         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 0.0   | 0.0  | 0.0   |
| 12 FEB 81 | 0  | 0.0  | 0.0  | 0                     | 0         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 0.0   | 0.0  | 0.0   |
| 24 MAR 81 | 0  | 0.0  | 0.0  | 0                     | 0         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 0.0   | 0.0  | 0.0   |
| 15 APR 81 | 0  | 0.0  | 0.0  | 0                     | 0         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 0.0   | 0.0  | 0.0   |
| 12 MAY 81 | 0  | 0.0  | 0.0  | 0                     | 0         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 0.0   | 0.0  | 0.0   |
| 9 JUN 81  | 0  | 0.0  | 0.0  | 0                     | 0         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 0.0   | 0.0  | 0.0   |
| 15 JUL 81 | 2  | 89.5 | 7.5  | 0                     | 2         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 82.0  | 89.5 | 97.0  |
| 12 AUG 81 | 44 | 75.8 | 16.3 | 1                     | 42        | 1           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 46.0  | 77.5 | 149.0 |

N=NUMBER OF LENGTHS;  
 X=MEAN LENGTH;  
 SD=STANDARD DEVIATION;  
 NA=DATA NOT AVAILABLE

MIN=SHORTEST LENGTH  
 MED=MEDIAN LENGTH  
 MAX=GREATEST LENGTH

TABLE 3-23 (CONT.)

45.7-Seine

| DATE      | N  | X     | SD   | LENGTH INTERVALS (MM) |           |             |             |             |             |             |        |     |     | RANGE |       |       |
|-----------|----|-------|------|-----------------------|-----------|-------------|-------------|-------------|-------------|-------------|--------|-----|-----|-------|-------|-------|
|           |    |       |      | 0.0-49.9              | 50.0-99.9 | 100.0-149.9 | 150.0-199.9 | 200.0-249.9 | 250.0-299.9 | 300.0-349.9 | >350.0 | MIN | MED | MAX   |       |       |
| 16 SEP 80 | 10 | 114.9 | 10.9 | 0                     | 1         | 9           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 93.0  | 118.0 | 135.0 |
| 14 OCT 80 | 0  | 0.0   | 0.0  | 0                     | 0         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 0.0   | 0.0   | 0.0   |
| 19 NOV 80 | 0  | 0.0   | 0.0  | 0                     | 0         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 0.0   | 0.0   | 0.0   |
| 10 DEC 80 | 0  | 0.0   | 0.0  | 0                     | 0         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 0.0   | 0.0   | 0.0   |
| 14 JAN 81 | 0  | 0.0   | 0.0  | 0                     | 0         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 0.0   | 0.0   | 0.0   |
| 12 FEB 81 | 0  | 0.0   | 0.0  | 0                     | 0         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 0.0   | 0.0   | 0.0   |
| 24 MAR 81 | 0  | 0.0   | 0.0  | 0                     | 0         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 0.0   | 0.0   | 0.0   |
| 15 APR 81 | 0  | 0.0   | 0.0  | 0                     | 0         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 0.0   | 0.0   | 0.0   |
| 12 MAY 81 | 0  | 0.0   | 0.0  | 0                     | 0         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 0.0   | 0.0   | 0.0   |
| 9 JUN 81  | 0  | 0.0   | 0.0  | 0                     | 0         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 0.0   | 0.0   | 0.0   |
| 15 JUL 81 | 11 | 93.0  | 14.3 | 0                     | 8         | 3           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 62.0  | 97.0  | 109.0 |
| 12 AUG 81 | 30 | 83.3  | 19.4 | 0                     | 27        | 2           | 1           | 0           | 0           | 0           | 0      | 0   | 0   | 61.0  | 80.5  | 170.0 |

N=NUMBER OF LENGTHS;  
 X=MEAN LENGTH;  
 SD=STANDARD DEVIATION; MAX=GREATEST LENGTH  
 NA=DATA NOT AVAILABLE

TABLE 3-24 MEAN NUMBER PER HAUL OF NORTHERN PIPEFISH (*Syngnathus fuscus*) COLLECTED BY OTTER TRAWL, 12.2-m SEINE, AND 45.7-m SEINE IN BARNEGAT BAY, SEPTEMBER 1980 - AUGUST 1981

| DATE     | Otter Trawl |      |      |      |      |      |      |      |      |     |     |
|----------|-------------|------|------|------|------|------|------|------|------|-----|-----|
|          | CDCD        | CDCN | FKRD | FKRN | DBCD | DBCN | OYCD | OYCN | MEAN |     |     |
| 9 SEP 80 | 0.0         | 0.0  | 0.0  | 0.5  | 0.0  | 1.0  | 0.0  | 0.0  | 0.0  | 0.0 | 0.2 |
| 7 OCT 80 | 0.0         | 0.5  | 0.5  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0 | 0.1 |
| 5 NOV 80 | 0.5         | 0.0  | 1.5  | 1.5  | 2.5  | 0.0  | 0.0  | 0.0  | 2.0  | 2.0 | 1.0 |
| 4 DEC 80 | 0.0         | 1.5  | 0.5  | 0.0  | 1.5  | 0.5  | 1.0  | 1.0  | 2.5  | 2.5 | 0.9 |
| 7 JAN 81 | --          | --   | 0.0  | 0.0  | --   | --   | 0.0  | 0.0  | 0.0  | 0.0 | 0.0 |
| 4 FEB 81 | 0.0         | 0.0  | 0.5  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0 | 0.1 |
| 3 MAR 81 | 0.0         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0 | 0.0 |
| 7 APR 81 | 0.0         | 0.0  | 0.5  | 1.5  | 0.0  | 0.0  | 1.0  | 1.0  | 4.5  | 4.5 | 0.9 |
| 5 MAY 81 | 0.0         | 0.0  | 2.5  | 5.0  | 2.0  | 0.5  | 0.0  | 0.0  | 0.5  | 0.5 | 1.3 |
| 3 JUN 81 | 0.0         | 0.0  | 0.0  | 4.0  | 1.0  | 0.5  | 0.5  | 0.5  | 1.0  | 1.0 | 0.9 |
| 8 JUL 81 | 0.0         | 5.5  | 0.5  | 3.0  | 2.5  | 0.0  | 0.0  | 0.0  | 1.5  | 1.5 | 1.6 |
| 5 AUG 81 | 0.0         | 1.5  | 0.0  | 0.0  | 1.0  | 0.0  | 0.5  | 0.5  | 0.0  | 0.0 | 0.4 |
| MEAN     | 0.0         | 0.8  | 0.5  | 1.3  | 1.0  | 0.2  | 0.2  | 0.2  | 1.0  | 1.0 | 0.6 |



TABLE 3-24 (CONT.)

## 12.2-m Seine

| DATE      | STATION |      |      |      |      |      |      |      |     |     |      | MEAN |     |
|-----------|---------|------|------|------|------|------|------|------|-----|-----|------|------|-----|
|           | CD/CD   | CDCN | FKRD | FKRN | DBCD | DBCN | OYCD | OYCN |     |     |      |      |     |
| 16 SEP 80 | 0.5     | 1.0  | 0.5  | 0.0  | 1.0  | 0.0  | 0.0  | 0.0  | 0.0 | 0.0 | 0.0  | 0.0  | 0.4 |
| 14 OCT 80 | 1.5     | 1.0  | 1.0  | 0.0  | 0.5  | 0.0  | 0.0  | 0.0  | 0.0 | 0.0 | 0.0  | 0.0  | 0.5 |
| 19 NOV 80 | 0.0     | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0 | 0.0 | 0.0  | 0.0  | 0.0 |
| 10 DEC 80 | 0.0     | 0.0  | 0.0  | 0.0  | 0.0  | 0.5  | 0.0  | 0.0  | 0.0 | 0.0 | 0.0  | 0.0  | 0.1 |
| 14 JAN 81 | --      | --   | 0.0  | 0.0  | --   | --   | 0.0  | 0.0  | 0.0 | 0.0 | 0.0  | 0.0  | 0.0 |
| 12 FEB 81 | 0.0     | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0 | 0.0 | 0.0  | 0.0  | 0.0 |
| 24 MAR 81 | 0.0     | 0.5  | 0.0  | 0.0  | 0.0  | 0.5  | 0.0  | 0.0  | 0.0 | 0.0 | 0.0  | 0.5  | 0.2 |
| 15 APR 81 | 0.0     | 1.5  | 0.5  | 2.0  | 0.5  | 1.0  | 0.0  | 0.0  | 0.0 | 0.0 | 0.0  | 0.5  | 0.7 |
| 12 MAY 81 | 0.0     | 0.0  | 2.0  | 2.5  | 0.0  | 2.0  | 0.0  | 0.0  | 2.0 | 2.0 | 5.5  | 5.5  | 1.8 |
| 9 JUN 81  | 1.0     | 27.0 | 0.0  | 2.0  | 4.0  | 1.0  | 0.0  | 0.0  | 3.0 | 3.0 | 13.5 | 13.5 | 6.4 |
| 15 JUL 81 | 0.5     | 1.5  | 1.5  | 2.5  | 20.5 | 17.5 | 0.0  | 0.0  | 4.5 | 4.5 | 1.0  | 1.0  | 6.2 |
| 12 AUG 81 | 0.0     | 0.5  | 10.0 | 2.0  | 12.0 | 12.0 | 0.0  | 0.0  | 1.0 | 1.0 | 2.0  | 2.0  | 4.9 |
| MEAN      | 0.3     | 3.0  | 1.3  | 0.9  | 3.5  | 3.1  | 0.0  | 0.0  | 0.9 | 0.9 | 1.9  | 1.9  | 1.9 |

TABLE 3-24 (CONT.)

## 45.7-m Seine

| DATE      | STATION |      |      |      |      |      |      |      |      |
|-----------|---------|------|------|------|------|------|------|------|------|
|           | CDCD    | CDCN | FKRD | FKRN | DBCD | DBCN | OYCD | OYCN | MEAN |
| 16 SEP 80 | 0.5     | 0.5  | 0.0  | 2.0  | 0.5  | 0.0  | 0.0  | 0.0  | 0.4  |
| 14 OCT 80 | 0.5     | 0.5  | 1.5  | 4.0  | 0.0  | 0.0  | 0.5  | 0.0  | 0.9  |
| 19 NOV 80 | 0.0     | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.5  | 0.0  | 0.1  |
| 10 DEC 80 | 0.5     | 0.0  | 1.0  | 0.5  | 0.0  | 0.5  | 0.0  | 0.0  | 0.3  |
| 14 JAN 81 | --      | --   | 0.0  | 0.0  | --   | --   | 0.0  | 0.0  | 0.0  |
| 12 FEB 81 | 0.0     | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 24 MAR 81 | 0.0     | 0.5  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.1  |
| 15 APR 81 | 0.5     | 1.0  | 6.5  | 3.5  | 0.0  | 0.5  | 1.5  | 0.0  | 1.7  |
| 12 MAY 81 | 0.5     | 0.0  | 2.5  | 4.5  | 2.5  | 2.5  | 4.0  | 2.5  | 2.4  |
| 9 JUN 81  | 0.5     | 0.0  | 2.0  | 0.0  | 1.5  | 2.0  | 1.0  | 0.0  | 0.9  |
| 15 JUL 81 | 0.5     | 0.0  | 4.0  | 3.5  | 0.0  | 0.5  | 1.5  | 0.0  | 1.2  |
| 12 AUG 81 | 0.5     | 0.5  | 0.5  | 0.5  | 0.5  | 2.0  | 0.0  | 0.0  | 0.6  |
| MEAN      | 0.4     | 0.3  | 1.5  | 1.5  | 0.5  | 0.7  | 0.7  | 0.2  | 0.7  |

TABLE 3-25 LENGTH-FREQUENCY DISTRIBUTION OF NORTHERN PIPEFISH (*Syngnathus fuscus*) COLLECTED BY OTTER TRAWL, 12.2-m SEINE, AND 45.7-m SEINE IN BARNEGAT BAY, SEPTEMBER 1980 - AUGUST 1981

Otter Trawl

| DATE     | N  | X̄    | SD   | LENGTH INTERVALS (MM) |              |                |                |                |                |                |        | RANGE |       |       |
|----------|----|-------|------|-----------------------|--------------|----------------|----------------|----------------|----------------|----------------|--------|-------|-------|-------|
|          |    |       |      | 0.0<br>49.9           | 50.0<br>99.9 | 100.0<br>149.9 | 150.0<br>199.9 | 200.0<br>249.9 | 250.0<br>299.9 | 300.0<br>349.9 | >350.0 | MIN   | MED   | MAX   |
| 9 SEP 80 | 3  | 164.0 | 50.0 | 0                     | 0            | 2              | 0              | 1              | 0              | 0              | 0      | 120.0 | 138.0 | 234.0 |
| 7 OCT 80 | 2  | 164.5 | 52.5 | 0                     | 0            | 1              | 0              | 1              | 0              | 0              | 0      | 112.0 | 164.5 | 217.0 |
| 5 NOV 80 | 16 | 175.6 | 35.7 | 0                     | 0            | 6              | 7              | 2              | 1              | 0              | 0      | 120.0 | 172.5 | 254.0 |
| 4 DEC 80 | 15 | 165.9 | 34.4 | 0                     | 0            | 5              | 6              | 4              | 0              | 0              | 0      | 100.0 | 165.0 | 220.0 |
| 7 JAN 81 | 0  | 0.0   | 0.0  | 0                     | 0            | 0              | 0              | 0              | 0              | 0              | 0      | 0.0   | 0.0   | 0.0   |
| 4 FEB 81 | 1  | 165.0 | 0.0  | 0                     | 0            | 0              | 1              | 0              | 0              | 0              | 0      | 135.0 | 165.0 | 165.0 |
| 3 MAR 81 | 0  | 0.0   | 0.0  | 0                     | 0            | 0              | 0              | 0              | 0              | 0              | 0      | 0.0   | 0.0   | 0.0   |
| 7 APR 81 | 15 | 155.3 | 37.2 | 0                     | 2            | 5              | 7              | 1              | 0              | 0              | 0      | 96.0  | 152.0 | 216.0 |
| 5 MAY 81 | 21 | 175.8 | 40.1 | 1                     | 0            | 4              | 10             | 6              | 0              | 0              | 0      | 44.0  | 189.0 | 226.0 |
| 3 JUN 81 | 14 | 201.2 | 26.0 | 0                     | 0            | 0              | 8              | 5              | 1              | 0              | 0      | 168.0 | 197.0 | 260.0 |
| 8 JUL 81 | 26 | 130.6 | 52.4 | 0                     | 9            | 11             | 2              | 3              | 1              | 0              | 0      | 59.0  | 106.5 | 255.0 |
| 5 AUG 81 | 6  | 139.2 | 29.8 | 0                     | 0            | 3              | 3              | 0              | 0              | 0              | 0      | 103.0 | 137.0 | 187.0 |

N=NUMBER OF LENGTHS; MIN=SHORTEST LENGTH  
 X=MEAN LENGTH; MED=MEDIAN LENGTH  
 SD=STANDARD DEVIATION; MAX=GREATEST LENGTH  
 NA=DATA NOT AVAILABLE

TABLE 3-25 (CONT.)

## 12.2-m Seine

| DATE      | N   | X     | SD   | LENGTH INTERVALS (MM) |              |                |                |                |                |                |        | RANGE |       |       |       |
|-----------|-----|-------|------|-----------------------|--------------|----------------|----------------|----------------|----------------|----------------|--------|-------|-------|-------|-------|
|           |     |       |      | 0.0<br>49.9           | 50.0<br>99.9 | 100.0<br>149.9 | 150.0<br>199.9 | 200.0<br>249.9 | 250.0<br>299.9 | 300.0<br>349.9 | >350.0 | MIN   | MED   | MAX   |       |
| 16 SEP 80 | 6   | 146.0 | 29.1 | 0                     | 0            | 3              | 3              | 0              | 0              | 0              | 0      | 0     | 113.0 | 140.0 | 192.0 |
| 14 OCT 80 | 8   | 118.3 | 46.4 | 1                     | 2            | 3              | 2              | 0              | 0              | 0              | 0      | 0     | 49.0  | 120.5 | 181.0 |
| 19 NOV 80 | 0   | 0.0   | 0.0  | 0                     | 0            | 0              | 0              | 0              | 0              | 0              | 0      | 0     | 0.0   | 0.0   | 0.0   |
| 10 DEC 80 | 1   | 102.0 | 0.0  | 0                     | 0            | 1              | 0              | 0              | 0              | 0              | 0      | 0     | 102.0 | 102.0 | 102.0 |
| 14 JAN 81 | 0   | 0.0   | 0.0  | 0                     | 0            | 0              | 0              | 0              | 0              | 0              | 0      | 0     | 0.0   | 0.0   | 0.0   |
| 12 FEB 81 | 0   | 0.0   | 0.0  | 0                     | 0            | 0              | 0              | 0              | 0              | 0              | 0      | 0     | 0.0   | 0.0   | 0.0   |
| 24 MAR 81 | 3   | 181.3 | 35.0 | 0                     | 0            | 1              | 1              | 1              | 0              | 0              | 0      | 0     | 142.0 | 175.0 | 227.0 |
| 15 APR 81 | 12  | 105.5 | 56.0 | 3                     | 1            | 5              | 3              | 0              | 0              | 0              | 0      | 0     | 12.0  | 124.0 | 176.0 |
| 12 MAY 81 | 28  | 159.9 | 29.6 | 0                     | 1            | 7              | 17             | 3              | 0              | 0              | 0      | 0     | 82.0  | 161.5 | 213.0 |
| 9 JUN 81  | 103 | 59.0  | 29.7 | 38                    | 60           | 0              | 4              | 1              | 0              | 0              | 0      | 0     | 33.0  | 52.0  | 204.0 |
| 15 JUL 81 | 99  | 98.8  | 22.0 | 1                     | 50           | 48             | 0              | 0              | 0              | 0              | 0      | 0     | 19.0  | 98.0  | 148.0 |
| 12 AUG 81 | 79  | 125.8 | 24.6 | 0                     | 10           | 57             | 11             | 1              | 0              | 0              | 0      | 0     | 53.0  | 127.0 | 200.0 |

N=NUMBER OF LENGTHS; MIN=SHORTEST LENGTH  
 X=MEAN LENGTH; MED=MEDIAN LENGTH  
 SD=STANDARD DEVIATION; MAX=GREATEST LENGTH  
 NA=DATA NOT AVAILABLE

TABLE 3-25 (CONT.)

45.7-m Seine

LENGTH INTERVALS (MM)

| DATE      | N  | X     | SD   | LENGTH INTERVALS (MM) |           |             |             |             |             |             |        |     |     | RANGE |       |       |
|-----------|----|-------|------|-----------------------|-----------|-------------|-------------|-------------|-------------|-------------|--------|-----|-----|-------|-------|-------|
|           |    |       |      | 0.0-49.9              | 50.0-99.9 | 100.0-149.9 | 150.0-199.9 | 200.0-249.9 | 250.0-299.9 | 300.0-349.9 | >350.0 | MIN | MED | MAX   |       |       |
| 16 SEP 80 | 7  | 144.6 | 38.3 | 0                     | 0         | 5           | 1           | 1           | 0           | 0           | 0      | 0   | 0   | 102.0 | 129.0 | 227.0 |
| 14 OCT 80 | 14 | 168.7 | 40.4 | 0                     | 1         | 3           | 6           | 4           | 0           | 0           | 0      | 0   | 0   | 87.0  | 170.5 | 230.0 |
| 19 NOV 80 | 1  | 175.0 | 0.0  | 0                     | 0         | 0           | 1           | 0           | 0           | 0           | 0      | 0   | 0   | 175.0 | 175.0 | 175.0 |
| 10 DEC 80 | 5  | 122.8 | 13.9 | 0                     | 0         | 5           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 105.0 | 118.0 | 140.0 |
| 14 JAN 81 | 0  | 0.0   | 0.0  | 0                     | 0         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 0.0   | 0.0   | 0.0   |
| 12 FEB 81 | 0  | 0.0   | 0.0  | 0                     | 0         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 0.0   | 0.0   | 0.0   |
| 24 MAR 81 | 1  | 200.0 | 0.0  | 0                     | 0         | 0           | 0           | 1           | 0           | 0           | 0      | 0   | 0   | 200.0 | 200.0 | 200.0 |
| 15 APR 81 | 27 | 168.5 | 31.4 | 0                     | 1         | 9           | 10          | 7           | 0           | 0           | 0      | 0   | 0   | 99.0  | 165.0 | 217.0 |
| 12 MAY 81 | 38 | 172.6 | 24.5 | 0                     | 0         | 6           | 27          | 5           | 0           | 0           | 0      | 0   | 0   | 140.0 | 165.5 | 227.0 |
| 9 JUN 81  | 13 | 142.5 | 67.1 | 2                     | 3         | 0           | 5           | 3           | 0           | 0           | 0      | 0   | 0   | 41.0  | 186.0 | 202.0 |
| 15 JUL 81 | 19 | 104.1 | 20.0 | 0                     | 8         | 11          | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 67.0  | 100.0 | 142.0 |
| 12 AUG 81 | 9  | 124.8 | 23.2 | 0                     | 2         | 6           | 1           | 0           | 0           | 0           | 0      | 0   | 0   | 84.0  | 130.0 | 163.0 |

N=NUMBER OF LENGTHS;  
 X=MEAN LENGTH;  
 SD=STANDARD DEVIATION;  
 NA=DATA NOT AVAILABLE

MIN=SHORTEST LENGTH  
 MED=MEDIAN LENGTH  
 MAX=GREATEST LENGTH

TABLE 3-26 MEAN NUMBER PER HAUL OF NORTHERN PUFFER (*Spherooides maculatus*) COLLECTED BY OTTER TRAWL, 12.2-m SEINE, AND 45.7-m SEINE IN BARNEGAT BAY, SEPTEMBER 1980 - AUGUST 1981

Otter Trawl

| DATE     | STATION |      |      |      |      |      |      |      |      |     |     |
|----------|---------|------|------|------|------|------|------|------|------|-----|-----|
|          | CDCD    | CDCN | FKRD | FKRN | DBCD | DBCN | OYCD | OYCN | MEAN |     |     |
| 9 SEP 80 | 0.0     | 0.0  | 0.0  | 0.0  | 0.0  | 0.5  | 0.0  | 0.0  | 0.5  | 0.0 | 0.1 |
| 7 OCT 80 | 0.0     | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0 | 0.0 |
| 5 NOV 80 | 0.0     | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0 | 0.0 |
| 4 DEC 80 | 0.0     | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0 | 0.0 |
| 7 JAN 81 | --      | --   | 0.0  | 0.0  | --   | --   | 0.0  | 0.0  | 0.0  | 0.0 | 0.0 |
| 4 FEB 81 | 0.0     | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0 | 0.0 |
| 3 MAR 81 | 0.0     | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0 | 0.0 |
| 7 APR 81 | 0.0     | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0 | 0.0 |
| 5 MAY 81 | 0.0     | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0 | 0.0 |
| 3 JUN 81 | 0.0     | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0 | 0.0 |
| 8 JUL 81 | 0.0     | 0.0  | 0.0  | 9.0  | 0.5  | 2.0  | 0.0  | 0.0  | 3.0  | 0.0 | 1.8 |
| 5 AUG 81 | 0.0     | 0.0  | 0.0  | 0.5  | 0.0  | 0.5  | 0.0  | 0.0  | 0.0  | 0.0 | 0.1 |
| MEAN     | 0.0     | 0.0  | 0.0  | 0.8  | 0.0  | 0.3  | 0.0  | 0.0  | 0.3  | 0.0 | 0.2 |





TABLE 3-26 (CONT.)

## 45.7-Seine

## STATION

| DATE      | CDCD | CDCN | FKRD | FKRN | DBCD | DBCN | OYCD | OYCN | MEAN |
|-----------|------|------|------|------|------|------|------|------|------|
| 16 SEP 80 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 14 OCT 80 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 19 NOV 80 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 10 DEC 80 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 14 JAN 81 | --   | --   | 0.0  | 0.0  | --   | --   | 0.0  | 0.0  | 0.0  |
| 12 FEB 81 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 24 MAR 81 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 15 APR 81 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 12 MAY 81 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 9 JUN 81  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 15 JUL 81 | 0.0  | 0.0  | 0.5  | 1.5  | 4.0  | 1.5  | 0.5  | 0.5  | 1.1  |
| 12 AUG 81 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.5  | 1.5  | 0.0  | 0.2  |
| MEAN      | 0.0  | 0.0  | 0.0  | 0.1  | 0.4  | 0.2  | 0.2  | 0.0  | 0.1  |

TABLE 3-27 LENGTH-FREQUENCY DISTRIBUTION OF NORTHERN PUFFER (*Sphoeroides maculatus*) COLLECTED BY OTTER TRAWL AND 12.2-m SEINE IN BARNEGAT BAY, SEPTEMBER 1980 - AUGUST 1981

Otter Trawl

| DATE     | N  | X    | SD   | LENGTH INTERVALS (MM) |           |             |             |             |             |             |        |     |     | RANGE |      |       |
|----------|----|------|------|-----------------------|-----------|-------------|-------------|-------------|-------------|-------------|--------|-----|-----|-------|------|-------|
|          |    |      |      | 0.0-49.9              | 50.0-99.9 | 100.0-149.9 | 150.0-199.9 | 200.0-249.9 | 250.0-299.9 | 300.0-349.9 | >350.0 | MIN | MED | MAX   |      |       |
| 9 SEP 80 | 2  | 81.5 | 8.5  | 0                     | 2         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 73.0  | 81.5 | 90.0  |
| 7 OCT 80 | 0  | 0.0  | 0.0  | 0                     | 0         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 0.0   | 0.0  | 0.0   |
| 5 NOV 80 | 0  | 0.0  | 0.0  | 0                     | 0         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 0.0   | 0.0  | 0.0   |
| 4 DEC 80 | 0  | 0.0  | 0.0  | 0                     | 0         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 0.0   | 0.0  | 0.0   |
| 7 JAN 81 | 0  | 0.0  | 0.0  | 0                     | 0         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 0.0   | 0.0  | 0.0   |
| 4 FEB 81 | 0  | 0.0  | 0.0  | 0                     | 0         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 0.0   | 0.0  | 0.0   |
| 3 MAR 81 | 0  | 0.0  | 0.0  | 0                     | 0         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 0.0   | 0.0  | 0.0   |
| 7 APR 81 | 0  | 0.0  | 0.0  | 0                     | 0         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 0.0   | 0.0  | 0.0   |
| 5 MAY 81 | 0  | 0.0  | 0.0  | 0                     | 0         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 0.0   | 0.0  | 0.0   |
| 3 JUN 81 | 0  | 0.0  | 0.0  | 0                     | 0         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 0.0   | 0.0  | 0.0   |
| 8 JUL 81 | 29 | 52.4 | 30.2 | 23                    | 4         | 1           | 1           | 0           | 0           | 0           | 0      | 0   | 0   | 37.0  | 45.0 | 192.0 |
| 5 AUG 81 | 2  | 86.5 | 3.5  | 0                     | 2         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 83.0  | 86.5 | 90.0  |

N=NUMBER OF LENGTHS;  
 X=MEAN LENGTH;  
 SD=STANDARD DEVIATION;  
 NA=DATA NOT AVAILABLE

MIN=SHORTEST LENGTH  
 MED=MEDIAN LENGTH  
 MAX=GREATEST LENGTH

TABLE 3-27 (CONT.)

12.2-m Seine

| DATE      | N | X    | SD  | LENGTH INTERVALS (MM) |           |             |             |             |             |             |        |     |     | RANGE |      |      |      |
|-----------|---|------|-----|-----------------------|-----------|-------------|-------------|-------------|-------------|-------------|--------|-----|-----|-------|------|------|------|
|           |   |      |     | 0.0-49.9              | 50.0-99.9 | 100.0-149.9 | 150.0-199.9 | 200.0-249.9 | 250.0-299.9 | 300.0-349.9 | >350.0 | MIN | MED | MAX   |      |      |      |
| 16 SEP 80 | 0 | 0.0  | 0.0 | 0                     | 0         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 0     | 0.0  | 0.0  | 0.0  |
| 14 OCT 80 | 0 | 0.0  | 0.0 | 0                     | 0         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 0     | 0.0  | 0.0  | 0.0  |
| 19 NOV 80 | 0 | 0.0  | 0.0 | 0                     | 0         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 0     | 0.0  | 0.0  | 0.0  |
| 10 DEC 80 | 0 | 0.0  | 0.0 | 0                     | 0         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 0     | 0.0  | 0.0  | 0.0  |
| 14 JAN 81 | 0 | 0.0  | 0.0 | 0                     | 0         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 0     | 0.0  | 0.0  | 0.0  |
| 12 FEB 81 | 0 | 0.0  | 0.0 | 0                     | 0         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 0     | 0.0  | 0.0  | 0.0  |
| 24 MAR 81 | 0 | 0.0  | 0.0 | 0                     | 0         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 0     | 0.0  | 0.0  | 0.0  |
| 15 APR 81 | 0 | 0.0  | 0.0 | 0                     | 0         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 0     | 0.0  | 0.0  | 0.0  |
| 12 MAY 81 | 0 | 0.0  | 0.0 | 0                     | 0         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 0     | 0.0  | 0.0  | 0.0  |
| 9 JUN 81  | 4 | 9.5  | 2.1 | 4                     | 0         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 0     | 7.0  | 9.5  | 12.0 |
| 15 JUL 81 | 4 | 52.3 | 2.0 | 1                     | 3         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 0     | 49.0 | 53.0 | 54.0 |
| 12 AUG 81 | 1 | 94.0 | 0.0 | 0                     | 1         | 0           | 0           | 0           | 0           | 0           | 0      | 0   | 0   | 0     | 94.0 | 94.0 | 94.0 |

N=NUMBER OF LENGTHS; MIN=SHORTEST LENGTH  
 X=MEAN LENGTH; MED=MEDIAN LENGTH  
 SD=STANDARD DEVIATION; MAX=GREATEST LENGTH  
 NA=DATA NOT AVAILABLE

TABLE 3-28 MEAN NUMBER PER HAUL OF FOURSPINE STICKLEBACK (*Apeltes quadracus*) COLLECTED BY OTTER TRAWL, 12.2-m SEINE, AND 45.7-m SEINE IN BARNEGAT BAY, SEPTEMBER 1980 - AUGUST 1981

Otter Trawl

| DATE     | STATION |      |      |       |       |       |      |      | MEAN |
|----------|---------|------|------|-------|-------|-------|------|------|------|
|          | CDCD    | CDCN | FKRD | FKRN  | DBCD  | DBCN  | OYCD | OYCN |      |
| 9 SEP 80 | 0.0     | 0.0  | 0.0  | 0.0   | 0.0   | 1.0   | 0.0  | 0.5  | 0.2  |
| 7 OCT 80 | 0.0     | 0.5  | 0.0  | 0.0   | 2.0   | 0.0   | 0.0  | 0.0  | 0.3  |
| 5 NOV 80 | 0.0     | 0.0  | 1.5  | 0.0   | 116.5 | 0.0   | 2.5  | 0.0  | 15.1 |
| 4 DEC 80 | 2.0     | 13.0 | 7.5  | 28.5  | 17.0  | 143.5 | 7.0  | 32.0 | 31.3 |
| 7 JAN 81 | --      | --   | 1.0  | 21.5  | --    | --    | 1.0  | 5.0  | 7.1  |
| 4 FEB 81 | 3.0     | 3.0  | 4.5  | 63.5  | 10.0  | 126.5 | 0.5  | 21.5 | 29.1 |
| 3 MAR 81 | 0.5     | 14.5 | 1.5  | 108.0 | 4.5   | 38.5  | 2.5  | 6.0  | 22.0 |
| 7 APR 81 | 2.5     | 2.5  | 1.5  | 6.5   | 4.0   | 9.0   | 0.0  | 1.5  | 3.4  |
| 5 MAY 81 | 0.0     | 4.5  | 0.0  | 0.0   | 4.5   | 13.5  | 0.0  | 0.5  | 2.9  |
| 3 JUN 81 | 1.0     | 0.0  | 0.0  | 0.0   | 0.5   | 0.5   | 0.0  | 0.0  | 0.2  |
| 8 JUL 81 | 0.0     | 4.5  | 0.0  | 0.0   | 0.0   | 0.0   | 0.0  | 0.0  | 0.6  |
| 5 AUG 81 | 0.0     | 0.0  | 0.0  | 0.0   | 0.0   | 0.0   | 0.0  | 0.0  | 0.0  |
| MEAN     | 0.8     | 3.9  | 1.5  | 19.0  | 14.5  | 30.2  | 1.1  | 5.6  | 9.4  |

TABLE 3-28 (CONT.)

## 12.2-m Seine

| DATE      | STATION |      |      |      |      |       |      |      |      |
|-----------|---------|------|------|------|------|-------|------|------|------|
|           | CPGD    | CDCN | FKRD | FKRN | DBCD | DBCN  | OYCD | OYCN | MEAN |
| 16 SEP 80 | 0.0     | 0.5  | 0.0  | 0.0  | 0.5  | 0.0   | 0.0  | 0.0  | 0.1  |
| 14 OCT 80 | 0.0     | 0.0  | 0.5  | 0.5  | 9.0  | 3.0   | 0.0  | 0.0  | 1.6  |
| 19 NOV 80 | 4.0     | 28.0 | 1.5  | 10.0 | 44.5 | 35.0  | 6.0  | 13.0 | 17.8 |
| 10 DEC 80 | 2.0     | 7.5  | 0.0  | 23.0 | 0.5  | 94.5  | 15.0 | 49.0 | 24.5 |
| 14 JAN 81 | --      | --   | 0.5  | 12.0 | --   | --    | 2.5  | 2.5  | 4.4  |
| 12 FEB 81 | 5.0     | 11.5 | 3.0  | 4.5  | 2.5  | 77.0  | 3.5  | 16.5 | 15.4 |
| 24 MAR 81 | 10.0    | 10.5 | 0.5  | 49.5 | 2.5  | 22.5  | 0.0  | 16.0 | 13.9 |
| 15 APR 81 | 1.0     | 47.5 | 1.5  | 2.0  | 10.5 | 108.5 | 18.0 | 14.0 | 25.4 |
| 12 MAY 81 | 1.0     | 0.5  | 2.5  | 2.0  | 1.0  | 0.5   | 0.5  | 1.5  | 1.2  |
| 9 JUN 81  | 2.0     | 14.0 | 1.0  | 0.0  | 3.0  | 0.0   | 0.0  | 2.5  | 2.8  |
| 15 JUL 81 | 8.5     | 1.5  | 0.5  | 0.5  | 12.5 | 0.0   | 0.0  | 0.0  | 2.9  |
| 12 AUG 81 | 0.0     | 0.5  | 4.0  | 0.0  | 1.5  | 0.5   | 0.0  | 0.0  | 0.8  |
| MEAN      | 3.0     | 11.1 | 1.3  | 8.7  | 8.0  | 31.0  | 3.3  | 9.6  | 9.4  |



TABLE 3-28 (CONT.)

45.7-m Seine

## STATION

| DATE      | CDCD | CDCN | FKRD | FKRN | DBCD | DBCN | OYCD | OYCN | MEAN |
|-----------|------|------|------|------|------|------|------|------|------|
| 16 SEP 80 | 0.0  | 0.0  | 0.0  | 0.0  | 0.5  | 0.0  | 0.0  | 0.0  | 0.1  |
| 14 OCT 80 | 0.0  | 0.0  | 0.5  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.1  |
| 19 NOV 80 | 0.5  | 1.0  | 0.5  | 0.5  | 1.0  | 0.5  | 3.5  | 1.0  | 1.1  |
| 10 DEC 80 | 1.0  | 1.0  | 3.0  | 1.0  | 1.0  | 0.5  | 4.0  | 2.0  | 1.7  |
| 14 JAN 81 | --   | --   | 0.5  | 0.0  | --   | --   | 0.0  | 0.5  | 0.2  |
| 12 FEB 81 | 0.0  | 0.0  | 0.0  | 1.0  | 0.0  | 4.0  | 2.0  | 0.0  | 0.9  |
| 24 MAR 81 | 0.5  | 7.0  | 0.0  | 2.0  | 0.0  | 2.0  | 0.0  | 1.0  | 1.6  |
| 15 APR 81 | 2.5  | 1.0  | 17.0 | 8.0  | 2.0  | 2.5  | 1.5  | 1.0  | 4.4  |
| 12 MAY 81 | 3.0  | 1.0  | 0.5  | 2.0  | 1.0  | 0.5  | 0.0  | 0.0  | 1.0  |
| 9 JUN 81  | 1.5  | 0.0  | 32.0 | 6.0  | 0.5  | 0.0  | 0.0  | 0.0  | 5.0  |
| 15 JUL 81 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 12 AUG 81 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| MEAN      | 0.8  | 1.0  | 4.5  | 1.7  | 0.5  | 0.9  | 0.9  | 0.5  | 1.4  |

TABLE 3-29 NUMBER OF FISH AND MACROINVERTEBRATES AFFLICTED WITH PARASITES, DISEASE, AND MORPHOLOGICAL ABNORMALITIES, BARNEGAT BAY SAMPLING, SEPTEMBER 1980 - AUGUST 1981

| <u>Species</u>                       | <u>External Parasites</u> |                 | <u>Lesions and Fungus</u> | <u>Morphological Deformities</u> |
|--------------------------------------|---------------------------|-----------------|---------------------------|----------------------------------|
|                                      | <u>Isopods</u>            | <u>Copepods</u> |                           |                                  |
| <u>Anguilla rostrata</u>             | 0                         | 0               | 1                         | 0                                |
| <u>Anchoa mitchilli</u>              | 0                         | 60              | 0                         | 0                                |
| <u>Menidia menidia</u>               | 0                         | 0               | 0                         | 1                                |
| <u>Apeltes quadracus</u>             | 0                         | 0               | 0                         | 2                                |
| <u>Pomatomus saltatrix</u>           | 9                         | 0               | 0                         | 0                                |
| <u>Pseudopleuronectes americanus</u> | 0                         | 0               | 0                         | 2                                |
| <u>Palaemonetes spp.</u>             | 40                        | 0               | 0                         | 0                                |
| <u>Callinectes sapidus</u>           | 0                         | 0               | 0                         | 2                                |

TABLE 3-30 SURFACE WATER QUALITY MEASUREMENTS ASSOCIATED WITH BARNEGAT BAY SEINE SAMPLING,  
SEPTEMBER 1980 - AUGUST 1981

| DATE      | Temperature (C) |      |      |      |      |      |      |      |      |
|-----------|-----------------|------|------|------|------|------|------|------|------|
|           | STATION         |      |      |      |      |      |      |      |      |
|           | CDCD            | CDCN | FKRD | FKRN | DBCD | DBCN | OYCD | OYCN | MEAN |
| 16 SEP 80 | 21.7            | 20.7 | 24.7 | 22.2 | 21.2 | 20.4 | 24.0 | 25.6 | 22.6 |
| 14 OCT 80 | 13.0            | 13.1 | 14.0 | 12.0 | 13.9 | 11.7 | 17.7 | 15.2 | 13.8 |
| 19 NOV 80 | 4.9             | 4.3  | 5.5  | 5.2  | 4.9  | 4.1  | 9.1  | 8.1  | 5.8  |
| 10 DEC 80 | 4.5             | 5.1  | 5.3  | 5.2  | 5.1  | 5.0  | 9.5  | 9.0  | 5.9  |
| 14 JAN 81 | --              | --   | 2.9  | 1.0  | --   | --   | 4.4  | 2.9  | 2.8  |
| 12 FEB 81 | 2.5             | 2.0  | 9.7  | 9.1  | 6.5  | 7.4  | 13.2 | 13.4 | 8.0  |
| 24 MAR 81 | 6.2             | 6.8  | 6.0  | 5.5  | 6.6  | 5.2  | 9.6  | 9.4  | 6.9  |
| 15 APR 81 | 9.7             | 9.3  | 18.3 | 16.5 | 12.9 | 9.7  | 12.8 | 12.3 | 12.3 |
| 12 MAY 81 | 14.3            | 16.2 | 17.5 | 15.2 | 17.6 | 14.6 | 18.0 | 14.2 | 16.0 |
| 9 JUN 81  | 23.7            | 23.4 | 23.8 | 23.1 | 22.7 | 22.1 | 25.8 | 27.3 | 24.0 |
| 15 JUL 81 | 25.6            | 25.2 | 27.4 | 26.5 | 27.2 | 24.6 | 29.0 | 27.8 | 26.7 |
| 12 AUG 81 | 26.4            | 24.2 | 26.7 | 25.0 | 24.9 | 24.1 | 28.5 | 26.0 | 25.7 |
| MEAN      | 13.9            | 13.7 | 15.0 | 13.9 | 14.9 | 13.5 | 17.1 | 15.9 | 14.8 |

Note: -- indicates measurement not taken.

TABLE 3-30 (CONT.)

| DATE      | Dissolved Oxygen (mg/l) |      |      |      |      |      |      |      | MEAN |
|-----------|-------------------------|------|------|------|------|------|------|------|------|
|           | STATION                 |      |      |      |      |      |      |      |      |
|           | CDCD                    | CDCN | FKRD | FKRN | DBCD | DBCN | OYCD | OYCN |      |
| 16 SEP 80 | 8.0                     | 6.5  | 6.0  | 5.5  | 7.2  | 6.9  | 7.9  | 6.3  | 6.8  |
| 14 OCT 80 | 6.7                     | 11.1 | 9.4  | 7.1  | 8.1  | 8.9  | 8.5  | 8.1  | 8.5  |
| 19 NOV 80 | 9.9                     | 11.0 | 9.7  | 9.7  | 9.9  | 10.0 | 9.7  | 9.2  | 9.9  |
| 10 DEC 80 | 10.6                    | 10.3 | 10.2 | 9.9  | 10.6 | 10.4 | 11.1 | 10.0 | 10.3 |
| 14 JAN 81 | --                      | --   | 12.4 | 14.0 | --   | --   | 15.5 | 14.5 | 14.1 |
| 12 FEB 81 | 10.0                    | 10.0 | 8.9  | 8.8  | 9.3  | 9.1  | 8.7  | 8.3  | 9.1  |
| 24 MAR 81 | 11.4                    | 10.8 | 11.2 | 10.2 | 11.5 | 9.8  | 10.5 | 10.0 | 10.7 |
| 15 APR 81 | 8.3                     | 8.5  | 9.2  | 7.3  | 9.7  | 9.1  | 9.1  | 8.0  | 8.6  |
| 12 MAY 81 | 8.3                     | 7.8  | 7.7  | 6.6  | 9.0  | 7.5  | 9.1  | 7.3  | 7.9  |
| 9 JUN 81  | 5.6                     | 5.5  | 6.5  | 4.2  | 7.6  | 5.8  | 6.5  | 6.0  | 6.0  |
| 15 JUL 81 | 6.1                     | 5.2  | 7.2  | 4.5  | 9.1  | 5.3  | 6.4  | 4.5  | 6.0  |
| 12 AUG 81 | 5.9                     | 7.2  | 6.3  | 5.2  | 5.3  | 3.8  | 5.5  | 4.4  | 5.5  |
| MEAN      | 8.3                     | 8.5  | 8.7  | 7.8  | 8.8  | 7.9  | 9.0  | 8.1  | 8.4  |

TABLE 3-30 (CONT.)

| DATE      | Salinity (ppt) |      |      |      |      |      |      |      |      |
|-----------|----------------|------|------|------|------|------|------|------|------|
|           | STATION        |      |      |      |      |      |      |      |      |
| CDCD      | CDCN           | FKRD | FKRN | DBCD | DBCN | OYCD | OYCN | MEAN |      |
| 16 SEP 80 | 15.0           | 24.2 | 27.0 | 27.7 | 28.0 | 27.4 | 26.6 | 27.3 | 25.4 |
| 14 OCT 80 | 22.0           | 22.2 | 24.9 | 25.7 | 26.2 | 26.0 | 23.9 | 24.8 | 24.5 |
| 19 NOV 80 | 23.5           | 22.7 | 26.6 | 26.0 | 27.3 | 26.5 | 26.5 | 25.7 | 25.6 |
| 10 DEC 80 | 22.4           | 18.5 | 25.0 | 25.5 | 26.8 | 27.2 | 24.4 | 24.5 | 24.3 |
| 14 JAN 81 | --             | --   | 22.2 | 17.5 | --   | --   | 23.8 | 25.1 | 22.1 |
| 12 FEB 81 | 22.0           | 23.0 | 25.3 | 25.8 | 27.5 | 28.0 | 24.5 | 25.8 | 25.2 |
| 24 MAR 81 | 22.4           | 14.9 | 23.4 | 21.0 | 25.0 | 25.1 | 23.3 | 23.0 | 22.3 |
| 15 APR 81 | 21.1           | 20.3 | 22.2 | 22.3 | 22.1 | 23.4 | 24.0 | 22.0 | 22.2 |
| 12 MAY 81 | 18.4           | 20.3 | 22.9 | 22.8 | 23.8 | 24.1 | 22.0 | 22.7 | 22.1 |
| 9 JUN 81  | 20.3           | 16.7 | 24.9 | 25.1 | 25.5 | 25.9 | 24.5 | 24.3 | 23.4 |
| 15 JUL 81 | 19.8           | 18.5 | 22.1 | 23.2 | 23.0 | 23.9 | 22.0 | 22.9 | 21.9 |
| 12 AUG 81 | 19.0           | 16.7 | 28.0 | 22.9 | 23.0 | 23.8 | 22.7 | 22.8 | 22.4 |
| MEAN      | 20.5           | 19.8 | 24.6 | 23.8 | 25.3 | 25.6 | 24.0 | 24.2 | 23.5 |

TABLE 3-30 (CONT.)

| DATE      | pH      |      |      |      |      |      |      |      |
|-----------|---------|------|------|------|------|------|------|------|
|           | STATION |      |      |      |      |      |      |      |
|           | CDCD    | CDCN | FKRD | FKRN | DBCD | DBCN | OYCD | OYCN |
| 16 SEP 80 | 7.7     | 7.5  | 7.7  | 7.6  | 7.8  | 7.8  | 7.7  | 7.6  |
| 14 OCT 80 | 7.9     | 8.3  | 8.1  | 8.0  | 8.0  | 8.1  | 8.0  | 7.9  |
| 19 NOV 80 | 7.9     | 7.8  | 7.9  | 7.9  | 8.0  | 7.9  | 7.9  | 7.8  |
| 10 DEC 80 | 7.8     | 7.8  | 7.8  | 7.9  | 7.9  | 7.9  | 7.9  | 7.8  |
| 14 JAN 81 | --      | --   | 7.9  | 7.5  | --   | --   | 7.9  | 7.9  |
| 12 FEB 81 | 7.9     | 7.9  | 8.2  | 8.0  | 8.1  | 8.1  | 8.2  | 8.0  |
| 24 MAR 81 | 8.1     | 8.0  | 8.2  | 8.0  | 8.2  | 8.1  | 8.1  | 8.2  |
| 15 APR 81 | 7.9     | 7.8  | 8.1  | 8.0  | 8.4  | 8.3  | 8.2  | 8.0  |
| 12 MAY 81 | 7.9     | 7.9  | 8.1  | 7.9  | 8.1  | 8.0  | 8.0  | 7.9  |
| 9 JUN 81  | 7.8     | 7.7  | 8.1  | 7.9  | 8.3  | 8.1  | 8.0  | 7.9  |
| 15 JUL 81 | 8.3     | 8.0  | 8.2  | 7.9  | 8.3  | 8.3  | 8.1  | 8.0  |
| 12 AUG 81 | 8.0     | 8.0  | 8.0  | 8.0  | 8.0  | 7.9  | 8.0  | 7.9  |
| MEAN      | 7.9     | 7.9  | 8.0  | 7.9  | 8.1  | 8.0  | 8.0  | 7.9  |



TABLE 3-31 BOTTOM WATER QUALITY MEASUREMENTS ASSOCIATED WITH BARNEGAT BAY OTTER TRAWL SAMPLING, SEPTEMBER 1980 - AUGUST 1981

| DATE     | Temperature (C) |      |      |      |      |      |      |      |      |
|----------|-----------------|------|------|------|------|------|------|------|------|
|          | CDCD            | CDCN | FKRD | FKRN | DBCD | DBCN | OYCD | OYCN | MEAN |
| 9 SEP 80 | 23.0            | 24.2 | 23.9 | 24.1 | 23.1 | 23.5 | 28.5 | 29.3 | 24.9 |
| 7 OCT 80 | 16.3            | 16.6 | 16.6 | 16.9 | 16.8 | 15.7 | 22.2 | 22.3 | 17.9 |
| 5 NOV 80 | 9.6             | 9.8  | 10.4 | 10.1 | 9.3  | 9.0  | 15.4 | 14.2 | 11.0 |
| 4 DEC 80 | 0.2             | 2.2  | 0.9  | 2.4  | 1.1  | 2.4  | 10.5 | 8.3  | 3.5  |
| 7 JAN 81 | --              | --   | -0.1 | -0.6 | --   | --   | 1.4  | 4.8  | 1.3  |
| 4 FEB 81 | 2.0             | 2.0  | -0.6 | 0.3  | -1.0 | 0.5  | 4.0  | 4.2  | 1.4  |
| 3 MAR 81 | 4.6             | 4.8  | 5.9  | 6.3  | 5.0  | 5.7  | 9.7  | 9.7  | 6.5  |
| 7 APR 81 | 12.1            | 10.9 | 14.2 | 12.0 | 11.6 | 11.7 | 16.7 | 15.1 | 13.0 |
| 5 MAY 81 | 14.8            | 15.0 | 15.1 | 14.4 | 15.9 | 14.8 | 14.4 | 14.8 | 14.9 |
| 3 JUN 81 | 19.5            | 20.3 | 19.8 | 21.7 | 19.5 | 20.0 | 24.9 | 24.3 | 21.2 |
| 8 JUL 81 | 25.7            | 26.4 | 26.7 | 26.0 | 26.9 | 27.2 | 30.8 | 30.6 | 27.5 |
| 5 AUG 81 | 25.9            | 26.1 | 26.1 | 25.6 | 26.8 | 25.6 | 29.8 | 27.9 | 26.7 |
| MEAN     | 14.0            | 14.4 | 13.2 | 13.3 | 14.1 | 14.2 | 17.3 | 17.1 | 14.7 |

Note: -- indicates measurement not taken.

TABLE 3-31 (CONT.)

## Dissolved Oxygen (mg/l)

| DATE     | STATION |      |      |      |      |      |      |      | MEAN |
|----------|---------|------|------|------|------|------|------|------|------|
|          | CDCD    | CDCN | FKRD | FKRN | DBCD | DBCN | OYCD | OYCN |      |
| 9 SEP 80 | 5.6     | 6.0  | 5.4  | 6.1  | 6.1  | 7.4  | 5.0  | 5.1  | 5.8  |
| 7 OCT 80 | 7.0     | 7.4  | 7.7  | 6.9  | 7.9  | 6.9  | 7.4  | 6.7  | 7.2  |
| 5 NOV 80 | 8.6     | 8.5  | 8.9  | 8.2  | 9.2  | 9.0  | 8.5  | 8.4  | 8.7  |
| 4 DEC 80 | 11.1    | 11.4 | 10.5 | 10.9 | 10.9 | 11.0 | 9.9  | 10.4 | 10.8 |
| 7 JAN 81 | --      | --   | 12.4 | 10.8 | --   | --   | 12.4 | 11.3 | 11.7 |
| 4 FEB 81 | 9.9     | 10.1 | 10.6 | 12.8 | 11.0 | 13.8 | 10.4 | 12.3 | 11.3 |
| 3 MAR 81 | 9.9     | 10.3 | 9.5  | 9.9  | 9.7  | 10.3 | 10.1 | 9.9  | 9.9  |
| 7 APR 81 | 8.3     | 11.1 | 7.6  | 9.3  | 10.5 | 10.3 | 9.4  | 8.9  | 9.4  |
| 5 MAY 81 | 6.9     | 7.7  | 7.5  | 7.8  | 7.1  | 6.8  | 7.3  | 8.4  | 7.4  |
| 3 JUN 81 | 6.3     | 7.8  | 6.6  | 6.8  | 5.9  | 6.4  | 5.9  | 6.4  | 6.5  |
| 8 JUL 81 | 5.7     | 5.8  | 7.5  | 4.6  | 6.6  | 6.1  | 6.2  | 5.0  | 5.9  |
| 5 AUG 81 | 6.2     | 7.1  | 6.0  | 6.7  | 7.6  | 7.0  | 6.6  | 5.7  | 6.6  |
| MEAN     | 7.8     | 8.4  | 8.3  | 8.4  | 8.4  | 8.6  | 8.3  | 8.2  | 8.3  |

TABLE 3-31 (CONT.)

## Salinity (ppt)

| DATE     | STATION |      |      |      |      |      |      |      | MEAN |
|----------|---------|------|------|------|------|------|------|------|------|
|          | CDCD    | CDCN | FKRD | FKRN | DBCD | DBCN | OYCD | OYCN |      |
| 9 SEP 80 | 22.1    | 23.8 | 24.4 | 25.0 | 25.4 | 25.1 | 24.1 | 24.8 | 24.3 |
| 7 OCT 80 | 24.5    | 25.6 | 26.3 | 26.5 | 27.0 | 30.6 | 25.8 | 26.1 | 26.5 |
| 5 NOV 80 | 25.9    | 24.4 | 26.6 | 27.5 | 26.9 | 27.1 | 25.2 | 26.5 | 26.2 |
| 4 DEC 80 | 20.2    | 18.5 | 23.6 | 24.0 | 26.0 | 26.8 | 22.1 | 23.6 | 23.1 |
| 7 JAN 81 | --      | --   | 25.6 | 27.0 | --   | --   | 25.5 | 23.1 | 25.3 |
| 4 FEB 81 | 20.4    | 23.1 | 25.3 | 26.3 | 27.6 | 27.1 | 25.3 | 26.0 | 25.1 |
| 3 MAR 81 | 22.6    | 20.3 | 24.1 | 23.2 | 26.5 | 26.5 | 22.8 | 24.5 | 23.8 |
| 7 APR 81 | 22.4    | 23.2 | 22.9 | 24.0 | 23.0 | 23.6 | 22.8 | 22.7 | 23.1 |
| 5 MAY 81 | 22.6    | 22.3 | 23.3 | 24.4 | 23.8 | 24.2 | 26.1 | 22.4 | 23.6 |
| 3 JUN 81 | 20.3    | 21.6 | 23.0 | 23.8 | 25.0 | 24.7 | 22.4 | 23.2 | 23.0 |
| 8 JUL 81 | 21.6    | 22.2 | 22.6 | 24.3 | 24.1 | 24.2 | 22.4 | 22.5 | 23.0 |
| 5 AUG 81 | 22.3    | 21.1 | 23.9 | 24.0 | 24.7 | 24.8 | 24.0 | 24.1 | 23.6 |
| MEAN     | 22.2    | 22.4 | 24.3 | 25.0 | 25.4 | 25.9 | 24.0 | 24.1 | 24.2 |



TABLE 3-32 GENERAL LINEAR MODEL RESULTS (MULTIPLE REGRESSION) FOR FIELD-FISHERIES CATCHES RELATIVE TO VARIOUS PLANT-OPERATIONAL, METEOROLOGICAL, AND WATER QUALITY PARAMETERS FOR SEPTEMBER 1975 - AUGUST 1981

| Species                      | Gear         | Season | r <sup>2</sup> | N   | Variable 1 | Variable 2     | Variable 3     |
|------------------------------|--------------|--------|----------------|-----|------------|----------------|----------------|
| <u>Anchoa mitchilli</u>      | Trawl        | Fall   | 0.05           | 181 | Ambient    | --             | --             |
|                              | Trawl        | Spring | 0.01           | 226 | --         | --             | --             |
|                              | Trawl        | Summer | 0.01           | 292 | --         | --             | --             |
|                              | Trawl        | Winter | 0.04           | 285 | Ambient    | Total flow     | --             |
| <u>Cynoscion regalis</u>     | Trawl        | Fall   | 0.11           | 100 | Total flow | Air temp.      | DO             |
|                              | Trawl        | Spring | 0.02           | 147 | --         | --             | --             |
|                              | Trawl        | Summer | 0.04           | 242 | Air temp.  | --             | --             |
|                              | Trawl        | Winter | 0.01           | 210 | --         | --             | --             |
| <u>Paralichthys dentatus</u> | Trawl        | Fall   | 0.08           | 100 | --         | --             | --             |
|                              | Trawl        | Spring | 0.05           | 175 | --         | --             | --             |
|                              | Trawl        | Summer | 0.03           | 255 | --         | --             | --             |
|                              | Trawl        | Winter | 0.01           | 216 | --         | --             | --             |
| <u>Callinectes sapidus</u>   | Trawl        | Fall   | 0.04           | 181 | --         | --             | --             |
|                              | Trawl        | Spring | 0.04           | 222 | Wind Speed | --             | --             |
|                              | Trawl        | Summer | 0.06           | 258 | Temp.      | --             | --             |
|                              | Trawl        | Winter | 0.07           | 278 | Temp.      | Winds          | --             |
| <u>Crangon septemspinosa</u> | 12.2-m seine | Fall   | 0.11           | 177 | Temp.      | Delta-T        | Heat rejection |
|                              | 12.2-m seine | Spring | 0.22           | 191 | Delta-T    | Heat rejection | Temp.          |
|                              | 12.2-m seine | Winter | 0.01           | 306 | --         | --             | --             |

Note: Ambient = ambient water temperature; Total flow = total cooling water and dilution flow; DO = dissolved oxygen; sal = salinity; Temp = intake temperature measured with sample collection. Variables are arranged left to right in decreasing order of importance; only those significant ( $\alpha = 0.05$ ) are shown; r<sup>2</sup> = coefficient of determination

TABLE 3-32 (CONT.)

| <u>Species</u>                       | <u>Gear</u>  | <u>Season</u> | <u>r<sup>2</sup></u> | <u>N</u> | <u>Variable 1</u> | <u>Variable 2</u> | <u>Variable 3</u> |
|--------------------------------------|--------------|---------------|----------------------|----------|-------------------|-------------------|-------------------|
| <u>Syngnathus fuscus</u>             | 12.2-m seine | Fall          | 0.02                 | 178      | --                | --                | --                |
|                                      | 12.2-m seine | Spring        | 0.06                 | 193      | Ambient           | Sal               | --                |
|                                      | 12.2-m seine | Winter        | 0.02                 | 304      | --                | --                | --                |
| <u>Menidia menidia</u>               | 12.2-m seine | Fall          | 0.03                 | 178      | Wind speed        | --                | --                |
|                                      | 12.2-m seine | Summer        | 0.04                 | 243      | Ambient           | --                | --                |
|                                      | 12.2-m seine | Winter        | 0.05                 | 304      | Ambient           | Winds             | --                |
| <u>Pseudopleuronectes americanus</u> | Trawl        | Spring        | 0.16                 | 193      | Heat rej.         | Delta-T           | DO                |
|                                      | Trawl        | Winter        | 0.004                | 273      | --                | --                | --                |
|                                      | 12.2-m seine | Spring        | 0.04                 | 191      | --                | --                | --                |
|                                      | 12.2-m seine | Winter        | 0.02                 | 304      | --                | --                | --                |
|                                      | 45.7-m seine | Spring        | 0.13                 | 156      | Delta-T           | Heat rejection    | Ambient           |
|                                      | 45.7-m seine | Winter        | 0.01                 | 236      | --                | --                | --                |
| <u>Pomatomus saltatrix</u>           | 45.7-m seine | Fall          | 0.04                 | 110      | --                | --                | --                |
|                                      | 45.7-m seine | Spring        | 0.17                 | 156      | Temp.             | Delta-T           | Heat rejection    |
|                                      | 45.7-m seine | Summer        | 0.06                 | 186      | Temp.             | --                | --                |
|                                      | 45.7-m seine | Winter        | 0.02                 | 238      | Temp.             | --                | --                |

TABLE 3-33 RELATIVE RANKING OF ANNUAL CATCH PER UNIT EFFORT OF 23 SELECTED FISH SPECIES AT FOUR STATIONS IN WESTERN BARNEGAT BAY

|                                      | Forked River |              |              |              |              |              |              |              |              |              |
|--------------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
|                                      | NOV 66       | NOV 67       | NOV 68       | NOV 69       | NOV 75       | NOV 76       | NOV 77       | NOV 78       | NOV 79       | NOV 80       |
|                                      | TO<br>OCT 67 | TO<br>OCT 68 | TO<br>OCT 69 | TO<br>OCT 70 | TO<br>OCT 76 | TO<br>OCT 77 | TO<br>OCT 78 | TO<br>OCT 79 | TO<br>OCT 80 | TO<br>OCT 81 |
| <u>Alosa aestivalis</u>              | 7.5          | 20.5         | 10.0         | 6.0          | 19.0         | 19.5         | 19.5         | 19.0         | 19.5         | 20.5         |
| <u>Anchoa mitchilli</u>              | 3.0          | 2.0          | 2.0          | 2.0          | 2.0          | 1.0          | 2.0          | 2.0          | 3.0          | 3.0          |
| <u>Apeltes quadracus</u>             | 1.0          | 3.0          | 4.0          | 4.0          | 8.5          | 8.0          | 5.0          | 3.0          | 2.0          | 5.0          |
| <u>Bairdiella chrysura</u>           | 4.0          | 5.0          | 3.0          | 3.0          | 12.0         | 19.5         | 13.5         | 12.0         | 19.5         | 15.5         |
| <u>Brevoortia tyrannus</u>           | 19.5         | 20.5         | 17.5         | 18.5         | 19.0         | 19.5         | 19.5         | 19.0         | 19.5         | 20.5         |
| <u>Caranx hippos</u>                 | 19.5         | 17.0         | 11.0         | 13.0         | 19.0         | 19.5         | 11.0         | 19.0         | 19.5         | 12.5         |
| <u>Cynoscion regalis</u>             | 19.5         | 15.5         | 21.0         | 22.0         | 19.0         | 14.5         | 13.5         | 12.0         | 14.5         | 9.0          |
| <u>Cyprinodon variegatus</u>         | 19.5         | 12.0         | 17.5         | 18.5         | 12.0         | 6.5          | 19.5         | 12.0         | 12.5         | 7.0          |
| <u>Fundulus diaphanus</u>            | 19.5         | 6.0          | 12.0         | 10.0         | 19.0         | 19.5         | 19.5         | 19.0         | 14.5         | 15.5         |
| <u>Fundulus heteroclitus</u>         | 9.0          | 7.0          | 9.0          | 7.0          | 3.0          | 4.0          | 7.0          | 5.0          | 9.0          | 2.0          |
| <u>Fundulus majalis</u>              | 14.0         | 14.0         | 21.0         | 9.0          | 12.0         | 12.5         | 19.5         | 9.0          | 12.5         | 11.0         |
| <u>Leiostomus xanthurus</u>          | 19.5         | 20.5         | 21.0         | 22.0         | 4.0          | 6.5          | 19.5         | 19.0         | 19.5         | 20.5         |
| <u>Mugil cephalus</u>                | 19.5         | 20.5         | 21.0         | 18.5         | 12.0         | 10.0         | 19.5         | 19.0         | 11.0         | 6.0          |
| <u>Mugil curema</u>                  | 14.0         | 20.5         | 13.5         | 18.5         | 8.5          | 10.0         | 13.5         | 19.0         | 19.5         | 20.5         |
| <u>Menidia menidia</u>               | 2.0          | 1.0          | 1.0          | 1.0          | 1.0          | 2.0          | 1.0          | 1.0          | 1.0          | 1.0          |
| <u>Menticirrhus saxatilis</u>        | 14.0         | 15.5         | 16.0         | 14.5         | 6.5          | 19.5         | 13.5         | 19.0         | 19.5         | 15.5         |
| <u>Opsanus tau</u>                   | 11.5         | 12.0         | 15.0         | 14.5         | 19.0         | 12.5         | 8.0          | 8.0          | 10.0         | 8.0          |
| <u>Pomatomus saltatrix</u>           | 10.0         | 12.0         | 13.5         | 12.0         | 19.0         | 10.0         | 3.0          | 7.0          | 7.5          | 10.0         |
| <u>Pseudopleuronectes americanus</u> | 7.5          | 10.0         | 8.0          | 16.0         | 6.5          | 3.0          | 6.9          | 6.0          | 4.0          | 20.5         |
| <u>Sphoeroides maculatus</u>         | 5.0          | 8.0          | 6.0          | 11.0         | 19.0         | 19.5         | 9.5          | 12.0         | 19.5         | 20.5         |
| <u>Strongylura marina</u>            | 11.5         | 9.0          | 7.0          | 8.0          | 12.0         | 19.5         | 9.5          | 12.0         | 6.0          | 12.5         |
| <u>Syngnathus fuscus</u>             | 6.0          | 4.0          | 5.0          | 5.0          | 5.0          | 5.0          | 4.0          | 4.0          | 5.0          | 4.0          |
| <u>Trachinotus falcatus</u>          | 19.5         | 20.5         | 21.0         | 22.0         | 19.0         | 14.5         | 19.5         | 19.0         | 7.5          | 15.5         |



TABLE 3-33 (CONT.)

|                                      | Oyster Creek |        |        |        |        |        |        |        |        |        |
|--------------------------------------|--------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                                      | NOV 66       | NOV 67 | NOV 68 | NOV 69 | NOV 75 | NOV 76 | NOV 77 | NOV 78 | NOV 79 | NOV 80 |
|                                      | T0           | T0     | T0     | T0     | T0     | T0     | T0     | T0     | T0     | T0     |
|                                      | OCT 67       | OCT 68 | OCT 69 | OCT 70 | OCT 76 | OCT 77 | OCT 78 | OCT 79 | OCT 80 | OCT 81 |
| <u>Alosa aestivalis</u>              | 14.0         | 19.0   | 10.0   | 11.0   | 22.0   | 17.0   | 18.5   | 18.5   | 15.0   | 20.5   |
| <u>Anchoa mitchilli</u>              | 4.0          | 3.0    | 2.0    | 6.0    | 1.0    | 2.0    | 2.0    | 2.0    | 9.0    | 2.0    |
| <u>Apeltes quadracus</u>             | 3.0          | 2.0    | 3.0    | 14.0   | 5.0    | 17.0   | 4.0    | 5.0    | 2.0    | 3.0    |
| <u>Bairdiella chrysura</u>           | 5.0          | 10.0   | 4.0    | 7.0    | 17.5   | 17.0   | 18.5   | 18.5   | 20.5   | 12.0   |
| <u>Brevoortia tyrannus</u>           | 22.0         | 19.0   | 17.0   | 9.5    | 17.5   | 17.0   | 12.0   | 18.5   | 6.0    | 20.5   |
| <u>Caranx hippos</u>                 | 15.0         | 11.5   | 13.0   | 16.0   | 4.0    | 17.0   | 9.5    | 18.5   | 15.0   | 12.0   |
| <u>Cynoscion regalis</u>             | 22.0         | 19.0   | 20.5   | 21.0   | 17.5   | 17.0   | 18.5   | 18.5   | 20.5   | 20.5   |
| <u>Cyprinodon variegatus</u>         | 18.5         | 19.0   | 20.5   | 8.0    | 12.5   | 17.0   | 7.0    | 6.0    | 5.0    | 6.0    |
| <u>Fundulus diaphanus</u>            | 18.5         | 7.5    | 11.0   | 3.0    | 17.5   | 17.0   | 9.5    | 18.5   | 15.0   | 16.0   |
| <u>Fundulus heteroclitus</u>         | 9.0          | 5.0    | 5.0    | 2.0    | 6.0    | 4.0    | 5.0    | 4.0    | 4.0    | 4.5    |
| <u>Fundulus majalis</u>              | 12.0         | 19.0   | 20.5   | 4.0    | 17.5   | 17.0   | 18.5   | 18.5   | 10.0   | 4.5    |
| <u>Leiostomus xanthurus</u>          | 16.5         | 19.0   | 20.5   | 21.0   | 8.0    | 10.0   | 18.5   | 12.5   | 20.5   | 20.5   |
| <u>Mugil cephalus</u>                | 16.5         | 19.0   | 20.5   | 21.0   | 22.0   | 17.0   | 17.5   | 12.5   | 3.0    | 9.0    |
| <u>Mugil curema</u>                  | 20.0         | 19.0   | 15.5   | 21.0   | 10.5   | 7.0    | 18.5   | 10.0   | 15.0   | 20.5   |
| <u>Menidia menidia</u>               | 1.0          | 1.0    | 1.0    | 1.0    | 2.0    | 1.0    | 1.0    | 1.0    | 1.0    | 1.0    |
| <u>Menticirrhus saxatilis</u>        | 8.0          | 9.0    | 9.0    | 12.0   | 10.5   | 17.0   | 14.5   | 18.5   | 20.5   | 20.5   |
| <u>Opsanus tau</u>                   | 10.0         | 11.5   | 12.0   | 13.0   | 7.0    | 8.5    | 6.0    | 8.0    | 20.5   | 10.0   |
| <u>Pomatomus saltatrix</u>           | 13.0         | 14.0   | 15.5   | 18.0   | 17.5   | 6.0    | 18.5   | 18.5   | 11.0   | 14.0   |
| <u>Pseudopleuronectes americanus</u> | 6.0          | 6.0    | 7.0    | 15.0   | 22.0   | 3.0    | 12.0   | 10.0   | 12.0   | 12.0   |
| <u>Sphoeroides maculatus</u>         | 2.0          | 4.0    | 8.0    | 17.0   | 14.0   | 17.0   | 18.5   | 18.5   | 20.5   | 16.0   |
| <u>Strongylura marina</u>            | 11.0         | 13.0   | 14.0   | 5.0    | 3.0    | 5.0    | 12.0   | 3.0    | 7.5    | 8.0    |
| <u>Syngnathus fuscus</u>             | 7.0          | 7.5    | 6.0    | 9.5    | 12.5   | 8.5    | 8.0    | 7.0    | 15.0   | 7.0    |
| <u>Trachinotus falcatus</u>          | 22.0         | 19.0   | 20.5   | 21.0   | 9.0    | 17.0   | 3.0    | 10.0   | 7.5    | 16.0   |

TABLE 3-33 (CONT.)

|                                      | Cedar Creek  |              |              |              |              |              |              |              |              |              |
|--------------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
|                                      | NOV 66       | NOV 67       | NOV 68       | NOV 69       | NOV 75       | NOV 76       | NOV 77       | NOV 78       | NOV 79       | NOV 80       |
|                                      | TO<br>OCT 67 | TO<br>OCT 68 | TO<br>OCT 69 | TO<br>OCT 70 | TO<br>OCT 76 | TO<br>OCT 77 | TO<br>OCT 78 | TO<br>OCT 79 | TO<br>OCT 80 | TO<br>OCT 81 |
| <u>Alosa aestivalis</u>              | 20.5         | 14.0         | 19.0         | 12.0         | 18.0         | 17.0         | 16.5         | 16.5         | 18.5         | 19.0         |
| <u>Anchoa mitchilli</u>              | 4.0          | 3.0          | 2.0          | 2.0          | 2.0          | 2.0          | 2.0          | 3.0          | 5.0          | 2.0          |
| <u>Apeltes quadracus</u>             | 3.0          | 2.0          | 4.0          | 3.0          | 6.5          | 6.0          | 4.5          | 2.0          | 2.0          | 3.0          |
| <u>Bairdiella chrysur</u>            | 8.0          | 19.5         | 3.0          | 7.0          | 18.0         | 17.0         | 16.5         | 16.5         | 18.5         | 19.0         |
| <u>Brevoortia tyrannus</u>           | 20.5         | 11.5         | 19.0         | 20.5         | 18.0         | 17.0         | 16.5         | 16.5         | 18.5         | 19.0         |
| <u>Caranx hippos</u>                 | 16.0         | 14.0         | 14.0         | 16.0         | 18.0         | 17.0         | 16.5         | 16.5         | 18.5         | 11.5         |
| <u>Cynoscion regalis</u>             | 20.5         | 19.5         | 19.0         | 20.5         | 6.5          | 17.0         | 16.5         | 16.5         | 18.5         | 10.0         |
| <u>Crypinodon variegatus</u>         | 15.0         | 11.5         | 13.0         | 13.5         | 18.0         | 17.0         | 9.0          | 16.5         | 9.0          | 8.5          |
| <u>Fundulus diaphanus</u>            | 13.0         | 4.0          | 5.0          | 10.0         | 18.0         | 17.0         | 7.0          | 5.0          | 13.0         | 19.0         |
| <u>Fundulus heteroclitus</u>         | 5.0          | 5.0          | 8.0          | 4.0          | 3.0          | 5.0          | 3.0          | 6.0          | 6.0          | 5.5          |
| <u>Fundulus majalis</u>              | 6.0          | 19.5         | 19.0         | 8.0          | 8.5          | 17.0         | 16.5         | 16.5         | 18.5         | 4.0          |
| <u>Leiostomus xanthurus</u>          | 20.5         | 19.5         | 19.0         | 20.5         | 10.0         | 8.5          | 16.5         | 16.5         | 18.5         | 13.5         |
| <u>Mugil cephalus</u>                | 20.5         | 19.5         | 19.0         | 20.5         | 18.0         | 17.0         | 16.5         | 16.5         | 11.0         | 19.0         |
| <u>Mugil curema</u>                  | 14.0         | 19.5         | 19.0         | 16.0         | 18.0         | 8.5          | 16.5         | 16.5         | 3.0          | 19.0         |
| <u>Menidia menidia</u>               | 1.0          | 1.0          | 1.0          | 1.0          | 1.0          | 1.0          | 1.0          | 1.0          | 1.0          | 1.0          |
| <u>Menticirrhus saxatilis</u>        | 12.0         | 19.5         | 19.0         | 20.5         | 11.5         | 17.0         | 16.5         | 16.5         | 16.5         | 13.5         |
| <u>Opsanus tau</u>                   | 11.0         | 8.0          | 7.0          | 10.0         | 4.0          | 17.0         | 16.5         | 8.0          | 11.0         | 19.0         |
| <u>Pomatomus saltatrix</u>           | 17.0         | 10.0         | 12.0         | 16.0         | 18.0         | 8.5          | 8.0          | 16.5         | 7.0          | 8.5          |
| <u>Pseudopleuronectes americanus</u> | 10.0         | 6.0          | 9.0          | 10.0         | 8.5          | 4.0          | 6.0          | 9.0          | 11.0         | 11.5         |
| <u>Sphaeroides maculatus</u>         | 2.0          | 14.0         | 10.0         | 13.5         | 18.0         | 17.0         | 16.5         | 16.5         | 18.5         | 19.0         |
| <u>Strongylura marina</u>            | 9.0          | 9.0          | 11.0         | 6.0          | 11.5         | 8.5          | 16.5         | 7.0          | 8.0          | 5.5          |
| <u>Syngnathus fuscus</u>             | 7.0          | 7.0          | 6.0          | 5.0          | 5.0          | 3.0          | 4.5          | 4.0          | 4.0          | 7.0          |
| <u>Trachinotus falcatus</u>          | 20.5         | 19.5         | 19.0         | 20.5         | 18.0         | 17.0         | 16.5         | 16.5         | 18.5         | 19.0         |

TABLE 3-33 (CONT.)

|                                      | Double Creek |              |              |              |              |              |              |              |              |              |
|--------------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
|                                      | NOV 66       | NOV 67       | NOV 68       | NOV 69       | NOV 75       | NOV 76       | NOV 77       | NOV 78       | NOV 79       | NOV 80       |
|                                      | TO<br>OCT 67 | TO<br>OCT 68 | TO<br>OCT 69 | TO<br>OCT 70 | TO<br>OCT 76 | TO<br>OCT 77 | TO<br>OCT 78 | TO<br>OCT 79 | TO<br>OCT 80 | TO<br>OCT 81 |
| <u>Alosa aestivalis</u>              | 20.0         | 19.5         | 16.5         | 19.0         | 19.0         | 16.5         | 18.5         | 12.0         | 19.0         | 20.5         |
| <u>Anchoa mitchilli</u>              | 9.0          | 5.0          | 11.0         | 19.0         | 2.0          | 7.5          | 8.0          | 6.0          | 2.0          | 3.0          |
| <u>Apeltes quadracus</u>             | 2.0          | 2.0          | 2.0          | 2.0          | 5.0          | 6.0          | 2.0          | 2.0          | 3.0          | 4.0          |
| <u>Bairdiella chrysura</u>           | 4.0          | 11.0         | 9.5          | 7.0          | 19.0         | 16.5         | 18.5         | 18.5         | 19.0         | 20.5         |
| <u>Brevoortia tyrannus</u>           | 20.0         | 19.5         | 20.5         | 19.0         | 19.0         | 16.5         | 18.5         | 18.5         | 19.0         | 20.5         |
| <u>Caranx hippos</u>                 | 16.0         | 13.5         | 8.0          | 19.0         | 9.0          | 16.5         | 18.5         | 18.5         | 19.0         | 16.0         |
| <u>Cynoscion regalis</u>             | 20.0         | 19.5         | 20.5         | 19.0         | 19.0         | 16.5         | 18.5         | 18.5         | 19.0         | 13.0         |
| <u>Cyprinodon variegatus</u>         | 15.0         | 15.0         | 20.5         | 14.0         | 8.0          | 16.5         | 9.5          | 12.0         | 5.0          | 5.0          |
| <u>Fundulus diaphanus</u>            | 12.0         | 7.0          | 14.5         | 13.0         | 19.0         | 16.5         | 7.0          | 18.5         | 12.0         | 20.5         |
| <u>Fundulus heteroclitus</u>         | 6.0          | 3.0          | 6.0          | 6.0          | 4.0          | 3.0          | 4.0          | 3.0          | 4.0          | 2.0          |
| <u>Fundulus majalis</u>              | 5.0          | 2.0          | 16.5         | 9.0          | 12.0         | 2.0          | 5.0          | 10.0         | 10.0         | 8.0          |
| <u>Leiostomus xanthurus</u>          | 20.0         | 19.5         | 20.5         | 19.0         | 3.0          | 16.5         | 18.5         | 12.0         | 19.0         | 16.0         |
| <u>Mugil cephalus</u>                | 20.0         | 19.5         | 14.5         | 19.0         | 19.0         | 16.5         | 18.5         | 18.5         | 6.0          | 7.0          |
| <u>Mugil curema</u>                  | 14.0         | 19.5         | 12.5         | 19.0         | 12.0         | 5.0          | 18.5         | 8.5          | 14.0         | 20.5         |
| <u>Menidia menidia</u>               | 1.0          | 1.0          | 1.0          | 1.0          | 1.0          | 1.0          | 1.0          | 1.0          | 1.0          | 1.0          |
| <u>Menticirrhus saxatilis</u>        | 11.0         | 19.5         | 9.5          | 11.0         | 19.0         | 16.5         | 18.5         | 18.5         | 19.0         | 16.0         |
| <u>Opsanus tau</u>                   | 13.0         | 12.0         | 20.5         | 8.0          | 12.0         | 16.5         | 12.0         | 18.5         | 13.0         | 11.5         |
| <u>Pomatomus saltatrix</u>           | 20.0         | 10.0         | 12.5         | 12.0         | 12.0         | 7.5          | 9.5          | 7.0          | 8.5          | 9.0          |
| <u>Pseudopleuronectes americanus</u> | 8.0          | 4.0          | 3.0          | 10.0         | 7.0          | 9.0          | 18.5         | 5.0          | 8.5          | 11.5         |
| <u>Sphaeroides maculatus</u>         | 3.0          | 13.5         | 5.0          | 4.0          | 19.0         | 16.5         | 6.0          | 18.5         | 19.0         | 14.0         |
| <u>Strongylura marina</u>            | 10.0         | 9.0          | 7.0          | 5.0          | 12.0         | 16.5         | 12.0         | 8.5          | 11.0         | 10.0         |
| <u>Syngnathus fuscus</u>             | 7.0          | 6.0          | 4.0          | 3.0          | 6.0          | 4.0          | 3.0          | 4.0          | 7.0          | 6.0          |
| <u>Trachinotus falcatus</u>          | 20.0         | 19.5         | 20.5         | 19.0         | 19.0         | 16.5         | 12.0         | 18.5         | 19.0         | 20.5         |

TABLE 3-34 MEAN ANNUAL CATCH PER UNIT EFFORT FOR 23 SELECTED TAXA COLLECTED AT THERMALLY UNAFFECTED STATIONS IN BARNEGAT BAY

| Taxa                   | Mean Annual CPUE |        |         |        |        |        |        | Median Annual CPUE |        | Significance of Difference |        |        |      |
|------------------------|------------------|--------|---------|--------|--------|--------|--------|--------------------|--------|----------------------------|--------|--------|------|
|                        | 66-67            | 67-68  | 68-69   | 69-70  | 70-71  | 71-72  | 72-73  | 73-74              | 74-75  |                            |        |        |      |
| <u>Mentha</u> spp.     | 72.244           | 42.889 | 62.097  | 41.256 | 26.516 | 22.847 | 28.742 | 67.063             | 62.375 | 241.439                    | 52.922 | 51.276 | N.S. |
| <u>A. mitchilli</u>    | 12.435           | 8.663  | 21.634  | 16.192 | 2.589  | 2.983  | 3.742  | 4.516              | 6.125  | 9.789                      | 13.992 | 4.535  | 0.05 |
| <u>A. quadracus</u>    | 29.587           | 18.960 | 6.429   | 2.977  | 0.395  | 0.339  | 1.227  | 7.031              | 5.347  | 4.456                      | 10.589 | 2.240  | N.S. |
| <u>B. chrysurus</u>    | 5.184            | 0.671  | 26.458  | 2.175  | 0.008  | 0.000  | 0.015  | 0.016              | 0.000  | 0.018                      | 4.478  | 0.009  | 0.05 |
| <u>S. maculatus</u>    | 15.089           | 0.127  | 0.529   | 0.469  | 0.000  | 0.000  | 0.212  | 0.016              | 0.000  | 0.035                      | 1.526  | 0.041  | 0.05 |
| <u>F. heteroclitus</u> | 3.156            | 1.226  | 0.370   | 0.519  | 1.008  | 1.085  | 0.712  | 2.344              | 1.764  | 5.509                      | 1.095  | 1.862  | N.S. |
| <u>S. fuscus</u>       | 1.822            | 1.413  | 1.206   | 1.023  | 0.339  | 0.898  | 0.555  | 1.344              | 0.750  | 1.842                      | 1.348  | 1.104  | N.S. |
| <u>P. americanus</u>   | 0.368            | 1.071  | 0.819   | 0.055  | 0.210  | 0.677  | 0.212  | 0.250              | 0.569  | 0.053                      | 0.527  | 0.311  | N.S. |
| <u>C. harengus</u>     | 3.283            | 0.123  | 0.697   | 0.003  | 0.000  | 0.000  | 0.000  | 0.000              | 0.000  | 0.000                      | 0.692  | 0.000  | 0.05 |
| <u>F. majalis</u>      | 1.730            | 0.179  | 0.004   | 0.111  | 0.064  | 1.441  | 0.182  | 0.063              | 0.139  | 0.895                      | 0.367  | 0.385  | N.S. |
| <u>F. diaphanus</u>    | 0.057            | 0.698  | 0.290   | 0.079  | 0.000  | 0.000  | 0.182  | 0.453              | 0.097  | 0.018                      | 0.257  | 0.115  | N.S. |
| <u>L. parva</u>        | 0.317            | 0.401  | 0.034   | 0.009  | 0.008  | 0.000  | 0.045  | 0.031              | 1.278  | 0.456                      | 0.178  | 0.238  | N.S. |
| <u>C. variegatus</u>   | 0.029            | 0.056  | 0.013   | 0.020  | 0.072  | 0.102  | 0.076  | 0.031              | 0.569  | 0.526                      | 0.029  | 0.210  | 0.05 |
| <u>S. marina</u>       | 0.305            | 0.163  | 0.361   | 0.312  | 0.040  | 0.017  | 0.061  | 0.234              | 0.319  | 0.298                      | 0.283  | 0.155  | N.S. |
| <u>M. saxatilis</u>    | 0.108            | 0.098  | 0.055   | 0.032  | 0.048  | 0.000  | 0.015  | 0.000              | 0.000  | 0.035                      | 0.050  | 0.016  | N.S. |
| <u>L. xanthurus</u>    | 0.060            | 0.000  | 0.000   | 0.000  | 1.008  | 0.118  | 0.000  | 0.016              | 0.000  | 0.035                      | 0.000  | 0.154  | 0.05 |
| <u>C. regalis</u>      | 0.000            | 0.009  | 0.008   | 0.009  | 0.040  | 0.017  | 0.015  | 0.016              | 0.014  | 0.192                      | 0.006  | 0.047  | 0.05 |
| <u>A. aestivatis</u>   | 0.092            | 0.004  | 0.059   | 0.271  | 0.000  | 0.000  | 0.000  | 0.016              | 0.000  | 0.000                      | 0.102  | 0.003  | 0.05 |
| <u>O. tau</u>          | 0.181            | 0.099  | 0.137   | 0.079  | 0.129  | 0.034  | 0.076  | 0.094              | 0.166  | 0.193                      | 0.123  | 0.114  | N.S. |
| <u>Mugil</u> spp.      | 0.044            | 0.000  | 0.068   | 0.009  | 0.048  | 0.356  | 0.015  | 0.047              | 0.750  | 0.600                      | 0.020  | 0.176  | N.S. |
| <u>Gobiosoma</u> spp.  | 0.025            | 0.024  | 0.021   | 0.023  | 0.089  | 0.017  | 0.091  | 0.016              | 3.625  | 0.246                      | 0.023  | 0.386  | N.S. |
| <u>P. saltatrix</u>    | 0.063            | 0.099  | 0.076   | 0.044  | 0.024  | 0.136  | 0.591  | 0.156              | 0.403  | 0.316                      | 0.070  | 0.410  | N.S. |
| Total                  | 149.829          | 77.421 | 108.761 | 66.350 | 32.943 | 34.118 | 37.378 | 84.141             | 85.542 | 268.755                    | 95.700 | 66.058 | N.S. |

#### 4. IMPINGEMENT OF FISH AND MACROINVERTEBRATES ON THE INTAKE SCREENS

##### 4.1 RESULTS

##### 4.1.1 General Species Composition and Abundance

Impingement<sup>†</sup> collections from September 1980 through August 1981 yielded 111 species of fish, invertebrates, and reptiles. Of the total species composition, 82 species were finfish, 27 species were invertebrates, and 2 were reptiles. Six species constituted 95 percent of the total annual numerical catch from the vertical traveling screens (Table 4-1). The total annual (sampling) catch of all species collected during the study period was 648,777 specimens; of this total catch 59,498 were fish (9.2 percent), 589,273 were invertebrates (90.8 percent), and 6 were reptiles (<0.1 percent).

The total weight of all specimens collected during the study period was 3,848.2 kilograms. Of this total, 1,073.5 kilograms (28 percent) were fish weight, 2,772.7 (72 percent) invertebrate weight, and 2.0 (<1 percent) reptile weight. Fifteen taxa accounted for more than 95 percent of the total weight of the annual catch (Table 4-2).

The seasonal distribution of estimated weekly numbers and weight of organisms impinged is illustrated in Figures 4-1 and 4-2. The period of maximum numerical abundance was bimodal--the first peak ranged from mid-November to mid-January followed by another that ranged from mid-March to mid-May. The peak weekly estimate of 1,152,390 individuals occurred during the second week of April. The weekly weight estimates also were bimodal--an isolated peak in November and a large peak in June, July, and August. The period of greatest estimated weight impinged (8,576.1 kg) occurred during the third week of July.

The day-night distribution of organisms collected from the traveling screens is presented in Table 4-3. Most organisms were more abundant in night samples. The total annual night catch of 544,442 organisms represented 83.9 percent of the overall catch. Of those organisms most abundant in impingement samples at night, the striped searobin exhibited the greatest difference in numbers caught during the day (9.6 percent) and night (90.4 percent). The smallmouth flounder yielded the greatest difference in weight between day and night catches (7.4 and 92.6 percent, respectively). Relatively few organisms were more abundant in the day catches. Of these, the butterfish showed the greatest tendency to appear in day collections (67 percent by number, 43 percent by weight).

##### 4.1.2 Occurrence and Abundance of Key Species

The U.S. Nuclear Regulatory Commission has defined 11 fish species and 2 invertebrate species as "Key Species" of finfish and shellfish (U.S. NRC 1978). The species so designated are: summer flounder, winter flounder, Atlantic menhaden, Atlantic silverside, bay anchovy, bluefish, weakfish, striped bass, northern pipefish, northern puffer, northern kingfish, blue



crab, and sand shrimp. All of the 11 defined key fish species, except striped bass, were collected from the OCNGS screens; both key invertebrate species were collected. The 10 key fish species accounted for 59.2 percent of the fish collected from the traveling screens. The two key invertebrate species accounted for 92.9 percent of the invertebrate catch by number and 89.7 percent of the catch by weight.

The abundance of each of the key species is described below; additionally, naked goby (Gobiosoma bosci) and smallmouth flounder (Etropus microstomus) abundances are described because of these species' abundance on the screens (>13 and 6 percent of the total fish catch, respectively). In the following discussion of key species, reference is made to weekly estimates of abundance for both numbers and weight (Tables 4-4 and 4-5, respectively). The "annual estimates" presented in Table 4-6 are not true annual estimates but rather are estimates for the 11.5-month period during which OCNGS operated.

In the presentations to follow, the use of the terms "collected" and "sampled" (and variants) refer to those specimens actually obtained in weekly 24-hour samples from the OCNGS screens. When referring to the weekly or annual projected impingement catches, the terms "estimate" or "estimated" are used.

#### 4.1.2.1 Atlantic Silverside (Menidia menidia)

Atlantic silverside was the most abundant fish species collected from the OCNGS screens; 19,000 specimens accounted for 32 percent of the total fish catch (2.9 percent of the total organism catch). Atlantic silverside ranked third in fish weight with 107.7 kilograms, accounting for 10 percent of the total fish catch (2.8 percent of the total organism catch). The annual estimate of the number impinged for this species was 268,961 and the total estimated weight was 1,519 kilograms (Table 4-6). The period of maximum abundance ranged from late October through mid-April with the peak estimate of weekly abundance occurring during the second week of November (102,425 individuals). The period of minimum estimated weekly abundance occurred during the warmer part of the year from July through mid-October. The peak weekly estimate of impinged weight was 551 kilograms which occurred during the second week of November. Approximately 75 percent of the total silverside catch by number and weight occurred during night collections (Table 4-3).

#### 4.1.2.2 Naked Goby (Gobiosoma bosci)

The naked goby was the second most abundant fish species collected from the screens--7,911 specimens constituted 13.3 percent of the total fish catch and 1.2 percent of the total screen catch (Table 4-1). Naked goby ranked 24th in terms of fish weight--4.1 kilograms comprised 0.4 percent of the total fish catch (0.1 percent of the total organism catch). Peak weekly estimated numerical catch occurred from late October 1980 through mid-January 1981 with the greatest estimated catch (65,868 individuals) occurring the third week of November 1980 (Table 4-4).

The greatest estimated weekly weight impinged (27.1 kg) occurred during the same week (Table 4-5). The estimated annual catch of naked goby was

105,378 individuals weighing 54.7 kilograms (Table 4-6). Night catches accounted for only 36 percent of the total catch by number (47 percent by weight, Table 4-3).

#### 4.1.2.3 Northern Pipefish (*Syngnathus fuscus*)

The third most abundant fish species collected was the northern pipefish with 5,659 specimens accounting for 9.5 percent of the total fish catch on the screens (0.9 percent of the total organism catch) (Table 4-1). Northern pipefish accounted for 1.4 percent of the annual fish weight catch (0.4 percent of the total organism weight); 15.4 kilograms were collected during the study year. Annual estimated abundance for this species was 92,602 individuals; the total annual estimated weight was 255.3 kilograms (Table 4-6). Species occurrence was greatest between late October and mid-December and again from mid-March through mid-July; peak estimated abundance occurred the third week of November when 18,843 individuals were estimated to have been impinged on the screens. The estimated weekly abundance was low throughout the rest of the study year. Estimated weight distribution throughout the year for pipefish was similar to the numerical distribution, with the peak estimated catch of 40.5 kilograms occurring during the second week of November. Night catches of this species accounted for 63.7 percent of the overall numerical catch and 69.4 percent of the weight.

#### 4.1.2.4 Smallmouth Flounder (*Etropus microstomus*)

Smallmouth flounder was the fourth most abundant fish species collected on the traveling screens--3,806 individuals composed 6.4 percent of the fish collected and 0.6 of the total organisms collected (Table 4-1). Smallmouth flounder were the sixth most abundant fish by weight--23 kilograms comprised 2.1 percent of the weight of impinged fish (0.6 percent of the weight of all organisms collected from the screens). The estimated annual catch of smallmouth flounder was 54,243 individuals weighing 325.5 kilograms (Table 4-6). The period of peak estimated smallmouth flounder occurred from mid-October through mid-December 1980. The greatest estimated abundance of 44,040 individuals occurred during the third week of November (Table 4-4). Likewise, maximum estimated weight (253.4 kg) occurred during the same week (Table 4-5). Night catches of smallmouth flounder accounted for 89.6 percent of the total numerical catch of this species and 92.6 percent of the total weight of this species (Table 4-3).

#### 4.1.2.5 Bay Anchovy (*Anchoa mitchilli*)

The bay anchovy was the fifth most abundant fish species collected from the screens--3,559 specimens constituted 6.0 percent of the total fish catch (0.5 percent of the total screen catch) (Table 4-1). Bay anchovy ranked 16th in terms of fish weight (0.7 percent of the fish catch; 0.2 percent of the total catch). The annual estimate of number impinged for this species was 76,994; the total estimated weight was 202.1 kilograms. Two periods of maximum anchovy abundance occurred. One period extended from September through mid-December 1980; the other extended from mid-June through mid-August 1981 and accounted for more fish than the earlier peak. Maximum estimated weekly abundance for this species was 22,932



specimens during mid-July. The period of minimum estimated weekly abundance occurred from January through March 1981. The peak weekly estimated weight of 65.6 kilograms occurred in mid-July. Night catches accounted for 74.6 percent of the annual anchovy catch by number; 87.7 percent of the total weight catch occurred at night.

#### 4.1.2.6 Winter Flounder (*Pseudopleuronectes americanus*)

Winter flounder was the sixth most abundant species of fish collected from the OCNGS traveling screens. A total of 2,931 specimens accounted for 4.9 percent of the total fish catch (0.5 percent of the total organism catch) (Table 4-1). Although sixth in numerical abundance, the relatively greater size attained by winter flounder resulted in its ranking first in fish weight; 507.2 kilograms composed 47.2 percent of the total fish catch (13.2 percent of the total organism catch by weight) (Table 4-2). Total estimated impingement for this species was 48,511 individuals weighing 8,644.5 kilograms (Table 4-6). The period of maximum estimated weekly abundance for this species extended from early November through February (Tables 4-4 and 4-5). The peak occurred in the third week of November when 14,702 individuals were estimated to have been impinged. The distribution of estimated weekly winter flounder weight impinged by OCNGS screens roughly paralleled numerical distribution. The peak weekly weight estimate of 2,281.2 kilograms occurred during the third week in November. No winter flounder were collected from September through mid-October or during the interval from late July through August 1981. Low catches occurred during the remainder of the study period with the exception of a minor peak from mid-June through mid-July 1981. Night collections accounted for 82.8 percent of the total numerical catch for this species; 81.0 percent of the weight collected was accounted for by night collections (Table 4-3).

#### 4.1.2.7 Weakfish (*Cynoscion regalis*)

Weakfish was the ninth most numerically abundant fish species collected from the screens with 1,596 specimens accounting for 2.7 percent of the annual fish catch (0.2 percent of the total organism catch) (Table 4-1). Weakfish accounted for 1.8 percent of the total fish weight collected (0.5 percent of the total organism catch) and were the eighth highest contributor to fish biomass (Table 4-2). Annual estimated abundance for this species was 37,401 individuals; the estimated annual weight of weakfish was 339.6 kilograms. The occurrence of this species on the screens was bimodal--the first peak extended from early September through mid-November 1980; the second peak extended from late June through mid-August 1981. The maximum weekly estimate occurred during the second period when 8,316 individuals were collected in late July 1981. No weakfish were impinged from late November through early May (Table 4-4). Maximum weekly estimated weight occurred during the second week of November when 152.7 kilograms, or approximately half of the annual estimate, was impinged (Table 4-5). Night catches accounted for 81.9 percent of the total weakfish catch by number; 44.5 percent of weakfish weight was collected at night.

#### 4.1.2.8 Atlantic Menhaden (*Brevoortia tyrannus*)

The 756 specimens of Atlantic menhaden collected from the traveling screens accounted for 1.3 percent of the total fish caught (0.1 percent of the total organism catch) (Table 4-1) and 3.3 percent of the total fish weight collected. It ranked 12th in abundance among finfish. The total weight for the study year was 35 kilograms (0.9 percent of the total organism catch) (Table 4-2). The annual estimated impingement abundance of menhaden was 12,005 individuals weighing 500.2 kilograms (Table 4-6). The period of maximum estimated abundance ranged from mid-October through mid-November with a peak estimated weekly abundance of 2,494 individuals (146.4 kg) in mid-November. A lesser period of abundance occurred from early July through the second week of August. Minimum estimated weekly abundance occurred from mid-December 1980 through June 1981 (Table 4-4). Night collections accounted for 67.1 percent of the total Atlantic menhaden catch and 60.1 percent of the total weight.

#### 4.1.2.9 Summer Flounder (*Paralichthys dentatus*)

Summer flounder ranked 15th in impingement abundance with 606 specimens accounting for 1.0 percent of total fish caught (0.1 percent of the total organism catch from the screens). Total summer flounder collected ranked second in fish weight; 112.6 kilograms constituted 10.5 percent of the total fish catch (2.9 percent of the total organism catch). The annual estimated impingement abundance for this species was 8,228 individuals weighing 1,532.7 kilograms (Table 4-6). The estimated catch for this species exhibited major and minor modes. The major mode extended from September through early December 1980 with the peak occurring in mid-October (2,327 individuals, 476.9 kg); the minor mode extended from mid-March through mid-April. Minimum catch estimates extended from May through mid-June. Night catches accounted for 60.2 percent of the total numeric summer flounder catch, while 57.1 percent of the total catch by weight was collected at night.

#### 4.1.2.10 Northern Puffer (*Sphoeroides maculatus*)

A total of 596 northern puffer (16th rank) were collected from the traveling screens during the study year. This total amounted to 1.0 percent of the annual total fish collected and 0.1 percent of the total organisms caught (Table 4-1). The total weight of this species collected from the screens was 5.9 kilograms, which accounted for 0.5 percent of total fish weight collected (0.2 percent of the total organism weight collected) (Table 4-2). The estimated annual abundance of this species was 17,179 individuals weighing 123.5 kilograms (Table 4-6). Two peaks in estimated weekly abundance are apparent for this species--a minor peak from September into early November 1980 and a major peak extending from mid-May through mid-August 1981. Peak weekly abundance occurred in mid-July 1981 when 11,592 individuals were estimated to have been impinged. This coincided with the period of maximum estimated weight impinged (66.1 kg) (Table 4-4 and 4-5).

#### 4.1.2.11 Bluefish (*Pomatomus saltatrix*)

The 439 bluefish captured accounted for 0.7 percent of the total fish caught (<0.1 percent of the total organism catch) and 0.5 percent of the total fish weight (5.4 kg). The annual estimated abundance of bluefish was 9,154 individuals weighing 93.4 kilograms. The peak estimated weekly abundance (2,766 fish) occurred during the last week of June after which the catch began to decline. A minor peak of estimated numerical bluefish catch occurred from September through November 1980. Peak estimated weekly weight occurred during the last week of October (24.6 kg). While the highest estimated numbers occurred in late June 1981, the greatest weight was impinged in October because of the presence of heavier individual fish. Of the total numeric bluefish catch, 74.7 percent occurred at night; 61.9 percent of the total bluefish weight was collected during night sampling.

#### 4.1.2.12 Northern Kingfish (*Menticirrhus saxatilis*)

A total of 5 northern kingfish weighing 0.5 kilograms was collected from the traveling screens during the study (<0.01 percent of all organisms collected). Estimated annual abundance of kingfish was 117 individuals weighing 12.2 kilograms (Table 4-6). Northern kingfish were collected during the interval from late October through mid-November 1980 with a maximum estimated weekly abundance of 43 individuals (5.0 kg) occurring during the second week of November 1980.

#### 4.1.2.13 Sand Shrimp (*Crangon septemspinosa*)

The sand shrimp was the most numerous organism collected. A total of 453,359 specimens was collected during the study period; this accounted for 76.9 percent of the total invertebrate catch (69.9 percent of the total organism catch) (Table 4-1). A total of 499.7 kilograms of sand shrimp was collected but accounted for only 18.0 percent of the total invertebrate catch weight (13.0 percent of the total organism catch) (Table 4-2) because of the small size this species attains. The estimated annual abundance for sand shrimp was 6,821,222 specimens weighing 7,615.9 kilograms (Table 4-6). The period of maximum abundance ranged from November through mid-June. The greatest estimated weekly abundance was 836,656 specimens weighing 1,842.4 kilograms, which occurred during the third week of November. Night catches accounted for 86.6 percent of the total numeric catch and 90 percent of the total catch by weight (Table 4-3).

#### 4.1.2.14 Blue Crab (*Callinectes sapidus*)

Blue crab was the second most numerous organism collected from the screens. A total of 93,907 specimens accounted for 15.9 percent of the total invertebrate catch (14.5 percent of the total organism catch). With regard to weight, this species accounted for the majority of both the invertebrate catch (71.7 percent) and the total organism catch (51.7 percent); 1,988.3 kilograms were collected during the study year. The estimated annual catch of blue crabs was 1,831,654 specimens weighing 43,808.4 kilograms. Blue crabs appeared in large numbers throughout the warmer part of the study period with the peak estimated weekly abundance

occurring during mid-July (204,708 individuals); maximum estimated weight of blue crabs impinged in a week was 7,731.8 kilograms during the same week. The period of minimum abundance extended from mid-November through mid-March. Night catches accounted for 82.9 percent of the total number of blue crabs and 76.3 percent of the total weight.

#### 4.1.3 Water Quality Data Associated with Impingement Sampling

The annual mean temperature at the OCNCS intake from September 1980 to August 1981 was 13.6 C (Table 4-7). The highest temperature recorded (28.9 C) occurred on 2 September 1980; on 5 January 1981 the lowest temperature was recorded (-0.9 C).

The dissolved oxygen (DO) annual mean was 8.3 mg/liter (Table 4-8). Dissolved oxygen values ranged from a maximum of 15.7 mg/liter on 19 January 1981 to a minimum of 4.1 on 20 July 1981, following the expected inverse relationship with water temperature. Maximum values above 15 mg/liter (recorded from day samples of 19 January 1981) at water temperatures of approximately 2 C represent 140 percent saturation in estuarine waters of 25 ppt salinity. Researchers recorded that the DO readings during this period were fluctuating; subsequent calibration failure resulted in replacement of instrument components. It is safe to assume that the daytime values of 19 January 1981 represent an overestimate of actual DO concentrations for that period.

The lowest mean salinity reading observed was 20.8 ppt on 11 May 1981; the highest mean reading for the study period was observed on 26 January 1981 at 28.7 ppt. The mean annual salinity was 24.4 ppt (Table 4-9).

Median pH values varied from a low of 7.2 on 27 October 1980 to a high of 8.3 that occurred 19 times from January through June 1981 (Table 4-10).

#### 4.1.4 Statistical Analysis of the Relationship Among Impingement Catches, Meteorological Phenomena, Water Quality Data, and Plant-Operational Characteristics

The relationship of the various parameters to impingement catches was investigated statistically using the SAS-General Linear Model (GLM) multiple regression program.

In a preliminary analysis, correlation coefficients ( $r$ ) were derived from regression analyses among various plant-operational and water quality variables. This was done to quantify the expected relationships among such variables as ambient water temperature and air temperature, ambient water temperature and dissolved oxygen, and heat rejection and delta-T. In this manner, those variables that were cross-correlated with other variables were identified.

As a preliminary procedure using biological data, coefficients of determination ( $r^2$ ) were computed between impingement catch rates for abundant species and the various meteorological, water quality, and plant-operational parameters for the entire six-year database. This was an attempt at early isolation of any very strong relationships. However,



all coefficients of determination ( $r^2$ ) were relatively low ( $\leq 0.20$ ), suggesting no strong relationships among the variables.

The full GLM model then was run using number and weight impinged per hour for important and abundant organisms relative to certain plant-operational, physical/chemical, and meteorological parameters. The regressions were run for each season because of the highly seasonal distribution of most organisms. The results of this model run are presented in Table 4-11, including sample size, coefficients of determination, and those variables found to be significantly related to impingement rates (listed in order of importance).

The highest  $r^2$  values generally occurred for species collected during seasons when they were most abundant (e.g., spring-caught bay anchovy [0.40], Atlantic silverside [0.42], and bluefish [0.47]). Minimum  $r^2$  generally occurred for species that were collected during seasons when they were least abundant (e.g., spring impinged weakfish [0.05] and summer impinged winter flounder [0.06]). Usually the significant variables identified in the model explained less than 50 percent of the variation in impingement abundance of a given organism (i.e.,  $r^2 < 0.50$ ).

Those variables identified as having some influence on impingement rates were largely water quality or meteorological parameters. Few plant-operational parameters were found significantly related to impingement rates.

Another model was generated that employed selected field-fisheries data and air temperature. This resulted in some  $r^2$  values for field-fisheries/impingement comparisons that were high (up to 0.88) when compared to impingement versus other variables, and suggested a focus on field abundance as a major influence on impingement (Table 4-12).

To enhance the analysis of the effect of field fisheries on impingement, a series of specialized regressions was performed, comparing impingement rates for various species to field catches and selected water quality data for the six-year period (Table 4-13). Nearly all correlations were significant, some highly so.

#### 4.1.5 Impingement Sampler Loss Determinations

A study to evaluate the efficiency of the impingement pit sampler at OCNGS was conducted from mid-December 1980 through March 1981. The study was designed to determine if any substantial loss of organisms was occurring through two open vertical slots on either side of the sampler opening. The slots are each approximately 0.5-0.75 inch wide. The study also tested the overall collection efficiency of the pit sampler.

A sampling device consisting of a frame and net of approximately the same size mesh as the pit sampler was placed directly behind the sampler to collect organisms and debris that were lost. A series of samples were taken with the slots in the impingement pit sampler open and another series with the slots closed.

The results of the efficiency study are summarized in Table 4-18. The percentage loss of invertebrates and fish was reduced from 22.8 to 16.8 and from 27.7 to 14.1 percent, respectively, by sealing the slots. This difference was not statistically significant ( $\alpha = 0.05$ ). However, even with the slots sealed, 14.1 percent of the fish and 16.8 percent of the invertebrates were lost, indicating that much of the organism loss from the pit sampler is due to small organisms passing through the net mesh rather than through the open side slots.

Because no significant difference in percentage losses could be found with the pit sampler slots open or sealed, it was reasonable to conclude that a continuation of present sampling methods is within acceptable standards.

## 4.2 DISCUSSION

This discussion is divided into four sections, each addressing a somewhat different, but related, aspect of the impingement phenomenon at OCMGS. The first section addresses some general factors that affect impingement rates. Next impingement and Barnegat Bay catches are compared for the September 1980 - August 1981 period. The third section presents a detailed evaluation of impingement catches at OCMGS over the last six years and the last discusses the results of statistical evaluations of the effect of meteorological and plant-operating characteristics on impingement rates for September 1980 - August 1981.

### 4.2.1 General Factors Affecting Impingement at OCMGS

A number of factors influence the measured rate at which organisms are impinged on the traveling screens. These include

1. seasonal presence or absence of a species within Barnegat Bay
2. behavioral characteristics of a species
3. range of physiological tolerances of individuals within a species
4. interaction between species on or in front of the screens prior to sampling
5. sampling or catch efficiencies characteristic of the OCMGS screening devices
6. sampling or catch efficiencies characteristic of the sampling gear

Items one through three can be related in part to a species' spatial and seasonal distribution, based on field-fisheries results presented in Section 3. Items four and five were not examined directly during the present study, but some light can be shed in this area through the statistical evaluation of plant-operating characteristics (Section 4.2.4). Item six was tested by a gear efficiency study conducted during the winter period of this study year.

Much of the impingement phenomenon at OCMGS can be related to species presence in the bay at a given time. Of the 111 taxa collected from the screens during this study period, 37 were residents, 31 were migrants, and 43 were occasional visitors. Resident species spend their entire lives in Barnegat Bay and its tributaries, although portions of some of

these populations may leave the bay at times. Migrant forms spend a portion of their life cycle within the study area. Occasional visitors are species that do not normally use the Barnegat Bay area during any part of their life cycle, but occasionally appear as strays. Unlike residents and migrants, the occasional visitors do not normally depend on Barnegat Bay for completion of any part of their life cycle.

The resident forms collected from the screens include 18 fish species, 2 reptile species, and 17 invertebrate taxa. Migrant forms include 28 fish species and 3 invertebrate species; occasional visitors consisted of 36 fish species and 7 invertebrate species. The taxa are categorized in Table 4-14.

Of the 31 migratory species collected during the study year, 30 used the Barnegat Bay area as a nursery ground; larvae and/or first-year juveniles exploit the bay's plankton and fish populations for some period throughout the year. Six of the 31 migratory species collected use the Barnegat Bay area for spawning as well as using the bay as a nursery. Scyphozoa occasionally enter the bay as adults to feed.

The 43 species noted as occasional visitors (Table 4-14) can be further categorized in terms of native habitat. Specifically, six species collected are from local freshwater areas; 27 species are normally found in warmer, more southern marine and estuarine areas; two species are normally encountered in colder, more northern waters; and eight species on this list are normally encountered in the mid-Atlantic region.

These patterns of occurrence are to some degree reflected in the relative abundance of species in the impingement catch (Table 4-1). The six most abundant species impinged--sand shrimp, blue crab, grass shrimp, Atlantic silverside, naked goby, and northern pipefish--were bay residents and composed over 95 percent of the catch. The next four most abundant species were all migrants--smallmouth flounder, bay anchovy, winter flounder, and blueback herring (*Alosa aestivalis*). Although these were ranked seventh through tenth in abundance, respectively, together they constituted only 1.4 percent of the total impingement catch. In contrast, the most abundant species categorized as an occasional visitor was the Crevalle jack (*Caranx hippos*) which comprised 0.03 percent of the total catch. Occasional visitors combined accounted for less than 0.17 percent of the impingement catch.

Another readily discernible factor affecting impingement is water temperature. A review of the impingement catch data from September 1975 through August 1980 for selected species reveals that the greatest rate of impingement of those species generally occurred over a characteristic temperature range. A comparison of the temperature ranges associated with peak impingement for selected species is presented in Table 4-15 for both the 60-month period from September 1975 through August 1980 and the 12-month period of the present study.

The data from September 1980 - August 1981 is generally similar to that obtained from September 1975 - August 1980 with respect to water temperatures during peak impingement periods. Those species occurring at specific water temperatures in the previous studies exhibited the same



patterns in the present study. Some species, particularly the summer flounder, were impinged in high numbers over a relatively wide range of environmental temperatures.

Some species exhibited differences in peak-catch/water-temperature relationships between the present study and the previous 60-month study period. Atlantic menhaden and northern puffer were more abundant at higher temperatures in the latest study year. Bluefish and summer flounder were less prevalent at lower temperatures during the latest study.

This water temperature/impingement relationship can be attributed in some degree to the seasonal occurrence of the species. However, this does not explain the reduced impingement of, for example, northern pipefish, winter flounder, and Atlantic silverside at higher temperatures, despite their presence in the bay during warmer seasons. Other factors are involved and these are discussed in Section 4.2.3.

Time of day is a very important factor affecting impingement rates at OCNGS. Miller (1977, 1978) and EA (1981) reported that most impingement at OCNGS occurs during the 12-hour period following sunset. Miller reported night catches for all organisms combined of 86.4 percent for the period September 1975 - August 1976 and 91 percent for September 1976 - August 1977. No day collections were conducted for the period September 1977 - May 1979. Results from the September 1979 - August 1980 study revealed that night catches made up 87 percent of the total catch of all organisms. The results for total organisms combined from the current study (Table 4-16) are similar to previous data and to percentage catch calculations applied to the previous data for selected species.

The striking day/night differences in impingement rates are a result of different vulnerabilities and behavior patterns of organisms between day and night. These aspects are further discussed in Section 4.2.3.

#### 4.2.2 Comparison of Impingement Catches with Concurrent Seine and Trawl Catches

The presence and abundance of several of the designated key species on OCNGS traveling screens during the 1980-1981 study year coincided with the presence and abundance distributions observed in western Barnegat Bay nekton populations. Weakfish, bay anchovy, blue crab, bluefish, sand shrimp, and Atlantic menhaden screen catches generally fluctuated as the field catches fluctuated (Figures 4-3, 4-4, 4-5, 4-8, 4-9, and 4-12, respectively). These species appeared to be vulnerable to the power plant traveling screens in a way that is directly related to their abundance in the adjacent waters.

The 1980-1981 study-year catches of Atlantic silverside, northern pipefish, winter flounder, and summer flounder show no consistent parallel trends between field gear catches and screen catch rates (Figures 4-6, 4-7, 4-10, and 4-11). Of these, Atlantic silverside and northern pipefish screen catches occurred almost exclusively during periods of low field abundance. Peak catch rates occurred during November or December and again during February, March, and April for Atlantic silverside and

northern pipefish. None of these forms are powerful swimmers and the peaks encountered on the screens may be a reflection of reduced swimming ability brought about by lowering water temperatures.

Summer flounder and winter flounder screen catches coincided with a period of increased field abundance but additional peaks in field abundance during the spring and summer seasons occurred for these species for which no increased screen catch was noted. For various reasons, individuals of these species were not vulnerable to impingement for some periods during which they were present in Barnegat Bay.

Both field and impingement catches of winter flounder exhibited peaks from fall through spring, primarily composed of adults. Catches from March through June by the otter trawl were not paralleled by screen catches. This spring/summer peak was composed of juveniles. Apparently juvenile winter flounder are not vulnerable to screen impingement during the summer, which could be caused by habitat preference; e.g., the species prefers sandy substrate in shallow waters (Martin and Drewry 1978), which is not available near OCNGS.

Summer flounder abundance was greatest in the field and on the screens during the fall and early winter followed by a field peak from March through July. The additional summer peak occurred only for otter trawl catches. That a parallel screen catch did not occur during that period is probably the result of habitat preference of the juveniles and adults in Barnegat Bay.

The small number of northern puffer collected from the screens and the field effort precludes any conclusion concerning that species' vulnerability to the OCNGS traveling screens.

#### 4.2.3 Evaluation of Impingement Data for the Period, September 1975 - August 1981

This evaluation is based on annual impingement estimates for all organisms and key/abundant organisms for the period September 1975 - August 1981. The data from September 1975 through March 1979 were collected by Ichthyological Associates (1977, 1978, 1979a, b); subsequent data were gathered by Ecological Analysts, Inc. (1980, 1981a, b, and present report).

Because day samples were not collected during September 1977 - March 1979, the annual estimates for these periods had to be adjusted so that direct comparisons could be made with data from before and after this period. A mean night-catch percentage was calculated for selected species and all species combined based on four years available data (Table 4-16). These values then were used in conjunction with the annual catch estimates for the period from September 1977 through March 1979 to adjust the reported annual totals (Table 4-17) to include the expected day component of the catch.

The total annual estimated screen catch for selected species and for all organisms combined are presented in Figure 4-13, which is derived from Table 4-17. The annual catch throughout the six-year period fluctuated

between 11.4 million organisms in 1975-1976 and 1.5 million in 1976-1977. The catches for the next three years stabilized between 4.3 and 6.7 million organisms. The estimated annual catch for the latest study year increased to almost 10.3 million organisms.

#### 4.2.3.1 Sand Shrimp (*Crangon septemspinosa*)

Estimated annual impingement of sand shrimp ranged from 0.6 million (1976-1977) to 6.8 million (1980-1981) and has exceeded an annual total of 3.3 million for five of the last six years (Figure 4-13). Moore (1978) reported that the low numbers of sand shrimp collected during the 1976-1977 period may have been due to either the severity of the winter period or to the existence of anoxic bottom waters off the coast of New Jersey during August - October 1976. Although no sand shrimp mortality was documented during that period, any individuals that emigrated from the warmer Barnegat Bay waters to the cooler oceanic waters would have been exposed to lethal anoxic conditions.

#### 4.2.3.2 Blue Crab (*Callinectes sapidus*)

Estimated annual impingement of blue crab has undergone even larger fluctuations than sand shrimp. The maximum estimated annual catch of 5.6 million occurred in 1975-1976; the minimum of 0.2 million occurred the following year (Figure 4-13). The estimated annual catch for the first year is greater than the sum of the following five years.

Miller (1978) and Metzger (1978c) reported that the dramatic decrease in blue crab abundance from 1975-1976 to 1976-1977 was caused by the severe winter conditions of 1976-1977. Thousands of dead blue crab were collected in Barnegat Bay during the early spring of that year. Metzger (1979) suggested that the increase in catches observed in 1977-1978 was indicative of a recovery of the blue crab population. However, annual screen catch estimates for 1978-1979 and 1979-1980 decreased to levels approaching the 1976-1977 minimum. The estimated annual screen catch for the latest study year is the second highest catch of the last six years.

Field-fisheries catches (Section 3) over the six-year study period exhibit the same trends for the first four years of the study period as the annual screen catch estimates. The total blue crab catch at four bay stations by all gears is listed below. The 1978-1979, 1979-1980, and 1980-1981 catches are adjusted downward by eliminating night catches from Cedar Creek and Double Creek (these station-times were not sampled in the earlier years of study) and dropping the extra stations of the 1975-1976 and 1976-1977 studies.

| <u>Study Year</u> | <u>Total Field Catch<br/>of Blue Crab</u> |
|-------------------|---|
| 1975-1976         | 2,016                                     |
| 1976-1977         | 693                                       |
| 1977-1978         | 1,552                                     |
| 1978-1979         | 1,297                                     |
| 1979-1980         | 3,393                                     |
| 1980-1981         | 4,254                                     |

Catches during the 1980-1981 study year were 33 percent greater than the previous study year, and were the largest bay catch on record for the entire six-year period. Screen catches for the 1980-1981 study year increased by a factor of eight from the previous year. Part of the reason for such an apparent increase could be attributed to the extended downtime of OCNGS during 1979-1980, which resulted in reduced impingement of blue crab during that study year. The down period extended from winter through spring and includes the period during which blue crab start actively moving into nursery areas. However, the percentage contribution of this time period to the total estimated annual crab catch has historically been low (usually <2 percent but up to 24 percent). Thus, if the annual blue crab catch of the 1979-1980 study year was adjusted for plant downtime during the late winter and spring, the net increase would generally be low. The apparent increase of blue crab impingement, then, appears to be a real increase, not especially affected by plant operational characteristics.

Listed below are the mean-weights-per-crab collected from the screens, obtained by dividing the annual numerical catch into the total weight collected:

| <u>Study Year</u> | <u>Mean Weight<br/>(grams per crab)</u> |
|-------------------|---|
| 1975-1976         | 9.1                                     |
| 1976-1977         | 47.0                                    |
| 1977-1978         | 18.0                                    |
| 1978-1979         | 52.8                                    |
| 1979-1980         | 64.7                                    |
| 1980-1981         | 21.2                                    |

Comparison of this list to the previous list of total crabs collected in the field efforts reveals that for the first four study years, an inverse relationship exists between numbers of crabs collected in the field and size (weight) of the crabs impinged. As the number of crabs collected increased in the field, the weight of impinged crabs decreased and vice-versa. During the 1979-1980 study year, however, this relationship was altered: the relatively high field abundance coincided with the greatest weight-per-crab measured at the screens. If it is assumed that the mean weight-per-crab collected from the screens is related to the average crab size in western Barnegat Bay, then a predominance of large crabs would be expected to have occurred in the bay during the 1979-1980 study year. Since larger crabs are less vulnerable to impingement, the 1979-1980 low impingement catches are not surprising.

The occurrence of a preponderance of large crabs in 1979-1980 was supported by the commercial-fisheries data. The number of large, commercially collected blue crabs landed in Ocean County was greater during the period from September 1979 through August 1980 than during the previous four years (Chapter 7).

The 1980-1981 study year catch on the screens was the second greatest catch in the past six years of study. As with trends from all but the 1979-1980 year, this period had an increased field catch that coincided



with a decreased mean weight per individual. Likewise, the commercial catch of blue crab dropped from the 1979-1980 season peak.

#### 4.2.3.3 Bay Anchovy (*Anchoa mitchilli*)

Bay anchovy, a major component of each annual estimated screen catch, dropped from a 1975-1976 maximum of 1.8 million individuals to a relatively low and stable annual catch of 77,000-155,000 during the following years (Figure 4-13). Kurtz (1978) suggested that the reduction in anchovy numbers on the OCNCS screens resulted from a reduced baywide population. He stated that the number of individuals entering the bay during the spring of 1977 was lower than the number entering during the spring a year earlier.

Periods when the plant was not operating also have influenced total annual estimates of bay anchovy impinged. During the last six years the plant was shut down for four prolonged periods, which coincided with periods of expected anchovy abundance (Figure 4-15). The outages May through June 1977, mid-January through late May 1980, and mid-April through May 1981 coincided with the period during which anchovy enter Barnegat Bay as adults and when high numbers are normally impinged. The shutdown from mid-September through mid-November 1978 coincided with the period during which young-of-the-year anchovy are usually impinged.

The disproportionately high catch of the 1975-1976 study year was mostly the result of the high springtime catches of adults occurring during April and May (91 percent of the annual catch for that year). Wide variations in anchovy catches can be expected during the spring months because the species tends to school more during that period. The presence or absence of a school during a collection period will result in large variations in the estimated numbers collected.

Field-fisheries catches (Chapter 3) over the past six-year period exhibit the same trends for the first five years as the annual screen-catch estimates. Comparison of the following table with Table 4-17 shows similar trends in increasing and decreasing field abundance and screen abundance.

| <u>Study Year</u> | <u>Adjusted Total<br/>Field Collections</u> |
|-------------------|---|
| 1975-1976         | 35,890                                      |
| 1976-1977         | 5,720                                       |
| 1977-1978         | 8,951                                       |
| 1978-1979         | 7,277                                       |
| 1979-1980         | 1,956                                       |
| 1980-1981         | 4,875                                       |

The latest study year has an increased field abundance that was not mirrored by the screen catch. This situation is probably caused by the reduced impingement sampling effort in August which is a period of juvenile anchovy collection. The actual peak of juvenile anchovy screen abundance probably occurred after the end of this study year.

The contribution of bay anchovy to the estimated annual screen catch has consistently decreased from 16 percent in 1975-1976 to 0.5 percent in 1980-1981.

#### 4.2.3.4 Winter Flounder (*Pseudopleuronectes americanus*)

The estimated annual impingement abundance of winter flounder ranged from a low of almost 9,000 in 1975-1976 to a high of more than 147,000 in 1978-1979 (Figure 4-13). The 1979-1980 year-catch estimate fell to 16,000, followed by a rise to more than 48,000 in 1980-1981, the second greatest catch of the last six study years.

The strikingly large catch from the 1978-1979 study year appeared to be related to a successful spawning season two years previous to that estimated catch. Sandine et al. (1978) reported that significantly more larvae were entrained during the winter of 1976-1977 than during the same season a year earlier. The increased abundance (and survival) of winter flounder larvae was attributed to a reduction of predators (e.g., *Sagitta*), increased food availability, or climatic changes. Jefferies and Johnson (1974) showed a correlation of winter flounder year-class success with water temperature; the greatest success was associated with reduced water temperature, suggesting a complex interaction between time of spawn, length of incubation period, larval metamorphosis, and predator/prey presence.

The following year (1978) Metzger (1979) reported an increase of juvenile winter flounder at the mouth of Forked River during the summer months, which was attributed to the successful spawn of 1977. The young winter flounder remain in Barnegat Bay throughout their first year, leaving the bay at the end of their first year with the onset of summer water temperatures. The peak impingement catch of 1978-1979 was due to the return of the 1977 year class to their home estuary for their first spawn.

The low catch that followed in 1979-1980 may have been an artifact of the plant shutdown that occurred from January through late May. That period accounted for most (60 percent) of the winter flounder catch during the previous year and it was not sampled at all during the latest year. The low catch from the first study year can be attributed to the same phenomenon of plant outage during January and February of 1976.

Estimated annual impingement of winter flounder during the latest study year was the second highest of the last six years; more than 48,000 individuals were estimated to have been impinged. This increase does not appear to be a reflection of field abundance in the western portion of Barnegat Bay. The adjusted field catches for the six-year period are listed below.



| <u>Study Year</u> | <u>Adjusted<br/>Field Abundance</u> |
|-------------------|-------------------------------------|
| 1975-1976         | 138                                 |
| 1976-1977         | 1,191                               |
| 1977-1978         | 900                                 |
| 1978-1979         | 1,021                               |
| 1979-1980         | 1,088                               |
| 1980-1981         | 525                                 |

Field catches for the 1980-1981 study year are only one half of the normal field catch of the last four years whereas impingement catches exhibited an impressive rise (Table 4-17).

Adult winter flounder make up the majority of the screen catch of this species. Less than 1 percent of the winter flounder catch occurred during the summer and early fall months of 1980-1981, the period during which only juvenile flounder are vulnerable to impingement because the adults move out of the bay during early summer. The apparent increase in estimated annual impingement during the 1980-1981 study is probably a direct result of the operation of OCNGS throughout the winter months, the period of maximum winter flounder abundance in Barnegat Bay.

#### 4.2.3.5 Atlantic Silverside (Menidia menidia)

The estimated annual catch of Atlantic silverside on OCNGS screens ranged between 35,000 in 1976-1977 and 269,000 in 1980-1981 (Figure 4-13). The estimated catches of silverside would probably have been much greater in 1975-1976 and 1979-1980 if the plant had not ceased operation during the period of greatest expected abundance for this species. Although a year-round resident of Barnegat Bay, Atlantic silverside are only vulnerable to impingement during the colder months of late fall, winter, and spring. This may be due to movement of this species from the shoreline-shallows habitat into deeper waters, increasing its vulnerability to the screens. The lowest estimated annual catch of 1976-1977 may have been a result of the severe winter conditions of that year. Hoff and Westman (1966) report that the Atlantic silverside cold-tolerance limit is 1 C. The mean monthly temperature for the 1976-1977 was 0.1 C for both December and January. Because of these low water temperatures, local populations of this species were either decimated or moved to warmer waters offshore. By the following winter, the numbers collected on the screens were growing, indicating that the population had successfully rebounded from the winter perturbation of 1976-1977. The catch from 1979 to 1980 was relatively high and would have been larger if the plant had not ceased operation from January to May 1980. By raising the estimated annual catch for the 1979-1980 period by 35 percent (the average contribution for the January - May period), the annual screen abundance becomes 207,781, which allows direct comparison with field-abundance data. The annual catch from 1980 to 1981 continued the rise evident since 1976-1977.

The estimated impingement catches for the six years followed a similar pattern to the field catches (Chapter 3):

| <u>Study Year</u> | <u>Screen Catch Estimate</u> | <u>Total Field Collections</u> |
|-------------------|------------------------------|--------------------------------|
| 1975-1976         | 61,272                       | 11,190                         |
| 1976-1977         | 35,051                       | 3,871                          |
| 1977-1978         | 86,687                       | 3,765                          |
| 1978-1979         | 196,164                      | 10,798                         |
| 1979-1980         | 207,781(a)                   | 11,515                         |
| 1980-1981         | 268,961                      | 59,532                         |

(a) Adjusted for plant-down period, January - May 1980.

The incredible rise in field abundance during the latest year is caused by the large number of juveniles collected during the summer months, primarily at the mouths of Oyster Creek and Forked River. No unusually high peak is detectible in impingement numbers during the summer period (Table 4-4) because the small size of the juveniles allows them to pass through the screen mesh, thus avoiding impingement collection.

The effect of the harsh winter of 1976-1977 is reflected in both data sets. The Atlantic silverside bay population rebounded from the bad year of 1976-1977, but this was not reflected until the second season (1978-1979) after the event.

#### 4.2.3.6 Atlantic Menhaden (*Brevoortia tyrannus*)

The estimated annual impingement catch of Atlantic menhaden varied from about 3,000 in 1979-1980 to 94,000 in 1976-1977 (Figure 4-13). The period of greatest abundance of this species has been in late fall and early winter, generally October through December. Kurtz (1978) attributed the peak abundance of 1976-1977 to the presence of a large 1976 year class. He pointed out that during 1976-1977, young-of-the-year menhaden accounted for 78 percent of the total collected as opposed to 28 percent for the previous year. Kurtz (1978) suggested that greater intake velocities during 1976-1977 may have resulted in the greater impingement catch. During 1976-1977, the operation of four circulation pumps resulted in velocities of 0.18-0.2 m/sec, whereas in 1975-1976 (lower impingement catch) the operation of three circulation pumps resulted in velocities of 0.06-0.12 m/sec.

Data from 1977-1978, 1978-1979, and 1980-1981 do not support the above hypothesis because during the late fall and early winter period of each of those years, all four circulation pumps were operating and impingement levels declined to levels below that of the first year (1975-1976).

The abundance of Atlantic menhaden collected from field stations throughout the six-year period provides a better explanation of the variation in annual menhaden impingement. Listed below are the year-by-year catches of menhaden collected from field stations, adjusted to account for differences in the number of stations sampled by considering only catches from the four stations as described in Chapter 3.

| <u>Study Year</u> | <u>Adjusted Total Annual<br/>Field Catch</u> |
|-------------------|--|
| 1975-1976         | 13   |
| 1976-1977         | 148  |
| 1977-1978         | 65   |
| 1978-1979         | 4  |
| 1979-1980         | 16   |
| 1980-1981         | 22   |

The two years of greatest field abundance are reflected as the years of greatest impingement for this species. Thus, a factor that appears to have great effect on Atlantic menhaden screen abundance is the abundance of the species within western Barnegat Bay.

#### 4.2.3.7 Northern Pipefish (*Synghathus fuscus*)

The annual estimated catch of northern pipefish on the OCNGS traveling screens ranges from a low of about 11,000 individuals in 1976-1977 to a maximum of almost 93,000 in 1980-1981 (Figure 4-13). The catch of northern pipefish during each study year reflects a bimodal distribution with one peak occurring during the period of rapidly falling water temperatures in November and December and another peak occurring in the spring from March through May.

Moore (1978) reported that differences between the 1975-1976 and the 1976-1977 screen catches were not reflections of local field abundance because, unlike the screen catch, field estimates of pipefish were substantially larger during 1976-1977.

In support of Moore's contention, the following list reveals that adjusted field abundance and screen abundance trends do not parallel one another.

| <u>Study Year</u> | <u>Adjusted<br/>Field Abundance</u> |
|-------------------|-------------------------------------|
| 1975-1976         | 220                                 |
| 1976-1977         | 215                                 |
| 1977-1978         | 417                                 |
| 1978-1979         | 756                                 |
| 1979-1980         | 926                                 |
| 1980-1981         | 414                                 |

The general trend in field abundance from 1976-1977 through 1979-1980 was a steady increase. The 1980-1981 field abundance dropped to 1977-1978 values. Screen abundance trends did not follow that trend with the latest study year yielding the greatest estimated catches. Clearly, there must be factors other than general Barnegat Bay abundance that affect screen catches of northern pipefish.

Although Bigelow and Schroeder (1953) state there is no reason to suppose that pipefish are at all migratory, Hildebrand and Schroeder (1928) provide information to substantiate their claim that pipefish in the

Chesapeake Bay overwinter in the deeper bay waters and are found along the shoreline during the remaining periods of the year. The same researchers state that most inshore migration occurs from late March into early April and most offshore migration occurs in November. It is reasonable to assume that similar seasonal movements take place in Barnegat Bay. This would explain the peak impingement catches in fall and spring--they occur when pipefish are moving to (fall) or from (spring) the deeper waters of Barnegat Bay. Further, Moore (1978) explains the discrepancy between field (Barnegat Bay) and screen catches. Larger field catches in deeper water in winter and summer will not be reflected in impingement catches because the fish are not moving and thus are not vulnerable to impingement.

#### 4.2.3.8 Northern Puffer (Sphoeroides maculatus)

The estimated annual catch of northern puffer was very low throughout four of the last six study years. The only substantial catch occurred during 1977-1978, when more than 50,000 individuals are estimated to have been impinged (Figure 4-13). Metzger (1979) attributed the increased screen catch of 1977-1978 to an increase in the baywide population of northern puffer because most of the fish collected during that year were young of the year. The annual catch of more than 17,000 specimens during the 1980-1981 study year also was comprised mostly of young-of-the-year individuals.

Below is a list of year-by-year field catches adjusted to include only stations sampled over the entire six-year study period:

| <u>Study Year</u> | <u>Adjusted Total Field Catch</u> |
|-------------------|-----------------------------------|
| 1975-1976         | 4                                 |
| 1976-1977         | 12                                |
| 1977-1978         | 197                               |
| 1978-1979         | 26                                |
| 1979-1980         | 1                                 |
| 1980-1981         | 52                                |

The peak field catches of 1977-1978 and 1980-1981 mostly consisted of young of the year. The mean size (FL) of puffers collected from the field stations that year was 51 millimeters as determined from information presented in Table 92 from Ichthyological Associates (1979). The mean size of puffers collected in July 1981 was 52 millimeters. Field abundance in the western portion of Barnegat Bay appears to be the primary factor influencing the impingement rate for this species. Moore (1977, 1978) reports that the northern puffer population has undergone a large decline during the last decades and that low population levels also were noted by 1972 in nearby Great Bay. Screen abundance estimates are generally a reflection of field abundance as the years of greatest field abundance (1977-1978 and 1980-1981) are also the years of greatest impingement.



#### 4.2.3.9 Weakfish (*Cynoscion regalis*)

The annual estimated screen catch of weakfish ranged from about 5,000 in 1978-1979 to a maximum of over 46,000 in 1979-1980 (Figure 4-13). Peak abundance generally occurs just after maximum summer water temperatures are reached (August) and abundance remains high throughout the end of summer and into fall, usually November. The minimum estimated screen catch of 1978-1979 is a direct result of OCNGS ceasing operation from mid-September through mid-November. This can be shown by comparing trends of the annual screen catch to trends in field catch (appropriately adjusted to account for differences in the number of stations sampled).

| <u>Study Year</u> | <u>Adjusted Total<br/>Field Catch</u> |
|-------------------|---------------------------------------|
| 1975-1976         | 52                                    |
| 1976-1977         | 94                                    |
| 1977-1978         | 114                                   |
| 1978-1979         | 159                                   |
| 1979-1980         | 99                                    |
| 1980-1981         | 308                                   |

Field abundance remained fairly stable from 1976-1977 through 1979-1980, but the peak catch of that period occurred in 1978-1979 when impingement catch estimates were the lowest of the six-year period. The impingement catch of that year might have been greater had not the plant been shut down during the late summer and fall. The 1980-1981 impingement estimate of over 37,000 weakfish, the second greatest annual catch, coincided with the year of greatest field abundance.

Weakfish generally use Barnegat Bay as a nursery ground, although some larger adults have been reported from the warmwater discharge (Hillman 1977). Weakfish are spawned in the ocean and enter Barnegat Bay in early summer as postlarval forms that are not vulnerable to impingement because they are small enough to pass through the screen mesh. This species grows rapidly and by August large numbers of individuals appear on the traveling screens as they become vulnerable to impingement. The vulnerability of this species ends by late fall when lowering water temperatures trigger migrations of the young out of the estuary. Another possible factor that would tend to reduce impingement during late summer is the increased swimming ability of larger juveniles.

#### 4.2.3.10 Bluefish (*Pomatomus saltatrix*)

Estimated annual bluefish impingement abundance ranged from about 2,000 in 1979-1980 to 14,000 in 1975-1976 (Figure 4-13). This species appeared on the screens from May through November during the years when plant shutdowns did not occur during that interval (1976, 1979). Because the periods of bluefish abundance overlaps designated study-year constraints (September - August), it is more helpful to group data into annual catch estimates which extend from January through December. The day/night corrected annual estimates grouped from January through December (which exclude data from before January 1976 and after December 1980) are:

| <u>Year</u> | <u>Adjusted Annual Estimate</u> |
|-------------|---------------------------------|
| 1976        | 15,362                          |
| 1977        | 3,014                           |
| 1978        | 1,877                           |
| 1979        | 10,412                          |
| 1980        | 13,202                          |

Rearranged in this fashion, it becomes obvious that the years of lowest catch were 1977 and 1978; during these years the plant was not operating during some period of expected bluefish abundance, specifically from mid-May through mid-July 1977 and from mid-September through mid-November 1978 (Figure 4-16). The estimated catches from 1976, 1979, and 1980 are similar.

Bluefish first enter Barnegat Bay as early juveniles and reach peak abundance on the screens as individuals grow large enough to be caught on the screens rather than pass through the 9.6-mm mesh. The abundance of the species in impingement collections then rapidly drops in midsummer as individual bluefish grow large enough that their swimming capabilities increase to where they can remain indefinitely in the forebay area or swim against the current down the Forked River intake canal into Barnegat Bay.

During the fall months, rapidly falling water temperatures signal an exodus of bluefish from the bay and may adversely affect bluefish swimming capabilities so a minor fall peak can be noted during the two years of complete plant operation.

#### 4.2.3.11 Summer Flounder (Paralichthys dentatus)

Abundances of summer flounder on the OCNCS screens have remained low throughout the six-year study period relative to most other species catches (Figure 4-13). Annual estimates range from 1,300 in 1978-1979 to about 8,200 in 1980-1981. Summer flounder were present from March through December during the six-year study period but peak abundances generally occurred in October or November. Comparing the estimated annual screen catches with station-adjusted field catches shows that the two greatest screen catches occurred in the same study years as the greatest adjusted field catches.

| <u>Study Year</u> | <u>Adjusted Total Field Catch</u> |
|-------------------|-----------------------------------|
| 1975-1976         | 14                                |
| 1976-1977         | 33                                |
| 1977-1978         | 9                                 |
| 1978-1979         | 80                                |
| 1979-1980         | 109                               |
| 1980-1981         | 93                                |

Metzger (1979) hypothesized that the low catches of 1977-1978 were caused by declines in summer flounder field abundance. However, he also stated



that the number of fish taken in the western bay probably does not reflect the abundance of summer flounder in the entire Barnegat Bay. This appears valid because, unlike the western bay area, the eastern bay substrate is generally hard-packed sand with occasional eel grass beds (*Zostera marina*). This species prefers sandy bottoms (Bigelow and Schroeder 1953) and thus avoidance of the soft muddy bottoms of the western shore would occur, resulting in low screen and field catches.

Metzger (1978) reported that most summer flounder collected in Barnegat Bay in 1975-1976 and 1976-1977 were subadults (<age 3+), but that during 1976-1977 fewer young-of-the-year specimens were collected, suggesting a reduction of reproductive success for this species.

Metzger (1978) has suggested that the anoxic water conditions of the summer and fall months in 1976 may have altered normal offshore migration of this species and may have had some effect on spawning success. Metzger cites Festa (1976) reporting the presence of hundreds of dead summer flounder in Little Egg Inlet (south of Barnegat Bay) in mid-July 1976 during an incursion of anoxic oceanic waters. Such a reduction of oceanic spawning stock could account for the low numbers encountered on the screens during the following two years. The annual screen estimates of the last two years and the catches from Barnegat Bay are the greatest of the six-year study period. This is evidence of a recovery of this species within New Jersey coastal waters.

#### 4.2.3.12 Northern Kingfish (*Menticirrus saxatilis*)

Northern kingfish appeared only occasionally on OCNCS screens throughout the five-year study period and have been uncommon in Barnegat Bay since these studies began. Boyle (1978) outlined the historical catch of this species in Barnegat Bay and examined the reduction of numbers collected in the bay from 1966-1967 on.

#### 4.2.4 Statistical Analysis

The application of linear models yielded significant correlations between impingement rates and both field abundance and plant-operating/water quality data. Use of these models, however, must be restricted only to correlations within existent data sets and this type of analysis does not lend itself to prediction. These linear models resulted in a quantitative description of the response of impingement rates to selected factors. The factors used included both continuous and discrete factors of which the former, although easily handled, generally exerted little effect upon the screen catch rates. Of the various discrete variables, several were found to be of importance in explaining variations in screen catch.

The effects of season are obvious. The effects of the period (day vs. night) and high winds (>16 kph) were tested using the basic model described in Chapter 2 for each discrete condition and were found to be much more important than the other continuous variables (i.e., temperature, salinity, DO, total flow, and windspeed). The day-night (period) effects are hardly surprising since it has been shown (Section 4.1) that more than 85 percent of the total screen catch occurs at night. However,

high-wind conditions (>16.1 kph) within seasons did have an effect on measured impingement rates for all species tested except bluefish. The effects of high winds are limited to the spring season for most of the above species. Only nine periods of high winds were recorded during the spring or only 7 percent of all high wind conditions encountered throughout the six-year period.

It is clear that some significant correlations exist between field abundance, as measured by various techniques, and screen catch rates. The data presented in Tables 4-12 and 4-13 indicate that the greatest correlations are species- and gear-specific and, in one case, a temporal lag effect on the correlation exists. The contention that abundance of organisms in the field is the primary factor affecting impingement is supported by the results for bay anchovy, summer flounder, sand shrimp, and northern puffer (although the field and screen catches are not always concurrent within a given year--see Section 4.2.2).

The lack of high  $r^2$  for the remaining species does not discount the importance of field abundance on measured impingement rates because the field gear employed may not adequately sample the field populations. That this may be the case can be observed by comparing coefficients of determination of 12.2-m seine catches to otter trawl catch correlations for bay anchovy (Table 4-12). The high  $r^2$  for 12.2-m seine catches relative to the otter trawl catches is probably due to gear selectivity, partly due to the small mesh size of the seine or to the habitat sampled.

In addition to species-specific gear selectivity, certain errors in field collection may have affected measured field abundance. The 45.7-m seine, used from June 1979 through August 1979, had a smaller mesh size than that employed prior to and after that three-month interval.

Another error consideration is the definition of day-night period throughout the six-year study. For impingement samples night was defined as sunset to dawn prior to June 1979; after that date, night was defined as the 12-hour interval following sunset.

In summary, variations in screen catch rates for the investigated species were shown to be primarily correlated with seasons, period, field abundance and, in some cases, high winds. The level of correlation of these factors to impingement is species-specific. To a large extent, the statistical analyses have confirmed quantitatively what was suggested qualitatively in Section 4.2.2: impingement rates are generally a function of abundance of organisms in the vicinity of OCNGS, within a given study year.

Other parameters, such as plant-operating and meteorological data, in some cases were shown to be related to impingement rates, but were of little importance in influencing impingement rates.

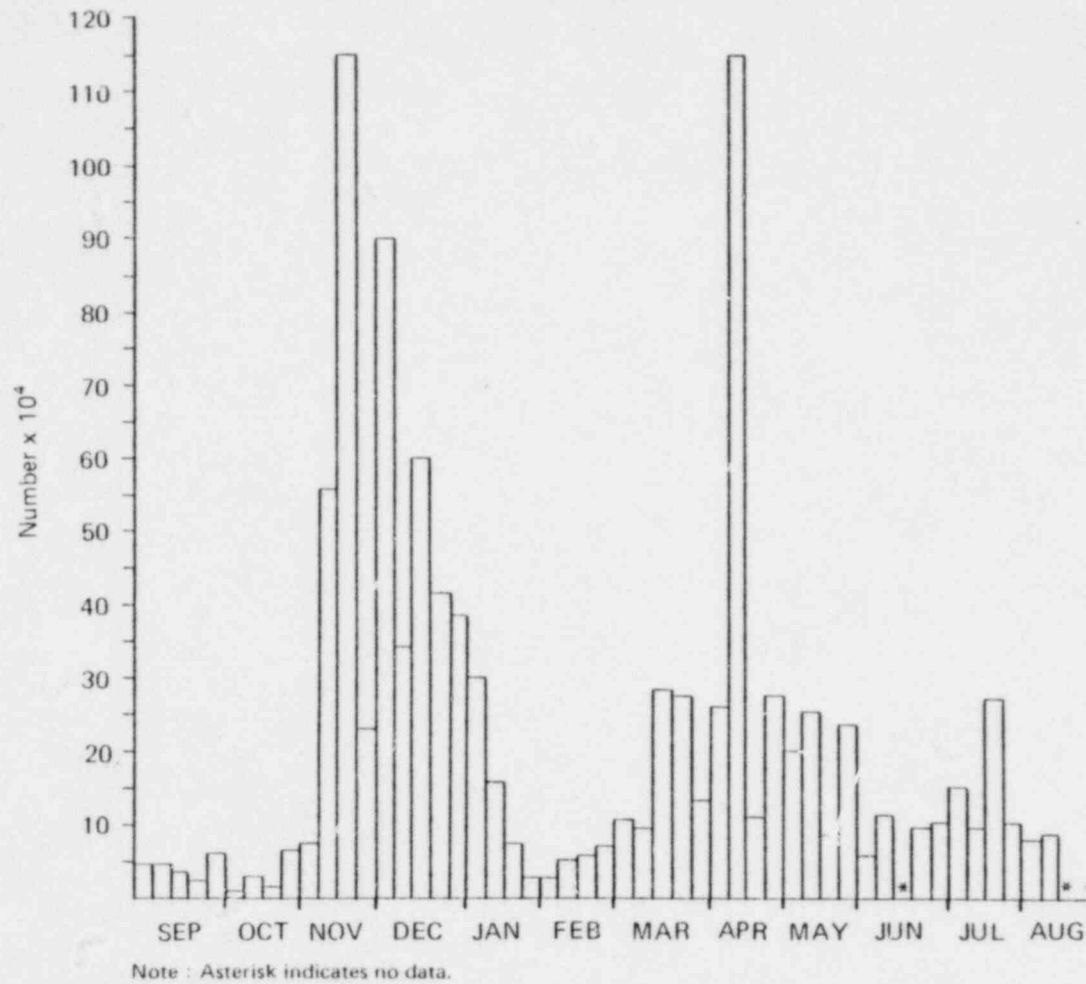


Figure 4-1. Estimated number of fish and macroinvertebrates impinged on the Oyster Creek Nuclear Generating Station traveling screens, September 1980 – August 1981.

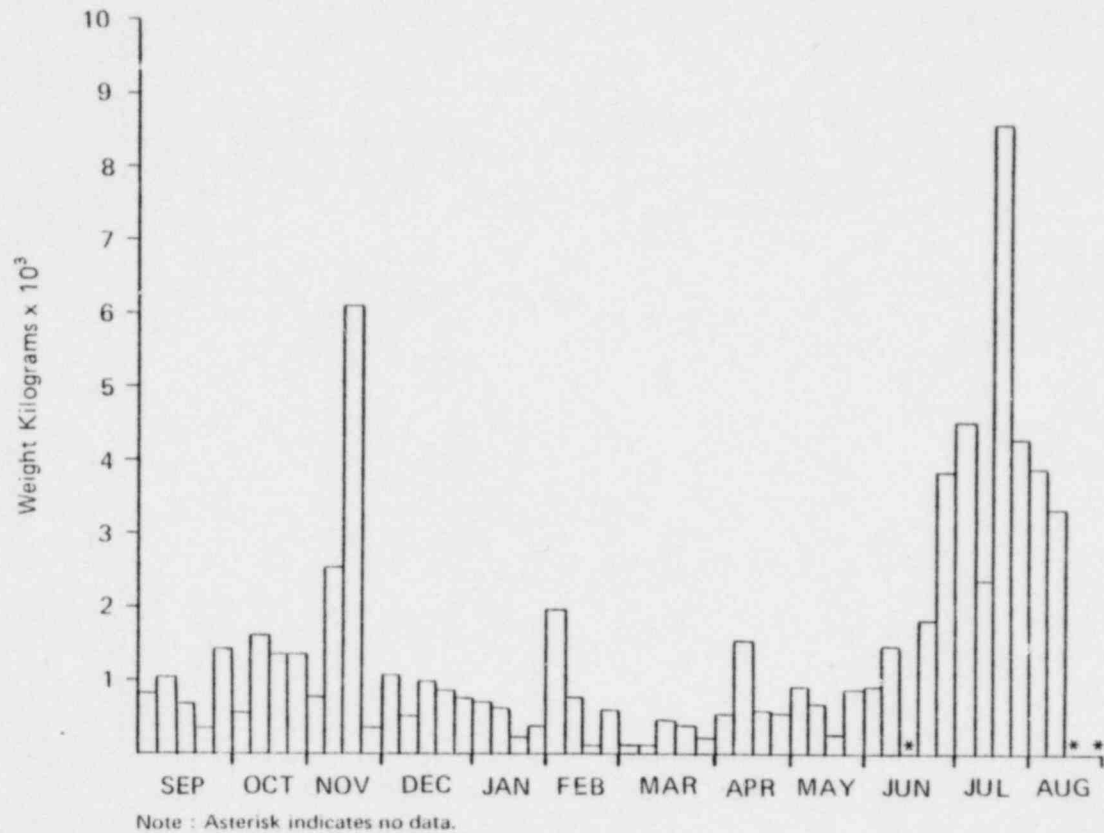


Figure 4-2. Estimated weekly weight (kg) of fish and macroinvertebrates impinged on the Oyster Creek Nuclear Generating Station traveling screens, September 1980 – August 1981.

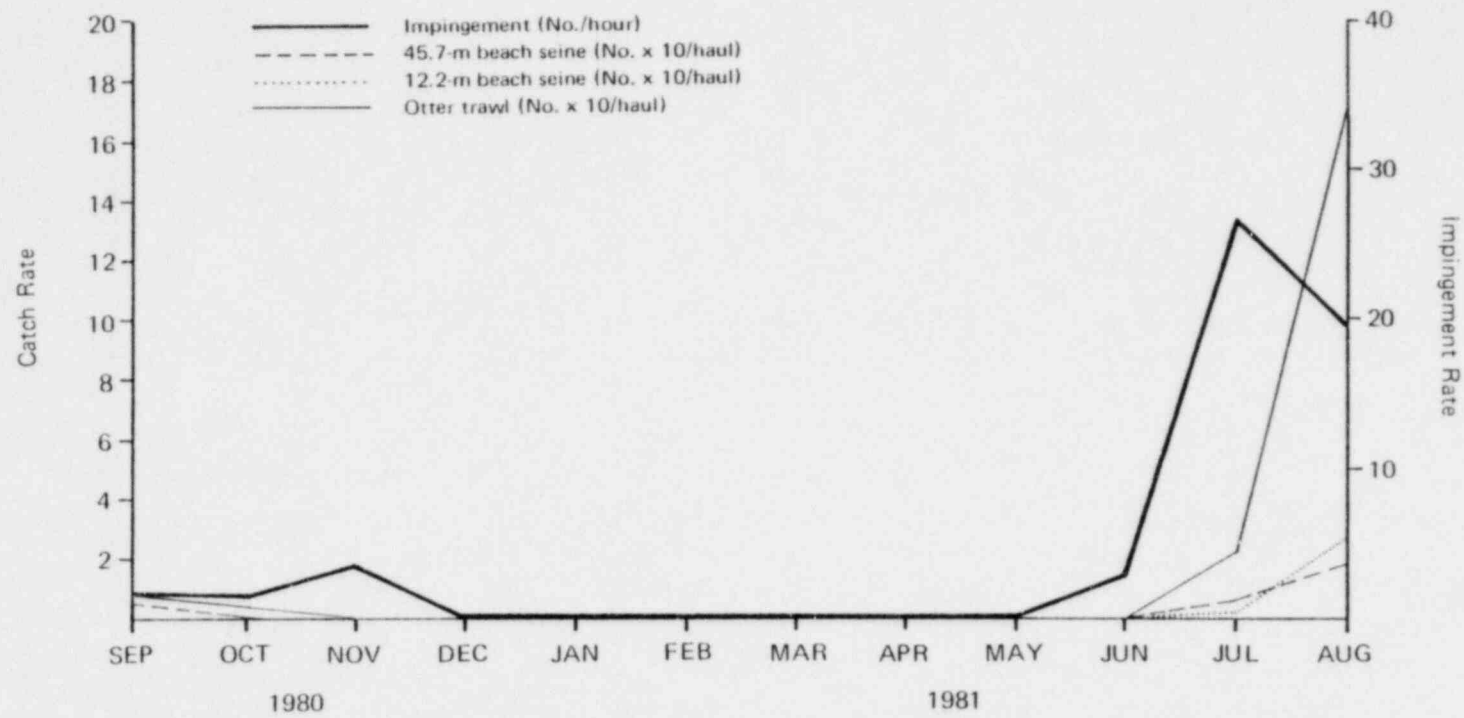


Figure 4-3. Comparison of mean monthly weakfish (*Cynoscion regalis*) impingement per hour at Oyster Creek Nuclear Generating Station with concurrent beach seines and otter trawl catches at four Barnegat Bay stations, September 1980 – August 1981.

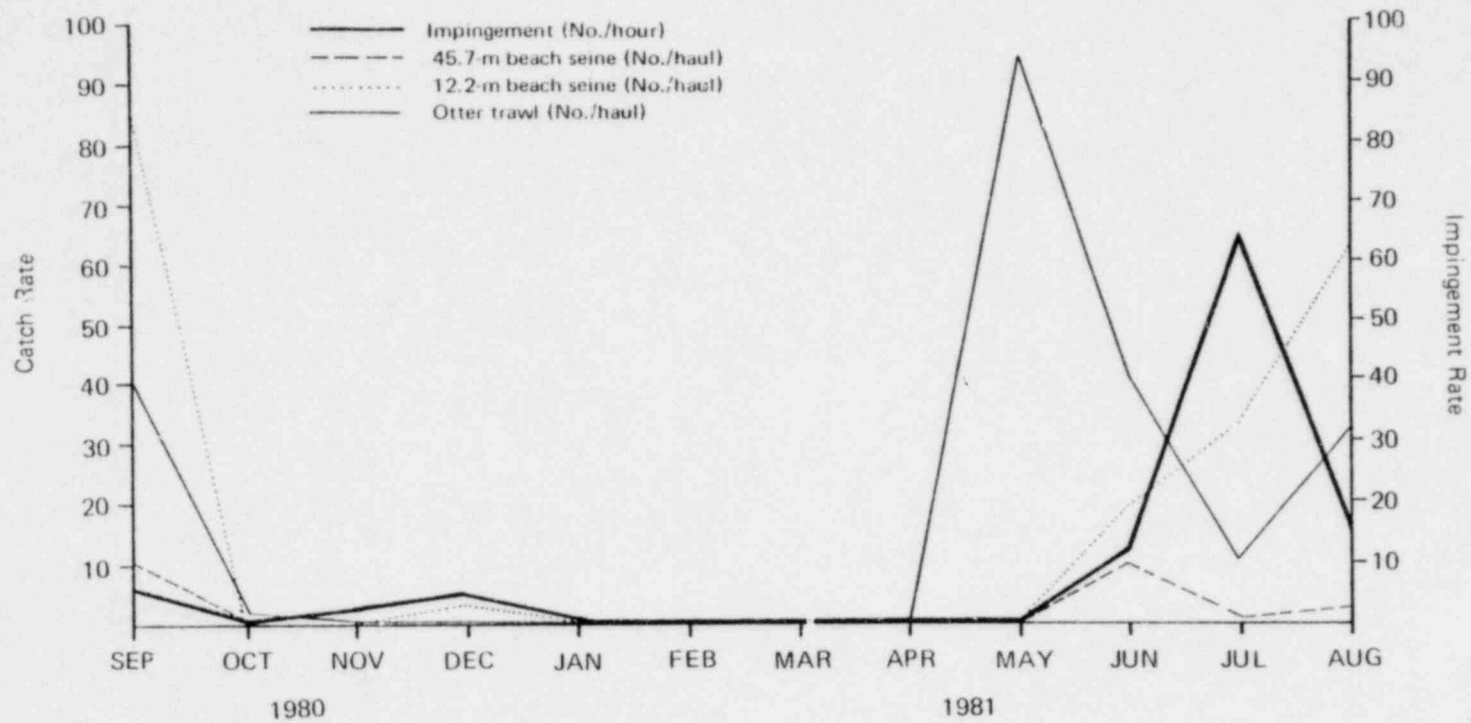


Figure 4-4. Comparison of mean monthly bay anchovy (*Anchoa mitchilli*) impingement per hour at Oyster Creek Nuclear Generating Station with concurrent beach seines and otter trawl catches at four Barnegat Bay stations, September 1980 – August 1981.



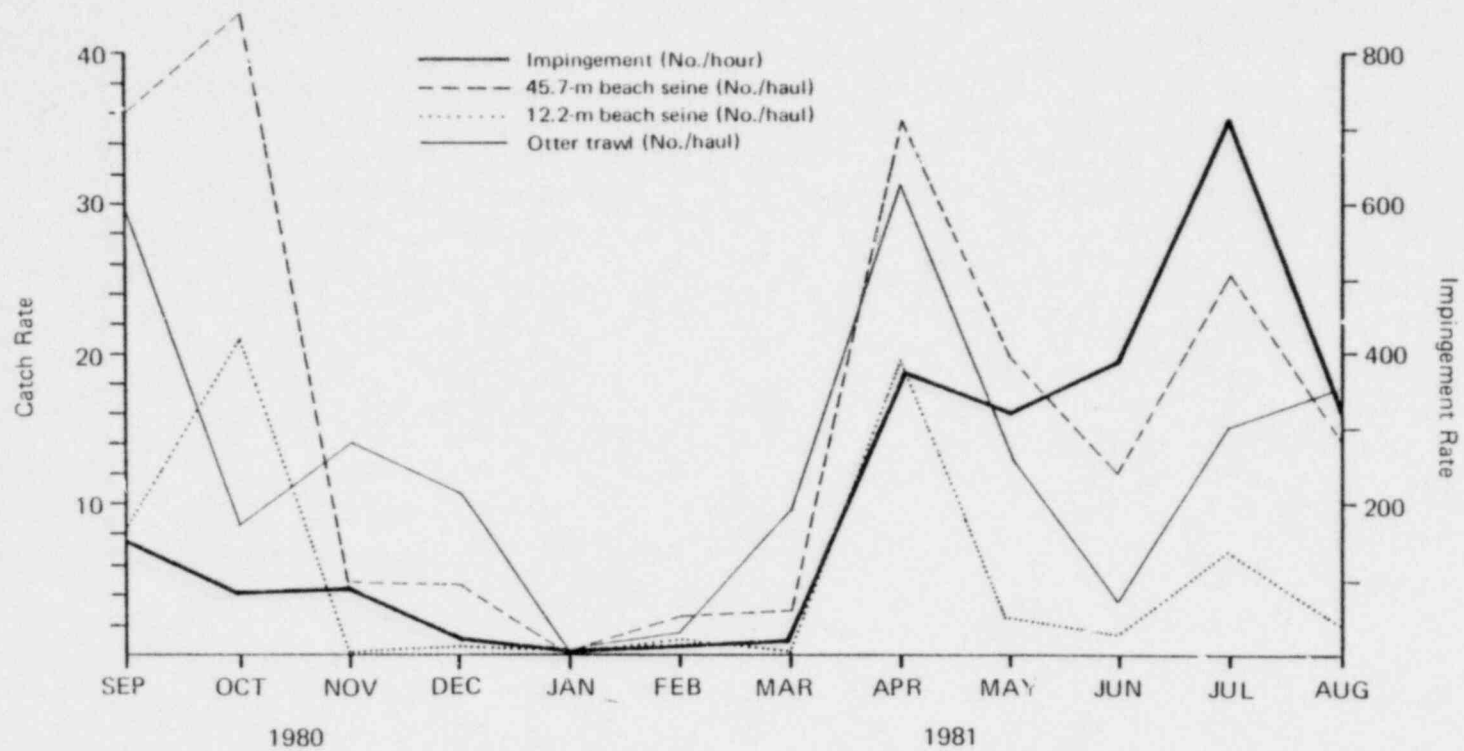


Figure 4-5. Comparison of mean monthly blue crab (*Callinectes sapidus*) impingement per hour at Oyster Creek Nuclear Generating Station with concurrent beach seines and otter trawl catches at four Barnegat Bay stations, September 1980 – August 1981.

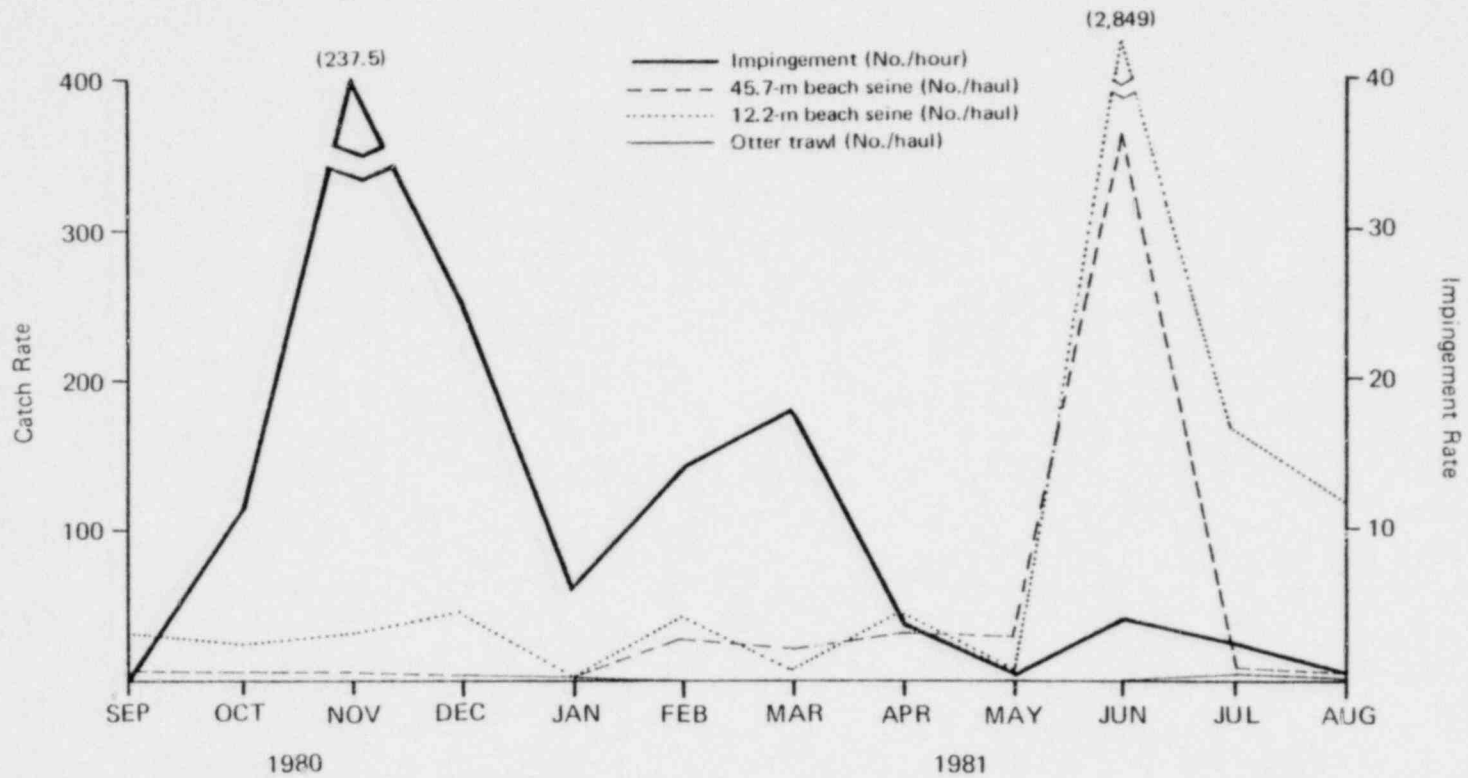


Figure 4-6. Comparison of mean monthly Atlantic silverside (*Menidia menidia*) impingement per hour at Oyster Creek Nuclear Generating Station with concurrent beach seines and otter trawl catches at four Barnegat Bay stations, September 1980 – August 1981.

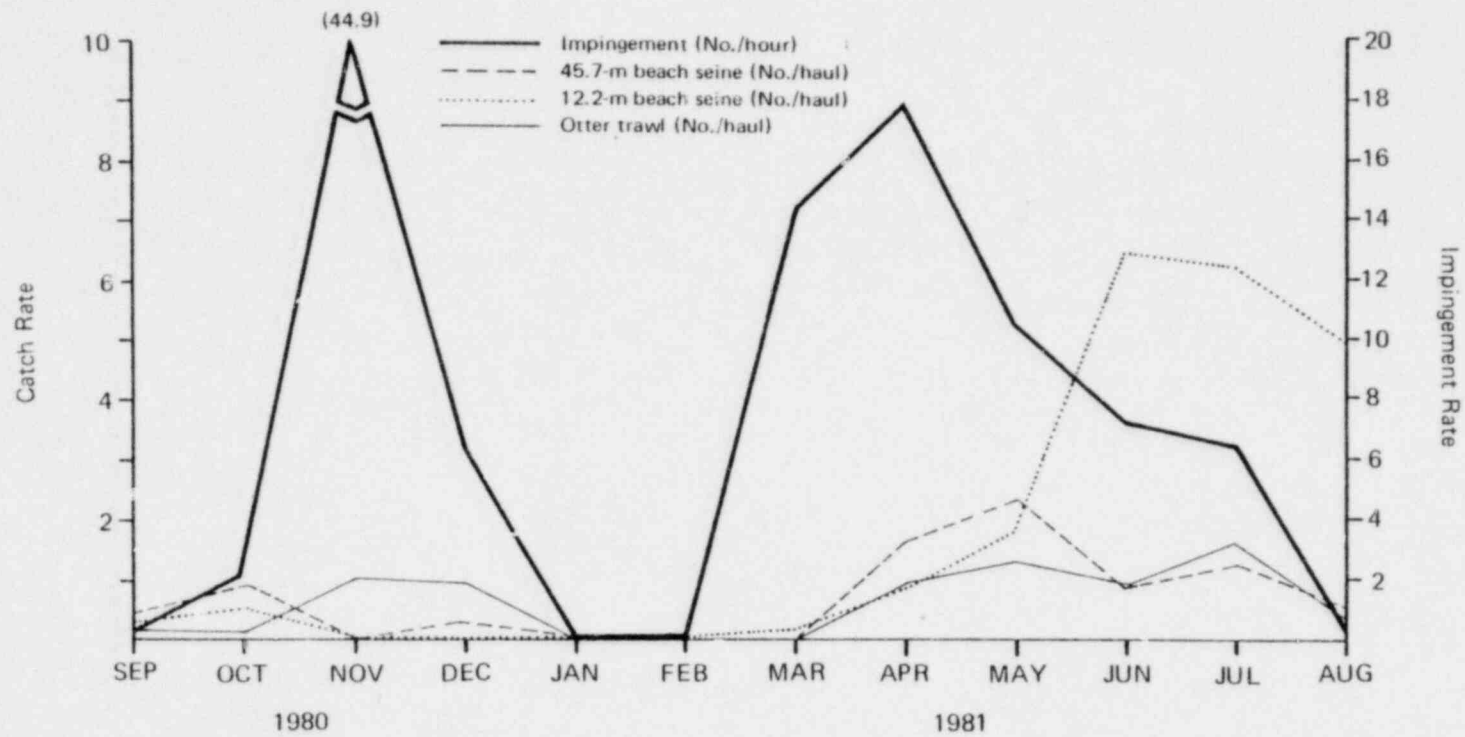


Figure 4-7. Comparison of mean monthly northern pipefish (*Syngnathus fuscus*) impingement per hour at Oyster Creek Nuclear Generating Station with concurrent beach seines and otter trawl catches at four Barnegat Bay stations, September 1980 – August 1981.

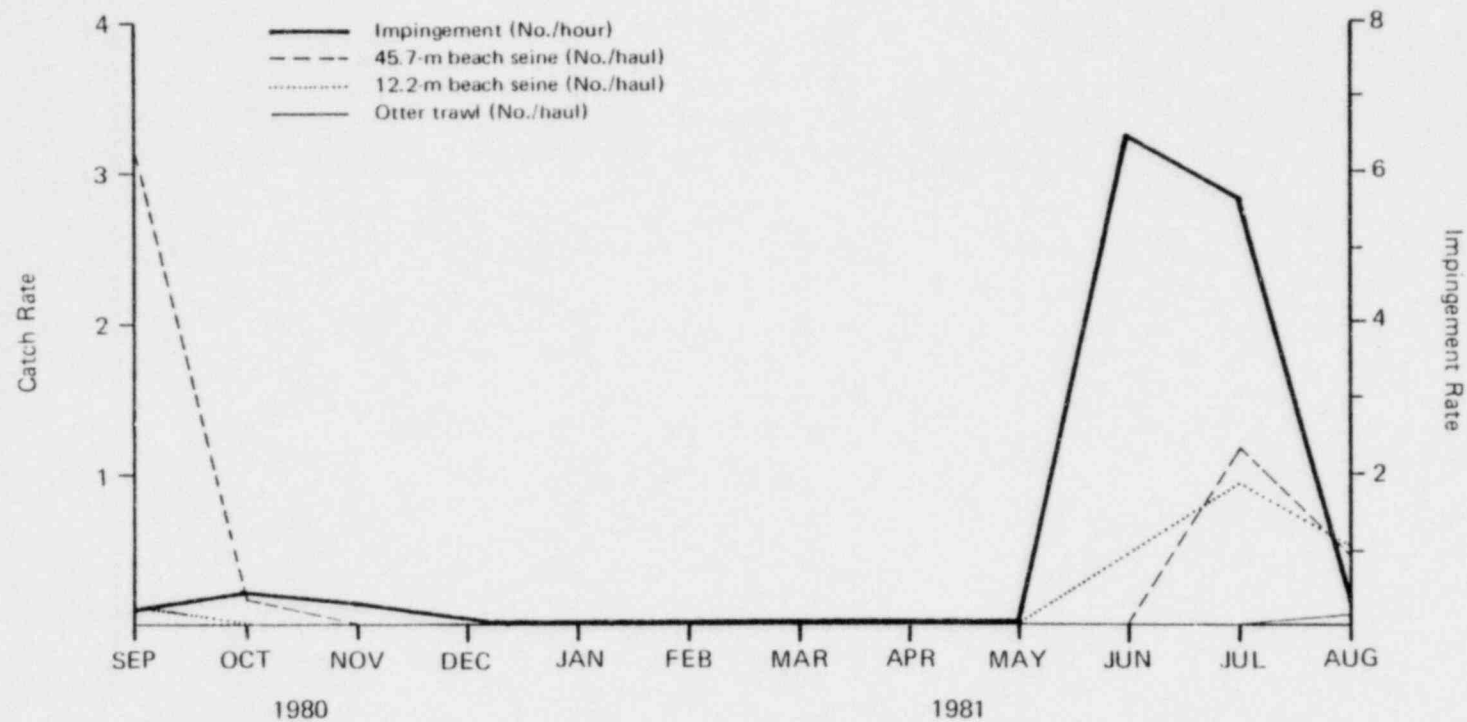


Figure 4-8. Comparison of mean monthly bluefish (*Pomatomus saltatrix*) impingement per hour at Oyster Creek Nuclear Generating Station with concurrent beach seines and otter trawl catches at four Barnegat Bay stations, September 1980 – August 1981.

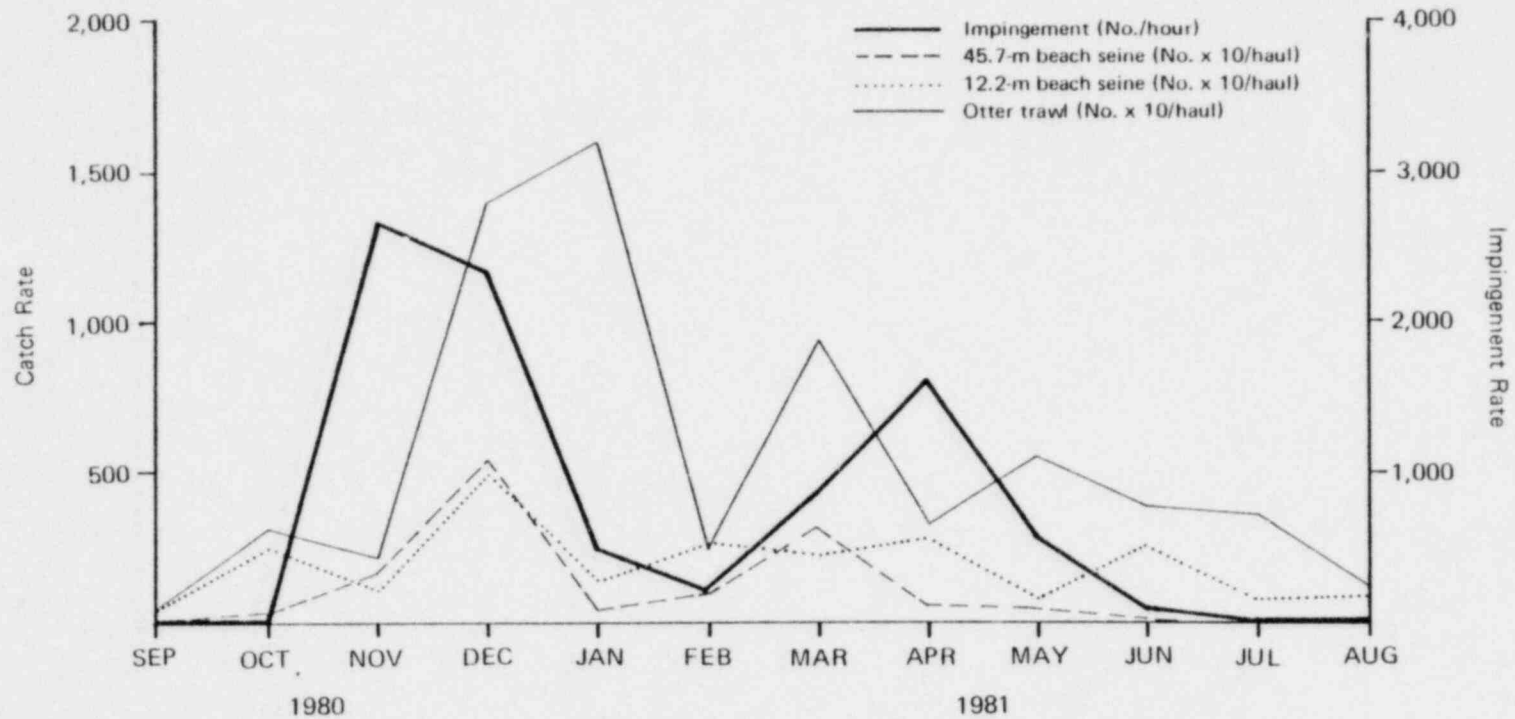


Figure 4-9. Comparison of mean monthly sand shrimp (*Crangon septemspinosa*) impingement per hour at Oyster Creek Nuclear Generating Station with concurrent beach seines and otter trawl catches at four Barnegat Bay stations, September 1980 – August 1981.

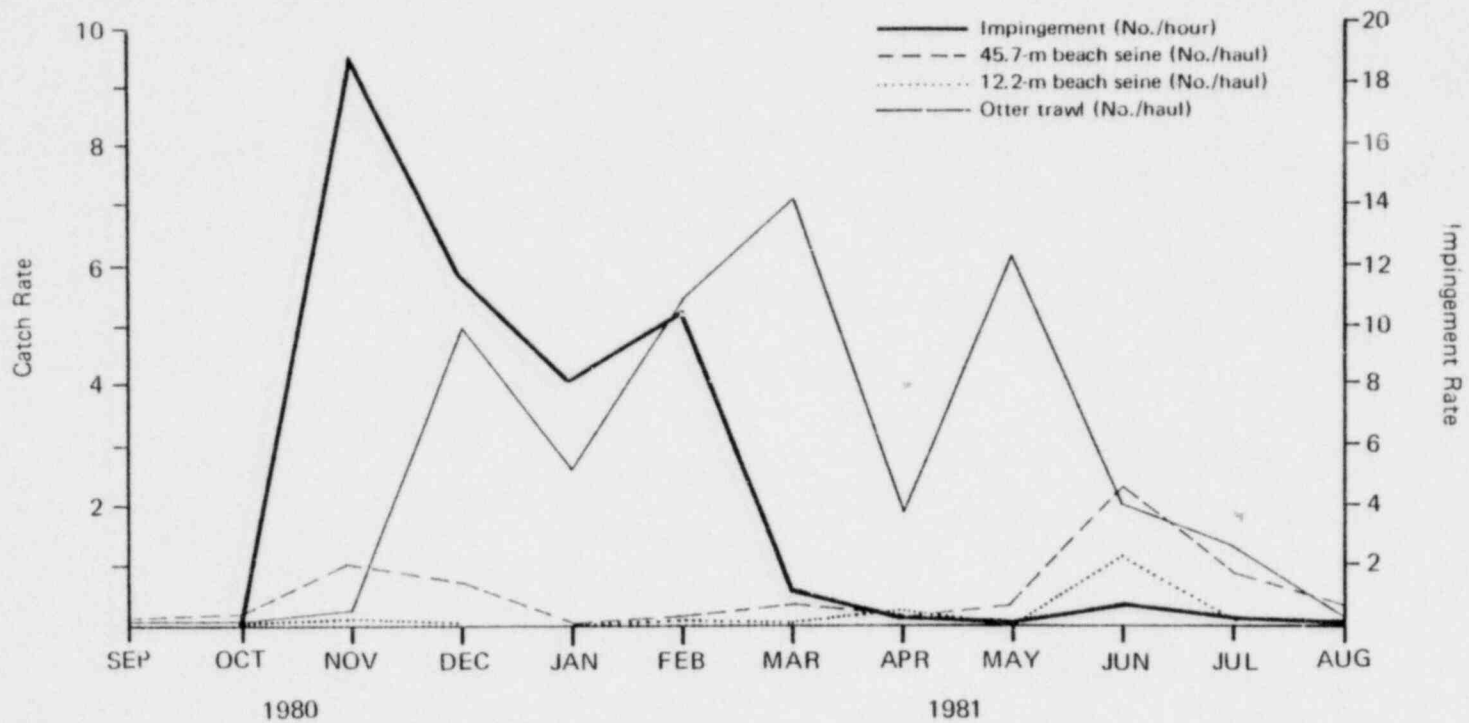


Figure 4-10. Comparison of mean monthly winter flounder (*Pseudopleuronectes americanus*) impingement per hour at Oyster Creek Nuclear Generating Station with concurrent beach seines and otter trawl catches at four Barnegat Bay stations, September 1980 – August 1981.



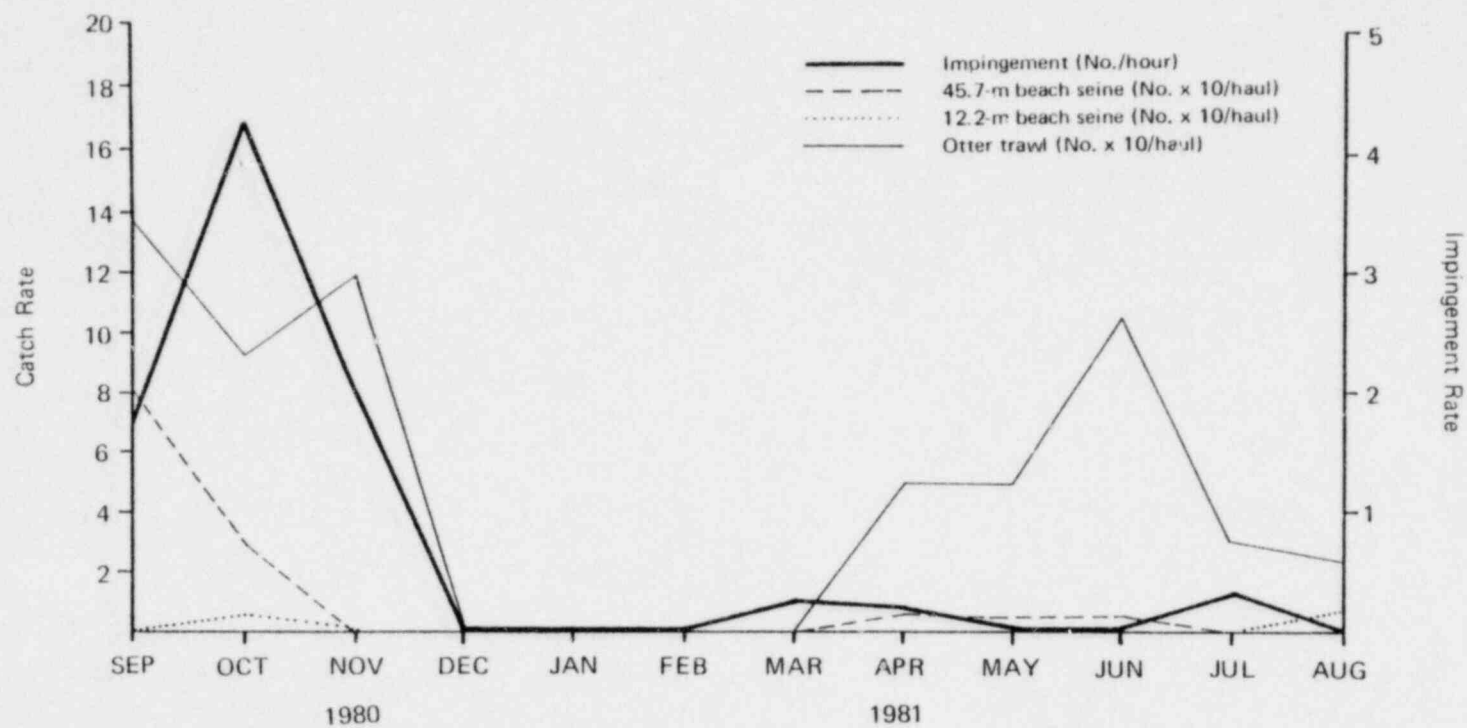


Figure 4-11. Comparison of mean monthly summer flounder (*Paralichthys dentatus*) impingement per hour at Oyster Creek Nuclear Generating Station with concurrent beach seines and otter trawl catches at four Barnegat Bay stations, September 1980 – August 1981.

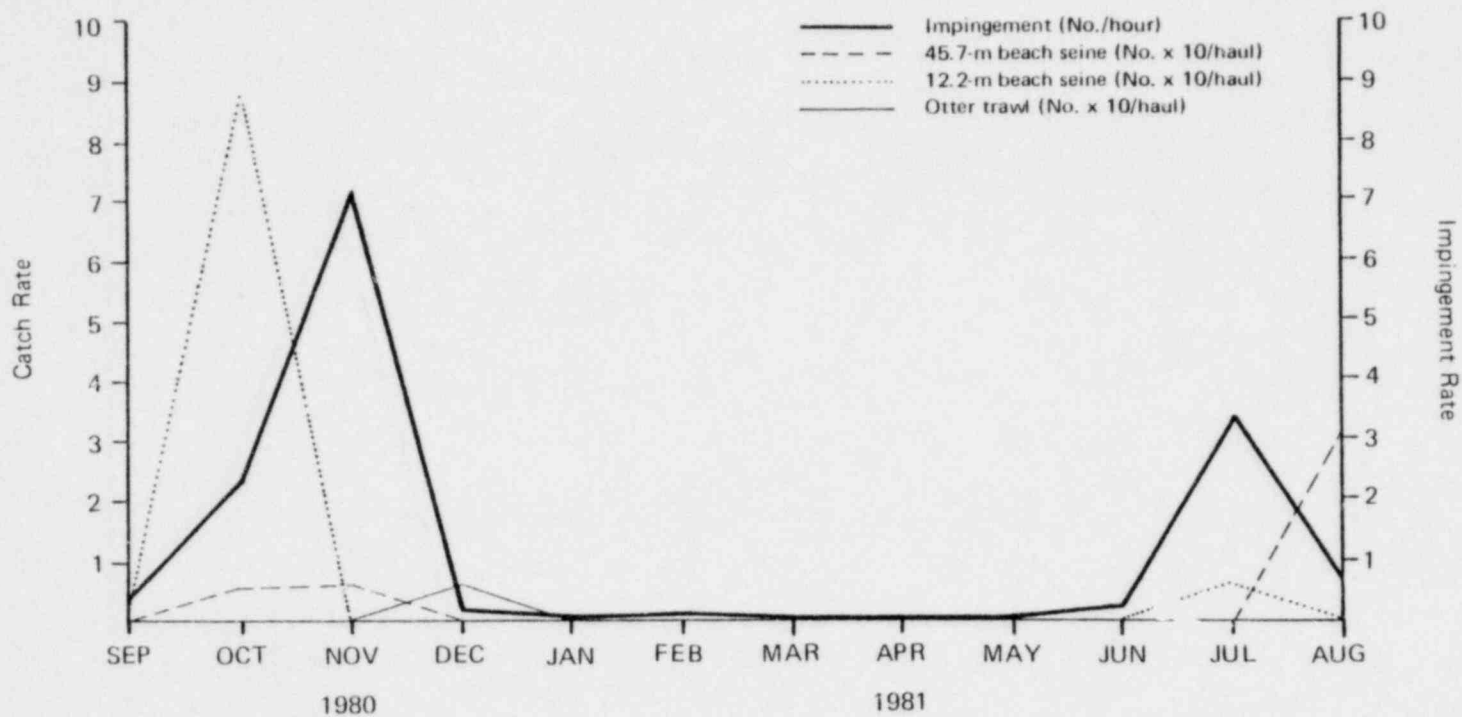


Figure 4-12. Comparison of mean monthly Atlantic menhaden (*Brevoortia tyrannus*) impingement per hour at Oyster Creek Nuclear Generating Station with concurrent beach seines and otter trawl catches at four Barnegat Bay stations, September 1980 – August 1981.

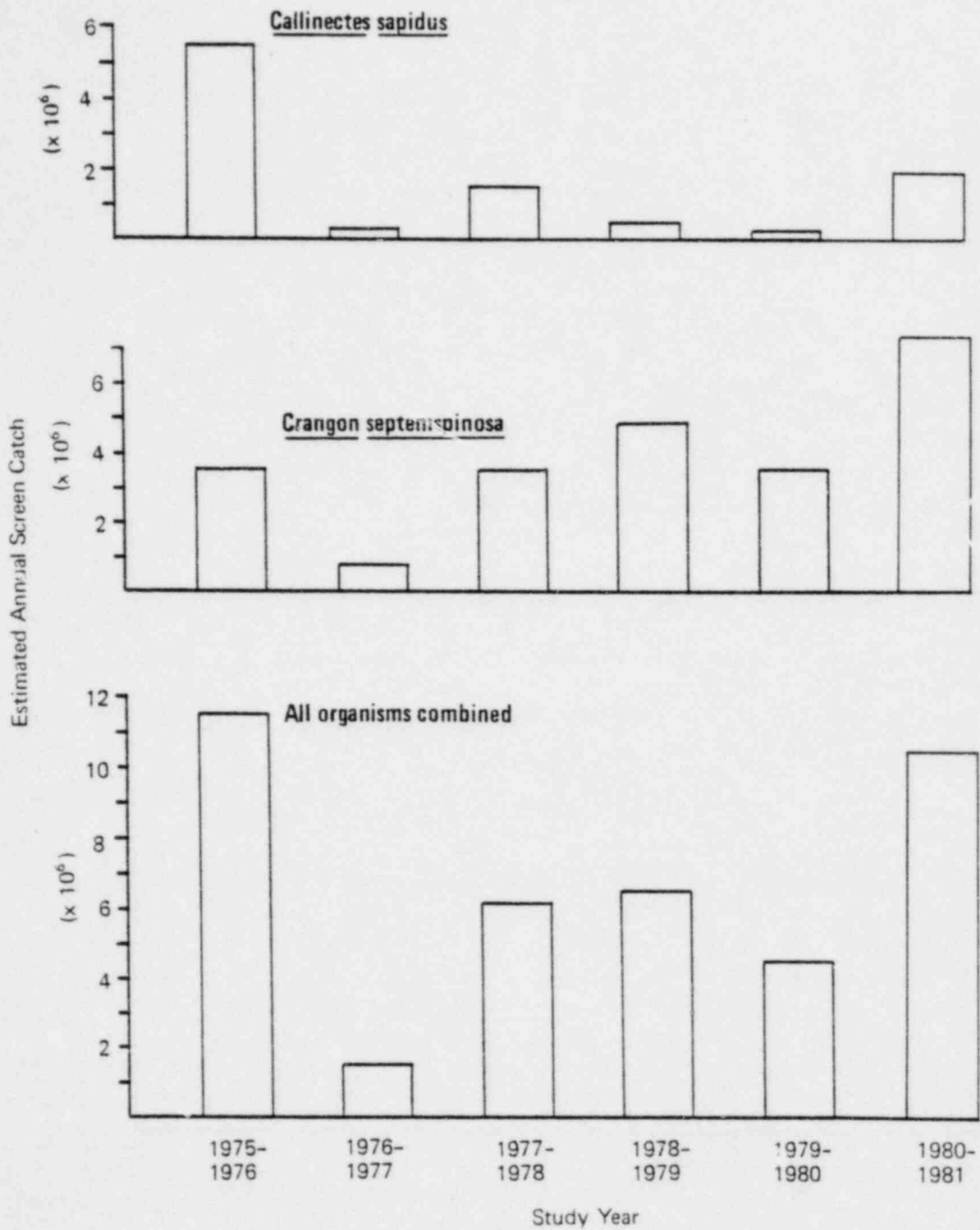


Figure 4-13. Estimated annual impingement catches for total organisms and key and abundant organisms at Oyster Creek Nuclear Generating Station.

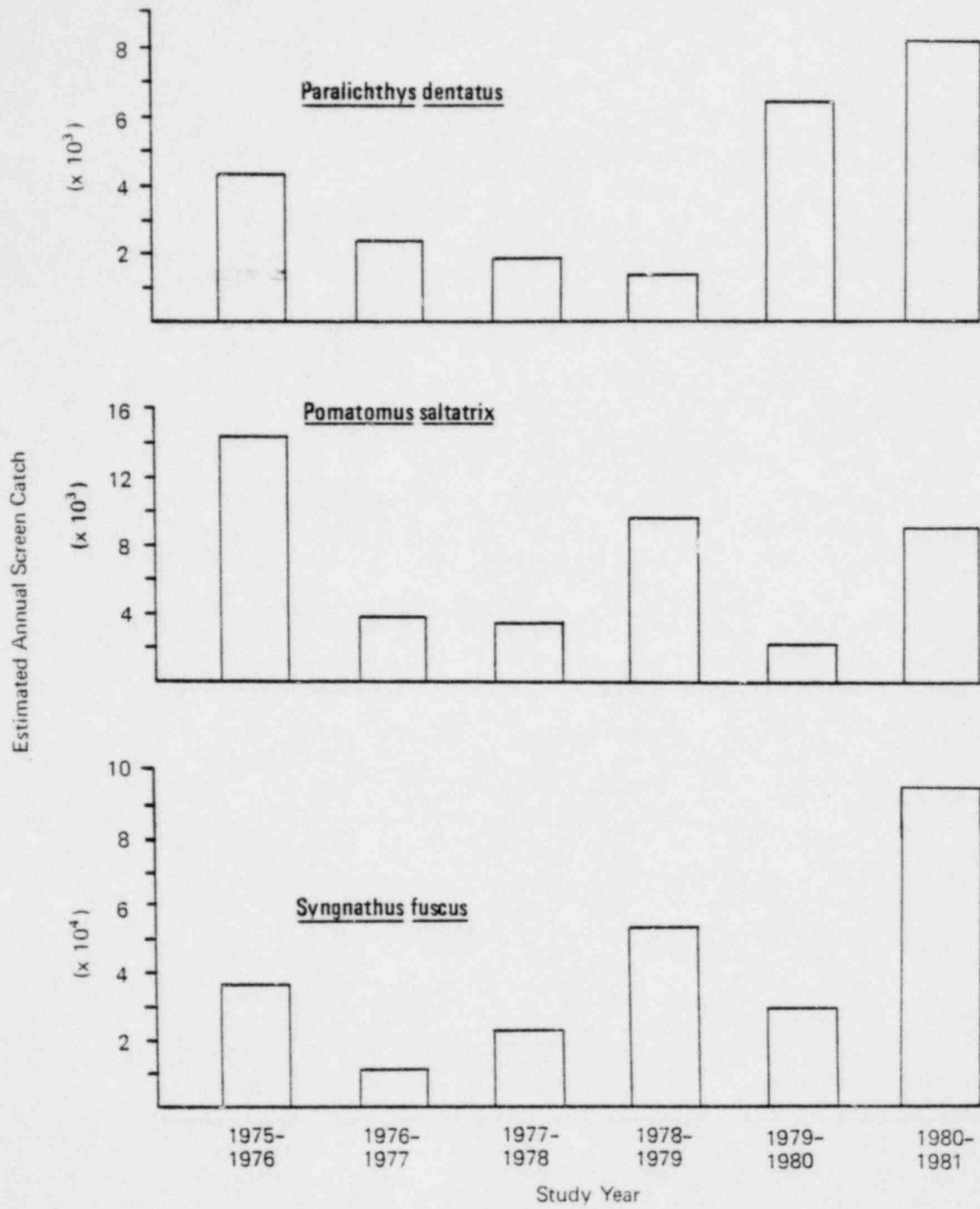


Figure 4-13. (Cont.)

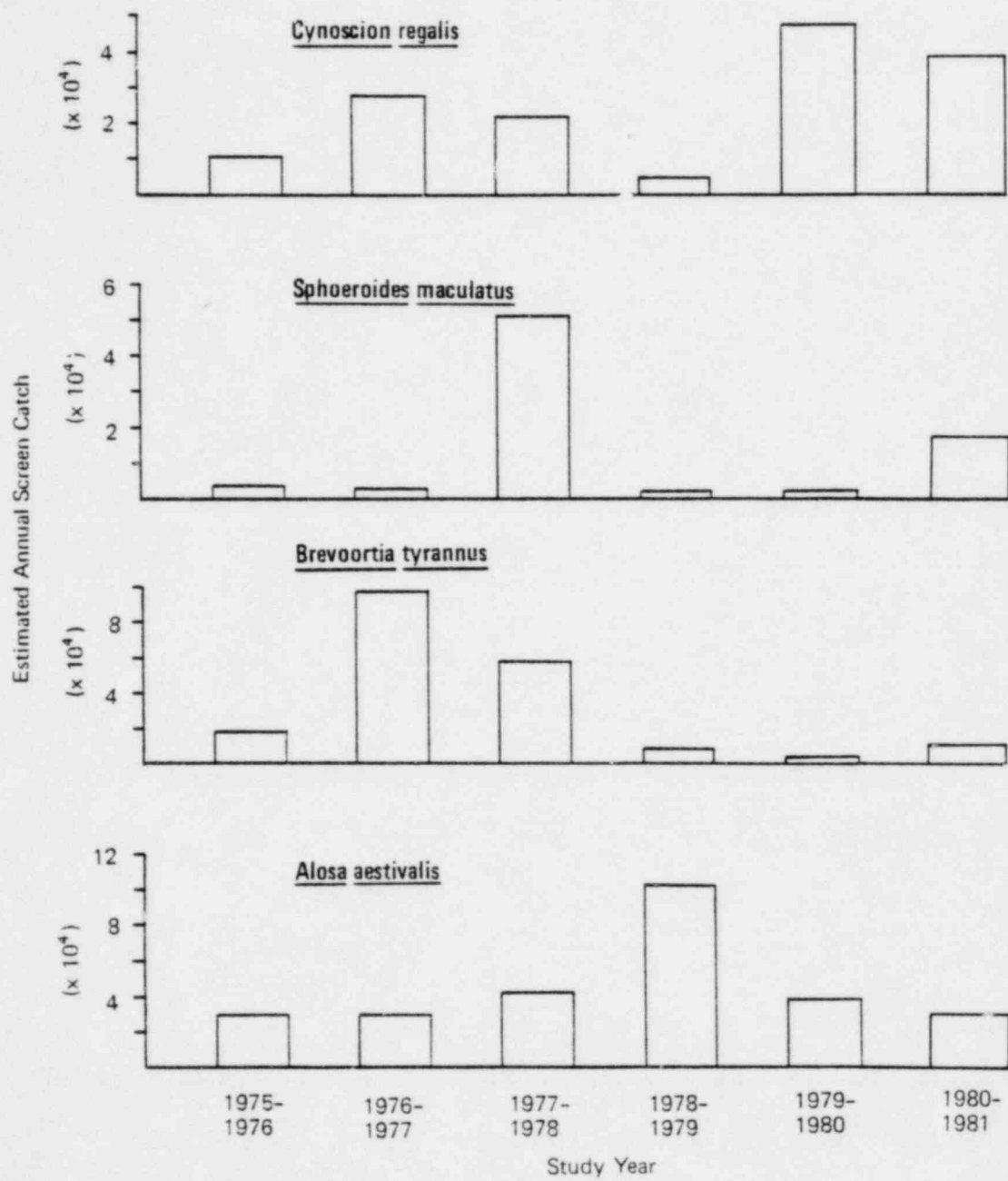


Figure 4-13. (Cont.)

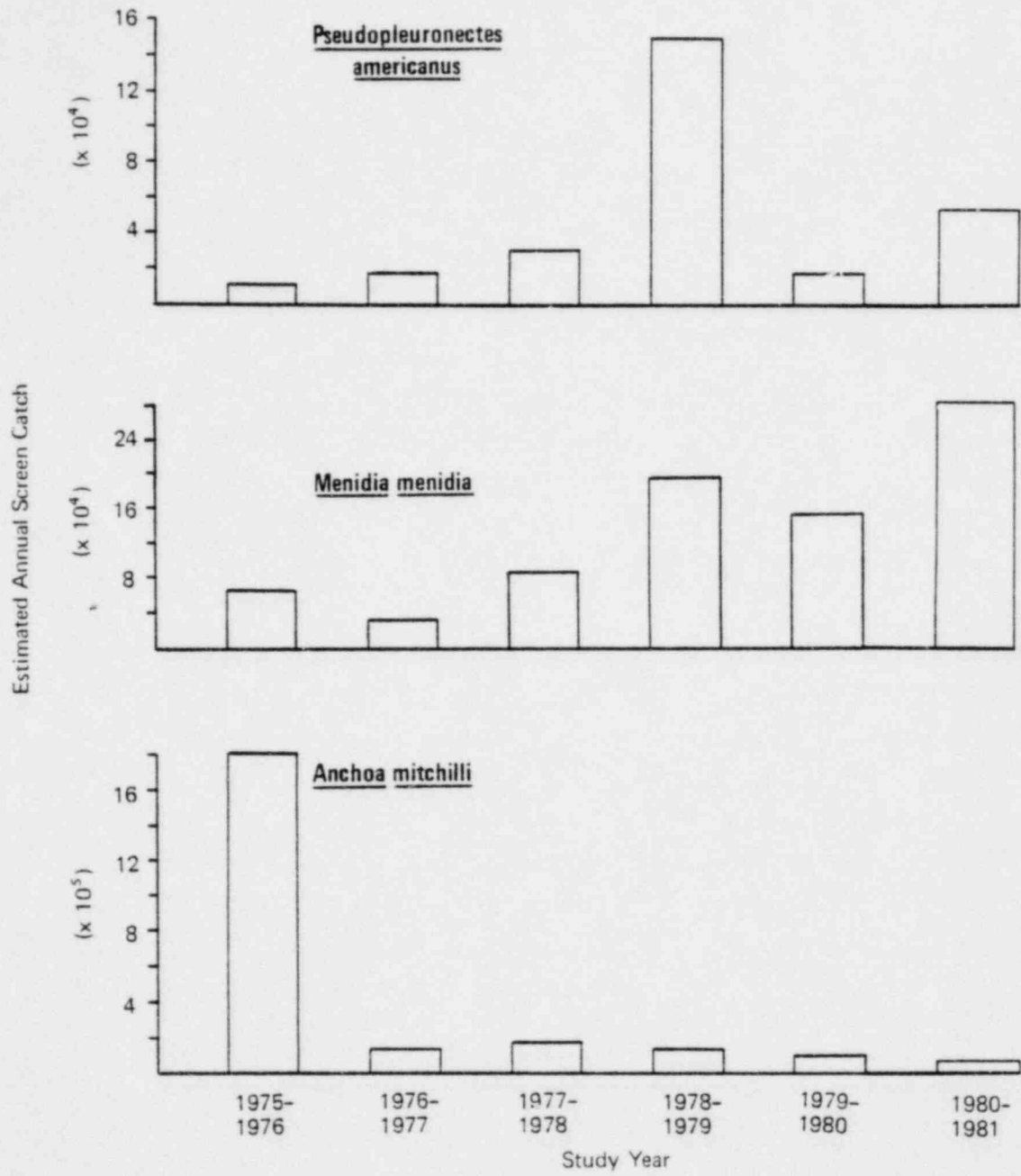


Figure 4-13. (Cont.)



TABLE 4-1 TOTAL NUMBER, PERCENT COMPOSITION, AND CUMULATIVE PERCENT OF FINFISH, OTHER VERTEBRATES, AND MACROINVERTEBRATES IMPINGED AT THE OYSTER CREEK NUCLEAR GENERATING STATION, SEPTEMBER 1980 - AUGUST 1981

| SPP. NAME                | NUMBER     | %      | CUMU. % |
|--------------------------|------------|--------|---------|
| CRANGON SEPTEMSPINOSA    | 453359.000 | 69.879 | 69.879  |
| CALLINECTES SAPIDUS      | 93907.000  | 14.474 | 84.353  |
| PALAEMONETES VULGARIS    | 37045.000  | 5.710  | 90.063  |
| MENIDIA MENIDIA          | 19064.000  | 2.938  | 93.002  |
| GOBIOSOMA BOSCI          | 7911.000   | 1.219  | 94.221  |
| SYNGNATHUS FUSCUS        | 5659.000   | 0.872  | 95.094  |
| ETROPUS MIL. OSTOMUS     | 3806.000   | 0.587  | 95.680  |
| ANCHOA MITCHILLI         | 3559.000   | 0.549  | 96.229  |
| PSEUDOPLEURONECTES AMERI | 2931.000   | 0.452  | 96.681  |
| ALOSA AESTIVALIS         | 2278.000   | 0.351  | 97.032  |
| APELTES QUADRACUS        | 2207.000   | 0.340  | 97.372  |
| CLASS SCYPHOZOA          | 2171.000   | 0.335  | 97.706  |
| CYNOSCION REGALIS        | 1596.000   | 0.246  | 97.952  |
| HIPPOCAMPUS ERECTUS      | 1160.000   | 0.179  | 98.131  |
| FAMILY XANTHIDAE JUV.    | 1040.000   | 0.160  | 98.292  |
| CYPRINODON VARIEGATUS    | 957.000    | 0.148  | 98.439  |
| BREVOORTIA TYRANNUS      | 756.000    | 0.117  | 98.556  |
| PRIONOTUS EVOLANS        | 748.000    | 0.115  | 98.671  |
| OPSANUS TAU              | 695.000    | 0.107  | 98.778  |
| PARALICHTHYS DENTATUS    | 606.000    | 0.093  | 98.871  |
| SPHOEROIDES MACULATUS    | 596.000    | 0.092  | 98.963  |
| TAUTOGA ONITIS           | 520.000    | 0.080  | 99.043  |
| MYOXOCEPHALUS AENAEUS    | 511.000    | 0.079  | 99.122  |
| POMATOMUS SALTATRIX      | 439.000    | 0.068  | 99.190  |
| ANGUILLA ROSTRATA        | 431.000    | 0.066  | 99.256  |
| OVALIPES OCELLATUS       | 357.000    | 0.055  | 99.311  |
| TRINECTES MACULATUS      | 346.000    | 0.053  | 99.365  |
| PHYLUM NEMERTEA          | 329.000    | 0.051  | 99.415  |
| ALOSA PSEUDOHARENGUS     | 307.000    | 0.047  | 99.463  |
| CHASMODES BOSQUIANUS     | 271.000    | 0.042  | 99.504  |
| FUNDULUS HETEROCLITUS    | 217.000    | 0.033  | 99.538  |
| CARANX HIPPOS            | 208.000    | 0.032  | 99.570  |
| LIBINIA DUBIA            | 191.000    | 0.029  | 99.599  |
| PEPRILUS TRIACANTHUS     | 141.000    | 0.022  | 99.621  |
| CENTROPRISTIS STRIATA    | 136.000    | 0.021  | 99.642  |
| SCOPHTHALMUS AQUOSUS     | 128.000    | 0.020  | 99.662  |
| ETRUMEUS TERES           | 124.000    | 0.019  | 99.681  |
| PORTUNUS GIBBESII        | 120.000    | 0.018  | 99.699  |
| PENAEUS AZTECUS          | 118.000    | 0.018  | 99.718  |
| CONGER OCEANICUS         | 100.000    | 0.015  | 99.733  |
| FAMILY XANTHIDAE         | 96.000     | 0.015  | 99.748  |
| AMMODYTES AMERICANUS     | 91.000     | 0.014  | 99.762  |
| HIPPOLYTE SP             | 81.000     | 0.012  | 99.774  |
| NEOPANOPE TEXANA SAYI    | 81.000     | 0.012  | 99.787  |
| MUGIL CEPHALUS           | 80.000     | 0.012  | 99.799  |
| SYNODUS FOETENS          | 73.000     | 0.011  | 99.810  |

TABLE 4-1 (CONT.)

|                          |        |       |        |
|--------------------------|--------|-------|--------|
| *ENIDIA BERYLLINA        | 72.000 | 0.011 | 99.821 |
| GASTEROSTEUS ACULEATUS   | 72.000 | 0.011 | 99.833 |
| RISSOLA MARGINATA        | 70.000 | 0.011 | 99.843 |
| ASTROSCOPUS GUTTATUS     | 67.000 | 0.010 | 99.854 |
| LIMULUS POLYPHEMUS       | 66.000 | 0.010 | 99.864 |
| ALOSA SAPIDISSIMA        | 62.000 | 0.010 | 99.873 |
| LEIOSTOMUS XANTHURUS     | 60.000 | 0.009 | 99.883 |
| STRONGYLURA MARINA       | 54.000 | 0.008 | 99.891 |
| MORONE AMERICANA         | 49.000 | 0.008 | 99.899 |
| PAGURUS LONGICARPUS      | 48.000 | 0.007 | 99.906 |
| CANCER IRRORATUS         | 48.000 | 0.007 | 99.913 |
| TAUTOGOLABRUS ADSPERSUS  | 46.000 | 0.007 | 99.920 |
| SQUILLA EMPUSA           | 46.000 | 0.007 | 99.928 |
| PANOPEUS HERBSTII        | 42.000 | 0.006 | 99.934 |
| RHITHROPANOPEUS HARRISII | 42.000 | 0.006 | 99.940 |
| HYSOBLENNIUS HENTZI      | 37.000 | 0.006 | 99.946 |
| CLASS HOLOTHUROIDEA      | 32.000 | 0.005 | 99.951 |
| LOLLIGUNCOLA BREVIS      | 28.000 | 0.004 | 99.955 |
| LUTJANUS GRISEUS         | 21.000 | 0.003 | 99.959 |
| MUGIL CUREMA             | 18.000 | 0.003 | 99.961 |
| FUNDULUS MAJALIS         | 16.000 | 0.002 | 99.964 |
| RACHYCENTRON CANADUM     | 15.000 | 0.002 | 99.966 |
| SELENE VOMER             | 15.000 | 0.002 | 99.969 |
| DOROSOMA CEPEDIANUM      | 14.000 | 0.002 | 99.971 |
| FUNDULUS DIAPHANUS       | 14.000 | 0.002 | 99.973 |
| STENOTOMUS CHRYSOPS      | 13.000 | 0.002 | 99.975 |
| MEMBRAS MARTINICA        | 11.000 | 0.002 | 99.977 |
| CHAETODON OCELLATUS      | 11.000 | 0.002 | 99.978 |
| CALLINECTES SIMILIS      | 11.000 | 0.002 | 99.980 |
| PRIONOTUS CAROLINUS      | 10.000 | 0.002 | 99.981 |
| UROPHYCIS CHUSS          | 7.000  | 0.001 | 99.983 |
| FISTULARIA TABALARIA     | 7.000  | 0.001 | 99.984 |
| LACTOPHRYS TRIQUETER     | 7.000  | 0.001 | 99.985 |
| UROPHYCIS REGIUS         | 6.000  | 0.001 | 99.986 |
| MENTICIRRHUS SAXATILIS   | 5.000  | 0.001 | 99.986 |
| CHILOMYCTERUS SCHOEPI    | 5.000  | 0.001 | 99.987 |
| MALACLEMYS TERRAPIN      | 5.000  | 0.001 | 99.988 |
| MYROPHIS PUNCTATUS       | 4.000  | 0.001 | 99.989 |
| BREVOORTIA TYRANNUS LAR  | 4.000  | 0.001 | 99.989 |
| MERLUCCIUS BILINEARIS    | 4.000  | 0.001 | 99.990 |
| ENNEACANTHUS OBESUS      | 4.000  | 0.001 | 99.990 |
| ALUTERUS SCHOEPI         | 4.000  | 0.001 | 99.991 |
| POLINICES DUPLICATUS     | 4.000  | 0.001 | 99.992 |
| ANCHOA HEPSETUS LARVAE   | 3.000  | 0.000 | 99.992 |
| ANCHOA HEPSETUS          | 3.000  | 0.000 | 99.993 |
| BAIRDIELLA CHRYSURA      | 3.000  | 0.000 | 99.993 |
| SPHYRAENA BOREALIS       | 3.000  | 0.000 | 99.994 |
| MONACANTHUS HISPIDUS     | 3.000  | 0.000 | 99.994 |
| ANGUILLA ROSTRATA JUV.   | 2.000  | 0.000 | 99.994 |
| UMBRA PYGMAEA            | 2.000  | 0.000 | 99.995 |
| POLLACHIUS VIRENS        | 2.000  | 0.000 | 99.995 |

TABLE 4-1 (CONT.)

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|                          |       |       |         |
|--------------------------|-------|-------|---------|
| UROPHYCIS SP             | 2.000 | 0.000 | 99.995  |
| ALECTIS CRINITUS         | 2.000 | 0.000 | 99.996  |
| MUGIL SP                 | 2.000 | 0.000 | 99.996  |
| LACTOPHRYS TRIGONUS      | 2.000 | 0.000 | 99.996  |
| PORTUNUS SPINIMANUS      | 2.000 | 0.000 | 99.996  |
| CARCINUS MAENAS          | 2.000 | 0.000 | 99.997  |
| CLASS ASTEROIDEA         | 2.000 | 0.000 | 99.997  |
| DASYATIS SAYI            | 1.000 | 0.000 | 99.997  |
| CLUPEIDAE                | 1.000 | 0.000 | 99.997  |
| NOTEMIGONUS CRYSOLEUCAS  | 1.000 | 0.000 | 99.997  |
| APHREDODERUS SAYANUS     | 1.000 | 0.000 | 99.998  |
| HYPORHAMPHUS UNIFASCIATU | 1.000 | 0.000 | 99.998  |
| MENIDIA SP               | 1.000 | 0.000 | 99.998  |
| LEPOMIS GIBBOSUS         | 1.000 | 0.000 | 99.998  |
| ETHEOSTOMA FUSIFORME     | 1.000 | 0.000 | 99.998  |
| DECAPTERUS PUNCTATUS     | 1.000 | 0.000 | 99.998  |
| TRACHINOTUS FALCATUS     | 1.000 | 0.000 | 99.999  |
| CARANJIDAE               | 1.000 | 0.000 | 99.999  |
| SCORPAENA PLUMIERI       | 1.000 | 0.000 | 99.999  |
| PARALICHTHYS OBLONGUS    | 1.000 | 0.000 | 99.999  |
| CLASS ANTHOZOA           | 1.000 | 0.000 | 99.999  |
| UPOGEBIA AFFINIS         | 1.000 | 0.000 | 99.999  |
| HOMARUS AMERICANUS ZOEAE | 1.000 | 0.000 | 99.999  |
| HOMARUS AMERICANUS       | 1.000 | 0.000 | 100.000 |
| CHELYDRA SERPENTINA      | 1.000 | 0.000 | 100.000 |
| INVERTEBRATE FRAGMENTS   | 1.000 | 0.000 | 100.000 |

TABLE 4-2 TOTAL WEIGHT COLLECTED (grams), PERCENT COMPOSITION,  
AND CUMULATIVE PERCENT OF FINFISH, OTHER VERTEBRATES,  
AND MACROINVERTEBRATES IMPINGED AT THE OYSTER CREEK  
NUCLEAR GENERATING STTION, SEPTEMBER 1980 - AUGUST 1981

| SPP. NAME                | NUMBER   | %      | CUMU. % |
|--------------------------|----------|--------|---------|
| CALLINECTES SAPIDUS      | 1992510. | 51.778 | 51.778  |
| PSEUDOPLEURONECTES AMERI | 507171.  | 13.179 | 64.957  |
| CRANGON SEPTEMPINOSA     | 495497.  | 12.876 | 77.833  |
| CLASS SCYPHOZOA          | 132989.  | 3.456  | 81.289  |
| PARALICHTHYS DENTATUS    | 112576.  | 2.925  | 84.214  |
| MENIDIA MENIDIA          | 107747.  | 2.800  | 87.014  |
| LIMJULUS POLYPHEMUS      | 100671.  | 2.616  | 89.630  |
| ANGUILLA ROSTRATA        | 52378.   | 1.361  | 90.991  |
| BREVOORTIA TYRANNUS      | 34965.   | 0.909  | 91.900  |
| ETROPUS MICROSTOMUS      | 22970.   | 0.597  | 92.497  |
| TAUTOGA ONITIS           | 20997.   | 0.546  | 93.043  |
| CYNOSCION REGALIS        | 19639.   | 0.510  | 93.553  |
| PALAEONETES VULGARIS     | 19355.   | 0.503  | 94.056  |
| ALOSA AESTIVALIS         | 18683.   | 0.485  | 94.541  |
| OPSANUS TAU              | 18066.   | 0.469  | 95.011  |
| SYNGNATHUS FUSCUS        | 15442.   | 0.401  | 95.412  |
| SCOPHTHALMUS AQUOSUS     | 15339.   | 0.399  | 95.811  |
| PRIONOTUS EVOLANS        | 14790.   | 0.384  | 96.195  |
| LIBINIA DUBIA            | 14747.   | 0.383  | 96.578  |
| TRINECTES MACULATUS      | 11939.   | 0.310  | 96.889  |
| ALOSA PSEUDOHARENGUS     | 10308.   | 0.268  | 97.156  |
| ANCHOA MITCHILLI         | 7987.    | 0.208  | 97.364  |
| LEIOSTOMUS XANTHURUS     | 6879.    | 0.179  | 97.543  |
| MORONE AMERICANA         | 5988.    | 0.156  | 97.698  |
| SPHOERIDES MACULATUS     | 5901.    | 0.153  | 97.852  |
| POMATOMUS SALTATRIX      | 5381.    | 0.140  | 97.992  |
| HIPPOCAMPUS ERECTUS      | 5191.    | 0.135  | 98.126  |
| PHYLUM NEMERTEA          | 4841.    | 0.126  | 98.252  |
| MYOXOCEPHALUS AENAEUS    | 4672.    | 0.121  | 98.374  |
| CONGER OCEANICUS         | 4158.    | 0.108  | 98.482  |
| GOBIOSOMA BOSCI          | 4071.    | 0.106  | 98.587  |
| OVALIPES OCELLATUS       | 3886.    | 0.101  | 98.688  |
| MUGIL CEPHALUS           | 3655.    | 0.095  | 98.783  |
| RISSOLA MARGINATA        | 3551.    | 0.092  | 98.876  |
| ETRUMEUS TERES           | 3480.    | 0.090  | 98.966  |
| CANCER IRRORATUS         | 3140.    | 0.082  | 99.048  |
| PEPRILUS TRIACANTHUS     | 3053.    | 0.079  | 99.127  |
| CENTROPRISTIS STRIATA    | 2776.    | 0.072  | 99.199  |
| SYNODUS FOETENS          | 2529.    | 0.066  | 99.265  |
| STENOTOMUS CHRYSOPS      | 2486.    | 0.065  | 99.330  |
| APELTES QUADRACUS        | 2245.    | 0.058  | 99.388  |
| ASTROSCOPUS GUTTATUS     | 2074.    | 0.054  | 99.442  |
| MALACLEMYS TERRAPIN      | 1997.    | 0.052  | 99.494  |
| CYPRINODON VARIEGATUS    | 1838.    | 0.048  | 99.541  |
| CARANX HIPPOS            | 1392.    | 0.036  | 99.578  |
| PRIONOTUS CAROLINUS      | 1321.    | 0.034  | 99.612  |

TABLE 4-2 (CONT.)

| SPP. NAME                | NUMBER | %     | CUMU. % |
|--------------------------|--------|-------|---------|
| PORTUNUS GIBBESII        | 1317.  | 0.034 | 99.646  |
| PENAEUS AZTECUS          | 1118.  | 0.029 | 99.675  |
| FUNDULUS HETEROCLITUS    | 870.   | 0.023 | 99.698  |
| STRONGYLURA MARINA       | 757.   | 0.020 | 99.717  |
| CHASMODES BOSQUIANUS     | 753.   | 0.020 | 99.737  |
| FAMILY XANTHIDAE JUV.    | 724.   | 0.019 | 99.756  |
| RACHYCENTRON CANADUM     | 705.   | 0.018 | 99.774  |
| ALOSA SAPIDISSIMA        | 636.   | 0.017 | 99.791  |
| ALUTERUS SCHOEPFI        | 569.   | 0.015 | 99.805  |
| MENTICIRRHUS SAXATILIS   | 526.   | 0.014 | 99.819  |
| CHILOMYCTERUS SCHOEPFI   | 496.   | 0.013 | 99.832  |
| SQUILLA EMPUSA           | 446.   | 0.012 | 99.844  |
| UROPHYCIS REGIUS         | 419.   | 0.011 | 99.854  |
| CLASS HOLOTHUROIDEA      | 369.   | 0.010 | 99.864  |
| SELENE VOMER             | 368.   | 0.010 | 99.874  |
| AMMODYTES AMERICANUS     | 354.   | 0.009 | 99.883  |
| PANOPEUS HERBSTII        | 347.   | 0.009 | 99.892  |
| DOROSOMA CEPEDIANUM      | 333.   | 0.009 | 99.901  |
| DASYATIS SAYI            | 313.   | 0.008 | 99.909  |
| MUGIL CUREMA             | 310.   | 0.008 | 99.917  |
| TAUTOGOLABRUS ADSPERSUS  | 291.   | 0.008 | 99.924  |
| LOLLIGUNCOLA BREVIS      | 278.   | 0.007 | 99.931  |
| POLINICES DUPLICATUS     | 267.   | 0.007 | 99.938  |
| FISTULARIA TABALARIA     | 246.   | 0.006 | 99.945  |
| HYSOBLENNIUS HENTZI      | 198.   | 0.005 | 99.950  |
| GASTEROSTEUS ACULEATUS   | 179.   | 0.005 | 99.955  |
| FUNDULUS MAJALIS         | 161.   | 0.004 | 99.959  |
| MONACANTHUS HISPIDUS     | 136.   | 0.004 | 99.962  |
| NEOPANOPE TEXANA SAYI    | 131.   | 0.003 | 99.966  |
| CALLINECTES SIMILIS      | 119.   | 0.003 | 99.969  |
| FAMILY XANTHIDAE         | 117.   | 0.003 | 99.972  |
| SPHYRAENA BOREALIS       | 110.   | 0.003 | 99.975  |
| LUTJANUS GRISEUS         | 95.    | 0.002 | 99.977  |
| UROPHYCIS CHUSS          | 91.    | 0.002 | 99.980  |
| PAGURUS LONGICARPUS      | 77.    | 0.002 | 99.982  |
| MYROPHIS PUNCTATUS       | 76.    | 0.002 | 99.984  |
| FUNDULUS DIAPHANUS       | 68.    | 0.002 | 99.985  |
| ALECTIS CRINITUS         | 65.    | 0.002 | 99.987  |
| MENIDIA BERYLLINA        | 64.    | 0.002 | 99.989  |
| MEMBRAS MARTINICA        | 45.    | 0.001 | 99.990  |
| CHAETODON OCELLATUS      | 43.    | 0.001 | 99.991  |
| MERLUCCIUS BILINEARIS    | 38.    | 0.001 | 99.992  |
| BAIRDIELLA CHRYSURA      | 32.    | 0.001 | 99.993  |
| TRACHINOTUS FALCATUS     | 31.    | 0.001 | 99.994  |
| RHITHROPHIDUS HARRISII   | 31.    | 0.001 | 99.994  |
| PORTUNUS SPINIMANUS      | 25.    | 0.001 | 99.995  |
| HYPORHAMPHUS UNIFASCIATU | 20.    | 0.001 | 99.996  |
| MUGIL SP                 | 17.    | 0.000 | 99.996  |



TABLE 4-2 (CONT.)

| SPP. NAME                | NUMBER | %     | CUMU. % |
|--------------------------|--------|-------|---------|
| PARALICHTHYS OBLONGUS    | 16.    | 0.000 | 99.996  |
| HIPPOLYTE SP             | 16.    | 0.000 | 99.997  |
| ANCHOA HEPSETUS          | 13.    | 0.000 | 99.997  |
| LACTOPHRYS TRIQUETER     | 12.    | 0.000 | 99.997  |
| ENNEACANTHUS OBESUS      | 10.    | 0.000 | 99.998  |
| NOTEMIGONUS CRYSOLEUCAS  | 9.     | 0.000 | 99.998  |
| CLASS ASTEROIDEA         | 8.     | 0.000 | 99.998  |
| APHREDODERUS SAYANUS     | 7.     | 0.000 | 99.998  |
| POLLACHIUS VIRENS        | 6.     | 0.000 | 99.998  |
| CARANJIDAE               | 6.     | 0.000 | 99.999  |
| CHELYDRA SERPENTINA      | 6.     | 0.000 | 99.999  |
| LACTOPHRYS TRIGONUS      | 5.     | 0.000 | 99.999  |
| CLASS ANTHOZOA           | 5.     | 0.000 | 99.999  |
| BREVOORTIA TYRANNUS LAR  | 4.     | 0.000 | 99.999  |
| SCORPAENA PLUMIERI       | 4.     | 0.000 | 99.999  |
| UMBRA PYGMAEA            | 3.     | 0.000 | 99.999  |
| LEPOMIS GIBBOSUS         | 3.     | 0.000 | 99.999  |
| CARCINUS MAENAS          | 3.     | 0.000 | 100.000 |
| ANGUILLA ROSTRATA JUV.   | 2.     | 0.000 | 100.000 |
| CLUPEIDAE                | 2.     | 0.000 | 100.000 |
| UROPHYCIS SP             | 2.     | 0.000 | 100.000 |
| DECAPTERUS PUNCTATUS     | 2.     | 0.000 | 100.000 |
| HOMARUS AMERICANUS       | 2.     | 0.000 | 100.000 |
| FISH REMAINS             | 1.     | 0.000 | 100.000 |
| ANCHOA HEPSETUS LARVAE   | 1.     | 0.000 | 100.000 |
| MENIDIA SP               | 1.     | 0.000 | 100.000 |
| ETHEOSTOMA FUSIFORME     | 1.     | 0.000 | 100.000 |
| UPOGEBIA AFFINIS         | 1.     | 0.000 | 100.000 |
| HOMARUS AMERICANUS ZOEAE | 1.     | 0.000 | 100.000 |
| INVERTEBRATE FRAGMENTS   | 1.     | 0.000 | 100.000 |



TABLE 4-3 DAY-NIGHT COMPARISONS OF NUMBERS AND WEIGHTS (kg) OF SELECTED SPECIES IMPINGED ON THE OYSTER CREEK NUCLEAR GENERATING STATION TRAVELING SCREENS, SEPTEMBER 1980 - AUGUST 1981

| Species                              | Number Collected |         | Percent Catch Night | Weight Collected |        | Percent Catch Night |
|--------------------------------------|------------------|---------|---------------------|------------------|--------|---------------------|
|                                      | Night            | Day     |                     | Night            | Day    |                     |
| <u>Callinectes sapidus</u>           | 77,850           | 16,057  | 82.9                | 1,520.88         | 471.63 | 76.3                |
| <u>Pseudopleuronectes americanus</u> | 2,428            | 503     | 82.8                | 410.89           | 96.29  | 81.0                |
| <u>Crangon septemspinosa</u>         | 392,780          | 60,579  | 86.6                | 449.76           | 49.96  | 90.0                |
| <u>Cynoscion regalis</u>             | 1,307            | 289     | 81.9                | 8.73             | 10.91  | 44.5                |
| <u>Paralichthys dentatus</u>         | 365              | 241     | 60.2                | 64.30            | 48.27  | 57.1                |
| <u>Menidia menidia</u>               | 14,237           | 4,827   | 74.7                | 83.20            | 24.55  | 77.2                |
| <u>Anguilla rostrata</u>             | 378              | 53      | 87.7                | 42.84            | 9.54   | 81.8                |
| <u>Tautoga onitis</u>                | 342              | 178     | 65.8                | 13.01            | 7.99   | 62.0                |
| <u>Class Scyphozoa</u>               | 1,332            | 839     | 61.4                | 7.39             | 55.10  | 58.6                |
| <u>Brevortia tyrannus</u>            | 507              | 249     | 67.1                | 21.01            | 13.95  | 60.1                |
| <u>Opsanus tau</u>                   | 613              | 82      | 88.2                | 14.18            | 3.89   | 78.5                |
| <u>Prionotus evolans</u>             | 676              | 72      | 90.4                | 11.59            | 3.20   | 78.4                |
| <u>Anchoa mitchilli</u>              | 2,656            | 903     | 74.6                | 7.01             | 0.98   | 87.7                |
| <u>Alosa aestivalis</u>              | 1,972            | 306     | 86.6                | 15.39            | 3.30   | 82.3                |
| <u>Trinectes maculatus</u>           | 310              | 36      | 89.6                | 10.25            | 1.69   | 85.8                |
| <u>Peprilus triacanthus</u>          | 47               | 94      | 33.3                | 1.75             | 1.31   | 57.2                |
| <u>Etropus microstomus</u>           | 3,416            | 390     | 89.6                | 21.27            | 1.71   | 92.6                |
| <u>Pomatomus saltatrix</u>           | 328              | 111     | 74.7                | 3.33             | 2.05   | 61.9                |
| <u>Palaemonetes vulgaris</u>         | 29,532           | 7,513   | 79.7                | 15.11            | 4.25   | 78.0                |
| <u>Syngnathus fuscus</u>             | 3,607            | 2,052   | 63.7                | 10.72            | 4.72   | 69.4                |
| <u>Gobiosoma boscii</u>              | 2,849            | 5,062   | 36.0                | 1.91             | 2.17   | 46.8                |
| Other species                        | 6,910            | 3,899   | 63.9                | 19.67            | 11.15  | 63.8                |
| Total                                | 544,442          | 104,335 | 83.9                | 2,916.54         | 931.66 | 75.8                |

TABLE 4-4 WEEKLY ESTIMATED NUMBER OF SELECTED SPECIES IMPINGED ON THE OYSTER CREEK NUCLEAR GENERATING STATION TRAVELING SCREENS, SEPTEMBER 1980 - AUGUST 1981

| Date      | Brevortia<br>syransus | Anchoa<br>mitchilli | Mentidia<br>mentidia | Syngnathus<br>fasciatus | Pomatomus<br>salatrix | Cynoscion<br>regalis | Menticirrhus<br>saxatilis | Gobioninae<br>bosci | Etroneus<br>microstomus | Paralichthys<br>dentatus | Pseudopleuronectes<br>americanus | Sphaeroides<br>maculatus | Crangon<br>septempinosus | Callinectes<br>sapidus | Total<br>Organisms |
|-----------|-----------------------|---------------------|----------------------|-------------------------|-----------------------|----------------------|---------------------------|---------------------|-------------------------|--------------------------|----------------------------------|--------------------------|--------------------------|------------------------|--------------------|
| 1 SEP 80  | 490                   | 1,605               | 21                   | 10                      | 76                    | 1,488                | 0                         | 0                   | 0                       | 834                      | 0                                | 56                       | 70                       | 36,939                 | 45,343             |
| 8 SEP 80  | 0                     | 2,045               | 0                    | 35                      | 75                    | 477                  | 0                         | 0                   | 0                       | 21                       | 0                                | 7                        | 0                        | 25,861                 | 43,214             |
| 15 SEP 80 | 7                     | 14                  | 0                    | 0                       | 0                     | 21                   | 0                         | 0                   | 0                       | 41                       | 0                                | 0                        | 0                        | 35,322                 | 36,336             |
| 22 SEP 80 | 14                    | 164                 | 0                    | 0                       | 28                    | 14                   | 0                         | 0                   | 0                       | 35                       | 0                                | 0                        | 0                        | 20,647                 | 21,148             |
| 29 SEP 80 | 0                     | 517                 | 26                   | 79                      | 119                   | 223                  | 0                         | 0                   | 0                       | 1,376                    | 0                                | 130                      | 19                       | 51,599                 | 60,660             |
| 6 OCT 80  | 7                     | 117                 | 0                    | 14                      | 0                     | 28                   | 0                         | 0                   | 0                       | 312                      | 0                                | 14                       | 0                        | 6,841                  | 8,629              |
| 13 OCT 80 | 35                    | 402                 | 96                   | 133                     | 43                    | 324                  | 0                         | 0                   | 0                       | 2,327                    | 0                                | 55                       | 43                       | 20,156                 | 26,743             |
| 20 OCT 80 | 37                    | 28                  | 38                   | 64                      | 38                    | 176                  | 0                         | 0                   | 27                      | 194                      | 0                                | 0                        | 0                        | 17,428                 | 19,102             |
| 27 OCT 80 | 1,875                 | 175                 | 6,718                | 1,883                   | 289                   | 827                  | 21                        | 257                 | 105                     | 305                      | 7                                | 86                       | 5,877                    | 30,350                 | 65,353             |
| 3 NOV 80  | 1,076                 | 22                  | 9,135                | 4,321                   | 61                    | 536                  | 0                         | 301                 | 465                     | 457                      | 180                              | 88                       | 10,904                   | 31,715                 | 73,876             |
| 10 NOV 80 | 2,494                 | 381                 | 102,425              | 11,094                  | 151                   | 2,652                | 43                        | 2,580               | 3,852                   | 750                      | 927                              | 0                        | 316,168                  | 34,824                 | 562,756            |
| 17 NOV 80 | 2,345                 | 947                 | 81,215               | 18,843                  | 41                    | 14                   | 14                        | 65,868              | 44,040                  | 567                      | 14,702                           | 0                        | 836,656                  | 2,233                  | 1,148,723          |
| 24 NOV 80 | 0                     | 167                 | 695                  | 615                     | 0                     | 0                    | 0                         | 12,303              | 462                     | 10                       | 153                              | 0                        | 217,055                  | 24                     | 235,772            |
| 1 DEC 80  | 66                    | 3,004               | 11,589               | 3,824                   | 0                     | 0                    | 0                         | 5,382               | 364                     | 14                       | 177                              | 0                        | 799,430                  | 19,934                 | 899,396            |
| 8 DEC 80  | 0                     | 165                 | 4,282                | 1,104                   | 0                     | 0                    | 0                         | 3,743               | 552                     | 370                      | 370                              | 0                        | 1,023                    | 387,178                | 387,178            |
| 15 DEC 80 | 0                     | 211                 | 4,725                | 1,430                   | 0                     | 0                    | 0                         | 6,478               | 676                     | 39                       | 1,640                            | 0                        | 585,147                  | 569                    | 606,895            |
| 22 DEC 80 | 0                     | 23                  | 504                  | 101                     | 0                     | 0                    | 0                         | 1,949               | 7                       | 0                        | 1,848                            | 0                        | 400,018                  | 2,019                  | 418,099            |
| 29 DEC 80 | 0                     | 14                  | 1,608                | 445                     | 0                     | 0                    | 0                         | 337                 | 0                       | 0                        | 3,425                            | 0                        | 352,410                  | 71                     | 380,365            |
| 5 JAN 81  | 0                     | 27                  | 247                  | 28                      | 0                     | 0                    | 0                         | 2,561               | 0                       | 0                        | 3,765                            | 0                        | 270,842                  | 4,252                  | 297,369            |
| 12 JAN 81 | 0                     | 28                  | 439                  | 42                      | 0                     | 0                    | 0                         | 351                 | 0                       | 0                        | 1,601                            | 0                        | 139,113                  | 2,977                  | 157,010            |
| 19 JAN 81 | 0                     | 0                   | 1,865                | 28                      | 0                     | 0                    | 0                         | 35                  | 0                       | 0                        | 925                              | 0                        | 56,346                   | 422                    | 70,680             |
| 7 FEB 81  | 0                     | 0                   | 1,039                | 42                      | 0                     | 0                    | 0                         | 42                  | 0                       | 0                        | 1,083                            | 0                        | 11,587                   | 1,316                  | 27,976             |
| 2 FEB 81  | 28                    | 0                   | 2,380                | 0                       | 0                     | 0                    | 0                         | 56                  | 0                       | 78                       | 5,978                            | 0                        | 12,922                   | 392                    | 27,342             |
| 9 FEB 81  | 0                     | 0                   | 532                  | 0                       | 0                     | 0                    | 0                         | 35                  | 0                       | 0                        | 2,212                            | 0                        | 46,088                   | 1,064                  | 57,724             |
| 16 FEB 81 | 0                     | 0                   | 1,177                | 0                       | 0                     | 0                    | 0                         | 0                   | 0                       | 0                        | 275                              | 0                        | 39,423                   | 3,726                  | 56,574             |
| 23 FEB 81 | 28                    | 0                   | 4,988                | 0                       | 0                     | 0                    | 0                         | 44                  | 0                       | 0                        | 1,609                            | 0                        | 52,205                   | 912                    | 69,774             |
| 2 MAR 81  | 0                     | 0                   | 1,752                | 397                     | 0                     | 0                    | 0                         | 0                   | 0                       | 0                        | 127                              | 0                        | 97,647                   | 791                    | 106,261            |
| 9 MAR 81  | 0                     | 0                   | 2,323                | 0                       | 0                     | 0                    | 0                         | 56                  | 0                       | 28                       | 154                              | 0                        | 86,032                   | 0                      | 95,578             |
| 16 MAR 81 | 0                     | 0                   | 4,843                | 3,550                   | 0                     | 0                    | 0                         | 224                 | 28                      | 84                       | 504                              | 0                        | 249,082                  | 112                    | 281,624            |
| 23 MAR 81 | 0                     | 0                   | 2,069                | 5,201                   | 0                     | 0                    | 0                         | 14                  | 0                       | 71                       | 338                              | 0                        | 253,467                  | 83                     | 271,578            |
| 30 MAR 81 | 0                     | 0                   | 0                    | 2,213                   | 0                     | 0                    | 0                         | 0                   | 0                       | 55                       | 14                               | 0                        | 92,124                   | 9,386                  | 131,483            |
| 6 APR 81  | 0                     | 28                  | 2,156                | 3,724                   | 0                     | 0                    | 0                         | 28                  | 0                       | 28                       | 0                                | 0                        | 157,360                  | 44,772                 | 263,778            |
| 13 APR 81 | 0                     | 596                 | 1,571                | 11,445                  | 0                     | 0                    | 0                         | 420                 | 177                     | 158                      | 321                              | 0                        | 887,663                  | 91,088                 | 1,152,390          |
| 20 APR 81 | 0                     | 28                  | 409                  | 681                     | 0                     | 0                    | 0                         | 0                   | 0                       | 14                       | 0                                | 0                        | 63,889                   | 47,074                 | 117,866            |
| 27 APR 81 | 0                     | 28                  | 14                   | 681                     | 0                     | 0                    | 0                         | 0                   | 0                       | 0                        | 0                                | 0                        | 194,043                  | 66,035                 | 270,805            |
| 4 MAY 81  | 0                     | 139                 | 106                  | 797                     | 0                     | 0                    | 0                         | 0                   | 0                       | 0                        | 0                                | 0                        | 99,174                   | 89,428                 | 194,418            |
| 11 MAY 81 | 0                     | 117                 | 115                  | 3,201                   | 0                     | 0                    | 0                         | 0                   | 0                       | 0                        | 0                                | 0                        | 182,016                  | 52,642                 | 252,805            |
| 18 MAY 81 | 0                     | 28                  | 28                   | 1,317                   | 0                     | 0                    | 0                         | 0                   | 14                      | 0                        | 0                                | 0                        | 42,788                   | 79,320                 | 122,579            |
| 26 MAY 81 | 0                     | 445                 | 292                  | 2,743                   | 0                     | 0                    | 0                         | 56                  | 0                       | 0                        | 0                                | 0                        | 131,203                  | 69,006                 | 229,728            |
| 1 JUN 81  | 0                     | 98                  | 0                    | 934                     | 174                   | 0                    | 0                         | 28                  | 0                       | 0                        | 14                               | 30                       | 26,051                   | 29,790                 | 65,635             |
| 8 JUN 81  | 0                     | 616                 | 112                  | 2,380                   | 618                   | 0                    | 0                         | 28                  | 0                       | 0                        | 112                              | 28                       | 24,320                   | 66,388                 | 112,232            |
| 22 JUN 81 | 0                     | 1,036               | 3,024                | 1,652                   | 112                   | 1,534                | 0                         | 28                  | 140                     | 392                      | 0                                | 28                       | 6,300                    | 67,816                 | 90,496             |
| 29 JUN 81 | 98                    | 4,241               | 245                  | 664                     | 2,766                 | 0                    | 0                         | 0                   | 0                       | 28                       | 14                               | 77                       | 6,282                    | 85,057                 | 99,984             |
| 6 JUL 81  | 498                   | 5,401               | 1,191                | 526                     | 3,300                 | 4,157                | 0                         | 0                   | 19                      | 19                       | 28                               | 1,854                    | 3,072                    | 127,057                | 153,396            |
| 13 JUL 81 | 424                   | 1,654               | 153                  | 1,208                   | 1,413                 | 3,072                | 0                         | 0                   | 56                      | 56                       | 0                                | 1,021                    | 333                      | 76,161                 | 89,273             |
| 20 JUL 81 | 1,176                 | 22,332              | 50                   | 2,464                   | 924                   | 5,012                | 0                         | 280                 | 224                     | 196                      | 0                                | 11,592                   | 924                      | 204,708                | 272,210            |
| 27 JUL 81 | 1,195                 | 15,820              | 0                    | 2,364                   | 84                    | 8,316                | 28                        | 0                   | 0                       | 0                        | 0                                | 140                      | 56                       | 75,684                 | 106,876            |
| 3 AUG 81  | 98                    | 3,027               | 126                  | 56                      | 98                    | 4,665                | 0                         | 0                   | 0                       | 0                        | 0                                | 0                        | 84                       | 65,885                 | 81,505             |
| 10 AUG 81 | 162                   | 4,194               | 0                    | 70                      | 84                    | 3,836                | 0                         | 0                   | 0                       | 0                        | 0                                | 14                       | 70                       | 67,550                 | 87,064             |

Note: Total number of organisms includes species not listed on this printout.

TABLE 4-5 WEEKLY ESTIMATED WEIGHT (kg) OF SELECTED SPECIES IMPINGED ON THE OYSTER CREEK NUCLEAR GENERATING STATION TRAVELING SCREENS, SEPTEMBER 1980 - AUGUST 1981

| Date      | Brevortia<br>virannus | Anchoa<br>mitchilli | Menidia<br>menidia | Syngnathus<br>fasciatus | Pomatomus<br>saltatoris | Cynoscion<br>regalis | Menticirrhus<br>saxatilis | Gobiosoma<br>boscii | Etracrus<br>microstomus | Paralichthys<br>dentatus | Pseudopleuronectes<br>americanus | Sphaeroides<br>maculatus | Crangon<br>septemspinus | Callinectes<br>saberleg |
|-----------|-----------------------|---------------------|--------------------|-------------------------|-------------------------|----------------------|---------------------------|---------------------|-------------------------|--------------------------|----------------------------------|--------------------------|-------------------------|-------------------------|
| 1 SEP 80  | 9.90                  | 4.01                | 0.06               | 0.25                    | 2.82                    | 5.11                 | 0.00                      | 0.00                | 0.00                    | 114.30                   | 0.00                             | 0.47                     | 0.07                    | 602.45                  |
| 8 SEP 80  | 0.00                  | 0.00                | 0.00               | 0.10                    | 0.06                    | 2.02                 | 0.00                      | 0.00                | 0.00                    | 3.03                     | 0.00                             | 0.08                     | 0.00                    | 470.00                  |
| 15 SEP 80 | 0.06                  | 0.92                | 0.00               | 0.01                    | 0.00                    | 0.28                 | 0.00                      | 0.00                | 0.00                    | 7.12                     | 0.00                             | 0.00                     | 0.00                    | 535.15                  |
| 22 SEP 80 | 0.23                  | 0.12                | 0.00               | 0.00                    | 1.27                    | 0.36                 | 0.00                      | 0.00                | 0.00                    | 4.82                     | 0.00                             | 0.00                     | 0.00                    | 348.87                  |
| 29 SEP 80 | 0.00                  | 1.11                | 0.16               | 0.47                    | 0.96                    | 4.72                 | 0.00                      | 0.00                | 0.00                    | 245.07                   | 0.00                             | 15.78                    | 0.02                    | 783.21                  |
| 6 OCT 80  | 2.88                  | 0.28                | 0.00               | 0.13                    | 0.88                    | 0.85                 | 0.00                      | 0.00                | 0.00                    | 70.05                    | 0.00                             | 1.41                     | 0.00                    | 248.21                  |
| 13 OCT 80 | 0.93                  | 0.80                | 0.47               | 0.56                    | 1.06                    | 9.55                 | 0.00                      | 0.00                | 0.00                    | 476.94                   | 0.00                             | 6.03                     | 0.03                    | 901.29                  |
| 20 OCT 80 | 1.19                  | 0.04                | 0.26               | 0.29                    | 2.10                    | 5.65                 | 0.00                      | 0.00                | 0.00                    | 36.20                    | 0.00                             | 0.00                     | 0.00                    | 1,162.80                |
| 27 OCT 80 | 119.47                | 0.35                | 36.31              | 6.40                    | 24.64                   | 31.31                | 4.69                      | 0.30                | 2.40                    | 57.43                    | 1.24                             | 3.12                     | 8.22                    | 1,870.22                |
| 3 NOV 80  | 63.85                 | 0.11                | 53.64              | 16.00                   | 1.45                    | 15.63                | 0.00                      | 0.41                | 7.78                    | 80.95                    | 66.93                            | 0.62                     | 8.94                    | 276.25                  |
| 10 NOV 80 | 146.35                | 0.65                | 580.96             | 33.27                   | 9.70                    | 152.66               | 5.04                      | 2.74                | 25.85                   | 137.04                   | 384.85                           | 0.00                     | 231.06                  | 363.71                  |
| 17 NOV 80 | 98.11                 | 0.61                | 532.29             | 40.49                   | 2.59                    | 1.15                 | 1.27                      | 27.08               | 253.38                  | 105.69                   | 2,281.71                         | 0.00                     | 1,842.37                | 10.91                   |
| 24 NOV 80 | 0.00                  | 0.81                | 3.52               | 1.94                    | 0.00                    | 0.00                 | 0.00                      | 6.47                | 2.41                    | 3.47                     | 46.19                            | 0.00                     | 2,733.47                | 0.12                    |
| 1 DEC 80  | 5.27                  | 2.45                | 58.19              | 8.60                    | 0.00                    | 0.00                 | 0.00                      | 3.31                | 2.79                    | 4.31                     | 45.46                            | 0.00                     | 668.81                  | 57.39                   |
| 8 DEC 80  | 0.00                  | 0.41                | 19.07              | 1.95                    | 0.00                    | 0.00                 | 0.00                      | 3.13                | 2.68                    | 0.00                     | 114.33                           | 0.00                     | 282.16                  | 11.07                   |
| 15 DEC 80 | 0.00                  | 0.29                | 22.81              | 3.70                    | 0.00                    | 0.00                 | 0.00                      | 0.00                | 2.73                    | 0.26                     | 347.54                           | 0.00                     | 1.27                    | 11.27                   |
| 22 DEC 80 | 0.00                  | 0.02                | 2.63               | 0.00                    | 0.00                    | 0.00                 | 0.00                      | 1.89                | 0.03                    | 0.00                     | 435.95                           | 0.00                     | 363.79                  | 3.54                    |
| 29 DEC 80 | 0.00                  | 0.01                | 7.25               | 0.68                    | 0.00                    | 0.00                 | 0.00                      | 0.31                | 0.00                    | 0.00                     | 384.38                           | 0.00                     | 333.97                  | 0.23                    |
| 5 JAN 81  | 0.00                  | 0.03                | 1.26               | 0.14                    | 0.00                    | 0.00                 | 0.00                      | 2.60                | 0.00                    | 0.00                     | 382.93                           | 0.00                     | 248.90                  | 10.40                   |
| 12 JAN 81 | 0.00                  | 0.03                | 1.69               | 0.04                    | 0.00                    | 0.00                 | 0.00                      | 0.35                | 0.00                    | 0.00                     | 192.37                           | 0.00                     | 358.64                  | 5.72                    |
| 19 JAN 81 | 0.00                  | 0.00                | 7.90               | 0.03                    | 0.00                    | 0.00                 | 0.00                      | 0.01                | 0.00                    | 0.00                     | 123.13                           | 0.00                     | 52.91                   | 0.38                    |
| 26 JAN 81 | 0.00                  | 0.00                | 4.16               | 0.04                    | 0.00                    | 0.00                 | 0.00                      | 0.04                | 0.00                    | 0.00                     | 290.60                           | 0.00                     | 11.32                   | 4.10                    |
| 2 FEB 81  | 1.06                  | 0.00                | 10.74              | 0.00                    | 0.00                    | 0.00                 | 0.00                      | 0.06                | 0.00                    | 3.05                     | 1,843.16                         | 0.00                     | 13.41                   | 1.37                    |
| 9 FEB 81  | 0.00                  | 0.00                | 2.38               | 0.06                    | 0.00                    | 0.00                 | 0.00                      | 0.00                | 0.00                    | 0.00                     | 686.84                           | 0.00                     | 40.60                   | 3.14                    |
| 16 FEB 81 | 0.00                  | 0.00                | 5.86               | 0.00                    | 0.00                    | 0.00                 | 0.00                      | 0.04                | 0.00                    | 0.00                     | 96.75                            | 0.00                     | 32.41                   | 13.39                   |
| 23 FEB 81 | 1.27                  | 0.00                | 27.78              | 0.00                    | 0.00                    | 0.00                 | 0.00                      | 0.04                | 0.00                    | 0.00                     | 428.75                           | 0.00                     | 42.60                   | 3.92                    |
| 2 MAR 81  | 0.00                  | 0.00                | 9.61               | 1.30                    | 0.00                    | 0.00                 | 0.00                      | 0.00                | 0.00                    | 0.00                     | 37.87                            | 0.00                     | 80.90                   | 0.95                    |
| 9 MAR 81  | 0.00                  | 0.00                | 13.86              | 2.27                    | 0.00                    | 0.00                 | 0.00                      | 0.08                | 0.00                    | 4.84                     | 78.68                            | 0.00                     | 77.15                   | 0.00                    |
| 16 MAR 81 | 0.00                  | 0.00                | 26.79              | 15.56                   | 0.00                    | 0.00                 | 0.00                      | 0.25                | 0.06                    | 6.64                     | 66.77                            | 0.00                     | 238.50                  | 0.76                    |
| 23 MAR 81 | 0.00                  | 0.00                | 78.77              | 15.56                   | 0.00                    | 0.00                 | 0.00                      | 0.01                | 0.00                    | 5.83                     | 72.58                            | 0.00                     | 240.37                  | 0.41                    |
| 30 MAR 81 | 0.00                  | 0.70                | 10.15              | 8.23                    | 0.00                    | 0.00                 | 0.00                      | 0.00                | 0.00                    | 2.85                     | 4.81                             | 0.00                     | 112.16                  | 36.23                   |
| 6 APR 81  | 0.00                  | 0.08                | 12.32              | 8.54                    | 0.00                    | 0.00                 | 0.00                      | 0.03                | 0.00                    | 2.52                     | 0.00                             | 0.00                     | 141.65                  | 232.26                  |
| 13 APR 81 | 0.00                  | 2.12                | 10.77              | 24.45                   | 0.00                    | 0.00                 | 0.00                      | 0.87                | 0.25                    | 15.41                    | 71.35                            | 0.00                     | 817.01                  | 310.46                  |
| 20 APR 81 | 0.00                  | 0.07                | 0.56               | 1.46                    | 0.00                    | 0.00                 | 0.00                      | 0.00                | 0.00                    | 0.00                     | 0.00                             | 0.00                     | 471.52                  | 471.52                  |
| 27 APR 81 | 0.00                  | 0.08                | 0.11               | 2.25                    | 0.00                    | 0.00                 | 0.00                      | 0.00                | 0.00                    | 2.58                     | 0.00                             | 0.00                     | 182.33                  | 296.37                  |
| 4 MAY 81  | 0.00                  | 0.49                | 0.69               | 2.74                    | 0.00                    | 0.00                 | 0.00                      | 0.00                | 0.00                    | 0.00                     | 0.00                             | 0.00                     | 97.43                   | 574.18                  |
| 11 MAY 81 | 0.00                  | 0.35                | 0.86               | 10.76                   | 0.00                    | 2.48                 | 0.00                      | 0.00                | 0.00                    | 0.00                     | 0.00                             | 1.70                     | 187.62                  | 367.48                  |
| 18 MAY 81 | 0.00                  | 0.10                | 0.23               | 3.85                    | 0.00                    | 0.00                 | 0.00                      | 0.00                | 0.31                    | 0.00                     | 0.00                             | 1.41                     | 141.39                  | 141.39                  |
| 25 MAY 81 | 0.00                  | 1.08                | 2.48               | 8.63                    | 0.00                    | 0.00                 | 0.00                      | 0.14                | 0.00                    | 0.00                     | 0.00                             | 0.00                     | 91.95                   | 502.95                  |
| 1 JUN 81  | 0.00                  | 0.25                | 0.00               | 3.34                    | 0.13                    | 0.00                 | 0.00                      | 0.00                | 0.00                    | 0.00                     | 0.01                             | 2.80                     | 73.50                   | 549.47                  |
| 8 JUN 81  | 0.00                  | 1.46                | 0.50               | 7.78                    | 0.70                    | 0.00                 | 0.00                      | 0.00                | 0.20                    | 0.00                     | 0.14                             | 0.87                     | 16.07                   | 969.53                  |
| 15 JUN 81 | 0.00                  | 2.48                | 1.01               | 7.22                    | 0.28                    | 0.00                 | 0.00                      | 0.11                | 1.37                    | 0.00                     | 6.36                             | 0.15                     | 3.30                    | 1,553.02                |
| 22 JUN 81 | 0.00                  | 11.29               | 0.28               | 3.42                    | 6.94                    | 2.49                 | 0.00                      | 0.00                | 0.00                    | 8.85                     | 2.39                             | 0.15                     | 0.15                    | 3,013.57                |
| 29 JUN 81 | 0.25                  | 11.29               | 1.23               | 2.55                    | 7.40                    | 10.73                | 0.00                      | 0.00                | 0.09                    | 4.65                     | 0.08                             | 4.23                     | 1.41                    | 4,253.29                |
| 6 JUL 81  | 1.92                  | 4.53                | 0.05               | 3.79                    | 7.87                    | 1.62                 | 0.00                      | 0.00                | 0.00                    | 0.00                     | 2.35                             | 3.72                     | 0.28                    | 2,268.31                |
| 13 JUL 81 | 4.24                  | 65.55               | 0.08               | 8.32                    | 10.42                   | 21.25                | 0.00                      | 0.34                | 2.91                    | 61.10                    | 6.00                             | 66.05                    | 0.42                    | 7,731.75                |
| 20 JUL 81 | 6.24                  | 45.14               | 0.00               | 0.64                    | 0.16                    | 15.93                | 0.03                      | 0.00                | 0.00                    | 0.00                     | 0.00                             | 1.29                     | 0.06                    | 3,850.20                |
| 27 JUL 81 | 0.90                  |                     |                    |                         |                         |                      |                           |                     |                         |                          |                                  |                          |                         |                         |
| 3 AUG 81  | 0.53                  | 8.85                | 0.00               | 0.14                    | 1.27                    | 14.14                | 0.00                      | 0.00                | 0.00                    | 0.00                     | 0.00                             | 0.00                     | 0.06                    | 3,596.10                |
| 10 AUG 81 | 1.64                  | 12.54               | 0.36               | 0.13                    | 2.12                    | 16.58                | 0.00                      | 0.00                | 0.00                    | 0.00                     | 0.00                             | 0.29                     | 0.07                    | 7,110.56                |

TABLE 4-6 TOTAL ESTIMATED NUMBER AND WEIGHT (kg) WITH 80 PERCENT CONFIDENCE INTERVALS OF KEY AND ABUNDANT SPECIES IMPINGED AT THE OYSTER CREEK NUCLEAR GENERATING STATION, SEPTEMBER 1980 - AUGUST 1981

| <u>Species</u>                       | <u>Number</u>        | <u>Weight</u>       |
|--------------------------------------|----------------------|---------------------|
| <u>Brevoortia tyrannus</u>           | 12,005±5,839         | 500.18±296.24       |
| <u>Anchoa mitchilli</u>              | 76,994±15,399        | 202.09±42.22        |
| <u>Menidia menidia</u>               | 268,961±202,896      | 1,518.99±1,194.14   |
| <u>Syngnathus fuscus</u>             | 92,602±35,399        | 255.34±79.10        |
| <u>Pomatomus saltatrix</u>           | 9,154±4,706          | 93.37±47.10         |
| <u>Cynoscion regalis</u>             | 37,401±9,926         | 339.62±230.72       |
| <u>Menticirrhus saxatilis</u>        | 117±109              | 12.15±11.87         |
| <u>Gobiosoma boscii</u>              | 105,378±88,131       | 54.70±34.40         |
| <u>Etropus microstomus</u>           | 54,243±71,724        | 325.52±412.91       |
| <u>Paralichthys dentatus</u>         | 8,228±4,199          | 1,532.70±815.31     |
| <u>Pseudopleuronectes americanus</u> | 48,511±25,172        | 8,644.52±4,153.95   |
| <u>Sphoeroides maculatus</u>         | 17,179±20,201        | 123.51±117.30       |
| <u>Crangon septemspinosa</u>         | 6,821,222±1,760,234  | 7,615.90±2,931.86   |
| <u>Callinectes sapidus</u>           | 1,831,654±287,946    | 43,808.42±8,161.46  |
| Total <sup>(a)</sup>                 | 10,293,611±2,370,194 | 73,849.67±14,054.76 |

(a) Total includes all species collected from screens.

TABLE 4-7 MEAN WATER TEMPERATURE VALUES (C) DURING DAY (INTD) AND NIGHT (INTN) IMPINGEMENT SAMPLING AT THE OYSTER CREEK NUCLEAR GENERATING STATION, SEPTEMBER 1980 - AUGUST 1981

| DATE      | Surface |      |      | Bottom  |      |      |
|-----------|---------|------|------|---------|------|------|
|           | STATION |      |      | STATION |      |      |
|           | INTN    | INTD | MEAN | INTN    | INTD | MEAN |
| 2 SEP 80  | 28.8    | 27.6 | 28.2 | 28.9    | 27.7 | 28.3 |
| 8 SEP 80  | 25.7    | 25.3 | 25.5 | 25.8    | 25.3 | 25.5 |
| 15 SEP 80 | 23.2    | 22.3 | 22.8 | 23.3    | 22.3 | 22.8 |
| 22 SEP 80 | 24.4    | 24.6 | 24.5 | 24.4    | 24.6 | 24.5 |
| 29 SEP 80 | 18.1    | 18.7 | 18.4 | 18.1    | 18.7 | 18.4 |
| 6 OCT 80  | 16.9    | 16.6 | 16.8 | 16.9    | 16.6 | 16.8 |
| 13 OCT 80 | 13.9    | 13.3 | 13.6 | 13.9    | 13.4 | 13.6 |
| 20 OCT 80 | 16.7    | 16.6 | 16.6 | 16.7    | 16.5 | 16.6 |
| 27 OCT 80 | 11.5    | 12.5 | 12.0 | 11.6    | 12.5 | 12.0 |
| 3 NOV 80  | 11.2    | 12.5 | 11.9 | 11.2    | 12.5 | 11.8 |
| 10 NOV 80 | 9.3     | 7.8  | 8.5  | 9.3     | 7.8  | 8.6  |
| 17 NOV 80 | 6.4     | 5.9  | 6.2  | 6.4     | 5.9  | 6.2  |
| 24 NOV 80 | 6.3     | 7.0  | 6.7  | 6.2     | 7.0  | 6.6  |
| 1 DEC 80  | 8.0     | 8.7  | 8.4  | 8.0     | 8.7  | 8.3  |
| 8 DEC 80  | 6.1     | 6.0  | 6.1  | 6.1     | 6.0  | 6.0  |
| 15 DEC 80 | 5.1     | 3.9  | 4.5  | 4.0     | 3.9  | 3.9  |
| 22 DEC 80 | 0.7     | 0.1  | 0.4  | -0.9    | -0.6 | -0.8 |
| 29 DEC 80 | 2.0     | 1.6  | 1.8  | 1.8     | 1.4  | 1.6  |
| 5 JAN 81  | -0.0    | 0.5  | 0.2  | -0.9    | -0.8 | -0.9 |
| 12 JAN 81 | 0.5     | 0.4  | 0.4  | -0.9    | -0.5 | -0.7 |
| 19 JAN 81 | 2.6     | 1.5  | 2.1  | 2.5     | 1.4  | 2.0  |
| 26 JAN 81 | 4.9     | 4.3  | 4.6  | 4.1     | 3.4  | 3.7  |
| 2 FEB 81  | 3.8     | 2.0  | 2.9  | 3.8     | 1.8  | 2.8  |
| 9 FEB 81  | 0.6     | 1.6  | 1.1  | 0.2     | 0.2  | 0.2  |
| 17 FEB 81 | 10.5    | 8.4  | 9.5  | 8.5     | 7.3  | 7.9  |
| 23 FEB 81 | 8.5     | 8.4  | 8.5  | 8.4     | 8.3  | 8.4  |
| 2 MAR 81  | 7.3     | 6.1  | 6.7  | 7.1     | 6.0  | 6.5  |
| 9 MAR 81  | 4.4     | 4.8  | 4.6  | 4.4     | 4.8  | 4.6  |
| 16 MAR 81 | 3.9     | 3.2  | 3.5  | 3.9     | 3.2  | 3.5  |
| 23 MAR 81 | 4.4     | 5.1  | 4.7  | 4.3     | 5.0  | 4.7  |
| 30 MAR 81 | 11.0    | 11.5 | 11.3 | 11.0    | 11.4 | 11.2 |
| 6 APR 81  | 11.4    | 11.7 | 11.5 | 11.4    | 11.7 | 11.5 |
| 13 APR 81 | 11.3    | 12.0 | 11.6 | 11.4    | 12.0 | 11.7 |
| 20 APR 81 | 12.2    | 11.3 | 11.8 | 12.2    | 11.4 | 11.8 |
| 27 APR 81 | 14.1    | 14.7 | 14.4 | 14.1    | 14.7 | 14.4 |
| 4 MAY 81  | 15.1    | 14.8 | 14.9 | 15.1    | 14.8 | 14.9 |
| 11 MAY 81 | 15.7    | 17.0 | 16.3 | 15.7    | 16.6 | 16.1 |
| 18 MAY 81 | 16.2    | 15.8 | 16.0 | 16.2    | 15.8 | 16.0 |
| 25 MAY 81 | 20.6    | 20.7 | 20.6 | 20.6    | 20.6 | 20.6 |
| 1 JUN 81  | 22.2    | 21.4 | 21.3 | 22.2    | 21.4 | 21.8 |
| 8 JUN 81  | 24.7    | 25.1 | 24.9 | 24.8    | 25.0 | 24.9 |
| 22 JUN 81 | 26.9    | 26.2 | 26.6 | 26.3    | 26.2 | 26.6 |
| 29 JUN 81 | 23.9    | 23.8 | 23.9 | 24.1    | 23.8 | 23.9 |
| 6 JUL 81  | 26.3    | 27.0 | 26.6 | 26.4    | 26.9 | 26.6 |
| 13 JUL 81 | 29.3    | 27.8 | 29.0 | 28.3    | 27.8 | 29.0 |
| 20 JUL 81 | 27.4    | 27.9 | 27.6 | 27.5    | 27.7 | 27.6 |
| 27 JUL 81 | 27.6    | 27.3 | 27.4 | 27.9    | 27.3 | 27.6 |
| 3 AUG 81  | 26.4    | 27.3 | 26.8 | 26.4    | 27.2 | 26.8 |
| 10 AUG 81 | 27.1    | 27.2 | 27.2 | 27.2    | 27.1 | 27.1 |
| MEAN      | 13.8    | 13.6 | 13.7 | 13.6    | 13.4 | 13.5 |

TABLE 4-8 MEAN DISSOLVED OXYGEN VALUES (mg/l) DURING DAY (INTD) AND NIGHT (INTN) IMPINGEMENT SAMPLING AT THE OYSTER CREEK NUCLEAR GENERATING STATION, SEPTEMBER 1980 - AUGUST 1981

| DATE      | Surface |      |      | Bottom  |      |      |
|-----------|---------|------|------|---------|------|------|
|           | STATION |      |      | STATION |      |      |
|           | INTN    | INTD | MEAN | INTN    | INTD | MEAN |
| 2 SEP 80  | 4.6     | 5.8  | 5.2  | 4.6     | 6.0  | 5.3  |
| 8 SEP 80  | 5.3     | 5.8  | 5.5  | 5.3     | 5.8  | 5.6  |
| 15 SEP 80 | 5.4     | 5.6  | 5.5  | 5.5     | 5.5  | 5.5  |
| 22 SEP 80 | 5.7     | 5.7  | 5.7  | 5.7     | 5.7  | 5.7  |
| 29 SEP 80 | 6.3     | 6.1  | 6.2  | 6.3     | 6.2  | 6.2  |
| 6 OCT 80  | 7.1     | 7.0  | 7.1  | 7.2     | 7.0  | 7.1  |
| 13 OCT 80 | 7.8     | 7.8  | 7.8  | 7.8     | 8.0  | 7.9  |
| 20 OCT 80 | 7.2     | 7.2  | 7.2  | 7.2     | 7.1  | 7.2  |
| 27 OCT 80 | 7.7     | 7.4  | 7.6  | 7.7     | 7.5  | 7.6  |
| 3 NOV 80  | 8.3     | 8.4  | 8.4  | 8.4     | 8.4  | 8.4  |
| 10 NOV 80 | 8.7     | 9.0  | 8.8  | 8.7     | 8.9  | 8.8  |
| 17 NOV 80 | 9.4     | 9.3  | 9.4  | 9.4     | 9.3  | 9.4  |
| 24 NOV 80 | 10.2    | 9.8  | 10.0 | 10.2    | 9.9  | 10.0 |
| 1 DEC 80  | 9.6     | 9.6  | 9.6  | 9.6     | 9.6  | 9.6  |
| 8 DEC 80  | 10.4    | 10.1 | 10.3 | 10.5    | 10.1 | 10.3 |
| 15 DEC 80 | 11.0    | 11.2 | 11.1 | 11.2    | 11.2 | 11.2 |
| 22 DEC 80 | 11.7    | 11.4 | 11.5 | 11.7    | 11.5 | 11.6 |
| 29 DEC 80 | 10.3    | 10.3 | 10.3 | 10.4    | 10.6 | 10.5 |
| 5 JAN 81  | 13.1    | 13.9 | 13.5 | 13.2    | 14.0 | 13.6 |
| 12 JAN 81 | 12.2    | 11.9 | 12.0 | 12.4    | 12.3 | 12.4 |
| 19 JAN 81 | 13.5    | 15.4 | 14.4 | 13.7    | 15.7 | 14.7 |
| 26 JAN 81 | 10.5    | 11.1 | 10.8 | 10.8    | 11.8 | 11.3 |
| 2 FEB 81  | 10.6    | 11.2 | 10.9 | 11.0    | 11.3 | 11.1 |
| 9 FEB 81  | 10.5    | 10.6 | 10.5 | 10.7    | 10.9 | 10.8 |
| 17 FEB 81 | 9.5     | 9.8  | 9.7  | 9.6     | 10.0 | 9.8  |
| 23 FEB 81 | 8.7     | 8.8  | 8.8  | 8.8     | 8.9  | 8.8  |
| 2 MAR 81  | 9.6     | 10.0 | 9.8  | 9.8     | 10.1 | 9.9  |
| 9 MAR 81  | 10.7    | 11.0 | 10.8 | 10.9    | 11.2 | 11.0 |
| 16 MAR 81 | 10.1    | 10.3 | 10.2 | 10.1    | 10.4 | 10.3 |
| 23 MAR 81 | 10.8    | 10.9 | 10.8 | 10.9    | 11.0 | 11.0 |
| 30 MAR 81 | 7.8     | 8.6  | 8.2  | 7.9     | 8.7  | 8.3  |
| 6 APR 81  | 8.4     | 9.4  | 8.9  | 8.4     | 9.5  | 9.0  |
| 13 APR 81 | 7.5     | 7.3  | 7.4  | 7.5     | 7.3  | 7.4  |
| 20 APR 81 | 8.4     | 8.7  | 8.5  | 8.4     | 8.7  | 8.6  |
| 27 APR 81 | 8.4     | 8.6  | 8.5  | 8.5     | 8.6  | 8.5  |
| 4 MAY 81  | 7.2     | 7.3  | 7.2  | 7.2     | 7.3  | 7.2  |
| 11 MAY 81 | 6.7     | 6.9  | 6.8  | 6.6     | 6.6  | 6.6  |
| 18 MAY 81 | 7.8     | 6.8  | 7.3  | 7.9     | 6.8  | 7.4  |
| 26 MAY 81 | 7.0     | 7.3  | 7.2  | 7.0     | 7.3  | 7.2  |
| 1 JUN 81  | 6.8     | 6.1  | 6.4  | 6.8     | 6.1  | 6.4  |
| 8 JUN 81  | 6.0     | 5.7  | 5.8  | 5.9     | 5.7  | 5.8  |
| 22 JUN 81 | 4.3     | 5.9  | 5.0  | 4.3     | 5.8  | 5.0  |
| 29 JUN 81 | 7.1     | 6.7  | 6.9  | 7.1     | 6.7  | 6.9  |
| 6 JUL 81  | 6.1     | 6.7  | 6.4  | 6.0     | 6.7  | 6.4  |
| 13 JUL 81 | 4.2     | 5.9  | 5.0  | 4.1     | 5.8  | 5.0  |
| 20 JUL 81 | 4.1     | 5.5  | 4.8  | 4.1     | 5.5  | 4.8  |
| 27 JUL 81 | 5.0     | 5.5  | 5.3  | 5.0     | 5.5  | 5.3  |
| 3 AUG 81  | 5.4     | 7.1  | 6.2  | 5.3     | 7.1  | 6.2  |
| 10 AUG 81 | 6.1     | 5.9  | 6.0  | 6.0     | 6.0  | 6.0  |
| MEAN      | 8.2     | 8.5  | 8.3  | 8.2     | 8.5  | 8.4  |



TABLE 4-9 MEAN SALINITY VALUES (ppt) DURING DAY (INTD) AND NIGHT (INTN) IMPINGEMENT SAMPLING AT THE OYSTER CREEK NUCLEAR GENERATING STATION, SEPTEMBER 1980 - AUGUST 1981

| DATE      | Surface |      |      | Bottom  |      |      |
|-----------|---------|------|------|---------|------|------|
|           | STATION |      |      | STATION |      |      |
|           | INTN    | INTD | MEAN | INTN    | INTD | MEAN |
| 2 SEP 80  | 24.2    | 24.0 | 24.1 | 24.3    | 24.0 | 24.1 |
| 8 SEP 80  | 24.2    | 24.9 | 24.5 | 24.2    | 24.9 | 24.6 |
| 15 SEP 80 | 27.6    | 28.1 | 27.8 | 27.7    | 28.1 | 27.9 |
| 22 SEP 80 | 25.3    | 25.4 | 25.8 | 25.3    | 25.3 | 25.8 |
| 29 SEP 80 | 26.4    | 26.2 | 26.3 | 26.3    | 26.2 | 26.3 |
| 6 OCT 80  | 26.4    | 26.8 | 26.6 | 26.5    | 26.7 | 26.6 |
| 13 OCT 80 | 25.2    | 25.4 | 25.3 | 25.3    | 25.3 | 25.3 |
| 20 OCT 80 | 23.9    | 24.4 | 24.1 | 24.0    | 24.3 | 24.1 |
| 27 OCT 80 | 23.9    | 23.5 | 23.7 | 23.9    | 23.7 | 23.8 |
| 3 NOV 80  | 26.0    | 26.0 | 26.0 | 26.1    | 26.0 | 26.0 |
| 10 NOV 80 | 25.6    | 25.8 | 25.7 | 25.7    | 26.0 | 25.8 |
| 17 NOV 80 | 25.1    | 24.4 | 24.8 | 25.2    | 24.6 | 24.9 |
| 24 NOV 80 | 24.0    | 23.8 | 23.9 | 24.1    | 23.9 | 24.0 |
| 1 DEC 80  | 24.0    | 23.9 | 24.0 | 23.8    | 24.0 | 23.9 |
| 8 DEC 80  | 25.9    | 26.3 | 26.1 | 25.7    | 26.1 | 25.9 |
| 15 DEC 80 | 24.0    | 23.5 | 23.7 | 23.4    | 23.4 | 23.4 |
| 22 DEC 80 | 24.4    | 25.3 | 24.8 | 24.3    | 24.9 | 24.6 |
| 29 DEC 80 | 24.1    | 25.2 | 24.6 | 23.5    | 25.2 | 24.3 |
| 5 JAN 81  | 24.7    | 24.9 | 24.8 | 23.9    | 24.8 | 24.4 |
| 12 JAN 81 | 25.3    | 25.8 | 25.5 | 25.5    | 25.7 | 25.6 |
| 19 JAN 81 | 24.7    | 25.5 | 25.1 | 24.6    | 25.3 | 24.9 |
| 25 JAN 81 | 28.2    | 28.6 | 28.4 | 27.7    | 28.7 | 28.2 |
| 2 FEB 81  | 26.4    | 27.3 | 26.8 | 26.3    | 27.3 | 26.8 |
| 9 FEB 81  | 26.9    | 26.2 | 26.6 | 26.4    | 25.8 | 26.1 |
| 17 FEB 81 | 26.0    | 26.4 | 26.2 | 25.6    | 26.1 | 25.9 |
| 23 FEB 81 | 24.7    | 26.0 | 25.4 | 25.1    | 26.6 | 25.9 |
| 2 MAR 81  | 23.0    | 23.4 | 23.2 | 23.0    | 23.1 | 23.1 |
| 9 MAR 81  | 24.0    | 23.6 | 23.8 | 24.1    | 23.7 | 23.9 |
| 16 MAR 81 | 22.8    | 24.4 | 23.6 | 22.8    | 24.4 | 23.6 |
| 23 MAR 81 | 23.2    | 23.7 | 23.4 | 23.2    | 23.7 | 23.5 |
| 30 MAR 81 | 22.1    | 22.8 | 22.4 | 22.1    | 22.8 | 22.4 |
| 6 APR 81  | 23.4    | 23.6 | 23.5 | 23.4    | 23.6 | 23.5 |
| 13 APR 81 | 22.4    | 21.7 | 22.0 | 22.4    | 21.7 | 22.0 |
| 20 APR 81 | 23.4    | 23.9 | 23.6 | 23.5    | 23.9 | 23.7 |
| 27 APR 81 | 22.7    | 22.1 | 22.4 | 22.8    | 22.1 | 22.5 |
| 4 MAY 81  | 23.9    | 23.8 | 23.8 | 23.9    | 23.8 | 23.9 |
| 11 MAY 81 | 21.5    | 20.5 | 21.0 | 21.5    | 20.8 | 21.2 |
| 18 MAY 81 | 22.3    | 22.9 | 22.6 | 22.4    | 22.9 | 22.6 |
| 25 MAY 81 | 24.3    | 24.3 | 24.3 | 24.3    | 24.2 | 24.3 |
| 1 JUN 81  | 24.3    | 24.1 | 24.2 | 24.3    | 24.1 | 24.2 |
| 8 JUN 81  | 25.0    | 24.9 | 24.9 | 25.1    | 24.9 | 25.0 |
| 22 JUN 81 | 22.4    | 22.6 | 22.5 | 22.4    | 22.7 | 22.5 |
| 29 JUN 81 | 22.9    | 22.1 | 22.5 | 22.9    | 22.1 | 22.5 |
| 6 JUL 81  | 23.6    | 23.2 | 23.4 | 23.6    | 23.3 | 23.4 |
| 13 JUL 81 | 22.4    | 22.0 | 22.2 | 22.4    | 22.1 | 22.2 |
| 20 JUL 81 | 24.9    | 24.6 | 24.7 | 25.0    | 24.7 | 24.8 |
| 27 JUL 81 | 23.8    | 23.7 | 23.8 | 23.8    | 23.7 | 23.8 |
| 3 AUG 81  | 24.0    | 24.0 | 24.0 | 24.1    | 24.0 | 24.0 |
| 10 AUG 81 | 24.1    | 23.5 | 23.8 | 24.1    | 23.6 | 23.9 |
| MEAN      | 24.3    | 24.5 | 24.4 | 24.3    | 24.5 | 24.4 |

TABLE 4-10 MEDIAN pH VALUES ASSOCIATED WITH IMPINGEMENT  
AT THE OYSTER CREEK NUCLEAR GENERATING STATION,  
SEPTEMBER 1980 - AUGUST 1981

|           | Day     |        | Night   |        | Daily<br>Median |
|-----------|---------|--------|---------|--------|-----------------|
|           | Surface | Bottom | Surface | Bottom |                 |
| 2 SEP 80  | 7.7     | 7.8    | 7.6     | 7.6    | 7.6             |
| 8 SEP 80  | 7.9     | 7.9    | 7.8     | 7.9    | 7.7             |
| 15 SEP 80 | 7.6     | 7.6    | 7.7     | 7.7    | 7.6             |
| 22 SEP 80 | 7.7     | 7.7    | 7.7     | 7.7    | 7.7             |
| 29 SEP 80 | 7.4     | 7.4    | 7.5     | 7.5    | 7.5             |
| 6 OCT 80  | 7.9     | 8.0    | 8.0     | 7.9    | 7.9             |
| 13 OCT 80 | 7.9     | 8.0    | 7.9     | 8.0    | 8.0             |
| 20 OCT 80 | 7.8     | 7.8    | 7.8     | 7.8    | 7.8             |
| 27 OCT 80 | 7.4     | 7.2    | 7.8     | 7.8    | 7.7             |
| 3 NOV 80  | 7.6     | 7.5    | 7.8     | 7.8    | 7.7             |
| 10 NOV 80 | 7.9     | 7.9    | 7.9     | 7.9    | 7.9             |
| 17 NOV 80 | 7.8     | 7.8    | 7.8     | 7.8    | 7.8             |
| 24 NOV 80 | 7.9     | 7.8    | 7.8     | 7.8    | 7.8             |
| 1 DEC 80  | 7.9     | 7.9    | 7.8     | 7.8    | 7.9             |
| 8 DEC 80  | 7.9     | 7.9    | 7.9     | 7.9    | 7.9             |
| 15 DEC 80 | 7.9     | 7.9    | 7.9     | 7.9    | 7.9             |
| 22 DEC 80 | 8.0     | 8.0    | 8.0     | 8.0    | 8.0             |
| 29 DEC 80 | 7.9     | 7.9    | 7.9     | 7.9    | 7.9             |
| 5 JAN 81  | 8.0     | 8.0    | 8.0     | 8.0    | 8.0             |
| 12 JAN 81 | 8.1     | 8.1    | 8.1     | 8.1    | 8.1             |
| 19 JAN 81 | 8.3     | 8.3    | 8.3     | 8.3    | 8.3             |
| 26 JAN 81 | 8.3     | 8.3    | 8.2     | 8.2    | 8.2             |
| 2 FEB 81  | 8.2     | 8.2    | 8.1     | 8.1    | 8.1             |
| 9 FEB 81  | 8.3     | 8.3    | 8.3     | 8.2    | 8.3             |
| 17 FEB 81 | 8.1     | 8.1    | 8.1     | 8.1    | 8.1             |
| 23 FEB 81 | 8.0     | 8.0    | 7.9     | 7.9    | 7.9             |
| 2 MAR 81  | 8.1     | 8.1    | 8.1     | 8.1    | 8.1             |
| 9 MAR 81  | 8.1     | 8.1    | 8.1     | 8.1    | 8.1             |
| 16 MAR 81 | 8.2     | 8.2    | 8.2     | 8.2    | 8.2             |
| 23 MAR 81 | 8.3     | 8.3    | 8.2     | 8.2    | 8.3             |
| 30 MAR 81 | 8.0     | 8.0    | 8.0     | 8.0    | 8.0             |
| 6 APR 81  | 8.1     | 8.1    | 8.0     | 8.0    | 8.0             |
| 13 APR 81 | 7.8     | 7.9    | 7.9     | 7.9    | 7.9             |
| 20 APR 81 | 8.1     | 8.0    | 8.1     | 8.1    | 8.1             |
| 27 APR 81 | 8.1     | 8.1    | 8.1     | 8.1    | 8.1             |

TABLE 4-10 (CONT.)

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|           | Day     |        | Night   |        | Daily<br>Median |
|-----------|---------|--------|---------|--------|-----------------|
|           | Surface | Bottom | Surface | Bottom |                 |
| 4 MAY 81  | 8.1     | 8.0    | 8.1     | 8.1    | 8.1             |
| 11 MAY 81 | 7.8     | 7.8    | 7.9     | 7.9    | 7.8             |
| 18 MAY 81 | 8.2     | 8.1    | 8.2     | 8.2    | 8.2             |
| 26 MAY 81 | 8.3     | 8.3    | 8.2     | 8.2    | 8.3             |
| 1 JUN 81  | 8.2     | 8.2    | 8.3     | 8.3    | 8.2             |
| 8 JUN 81  | 8.0     | 8.0    | 8.1     | 8.1    | 8.0             |
| 22 JUN 81 | 8.0     | 8.0    | 7.9     | 7.9    | 7.9             |
| 29 JUN 81 | 8.3     | 8.3    | 8.3     | 8.3    | 8.3             |
| 6 JUL 81  | 8.2     | 8.1    | 8.1     | 8.2    | 8.2             |
| 13 JUL 81 | 8.0     | 8.0    | 7.9     | 7.9    | 8.0             |
| 20 JUL 81 | 8.1     | 8.0    | 7.9     | 7.8    | 7.9             |
| 27 JUL 81 | 8.2     | 8.2    | 8.2     | 8.2    | 8.2             |
| 3 AUG 81  | 8.1     | 8.1    | 8.0     | 8.0    | 8.0             |
| 10 AUG 81 | 8.0     | 7.9    | 8.1     | 8.1    | 8.1             |

TABLE 4-11 GENERAL LINEAR MODEL RESULTS FOR SELECTED SPECIES IMPINGED WEEKLY ON OYSTER CREEK NUCLEAR GENERATING STATION TRAVELING SCREENS RELATIVE TO VARIOUS PLANT OPERATIONAL AND WATER CHEMISTRY MEASUREMENTS FROM SEPTEMBER 1975 THROUGH AUGUST 1981

| Species                  | Season | r <sup>2</sup> | n   | Continuous Variables |      |       |       |       |      |    |    |    |    | Discrete Variables |         |         |        |       |         |
|--------------------------|--------|----------------|-----|----------------------|------|-------|-------|-------|------|----|----|----|----|--------------------|---------|---------|--------|-------|---------|
|                          |        |                |     | 1                    | 2    | 3     | 4     | 5     | 6    | 7  | 8  | 9  | 10 | 1                  | 2       | 3       | 4      | 5     |         |
| <u>Anchoa mitchilli</u>  |        |                |     |                      |      |       |       |       |      |    |    |    |    |                    |         |         |        |       |         |
| Number                   | Fall   | 0.32           | 193 | pH                   | DO   | Winds | --    | --    | --   | -- | -- | -- | -- | --                 | Wind 1  | Pumps   | Period | --    | --      |
|                          | Winter | 0.10           | 604 | Winds                | DO   | --    | --    | --    | --   | -- | -- | -- | -- | --                 | Screens | --      | --     | --    | --      |
|                          | Spring | 0.40           | 221 | pH                   | DO   | --    | --    | --    | --   | -- | -- | -- | -- | --                 | Wind 2  | --      | --     | --    | --      |
|                          | Summer | 0.19           | 394 | Temp.                | Amb. | Flow  | Winds | --    | --   | -- | -- | -- | -- | --                 | Period  | Screens | --     | --    | --      |
| Weight                   | Fall   | 0.48           | 193 | pH                   | DO   | Winds | Flow  | --    | --   | -- | -- | -- | -- | --                 | Period  | Wind 1  | Wind 2 | Pumps | Screens |
|                          | Winter | 0.10           | 604 | DO                   | --   | --    | --    | --    | --   | -- | -- | -- | -- | --                 | Screens | Period  | --     | --    | --      |
|                          | Spring | 0.42           | 221 | pH                   | DO   | --    | --    | --    | --   | -- | -- | -- | -- | --                 | Wind 2  | --      | --     | --    | --      |
|                          | Summer | 0.19           | 394 | Temp.                | Amb. | Flow  | --    | --    | --   | -- | -- | -- | -- | --                 | Period  | Screens | --     | --    | --      |
| <u>Menidia menidia</u>   |        |                |     |                      |      |       |       |       |      |    |    |    |    |                    |         |         |        |       |         |
| Number                   | Fall   | 0.51           | 193 | ΔT                   | H.R. | --    | --    | --    | --   | -- | -- | -- | -- | --                 | --      | --      | --     | --    | --      |
|                          | Winter | 0.13           | 604 | DO                   | ΔT   | Winds | H.R.  | pH    | --   | -- | -- | -- | -- | --                 | Wind 1  | Period  | Pumps  | --    | --      |
|                          | Spring | 0.42           | 221 | Temp.                | Amb. | ΔT    | H.R.  | --    | --   | -- | -- | -- | -- | --                 | Wind 2  | Period  | --     | --    | --      |
|                          | Summer | 0.14           | 394 | Sal.                 | DO   | --    | --    | --    | --   | -- | -- | -- | -- | --                 | Screens | --      | --     | --    | --      |
| Weight                   | Fall   | 0.49           | 193 | ΔT                   | H.R. | --    | --    | --    | --   | -- | -- | -- | -- | --                 | --      | --      | --     | --    | --      |
|                          | Winter | 0.12           | 604 | DO                   | pH   | ΔT    | Winds | Temp. | --   | -- | -- | -- | -- | --                 | Wind 1  | Period  | --     | --    | --      |
|                          | Spring | 0.38           | 221 | Temp.                | Amb. | DO    | --    | --    | --   | -- | -- | -- | -- | --                 | Wind 2  | Period  | --     | --    | --      |
|                          | Summer | 0.14           | 394 | Sal.                 | DO   | --    | --    | --    | --   | -- | -- | -- | -- | --                 | Screens | --      | --     | --    | --      |
| <u>Syngnathus fuscus</u> |        |                |     |                      |      |       |       |       |      |    |    |    |    |                    |         |         |        |       |         |
| Number                   | Fall   | 0.36           | 193 | H.R.                 | ΔT   | Amb.  | --    | --    | --   | -- | -- | -- | -- | Period             | Screens | Pumps   | --     | --    |         |
|                          | Winter | 0.16           | 604 | DO                   | pH   | Winds | --    | --    | --   | -- | -- | -- | -- | Period             | Wind 1  | --      | --     | --    |         |
|                          | Spring | 0.24           | 221 | DO                   | Amb. | pH    | --    | --    | --   | -- | -- | -- | -- | Wind 2             | --      | --      | --     | --    |         |
|                          | Summer | 0.21           | 394 | DO                   | pH   | Sal.  | --    | --    | --   | -- | -- | -- | -- | Period             | Wind 1  | Screens | --     | --    |         |
| Weight                   | Fall   | 0.34           | 193 | H.R.                 | ΔT   | Amb.  | --    | --    | --   | -- | -- | -- | -- | Period             | Screens | --      | --     | --    |         |
|                          | Winter | 0.18           | 604 | pH                   | DO   | ΔT    | Amb.  | H.R.  | Sal. | -- | -- | -- | -- | Period             | --      | --      | --     | --    |         |
|                          | Spring | 0.23           | 221 | DO                   | pH   | Amb.  | --    | --    | --   | -- | -- | -- | -- | Wind 2             | --      | --      | --     | --    |         |
|                          | Summer | 0.17           | 394 | DO                   | pH   | Sal.  | --    | --    | --   | -- | -- | -- | -- | Period             | Wind 1  | --      | --     | --    |         |

Note: Variables are arranged from left to right in decreasing importance.

Sal. = salinity; Temp. = air temperature; Amb. = ambient water temperature; Flow = total cooling water and dilution flow; H.R. = heat rejection; ΔT = delta-T; Wind 1 = winds <16.1 kph; Wind 2 = winds >16.1 kph; Period = day or night; Screens = number of travelling screens running.

TABLE 4-11 (CONT.)

| Species                      | Season | r <sup>2</sup> | n   | Continuous Variables |       |      |       |       |    |    |      |      |      | Discrete Variables |         |         |    |    |
|------------------------------|--------|----------------|-----|----------------------|-------|------|-------|-------|----|----|------|------|------|--------------------|---------|---------|----|----|
|                              |        |                |     | 1                    | 2     | 3    | 4     | 5     | 6  | 7  | 8    | 9    | 10   | 1                  | 2       | 3       | 4  | 5  |
| <u>Pomatomus saltatrix</u>   |        |                |     |                      |       |      |       |       |    |    |      |      |      |                    |         |         |    |    |
| Number                       | Fall   | 0.25           | 193 | pH                   | Winds | --   | --    | --    | -- | -- | --   | --   | --   | Period             | --      | --      | -- | -- |
|                              | Winter | 0.12           | 604 | Amb.                 | Flow  | pH   | --    | --    | -- | -- | --   | --   | --   | Screens            | --      | --      | -- | -- |
|                              | Spring | 0.47           | 221 | Sal.                 | --    | --   | --    | --    | -- | -- | --   | --   | --   | Screens            | Pumps   | --      | -- | -- |
|                              | Summer | 0.17           | 394 | DO                   | --    | --   | --    | --    | -- | -- | --   | --   | --   | --                 | --      | --      | -- | -- |
| Weight                       | Fall   | 0.16           | 193 | pH                   | Winds | --   | --    | --    | -- | -- | --   | --   | --   | --                 | --      | --      | -- | -- |
|                              | Winter | 0.10           | 604 | Amb.                 | --    | --   | --    | --    | -- | -- | --   | --   | --   | Screens            | --      | --      | -- | -- |
|                              | Spring | 0.45           | 221 | Sal.                 | Winds | --   | --    | --    | -- | -- | --   | --   | --   | Pumps              | Screens | --      | -- | -- |
|                              | Summer | 0.16           | 394 | Amb.                 | Temp. | Flow | Winds | --    | -- | -- | --   | --   | --   | Period             | Wind 1  | --      | -- | -- |
| <u>Cynoscion regalis</u>     |        |                |     |                      |       |      |       |       |    |    |      |      |      |                    |         |         |    |    |
| Number                       | Fall   | 0.35           | 193 | Winds                | pH    | DO   | Flow  | --    | -- | -- | --   | --   | --   | Wind 2             | Pumps   | --      | -- | -- |
|                              | Winter | 0.15           | 604 | Amb.                 | Winds | Sal. | Flow  | --    | -- | -- | --   | --   | --   | Screens            | --      | --      | -- | -- |
|                              | Spring | 0.05           | 221 | --                   | --    | --   | --    | --    | -- | -- | --   | --   | --   | --                 | --      | --      | -- | -- |
|                              | Summer | 0.19           | 394 | --                   | --    | --   | --    | --    | -- | -- | --   | --   | --   | Period             | --      | --      | -- | -- |
| Weight                       | Fall   | 0.30           | 193 | pH                   | Winds | DO   | Flow  | --    | -- | -- | --   | --   | --   | Wind 2             | Pumps   | --      | -- | -- |
|                              | Winter | 0.09           | 604 | Winds                | --    | --   | --    | --    | -- | -- | --   | --   | --   | Screens            | --      | --      | -- | -- |
|                              | Spring | 0.05           | 221 | --                   | --    | --   | --    | --    | -- | -- | --   | --   | --   | --                 | --      | --      | -- | -- |
|                              | Summer | 0.11           | 394 | --                   | --    | --   | --    | --    | -- | -- | --   | --   | --   | Period             | --      | --      | -- | -- |
| <u>Paralichthys dentatus</u> |        |                |     |                      |       |      |       |       |    |    |      |      |      |                    |         |         |    |    |
| Number                       | Fall   | 0.46           | 193 | Winds                | Flow  | Amb. | Sal.  | Temp. | DO | pH | ΔT   | H.R. | Tide | Period             | Wind 1  | Screens | -- | -- |
|                              | Winter | 0.14           | 604 | pH                   | Amb.  | Sal. | --    | --    | -- | -- | --   | --   | --   | Screens            | Period  | --      | -- | -- |
|                              | Spring | 0.38           | 221 | Sal.                 | --    | --   | --    | --    | -- | -- | --   | --   | --   | Wind 2             | --      | --      | -- | -- |
|                              | Summer | 0.11           | 394 | Temp.                | Amb.  | --   | --    | --    | -- | -- | --   | --   | --   | Period             | --      | --      | -- | -- |
| Weight                       | Fall   | 0.45           | 193 | Winds                | Amb.  | Flow | Sal.  | Temp. | ΔT | DO | H.R. | Tide | pH   | Period             | Wind 1  | Screens | -- | -- |
|                              | Winter | 0.12           | 604 | pH                   | Sal.  | Amb. | --    | --    | -- | -- | --   | --   | --   | Screens            | Period  | --      | -- | -- |
|                              | Spring | 0.39           | 221 | Sal.                 | --    | --   | --    | --    | -- | -- | --   | --   | --   | Wind 2             | --      | --      | -- | -- |
|                              | Summer | 0.08           | 394 | Temp.                | Amb.  | --   | --    | --    | -- | -- | --   | --   | --   | Screens            | --      | --      | -- | -- |

TABLE 4-11 (CONT.)

| Species                              | Season | r <sup>2</sup> | n   | Continuous Variables |       |       |      |       |       |    |    |    |    | Discrete Variables |         |         |         |    |
|--------------------------------------|--------|----------------|-----|----------------------|-------|-------|------|-------|-------|----|----|----|----|--------------------|---------|---------|---------|----|
|                                      |        |                |     | 1                    | 2     | 3     | 4    | 5     | 6     | 7  | 8  | 9  | 10 | 1                  | 2       | 3       | 4       | 5  |
| <u>Pseudopleuronectes americanus</u> |        |                |     |                      |       |       |      |       |       |    |    |    |    |                    |         |         |         |    |
| Number                               | Fall   | 0.15           | 193 | H.R.                 | ΔT    | --    | --   | --    | --    | -- | -- | -- | -- | --                 | --      | --      | --      | -- |
|                                      | Winter |                | 604 | Amb.                 | DO    | --    | --   | --    | --    | -- | -- | -- | -- | Wind 1             | Period  | Wind 2  | --      | -- |
|                                      | Spring | 0.47           | 221 | Sal.                 | Temp. | pH    | Amb. | H.R.  | Winds | ΔT | -- | -- | -- | Screens            | --      | --      | --      | -- |
|                                      | Summer | 0.06           | 394 | Flow                 | --    | --    | --   | --    | --    | -- | -- | -- | -- | --                 | --      | --      | --      | -- |
| Weight                               | Fall   | 0.17           | 193 | H.R.                 | ΔT    | pH    | --   | --    | --    | -- | -- | -- | -- | Screens            | --      | --      | --      | -- |
|                                      | Winter | 0.23           | 604 | DO                   | Amb.  | --    | --   | --    | --    | -- | -- | -- | -- | Wind 1             | Period  | --      | --      | -- |
|                                      | Spring | 0.41           | 221 | Sal.                 | Temp. | Winds | Amb. | --    | --    | -- | -- | -- | -- | Wind 2             | --      | --      | --      | -- |
|                                      | Summer | 0.05           | 394 | Temp.                | --    | --    | --   | --    | --    | -- | -- | -- | -- | --                 | --      | --      | --      | -- |
| <u>Crangon septemspinosus</u>        |        |                |     |                      |       |       |      |       |       |    |    |    |    |                    |         |         |         |    |
| Number                               | Fall   | 0.40           | 193 | H.R.                 | ΔT    | --    | --   | --    | --    | -- | -- | -- | -- | Period             | Screens | --      | --      | -- |
|                                      | Winter | 0.14           | 604 | DO                   | pH    | Sal.  | Amb. | --    | --    | -- | -- | -- | -- | Period             | Wind 1  | --      | --      | -- |
|                                      | Spring | 0.14           | 221 | Sal.                 | --    | --    | --   | --    | --    | -- | -- | -- | -- | Wind 2             | --      | --      | --      | -- |
|                                      | Summer | 0.11           | 394 | Sal.                 | --    | --    | --   | --    | --    | -- | -- | -- | -- | Period             | --      | --      | --      | -- |
| Weight                               | Fall   | 0.38           | 193 | H.R.                 | ΔT    | --    | --   | --    | --    | -- | -- | -- | -- | Period             | Screens | --      | --      | -- |
|                                      | Winter | 0.15           | 604 | DO                   | pH    | Amb.  | Sal. | Winds | --    | -- | -- | -- | -- | Period             | Wind 1  | --      | --      | -- |
|                                      | Spring | 0.16           | 221 | Sal.                 | --    | --    | --   | --    | --    | -- | -- | -- | -- | Wind 2             | --      | --      | --      | -- |
|                                      | Summer | 0.11           | 394 | Sal.                 | --    | --    | --   | --    | --    | -- | -- | -- | -- | Period             | --      | --      | --      | -- |
| <u>Callinectes sapidus</u>           |        |                |     |                      |       |       |      |       |       |    |    |    |    |                    |         |         |         |    |
| Number                               | Fall   | 0.53           | 193 | Winds                | DO    | Amb.  | --   | --    | --    | -- | -- | -- | -- | Period             | Wind 2  | Screens | --      | -- |
|                                      | Winter | 0.24           | 604 | ΔT                   | H.R.  | Sal.  | Amb. | --    | --    | -- | -- | -- | -- | Period             | Pumps   | --      | --      | -- |
|                                      | Spring | 0.34           | 221 | Temp.                | Amb.  | Sal.  | --   | --    | --    | -- | -- | -- | -- | Screens            | Period  | Wind 2  | --      | -- |
|                                      | Summer | 0.25           | 394 | Sal.                 | Winds | DO    | --   | --    | --    | -- | -- | -- | -- | Wind 1             | --      | --      | --      | -- |
| Weight                               | Fall   | 0.43           | 193 | Sal.                 | Winds | DO    | --   | --    | --    | -- | -- | -- | -- | Period             | Pumps   | Wind 2  | Screens | -- |
|                                      | Winter | 0.30           | 604 | Amb.                 | Winds | ΔT    | Sal. | --    | --    | -- | -- | -- | -- | Period             | Screens | Wind 1  | --      | -- |
|                                      | Spring | 0.49           | 221 | pH                   | DO    | --    | --   | --    | --    | -- | -- | -- | -- | Screens            | Period  | --      | --      | -- |
|                                      | Summer | 0.18           | 394 | Temp.                | Amb.  | Flow  | Sal. | --    | --    | -- | -- | -- | -- | Period             | --      | --      | --      | -- |



TABLE 4-12 COEFFICIENTS OF DETERMINATION ( $r^2$ ) OF REGRESSION ANALYSES OF MONTHLY MEAN IMPINGEMENT VERSUS FIELD FISHERIES AND ASSOCIATED WATER TEMPERATURE FOR THE 1975-1981 DATABASE

| <u>Species</u>                       | <u>Trawl</u> | <u>Seine</u>  |               |
|--------------------------------------|--------------|---------------|---------------|
|                                      |              | <u>12.2-m</u> | <u>45.7-m</u> |
| <u>Anchoa mitchilli</u>              | 0.06         | 0.76          | 0.07          |
| <u>Menidia menidia</u>               | 0.15         | 0.14          | 0.16          |
| <u>Syngnathus fuscus</u>             | 0.07         | 0.06          | 0.08          |
| <u>Pomatomus saltatrix</u>           | 0.19         | 0.20          | 0.24          |
| <u>Cynoscion regalis</u>             | 0.22         | 0.18          | 0.17          |
| <u>Paralichthys dentatus</u>         | 0.10         | 0.05          | 0.03          |
| <u>Pseudopleuronectes americanus</u> | 0.21         | 0.23          | 0.28          |
| <u>Crangon septemspinosa</u>         | 0.35         | 0.35          | 0.54          |
| <u>Callinectes sapidus</u>           | 0.20         | 0.21          | 0.14          |
| <u>Sphoeroides maculatus</u>         | 0.88         | 0.03          | 0.14          |

TABLE 4-13 RESULTS OF REGRESSION MODELS EMPLOYED ON MONTHLY MEAN IMPINGEMENT OF SELECTED SPECIES VERSUS SELECTED PLANT-OPERATIONAL, FIELD COLLECTIONS, AND WATER QUALITY PARAMETERS FOR THE 1975-1981 DATABASE

| <u>Species</u>               | <u>r<sup>2</sup></u> | <u>n</u> | <u>Significant Variables<sup>(a)</sup> (p &lt; 0.05)</u>           |
|------------------------------|----------------------|----------|--|
| <u>Anchoa mitchilli</u>      | 0.79                 | 43       | 12.2-m seine--winter excluded                                      |
| <u>Pomatomus saltatrix</u>   | 0.33                 | 33       | 45.7-m seine--winter excluded <sup>(b)</sup>                       |
| <u>Cynoscion regalis</u>     | 0.35                 | 32       | Otter trawl--winter, spring excluded                               |
| <u>Paralichthys dentatus</u> | 0.38                 | 49       | 45.7-m seine (3-month lag)--DO, windspeed, total flow, water temp. |
| <u>Crangon septemspinosa</u> | 0.41                 | 44       | 12.2-m seine--summer excluded, salinity, air temp.                 |

- (a) Model employed: Mean monthly impingement = (C<sub>1</sub>) measured water Temp. + (C<sub>2</sub>) salinity + (C<sub>3</sub>) DO + (C<sub>4</sub>) total flow + (C<sub>5</sub>) windspeed + (C<sub>6</sub>) mean monthly field collection + C<sub>7</sub>.
- (b) No single parameter significant at p ≤ 0.05.

TABLE 4-14 TAXA COLLECTED FROM OCNGS TRAVELING SCREENS FROM SEPTEMBER 1980 - AUGUST 1981  
CATEGORIZED BY USE OF LOCAL WATERS

| <u>Residents</u>               | <u>Migrants</u>                          | <u>Occasional Visitors</u>        |
|--------------------------------|--|-----------------------------------|
| <u>Crangon septemspinosa</u>   | <u>Anchoa mitchilli</u> (SN)             | <u>Penaeus aztecus</u>            |
| <u>Callinectes sapidus</u>     | <u>Cynoscion regalis</u>                 | <u>Peprilus triacanthus</u> (MA)  |
| <u>Menidia menidia</u>         | <u>Alosa aestivalis</u>                  | <u>Caranx hippos</u>              |
| <u>Palaemonetes vulgaris</u>   | <u>Prionotus evolans</u>                 | <u>Conger oceanicus</u>           |
| <u>Syngnathus fuscus</u>       | <u>Pseudopleuronectes americana</u> (SN) | <u>Selene vomer</u>               |
| <u>Opsanus tau</u>             | <u>Etropus microstomus</u>               | <u>Anchoa hepsetus</u> (MA)       |
| <u>Rissola marginata</u>       | <u>Bairdiella chrysur</u>                | <u>Menticirrhus saxatilis</u>     |
| <u>Trinectes maculatus</u>     | <u>Leiostomus xanthurus</u>              | <u>Rachycentron canadum</u>       |
| <u>Hippocampus erectus</u>     | <u>Paralichthys dentatus</u>             | <u>Urophycis chuss</u> (N)        |
| <u>Gobiosoma boscii</u>        | <u>Ovalipes ocellatus</u> (AF, N)        | <u>Stenotomus chrysops</u>        |
| <u>Apeltes quadracus</u>       | <u>Anguilla rostrata</u>                 | <u>Cancer irroratus</u> (MA)      |
| <u>Cyprinodon variegatus</u>   | <u>Brevoortia tyrannus</u>               | <u>Dorosoma cepedianum</u> (MA)   |
| <u>Chasmodes bosquianus</u>    | <u>Class Scyphozoa</u> (AF)              | <u>Callinectes similis</u>        |
| <u>Fundulus heteroclitus</u>   | <u>Pomatomus saltatrix</u>               | <u>Sphyraena borealis</u>         |
| <u>Phylum Nemertea</u>         | <u>Tautoga onitis</u>                    | <u>Chilomycterus schoepfi</u>     |
| <u>Sphoeroides maculatus</u>   | <u>Alosa pseudoharengus</u>              | <u>Alectis crinitus</u>           |
| <u>Libinia dubia</u>           | <u>Myoxocephalus aeneus</u> (SN)         | <u>Pollachius virens</u> (N)      |
| <u>Panopeus herbstii</u>       | <u>Scophthalmus aquosus</u>              | <u>Lutjanus griseus</u>           |
| <u>Astroscopus guttatus</u>    | <u>Centropristis striata</u>             | <u>Chaetodon ocellatus</u>        |
| <u>Menidia beryllina</u>       | <u>Limulus polyphemus</u> (SN)           | <u>Etrumeus teres</u>             |
| <u>Neopanope texana sayi</u>   | <u>Strongylura marina</u>                | <u>Aluterus schoepfi</u>          |
| <u>Squilla empusa</u>          | <u>Prionotus carolinus</u>               | <u>Monacanthus hispidus</u>       |
| <u>Pagurus longicarpus</u>     | <u>Morone americana</u>                  | <u>Portunus gibbesii</u>          |
| <u>Fundulus diaphanus</u>      | <u>Alosa sapidissima</u>                 | <u>Lolliguncula brevis</u> (MA)   |
| <u>Rhithropanopeus harrisi</u> | <u>Mugil curema</u>                      | <u>Fistularia tabacaria</u>       |
| <u>Hypsoblennius hentzi</u>    | <u>Urophycis regius</u>                  | <u>Lactophrys triqueter</u>       |
| <u>Fundulus majalis</u>        | <u>Mugil cephalus</u>                    | <u>Myrophis punctatus</u>         |
| <u>Membras martinica</u>       | <u>Tautogolabrus adspersus</u>           | <u>Merluccius bilinearis</u> (MA) |

Note: SN = spawning and nursery; AF = adult feeding; MA = Atlantic; N = northern;  
F = freshwater. All uncoded migrants use the bay only for a nursery;  
all uncoded occasional visitors are southern species.

TABLE 4-14 (CONT.)

| Residents                     | Migrants                           | Occasional Visitors                |
|-------------------------------|------------------------------------|------------------------------------|
| <u>Malaclemys terrapin</u>    | <u>Synodus foetens</u>             | <u>Enneacanthus obesus</u> (F)     |
| Class Anthozoa                | <u>Gasterosteus aculeatus</u> (SN) | <u>Umbra pygmaea</u> (F)           |
| <u>Upogebia affinis</u>       | <u>Ammodytes americanus</u> (SN)   | <u>Dasyatis sayi</u> (MA)          |
| <u>Carcinus maenas</u>        |                                    | <u>Homarus americanus</u> (MA)     |
| Class Asteroidea              |                                    | <u>Paralichthys oblongus</u>       |
| <u>Chelydra s. serpentina</u> |                                    | <u>Scorpaena plumieri</u>          |
| <u>Hippolyte</u> sp.          |                                    | <u>Trachinotus falcatus</u>        |
| Class Holothuroidea           |                                    | <u>Decapterus punctatus</u>        |
| <u>Polinices duplicatus</u>   |                                    | <u>Lactophrys trigonus</u>         |
|                               |                                    | <u>Portunus spinimanus</u>         |
|                               |                                    | <u>Notemigonus crysoleucas</u> (F) |
|                               |                                    | <u>Aphredoderus sayanus</u> (F)    |
|                               |                                    | <u>Hyporamphus unifasciatus</u>    |
|                               |                                    | <u>Lepomis gibbosus</u> (F)        |
|                               |                                    | <u>Etheostoma fusiforme</u> (F)    |

TABLE 4-15 TEMPERATURE RANGES (C) FOR SELECTED SPECIES  
 FOR THE PERIODS SEPTEMBER 1975 - AUGUST 1980  
 AND SEPTEMBER 1980 - AUGUST 1981

| <u>Species</u>                      | <u>SEP 75 - AUG 80</u> | <u>SEP 80 - AUG 81</u> |
|-------------------------------------|------------------------|------------------------|
| <u>Anchoa mitchilli</u>             | 6-26                   | 9-29                   |
| <u>Alosa aestivalis</u>             | 0.6-11.5               | 3.5-11.5               |
| <u>Brevoortia tyrannus</u>          | 1-16                   | 6.5-28.5               |
| <u>Cynoscion regalis</u>            | 8.5-27                 | 8-29                   |
| <u>Callinectes sapidus</u>          | 11-29                  | 9-29                   |
| <u>Crangon septemspinosa</u>        | -1-12                  | -0.5-14                |
| <u>Menidia menidia</u>              | 1-15                   | 3.5-12.5               |
| <u>Pseudopleuronectes americana</u> | -0.5-10                | 0-8.5                  |
| <u>Paralichthys dentatus</u>        | 1-29                   | 7-28                   |
| <u>Pomatomus saltatrix</u>          | 15-28                  | 23-28                  |
| <u>Syngnathus fuscus</u>            | 2.5-16.5               | 3.5-16                 |
| <u>Sphoeroides maculatus</u>        | 15-26                  | 26.5-28.5              |

TABLE 4-16 PERCENT OF NUMERICAL CATCH OCCURRING AT NIGHT FOR SELECTED SPECIES AND ALL SPECIES COMBINED FOR FOUR STUDY YEARS

| <u>Species</u>                           | <u>SEP 75 -<br/>AUG 76</u> | <u>SEP 76 -<br/>AUG 77</u> | <u>SEP 79 -<br/>AUG 80</u> | <u>SEP 80 -<br/>AUG 81</u> | <u>Mean</u> |
|--|----------------------------|----------------------------|----------------------------|----------------------------|-------------|
| <u>Alosa aestivalis</u>                  | 80                         | 85                         | 87                         | 87                         | 85          |
| <u>Brevoortia tyrannus</u>               | 74                         | 85                         | 69                         | 67                         | 74          |
| <u>Anchoa mitchilli</u>                  | 71                         | 86                         | 63                         | 75                         | 74          |
| <u>Menidia menidia</u>                   | 57                         | 66                         | 66                         | 75                         | 66          |
| <u>Syngnathus fuscus</u>                 | 77                         | 86                         | 79                         | 64                         | 77          |
| <u>Pomatomus saltatrix</u>               | 68                         | 79                         | 53                         | 75                         | 69          |
| <u>Cynoscion regalis</u>                 | 65                         | 86                         | 69                         | 82                         | 76          |
| <u>Paralichthys dentatus</u>             | 63                         | 85                         | 73                         | 60                         | 70          |
| <u>Pseudopleuronectes<br/>americanus</u> | 71                         | 93                         | 75                         | 83                         | 81          |
| <u>Crangon septemspinosa</u>             | 93                         | 99                         | 91                         | 87                         | 93          |
| <u>Callinectes sapidus</u>               | 87                         | 79                         | 74                         | 83                         | 81          |
| All organisms                            | 86                         | 91                         | 87                         | 84                         | 87          |



TABLE 4-17 ESTIMATED ANNUAL IMPINGEMENT OF SELECTED SPECIES AND ALL ORGANISMS COMBINED BY STUDY YEAR, ADJUSTED FOR DIFFERENCES IN SAMPLING EFFORT<sup>(a)</sup>

| <u>Species Name</u>                  | <u>SEP 75 -<br/>AUG 76</u> | <u>SEP 76 -<br/>AUG 77</u> | <u>SEP 77 -<br/>AUG 78</u> | <u>SEP 78 -<br/>AUG 79</u> | <u>SEP 79 -<br/>AUG 80</u> | <u>SEP 80 -<br/>AUG 81</u> |
|--------------------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| <u>Alosa aestivalis</u>              | 28,120                     | 27,496                     | 41,914                     | 102,612                    | 35,034                     | 29,923                     |
| <u>Brevoortia tyrannus</u>           | 17,788                     | 94,960                     | 55,338                     | 9,530                      | 3,427                      | 12,005                     |
| <u>Anchoa mitchilli</u>              | 1,811,550                  | 147,202                    | 154,631                    | 145,977                    | 85,611                     | 76,994                     |
| <u>Menidia menidia</u>               | 61,272                     | 35,051                     | 84,789                     | 191,886                    | 153,912                    | 268,961                    |
| <u>Syngnathus fuscus</u>             | 36,066                     | 11,220                     | 22,616                     | 55,289                     | 29,822                     | 92,602                     |
| <u>Pomatomus saltatrix</u>           | 14,086                     | 3,935                      | 3,606                      | 9,641                      | 2,392                      | 9,154                      |
| <u>Cynoscion regalis</u>             | 11,790                     | 27,297                     | 20,347                     | 5,257                      | 46,186                     | 37,401                     |
| <u>Menticirrhus saxatilis</u>        | 16                         | 105                        | 23                         | 20                         | 342                        | 117                        |
| <u>Paralichthys dentatus</u>         | 4,266                      | 2,380                      | 1,941                      | 1,308                      | 6,440                      | 8,228                      |
| <u>Pseudopleuronectes americanus</u> | 8,908                      | 18,618                     | 27,370                     | 147,212                    | 16,122                     | 48,511                     |
| <u>Sphoeroides maculatus</u>         | 3,313                      | 1,516                      | 50,414                     | 233                        | 420                        | 17,179                     |
| <u>Crangon septemspinosa</u>         | 3,342,143                  | 600,278                    | 3,829,142                  | 4,864,083                  | 3,365,975                  | 6,821,222                  |
| <u>Callinectes sapidus</u>           | 5,627,253                  | 230,691                    | 1,157,562                  | 309,661                    | 277,727                    | 1,831,654                  |
| Other species                        | 519,542                    | 280,647                    | 647,775                    | 896,005                    | 235,526                    | 1,039,660                  |
| Total                                | 11,486,113                 | 1,481,396                  | 6,097,468                  | 6,738,714                  | 4,258,936                  | 10,293,611                 |

(a) Night samples only were collected for the period from September 1977 through May 1979; the adjusted estimates for this period used mean percents from Table 4-16.

TABLE 4-18 MEAN PERCENT LOSSES BY NUMBER AND WEIGHT OF OYSTER CREEK NUCLEAR GENERATING STATION  
 IMPINGEMENT PIT SAMPLER FOR FISH AND INVERTEBRATES COLLECTED FROM 15 DECEMBER 1980  
 TO 31 MARCH 1981 WITH PIT SAMPLER SLOTS OPEN AND WITH PIT SAMPLER SLOTS CLOSED

| Taxon             | Number                          |                                   | Weight                          |                                   |
|-------------------|---------------------------------|-----------------------------------|---------------------------------|-----------------------------------|
|                   | Percent Loss With<br>Slots Open | Percent Loss With<br>Slots Sealed | Percent Loss With<br>Slots Open | Percent Loss With<br>Slots Sealed |
| Invertebrates     | 22.80                           | 16.80                             | 21.16                           | 15.40                             |
| Fish              | 27.70                           | 14.14                             | 2.01                            | 7.47                              |
| Total Organisms   | 23.00                           | 16.63                             | 7.88                            | 10.86                             |
| Number of Samples | 8                               | 7                                 | 8                               | 7                                 |

## 5. ENTRAINMENT OF ICHTHYOPLANKTON

### 5.1 RESULTS

A total of 258 samples were collected and examined for ichthyoplankton abundance and viability from 2 September to 27 October 1980 and from 2 March to 31 August 1981. An additional 98 samples were collected and only examined for ichthyoplankton abundance from 3 November 1980 to 23 February 1981.

#### 5.1.1 General Species Composition and Abundance

The bay anchovy (Anchoa mitchilli) was the dominant species collected in entrainment samples (Table 5-1). Eggs of the bay anchovy were the most abundant form with a mean annual sample density of 509.2/100 m<sup>3</sup> composing 65.2 percent of the total catch. Bay anchovy larvae were the third most abundant form with a mean annual sample density of 56.9/100 m<sup>3</sup> (7.3 percent of the total catch). Juvenile bay anchovy were reduced in abundance, dropping in rank from 5th in 1979-1980 to 13th in 1980-1981, with a mean sample density of 3.6/100 m<sup>3</sup> (0.5 percent of the total catch).

Winter flounder (Pseudopleuronectes americanus) was the second most dominant species in entrainment samples. The eggs were the second most abundant form with a mean annual sample density of 66.3/100 m<sup>3</sup> (8.5 percent of the total catch). Winter flounder larvae were the seventh most abundant form with a mean sample density of 17.9/100 m<sup>3</sup> (2.3 percent of the total catch).

Unidentified eggs were the fourth most abundant form collected with a mean annual density of 39.1/100 m<sup>3</sup> constituting 5.0 percent of the total catch. These eggs were unidentified because of their early stage of development or to damage during collection or condenser passage.

Larvae of the family Gobiidae were fifth most abundant with a mean annual sample density of 27.3/100 m<sup>3</sup> (3.4 percent of the total catch). Goby larvae cannot confidently be identified to species, but were probably naked goby (Gobiosoma boscii) since all of the gobies taken in impingement and field sampling during 1980-1981 were of this species.

Sand lance larvae (Ammodytes americanus) were the sixth most abundant form. They were collected at a mean annual sample density of 21.9/100 m<sup>3</sup> and made up 2.8 percent of the total catch.

Eggs of the family Labridae were eighth most abundant. They were collected at a mean annual sample density of 8.8/100 m<sup>3</sup> and made up 1.1 percent of the total catch.

Combined, these forms comprised more than 95 percent of the total catch. The remainder of the catch was composed of 33 different forms representing at least 19 species. Of these 33 forms only 8 were collected at mean annual sample densities greater than 1/100 m<sup>3</sup>. These included juveniles of the northern pipefish (Syngnathus fuscus) with a mean annual sample

density of 6.5/100 m<sup>3</sup> (0.8 percent of the catch); larvae of the family Atherinidae (6.4/100 m<sup>3</sup>, 0.8 percent); eggs of the hogchoker (Trinectes maculatus) (5.0/100 m<sup>3</sup>, 0.6 percent); and windowpane eggs (Scophthalmus aquosus) (3.9/100 m<sup>3</sup>, 0.5 percent). Bay anchovy juveniles ranked next. The remaining three forms were Atlantic menhaden eggs (Brevoortia tyrannus), juvenile Atlantic silverside (Menidia menidia), and summer flounder eggs (Paralichthys dentatus) (1.9, 1.4, and 1.0/100 m<sup>3</sup>, respectively). These forms, combined with the eight most abundant forms, constituted over 99 percent of the total catch.

Weekly night densities of total fish eggs and total larvae and juveniles are shown in Figure 5-1. Samples taken during September and October were composed primarily of larvae and juveniles of summer spawners such as bay anchovy, northern pipefish, and gobies, and were taken during a period of declining ichthyoplankton abundance. The minor peak of egg abundances in September and October was the result of a mixture of summer and fall spawners (labrids and summer flounder, respectively). By the middle of November, abundances of eggs, larvae, and juveniles had dropped to zero. Ichthyoplankton abundance began to increase in December with influx of larvae from winter spawners, specifically sand lance larvae. Peak egg abundance in February was caused by winter flounder spawning. Relatively high densities of larvae during February, March, and April were due to larvae of the sand lance and winter flounder. Larval abundances declined gradually during April and reached a low in early May. During this period of declining larval abundances, egg abundances began to increase with the initiation of spring and early summer spawning. Egg densities increased rapidly in May with bay anchovy spawning and reached peak abundance in early June. Densities then declined gradually during the summer. Densities of larvae also increased rapidly during May and remained high throughout the summer. Larval abundances during this time were dominated by atherinids, bay anchovy, gobies, and northern pipefish juveniles. Larval densities reached their highest point the last week in August after which the sampling program was terminated.

### 5.1.2 Occurrence and Abundance of Key Species

Emphasis is placed on the key species designated in the Technical Specifications: bay anchovy, northern pipefish, winter flounder, and Atlantic menhaden. Larvae of the family Gobiidae and sand lance are included because of their high abundance (mean sample density >10/100 m<sup>3</sup>) in the entrainment samples. (Note that all densities are expressed or implied in terms of number/100 m<sup>3</sup>).

Bay anchovy eggs were first collected at low densities on 6 May 1981 (4.8/100 m<sup>3</sup>, Appendix F). Densities increased during May resulting in a monthly mean density of 342.7/100 m<sup>3</sup> (Table 5-2). The peak mean weekly density occurred on 1 June 1981 (6,910.5). Densities remained high during June and July (monthly mean densities 2,176.8 and 2,232.9/100 m<sup>3</sup>, respectively) and were reduced in August (930.9).

Larval and juvenile bay anchovies from the 1980 year class were collected during September and October 1980 (Table 5-2). During September, larvae were collected at a mean monthly density of 8.1/100 m<sup>3</sup> whereas juveniles had a mean monthly density of 5.8. During October, the abundance of both

larvae and juveniles declined with mean monthly densities of 0.6 and 0.9/100 m<sup>3</sup>, respectively.

In 1981, bay anchovy larvae were first collected on 18 May at a mean density of 21.6/100 m<sup>3</sup> (Appendix F). The monthly mean density was 16.3/100 m<sup>3</sup>. Densities increased in June (monthly mean density of 192.3/100 m<sup>3</sup>), peaked in July (283.3), and remained relatively high in August (145.4). The highest abundance of larvae occurred the first week in June (509.3/100 m<sup>3</sup>). Densities were still relatively high during the last week in August when sampling was terminated.

Juvenile bay anchovy were first collected on 29 June at a mean density of 18.2/100 m<sup>3</sup>. Peak abundance occurred on 6 July at a mean density of 67.1. Monthly mean density was high in July (26.8) and declined in August (3.7).

Northern pipefish juveniles were collected in low densities during September and October 1980 (monthly mean densities 3.7 and 1.6/100 m<sup>3</sup>, respectively). They were first collected in 1981 on 18 May at a mean density of 16.2/100 m<sup>3</sup>. The highest monthly mean density occurred in June 1981 (40.0) with the peak density occurring during the first week (68.6). They continued to occur at low densities through July (5.6) and August (6.9).

Winter flounder eggs were first collected in January at low densities (1.0/100 m<sup>3</sup>), were most abundant in February (969.8), and were again at low densities in March (1.6). Winter flounder eggs are demersal and those collected were probably dislodged from the substrate by wave action or currents.

Larvae of the winter flounder were first collected on 18 February 1981 at a mean density of 44.7/100 m<sup>3</sup>; the monthly mean density was 39.7 for February. The highest abundance of winter flounder larvae occurred the first week in March with a mean density of 221.2/100 m<sup>3</sup>. Densities declined gradually during March resulting in a monthly mean density of 137.4. Low densities of larvae approaching metamorphosis occurred in April (monthly mean density 12.0). During May, a single small larva was collected resulting in a mean density less than 1.0/100 m<sup>3</sup>.

Single specimens of Atlantic menhaden larvae were collected in September and December resulting in monthly mean densities for both months of less than 1.0/100 m<sup>3</sup>. Low densities of Atlantic menhaden eggs were collected on 18 May (mean density 1.5/100 m<sup>3</sup>). Eggs were collected in higher densities on 1 June (162.0). These were the only two occurrences of Atlantic menhaden eggs and no larvae resulting from this limited spawning activity were collected.

Larvae of the family Gobiidae were collected in low densities during September 1980 (monthly mean density 2.8/100 m<sup>3</sup>). Larvae were collected again in June 1981 (132.9), densities were reduced slightly during July (116.8), and declined further in August (33.6). The peak density occurred on 22 June at 265.9/100 m<sup>3</sup>.



Sand lance larvae were first collected in December (mean monthly density 16.1/100 m<sup>3</sup>). Mean monthly densities remained relatively constant from January until April and ranged from 39.5 to 84.8/100 m<sup>3</sup>. The peak density occurred on 23 March (129.3). Densities declined rapidly at the end of April and only one larva was collected in May, resulting in a monthly mean density of less than 1.0/100 m<sup>3</sup>.

When comparing day and night differences in densities, only data from weeks when 24-hour studies occurred were examined (Table 5-3). Total ichthyoplankton densities were generally higher at night, but this relationship varied from month to month and from species to species. Bay anchovy eggs showed minor day/night differences in May, were more abundant at night during June, and were more abundant during the day in July and August. Bay anchovy larvae showed no consistent day/night differences in May. In June, when most of the larvae were relatively small, densities were slightly higher during the day. During July and August, when the majority of larvae were larger, densities were higher at night. Juvenile bay anchovy were only abundant in July and densities were higher at night. Winter flounder eggs were more abundant at night in February, the only month when they were common. Winter flounder larvae showed no consistent day/night difference although they were more abundant at night during March, the month in which they were most common. Goby larvae and northern pipefish juveniles were generally more abundant at night. Sand lance larvae seemed equally distributed between day and night.

Estimated numbers of important and abundant ichthyoplankton entrained at OCNGS from September 1980 through August 1981 are shown in Table 5-4. The bay anchovy was the most abundant species with  $9,809.81 \times 10^6$  eggs,  $555.78 \times 10^6$  larvae, and  $35.73 \times 10^6$  juveniles. Winter flounder was the second most abundant species with  $1,769.05 \times 10^6$  eggs and  $270.04 \times 10^6$  larvae entrained. A total of  $13,930.61 \times 10^6$  ichthyoplankton organisms were entrained.

### 5.1.3 Mortality of Ichthyoplankton Passing Through the Cooling System

Results of viability determinations for bay anchovy, northern pipefish, gobies, winter flounder, sand lance, and atherinids are presented in Table 5-5. The data are presented as both numbers of live, stunned, and dead, and as percentages of combined live-stunned and dead. Three types of mortality data are presented in the table:

1. Unadjusted mortality--represented by those organisms found dead either at the intake or discharge, whose death may have been at least partly caused by the sampling gear or may have occurred before the organisms reached the intake. These data are shown as percentages in Table 5-5.
2. Condenser passage percent mortality--calculated by subtracting the intake mortality from the discharge mortality (Formula 2-13). This is the method required by the Technical Specifications.
3. Percent entrainment mortality--calculated by Equations 2-14 and 2-15 (percent entrainment survival is provided also in Table 5-6). This method is suggested as the most appropriate for calculating mortality.



Unadjusted mortality of bay anchovy larvae at the intake from September 1979 to August 1980 ranged from 0 to 91.7 percent; at the discharge it ranged from 85.9 to 100 percent. The unadjusted mortality for the entire study period combined was 79.9 percent at the intake and 95.1 percent at the discharge. The difference between the intake and discharge was significant (probability  $\leq 0.001$ ). Mortality attributable to passage through the cooling system (entrainment mortality) was 75.6 percent.

Bay anchovy juveniles had an unadjusted mortality at the intake ranging from 0.0 to 9.1 percent with a mortality of 6.4 percent for the whole study. At the discharge, unadjusted mortality ranged from 83.3 to 100.0 percent with a mortality of 96.4 percent for the entire study. The difference between intake and discharge was significant (probability  $\leq 0.001$ ). Entrainment mortality was 96.2 percent.

The unadjusted mortality of northern pipefish juveniles at the intake ranged from 0.0 to 33.3 percent with an overall mortality of 9.6 percent. At the discharge, unadjusted mortality ranged from 0.0 to 75.0 percent with an overall mortality of 50.6 percent. The difference between intake and discharge was significant (probability  $\leq 0.001$ ). Entrainment mortality was 45.4 percent.

Depending on the month during the study period, unadjusted mortality of goby larvae ranged from 0.0 to 60.2 percent at the intake and 60.0 to 93.0 percent at the discharge. Unadjusted mortality for all months combined was 51.6 and 92.1 percent at the intake and discharge, respectively (significant at probability  $\leq 0.001$ ). An estimated 83.7 percent were killed by passage through the cooling system.

Unadjusted mortality of winter flounder larvae at the intake ranged from 16.7 to 86.4 percent with an overall mortality of 83.7 percent. At the discharge, unadjusted mortality ranged from 41.2 to 98.4 percent with an overall mortality of 86.3 percent. The difference between intake and discharge was not significant. However, in March, when winter flounder larvae were abundant, the difference between intake and discharge was significant (probability  $\leq 0.001$ ). Unadjusted mortality was 86.4 and 98.4 percent for intake and discharge, respectively. This corresponds to an entrainment mortality of 88.2 percent.

At the intake, unadjusted mortality of sand lance larvae ranged from 0.0 to 43.9 percent. At the discharge, mortalities ranged from 34.5 to 64.3 percent. Overall mortalities were 24.6 and 48.1 percent at intake and discharge, which corresponds to 31.2 percent entrainment mortality.

Atherinid larvae unadjusted mortality at the intake ranged from 15.8 to 62.0 percent with an overall mortality of 57.4 percent. At the discharge, unadjusted mortality ranged from 0.0 to 100 percent with an overall mortality of 65.9 percent. The difference between intake and discharge was not significant. In June, when atherinid larvae were abundant and the plant was producing heat, the difference between intake and discharge was significant. Unadjusted mortality was 62.0 and 94.7 percent for intake and discharge, respectively, which corresponds to an entrainment mortality of 86.1 percent.

#### 5.1.4 Water Quality Data Associated with Entrainment Sampling

Water temperature values at the intake ranged from -0.5 C on 23 December 1980 to 30.2 C on 2 September 1980. Water temperature values differed little between surface and bottom, and day and night (Table 5-6).

Water temperature values at the discharge ranged from 5.2 C on 16 March 1981 to 39.2 C on 2 September 1980. There was no consistent difference between day and night values. The average delta-T between the intake and discharge was 7.0 C for night surface readings and 6.2 C for day surface readings. However, these average readings include sampling dates when the plant was not producing any heat. When these values are excluded, the average delta-T was 10.5 C for night surface readings and 10.0 C for day surface readings.

Water temperatures were high at the beginning of the entrainment study period in September and declined gradually during fall and early winter until the minimum water temperature occurred in December. Temperatures remained relatively cold from December until March except for a period of warmer temperatures in mid-February. Temperatures increased rapidly the last week of March and continued a gradual increase through spring and early summer until the summer maxima was reached in July. Temperatures remained high through July and August.

Dissolved oxygen values ranged from 4.0 to 11.7 mg/liter at the intake, and from 4.2 to 13.7 mg/liter at the discharge (Table 5-7). There was little difference between surface and bottom at the intake, but day values averaged slightly higher than night values for both intake and discharge. The annual cycle of dissolved oxygen concentrations was the inverse of the water temperature cycle. Highest DO concentrations occurred during December and January when water temperatures were lowest, whereas lowest DO concentrations occurred during July when water temperatures were highest.

The pH values ranged from 7.5 to 8.4 (Table 5-8). Differences between surface and bottom, and day and night, were minor and inconsistent. However, the discharge values were slightly lower than the intake values. There was no evidence for an annual cycle in pH values.

Salinity values ranged from 21.8 to 28.8 ppt during the entrainment study period (Table 5-9). There were no consistent differences between surface and bottom, and day and night. The discharge values averaged slightly higher than the intake values.

Total chlorine was measured at the discharge on each entrainment sampling date. On each occasion, the chlorine concentrations were found to be <0.01 ppm.

### 5.1.5 Statistical Analysis of the Relationship of Ichthyoplankton Entrainment Rates to Physical/Chemical Parameters, Meteorological Phenomena, and Plant-Operational Conditions

This relationship was statistically analyzed using a multiple linear regression technique known as the General Linear Model. Details of the technique and the variables used are given in Section 2.7.4. Final models were run on seven different species/life-stage combinations. The results of the GLM are presented for several key and abundant species: bay anchovy eggs, bay anchovy larvae and juveniles, northern pipefish juveniles, winter flounder larvae, goby larvae, and silverside larvae. The model run for sand lance larvae revealed no significant relationships. No models were run for Atlantic menhaden eggs or larvae due to their low abundances and sporadic occurrences.

In general, it was difficult to generate a model with a high  $r^2$  using GLM and the available data. However, the analysis arranged the variables in relative order of importance and eliminated variables with no significant relationship to entrainment densities. Table 5-10 presents the GLM results; it lists the  $r^2$  for the best model, the variables in order of relative importance, and the direction of their influence.

## 5.2 DISCUSSION

The following discussion emphasizes key species designated by the Technical Specifications: Atlantic menhaden, bay anchovy, northern pipefish, and winter flounder. Due to their high abundance in entrainment samples, gobiidae larvae, atherinidae larvae, and sand lance also are discussed. Because of inconsistencies in sampling at the intake (especially during 1975-1976 and 1976-1977), comparisons between the 1980-1981 data and data from previous years are made using only discharge data. In order to facilitate year-to-year comparisons, periods when the dilution discharge was sampled during plant shutdowns also are included.

### 5.2.1 Relationship of Fish Spawning in Barnegat Bay to Ichthyoplankton Entrainment

Bay anchovy was the most common species in the ichthyoplankton entrainment collections. Adults enter the bay in late spring with the first indication of spawning occurring shortly thereafter. The peak reproductive activity occurs during summer at a temperature range of 18.5-30 C. Spawning is pelagic and occurs predominantly in the early evening hours (Hildebrand and Cable 1930; Ferraro 1980). Kurtz (1977, 1978) reported that most adults had mature resting gonads when they entered the bay. During May and June, the proportions of adult fish with enlarged or ripe gonads increased. By July, a large percentage of the fish had spent gonads and by August, almost all females had spent gonads or had again entered a mature, resting stage.

Bay anchovy entrainment reflected this reproductive pattern. Both larvae and juveniles of the 1980 year class were entrained in September and October. Densities during this period were low because of poor year class success. Eggs were first collected in May and increased rapidly in abundance. Densities remained high during June and July, and were

reduced in August. Bay anchovy larvae were first collected in May. Densities increased in June, were highest in July, then decreased in August. Juveniles were first collected in June, increased in abundance in July, and then decreased in abundance during August.

Northern pipefish is a year-round resident of Barnegat Bay with the shallow vegetated areas providing prime habitat during most of the year. During the winter, northern pipefish move out of the shallows and into deeper areas of the bay. Moore (1977, 1978) reported gravid males from May through September with most of the gravid males taken in May and June. The entrainment abundance of northern pipefish juveniles followed this reproductive pattern. Juveniles from the 1980 year class were entrained in low densities in September and October. They were collected in moderate densities in May, peaked in abundance in June, and were still present in low densities during July and August.

Winter flounder adults enter the bay during late fall and early winter. Spawning occurs over the winter at temperatures of 0-4 C; adults then leave the bay in the spring as water temperatures rise above 10-15 C (Danila 1977, 1978). Danila reported that most adult fish had enlarged gonads when they entered the bay. By February, a small portion of the adult females had spawned and by March nearly all females had spawned.

Winter flounder eggs are demersal and are not normally susceptible to entrainment. Eggs were collected in entrainment samples from February to April with highest densities occurring in March. These eggs were probably swept from the substrate by waves or currents, and represent only a small portion of the eggs spawned in Barnegat Bay. Winter flounder larvae were first collected in February with highest densities occurring in March. Densities declined in April and by the end of April most larvae were no longer susceptible to entrainment.

Atlantic menhaden are found in coastal and tidal estuarine waters of the eastern United States; spawning occurs primarily in coastal waters. There are two periods of spawning in the mid-Atlantic area which correspond to periods of migration of adults in the spring and fall. Late postlarvae and early juveniles enter and use estuaries as nursery areas. Kurtz (1977, 1978) reported that very few of the Atlantic menhaden from Barnegat Bay had ripe or spent gonads. Single specimens of Atlantic menhaden larvae were collected in September and December. These larvae were the result of the fall spawning peak and probably do not survive since water temperatures in the bay soon drop below the lower lethal limit for Atlantic menhaden (Lewis 1965). Atlantic menhaden eggs were collected on two dates in May and June. Egg survival was probably insignificant since no larvae were collected in entrainment samples following the occurrence of the eggs. The evidence of apparent, natural mortality and the sporadic occurrence of eggs and larvae during six years of entrainment monitoring suggests that Barnegat Bay is not a favorable spawning habitat for Atlantic menhaden.

The naked goby (Gobiosoma bosci) is a year-round resident of Barnegat Bay. The adults normally occur in shell reefs or other hard substrate and so are underestimated by the sampling program. Spawning occurs in



the late spring and summer with the male guarding the attached eggs inside his nest, usually an empty shell. Upon hatching, the larvae become pelagic and are entrained in relatively high numbers. Small numbers of larvae and juveniles from the 1980 year class were entrained during September and November. Larvae were collected again at relatively high densities in June 1981. Densities were gradually reduced during the summer but larvae were still present in August when the sampling program was terminated. Due to the presence of the seaboard goby (Gobiosoma ginsburgi) in Barnegat Bay, larvae were identified only to the family level.

The Atlantic silverside is also a year-round resident in Barnegat Bay. It is most commonly found in the shore zone, but during winter may move to deeper water in the Bay or nearby ocean. Spawning occurs during the spring. Hoch (1978) reported a high proportion of enlarged gonads in March with a high proportion of ripe gonads in April. By May, many fish had spent or partially spent gonads indicating that most spawning had occurred in late April or May, although spent or partially spent fish were found through July indicating some low level of spawning through the summer. The eggs are spawned in and attach to beds of vegetation. The larvae, upon hatching, are closely associated with these beds of vegetation and other shorezone features and probably are not entrained in densities relative to their actual abundance in the bay. During 1980-1981, larvae were first collected in April, increased rapidly during May to a peak in June, then decreased in abundance during July and August. Because of the presence of two other species of silverside in Barnegat Bay, larvae were identified to family level only.

The sand lance is a common component of the nearshore ichthyofauna, but occurs less frequently in Barnegat Bay. Small numbers of sand lance may enter the bay during fall and winter to utilize the shallow sand flats in the eastern bay for spawning. Spawning occurs in late fall and winter as temperature drops toward the seasonal minima. The eggs are demersal and associated with beds of sand. Hatching occurs during the cold months and the winter ichthyoplankton is often dominated by this species in nearshore waters (Thomas 1977). In 1980-1981, larvae were first collected in December. Densities remained relatively low throughout the season from December through April with no significant peak of abundance.

#### 5.2.2 Comparison of 1980-1981 Ichthyoplankton Entrainment Data with Previous Entrainment Data

The bay anchovy has been the most abundant organism in ichthyoplankton samples since entrainment monitoring began in September 1975. Peak abundances of bay anchovy eggs occurred during the 1976 breeding season (monthly mean density 8,248.0/100 m<sup>3</sup> in June 1976, Figure 5-2). Densities since the 1976 breeding season have been relatively low and variable with peak monthly mean densities ranging from 547.8/100 m<sup>3</sup> in May 1980 to 3,348.8/100 m<sup>3</sup> in July 1979. Densities in 1980 were the lowest observed during the six-year period. Densities of eggs during the 1981 breeding season were moderate with a peak monthly mean density of 3,292.1/100 m<sup>3</sup> in July.

There was a positive relationship between the field-fisheries catch of adult bay anchovy in the spring and subsequent densities of eggs. The large catches of adult anchovy in spring 1976 corresponded to the high abundance of eggs during summer 1976 and the low catches of adults in 1980 corresponded to the low abundance of eggs during 1980. In 1977, 1978, and 1979, the abundance of adults was generally declining whereas egg abundance was variable. In 1981, the abundance of adults increased over the previous three years which resulted in moderate densities of eggs.

The peak abundance of bay anchovy eggs did not result in a corresponding peak of abundance in bay anchovy larvae and juveniles (Figure 5-3). Densities were relatively low during the 1976 breeding season (mean monthly density 587.1/100 m<sup>3</sup> in July 1976). Peak abundances of larvae and juveniles occurred in the 1977 and 1979 breeding seasons (monthly mean densities of 1,816.9 and 1,848.2/100 m<sup>3</sup> for July 1977 and July 1979, respectively). Despite the moderate density of anchovy eggs during 1981, densities of larvae and juveniles were relatively low (peak mean monthly density 168.1/100 m<sup>3</sup> in July). This might be caused by competition with Atlantic silverside which had an extremely large year class in 1981.

Densities of bay anchovy eggs, larvae, and juveniles were lowest during the 1980 breeding season. This may have been due to the low adult numbers resulting in reduced breeding activity, or to a possible predational or competitive interaction with ctenophores (see Ecological Analysts 1980, Chapter 5).

Highest abundances of winter flounder larvae occurred during the 1977 breeding season, whereas lowest abundances occurred during the 1981 season (Figure 5-4). Peak monthly mean densities ranged from 128.5/100 m<sup>3</sup> in March 1981 to 847.3/100 m<sup>3</sup> in March 1977. The peak monthly mean was also low during the 1976 season (229.9/100 m<sup>3</sup> in March 1976) while densities were intermediate in 1978 and 1979 (363.0 and 651.7/100 m<sup>3</sup> in March 1978 and March 1979, respectively).

The low abundance of winter flounder larvae during the 1976 season was probably related to several factors. There were comparatively few adults spawning in the bay that year as a result of relatively poor year-class success in previous years. Thomas (1977) noted the declining population in nearby estuaries from 1972 to 1974. Also, the winter of 1975-1976 was relatively warm and Jeffries and Johnson (1974) found a negative correlation between warming climatic trends during the spawning season and subsequent trawl catches.

The high abundance of winter flounder larvae during the 1977 breeding season was probably related to the severity and duration of the cold winter of 1976-1977. Again, this relates to the findings of Jeffries and Johnson (1974). The relatively severe (cold) winter of 1976-1977 resulted in high survival of larvae, whereas the relatively mild winter of 1975-1976 resulted in lower larval survival. Tighe and Sandine (1978) reported that the daily mortality rates of larvae (based on catch-curve analyses) were 19.4 and 8.1 percent for the 1976 and 1977 seasons, respectively.



The low abundance of winter flounder during the 1981 season cannot be adequately explained. The abundance of spawning adults in the winter was the highest measured during the six-year period but the winter was not unusually warm compared to previous winters. Both of these factors indicate that year class success should have been average-to-good, yet larval abundance was the lowest during the six-year period. The number of juveniles taken in field-fisheries catches during the summer was low indicating poor year-class success. Obviously, the factors determining year-class success are more complicated than an interaction between breeding stock and climate. Other factors that may affect year-class success have apparently not been measured by this project.

Peak abundances of northern pipefish juveniles occurred during the 1976 and 1977 breeding seasons, when peak monthly mean densities were almost identical ( $29.1$  and  $30.1/100\text{ m}^3$  in June 1976 and July 1977, respectively; Figure 5-5). Densities were lower during the 1978 season when the peak monthly mean density was  $13.2/100\text{ m}^3$  in June. This might indicate that the period of peak release of young from gravid males was more protracted in 1978, which would result in lower peak densities in entrainment samples. This protracted season may have caused the number of young released in 1978 to be similar to the number released in 1976 and 1977. Densities in 1979 were intermediate between 1978 and the peak years of 1976 and 1977. Densities in 1980 were the lowest observed during the five-year period, possibly a competitive interaction with the high abundance of ctenophores that year (see Ecological Analysis 1980, Chapter 5). Densities during 1981 were relatively high ( $26.5/100\text{ m}^3$  in June) indicating a rapid recovery from the poor 1980 year class.

Due to the high abundance of larvae of the sand lance, gobies, and silversides during most of the six years, 1980-1981 entrainment data will be compared with the previous data.

Abundances of sand lance larvae have been relatively constant over five of the six years with peak monthly mean densities ranging from  $69.4$  to  $202.0/100\text{ m}^3$  (Figure 5-6). In 1978-1979, the peak monthly density was much higher ( $616.1/100\text{ m}^3$ ). Since most sand lance spawning probably occurs on the sand flats in the eastern portion of the bay, or actually outside the bay in nearby coastal waters, this year of high density probably represents a period of wind or current conditions dispersing the larvae to the western portion of the bay where entrainment is more probable.

Peak abundance of goby larvae occurred in 1975-1976 (peak monthly mean density  $304.5/100\text{ m}^3$ , Figure 5-7). Abundances declined over the next three years, then recovered slightly and have remained relatively constant in 1979-1980 and 1980-1981 (peak monthly mean densities  $98.9$  and  $92.2/100\text{ m}^3$ , respectively).

Silverside (family Atherinidae) larvae have been increasing in abundance over five of the six years studied (Figure 5-8). Lowest densities occurred in 1979-1980 when the peak monthly mean density was  $2.7/100\text{ m}^3$  in June 1980. This period of low density may have been caused by an interaction with the high densities of ctenophores which occurred that year. Highest densities of silverside larvae occurred in 1980-1981 when

the peak monthly mean density was 48.0/100 m<sup>3</sup>. It is not clear why silversides (especially Atlantic silverside) had such a good year class, which was reflected in both entrainment densities of larvae and field catches by seine of juveniles.

It is clear from the examination of the six years of available entrainment data that year-to-year fluctuations in the abundance of early life history stages of fish were great. Some forms, such as bay anchovy eggs and sand lance larvae, had one year of high density with the other five years having relatively low densities. Several forms (bay anchovy larvae and juveniles, winter flounder larvae, and northern pipefish juveniles) had two or more years of high densities interspersed with years of low density. One form (larvae of the family Gobiidae) showed a general decline in abundance over the years, whereas another (larvae of the family Atherinidae) showed a general increase in abundance. The relationship of these year-to-year fluctuations with environmental data such as physical/chemical factors, meteorological phenomena, and OCMGS plant operation parameters is not clear from the available data.

### 5.2.3 Impact of Ichthyoplankton Entrainment on Barnegat Bay Fish Populations

Results of ichthyoplankton viability studies from September 1975 through August 1981 are summarized in Table 5-11. Viability studies have been conducted with two types of sampling gear: bongo nets and reducing cone mortality sampler (RCMS, Miller and Tighe 1979). The results of these studies enable an assessment of the immediate effects of entrainment.

Viability studies on bay anchovy eggs were conducted during one year only. The results indicate an entrainment mortality of 29.1 percent. This mortality, combined with the estimated numbers entrained, results in an estimated 2,854.65 x 10<sup>6</sup> eggs killed by the immediate effects of entrainment during the 1981 breeding season.

Viability studies on bay anchovy larvae were conducted for six years. For one year, the RCMS was used resulting in an estimated entrainment mortality of 95.5 percent. For the five years of studies conducted with the bongo net sampler, entrainment mortality ranged from 9.0 to 95.1 percent with an overall mortality of 77.9 percent. The low (9.0) occurred during the 1976-1977 study year when the plant was shut down during the major portion of the breeding season. Most of the larvae examined for viability occurred in September and October 1976 when the larvae were larger and the water temperatures were cooler resulting in lower immediate mortality. In other years when the viability studies encompassed more of the breeding season, estimated mortalities ranged from 68.9 to 95.1 percent.

The entrainment mortality as measured by the RCMS (95.5 percent) was different from that measured by the bongo sampler (77.9 percent). At the intake, the proportion of dead larvae was significantly lower with the RCMS; however, at the discharge there was no significant difference in proportion of dead larvae between the bongos and the RCMS. Because of this lack of a consistent difference between the two gears and the relatively small amount of data with the RCMS (one year), mortality estimates

were calculated with both entrainment mortality percentages. Based on the estimated number of larvae entrained and the above entrainment mortality percentages, between  $432.95 \times 10^6$  and  $530.77 \times 10^6$  larvae were killed by immediate effects of entrainment during the 1980-1981 study period.

Viability of bay anchovy juveniles was studied for six years using the bongo sampler. Entrainment mortality ranged from 14.3 to 95.7 percent with an overall mortality of 47.6 percent. This percent entrainment mortality, combined with the estimated number of juveniles entrained during the 1980-1981 study period, gives an estimated  $17.01 \times 10^6$  juveniles killed by the immediate effects of entrainment.

Viability of northern pipefish juveniles was studied for five years using the bongo sampler. Entrainment mortality ranged from 0.0 to 56.8 percent. The low of 0.0 percent occurred during the 1976-1977 study year when the plant was shut down for most of the breeding season. The low numbers of juveniles examined and the approximately equal proportions of dead at the intake and discharge precluded any determination of entrainment effects. Therefore, the entrainment mortality was assumed to be zero for that year. The overall mortality for the five years was 52.8 percent. This results in an estimated  $32.45 \times 10^6$  northern pipefish killed by the immediate effects of entrainment during the 1980-1981 study year.

Viability of winter flounder larvae was studied for five years: three years with the bongo sampler and two years with the RCMS. With the bongo sampler, entrainment mortality ranged from 17.4 to 77.0 percent with an overall mortality of 75.0 percent. With the RCMS, entrainment mortality ranged from 47.7 to 60.6 percent with an overall mortality of 59.0 percent. There was a significant difference between the two types of sampling gear at both the intake and discharge. Since the RCMS gave significantly lower proportions of dead larvae at both the intake and discharge, entrainment mortality estimated with this gear is probably more accurate. Using this entrainment mortality of 59.0 percent, an estimated  $159.32 \times 10^6$  winter flounder larvae were killed by immediate effects of entrainment during the 1980-1981 study year.

There is less information available on the immediate effects of entrainment on larvae of the family Gobiidae, family Atherinidae, and sand lance. The best available data for larvae of the family Gobiidae was taken with the bongo sampler during the years 1975-1976, 1976-1977, and 1980-1981. The overall totals for these three years give an entrainment mortality of 88.75 percent. Combined with the entrainment estimate for 1980-1981, an estimated  $252.74 \times 10^6$  goby larvae were killed by the immediate effects of entrainment.

The best available data for the immediate effects of entrainment on sand lance larvae were taken during 1977-1978 and 1978-1979 with the RCMS. The totals for these two years give an estimated entrainment mortality of 55.5 percent. This entrainment mortality, combined with the estimated number entrained, gives an estimated  $193.82 \times 10^6$  larvae killed by the immediate effects of entrainment during 1980-1981.

Viability samples taken during the years 1975-1976 and 1980-1981 are the best available data to determine the entrainment mortality of larvae of the family Atherinidae. Data from these two years give an entrainment mortality of 61.6 percent which, combined with the entrainment estimate for 1980-1981, gives an estimated  $33.23 \times 10^6$  killed by the immediate effects of entrainment.

Despite the magnitude of the losses described above, there is little evidence to indicate that entrainment has had a significant impact on most fish populations in Barnegat Bay. The number of northern pipefish in the bay (based on field-fisheries catches) has been fairly constant or increased slightly during the six years of study. The number of winter flounder adults (field-fisheries catches in winter and early spring) has increased during the six-year study, although the number of juveniles (field-fisheries catch in the summer) has fluctuated from year to year. The population of Atlantic silverside, both adults and juveniles, also has been increasing during the six years. The abundance of these three species at thermally unaffected stations for the six years studied is not significantly different from the abundances during 1966-1970 (Marcellus 1972, Section 3).

It is more difficult to determine if there has been an impact on the goby (Gobiosoma spp.) and sand lance populations, but it is unlikely. Although the adult population of gobies is not adequately sampled by the methods used, the abundance of gobies during 1966-1970 (Marcellus 1972) is not significantly different from the abundance during 1975-1981 (Section 3). The adult sand lance population is found mainly in near-shore marine waters and the limited entrainment of larvae probably has little effect on overall population numbers. In fact, the sand lance population in the Mid-Atlantic Bight has been undergoing an explosive increase in recent years (Sherman and Smith 1979).

The only species that the data indicate may have been significantly impacted by entrainment at OCNGS is bay anchovy. Based on field-fisheries catches in the spring, adult numbers declined steadily during the first five years, then recovered slightly during the sixth year. Young of the year (based on field-fisheries catches in the fall) have been more variable in abundance, but also have shown a general decline. Although year-to-year fluctuations have occurred (due in part to periods of plant shutdown), it appears that impingement estimates of bay anchovy also have declined during the six year study with the last two years considerably lower than the first four years. All of the above evidence indicates that the population of bay anchovy in Barnegat Bay is in a period of decline.

Further evidence to support this is found in a comparison of bay anchovy abundance in 1966-1970 (Marcellus 1972) with the abundance measured during 1975-1981. The mean annual catch per unit effort of bay anchovy at thermally unaffected stations was significantly greater during 1966-1971 (Section 3.2.3).

This decline may have been related to entrainment effects since the bay anchovy is entrained in high numbers during all three of its early life history stages (eggs, larvae, and juveniles). Also, the mortality



associated with entrainment of this species is relatively high, especially for larvae with the highest measured entrainment mortality of any ichthyoplankton form examined.

However, this decline may have been related to some other factor rather than OCNGS operation. Since there were no comparable studies during 1975-1981 in other nearby estuaries, it is not clear whether this decline is limited to Barnegat Bay or reflects a general decline in the mid-Atlantic population. Other factors such as redistribution of the mid-Atlantic population, an increase in the abundance of predators and/or competitors, or some other factor not measured in this study may have been responsible for this decline.

This section deals only with the immediate effects of entrainment. Any latent mortality effects associated with entrainment have not yet been determined.

#### 5.2.4 Relationship of Physical/Chemical, Meteorological, and Plant Operational Factors to Ichthyoplankton Entrainment

One of the most important factors explaining the variation of ichthyoplankton entrainment is time of year. Therefore, models were run only for seasons of the year when each form was present.

For bay anchovy eggs, the two variables that were significantly correlated with density were wind speed and ambient temperature. Wind speed was the most significant variable and had a positive slope in relation to density, i.e., the higher the wind speed, the higher the egg densities. However, this relationship breaks down at higher wind speeds (>16.1 kph). A separate analysis showed that the highest wind speeds had a strong negative correlation with egg densities. There are several possible explanations for this phenomenon. Either high wind speeds (and the resulting turbulence in the bay) had a negative effect on anchovy spawning or the periods of high wind occurred early or late in the season when egg abundances were low. The positive correlation with lower wind speeds is probably due to the randomizing effect of wind-driven currents on egg densities and the resulting dispersion of patches of high egg density. This would result in an increased probability of entrainment for eggs spawned in small patches of very high density.

The positive correlation of ambient temperature with egg densities is obvious. Densities are low early in the season when temperatures are low, and increase later in the season with increased spawning activity and increased temperature. Later in the season when temperature is decreasing again, spawning activity is reduced or has ceased resulting in low egg densities.

Densities of bay anchovy larvae and juveniles can be positively correlated with ambient temperatures and salinity and negatively correlated with total flow. The relationship with temperature is obvious. Early in the season when temperatures are low, densities also are low. Densities peak in mid or late summer when temperatures also are at a peak. As the season progresses and temperatures are dropping, densities are dropping due to natural mortality and emigration from the bay.

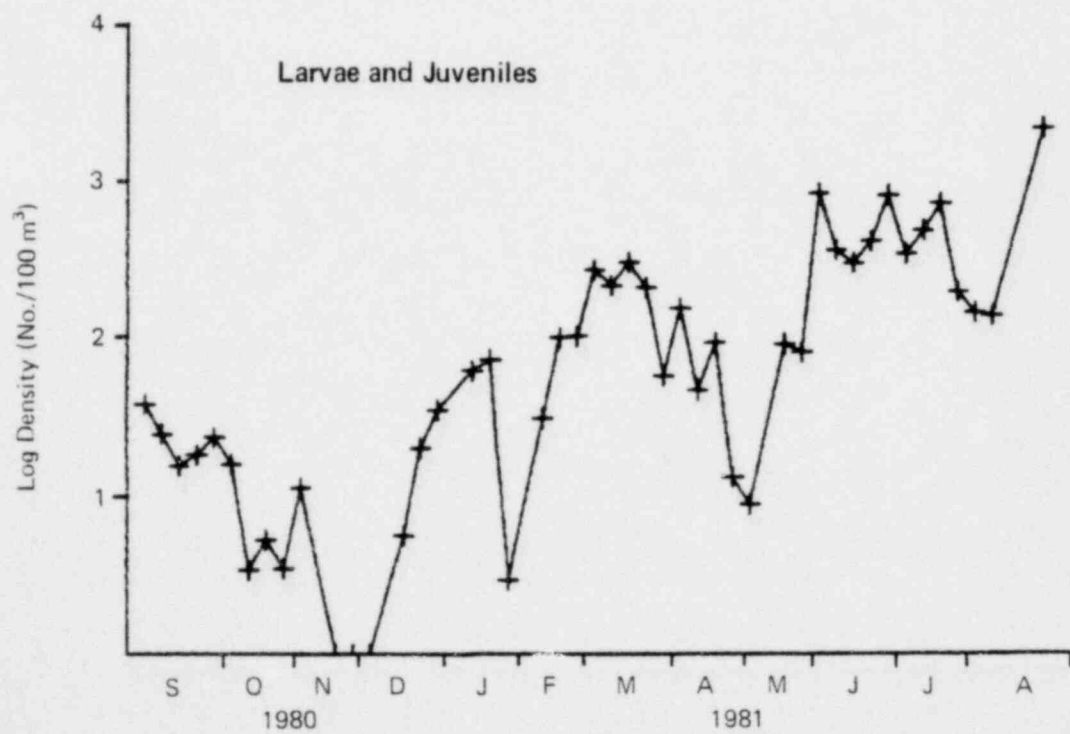
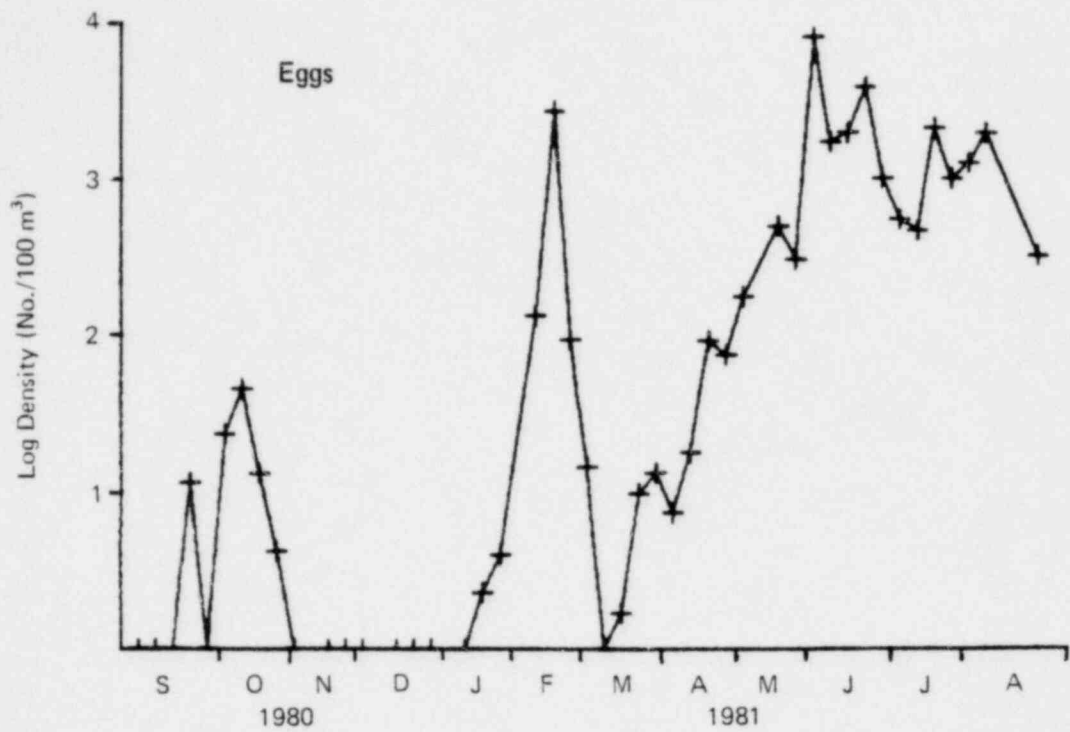


Figure 5-1. Mean density (No./100 m<sup>3</sup>) by date of total fish eggs, and total larvae and juveniles entrained at Oyster Creek Nuclear Generating Station, September 1980 – August 1981.



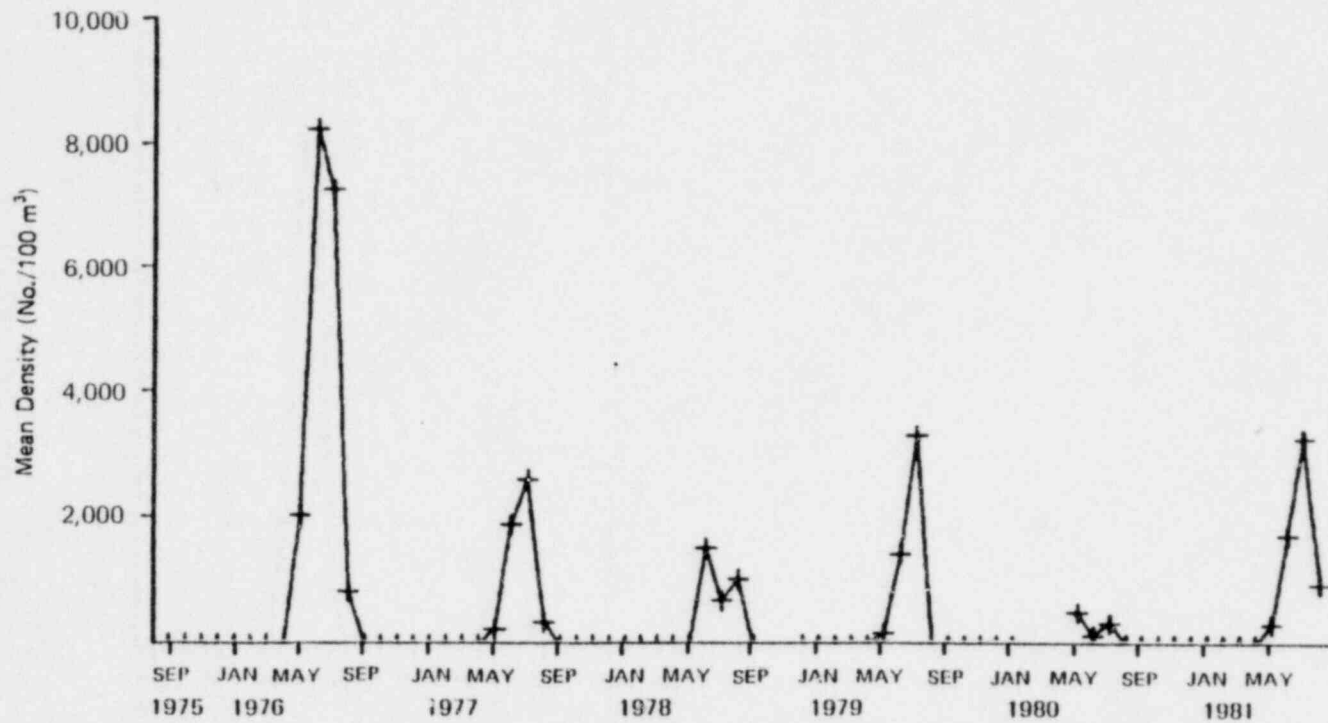


Figure 5-2. Monthly mean density of bay anchovy (*Anchoa mitchilli*) eggs collected from the discharge of the Oyster Creek Nuclear Generating Station, September 1975 – August 1981.

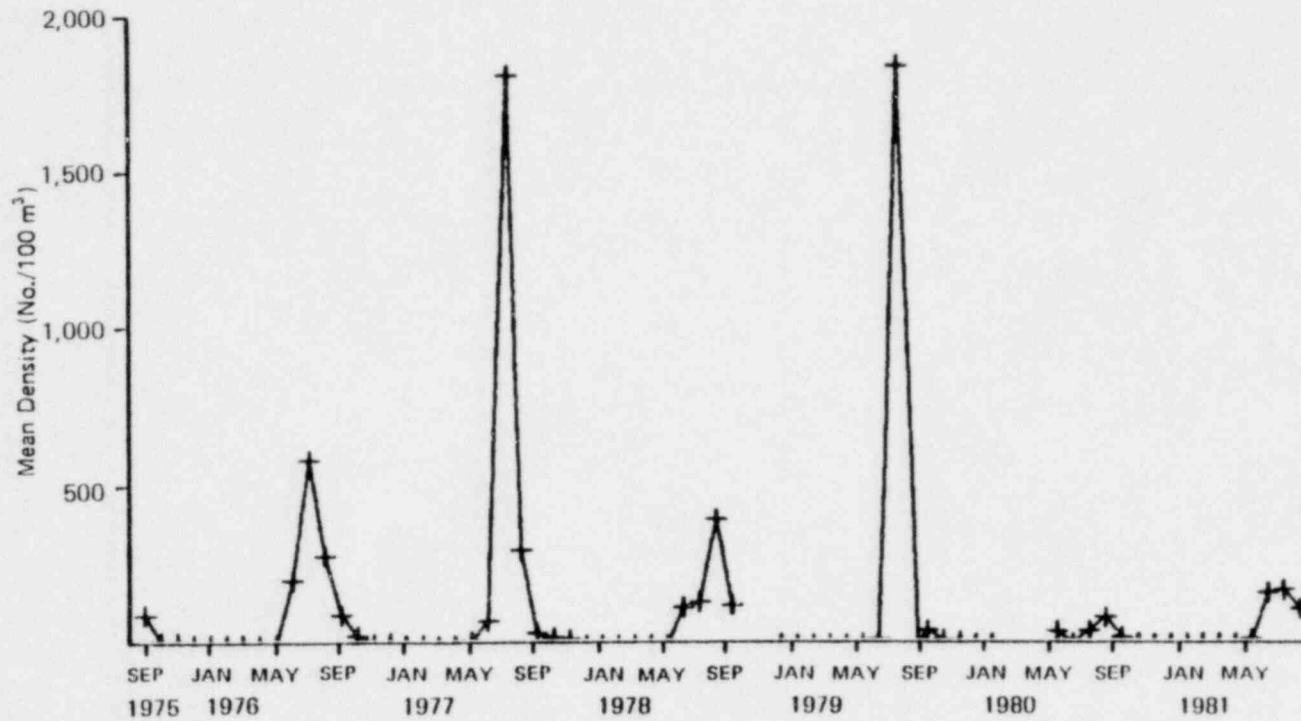


Figure 5-3. Monthly mean density of bay anchovy (*Anchoa mitchilli*) larvae and juveniles collected from the discharge of the Oyster Creek Nuclear Generating Station, September 1975 – August 1981.

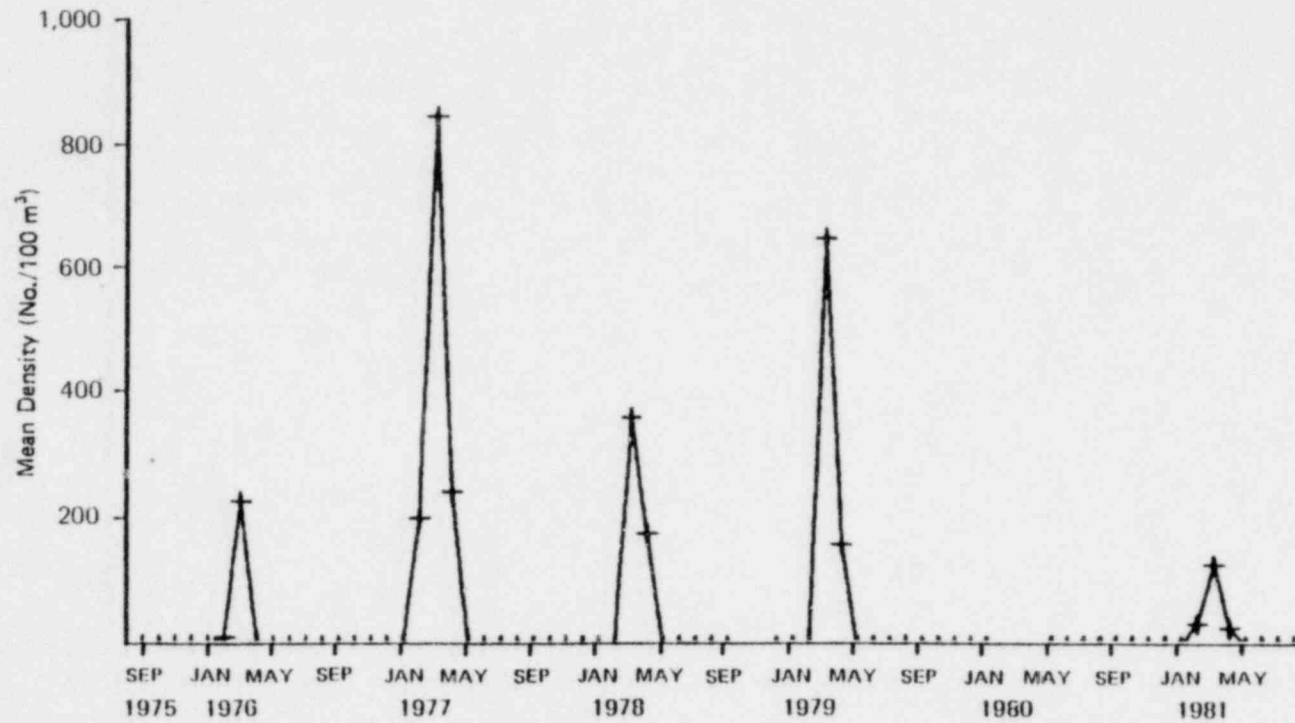


Figure 5-4. Monthly mean density of winter flounder (*Pseudopleuronectes americanus*) larvae collected from the discharge of the Oyster Creek Nuclear Generating Station, September 1975 – August 1981.

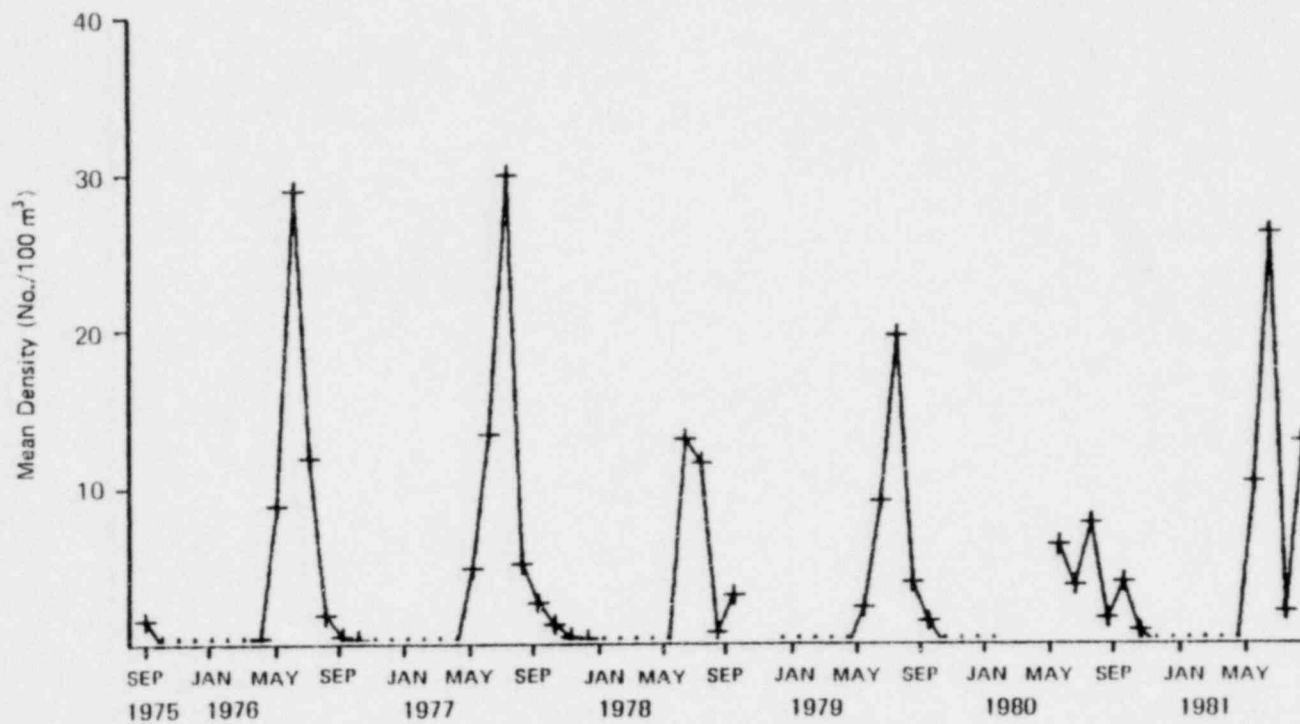


Figure 5-5. Monthly mean density of northern pipefish (*Syngnathus fuscus*) juveniles collected from the discharge of the Oyster Creek Nuclear Generating Station, September 1975 – August 1981.

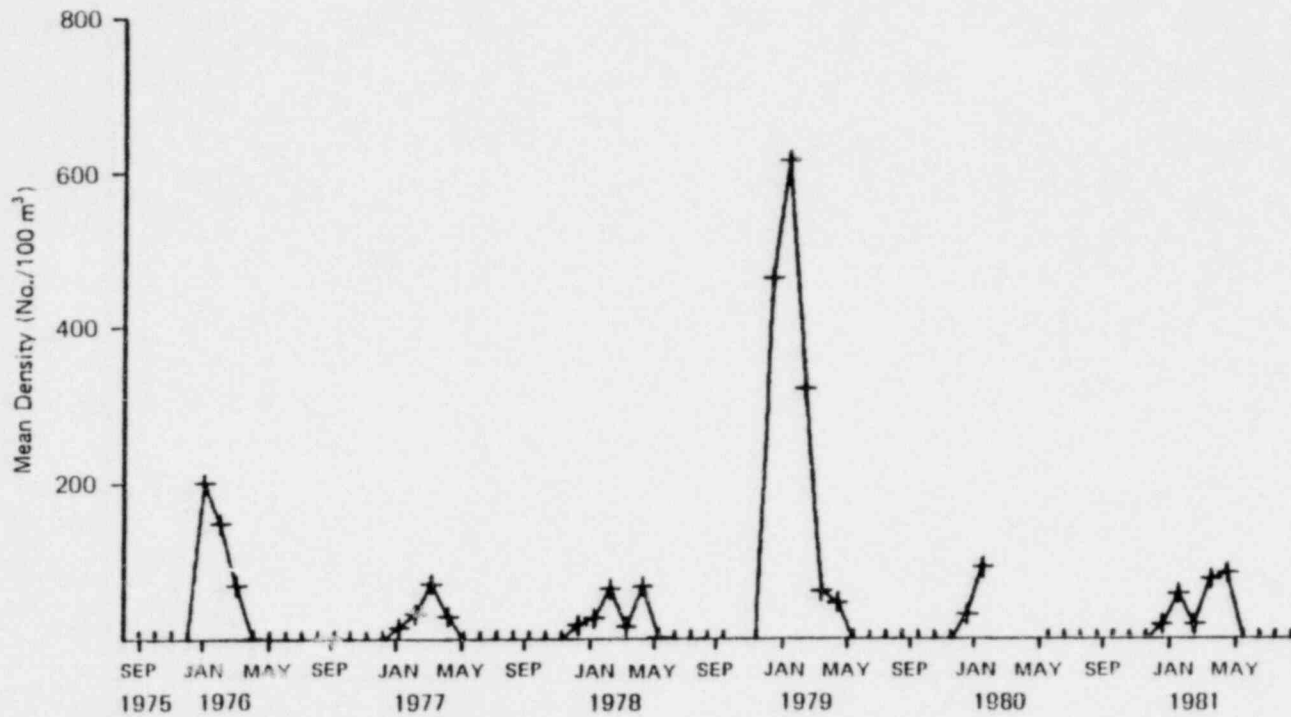


Figure 5-6. Monthly mean density of sand lance (*Ammodytes americanus*) larvae collected from the discharge of the Oyster Creek Nuclear Generating Station, September 1975 – August 1981.

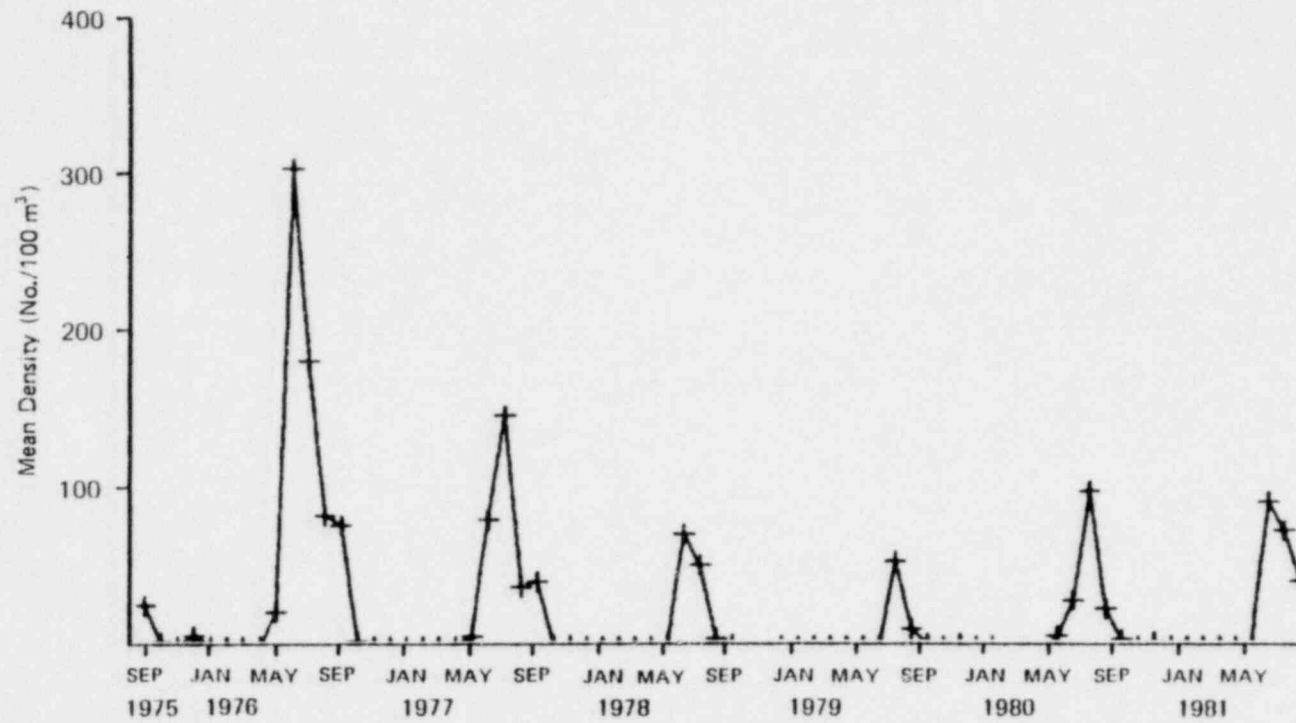


Figure 5-7. Monthly mean density of goby (Family Gobiidae) larvae collected from the discharge of the Oyster Creek Nuclear Generating Station, September 1975 – August 1981.



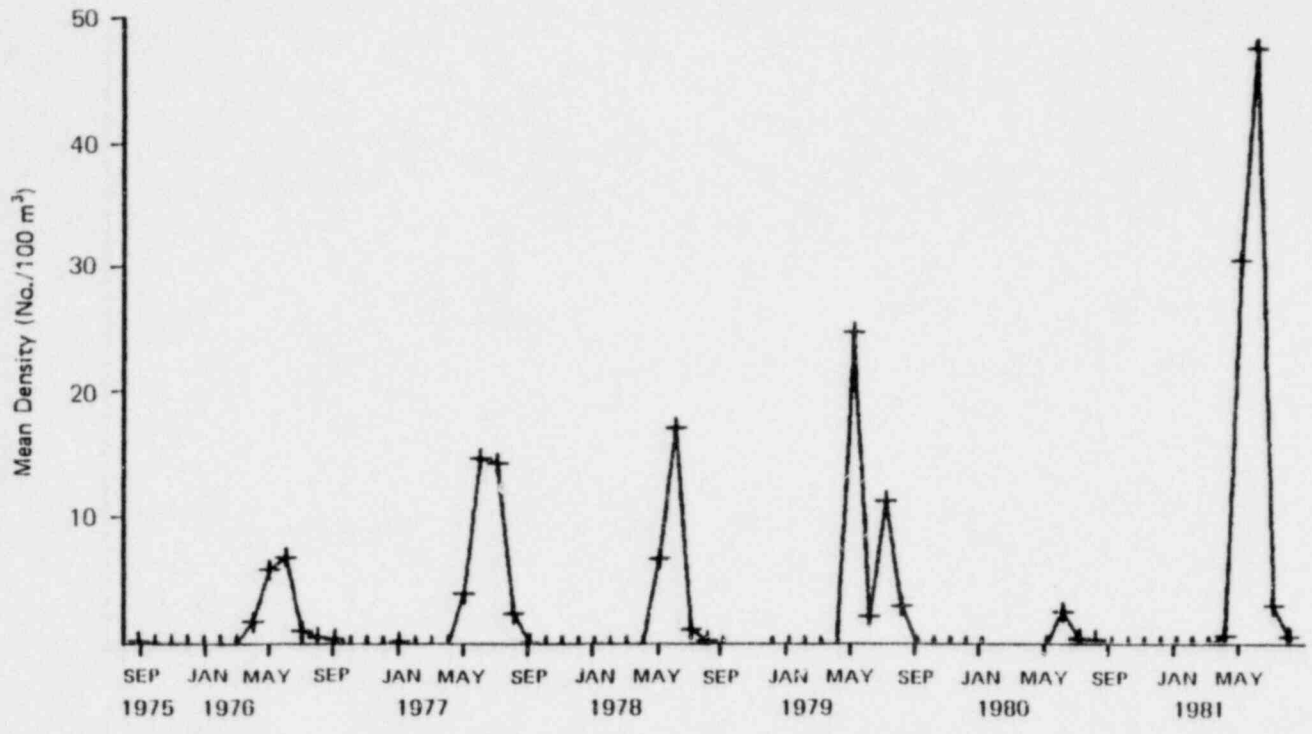


Figure 5-8. Monthly mean density of silverside (Family Atherinidae) larvae collected from the discharge of the Oyster Creek Nuclear Generating Station, September 1975 – August 1981.

TABLE 5-1 MEAN SAMPLE DENSITY (No./100 m<sup>3</sup>), PERCENT COMPOSITION,  
AND CUMULATIVE PERCENT OF ICHTHYOPLANKTON COLLECTED  
AT THE INTAKE AND DISCHARGE OF THE OYSTER CREEK NUCLEAR  
GENERATING STATION, SEPTEMBER 1980 - AUGUST 1981

| SPP. NAME                | NUMBER  | %      | CUMU. % |
|--------------------------|---------|--------|---------|
| ANCHOA MITCHILLI EGG     | 509.197 | 65.184 | 65.184  |
| PSEUDOPLEURONEC AMER EGG | 66.345  | 8.493  | 73.677  |
| ANCHOA MITCHILLI LAR     | 56.912  | 7.285  | 80.962  |
| UNIDENTIFIED EGG         | 39.095  | 5.005  | 85.967  |
| GOBIIDAE LAR             | 26.408  | 3.381  | 89.347  |
| AMMODYTES AMERICANUS LAR | 21.931  | 2.807  | 92.155  |
| PSEUDOPLEURONEC AMER LAR | 17.886  | 2.290  | 94.444  |
| LABRIDAE EGG             | 8.835   | 1.131  | 95.575  |
| SYNGNATHUS FUSCUS JUV    | 6.546   | 0.838  | 96.413  |
| ATHERINIDAE LAR          | 6.395   | 0.819  | 97.232  |
| TRINECTES MACULATUS EGG  | 5.035   | 0.645  | 97.877  |
| SCOPHTHALMUS AQUOSUS EGG | 3.879   | 0.497  | 98.373  |
| ANCHOA MITCHILLI JUV     | 3.562   | 0.456  | 98.829  |
| BREVOORTIA TYRANNUS EGG  | 1.928   | 0.247  | 99.076  |
| MENIDIA MENIDIA JUV      | 1.416   | 0.181  | 99.257  |
| PARALICHTHYS DENTATU EGG | 1.010   | 0.129  | 99.386  |
| GOBIIDAE JUV             | 0.938   | 0.120  | 99.507  |
| ANGUILLA ROSTRATA GLASS  | 0.868   | 0.111  | 99.618  |
| BLENNIIDAE LAR           | 0.634   | 0.081  | 99.699  |
| MYOXOCEPHALUS AENAEU LAR | 0.479   | 0.061  | 99.760  |
| SPHOEROIDES MACULATU LAR | 0.273   | 0.035  | 99.795  |
| SCOPHTHALMUS AQUOSUS LAR | 0.223   | 0.029  | 99.824  |
| CYNOSCION REGALIS JUV    | 0.189   | 0.024  | 99.848  |
| GOBIOSOMA BOSCI JUV      | 0.157   | 0.020  | 99.868  |
| APELTES QUADRACUS ADULT  | 0.142   | 0.018  | 99.886  |
| PARALICHTHYS DENTATU LAR | 0.121   | 0.015  | 99.902  |
| HIPPOCAMPUS ERECTUS JUV  | 0.110   | 0.014  | 99.916  |
| UNIDENTIFIED LAR         | 0.110   | 0.014  | 99.930  |
| ATHERINIDAE EGG          | 0.061   | 0.008  | 99.937  |
| TRINECTES MACULATUS LAR  | 0.060   | 0.008  | 99.945  |
| GOBIOSOMA BOSCI ADULT    | 0.059   | 0.008  | 99.953  |
| GOBIIDAE EGG             | 0.051   | 0.007  | 99.959  |
| STRONGYLURA MARINA LAR   | 0.050   | 0.006  | 99.966  |
| BREVOORTIA TYRANNUS LAR  | 0.046   | 0.006  | 99.972  |
| UNIDENTIFIED FRAG. JUV   | 0.034   | 0.004  | 99.976  |
| MENIDIA BERYLLINA EGG    | 0.032   | 0.004  | 99.980  |
| TAUTOGA ONITIS LAR       | 0.030   | 0.004  | 99.984  |
| CHASMODES BOSQUIANUS JUV | 0.028   | 0.004  | 99.987  |
| FUNDULUS DIAPHANUS ADULT | 0.028   | 0.004  | 99.991  |
| ANCHOA MITCHILLI ADULT   | 0.027   | 0.003  | 99.994  |
| SYNGNATHUS FUSCUS ADULT  | 0.024   | 0.003  | 99.998  |
| MENIDIA MENIDIA EGG      | 0.019   | 0.002  | 100.000 |

TABLE 5-2 MONTHLY MEAN SAMPLE DENSITIES (No./100 m<sup>3</sup>) AND PERCENT COMPOSITION OF ICHTHYOPLANKTON COLLECTED AT THE OYSTER CREEK NUCLEAR GENERATING STATION, SEPTEMBER 1980 - AUGUST 1981

| OYSTERCR                |  | GEAR-36BONG |       |        |       |        |       |        |       | SEP-1980 |       |
|-------------------------|--|-------------|-------|--------|-------|--------|-------|--------|-------|----------|-------|
| STATION                 |  | INNT        |       | INDA   |       | DSNT   |       | DSDA   |       |          |       |
| SPECIES                 |  | NUMBER      | PCT   | NUMBER | PCT   | NUMBER | PCT   | NUMBER | PCT   | NUMBER   | PCT   |
|                         |  | INDIVS      | COMP  | INDIVS | COMP  | INDIVS | COMP  | INDIVS | COMP  | TOTAL    | COMP  |
| ANCHOA MITCHILLI LAR    |  | 6.87        | 32.28 | 10.63  | 66.93 | 6.39   | 21.03 | 15.65  | 23.53 | 8.08     | 27.62 |
| GOBIIDAE LAR            |  | 1.34        | 6.31  | 0.00   | 0.00  | 4.79   | 15.78 | 3.40   | 5.11  | 2.76     | 9.45  |
| LABRIDAE EGG            |  | 0.00        | 0.00  | 0.00   | 0.00  | 8.99   | 29.59 | 44.05  | 66.24 | 8.39     | 28.69 |
| SYNGNATHUS FUSCUS JUV   |  | 2.17        | 10.20 | 5.25   | 33.07 | 4.90   | 16.14 | 3.40   | 5.11  | 3.71     | 12.69 |
| ATHERINIDAE LAR         |  | 0.76        | 3.59  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 0.30     | 1.02  |
| ANCHOA MITCHILLI JUV    |  | 10.14       | 47.62 | 0.00   | 0.00  | 4.74   | 15.60 | 0.00   | 0.00  | 5.78     | 19.78 |
| BREVOORTIA TYRANNUS LAR |  | 0.00        | 0.00  | 0.00   | 0.00  | 0.56   | 1.86  | 0.00   | 0.00  | 0.22     | 0.75  |
| STATION TOTAL AND DATE  |  | TOTAL       |       | TOTAL  |       | TOTAL  |       | TOTAL  |       | TOTAL    |       |
|                         |  | 21.29       |       | 15.88  |       | 30.36  |       | 66.50  |       | 29.24    |       |

TABLE 5-2 (CONT.)

| OYSTERCR                  |                  | GEAR-36BONG |                  |             |                  |             |                  | OCT-1980    |                 |             |
|---------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|-----------------|-------------|
| STATION                   | INNT             |             | INDA             |             | DSNT             |             | DSDA             |             |                 |             |
| SPECIES                   | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |
| ANCHOA MITCHILLI LAR      | 0.75             | 3.12        | 0.00             | 0.00        | 0.82             | 2.90        | 0.00             | 0.00        | 0.59            | 2.20        |
| UNIDENTIFIED EGG          | 17.72            | 73.69       | 0.00             | 0.00        | 11.33            | 40.22       | 0.00             | 0.00        | 10.89           | 40.84       |
| SYNGNATHUS FUSCUS JUV     | 1.98             | 8.25        | 0.00             | 0.00        | 2.22             | 7.87        | 0.00             | 0.00        | 1.58            | 5.90        |
| ANCHOA MITCHILLI JUV      | 1.48             | 6.14        | 2.67             | 8.79        | 0.00             | 0.00        | 0.00             | 0.00        | 0.89            | 3.33        |
| PARALICHTHYS DENTATU EGG  | 2.12             | 8.80        | 27.75            | 91.21       | 9.49             | 33.69       | 26.33            | 100.00      | 11.11           | 41.66       |
| PARALICHTHYS DENTATU LAR  | 0.00             | 0.00        | 0.00             | 0.00        | 2.84             | 10.09       | 0.00             | 0.00        | 1.07            | 3.99        |
| HIPPOCAMPUS ERECTUS JUV   | 0.00             | 0.00        | 0.00             | 0.00        | 1.48             | 5.24        | 0.00             | 0.00        | 0.55            | 2.07        |
| STATION TOTAL AND<br>DATE |                  |             |                  |             |                  |             |                  |             |                 |             |
|                           |                  | 24.04       |                  | 30.43       |                  | 28.18       |                  | 26.33       |                 | 26.67       |

TABLE 5-2 (CONT.)

| OYSTERCR               |       |  | GEAR-36BONG |       |        |      |        |       | NOV-1980 |      |      |       |
|------------------------|-------|--|-------------|-------|--------|------|--------|-------|----------|------|------|-------|
| STATION                |       |  | INNT        |       | INDA   |      | DSNT   |       | DSDA     |      |      |       |
| SPECIES                |       |  | NUMBER      | PCT   | NUMBER | PCT  | NUMBER | PCT   | NUMBER   | PCT  |      |       |
|                        |       |  | INDIVS      | COMP  | INDIVS | COMP | INDIVS | COMP  | TOTAL    | COMP |      |       |
| GOBIOSOMA BOSCI        | JUV   |  | 5.11        | 79.26 | 0.00   | 0.00 | 0.00   | 0.00  | 0.00     | 0.00 | 1.70 | 58.26 |
| GOBIOSOMA BOSCI        | ADULT |  | 1.34        | 20.74 | 0.00   | 0.00 | 1.27   | 54.84 | 0.00     | 0.00 | 0.87 | 29.77 |
| OTHER SPECIES          |       |  | 0.00        | 0.00  | 0.00   | 0.00 | 1.05   | 45.16 | 0.00     | 0.00 | 0.35 | 11.97 |
| STATION TOTAL AND DATE |       |  | TOTAL       |       | 0.00   |      | 2.33   |       | 0.00     |      | 2.93 |       |

TABLE 5-2 (CONT.)

| OYSTERCR                  |                  | GEAR-36BONG |                  |             |                  |             |                  | DEC-1980    |                 |             |
|---------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|-----------------|-------------|
| STATION                   | INNT             |             | INDA             |             | DSNT             |             | DSDA             |             |                 |             |
| SPECIES                   | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |
| AMMODYTES AMERICANUS LAR  | 12.57            | 88.09       | 13.13            | 100.00      | 17.26            | 90.89       | 25.00            | 100.00      | 16.10           | 92.93       |
| APELTES QUADRACUS ADULT   | 0.87             | 6.10        | 0.00             | 0.00        | 0.76             | 4.00        | 0.00             | 0.00        | 0.58            | 3.36        |
| BREVOORTIA TYRANNUS LAR   | 0.83             | 5.82        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.30            | 1.71        |
| OTHER SPECIES             | 0.00             | 0.00        | 0.00             | 0.00        | 0.97             | 5.11        | 0.00             | 0.00        | 0.35            | 2.00        |
| STATION TOTAL AND<br>DATE | TOTAL            |             | 13.13            |             | 18.99            |             | 25.00            |             | 17.33           |             |



TABLE 5-2 (CONT.)

| OYSTERCR                        |  | GEAR-36BONG |        |        |        |        |       |        |        | JAN-1981 |       |
|---------------------------------|--|-------------|--------|--------|--------|--------|-------|--------|--------|----------|-------|
| STATION                         |  | INNT        |        | INDA   |        | DSNT   |       | DSDA   |        |          |       |
| SPECIES                         |  | NUMBER      | PCT    | NUMBER | PCT    | NUMBER | PCT   | NUMBER | PCT    | NUMBER   | PCT   |
|                                 |  | INDIVS      | COMP   | INDIVS | COMP   | INDIVS | COMP  | INDIVS | COMP   | TOTAL    | COMP  |
| PSEUDOPLEURONEC AMER EGG        |  | 0.00        | 0.00   | 0.00   | 0.00   | 2.86   | 4.36  | 0.00   | 0.00   | 1.04     | 1.97  |
| AMMODYTES AMERICANUS LAR        |  | 33.12       | 100.00 | 53.95  | 100.00 | 62.80  | 95.64 | 55.92  | 100.00 | 51.85    | 98.03 |
| STATION TOTAL AND<br>DATE TOTAL |  | 33.12       |        | 53.95  |        | 65.66  |       | 55.92  |        | 52.89    |       |

TABLE 5-2 (CONT.)

| OYSTERCR                  |                  | GEAR-36BONG |                  |             |                  |             |                  | FEB-1981    |                 |             |
|---------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|-----------------|-------------|
| STATION                   | INNT             |             | INDA             |             | DSNT             |             | DSDA             |             |                 |             |
| SPECIES                   | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |
| PSEUDOPLEURONEC AMER EGG  | 185.43           | 63.52       | 130.15           | 53.41       | 2579.25          | 97.67       | 158.98           | 75.77       | 969.75          | 92.08       |
| UNIDENTIFIED EGG          | 2.84             | 0.97        | 3.20             | 1.31        | 0.00             | 0.00        | 0.00             | 0.00        | 1.48            | 0.14        |
| AMMODYTES AMERICANUS LAR  | 58.58            | 20.07       | 56.78            | 23.30       | 22.43            | 0.85        | 18.30            | 8.72        | 39.51           | 3.75        |
| PSEUDOPLEURONEC AMER LAR  | 39.83            | 13.64       | 53.55            | 21.98       | 36.36            | 1.38        | 32.53            | 15.50       | 39.74           | 3.77        |
| ANGUILLA ROSTRATA GLASS   | 2.84             | 0.97        | 0.00             | 0.00        | 2.88             | 0.11        | 0.00             | 0.00        | 1.90            | 0.18        |
| MYOXOCEPHALUS AENAEU LAR  | 2.40             | 0.82        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.80            | 0.08        |
| STATION TOTAL AND<br>DATE |                  |             |                  |             |                  |             |                  |             |                 |             |
|                           |                  |             |                  |             |                  |             |                  |             | 291.90          | 243.68      |
|                           |                  |             |                  |             |                  |             |                  |             | 2640.91         | 209.80      |
|                           |                  |             |                  |             |                  |             |                  |             | 1053.18         |             |

TABLE 5-2 (CONT.)

| OYSTERCR                  |  | GEAR-36BONG |       |        |       |        |       | MAR-1981 |       |        |       |
|---------------------------|--|-------------|-------|--------|-------|--------|-------|----------|-------|--------|-------|
| STATION                   |  | INNT        |       | INDA   |       | DSNT   |       | DSDA     |       |        |       |
| SPECIES                   |  | NUMBER      | PCT   | NUMBER | PCT   | NUMBER | PCT   | NUMBER   | PCT   | NUMBER | PCT   |
|                           |  | INDIVS      | COMP  | INDIVS | COMP  | INDIVS | COMP  | INDIVS   | COMP  | TOTAL  | COMP  |
| PSEUDOPLEURONEC AMER EGG  |  | 1.16        | 0.53  | 0.00   | 0.00  | 2.89   | 1.10  | 0.00     | 0.00  | 1.57   | 0.72  |
| UNIDENTIFIED EGG          |  | 1.07        | 0.49  | 0.00   | 0.00  | 0.73   | 0.28  | 0.00     | 0.00  | 0.70   | 0.32  |
| AMMODYTES AMERICANUS LAR  |  | 53.21       | 24.28 | 68.80  | 52.28 | 81.64  | 30.98 | 70.10    | 47.27 | 67.88  | 31.02 |
| PSEUDOPLEURONEC AMER LAR  |  | 147.36      | 67.25 | 59.57  | 45.27 | 167.80 | 63.67 | 73.58    | 49.61 | 137.36 | 62.78 |
| LABRIDAE EGG              |  | 0.78        | 0.36  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00     | 0.00  | 0.30   | 0.14  |
| SCOPHTHALMUS AQUOSUS EGG  |  | 2.11        | 0.96  | 0.00   | 0.00  | 2.24   | 0.85  | 0.00     | 0.00  | 1.69   | 0.77  |
| ANGUILLA ROSTRATA GLASS   |  | 9.48        | 4.33  | 0.00   | 0.00  | 4.59   | 1.74  | 0.00     | 0.00  | 5.47   | 2.50  |
| MYOXOCEPHALUS AENAEU LAR  |  | 2.35        | 1.07  | 3.22   | 2.45  | 2.26   | 0.86  | 4.63     | 3.12  | 2.67   | 1.22  |
| APELTES QUADRACUS ADULT   |  | 1.62        | 0.74  | 0.00   | 0.00  | 0.79   | 0.30  | 0.00     | 0.00  | 0.94   | 0.43  |
| PARALICHTHYS DENTATU LAR  |  | 0.00        | 0.00  | 0.00   | 0.00  | 0.60   | 0.23  | 0.00     | 0.00  | 0.23   | 0.11  |
| STATION TOTAL AND<br>DATE |  | TOTAL       |       | TOTAL  |       | TOTAL  |       | TOTAL    |       | TOTAL  |       |
|                           |  | 219.14      |       | 131.60 |       | 263.53 |       | 148.30   |       | 218.81 |       |

TABLE 5-2 (CONT.)

| OYSTERCR                  | GEAR-36BONG      |             |                  |             |                  |             |                  |             | APR-1981        |             |
|---------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|-----------------|-------------|
| STATION                   | INNT             |             | INDA             |             | DSNT             |             | DSDA             |             |                 |             |
| SPECIES                   | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |
| UNIDENTIFIED EGG          | 13.61            | 9.82        | 14.70            | 4.44        | 24.76            | 16.81       | 76.03            | 20.85       | 25.73           | 13.25       |
| AMMODYTES AMERICANUS LAR  | 75.67            | 54.59       | 155.90           | 47.04       | 62.32            | 42.30       | 108.88           | 29.86       | 84.84           | 43.68       |
| PSEUDOPLEURONEC AMER LAR  | 6.16             | 4.44        | 14.43            | 4.35        | 4.28             | 2.91        | 50.25            | 13.78       | 12.00           | 6.18        |
| LABRIDAE EGG              | 19.99            | 14.42       | 40.35            | 12.18       | 22.00            | 14.93       | 44.35            | 12.16       | 26.33           | 13.56       |
| ATHERINIDAE LAR           | 0.00             | 0.00        | 0.00             | 0.00        | 1.68             | 1.14        | 0.00             | 0.00        | 0.63            | 0.32        |
| SCOPHTHALMUS AQUOSUS EGG  | 16.38            | 11.81       | 104.10           | 31.41       | 25.58            | 17.36       | 83.07            | 22.78       | 39.13           | 20.15       |
| ANGUILLA ROSTRATA GLASS   | 1.84             | 1.33        | 0.00             | 0.00        | 3.41             | 2.31        | 0.00             | 0.00        | 1.97            | 1.01        |
| MYOXOCEPHALUS AENAEU LAR  | 3.61             | 2.60        | 0.00             | 0.00        | 0.85             | 0.58        | 0.00             | 0.00        | 1.67            | 0.86        |
| SCOPHTHALMUS AQUOSUS LAR  | 1.36             | 0.98        | 1.92             | 0.58        | 1.88             | 1.28        | 2.10             | 0.58        | 1.72            | 0.88        |
| OTHER SPECIES             | 0.00             | 0.00        | 0.00             | 0.00        | 0.57             | 0.38        | 0.00             | 0.00        | 0.21            | 0.11        |
| STATION TOTAL AND<br>DATE |                  |             |                  |             |                  |             |                  |             |                 |             |
|                           | 138.61           |             | 331.40           |             | 147.32           |             | 364.68           |             | 194.23          |             |

TABLE 5-2 (CONT.)

| OYSTERCR                  | GEAR-36BONG      |             |                  |             |                  |             |                  |             | MAY-1981        |             |
|---------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|-----------------|-------------|
| STATION                   | INNT             |             | INDA             |             | DSNT             |             | DSDA             |             |                 |             |
| SPECIES                   | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |
| ANCHOA MITCHILLI EGG      | 382.64           | 71.95       | 486.80           | 91.84       | 285.68           | 67.54       | 251.43           | 76.29       | 342.72          | 74.30       |
| ANCHOA MITCHILLI LAR      | 34.21            | 6.43        | 3.35             | 0.63        | 2.58             | 0.61        | 23.48            | 7.12        | 16.33           | 3.54        |
| UNIDENTIFIED EGG          | 1.20             | 0.23        | 0.00             | 0.00        | 3.99             | 0.94        | 1.95             | 0.59        | 2.17            | 0.47        |
| AMMODYTES AMERICANUS LAR  | 2.40             | 0.45        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.80            | 0.17        |
| PSEUDOPLEURONEC AMER LAR  | 0.00             | 0.00        | 3.30             | 0.62        | 0.00             | 0.00        | 0.00             | 0.00        | 0.49            | 0.11        |
| LABRIDAE EGG              | 62.09            | 11.67       | 18.92            | 3.57        | 56.97            | 13.47       | 41.95            | 12.73       | 50.81           | 11.02       |
| SYNGNATHUS FUSCUS JUV     | 17.13            | 3.22        | 17.67            | 3.33        | 11.98            | 2.83        | 8.32             | 2.53        | 14.00           | 3.03        |
| ATHERINIDAE LAR           | 27.12            | 5.10        | 0.00             | 0.00        | 52.09            | 12.31       | 2.45             | 0.74        | 28.70           | 6.22        |
| SCOPHTHALMUS AQUOSUS EGG  | 0.00             | 0.00        | 0.00             | 0.00        | 5.24             | 1.24        | 0.00             | 0.00        | 1.94            | 0.42        |
| BREVOORTIA TYRANNUS EGG   | 2.59             | 0.49        | 0.00             | 0.00        | 0.72             | 0.17        | 0.00             | 0.00        | 1.13            | 0.24        |
| SPHOEROIDES MACULATU LAR  | 0.00             | 0.00        | 0.00             | 0.00        | 0.88             | 0.21        | 0.00             | 0.00        | 0.33            | 0.07        |
| SCOPHTHALMUS AQUOSUS LAR  | 0.00             | 0.00        | 0.00             | 0.00        | 0.72             | 0.17        | 0.00             | 0.00        | 0.27            | 0.06        |
| ATHERINIDAE EGG           | 0.00             | 0.00        | 0.00             | 0.00        | 2.16             | 0.51        | 0.00             | 0.00        | 0.80            | 0.17        |
| MENIDIA BERYLLINA EGG     | 1.24             | 0.23        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.41            | 0.09        |
| TAUTOGA ONITIS LAR        | 1.19             | 0.22        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.40            | 0.09        |
| STATION TOTAL AND<br>DATE |                  |             |                  |             |                  |             |                  |             |                 |             |
|                           | 531.82           |             | 530.05           |             | 423.01           |             | 329.57           |             | 461.30          |             |

TABLE 5-2 (CONT.)

| OYSTERCR                  |         | GEAR-36BONG |         |       |         |       |         | JUN-1981 |         |       |
|---------------------------|---------|-------------|---------|-------|---------|-------|---------|----------|---------|-------|
| STATION                   | INNT    |             | INDA    |       | DSNT    |       | DSDA    |          |         |       |
| SPECIES                   | NUMBER  | PCT         | NUMBER  | PCT   | NUMBER  | PCT   | NUMBER  | PCT      | NUMBER  | PCT   |
|                           | INDIVS  | COMP        | INDIVS  | COMP  | INDIVS  | COMP  | INDIVS  | COMP     | TOTAL   | COMP  |
| ANCHOA MITCHILLI EGG      | 2236.79 | 71.15       | 921.13  | 71.86 | 2775.13 | 77.80 | 779.30  | 72.59    | 2176.83 | 74.48 |
| ANCHOA MITCHILLI LAR      | 264.34  | 8.41        | 150.07  | 11.71 | 146.19  | 4.10  | 127.10  | 11.84    | 192.25  | 6.58  |
| UNIDENTIFIED EGG          | 284.19  | 9.04        | 8.55    | 0.67  | 291.21  | 8.16  | 52.93   | 4.93     | 235.67  | 8.06  |
| GOBIIDAE LAR              | 159.74  | 5.08        | 148.73  | 11.60 | 116.55  | 3.27  | 62.83   | 5.85     | 132.90  | 4.55  |
| LABRIDAE EGG              | 11.60   | 0.37        | 25.00   | 1.95  | 15.47   | 0.43  | 34.40   | 3.20     | 16.63   | 0.57  |
| SYNGNATHUS FUSCUS JUV     | 52.26   | 1.66        | 8.52    | 0.67  | 43.34   | 1.22  | 8.67    | 0.81     | 39.96   | 1.37  |
| ATHERINIDAE LAR           | 39.47   | 1.26        | 0.00    | 0.00  | 58.55   | 1.64  | 0.00    | 0.00     | 39.21   | 1.34  |
| TRINECTES MACULATUS EGG   | 51.40   | 1.64        | 0.00    | 0.00  | 40.36   | 1.13  | 0.00    | 0.00     | 36.71   | 1.26  |
| ANCHOA MITCHILLI JUV      | 4.06    | 0.13        | 0.00    | 0.00  | 1.14    | 0.03  | 0.00    | 0.00     | 2.08    | 0.07  |
| BREVOORTIA TYRANNUS EGG   | 18.84   | 0.60        | 0.00    | 0.00  | 27.45   | 0.77  | 0.00    | 0.00     | 18.52   | 0.63  |
| MENIDIA MENIDIA JUV       | 7.93    | 0.25        | 19.85   | 1.55  | 17.73   | 0.50  | 8.37    | 0.78     | 13.25   | 0.45  |
| GOBIIDAE JUV              | 0.00    | 0.00        | 0.00    | 0.00  | 23.59   | 0.66  | 0.00    | 0.00     | 9.44    | 0.32  |
| BLENNIIDAE LAR            | 6.06    | 0.19        | 0.00    | 0.00  | 3.30    | 0.09  | 0.00    | 0.00     | 3.75    | 0.13  |
| SPHOEROIDES MACULATU LAR  | 3.11    | 0.10        | 0.00    | 0.00  | 3.12    | 0.09  | 0.00    | 0.00     | 2.49    | 0.09  |
| SCOPHTHALMUS AQUOSUS LAR  | 0.00    | 0.00        | 0.00    | 0.00  | 1.17    | 0.03  | 0.00    | 0.00     | 0.47    | 0.02  |
| GOBIOSOMA BOSCI JUV       | 1.01    | 0.03        | 0.00    | 0.00  | 0.00    | 0.00  | 0.00    | 0.00     | 0.41    | 0.01  |
| HIPPOCAMPUS ERECTUS JUV   | 0.00    | 0.00        | 0.00    | 0.00  | 0.71    | 0.02  | 0.00    | 0.00     | 0.28    | 0.01  |
| UNIDENTIFIED LAR          | 0.00    | 0.00        | 0.00    | 0.00  | 0.76    | 0.02  | 0.00    | 0.00     | 0.31    | 0.01  |
| TRINECTES MACULATUS LAR   | 1.50    | 0.05        | 0.00    | 0.00  | 0.00    | 0.00  | 0.00    | 0.00     | 0.60    | 0.02  |
| STRONGYLURA MARINA LAR    | 1.26    | 0.04        | 0.00    | 0.00  | 0.00    | 0.00  | 0.00    | 0.00     | 0.50    | 0.02  |
| CHASMODES BOSQUIANUS JUV  | 0.00    | 0.00        | 0.00    | 0.00  | 0.70    | 0.02  | 0.00    | 0.00     | 0.28    | 0.01  |
| OTHER SPECIES             | 0.00    | 0.00        | 0.00    | 0.00  | 0.68    | 0.02  | 0.00    | 0.00     | 0.27    | 0.01  |
| STATION TOTAL AND<br>DATE | TOTAL   |             |         |       |         |       |         |          |         |       |
|                           | 3143.56 |             | 1281.85 |       | 3567.15 |       | 1073.60 |          | 2922.80 |       |



TABLE 5-2 (CONT.)

| OYSTERCR                  |         | GEAR-36BONG |         |       |         |       |         | JUL-1981 |         |       |
|---------------------------|---------|-------------|---------|-------|---------|-------|---------|----------|---------|-------|
| STATION                   | INNT    |             | INDA    |       | DSNT    |       | DSDA    |          |         |       |
| SPECIES                   | NUMBER  | PCT         | NUMBER  | PCT   | NUMBER  | PCT   | NUMBER  | PCT      | NUMBER  | PCT   |
|                           | INDIVS  | COMP        | INDIVS  | COMP  | INDIVS  | COMP  | INDIVS  | COMP     | TOTAL   | COMP  |
| ANCHOA MITCHILLI EGG      | 1212.07 | 58.93       | 4981.35 | 96.28 | 1182.63 | 66.08 | 5698.08 | 97.99    | 2232.94 | 79.30 |
| ANCHOA MITCHILLI LAR      | 455.76  | 22.16       | 122.23  | 2.36  | 229.60  | 12.83 | 87.88   | 1.51     | 283.27  | 10.06 |
| UNIDENTIFIED EGG          | 161.96  | 7.87        | 0.00    | 0.00  | 173.68  | 9.70  | 0.00    | 0.00     | 125.86  | 4.47  |
| GOBIIDAE LAR              | 156.28  | 7.60        | 65.45   | 1.27  | 124.84  | 6.98  | 25.83   | 0.44     | 116.83  | 4.15  |
| SYNGNATHUS FUSCUS JUV     | 9.07    | 0.44        | 0.00    | 0.00  | 5.79    | 0.32  | 0.00    | 0.00     | 5.57    | 0.20  |
| ATHERINIDAE LAR           | 3.17    | 0.15        | 0.00    | 0.00  | 1.06    | 0.06  | 2.90    | 0.05     | 1.95    | 0.07  |
| TRINECTES MACULATUS EGG   | 17.05   | 0.83        | 0.00    | 0.00  | 23.58   | 1.32  | 0.00    | 0.00     | 15.24   | 0.54  |
| ANCHOA MITCHILLI JUV      | 30.98   | 1.51        | 0.00    | 0.00  | 40.42   | 2.26  | 0.00    | 0.00     | 26.77   | 0.95  |
| MENIDIA MENIDIA JUV       | 0.95    | 0.05        | 0.00    | 0.00  | 1.93    | 0.11  | 0.00    | 0.00     | 1.08    | 0.04  |
| BLENNIIDAE LAR            | 5.21    | 0.25        | 0.00    | 0.00  | 1.59    | 0.09  | 0.00    | 0.00     | 2.55    | 0.09  |
| CYNOSCION REGALIS JUV     | 1.85    | 0.09        | 0.00    | 0.00  | 3.69    | 0.21  | 0.00    | 0.00     | 2.08    | 0.07  |
| UNIDENTIFIED LAR          | 2.33    | 0.11        | 0.00    | 0.00  | 0.00    | 0.00  | 0.00    | 0.00     | 0.87    | 0.03  |
| GOBIIDAE EGG              | 0.00    | 0.00        | 4.53    | 0.09  | 0.00    | 0.00  | 0.00    | 0.00     | 0.57    | 0.02  |
| UNIDENTIFIED FRAG. JUV    | 0.00    | 0.00        | 0.00    | 0.00  | 1.00    | 0.06  | 0.00    | 0.00     | 0.37    | 0.01  |
| STATION TOTAL AND<br>DATE | TOTAL   |             |         |       |         |       |         |          |         |       |
|                           | 2056.67 |             | 5173.55 |       | 1789.82 |       | 5814.68 |          | 2815.96 |       |

TABLE 5-2 (CONT.)

| OYSTERCR                  |                  | GEAR-36BONG |                  |             |                  |             |                  | AUG-1981    |                 |             |
|---------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|-----------------|-------------|
| STATION                   | INNT             |             | INDA             |             | DSNT             |             | DSDA             |             |                 |             |
| SPECIES                   | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |
| ANCHOA MITCHILLI EGG      | 861.48           | 78.87       | 876.85           | 83.14       | 1055.96          | 83.15       | 873.42           | 87.37       | 930.86          | 82.39       |
| ANCHOA MITCHILLI LAR      | 184.40           | 16.88       | 158.58           | 15.04       | 136.40           | 10.74       | 72.08            | 7.21        | 145.37          | 12.87       |
| UNIDENTIFIED EGG          | 10.30            | 0.94        | 0.00             | 0.00        | 13.95            | 1.10        | 0.00             | 0.00        | 8.08            | 0.72        |
| GOBIIDAE LAR              | 29.61            | 2.71        | 8.12             | 0.77        | 53.06            | 4.18        | 28.03            | 2.80        | 33.58           | 2.97        |
| SYNGNATHUS FUSCUS JUV     | 3.41             | 0.31        | 8.32             | 0.79        | 0.00             | 0.00        | 26.18            | 2.62        | 6.89            | 0.61        |
| ATHERINIDAE LAR           | 0.00             | 0.00        | 0.00             | 0.00        | 1.38             | 0.11        | 0.00             | 0.00        | 0.46            | 0.04        |
| ANCHOA MITCHILLI JUV      | 1.70             | 0.16        | 0.00             | 0.00        | 9.25             | 0.73        | 0.00             | 0.00        | 3.65            | 0.32        |
| BLENNIIDAE LAR            | 1.31             | 0.12        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.44            | 0.04        |
| HIPPOCAMPUS ERECTUS JUV   | 0.00             | 0.00        | 2.75             | 0.26        | 0.00             | 0.00        | 0.00             | 0.00        | 0.46            | 0.04        |
| STATION TOTAL AND<br>DATE |                  |             |                  |             |                  |             |                  |             |                 |             |
|                           |                  |             |                  |             |                  |             |                  |             |                 |             |
|                           | 1092.21          |             | 1054.63          |             | 1270.00          |             | 999.70           |             | 1129.79         |             |

TABLE 5-3 MEAN SAMPLE DENSITIES (No./100 m<sup>3</sup>) AND PERCENT COMPOSITION OF ICHTHYOPLANKTON COLLECTED DURING 24-HOUR STUDIES AT THE OYSTER CREEK NUCLEAR GENERATING STATION, SEPTEMBER 1980 - AUGUST 1981

| OYSTERCR                |       | GEAR-36BONG |       |        |       |        |       |        |       | 22 SEP 80 |       |
|-------------------------|-------|-------------|-------|--------|-------|--------|-------|--------|-------|-----------|-------|
| STATION                 |       | INNT        |       | INDA   |       | DSNT   |       | DSDA   |       |           |       |
| SPECIES                 |       | NUMBER      | PCT   | NUMBER | PCT   | NUMBER | PCT   | NUMBER | PCT   | NUMBER    | PCT   |
|                         |       | INDIVS      | COMP  | INDIVS | COMP  | INDIVS | COMP  | INDIVS | COMP  | TOTAL     | COMP  |
| ANCHOA MITCHILLI LAR    |       | 7.02        | 45.86 | 10.63  | 66.93 | 8.32   | 20.57 | 15.65  | 23.53 | 9.85      | 29.69 |
| GOBIIDAE LAR            |       | 3.13        | 20.48 | 0.00   | 0.00  | 2.45   | 6.06  | 3.40   | 5.11  | 2.36      | 7.09  |
| LABRIDAE EGG            |       | 0.00        | 0.00  | 0.00   | 0.00  | 20.97  | 51.85 | 44.05  | 66.24 | 15.10     | 45.49 |
| SYNGNATHUS FUSCUS JUV   |       | 3.28        | 21.46 | 5.25   | 33.07 | 6.07   | 15.00 | 3.40   | 5.11  | 4.54      | 13.56 |
| ANCHOA MITCHILLI JUV    |       | 1.87        | 12.20 | 0.00   | 0.00  | 1.32   | 3.26  | 0.00   | 0.00  | 0.96      | 2.88  |
| BREVOORTIA TYRANNUS LAR |       | 0.00        | 0.00  | 0.00   | 0.00  | 1.32   | 3.26  | 0.00   | 0.00  | 0.40      | 1.19  |
| STATION TOTAL AND       |       |             |       |        |       |        |       |        |       |           |       |
| DATE                    | TOTAL | 15.30       |       | 15.88  |       | 40.43  |       | 66.50  |       | 33.20     |       |

TABLE 5-3 (CONT.)

| OYSTERCR                  |        | GEAR-36BONG |        |       |        |       |        | 20 OCT 80 |        |       |
|---------------------------|--------|-------------|--------|-------|--------|-------|--------|-----------|--------|-------|
| STATION                   | INNT   |             | INDA   |       | DSNT   |       | DSDA   |           |        |       |
| SPECIES                   | NUMBER | PCT         | NUMBER | PCT   | NUMBER | PCT   | NUMBER | PCT       | NUMBER | PCT   |
|                           | INDIVS | COMP        | INDIVS | COMP  | INDIVS | COMP  | INDIVS | COMP      | TOTAL  | COMP  |
| ANCHOA MITCHILLI LAR      | 1.50   | 7.83        | 0.00   | 0.00  | 1.63   | 6.39  | 0.00   | 0.00      | 0.94   | 3.80  |
| UNIDENTIFIED EGG          | 16.38  | 85.48       | 0.00   | 0.00  | 4.30   | 16.83 | 0.00   | 0.00      | 6.21   | 25.06 |
| ANCHOA MITCHILLI JUV      | 1.28   | 6.70        | 2.67   | 8.79  | 0.00   | 0.00  | 0.00   | 0.00      | 0.92   | 3.71  |
| PARALICHTHYS DENTATU EGG  | 0.00   | 0.00        | 27.75  | 91.21 | 13.93  | 54.53 | 26.33  | 100.00    | 14.99  | 60.55 |
| PARALICHTHYS DENTATJ LAR  | 0.00   | 0.00        | 0.00   | 0.00  | 5.68   | 22.24 | 0.00   | 0.00      | 1.70   | 6.88  |
| STATION TOTAL AND<br>DATE |        |             |        |       |        |       |        |           |        |       |
|                           |        |             |        |       |        |       |        |           |        |       |
|                           | 19.17  |             | 30.43  |       | 25.55  |       | 26.33  |           | 24.77  |       |

TABLE 5-3 (CONT.)

| OYSTERCR                  |  |  | GEAR-36BONG |        |        |      |        |        | 24 NOV 80 |      |      |        |
|---------------------------|--|--|-------------|--------|--------|------|--------|--------|-----------|------|------|--------|
| STATION                   |  |  | INNT        |        | INDA   |      | DSNT   |        | DSDA      |      |      |        |
| SPECIES                   |  |  | NUMBER      | PCT    | NUMBER | PCT  | NUMBER | PCT    | NUMBER    | PCT  |      |        |
|                           |  |  | INDIVS      | COMP   | INDIVS | COMP | INDIVS | COMP   | TOTAL     | COMP |      |        |
| GOBIOSOMA BOSCI ADULT     |  |  | 2.67        | 100.00 | 0.00   | 0.00 | 2.55   | 100.00 | 0.00      | 0.00 | 1.31 | 100.00 |
| STATION TOTAL AND<br>DATE |  |  | 2.67        |        | 0.00   |      | 2.55   |        | 0.00      |      | 1.31 |        |

TABLE 5-3 (CONT.)

| OYSTERCR                  |       | GEAR-36BONG |        |        |        |        |       |        |        | 23 DEC 80 |       |
|---------------------------|-------|-------------|--------|--------|--------|--------|-------|--------|--------|-----------|-------|
| STATION                   |       | INNT        |        | INDA   |        | DSNT   |       | DSDA   |        |           |       |
| SPECIES                   |       | NUMBER      | PCT    | NUMBER | PCT    | NUMBER | PCT   | NUMBER | PCT    | NUMBER    | PCT   |
|                           |       | INDIVS      | COMP   | INDIVS | COMP   | INDIVS | COMP  | INDIVS | COMP   | TOTAL     | COMP  |
| AMMODYTES AMERICANUS LAR  |       | 14.73       | 100.00 | 13.13  | 100.00 | 23.30  | 92.46 | 25.00  | 100.00 | 19.04     | 97.57 |
| APELTES QUADRACUS ADULT   |       | 0.00        | 0.00   | 0.00   | 0.00   | 1.90   | 7.54  | 0.00   | 0.00   | 0.47      | 2.43  |
| STATION TOTAL AND<br>DATE | TOTAL | 14.73       |        | 13.13  |        | 25.20  |       | 25.00  |        | 19.51     |       |



TABLE 5-3 (CONT.)

| OYSTERCR                        |  | GEAR-36BONG |        |        |        |        |       |        |        | 20 JAN 81 |       |
|---------------------------------|--|-------------|--------|--------|--------|--------|-------|--------|--------|-----------|-------|
| STATION                         |  | INNT        |        | INDA   |        | DSNT   |       | DSDA   |        |           |       |
| SPECIES                         |  | NUMBER      | PCT    | NUMBER | PCT    | NUMBER | PCT   | NUMBER | PCT    | NUMBER    | PCT   |
|                                 |  | INDIVS      | COMP   | INDIVS | COMP   | INDIVS | COMP  | INDIVS | COMP   | TOTAL     | COMP  |
| PSEUDOPLEURONEC AMER EGG        |  | 0.00        | 0.00   | 0.00   | 0.00   | 2.80   | 2.86  | 0.00   | 0.00   | 0.70      | 1.10  |
| AMMODYTES AMERICANUS LAR        |  | 47.73       | 100.00 | 53.95  | 100.00 | 95.05  | 97.14 | 55.92  | 100.00 | 63.16     | 98.90 |
| STATION TOTAL AND<br>DATE TOTAL |  | 47.73       |        | 53.95  |        | 97.85  |       | 55.92  |        | 63.86     |       |

TABLE 5-3 (CONT.)

| OYSTERCR                        |  | GEAR-36BONG |       |        |       |         |       |        |       | 18 FEB 81 |       |
|---------------------------------|--|-------------|-------|--------|-------|---------|-------|--------|-------|-----------|-------|
| STATION                         |  | INNT        |       | INDA   |       | DSNT    |       | DSDA   |       |           |       |
| SPECIES                         |  | NUMBER      | PCT   | NUMBER | PCT   | NUMBER  | PCT   | NUMBER | PCT   | NUMBER    | PCT   |
|                                 |  | INDIVS      | COMP  | INDIVS | COMP  | INDIVS  | COMP  | INDIVS | COMP  | TOTAL     | COMP  |
| PSEUDOPLEURONEC AMER EGG        |  | 248.82      | 63.71 | 130.15 | 53.41 | 5062.15 | 98.83 | 158.98 | 75.77 | 1400.03   | 93.87 |
| UNIDENTIFIED EGG                |  | 2.33        | 0.60  | 3.20   | 1.31  | 0.00    | 0.00  | 0.00   | 0.00  | 1.38      | 0.09  |
| AMMODYTES AMERICANUS LAR        |  | 79.10       | 20.25 | 56.78  | 23.30 | 14.57   | 0.28  | 18.30  | 8.72  | 42.19     | 2.83  |
| PSEUDOPLEURONEC AMER LAR        |  | 53.20       | 13.62 | 53.55  | 21.98 | 39.43   | 0.77  | 32.53  | 15.50 | 44.68     | 3.00  |
| ANGUILLA ROSTRATA GLASS         |  | 2.33        | 0.60  | 0.00   | 0.00  | 5.75    | 0.11  | 0.00   | 0.00  | 2.02      | 0.14  |
| MYOXOCEPHALUS AENAEU LAR        |  | 4.80        | 1.23  | 0.00   | 0.00  | 0.00    | 0.00  | 0.00   | 0.00  | 1.20      | 0.08  |
| STATION TOTAL AND<br>DATE TOTAL |  | 390.58      |       | 243.68 |       | 5121.90 |       | 209.80 |       | 1491.49   |       |

TABLE 5-3 (CONT.)

| OYSTERCR                  |                  | GEAR-36BONG |                  |             |                  |             |                  | 16 MAR 81   |                 |             |
|---------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|-----------------|-------------|
| STATION                   | INNT             |             | INDA             |             | DSNT             |             | DSDA             |             |                 |             |
| SPECIES                   | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |
| PSEUDOPLEURONEC AMER EGG  | 0.00             | 0.00        | 0.00             | 0.00        | 1.70             | 0.48        | 0.00             | 0.00        | 0.51            | 0.21        |
| UNIDENTIFIED EGG          | 1.07             | 0.43        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.32            | 0.13        |
| AMMODYTES AMERICANUS LAR  | 48.87            | 19.49       | 68.80            | 52.28       | 105.38           | 29.56       | 70.10            | 47.27       | 74.06           | 31.10       |
| PSEUDOPLEURONEC AMER LAR  | 181.08           | 72.22       | 59.57            | 45.27       | 240.93           | 67.59       | 73.58            | 49.61       | 153.24          | 64.34       |
| ANGUILLA ROSTRATA GLASS   | 13.73            | 5.48        | 0.00             | 0.00        | 1.90             | 0.53        | 0.00             | 0.00        | 4.69            | 1.97        |
| MYOXOCEPHALUS AENAEU LAR  | 2.22             | 0.88        | 3.22             | 2.45        | 3.33             | 0.94        | 4.63             | 3.12        | 3.24            | 1.36        |
| APELTES QUADRACUS ADULT   | 3.78             | 1.51        | 0.00             | 0.00        | 1.83             | 0.51        | 0.00             | 0.00        | 1.69            | 0.71        |
| PARALICHTHYS DENTATU LAR  | 0.00             | 0.00        | 0.00             | 0.00        | 1.40             | 0.39        | 0.00             | 0.00        | 0.42            | 0.18        |
| STATION TOTAL AND<br>DATE |                  | TOTAL       |                  | TOTAL       |                  | TOTAL       |                  | TOTAL       |                 | TOTAL       |
|                           |                  | 250.75      |                  | 131.60      |                  | 356.48      |                  | 148.30      |                 | 238.15      |

TABLE 5-3 (CONT.)

| OYSTERCR                  |  | GEAR-36BONG |       |        |       |        |       |        |       | 20 APR 81 |       |
|---------------------------|--|-------------|-------|--------|-------|--------|-------|--------|-------|-----------|-------|
| STATION                   |  | INNT        |       | INDA   |       | DSNT   |       | DSDA   |       |           |       |
| SPECIES                   |  | NUMBER      | PCT   | NUMBER | PCT   | NUMBER | PCT   | NUMBER | PCT   | NUMBER    | PCT   |
|                           |  | INDIVS      | COMP  | INDIVS | COMP  | INDIVS | COMP  | INDIVS | COMP  | TOTAL     | COMP  |
| UNIDENTIFIED EGG          |  | 21.75       | 12.40 | 14.70  | 4.44  | 35.58  | 18.75 | 76.03  | 20.85 | 35.35     | 14.21 |
| AMMODYTES AMERICANUS LAR  |  | 88.07       | 50.21 | 155.90 | 47.04 | 71.68  | 37.77 | 108.88 | 29.86 | 100.88    | 40.55 |
| PSEUDOPLEURONEC AMER LAR  |  | 7.82        | 4.46  | 14.43  | 4.35  | 3.45   | 1.82  | 50.25  | 13.78 | 16.32     | 6.56  |
| LABRIDAE EGG              |  | 27.60       | 15.74 | 40.35  | 12.18 | 32.40  | 17.07 | 44.35  | 12.16 | 34.94     | 14.05 |
| ATHERINIDAE LAR           |  | 0.00        | 0.00  | 0.00   | 0.00  | 3.35   | 1.77  | 0.00   | 0.00  | 1.00      | 0.40  |
| SCOPHTHALMUS AQUOSUS EGG  |  | 23.75       | 13.54 | 104.10 | 31.41 | 39.55  | 20.84 | 83.07  | 22.78 | 56.42     | 22.68 |
| ANGUILLA ROSTRATA GLASS   |  | 3.68        | 2.10  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 1.11      | 0.44  |
| SCOPHTHALMUS AQUOSUS LAR  |  | 2.72        | 1.55  | 1.92   | 0.58  | 3.77   | 1.98  | 2.10   | 0.58  | 2.75      | 1.11  |
| STATION TOTAL AND<br>DATE |  | TOTAL       |       | TOTAL  |       | TOTAL  |       | TOTAL  |       | TOTAL     |       |
|                           |  | 175.38      |       | 331.40 |       | 189.78 |       | 364.68 |       | 248.77    |       |

TABLE 5-3 (CONT.)

| OYSTERCR                  |        | GEAR-36BONG |        |       |        |       |        | 18 MAY 81 |        |       |
|---------------------------|--------|-------------|--------|-------|--------|-------|--------|-----------|--------|-------|
| STATION                   | INNT   |             | INDA   |       | DSNT   |       | DSDA   |           |        |       |
| SPECIES                   | NUMBER | PCT         | NUMBER | PCT   | NUMBER | PCT   | NUMBER | PCT       | NUMBER | PCT   |
|                           | INDIVS | COMP        | INDIVS | COMP  | INDIVS | COMP  | INDIVS | COMP      | TOTAL  | COMP  |
| ANCHOA MITCHILLI EGG      | 473.93 | 74.84       | 486.80 | 91.84 | 391.93 | 74.71 | 251.43 | 76.29     | 407.40 | 78.45 |
| ANCHOA MITCHILLI LAR      | 49.83  | 7.87        | 3.35   | 0.63  | 4.30   | 0.82  | 23.48  | 7.12      | 21.61  | 4.16  |
| UNIDENTIFIED EGG          | 0.00   | 0.00        | 0.00   | 0.00  | 2.98   | 0.57  | 1.95   | 0.59      | 1.29   | 0.25  |
| AMMODYTES AMERICANUS LAR  | 3.60   | 0.57        | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00      | 1.08   | 0.21  |
| PSEUDOPLEURONEC AMER LAR  | 0.00   | 0.00        | 3.30   | 0.62  | 0.00   | 0.00  | 0.00   | 0.00      | 0.66   | 0.13  |
| LABRIDAE EGG              | 57.40  | 9.06        | 18.92  | 3.57  | 41.83  | 7.97  | 41.95  | 12.73     | 41.94  | 8.08  |
| SYNGNATHUS FUSCUS JUV     | 19.77  | 3.12        | 17.67  | 3.33  | 16.93  | 3.23  | 8.32   | 2.53      | 16.21  | 3.12  |
| ATHERINIDAE LAR           | 21.20  | 3.35        | 0.00   | 0.00  | 61.83  | 11.79 | 2.45   | 0.74      | 25.40  | 4.89  |
| BREVOORTIA TYRANNUS EGG   | 3.88   | 0.61        | 0.00   | 0.00  | 1.20   | 0.23  | 0.00   | 0.00      | 1.52   | 0.29  |
| ATHERINIDAE EGG           | 0.00   | 0.00        | 0.00   | 0.00  | 3.60   | 0.69  | 0.00   | 0.00      | 1.08   | 0.21  |
| MENIDIA BERYLLINA EGG     | 1.87   | 0.29        | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00      | 0.56   | 0.11  |
| TAUTOGA ONITIS LAR        | 1.78   | 0.28        | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00      | 0.53   | 0.10  |
| STATION TOTAL AND<br>DATE | TOTAL  |             |        |       |        |       |        |           |        |       |
|                           | 633.27 |             | 530.05 |       | 524.62 |       | 329.57 |           | 519.29 |       |

TABLE 5-3 (CONT.)

| OYSTERCR                  |         | GEAR-36BONG |         |       |         |       |         | 15 JUN 81 |         |       |
|---------------------------|---------|-------------|---------|-------|---------|-------|---------|-----------|---------|-------|
| STATION                   | INNT    |             | INDA    |       | DSNT    |       | DSDA    |           |         |       |
| SPECIES                   | NUMBER  | PCT         | NUMBER  | PCT   | NUMBER  | PCT   | NUMBER  | PCT       | NUMBER  | PCT   |
|                           | INDIVS  | COMP        | INDIVS  | COMP  | INDIVS  | COMP  | INDIVS  | COMP      | TOTAL   | COMP  |
| ANCHOA MITCHILLI EGG      | 1516.48 | 80.85       | 921.13  | 71.86 | 2276.50 | 87.21 | 779.30  | 72.59     | 1514.75 | 81.61 |
| ANCHOA MITCHILLI LAR      | 91.10   | 4.86        | 150.07  | 11.71 | 54.73   | 2.10  | 127.10  | 11.84     | 97.72   | 5.26  |
| UNIDENTIFIED EGG          | 23.92   | 1.28        | 8.55    | 0.67  | 24.03   | 0.92  | 52.93   | 4.93      | 25.30   | 1.36  |
| GOBIIDAE LAR              | 154.82  | 8.25        | 148.73  | 11.60 | 127.42  | 4.88  | 62.83   | 5.85      | 130.36  | 7.02  |
| LABRIDAE EGG              | 4.60    | 0.25        | 25.00   | 1.95  | 7.82    | 0.30  | 34.40   | 3.20      | 14.62   | 0.79  |
| SYNGNATHUS FUSCUS JUV     | 61.50   | 3.28        | 8.52    | 0.67  | 48.28   | 1.85  | 8.67    | 0.81      | 37.83   | 2.04  |
| ATHERINIDAE LAR           | 15.17   | 0.81        | 0.00    | 0.00  | 1.63    | 0.06  | 0.00    | 0.00      | 5.31    | 0.29  |
| TRINECTES MACULATUS EGG   | 3.43    | 0.18        | 0.00    | 0.00  | 1.65    | 0.06  | 0.00    | 0.00      | 1.61    | 0.09  |
| MENIDIA MENIDIA JUV       | 1.75    | 0.09        | 19.85   | 1.55  | 6.82    | 0.26  | 8.37    | 0.78      | 8.21    | 0.44  |
| GOBIIDAE JUV              | 0.00    | 0.00        | 0.00    | 0.00  | 55.05   | 2.11  | 0.00    | 0.00      | 17.38   | 0.94  |
| BLENNIIDAE LAR            | 0.00    | 0.00        | 0.00    | 0.00  | 3.23    | 0.12  | 0.00    | 0.00      | 1.02    | 0.06  |
| HIPPOCAMPUS ERECTUS JUV   | 0.00    | 0.00        | 0.00    | 0.00  | 1.65    | 0.06  | 0.00    | 0.00      | 0.52    | 0.03  |
| STRONGYLURA MARINA LAR    | 2.93    | 0.16        | 0.00    | 0.00  | 0.00    | 0.00  | 0.00    | 0.00      | 0.93    | 0.05  |
| CHASMODES BOSQUIANUS JUV  | 0.00    | 0.00        | 0.00    | 0.00  | 1.63    | 0.06  | 0.00    | 0.00      | 0.52    | 0.03  |
| STATION TOTAL AND<br>DATE | 1875.70 |             | 1281.85 |       | 2610.45 |       | 1073.60 |           | 1856.06 |       |



TABLE 5-3 (CONT.)

| OYSTERCR                  |         | GEAR-36BONG |         |       |         |       |         | 20 JUL 81 |         |       |
|---------------------------|---------|-------------|---------|-------|---------|-------|---------|-----------|---------|-------|
| STATION                   | INNT    |             | INDA    |       | DSNT    |       | DSDA    |           |         |       |
| SPECIES                   | NUMBER  | PCT         | NUMBER  | PCT   | NUMBER  | PCT   | NUMBER  | PCT       | NUMBER  | PCT   |
|                           | INDIVS  | COMP        | INDIVS  | COMP  | INDIVS  | COMP  | INDIVS  | COMP      | TOTAL   | COMP  |
| ANCHOA MITCHILLI EGG      | 2046.43 | 64.49       | 4981.35 | 96.28 | 1889.13 | 76.01 | 5698.08 | 97.99     | 3316.56 | 85.14 |
| ANCHOA MITCHILLI LAR      | 654.62  | 20.63       | 122.23  | 2.36  | 288.33  | 11.60 | 87.88   | 1.51      | 324.90  | 8.34  |
| UNIDENTIFIED EGG          | 136.67  | 4.31        | 0.00    | 0.00  | 112.80  | 4.54  | 0.00    | 0.00      | 74.84   | 1.92  |
| GOBIIDAE LAR              | 264.58  | 8.34        | 65.45   | 1.27  | 131.23  | 5.28  | 25.83   | 0.44      | 137.00  | 3.52  |
| SYNGNATHUS FUSCUS JUV     | 7.62    | 0.24        | 0.00    | 0.00  | 8.20    | 0.33  | 0.00    | 0.00      | 4.75    | 0.12  |
| ATHERINIDAE LAR           | 4.62    | 0.15        | 0.00    | 0.00  | 2.12    | 0.09  | 2.90    | 0.05      | 2.60    | 0.07  |
| TRINECTES MACULATUS EGG   | 11.73   | 0.37        | 0.00    | 0.00  | 2.12    | 0.09  | 0.00    | 0.00      | 4.15    | 0.11  |
| ANCHOA MITCHILLI JUV      | 31.57   | 0.99        | 0.00    | 0.00  | 46.00   | 1.85  | 0.00    | 0.00      | 23.27   | 0.60  |
| BLENNIIDAE LAR            | 8.67    | 0.27        | 0.00    | 0.00  | 0.00    | 0.00  | 0.00    | 0.00      | 2.60    | 0.07  |
| CYNOSCION REGALIS JUV     | 2.05    | 0.06        | 0.00    | 0.00  | 5.58    | 0.22  | 0.00    | 0.00      | 2.29    | 0.06  |
| UNIDENTIFIED LAR          | 4.65    | 0.15        | 0.00    | 0.00  | 0.00    | 0.00  | 0.00    | 0.00      | 1.40    | 0.04  |
| GOBIIDAE EGG              | 0.00    | 0.00        | 4.53    | 0.09  | 0.00    | 0.00  | 0.00    | 0.00      | 0.91    | 0.02  |
| STATION TOTAL AND<br>DATE | TOTAL   |             | TOTAL   |       | TOTAL   |       | TOTAL   |           | TOTAL   |       |
|                           | 3173.20 |             | 5173.55 |       | 2485.52 |       | 5814.68 |           | 3895.26 |       |

TABLE 5-3 (CONT.)

| OYSTERCR                  |        | GEAR-36BONG |        |         |        |       |        |       |        | 31 AUG 81 |            |
|---------------------------|--------|-------------|--------|---------|--------|-------|--------|-------|--------|-----------|------------|
| STATION                   |        | INNT        |        | INDA    |        | DSNT  |        | DSDA  |        |           |            |
| SPECIES                   | NUMBER | PCT         | NUMBER | PCT     | NUMBER | PCT   | NUMBER | PCT   | NUMBER | PCT       |            |
|                           | INDIVS | COMP        | INDIVS | COMP    | INDIVS | COMP  | INDIVS | COMP  | INDIVS | COMP      | TOTAL COMP |
| ANCHOA MITCHILLI EGG      | 292.25 | 48.61       | 876.85 | 83.14   | 357.32 | 59.44 | 873.42 | 87.37 | 599.96 | 73.69     |            |
| ANCHOA MITCHILLI LAR      | 269.75 | 44.86       | 158.58 | 15.04   | 202.03 | 33.60 | 72.08  | 7.21  | 175.61 | 21.57     |            |
| GOBIIDAE LAR              | 32.43  | 5.39        | 8.12   | 0.77    | 39.10  | 6.50  | 28.03  | 2.80  | 26.92  | 3.31      |            |
| SYNGNATHUS FUSCUS JUV     | 6.83   | 1.14        | 8.32   | 0.79    | 0.00   | 0.00  | 26.18  | 2.62  | 10.33  | 1.27      |            |
| ATHERINIDAE LAR           | 0.00   | 0.00        | 0.00   | 0.00    | 2.75   | 0.46  | 0.00   | 0.00  | 0.69   | 0.08      |            |
| HIPPOCAMPUS ERECTUS JUV   | 0.00   | 0.00        | 2.75   | 0.26    | 0.00   | 0.00  | 0.00   | 0.00  | 0.69   | 0.08      |            |
| STATION TOTAL AND<br>DATE |        |             | 601.25 | 1054.63 | 601.20 |       | 999.70 |       | 814.19 |           |            |

TABLE 5-4 ESTIMATED NUMBERS OF KEY AND ABUNDANT ICHTHYOPLANKTON  
ENTRAINED AT THE OYSTER CREEK NUCLEAR GENERATING  
STATION, SEPTEMBER 1980 - AUGUST 1981

| Species/Life Stage                          | Estimated<br>Number<br>Entrained<br>(x 10 <sup>6</sup> ) | 80 Percent<br>Confidence<br>Interval<br>(x 10 <sup>6</sup> ) |
|---|--|--|
| <u>Anchoa mitchilli</u> eggs                | 9,809.81   | ±3,454.60  |
| <u>Anchoa mitchilli</u> larvae              | 555.78   | ±94.45   |
| <u>Anchoa mitchilli</u> juveniles           | 35.73  | ±16.30   |
| <u>Pseudopleuronectes americanus</u> eggs   | 1,769.05   | ±2,374.80  |
| <u>Pseudopleuronectes americanus</u> larvae | 270.04   | ±87.64   |
| <u>Syngnathus fuscus</u> juveniles          | 61.45  | ±12.53   |
| Gobiidae larvae                             | 301.96   | ±83.69   |
| <u>Ammodytes americanus</u> larvae          | 349.22   | ±70.21   |
| Labridae eggs                               | 132.49   | ±58.03   |
| Atherinidae larvae                          | 53.95  | ±31.28   |
| <u>Brevoortia tyrannus</u> eggs             | 13.89  | ±21.14   |
| <u>Paralichthys dentatus</u> eggs           | 51.54  | ±35.20   |
| Total eggs                                  | 12,224.69  | ±4,211.99  |
| Total larvae                                | 1,556.58   | ±202.62  |
| Total juveniles and adults                  | 149.35   | ±28.54   |
| Total entrainment                           | 13,930.61  | ±4,225.60  |

TABLE 5-5 NUMBER AND PERCENTAGE OF LIVE (L), STUNNED (S), AND DEAD (D) SPECIMENS OF SEVEN TAXA COLLECTED IN ENTRAINMENT SAMPLES AT THE OYSTER CREEK NUCLEAR GENERATING STATION, SEPTEMBER 1980 - AUGUST 1981

| Taxa                           |       | Numbers |    |     |           |    |      | Percentages |      |           |       | Statistics |       | Condenser<br>Passage<br>Percent<br>Mortality | Percent<br>Entrainment<br>Survival | Percent<br>Entrainment<br>Mortality |
|--------------------------------|-------|---------|----|-----|-----------|----|------|-------------|------|-----------|-------|------------|-------|--|------------------------------------|-------------------------------------|
|                                |       | Intake  |    |     | Discharge |    |      | Intake      |      | Discharge |       | z          | Sig.  |  |                                    |                                     |
|                                |       | L       | S  | D   | L         | S  | D    | L/S         | D    | L/S       | D     |            |       |  |                                    |                                     |
| Bay anchovy<br>larvae          | SEP   | 0       | 1  | 11  | 0         | 0  | 15   | 8.3         | 91.7 | 0.0       | 100.0 | --         |       |  |                                    |                                     |
|                                | OCT   | 0       | 1  | 0   | 0         | 0  | 1    | 100.0       | 0.0  | 0.0       | 100.0 | --         |       |  |                                    |                                     |
|                                | JUN   | 38      | 7  | 217 | 3         | 5  | 150  | 17.2        | 82.8 | 5.1       | 94.9  | 3.62       | 0.001 | 12.1   | 29.7                               | 70.3                                |
|                                | JUL   | 53      | 57 | 345 | 0         | 1  | 194  | 24.2        | 75.8 | 0.5       | 99.5  | 7.35       | 0.001 | 23.7   | 2.1                                | 97.9                                |
|                                | AUG   | 10      | 8  | 122 | 4         | 10 | 85   | 12.9        | 87.1 | 14.1      | 85.9  | -0.29      | N.S.  |  |                                    |                                     |
|                                | Total | 101     | 74 | 695 | 7         | 16 | 445  | 20.1        | 79.9 | 4.9       | 95.1  | 7.47       | 0.001 | 15.2   | 24.4                               | 75.6                                |
| Bay anchovy<br>juveniles       | SEP   | 9       | 1  | 1   | 0         | 1  | 5    | 90.9        | 9.1  | 16.7      | 83.3  | --         |       |  |                                    |                                     |
|                                | OCT   | 1       | 2  | 0   | 0         | 0  | 0    | 100.0       | 0.0  | --        | --    | --         |       |  |                                    |                                     |
|                                | JUN   | 4       | 0  | 0   | 0         | 0  | 0    | 100.0       | 0.0  | --        | --    | --         |       |  |                                    |                                     |
|                                | JUL   | 22      | 5  | 2   | 0         | 0  | 44   | 93.1        | 6.9  | 0.0       | 100.0 | 8.06       | 0.001 | 93.1   | 0.0                                | 100.0                               |
|                                | AUG   | 0       | 0  | 0   | 0         | 1  | 5    | --          | --   | 16.7      | 83.3  | --         |       |  |                                    |                                     |
|                                | Total | 36      | 8  | 3   | 0         | 2  | 54   | 93.6        | 6.4  | 3.6       | 96.4  | 9.16       | 0.001 | 90.0   | 3.0                                | 96.2                                |
| Northern pipefish<br>juveniles | SEP   | 2       | 0  | 1   | 1         | 0  | 1    | 66.7        | 33.3 | 50.0      | 50.0  | --         |       |  |                                    |                                     |
|                                | OCT   | 1       | 0  | 0   | 0         | 1  | 0    | 100.0       | 0.0  | 100.0     | 0.0   | --         |       |  |                                    |                                     |
|                                | MAY   | 13      | 1  | 0   | 8         | 3  | 1    | 100.0       | 0.0  | 91.7      | 8.3   | --         |       |  |                                    |                                     |
|                                | JUN   | 48      | 2  | 5   | 13        | 6  | 35   | 90.9        | 9.1  | 35.2      | 64.8  | 6.03       | 0.001 | 55.7   | 38.7                               | 61.3                                |
|                                | JUL   | 4       | 1  | 2   | 0         | 1  | 3    | 71.4        | 28.6 | 25.0      | 75.0  | --         |       |  |                                    |                                     |
|                                | AUG   | 1       | 2  | 0   | 6         | 0  | 0    | 100.0       | 0.0  | 100.0     | 0.0   | --         |       |  |                                    |                                     |
| Total                          | 69    | 6       | 8  | 28  | 11        | 40 | 90.4 | 9.6         | 49.4 | 50.6      | 5.71  | 0.001      | 41.6  | 54.6   | 45.4                               |                                     |
| Gobiidae<br>larvae             | SEP   | 0       | 1  | 0   | 1         | 1  | 3    | 100.0       | 0.0  | 40.0      | 60.0  | --         |       |  |                                    |                                     |
|                                | JUN   | 56      | 8  | 97  | 8         | 1  | 119  | 39.8        | 60.2 | 7.0       | 93.0  | 6.36       | 0.001 | 32.8   | 17.5                               | 82.5                                |
|                                | JUL   | 75      | 8  | 64  | 3         | 5  | 98   | 56.5        | 43.5 | 7.5       | 92.5  | 7.99       | 0.001 | 49.0   | 13.2                               | 86.8                                |
|                                | AUG   | 7       | 1  | 5   | 0         | 0  | 0    | 61.5        | 38.5 | --        | --    | --         |       |  |                                    |                                     |
|                                | Total | 138     | 18 | 166 | 12        | 7  | 220  | 48.4        | 51.6 | 7.9       | 92.1  | 10.24      | 0.001 | 40.5   | 16.3                               | 83.7                                |
| Winter flounder<br>larvae      | MAR   | 10      | 10 | 127 | 1         | 1  | 124  | 13.6        | 86.4 | 1.6       | 98.4  | 3.64       | 0.001 | 12.0   | 11.8                               | 88.2                                |
|                                | APR   | 3       | 2  | 1   | 14        | 6  | 14   | 83.3        | 16.7 | 58.8      | 41.2  | --         |       |  |                                    |                                     |
|                                | Total | 13      | 12 | 128 | 15        | 7  | 138  | 16.3        | 83.7 | 13.7      | 86.3  | 0.641      | N.S.  |  |                                    |                                     |

TABLE 5-5 (CONT.)

| Taxa                  |       | Numbers |    |    |           |    |      | Percentages |      |           |       | Statistics |       | Condenser<br>Passage<br>Percent<br>Mortality | Percent<br>Entrainment<br>Survival | Percent<br>Entrainment<br>Mortality |
|-----------------------|-------|---------|----|----|-----------|----|------|-------------|------|-----------|-------|------------|-------|--|------------------------------------|-------------------------------------|
|                       |       | Intake  |    |    | Discharge |    |      | Intake      |      | Discharge |       | z          | Sig.  |  |                                    |                                     |
|                       |       | L       | S  | D  | L         | S  | D    | L/S         | D    | L/S       | D     |            |       |  |                                    |                                     |
| Sand lance<br>larvae  | MAR   | 38      | 8  | 36 | 21        | 14 | 63   | 56.1        | 43.9 | 35.7      | 64.3  | 2.74       | 0.010 | 20.4   | 63.6                               | 36.4                                |
|                       | APR   | 117     | 8  | 20 | 48        | 28 | 40   | 86.2        | 13.8 | 65.5      | 34.5  | 3.95       | 0.001 | 20.7   | 76.0                               | 24.0                                |
|                       | MAY   | 1       | 0  | 0  | 0         | 0  | 0    | 100.0       | 0.0  | --        | --    | --         | --    | --   | --                                 | --                                  |
|                       | Total | 156     | 16 | 56 | 69        | 42 | 103  | 75.4        | 24.6 | 51.9      | 48.1  | 5.17       | 0.001 | 23.5   | 68.8                               | 31.2                                |
| Atherinidae<br>larvae | APR   | 0       | 0  | 0  | 0         | 1  | 1    | --          | --   | 50.0      | 50.0  | --         | --    | --   | --                                 | --                                  |
|                       | MAY   | 14      | 2  | 3  | 27        | 13 | 15   | 84.2        | 15.8 | 72.7      | 27.3  | --         | --    | --   | --                                 | --                                  |
|                       | JUN   | 16      | 3  | 31 | 4         | 0  | 72   | 38.0        | 62.0 | 5.3       | 94.7  | 4.65       | 0.001 | 32.7   | 13.9                               | 86.1                                |
|                       | JUL   | 1       | 0  | 1  | 0         | 0  | 1    | 50.0        | 50.0 | 0.0       | 100.0 | --         | --    | --   | --                                 | --                                  |
|                       | AUG   | 0       | 0  | 0  | 1         | 0  | 0    | --          | --   | 100.0     | 0.0   | --         | --    | --   | --                                 | --                                  |
| Total                 | 21    | 5       | 35 | 32 | 14        | 89 | 42.6 | 57.4        | 34.1 | 65.9      | 1.15  | N.S.       | --    | --   | --                                 |                                     |

TABLE 5-6 WATER TEMPERATURE MEASUREMENTS (C) ASSOCIATED WITH ENTRAINMENT SAMPLING AT THE OYSTER CREEK NUCLEAR GENERATING STATION, SEPTEMBER 1980 - AUGUST 1981

| Date      | Intake  |        |         |        | Discharge |         |
|-----------|---------|--------|---------|--------|-----------|---------|
|           | Night   |        | Day     |        | Night     | Day     |
|           | Surface | Bottom | Surface | Bottom | Surface   | Surface |
| 2 SEP 80  | 30.2    | 30.2   | --      | --     | 39.2      | --      |
| 8 SEP 80  | 25.7    | 25.8   | --      | --     | 37.1      | --      |
| 15 SEP 80 | 23.0    | 23.0   | --      | --     | 34.5      | --      |
| 22 SEP 80 | 25.0    | 25.1   | --      | --     | 25.0      | --      |
| 24 SEP 80 | 21.8    | 21.8   | 23.1    | 22.6   | 31.8      | 31.0    |
| 29 SEP 80 | 18.4    | 18.4   | --      | --     | 29.0      | --      |
| 6 OCT 80  | 17.3    | 17.2   | --      | --     | 28.2      | --      |
| 13 OCT 80 | 14.4    | 14.4   | --      | --     | 25.3      | --      |
| 20 OCT 80 | 16.9    | 16.9   | --      | --     | 28.2      | --      |
| 21 OCT 80 | 17.8    | 17.8   | 16.5    | 16.5   | 29.0      | 27.8    |
| 27 OCT 80 | 11.2    | 11.2   | --      | --     | 21.0      | --      |
| 3 NOV 80  | 11.0    | 11.0   | --      | --     | 24.9      | --      |
| 17 NOV 80 | 6.8     | 6.8    | --      | --     | 17.6      | --      |
| 24 NOV 80 | 6.1     | 6.0    | 7.2     | 7.1    | 6.7       | 7.2     |
| 1 DEC 80  | 8.0     | 8.0    | --      | --     | 17.8      | --      |
| 15 DEC 80 | 3.8     | 3.8    | --      | --     | 15.0      | --      |
| 23 DEC 80 | -0.3    | -0.3   | -0.5    | -0.4   | 11.0      | 10.5    |
| 29 DEC 80 | 2.5     | 1.9    | --      | --     | 12.0      | --      |
| 13 JAN 81 | --      | --     | --      | --     | 9.0       | --      |
| 20 JAN 81 | 0.9     | 0.6    | 1.2     | 0.9    | 11.8      | 11.1    |
| 26 JAN 81 | 6.2     | 5.0    | --      | --     | 17.8      | --      |
| 9 FEB 81  | 2.0     | 1.0    | --      | --     | 15.9      | --      |
| 18 FEB 81 | 10.4    | 10.3   | 10.4    | 9.3    | 19.8      | 20.9    |
| 23 FEB 81 | 8.8     | 8.6    | --      | --     | 18.0      | --      |
| 2 MAR 81  | 7.5     | 7.5    | --      | --     | 18.1      | --      |
| 7 MAR 81  | 4.4     | 4.4    | --      | --     | 12.9      | --      |
| 16 MAR 81 | 4.6     | 4.6    | --      | --     | 5.2       | --      |
| 17 MAR 81 | 3.1     | 3.1    | 2.9     | 2.8    | 10.4      | 11.4    |
| 23 MAR 81 | 4.8     | 4.7    | --      | --     | 16.0      | --      |
| 30 MAR 81 | 11.0    | 11.0   | --      | --     | 10.9      | --      |

Note: -- water temperature values for 24-hour studies (those including day samples) are means of two measurements; all other values shown are individual measurements (except column means).



TABLE 5-6 (CONT.)

| Date      | Intake  |        |         |        | Discharge |         |
|-----------|---------|--------|---------|--------|-----------|---------|
|           | Night   |        | Day     |        | Night     | Day     |
|           | Surface | Bottom | Surface | Bottom | Surface   | Surface |
| 6 APR 81  | 11.9    | 11.9   | --      | --     | 22.0      | --      |
| 13 APR 81 | 11.7    | 11.7   | --      | --     | 22.1      | --      |
| 20 APR 81 | 13.6    | 13.7   | --      | --     | 13.7      | --      |
| 22 APR 81 | 11.9    | 11.9   | 11.7    | 11.7   | 11.7      | 11.4    |
| 27 APR 81 | 14.7    | 14.7   | --      | --     | 14.5      | --      |
| 6 MAY 81  | 15.4    | 15.3   | --      | --     | 15.7      | --      |
| 18 MAY 81 | 16.6    | 16.6   | --      | --     | 15.9      | --      |
| 20 MAY 81 | 16.2    | 16.3   | 15.8    | 15.8   | 16.5      | 15.8    |
| 26 MAY 81 | 20.9    | 20.9   | --      | --     | 21.5      | --      |
| 1 JUN 81  | 21.7    | 21.6   | --      | --     | 31.0      | --      |
| 8 JUN 81  | 25.1    | 25.0   | --      | --     | 34.6      | --      |
| 15 JUN 81 | 23.3    | 23.3   | --      | --     | 35.2      | --      |
| 16 JUN 81 | 26.6    | 26.7   | 24.8    | 24.7   | 37.8      | 36.5    |
| 22 JUN 81 | 27.7    | 27.6   | --      | --     | 37.3      | --      |
| 29 JUN 81 | 24.7    | 24.7   | --      | --     | 24.9      | --      |
| 6 JUL 81  | 26.9    | 26.9   | --      | --     | 36.8      | --      |
| 13 JUL 81 | 29.0    | 29.0   | --      | --     | 37.6      | --      |
| 20 JUL 81 | 28.1    | 28.1   | --      | --     | 37.0      | --      |
| 21 JUL 81 | 27.2    | 27.4   | 27.4    | 27.3   | 36.6      | 36.2    |
| 27 JUL 81 | 28.0    | 28.3   | --      | --     | 36.2      | --      |
| 3 AUG 81  | 26.4    | 26.4   | --      | --     | 35.0      | --      |
| 10 AUG 81 | 27.9    | 27.9   | --      | --     | 36.6      | --      |
| 31 AUG 81 | 23.6    | 23.7   | 23.9    | 23.8   | 23.8      | 23.6    |
| Mean      | 15.8    | 15.4   | 13.7    | 13.5   | 22.8      | 19.9    |

TABLE 5-7 DISSOLVED OXYGEN MEASUREMENTS (mg/l) ASSOCIATED WITH ENTRAINMENT SAMPLING AT THE OYSTER CREEK NUCLEAR GENERATING STATION, SEPTEMBER 1980 - AUGUST 1981

| Date      | Intake  |        |         |        | Discharge |         |
|-----------|---------|--------|---------|--------|-----------|---------|
|           | Night   |        | Day     |        | Night     | Day     |
|           | Surface | Bottom | Surface | Bottom | Surface   | Surface |
| 2 SEP 80  | 4.6     | 4.7    | --      | --     | 4.7       | --      |
| 8 SEP 80  | 5.8     | 5.7    | --      | --     | 5.7       | --      |
| 15 SEP 80 | 6.6     | 6.5    | --      | --     | 5.8       | --      |
| 22 SEP 80 | 6.3     | 6.3    | --      | --     | 6.1       | --      |
| 24 SEP 80 | 5.0     | 5.1    | 5.2     | 5.3    | 6.0       | 5.7     |
| 29 SEP 80 | 6.5     | 6.5    | --      | --     | 6.1       | --      |
| 6 OCT 80  | 7.3     | 7.4    | --      | --     | 7.5       | --      |
| 13 OCT 80 | 8.0     | 8.0    | --      | --     | 7.7       | --      |
| 20 OCT 80 | 7.5     | 7.5    | --      | --     | 7.3       | --      |
| 21 OCT 80 | 7.1     | 6.9    | 7.4     | 7.3    | 7.0       | 7.4     |
| 27 OCT 80 | 7.8     | 7.8    | --      | --     | 8.0       | --      |
| 3 NOV 80  | 8.5     | 8.2    | --      | --     | 7.9       | --      |
| 17 NOV 80 | 9.5     | 9.5    | --      | --     | 9.7       | --      |
| 24 NOV 80 | 10.4    | 10.4   | 9.9     | 9.9    | 10.6      | 9.4     |
| 1 DEC 80  | 9.6     | 9.7    | --      | --     | 9.2       | --      |
| 15 DEC 80 | 11.6    | 11.7   | --      | --     | 9.9       | --      |
| 23 DEC 80 | 11.0    | 11.3   | 11.3    | 11.5   | 11.8      | 12.3    |
| 29 DEC 80 | 9.9     | 10.2   | --      | --     | 11.4      | --      |
| 13 JAN 81 | --      | --     | --      | --     | 12.6      | --      |
| 20 JAN 81 | --      | --     | --      | --     | 13.3      | 13.7    |
| 26 JAN 81 | 9.8     | 10.0   | --      | --     | 11.8      | --      |
| 9 FEB 81  | 10.4    | 10.6   | --      | --     | 10.6      | --      |
| 18 FEB 81 | 9.2     | 9.0    | 9.8     | 10.2   | 9.8       | 10.2    |
| 23 FEB 81 | 8.8     | 8.9    | --      | --     | 8.5       | --      |
| 2 MAR 81  | 9.8     | 10.0   | --      | --     | 9.9       | --      |
| 9 MAR 81  | 11.0    | 11.1   | --      | --     | 5.7       | --      |
| 16 MAR 81 | 9.9     | 10.1   | --      | --     | 10.4      | --      |
| 17 MAR 81 | 10.5    | 10.5   | 11.9    | 12.0   | 10.6      | 11.4    |
| 23 MAR 81 | 11.2    | 11.2   | --      | --     | 10.4      | --      |
| 30 MAR 81 | 7.9     | 8.0    | --      | --     | 8.9       | --      |

Note: -- dissolved oxygen values for 24-hour studies (those including day samples) are means of two measurements; all other values shown are individual measurements (except column means).

TABLE 5-7 (CONT.)

| Date      | Intake  |        |         |        | Discharge |         |
|-----------|---------|--------|---------|--------|-----------|---------|
|           | Night   |        | Day     |        | Night     | Day     |
|           | Surface | Bottom | Surface | Bottom | Surface   | Surface |
| 6 APR 81  | 8.5     | 8.6    | --      | --     | 8.4       | --      |
| 13 APR 81 | 7.6     | 7.6    | --      | --     | 7.9       | --      |
| 20 APR 81 | 8.5     | 8.7    | --      | --     | 8.3       | --      |
| 22 APR 81 | 9.1     | 9.1    | 8.9     | 9.0    | 8.8       | 8.7     |
| 27 APR 81 | 8.5     | 8.6    | --      | --     | 9.3       | --      |
| 6 MAY 81  | 6.6     | 6.2    | --      | --     | 7.7       | --      |
| 18 MAY 81 | 8.2     | 8.2    | --      | --     | 8.4       | --      |
| 20 MAY 81 | 7.9     | 7.9    | 7.0     | 7.0    | 7.5       | 6.9     |
| 26 MAY 81 | 7.3     | 7.3    | --      | --     | 7.3       | --      |
| 1 JUN 81  | 7.5     | 7.5    | --      | --     | 7.4       | --      |
| 8 JUN 81  | 6.5     | 6.4    | --      | --     | 6.4       | --      |
| 15 JUN 81 | 6.6     | 6.6    | --      | --     | 6.5       | --      |
| 16 JUN 81 | 5.8     | 5.8    | 6.4     | 6.5    | 5.7       | 6.5     |
| 22 JUN 81 | 4.4     | 4.4    | --      | --     | 4.3       | --      |
| 29 JUN 81 | 7.9     | 7.9    | --      | --     | 7.5       | --      |
| 6 JUL 81  | 6.4     | 6.4    | --      | --     | 6.2       | --      |
| 13 JUL 81 | 4.5     | 4.5    | --      | --     | 4.4       | --      |
| 20 JUL 81 | 4.0     | 4.0    | --      | --     | 4.2       | --      |
| 21 JUL 81 | 4.6     | 4.6    | 5.8     | 5.8    | 4.9       | 5.9     |
| 27 JUL 81 | 5.5     | 5.4    | --      | --     | 5.6       | --      |
| 3 AUG 81  | 5.9     | 5.8    | --      | --     | 5.5       | --      |
| 10 AUG 81 | 6.4     | 6.4    | --      | --     | 6.0       | --      |
| 31 AUG 81 | 5.8     | 5.7    | 6.2     | 6.2    | 6.1       | 6.2     |
| Median    | 7.8     | 7.8    | 8.1     | 8.2    |           |         |

TABLE 5-8 pH MEASUREMENTS ASSOCIATED WITH ENTRAINMENT SAMPLING  
AT THE OYSTER CREEK NUCLEAR GENERATING STATION,  
SEPTEMBER 1980 - AUGUST 1981

| Date      | Intake  |        |         |        | Discharge |         |
|-----------|---------|--------|---------|--------|-----------|---------|
|           | Night   |        | Day     |        | Night     | Day     |
|           | Surface | Bottom | Surface | Bottom | Surface   | Surface |
| 2 SEP 80  | 7.6     | 7.6    | --      | --     | 7.5       | --      |
| 8 SEP 80  | 7.9     | 7.9    | --      | --     | 8.0       | --      |
| 15 SEP 80 | 7.7     | --     | --      | --     | 7.8       | --      |
| 22 SEP 80 | 7.6     | 7.6    | --      | --     | 7.5       | --      |
| 24 SEP 80 | 7.8     | 7.8    | 7.8     | 7.8    | 7.7       | 7.6     |
| 29 SEP 80 | 7.6     | 7.7    | --      | --     | 7.7       | --      |
| 6 OCT 80  | 8.0     | 8.0    | --      | --     | 7.7       | --      |
| 13 OCT 80 | 8.0     | 8.0    | --      | --     | 7.9       | --      |
| 20 OCT 80 | 7.9     | 7.9    | --      | --     | 7.8       | --      |
| 21 OCT 80 | 7.8     | 7.8    | 7.8     | 7.8    | 7.9       | 7.9     |
| 27 OCT 80 | 7.8     | 7.8    | --      | --     | 7.7       | --      |
| 3 NOV 80  | 7.9     | 7.9    | --      | --     | 8.0       | --      |
| 17 NOV 80 | 7.9     | 7.9    | --      | --     | 7.7       | --      |
| 24 NOV 80 | 7.5     | 7.9    | 8.0     | 7.9    | 7.6       | 7.8     |
| 1 DEC 80  | 7.9     | 8.0    | --      | --     | 7.9       | --      |
| 15 DEC 80 | 7.9     | 8.0    | --      | --     | 7.8       | --      |
| 23 DEC 80 | 8.0     | 8.0    | 8.0     | 8.0    | 8.0       | 7.9     |
| 29 DEC 80 | 7.9     | 7.9    | --      | --     | 7.6       | --      |
| 13 JAN 81 | --      | --     | --      | --     | 7.8       | --      |
| 20 JAN 81 | 8.3     | 8.3    | 8.3     | 8.3    | 8.2       | 8.2     |
| 26 JAN 81 | 8.2     | 8.2    | --      | --     | 8.2       | --      |
| 9 FEB 81  | 8.2     | 8.2    | --      | --     | 8.0       | --      |
| 18 FEB 81 | 8.1     | 8.1    | 8.1     | 8.1    | 8.0       | 8.1     |
| 23 FEB 81 | 8.0     | 8.0    | --      | --     | 7.9       | --      |
| 2 MAR 81  | 8.0     | 8.1    | --      | --     | 7.9       | --      |
| 9 MAR 81  | 8.1     | 8.1    | --      | --     | 7.9       | --      |
| 16 MAR 81 | 8.3     | 8.2    | --      | --     | 7.9       | --      |
| 17 MAR 81 | 8.2     | 8.2    | 8.2     | 8.2    | 7.9       | 7.9     |
| 23 MAR 81 | 8.2     | 8.2    | --      | --     | 8.0       | --      |
| 30 MAR 81 | 8.0     | 8.0    | --      | --     | 7.6       | --      |

Note: -- pH values for 24-hour studies (those including day samples) are approximations of the median between two values; all other values shown are individual measurements (except column medians).

TABLE 5-8 (CONT.)

| Date      | Intake  |        |         |        | Discharge |         |
|-----------|---------|--------|---------|--------|-----------|---------|
|           | Night   |        | Day     |        | Night     | Day     |
|           | Surface | Bottom | Surface | Bottom | Surface   | Surface |
| 6 APR 81  | 8.1     | 8.1    | --      | --     | 7.9       | --      |
| 13 APR 81 | 8.0     | 8.0    | --      | --     | 7.8       | --      |
| 20 APR 81 | 8.1     | 8.1    | --      | --     | 7.9       | --      |
| 22 APR 81 | 8.1     | 8.1    | 8.1     | 8.1    | 7.9       | 7.9     |
| 27 APR 81 | 8.2     | 8.2    | --      | --     | 8.0       | --      |
| 6 MAY 81  | 8.0     | 8.1    | --      | --     | 8.0       | --      |
| 18 MAY 81 | 8.2     | 8.3    | --      | --     | 8.1       | --      |
| 20 MAY 81 | 8.2     | 8.2    | 8.0     | 8.1    | 8.0       | 7.9     |
| 26 MAY 81 | 8.3     | 8.3    | --      | --     | 8.0       | --      |
| 1 JUN 81  | 8.4     | 8.4    | --      | --     | 8.1       | --      |
| 8 JUN 81  | 8.2     | 8.2    | --      | --     | 8.2       | --      |
| 15 JUN 81 | 8.0     | 8.0    | --      | --     | 7.8       | --      |
| 16 JUN 81 | 8.0     | 8.0    | 8.0     | 7.9    | 7.8       | 7.9     |
| 22 JUN 81 | 7.9     | 7.9    | --      | --     | 7.8       | --      |
| 29 JUN 81 | 8.4     | 8.4    | --      | --     | 8.3       | --      |
| 6 JUL 81  | 8.2     | 8.2    | --      | --     | 7.9       | --      |
| 13 JUL 81 | 8.0     | 8.0    | --      | --     | 7.8       | --      |
| 20 JUL 81 | 7.8     | 7.8    | --      | --     | 7.7       | --      |
| 21 JUL 81 | 7.9     | 7.9    | 8.1     | 8.1    | 7.9       | 7.9     |
| 27 JUL 81 | 8.2     | 8.2    | --      | --     | 7.9       | --      |
| 3 AUG 81  | 8.0     | 8.0    | --      | --     | 8.1       | --      |
| 10 AUG 81 | 8.2     | 8.2    | --      | --     | 8.1       | --      |
| 31 AUG 81 | 8.1     | 8.1    | 8.1     | 8.1    | 8.0       | 8.0     |
| Median    | 8.0     | 8.0    | 8.0     | 8.0    | 7.9       | 7.9     |

TABLE 5-9 SALINITY MEASUREMENTS (ppt) ASSOCIATED WITH ENTRAINMENT SAMPLING AT THE OYSTER CREEK NUCLEAR GENERATING STATION, SEPTEMBER 1980 - AUGUST 1981

| Date      | Intake  |        |         |        | Discharge |         |
|-----------|---------|--------|---------|--------|-----------|---------|
|           | Night   |        | Day     |        | Night     | Day     |
|           | Surface | Bottom | Surface | Bottom | Surface   | Surface |
| 2 SEP 80  | 23.0    | 23.2   | --      | --     | 26.9      | --      |
| 8 SEP 80  | 24.2    | 24.2   | --      | --     | 28.1      | --      |
| 15 SEP 80 | 27.0    | 26.8   | --      | --     | 25.2      | --      |
| 22 SEP 80 | 23.1    | 23.0   | --      | --     | 26.8      | --      |
| 24 SEP 80 | 28.3    | 28.2   | 29.1    | 28.8   | 27.3      | 27.2    |
| 29 SEP 80 | 26.6    | 26.3   | --      | --     | 27.8      | --      |
| 6 OCT 80  | 26.4    | 26.4   | --      | --     | 27.9      | --      |
| 13 OCT 80 | 26.0    | 26.1   | --      | --     | 27.0      | --      |
| 20 OCT 80 | 23.5    | 23.8   | --      | --     | 26.8      | --      |
| 21 OCT 80 | 24.6    | 24.5   | 24.1    | 24.2   | 28.0      | 26.8    |
| 27 OCT 80 | 24.0    | 24.0   | --      | --     | 28.0      | --      |
| 3 NOV 80  | 26.5    | 26.5   | --      | --     | 26.9      | --      |
| 17 NOV 80 | 26.6    | 26.6   | --      | --     | 25.2      | --      |
| 24 NOV 80 | 24.2    | 24.3   | 24.2    | 24.2   | 24.6      | 25.2    |
| 1 DEC 80  | 23.8    | 23.8   | --      | --     | 24.1      | --      |
| 15 DEC 80 | 24.2    | 23.8   | --      | --     | 23.3      | --      |
| 23 DEC 80 | 25.9    | 25.7   | 26.1    | 25.8   | 24.5      | 25.3    |
| 29 DEC 80 | 24.9    | 24.5   | --      | --     | 25.5      | --      |
| 13 JAN 81 | --      | --     | --      | --     | 24.0      | --      |
| 20 JAN 81 | 25.6    | 25.6   | 27.1    | 27.0   | 25.6      | 27.3    |
| 26 JAN 81 | 28.4    | 28.4   | --      | --     | 24.7      | --      |
| 9 FEB 81  | 27.0    | 26.5   | --      | --     | 26.0      | --      |
| 18 FEB 81 | 26.1    | 25.9   | 26.3    | 26.2   | 25.5      | 25.0    |
| 23 FEB 81 | 24.5    | 24.5   | --      | --     | 25.2      | --      |
| 2 MAR 81  | 23.2    | 23.0   | --      | --     | 22.5      | --      |
| 9 MAR 81  | 24.6    | 24.7   | --      | --     | 24.0      | --      |
| 16 MAR 81 | 22.4    | 22.4   | --      | --     | 22.3      | --      |
| 17 MAR 81 | 23.9    | 23.9   | 22.7    | 22.7   | 23.9      | 22.9    |
| 23 MAR 81 | 23.1    | 23.1   | --      | --     | 23.2      | --      |
| 30 MAR 81 | 21.8    | 21.8   | --      | --     | 22.2      | --      |

Note: -- salinity values for 24-hour studies (those including day samples) are means of two measurements; all other values shown are individual measurements (except column means).



TABLE 5-9 (CONT.)

| Date      | Intake  |        |         |        | Discharge |         |
|-----------|---------|--------|---------|--------|-----------|---------|
|           | Night   |        | Day     |        | Night     | Day     |
|           | Surface | Bottom | Surface | Bottom | Surface   | Surface |
| 6 APR 81  | 23.2    | 23.2   | --      | --     | 23.0      | --      |
| 13 APR 81 | 22.3    | 22.3   | --      | --     | 22.2      | --      |
| 20 APR 81 | 22.7    | 22.8   | --      | --     | 23.2      | --      |
| 22 APR 81 | 22.7    | 22.7   | 23.4    | 22.9   | 23.5      | 23.1    |
| 27 APR 81 | 23.0    | 23.0   | --      | --     | 24.0      | --      |
| 6 MAY 81  | 23.6    | 25.2   | --      | --     | 23.2      | --      |
| 18 MAY 81 | 22.6    | 22.6   | --      | --     | 24.1      | --      |
| 20 MAY 81 | 22.6    | 22.6   | 22.1    | 22.1   | 23.7      | 23.0    |
| 26 MAY 81 | 24.2    | 24.2   | --      | --     | 23.6      | --      |
| 1 JUN 81  | 24.6    | 24.6   | --      | --     | 24.0      | --      |
| 8 JUN 81  | 25.0    | 25.3   | --      | --     | 24.5      | --      |
| 15 JUN 81 | 24.0    | 23.8   | --      | --     | 23.0      | --      |
| 16 JUN 81 | 24.2    | 24.6   | 23.9    | 23.9   | 23.4      | 23.5    |
| 22 JUN 81 | 22.3    | 22.3   | --      | --     | 24.5      | --      |
| 29 JUN 81 | 23.2    | 23.4   | --      | --     | 22.4      | --      |
| 6 JUL 81  | 23.6    | 23.6   | --      | --     | 23.1      | --      |
| 13 JUL 81 | 22.5    | 22.5   | --      | --     | 22.9      | --      |
| 20 JUL 81 | 24.6    | 24.6   | --      | --     | 25.0      | --      |
| 21 JUL 81 | 24.7    | 24.7   | 24.3    | 24.3   | 24.1      | 24.3    |
| 27 JUL 81 | 23.8    | 23.8   | --      | --     | 24.5      | --      |
| 3 AUG 81  | 23.8    | 23.9   | --      | --     | 26.0      | --      |
| 10 AUG 81 | 24.3    | 24.3   | --      | --     | 25.6      | --      |
| 31 AUG 81 | 22.6    | 22.6   | 23.1    | 23.2   | 24.1      | 24.1    |
| Median    | 24.4    | 24.3   | 24.7    | 24.6   | 24.8      | 24.8    |

TABLE 5-10 RESULTS OF THE GENERAL LINEAR MODEL FOR SELECTED ICHTHYOPLANKTON ENTRAINED AT THE OYSTER CREEK NUCLEAR GENERATING STATION RELATIVE TO VARIOUS METEOROLOGICAL, WATER CHEMISTRY, AND PLANT-OPERATIONAL PARAMETERS, SEPTEMBER 1975 - JUNE 1981

| <u>Species</u>                  | <u>Season</u> | <u>r<sup>2</sup></u> | <u>Size</u> | <u>Variable 1</u> | <u>Variable 2</u> | <u>Variable 3</u> | <u>Variable 4</u> |
|---------------------------------|---------------|----------------------|-------------|-------------------|-------------------|-------------------|-------------------|
| Bay anchovy<br>eggs             | Summer        | 0.22                 | 506         | Winds (+)         | Ambient (+)       |                   |                   |
| Bay anchovy<br>larvae/juveniles | Summer/Fall   | 0.14                 | 692         | Ambient (+)       | Total flow (-)    | Salinity (+)      |                   |
| Northern pipefish<br>juveniles  | Summer/Fall   | 0.12                 | 695         | Ambient (+)       | Winds (+)         | Period (N)        | Total flow (-)    |
| Winter flounder<br>larvae       | Spring        | 0.08                 | 224         | Ambient (-)       | Salinity (-)      |                   |                   |
| Gobiidae<br>larvae              | Summer/Fall   | 0.22                 | 681         | Ambient (+)       | Winds (+)         | Period (N)        | Salinity (+)      |
| Atherinidae                     | Summer        | 0.04                 | 512         | Period (N)        | Ambient (-)       |                   |                   |

Note: + = positive correlation  
 - = negative correlation  
 N = night  
 Total flow = total cooling water and dilution flow  
 Ambient = ambient water temperature

TABLE 5-11 SUMMARY OF THE RESULTS OF ICHTHYOPLANKTON VIABILITY STUDIES CONDUCTED AT THE OYSTER CREEK NUCLEAR GENERATING STATION, SEPTEMBER 1975 - AUGUST 1981

| Taxa                           | Year  | Gear  | Number |       |           |       | Percentage |      |           |      | Percentage<br>Entrainment<br>Survival | Percentage<br>Entrainment<br>Mortality |
|--------------------------------|-------|-------|--------|-------|-----------|-------|------------|------|-----------|------|---------------------------------------|--|
|                                |       |       | Intake |       | Discharge |       | Intake     |      | Discharge |      |                                       |  |
|                                |       |       | L/S    | D     | L/S       | D     | L/S        | D    | L/S       | D    |                                       |  |
| Bay anchovy<br>eggs            | 77-78 | RCMS  | 121    | 56    | 50        | 53    | 68.4       | 31.6 | 48.5      | 51.5 | 70.9                                  | 29.1                                   |
| Bay anchovy<br>larvae          | 75-76 | Bongo | 408    | 5,868 | 32        | 4,433 | 6.5        | 93.5 | 0.7       | 99.3 | 10.8                                  | 89.2                                   |
|                                | 76-77 | Bongo | 96     | 444   | 54        | 275   | 17.8       | 82.2 | 16.4      | 83.6 | 91.0                                  | 9.0                                    |
|                                | 77-78 | RCMS  | 46     | 19    | 1         | 30    | 70.8       | 29.2 | 3.2       | 96.8 | 4.5                                   | 95.5                                   |
|                                | 78-79 | Bongo | 49     | 737   | 2         | 781   | 6.2        | 93.8 | 0.3       | 99.7 | 4.9                                   | 95.1                                   |
|                                | 79-80 | Bongo | 12     | 101   | 5         | 145   | 10.6       | 89.4 | 3.3       | 96.7 | 31.1                                  | 68.9                                   |
|                                | 80-81 | Bongo | 175    | 695   | 23        | 445   | 20.1       | 79.9 | 4.9       | 95.1 | 24.4                                  | 75.6                                   |
|                                | Total | Bongo | 740    | 7,845 | 115       | 6,079 | 8.6        | 91.4 | 1.9       | 98.1 | 22.1                                  | 77.9                                   |
| Total                          | RCMS  | 46    | 19     | 1     | 30        | 70.8  | 29.2       | 3.2  | 96.8      | 4.5  | 95.5                                  |  |
| Bay anchovy<br>juveniles       | 75-76 | Bongo | 192    | 63    | 33        | 166   | 75.3       | 24.7 | 16.6      | 83.4 | 22.0                                  | 78.0                                   |
|                                | 76-77 | Bongo | 233    | 18    | 122       | 32    | 92.8       | 7.2  | 79.2      | 20.8 | 85.7                                  | 14.3                                   |
|                                | 77-78 | Bongo | 71     | 9     | 55        | 28    | 88.8       | 11.2 | 66.3      | 33.7 | 74.7                                  | 25.3                                   |
|                                | 78-79 | Bongo | 300    | 66    | 95        | 114   | 82.0       | 18.0 | 45.5      | 54.5 | 55.5                                  | 44.5                                   |
|                                | 79-80 | Bongo | 59     | 7     | 26        | 26    | 89.4       | 10.6 | 50.0      | 50.0 | 55.9                                  | 44.1                                   |
|                                | 80-81 | Bongo | 44     | 8     | 2         | 54    | 84.6       | 15.4 | 3.6       | 96.4 | 4.3                                   | 95.7                                   |
|                                | Total | Bongo | 899    | 166   | 333       | 420   | 84.4       | 15.6 | 44.2      | 55.8 | 52.4                                  | 47.6                                   |
| Northern pipefish<br>juveniles | 75-76 | Bongo | 341    | 201   | 108       | 289   | 62.9       | 37.1 | 27.2      | 72.8 | 43.2                                  | 56.8                                   |
|                                | 76-77 | Bongo | 7      | 12    | 3         | 5     | 36.8       | 63.2 | 37.5      | 62.5 | 100.0                                 | 0.0                                    |
|                                | 78-79 | Bongo | 36     | 5     | 12        | 7     | 87.8       | 12.2 | 63.2      | 36.8 | 72.0                                  | 28.0                                   |
|                                | 79-80 | Bongo | 34     | 0     | 9         | 5     | 100.0      | 0.0  | 64.3      | 35.7 | 64.3                                  | 35.7                                   |
|                                | 80-81 | Bongo | 75     | 8     | 39        | 40    | 90.4       | 9.6  | 49.4      | 50.6 | 54.6                                  | 45.4                                   |
|                                | Total | Bongo | 493    | 226   | 171       | 356   | 68.6       | 31.4 | 32.4      | 67.6 | 47.2                                  | 52.8                                   |
| Winter flounder<br>larvae      | 75-76 | Bongo | 35     | 225   | 26        | 818   | 13.5       | 86.5 | 3.1       | 96.9 | 23.0                                  | 77.0                                   |
|                                | 76-77 | Bongo | 1,339  | 2,131 | 272       | 2,296 | 38.6       | 61.4 | 10.6      | 89.4 | 27.5                                  | 72.5                                   |
|                                | 77-78 | RCMS  | 288    | 66    | 97        | 205   | 81.4       | 18.6 | 32.1      | 67.9 | 39.4                                  | 60.6                                   |
|                                | 78-79 | RCMS  | 100    | 17    | 21        | 26    | 85.5       | 14.5 | 44.7      | 55.3 | 52.3                                  | 47.7                                   |
|                                | 80-81 | Bongo | 25     | 128   | 22        | 138   | 16.7       | 83.3 | 13.8      | 86.2 | 82.6                                  | 17.4                                   |
|                                | Total | Bongo | 1,399  | 2,484 | 320       | 3,252 | 36.0       | 64.0 | 9.0       | 91.0 | 25.0                                  | 75.0                                   |
| Total                          | RCMS  | 388   | 83     | 118   | 231       | 82.4  | 17.6       | 33.8 | 66.2      | 41.0 | 59.0                                  |  |

## 6. MACROZOOPLANKTON ENTRAINMENT

### 6.1 RESULTS

#### 6.1.1 General Species Composition and Abundance

A total of 357 samples were collected and examined for macrozooplankton abundance from 1 September 1980 to 1 September 1981. As in previous studies, organisms in samples collected at the intake were not identified to as low a taxonomic level as those collected at the discharge. Because of the greater detail afforded, discharge samples are emphasized in the presentation of results and in the discussion.

A total of 114 macrozooplankton forms were collected at the discharge (Table 6-1). Mysids, certain amphipods, cumaceans, hydromedusae, ostracods, pycnogonids, and zoeae of mudcrabs, sand shrimp, and grass shrimp constituted 95 percent of the total collection.

Seasonal distribution of estimated weekly densities is shown in Figure 6-1. The peak density was recorded during early June when the weekly mean density of collected forms at the discharge reached 42,118/100 m<sup>3</sup>. High densities for the sampling period generally occurred from early April through mid-June. The period of low densities occurred from mid-November through January.

The day/night distribution of total macroinvertebrates collected at the discharge is illustrated in Table 6-2. Generally, organism densities and total taxa were considerably higher in night collections although some forms showed a tendency to appear more frequently in day collections. In particular, the amphipod, Jassa falcata, occurred in higher densities during the day throughout much of the sampling period. Sand shrimp zoeae, when abundant, also appeared in greater densities during the day collections (Table 6-2).

#### 6.1.2 Occurrence and Abundance of Key Species

Four macroinvertebrate species have been defined as key species by the Nuclear Regulatory Commission. Those so designated are Neomysis americana, Corophium tuberculatum, Callinectes sapidus megalopae, and Crangon septemspinosa. In the remainder of this section densities of organisms are expressed or implied in terms of number/100 m<sup>3</sup>.

Neomysis americana, present throughout the sampling year, was the most abundant form collected at the OCMGS condenser discharge. It accounted for 96 percent of all mysids. Based on collections taken from September 1980 to August 1981, an estimated annual mean density of 4,020/100 m<sup>3</sup> was calculated. This represents 31.3 percent of the total macrozooplankton catch (Table 6-1). The period of maximum abundance occurred in September 1980 when the estimated mean density for that month was 12,501. Two periods of minimum N. americana abundance occurred--one in January 1981 (593) and one in August 1981 (536) (Table 6-3).

Sand shrimp (Crangon septemspinosa) occurred both as zoeal and undetermined (juvenile-to-adult) life stages. The density of zoeae reached a maxima in April when an estimated 9,372/100 m<sup>3</sup> were collected. At that time, Crangon zoeae constituted 34.4 percent of the total monthly catch (Table 6-3). The 24-hour sampling event during April yielded extremely high densities of zoeae, particularly in day collections. Day densities had an estimated mean of 20,295 Crangon zoeae. The night mean density was 8,645/100 m<sup>3</sup>. Crangon zoeae ranked fourth in abundance in the annual catch for all organisms. The annual mean density was 1,045, accounting for 8.1 percent of the catch. Adult and juvenile Crangon were collected during every month except October. The annual mean density for discharge samples was 51/100 m<sup>3</sup>, constituting less than 0.4 percent of the annual catch. Maximum abundance of Crangon juveniles and adults occurred in April, coinciding with the highest density of Crangon zoeae. The peak in April for adults and juveniles was estimated to be 214 (Table 6-3).

The megalopal and zoeal stages of the crab genus Callinectes spp. were identified only to generic level because of the difficulty involved in differentiating between the two species that could occur in the collections (C. sapidus and C. similis). Most, if not all, specimens were probably the blue crab, C. sapidus, but there is the possibility that C. similis individuals were present also.

Callinectes spp. megalopae collected at the discharge had an estimated annual mean density of 5/100 m<sup>3</sup> which accounted for 0.04 percent of the total catch (Table 6-1). Peak abundance occurred in August 1981 when the estimated monthly mean density at the discharge was 30/100 m<sup>3</sup> (Table 6-4). Callinectes spp. zoeae were collected in very low densities (0.08/100 m<sup>3</sup>), accounting for only 0.001 percent of the total catch (Table 6-1).

The majority of Corophium were identified only to generic level because of the difficulty involved in keying these particular amphipods to species level; 17.9 percent of all identified Corophium was C. tuberculatum. The most abundant species of this genus was C. acherusicum, which accounted for 70.1 percent of all identified Corophium. Corophium tuberculatum had an estimated annual mean density of 6/100 m<sup>3</sup>, accounting for 0.05 percent of the total catch (Table 6-1). Highest densities occurred in June 1981 when the estimated monthly mean density at the discharge was 46 (Table 6-4).

#### Other Abundant Forms

The following species composed the top 90 percent of all collected forms at the condenser discharge from September 1980 through August 1981.

As previously discussed, Neomysis americana was the most abundant form collected throughout the sampling period. Crangon septemspinosa zoeae was the fourth most abundant. Both of these forms are considered important or key forms as designated by the Nuclear Regulatory Commission.

The following forms, though not of key status, are noted because of their abundance.

Ampelisca sp. was the second most abundant form collected at the OCNCS condenser discharge. They were present during each month and the annual estimated mean density for the 1980-1981 study year was 1,989/100 m<sup>3</sup>. This represented 15.5 percent of the total macrozooplankton catch (Table 6-1). Densities peaked during the second week of June when the estimated mean density was 20,709 (Appendix G). The mean monthly density for June was 8,934, the highest of all 12 months.

Jassa falcata ranked third in abundance of all forms collected at the discharge. The annual mean density was 1,142/100 m<sup>3</sup>, accounting for 8.9 percent of the catch (Table 6-1). Though the peak weekly abundance occurred during the first week of July (3,461/100 m<sup>3</sup>), the highest mean monthly density was in February (2,505).

The amphipod, Gammarus sp., was the fifth most abundant form. They were collected at a mean annual density of 1,024/100 m<sup>3</sup> and made up 8.0 percent of the total catch.

An additional seven forms composed the remainder of top 90 percent group. They are: ostracods (826/100 m<sup>3</sup>, 6.4 percent), Neopanope texana sayi zoeae (556, 4.3 percent), Corophium sp. (257, 2.0 percent), caprellids (226, 1.8 percent), Panopeus herbstii zoeae (204, 1.6 percent), Sarsia sp. (179, 1.4 percent), and Leucon americanus (166, 1.2 percent).

Species composition and abundance of macrozooplankton collected at the condenser intake are given in Table 6-5. The fewer taxa, as compared to discharge samples, result from the more general taxonomic levels used for identification. Amphipods cumulatively composed the highest density of collected forms, accounting for 37.6 percent (4,817) of the total catch. Mysids were the second most abundant form, cumulatively accounting for 33.8 percent (4,329) of the collection. Monthly mean densities of macrozooplankton at the intake are found in Table 6-6.

Estimates of the numbers of individual key and abundant macroinvertebrates entrained at the plant from September 1980 through August 1981 are found in Table 6-7. The estimated total number of entrained organisms is  $139,696.74 \times 10^6$ .

Water quality data associated with macroinvertebrate entrainment sampling are described in Section 5.1.4 in conjunction with the ichthyoplankton sampling.

## 6.2 DISCUSSION

This discussion involves those organisms designated as key or important forms by the Nuclear Regulatory Commission--Neomysis americana; Crangon septemspinosa zoeae, adults, and juveniles; Callinectes sapidus megalopae; and Corophium tuberculatum. Included are brief discussions on several macrozooplankton forms that are of interest because of their abundance in the collections.



Major emphasis of species composition and abundance is placed on the results of discharge samples rather than intake samples. The area of the intake sampled is subject to changing currents and eddying, which results in inconsistent collection efficiencies for the bongo sampler. Ctenophore densities, however, were determined from intake collections because ctenophores are fragile and tend to fragment easily during passage through the intake screens and condenser tube.

In comparing day and night differences in densities, only data from weeks when 24-hour studies occurred were examined (Table 6-2).

The discussion, which focuses on the key and important forms, involves four aspects of the macrozooplankton entrainment study. The first two sections are combined and present evaluations of the 1980-1981 entrainment data as well as a comparison of data over the last six years. The third aspect is a qualitative impact assessment for the 1980-1981 study year and the fourth is a look at the relationship of meteorological and plant-operating factors to macrozooplankton entrainment.

Monthly densities of important and abundant macrozooplankton forms collected throughout the six study years (1975-1981) are shown in Figures 6-2 through 6-17. Slight differences that may occur between the densities plotted on the figures and the numbers found in the density tables are caused by the different methods employed in calculating mean monthly densities.

#### 6.2.1 Macrozooplankton Entrainment Data for 1980-1981 and Comparisons with Previous Entrainment Data (1975-1979)

Neomysis americana was the most abundant and frequently collected form at the condenser discharge from September 1980 to August 1981 (Table 6-1). An estimated  $41,723.01 \times 10^6$  were entrained during the study. This species is a year-round resident of Barnegat Bay and occurred in most of the discharge collections. As in previous studies (Sandine et al. 1977), the majority of N. americana were collected at night. This is probably due to the pronounced diurnal migratory behavior typical of mysidaceans.

The peak density of N. americana occurred during the third week of September 1980 (Appendix G). Ambient temperature at this time was 25.0 C. A minor peak occurred in April when recruitment of juveniles was probably a factor contributing to the rise in densities.

Monthly means of N. americana densities from September 1975 through August 1981 are shown in Figure 6-2. Periods of peak abundances throughout the six years appear to vary, though some seasonal trends are discernible. Generally, high numbers were collected in spring (March - May) when ambient temperatures were rising. Juveniles compose a large percentage of the population at this time. Peaks during the summer and fall (July - September) are probably the result of mysid movement from coastal waters and reproduction by the first spring generation as well as by the overwintering population (Allen 1978).

Crangon septemspinosa (sand shrimp) zoeae were present during each month sampled, with the exception of September 1980. An estimated  $13,231.81 \times 10^6$  were entrained. Although none were collected at the discharge during the months of January, July, and August 1981, low densities of Crangon zoeae did occur in intake samples for those months. Peak abundance occurred during the 24-hour sampling event in the third week of April 1981 when ambient was 13.6 C. Day collections yielded extremely high densities ( $20,295/100 \text{ m}^3$ ) of zoeae (Table 6-2). Sand shrimp zoeae followed similar patterns of peak periods throughout the six study years (Figure 6-3). Highest densities generally occurred between April and June at temperatures ranging from 13.0 to 23.0 C. The 1980-81 study year produced the highest peak in sand shrimp zoeae densities of all compared years.

Sand shrimp of undetermined (adult and juvenile) life stages were collected each sampling month except October. An estimated  $453.71 \times 10^6$  were entrained during the study. Peak densities occurred in April 1981. This peak is the highest density recorded during the six study years. Previous to this year, peaks of abundance usually occurred during the colder months of January through March (Figure 6-4). Because the plant was shutdown from January to May 1980, samples for that five-month period were not collected; the peak of Crangon juveniles and adults for that year probably was missed. The high April peak during 1981 may be attributed to large numbers of juvenile specimens that had just undergone the development from zoeae to juvenile. This is further explained by the large densities of Crangon zoeae (many in late larval stage development) collected during April 1981 (Figure 6-3). The minor peak of juveniles and adults in February 1981 (Figure 6-4) is probably a more accurate estimate of the densities of larger juvenile and adult sand shrimp.

The very low densities of Callinectes spp. zoeae observed at the discharge may be the result of several factors. First, because of their small size, blue crab zoeae are subject to extrusion through the 505- $\mu\text{m}$  mesh bongo nets. Second, most gravid blue crab females spawn in early summer in inlets and coastal waters where salinities are high (>20 ppt). Zoeae usually are scarce at OCMGS because they tend to remain in these high-salinity areas until they develop into megalopae, a much more euryhaline and motile life stage capable of migration into bays and estuaries. Highest densities of blue crab zoeae for the six-year period occurred in June 1976. Densities were considerably lower for the following five years (Figure 6-5). An estimated  $3.56 \times 10^6$  were entrained during the 1980-1981 study.

Because of their greater size and mobility, Callinectes spp. megalopae were present in greater densities than zoeae at the OCMGS discharge (Table 6-1). An estimated  $53.84 \times 10^6$  were entrained. Based on findings from previous studies, blue crab megalopae usually appeared at OCMGS in July or August and reached peak densities in September or October when ambient temperatures were dropping. As shown in Figure 6-6, densities during the 1980-1981 study year were low when compared to previous years.

The amphipod, Corophium tuberculatum, was second in abundance of all identified Corophium. It was collected infrequently and in very low densities (Table 6-4). An estimated  $75.93 \times 10^6$  were entrained during

the study. Since most Corophium were not identified to species level and it is difficult to estimate what percentage of the unidentified specimens was C. tuberculatum; the densities and entrainment estimates for this particular key form are probably low.

Corophium were not identified to the species level until the second year of the study (1976-1977). The highest densities of C. tuberculatum for the five-year period, beginning in September 1976, occurred in May 1978 (Figure 6-7). This peak is mentioned later in the discussion as it is probably related to a similar peak in Corophium spp.

Ctenophores were present during 11 of the 12 months sampled. An estimated  $1,247.35 \times 10^6$  were entrained. Ctenophore densities were determined only from intake collections for reasons explained earlier. Most specimens were Mnemiopsis leidyi, although Pleurobrachia pileus and Beroe ovata also were present during certain months.

During previous years, M. leidyi usually appeared in May or June, reached peak densities in August or September, then rapidly declined in abundance as the water temperature decreased (Figure 6-8). The sharp rise of M. leidyi densities in June 1980 appears anomalous when compared with the other five years.

The amphipod, Ampelisca sp., was the second most abundant form collected at the condenser discharge (Table 6-1). An estimated  $16,739.98 \times 10^6$  were entrained. Specimens were collected during each month of the 1980-1981 study year. Densities peaked during the third week of June when the estimated mean density was  $20,709/100 \text{ m}^3$  (Appendix G). Ambient temperature at this time was 25.1 C (Figure 6-9).

Over the six-year study period, the highest densities occurred during the 1980-1981 study (Figure 6-9). As shown, the various peaks throughout the years occurred during periods of warmer temperatures from May through September.

Jassa falcata, an amphipod that is considered a dominant fouling organism (Bousfield 1973), was the third most abundant form collected at OCNCS during the 1980-1981 study year (Table 6-1). An estimated  $19,350.14 \times 10^6$  were entrained. This organism was present during each month and reached highest densities ( $3,461/100 \text{ m}^3$ ) during the first week in July (Appendix G). Ambient temperature at this time was 26.9 C.

Jassa falcata densities (Figure 6-10) appeared to rise and fall sharply throughout most of the six study years. During the first few years, the peaks were bimodal, occurring in the spring and late fall. Densities were extremely low to nonexistent from December 1978 to August 1980, then steadily increased to a peak in February 1981. A second peak occurred in July 1981. Because the plant was shut down during October and November 1978 and again in May 1979, it is possible that peak densities may have been missed. However, data from adjoining months when sampling resumed gives little evidence of Jassa presence.

Two species of mud crab zoeae, Neopanope texana sayi and Panopeus herbstii, were common throughout the summer months when ambient temperatures ranged from 15.4 to 29 C. Densities of Neopanope reached a peak during the third week of June 1981 when the estimated weekly night density was 5,715/100 m<sup>3</sup> (Appendix G). Panopeus densities peaked during the second week of July 1981 when the weekly estimate was 2,998. For both species, the monthly peak occurred in June 1981. Monthly densities throughout the six study years for N. texana sayi zoeae and P. herbstii zoeae are shown in Figures 6-11 and 6-12, respectively. The highest densities of Neopanope zoeae occurred in June 1976 when the estimated monthly density was greater than 5,900/100 m<sup>3</sup> (Figure 6-11).

The highest density of Panopeus zoeae throughout the six years occurred in July 1977 when the monthly mean density for night samples was >4,500 (Figure 6-12). Day collections during this month also yielded high densities (>4,400) of Panopeus zoeae.

The hydromedusae, Sarsia spp., was present at OCNGS from January to April 1981 when ambient temperatures ranged from 0.9 to 13.6 C. Peak densities occurred during the last week of March when ambient was 11.0 C. The estimated weekly density was 3,023/100 m<sup>3</sup> (Appendix G). Monthly densities throughout the six study years are shown in Figure 6-13. Peaks generally occurred in March of each year, with the exception of 1980 for which there are no data from January through May due to a plant shutdown. The highest densities of Sarsia spp. occurred in 1977.

Caprellid amphipods were present during each month of the 1980-1981 study. The peak monthly density (869/100 m<sup>3</sup>) occurred in September (Table 6-3). This peak represents the highest abundance of caprellids over the six-year period (Figure 6-14). Abundance fluctuated throughout the six years and the period of highest densities occurred from July to September. There was little difference in abundance between day and night collections, although night densities were frequently slightly higher.

Ostracods were present during each month of the 1980-1981 study. An estimated  $6,703.28 \times 10^6$  were entrained. Minimum densities occurred from December through March. Abundance steadily rose in April and May, then peaked during the last week in June when the weekly density for night was 11,883/100 m<sup>3</sup> (Appendix G). The densities from day collections were very low throughout the year.

Ostracods have been enumerated in entrainment samples only since April 1979. Previously, subclass Ostracoda was classified as microzooplankton.

Amphipods of the genus, Gammarus, were extremely abundant during the 1980-1981 study year. Specimens were first collected during the last week of October when ambient was 11.0 C. Densities remained less than 100/100 m<sup>3</sup> from November to the end of January. Abundance gradually began to rise as ambient temperatures increased in February. Ambient temperatures decreased again in March and remained below 5 C for a period of approximately three weeks during which time Gammarus spp. densities also declined. As ambient rose to 11 C during the last week of March and steadily increased from that date forward, densities of Gammarus spp.



also increased to a peak in April when the weekly density during the second week was 17,686 (Appendix G).

This peak represents the highest abundance of Gammarus spp. specimens collected during the six study years (Figure 6-15). Due to the large concentrations of Gammarus spp. in April 1981, many of the lower monthly densities encountered in previous years do not appear on the graph because the densities are less than 100/100 m<sup>3</sup>.

The cumacean, Leucon americanus, was present throughout the 1980-1981 study year. They were most abundant in September when the weekly density during the second week was estimated at 1,206/100 m<sup>3</sup> (Appendix G). Monthly densities throughout the six study years are shown in Figure 6-16. Highest densities generally occurred during the summer months. Throughout the six years the vast majority of specimens were collected at night. Although primarily benthic creatures, the males of some species of cumaceans are nocturnal plankters and may be attracted to low-intensity light (Gosner 1971). This may explain, in part, their presence predominantly in night collections.

Amphipods of the genus Corophium were the eighth most abundant form collected at the discharge during the 1980-1981 study year (Table 6-1). An estimated  $4,705.42 \times 10^6$  were entrained. The period of greatest abundance of Corophium spp. was in January when the mean for day collections was an estimated 1,551/100 m<sup>3</sup> (Table 6-3). This peak is the result of large numbers of corophiids collected in one sample that contained several loose pieces of substrate. Since corophiids are bottom dwelling amphipods that construct nests or tubes in the substratum, this may explain the unusually high densities found in January.

Monthly densities of Corophium spp. for the six-year period are shown in Figure 6-17. The highest density occurred in May of 1978. This was also the highest peak period of Corophium tuberculatum, as previously discussed. Again, this peak is probably the result of pieces of corophiid-containing substratum that broke loose and were collected in the sampling gear.

### 6.2.2 Impact of Entrainment

Any significant effects that entrainment may have on the macrozooplankton community in Barnegat Bay are difficult to evaluate for several reasons. There are no data on macrozooplankton populations at Barnegat Bay prior to OCNCS operation. Large natural variations in abundance that commonly occur in macrozooplankton populations may further preclude analysis of entrainment effects. Finally, previous studies to determine population size, and the condition of organisms during passage down the discharge canal after entrainment were confounded by the presence of forms passing through the dilution pumps and those residing or spawned in the canal.

Because of the difficulty involved in assessing the relationship of entrainment to field macrozooplankton populations and the insufficiency of data to determine any negative or positive long-term effects of entrainment, attention is given only to immediate effects. Viability studies for certain macrozooplankton forms entrained at OCNCS were

conducted for two years, from 1 September 1975 through 31 August 1977. Based on these findings, qualitative impact assessments were determined for 1980-1981.

In the first year, it was apparent that most macrozooplankton mortality was induced thermally (Sandine et al. 1977). Mortality as high as 100 percent was found for some forms when discharge temperatures ranged from 30 to 35 C. Most forms suffered 50-100 percent mortality when temperatures exceeded 35 C.

Average discharge temperatures exceeded 30 C during 14 weeks of the 1980-1981 study. In September 1980 and June, July, and August 1981, discharge temperatures exceeded 35 C for extended periods and this could have resulted in 50-100 percent mortality of most entrained forms. These months included periods of peak abundance for several forms, including Neomysis americana, Callinectes sp. megalopae, Corophium tuberculatum, caprellids, Jassa falcata, ostracods, Leucon americanus, and mud crab zoeae.

In previous studies, N. americana experienced 100 percent mortality when exposed to temperatures of about 35 C (Sandine et al. 1978). Because discharge temperatures exceeded tolerance levels at the time of peak abundance, it is assumed that large numbers of entrained N. americana suffered 100 percent mortality. Below 30 C, mortality generally did not exceed 10 percent (Sandine et al. 1978).

The highest density of Crangon septemspinosa adults and juveniles occurred when the thermal discharge was below 30 C. According to Sandine et al. (1978), little mortality usually occurred at discharge temperatures below 30 C in either year of the viability study. Although not in peak densities, Crangon adults and juveniles were present when temperatures exceeded 35 C, and an estimated 75 percent of those entrained specimens probably died (Sandine et al. 1978).

Callinectes spp. megalopae were present at times of high (>35 C) discharge temperatures. Based on previous studies by Chase (1977), blue crab megalopae demonstrate a 100 percent survival rate when exposed for 180 minutes to temperatures up to 38 C. Previous OCNGS entrainment studies have shown a high survival rate of Callinectes megalopae when exposed to extreme temperatures (Sandine et al. 1977).

Ctenophores greater than 20 millimeters are one of the few macrozooplankton forms known to suffer obvious mechanical damage as a result of passage through the screens and condenser tube. According to Sandine et al. (1977), specimens less than 20 millimeters were collected in discharge samples without obvious mechanical damage. Highest densities of Mnemiopsis leidyi during the present study occurred in August 1981 and it is assumed that most specimens greater than 20 millimeters died as a result of mechanical damage.

In the 1975-1976 study, immediate mortalities were determined for all amphipods but not for individual species. In general, amphipods collected at the discharge when temperatures were below 35 C experienced less than 10 percent mortality (Sandine et al. 1977). In 1976-1977, the



study involved examination of individual species. Thermal tolerances varied for individual species when temperatures exceeded 30 C. Fewer numbers of amphipods were examined during the second year as a result of plant shutdown so there is insufficient data on which to base viability assessments for individual species collected during the 1980-1981 study period. In general, Sandine et al. (1977) found that when discharge temperatures exceeded 35 C the mortality of entrained amphipods was as high as 65 percent. During the 1980-1981 study, highest monthly densities of Ampelisca sp. occurred in June when discharge temperatures exceeded 35 C for two weeks.

No quantitative viability data were determined for mud crab zoeae or cumaceans, although qualitative observations indicated that mud crab zoeae generally were unaffected at temperatures below 35 C.

### 6.2.3 Relationship of Meteorological and Plant-Operating Factors to Macrozooplankton Entrainment

Coefficients of determination ( $r^2$ ) varied considerably from species to species and from season to season (Table 6-8). Generally, the greatest  $r^2$  occurred when the primary variable was related to temperature (e.g., air temperature, ambient water temperature). Salinity also appeared to be an important variable during certain seasons. Species exhibiting the greatest  $r^2$  were N. americana and C. septemspinosa adults, juveniles, and zoeae. Lowest  $r^2$  appeared for C. tuberculatum. The species with the greatest  $r^2$  are all residents of Barnegat Bay and commonly occur in the water column at night (the stratum examined).

The GLM results for macrozooplankton were more complex and less clear than those for ichthyoplankton. The relationships shown in Table 6-8 could not be satisfactorily explained by examination of the database. Physical/chemical parameters such as temperature, dissolved oxygen, and salinity frequently were correlated to organism density, and this points to overall environmental conditions influencing densities of macrozooplankton.

Regardless of the exact nature of the relationships shown in Table 6-8, none are very strong--the  $r^2$  values are mostly <0.5. Again, this suggests that there are other factors, not included in the model, that influence densities of macrozooplankton. These may include biological factors such as predation or other chemical/physical characteristics.

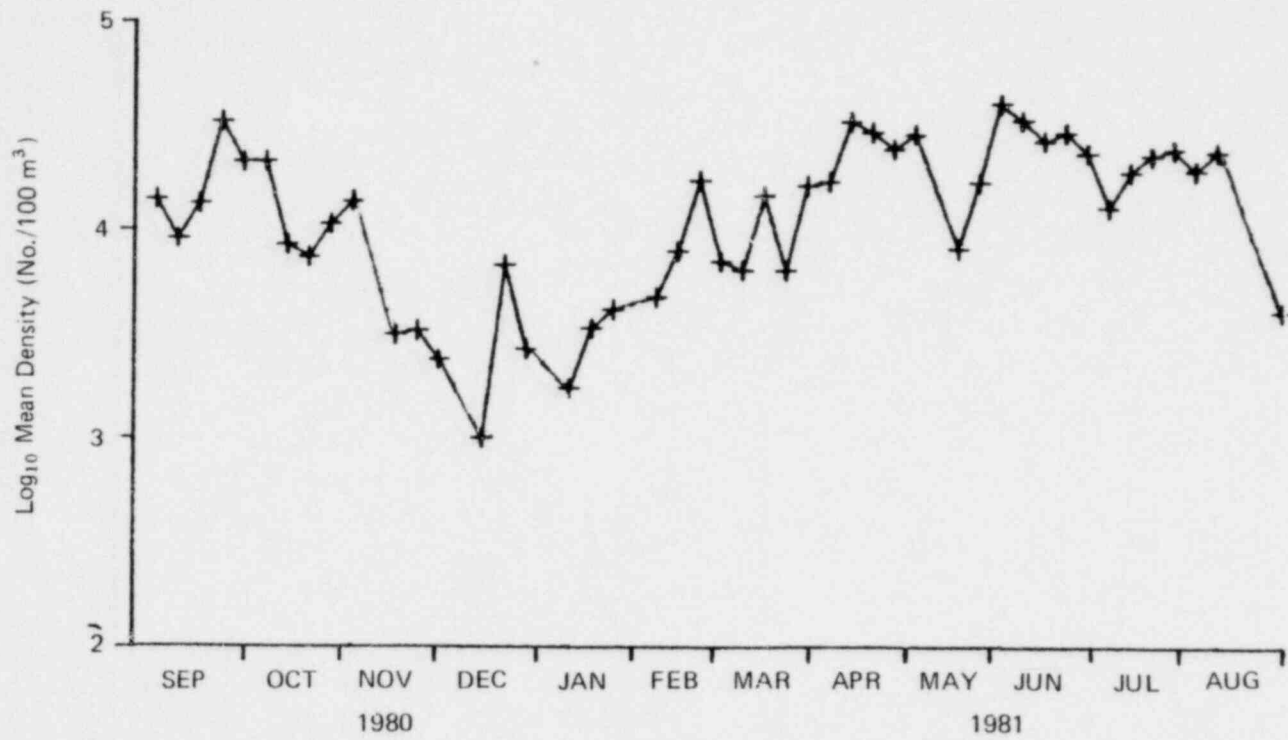


Figure 6-1. Weekly mean density of total macrozooplankton collected from the discharge of the Oyster Creek Nuclear Generating Station, September 1975 – August 1981.

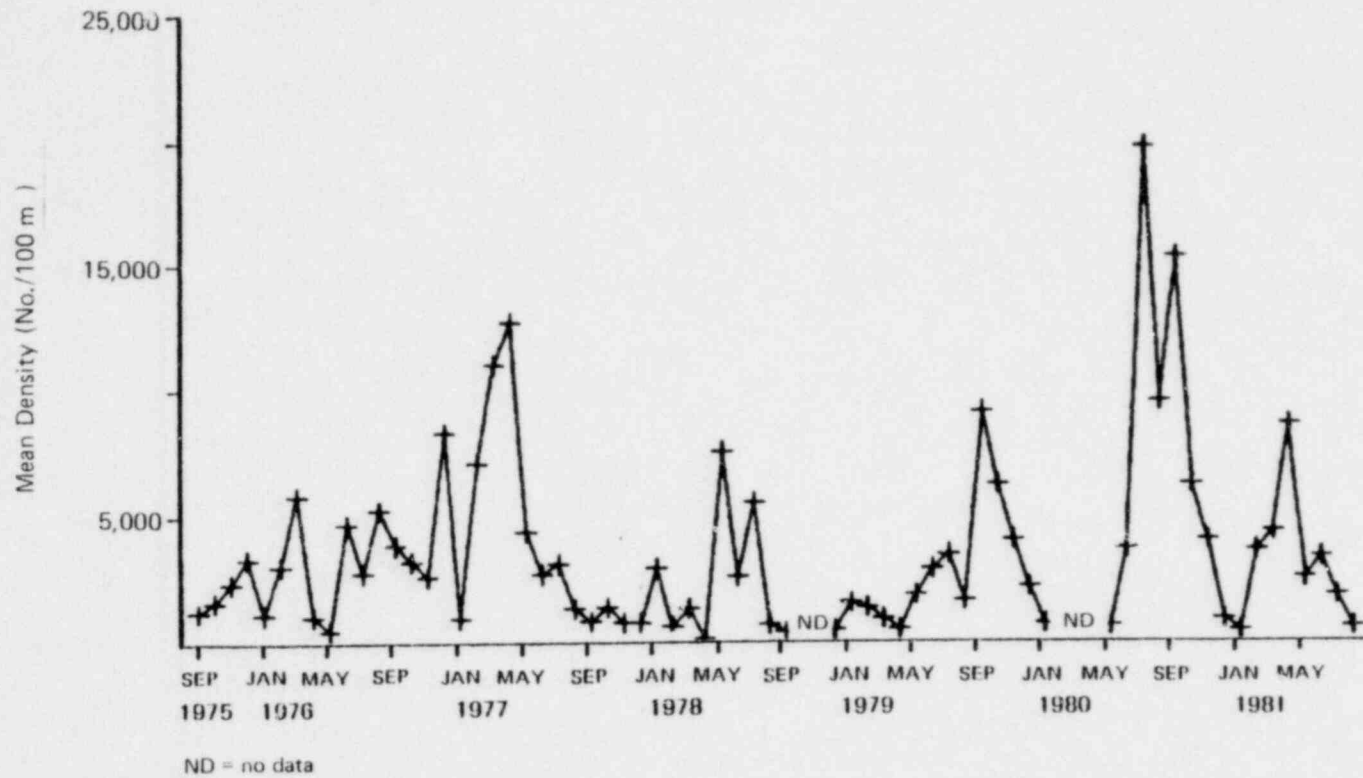


Figure 6-2. Monthly mean density of *Neomysis americana* taken in night collections at the discharge of the Oyster Creek Nuclear Generating Station, September 1975 – August 1981.

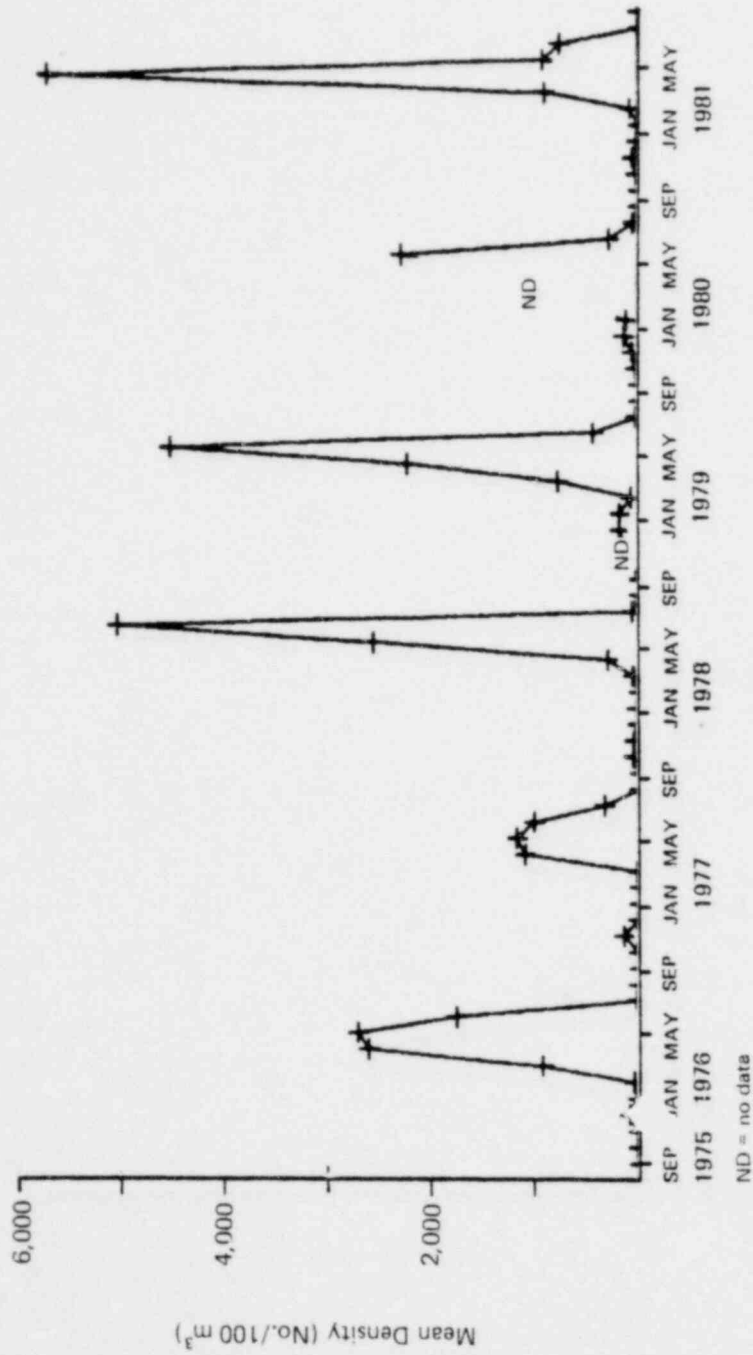


Figure 6-3. Monthly mean density of *Crangon septemspinosa* zoeae taken in night collections at the Oyster Creek Nuclear Generating Station, September 1975 — August 1981.

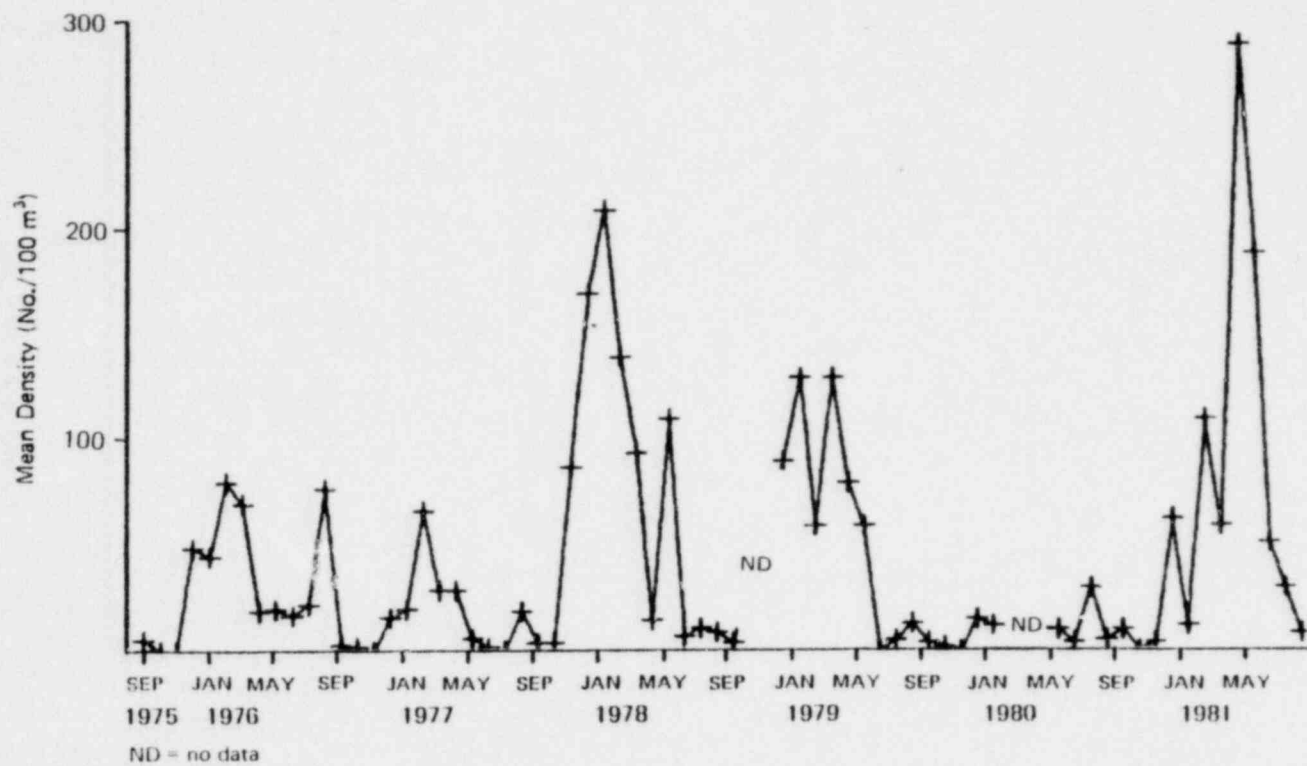


Figure 6-4. Monthly mean density of *Crangon septemspinosus* adults and juveniles taken in night collections at the discharge of the Oyster Creek Nuclear Generating Station, September 1975 – August 1981.

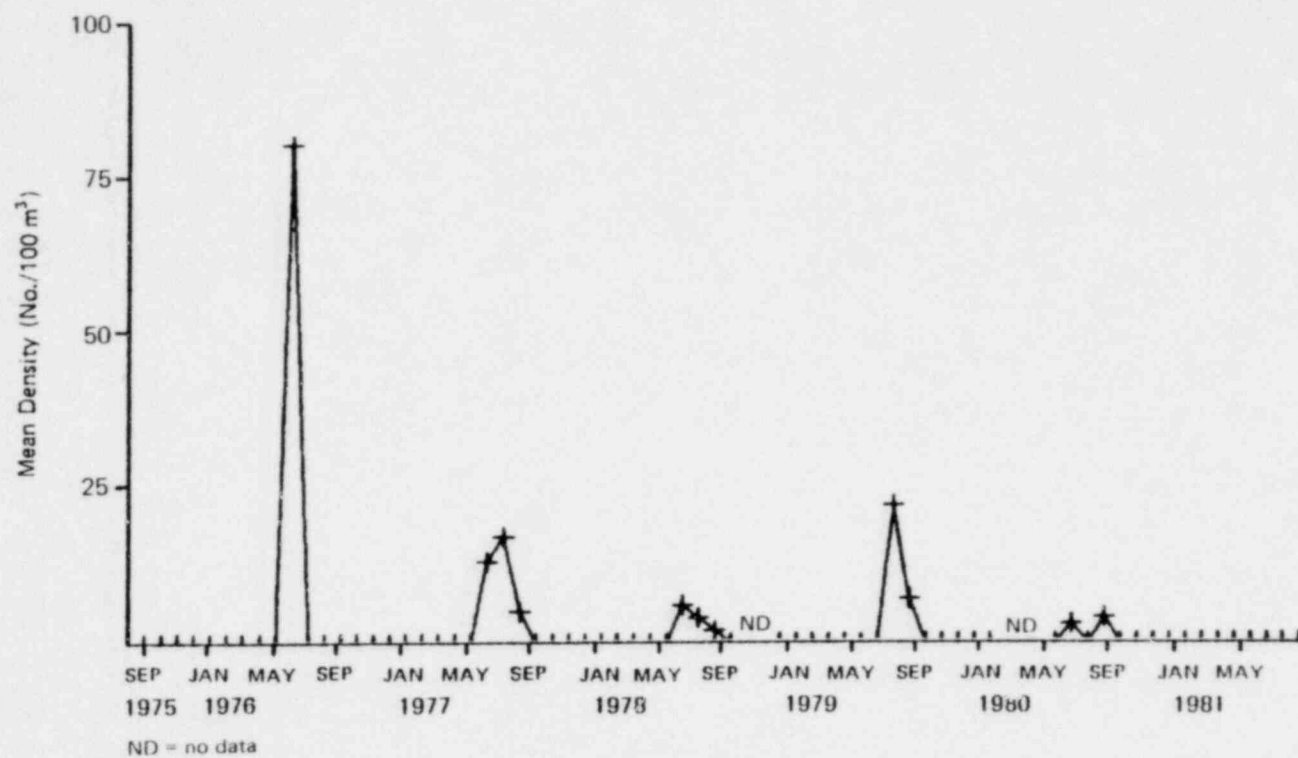


Figure 6-5. Monthly mean density of *Callinectes* sp. zoeae taken in night collections at the discharge of the Oyster Creek Nuclear Generating Station, September 1975 – August 1981.



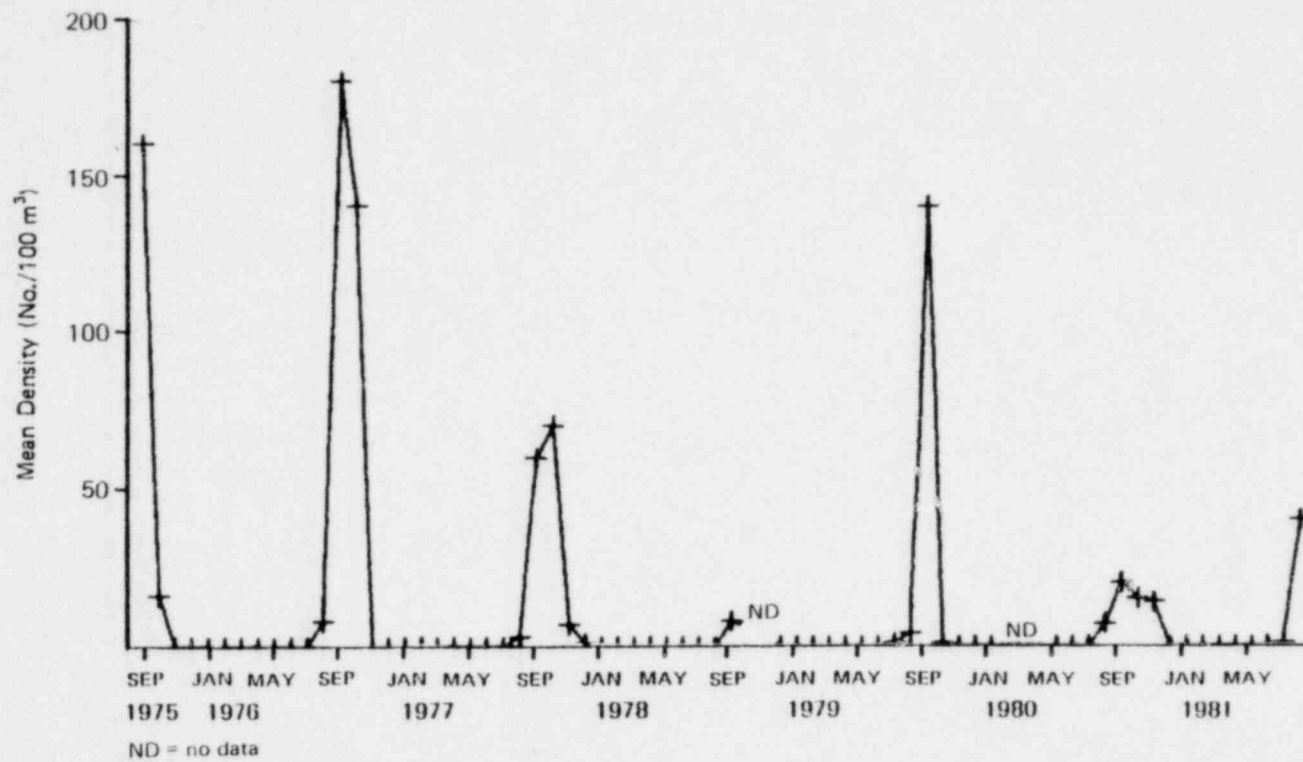


Figure 6-6. Monthly mean density of *Callinectes* sp. megalopae taken in night collections at the discharge of the Oyster Creek Nuclear Generating Station, September 1975 – August 1981.

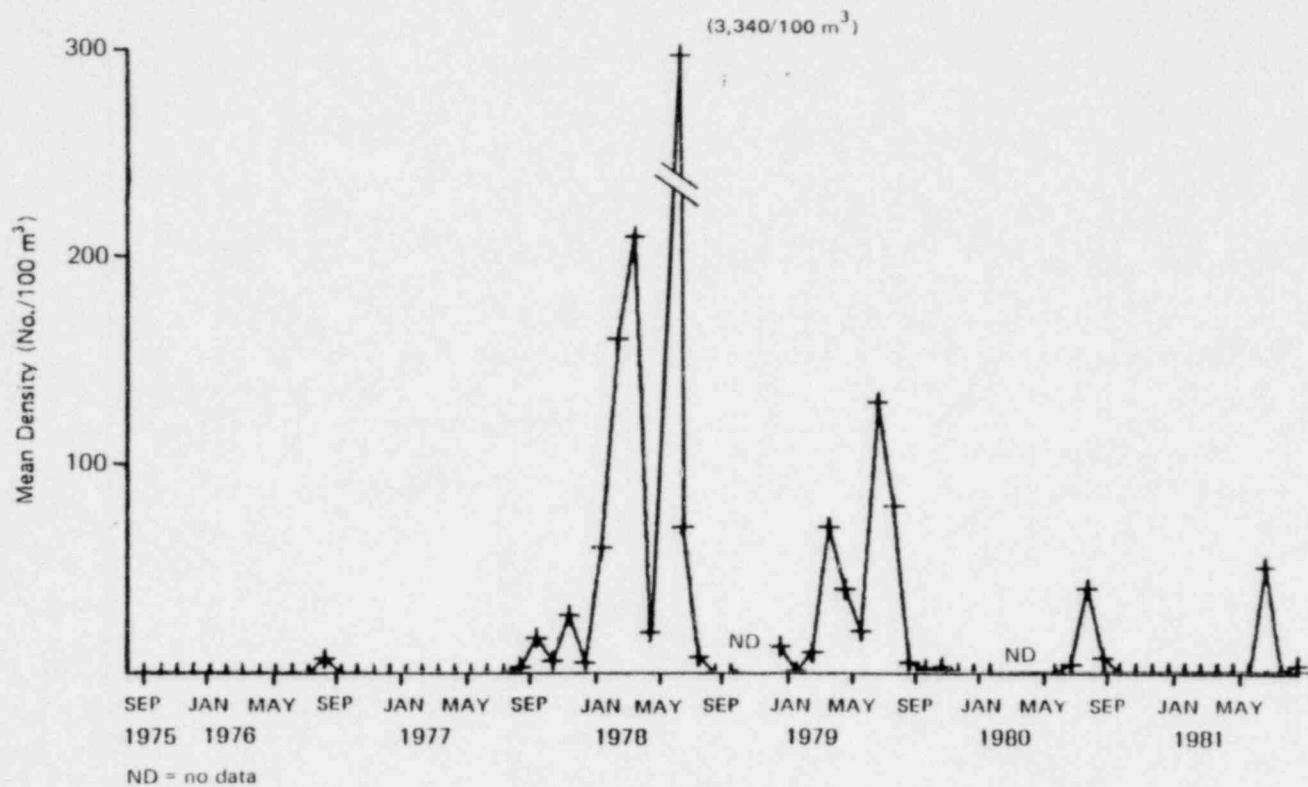


Figure 6-7. Monthly mean density of *Corophium tuberculatum* taken in night collections at the discharge of the Oyster Creek Nuclear Generating Station, September 1975 – August 1981.

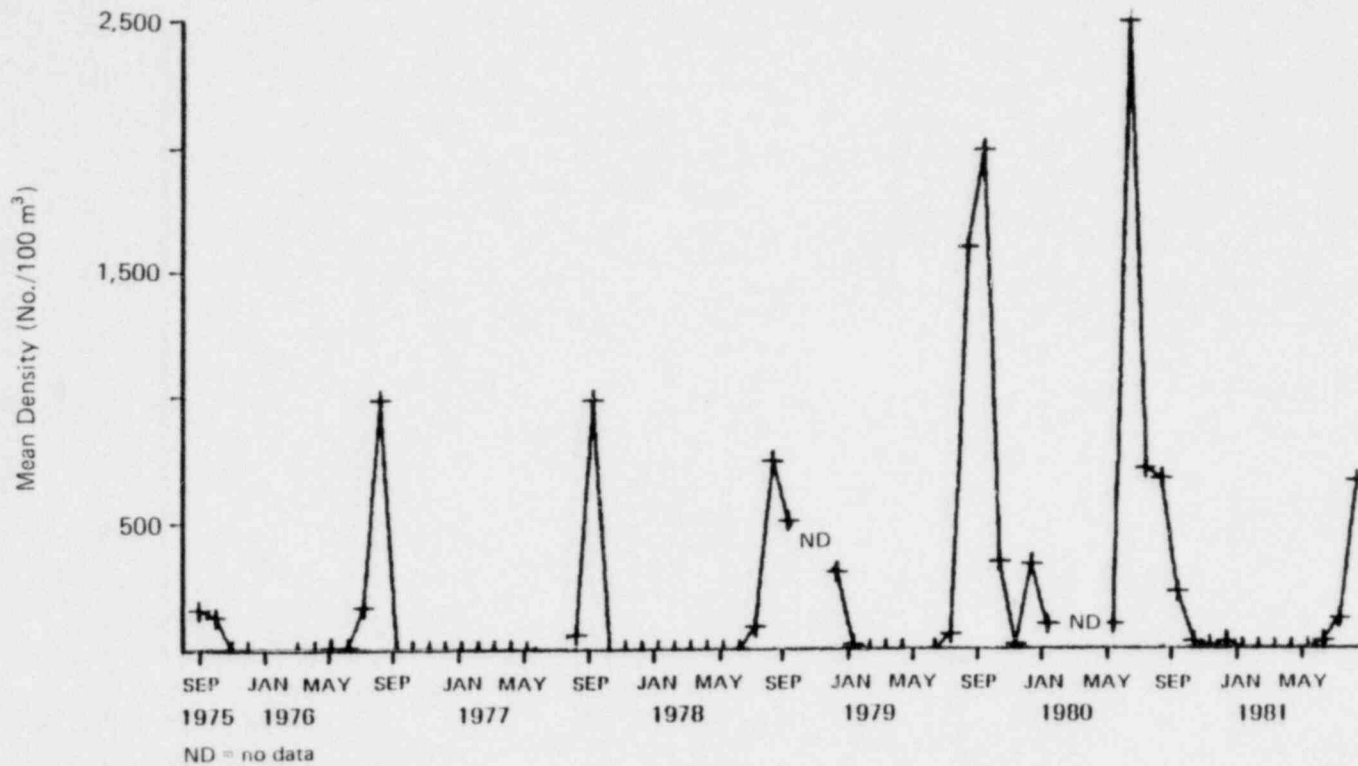


Figure 6-8. Monthly mean density of *Mnemiopsis leidyi* taken in night collections at the intake of the Oyster Creek Nuclear Generating Station, September 1975 – August 1981.

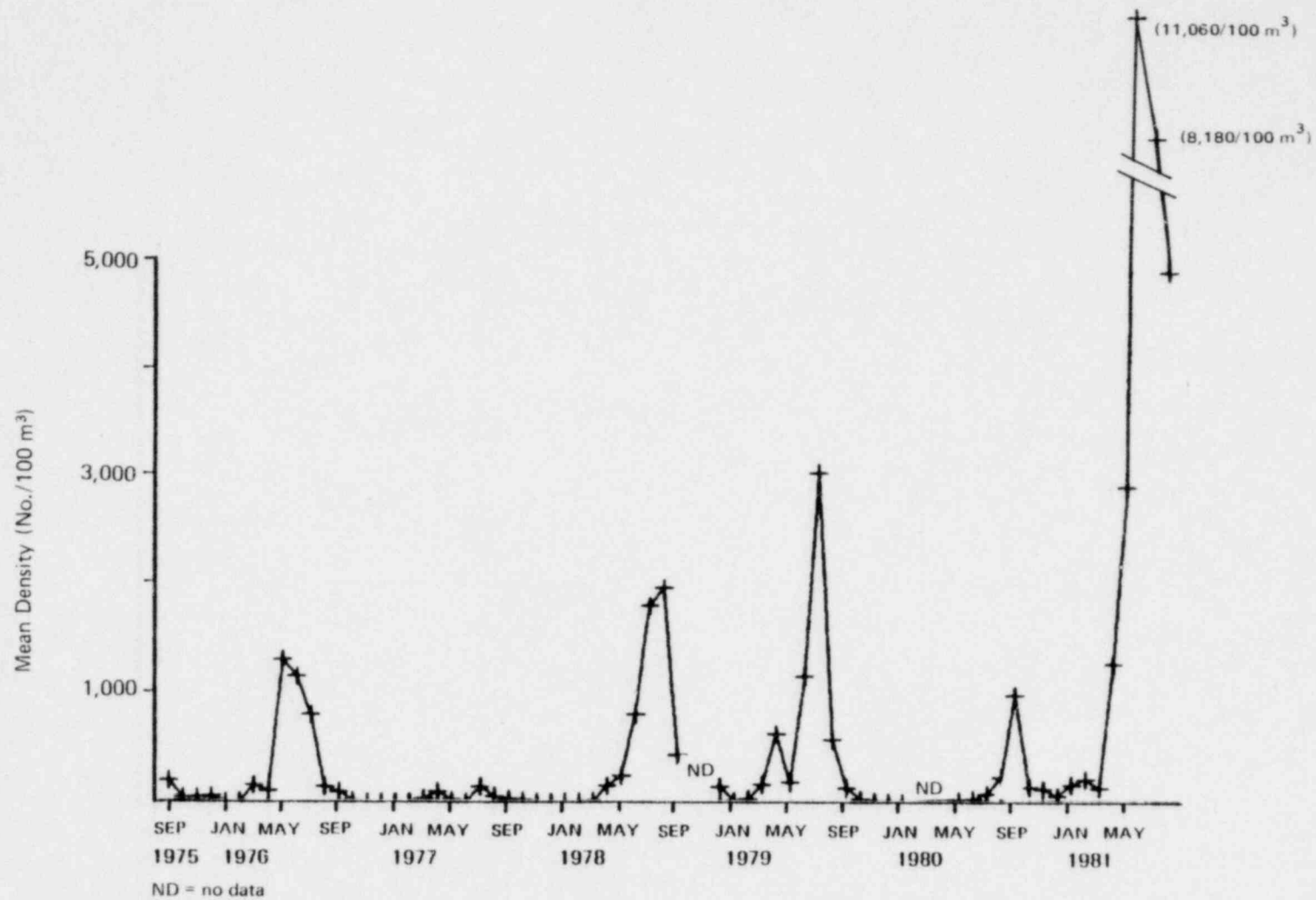


Figure 6-9. Monthly mean density of *Ampelisca* sp. taken in night collections at the discharge of the Oyster Creek Nuclear Generating Station, September 1975 – August 1981.

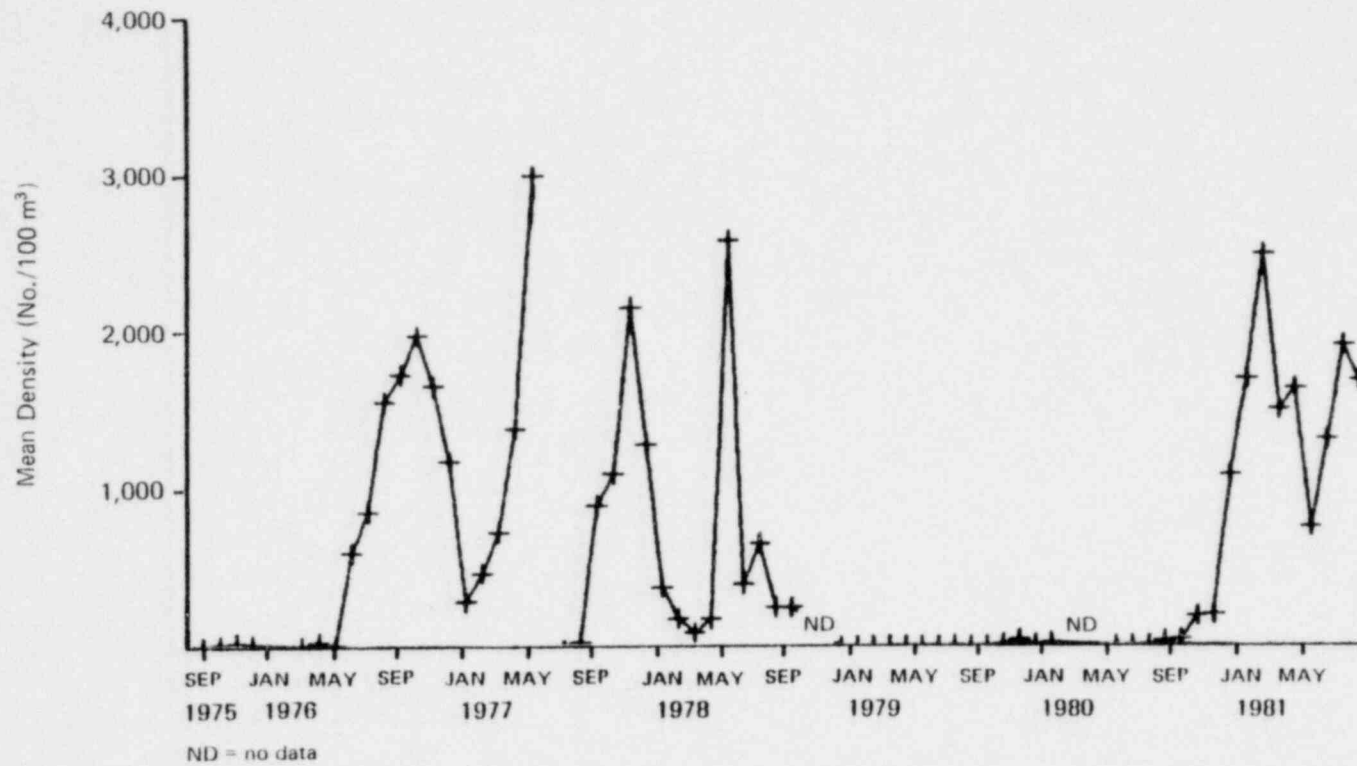


Figure 6-10. Monthly mean density of *Jassa falcata* taken in night collections at the discharge of the Oyster Creek Nuclear Generating Station, September 1975 – August 1981.

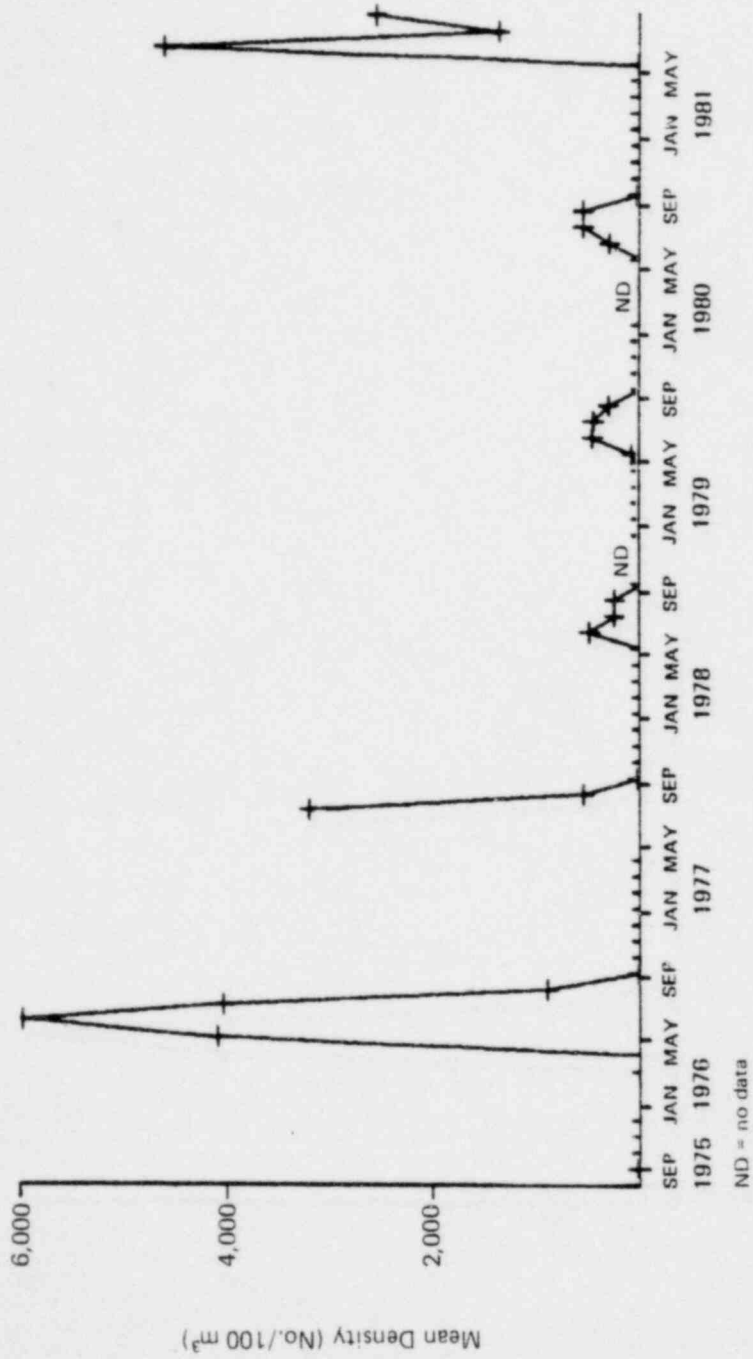


Figure 6-11. Monthly mean density of *Neopanope texana sayi* zoeae taken in night collections at the discharge of the Oyster Creek Nuclear Generating Station, September 1975 – August 1981.



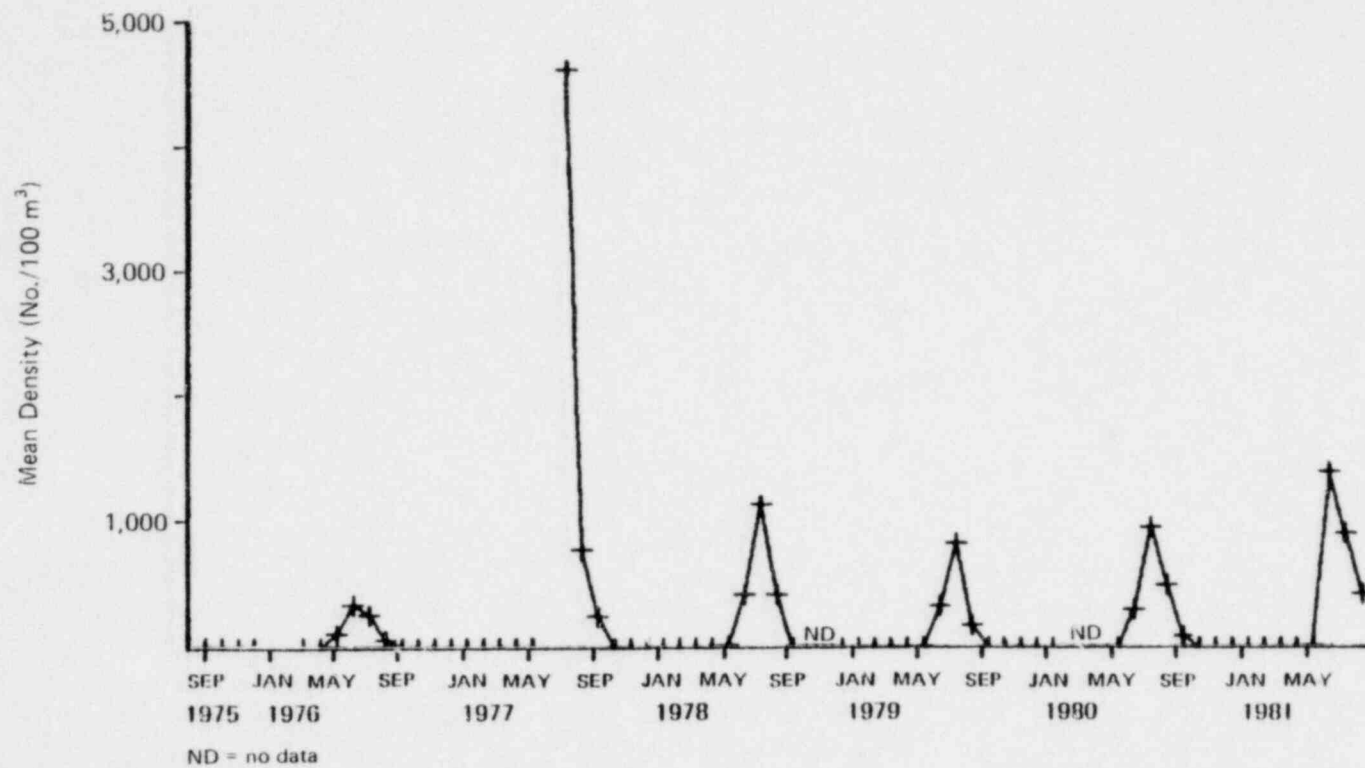


Figure 6-12. Monthly mean density of *Panopeus herbstii* zoeae taken in night collections at the discharge of the Oyster Creek Nuclear Generating Station, September 1975 – August 1981.

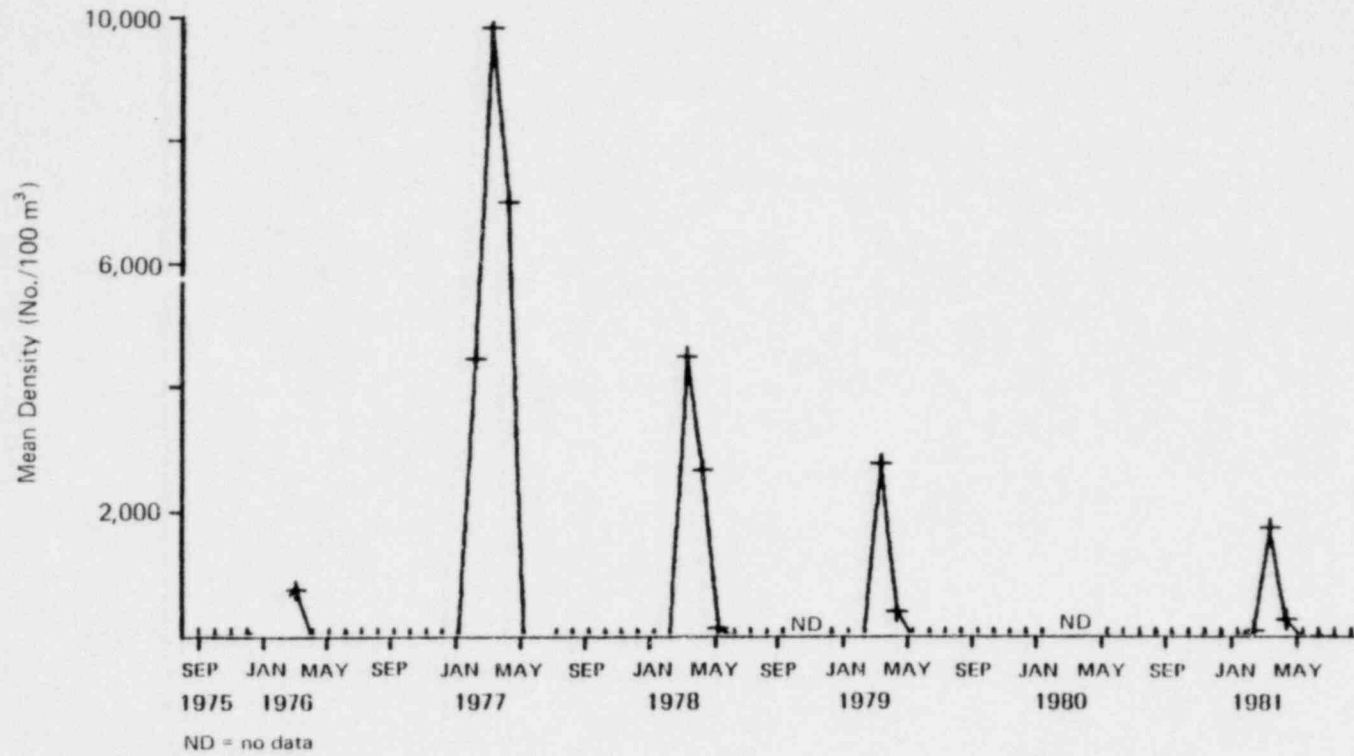


Figure 6-13. Monthly mean density of *Sarsia* spp. taken in night collections at the discharge of the Oyster Creek Nuclear Generating Station, September 1975 – August 1981.

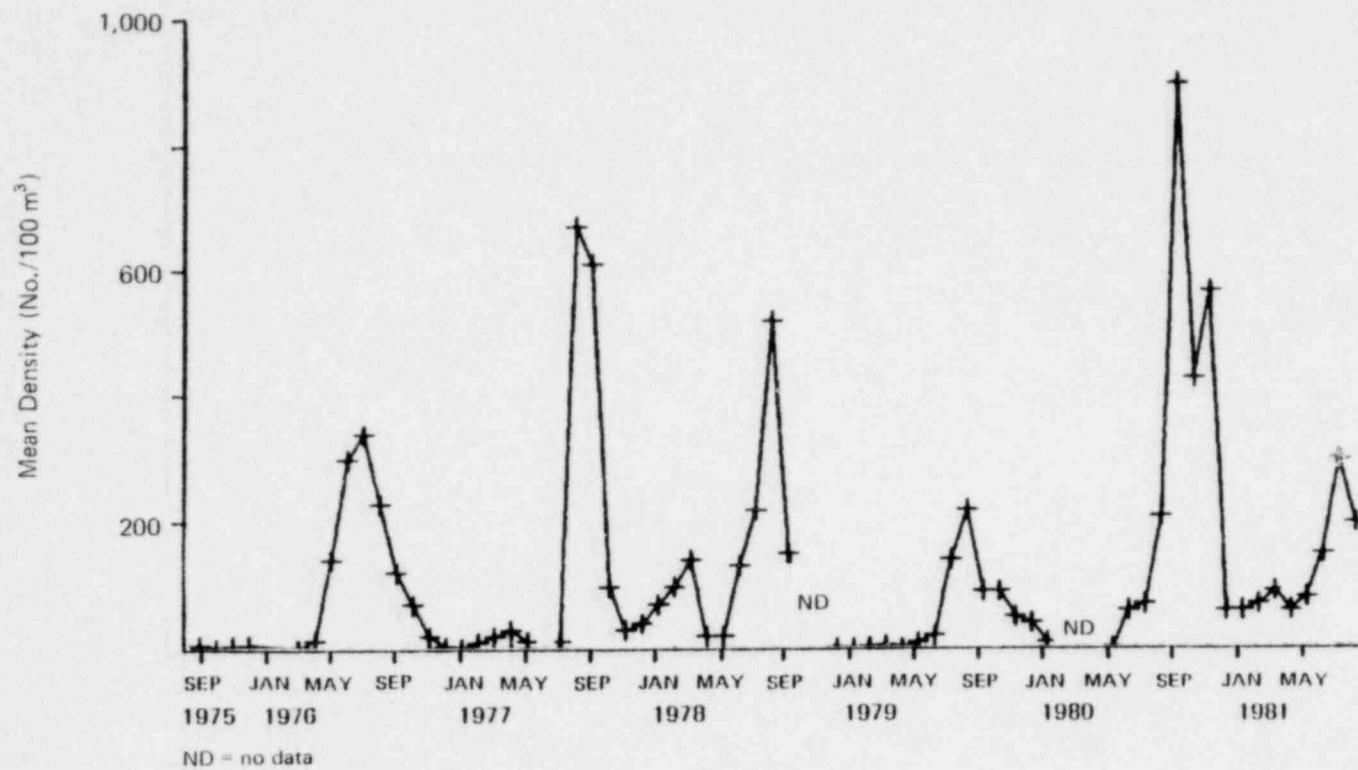


Figure 6-14. Monthly mean density of Suborder Caprellidea taken in night collections at the discharge of the Oyster Creek Nuclear Generating Station, September 1975 – August 1981.

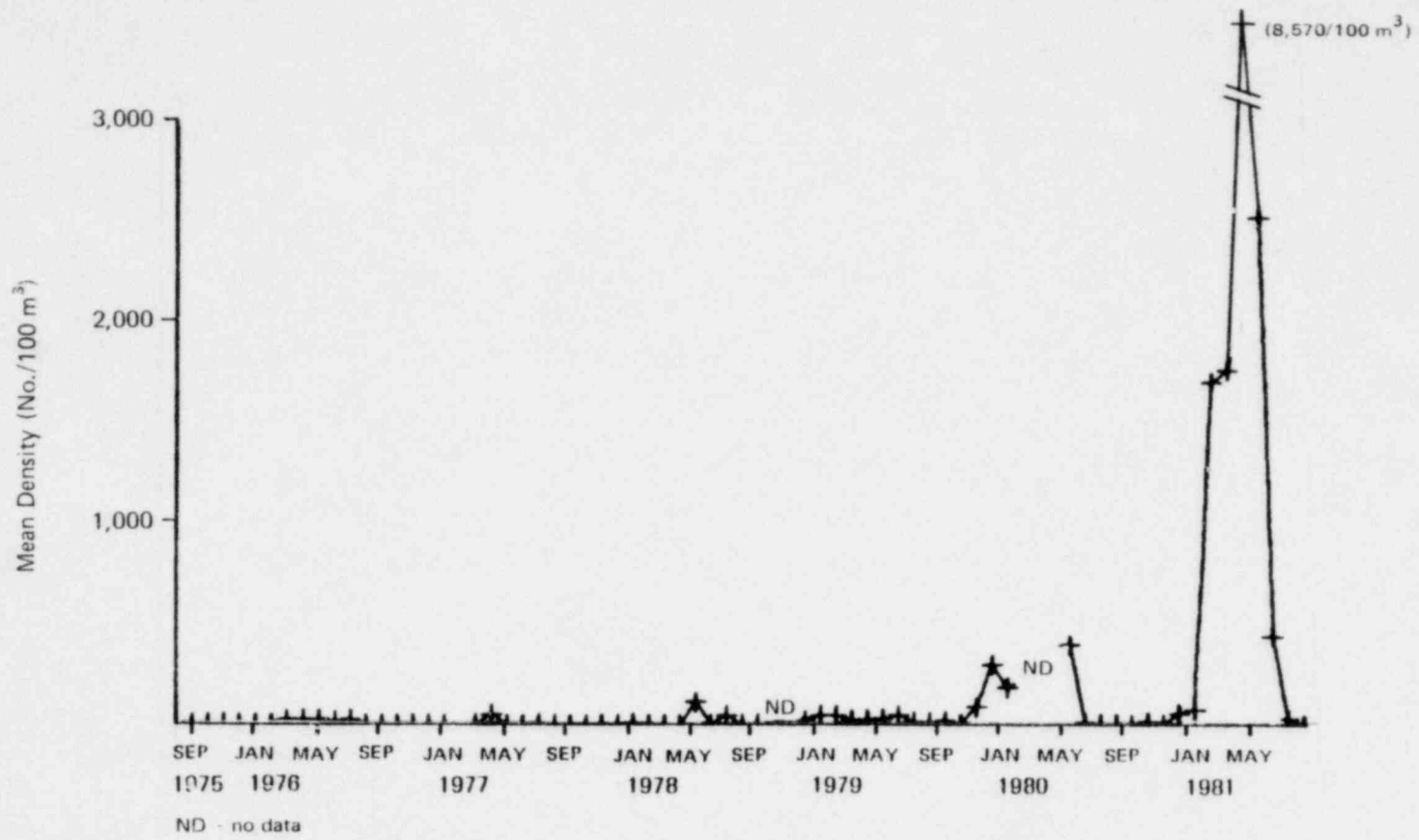


Figure 6-15. Monthly mean density of Gammarus spp. taken in night collections at the discharge of the Oyster Creek Nuclear Generating Station, September 1975 – August 1981.

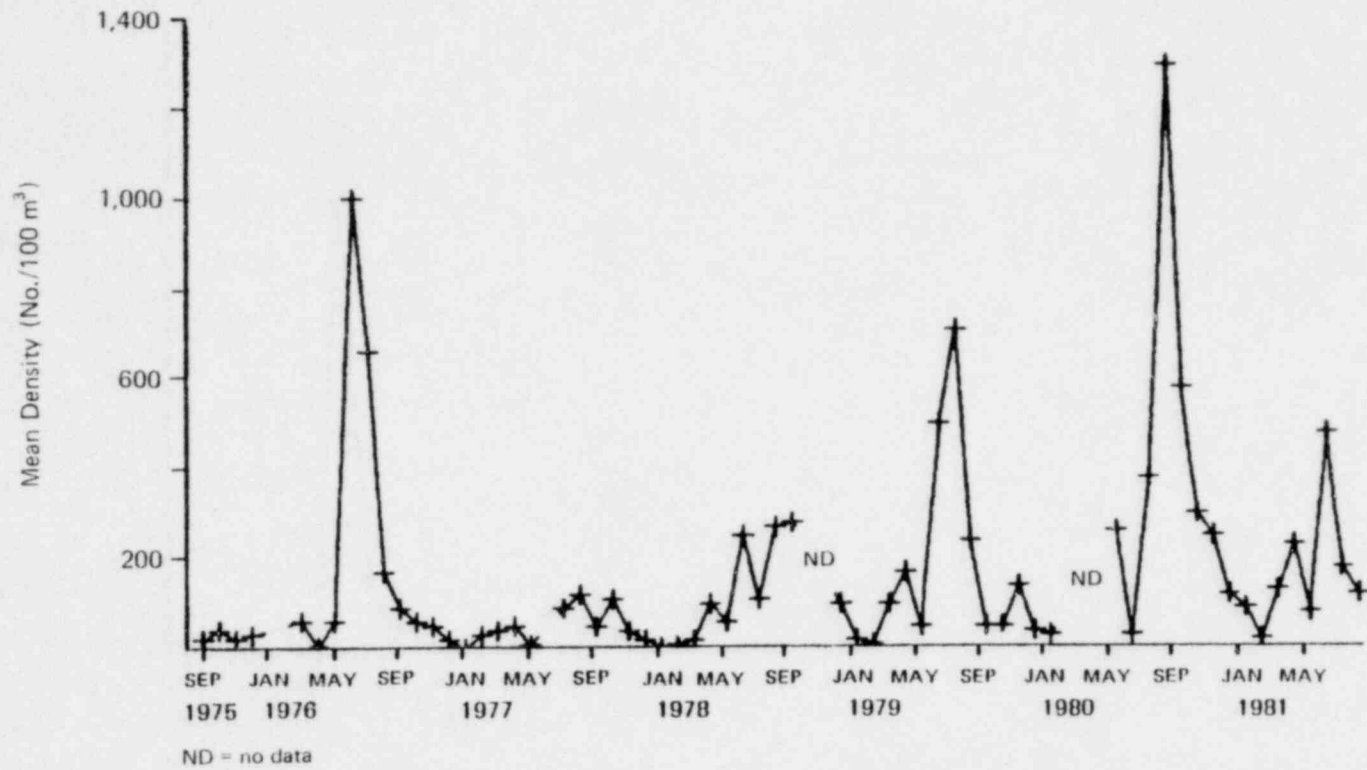


Figure 6-16. Monthly mean density of *Leucon americanus* taken in night collections at the discharge of the Oyster Creek Nuclear Generating Station, September 1975 – August 1981.

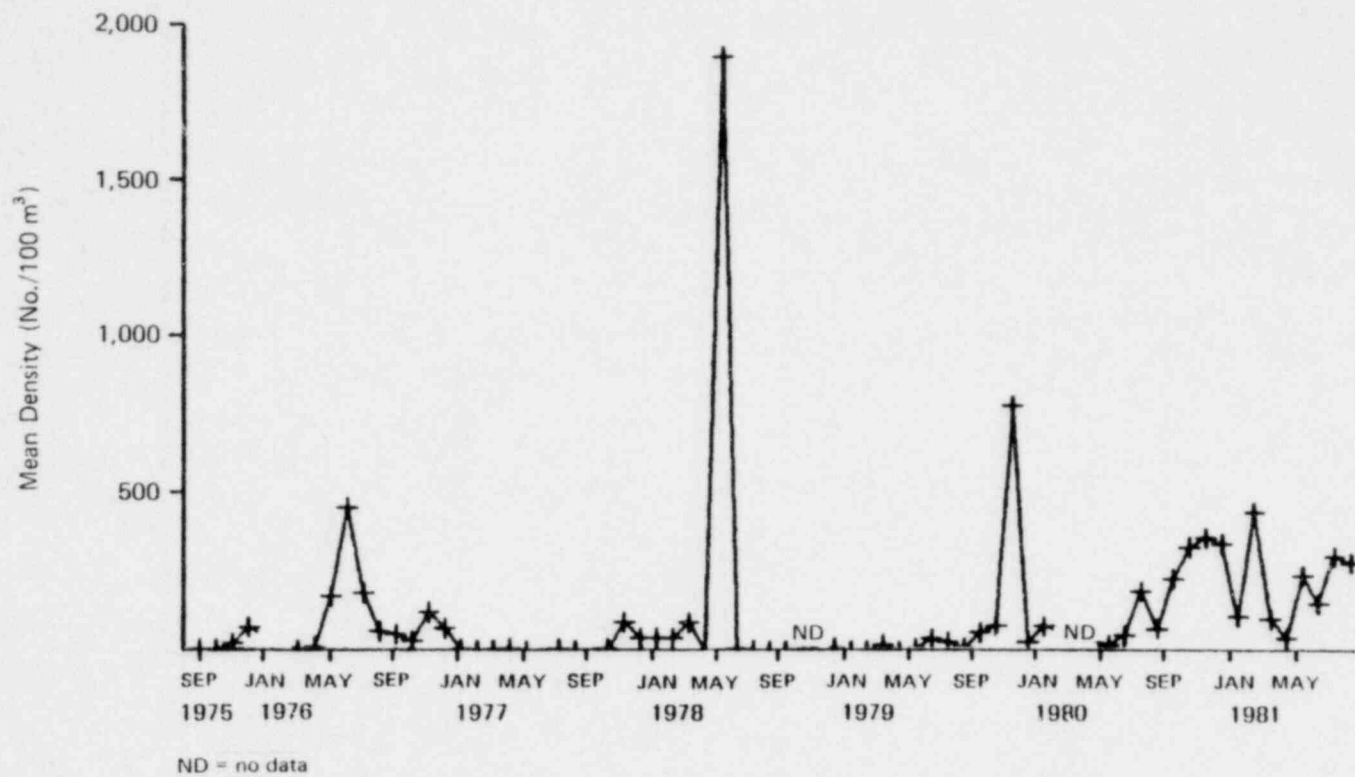


Figure 6-17. Monthly mean density of *Corophium* spp. taken in night collections at the discharge of the Oyster Creek Nuclear Generating Station, September 1975 – August 1981.



TABLE 6-1 MEAN SAMPLE DENSITY (No./100 m<sup>3</sup>), PERCENT COMPOSITION, AND CUMULATIVE PERCENT OF MACROZOOPLANKTON COLLECTED AT THE DISCHARGE OF THE OYSTER CREEK NUCLEAR GENERATING STATION, SEPTEMBER 1980 - AUGUST 1981

| SPP. NAME                 | NUMBER   | %      | CUMU. % |
|---------------------------|----------|--------|---------|
| NEOMYSIS AMERICANA        | 4020.276 | 31.257 | 31.257  |
| AMPELISCA SP              | 1989.185 | 15.466 | 46.723  |
| JASSA FALCATA             | 1141.867 | 8.878  | 55.601  |
| CRANGON SEPTEMPINO ZOEAE  | 1044.853 | 8.124  | 63.724  |
| GAMMARUS SP               | 1024.352 | 7.964  | 71.688  |
| SUBCLASS OSTRACODA        | 825.944  | 6.422  | 78.110  |
| NEOPANOPE TEXA SAYI ZOEAE | 555.714  | 4.321  | 82.431  |
| COROPHIUM SP              | 257.794  | 2.004  | 84.435  |
| SUBORDER CAPRELLIDEA      | 226.055  | 1.758  | 86.193  |
| PANOPEUS HERBSTII ZOEAE   | 204.226  | 1.588  | 87.780  |
| SARSIA SP                 | 178.811  | 1.390  | 89.171  |
| LEUCON AMERICANUS         | 165.509  | 1.287  | 90.457  |
| MYSIDOPSIS BIGELOWI       | 151.873  | 1.181  | 91.638  |
| OXYUROSTYLIS SMITHI       | 123.915  | 0.963  | 92.602  |
| STENOTHOE SP              | 115.436  | 0.897  | 93.499  |
| CLASS PYCNOGONIDA         | 87.826   | 0.683  | 94.182  |
| PALAEONETES SP ZOEAE      | 59.776   | 0.465  | 94.647  |
| CRANGON SEPTEMPINOSA      | 51.052   | 0.397  | 95.044  |
| UPOGEBIA AFFINIS ZOEAE    | 37.175   | 0.289  | 95.333  |
| CERAPUS TUBULARIS         | 35.849   | 0.279  | 95.611  |
| ELASMOPUS LEVIS           | 34.961   | 0.272  | 95.883  |
| IDOTEA BALTICA            | 33.525   | 0.261  | 96.144  |
| BATEA CATHARINENSIS       | 28.853   | 0.224  | 96.368  |
| EDOTEA TRILOBA            | 26.298   | 0.204  | 96.573  |
| RHITHROPANOPEUS HAR ZOEAE | 25.244   | 0.196  | 96.769  |
| MICROPROTOPUS RANEYI      | 25.094   | 0.195  | 96.964  |
| MELITA NITIDA             | 23.634   | 0.184  | 97.148  |
| RATHKEA OCTOPUNCTATA      | 23.144   | 0.180  | 97.328  |
| COROPHIUM ACHERUSICUM     | 23.119   | 0.180  | 97.507  |
| MONOCULODES EDWARDSI      | 22.588   | 0.176  | 97.683  |
| SAGITTA SP                | 21.665   | 0.168  | 97.852  |
| AEQUOREA SP               | 19.390   | 0.151  | 98.002  |
| CYMADUSA COMPTA           | 14.803   | 0.115  | 98.117  |
| ORDER AMPHIPODA           | 14.718   | 0.114  | 98.232  |
| AUTOLYTUS SP              | 13.412   | 0.104  | 98.336  |
| TURRITOPSIS NUTRICOLA     | 12.239   | 0.095  | 98.431  |
| MICRODEUTOPUS GRYLLOTALP  | 11.112   | 0.086  | 98.518  |
| ERICHTHONIUS SP           | 10.688   | 0.083  | 98.601  |
| CLASS POLYCHAETA          | 9.880    | 0.077  | 98.678  |
| LIBINIA SP ZOEAE          | 9.056    | 0.070  | 98.748  |
| SECTION BRACHYURA MEGALP  | 7.960    | 0.062  | 98.810  |
| ORDER CUMACEA             | 7.951    | 0.062  | 98.872  |
| CREPIDULA SP              | 7.348    | 0.057  | 98.929  |
| CYCLASPIS VARIANS         | 7.102    | 0.055  | 98.984  |
| CLASS POLYCHAETA LAR      | 7.049    | 0.055  | 99.039  |
| HYDROMEDUSAE              | 6.775    | 0.053  | 99.091  |
| LYSIANOPSIS ALBA          | 6.686    | 0.052  | 99.143  |

TABLE 6-1 (CONT.)

| SPP. NAME                 | NUMBER | %     | CUMU. % |
|---------------------------|--------|-------|---------|
| COROPHIUM TUBERCULATUM    | 5.902  | 0.046 | 99.189  |
| FAMILY SYLLIDAE           | 5.385  | 0.042 | 99.231  |
| CALLINECTES SP MEGALOP    | 5.353  | 0.042 | 99.273  |
| HIRUDINEA                 | 5.347  | 0.042 | 99.314  |
| CLASS GASTROPODA          | 5.162  | 0.040 | 99.355  |
| LEPTOSYNAPTA SP           | 4.539  | 0.035 | 99.390  |
| SPIORBUS SP.              | 4.315  | 0.034 | 99.423  |
| FAMILY XANTHIDAE ZOEAE    | 4.247  | 0.033 | 99.456  |
| ORDER ACTINIARIA          | 4.154  | 0.032 | 99.489  |
| NEREIS SP EPITOKE         | 4.113  | 0.032 | 99.521  |
| COROPHIUM BONELLI         | 3.957  | 0.031 | 99.551  |
| HIPPOLYTE SP ZOEAE        | 3.903  | 0.030 | 99.582  |
| POLYDORA SP               | 3.598  | 0.028 | 99.610  |
| FAMILY PHYLLODOCIDAE      | 3.503  | 0.027 | 99.637  |
| PAGURUS SP ZOEAE          | 3.325  | 0.026 | 99.663  |
| PALAEONETES VULGARIS      | 3.293  | 0.026 | 99.688  |
| OBELIA SP                 | 3.196  | 0.025 | 99.713  |
| CLASS TURBELLARIA         | 3.054  | 0.024 | 99.737  |
| UNCIOLEA SP               | 3.043  | 0.024 | 99.761  |
| ERICHSONELLA              | 2.084  | 0.016 | 99.777  |
| CLASS PELECYPODA          | 1.918  | 0.015 | 99.792  |
| GAMMARUS MUCRONATUS       | 1.875  | 0.015 | 99.806  |
| INVERTEBRATE FRAGMENTS    | 1.813  | 0.014 | 99.821  |
| PALAEONETES SP            | 1.668  | 0.013 | 99.833  |
| SUBCLS CIRRIPIEDIA CYPRID | 1.639  | 0.013 | 99.846  |
| HYDROIDES DIANTHUS        | 1.578  | 0.012 | 99.858  |
| PODARKE OBSCURA           | 1.383  | 0.011 | 99.869  |
| SUBORDER DORIDACEA        | 1.279  | 0.010 | 99.879  |
| FAMILY CAPITELLIDAE       | 1.075  | 0.008 | 99.888  |
| MARGELOPSIS GIBBESI       | 0.904  | 0.007 | 99.895  |
| HETEROMYSIS FORMOSA       | 0.903  | 0.007 | 99.902  |
| NEREIS SP                 | 0.896  | 0.007 | 99.909  |
| FAMILY AMPITHOIDAE        | 0.887  | 0.007 | 99.915  |
| LISTRIELLA BARNARDI       | 0.746  | 0.006 | 99.921  |
| OVALIPES OCELLATUS ZOEAE  | 0.739  | 0.006 | 99.927  |
| PECTINARIA GOULDII        | 0.711  | 0.006 | 99.933  |
| SUBORDER AEOLIDACEA       | 0.673  | 0.005 | 99.938  |
| PHIALIDIUM SP MEDUSAE     | 0.667  | 0.005 | 99.943  |
| PARAHESIONE LUTEOLA       | 0.666  | 0.005 | 99.948  |
| UCA SP ZOEAE              | 0.602  | 0.005 | 99.953  |
| CLASS SCYPHOZOA EPHYRA    | 0.546  | 0.004 | 99.957  |
| CYATHURA POLITA           | 0.531  | 0.004 | 99.961  |
| FAMILY MYSIDAE            | 0.524  | 0.004 | 99.965  |
| CALLINECTES SP JUV        | 0.465  | 0.004 | 99.969  |
| FAMILY TEREBELLIDAE       | 0.458  | 0.004 | 99.972  |
| FAMILY SPIONIDAE          | 0.383  | 0.003 | 99.975  |
| ORDER SABELLIDAE          | 0.338  | 0.003 | 99.978  |
| CALLINECTES SAPIDUS JUV   | 0.325  | 0.003 | 99.981  |
| HIPPOLYTE SP              | 0.287  | 0.002 | 99.983  |

TABLE 6-1 (CONT.)

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| SPP. NAME               | NUMBER | %     | CUMU. % |
|-------------------------|--------|-------|---------|
| FAMILY SABELLIDAE       | 0.275  | 0.002 | 99.985  |
| FAMILY AMPHARETIDAE     | 0.240  | 0.002 | 99.987  |
| PINNIXA SP ZOEAE        | 0.234  | 0.002 | 99.989  |
| MARPHYSA SANGUINEA      | 0.211  | 0.002 | 99.990  |
| NEMOPSIS BACHEI         | 0.141  | 0.001 | 99.991  |
| STAUONEREIS RUDOLPHI    | 0.135  | 0.001 | 99.992  |
| AMPITHOE LONGIMANA      | 0.106  | 0.001 | 99.993  |
| CHIRIDOTEA SP.          | 0.104  | 0.001 | 99.994  |
| BOUGAINVILLIA SP        | 0.099  | 0.001 | 99.995  |
| CLASS INSECTA           | 0.093  | 0.001 | 99.996  |
| FAMILY LUMBRINERIDAE    | 0.089  | 0.001 | 99.996  |
| FAMILY CYMOTHOIDAE      | 0.089  | 0.001 | 99.997  |
| SABELLA MICROPHALMA     | 0.076  | 0.001 | 99.997  |
| CALLINECTES SP ZOEAE    | 0.075  | 0.001 | 99.998  |
| AMPHINEMA               | 0.069  | 0.001 | 99.999  |
| ORDER TANAIIDACEA       | 0.061  | 0.000 | 99.999  |
| FAMILY HESIONIDAE       | 0.060  | 0.000 | 100.000 |
| TOMOPTERIS HELGOLANDICA | 0.054  | 0.000 | 100.000 |

TABLE 6-2 MEAN SAMPLE DENSITIES (No./100 m<sup>3</sup>) AND PERCENT COMPOSITION OF MACROZOOPLANKTON COLLECTED DURING THE DAY AND NIGHT AT THE CONDENSER DISCHARGE OF THE OYSTER CREEK NUCLEAR GENERATING STATION, SEPTEMBER 1980 - AUGUST 1981

| STATION                   | OYSTERCR         |             | GEAR-36BONG      |             | 22 SEP 80       |             |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | DSNT             |             | DSDA             |             |                 |             |
| SPECIES                   | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |
| NEOMYSIS AMERICANA        | 26681.80         | 81.20       | 1467.35          | 39.87       | 16596.02        | 78.33       |
| AMPELISCA SP              | 850.53           | 2.59        | 7.55             | 0.21        | 513.34          | 2.42        |
| JASSA FALCATA             | 21.50            | 0.07        | 156.68           | 4.26        | 75.57           | 0.36        |
| SUBCLASS OSTRACODA        | 1200.10          | 3.65        | 12.25            | 0.33        | 724.96          | 3.42        |
| NEOPANOPE TEXA SAYI ZOEAE | 19.63            | 0.06        | 0.00             | 0.00        | 11.78           | 0.06        |
| COROPHIUM SP              | 240.40           | 0.73        | 166.30           | 4.52        | 210.76          | 0.99        |
| SUBORDER CAPRELLIDEA      | 1373.47          | 4.18        | 622.00           | 16.90       | 1072.88         | 5.06        |
| LEUCON AMERICANUS         | 390.65           | 1.19        | 0.00             | 0.00        | 234.39          | 1.11        |
| MYSIDOPSIS BIGELOWI       | 396.03           | 1.21        | 16.43            | 0.45        | 244.19          | 1.15        |
| OXYUROSTYLIS SMITHI       | 86.63            | 0.26        | 6.85             | 0.19        | 54.72           | 0.26        |
| STENOTHOE SP              | 72.58            | 0.22        | 397.30           | 10.80       | 202.47          | 0.96        |
| CLASS PYCNOGONIDA         | 425.73           | 1.30        | 170.78           | 4.64        | 323.75          | 1.53        |
| UPOGEBIA AFFINIS ZOEAE    | 10.48            | 0.03        | 0.00             | 0.00        | 6.29            | 0.03        |
| CERAPUS TUBULARIS         | 140.63           | 0.43        | 83.53            | 2.27        | 117.79          | 0.56        |
| ELASMOPUS LEVIS           | 21.50            | 0.07        | 0.00             | 0.00        | 12.90           | 0.06        |
| IDOTEA BALTICA            | 0.00             | 0.00        | 3.12             | 0.08        | 1.25            | 0.01        |
| BATEA CATHARINENSIS       | 10.48            | 0.03        | 10.80            | 0.29        | 10.61           | 0.05        |
| EDOTEA TRILOBA            | 79.02            | 0.24        | 28.60            | 0.78        | 58.85           | 0.28        |
| MICROPROTOPUS RANEYI      | 67.32            | 0.20        | 10.80            | 0.29        | 44.71           | 0.21        |
| MELITA NITIDA             | 86.42            | 0.26        | 54.53            | 1.48        | 73.66           | 0.35        |
| COROPHIUM ACHERUSICUM     | 20.97            | 0.06        | 13.55            | 0.37        | 18.00           | 0.08        |
| MONOCULODES EDWARDSI      | 9.82             | 0.03        | 0.00             | 0.00        | 5.89            | 0.03        |
| AEQUOREA SP               | 190.55           | 0.58        | 330.55           | 8.98        | 246.55          | 1.16        |
| ORDER AMPHIPODA           | 53.57            | 0.16        | 0.00             | 0.00        | 32.14           | 0.15        |
| AUTOLYTUS SP              | 0.00             | 0.00        | 6.10             | 0.17        | 2.44            | 0.01        |
| TURRITOPSIS NUTRICOLA     | 237.37           | 0.72        | 60.08            | 1.63        | 166.45          | 0.79        |
| MICRODEUTOPUS GRYLLOLALP  | 11.02            | 0.03        | 3.40             | 0.09        | 7.97            | 0.04        |
| ERICHTHONIUS SP           | 31.18            | 0.09        | 6.22             | 0.17        | 21.20           | 0.10        |
| OTHER SPECIES             | 130.67           | 0.40        | 45.33            | 1.23        | 96.53           | 0.46        |
| STATION TOTAL AND<br>DATE | 32860.05         |             | 3680.07          |             | 21188.06        |             |

TABLE 6-2 (CONT.)

| STATION                   | OYSTERCR         |             |                  |             | GEAR-36BONG     |             | 20 OCT 80 |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|-----------|
|                           | DSNT             |             | DSDA             |             | NUMBER<br>TOTAL | PCT<br>COMP |           |
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |           |
| NEOMYSIS AMERICANA        | 4205.40          | 56.69       | 1654.55          | 54.32       | 3185.06         | 56.18       |           |
| AMPELISCA SP              | 101.35           | 1.37        | 15.80            | 0.52        | 67.13           | 1.18        |           |
| JASSA FALCATA             | 314.22           | 4.24        | 168.75           | 5.54        | 256.03          | 4.52        |           |
| CRANGON SEPTEMSPINO ZOEAE | 19.62            | 0.26        | 4.53             | 0.15        | 13.58           | 0.24        |           |
| SUBCLASS OSTRACODA        | 1020.35          | 13.75       | 34.48            | 1.13        | 626.00          | 11.04       |           |
| COROPHIUM SP              | 322.62           | 4.35        | 533.25           | 17.51       | 406.87          | 7.18        |           |
| SUBORDER CAPRELLIDEA      | 453.62           | 6.11        | 329.30           | 10.81       | 403.89          | 7.12        |           |
| LEUCON AMERICANUS         | 357.48           | 4.82        | 0.00             | 0.00        | 214.49          | 3.78        |           |
| MYSIDOPSIS BIGELOWI       | 106.67           | 1.44        | 0.00             | 0.00        | 64.00           | 1.13        |           |
| OXYUROSTYLIS SMITHI       | 34.40            | 0.46        | 0.00             | 0.00        | 20.64           | 0.36        |           |
| STENOTHOE SP              | 67.13            | 0.90        | 55.85            | 1.83        | 62.62           | 1.10        |           |
| CLASS PACHOGONIDA         | 87.12            | 1.17        | 105.40           | 3.46        | 94.43           | 1.67        |           |
| CERAPUS TUBULARIS         | 58.98            | 0.80        | 24.80            | 0.81        | 45.31           | 0.80        |           |
| ELASMOPUS LEVIS           | 20.22            | 0.27        | 5.25             | 0.17        | 14.23           | 0.25        |           |
| IDOTEA BALTICA            | 3.80             | 0.05        | 0.00             | 0.00        | 2.28            | 0.04        |           |
| BATEA CATHARINENSIS       | 14.42            | 0.19        | 0.00             | 0.00        | 8.65            | 0.15        |           |
| EDOTEA TRILOBA            | 27.03            | 0.36        | 23.35            | 0.77        | 25.56           | 0.45        |           |
| MICROPROTOPUS RANEYI      | 0.00             | 0.00        | 5.28             | 0.17        | 2.11            | 0.04        |           |
| MELITA NITIDA             | 4.30             | 0.06        | 0.00             | 0.00        | 2.58            | 0.05        |           |
| COROPHIUM ACHERUSICUM     | 76.45            | 1.03        | 21.08            | 0.69        | 54.30           | 0.96        |           |
| AEQUOREA SP               | 30.88            | 0.42        | 9.98             | 0.33        | 22.52           | 0.40        |           |
| CYADUSA COMPTA            | 3.80             | 0.05        | 0.00             | 0.00        | 2.28            | 0.04        |           |
| ORDER AMPHIPODA           | 7.45             | 0.10        | 0.00             | 0.00        | 4.47            | 0.08        |           |
| TURRITOPSIS NUTRICOLA     | 6.97             | 0.09        | 0.00             | 0.00        | 4.18            | 0.07        |           |
| ERICHTHONIUS SP           | 4.30             | 0.06        | 0.00             | 0.00        | 2.58            | 0.05        |           |
| OTHER SPECIES             | 69.58            | 0.94        | 54.13            | 1.78        | 63.40           | 1.12        |           |
| STATION TOTAL AND<br>DATE | 7418.15          |             | 3045.75          |             | 5669.19         |             |           |

TABLE 6-2 (CONT.)

| OYSTERCR                  |                  | GEAR-36BONG |                  |             |                 | 24 NOV 80   |  |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|--|
| STATION                   |                  | DSNT        |                  | DSDA        |                 |             |  |
| SPECIES                   | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |  |
| NEOMYSIS AMERICANA        | 2790.25          | 83.35       | 757.65           | 54.29       | 1773.95         | 74.80       |  |
| AMPELISCA SP              | 27.90            | 0.83        | 3.83             | 0.27        | 15.86           | 0.67        |  |
| JASSA FALCATA             | 53.35            | 1.59        | 93.05            | 6.67        | 73.20           | 3.09        |  |
| CRANGON SEPTEMPINO ZOEAE  | 28.27            | 0.84        | 10.10            | 0.72        | 19.19           | 0.81        |  |
| GAMMARUS SP               | 5.58             | 0.17        | 3.40             | 0.24        | 4.49            | 0.19        |  |
| SUBCLASS OSTRACODA        | 0.00             | 0.00        | 3.85             | 0.28        | 1.92            | 0.08        |  |
| COROPHIUM SP              | 63.28            | 1.89        | 314.10           | 22.51       | 188.69          | 7.96        |  |
| SUBORDER CAPRELLIDEA      | 55.85            | 1.67        | 64.80            | 4.64        | 60.33           | 2.54        |  |
| LEUCON AMERICANUS         | 137.35           | 4.10        | 20.33            | 1.46        | 78.84           | 3.32        |  |
| MYSIDOPSIS BIGELOWI       | 52.35            | 1.59        | 34.70            | 2.49        | 44.02           | 1.86        |  |
| OXYUROSTYLIS SMITHI       | 21.98            | 0.66        | 0.00             | 0.00        | 10.99           | 0.46        |  |
| STENOTHOE SP              | 13.45            | 0.40        | 21.10            | 1.51        | 17.27           | 0.73        |  |
| CLASS PYCNOGONIDA         | 2.78             | 0.08        | 29.30            | 2.10        | 16.04           | 0.68        |  |
| CRANGON SEPTEMPINOSA      | 5.75             | 0.17        | 0.00             | 0.00        | 2.88            | 0.12        |  |
| CERAPUS TUBULARIS         | 0.00             | 0.00        | 3.83             | 0.27        | 1.91            | 0.08        |  |
| IDOTEA BALTICA            | 10.68            | 0.32        | 7.18             | 0.51        | 8.93            | 0.38        |  |
| BATEA CATHARINENSIS       | 16.90            | 0.50        | 0.00             | 0.00        | 8.45            | 0.36        |  |
| MELITA NITIDA             | 2.78             | 0.08        | 0.00             | 0.00        | 1.39            | 0.06        |  |
| MONOCULODES EDWARDSI      | 14.18            | 0.42        | 0.00             | 0.00        | 7.09            | 0.30        |  |
| SAGITTA SP                | 0.00             | 0.00        | 7.68             | 0.55        | 3.84            | 0.16        |  |
| ORDER AMPHIPODA           | 2.78             | 0.08        | 0.00             | 0.00        | 1.39            | 0.06        |  |
| OTHER SPECIES             | 41.35            | 1.24        | 20.70            | 1.48        | 31.03           | 1.31        |  |
| STATION TOTAL AND<br>DATE | TOTAL            | 3347.77     | 1395.57          |             | 2371.68         |             |  |



TABLE 6-2 (CONT.)

| OYSTERCR                  |                  | GEAR-36BONG |                  |             |                 | 23 DEC 80   |  |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|--|
| STATION                   | DSNT             |             | DSDA             |             |                 |             |  |
| SPECIES                   | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |  |
| NEOMYSIS AMERICANA        | 2100.65          | 31.22       | 879.78           | 50.35       | 1490.21         | 35.16       |  |
| JASSA FALCATA             | 3013.02          | 44.78       | 619.80           | 35.47       | 1816.41         | 42.86       |  |
| CRANGON SEPTemspino ZOEAE | 7.40             | 0.11        | 6.03             | 0.34        | 6.71            | 0.16        |  |
| GAMMARUS SP               | 77.90            | 1.16        | 0.00             | 0.00        | 38.95           | 0.92        |  |
| COROPHIUM SP              | 1106.32          | 16.44       | 71.35            | 4.08        | 588.84          | 13.89       |  |
| SUBORDER CAPRELLIDEA      | 17.02            | 0.25        | 18.25            | 1.04        | 17.64           | 0.42        |  |
| LEUCON AMERICANUS         | 27.65            | 0.41        | 2.13             | 0.12        | 14.89           | 0.35        |  |
| MYSIDOPSIS BIGELOWI       | 53.55            | 0.80        | 1.95             | 0.11        | 27.75           | 0.65        |  |
| OXYUROSTYLIS SMITHI       | 2.42             | 0.04        | 0.00             | 0.00        | 1.21            | 0.03        |  |
| STENOTHOE SP              | 80.32            | 1.19        | 31.02            | 1.78        | 55.67           | 1.31        |  |
| CLASS PYCNOGONIDA         | 2.42             | 0.04        | 0.00             | 0.00        | 1.21            | 0.03        |  |
| CRANGON SEPTemspinosa     | 79.80            | 1.19        | 0.00             | 0.00        | 39.90           | 0.94        |  |
| CERAPUS TUBULARIS         | 0.00             | 0.00        | 8.77             | 0.50        | 4.39            | 0.10        |  |
| MONOCULODES EDWARDSI      | 4.82             | 0.07        | 0.00             | 0.00        | 2.41            | 0.06        |  |
| SAGITTA SP                | 104.05           | 1.55        | 86.70            | 4.96        | 95.38           | 2.25        |  |
| AUTOLYTUS SP              | 2.42             | 0.04        | 10.88            | 0.62        | 6.65            | 0.16        |  |
| OTHER SPECIES             | 49.30            | 0.73        | 10.55            | 0.60        | 29.92           | 0.71        |  |
| STATION TOTAL AND<br>DATE | 6729.10          |             | 1747.20          |             | 4238.15         |             |  |

TABLE 6-2 (CONT.)

| OYSTERCR                  |                  | GEAR-36BONG |                  |             |                 | 20 JAN 81   |  |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|--|
| STATION                   | DSNT             |             | DSDA             |             |                 |             |  |
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |  |
| NEOMYSIS AMERICANA        | 1127.95          | 33.30       | 439.38           | 8.78        | 783.66          | 18.68       |  |
| JASSA FALCATA             | 1675.28          | 49.46       | 2662.60          | 53.20       | 2168.94         | 51.69       |  |
| GAMMARUS SP               | 44.35            | 1.31        | 13.33            | 0.27        | 28.84           | 0.69        |  |
| SUBCLASS OSTRACODA        | 22.15            | 0.65        | 2.42             | 0.05        | 12.29           | 0.29        |  |
| COROPHIUM SP              | 78.40            | 2.31        | 1550.68          | 30.99       | 814.54          | 19.41       |  |
| SUBORDER CAPRELLIDEA      | 101.13           | 2.99        | 29.33            | 0.59        | 65.23           | 1.55        |  |
| SARSIA SP                 | 0.00             | 0.00        | 2.13             | 0.04        | 1.06            | 0.03        |  |
| LEUCON AMERICANUS         | 111.70           | 3.30        | 4.55             | 0.09        | 58.13           | 1.39        |  |
| MYSIDOPSIS BIGELOWI       | 7.13             | 0.21        | 0.00             | 0.00        | 3.56            | 0.08        |  |
| OXYUROSTYLIS SMITHI       | 13.98            | 0.41        | 4.55             | 0.09        | 9.26            | 0.22        |  |
| STENOTHOE SP              | 48.55            | 1.43        | 78.88            | 1.58        | 63.71           | 1.52        |  |
| CLASS PYCNOGONIDA         | 0.00             | 0.00        | 2.42             | 0.05        | 1.21            | 0.03        |  |
| CRANGON SEPTEMPINOSA      | 6.38             | 0.19        | 0.00             | 0.00        | 3.19            | 0.08        |  |
| CERAPUS TUBULARIS         | 5.55             | 0.16        | 0.00             | 0.00        | 2.78            | 0.07        |  |
| ELASMOPUS LEVIS           | 8.65             | 0.26        | 8.48             | 0.17        | 8.56            | 0.20        |  |
| EDOTEA TRILOBA            | 4.85             | 0.14        | 2.42             | 0.05        | 3.64            | 0.09        |  |
| RATHKEA OCTOPUNCTATA      | 0.00             | 0.00        | 2.42             | 0.05        | 1.21            | 0.03        |  |
| COROPHIUM ACHERUSICUM     | 0.00             | 0.00        | 49.35            | 0.99        | 24.67           | 0.59        |  |
| MONOCULODES EDWARDSI      | 47.75            | 1.41        | 0.00             | 0.00        | 23.88           | 0.57        |  |
| SAGITTA SP                | 23.15            | 0.68        | 53.20            | 1.06        | 38.18           | 0.91        |  |
| AUTOLYTUS SP              | 4.10             | 0.12        | 0.00             | 0.00        | 2.05            | 0.05        |  |
| ERICHTHONIUS SP           | 0.00             | 0.00        | 12.35            | 0.25        | 6.18            | 0.15        |  |
| OTHER SPECIES             | 56.43            | 1.67        | 86.03            | 1.72        | 71.23           | 1.70        |  |
| STATION TOTAL AND<br>DATE |                  |             |                  |             |                 |             |  |
|                           | 3387.45          |             | 5004.50          |             | 4195.38         |             |  |

TABLE 6-2 (CONT.)

| STATION                  | OYSTERCR |       | GEAR-36BONG |       | 18 FEB 81 |       |
|--------------------------|----------|-------|-------------|-------|-----------|-------|
|                          | DSNT     |       | DSDA        |       | NUMBER    | PCT   |
| SPECIES                  | NUMBER   | PCT   | NUMBER      | PCT   | NUMBER    | PCT   |
|                          | INDIVS   | COMP  | INDIVS      | COMP  | TOTAL     | COMP  |
| NEOMYSIS AMERICANA       | 2977.65  | 37.38 | 92.28       | 3.16  | 1534.96   | 28.20 |
| AMPELISCA SP             | 196.65   | 2.47  | 20.48       | 0.70  | 108.56    | 1.99  |
| JASSA FALCATA            | 2918.60  | 36.64 | 2213.03     | 75.76 | 2565.81   | 47.14 |
| CRANGON SEPTEMPINO ZOEAE | 54.50    | 0.68  | 4.58        | 0.16  | 29.54     | 0.54  |
| GAMMARUS SP              | 649.40   | 8.15  | 16.73       | 0.57  | 333.06    | 6.12  |
| SUBCLASS OSTRACODA       | 39.20    | 0.49  | 2.55        | 0.09  | 20.88     | 0.38  |
| COROPHIUM SP             | 516.75   | 6.49  | 287.98      | 9.86  | 402.36    | 7.39  |
| SUBORDER CAPRELLIDEA     | 34.70    | 0.44  | 17.65       | 0.60  | 26.18     | 0.48  |
| SARZIA SP                | 159.15   | 2.00  | 62.75       | 2.15  | 110.95    | 2.04  |
| LEUCON AMERICANUS        | 45.38    | 0.57  | 4.80        | 0.16  | 25.09     | 0.46  |
| MYSIDOPSIS BIGELOWI      | 11.00    | 0.14  | 0.00        | 0.00  | 5.50      | 0.10  |
| OXYUROSTYLIS SMITHI      | 21.28    | 0.27  | 2.17        | 0.07  | 11.73     | 0.22  |
| STENOTHOE SP             | 122.75   | 1.54  | 33.48       | 1.15  | 78.11     | 1.44  |
| CLASS PYCNOGONIDA        | 8.60     | 0.11  | 12.85       | 0.44  | 10.73     | 0.20  |
| CRANGON SEPTEMPINOSA     | 48.30    | 0.61  | 0.00        | 0.00  | 24.15     | 0.44  |
| ELASMOPUS LEVIS          | 28.08    | 0.35  | 8.98        | 0.31  | 18.53     | 0.34  |
| BATEA CATHARINENSIS      | 34.70    | 0.44  | 8.05        | 0.28  | 21.38     | 0.39  |
| EDOTEA TRILOBA           | 5.58     | 0.07  | 2.17        | 0.07  | 3.88      | 0.07  |
| MELITA NITIDA            | 11.32    | 0.14  | 0.00        | 0.00  | 5.66      | 0.10  |
| RATHKEA OCTOPUNCTATA     | 5.50     | 0.07  | 4.20        | 0.14  | 4.85      | 0.09  |
| COROPHIUM ACHERUSICUM    | 0.00     | 0.00  | 8.98        | 0.31  | 4.49      | 0.08  |
| SAGITTA SP               | 41.63    | 0.52  | 59.15       | 2.02  | 50.39     | 0.93  |
| ERTCHTHONIUS SP          | 11.32    | 0.14  | 18.90       | 0.65  | 15.11     | 0.28  |
| OTHER SPECIES            | 23.03    | 0.29  | 39.30       | 1.35  | 31.16     | 0.57  |
| STATION TOTAL AND DATE   | TOTAL    |       |             |       |           |       |
|                          | 7965.05  |       | 2921.02     |       | 5443.04   |       |

TABLE 6-2 (CONT.)

| OYSTERCR                  |                  | GEAR-36BONG |                  |             |                 | 16 MAR 81   |  |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|--|
| STATION                   | DSNT             |             | DSDA             |             | NUMBER<br>TOTAL | PCT<br>COMP |  |
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |  |
| NEOMYSIS AMERICANA        | 8068.22          | 55.15       | 1754.55          | 38.95       | 5542.75         | 52.39       |  |
| AMPELISCA SP              | 40.13            | 0.27        | 0.00             | 0.00        | 24.08           | 0.23        |  |
| JASSA FALCATA             | 1206.77          | 8.25        | 1351.00          | 29.99       | 1264.46         | 11.95       |  |
| CRANGON SEPTEMPINO ZOEAE  | 1246.67          | 8.52        | 377.80           | 8.39        | 899.12          | 8.50        |  |
| GAMMARUS SP               | 770.27           | 5.26        | 46.92            | 1.04        | 480.93          | 4.55        |  |
| SUBCLASS OSTRACODA        | 1.53             | 0.01        | 0.00             | 0.00        | 0.92            | 0.01        |  |
| COROPHIUM SP              | 99.13            | 0.68        | 89.32            | 1.98        | 95.21           | 0.90        |  |
| SUBORDER CAPRELLIDEA      | 128.72           | 0.88        | 88.33            | 1.96        | 112.56          | 1.06        |  |
| SARSIA SP                 | 2206.55          | 15.08       | 655.58           | 14.55       | 1586.16         | 14.99       |  |
| LEUCON AMERICANUS         | 161.53           | 1.10        | 0.00             | 0.00        | 96.92           | 0.92        |  |
| MYSIDOPSIS BIGELOWI       | 50.58            | 0.35        | 0.00             | 0.00        | 30.35           | 0.29        |  |
| OXYUROSTYLIS SMITHI       | 26.18            | 0.18        | 2.60             | 0.06        | 16.75           | 0.16        |  |
| STENOTHOE SP              | 49.63            | 0.34        | 28.33            | 0.63        | 41.11           | 0.39        |  |
| CLASS PYCNOGONIDA         | 14.72            | 0.10        | 7.47             | 0.17        | 11.82           | 0.11        |  |
| CRANGON SEPTEMPINOSA      | 75.83            | 0.52        | 0.00             | 0.00        | 45.50           | 0.43        |  |
| CERAPUS TUBULARIS         | 5.60             | 0.04        | 9.52             | 0.21        | 7.17            | 0.07        |  |
| ELASMOPOUS LEVIS          | 12.95            | 0.09        | 9.73             | 0.22        | 11.66           | 0.11        |  |
| EDOTEA TRILOBA            | 5.60             | 0.04        | 0.00             | 0.00        | 3.36            | 0.03        |  |
| MICROPROTOPUS RANEYI      | 26.50            | 0.18        | 0.00             | 0.00        | 15.90           | 0.15        |  |
| RATHKEA OCTOPUNCTATA      | 228.98           | 1.57        | 46.15            | 1.02        | 155.85          | 1.47        |  |
| COROPHIUM ACHERUSICUM     | 7.35             | 0.05        | 13.60            | 0.30        | 9.85            | 0.09        |  |
| MONOCULODES EDWARDSI      | 26.73            | 0.18        | 0.00             | 0.00        | 16.04           | 0.15        |  |
| SAGITTA SP                | 33.48            | 0.23        | 2.38             | 0.05        | 21.04           | 0.20        |  |
| ERICHSONIUS SP            | 0.00             | 0.00        | 4.53             | 0.10        | 1.81            | 0.02        |  |
| OTHER SPECIES             | 136.45           | 0.93        | 16.43            | 0.36        | 88.44           | 0.84        |  |
| STATION TOTAL AND<br>DATE | TOTAL            | 14630.12    | 4504.22          |             | 10579.76        |             |  |

TABLE 6-2 (CONT.)

| STATION                   | OYSTERCR         |             | GEAR-3/PONG      |             | 20 APR 81       |             |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | DSNT             |             | DSDA             |             |                 |             |
| SPECIES                   | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |
| NEOMYSIS AMERICANA        | 11371.23         | 37.67       | 2412.45          | 9.58        | 7787.72         | 27.63       |
| AMPELISCA SP              | 766.57           | 2.54        | 14.20            | 0.06        | 465.62          | 1.65        |
| JASSA FALCATA             | 1970.80          | 6.53        | 889.58           | 3.53        | 1538.31         | 5.46        |
| CRANGON SEPTEMSPINO ZOEAE | 8645.22          | 28.64       | 20294.75         | 80.57       | 13305.03        | 47.20       |
| GAMMARUS SP               | 5647.45          | 18.71       | 363.38           | 1.44        | 3533.82         | 12.54       |
| SUBCLASS OSTRACODA        | 81.22            | 0.27        | 0.00             | 0.00        | 48.73           | 0.17        |
| COROPHIUM SP              | 77.42            | 0.26        | 68.68            | 0.27        | 73.92           | 0.26        |
| SUBORDER CAPRELLIDEA      | 23.42            | 0.08        | 14.90            | 0.06        | 20.01           | 0.07        |
| SARSIA SP                 | 211.08           | 0.70        | 444.70           | 1.77        | 304.53          | 1.08        |
| LEUCON AMERICANUS         | 209.73           | 0.69        | 0.00             | 0.00        | 125.84          | 0.45        |
| OXYUROSTYLIS SMITHI       | 89.45            | 0.30        | 7.53             | 0.03        | 56.68           | 0.20        |
| STENOTHOE SP              | 9.20             | 0.03        | 23.42            | 0.09        | 14.89           | 0.05        |
| CLASS PYCNOGONIDA         | 19.08            | 0.06        | 0.00             | 0.00        | 11.45           | 0.04        |
| CRANGON SEPTEMSPINOSA     | 372.73           | 1.23        | 0.00             | 0.00        | 223.64          | 0.79        |
| CERAPUS TUBULARIS         | 9.20             | 0.03        | 7.53             | 0.03        | 8.53            | 0.03        |
| ELASMOPUS LEVIS           | 17.90            | 0.06        | 0.00             | 0.00        | 10.74           | 0.04        |
| IDOTEA BALTICA            | 0.00             | 0.00        | 7.53             | 0.03        | 3.01            | 0.01        |
| EDOTEA TRILOBA            | 2.37             | 0.01        | 7.10             | 0.03        | 4.26            | 0.02        |
| MICROPROTOPUS RANEYI      | 11.70            | 0.04        | 7.80             | 0.03        | 10.14           | 0.04        |
| RATHKEA OCTOPUNCTATA      | 167.32           | 0.55        | 188.50           | 0.75        | 175.79          | 0.62        |
| COROPHIUM ACHERUSICUM     | 0.00             | 0.00        | 14.90            | 0.06        | 5.96            | 0.02        |
| MONOCULODES EDWARDSI      | 11.70            | 0.04        | 7.10             | 0.03        | 9.86            | 0.03        |
| SAGITTA SP                | 87.47            | 0.29        | 179.15           | 0.71        | 124.14          | 0.44        |
| ORDER AMPHIPODA           | 11.70            | 0.04        | 15.55            | 0.06        | 13.24           | 0.05        |
| AUTOLYTUS SP              | 193.43           | 0.64        | 14.63            | 0.06        | 121.91          | 0.43        |
| MICRODEUTOPUS GRYLLOTALP  | 9.20             | 0.03        | 0.00             | 0.00        | 5.52            | 0.02        |
| OTHER SPECIES             | 172.33           | 0.57        | 206.75           | 0.82        | 186.10          | 0.66        |
| STATION TOTAL AND<br>DATE | 30188.91         |             | 25190.11         |             | 28189.39        |             |

TABLE 6-2 (CONT.)

| STATION                   | OYSTERCR         |             | GEAR-36BONG      |             | 18 MAY 81       |             |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | DSNT             |             | DSDA             |             |                 |             |
| SPECIES                   | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |
| NEOMYSIS AMERICANA        | 737.93           | 8.84        | 64.28            | 4.71        | 468.47          | 8.43        |
| AMPELISCA SP              | 1288.17          | 15.43       | 35.23            | 2.58        | 786.99          | 14.17       |
| JASSA FALCATA             | 662.90           | 7.94        | 467.48           | 34.28       | 584.73          | 10.53       |
| CRANGON SEPTemspino ZOEa  | 447.83           | 5.36        | 364.00           | 26.69       | 414.30          | 7.46        |
| GAMMARUS SP               | 850.97           | 10.19       | 18.30            | 1.34        | 517.90          | 9.32        |
| SUBCLASS OSTRACODA        | 3745.58          | 44.86       | 63.45            | 4.65        | 2272.73         | 40.91       |
| COROPHIUM SP              | 116.87           | 1.40        | 127.75           | 9.37        | 121.22          | 2.18        |
| SUBORDER CAPRELLIDEA      | 33.45            | 0.40        | 27.58            | 2.02        | 31.10           | 0.56        |
| LEUCON AMERICANUS         | 39.73            | 0.48        | 1.95             | 0.14        | 24.62           | 0.44        |
| OXYUROSTYLIS SMITHI       | 97.33            | 1.17        | 0.00             | 0.00        | 58.40           | 1.05        |
| STENOThOE SP              | 66.03            | 0.79        | 48.10            | 3.53        | 58.86           | 1.06        |
| CLASS PYCNOgonIDA         | 0.00             | 0.00        | 4.15             | 0.30        | 1.66            | 0.03        |
| CRANGON SEPTemspINOSA     | 20.97            | 0.25        | 2.45             | 0.18        | 13.56           | 0.24        |
| CERAPUS TUBULARIS         | 4.80             | 0.06        | 0.00             | 0.00        | 2.88            | 0.05        |
| ELASMOPUS LEVIS           | 9.95             | 0.12        | 0.00             | 0.00        | 5.97            | 0.11        |
| IDOTEA BALTICA            | 22.03            | 0.26        | 13.32            | 0.98        | 18.55           | 0.33        |
| EDOTEA TRILOBA            | 5.17             | 0.06        | 6.60             | 0.48        | 5.74            | 0.10        |
| MICROPROTOPUS RANEYI      | 4.80             | 0.06        | 0.00             | 0.00        | 2.88            | 0.05        |
| MELITA NITIDA             | 0.00             | 0.00        | 8.32             | 0.61        | 3.33            | 0.06        |
| COROPHIUM ACHERUSICUM     | 80.08            | 0.95        | 38.28            | 2.81        | 63.36           | 1.14        |
| SAGITTA SP                | 0.00             | 0.00        | 2.08             | 0.15        | 0.83            | 0.01        |
| ORDER AMPHIPODA           | 0.00             | 0.00        | 2.20             | 0.16        | 0.88            | 0.02        |
| AUTOLYTUS SP              | 7.18             | 0.09        | 0.00             | 0.00        | 4.31            | 0.08        |
| ERICHTHONIUS SP           | 9.58             | 0.11        | 0.00             | 0.00        | 5.75            | 0.10        |
| OTHER SPECIES             | 97.75            | 1.17        | 68.28            | 5.01        | 85.96           | 1.55        |
| STATION TOTAL AND<br>DATE | TOTAL            | 8349.12     | 1363.77          |             | 5554.98         |             |



TABLE 6-2 (CONT.)

| STATION                   | OYSTERCR         |             | GEAR-36BONG      |             | 15 JUN 81       |             |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | DSNT             |             | DSDA             |             | NUMBER<br>TOTAL | PCT<br>COMP |
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |
| NEOMYSIS AMERICANA        | 6129.63          | 22.38       | 408.48           | 11.62       | 3841.17         | 21.53       |
| AMPELISCA SP              | 6386.55          | 23.32       | 39.28            | 1.12        | 3847.64         | 21.57       |
| JASSA FALCATA             | 1225.95          | 4.48        | 1326.25          | 37.73       | 1266.07         | 7.10        |
| CRANGON SEPTemspino ZOEAE | 69.62            | 0.25        | 25.75            | 0.73        | 52.07           | 0.29        |
| GAMMARUS SP               | 62.52            | 0.23        | 0.00             | 0.00        | 37.51           | 0.21        |
| SUBCLASS OSTRACODA        | 1031.80          | 3.77        | 21.55            | 0.61        | 627.70          | 3.52        |
| NEOPANOPE TEXA SAYI ZOEAE | 5715.10          | 20.86       | 595.65           | 16.95       | 3667.32         | 20.56       |
| COROPHIUM SP              | 196.13           | 0.72        | 123.28           | 3.51        | 166.99          | 0.94        |
| SUBORDER CAPRELLIDEA      | 83.58            | 0.31        | 28.23            | 0.80        | 61.44           | 0.34        |
| PANOPEUS HERBSTII ZOEAE   | 2888.93          | 10.55       | 299.90           | 8.53        | 1853.32         | 10.39       |
| LEUCON AMERICANUS         | 473.57           | 1.73        | 2.90             | 0.08        | 285.30          | 1.60        |
| OXYUROSTYLIS SMITHI       | 483.55           | 1.77        | 13.85            | 0.39        | 295.67          | 1.66        |
| STENOTHOE SP              | 131.62           | 0.48        | 151.40           | 4.31        | 139.53          | 0.78        |
| CLASS PYCNOGONIDA         | 113.57           | 0.41        | 5.40             | 0.15        | 70.30           | 0.39        |
| PALAEONETES SP ZOEAE      | 408.05           | 1.49        | 6.03             | 0.17        | 247.24          | 1.39        |
| CRANGON SEPTemspinosa     | 37.55            | 0.14        | 0.00             | 0.00        | 22.53           | 0.13        |
| UPOGEBIA AFFINIS ZOEAE    | 571.77           | 2.09        | 47.42            | 1.35        | 362.03          | 2.03        |
| CERAPUS TUBULARIS         | 0.00             | 0.00        | 14.88            | 0.42        | 5.95            | 0.03        |
| ELASMOPOUS LEVIS          | 167.13           | 0.61        | 25.93            | 0.74        | 110.65          | 0.62        |
| IDOTEA BALTICA            | 410.30           | 1.50        | 100.03           | 2.85        | 286.19          | 1.60        |
| BATEA CATHARINENSIS       | 31.27            | 0.11        | 0.00             | 0.00        | 18.76           | 0.11        |
| EDOTEA TRILOBA            | 115.25           | 0.42        | 20.85            | 0.59        | 77.49           | 0.43        |
| RHITHROPANOPEUS HAR ZOEAE | 91.18            | 0.33        | 43.05            | 1.22        | 71.93           | 0.40        |
| MELITA NITIDA             | 13.35            | 0.05        | 0.00             | 0.00        | 8.01            | 0.04        |
| COROPHIUM ACHERUSICUM     | 0.00             | 0.00        | 6.68             | 0.19        | 2.67            | 0.01        |
| MONOCULODES EDWARDSI      | 90.80            | 0.33        | 0.00             | 0.00        | 54.48           | 0.31        |
| CYMADEUSA COMPTA          | 25.72            | 0.09        | 0.00             | 0.00        | 15.43           | 0.09        |
| ORDER AMPHIPODA           | 39.02            | 0.14        | 7.65             | 0.22        | 26.47           | 0.15        |
| OTHER SPECIES             | 398.87           | 1.46        | 200.48           | 5.70        | 319.51          | 1.79        |
| STATION TOTAL AND<br>DATE | 27392.35         |             | 3514.88          |             | 17841.36        |             |

TABLE 6-2 (CONT.)

| STATION                   | OYSTERCR         |             | GEAR-36BONG      |             | 20 JUL 81       |             |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | DSNT             |             | DSDA             |             |                 |             |
| SPECIES                   | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |
| NEOMYSIS AMERICANA        | 4095.20          | 17.47       | 100.50           | 2.07        | 2497.32         | 15.60       |
| AMPELISCA SP              | 9344.42          | 39.85       | 93.05            | 1.92        | 5643.87         | 35.26       |
| JASSA FALCATA             | 1490.35          | 6.36        | 1900.30          | 39.20       | 1654.33         | 10.34       |
| GAMMARUS SP               | 70.28            | 0.30        | 0.00             | 0.00        | 42.17           | 0.26        |
| SUBCLASS OSTRACODA        | 1760.42          | 7.51        | 99.65            | 2.06        | 1096.11         | 6.85        |
| NEOPANOPE TEXA SAYI ZOEAE | 1080.95          | 4.61        | 169.73           | 3.50        | 716.46          | 4.48        |
| COROPHIUM SP              | 469.30           | 2.00        | 257.93           | 5.32        | 384.75          | 2.40        |
| SUBORDER CAPRELLIDEA      | 394.53           | 1.68        | 488.35           | 10.07       | 432.06          | 2.70        |
| PANOPEUS HERBSTII ZOEAE   | 331.88           | 1.42        | 113.58           | 2.34        | 244.56          | 1.53        |
| LEUCON AMERICANUS         | 145.02           | 0.62        | 0.00             | 0.00        | 87.01           | 0.54        |
| MYSIDOPSIS BIGELOWI       | 1122.43          | 4.79        | 25.90            | 0.53        | 683.82          | 4.27        |
| OXYUROSTYLIS SMITHI       | 284.15           | 1.21        | 0.00             | 0.00        | 170.49          | 1.07        |
| STENOTHOE SP              | 323.98           | 1.38        | 572.53           | 11.81       | 423.40          | 2.65        |
| CLASS PYCNOGONIDA         | 275.63           | 1.18        | 197.80           | 4.08        | 244.50          | 1.53        |
| PALAEONETES SP ZOEAE      | 322.32           | 1.37        | 31.48            | 0.65        | 205.98          | 1.29        |
| CRANGON SEPTEMSPINOSA     | 46.08            | 0.20        | 0.00             | 0.00        | 27.65           | 0.17        |
| UPOGEBIA AFFINIS ZOEAE    | 89.40            | 0.38        | 38.13            | 0.79        | 68.89           | 0.43        |
| CERAPUS TUBULARIS         | 85.38            | 0.36        | 150.28           | 3.10        | 111.34          | 0.70        |
| ELASMOPUS LEVIS           | 170.87           | 0.73        | 92.72            | 1.91        | 139.61          | 0.87        |
| IDOTEA BALTICA            | 16.95            | 0.07        | 2.85             | 0.06        | 11.31           | 0.07        |
| BATEA CATHARINENSIS       | 139.78           | 0.60        | 22.75            | 0.47        | 92.97           | 0.58        |
| EDOTEA TRILOBA            | 27.57            | 0.12        | 14.20            | 0.29        | 22.22           | 0.14        |
| RHITHROANOPEUS HAR ZOEAE  | 71.38            | 0.30        | 46.42            | 0.96        | 61.40           | 0.38        |
| MICROPROTOPUS RANEYI      | 189.18           | 0.81        | 11.35            | 0.23        | 118.05          | 0.74        |
| MELITA NITIDA             | 72.17            | 0.31        | 11.57            | 0.24        | 47.93           | 0.30        |
| COROPHIUM ACHERUSICUM     | 14.38            | 0.06        | 45.75            | 0.94        | 26.93           | 0.17        |
| MONOCULODES EDWARDSI      | 108.32           | 0.46        | 0.00             | 0.00        | 64.99           | 0.41        |
| CYMAUSA COMPTA            | 251.07           | 1.07        | 0.00             | 0.00        | 150.64          | 0.94        |
| ORDER AMPHIPODA           | 38.03            | 0.16        | 22.77            | 0.47        | 31.93           | 0.20        |
| TURRITOPSIS NUTRICOLA     | 9.52             | 0.04        | 0.00             | 0.00        | 5.71            | 0.04        |
| MICRODEUTOPUS GRYLLOTALP  | 91.37            | 0.39        | 11.57            | 0.24        | 59.45           | 0.37        |
| ERICHTHONIUS SP           | 49.08            | 0.21        | 71.83            | 1.48        | 58.18           | 0.36        |
| OTHER SPECIES             | 464.75           | 1.98        | 254.63           | 5.25        | 380.70          | 2.38        |
| STATION TOTAL AND<br>DATE | 23446.16         |             | 4847.60          |             | 16006.75        |             |

TABLE 6-2 (CONT.)

| OYSTERCR                  |                  | GEAR-36BONG |                  |             |                 | 31 AUG 81   |  |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|--|
| STATION                   |                  | DSNT        |                  | DSDA        |                 |             |  |
| SPECIES                   | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |  |
| NEOMYSIS AMERICANA        | 866.20           | 20.89       | 13.47            | 0.67        | 439.84          | 14.30       |  |
| ANPELISCA SP              | 106.85           | 2.58        | 3.08             | 0.15        | 54.96           | 1.79        |  |
| JASSA FALCATA             | 0.00             | 0.00        | 10.55            | 0.53        | 5.28            | 0.17        |  |
| GAMMARUS SP               | 2.75             | 0.07        | 0.00             | 0.00        | 1.38            | 0.04        |  |
| SUBCLASS OSTRACODA        | 334.35           | 8.06        | 24.90            | 1.24        | 179.63          | 5.84        |  |
| NEOPANOPE TEXA SAYI ZOEAE | 1132.20          | 27.30       | 1228.63          | 61.26       | 1180.41         | 38.37       |  |
| COROPHIUM SP              | 17.33            | 0.42        | 30.30            | 1.51        | 23.81           | 0.77        |  |
| SUBORDER CAPRELLIDEA      | 21.08            | 0.51        | 0.00             | 0.00        | 10.54           | 0.34        |  |
| PANOPEUS HERBSTII ZOEAE   | 86.68            | 2.09        | 62.55            | 3.12        | 74.61           | 2.43        |  |
| LEUCON AMERICANUS         | 22.85            | 0.55        | 0.00             | 0.00        | 11.43           | 0.37        |  |
| MYSIDOPSIS BIGELOWI       | 237.25           | 5.72        | 3.38             | 0.17        | 120.31          | 3.91        |  |
| OXYUROSTYLIS SMITHI       | 145.78           | 3.51        | 3.08             | 0.15        | 74.43           | 2.42        |  |
| STENOThOE SP              | 3.70             | 0.09        | 0.00             | 0.00        | 1.85            | 0.05        |  |
| CLASS PYCNOGONIDA         | 51.00            | 1.23        | 6.93             | 0.35        | 28.96           | 0.94        |  |
| PALAEONETES SP ZOEAE      | 227.43           | 5.48        | 133.55           | 6.66        | 190.49          | 5.87        |  |
| UPOGEBIA AFFINIS ZOEAE    | 5.50             | 0.13        | 24.20            | 1.21        | 14.85           | 0.48        |  |
| CERAPUS TUBULARIS         | 2.67             | 0.06        | 0.00             | 0.00        | 1.34            | 0.04        |  |
| ELASMOPUS LEVIS           | 12.80            | 0.31        | 6.78             | 0.34        | 9.79            | 0.32        |  |
| IDOTEA BALTICA            | 150.07           | 3.62        | 56.50            | 2.82        | 103.29          | 3.36        |  |
| BATEA CATHARINENSIS       | 21.05            | 0.51        | 0.00             | 0.00        | 10.53           | 0.34        |  |
| EDOTEA TRILOBA            | 0.00             | 0.00        | 10.30            | 0.51        | 5.15            | 0.17        |  |
| RHITHROPANOPEUS HAR ZOEAE | 0.00             | 0.00        | 15.38            | 0.77        | 7.69            | 0.25        |  |
| MICROPROTOPUS RANEYI      | 2.75             | 0.07        | 0.00             | 0.00        | 1.38            | 0.04        |  |
| MELITA NITIDA             | 3.70             | 0.09        | 6.40             | 0.32        | 5.05            | 0.16        |  |
| COROPHIUM ACHERUSICUM     | 2.75             | 0.07        | 0.00             | 0.00        | 1.38            | 0.04        |  |
| MONOCULODES EDWARDST      | 6.38             | 0.15        | 0.00             | 0.00        | 3.19            | 0.10        |  |
| CYADUSA COMPTA            | 19.33            | 0.47        | 0.00             | 0.00        | 9.66            | 0.31        |  |
| ORDER AMPHIPODA           | 8.10             | 0.20        | 3.08             | 0.15        | 5.59            | 0.18        |  |
| AUTOLYTUS SP              | 0.00             | 0.00        | 3.38             | 0.17        | 1.69            | 0.05        |  |
| TURRITOPSIS NUTRICOLA     | 2.67             | 0.06        | 19.48            | 0.97        | 11.07           | 0.36        |  |
| ERICHTHONIUS SP           | 2.75             | 0.07        | 0.00             | 0.00        | 1.38            | 0.04        |  |
| OTHER SPECIES             | 651.40           | 15.71       | 339.60           | 16.93       | 495.50          | 16.11       |  |
| STATION TOTAL AND<br>DATE | 4147.35          |             | 2005.47          |             | 3076.41         |             |  |

TABLE 6-3 MONTHLY MEAN SAMPLE DENSITY (No./100 m<sup>3</sup>) AND PERCENT COMPOSITION OF MACROZOOPLANKTON COLLECTED AT THE DISCHARGE OF THE OYSTER CREEK NUCLEAR GENERATING STATION, SEPTEMBER 1980 - AUGUST 1981

| STATION                   | OYSTERCR |       | GEAR-36BONG |       | SEP-1980 |       |
|---------------------------|----------|-------|-------------|-------|----------|-------|
|                           | DSNT     |       | DSDA        |       | NUMBER   | PCT   |
| SPECIES                   | NUMBER   | PCT   | NUMBER      | PCT   | NUMBER   | PCT   |
|                           | INDIVS   | COMP  | INDIVS      | COMP  | TOTAL    | COMP  |
| NEOMYSIS AMERICANA        | 15653.24 | 70.02 | 1467.35     | 39.87 | 12500.82 | 68.66 |
| AMPELISCA SP              | 981.98   | 4.39  | 7.55        | 0.21  | 765.44   | 4.20  |
| JASSA FALCATA             | 39.61    | 0.18  | 156.68      | 4.26  | 65.63    | 0.36  |
| SUBCLASS OSTRACODA        | 1575.09  | 7.05  | 12.25       | 0.33  | 1227.79  | 6.74  |
| NEOPANOPE TEXA SAYI ZOEAE | 27.69    | 0.12  | 0.00        | 0.00  | 21.54    | 0.12  |
| COROPHIUM SP              | 229.55   | 1.03  | 166.30      | 4.52  | 215.49   | 1.18  |
| SUBORDER CAPRELLIDEA      | 939.72   | 4.20  | 622.00      | 16.90 | 869.12   | 4.77  |
| PANOPEUS HERBSTII ZOEAE   | 91.03    | 0.41  | 0.00        | 0.00  | 70.80    | 0.39  |
| LEUCON AMERICANUS         | 575.90   | 2.58  | 0.00        | 0.00  | 447.92   | 2.46  |
| MYSIDOPSIS BIGELOWI       | 661.79   | 2.96  | 16.43       | 0.45  | 518.38   | 2.85  |
| OXYUROSTYLIS SMITHI       | 231.33   | 1.03  | 6.85        | 0.19  | 181.44   | 1.00  |
| STENOTHOE SP              | 55.76    | 0.25  | 397.30      | 10.80 | 131.66   | 0.72  |
| CLASS PYCNOGONIDA         | 362.40   | 1.62  | 170.78      | 4.64  | 319.82   | 1.76  |
| PALAEONETES SP ZOEAE      | 5.16     | 0.02  | 0.00        | 0.00  | 4.02     | 0.02  |
| CRANGON SEPTEMPINOSA      | 9.81     | 0.04  | 0.00        | 0.00  | 7.63     | 0.04  |
| UPOGEBIA AFFINIS ZOEAE    | 8.81     | 0.04  | 0.00        | 0.00  | 6.85     | 0.04  |
| CERAPUS TUBULARIS         | 126.61   | 0.57  | 83.53       | 2.27  | 117.04   | 0.64  |
| ELASMOPUS LEVIS           | 15.73    | 0.07  | 0.00        | 0.00  | 12.23    | 0.07  |
| IDOTEA BALTICA            | 5.16     | 0.02  | 3.12        | 0.08  | 4.71     | 0.03  |
| BATEA CATHARINENSIS       | 12.06    | 0.05  | 10.80       | 0.29  | 11.78    | 0.06  |
| EDOTEA TRILOBA            | 94.35    | 0.42  | 28.60       | 0.78  | 79.74    | 0.44  |
| MICROPROTOPUS RANEYI      | 45.19    | 0.20  | 10.80       | 0.29  | 37.55    | 0.21  |
| MELITA NITIDA             | 87.12    | 0.39  | 54.53       | 1.48  | 79.88    | 0.44  |
| COROPHIUM ACHERSICUM      | 16.81    | 0.08  | 13.55       | 0.37  | 16.08    | 0.09  |
| MONOCULODES EDWARDSI      | 24.29    | 0.11  | 0.00        | 0.00  | 18.89    | 0.10  |
| AEQUOREA SP               | 100.56   | 0.45  | 330.55      | 8.98  | 151.67   | 0.83  |
| CYADUSA COMPTA            | 20.56    | 0.09  | 0.00        | 0.00  | 15.99    | 0.09  |
| ORDER AMPHIPODA           | 32.94    | 0.15  | 0.00        | 0.00  | 25.62    | 0.14  |
| AUTOLYTUS SP              | 0.00     | 0.00  | 6.10        | 0.17  | 1.36     | 0.01  |
| TURRIIOPSIS NUTRICOLA     | 104.18   | 0.47  | 60.08       | 1.63  | 94.38    | 0.52  |
| MICRODEUTOPUS GRYLLOALP   | 13.07    | 0.06  | 3.40        | 0.09  | 10.92    | 0.06  |
| ERICHTHONIUS SP           | 37.01    | 0.17  | 6.22        | 0.17  | 30.17    | 0.17  |
| OTHER SPECIES             | 171.56   | 0.77  | 45.33       | 1.23  | 143.51   | 0.79  |
| STATION TOTAL AND DATE    | 22356.07 |       | 3680.07     |       | 18205.85 |       |

TABLE 6-13 (CONT.)

| OYSTERCR                  |                  |             | GEAR-36BONG      |             |                 | OCT-1980    |  |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|--|
| STATION                   | DSNT             |             | DSDA             |             | NUMBER<br>TOTAL | PCT<br>COMP |  |
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |  |
| NEOMYSIS AMERICANA        | 7141.28          | 68.03       | 1654.55          | 54.32       | 5769.59         | 66.82       |  |
| AMPELISCA SP              | 150.27           | 1.43        | 15.80            | 0.52        | 116.66          | 1.35        |  |
| JASSA FALCATA             | 194.35           | 1.85        | 168.75           | 5.54        | 187.95          | 2.18        |  |
| CRANGON SEPTemspino ZOEAE | 26.67            | 0.25        | 4.53             | 0.15        | 21.13           | 0.24        |  |
| GAMMARUS SP               | 7.72             | 0.07        | 0.00             | 0.00        | 5.79            | 0.07        |  |
| SUBCLASS OSTRACODA        | 880.61           | 8.39        | 34.48            | 1.13        | 669.08          | 7.75        |  |
| COROPHIUM SP              | 331.52           | 3.16        | 533.25           | 17.51       | 381.95          | 4.42        |  |
| SUBORDER CAPRELLIDEA      | 416.13           | 3.96        | 329.30           | 10.81       | 394.42          | 4.57        |  |
| LEUCON AMERICANUS         | 234.60           | 2.23        | 0.00             | 0.00        | 175.95          | 2.04        |  |
| MYSIDOPSIS BIGELOWI       | 471.18           | 4.49        | 0.00             | 0.00        | 353.39          | 4.09        |  |
| OXYUROSTYLIS SMITHI       | 57.25            | 0.55        | 0.00             | 0.00        | 42.94           | 0.50        |  |
| STENOTHOE SP              | 54.13            | 0.52        | 55.85            | 1.83        | 54.56           | 0.63        |  |
| CLASS PYCNOGONIDA         | 107.47           | 1.02        | 105.40           | 3.46        | 106.96          | 1.24        |  |
| CERAPUS TUBULARIS         | 49.80            | 0.47        | 24.80            | 0.81        | 43.55           | 0.50        |  |
| ELASMOPUS LEVIS           | 10.11            | 0.10        | 5.25             | 0.17        | 8.89            | 0.10        |  |
| IDOTEA BALTICA            | 4.85             | 0.05        | 0.00             | 0.00        | 3.64            | 0.04        |  |
| BATEA CATHARINENSIS       | 27.26            | 0.26        | 0.00             | 0.00        | 20.44           | 0.24        |  |
| EDOTEA TRILOBA            | 39.27            | 0.37        | 23.35            | 0.77        | 35.29           | 0.41        |  |
| MICROPROTOPUS RANEYI      | 9.90             | 0.09        | 5.28             | 0.17        | 8.74            | 0.10        |  |
| MELITA NITIDA             | 12.25            | 0.12        | 0.00             | 0.00        | 9.19            | 0.11        |  |
| COROPHIUM ACHERUSICUM     | 48.13            | 0.46        | 21.08            | 0.69        | 41.36           | 0.48        |  |
| MONOCULODES EDWARDSI      | 3.51             | 0.03        | 0.00             | 0.00        | 2.63            | 0.03        |  |
| SAGITTA SP                | 1.62             | 0.02        | 0.00             | 0.00        | 1.21            | 0.01        |  |
| AEQUOREA SP               | 56.78            | 0.54        | 9.98             | 0.33        | 45.08           | 0.52        |  |
| CYADUSA COMPTA            | 28.91            | 0.28        | 0.00             | 0.00        | 21.68           | 0.25        |  |
| ORDER AMPHIPODA           | 8.71             | 0.08        | 0.00             | 0.00        | 6.53            | 0.08        |  |
| TURRITOPSIS NUTRICOLA     | 6.58             | 0.06        | 0.00             | 0.00        | 4.93            | 0.06        |  |
| ERICHTHONIUS SP           | 3.63             | 0.03        | 0.00             | 0.00        | 2.72            | 0.03        |  |
| OTHER SPECIES             | 112.69           | 1.07        | 54.13            | 1.78        | 98.05           | 1.14        |  |
| STATION TOTAL AND<br>DATE | 10497.16         |             | 3045.75          |             | 8634.31         |             |  |

TABLE 6-3 (CONT.)

| STATION                   | OYSTERCR         |             | GEAR-36BONG      |             | NOV-1980        |             |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | DSNT             |             | DSDA             |             | NUMBER<br>TOTAL | PCT<br>COMP |
| SPECIES                   | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |
| NEOMYSIS AMERICANA        | 3931.44          | 66.93       | 757.65           | 54.29       | 2873.51         | 65.59       |
| AMPELISCA SP              | 98.66            | 1.68        | 3.83             | 0.27        | 67.05           | 1.53        |
| JASSA FALCATA             | 161.29           | 2.75        | 93.05            | 6.67        | 138.54          | 3.16        |
| CRANGON SEPTEMPINO ZOEAE  | 51.35            | 0.87        | 10.10            | 0.72        | 37.60           | 0.86        |
| GAMMARUS SP               | 7.84             | 0.13        | 3.40             | 0.24        | 6.36            | 0.15        |
| SUBCLASS OSTRACODA        | 138.82           | 2.36        | 3.85             | 0.28        | 93.83           | 2.14        |
| COROPHILUM SP             | 288.39           | 4.91        | 314.10           | 22.51       | 296.96          | 6.78        |
| SUBORDER CAPRELLIDEA      | 444.24           | 7.56        | 64.80            | 4.64        | 317.76          | 7.25        |
| LEUCON AMERICANUS         | 221.66           | 3.77        | 20.33            | 1.46        | 154.55          | 3.53        |
| MYSIDOPSIS BIGELOWI       | 82.51            | 1.40        | 34.70            | 2.49        | 66.58           | 1.52        |
| OXYUROSTYLIS SMITHI       | 37.34            | 0.64        | 0.00             | 0.00        | 24.89           | 0.57        |
| STENOTHOE SP              | 36.91            | 0.63        | 21.10            | 1.51        | 31.64           | 0.72        |
| CLASS PYCNOGONIDA         | 44.41            | 0.76        | 29.30            | 2.10        | 39.38           | 0.90        |
| CRANGON SEPTEMPINOSA      | 4.97             | 0.08        | 0.00             | 0.00        | 3.32            | 0.08        |
| CERAPUS TUBULARIS         | 6.72             | 0.11        | 3.83             | 0.27        | 5.76            | 0.13        |
| ELASMOPUS LEVIS           | 19.42            | 0.33        | 0.00             | 0.00        | 12.95           | 0.30        |
| IDOTEA BALTICA            | 6.39             | 0.11        | 7.18             | 0.51        | 6.65            | 0.15        |
| BATEA CATHARINENSIS       | 29.98            | 0.51        | 0.00             | 0.00        | 19.98           | 0.46        |
| EDOTEA TRILOBA            | 6.57             | 0.11        | 0.00             | 0.00        | 4.38            | 0.10        |
| MELITA NITIDA             | 8.11             | 0.14        | 0.00             | 0.00        | 5.41            | 0.12        |
| MONOCULODES EDWARDSI      | 9.61             | 0.16        | 0.00             | 0.00        | 6.41            | 0.15        |
| SAGITTA SP                | 2.10             | 0.04        | 7.68             | 0.55        | 3.96            | 0.09        |
| CYMAUSA COMPTA            | 6.57             | 0.11        | 0.00             | 0.00        | 4.38            | 0.10        |
| ORDER AMPHIPODA           | 3.49             | 0.06        | 0.00             | 0.00        | 2.33            | 0.05        |
| OTHER SPECIES             | 225.37           | 3.84        | 20.70            | 1.48        | 157.15          | 3.59        |
| STATION TOTAL AND<br>DATE | 5874.19          |             | 1395.57          |             | 4381.32         |             |



TABLE 6-3 (CONT.)

| OYSTERCR                  |                  | GEAR-36BONG |                  |             |                 | DEC-1980    |  |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|--|
| STATION                   |                  | DSNT        |                  | DSDA        |                 |             |  |
| SPECIES                   | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |  |
| NEOMYSIS AMERICANA        | 1332.91          | 34.12       | 879.78           | 50.35       | 1203.44         | 36.58       |  |
| AMPELISCA SP              | 48.29            | 1.24        | 0.00             | 0.00        | 34.49           | 1.05        |  |
| JASSA FALCATA             | 1472.72          | 37.70       | 619.80           | 35.47       | 1229.03         | 37.36       |  |
| CRANGON SEPTemspino ZOEAE | 12.51            | 0.32        | 6.03             | 0.34        | 10.66           | 0.32        |  |
| GAMMARUS SP               | 61.31            | 1.57        | 0.00             | 0.00        | 43.79           | 1.33        |  |
| SUBCLASS OSTRACODA        | 9.66             | 0.25        | 0.00             | 0.00        | 6.90            | 0.21        |  |
| COROPHIUM SP              | 492.43           | 12.61       | 71.35            | 4.08        | 372.12          | 11.31       |  |
| SUBORDER CAPRELLIDEA      | 55.18            | 1.41        | 18.25            | 1.04        | 44.63           | 1.36        |  |
| LEUCON AMERICANUS         | 98.51            | 2.52        | 2.13             | 0.12        | 70.97           | 2.16        |  |
| MYSIDOPSIS BIGELOWI       | 38.10            | 0.98        | 1.95             | 0.11        | 27.77           | 0.84        |  |
| OXYUROSTYLIS SMITHI       | 16.43            | 0.42        | 0.00             | 0.00        | 11.74           | 0.36        |  |
| STENOTHOE SP              | 41.92            | 1.07        | 31.02            | 1.78        | 38.81           | 1.18        |  |
| CLASS PYCNOGONIDA         | 17.33            | 0.44        | 0.00             | 0.00        | 12.38           | 0.38        |  |
| CRANGON SEPTemspinosa     | 66.11            | 1.69        | 0.00             | 0.00        | 47.22           | 1.44        |  |
| CERAPUS TUBULARIS         | 1.93             | 0.05        | 8.77             | 0.50        | 3.89            | 0.12        |  |
| ELASMOPUS LEVIS           | 5.79             | 0.15        | 0.00             | 0.00        | 4.14            | 0.13        |  |
| IDOTEA BALTICA            | 0.97             | 0.02        | 0.00             | 0.00        | 0.69            | 0.02        |  |
| BATEA CATHARINENSIS       | 5.79             | 0.15        | 0.00             | 0.00        | 4.14            | 0.13        |  |
| EDOTEA TRILOBA            | 3.85             | 0.10        | 0.00             | 0.00        | 2.75            | 0.08        |  |
| MONOCULODES EDWARDSI      | 17.60            | 0.45        | 0.00             | 0.00        | 12.57           | 0.38        |  |
| SAGITTA SP                | 65.99            | 1.69        | 86.70            | 4.96        | 71.91           | 2.19        |  |
| ORDER AMPHIPODA           | 1.93             | 0.05        | 0.00             | 0.00        | 1.38            | 0.04        |  |
| AUTOLYTUS SP              | 2.01             | 0.05        | 10.88            | 0.62        | 4.54            | 0.14        |  |
| ERICHTHONIUS SP           | 1.93             | 0.05        | 0.00             | 0.00        | 1.38            | 0.04        |  |
| OTHER SPECIES             | 35.28            | 0.90        | 10.55            | 0.60        | 28.21           | 0.86        |  |
| STATION TOTAL AND<br>DATE | 3906.48          |             | 1747.20          |             | 3289.54         |             |  |

TABLE 6-3 (CONT.)

| OYSTERCR                  |                  | GEAR-36BONG |                  |             |                 | JAN-1981    |  |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|--|
| STATION                   | DSNT             |             | DSDA             |             |                 |             |  |
| SPECIES                   | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |  |
| NEOMYSIS AMERICANA        | 670.26           | 21.10       | 439.38           | 8.78        | 593.30          | 15.67       |  |
| AMPELISCA SP              | 162.41           | 5.11        | 0.00             | 0.00        | 108.28          | 2.86        |  |
| JASSA FALCATA             | 1720.70          | 54.17       | 2662.60          | 53.20       | 2034.67         | 53.75       |  |
| GAMMARUS SP               | 69.05            | 2.17        | 13.33            | 0.27        | 50.48           | 1.33        |  |
| SUBCLASS OSTRACODA        | 16.28            | 0.51        | 2.42             | 0.05        | 11.66           | 0.31        |  |
| COROPHIUM SP              | 108.68           | 3.42        | 1550.68          | 30.99       | 589.34          | 15.57       |  |
| SUBORDER CAPRELLIDEA      | 61.39            | 1.93        | 29.33            | 0.59        | 50.70           | 1.34        |  |
| SARSIA SP                 | 0.00             | 0.00        | 2.13             | 0.04        | 0.71            | 0.02        |  |
| LEUCON AMERICANUS         | 95.11            | 2.99        | 4.55             | 0.09        | 64.93           | 1.71        |  |
| MYSIDOPSIS BIGELOWI       | 4.65             | 0.15        | 0.00             | 0.00        | 3.10            | 0.08        |  |
| OXYUROSTYLIS SMITHI       | 9.54             | 0.30        | 4.55             | 0.09        | 7.87            | 0.21        |  |
| STENOTHOE SP              | 48.63            | 1.53        | 78.88            | 1.58        | 58.71           | 1.55        |  |
| CLASS PYCNOGONIDA         | 0.00             | 0.00        | 2.42             | 0.05        | 0.81            | 0.02        |  |
| CRANGON SEPTEMSPINOSA     | 12.24            | 0.39        | 0.00             | 0.00        | 8.16            | 0.22        |  |
| CERAPUS TUBULARIS         | 7.10             | 0.22        | 0.00             | 0.00        | 4.73            | 0.13        |  |
| ELASMOPUS LEVIS           | 12.34            | 0.39        | 8.48             | 0.17        | 11.05           | 0.29        |  |
| EDOTEA TRILOBA            | 3.89             | 0.12        | 2.42             | 0.05        | 3.40            | 0.09        |  |
| RATHKEA OCTOPUNCTATA      | 0.00             | 0.00        | 2.42             | 0.05        | 0.81            | 0.02        |  |
| COROPHIUM ACHERUSICUM     | 0.00             | 0.00        | 49.35            | 0.99        | 16.45           | 0.43        |  |
| MONOCULODES EDWARDSI      | 44.53            | 1.40        | 0.00             | 0.00        | 29.68           | 0.78        |  |
| SAGITTA SP                | 38.46            | 1.21        | 53.20            | 1.06        | 43.38           | 1.15        |  |
| AUTOLYTUS SP              | 2.05             | 0.06        | 0.00             | 0.00        | 1.37            | 0.04        |  |
| ERICHTHONIUS SP           | 0.00             | 0.00        | 12.35            | 0.25        | 4.12            | 0.11        |  |
| OTHER SPECIES             | 89.13            | 2.81        | 86.03            | 1.72        | 88.09           | 2.33        |  |
| STATION TOTAL AND<br>DATE |                  | TOTAL       |                  |             |                 |             |  |
|                           | 3176.41          |             | 5004.50          |             | 3785.77         |             |  |

TABLE 6-3 (CONT.)

| OYSTERCR                  |                  | GEAR-36BONG |                  |             |                 | FEB-1981    |  |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|--|
| STATION                   | DSNT             |             | DSDA             |             |                 |             |  |
| SPECIES                   | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |  |
| NEOMYSIS AMERICANA        | 3620.73          | 38.04       | 92.28            | 3.16        | 2444.57         | 33.40       |  |
| AMPELISCA SP              | 188.44           | 1.98        | 20.48            | 0.70        | 132.45          | 1.81        |  |
| JASSA FALCATA             | 2650.40          | 27.84       | 2213.03          | 75.76       | 2504.61         | 34.22       |  |
| CRANGON SEPTEMSPINO ZOEAE | 77.84            | 0.82        | 4.58             | 0.16        | 53.42           | 0.73        |  |
| GAMMARUS SP               | 1750.49          | 18.39       | 16.73            | 0.57        | 1172.57         | 16.02       |  |
| SUBCLASS OSTRACODA        | 19.60            | 0.21        | 2.55             | 0.09        | 13.92           | 0.19        |  |
| COROPHIUM SP              | 484.53           | 5.09        | 287.98           | 9.86        | 419.01          | 5.72        |  |
| SUBORDER CAPRELLIDEA      | 65.03            | 0.68        | 17.65            | 0.60        | 49.23           | 0.67        |  |
| SARSIA SP                 | 79.58            | 0.84        | 62.75            | 2.15        | 73.97           | 1.01        |  |
| LEUCON AMERICANUS         | 22.69            | 0.24        | 4.80             | 0.16        | 16.73           | 0.23        |  |
| MYSIDOPSIS BIGELOWI       | 5.50             | 0.06        | 0.00             | 0.00        | 3.67            | 0.05        |  |
| OXYUROSTYLIS SMITHI       | 35.01            | 0.37        | 2.17             | 0.07        | 24.07           | 0.33        |  |
| STENOTHOE SP              | 77.05            | 0.81        | 33.48            | 1.15        | 62.52           | 0.85        |  |
| CLASS PYCNOGONIDA         | 51.97            | 0.55        | 12.85            | 0.44        | 38.93           | 0.53        |  |
| CRANGON SEPTEMSPINOSA     | 107.94           | 1.13        | 0.00             | 0.00        | 71.96           | 0.98        |  |
| ELASMOPUS LEVIS           | 14.04            | 0.15        | 8.98             | 0.31        | 12.35           | 0.17        |  |
| BATEA CATHARINENSIS       | 29.80            | 0.31        | 8.05             | 0.28        | 22.55           | 0.31        |  |
| EDOTEA TRILOBA            | 4.09             | 0.04        | 2.17             | 0.07        | 3.45            | 0.05        |  |
| MELITA NITIDA             | 5.66             | 0.06        | 0.00             | 0.00        | 3.77            | 0.05        |  |
| RATHKEA OCTOPUNCTATA      | 2.75             | 0.03        | 4.20             | 0.14        | 3.23            | 0.04        |  |
| COROPHIUM ACHERUSICUM     | 0.00             | 0.00        | 8.98             | 0.31        | 2.99            | 0.04        |  |
| MONOCULODES EDWARDSI      | 98.25            | 1.03        | 0.00             | 0.00        | 65.50           | 0.89        |  |
| SAGITTA SP                | 42.75            | 0.45        | 59.15            | 2.02        | 48.22           | 0.66        |  |
| ORDER AMPHIPODA           | 12.45            | 0.13        | 0.00             | 0.00        | 8.30            | 0.11        |  |
| ERICHTHONIUS SP           | 5.66             | 0.06        | 18.90            | 0.65        | 10.08           | 0.14        |  |
| OTHER SPECIES             | 66.31            | 0.70        | 39.30            | 1.35        | 57.31           | 0.78        |  |
| STATION TOTAL AND<br>DATE | 9518.54          |             | 2921.02          |             | 7319.36         |             |  |

TABLE 6-3 (CONT.)

| OYSTERCR                  |                  | GEAR-36BONG |                  |             |                 | MAR-1981    |  |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|--|
| STATION                   | DSNT             |             | DSDA             |             |                 |             |  |
| SPECIES                   | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |  |
| NEOMYSIS AMERICANA        | 4491.20          | 39.16       | 1754.55          | 38.95       | 3883.06         | 39.14       |  |
| AMPELISCA SP              | 135.51           | 1.18        | 0.00             | 0.00        | 105.40          | 1.06        |  |
| JASSA FALCATA             | 1537.04          | 13.40       | 1351.00          | 29.99       | 1495.69         | 15.08       |  |
| CRANGON SEPTemspino ZOEAE | 875.74           | 7.64        | 377.80           | 8.39        | 765.09          | 7.71        |  |
| GAMMARUS SP               | 1891.38          | 16.49       | 46.92            | 1.04        | 1481.50         | 14.93       |  |
| SUBCLASS OSTRACODA        | 13.34            | 0.12        | 0.00             | 0.00        | 10.38           | 0.10        |  |
| COROPHIUM SP              | 104.28           | 0.91        | 89.32            | 1.98        | 100.96          | 1.02        |  |
| SUBORDER CAPRELLIDEA      | 86.78            | 0.76        | 88.33            | 1.96        | 87.12           | 0.88        |  |
| SARSIA SP                 | 1652.43          | 14.41       | 655.58           | 14.55       | 1430.91         | 14.42       |  |
| LEUCON AMERICANUS         | 131.86           | 1.15        | 0.00             | 0.00        | 102.56          | 1.03        |  |
| MYSIDOPSIS BIGELOWI       | 28.22            | 0.25        | 0.00             | 0.00        | 21.95           | 0.22        |  |
| OXYUROSTYLIS SMITHI       | 55.49            | 0.48        | 2.60             | 0.06        | 43.74           | 0.44        |  |
| STENOTHOE SP              | 57.34            | 0.50        | 28.33            | 0.63        | 50.89           | 0.51        |  |
| CLASS PYCNOGONIDA         | 12.30            | 0.11        | 7.47             | 0.17        | 11.23           | 0.11        |  |
| CRANGON SEPTemspinosa     | 52.55            | 0.46        | 0.00             | 0.00        | 40.87           | 0.41        |  |
| CERAPUS TUBULARIS         | 2.40             | 0.02        | 9.52             | 0.21        | 3.98            | 0.04        |  |
| ELASMOPUS LEVIS           | 10.31            | 0.09        | 9.73             | 0.22        | 10.18           | 0.10        |  |
| EDOTEA TRILOBA            | 7.14             | 0.06        | 0.00             | 0.00        | 5.56            | 0.06        |  |
| MICROPROTOPUS RAWEYI      | 16.54            | 0.14        | 0.00             | 0.00        | 12.86           | 0.13        |  |
| RATHKEA OCTOPUNCTATA      | 124.91           | 1.09        | 46.15            | 1.02        | 107.41          | 1.08        |  |
| COROPHIUM ACHERUSICUM     | 24.52            | 0.21        | 13.60            | 0.30        | 22.09           | 0.22        |  |
| MONOCULODES EDWARDSI      | 24.28            | 0.21        | 0.00             | 0.00        | 18.88           | 0.19        |  |
| SAGITTA SP                | 21.46            | 0.19        | 2.38             | 0.05        | 17.22           | 0.17        |  |
| ORDER AMPHIPODA           | 13.39            | 0.12        | 0.00             | 0.00        | 10.41           | 0.10        |  |
| AUTOLYTUS SP              | 6.86             | 0.06        | 0.00             | 0.00        | 5.33            | 0.05        |  |
| ERICHTHONIUS SP           | 14.57            | 0.13        | 4.53             | 0.10        | 12.34           | 0.12        |  |
| OTHER SPECIES             | 77.39            | 0.67        | 16.43            | 0.36        | 63.84           | 0.64        |  |
| STATION TOTAL AND<br>DATE | TOTAL            |             |                  |             |                 |             |  |
|                           | 11469.24         |             | 4504.22          |             | 9921.46         |             |  |

TABLE 6-3 (CONT.)

| STATION                   | OYSTERC          |             | GEAR-36BONG      |             | APR-1981        |             |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | DSNT             |             | DSDA             |             |                 |             |
| SPECIES                   | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |
| NEOMYSIS AMERICANA        | 8931.38          | 32.02       | 2412.45          | 9.58        | 7301.64         | 26.83       |
| AMPELISCA SP              | 1273.12          | 4.56        | 14.20            | 0.06        | 958.39          | 3.52        |
| JASSA FALCATA             | 1638.07          | 5.87        | 889.58           | 3.53        | 1450.94         | 5.33        |
| CRANGON SEPTEMSPINO ZOEAE | 5730.52          | 20.55       | 20294.75         | 80.57       | 9371.58         | 34.43       |
| GAMMARUS SP               | 8569.27          | 30.72       | 363.38           | 1.44        | 6517.79         | 23.95       |
| SUBCLASS OSTRACODA        | 165.45           | 0.59        | 0.00             | 0.00        | 124.09          | 0.46        |
| COROPHIUM SP              | 38.71            | 0.14        | 68.68            | 0.27        | 46.20           | 0.17        |
| SUBORDER CAPRELLIDEA      | 60.20            | 0.22        | 14.90            | 0.06        | 48.88           | 0.18        |
| SARSIA SP                 | 283.09           | 1.01        | 444.70           | 1.77        | 323.49          | 1.19        |
| LEUCON AMERICANUS         | 231.39           | 0.83        | 0.00             | 0.00        | 173.54          | 0.64        |
| MYSIDOPSIS BIGELOWI       | 15.72            | 0.06        | 0.00             | 0.00        | 11.79           | 0.04        |
| OXYUROSTYLIS SMITHI       | 78.77            | 0.28        | 7.53             | 0.03        | 60.96           | 0.22        |
| STENOThOE SP              | 23.52            | 0.08        | 23.42            | 0.09        | 23.49           | 0.09        |
| CLASS PYCNOGONIDA         | 9.54             | 0.03        | 0.00             | 0.00        | 7.16            | 0.03        |
| CRANGON SEPTEMSPINOSA     | 285.88           | 1.02        | 0.00             | 0.00        | 214.41          | 0.79        |
| CERAPUS TUBULARIS         | 4.60             | 0.02        | 7.53             | 0.03        | 5.33            | 0.02        |
| ELASMOPUS LEVIS           | 8.95             | 0.03        | 0.00             | 0.00        | 6.71            | 0.02        |
| IDOTEA BALTICA            | 14.26            | 0.05        | 7.53             | 0.03        | 12.57           | 0.05        |
| EDOTEA TRILOBA            | 11.42            | 0.04        | 7.10             | 0.03        | 10.34           | 0.04        |
| MICROPROTOPUS RANEYI      | 30.53            | 0.11        | 7.80             | 0.03        | 24.84           | 0.09        |
| RATHKEA OCTOPUNCTATA      | 115.31           | 0.41        | 188.50           | 0.75        | 133.61          | 0.49        |
| COROPHIUM ACHERUSICUM     | 15.72            | 0.06        | 14.90            | 0.06        | 15.52           | 0.06        |
| MONOCULODES EDWARDSI      | 5.85             | 0.02        | 7.10             | 0.03        | 6.16            | 0.02        |
| SAGITTA SP                | 54.06            | 0.19        | 179.15           | 0.71        | 85.33           | 0.31        |
| ORDER AMPHIPODA           | 5.85             | 0.02        | 15.55            | 0.06        | 8.27            | 0.03        |
| AUTOLYTUS SP              | 133.21           | 0.48        | 14.63            | 0.06        | 103.56          | 0.38        |
| MICRODEUTOPUS GRYLLOTALP  | 4.60             | 0.02        | 0.00             | 0.00        | 3.45            | 0.01        |
| OTHER SPECIES             | 153.46           | 0.55        | 206.75           | 0.82        | 166.78          | 0.61        |
| STATION TOTAL AND<br>DATE | TOTAL            | 27892.42    | 25190.11         |             | 27216.84        |             |

TABLE 6-3 (CONT.)

MAY-1981

GEAR-36BONG

OYSTERCR

STATION

DSNT DSDA

| SPECIES                    | DSNT             |             | DSDA             |             | NUMBER<br>TOTAL | PCT<br>COMP |
|----------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                            | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |
| NEOMYSIS AMERICANA         | 2724.00          | 18.98       | 64.28            | 4.71        | 1964.08         | 18.45       |
| AMPELISCA SP               | 2354.49          | 16.40       | 35.23            | 2.58        | 1691.84         | 15.90       |
| JASSA FALCATA              | 827.27           | 5.76        | 467.48           | 34.28       | 724.47          | 6.81        |
| CRANGON SEPTemsp INO ZOEAE | 1113.50          | 7.76        | 364.00           | 26.69       | 899.36          | 8.45        |
| GAMMARUS SP                | 3032.75          | 21.13       | 18.30            | 1.34        | 2171.48         | 20.40       |
| SUBCLASS OSTRACOD*         | 2881.36          | 20.07       | 63.45            | 4.65        | 2076.24         | 19.51       |
| NEOPANOPE TEXA SAYI ZOEAE  | 7.05             | 0.05        | 0.00             | 0.00        | 5.04            | 0.05        |
| COROPHIUM SP               | 255.92           | 1.78        | 127.75           | 9.37        | 219.30          | 2.06        |
| SUBORDER CAPRELLIDEAE      | 92.78            | 0.65        | 27.58            | 2.02        | 74.15           | 0.70        |
| PANOPEUS HERBSTII ZOEAE    | 11.50            | 0.08        | 0.00             | 0.00        | 8.21            | 0.08        |
| LEUCON AMERICANUS          | 85.59            | 0.60        | 1.95             | 0.14        | 61.69           | 0.58        |
| OXYUROSTYLIS SMITHI        | 119.40           | 0.83        | 0.00             | 0.00        | 85.29           | 0.80        |
| STENOHOE SP                | 140.55           | 0.98        | 48.10            | 3.53        | 114.14          | 1.07        |
| CLASS PYCNOGONIDA          | 0.00             | 0.00        | 4.15             | 0.30        | 1.19            | 0.01        |
| PALAEOMETES SP ZOEAE       | 14.53            | 0.10        | 0.00             | 0.00        | 10.38           | 0.10        |
| CRANGON SEPTemspINOSA      | 182.93           | 1.27        | 2.45             | 0.18        | 131.36          | 1.23        |
| CERAPUS TUBILARIS          | 17.41            | 0.12        | 0.00             | 0.00        | 12.44           | 0.12        |
| ELASMOPIUS LEVIS           | 97.99            | 0.68        | 0.00             | 0.00        | 69.99           | 0.66        |
| IDOTEA BALTICA             | 61.08            | 0.43        | 13.32            | 0.98        | 47.44           | 0.45        |
| EDOTEA TRILORAE            | 16.45            | 0.11        | 6.60             | 0.48        | 13.64           | 0.13        |
| MICROPROTOPUS RANEYI       | 2.88             | 0.02        | 0.00             | 0.00        | 2.06            | 0.02        |
| MELITA NITIDA              | 0.00             | 0.00        | 8.32             | 0.61        | 2.38            | 0.02        |
| COROPHIUM ACHERSUSICUM     | 94.06            | 0.66        | 38.28            | 2.81        | 78.12           | 0.73        |
| MONOCULODES EDWARDSI       | 14.53            | 0.10        | 0.00             | 0.00        | 10.38           | 0.10        |
| SAGITTA SP                 | 0.00             | 0.00        | 2.08             | 0.15        | 0.59            | 0.01        |
| ORDER AMPHIPODA            | 0.00             | 0.00        | 2.20             | 0.16        | 0.63            | 0.01        |
| AUTOLYTUS SP               | 51.65            | 0.36        | 0.00             | 0.00        | 36.89           | 0.35        |
| ERICHTHIUS SP              | 5.75             | 0.04        | 0.00             | 0.00        | 4.11            | 0.04        |
| OTHER SPECIES              | 148.83           | 1.04        | 68.28            | 5.01        | 125.81          | 1.18        |

STATION TOTAL AND  
DATE

14354.25

1363.77

10642.68



TABLE 6-3 (CONT.)

| STATION                   | OYSTERCR         |             | GEAR-36BONG      |             | JUN-1981        |             |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | DSNT             |             | DSDA             |             |                 |             |
| SPECIES                   | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |
| NEOMYSIS AMERICANA        | 4014.22          | 13.21       | 408.48           | 11.62       | 3212.94         | 13.16       |
| AMPELISCA SP              | 11475.49         | 37.76       | 39.28            | 1.12        | 8934.11         | 36.59       |
| JASSA FALCATA             | 1462.76          | 4.81        | 1326.25          | 37.73       | 1432.42         | 5.87        |
| CRANGON SEPTemspino ZOEAE | 570.96           | 1.88        | 25.75            | 0.73        | 449.80          | 1.84        |
| GAMMARUS SP               | 363.64           | 1.20        | 0.00             | 0.00        | 282.83          | 1.16        |
| SUBCLASS OSTRACODA        | 3219.41          | 10.59       | 21.55            | 0.61        | 2508.77         | 10.28       |
| NEOPANOPE TEXA SAYI ZOEAE | 4053.83          | 13.34       | 595.65           | 16.95       | 3285.34         | 13.46       |
| COROPHIUM SP              | 160.81           | 0.53        | 123.28           | 3.51        | 152.47          | 0.62        |
| SUBORDER CAPRELLIDEA      | 138.37           | 0.46        | 28.23            | 0.80        | 113.89          | 0.47        |
| PANOPEUS HERBSTII ZOEAE   | 1466.66          | 4.83        | 299.90           | 8.53        | 1207.38         | 4.95        |
| LEUCON AMERICANUS         | 457.34           | 1.51        | 2.90             | 0.08        | 356.36          | 1.46        |
| MYSIDOPSIS BIGELOWI       | 13.30            | 0.04        | 0.00             | 0.00        | 10.34           | 0.04        |
| OXYUROSTYLIS SMITHI       | 588.73           | 1.94        | 13.85            | 0.39        | 460.98          | 1.89        |
| STENOTHOE SP              | 211.44           | 0.70        | 151.40           | 4.31        | 198.09          | 0.81        |
| CLASS PYCNOGONIDA         | 91.53            | 0.30        | 5.40             | 0.15        | 72.39           | 0.30        |
| PALAEONETES SP ZOEAE      | 367.51           | 1.21        | 6.03             | 0.17        | 287.18          | 1.18        |
| CRANGON SEPTemspINOSA     | 56.96            | 0.19        | 0.00             | 0.00        | 44.30           | 0.18        |
| UPOGEBIA AFFINIS ZOEAE    | 287.09           | 0.94        | 47.42            | 1.35        | 233.83          | 0.96        |
| CERAPUS TUBULARIS         | 12.51            | 0.04        | 14.88            | 0.42        | 13.03           | 0.05        |
| ELASMOPUS LEVIS           | 118.42           | 0.39        | 25.93            | 0.74        | 97.87           | 0.40        |
| IDOTEA BALTICA            | 214.65           | 0.71        | 100.03           | 2.85        | 189.18          | 0.77        |
| BATEA CATHARINENSIS       | 35.17            | 0.12        | 0.00             | 0.00        | 27.36           | 0.11        |
| EDOTEA TRILOBA            | 78.56            | 0.26        | 20.85            | 0.59        | 65.74           | 0.27        |
| RHITHROPANOPEUS HAR ZOEAE | 235.73           | 0.78        | 43.05            | 1.22        | 192.91          | 0.79        |
| MICROPROTOPUS RANEYI      | 10.31            | 0.03        | 0.00             | 0.00        | 8.02            | 0.03        |
| MELITA NITIDA             | 98.86            | 0.33        | 0.00             | 0.00        | 76.89           | 0.31        |
| COROPHIUM ACHERUSICUM     | 0.00             | 0.00        | 6.68             | 0.19        | 1.48            | 0.01        |
| MONOCULODES EDWARDSI      | 63.41            | 0.21        | 0.00             | 0.00        | 49.32           | 0.20        |
| CYMADESA COMPTA           | 11.84            | 0.04        | 0.00             | 0.00        | 9.21            | 0.04        |
| ORDER AMPHIPODA           | 38.84            | 0.13        | 7.65             | 0.22        | 31.91           | 0.13        |
| MICRODEUTOPUS GRYLLOTALP  | 59.66            | 0.20        | 0.00             | 0.00        | 46.40           | 0.19        |
| ERTCHTHONIUS SP           | 18.14            | 0.06        | 0.00             | 0.00        | 14.11           | 0.06        |
| OTHER SPECIES             | 390.56           | 1.29        | 200.48           | 5.70        | 348.32          | 1.43        |
| STATION TOTAL AND<br>DATE | 30386.69         |             | 3514.88          |             | 24415.18        |             |

TABLE 6-3 (CONT.)

| OYSTERCR                  |                  | GEAR-36BONG |                  |             |                 | JUL-1981    |  |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|--|
| STATION                   | DSNT             |             | DSDA             |             |                 |             |  |
| SPECIES                   | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |  |
| NEOMYSIS AMERICANA        | 2634.11          | 12.35       | 100.50           | 2.07        | 2000.71         | 11.63       |  |
| AMPELISCA SP              | 8572.89          | 40.19       | 93.05            | 1.92        | 6452.93         | 37.50       |  |
| JASSA FALCATA             | 1824.33          | 8.55        | 1900.30          | 39.20       | 1843.33         | 10.71       |  |
| GAMMARUS SP               | 35.14            | 0.16        | 0.00             | 0.00        | 26.36           | 0.15        |  |
| SUBCLASS OSTRACODA        | 1689.74          | 7.92        | 99.65            | 2.06        | 1292.22         | 7.51        |  |
| NEOPANOPE TEXA SAYI ZOEAE | 1358.77          | 6.37        | 169.73           | 3.50        | 1061.51         | 6.17        |  |
| COROPHIUM SP              | 315.05           | 1.48        | 257.93           | 5.32        | 300.77          | 1.75        |  |
| SUBORDER CAPRELLIDEA      | 333.18           | 1.56        | 488.35           | 10.07       | 371.97          | 2.16        |  |
| PANOPEUS HERBSTII ZOEAE   | 825.72           | 3.87        | 113.58           | 2.34        | 647.68          | 3.76        |  |
| LEUCON AMERICANUS         | 176.13           | 0.83        | 0.00             | 0.00        | 132.10          | 0.77        |  |
| MYSIDOPSIS BIGELOWI       | 682.15           | 3.20        | 25.90            | 0.53        | 518.09          | 3.01        |  |
| OXYUROSTYLIS SMITHI       | 373.24           | 1.75        | 0.00             | 0.00        | 279.93          | 1.63        |  |
| STENOHOE SP               | 367.37           | 1.72        | 572.53           | 11.81       | 418.66          | 2.43        |  |
| CLASS PYCNOGONIDA         | 209.97           | 0.98        | 197.80           | 4.08        | 206.93          | 1.20        |  |
| PALAEONETES SP ZOEAE      | 262.54           | 1.23        | 31.48            | 0.65        | 204.77          | 1.19        |  |
| CRANGON SEPTEMSPINOSA     | 35.36            | 0.17        | 0.00             | 0.00        | 26.52           | 0.15        |  |
| UPOGEBIA AFFINIS ZOEAE    | 120.23           | 0.56        | 38.13            | 0.79        | 99.71           | 0.58        |  |
| CERAPUS TUBULARIS         | 119.70           | 0.56        | 150.28           | 3.10        | 127.34          | 0.74        |  |
| ELASMOPUS LEVIS           | 124.41           | 0.58        | 92.72            | 1.91        | 116.49          | 0.68        |  |
| IDOTEAE BALTICA           | 37.85            | 0.18        | 2.85             | 0.06        | 29.10           | 0.17        |  |
| BATEA CATHARINENSIS       | 166.88           | 0.78        | 22.75            | 0.47        | 130.84          | 0.76        |  |
| IDOTEAE TRILOBA           | 29.83            | 0.14        | 14.20            | 0.29        | 25.92           | 0.15        |  |
| RHITHROPANOPEUS HAR ZOEAE | 56.44            | 0.26        | 46.42            | 0.96        | 53.94           | 0.31        |  |
| MICROPROTOPUS RANEYI      | 174.36           | 0.82        | 11.35            | 0.23        | 133.61          | 0.78        |  |
| MELITA NITIDA             | 52.09            | 0.24        | 11.57            | 0.24        | 41.96           | 0.24        |  |
| COROPHIUM ACHERUSICUM     | 7.19             | 0.03        | 45.75            | 0.94        | 16.83           | 0.10        |  |
| MONOCULODES EDWARDSI      | 62.18            | 0.29        | 0.00             | 0.00        | 46.64           | 0.27        |  |
| CYCADUSA COMPTA           | 133.53           | 0.63        | 0.00             | 0.00        | 100.15          | 0.58        |  |
| ORDER AMPHIPODA           | 64.34            | 0.30        | 22.77            | 0.47        | 53.95           | 0.31        |  |
| TURRITOPSIS NUTRICOLA     | 14.00            | 0.07        | 0.00             | 0.00        | 10.50           | 0.06        |  |
| MICRODEUTOPUS GRYLLOLALP  | 45.68            | 0.21        | 11.57            | 0.24        | 37.16           | 0.22        |  |
| ERICHTHONIUS SP           | 24.54            | 0.12        | 71.83            | 1.48        | 36.36           | 0.21        |  |
| OTHER SPECIES             | 400.46           | 1.88        | 254.63           | 5.25        | 364.00          | 2.12        |  |
| STATION TOTAL AND<br>DATE | 21329.41         |             | 4847.60          |             | 17208.96        |             |  |

TABLE 6-3 (CONT.)

| STATION                   | OYSTERCR         |             | GEAR-36BONE      |             | AUG-1981        |             |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | DSNT             |             | DSDA             |             |                 |             |
| SPECIES                   | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |
| NEOMYSIS AMERICANA        | 797.45           | 6.03        | 13.47            | 0.67        | 536.13          | 5.65        |
| AMPELISCA SP              | 3658.00          | 27.66       | 3.08             | 0.15        | 2439.69         | 25.72       |
| JASSA FALCATA             | 1265.56          | 9.57        | 10.55            | 0.53        | 847.23          | 8.93        |
| GAMMARUS SP               | 1.38             | 0.01        | 0.00             | 0.00        | 0.92            | 0.01        |
| SUBCLASS OSTRACODA        | 1938.81          | 14.66       | 24.90            | 1.24        | 1300.84         | 13.72       |
| NEOPANOPE TEXA SAYI ZOEAE | 2178.01          | 16.47       | 1228.63          | 61.26       | 1861.55         | 19.63       |
| COROPHIUM SP              | 214.93           | 1.63        | 30.30            | 1.51        | 153.38          | 1.62        |
| SUBORDER CAPRELLIDEA      | 157.00           | 1.19        | 0.00             | 0.00        | 104.67          | 1.10        |
| PANOPEUS HERBSTII ZOEAE   | 327.11           | 2.47        | 62.55            | 3.12        | 238.92          | 2.52        |
| LEUCON AMERICANUS         | 92.54            | 0.70        | 0.00             | 0.00        | 61.69           | 0.65        |
| MYSIDOPSIS BIGELOWI       | 213.33           | 1.61        | 3.38             | 0.17        | 143.34          | 1.51        |
| OXYUROSTYLIS SMITHI       | 189.01           | 1.43        | 3.08             | 0.15        | 127.03          | 1.34        |
| STENOTHOE SP              | 221.63           | 1.68        | 0.00             | 0.00        | 147.75          | 1.56        |
| CLASS PYCNOGONIDA         | 258.45           | 1.95        | 6.93             | 0.35        | 174.61          | 1.84        |
| PALAEONETES SP ZOEAE      | 180.33           | 1.36        | 133.55           | 6.66        | 164.73          | 1.74        |
| CRANGON SEPTEMSPINOSA     | 7.56             | 0.06        | 0.00             | 0.00        | 5.04            | 0.05        |
| UPOGEBIA AFFINIS ZOEAE    | 74.10            | 0.56        | 24.20            | 1.21        | 57.47           | 0.61        |
| CERAPUS TUBULARIS         | 99.26            | 0.75        | 0.00             | 0.00        | 66.18           | 0.70        |
| ELASMOPUS LEVIS           | 55.43            | 0.42        | 6.78             | 0.34        | 39.21           | 0.41        |
| IDOTEA BALTICA            | 96.60            | 0.73        | 56.50            | 2.82        | 83.23           | 0.88        |
| BATEA CATHARINENSIS       | 180.32           | 1.36        | 0.00             | 0.00        | 120.22          | 1.27        |
| EDOTEA TRILOBA            | 51.55            | 0.39        | 10.30            | 0.51        | 37.80           | 0.40        |
| RHITHROPANOPEUS HAR ZOEAE | 12.07            | 0.09        | 15.38            | 0.77        | 13.18           | 0.14        |
| MICROPROTOPUS RANEYI      | 88.88            | 0.67        | 0.00             | 0.00        | 59.25           | 0.62        |
| MELITA NITIDA             | 49.70            | 0.38        | 6.40             | 0.32        | 35.27           | 0.37        |
| COROPHIUM ACHERUSICUM     | 111.86           | 0.85        | 0.00             | 0.00        | 74.58           | 0.79        |
| MONOCULODES EDWARDSI      | 3.19             | 0.02        | 0.00             | 0.00        | 2.13            | 0.02        |
| CYADUSA COMPTA            | 22.45            | 0.17        | 0.00             | 0.00        | 14.97           | 0.16        |
| ORDER AMPHIPODA           | 16.13            | 0.12        | 3.08             | 0.15        | 11.78           | 0.12        |
| AUTOLYTUS SP              | 0.00             | 0.00        | 3.38             | 0.17        | 1.13            | 0.01        |
| TURRITOPSIS NUTRICOLA     | 19.36            | 0.15        | 19.48            | 0.97        | 19.40           | 0.20        |
| MICRODEUTOPUS GRYLLOLALP  | 37.06            | 0.28        | 0.00             | 0.00        | 24.71           | 0.26        |
| ERICHTHONIUS SP           | 1.38             | 0.01        | 0.00             | 0.00        | 0.92            | 0.01        |
| OTHER SPECIES             | 603.30           | 4.56        | 339.60           | 16.93       | 515.40          | 5.43        |
| STATION TOTAL AND<br>DATE | 13223.73         |             | 2005.47          |             | 9484.30         |             |

TABLE 6-4 MONTHLY MEAN SAMPLE DENSITY (No./100 m<sup>3</sup>) OF LESS ABUNDANT KEY MACROZOOPLANKTON COLLECTED AT THE DISCHARGE OF THE OYSTER CREEK NUCLEAR GENERATING STATION, SEPTEMBER 1980 - AUGUST 1981

|        | <u>Callinectes spp.</u><br>(Megalopae) |             |             | <u>Corophium tuberculatum</u><br>(Undetermined) |             |             |
|--------|--|-------------|-------------|---|-------------|-------------|
|        | <u>DSNT</u>                            | <u>DSDA</u> | <u>Mean</u> | <u>DSNT</u>                                     | <u>DSDA</u> | <u>Mean</u> |
| SEP 80 | 19.95                                  | 6.78        | 17.02       | 0   | 0           | 0           |
| OCT 80 | 17.93                                  | 0           | 13.44       | 0   | 9.98        | 2.49        |
| NOV 80 | 10.33                                  | 0           | 6.88        | 0   | 0           | 0           |
| DEC 80 | 0                                      | 0           | 0           | 0   | 0           | 0           |
| JAN 81 | 0                                      | 0           | 0           | 0   | 0           | 0           |
| FEB 81 | 0                                      | 0           | 0           | 0   | 0           | 0           |
| MAR 81 | 0                                      | 0           | 0           | 0   | 0           | 0           |
| APR 81 | 0                                      | 0           | 0           | 0   | 0           | 0           |
| MAY 81 | 0                                      | 0           | 0           | 0   | 0           | 0           |
| JUN 81 | 0                                      | 0           | 0           | 59.53   | 0           | 46.30       |
| JUL 81 | 1.13                                   | 0           | 0.84        | 0   | 35.80       | 8.95        |
| AUG 81 | 38.31                                  | 7.18        | 27.93       | 2.71  | 3.08        | 2.83        |

TABLE 6-5 MEAN SAMPLE DENSITY (No./100 m<sup>3</sup>), PERCENT COMPOSITION,  
AND CUMULATIVE PERCENT OF MACROZOOPLANKTON COLLECTED  
AT THE INTAKE OF THE OYSTER CREEK NUCLEAR GENERATING  
STATION, SEPTEMBER 1980 - AUGUST 1981

| SPP. NAME                 | NUMBER   | %      | CUMU. % |
|---------------------------|----------|--------|---------|
| ORDER AMPHIPODA           | 4816.763 | 37.619 | 37.619  |
| FAMILY MYSIDAE            | 4329.039 | 33.810 | 71.429  |
| CRANGON SEPTEMPINO ZOEAE  | 1022.595 | 7.987  | 79.416  |
| FAMILY XANTHIDAE ZOEAE    | 658.967  | 5.147  | 84.563  |
| SUBCLASS OSTRACODA        | 549.523  | 4.292  | 88.854  |
| SUBORDER CAPRELLIDEA      | 361.919  | 2.827  | 91.681  |
| ORDER CUMACEA             | 271.780  | 2.123  | 93.804  |
| HYDROMEDUSAE              | 206.385  | 1.612  | 95.416  |
| MNEMIOPSIS LEIDYI         | 93.267   | 0.728  | 96.144  |
| CLASS PYCNOGONIDA         | 69.983   | 0.547  | 96.691  |
| PALAEOMETES SP ZOEAE      | 68.298   | 0.533  | 97.224  |
| CLASS POLYCHAETA          | 67.997   | 0.531  | 97.755  |
| ORDER ISOPODA             | 57.213   | 0.447  | 98.202  |
| CRANGON SEPTEMPINOSA      | 52.712   | 0.412  | 98.614  |
| UPOGEBIA AFFINIS ZOEAE    | 41.047   | 0.321  | 98.934  |
| CLASS POLYCHAETA LAR      | 25.603   | 0.200  | 99.134  |
| SAGITTA SP                | 20.805   | 0.162  | 99.297  |
| LIBINIA SP ZOEAE          | 13.293   | 0.104  | 99.400  |
| HIRUDINEA                 | 12.220   | 0.095  | 99.496  |
| CALLINECTES SP MEGALOP    | 10.740   | 0.084  | 99.580  |
| SECTION BRACHYURA MEGALP  | 9.921    | 0.077  | 99.657  |
| CLASS TURBELLARIA         | 7.726    | 0.060  | 99.718  |
| LEPTOSYNAPTA SP           | 4.612    | 0.036  | 99.754  |
| CREPIDULA SP              | 4.427    | 0.035  | 99.788  |
| PALAEOMETES VULGARIS      | 3.905    | 0.030  | 99.819  |
| CLASS GASTROPODA          | 3.097    | 0.024  | 99.843  |
| PAGURUS SP ZOEAE          | 2.678    | 0.021  | 99.864  |
| PHYLUM CTENOPHORA         | 2.570    | 0.020  | 99.884  |
| HIPPOLYTE SP ZOEAE        | 2.482    | 0.019  | 99.903  |
| ORDER ACTINIARIA          | 1.620    | 0.013  | 99.916  |
| PLEUROBRACHIA PILEUS      | 1.433    | 0.011  | 99.927  |
| INVERTEBRATE FRAGMENTS    | 1.176    | 0.009  | 99.936  |
| SUBORDER AEOLIDACEA       | 1.149    | 0.009  | 99.945  |
| NEREIS SP EPITOKE         | 1.114    | 0.009  | 99.954  |
| CLASS PELECYPODA          | 1.026    | 0.008  | 99.962  |
| ORDER CERIANTHARIA        | 0.815    | 0.006  | 99.968  |
| SUBCLS CIRRIPIEDIA CYPRID | 0.788    | 0.006  | 99.974  |
| CALLINECTES SAPIDUS JUV   | 0.659    | 0.005  | 99.980  |
| SUBORDER DORIDACEA        | 0.625    | 0.005  | 99.984  |
| PALAEOMETES SP            | 0.585    | 0.005  | 99.989  |
| FAMILY CYMOTHOIDAE        | 0.570    | 0.004  | 99.994  |
| CLASS OLIGOCHAETA         | 0.206    | 0.002  | 99.995  |
| ANNELIDA                  | 0.185    | 0.001  | 99.997  |
| HIPPOLYTE SP              | 0.122    | 0.001  | 99.998  |
| UCA SP ZOEAE              | 0.115    | 0.001  | 99.998  |
| PHYLUM NEMERTEA           | 0.079    | 0.001  | 99.999  |
| CLASS SCYPHOZOA EPHYRA    | 0.063    | 0.000  | 100.000 |
| BEROE OVATA               | 0.062    | 0.000  | 100.000 |

TABLE 6-6 MONTHLY MEAN SAMPLE DENSITY (No./100 m<sup>3</sup>) AND PERCENT COMPOSITION OF MACROZOOPLANKTON COLLECTED AT THE INTAKE OF THE OYSTER CREEK NUCLEAR GENERATING STATION, SEPTEMBER 1980 - AUGUST 1981

| STATION                   | OYSTERCR         |             | GEAR-36BONG      |             | SEP-1980        |             |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | INNT             |             | INDA             |             | NUMBER<br>TOTAL | PCT<br>COMP |
| SPECIES                   | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |
| ORDER AMPHIPODA           | 1538.69          | 10.41       | 53.90            | 3.42        | 1208.73         | 10.20       |
| FAMILY MYSIDAE            | 8493.87          | 57.44       | 355.00           | 22.52       | 6685.23         | 56.41       |
| FAMILY XANTHIDAE ZOEAE    | 192.21           | 1.30        | 2.38             | 0.15        | 150.03          | 1.27        |
| SUBCLASS OSTRACODA        | 965.03           | 6.53        | 2.38             | 0.15        | 751.11          | 6.34        |
| SUBORDER CAPRELLIDAE      | 2185.46          | 14.78       | 119.05           | 7.55        | 1726.26         | 14.57       |
| ORDER CUMACEA             | 512.51           | 3.47        | 0.00             | 0.00        | 398.62          | 3.36        |
| HYDROMEDUSAE              | 190.91           | 1.29        | 613.33           | 38.90       | 284.78          | 2.40        |
| MNEMIOPSIS LEIDYI         | 234.48           | 1.59        | 341.77           | 21.68       | 258.32          | 2.18        |
| CLASS PYCNOGONIDA         | 249.39           | 1.69        | 38.35            | 2.43        | 202.49          | 1.71        |
| PALAEMONETES SP ZOEAE     | 4.30             | 0.03        | 0.00             | 0.00        | 3.34            | 0.03        |
| CLASS POLYCHAETA          | 46.95            | 0.32        | 2.38             | 0.15        | 37.04           | 0.31        |
| ORDER ISOPODA             | 75.06            | 0.51        | 23.25            | 1.47        | 63.54           | 0.54        |
| CRANGON SEPTEMSPINOSA     | 4.71             | 0.03        | 0.00             | 0.00        | 3.66            | 0.03        |
| UPOGEBIA AFFINIS ZOEAE    | 3.29             | 0.02        | 0.00             | 0.00        | 2.56            | 0.02        |
| SAGITTA SP                | 0.00             | 0.00        | 2.88             | 0.18        | 0.64            | 0.01        |
| CALLINECTES SP MEGALOP    | 28.33            | 0.19        | 5.70             | 0.36        | 23.30           | 0.20        |
| SECTION BRACHYURA MEGALP  | 14.51            | 0.10        | 0.00             | 0.00        | 11.29           | 0.10        |
| LEPTOSYNAPTA SP           | 5.06             | 0.03        | 0.00             | 0.00        | 3.94            | 0.03        |
| CLASS GASTROPODA          | 18.51            | 0.13        | 2.38             | 0.15        | 14.93           | 0.13        |
| PAGURUS SP ZOEAE          | 0.68             | 0.00        | 2.38             | 0.15        | 1.06            | 0.01        |
| HIPPOLYTE SP ZOEAE        | 9.18             | 0.06        | 9.07             | 0.58        | 9.16            | 0.08        |
| INVERTEBRATE FRAGMENTS    | 3.69             | 0.02        | 0.00             | 0.00        | 2.87            | 0.02        |
| SUBORDER AEOLIDACEA       | 5.68             | 0.04        | 0.00             | 0.00        | 4.42            | 0.04        |
| OTHER SPECIES             | 4.41             | 0.03        | 2.38             | 0.15        | 3.96            | 0.03        |
| STATION TOTAL AND<br>DATE | TOTAL            | 14786.91    | 1576.55          |             | 11851.27        |             |



TABLE 6-6 (CONT.)

| STATION                   | OYSTERCR         |             |                  |             | GEAR-36BONG     |             | OCT-1980 |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|----------|
|                           | INNT             |             | INDA             |             | NUMBER<br>TOTAL | PCT<br>COMP |          |
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |          |
| ORDER AMPHIPODA           | 862.48           | 7.92        | 376.68           | 7.79        | 741.03          | 7.90        |          |
| FAMILY MYSIDAE            | 7743.18          | 71.11       | 3692.42          | 76.38       | 6730.49         | 71.79       |          |
| CRANGON SEPTemspino ZOEAE | 11.92            | 0.11        | 22.23            | 0.46        | 14.49           | 0.15        |          |
| SUBCLASS OSTRACODA        | 988.70           | 9.08        | 12.38            | 0.26        | 744.62          | 7.94        |          |
| SUBORDER CAPRELLIDEA      | 618.22           | 5.68        | 454.30           | 9.40        | 577.24          | 6.16        |          |
| ORDER CUMACEA             | 337.74           | 3.10        | 11.55            | 0.24        | 256.19          | 2.73        |          |
| HYDROMEDUSAE              | 51.75            | 0.48        | 8.93             | 0.18        | 41.04           | 0.44        |          |
| MNEMIOPSIS LEIDYI         | 29.66            | 0.27        | 11.98            | 0.25        | 25.24           | 0.27        |          |
| CLASS PYCNOGONIDA         | 153.93           | 1.41        | 145.30           | 3.01        | 151.78          | 1.62        |          |
| CLASS POLYCHAETA          | 24.84            | 0.23        | 63.15            | 1.31        | 34.42           | 0.37        |          |
| ORDER ISOPODA             | 30.68            | 0.28        | 17.83            | 0.37        | 27.46           | 0.29        |          |
| CLASS POLYCHAETA LAR      | 0.00             | 0.00        | 6.20             | 0.13        | 1.55            | 0.02        |          |
| CALLINECTES SP MEGALOP    | 27.08            | 0.25        | 11.55            | 0.24        | 23.19           | 0.25        |          |
| PALAEMONETES VULGARIS     | 2.59             | 0.02        | 0.00             | 0.00        | 1.94            | 0.02        |          |
| HIPPOLYTE SP ZOEAE        | 4.37             | 0.04        | 0.00             | 0.00        | 3.28            | 0.03        |          |
| CALLINECTES SAPIDUS JUV   | 1.43             | 0.01        | 0.00             | 0.00        | 1.07            | 0.01        |          |
| OTHER SPECIES             | 0.75             | 0.01        | 0.00             | 0.00        | 0.56            | 0.01        |          |
| STATION TOTAL AND<br>DATE | 10889.30         |             | 4834.48          |             | 9375.59         |             |          |

TABLE 6-6 (CONT.)

| OYSTERCR                  |                  | GEAR-36BONG |                  |             |                 | NOV-1980    |  |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|--|
| STATION                   | INNT             |             | INDA             |             |                 |             |  |
| SPECIES                   | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |  |
| ORDER AMPHIPODA           | 314.13           | 3.49        | 39.65            | 1.74        | 222.63          | 3.30        |  |
| FAMILY MYSIDAE            | 7202.50          | 80.11       | 2105.63          | 92.45       | 5503.54         | 81.50       |  |
| CRANGON SEPTEMSPINO ZOEAE | 85.67            | 0.95        | 11.10            | 0.49        | 60.82           | 0.90        |  |
| SUBCLASS OSTRACODA        | 102.16           | 1.14        | 0.00             | 0.00        | 68.11           | 1.01        |  |
| SUBORDER CAPRELLIDEA      | 552.97           | 6.15        | 35.50            | 1.56        | 380.48          | 5.63        |  |
| ORDER CUMACEA             | 600.79           | 6.68        | 8.20             | 0.36        | 403.26          | 5.97        |  |
| HYDROMEDUSAE              | 0.00             | 0.00        | 2.70             | 0.12        | 0.90            | 0.01        |  |
| MNEMIOPSIS LEIDYI         | 9.18             | 0.10        | 0.00             | 0.00        | 6.12            | 0.09        |  |
| CLASS PYCNOGONIDA         | 16.63            | 0.18        | 23.83            | 1.05        | 19.02           | 0.28        |  |
| CLASS POLYCHAETA          | 16.19            | 0.18        | 2.70             | 0.12        | 11.69           | 0.17        |  |
| ORDER ISOPODA             | 12.46            | 0.14        | 0.00             | 0.00        | 8.31            | 0.12        |  |
| CRANGON SEPTEMSPINOSA     | 12.14            | 0.13        | 0.00             | 0.00        | 8.09            | 0.12        |  |
| CLASS POLYCHAETA LAR      | 29.14            | 0.32        | 10.80            | 0.47        | 23.03           | 0.34        |  |
| SAGITTA SP                | 2.80             | 0.03        | 5.50             | 0.24        | 3.70            | 0.05        |  |
| HIRUDINEA                 | 4.35             | 0.05        | 0.00             | 0.00        | 2.90            | 0.04        |  |
| CALLINECTES SP MEGALOP    | 13.09            | 0.15        | 0.00             | 0.00        | 8.72            | 0.13        |  |
| PALAEONETES VULGARIS      | 11.38            | 0.13        | 0.00             | 0.00        | 7.58            | 0.11        |  |
| PHYLUM CTENOPHORA         | 0.00             | 0.00        | 24.48            | 1.07        | 8.16            | 0.12        |  |
| ORDER ACTINIARIA          | 0.00             | 0.00        | 4.75             | 0.21        | 1.58            | 0.02        |  |
| CALLINECTES SAPIDUS JUV   | 5.51             | 0.06        | 0.00             | 0.00        | 3.67            | 0.05        |  |
| OTHER SPECIES             | 0.00             | 0.00        | 2.70             | 0.12        | 0.90            | 0.01        |  |
| STATION TOTAL AND<br>DATE | TOTAL            | 8991.07     | 2277.52          |             | 6753.22         |             |  |

TABLE 6-6 (CONT.)

| STATION                   | OYSTERCR         |             | JNOA             |             | GEAR-36BONG     |             | DEC-1980 |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|----------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |          |
| ORDER AMPHIPODA           | 182.41           | 5.93        | 92.10            | 6.69        | 156.61          | 6.04        |          |
| FAMILY MYSIDAE            | 2394.40          | 77.79       | 1048.78          | 76.15       | 2009.94         | 77.54       |          |
| CRANGON SEPTEMPINO ZOEAE  | 23.46            | 0.76        | 9.95             | 0.72        | 19.60           | 0.76        |          |
| SUBCLASS OSTRACODA        | 11.88            | 0.39        | 1.90             | 0.14        | 9.03            | 0.35        |          |
| SUBORDER CAPRELLIDEA      | 101.66           | 3.30        | 34.20            | 2.48        | 82.39           | 3.18        |          |
| ORDER CUMACEA             | 100.65           | 3.27        | 7.65             | 0.56        | 74.08           | 2.86        |          |
| MNEMIOPSIS LEIDYI         | 11.37            | 0.37        | 1.90             | 0.14        | 8.66            | 0.33        |          |
| CLASS PYCNOGONIDA         | 6.13             | 0.20        | 4.37             | 0.32        | 5.63            | 0.22        |          |
| CLASS POLYCHAETA          | 40.63            | 1.32        | 24.95            | 1.81        | 36.15           | 1.39        |          |
| ORDER ISOPODA             | 3.66             | 0.12        | 7.05             | 0.51        | 4.63            | 0.18        |          |
| CRANGON SEPTEMPINOSA      | 94.06            | 3.06        | 0.00             | 0.00        | 67.19           | 2.59        |          |
| CLASS POLYCHAETA LAR      | 12.11            | 0.39        | 8.93             | 0.65        | 11.20           | 0.43        |          |
| SAGITTA SP                | 54.18            | 1.76        | 82.68            | 6.00        | 62.32           | 2.40        |          |
| HIRUDINEA                 | 20.57            | 0.67        | 5.15             | 0.37        | 16.16           | 0.62        |          |
| PALAEMONETES VULGARIS     | 2.52             | 0.08        | 0.00             | 0.00        | 1.80            | 0.07        |          |
| CLASS GASTROPODA          | 0.00             | 0.00        | 1.90             | 0.14        | 0.54            | 0.02        |          |
| PHYLUM CTENOPHORA         | 5.00             | 0.16        | 22.10            | 1.60        | 9.89            | 0.38        |          |
| PLEUROBRACHIA PILEUS      | 11.31            | 0.37        | 15.50            | 1.13        | 12.51           | 0.48        |          |
| SUBORDER AEOLIDACEA       | 0.82             | 0.03        | 0.00             | 0.00        | 0.59            | 0.02        |          |
| OTHER SPECIES             | 1.39             | 0.05        | 8.07             | 0.59        | 3.30            | 0.13        |          |
| STATION TOTAL AND<br>DATE | 3078.21          |             | 1377.18          |             | 2592.20         |             |          |

TABLE 6-6 (CONT.)

| OYSTERCR                  |                  | GEAR-36BONG |                  |             |                 | JAN-1981    |  |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|--|
| STATION                   | INNT             |             | INDA             |             | NUMBER<br>TOTAL | PCT<br>COMP |  |
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |  |
| ORDER AMPHIPODA           | 406.13           | 17.74       | 171.10           | 16.10       | 312.12          | 17.35       |  |
| FAMILY MYSIDAE            | 1470.65          | 64.23       | 632.18           | 59.49       | 1135.26         | 63.11       |  |
| CRANGON SEPTemspino ZOEAE | 1.45             | 0.06        | 0.00             | 0.00        | 0.87            | 0.05        |  |
| SUBCLASS OSTRACODA        | 16.82            | 0.73        | 6.59             | 0.62        | 12.72           | 0.71        |  |
| SUBORDER CAPRELLIDEA      | 64.88            | 2.83        | 79.93            | 7.52        | 70.90           | 3.94        |  |
| ORDER CUMACEA             | 153.20           | 6.69        | 11.33            | 1.07        | 96.45           | 5.36        |  |
| HYDROMEDUSAE              | 0.00             | 0.00        | 4.18             | 0.39        | 1.67            | 0.09        |  |
| CLASS PYCNOGONIDA         | 1.95             | 0.09        | 10.85            | 1.02        | 5.51            | 0.31        |  |
| CLASS POLYCHAETA          | 86.92            | 3.80        | 62.63            | 5.89        | 77.20           | 4.29        |  |
| ORDER ISOPODA             | 6.92             | 0.30        | 6.90             | 0.65        | 6.91            | 0.38        |  |
| CRANGON SEPTemspinosa     | 18.12            | 0.79        | 0.00             | 0.00        | 10.87           | 0.60        |  |
| CLASS POLYCHAETA LAR      | 1.95             | 0.09        | 2.10             | 0.20        | 2.01            | 0.11        |  |
| SAGITTA SP                | 27.28            | 1.19        | 55.83            | 5.25        | 38.70           | 2.15        |  |
| HIRUDINEA                 | 27.00            | 1.18        | 8.25             | 0.78        | 19.50           | 1.08        |  |
| PALAEMONETES VULGARIS     | 1.22             | 0.05        | 0.00             | 0.00        | 0.73            | 0.04        |  |
| CLASS GASTROPODA          | 1.22             | 0.05        | 4.22             | 0.40        | 2.42            | 0.13        |  |
| PLEUROBRACHIA PILEUS      | 2.67             | 0.12        | 6.58             | 0.62        | 4.23            | 0.24        |  |
| SUBORDER AEOLIDACEA       | 1.30             | 0.06        | 0.00             | 0.00        | 0.78            | 0.04        |  |
| STATION TOTAL AND<br>DATE | TOTAL            | 2289.67     | 1062.62          |             | 1798.85         |             |  |

TABLE 6-6 (CONT.)

| STATION                   | OYSTERC          |             |                  |             | GEAR-36BONG     |             | FEB-1981        |             |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|-----------------|-------------|
|                           | INNT             |             | INDA             |             | NUMBER<br>TOTAL | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |
| SPECIES                   | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |                 |             |
| ORDER AMPHIPODA           | 966.48           | 17.36       | 115.10           | 26.93       | 682.68          | 17.71       |                 |             |
| FAMILY MYSIDAE            | 3847.00          | 69.09       | 32.70            | 7.65        | 2575.57         | 66.82       |                 |             |
| CRANGON SEPTemspino ZOEAE | 122.08           | 2.19        | 66.18            | 15.48       | 103.44          | 2.68        |                 |             |
| SUBCLASS OSTRACODA        | 21.50            | 0.39        | 0.00             | 0.00        | 14.33           | 0.37        |                 |             |
| SUBORDER CAPRELLIDEA      | 22.96            | 0.41        | 7.95             | 1.86        | 17.96           | 0.47        |                 |             |
| ORDER CUMACEA             | 110.75           | 1.99        | 2.65             | 0.62        | 74.72           | 1.94        |                 |             |
| HYDROMEDUSAE              | 201.99           | 3.63        | 106.28           | 24.86       | 170.08          | 4.41        |                 |             |
| CLASS PYCNOGONIDA         | 4.93             | 0.09        | 13.75            | 3.22        | 7.87            | 0.20        |                 |             |
| CLASS POLYCHAETA          | 15.84            | 0.28        | 5.95             | 1.39        | 12.54           | 0.33        |                 |             |
| ORDER ISOPODA             | 5.60             | 0.10        | 0.00             | 0.00        | 3.73            | 0.10        |                 |             |
| CRANGON SEPTemspinosa     | 127.96           | 2.30        | 0.00             | 0.00        | 85.31           | 2.21        |                 |             |
| CLASS POLYCHAETA LAR      | 2.40             | 0.04        | 0.00             | 0.00        | 1.60            | 0.04        |                 |             |
| SAGITTA SP                | 56.42            | 1.01        | 70.98            | 16.60       | 61.28           | 1.59        |                 |             |
| HIRUDINEA                 | 58.81            | 1.06        | 0.00             | 0.00        | 39.21           | 1.02        |                 |             |
| PALAEMONETES VULGARIS     | 2.25             | 0.04        | 0.00             | 0.00        | 1.50            | 0.04        |                 |             |
| PLEUROBRACHIA PILEUS      | 1.20             | 0.02        | 5.95             | 1.39        | 2.78            | 0.07        |                 |             |
| STATION TOTAL AND<br>DATE | 5568.16          |             | 427.47           |             | 3854.60         |             |                 |             |

TABLE 6-6 (CONT.)

| STATION                   | OYSTERCR         |             | GEAR-36BONG      |             | MAR-1981        |             |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | INNT             |             | INDA             |             |                 |             |
| SPECIES                   | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |
| ORDER AMPHIPODA           | 4464.55          | 33.63       | 87.58            | 2.28        | 3491.89         | 31.24       |
| FAMILY MYSIDAE            | 6546.21          | 49.32       | 2731.33          | 71.10       | 5698.46         | 50.98       |
| CRANGON SEPTemspino ZOEAE | 449.05           | 3.38        | 338.45           | 8.81        | 424.47          | 3.80        |
| SUBCLASS OSTRACODA        | 22.85            | 0.17        | 0.00             | 0.00        | 17.77           | 0.16        |
| SUBORDER CAPRELLIDEA      | 184.85           | 1.39        | 32.53            | 0.85        | 151.00          | 1.35        |
| ORDER CUMACEA             | 184.85           | 1.39        | 7.25             | 0.19        | 145.38          | 1.30        |
| HYDROMEDUSAE              | 1008.64          | 7.60        | 587.33           | 15.29       | 915.02          | 8.19        |
| CLASS PYCNOGONIDA         | 5.41             | 0.04        | 0.00             | 0.00        | 4.21            | 0.04        |
| CLASS POLYCHAETA          | 220.46           | 1.66        | 7.73             | 0.20        | 173.19          | 1.55        |
| ORDER ISOPODA             | 18.95            | 0.14        | 3.05             | 0.08        | 15.42           | 0.14        |
| CRANGON SEPTemspinosa     | 79.53            | 0.60        | 0.00             | 0.00        | 61.86           | 0.55        |
| CLASS POLYCHAETA LAR      | 2.16             | 0.02        | 0.00             | 0.00        | 1.68            | 0.02        |
| SAGITTA SP                | 10.18            | 0.08        | 5.75             | 0.15        | 9.19            | 0.08        |
| HIRUDINEA                 | 63.74            | 0.48        | 34.15            | 0.89        | 57.17           | 0.51        |
| PALAEMONETES VULGARIS     | 3.38             | 0.03        | 0.00             | 0.00        | 2.63            | 0.02        |
| CLASS GASTROPODA          | 0.00             | 0.00        | 3.22             | 0.08        | 0.72            | 0.01        |
| CLASS PELECYPODA          | 8.56             | 0.06        | 3.22             | 0.08        | 7.37            | 0.07        |
| CALLINECTES SAPIDUS JUV   | 0.63             | 0.00        | 0.00             | 0.00        | 0.49            | 0.00        |
| STATION TOTAL AND<br>DATE |                  | 13273.99    | 3841.63          |             | 11177.91        |             |



TABLE 6-6 (CONT.)

| STATION                   | OYSTERCR         |             | INDA             |             | TOTAL           |             |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |
| ORDER AMPHIPODA           | 30213.42         | 59.27       | 208.28           | 0.85        | 22712.14        | 51.87       |
| FAMILY MYSIDAE            | 13213.50         | 25.76       | 1588.95          | 6.49        | 10307.40        | 23.54       |
| CRANGON SEPTEMPINO ZOEAE  | 4840.07          | 9.39        | 20932.45         | 85.52       | 8863.17         | 20.24       |
| SUBCLASS OSTRACODA        | 228.85           | 0.44        | 0.00             | 0.00        | 171.64          | 0.39        |
| SUBORDER CAPRELLIDEA      | 103.78           | 0.20        | 8.78             | 0.16        | 87.53           | 0.20        |
| ORDER CUMACEA             | 389.26           | 0.75        | 0.00             | 0.00        | 291.94          | 0.67        |
| HYDROMEDUSAE              | 390.63           | 0.75        | 0.00             | 0.00        | 558.21          | 1.27        |
| CLASS PYCNOGONIDA         | 1.20             | 0.00        | 4.07             | 0.02        | 1.95            | 0.00        |
| CLASS POLYCHAETA          | 228.92           | 0.46        | 71.70            | 0.08        | 176.86          | 0.40        |
| ORDER ISOPODA             | 76.88            | 0.15        | 8.57             | 0.04        | 59.80           | 0.14        |
| CRANGON SEPTEMPINOSA      | 321.78           | 0.64        | 0.00             | 0.00        | 241.33          | 0.55        |
| CLASS POLYCHAETA LAR      | 95.45            | 0.19        | 400.03           | 1.63        | 171.59          | 0.39        |
| SAGITTA SP                | 62.76            | 0.12        | 167.88           | 0.69        | 89.04           | 0.20        |
| HIRUDINEA                 | 15.24            | 0.03        | 0.00             | 0.00        | 11.43           | 0.03        |
| PALAEONETES VULGARIS      | 23.79            | 0.05        | 0.00             | 0.00        | 17.84           | 0.04        |
| PHYLUM CTENOPHORA         | 0.00             | 0.00        | 27.00            | 0.11        | 6.75            | 0.02        |
| SUBORDER AEOLIDACEA       | 0.59             | 0.00        | 0.00             | 0.00        | 0.44            | 0.00        |
| ORDER CERIANTHARIA        | 6.01             | 0.01        | 17.63            | 0.07        | 8.91            | 0.02        |
| SUBCLS CIRRIPELID CYPRID  | 11.49            | 0.02        | 0.00             | 0.00        | 8.62            | 0.02        |
| CALLINECTES SAPIDUS JUV   | 3.78             | 0.01        | 0.00             | 0.00        | 2.84            | 0.01        |
| STATION TOTAL AND<br>DATE | 50227.48         |             | 24475.28         |             | 43789.43        |             |

TABLE 6-6 (CONT.)

| STATION                   | OYSTERCR         |             | GEAR-36BONG      |             | MAY-1981        |             |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | INNT             |             | INDA             |             |                 |             |
| SPECIES                   | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |
| ORDER AMPHIPODA           | 4401.71          | 52.42       | 75.05            | 8.96        | 3070.43         | 50.58       |
| FAMILY MYSIDAE            | 697.60           | 8.31        | 76.15            | 9.09        | 506.38          | 8.34        |
| CRANGON SEPTemspino ZOEAE | 1861.38          | 22.17       | 522.63           | 62.36       | 1449.45         | 23.88       |
| FAMILY XANTHIDAE ZOEAE    | 22.03            | 0.26        | 0.00             | 0.00        | 15.25           | 0.25        |
| SUBCLASS OSTRACODA        | 636.73           | 7.58        | 2.75             | 0.33        | 441.66          | 7.28        |
| SUBORDER CAPRELLIDEAE     | 38.56            | 0.46        | 25.55            | 3.05        | 34.55           | 0.57        |
| ORDER CUMACEA             | 223.20           | 2.66        | 0.00             | 0.00        | 154.52          | 2.55        |
| HYDROMEDUSAE              | 113.27           | 1.35        | 94.40            | 11.26       | 107.46          | 1.77        |
| CLASS PYCNOGONIDA         | 14.26            | 0.17        | 3.30             | 0.39        | 10.88           | 0.18        |
| PALAEMONETES SP ZOEAE     | 7.17             | 0.09        | 0.00             | 0.00        | 4.96            | 0.08        |
| CLASS POLYCHAETA          | 66.49            | 0.79        | 9.93             | 1.18        | 49.08           | 0.81        |
| ORDER ISOPODA             | 74.40            | 0.89        | 0.00             | 0.00        | 51.51           | 0.85        |
| CRANGON SEPTemspinosa     | 129.02           | 1.54        | 0.00             | 0.00        | 89.32           | 1.47        |
| CLASS POLYCHAETA LAR      | 87.39            | 1.04        | 18.33            | 2.19        | 66.14           | 1.09        |
| PALAEMONETES VULGARIS     | 3.46             | 0.04        | 0.00             | 0.00        | 2.39            | 0.04        |
| CLASS GASTROPODA          | 4.78             | 0.06        | 0.00             | 0.00        | 3.31            | 0.05        |
| PAGURUS SP ZOEAE          | 0.00             | 0.00        | 7.22             | 0.86        | 2.22            | 0.04        |
| PHYLUM CTENOPHORA         | 2.69             | 0.03        | 2.75             | 0.33        | 2.71            | 0.04        |
| ORDER ACTINIARIA          | 3.83             | 0.05        | 0.00             | 0.00        | 2.65            | 0.04        |
| NEREIS SP EPITOKE         | 8.32             | 0.10        | 0.00             | 0.00        | 5.76            | 0.09        |
| STATION TOTAL AND<br>DATE | 8396.28          |             | 838.05           |             | 6070.67         |             |

TABLE 6-6 (CONT.)

| STATION                   | OYSTERCR         |             | GEAR-36BONG      |             | JUN-1981        |             |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | INNT             |             | INDA             |             |                 |             |
| SPECIES                   | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |
| ORDER AMPHIPODA           | 11801.28         | 47.92       | 168.35           | 9.45        | 9216.18         | 47.14       |
| FAMILY MYSIDAE            | 3751.74          | 15.23       | 256.25           | 14.39       | 2974.97         | 15.22       |
| CRANGON SEPTEMPINO ZOEAE  | 574.49           | 2.33        | 18.68            | 1.05        | 450.97          | 2.31        |
| FAMILY XANTHIDAE ZOEAE    | 3486.00          | 14.16       | 945.80           | 53.10       | 2921.51         | 14.94       |
| SUBCLASS OSTRACODA        | 2702.37          | 10.97       | 11.07            | 0.62        | 2104.31         | 10.76       |
| SUBORDER CAPRELLIDEA      | 234.55           | 0.95        | 37.95            | 2.13        | 190.86          | 0.98        |
| ORDER CUMACEA             | 844.71           | 3.43        | 18.08            | 1.01        | 661.01          | 3.38        |
| HYDROMEDUSAE              | 20.89            | 0.08        | 25.23            | 1.42        | 21.85           | 0.11        |
| MNEMIOPSIS LEIDYI         | 34.15            | 0.14        | 0.00             | 0.00        | 26.56           | 0.14        |
| CLASS PYCNOGONIDA         | 60.54            | 0.25        | 5.72             | 0.32        | 48.36           | 0.25        |
| PALAEMONETES SP ZOEAE     | 320.35           | 1.30        | 8.12             | 0.46        | 250.97          | 1.28        |
| CLASS POLYCHAETA          | 28.25            | 0.11        | 4.78             | 0.27        | 23.03           | 0.12        |
| ORDER ISOPODA             | 267.56           | 1.09        | 105.48           | 5.92        | 231.54          | 1.18        |
| CRANGON SEPTEMPINOSA      | 40.26            | 0.16        | 0.00             | 0.00        | 31.32           | 0.16        |
| UPOGEBIA AFFINIS ZOEAE    | 275.92           | 1.12        | 75.73            | 4.25        | 231.43          | 1.18        |
| CLASS POLYCHAETA LAR      | 2.66             | 0.01        | 0.00             | 0.00        | 2.07            | 0.01        |
| LIBINIA SP ZOEAE          | 74.85            | 0.30        | 16.27            | 0.91        | 61.83           | 0.32        |
| SECTION BRACHYURA MEGALP  | 13.16            | 0.05        | 0.00             | 0.00        | 10.24           | 0.05        |
| CLASS TURBELLARIA         | 12.83            | 0.05        | 0.00             | 0.00        | 9.98            | 0.05        |
| LEPTOSYNAPTA SP           | 7.16             | 0.03        | 0.00             | 0.00        | 5.57            | 0.03        |
| CREPIDULA SP              | 26.41            | 0.11        | 72.63            | 4.08        | 36.68           | 0.19        |
| PALAEMONETES VULGARIS     | 0.66             | 0.00        | 0.00             | 0.00        | 0.52            | 0.00        |
| CLASS GASTROPODA          | 2.66             | 0.01        | 0.00             | 0.00        | 2.07            | 0.01        |
| PAGURUS SP ZOEAE          | 12.74            | 0.05        | 8.18             | 0.46        | 11.73           | 0.06        |
| PHYLUM CTENOPHORA         | 5.01             | 0.02        | 0.00             | 0.00        | 3.90            | 0.02        |
| HIPPOLYTE SP ZOEAE        | 8.81             | 0.04        | 0.00             | 0.00        | 6.86            | 0.04        |
| ORDER ACTINIARIA          | 2.63             | 0.01        | 0.00             | 0.00        | 2.04            | 0.01        |
| INVERTEBRATE FRAGMENTS    | 5.99             | 0.02        | 0.00             | 0.00        | 4.66            | 0.02        |
| NEREIS SP EPITOKE         | 5.14             | 0.02        | 0.00             | 0.00        | 4.00            | 0.02        |
| CLASS PELECYPODA          | 1.52             | 0.01        | 0.00             | 0.00        | 1.18            | 0.01        |
| OTHER SPECIES             | 1.52             | 0.01        | 2.75             | 0.15        | 1.79            | 0.01        |
| STATION TOTAL AND<br>DATE | TOTAL            | 24626.83    | 1781.05          |             | 19549.99        |             |

TABLE 6-6 (CONT.)

| OYSTERCR                  |                  | GEAR-36BONG |                  |             |                 | JUL-1981    |  |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|--|
| STATION                   | INNT             |             | INDA             |             |                 |             |  |
| SPECIES                   | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |  |
| ORDER AMPHIPODA           | 11286.57         | 49.53       | 837.45           | 32.95       | 8674.29         | 48.93       |  |
| FAMILY MYSIDAE            | 4982.97          | 21.87       | 414.07           | 16.29       | 3840.74         | 21.67       |  |
| CRANGON SEPTEMSPINO ZOEAE | 3.80             | 0.02        | 0.00             | 0.00        | 2.85            | 0.02        |  |
| FAMILY XANTHIDAE ZOEAE    | 2427.17          | 10.65       | 398.08           | 15.66       | 1919.89         | 10.83       |  |
| SUBCLASS OSTRACODA        | 1642.53          | 7.21        | 22.45            | 0.88        | 1237.51         | 6.98        |  |
| SUBORDER CAPRELLIDEA      | 471.06           | 2.07        | 313.75           | 12.34       | 431.73          | 2.44        |  |
| ORDER CUMACEA             | 501.93           | 2.20        | 4.47             | 0.18        | 377.57          | 2.13        |  |
| HYDROMEDUSAE              | 46.11            | 0.20        | 25.23            | 0.99        | 40.89           | 0.23        |  |
| MNEMIOPSIS LEIDYI         | 118.13           | 0.52        | 100.65           | 3.96        | 113.76          | 0.64        |  |
| CLASS PYCNOGONIDA         | 205.63           | 0.90        | 197.53           | 7.77        | 203.61          | 1.15        |  |
| PALAEONETES SP ZOEAE      | 400.78           | 1.76        | 11.15            | 0.44        | 303.37          | 1.71        |  |
| CLASS POLYCHAETA          | 109.82           | 0.48        | 50.55            | 1.99        | 95.01           | 0.54        |  |
| ORDER ISOPODA             | 86.27            | 0.38        | 51.83            | 2.04        | 77.66           | 0.44        |  |
| CRANGON SEPTEMSPINOSA     | 23.21            | 0.10        | 0.00             | 0.00        | 17.41           | 0.10        |  |
| UPOGEBIA AFFINIS ZOEAE    | 185.04           | 0.81        | 22.40            | 0.88        | 144.38          | 0.81        |  |
| CLASS POLYCHAETA LAR      | 17.75            | 0.08        | 4.47             | 0.18        | 14.43           | 0.08        |  |
| LIBINIA SP ZOEAE          | 85.25            | 0.37        | 47.55            | 1.87        | 75.82           | 0.43        |  |
| CALLINECTES SP MEGALOP    | 0.73             | 0.00        | 0.00             | 0.00        | 0.55            | 0.00        |  |
| SECTION BRACHYURA MEGALP  | 8.07             | 0.04        | 0.00             | 0.00        | 6.06            | 0.03        |  |
| CLASS TURBELLARIA         | 90.94            | 0.40        | 11.18            | 0.44        | 71.00           | 0.40        |  |
| LEPTOSYNAPTA SP           | 20.98            | 0.09        | 5.15             | 0.20        | 17.02           | 0.10        |  |
| CREPIDULA SP              | 8.05             | 0.04        | 4.47             | 0.18        | 7.16            | 0.04        |  |
| PALAEONETES VULGARS       | 11.46            | 0.05        | 0.00             | 0.00        | 8.59            | 0.05        |  |
| CLASS GASTROPODA          | 5.87             | 0.03        | 10.30            | 0.41        | 6.98            | 0.04        |  |
| ORDER ACTINIARIA          | 16.10            | 0.07        | 0.00             | 0.00        | 12.07           | 0.07        |  |
| INVERTEBRATE FRAGMENTS    | 5.86             | 0.03        | 0.00             | 0.00        | 4.39            | 0.02        |  |
| SUBORDER AEOLIDACEA       | 8.20             | 0.04        | 0.00             | 0.00        | 6.15            | 0.03        |  |
| NEREIS SP EPITOE          | 2.88             | 0.01        | 0.00             | 0.00        | 2.16            | 0.01        |  |
| OTHER SPECIES             | 15.98            | 0.07        | 9.00             | 0.35        | 14.24           | 0.08        |  |
| STATION TOTAL AND<br>DATE | TOTAL            | 22789.13    | 2541.73          |             | 17727.28        |             |  |

TABLE 6-6 (CONT.)

| STATION                   | OYSTERCR         |             | INDA             |             | GEAR-36BONG     |             | AUG-1981 |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|----------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |          |
| ORDER AMPHIPODA           | 2780.72          | 32.15       | 13.18            | 0.51        | 1858.21         | 28.05       |          |
| FAMILY MYSIDAE            | 501.44           | 5.80        | 8.05             | 0.31        | 336.98          | 5.09        |          |
| CRANGON SEPTEMPINO ZOEAE  | 0.00             | 0.00        | 2.70             | 0.10        | 0.90            | 0.01        |          |
| FAMILY XANTHIDAE ZOEAE    | 2953.68          | 34.15       | 1371.38          | 53.23       | 2426.24         | 36.62       |          |
| SUBCLASS OSTRACODA        | 375.56           | 4.34        | 0.00             | 0.00        | 250.38          | 3.78        |          |
| SUBORDER CAPRELLIDAE      | 182.69           | 2.11        | 2.83             | 0.11        | 122.73          | 1.85        |          |
| ORDER CUMACEA             | 164.23           | 1.90        | 0.00             | 0.00        | 109.48          | 1.65        |          |
| HYDROMEDUSAE              | 40.90            | 0.47        | 23.18            | 0.90        | 34.99           | 0.53        |          |
| MNEMIOPSIS LEIDYI         | 665.43           | 7.69        | 862.95           | 33.50       | 731.27          | 11.04       |          |
| CLASS PYCNOGONIDA         | 166.20           | 1.92        | 2.75             | 0.11        | 111.72          | 1.69        |          |
| PALAEONETES SP ZOEAE      | 227.74           | 2.63        | 158.55           | 6.15        | 204.68          | 3.09        |          |
| CLASS POLYCHAETA          | 71.39            | 0.83        | 5.47             | 0.21        | 49.42           | 0.75        |          |
| ORDER ISOPODA             | 92.25            | 1.07        | 24.63            | 0.96        | 69.71           | 1.05        |          |
| CRANGON SEPTEMPINOSA      | 1.31             | 0.02        | 0.00             | 0.00        | 0.87            | 0.01        |          |
| UPOGEBIA AFFINIS ZOEAE    | 55.11            | 0.64        | 55.08            | 2.14        | 55.10           | 0.83        |          |
| CLASS POLYCHAETA LAR      | 8.73             | 0.10        | 2.47             | 0.10        | 6.64            | 0.10        |          |
| CALLINECTES SP MEGALOP    | 121.94           | 1.41        | 0.00             | 0.00        | 81.29           | 1.23        |          |
| SECTION BRACHYURA MEGALP  | 153.68           | 1.78        | 5.58             | 0.22        | 104.31          | 1.57        |          |
| CLASS TURBELLARIA         | 4.55             | 0.05        | 0.00             | 0.00        | 3.03            | 0.05        |          |
| LEPTOSYNAPTA SP           | 45.44            | 0.53        | 0.00             | 0.00        | 30.29           | 0.46        |          |
| CLASS GASTROPODA          | 4.59             | 0.05        | 0.00             | 0.00        | 3.06            | 0.05        |          |
| PAGURUS SP ZOEAE          | 14.00            | 0.16        | 24.40            | 0.95        | 17.47           | 0.26        |          |
| HIPPOLYTE SP ZOEAE        | 9.24             | 0.11        | 4.95             | 0.19        | 7.81            | 0.12        |          |
| NEREIS SP EPIPODE         | 1.70             | 0.02        | 0.00             | 0.00        | 1.13            | 0.02        |          |
| CLASS PELECYPODA          | 3.19             | 0.04        | 0.00             | 0.00        | 2.13            | 0.03        |          |
| OTHER SPECIES             | 3.46             | 0.04        | 7.97             | 0.31        | 4.97            | 0.07        |          |
| STATION TOTAL AND<br>DATE | 8649.14          |             | 2576.10          |             | 6624.79         |             |          |

TABLE 6-7 ESTIMATED NUMBERS OF KEY AND ABUNDANT MACROZOOPLANKTON  
ENTRAINED AT THE OYSTER CREEK NUCLEAR GENERATING  
STATION, SEPTEMBER 1980 - AUGUST 1981<sup>(a)</sup>

| Species and Life Stage               | Estimated<br>Number Entrained<br>(x 10 <sup>6</sup> ) | 80 Percent<br>Confidence Interval<br>(x 10 <sup>6</sup> ) |
|--------------------------------------|---|---|
| <u>Aequorea</u> sp.                  | 298.00  | 55.05   |
| Class Pycnogonida                    | 1,165.18  | 206.95  |
| Subclass Ostracoda                   | 6,703.28  | 1,533.79  |
| <u>Neomysis americana</u>            | 41,723.01   | 7,988.90  |
| <u>Mysidopsis bigelowi</u>           | 1,571.66  | 560.14  |
| <u>Leucon americanus</u>             | 1,621.35  | 284.55  |
| <u>Oxyurostylis smithi</u>           | 1,091.09  | 180.53  |
| <u>Gammarus</u> sp.                  | 7,973.84  | 3,194.82  |
| <u>Stenothoe</u> sp.                 | 1,992.08  | 550.53  |
| <u>Ampelisca</u> sp.                 | 16,739.98   | 4,387.25  |
| <u>Jassa falcata</u>                 | 19,350.14   | 2,752.87  |
| <u>Corophium</u> sp.                 | 4,705.42  | 1,230.68  |
| <u>Corophium tuberculatum</u>        | 75.93   | 32.70   |
| Suborder Caprellidea                 | 3,221.15  | 606.38  |
| <u>Crangon septemspinosa</u> zoea    | 13,231.81   | 2,419.31  |
| <u>Crangon septemspinosa</u>         | 453.71  | 126.87  |
| <u>Callinectes</u> spp. zoeae        | 3.56  | 5.81  |
| <u>Callinectes</u> spp. megalopae    | 53.84   | 22.33   |
| <u>Neopanope texana sayi</u> zoeae   | 5,459.07  | 1,385.31  |
| <u>Panopeus herbstii</u> zoeae       | 2,046.57  | 845.57  |
| <u>Rhithropanopeus harrisi</u> zoeae | 257.84  | 94.84   |
| Phylum Ctenophora                    | 1,247.35  | 176.18  |
| Total Entrained                      | 139,696.74  | 12,757.80   |

(a) Estimates were based on data obtained from collections taken at the condenser discharge, except for estimates of ctenophores which were derived from collections at the condenser intake.



TABLE 6-8 RESULTS OF THE GENERAL LINEAR MODEL FOR SELECTED MACROZOOPLANKTON ENTRAINED AT THE OYSTER CREEK NUCLEAR GENERATING STATION RELATIVE TO VARIOUS METEOROLOGICAL, WATER CHEMISTRY, AND PLANT-OPERATIONAL PARAMETERS, SEPTEMBER 1975 - AUGUST 1981

| <u>Species</u>  | <u>Season</u> | <u>r<sup>2</sup></u> | <u>Size</u> | <u>Variable 1</u> | <u>Variable 2</u> | <u>Variable 3</u> |
|---|---------------|----------------------|-------------|-------------------|-------------------|-------------------|
| <u>Neomysis americana</u><br>(night catch only)                             | Fall          | 0.24                 | 56          | --                |                   |                   |
|   | Spring        | 0.17                 | 68          | Salinity          |                   |                   |
|   | Summer        | 0.11                 | 147         | DO                | Ambient           |                   |
|   | Winter        | 0.50                 | 55          | Air temperature   | DO                | Ambient           |
| <u>Callinectes sp.</u><br>megalopae   | Fall          | 0.18                 | 143         | Total flow        |                   |                   |
| <u>Callinectes sp.</u><br>zoeae   | Summer        | 0.11                 | 356         | Total flow        | Ambient           |                   |
| <u>Corophium tuberculatum</u><br>(night catch only)                         | Fall          | 0.09                 | 110         | --                |                   |                   |
|   | Spring        | 0.11                 | 126         | Salinity          |                   |                   |
|   | Summer        | 0.03                 | 276         | --                |                   |                   |
|   | Winter        | 0.16                 | 99          | Salinity          |                   |                   |
| <u>Crangon septemspinosus</u><br>adults and juveniles<br>(night catch only) | Fall          | 0.23                 | 106         | Ambient           | Air temperature   |                   |
|   | Spring        | 0.10                 | 126         | Delta-T           | Ambient           |                   |
|   | Summer        | 0.06                 | 270         | Air temperature   | Ambient           |                   |
|   | Winter        | 0.17                 | 98          | Delta-T           | DO                |                   |
| <u>Crangon septemspinosus</u><br>zoeae<br>(night catch only)                | Fall          | 0.19                 | 145         | Air temperature   | Delta-T           |                   |
|   | Spring        | 0.17                 | 162         | Delta-T           | Ambient           | Delta-T           |
|   | Summer        | 0.13                 | 358         | Ambient           | Salinity          |                   |
|   | Winter        | 0.26                 | 160         | Ambient           |                   |                   |

Note: Ambient = ambient water temperature  
 DO = dissolved oxygen  
 Delta-T = discharge/intake water temperature

## 7. COMMERCIAL LANDINGS OF FINFISH AND SHELLFISH

Commercial landing data for Ocean and Atlantic counties, New Jersey, are presented and discussed; landing data specific to Barnegat Bay are no longer compiled by the National Marine Fishery Service. Twelve months of data are presented covering the period September 1980 through August 1981.

### 7.1 RESULTS

Data for seven finfish species and two species of shellfish are presented in Tables 7-1 and 7-2. The combined landings for both counties totaled over 1.5 million kilograms valued at over 3.1 million dollars. Both total landings and dollar value were greater in Ocean County. The Ocean County landings were about 4.6 times and the dollar value was about 2.5 times greater than that of Atlantic County.

Summer flounder produced the greatest weight of any species in Ocean County and the second highest dollar value. Bluefish yielded the next greatest weight, but ranked only fourth in value. Weakfish ranked third in both weight and value. Hard clam meats were fourth in weight but first in dollar value at over a million dollars for the 12-month period. Blue crab ranked fifth in both weight and value. In Atlantic County, hard clam meats, blue crab, summer flounder, American eel, and winter flounder ranked first through fifth, respectively, in both weight and value.

### 7.2 DISCUSSION

In both Ocean and Atlantic counties, the landings were greater during summer and early fall months (Tables 7-1 and 7-2). This is a reflection of decreased availability of most species in winter and spring, coupled with a probable reduced fishing effort. In a very general way, seasonal distributions of commercial catches were similar to those described for Barnegat Bay trawl sampling (Chapter 3) for those species taken in any numbers in the Technical Specifications program (i.e., blue crab, winter flounder, summer flounder, and weakfish). However, the populations in question were different; that sampled by the commercial effort was largely composed of adults, whereas that sampled in the Technical Specifications monitoring program was composed mostly of juveniles.

As already noted, commercial landings from Barnegat Bay are no longer separately compiled. The Barnegat Bay catches are reported in the Ocean County landings and, for some species, Ocean County data are partly or entirely made up of Barnegat Bay catches. Swider (1978) and Hillman (1977) reported Barnegat Bay percent contributions to the Ocean County landings for the period September 1975 - August 1977: alewife, 41-100 percent; American eel, 46-47 percent; winter flounder, 30-63 percent; white perch, 98-100 percent; blue crab, 100 percent; and hard clam meats, 30-36 percent. The Ocean County landings of bluefish, weakfish, and summer flounder are from outside Barnegat Bay (Boyle 1979).

Considering all commercial species together, total landed weights were rather consistent from year to year (Table 7-3). The largest total was produced during 1978-1979 (1.6 million kg) and the smallest (1.2 million kg) in 1979-1980. Although total landings were relatively consistent from year to year, some individual species exhibited significant year-to-year fluctuations. The Ocean County bluefish landings increased consistently from 156,497 kilograms in 1975-1976 to 245,935 kilograms in 1980-1981, for an average year-to-year increase of 9.6 percent. Summer flounder landings decreased by 40 percent from 1976-1977 to 1979-1980, but then increased again in 1980-1981. Weakfish landings fluctuated dramatically with year-to-year totals two to three times as high (or low) as the previous year. The highest landings of weakfish occurred in 1980-1981. White perch dropped from 18,611 kilograms in 1975-1976 to 924 kilograms in 1980-1981, with an additional peak (16,507 kg) in 1978-1979. Blue crab landings decreased from 1975-1976 to 1977-1978, then increased to the largest yearly total of 161,766 kilograms in 1979-1980. Landings decreased 24 percent in 1980-1981, but the catch of 122,223 kilograms represents the second highest annual total. Hard clam landings fluctuated also, with the highest total in 1978-1979 and the lowest in 1979-1980 (a threefold decrease). Landings in 1980-1981 increased slightly over 1979-1980, but still represented the second lowest annual total.

Of those species taken commercially, the bluefish, winter flounder, summer flounder, weakfish, striped bass, and blue crab are key species designated in the Technical Specifications. Striped bass were not taken in sufficient numbers for comparison of OCNGS data with commercial landings.

For bluefish, there is no similarity between annual impingement estimates and Ocean County commercial landings for the last six years:

|           | <u>Impingement</u><br>(No. x 10 <sup>3</sup> ) | <u>Commercial Landings</u><br>(kg x 10 <sup>3</sup> ) |
|-----------|--|---|
| 1975-1976 | 14.1   | 1.6   |
| 1976-1977 | 3.9  | 1.8   |
| 1977-1978 | 3.7  | 2.1   |
| 1978-1979 | 9.7  | 2.3   |
| 1979-1980 | 2.4  | 2.3   |
| 1980-1981 | 9.2  | 2.5   |

As noted in Chapter 4, the period of bluefish vulnerability to impingement is from May to November (most before July), when young-of-the-year bluefish are in the bay. The young bluefish soon grow to a size where their swimming ability allows them to avoid the traveling screens. Thus, both the estimated numbers of bluefish impinged and its consequent contribution to overall mortality are quite low. Assuming reasonably equal fishing effort from year to year, and similar size distributions among the annual catches, the population of bluefish has steadily increased in Ocean County waters over the last six years. This indicates that the level of impingement cropping at OCNGS is not sufficient to retard the maintenance of the bluefish stocks in the vicinity.

The potential is greater for impingement and entrainment at OCNGS to affect populations of winter flounder in Barnegat Bay. This species uses the bay as a spawning and nursery ground. The potential for related effects on the commercial fishery is tempered by the fact that the fishery for winter flounder in Ocean County is relatively minor (Danila 1978).

For comparison, the 1975-1981 estimates of annual impingement, larval entrainment, and commercial landing data for winter flounder are

|           | <u>Impingement</u><br>(No. x 10 <sup>3</sup> ) | <u>Entrainment</u><br>(No. x 10 <sup>0</sup> ) | <u>Commercial</u><br>(kg x 10 <sup>3</sup> ) |
|-----------|--|--|--|
| 1975-1976 | 8.9  | 2.1  | 32.7   |
| 1976-1977 | 18.6   | 13.9   | 21.7   |
| 1977-1978 | 27.6   | 4.1  | 30.1   |
| 1978-1979 | 148.4  | 6.6  | 20.8   |
| 1979-1980 | 16.1   | 0.0  | 20.3   |
| 1980-1981 | 48.0   | 2.7  | 28.9   |

Commercial landing data remained relatively stable, whereas the impingement and entrainment catches varied by several orders of magnitude. Annual impingement estimates increased from nearly 9,000 in 1975-1976 to a peak of over 148,000 in 1978-1979. This increase was at least partly due to the large year class produced in 1977, which is evident in the 1976-1977 entrainment data. Despite this large year-to-year variation in apparent Barnegat Bay populations, the Ocean County commercial catch remained relatively stable. It would appear that, within certain (unknown) population-size bounds, the low-level fishery will produce similar landings of winter flounder each year, unaffected by impingement and entrainment cropping at OCNGS.

In all but one of the last six years, summer flounder produced the greatest landed weight of any species from Ocean County (Table 7-3). However, the interaction of the species with OCNGS was slight. Entrainment is not a factor because the species spawns outside Barnegat Bay in the ocean. Impingement is low, ranging from an estimated 1,308 specimens in 1978-1979 to 8,228 specimens in 1980-1981. Within the bay, summer flounder tend to congregate in the eastern portion, preferring the sandy substrate (Metzger 1978b). Thus, there is little opportunity for interaction of this species with the OCNGS intake, and consequently the population and commercial catch are not affected.

Weakfish ranked third or fourth in Ocean County landings over the past six years and were impinged in relatively moderate numbers:

|           | <u>Impingement</u><br>(No. x 10 <sup>4</sup> ) | <u>Commercial</u><br>(kg x 10 <sup>4</sup> ) |
|-----------|--|--|
| 1975-1976 | 1.2  | 22.6   |
| 1976-1977 | 2.7  | 8.4  |
| 1977-1978 | 2.1  | 11.1   |
| 1978-1979 | 0.5  | 8.6  |
| 1979-1980 | 4.6  | 18.7   |
| 1980-1981 | 3.7  | 23.1   |

There is little correlation between the commercial landings and the rate of impingement of weakfish at OCNGS because the coastal commercial catch is composed primarily of adults whereas impingement in the bay affects primarily juveniles.

Because of the complex nature of their migration there is little possibility of determining the effect of OCNGS impingement on the weakfish stocks. There is some evidence that there may be two or three separate spawning populations of weakfish along the Atlantic Coast, and further that there may be recruitment from the southern to the northern spawning populations (Johnson 1978). Such interaction would tend to mask any localized cropping of juveniles such as that represented by impingement at OCNGS.

The abundance of blue crabs in the OCNGS impingement catch and the Ocean County commercial landings has fluctuated drastically from year to year:

|           | <u>Impingement</u><br>(No. x 10 <sup>4</sup> ) | <u>Commercial</u><br>(kg x 10 <sup>4</sup> ) |
|-----------|--|--|
| 1975-1976 | 5.6  | 7.3  |
| 1976-1977 | 0.2  | 2.8  |
| 1977-1978 | 1.2  | 1.4  |
| 1978-1979 | 0.3  | 4.3  |
| 1979-1980 | 0.3  | 16.2   |
| 1980-1981 | 1.8  | 12.2   |

There is a poor correspondence in year-to-year fluctuations between the two data sets. Both drop from the first to the second study years, but while the annual impingement estimates increase sixfold from the second to third years, the commercial catch continued to drop during the third year, reaching its lowest level of 14,152 kilograms. Again, in the fourth and fifth years, impingement decreased to one-fourth the 1977-1978 levels, but the commercial landings increased through the fourth and fifth years, reaching the greatest landed weight in 1979-1980 (161,766 kg). Impingement increased by a factor of six in 1980-1981, but the commercial catch decreased by 25 percent.

The reasons for these seemingly unrelated fluctuations were addressed in Chapter 4 (Impingement) and involved the perturbations of the severe winter of 1976-1977 and the size distribution of blue crabs in Barnegat Bay. The decrease in both impingement and commercial landings of crabs from 1975-1976 to 1976-1977 was probably a result of extensive crab



mortality caused by the severe winter of 1976-1977. From a trawl survey in March 1977, Metzger (1978c) estimated 42,000 dead crabs in the bay and suggested that this number was probably only a portion of those actually killed during the winter. Most of those killed were young of <60-mm carapace width. The fact that the young were most affected is reflected in the impingement and commercial catch data for 1976-1977; although the impingement catch (mostly young) was reduced by 96 percent from 1975-1976, the commercial landings (adults) only decreased by 61 percent. The 96 percent reduction of the impingement catch in 1976-1977 is also partly the result of the shutdown of OCNGS from May to July.

In addition to the influence of the 1976-1977 winter mortality, the size distribution of blue crabs in Barnegat Bay can be used to predict trends in commercial catches. In Chapter 4, the mean weight per impinged crab was calculated for the six study years:

|           | $\bar{X}$ wt Per Crab<br>(g) | Commercial Landings<br>(kg x 10 <sup>4</sup> ) |
|-----------|------------------------------|--|
| 1975-1976 | 9.1                          | 7.3  |
| 1976-1977 | 47.0                         | 2.8  |
| 1977-1978 | 18.0                         | 1.4  |
| 1978-1979 | 52.8                         | 4.3  |
| 1979-1980 | 64.7                         | 16.2   |
| 1980-1981 | 21.2                         | 12.2   |

Assuming that the size distribution of impinged blue crabs is a reasonable reflection of the size distribution of crabs throughout Barnegat Bay, a relationship of size with commercial landings is noted. From 1977-1978 through 1979-1980, the commercial catch increased with increasing size of crabs. In 1980-1981, the mean weight per crab dropped as did the commercial catch.

It is evident that the success of the blue crab commercial fishery in Ocean County (= Barnegat Bay) is dependent upon the availability of larger crabs in the bay from year to year. Impingement catches, as numbers of crabs, cannot predict commercial success because impingement primarily affects the younger crabs.

There is, perhaps more than with any other species, greater potential for impingement and entrainment to affect commercial catches of blue crab because they reside in the bay year-round and the entire Ocean County commercial catch is taken from Barnegat Bay. The impingement of larger crabs and entrainment of larval forms represent a cropping effect that adds to the natural mortality of the species. However, survival of impinged blue crabs is high, as noted in Chapter 4. Whatever the contribution to overall blue crab mortality, it does not appear to control the success of the commercial fishery. Since OCNGS has been operating (and thus cropping blue crabs through impingement and entrainment), the commercial catch of crabs from Barnegat Bay has increased by approximately an order of magnitude from 1977-1978 to 1980-1981.



The foregoing discussion relates commercial catch data to OCNGS impingement and entrainment catches, as directed by the Environmental Technical Specifications. This general analysis indicates that the effect of impingement and entrainment cropping of the various species cannot be identified in the commercial landings data. Rather, the year-to-year fluctuations in both impingement/entrainment and commercial fishing success appear to be controlled by those factors that bring about natural variation in the size of species populations.

TABLE 7-1 TOTAL REPORTED COMMERCIAL LANDINGS (kg) AND VALUE OF FINFISH AND SHELLFISH TAKEN FROM OCEAN COUNTY, NEW JERSEY, SEPTEMBER 1980 - AUGUST 1981

| Species           | September   |            | October     |            | November    |            | December    |            | January     |            | February    |            | March       |            |
|-------------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|
|                   | Weight (kg) | Value (\$) | Weight (kg) | Value (\$) | Weight (kg) | Value (\$) | Weight (kg) | Value (\$) | Weight (kg) | Value (\$) | Weight (kg) | Value (\$) | Weight (kg) | Value (\$) |
| Bluefish          | 0           | 0          | 0           | 0          | 29,790      | 11,531     | 374         | 239        | 148         | 66         | 0           | 0          | 0           | 0          |
| American eel      | 652         | 1,148      | 0           | 0          | 0           | 0          | 0           | 0          | 0           | 0          | 0           | 0          | 0           | 0          |
| Winter flounder   | 0           | 0          | 2,327       | 753        | 2,309       | 1,769      | 351         | 125        | 427         | 311        | 2,368       | 1,527      | 3,539       | 3,122      |
| Summer flounder   | 163,422     | 180,159    | 15,589      | 11,862     | 33,691      | 34,592     | 1,340       | 1,901      | 51,103      | 189,625    | 32,240      | 54,823     | 33,756      | 74,756     |
| Weakfish          | 79,264      | 58,995     | 35,979      | 28,788     | 16,029      | 11,938     | 0           | 0          | 148         | 65         | 0           | 0          | 0           | 0          |
| White perch       | 0           | 0          | 0           | 0          | 318         | 280        | 0           | 0          | 0           | 0          | 0           | 0          | 436         | 480        |
| Striped bass      | 0           | 0          | 559         | 1,900      | 1,686       | 3,954      | 5           | 11         | 218         | 486        | 50          | 121        | 51          | 142        |
| Blue crab         | 7,080       | 7,022      | 30,816      | 27,141     | 0           | 0          | 0           | 0          | 0           | 0          | 4,655       | 5,120      | 3,600       | 4,158      |
| Hard clam (meats) | 21,368      | 94,020     | 17,214      | 75,740     | 15,155      | 66,680     | 11,718      | 51,560     | 2,655       | 13,141     | 8,400       | 41,580     | 11,114      | 56,846     |
| Total             | 271,786     |            | 102,484     |            | 98,978      |            | 13,788      |            | 54,699      |            | 47,713      |            | 52,496      |            |

Source: National Marine Fisheries Service

TABLE 7-1 (EXTENDED)

| Species           | April       |            | May         |            | June        |            | July        |            | August      |            | Total       |            |
|-------------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|
|                   | Weight (kg) | Value (\$) | Weight (kg) | Value (\$) | Weight (kg) | Value (\$) | Weight (kg) | Value (\$) | Weight (kg) | Value (\$) | Weight (kg) | Value (\$) |
| Bluefish          | 23          | 12         | 16,742      | 14,517     | 25,600      | 20,788     | 70,434      | 59,296     | 102,824     | 68,383     | 245,935     | 174,882    |
| American eel      | 1,895       | 5,212      | 3,782       | 5,824      | 1,830       | 2,415      | 1,418       | 1,872      | 2,832       | 3,115      | 12,409      | 19,586     |
| Winter flounder   | 2,927       | 2,451      | 7,277       | 3,448      | 7,340       | 3,233      | 41          | 32         | 25          | 16         | 28,931      | 16,787     |
| Summer flounder   | 8,102       | 16,513     | 10,800      | 20,521     | 15,752      | 28,468     | 9,124       | 18,722     | 42,703      | 85,857     | 417,622     | 717,799    |
| Weakfish          | 6,205       | 6,401      | 12,590      | 12,055     | 36,589      | 19,138     | 10,181      | 15,628     | 34,161      | 55,641     | 231,146     | 208,649    |
| White perch       | 170         | 187        | 0           | 0          | 0           | 0          | 0           | 0          | 0           | 0          | 924         | 947        |
| Striped bass      | 1,124       | 2,742      | 59          | 172        | 61          | 135        | 0           | 0          | 0           | 0          | 3,813       | 9,663      |
| Blue crab         | 0           | 0          | 0           | 0          | 9,818       | 7,020      | 27,509      | 19,669     | 38,745      | 27,703     | 122,223     | 97,833     |
| Hard clam (meats) | 21,732      | 109,963    | 19,681      | 97,425     | 27,491      | 128,520    | 31,964      | 140,640    | 30,782      | 143,905    | 219,274     | 1,020,020  |
|                   | 42,178      |            | 70,931      |            | 124,481     |            | 150,671     |            | 252,072     |            | 1,282,277   | 2,266,166  |

TABLE 7-2 TOTAL REPORTED COMMERCIAL LANDINGS (kg) AND VALUE OF FINFISH AND SHELLFISH TAKEN FROM ATLANTIC COUNTY, NEW JERSEY, SEPTEMBER 1980 - AUGUST 1981

| Species           | September   |            | October     |            | November    |            | December    |            | January     |            | February    |            | March       |            |
|-------------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|
|                   | Weight (kg) | Value (\$) | Weight (kg) | Value (\$) | Weight (kg) | Value (\$) | Weight (kg) | Value (\$) | Weight (kg) | Value (\$) | Weight (kg) | Value (\$) | Weight (kg) | Value (\$) |
| Bluefish          | 267         | 65         | 0           | 0          | 0           | 0          | 0           | 0          | 0           | 0          | 0           | 0          | 0           | 0          |
| American eel      | 209         | 368        | 0           | 0          | 0           | 0          | 0           | 0          | 0           | 0          | 0           | 0          | 0           | 0          |
| Winter flounder   | 0           | 0          | 0           | 0          | 1,500       | 1,155      | 0           | 0          | 0           | 0          | 0           | 0          | 2,545       | 2,240      |
| Summer flounder   | 31,035      | 32,284     | 281         | 390        | 0           | 0          | 0           | 0          | 0           | 0          | 0           | 0          | 0           | 0          |
| Weakfish          | 4,718       | 2,594      | 0           | 0          | 0           | 0          | 0           | 0          | 0           | 0          | 0           | 0          | 0           | 0          |
| White perch       | 0           | 0          | 0           | 0          | 182         | 160        | 0           | 0          | 0           | 0          | 0           | 0          | 500         | 550        |
| Striped bass      | 0           | 0          | 0           | 0          | 0           | 0          | 0           | 0          | 0           | 0          | 0           | 0          | 0           | 0          |
| Blue crab         | 7,818       | 6,450      | 3,582       | 2,955      | 0           | 0          | 0           | 0          | 0           | 0          | 9,564       | 10,520     | 3,927       | 4,536      |
| Hard clam (meats) | 20,996      | 92,380     | 12,646      | 55,640     | 13,082      | 57,560     | 8,709       | 38,320     | 4,586       | 22,703     | 7,395       | 36,608     | 10,677      | 54,614     |
| Total             | 65,043      |            | 16,509      |            | 14,764      |            | 8,709       |            | 4,586       |            | 16,959      |            | 17,649      |            |

Source: National Marine Fisheries Service

TABLE 7-2 (EXTENDED)

| Species           | April       |            | May         |            | June        |            | July        |            | August      |            | Total       |            |
|-------------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|
|                   | Weight (kg) | Value (\$) | Weight (kg) | Value (\$) | Weight (kg) | Value (\$) | Weight (kg) | Value (\$) | Weight (kg) | Value (\$) | Weight (kg) | Value (\$) |
| Bluefish          | 0           | 0          | 0           | 0          | 0           | 0          | 0           | 0          | 0           | 0          | 267         | 65         |
| American eel      | 682         | 1,875      | 1,636       | 2,520      | 1,568       | 2,070      | 773         | 1,020      | 1,791       | 1,773      | 6,659       | 9,626      |
| Winter flounder   | 1,682       | 1,480      | 0           | 0          | 0           | 0          | 0           | 0          | 0           | 0          | 5,727       | 4,875      |
| Summer flounder   | 0           | 0          | 0           | 0          | 0           | 0          | 0           | 0          | 0           | 0          | 31,316      | 32,674     |
| Weakfish          | 0           | 0          | 0           | 0          | 0           | 0          | 0           | 0          | 0           | 0          | 4,718       | 2,594      |
| White perch       | 277         | 305        | 0           | 0          | 0           | 0          | 0           | 0          | 0           | 0          | 959         | 1,015      |
| Striped bass      | 0           | 0          | 0           | 0          | 0           | 0          | 0           | 0          | 0           | 0          | 0           | 0          |
| Blue crab         | 0           | 0          | 0           | 0          | 6,545       | 4,680      | 10,909      | 7,800      | 13,091      | 9,360      | 55,436      | 46,301     |
| Hard clam (meats) | 22,086      | 111,757    | 13,418      | 66,420     | 19,091      | 82,250     | 20,873      | 91,480     | 19,832      | 92,714     | 173,391     | 809,806    |
|                   | 24,727      |            | 15,054      |            | 27,204      |            | 32,555      |            | 34,714      |            | 278,473     | 906,956    |

TABLE 7-3 OCEAN COUNTY COMMERCIAL LANDINGS (kg) FOR THE PERIOD SEPTEMBER 1975 THROUGH AUGUST 1981  
 (September of each year through August of the next year is the annual reporting period)

| <u>Species</u>    | <u>1975-1976</u> | <u>1976-1977</u> | <u>1977-1978</u> | <u>1978-1979</u> | <u>1979-1980</u> | <u>1980-1981</u> |
|-------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| Alewife           | 1,333            | 1,000            | --               | 0                | 0                | 0                |
| Bluefish          | 156,497          | 175,142          | 209,513          | 228,705          | 232,275          | 245,935          |
| American eel      | 28,715           | 22,237           | 15,868           | 45,450           | 10,378           | 12,409           |
| Winter flounder   | 32,650           | 21,719           | 30,122           | 23,490           | 20,269           | 28,931           |
| Summer flounder   | 577,103          | 628,764          | 611,079          | 566,724          | 381,351          | 417,622          |
| Weakfish          | 226,388          | 83,640           | 111,470          | 85,943           | 187,398          | 231,146          |
| White perch       | 18,611           | 4,392            | 4,914            | 16,507           | 1,312            | 924              |
| Striped bass      | --               | --               | --               | --               | 4,363            | 3,813            |
| Blue crab         | 73,174           | 28,437           | 14,152           | 62,077           | 161,766          | 122,223          |
| Hard clam (meats) | 374,105          | 298,482          | 228,396          | 598,111          | 190,692          | 219,274          |
| Totals            | 1,488,576        | 1,263,813        | 1,225,514        | 1,627,007        | 1,189,692        | 1,282,277        |

Source: National Marine Fisheries Service.



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APPENDIX A:  
FISH AND REPTILE SPECIES LIST

TABLE A-1 FISHES AND REPTILES ENCOUNTERED DURING SEINE,  
TRAWL, IMPINGEMENT, AND ENTRAINMENT SAMPLING,  
SEPTEMBER 1980 - AUGUST 1981

| <u>Scientific Name</u>           | <u>Common Name</u>     |
|----------------------------------|------------------------|
| <u>Dasyatis sayi</u>             | Bluntnose stingray     |
| <u>Anguilla rostrata</u>         | American eel           |
| <u>Conger oceanicus</u>          | Conger eel             |
| <u>Myrophis punctatus</u>        | Speckled worm eel      |
| <u>Alosa aestivalis</u>          | Blueback herring       |
| <u>Alosa pseudoharengus</u>      | Alewife                |
| <u>Alosa sapidissima</u>         | American shad          |
| <u>Brevoortia tyrannus</u>       | Atlantic menhaden      |
| <u>Clupea h. harengus</u>        | Atlantic herring       |
| <u>Dorosoma cepedianum</u>       | Gizzard shad           |
| <u>Etrumeus teres</u>            | Round herring          |
| <u>Anchoa hepsetus</u>           | Striped anchovy        |
| <u>Anchoa mitchilli</u>          | Bay anchovy            |
| <u>Umbra pygmaea</u>             | Eastern mudminnow      |
| <u>Synodus foetens</u>           | Inshore lizardfish     |
| <u>Notemigonus cyrsoleucas</u>   | Golden shiner          |
| <u>Aphredoderus sayanus</u>      | Pirate perch           |
| <u>Opsanus tau</u>               | Oyster toadfish        |
| <u>Gadidae (family)</u>          | Codfishes              |
| <u>Merluccius bilinearis</u>     | Silver hake            |
| <u>Pollachius virens</u>         | Pollack                |
| <u>Urophycis chuss</u>           | Red hake               |
| <u>Urophycis regius</u>          | Spotted hake           |
| <u>Rissola marginata</u>         | Striped cusk-eel       |
| <u>Hyporhamphus unifasciatus</u> | Halfbeak               |
| <u>Strongylura marina</u>        | Atlantic needlefish    |
| <u>Tylosurus acus</u>            | Agujon                 |
| <u>Cyprinodon variegatus</u>     | Sheepshead minnow      |
| <u>Fundulus diaphanus</u>        | Banded killifish       |
| <u>Fundulus heteroclitus</u>     | Mummichog              |
| <u>Fundulus majalis</u>          | Striped killifish      |
| <u>Lucania parva</u>             | Rainwater killifish    |
| <u>Membras martinica</u>         | Rough silverside       |
| <u>Menidia beryllina</u>         | Tidewater silverside   |
| <u>Menidia menidia</u>           | Atlantic silverside    |
| <u>Apeltes quadracus</u>         | Fourspine stickleback  |
| <u>Gasterosteus aculeatus</u>    | Threespine stickleback |
| <u>Fistularia tabacaria</u>      | Bluespotted cornetfish |
| <u>Hippocampus erectus</u>       | Lined seahorse         |
| <u>Syngnathus fuscus</u>         | Northern pipefish      |
| <u>Morone americana</u>          | White perch            |
| <u>Centropristis striata</u>     | Black sea bass         |
| <u>Enneacanthus obesus</u>       | Banded sunfish         |
| <u>Lepomis gibbosus</u>          | Pumpkinseed            |
| <u>Etheostoma fusiforme</u>      | Swamp darter           |
| <u>Pomatomus saltatrix</u>       | Bluefish               |
| <u>Rachycentron canadum</u>      | Cobia                  |

TABLE A-1 (CONT.)

| <u>Scientific Name</u>               | <u>Common Name</u>    |
|--------------------------------------|-----------------------|
| <u>Alectis crinitus</u>              | African pompano       |
| <u>Caranx crysos</u>                 | Blue runner           |
| <u>Caranx hippos</u>                 | Crevalle jack         |
| <u>Decapterus punctatus</u>          | Round scad            |
| <u>Selene vomer</u>                  | Lookdown              |
| <u>Trachinotus falcatus</u>          | Permit                |
| <u>Lutjanus griseus</u>              | Gray snapper          |
| <u>Stenotomus chrysops</u>           | Scup                  |
| <u>Bairdiella chrysura</u>           | Silver perch          |
| <u>Cynoscion regalis</u>             | Weakfish              |
| <u>Leiostomus xanthurus</u>          | Spot                  |
| <u>Menticirrhus saxatilis</u>        | Northern kingfish     |
| <u>Chaetodipterus faber</u>          | Atlantic spadefish    |
| <u>Chaetodon ocellatus</u>           | Spotfin butterflyfish |
| <u>Tautoga onitis</u>                | Tautog                |
| <u>Tautoglabrus adspersus</u>        | Cunner                |
| <u>Mugil cephalus</u>                | Striped mullet        |
| <u>Mugil curema</u>                  | White mullet          |
| <u>Sphyraena borealis</u>            | Northern sennet       |
| <u>Astroscopus guttatus</u>          | Northern stargazer    |
| <u>Chasmodes bosquianus</u>          | Striped blenny        |
| <u>Ammodytes americanus</u>          | American sand lance   |
| <u>Gobiosoma boscii</u>              | Naked goby            |
| <u>Peprilus triacanthus</u>          | Butterfish            |
| <u>Scorpaena plumieri</u>            | Spotted scorpionfish  |
| <u>Prionotus carolinus</u>           | Northern searobin     |
| <u>Prionotus evolans</u>             | Striped searobin      |
| <u>Myoxocephalus aeneus</u>          | Grubby                |
| <u>Etropus microstomus</u>           | Smallmouth flounder   |
| <u>Paralichthys dentatus</u>         | Summer flounder       |
| <u>Paralichthys oblongus</u>         | Fourspot flounder     |
| <u>Scophthalmus aquosus</u>          | Windowpane            |
| <u>Pseudopleuronectes americanus</u> | Winter flounder       |
| <u>Trinectes maculatus</u>           | Hogchoker             |
| <u>Aluterus schoepfi</u>             | Orange filefish       |
| <u>Monacanthus hispidus</u>          | Planehead filefish    |
| <u>Lactophrys trigonus</u>           | Trunkfish             |
| <u>Lactophrys triqueter</u>          | Smooth trunkfish      |
| <u>Sphoeroides maculatus</u>         | Northern puffer       |
| <u>Chilomycterus schoepfi</u>        | Striped burrfish      |
| <u>Malaclemys terrapin*</u>          | Diamondback terrapin  |
| <u>Chelydra serpentina*</u>          | Snapping turtle       |

\* Subphylum vertebrata.

APPENDIX B: MACROINVERTEBRATE SPECIES LIST



TABLE B-1 MACROINVERTEBRATES ENCOUNTERED DURING SEINE, TRAWL, AND IMPINGEMENT SAMPLING, SEPTEMBER 1980 - AUGUST 1981

|        | <u>Scientific Name</u>          | <u>Common Name</u>      |
|--------|---------------------------------|-------------------------|
| Class  | Scyphozoa                       | True jellyfishes        |
| Class  | Anthozoa                        | Corals and sea anemones |
| Phylum | Nemertea                        | Ribbon worms            |
|        | <u>Polinices duplicatus</u>     | Moon snail              |
|        | <u>Busycon canaliculatum</u>    | Channel whelk           |
|        | <u>Busycon carica</u>           | Knobbed whelk           |
|        | <u>Lolliguncula brevis</u>      | Squid                   |
|        | <u>Limulus polyphemus</u>       | Horseshoe crab          |
|        | <u>Squilla empusa</u>           | Mantis shrimp           |
|        | <u>Penaeus aztecus</u>          | Brown shrimp            |
|        | <u>Palaemonetes intermedius</u> | Grass shrimp            |
|        | <u>Palaemonetes pugio</u>       | Grass shrimp            |
|        | <u>Palaemonetes vulgaris</u>    | Grass shrimp            |
|        | Hippolyte sp.                   | Caridean shrimp         |
|        | <u>Crangon septemspinosa</u>    | Sand shrimp             |
|        | <u>Upogebia affinis</u>         | Mud shrimp              |
|        | <u>Homarus americanus</u>       | Lobster                 |
|        | <u>Pagurus longicarpus</u>      | Long-armed hermit crab  |
|        | <u>Portunus gibbesii</u>        | Portunid crab           |
|        | <u>Portunus spinimanus</u>      | Portunid crab           |
|        | <u>Callinectes sapidus</u>      | Blue crab               |
|        | <u>Callinectes similis</u>      | Lesser blue crab        |
|        | <u>Ovalipes ocellatus</u>       | Lady crab               |
|        | <u>Carcinus maenas</u>          | Green crab              |
|        | <u>Cancer irroratus</u>         | Rock crab               |
| Family | Xanthidae                       | Mud crabs               |
|        | <u>Neopanope texana sayi</u>    | Mud crab                |
|        | <u>Panopeus herbstii</u>        | Mud crab                |
|        | <u>Rhithropanopeus harrisi</u>  | Mud crab                |
|        | <u>Libinia dubia</u>            | Spider crab             |
| Class  | Asteroidea                      | Starfish                |
| Class  | Holothuroidea                   | Sea cucumbers           |

## APPENDIX C: OTTER TRAWL DATA

Appendix C is arranged by sampling date. The catch data are expressed as total specimens captured in two trawl hauls at each station (NUMBER INDIVS) and percent composition (PCT COMP). The sampling stations are identified by the first three letters of the station code: CDC = Cedar Creek, FKR = Forked River, DBC = Double Creek, and OYC = Oyster Creek. The last letter of the station code denotes day samples (D) or night samples (N). The last (righthand) column in each data table contains the combined totals for all stations.

OYSTERC

GEAR-16 TRA

SEP-1980

STATION

| SPECIES                  | CDCN             |             | CDCD             |             | FKRD             |             | FARN             |             | DBCD             |             | DBCN             |             | OYCD             |             | OYCN             |             | NUMBER TOTAL     |             | PCT COMP         |             |
|--------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|
|                          | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |
| CRANGON SEPTEMPINOSA     | 312.00           | 68.57       | 4.00             | 33.33       | 13.00            | 9.35        | 188.00           | 39.58       | 20.00            | 1.95        | 120.00           | 11.64       | 0.00             | 0.00        | 41.00            | 10.85       | 698.00           | 19.81       |                  |             |
| FAMILY XANTHIDAE JUV.    | 0.00             | 0.00        | 1.00             | 8.33        | 6.00             | 4.32        | 18.00            | 3.79        | 462.00           | 45.12       | 750.00           | 72.74       | 0.00             | 0.00        | 1.00             | 0.26        | 1238.00          | 35.13       |                  |             |
| ANCHIA MITCHELLI         | 54.00            | 11.87       | 0.00             | 0.00        | 32.00            | 23.02       | 17.00            | 3.58        | 489.00           | 47.75       | 54.00            | 5.24        | 0.00             | 0.00        | 6.00             | 1.59        | 652.00           | 18.50       |                  |             |
| PALAEONETES VULGARIS     | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 1.44        | 21.00            | 4.42        | 5.00             | 0.49        | 15.00            | 1.45        | 0.00             | 0.00        | 34.00            | 8.99        | 77.00            | 2.19        |                  |             |
| CALLINectes SAPIDUS      | 31.00            | 6.81        | 5.00             | 41.67       | 47.00            | 33.81       | 33.00            | 6.95        | 13.00            | 1.27        | 13.00            | 1.26        | 3.00             | 30.00       | 216.00           | 57.14       | 361.00           | 10.24       |                  |             |
| APELTES (NUADRACUS)      | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 0.19        | 0.00             | 0.00        | 1.00             | 0.26        | 3.00             | 0.09        |                  |             |
| GOBIOSOMA BOSCI          | 50.00            | 10.99       | 0.00             | 0.00        | 12.00            | 8.63        | 39.00            | 8.21        | 3.00             | 0.29        | 3.00             | 0.29        | 0.00             | 0.00        | 53.00            | 14.02       | 160.00           | 4.54        |                  |             |
| PSEUDOPLEURONECTES AMERI | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.10        | 1.00             | 10.00       | 0.00             | 0.00        | 2.00             | 0.06        |                  |             |
| CALLINECTES SAPIDUS JUV  | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 115.00           | 24.21       | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 115.00           | 3.26        |                  |             |
| CYNOSCION REGALIS        | 2.00             | 0.44        | 0.00             | 0.00        | 1.00             | 0.72        | 1.00             | 0.21        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 10.00       | 8.00             | 2.12        | 13.00            | 0.37        |                  |             |
| CLASS ASTEROIDEA         | 0.00             | 0.00        | 0.00             | 0.00        | 21.00            | 15.11       | 32.00            | 6.74        | 0.00             | 0.00        | 1.00             | 0.10        | 0.00             | 0.00        | 0.00             | 0.00        | 54.00            | 1.53        |                  |             |
| LIBINIA DUBIA            | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 1.44        | 1.00             | 0.21        | 24.00            | 2.34        | 41.00            | 3.98        | 1.00             | 10.00       | 0.00             | 0.00        | 69.00            | 1.96        |                  |             |
| OPSANIUS TAU             | 1.00             | 0.22        | 0.00             | 0.00        | 1.00             | 0.72        | 1.00             | 0.21        | 0.00             | 0.00        | 9.00             | 0.87        | 0.00             | 0.00        | 9.00             | 2.38        | 21.00            | 0.60        |                  |             |
| TRINECTES MACULATUS      | 3.00             | 0.66        | 2.00             | 16.67       | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 3.00             | 0.79        | 8.00             | 0.23        |                  |             |
| SYNGNATHUS FUSCUS        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.21        | 0.00             | 0.00        | 2.00             | 0.19        | 0.00             | 0.00        | 0.00             | 0.00        | 3.00             | 0.09        |                  |             |
| HIPPOLYTE SP             | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.21        | 0.00             | 0.00        | 1.00             | 0.10        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 0.06        |                  |             |
| PARALICHTHYS DENTATUS    | 1.00             | 0.22        | 0.00             | 0.00        | 1.00             | 0.72        | 3.00             | 0.63        | 3.00             | 0.29        | 13.00            | 1.26        | 1.00             | 10.00       | 0.00             | 0.00        | 22.00            | 0.62        |                  |             |
| NEOPANDOE TEXANA SAYI    | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.72        | 3.00             | 0.63        | 5.00             | 0.49        | 3.00             | 0.29        | 0.00             | 0.00        | 0.00             | 0.00        | 12.00            | 0.34        |                  |             |
| PRIONOTUS EVOLANS        | 1.00             | 0.22        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.21        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.26        | 3.00             | 0.09        |                  |             |
| SPHROETIDES MACULATUS    | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.10        | 0.00             | 0.00        | 1.00             | 0.26        | 2.00             | 0.06        |                  |             |
| CHIASMODIES BOSQIANUS    | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 10.00       | 4.00             | 1.06        | 5.00             | 0.14        |                  |             |
| LEIOTOMUS XANTHORUS      | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.10        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.03        |                  |             |
| OTHER SPECIES            | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.10        | 2.00             | 20.00       | 0.00             | 0.00        | 3.00             | 0.09        |                  |             |
| STATION TOTAL AND DATE   | 455.00           |             | 12.00            |             | 139.00           |             | 475.00           |             | 1024.00          |             | 1031.00          |             | 10.00            |             | 378.00           |             | 3524.00          |             |                  |             |

OCT-1980

GEAR-16 TRA

OYSTERCR

STATION

| SPECIES                  | CDCN             |             | CDCD             |             | FKRD             |             | FKRN             |             | DBCD             |             | DBCN             |             | OYCD             |             | OYCN             |             | PCT             |             |
|--------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                          | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |
| CRANGON SEPTENTRIONALIS  | 347.00           | 88.30       | 8.00             | 33.33       | 44.00            | 16.73       | 227.00           | 63.41       | 3.00             | 1.96        | 4333.00          | 62.55       | 0.00             | 0.00        | 1.00             | 2.50        | 4963.00         | 60.68       |
| FAMILY XANTHIDAE JUV.    | 2.00             | 0.51        | 2.00             | 8.33        | 55.00            | 20.91       | 65.00            | 18.16       | 112.00           | 73.20       | 2470.00          | 35.66       | 0.00             | 0.00        | 6.00             | 15.00       | 2712.00         | 33.16       |
| ANCHOA MITCHILLI         | 6.00             | 1.53        | 0.00             | 0.00        | 0.00             | 0.00        | 8.00             | 2.23        | 3.00             | 1.96        | 26.00            | 0.38        | 0.00             | 0.00        | 2.00             | 5.00        | 45.00           | 0.55        |
| PALAEMONETES VULGARIS    | 2.00             | 0.51        | 0.00             | 0.00        | 25.00            | 9.51        | 8.00             | 2.23        | 7.00             | 4.58        | 42.00            | 0.61        | 0.00             | 0.00        | 7.00             | 17.50       | 91.00           | 1.11        |
| CALLINectes SAPIIDUS     | 17.00            | 4.33        | 10.00            | 41.67       | 49.00            | 18.63       | 14.00            | 3.91        | 10.00            | 6.54        | 13.00            | 0.19        | 10.00            | 47.62       | 11.00            | 27.50       | 134.00          | 1.64        |
| APELITES QUADRACUS       | 1.00             | 0.25        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 4.00             | 2.61        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 5.00            | 0.06        |
| GEBIOSOMA BOSCI          | 9.00             | 2.29        | 0.00             | 0.00        | 31.00            | 11.79       | 3.00             | 0.84        | 1.00             | 0.65        | 17.00            | 0.25        | 0.00             | 0.00        | 0.00             | 0.00        | 61.00           | 0.75        |
| PSEUDOPLEURONECTES AMERI | 1.00             | 0.25        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00            | 0.01        |
| CYNOSCION REGALIS        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 7.00            | 0.09        |
| CLASS ASTEROIDEA         | 0.00             | 0.00        | 1.00             | 4.17        | 29.00            | 11.03       | 25.00            | 6.98        | 1.00             | 0.65        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 56.00           | 0.68        |
| LIBINIA DUBIA            | 0.00             | 0.00        | 1.00             | 4.17        | 7.00             | 2.66        | 3.00             | 0.84        | 8.00             | 5.23        | 16.00            | 0.23        | 0.00             | 0.00        | 0.00             | 0.00        | 35.00           | 0.43        |
| OPSANUS TAU              | 0.00             | 0.00        | 0.00             | 0.00        | 3.00             | 1.14        | 1.00             | 0.28        | 2.00             | 1.31        | 3.00             | 0.04        | 3.00             | 14.29       | 0.00             | 0.00        | 12.00           | 0.15        |
| TRINECTES MACULATUS      | 2.00             | 0.51        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 6.00            | 0.07        |
| SYNGNATHUS FUSCUS        | 1.00             | 0.25        | 0.00             | 0.00        | 1.00             | 0.38        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00            | 0.02        |
| HIPPOLYTE SP             | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.28        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00            | 0.01        |
| PARALICHTHYS DENTATUS    | 4.00             | 1.02        | 1.00             | 4.17        | 3.00             | 1.14        | 3.00             | 0.84        | 0.00             | 0.00        | 2.00             | 0.03        | 2.00             | 9.52        | 0.00             | 0.00        | 15.00           | 0.18        |
| NEOPHOPE TEXANA SAYI     | 0.00             | 0.00        | 0.00             | 0.00        | 11.00            | 4.18        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 11.00           | 0.13        |
| PRIONOTUS EVOLANS        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00            | 0.01        |
| ANGUILLA ROSTRATA        | 1.00             | 0.25        | 0.00             | 0.00        | 1.00             | 0.38        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.01        | 0.00             | 0.00        | 0.00             | 0.00        | 3.00            | 0.04        |
| CONGER OCEANICUS         | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 0.03        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00            | 0.02        |
| TAUTOGA ONTIS            | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.38        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00            | 0.01        |
| CARANX HIPPOS            | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00            | 0.01        |
| PAMPEUS HERBSTII         | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.38        | 0.00             | 0.00        | 1.00             | 0.65        | 1.00             | 0.01        | 1.00             | 4.76        | 0.00             | 0.00        | 4.00            | 0.05        |
| HIPPICAMPUS ERECTUS      | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.38        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00            | 0.01        |
| CYPRINODON VARIEGATUS    | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.01        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00            | 0.01        |
| OTHER SPECIES            | 0.00             | 0.00        | 1.00             | 4.17        | 1.00             | 0.38        | 0.00             | 0.00        | 1.00             | 0.65        | 0.00             | 0.00        | 3.00             | 14.29       | 0.00             | 5.00        | 8.00            | 0.10        |

STATION TOTAL AND DATE

393.00      24.00      263.00      358.00      153.00      6927.00      21.00      40.00      8179.00

## STATION

| SPECIES                 | CDCN             |             | CDCD             |             | FKRD             |             | FKRN             |             | DBCD             |             | DBCN             |             | OYCD             |             | OYCN             |             | NUMBER<br>TOTAL | PCT<br>COMP |
|-------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                         | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |
| CRANGON SEPTEMPINOSA    | 104.00           | 47.49       | 694.00           | 88.75       | 189.00           | 62.38       | 48.00            | 37.50       | 1204.00          | 32.48       | 142.00           | 78.89       | 46.00            | 60.53       | 996.00           | 90.46       | 3423.00         | 52.69       |
| FAMILY XANTHIDAE JUV.   | 1.00             | 0.46        | 4.00             | 0.51        | 34.00            | 11.22       | 5.00             | 3.91        | 1722.00          | 46.45       | 0.00             | 0.00        | 1.00             | 1.32        | 0.00             | 0.00        | 1767.00         | 27.20       |
| ANCORA MITCHILLI        | 0.00             | 0.00        | 1.00             | 0.13        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 1.32        | 0.00             | 0.00        | 2.00            | 0.03        |
| PALAEONETES VULGARIS    | 2.00             | 1.37        | 41.00            | 5.24        | 45.00            | 14.85       | 63.00            | 49.22       | 304.00           | 8.20        | 20.00            | 11.11       | 1.00             | 1.32        | 17.00            | 1.54        | 494.00          | 7.60        |
| CALLINECTES SAPIDUS     | 103.00           | 47.03       | 11.00            | 1.41        | 3.00             | 0.99        | 2.00             | 1.56        | 38.00            | 1.03        | 12.00            | 6.67        | 7.00             | 9.21        | 48.00            | 4.36        | 224.00          | 3.45        |
| APELITES QUADRACUS      | 0.00             | 0.00        | 0.00             | 0.00        | 3.00             | 0.99        | 0.00             | 0.00        | 233.00           | 6.29        | 0.00             | 0.00        | 5.00             | 6.58        | 0.00             | 0.00        | 241.00          | 3.71        |
| GEBIOSOMA BOSCI         | 5.00             | 2.28        | 20.00            | 2.56        | 0.00             | 0.00        | 3.00             | 2.34        | 86.00            | 2.32        | 4.00             | 2.22        | 0.00             | 0.00        | 12.00            | 1.09        | 130.00          | 2.00        |
| PSEUDOPLEURONETES AMERI | 0.00             | 0.00        | 1.00             | 0.13        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.03        | 1.00             | 0.56        | 1.00             | 1.32        | 0.00             | 0.00        | 4.00            | 0.06        |
| CLASS ASTEROIDEA        | 0.00             | 0.00        | 0.00             | 0.00        | 18.00            | 5.94        | 4.00             | 3.12        | 2.00             | 0.05        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 24.00           | 0.37        |
| LIBINIA DIBIA           | 0.00             | 0.00        | 0.00             | 0.00        | 3.00             | 0.99        | 0.00             | 0.00        | 23.00            | 0.62        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 26.00           | 0.40        |
| OPSANUS TAU             | 1.00             | 0.46        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.03        | 0.00             | 0.00        | 1.00             | 1.32        | 1.00             | 0.09        | 4.00            | 0.06        |
| TRINECTES MACULATUS     | 2.00             | 0.91        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 10.00            | 0.91        | 12.00           | 0.18        |
| MENIDIA MENIDIA         | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.03        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00            | 0.02        |
| SYNGNATHUS FUSCUS       | 0.00             | 0.00        | 1.00             | 0.13        | 3.00             | 0.99        | 3.00             | 2.34        | 5.00             | 0.13        | 0.00             | 0.00        | 0.00             | 0.00        | 4.00             | 0.36        | 16.00           | 0.25        |
| HIPPOLYTE SP            | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.33        | 0.00             | 0.00        | 60.00            | 1.62        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 61.00           | 0.94        |
| PARALICHTHYS DENTATUS   | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 10.00            | 0.91        | 19.00           | 0.29        |
| NEOPHOPE TEXANA SAYI    | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 10.00            | 0.27        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 10.00           | 0.15        |
| PRIONOTUS EVOLANS       | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.09        | 1.00            | 0.02        |
| ETROPUS MICROSTOMUS     | 0.00             | 0.00        | 4.00             | 0.51        | 0.00             | 0.00        | 0.00             | 0.00        | 4.00             | 0.11        | 1.00             | 0.56        | 1.00             | 1.32        | 0.00             | 0.00        | 10.00           | 0.15        |
| COMBER OCEANICUS        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.09        | 1.00            | 0.02        |
| TAUTOGA OMITES          | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 8.00             | 0.22        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 8.00            | 0.12        |
| CHASMOIDES BOSQUIANUS   | 0.00             | 0.00        | 4.00             | 0.51        | 3.00             | 0.99        | 0.00             | 0.00        | 3.00             | 0.08        | 0.00             | 0.00        | 1.00             | 1.32        | 0.00             | 0.00        | 11.00           | 0.17        |
| CARANX HIPPOS           | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 1.32        | 0.00             | 0.00        | 1.00            | 0.02        |
| PANOPAEUS HERBSTII      | 0.00             | 0.00        | 1.00             | 0.13        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00            | 0.02        |
| HIPPICAMPUS ERECTUS     | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.33        | 0.00             | 0.00        | 2.00             | 0.05        | 0.00             | 0.00        | 1.00             | 1.32        | 0.00             | 0.00        | 4.00            | 0.06        |
| OTHER SPECIES           | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.09        | 1.00            | 0.02        |

STATION TOTAL AND  
DATE

219.00 782.00 303.00 128.00 3707.00 180.00 76.00 1101.00 6496.00

OYSTERCR

GEAR-16 TRA

DEC-1980

STATION

| SPECIES                  | CUCN             |             | CQCD             |             | FKRD             |             | FKRN             |             | DBCD             |             | DBCN             |             | OYCD             |             | OYCN             |             |
|--------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|
|                          | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |
| CRAIGON SEPTEMPINOSA     | 1412.00          | 95.73       | 27.00            | 79.41       | 61.00            | 15.72       | 919.00           | 55.73       | 172.00           | 57.33       | 5484.00          | 80.66       | 3922.00          | 97.20       | 10441.00         | 95.23       |
| FAMILY XANTHIDAE JUV.    | 0.00             | 0.00        | 0.00             | 0.00        | 3.00             | 0.77        | 2.00             | 0.12        | 33.00            | 11.00       | 140.00           | 2.06        | 0.00             | 0.00        | 2.00             | 0.02        |
| ATICHOA MITCHELLI        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 0.67        | 0.00             | 0.00        | 11.00            | 0.27        | 0.00             | 0.00        |
| PALAEONETES VULGARIS     | 14.00            | 0.95        | 1.00             | 2.94        | 270.00           | 69.59       | 625.00           | 37.90       | 49.00            | 16.33       | 778.00           | 11.44       | 0.00             | 0.00        | 165.00           | 1.50        |
| CALLINECTES SAPIDIUS     | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.06        | 0.00             | 0.00        | 3.00             | 0.04        | 22.00            | 0.55        | 146.00           | 1.33        |
| APELITES QUADRACUS       | 26.00            | 1.76        | 4.00             | 11.76       | 15.00            | 3.87        | 57.00            | 3.46        | 34.00            | 11.33       | 287.00           | 4.22        | 14.00            | 0.35        | 64.00            | 0.58        |
| GOBIOSOMA BOSCI          | 11.00            | 0.75        | 0.00             | 0.00        | 2.00             | 0.52        | 15.00            | 0.91        | 3.00             | 1.00        | 60.00            | 0.88        | 1.00             | 0.02        | 61.00            | 0.56        |
| PSEUDOPLEURONECTES AMERI | 3.00             | 0.20        | 2.00             | 5.88        | 0.00             | 0.00        | 3.00             | 0.18        | 0.00             | 0.00        | 0.00             | 0.00        | 36.00            | 0.89        | 35.00            | 0.32        |
| CLASS ASTEROIDEA         | 0.00             | 0.00        | 0.00             | 0.00        | 35.00            | 9.02        | 19.00            | 1.15        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| LIBINIA DIBIA            | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.06        | 0.00             | 0.00        | 1.00             | 0.01        | 0.00             | 0.00        | 0.00             | 0.00        |
| TRINECTES MACULATUS      | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.01        |
| MENIDIA MENIDIA          | 1.00             | 0.07        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.01        | 24.00            | 0.59        | 5.00             | 0.05        |
| SYNGNATHUS FUSCUS        | 3.00             | 0.20        | 0.00             | 0.00        | 1.00             | 0.26        | 0.00             | 0.00        | 3.00             | 1.00        | 1.00             | 0.01        | 2.00             | 0.05        | 5.00             | 0.05        |
| HIPPOLYTE SP             | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.06        | 3.00             | 1.00        | 30.00            | 0.44        | 0.00             | 0.00        | 0.00             | 0.00        |
| NEOPANOPE TEXANA SAYI    | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.06        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| HYDROCEPHALUS AENAEUS    | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 0.12        | 0.00             | 0.00        | 1.00             | 0.01        | 0.00             | 0.00        | 3.00             | 0.03        |
| ANGUILLA ROSTRATA        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.01        | 0.00             | 0.00        | 4.00             | 0.04        |
| ETROPUS MICROSTOMUS      | 1.00             | 0.07        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 0.03        | 0.00             | 0.00        | 7.00             | 0.06        |
| CONGER OCEANICUS         | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 21.00            | 0.19        |
| TAUTOGA ONITIS           | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 0.12        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| CHASMODES BOSQUIANUS     | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.26        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 0.03        | 0.00             | 0.00        | 0.00             | 0.00        |
| FUNDULUS HETEROCLITUS    | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 7.00             | 0.10        | 0.00             | 0.00        | 0.00             | 0.00        |
| ALOSA AESTIVALIS         | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.06        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| SCOPHTHALMUS AQUOSUS     | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.01        |
| HIPPICAMPUS ERECTUS      | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.02        | 2.00             | 0.02        |
| CYPRINODON VARIEGATUS    | 4.00             | 0.27        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| OTHER SPECIES            | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.33        | 1.00             | 0.01        | 2.00             | 0.05        | 1.00             | 0.01        |

STATION TOTAL AND DATE 1475.00 34.00 388.00 1649.00 300.00 6799.00 4035.00 10964.00 25644.00



OYSTERC

GEAR-16 TRA

JAN-1981

STATION

| SPECIES                   | FKRD             |             | FKRN             |             | OYCD             |             | OYCN             |             | NUMBER<br>TOTAL | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |
|---------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|-----------------|-------------|-----------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |                 |             |
| CRANGON SEPTEMSPINOSA     | 4.00             | 4.17        | 253.00           | 62.01       | 130.00           | 86.09       | 12448.00         | 99.20       | 12835.00        | 97.21       | 5.00            | 0.07        |
| FAMILY XANTHIDAE JUV.     | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 9.00             | 0.07        | 9.00            | 0.07        | 178.00          | 1.35        |
| PALAEONETES VULGARIS      | 62.00            | 64.58       | 81.00            | 19.85       | 4.00             | 2.65        | 31.00            | 0.25        | 178.00          | 1.35        | 5.00            | 0.04        |
| CALLINectes SAPIDUS       | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 1.32        | 3.00             | 0.02        | 5.00            | 0.04        | 57.00           | 0.43        |
| APELTES QUADRATUS         | 2.00             | 2.08        | 43.00            | 10.54       | 2.00             | 1.32        | 10.00            | 0.08        | 57.00           | 0.43        | 2.00            | 0.02        |
| GOBIOSOMA BOSCI           | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 0.02        | 2.00            | 0.02        | 21.00           | 0.16        |
| PSEUDOPLEURONECTES AMERI  | 0.00             | 0.00        | 0.00             | 0.00        | 9.00             | 5.96        | 12.00            | 0.10        | 21.00           | 0.16        | 57.00           | 0.43        |
| CLASS ASTEROIDEA          | 27.00            | 28.12       | 30.00            | 7.35        | 0.00             | 0.00        | 0.00             | 0.00        | 57.00           | 0.43        | 1.00            | 0.01        |
| LIRINIA DUBIA             | 1.00             | 1.04        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00            | 0.01        | 17.00           | 0.13        |
| MENIDIA MENIDIA           | 0.00             | 0.00        | 0.00             | 0.00        | 4.00             | 2.65        | 13.00            | 0.10        | 17.00           | 0.13        | 21.00           | 0.16        |
| MYOXOCEPHALUS AENAUS      | 0.00             | 0.00        | 1.00             | 0.25        | 0.00             | 0.00        | 20.00            | 0.16        | 21.00           | 0.16        | 1.00            | 0.01        |
| ANGUILLA ROSTRATA         | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.01        | 1.00            | 0.01        |                 |             |
| STATION TOTAL AND<br>DATE | 96.00            |             | 408.00           |             | 151.00           |             | 12549.00         |             | 13204.00        |             |                 |             |

DATE GROUPING

7 JAN 81 TO 8 JAN 81

OYSTERC

GEAR-16 TRA

FEB-1981

STATION

| SPECIES                   | CDCN             |             | CDCD             |             | FKRD             |             | FKRN             |             | DBCD             |             | DBCN             |             | OYCD             |             | OYCN             |             | NUMBER<br>TOTAL | PCT<br>COMP |
|---------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |
| CRANGON SEPTENSPINOSA     | 403.00           | 97.11       | 193.00           | 94.15       | 3.00             | 4.00        | 540.00           | 75.31       | 101.00           | 22.10       | 766.00           | 73.30       | 87.00            | 87.88       | 1633.00          | 91.69       | 3726.00         | 77.72       |
| FAMILY XANTHIDAE JUV.     | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 4.00             | 0.56        | 108.00           | 23.63       | 7.00             | 0.67        | 0.00             | 0.00        | 0.00             | 0.00        | 119.00          | 2.48        |
| PALAEONETES VULGARIS      | 3.00             | 0.72        | 2.00             | 0.98        | 33.00            | 44.00       | 29.00            | 4.04        | 182.00           | 39.82       | 15.00            | 1.44        | 4.00             | 4.04        | 22.00            | 1.24        | 290.00          | 6.05        |
| CALLINECTES SAPIDUS       | 1.00             | 0.24        | 3.00             | 1.46        | 0.00             | 0.00        | 0.00             | 0.00        | 19.00            | 4.16        | 1.00             | 0.10        | 0.00             | 0.00        | 2.00             | 0.11        | 26.00           | 0.54        |
| APELTES QUADRACUS         | 6.00             | 1.45        | 6.00             | 2.93        | 9.00             | 12.00       | 127.00           | 17.71       | 20.00            | 4.38        | 253.00           | 24.21       | 1.00             | 1.01        | 43.00            | 2.41        | 465.00          | 9.70        |
| GOBIOSOMA BOSCI           | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 7.00             | 0.98        | 23.00            | 5.03        | 1.00             | 0.10        | 0.00             | 0.00        | 0.00             | 0.00        | 31.00           | 0.65        |
| PSEUDOPLEURONECTES AMERI  | 2.00             | 0.48        | 1.00             | 0.49        | 2.00             | 2.67        | 7.00             | 0.98        | 0.00             | 0.00        | 1.00             | 0.10        | 7.00             | 7.07        | 67.00            | 3.76        | 87.00           | 1.81        |
| CLASS ASTEROIDEA          | 0.00             | 0.00        | 0.00             | 0.00        | 25.00            | 33.33       | 1.00             | 0.14        | 0.00             | 0.00        | 1.00             | 0.10        | 0.00             | 0.00        | 0.00             | 0.00        | 27.00           | 0.56        |
| OPSANUS TAU               | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.14        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00            | 0.02        |
| MENIDIA MENIDIA           | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 6.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.06        | 1.00            | 0.02        |
| SYNGMATHUS FUSCUS         | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 1.33        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00            | 0.02        |
| HIPPOLYTE SP              | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 3.00             | 0.66        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 3.00            | 0.06        |
| MYOXOCEPHALUS AENAEUS     | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 1.33        | 1.00             | 0.14        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 7.00             | 0.39        | 9.00            | 0.19        |
| TAUTOGA ONITIS            | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 1.33        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00            | 0.02        |
| FUNDULUS HETEROCLITUS     | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 4.00             | 0.22        | 4.00            | 0.08        |
| ALOSA AESTIVALIS          | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.06        | 1.00            | 0.02        |
| SCOPHTHALMUS AQUOSIUS     | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.06        | 1.00            | 0.02        |
| OTHER SPECIES             | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.22        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00            | 0.02        |
| STATION TOTAL AND<br>DATE | 415.00           |             | 205.00           |             | 75.00            |             | 717.00           |             | 457.00           |             | 1045.00          |             | 99.00            |             | 1781.00          |             | 4794.00         |             |

YSTERC

GEAR-16 TRA

MAR-1981

STATION

| SPECIES                  | CDCN             |             | CDCD             |             | FKRD             |             | FKRN             |             | DBCD             |             | DBCN             |             | OYCD             |             | OYCN             |             |          |       |
|--------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|----------|-------|
|                          | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |          |       |
| CRANGON SEPTEMPINOSA     | 557.00           | 94.41       | 40.00            | 95.24       | 3.00             | 7.32        | 451.00           | 52.08       | 37.00            | 28.46       | 182.00           | 37.84       | 3320.00          | 98.90       | 10797.00         | 96.59       | 15387.00 | 92.22 |
| FAMILY XANTHIDAE JUV.    | 0.00             | 0.00        | 0.00             | 0.00        | 5.00             | 12.20       | 10.00            | 1.15        | 54.00            | 41.54       | 122.00           | 25.36       | 0.00             | 0.00        | 0.00             | 0.00        | 191.00   | 1.14  |
| CALLINECTES SAPIDUS      | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 4.00             | 0.46        | 0.00             | 0.00        | 11.00            | 2.29        | 4.00             | 0.12        | 137.00           | 1.23        | 156.00   | 0.93  |
| PALAEOMNETES SP.         | 4.00             | 0.68        | 0.00             | 0.00        | 0.00             | 0.00        | 175.00           | 20.21       | 27.00            | 20.77       | 82.00            | 17.05       | 5.00             | 0.15        | 135.00           | 1.21        | 428.00   | 2.57  |
| APELTES QUADRACUS        | 29.00            | 4.92        | 1.00             | 2.38        | 3.00             | 7.32        | 216.00           | 24.94       | 9.00             | 6.92        | 77.00            | 16.01       | 5.00             | 0.15        | 12.00            | 0.11        | 352.00   | 2.11  |
| GOBIOSOMA BOSCI          | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 0.23        | 1.00             | 0.77        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.01        | 4.00     | 0.02  |
| PSEUDOPLEURONECTES AMERI | 0.00             | 0.00        | 0.00             | 0.00        | 4.00             | 9.76        | 2.00             | 0.23        | 2.00             | 1.54        | 0.00             | 0.00        | 18.00            | 0.54        | 89.00            | 0.80        | 115.00   | 0.69  |
| CLASS ASTEROIDEA         | 0.00             | 0.00        | 0.00             | 0.00        | 20.00            | 48.78       | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 20.00    | 0.12  |
| LIBINIA DUBIA            | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 4.88        | 0.00             | 0.00        | 0.00             | 0.00        | 6.00             | 1.25        | 0.00             | 0.00        | 0.00             | 0.00        | 8.00     | 0.05  |
| MENIDIA MENIDIA          | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.03        | 0.00             | 0.00        | 1.00     | 0.01  |
| HIPPOLYTE SP             | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.12        | 0.00             | 0.00        | 1.00             | 0.21        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00     | 0.01  |
| NEOPANOPE TEXANA SAYI    | 0.00             | 0.00        | 0.00             | 0.00        | 3.00             | 7.32        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 3.00     | 0.02  |
| MYOXOCEPHALUS AENEUS     | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 5.00             | 0.04        | 5.00     | 0.03  |
| ANGUILLA ROSTRATA        | 0.00             | 0.00        | 1.00             | 2.38        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00     | 0.01  |
| TAUTOGA ONITIS           | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.03        | 0.00             | 0.00        | 1.00     | 0.01  |
| ALOSA AESTIVALIS         | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.03        | 0.00             | 0.00        | 1.00     | 0.01  |
| SCOPHTHALMUS AQUOSUS     | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.01        | 1.00     | 0.01  |
| OTHER SPECIES            | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 2.44        | 5.00             | 0.58        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 0.06        | 1.00             | 0.01        | 9.00     | 0.05  |

STATION TOTAL AND

DATE 590.00 42.00 41.00 866.00 130.00 481.00 3357.00 11178.00 16685.00

OYSTERC

GEAR-16 TRA

APR-1981

STATION

| SPECIES                  | CDCN          |          | CDCD          |          | FKRD          |          | FKRN          |          | DBCD          |          | DBCN          |          | OYCD          |          | OYCN          |          | NUMBER TOTAL | PCT COMP |
|--------------------------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|--------------|----------|
|                          | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP |              |          |
| CRANGON SEPTEMSPINOSA    | 185.00        | 60.26    | 154.00        | 88.51    | 191.00        | 77.64    | 397.00        | 55.92    | 82.00         | 63.57    | 598.00        | 69.70    | 422.00        | 88.47    | 3053.00       | 86.02    | 5082.00      | 78.79    |
| FAMILY XANTHIDAE JUV.    | 0.00          | 0.00     | 2.00          | 1.15     | 6.00          | 2.44     | 42.00         | 5.92     | 16.00         | 12.40    | 19.00         | 2.21     | 20.00         | 4.19     | 24.00         | 0.68     | 129.00       | 2.00     |
| CALLINECTES SAPIDUS      | 27.00         | 8.79     | 9.00          | 5.17     | 11.00         | 4.47     | 52.00         | 7.32     | 7.00          | 5.43     | 37.00         | 4.31     | 20.00         | 4.19     | 184.00        | 5.18     | 347.00       | 5.38     |
| PALAEONETES SP.          | 10.00         | 3.26     | 2.00          | 1.15     | 23.00         | 9.35     | 187.00        | 26.34    | 6.00          | 4.65     | 89.00         | 10.37    | 3.00          | 0.63     | 225.00        | 6.34     | 545.00       | 8.45     |
| APELTES QUADRACUS        | 5.00          | 1.63     | 5.00          | 2.87     | 3.00          | 1.22     | 13.00         | 1.83     | 8.00          | 6.20     | 18.00         | 2.10     | 0.00          | 0.00     | 3.00          | 0.08     | 55.00        | 0.85     |
| GUBIOSOMA BOSCI          | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 1.00          | 0.03     | 1.00         | 0.02     |
| PSEUDOPLEUROPECTES AMERI | 0.00          | 0.00     | 1.00          | 0.57     | 0.00          | 0.00     | 0.00          | 0.00     | 5.00          | 3.88     | 4.00          | 0.47     | 4.00          | 0.84     | 15.00         | 0.42     | 29.00        | 0.45     |
| CALLINECTES SAPIDUS JUV  | 79.00         | 25.73    | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 86.00         | 10.02    | 0.00          | 0.00     | 0.00          | 0.00     | 165.00       | 2.56     |
| CLASS ASTEROIDEA         | 0.00          | 0.00     | 0.00          | 0.00     | 5.00          | 2.03     | 10.00         | 1.41     | 1.00          | 0.78     | 0.00          | 0.00     | 0.00          | 0.00     | 2.00          | 0.06     | 18.00        | 0.28     |
| LIBINIA DUBIA            | 0.00          | 0.00     | 1.00          | 0.57     | 3.00          | 1.22     | 2.00          | 0.28     | 1.00          | 0.78     | 1.00          | 0.12     | 0.00          | 0.00     | 1.00          | 0.03     | 9.00         | 0.14     |
| TRINECTES MACULATUS      | 1.00          | 0.33     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 12.00         | 0.34     | 13.00        | 0.20     |
| SYGNATHUS FUSCUS         | 0.00          | 0.00     | 0.00          | 0.00     | 1.00          | 0.41     | 3.00          | 0.42     | 0.00          | 0.00     | 0.00          | 0.00     | 2.00          | 0.42     | 9.00          | 0.25     | 15.00        | 0.23     |
| PARALICHTHYS DENTATUS    | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 8.00          | 0.12     | 8.00         | 0.12     |
| NEOPANOPE TEXANA SAYI    | 0.00          | 0.00     | 0.00          | 0.00     | 1.00          | 0.41     | 4.00          | 0.56     | 1.00          | 0.78     | 1.00          | 0.12     | 1.00          | 0.21     | 0.00          | 0.00     | 8.00         | 0.12     |
| MYOXOCEPHALUS AENAEUS    | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 1.00          | 0.03     | 1.00         | 0.02     |
| ANGUILLA ROSTRATA        | 0.00          | 0.00     | 0.00          | 0.00     | 1.00          | 0.41     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 1.00          | 0.03     | 3.00         | 0.05     |
| ETROPUS MICROSTOMUS      | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 1.00          | 0.03     | 1.00         | 0.02     |
| CONGER OCEANICUS         | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 1.00          | 0.03     | 1.00         | 0.02     |
| TAUTOGA ONITIS           | 0.00          | 0.00     | 0.00          | 0.00     | 1.00          | 0.41     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 3.00          | 0.63     | 0.00          | 0.00     | 4.00         | 0.06     |
| FUNDULUS HETEROCLITUS    | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 2.00          | 0.23     | 0.00          | 0.00     | 0.00          | 0.00     | 2.00         | 0.03     |
| ALOSA AESTIVALIS         | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 5.00          | 0.14     | 5.00         | 0.08     |
| SCOPHTHALMUS AQUOSUS     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 1.00          | 0.03     | 1.00         | 0.02     |
| PANOPEUS HERBSTII        | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 2.00          | 0.42     | 1.00          | 0.03     | 3.00         | 0.05     |
| CYPRINODON VARIEGATUS    | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 2.00          | 1.55     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 2.00         | 0.03     |
| OTHER SPECIES            | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 2.00          | 0.23     | 0.00          | 0.00     | 1.00          | 0.03     | 3.00         | 0.05     |

| STATION TOTAL AND DATE | 307.00 | 246.00 | 174.00 | 710.00 | 129.00 | 858.00 | 477.00 | 3549.00 | 6450.00 |
|------------------------|--------|--------|--------|--------|--------|--------|--------|---------|---------|
|------------------------|--------|--------|--------|--------|--------|--------|--------|---------|---------|

OYSTERC

GEAR-16 TRA

MAY-1981

STATION

| SPECIES                  | COCN          |          | CUCD          |          | FKRD          |          | FKRN          |          | DBCD          |          | DBCN          |          | OYCD          |          | OYCN          |          | NUMBER TOTAL | PCT COMP |
|--------------------------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|--------------|----------|
|                          | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP |              |          |
| CRANGON SEPTEMPINOSA     | 181.00        | 72.40    | 91.00         | 5.88     | 1020.00       | 94.27    | 5657.00       | 98.06    | 488.00        | 78.58    | 1266.00       | 79.87    | 8.00          | 12.12    | 207.00        | 48.36    | 8918.00      | 78.59    |
| FAMILY XANTHIDAE JUV.    | 1.00          | 0.40     | 0.00          | 0.00     | 3.00          | 0.28     | 1.00          | 0.02     | 19.00         | 3.06     | 124.00        | 7.82     | 0.00          | 0.00     | 2.00          | 0.47     | 150.00       | 1.32     |
| ANCHOA MITCHELLI         | 14.00         | 5.60     | 1443.00       | 93.28    | 31.00         | 2.87     | 6.00          | 0.10     | 2.00          | 0.32     | 17.00         | 1.07     | 0.00          | 0.00     | 0.00          | 0.00     | 1513.00      | 13.33    |
| CALLINECTES SAPIDUS      | 26.00         | 10.40    | 6.00          | 0.39     | 10.00         | 0.92     | 17.00         | 0.29     | 15.00         | 2.42     | 38.00         | 2.40     | 16.00         | 24.24    | 10.00         | 2.34     | 138.00       | 1.22     |
| PALAEONETES SP.          | 5.00          | 2.00     | 4.00          | 0.26     | 2.00          | 0.18     | 49.00         | 0.85     | 33.00         | 5.31     | 81.00         | 5.11     | 0.00          | 0.00     | 50.00         | 11.68    | 224.00       | 1.97     |
| APELLES QUADRACUS        | 9.00          | 3.60     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 9.00          | 1.45     | 27.00         | 1.70     | 0.00          | 0.00     | 1.00          | 0.23     | 46.00        | 0.41     |
| GOBIOSOMA BOSCI          | 4.00          | 1.60     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 2.00          | 0.13     | 0.00          | 0.00     | 2.00          | 0.47     | 8.00         | 0.07     |
| PSEUDOPLEURONECTES AMERI | 1.00          | 0.40     | 0.00          | 0.00     | 6.00          | 0.55     | 11.00         | 0.19     | 3.00          | 0.48     | 1.00          | 0.06     | 28.00         | 42.42    | 49.00         | 11.45    | 99.00        | 0.87     |
| FAMILY XANTHIDAE         | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 41.00         | 6.60     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 41.00        | 0.36     |
| CALLINECTES SAPIDUS JUV  | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 85.00         | 19.86    | 85.00        | 0.75     |
| CLASS ASTEROIDEA         | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 1.00          | 0.06     | 0.00          | 0.00     | 0.00          | 0.00     | 1.00         | 0.01     |
| LIBINIA DUBIA            | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 5.00          | 0.81     | 20.00         | 1.26     | 8.00          | 12.12    | 4.00          | 0.93     | 37.00        | 0.33     |
| OPSANUS TAU              | 2.00          | 0.80     | 0.00          | 0.00     | 1.00          | 0.09     | 9.00          | 0.16     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 2.00          | 0.47     | 14.00        | 0.12     |
| TRINECTES MACULATUS      | 2.00          | 0.80     | 0.60          | 0.00     | 0.00          | 0.00     | 3.00          | 0.05     | 0.00          | 0.00     | 1.00          | 0.06     | 0.00          | 0.00     | 10.00         | 2.34     | 16.00        | 0.14     |
| MENIDIA MENIDIA          | 1.00          | 0.40     | 3.00          | 0.19     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 4.00         | 0.04     |
| SYNGNATHUS FUSCUS        | 0.00          | 0.00     | 0.00          | 0.00     | 5.00          | 0.46     | 10.00         | 0.17     | 4.00          | 0.64     | 1.00          | 0.06     | 0.00          | 0.00     | 1.00          | 0.23     | 21.00        | 0.19     |
| HIPPOLYTE SP             | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 2.00          | 0.13     | 0.00          | 0.00     | 0.00          | 0.00     | 2.00         | 0.02     |
| PAPALICHTHYS DENTATUS    | 0.00          | 0.00     | 0.00          | 0.00     | 2.00          | 0.18     | 1.00          | 0.02     | 0.00          | 0.00     | 0.00          | 0.00     | 4.00          | 6.06     | 1.00          | 0.23     | 8.00         | 0.07     |
| MYOXOCEPHALUS AENAUS     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 1.00          | 0.23     | 1.00         | 0.01     |
| ANGUILLA ROSTRATA        | 3.00          | 1.20     | 0.00          | 0.00     | 0.00          | 0.00     | 2.00          | 0.03     | 1.00          | 0.16     | 0.00          | 0.00     | 1.00          | 1.52     | 2.00          | 0.47     | 3.00         | 0.03     |
| TAUTOGA ONITIS           | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00         | 0.00     |
| ALOSA AESTIVALIS         | 1.00          | 0.40     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 1.00         | 0.01     |
| SCOPHTHALMUS AQUOSUS     | 0.00          | 0.00     | 0.00          | 0.00     | 1.00          | 0.09     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 1.00         | 0.01     |
| OTHER SPECIES            | 0.00          | 0.00     | 0.00          | 0.00     | 1.00          | 0.09     | 3.00          | 0.05     | 1.00          | 0.16     | 4.00          | 0.25     | 1.00          | 1.52     | 1.00          | 0.23     | 11.00        | 0.10     |
| STATION TOTAL AND DATE   | 250.00        |          | 1547.00       |          | 1082.00       |          | 5769.00       |          | 621.00        |          | 1585.00       |          | 66.00         |          | 428.00        |          | 11348.00     |          |

OYSTERC

GEAR-16 TRA

JUN-1981

| STATION                  | CDCN   |       | CDCD   |       | FKRD   |       | FKRN    |       | DBCD   |       | DBCN    |       | OYCD   |       | OYCN   |       | NUMBER TOTAL | PCT COMP |
|--------------------------|--------|-------|--------|-------|--------|-------|---------|-------|--------|-------|---------|-------|--------|-------|--------|-------|--------------|----------|
|                          | NUMBER | PCT   | NUMBER | PCT   | NUMBER | PCT   | NUMBER  | PCT   | NUMBER | PCT   | NUMBER  | PCT   | NUMBER | PCT   | NUMBER | PCT   |              |          |
| CRANGON SEPTEMPINOUSA    | 137.00 | 37.74 | 75.00  | 20.16 | 49.00  | 59.76 | 2669.00 | 94.28 | 119.00 | 35.84 | 2775.00 | 89.14 | 1.00   | 7.69  | 340.00 | 77.98 | 6165.00      | 81.74    |
| ANCHOA MITCHILLI         | 217.00 | 59.78 | 263.00 | 70.70 | 0.00   | 0.00  | 8.00    | 0.28  | 123.00 | 37.05 | 30.00   | 0.96  | 0.00   | 0.00  | 4.00   | 0.92  | 645.00       | 8.55     |
| CALLINECTES SAPIIDUS     | 2.00   | 0.55  | 8.00   | 2.15  | 5.00   | 6.10  | 13.00   | 0.46  | 5.00   | 1.51  | 10.00   | 0.32  | 3.00   | 23.08 | 13.00  | 2.98  | 59.00        | 0.78     |
| PALAEONETES SP.          | 2.00   | 0.55  | 21.00  | 5.65  | 8.00   | 9.76  | 65.00   | 2.30  | 59.00  | 17.77 | 222.00  | 7.13  | 4.00   | 30.77 | 55.00  | 12.61 | 436.00       | 5.78     |
| APELITES QUADRACUS       | 0.00   | 0.00  | 2.00   | 0.54  | 0.00   | 0.00  | 0.00    | 0.00  | 1.00   | 0.30  | 1.00    | 0.03  | 0.00   | 0.00  | 0.00   | 0.00  | 4.00         | 0.05     |
| GOBIOSOMA BOSCI          | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00    | 0.00  | 1.00   | 0.30  | 2.00    | 0.06  | 0.00   | 0.00  | 0.00   | 0.00  | 3.00         | 0.04     |
| PSEUDOPLEURONECTES AMERI | 0.00   | 0.00  | 0.00   | 0.00  | 4.00   | 4.88  | 23.00   | 0.81  | 0.00   | 0.00  | 5.00    | 0.16  | 0.00   | 0.00  | 0.00   | 0.00  | 32.00        | 0.42     |
| FAMILY XANTHIDAE         | 0.00   | 0.00  | 0.00   | 0.00  | 12.00  | 14.63 | 5.00    | 0.18  | 17.00  | 5.12  | 53.00   | 1.70  | 0.00   | 0.00  | 4.00   | 0.92  | 91.00        | 1.21     |
| CLASS ASTEROIDEA         | 0.00   | 0.00  | 0.00   | 0.00  | 3.00   | 3.66  | 1.00    | 0.04  | 0.00   | 0.00  | 0.00    | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 4.00         | 0.05     |
| LIBINIA DUBIA            | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 1.00    | 0.04  | 1.00   | 0.30  | 4.00    | 0.13  | 2.00   | 15.38 | 7.00   | 1.61  | 15.00        | 0.20     |
| OPSARIUS TAU             | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 13.00   | 0.46  | 0.00   | 0.00  | 1.00    | 0.03  | 0.00   | 0.00  | 1.00   | 0.23  | 15.00        | 0.20     |
| TRINECTES MACULATUS      | 3.00   | 0.83  | 2.00   | 0.54  | 0.00   | 0.00  | 9.00    | 0.32  | 0.00   | 0.00  | 1.00    | 0.03  | 0.00   | 0.00  | 9.00   | 2.06  | 24.00        | 0.32     |
| MENIDIA MENIDIA          | 2.00   | 0.55  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00    | 0.00  | 0.00   | 0.00  | 0.00    | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 2.00         | 0.03     |
| SYNGNATHUS FUSCUS        | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 8.00    | 0.28  | 2.00   | 0.60  | 1.00    | 0.03  | 1.00   | 7.69  | 2.00   | 0.46  | 14.00        | 0.19     |
| PARALICHTHYS DENTATUS    | 0.00   | 0.00  | 1.00   | 0.27  | 1.00   | 1.22  | 11.00   | 0.39  | 2.00   | 0.60  | 2.00    | 0.06  | 6.00   | 0.00  | 0.00   | 0.00  | 17.00        | 0.23     |
| ANGUILLA ROSTRATA        | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00    | 0.00  | 0.00   | 0.00  | 0.00    | 0.00  | 1.00   | 7.69  | 0.00   | 0.00  | 1.00         | 0.01     |
| ETROPUS MICROSTOMUS      | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00    | 0.00  | 0.00   | 0.00  | 3.00    | 0.10  | 0.00   | 0.00  | 0.00   | 0.00  | 3.00         | 0.04     |
| TAUTOGA ONITIS           | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 1.00    | 0.04  | 1.00   | 0.30  | 3.00    | 0.00  | 1.00   | 7.69  | 0.00   | 0.00  | 3.00         | 0.04     |
| SCOPHTHALMUS AQUOSUS     | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 3.00    | 0.11  | 0.00   | 0.00  | 1.00    | 0.03  | 0.00   | 0.00  | 0.00   | 0.00  | 4.00         | 0.05     |
| PANDIPEUS HERBSTII       | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 1.00    | 0.04  | 0.00   | 0.00  | 0.00    | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 1.00         | 0.01     |
| OTHER SPECIES            | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00    | 0.00  | 1.00   | 0.30  | 2.00    | 0.06  | 0.00   | 0.00  | 1.00   | 0.23  | 4.00         | 0.05     |

STATION TOTAL AND DATE

363.00 372.00 82.00 2831.00 332.00 3113.00 13.00 436.00 7542.00





OYSTERCR

GEAR-16 TRA

AUG-1981

STATION

| SPECIES                  | CDCM             |             | CDCD             |             | FKPD             |             | FKRN             |             | DBCD             |             | ER7N             |             | OYCD             |             | OYCN             |             | PCT             |             |
|--------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                          | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |
| CRANGON SEPTemspINOSA    | 1400.00          | 90.97       | 28.00            | 6.70        | 1.00             | 1.16        | 177.00           | 59.40       | 2.00             | 0.65        | 389.00           | 56.13       | 0.00             | 0.00        | 9.00             | 6.47        | 2006.00         | 56.73       |
| ANCHOA MITCHILLI         | 27.00            | 1.75        | 320.00           | 76.56       | 36.00            | 41.86       | 7.00             | 2.35        | 80.00            | 25.81       | 36.00            | 5.19        | 10.00            | 18.87       | 2.00             | 1.44        | 518.00          | 14.65       |
| PALAEMONES VULGARIS      | 16.00            | 1.04        | 3.00             | 0.72        | 0.00             | 0.00        | 2.00             | 0.67        | 4.00             | 1.29        | 56.00            | 8.08        | 0.00             | 0.00        | 14.00            | 10.07       | 95.00           | 2.69        |
| CALLINECTES SAPIDUS      | 41.00            | 2.66        | 38.00            | 9.09        | 27.00            | 31.40       | 36.00            | 12.08       | 20.00            | 6.45        | 35.00            | 5.05        | 14.00            | 26.42       | 74.00            | 53.24       | 285.00          | 8.06        |
| GOBIOSOMA BOSCI          | 4.00             | 0.26        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.34        | 0.00             | 0.00        | 1.00             | 0.14        | 0.00             | 0.00        | 1.00             | 0.72        | 7.00            | 0.20        |
| PSEUDOPLEURONECTES AMERI | 1.00             | 0.06        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.32        | 1.00             | 0.14        | 0.00             | 0.00        | 0.00             | 0.00        | 3.00            | 0.08        |
| FAMILY XANTHIDAE         | 12.00            | 0.78        | 7.00             | 1.67        | 5.00             | 5.81        | 0.00             | 0.00        | 36.00            | 11.61       | 86.00            | 12.41       | 3.00             | 5.66        | 4.00             | 2.88        | 153.00          | 4.33        |
| CYNOSCION REGALIS        | 10.00            | 0.65        | 14.00            | 3.35        | 8.00             | 9.30        | 28.00            | 9.40        | 148.00           | 47.74       | 52.00            | 7.50        | 12.00            | 22.64       | 6.00             | 4.32        | 278.00          | 7.86        |
| CLASS ASTEROIDEA         | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 4.00            | 0.11        |
| LIBINIA DURIA            | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.14        | 0.00             | 0.00        | 1.00             | 0.72        | 2.00            | 0.06        |
| OPSAEUS TAU              | 13.00            | 0.84        | 5.00             | 1.20        | 2.00             | 2.33        | 7.00             | 2.35        | 8.00             | 2.58        | 11.00            | 1.59        | 2.00             | 3.77        | 0.00             | 0.00        | 48.00           | 1.36        |
| TRINECTES MACULATUS      | 6.00             | 0.39        | 0.00             | 0.00        | 1.00             | 1.16        | 1.00             | 0.34        | 0.00             | 0.00        | 1.00             | 0.14        | 10.00            | 18.87       | 23.00            | 16.55       | 42.00           | 1.19        |
| MENIDIA MENIDIA          | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 3.00             | 0.97        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 3.00            | 0.08        |
| SYNGNATHUS FUSCUS        | 3.00             | 0.19        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 0.65        | 0.00             | 0.00        | 1.00             | 1.89        | 0.00             | 0.00        | 6.00            | 0.17        |
| HIPPOLYTE SP             | 2.00             | 0.13        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 0.29        | 0.00             | 0.00        | 0.00             | 0.00        | 4.00            | 0.11        |
| PARALICHTHYS DENTATUS    | 0.00             | 0.00        | 1.00             | 0.24        | 0.00             | 0.00        | 2.00             | 0.67        | 1.00             | 0.32        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 4.00            | 0.11        |
| NEOPANOPE TEXANA SAYI    | 4.00             | 0.26        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 0.65        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 6.00            | 0.17        |
| PRIONOTUS EVOLANS        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 32.00            | 10.74       | 0.00             | 0.00        | 13.00            | 1.88        | 0.00             | 0.00        | 0.00             | 0.00        | 45.00           | 1.27        |
| SPHOERODES MACULATUS     | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.34        | 0.00             | 0.00        | 1.00             | 0.14        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00            | 0.06        |
| ANGUILLA ROSTRATA        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 0.65        | 5.00             | 0.72        | 0.00             | 0.00        | 0.00             | 0.00        | 7.00            | 0.20        |
| ETROPUS MICROSTOMUS      | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.14        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00            | 0.03        |
| CAHANK HIPPOS            | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.14        | 0.00             | 0.00        | 2.00             | 1.44        | 3.00            | 0.08        |
| LEIOSTOMUS XANTHURUS     | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 0.67        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00            | 0.06        |
| MENTICIRRHUS SAXATILIS   | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.34        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 1.44        | 3.00            | 0.08        |
| OTHER SPECIES            | 0.00             | 0.00        | 2.00             | 0.48        | 2.00             | 2.33        | 1.00             | 0.34        | 1.00             | 0.32        | 1.00             | 0.14        | 1.00             | 1.89        | 1.00             | 0.72        | 9.00            | 0.25        |

| STATION TOTAL AND DATE | 1539.00 | 418.00 | 86.00 | 298.00 | 310.00 | 693.00 | 53.00 | 139.00 | 3536.00 |
|------------------------|---------|--------|-------|--------|--------|--------|-------|--------|---------|
|------------------------|---------|--------|-------|--------|--------|--------|-------|--------|---------|

## APPENDIX D: 45.7-m SEINE DATA

Appendix D is arranged by sampling date. The catch data are expressed as total specimens captured in two seine hauls at each station (NUMBER INDIVS) and percent composition (PCT COMP). The sampling stations are identified by the first three letters of the station code: CDC = Cedar Creek, FKR = Forked River, DBC = Double Creek, and OYC = Oyster Creek. The last letter of the station code denotes day samples (D) or night samples (N). The last (righthand) column in each data table contains the combined totals for all stations.

OYSTERCR

GEAR-150SEI

SEP-1980

STATION

| SPECIES                  | CDCN             |             | CDGD             |             | FKRD             |             | FKRN             |             | DBCD             |             | DBCN             |             | OYCD             |             | OYCN             |             | NUMBER<br>TOTAL | PCT<br>COMP |
|--------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                          | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |
| CRANGON SEPTENTRIONALIS  | 40.00            | 13.89       | 2.00             | 4.08        | 0.00             | 0.00        | 6.00             | 3.97        | 0.00             | 0.00        | 3.00             | 3.37        | 0.00             | 0.00        | 0.00             | 0.00        | 52.00           | 4.35        |
| MENIDIA MENIDIA          | 0.00             | 0.00        | 11.00            | 22.45       | 30.00            | 11.90       | 1.00             | 0.66        | 60.00            | 38.46       | 0.00             | 0.00        | 2.00             | 2.17        | 0.00             | 0.00        | 104.00          | 8.70        |
| CALLINECTES SAPIIDUS     | 15.00            | 5.21        | 25.00            | 51.02       | 20.00            | 7.94        | 94.00            | 62.25       | 17.00            | 10.90       | 55.00            | 61.80       | 58.00            | 63.04       | 43.00            | 36.44       | 327.00          | 27.36       |
| PALAEONETES VULGARIS     | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.66        | 0.00             | 0.00        | 3.00             | 3.37        | 1.00             | 1.09        | 0.00             | 0.00        | 5.00            | 0.42        |
| CALLINECTES SAPIIDUS JUV | 215.00           | 74.65       | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 271.00          | 22.68       |
| ANCHOA MITCHELLI         | 0.00             | 0.00        | 0.00             | 0.00        | 142.00           | 56.35       | 1.00             | 0.66        | 30.00            | 19.23       | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.85        | 174.00          | 14.56       |
| APELTES QUADRACUS        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.64        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00            | 0.08        |
| MUGIL CEPHALUS           | 0.00             | 0.00        | 4.00             | 8.16        | 6.00             | 2.38        | 1.00             | 0.66        | 3.00             | 1.92        | 16.00            | 17.98       | 5.00             | 5.43        | 0.00             | 0.00        | 35.00           | 2.93        |
| OPSANUS TAU              | 5.00             | 1.74        | 0.00             | 0.00        | 9.00             | 3.57        | 26.00            | 17.22       | 2.00             | 1.28        | 0.00             | 0.00        | 1.00             | 1.09        | 4.00             | 3.39        | 47.00           | 3.93        |
| FUNDULUS MAJALIS         | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.64        | 5.00             | 5.62        | 0.00             | 0.00        | 0.00             | 0.00        | 6.00            | 0.50        |
| FUNDULUS HETEROCLITUS    | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 3.00             | 1.99        | 0.00             | 0.00        | 1.00             | 1.12        | 0.00             | 0.00        | 0.00             | 0.00        | 4.00            | 0.33        |
| SYNGNATHUS FUSCUS        | 1.00             | 0.35        | 1.00             | 2.04        | 0.00             | 0.00        | 4.00             | 2.65        | 1.00             | 0.64        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 7.00            | 0.59        |
| CARANX HIPPOS            | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.43        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 1.12        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00            | 0.17        |
| PSEUDOPLEURORECTES AMERI | 2.00             | 0.69        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00            | 0.17        |
| MENIDIA BERYLLINA        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 0.79        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 4.00            | 0.33        |
| POMATOMUS SALTATRIX      | 1.00             | 0.35        | 0.00             | 0.00        | 30.00            | 11.90       | 0.00             | 0.00        | 18.00            | 11.54       | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 50.00           | 4.18        |
| OVALIPES OCELLATUS       | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.66        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00            | 0.08        |
| GUBIOSOMA BOSCI          | 2.00             | 0.69        | 2.00             | 4.08        | 0.00             | 0.00        | 2.00             | 1.32        | 0.00             | 0.00        | 2.00             | 2.25        | 0.00             | 0.00        | 0.00             | 0.00        | 8.00            | 0.67        |
| FAMILY XANTHIDAE JUV.    | 6.00             | 2.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 1.12        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00            | 0.08        |
| STRONGYLURA MARINA       | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 4.00             | 2.56        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 1.69        | 6.00            | 0.50        |
| CYNOSSION REGALIS        | 0.00             | 0.00        | 0.00             | 0.00        | 9.00             | 3.57        | 0.00             | 0.00        | 1.00             | 0.64        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 10.00           | 0.84        |
| ANGUILLA ROSTRATA        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.40        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 1.12        | 1.00             | 1.09        | 0.00             | 0.00        | 3.00            | 0.25        |
| MUGIL CURCHA             | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.40        | 1.00             | 0.66        | 15.00            | 5.62        | 0.00             | 0.00        | 14.00            | 15.22       | 0.00             | 0.00        | 31.00           | 2.59        |
| CHASMODES BOSQUIANUS     | 1.00             | 0.35        | 1.00             | 2.04        | 0.00             | 0.00        | 3.00             | 1.99        | 1.00             | 0.64        | 1.00             | 1.12        | 5.00             | 5.43        | 1.00             | 0.85        | 13.00           | 1.09        |
| LIBINIA OMBIA            | 0.00             | 0.00        | 1.00             | 2.04        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00            | 0.08        |
| PAPALICTHYS DENTATUS     | 4.00             | 1.39        | 0.00             | 0.00        | 0.00             | 0.00        | 3.00             | 1.99        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 2.17        | 4.00             | 3.39        | 13.00           | 1.09        |
| TRINectes MACULATUS      | 1.00             | 0.35        | 2.00             | 4.08        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00            | 0.08        |
| OTHER SPECIES            | 1.00             | 0.35        | 2.00             | 4.08        | 1.00             | 0.40        | 4.00             | 2.65        | 0.00             | 0.00        | 0.00             | 0.00        | 3.00             | 3.26        | 5.00             | 4.24        | 16.00           | 1.34        |

STATION TOTAL AND  
DATE

288.00

49.00

252.00

151.00

156.00

89.00

92.00

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1195.00

OYSTERC

GEAR-150SEI

OCT-1980

STATION

| SPECIES                  | CDCN             |             | CDCD             |             | FKRD             |             | FKRN             |             | DBCD             |             | DBCN             |             | OYCD             |             | OYCN             |             | NUMBER<br>TOTAL | PCT<br>COMP |
|--------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                          | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |
| CRAMON SEPTEMSPINOSA     | 188.00           | 34.94       | 1.00             | 0.00        | 4.00             | 14.81       | 12.00            | 7.10        | 2.00             | 5.41        | 19.00            | 8.19        | 0.00             | 0.00        | 23.00            | 16.67       | 396.00          | 28.55       |
| MENIDIA MENIDIA          | 42.00            | 7.81        | 0.00             | 0.00        | 3.00             | 11.11       | 31.00            | 18.34       | 3.00             | 8.11        | 4.00             | 1.72        | 0.00             | 0.00        | 0.00             | 0.00        | 83.00           | 5.98        |
| CALLINECTES SAPIENS      | 285.00           | 52.97       | 45.00            | 22.17       | 4.00             | 14.81       | 77.00            | 45.56       | 19.00            | 51.35       | 188.00           | 81.03       | 14.00            | 32.56       | 48.00            | 34.78       | 680.00          | 49.03       |
| PALAEMONETES VULGARIS    | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 3.70        | 0.00             | 0.59        | 10.00            | 27.03       | 0.00             | 0.00        | 0.00             | 0.00        | 4.00             | 2.90        | 16.00           | 1.15        |
| APELITES QUADRATUS       | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 3.70        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.90             | 0.00        | 0.00             | 0.00        | 1.00            | 0.07        |
| MUGIL CEPHALUS           | 0.00             | 0.00        | 5.00             | 0.00        | 1.00             | 3.70        | 4.00             | 2.37        | 0.00             | 0.00        | 0.00             | 0.00        | 3.00             | 6.98        | 9.00             | 6.52        | 17.00           | 1.23        |
| OPSANUS TAU              | 3.00             | 0.56        | 7.00             | 3.45        | 0.00             | 0.00        | 16.00            | 9.47        | 0.00             | 0.00        | 4.00             | 1.72        | 4.00             | 9.30        | 15.00            | 10.87       | 47.00           | 3.39        |
| FUNDULUS MAJALIS         | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 5.00             | 3.62        | 9.00            | 0.65        |
| FUNDULUS HETEROCLITUS    | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 0.86        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00            | 0.14        |
| SYNGNATHUS FUSCUS        | 1.00             | 0.19        | 1.00             | 0.49        | 3.00             | 11.11       | 8.00             | 4.73        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 2.33        | 0.00             | 0.00        | 14.00           | 1.01        |
| CARANX HIPPOS            | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 7.00             | 5.07        | 7.00            | 0.50        |
| PSEUDOPLEURONECTES AMERI | 2.00             | 0.37        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00            | 0.14        |
| MENIDIA BERYLLINA        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 2.70        | 3.00             | 1.29        | 0.00             | 0.00        | 0.00             | 0.00        | 4.00            | 0.29        |
| POMATOMUS SALTATRIX      | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 4.65        | 1.00             | 0.72        | 3.00            | 0.22        |
| OVALPES OCELLATUS        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 0.66        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00            | 0.14        |
| GOBIOSOMA BOSCI          | 10.00            | 1.86        | 0.00             | 0.00        | 0.00             | 0.00        | 3.00             | 1.78        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 1.45        | 15.00           | 1.08        |
| FAMILY XANTHIDAE JUV.    | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 1.18        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00            | 0.14        |
| STRONGYLURA MARINA       | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 6.00             | 13.95       | 1.00             | 0.72        | 7.00            | 0.50        |
| CYPRINODON VARIEGATUS    | 1.00             | 0.19        | 1.00             | 0.49        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 7.00             | 5.07        | 9.00            | 0.65        |
| ANGUILLA ROSTRATA        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.59        | 0.00             | 0.00        | 2.00             | 0.86        | 1.00             | 2.33        | 0.00             | 0.00        | 4.00            | 0.29        |
| MUGIL CUREMA             | 1.00             | 0.19        | 0.00             | 0.00        | 4.00             | 14.81       | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 4.65        | 2.00             | 1.45        | 9.00            | 0.65        |
| CHASMODES BOSQUIANUS     | 2.00             | 0.37        | 0.00             | 0.00        | 1.00             | 3.70        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 2.33        | 1.00             | 0.72        | 5.00            | 0.36        |
| NEOPANCOPE TEXANA SAYI   | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 7.41        | 7.00             | 4.14        | 0.00             | 0.00        | 4.00             | 1.72        | 0.00             | 0.00        | 3.00             | 2.17        | 16.00           | 1.15        |
| LIBINIA DIBBIA           | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 5.41        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00            | 0.14        |
| TRACHINOTUS FALCATUS     | 0.00             | 0.00        | 1.00             | 0.49        | 1.00             | 3.70        | 1.00             | 0.59        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 3.00            | 0.22        |
| PARALICHTHYS DENTATUS    | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.43        | 2.00             | 4.65        | 2.00             | 1.45        | 5.00            | 0.36        |
| TAUTOCHA ORNITIS         | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.59        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00            | 0.14        |
| TRINECTES MACULATUS      | 2.00             | 0.37        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00            | 0.14        |
| OTHER SPECIES            | 1.00             | 0.19        | 0.00             | 0.00        | 2.00             | 7.41        | 5.00             | 2.96        | 0.00             | 0.00        | 1.00             | 0.43        | 7.00             | 16.28       | 7.00             | 5.07        | 23.00           | 1.66        |

STATION TOTAL AND  
DATE

538.00

27.00

169.00

37.00

232.00

43.00

138.00

1387.00



OYSTERCR

GEAR-150SEI

NOV-1980

## STATION

| SPECIES                  | CDCN   |       | CDCD   |       | FKRD   |       | FKRN   |       | DBCD   |       | DBCN   |       | OYCD   |       | OYCN   |       | TOTAL   |       |
|--------------------------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|---------|-------|
|                          | NUMBER | PCT   | NUMBER | PCT   | NUMBER | PCT   | NUMBER | PCT   | NUMBER | PCT   | NUMBER | PCT   | NUMBER | PCT   | NUMBER | PCT   | NUMBER  | PCT   |
| GRABON SEPTEMPINOSA      | 835.00 | 97.78 | 297.00 | 99.33 | 63.00  | 96.92 | 740.00 | 86.05 | 41.00  | 80.39 | 351.00 | 94.61 | 56.00  | 38.36 | 377.00 | 77.89 | 2760.00 | 88.18 |
| MENIDIA MENIDIA          | 0.00   | 0.00  | 0.00   | 0.00  | 1.00   | 1.54  | 0.00   | 0.00  | 0.00   | 0.00  | 3.00   | 0.81  | 52.00  | 35.62 | 15.00  | 3.10  | 71.00   | 2.27  |
| CALLINECTES SAPIDUS      | 2.00   | 0.23  | 0.00   | 0.00  | 0.00   | 0.00  | 7.00   | 0.81  | 0.00   | 0.00  | 0.00   | 0.00  | 6.00   | 4.11  | 62.00  | 12.81 | 77.00   | 2.46  |
| PALAEONECTES VULGARIS    | 2.00   | 0.23  | 1.00   | 0.33  | 0.00   | 0.00  | 98.00  | 11.40 | 5.00   | 9.80  | 1.00   | 0.27  | 5.00   | 3.42  | 1.00   | 0.21  | 113.00  | 3.61  |
| APELTES QUADRACUS        | 2.00   | 0.23  | 1.00   | 0.33  | 1.00   | 1.54  | 1.00   | 0.12  | 2.00   | 3.92  | 1.00   | 0.27  | 7.00   | 4.79  | 2.00   | 0.41  | 17.00   | 0.54  |
| OPSANIUS TAU             | 1.00   | 0.12  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 1.00    | 0.03  |
| FUNDULUS MAJALIS         | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 3.00   | 0.58  | 0.00   | 0.00  | 2.00   | 0.54  | 1.00   | 0.68  | 1.00   | 0.21  | 9.00    | 0.29  |
| FUNDULUS HETEROCLITUS    | 1.00   | 0.12  | 0.00   | 0.00  | 0.00   | 0.00  | 2.00   | 0.23  | 0.00   | 0.00  | 8.00   | 2.16  | 0.00   | 0.00  | 0.00   | 0.00  | 11.00   | 0.35  |
| SYNGNATHUS FUSCUS        | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 1.00   | 0.68  | 0.00   | 0.00  | 1.00    | 0.03  |
| PSEUDOPLEURONECTES AMERI | 2.00   | 0.23  | 0.00   | 0.00  | 0.00   | 0.00  | 5.00   | 0.58  | 0.00   | 0.00  | 0.00   | 0.00  | 2.00   | 1.37  | 7.00   | 1.45  | 16.00   | 0.51  |
| MENIDIA BERYLLINA        | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 1.00   | 1.96  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 1.00    | 0.03  |
| GOBIOSOMA BOSCI          | 7.00   | 0.82  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 1.00   | 1.96  | 2.00   | 0.54  | 10.00  | 6.85  | 5.00   | 1.03  | 25.00   | 0.80  |
| FAMILY XANTHIDAE JUV.    | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 1.00   | 0.21  | 1.00    | 0.03  |
| STRONGYLURA MARINA       | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 3.00   | 0.62  | 3.00    | 0.10  |
| CYPRINODON VARIEGATUS    | 1.00   | 0.12  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 1.00   | 0.21  | 2.00    | 0.06  |
| ANGUILLA ROSTRATA        | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 1.00   | 0.21  | 1.00    | 0.03  |
| CHASMODES BOSQUIANUS     | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 1.00   | 0.68  | 1.00   | 0.21  | 2.00    | 0.06  |
| NEOPANUPE TEXANA SAYI    | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 1.00   | 0.68  | 0.00   | 0.00  | 1.00    | 0.03  |
| FUNDULUS DIAPHANUS       | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 1.00   | 0.12  | 0.00   | 0.00  | 2.00   | 0.54  | 1.00   | 0.68  | 0.00   | 0.00  | 4.00    | 0.13  |
| TAUTOGA ONITIS           | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 1.00   | 1.96  | 0.00   | 0.00  | 0.00   | 0.00  | 4.00   | 0.83  | 5.00    | 0.16  |
| OTHER SPECIES            | 1.00   | 0.12  | 0.00   | 0.00  | 0.00   | 0.00  | 1.00   | 0.12  | 0.00   | 0.00  | 1.00   | 0.27  | 3.00   | 2.05  | 3.00   | 0.62  | 9.00    | 0.29  |

STATION TOTAL AND DATE

854.00 299.00 65.00 860.00 51.00 371.00 146.00 484.00 3130.00



DEC-1980

GEAR-150SEI

OYSTERCR

| STATION                  | CDCN             |             | CDCD             |             | FKRD             |             | FKRN             |             | DBCD             |             | DBCN             |             | OYCD             |             | OYCN             |             |         |       |
|--------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|---------|-------|
|                          | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |         |       |
| CRANGON SEPTISPINOSA     | 946.00           | 99.37       | 52.00            | 92.86       | 52.00            | 78.79       | 1300.00          | 72.06       | 15.00            | 78.95       | 705.00           | 96.05       | 159.00           | 81.96       | 5260.00          | 97.41       | 8489.00 | 92.02 |
| MENIDIA MENIDIA          | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.06        | 0.00             | 0.00        | 1.00             | 0.14        | 16.00            | 8.25        | 10.00            | 0.19        | 28.00   | 0.30  |
| CALLINECTES SAPIIDUS     | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 16.00            | 0.89        | 0.00             | 0.00        | 2.00             | 0.27        | 1.00             | 0.52        | 56.00            | 1.04        | 75.00   | 0.81  |
| PALAEONETES VULGARIS     | 0.00             | 0.00        | 1.00             | 1.79        | 4.00             | 6.06        | 457.00           | 25.33       | 2.00             | 10.53       | 3.00             | 0.41        | 1.00             | 0.52        | 0.00             | 0.00        | 468.00  | 5.07  |
| ANCHOA MITCHELLI         | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 4.00             | 2.06        | 3.00             | 0.06        | 7.00    | 0.08  |
| APELTES QUADRACUS        | 2.00             | 0.21        | 2.00             | 3.57        | 6.00             | 9.09        | 2.00             | 0.11        | 2.00             | 10.53       | 1.00             | 0.14        | 8.00             | 4.12        | 4.00             | 0.07        | 27.00   | 0.29  |
| MUGIL CEPHALUS           | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 10.00            | 0.19        | 10.00   | 0.11  |
| OPSANUS TAU              | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.06        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00    | 0.01  |
| FUNDULUS MAJALIS         | 1.00             | 0.11        | 0.00             | 0.00        | 0.00             | 0.00        | 3.00             | 0.17        | 0.00             | 0.00        | 18.00            | 2.45        | 2.00             | 1.03        | 14.00            | 0.26        | 38.00   | 0.41  |
| FUNDULUS HETEROCLITUS    | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 0.11        | 0.00             | 0.00        | 2.00             | 0.27        | 0.00             | 0.00        | 1.00             | 0.02        | 5.00    | 0.05  |
| SYNGNATHUS FUSCUS        | 0.00             | 0.00        | 1.00             | 1.79        | 2.00             | 3.03        | 1.00             | 0.06        | 0.00             | 0.00        | 1.00             | 0.14        | 0.00             | 0.00        | 0.00             | 0.00        | 5.00    | 0.05  |
| PSEUDOPLEURORECTES AMERI | 1.00             | 0.11        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 0.11        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.52        | 7.00             | 0.13        | 11.00   | 0.12  |
| MENIDIA BERYLLINA        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.52        | 0.00             | 0.00        | 1.00    | 0.01  |
| GOBIOSOMA BOSCI          | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 9.00             | 0.17        | 9.00    | 0.10  |
| FAMILY XANTHIDAE JUV.    | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 3.03        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00    | 0.02  |
| ALOSA AESTIVALIS         | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.52        | 18.00            | 0.33        | 19.00   | 0.21  |
| CYPRINODON VARIEGATUS    | 2.00             | 0.21        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.02        | 3.00    | 0.03  |
| ANGUILLA ROSTRATA        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.02        | 1.00    | 0.01  |
| NEOPANOPE TEXANA SAYI    | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.14        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00    | 0.01  |
| FUNDULUS DIAPHANIUS      | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 17.00            | 0.94        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 17.00   | 0.18  |
| TAUTOGA ONITIS           | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.02        | 1.00    | 0.01  |
| TRINECTES MACULATUS      | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.02        | 1.00    | 0.01  |
| OTHER SPECIES            | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 0.11        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 4.00             | 0.07        | 6.00    | 0.07  |

| STATION TOTAL AND DATE | 952.00 | 56.00 | 1804.00 | 19.00 | 734.00 | 194.00 | 5400.00 | 9225.00 |
|------------------------|--------|-------|---------|-------|--------|--------|---------|---------|
|------------------------|--------|-------|---------|-------|--------|--------|---------|---------|

OYSTERCR

GEAP-1505E1

JAN-1981

STATION

| SPECIES                 | FKRD             |             | FKRN             |             | OYCD             |             | OYCN             |             | NUMBER<br>TOTAL | PCT<br>COMP |
|-------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                         | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |
| CRANGON SEPTENSPINOSA   | 11.00            | 84.62       | 234.00           | 97.91       | 0.00             | 0.00        | 33.00            | 89.19       | 278.00          | 92.05       |
| MENIDIA MENIDIA         | 0.00             | 0.00        | 0.00             | 0.00        | 12.00            | 92.71       | 1.00             | 2.70        | 13.00           | 4.30        |
| CALLINectes SAPIDUS     | 1.00             | 7.69        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00            | 0.33        |
| PALAEONETES VULGARIS    | 0.00             | 0.00        | 3.00             | 1.26        | 0.00             | 0.00        | 0.00             | 0.00        | 3.00            | 0.99        |
| APELITES QUADRACUS      | 1.00             | 7.69        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 2.70        | 2.00            | 0.66        |
| FUNDULUS MAJALIS        | 0.00             | 0.00        | 1.00             | 0.42        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00            | 0.33        |
| FUNDULUS HETEROCOLLITUS | 0.00             | 0.00        | 1.00             | 0.42        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00            | 0.33        |
| MENIDIA BERYLLINA       | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 7.69        | 0.00             | 0.00        | 1.00            | 0.33        |
| OTHER SPECIES           | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 5.41        | 2.00            | 0.66        |
| -----                   |                  |             |                  |             |                  |             |                  |             |                 |             |
| STATION TOTAL AND       | 13.00            |             | 239.00           |             | 13.00            |             | 37.00            |             | 302.00          |             |

DATE

DATE GROUPING

7 JAN 81 TO 28 JAN 81

JAN-1981

OYSTERC

GEAR-150SEI

FEB-1981

STATION

| SPECIES                  | CDCN          |          | CDCD          |          | FKRD          |          | FKRN          |          | DBCD          |          | DBCN          |          | OYCD          |          | OYCN          |          | NUMBER TOTAL | PCT COMP |
|--------------------------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|--------------|----------|
|                          | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP |              |          |
| CRANGON SEPTEMPINOSA     | 511.00        | 99.22    | 22.00         | 100.00   | 5.00          | 50.00    | 132.00        | 92.31    | 9.00          | 52.94    | 449.00        | 90.71    | 65.00         | 15.15    | 312.00        | 70.59    | 1505.00      | 72.60    |
| MENIDIA MENIDIA          | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 1.00          | 0.20     | 329.00        | 76.69    | 86.00         | 19.46    | 416.00       | 20.07    |
| CALLINectes SAPIDUS      | 2.00          | 0.39     | 0.00          | 0.00     | 0.00          | 0.00     | 1.00          | 0.70     | 1.00          | 5.88     | 0.00          | 0.00     | 8.00          | 1.86     | 30.00         | 6.79     | 42.00        | 2.03     |
| PALAEMONETES VULGARIS    | 0.00          | 0.00     | 0.00          | 0.00     | 1.00          | 10.00    | 1.00          | 0.70     | 0.00          | 0.00     | 1.00          | 0.20     | 2.00          | 0.47     | 0.00          | 0.00     | 5.00         | 0.24     |
| APELITES QUADRACUS       | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 2.00          | 1.40     | 0.00          | 0.00     | 8.00          | 1.62     | 4.00          | 0.93     | 0.00          | 0.00     | 14.00        | 0.68     |
| MUGIL CEPHALUS           | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 1.00          | 0.23     | 0.00          | 0.00     | 1.00         | 0.05     |
| FUNDULUS MAJALIS         | 1.00          | 0.19     | 0.00          | 0.00     | 1.00          | 10.00    | 2.00          | 1.40     | 2.00          | 11.76    | 26.00         | 5.25     | 7.00          | 1.63     | 6.00          | 1.36     | 45.00        | 2.17     |
| FUNDULUS HETEROLELITUS   | 0.00          | 0.00     | 0.00          | 0.00     | 2.00          | 20.00    | 3.00          | 2.10     | 0.00          | 0.00     | 7.00          | 1.41     | 5.00          | 1.17     | 2.00          | 0.45     | 19.00        | 0.92     |
| PSEUDOPLEURONECTES AMERI | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 2.00          | 0.40     | 0.00          | 0.00     | 0.00          | 0.00     | 2.00         | 0.10     |
| MENIDIA BERYLLINA        | 0.00          | 0.00     | 0.00          | 0.00     | 1.00          | 10.00    | 0.00          | 0.00     | 4.00          | 23.53    | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 5.00         | 0.24     |
| FAMILY XANTHIDAE JUV.    | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 1.00          | 0.70     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 1.00         | 0.05     |
| ALOSA AESTIVALIS         | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 4.00          | 0.93     | 0.00          | 0.00     | 4.00         | 0.19     |
| CYPRINODON VARIEGATUS    | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 1.00          | 0.70     | 1.00          | 5.88     | 1.00          | 0.20     | 4.00          | 0.93     | 2.00          | 0.45     | 9.00         | 0.43     |
| OTHER SPECIES            | 1.00          | 0.19     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 4.00          | 0.90     | 5.00         | 0.24     |

STATION TOTAL AND DATE

515.00 22.00 10.00 143.00 17.00 495.00 429.00 442.00 2073.00

OYSTERCR

GEAR-150SET

MAR-1981

STATION

| SPECIES                  | CDCN             |             | CDDC             |             | FKRD             |             | FKRN             |             | DBCD             |             | DBCN             |             | OYCD             |             | OYCN             |             |         |       |
|--------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|---------|-------|
|                          | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |         |       |
| CRANGON SEPTEMSPINOSA    | 2756.00          | 98.82       | 51.00            | 98.08       | 10.00            | 71.43       | 430.00           | 93.07       | 7.00             | 4.00        | 689.00           | 99.15       | 61.00            | 62.24       | 962.00           | 82.65       | 4966.00 | 91.02 |
| MENIDIA MENIDIA          | 14.00            | 0.50        | 0.00             | 0.00        | 1.00             | 7.14        | 0.00             | 0.00        | 168.00           | 96.00       | 1.00             | 0.14        | 30.00            | 30.61       | 112.00           | 9.62        | 326.00  | 5.98  |
| CALLINECTES SAPIDUS      | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 5.00             | 5.10        | 42.00            | 3.61        | 47.00   | 0.86  |
| PALAEONETES SP.          | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 17.00            | 3.68        | 0.00             | 0.00        | 1.00             | 0.14        | 1.00             | 1.02        | 1.00             | 0.09        | 20.00   | 0.37  |
| APELTES QUADRACUS        | 14.00            | 0.50        | 1.00             | 1.92        | 0.00             | 0.00        | 4.00             | 0.87        | 0.00             | 0.00        | 4.00             | 0.57        | 0.00             | 0.00        | 2.00             | 0.17        | 25.00   | 0.46  |
| MUGIL CEPHALUS           | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 0.17        | 2.00    | 0.04  |
| FUNDULUS MAJALIS         | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 14.29       | 5.00             | 1.08        | 0.00             | 0.00        | 4.00             | 0.57        | 0.00             | 0.00        | 3.00             | 0.26        | 14.00   | 0.26  |
| FUNDULUS HETEROCLITUS    | 1.00             | 0.04        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 0.43        | 0.00             | 0.00        | 2.00             | 0.28        | 0.00             | 0.00        | 2.00             | 0.17        | 7.00    | 0.13  |
| SYNGNATHUS FUSCUS        | 1.00             | 0.04        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00    | 0.02  |
| PSEUDOPLEURONECTES AMERI | 2.00             | 0.07        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.22        | 0.00             | 0.00        | 1.00             | 0.14        | 0.00             | 0.00        | 2.00             | 0.17        | 6.00    | 0.11  |
| FAMILY XANTHIDAE JUV.    | 1.00             | 0.04        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00    | 0.02  |
| ALOSA AESTIVALIS         | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 25.00            | 2.15        | 25.00   | 0.46  |
| CYPRINODON VARIEGATUS    | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 7.14        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00    | 0.02  |
| ANGUILLA ROSTRATA        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.09        | 1.00    | 0.02  |
| TAUTOGA OMITIS           | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 1.02        | 0.00             | 0.00        | 1.00    | 0.02  |
| OTHER SPECIES            | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 3.00             | 0.65        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 10.00            | 0.86        | 13.00   | 0.24  |

STATION TOTAL AND

DATE 2789.00 52.00 14.00 462.00 175.00 702.00 98.00 1164.00 5456.00

OYSTERC

GEAR-1505E1

APR-1981

STATION

| SPECIES                  | CDCN             |             | CQCD             |             | FKC-D            |             | FKRN             |             | DBCD             |             | DBCN             |             | OYCD             |             | OYCN             |             |
|--------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|
|                          | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |
| CRANGON SEPTEMSPINOSA    | 124.00           | 52.99       | 98.00            | 60.87       | 10.00            | 2.45        | 75.00            | 26.04       | 6.00             | 2.49        | 173.00           | 34.19       | 121.00           | 51.05       | 364.00           | 58.80       |
| MENIDIA MENIDIA          | 9.00             | 3.85        | 0.00             | 0.00        | 210.00           | 51.47       | 47.00            | 16.32       | 202.00           | 83.82       | 4.00             | 0.79        | 33.00            | 13.92       | 3.00             | 0.48        |
| CALLINECTES SAPIIDUS     | 87.00            | 37.18       | 51.00            | 31.68       | 13.00            | 3.19        | 19.00            | 6.60        | 14.00            | 5.81        | 270.00           | 53.36       | 71.00            | 29.96       | 45.00            | 7.27        |
| PALAEOMETES SP.          | 1.00             | 0.43        | 1.00             | 0.62        | 78.00            | 19.12       | 94.00            | 32.64       | 4.00             | 1.66        | 23.00            | 4.55        | 2.00             | 0.84        | 17.00            | 2.75        |
| CALLINECTES SAPIIDUS JUV | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 164.00           | 26.49       |
| ANCHORA MITCHELLI        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.16        |
| APELTES QUADRACUS        | 2.00             | 0.85        | 5.00             | 3.11        | 34.00            | 8.33        | 16.00            | 5.56        | 4.00             | 1.66        | 5.00             | 0.99        | 3.00             | 1.27        | 2.00             | 0.32        |
| MUGIL CEPHALUS           | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.35        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.16        |
| OPSANUS TAU              | 1.00             | 0.43        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.20        | 0.00             | 0.00        | 0.00             | 0.00        |
| FUNDULUS MAJALIS         | 1.00             | 0.43        | 0.00             | 0.00        | 0.00             | 0.00        | 9.00             | 3.12        | 0.00             | 0.00        | 4.00             | 0.79        | 0.00             | 0.00        | 1.00             | 0.16        |
| FUNDULUS HETEROCLITUS    | 3.00             | 1.28        | 2.00             | 1.24        | 17.00            | 4.17        | 5.00             | 1.74        | 3.00             | 1.24        | 16.00            | 3.16        | 1.00             | 0.42        | 6.00             | 0.97        |
| SYNGNATHUS FUSCUS        | 2.00             | 0.85        | 1.00             | 0.62        | 13.00            | 3.19        | 7.00             | 2.43        | 0.00             | 0.00        | 1.00             | 0.20        | 3.00             | 1.27        | 0.00             | 0.00        |
| PSEUDOPLEURONECTES AMERI | 0.00             | 0.00        | 1.00             | 0.62        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.16        |
| MENIDIA BERYLLINA        | 1.00             | 0.43        | 1.00             | 0.62        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.41        | 3.00             | 0.59        | 0.00             | 0.00        | 1.00             | 0.16        |
| OVALIPES OCELLATUS       | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.16        |
| GORTOSOMA BOSCI          | 0.00             | 0.00        | 1.00             | 0.62        | 1.00             | 0.25        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.16        |
| FAMILY XANTHIDAE JUV.    | 0.00             | 0.00        | 0.00             | 0.00        | 15.00            | 3.68        | 3.00             | 2.78        | 5.00             | 2.07        | 2.00             | 0.40        | 3.00             | 1.27        | 1.00             | 0.16        |
| CYPRINODON VARIIGATUS    | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.25        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 0.40        | 0.00             | 0.00        | 4.00             | 0.65        |
| ANGUILLA ROSTRATA        | 2.00             | 0.85        | 0.00             | 0.00        | 0.00             | 0.00        | 5.00             | 1.74        | 0.00             | 0.00        | 1.00             | 0.20        | 0.00             | 0.00        | 0.00             | 0.00        |
| NEOPANOPE TEKANA SAYI    | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.41        | 1.00             | 0.20        | 0.00             | 0.00        | 1.00             | 0.16        |
| LIBINIA DUBIA            | 0.00             | 0.00        | 0.00             | 0.00        | 10.00            | 2.45        | 2.00             | 0.69        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| PARALICHTHYS DENTATUS    | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.16        |
| TAUTOGA ONITIS           | 0.00             | 0.00        | 0.00             | 0.00        | 3.00             | 0.74        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| TRINECTES MACULATUS      | 1.00             | 0.43        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 0.32        |
| OTHER SPECIES            | 0.00             | 0.00        | 0.00             | 0.00        | 3.00             | 0.74        | 0.00             | 0.00        | 1.00             | 0.41        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 0.32        |

STATION TOTAL AND  
DATE

234.00

161.00

408.00

288.00

241.00

506.00

237.00

619.00

2694.00

OYSTERCR

GEAR-150SET

MAY-1981

STATION

| SPECIES                  | CDCN             |             | COCO             |             | FKRD             |             | FKRN             |             | DBCD             |             | DBCN             |             | OYCD             |             | OYCN             |             | NUMBER<br>TOTAL | PCT<br>COMP |
|--------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                          | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |
| CRANGON SEPTEMPINOSA     | 48.00            | 25.40       | 7.00             | 8.75        | 24.00            | 13.19       | 254.00           | 61.06       | 8.00             | 8.00        | 112.00           | 61.88       | 6.00             | 1.96        | 238.00           | 73.01       | 697.00          | 39.16       |
| MENIDIA MENIDIA          | 12.00            | 6.35        | 18.00            | 22.50       | 121.00           | 66.48       | 4.00             | 0.96        | 71.00            | 71.00       | 2.00             | 1.10        | 206.00           | 67.32       | 27.00            | 8.28        | 461.00          | 25.90       |
| CALLINectes SAPIDUS      | 109.00           | 57.67       | 38.00            | 47.50       | 7.00             | 3.85        | 71.00            | 17.07       | 1.00             | 1.00        | 41.00            | 22.65       | 12.00            | 3.92        | 40.00            | 12.27       | 319.00          | 17.92       |
| PALAEONETES SP.          | 4.00             | 2.12        | 8.00             | 10.00       | 18.00            | 9.89        | 49.00            | 11.78       | 7.00             | 7.00        | 8.00             | 4.42        | 0.00             | 0.00        | 2.00             | 0.61        | 96.00           | 5.39        |
| APELITES QUADRACUS       | 2.00             | 1.06        | 6.00             | 7.50        | 1.00             | 0.55        | 4.00             | 0.96        | 2.00             | 2.00        | 1.00             | 0.55        | 0.00             | 0.00        | 0.00             | 0.00        | 16.00           | 0.90        |
| MUGIL CEPHALUS           | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 3.00             | 0.92        | 56.00           | 3.15        |
| OPSANUS TAU              | 2.00             | 1.06        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 0.48        | 0.00             | 0.00        | 1.00             | 0.55        | 0.00             | 0.00        | 2.00             | 0.61        | 7.00            | 0.39        |
| FUNDULUS MAJALIS         | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 1.10        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00            | 0.11        |
| FUNDULUS HETEROGLITUS    | 3.00             | 1.59        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.24        | 2.00             | 2.00        | 1.00             | 0.55        | 1.00             | 0.33        | 2.00             | 0.61        | 10.00           | 0.56        |
| SYGNATHUS FUSCUS         | 0.00             | 0.00        | 1.00             | 1.25        | 5.00             | 2.75        | 9.00             | 2.16        | 5.00             | 5.00        | 5.00             | 2.76        | 8.00             | 2.61        | 5.00             | 1.53        | 38.00           | 2.13        |
| PSEUDOPLEURONECTES AMERI | 1.00             | 0.53        | 0.00             | 0.00        | 0.00             | 0.00        | 5.00             | 1.20        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 6.00            | 0.34        |
| MENIDIA BERYLLINA        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 0.48        | 1.00             | 1.00        | 0.00             | 0.00        | 13.00            | 4.25        | 1.00             | 0.31        | 17.00           | 0.96        |
| OVALIPES OCELLATUS       | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.55        | 1.00             | 0.33        | 2.00             | 0.61        | 4.00            | 0.22        |
| GOBIOSOMA BOSCI          | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.24        | 0.00             | 0.00        | 1.00             | 0.55        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00            | 0.11        |
| FAMILY XANTHIDAE JUV.    | 0.00             | 0.00        | 0.00             | 0.00        | 4.00             | 2.20        | 3.00             | 0.72        | 0.00             | 0.00        | 6.00             | 3.31        | 0.00             | 0.00        | 0.00             | 0.00        | 13.00           | 0.73        |
| CYPRINODON VARIEGATUS    | 0.00             | 0.00        | 1.00             | 1.25        | 1.00             | 0.55        | 0.00             | 0.00        | 1.00             | 1.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.31        | 4.00            | 0.22        |
| ANGUILLA ROSTRATA        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 0.48        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00            | 0.11        |
| CHASMODES BOSQUIANUS     | 4.00             | 2.12        | 1.00             | 1.25        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 5.00            | 0.28        |
| LIBinia DIBIA            | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.55        | 1.00             | 0.24        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 0.65        | 1.00             | 0.31        | 5.00            | 0.28        |
| PARALICHTHYS DENTATUS    | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.31        | 1.00            | 0.06        |
| TRINectes MACULATUS      | 1.00             | 0.53        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.31        | 2.00            | 0.11        |
| OTHER SPECIES            | 3.00             | 1.59        | 0.00             | 0.00        | 0.00             | 0.00        | 8.00             | 1.92        | 2.00             | 2.00        | 0.00             | 0.00        | 4.00             | 1.31        | 0.00             | 0.00        | 17.00           | 0.96        |

STATION TOTAL AND  
DATE

189.00

80.00

182.00

416.00

100.00

181.00

306.00

326.00

1780.00



GEAR-150SEI JUN-1981

OYSTERCR STATION

| SPECIES                  | CUCN          |          | CQCD          |          | FKRD          |          | FKRN          |          | DBCD          |          | DBCN          |          | OYCD          |          | OYCN          |          | NUMBER TOTAL | PCT COMP |
|--------------------------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|--------------|----------|
|                          | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP |              |          |
| CRANGON SEPTEMPINOSA     | 35.00         | 29.91    | 4.00          | 0.93     | 16.00         | 0.65     | 22.00         | 20.00    | 1.00          | 0.07     | 46.00         | 20.26    | 0.00          | 0.00     | 11.00         | 8.59     | 135.00       | 1.99     |
| MENIDIA MENIDIA JUV      | 0.00          | 0.00     | 271.00        | 62.73    | 2300.00       | 93.99    | 1.00          | 0.91     | 96.00         | 6.26     | 0.00          | 0.00     | 1428.00       | 79.16    | 0.00          | 0.00     | 4096.00      | 60.25    |
| MENIDIA MENIDIA          | 3.00          | 2.56     | 101.00        | 23.38    | 1.00          | 0.04     | 21.00         | 19.09    | 1349.00       | 88.00    | 27.00         | 11.89    | 152.00        | 8.43     | 72.00         | 56.25    | 1726.00      | 25.39    |
| CALLINECTES SAPIDUS      | 54.00         | 46.15    | 12.00         | 2.78     | 9.00          | 0.37     | 15.00         | 13.64    | 23.00         | 1.50     | 21.00         | 9.25     | 41.00         | 2.27     | 17.00         | 13.28    | 192.00       | 2.82     |
| PALAEONETES SP.          | 5.00          | 4.27     | 13.00         | 3.01     | 29.00         | 1.19     | 12.00         | 10.91    | 5.00          | 0.33     | 51.00         | 22.47    | 12.00         | 0.67     | 9.00          | 7.03     | 136.00       | 2.00     |
| ANCHOA MITCHELLI         | 0.00          | 0.00     | 0.00          | 0.00     | 1.00          | 0.04     | 0.00          | 0.00     | 4.00          | 0.26     | 9.00          | 3.96     | 38.00         | 7.65     | 2.00          | 1.56     | 154.00       | 2.27     |
| APELTES QUADRACUS        | 6.00          | 0.00     | 3.00          | 0.69     | 64.00         | 2.62     | 12.00         | 10.91    | 1.00          | 0.07     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 80.00        | 1.18     |
| MUGIL CEPHALUS           | 0.00          | 0.00     | 0.00          | 0.00     | 1.00          | 0.04     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 1.00          | 0.78     | 2.00         | 0.03     |
| OPSANUS TAU              | 2.00          | 1.71     | 1.00          | 0.23     | 0.00          | 0.00     | 4.00          | 3.64     | 0.00          | 0.00     | 8.00          | 3.52     | 1.00          | 0.06     | 5.00          | 3.91     | 21.00        | 0.31     |
| FUNDULUS MAJALIS         | 0.00          | 0.00     | 3.00          | 0.69     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 3.00         | 0.04     |
| FUNDULUS HETEROCLITUS    | 2.00          | 1.71     | 5.00          | 1.16     | 3.00          | 0.12     | 5.00          | 4.55     | 0.00          | 0.00     | 10.00         | 4.41     | 1.00          | 0.06     | 0.00          | 0.00     | 26.00        | 0.38     |
| SYNGNATHUS FUSCUS        | 0.00          | 0.00     | 1.00          | 0.23     | 4.00          | 0.16     | 0.00          | 0.00     | 3.00          | 0.20     | 4.00          | 1.76     | 2.00          | 0.11     | 0.00          | 0.00     | 14.00        | 0.21     |
| PSEUDOPLEURONECTES AMERI | 12.00         | 10.26    | 1.00          | 0.23     | 1.00          | 0.04     | 4.00          | 3.64     | 1.00          | 0.07     | 17.00         | 7.49     | 0.00          | 0.00     | 0.00          | 0.00     | 36.00        | 0.53     |
| MENIDIA BERYLLINA        | 0.00          | 0.00     | 9.00          | 2.08     | 0.00          | 0.00     | 0.00          | 0.00     | 32.00         | 2.09     | 1.00          | 0.44     | 2.00          | 0.11     | 0.00          | 0.00     | 44.00        | 0.65     |
| OVALIPES OCELLATUS       | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 8.00          | 0.52     | 24.00         | 10.57    | 1.00          | 0.06     | 0.00          | 0.00     | 33.00        | 0.49     |
| GOBIOSOMA BOSCI          | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 2.00          | 0.11     | 0.00          | 0.00     | 2.00         | 0.03     |
| ALOSA AESTIVALIS         | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 3.00          | 0.20     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 3.00         | 0.04     |
| STRONGYLURA MARINA       | 1.00          | 0.85     | 3.00          | 0.69     | 4.00          | 0.16     | 0.00          | 0.00     | 2.00          | 0.13     | 0.00          | 0.00     | 19.00         | 1.05     | 1.00          | 0.78     | 30.00        | 0.44     |
| CYPRINODON VARIEGATUS    | 0.00          | 0.00     | 4.00          | 0.93     | 0.00          | 0.00     | 4.00          | 3.64     | 1.00          | 0.07     | 1.00          | 0.44     | 4.00          | 0.22     | 0.00          | 0.00     | 14.00        | 0.21     |
| ANGUILLA ROSTRATA        | 2.00          | 1.71     | 0.00          | 0.00     | 1.00          | 0.04     | 1.00          | 0.91     | 1.00          | 0.07     | 3.00          | 1.32     | 0.00          | 0.00     | 0.00          | 0.00     | 8.00         | 0.12     |
| LEIOSTOMUS XANTHURUS     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 1.00          | 0.44     | 0.00          | 0.00     | 0.00          | 0.00     | 1.00         | 0.01     |
| CHASMODES BOSQUIANUS     | 0.00          | 0.00     | 1.00          | 0.23     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 3.00          | 2.34     | 4.00         | 0.06     |
| LIBINIA DUBIA            | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 1.00          | 0.44     | 0.00          | 0.00     | 2.00          | 1.56     | 3.00         | 0.04     |
| PARALICHTHYS DENTATUS    | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 1.00          | 0.44     | 0.00          | 0.00     | 0.00          | 0.00     | 1.00         | 0.01     |
| TAUTOGA ONITIS           | 0.00          | 0.00     | 0.00          | 0.00     | 2.00          | 0.08     | 3.00          | 2.73     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 5.00         | 0.07     |
| TRINectes MACULATUS      | 1.00          | 0.85     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 1.00          | 0.06     | 4.00          | 3.12     | 6.00         | 0.09     |
| OTHER SPECIES            | 0.00          | 0.00     | 0.00          | 0.00     | 11.00         | 0.45     | 6.00          | 5.45     | 3.00          | 0.20     | 2.00          | 0.88     | 0.00          | 0.00     | 1.00          | 0.78     | 23.00        | 0.34     |

| STATION TOTAL AND DATE | 117.00 | 432.00 | 2447.00 | 110.00 | 1533.00 | 227.00 | 1804.00 | 128.00 | 6798.00 |
|------------------------|--------|--------|---------|--------|---------|--------|---------|--------|---------|
|------------------------|--------|--------|---------|--------|---------|--------|---------|--------|---------|

## STATION

| SPECIES                  | CDCN             |             | CDCD             |             | FKRD             |             | FKRN             |             | DBCD             |             | DBCN             |             | OYCD             |             | OYCN             |             | NUMBER<br>TOTAL | PCT<br>COMP |
|--------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                          | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |
| CRANGON SEPTEMPINOSA     | 4.00             | 6.45        | 1.00             | 0.76        | 0.00             | 0.00        | 13.00            | 16.88       | 1.00             | 0.90        | 5.00             | 6.33        | 0.00             | 0.00        | 0.00             | 0.00        | 24.00           | 2.71        |
| MENIDIA MENIDIA JUV      | 5.00             | 8.06        | 0.00             | 0.00        | 0.00             | 0.00        | 10.00            | 12.99       | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 39.00           | 4.41        |
| MENIDIA MENIDIA          | 2.00             | 3.23        | 50.00            | 37.88       | 35.00            | 29.41       | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 2.53        | 4.00             | 3.45        | 0.00             | 0.00        | 93.00           | 10.51       |
| CALLINECTES SAPIDUS      | 36.00            | 58.06       | 61.00            | 46.21       | 57.00            | 47.90       | 21.00            | 27.27       | 62.00            | 55.86       | 22.00            | 27.85       | 74.00            | 63.79       | 74.00            | 39.15       | 407.00          | 45.99       |
| PALAEOMETES SP.          | 2.00             | 3.23        | 2.00             | 1.52        | 0.00             | 0.00        | 4.00             | 5.19        | 0.00             | 0.00        | 7.00             | 8.86        | 0.00             | 0.00        | 1.00             | 0.53        | 16.00           | 1.81        |
| ANCHOA MITCHELLI         | 3.00             | 4.84        | 1.00             | 0.76        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 4.00            | 0.45        |
| MUGIL CEPHALUS           | 0.00             | 0.00        | 8.00             | 6.06        | 1.00             | 0.84        | 0.00             | 0.00        | 13.00            | 11.71       | 0.00             | 0.00        | 1.00             | 0.86        | 1.00             | 0.53        | 24.00           | 2.71        |
| OPSAHUS TAU              | 1.00             | 1.61        | 0.00             | 0.00        | 3.00             | 2.52        | 3.00             | 3.90        | 3.00             | 2.70        | 9.00             | 11.39       | 5.00             | 4.31        | 5.00             | 2.65        | 29.00           | 3.28        |
| FUNDULUS MAJALIS         | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 1.68        | 1.00             | 1.30        | 0.00             | 0.00        | 8.00             | 10.13       | 0.00             | 0.00        | 0.00             | 0.00        | 11.00           | 1.24        |
| FUNDULUS HETEROCLITUS    | 4.00             | 6.45        | 0.00             | 0.00        | 0.00             | 0.00        | 6.00             | 7.79        | 1.00             | 0.90        | 2.00             | 2.53        | 0.00             | 0.00        | 0.00             | 0.00        | 13.00           | 1.47        |
| SYNGNATHUS FUSCUS        | 0.00             | 0.00        | 1.00             | 0.76        | 8.00             | 6.72        | 7.00             | 9.09        | 0.00             | 0.00        | 1.00             | 1.27        | 3.00             | 2.59        | 0.00             | 0.00        | 20.00           | 2.26        |
| CARANX HIPPOS            | 0.00             | 0.00        | 1.00             | 0.76        | 0.00             | 0.00        | 0.00             | 0.00        | 5.00             | 4.50        | 1.00             | 1.27        | 15.00            | 12.93       | 66.00            | 34.92       | 88.00           | 9.94        |
| PSEUDOPLEURONECTES AMERI | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 7.00             | 6.31        | 7.00             | 8.86        | 0.00             | 0.00        | 0.00             | 0.00        | 14.00           | 1.58        |
| MENIDIA BERYLLINA        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00            | 0.23        |
| POMATOGUS SALTATRIX      | 1.00             | 1.61        | 5.00             | 3.79        | 4.00             | 3.36        | 0.00             | 0.00        | 5.00             | 4.50        | 1.00             | 1.27        | 3.00             | 2.59        | 0.00             | 0.00        | 19.00           | 2.15        |
| OVALIPES OCELLATUS       | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 6.00             | 7.59        | 0.00             | 0.00        | 0.00             | 0.00        | 6.00            | 0.68        |
| GOBIOSOMA BOSCI          | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.84        | 6.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00            | 0.11        |
| STRONGYLURA MARINA       | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 1.30        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00            | 0.11        |
| CYNOSCION REGALIS        | 1.00             | 1.61        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 2.60        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.86        | 7.00             | 3.70        | 11.00           | 1.24        |
| CYPRINODON VARIEGATUS    | 0.00             | 0.00        | 1.00             | 0.76        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00            | 0.11        |
| ANGUILLA ROSTRATA        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 1.30        | 1.00             | 0.90        | 1.00             | 1.27        | 4.00             | 3.45        | 1.00             | 0.53        | 8.00            | 0.90        |
| LEIOTOMUS XANTHURUS      | 2.00             | 3.23        | 0.00             | 0.00        | 4.00             | 3.36        | 0.00             | 0.00        | 3.00             | 2.70        | 3.00             | 3.80        | 4.00             | 3.45        | 5.00             | 2.65        | 21.00           | 2.37        |
| CHASMODES BOSQUIANUS     | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 1.30        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00            | 0.11        |
| NEOPANOPE TEXANA SAYI    | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 1.68        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 4.00            | 0.45        |
| LIBINIA DUBIA            | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.86        | 0.00             | 0.00        | 1.00            | 0.11        |
| FRACHTMOTUS FALCATUS     | 1.00             | 1.61        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00            | 0.11        |
| SPHEROIDES MACULATUS     | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.84        | 3.00             | 3.90        | 8.00             | 7.21        | 3.00             | 3.80        | 1.00             | 0.86        | 1.00             | 0.53        | 17.00           | 1.92        |
| TAUTOGA ONITES           | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.90        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00            | 0.11        |
| TRINECTES MACULATUS      | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 2.60        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 1.06        | 4.00            | 0.45        |
| OTHER SPECIES            | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.90        | 1.00             | 1.27        | 0.00             | 0.00        | 1.00             | 0.53        | 3.00            | 0.34        |

STATION TOTAL AND  
DATE

62.00

132.00

119.00

77.00

111.00

79.00

116.00

189.00

885.00

OYSTERC

GEAR-1505E1

AUG-1961

STATION

| SPECIES                  | COCN          |          | FKRD          |          | FKRN          |          | DRCD          |          | DBCN          |          | OYCD          |          | OYCN          |          | NUMBER TOTAL | PCT COMP |
|--------------------------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|--------------|----------|
|                          | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP |              |          |
| CRAIGON SEPTEMSPINOSA    | 6.00          | 35.29    | 0.00          | 0.00     | 4.00          | 4.08     | 0.00          | 0.00     | 2.00          | 1.89     | 0.00          | 0.00     | 0.00          | 0.00     | 16.00        | 2.18     |
| MENIDIA MENIDIA          | 3.00          | 17.65    | 1.00          | 1.69     | 3.00          | 3.06     | 71.00         | 51.45    | 8.00          | 7.55     | 3.00          | 2.10     | 16.00         | 12.60    | 118.00       | 16.05    |
| CALLINectes SAPIDIUS     | 3.00          | 17.65    | 20.00         | 33.90    | 46.00         | 46.94    | 19.00         | 13.77    | 6.00          | 5.66     | 71.00         | 49.65    | 35.00         | 27.56    | 227.00       | 30.88    |
| PALAEOMONES VULGARIS     | 0.00          | 0.00     | 0.00          | 0.00     | 1.00          | 1.02     | 2.00          | 1.45     | 8.00          | 7.55     | 0.00          | 0.00     | 0.00          | 0.00     | 11.00        | 1.50     |
| ANCHORA MITCHILLI        | 0.00          | 0.00     | 0.00          | 0.00     | 2.00          | 2.04     | 36.00         | 26.09    | 2.00          | 1.89     | 0.00          | 0.00     | 1.00          | 0.79     | 41.00        | 5.58     |
| KJGIL CEPHALUS           | 1.00          | 5.88     | 2.00          | 3.39     | 1.00          | 1.02     | 1.00          | 0.72     | 5.00          | 4.72     | 9.00          | 6.29     | 32.00         | 25.20    | 51.00        | 6.94     |
| OPSARIUS TAU             | 0.00          | 0.00     | 0.00          | 0.00     | 7.00          | 7.14     | 0.00          | 0.00     | 9.00          | 8.49     | 6.00          | 4.20     | 12.00         | 9.45     | 34.00        | 4.63     |
| FUNDULUS MAJALIS         | 0.00          | 0.00     | 0.00          | 0.00     | 1.00          | 1.02     | 1.00          | 0.72     | 9.00          | 8.49     | 0.00          | 0.00     | 0.00          | 0.00     | 11.00        | 1.50     |
| FUNDULUS HETEROCLEITUS   | 0.00          | 0.00     | 0.00          | 0.00     | 6.00          | 6.12     | 0.00          | 0.00     | 1.00          | 0.94     | 0.00          | 0.00     | 2.00          | 1.57     | 9.00         | 1.22     |
| SYNGRATHUS FUSCUS        | 1.00          | 5.88     | 1.00          | 1.69     | 1.00          | 1.02     | 1.00          | 0.72     | 4.00          | 3.77     | 0.00          | 0.00     | 0.00          | 0.00     | 9.00         | 1.22     |
| CARANX HIPPOS            | 0.00          | 0.00     | 0.00          | 0.00     | 1.00          | 1.02     | 0.00          | 0.00     | 0.00          | 0.00     | 6.00          | 4.20     | 7.00          | 5.51     | 14.00        | 1.90     |
| PSEUDOPLEUROPECTES AMERI | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 5.00          | 4.72     | 0.00          | 0.00     | 0.00          | 0.00     | 5.00         | 0.68     |
| POMATOMUS SALTATRIX      | 1.00          | 5.88     | 1.00          | 1.69     | 1.00          | 1.02     | 2.00          | 1.45     | 0.00          | 0.00     | 0.00          | 0.00     | 2.00          | 1.57     | 7.00         | 0.95     |
| OVALIPES OCELLATUS       | 0.00          | 0.00     | 11.00         | 18.64    | 0.00          | 0.00     | 2.00          | 1.45     | 7.00          | 6.60     | 0.00          | 0.00     | 0.00          | 0.00     | 21.00        | 2.86     |
| STRONGYLURA MARTINA      | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 2.00          | 1.40     | 0.00          | 0.00     | 3.00         | 0.41     |
| CYNOScion REGALIS        | 1.00          | 5.88     | 0.00          | 0.00     | 4.00          | 4.08     | 1.00          | 0.72     | 22.00         | 20.75    | 0.00          | 0.00     | 1.00          | 0.79     | 30.00        | 4.08     |
| PRIONOTUS EVOLANS        | 1.00          | 5.88     | 6.00          | 10.17    | 15.00         | 15.31    | 1.00          | 0.72     | 11.00         | 10.38    | 3.00          | 2.10     | 8.00          | 6.30     | 45.00        | 6.12     |
| ANGUILLA ROSTRATA        | 0.00          | 0.00     | 0.00          | 0.00     | 1.00          | 1.02     | 0.00          | 0.00     | 3.00          | 2.83     | 3.00          | 2.10     | 1.00          | 0.79     | 8.00         | 1.09     |
| LEIOSOMUS XANTHURUS      | 0.00          | 0.00     | 6.00          | 10.17    | 2.00          | 2.04     | 0.00          | 0.00     | 2.00          | 1.89     | 2.00          | 1.40     | 6.00          | 4.72     | 18.00        | 2.45     |
| TRACHINOTUS FALCATUS     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 1.00          | 0.94     | 17.00         | 11.89    | 0.00          | 0.00     | 18.00        | 2.45     |
| PHOERODES MACULATUS      | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 1.00          | 0.94     | 3.00          | 2.10     | 0.00          | 0.00     | 4.00         | 0.54     |
| TAUTOGA ORLIS            | 0.00          | 0.00     | 0.00          | 0.00     | 1.00          | 1.02     | 1.00          | 0.72     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 2.00         | 0.27     |
| OTHER SPECIES            | 0.00          | 0.00     | 11.00         | 18.64    | 1.00          | 1.02     | 0.00          | 0.00     | 0.00          | 0.00     | 18.00         | 12.59    | 3.00          | 2.36     | 33.00        | 4.49     |

STATION TOTAL AND DATE

17.00 47.00 59.00 98.00 138.00 106.00 143.00 127.00 735.00

## APPENDIX E: 12.2-m SEINE DATA

Appendix E is arranged by sampling date. The catch data are expressed as total specimens captured in two seine hauls at each station (NUMBER INDIVS) and percent composition (PCT COMP). The sampling stations are identified by the first three letters of the station code: CDC = Cedar Creek, FKR = Forked River, DBC = Double Creek, and OYC = Oyster Creek. The last letter of the station code denotes day samples (D) or night samples (N). The last (righthand) column in each data table contains the combined totals for all stations.

## STATION

CDCN      COCD      FKRD      FKRN      DBCD      DBCN      OYCD      OYCN

| SPECIES                  | CDCN             |             | COCD             |             | FKRD             |             | FKRN             |             | DBCD             |             | DBCN             |             | OYCD             |             | OYCN             |             |
|--------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|
|                          | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |
| CRANGON SEPTemspINOSA    | 275.00           | 50.18       | 15.00            | 13.39       | 1.00             | 0.36        | 89.00            | 40.09       | 3.00             | 0.50        | 49.00            | 5.94        | 0.00             | 0.00        | 161.00           | 60.75       |
| MENIDIA MENIDIA          | 2.00             | 0.36        | 71.00            | 63.39       | 237.00           | 84.34       | 9.00             | 4.05        | 179.00           | 29.78       | 29.00            | 3.52        | 21.00            | 60.00       | 1.00             | 0.38        |
| ANCHOVA MITCHILLI        | 206.00           | 37.59       | 6.00             | 5.36        | 16.00            | 5.69        | 50.00            | 22.52       | 387.00           | 64.39       | 659.00           | 79.88       | 3.00             | 8.57        | 25.00            | 9.43        |
| PALAEONETES VULGARIS     | 12.00            | 2.19        | 0.00             | 0.00        | 0.00             | 0.00        | 34.00            | 15.32       | 6.00             | 1.00        | 58.00            | 7.03        | 0.00             | 0.00        | 15.00            | 5.66        |
| APELLIES QUADRACUS       | 1.00             | 0.18        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.17        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| CALLINectes Sapidus      | 26.00            | 4.74        | 6.00             | 5.36        | 6.00             | 2.14        | 21.00            | 9.46        | 16.00            | 2.66        | 17.00            | 1.45        | 6.00             | 17.14       | 37.00            | 13.96       |
| FUNDULUS Heteroclitus    | 5.00             | 0.91        | 0.00             | 0.00        | 6.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.17        |
| SYNGNATHUS FUSCUS        | 2.00             | 0.36        | 1.00             | 0.89        | 1.00             | 0.36        | 0.00             | 0.00        | 2.00             | 0.33        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| FUNDULUS MAJALIS         | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.17        | 2.00             | 0.24        | 1.00             | 2.86        | 0.00             | 0.00        |
| Gobiosoma bosci          | 17.00            | 3.10        | 9.00             | 8.04        | 7.00             | 2.49        | 6.00             | 2.70        | 2.00             | 0.33        | 2.00             | 0.24        | 0.00             | 0.00        | 10.00            | 3.77        |
| MENIDIA BERYLLINA        | 0.00             | 0.00        | 2.00             | 1.79        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.31        |
| HIPPOLYTE SP             | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 0.07        |
| MUGIL CEPHALUS           | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.36        | 0.00             | 0.00        | 1.00             | 0.17        | 5.00             | 0.61        | 2.00             | 5.71        | 0.00             | 0.00        |
| STRONGYLURA MARINA       | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 0.71        | 1.00             | 0.45        | 0.00             | 0.00        | 4.00             | 0.48        | 0.00             | 0.00        | 8.00             | 3.02        |
| FAMILY XANTHIDAE JUV.    | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.17        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| LUCANIA PARVA            | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 2.86        | 0.00             | 0.00        |
| OPSAIUS TAU              | 0.00             | 0.00        | 1.00             | 0.89        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.38        |
| POMATIUS SALTATRIX       | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 0.33        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| PSEUDOPLEURONECTES AMERI | 1.00             | 0.18        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.03             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| TRACHINOTUS FALCATUS     | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 0.71        | 6.00             | 2.70        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 2.86        | 0.00             | 0.00        |
| PRIONOTUS EVOLANS        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.38        |
| MEMBRAS MARTINICA        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 0.71        | 5.00             | 2.25        | 0.00             | 0.00        | 2.00             | 0.24        | 0.00             | 0.00        | 0.00             | 0.00        |
| CHASMODES BOSQUIANUS     | 1.00             | 0.18        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 3.00             | 1.13        |
| ANCHOVA HEPESETUS        | 0.00             | 0.00        | 0.00             | 0.00        | 6.00             | 2.14        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| OTHER SPECIES            | 0.00             | 0.00        | 1.00             | 0.89        | 0.00             | 0.00        | 1.00             | 0.45        | 0.00             | 0.00        | 3.00             | 0.36        | 0.00             | 0.00        | 1.00             | 0.38        |

STATION TOTAL AND  
DATE

548.00

112.00

281.00

222.00

601.00

825.00

35.00

265.00

2889.00



OYSTERC

GEAR-40 SEI

OCT-1900

| STATION                  | CDCN             |             | CDCD             |             | FKRD             |             | FKRN             |             | DBCD             |             | DBCN             |             | OYCD             |             | OYCN             |             |         |
|--------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|---------|
|                          | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |         |
| MENIDIA MENIDIA JUV      | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 1.35        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |         |
| CRANGON SEPTEMSPINOSA    | 926.00           | 81.23       | 316.00           | 61.48       | 42.00            | 35.90       | 506.00           | 63.41       | 17.00            | 11.49       | 1759.00          | 84.85       | 4.00             | 5.26        | 157.00           | 53.77       |         |
| CRANGON SEPTEMSPIN JUV   | 0.00             | 0.00        | 163.00           | 31.71       | 0.00             | 0.00        | 0.00             | 0.00        | 6.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |         |
| MENIDIA MENIDIA          | 87.00            | 7.63        | 0.00             | 0.00        | 52.00            | 44.44       | 186.00           | 23.31       | 6.00             | 4.05        | 39.00            | 1.88        | 0.00             | 0.00        | 0.00             | 0.00        |         |
| PALAEOMETES VULGARIS     | 8.00             | 0.70        | 12.00            | 2.33        | 5.00             | 4.27        | 24.00            | 3.01        | 29.00            | 19.59       | 46.00            | 2.22        | 2.00             | 2.63        | 12.00            | 4.11        |         |
| APELTES QUADRACUS        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.85        | 1.00             | 0.13        | 18.00            | 12.16       | 6.00             | 0.29        | 0.00             | 0.00        | 0.00             | 0.00        |         |
| CALLINECTES SAPIDUS      | 68.00            | 5.96        | 9.00             | 1.75        | 11.00            | 9.40        | 34.00            | 4.26        | 3.00             | 2.03        | 85.00            | 4.10        | 41.00            | 53.95       | 87.00            | 29.79       |         |
| FUNDULUS HETEROCLITUS    | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 0.25        | 2.00             | 1.35        | 48.00            | 2.32        | 0.00             | 0.00        | 0.00             | 0.00        |         |
| SYNGNATHUS FUSCUS        | 2.00             | 0.18        | 3.00             | 0.58        | 2.00             | 1.71        | 0.00             | 0.00        | 1.00             | 0.68        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |         |
| FUNDULUS MAJALIS         | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.13        | 1.00             | 0.68        | 10.00            | 0.48        | 0.00             | 0.00        | 1.00             | 0.34        |         |
| GOBIOSOMA BOSCI          | 46.00            | 4.04        | 5.00             | 0.97        | 0.00             | 0.00        | 8.00             | 1.00        | 0.00             | 0.00        | 16.00            | 0.77        | 1.00             | 1.32        | 14.00            | 4.79        |         |
| MENIDIA BERYLLINA        | 1.00             | 0.09        | 0.00             | 0.00        | 1.00             | 0.85        | 3.00             | 0.38        | 41.00            | 27.70       | 17.00            | 0.82        | 0.00             | 0.00        | 2.00             | 0.68        |         |
| HIPPOLYTE SP             | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 14.00            | 1.75        | 24.00            | 16.22       | 6.00             | 0.29        | 0.00             | 0.00        | 0.00             | 0.00        |         |
| MUGIL CEPHALUS           | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.13        | 0.00             | 0.00        | 0.00             | 0.00        | 3.00             | 3.95        | 0.00             | 0.08        |         |
| CYPRINODON VARIEGATUS    | 1.00             | 0.09        | 0.00             | 0.00        | 0.00             | 0.00        | 5.00             | 0.63        | 2.00             | 1.35        | 14.00            | 0.68        | 0.00             | 0.00        | 13.00            | 4.45        |         |
| FAMILY XANTHIDAE JUV.    | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 1.71        | 11.00            | 1.38        | 0.00             | 0.00        | 6.00             | 0.29        | 0.00             | 0.00        | 0.00             | 0.37        |         |
| LUCANIA PARVA            | 0.00             | 0.00        | 6.00             | 1.17        | 1.00             | 0.85        | 0.00             | 0.00        | 2.00             | 1.35        | 18.00            | 0.87        | 0.00             | 0.00        | 0.00             | 0.52        |         |
| OPSANUS TAU              | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.13        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.02        |         |
| PSEUDOPLEURONECTES AMERI | 1.00             | 0.09        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.02        |         |
| TRACHINOTUS FALCATUS     | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 5.00             | 6.58        | 4.00             | 1.37        |         |
| BREVORTIA TYRANNUS JUV   | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 14.00            | 18.42       | 0.00             | 0.00        |         |
| MEMBRAS MARTINICA        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 1.32        | 0.00             | 0.00        |         |
| CHASMODES BOSQUIANUS     | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.02        |         |
| OTHER SPECIES            | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.13        | 0.00             | 0.00        | 3.00             | 0.14        | 5.00             | 6.58        | 1.00             | 0.34        |         |
| STATION TOTAL AND DATE   | 1140.00          |             | 514.00           |             | 117.00           |             | 798.00           |             | 148.00           |             | 2373.00          |             | 76.00            |             | 292.00           |             | 5158.00 |



OYSTERCR

GEAR-40 SEI

NOV-1980

STATION

| SPECIES                  | CDCN             |             | CDCD             |             | FKRD             |             | FKRN             |             | DBGD             |             | DBCN             |             | OYCD             |             | OYCN             |             |
|--------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|
|                          | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |
| MENIDIA MENIDIA JUV      | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 11.00            | 2.15        | 34.00            | 8.35        |
| CRANGON SEPTEMSPINOSA    | 383.00           | 60.51       | 373.00           | 94.19       | 31.00            | 63.27       | 214.00           | 47.35       | 92.00            | 42.20       | 356.00           | 57.42       | 84.00            | 16.44       | 148.00           | 36.36       |
| CRANGON SEPTEMSPIN JUV   | 0.00             | 0.00        | 2.00             | 0.51        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| MENIDIA MENIDIA          | 0.00             | 0.00        | 3.00             | 0.76        | 12.00            | 24.49       | 0.00             | 0.00        | 9.00             | 4.13        | 1.00             | 0.16        | 304.00           | 59.49       | 127.00           | 31.20       |
| PALAEONETES VULGARTS     | 181.00           | 28.59       | 6.00             | 1.52        | 2.00             | 4.08        | 193.00           | 42.70       | 14.00            | 6.42        | 157.00           | 25.32       | 28.00            | 5.48        | 31.00            | 7.62        |
| APELITES QUADRACUS       | 56.00            | 8.85        | 8.00             | 2.02        | 3.00             | 6.12        | 20.00            | 4.42        | 89.00            | 40.83       | 70.00            | 11.29       | 12.00            | 2.35        | 26.00            | 6.39        |
| CALLINECTES SAPIDUS      | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 0.92        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 0.49        |
| FUNDULUS HETEROCLITUS    | 3.00             | 0.47        | 0.00             | 0.00        | 0.00             | 0.00        | 17.00            | 3.76        | 1.00             | 0.46        | 10.00            | 1.61        | 2.00             | 0.39        | 9.00             | 2.21        |
| FUNDULUS MAJALIS         | 2.00             | 0.32        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 0.44        | 0.00             | 0.00        | 12.00            | 1.94        | 1.00             | 0.20        | 5.00             | 1.23        |
| GORTOSOMA BOSCI          | 1.00             | 0.16        | 2.00             | 0.51        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 0.92        | 1.00             | 0.16        | 63.00            | 12.33       | 17.00            | 4.18        |
| MENIDIA BERYLLINA        | 1.00             | 0.16        | 0.00             | 0.00        | 1.00             | 2.04        | 1.00             | 0.22        | 0.00             | 0.00        | 6.00             | 0.97        | 1.00             | 0.20        | 1.00             | 0.25        |
| HIPPOLYTE SP             | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.16        | 1.00             | 0.20        | 0.00             | 0.00        |
| CYPRINODON VARIEGATUS    | 3.00             | 0.47        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 0.92        | 2.00             | 0.32        | 0.00             | 0.00        | 1.00             | 0.25        |
| FAMILY XANHIDAE JUV.     | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.46        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| ANGUILLA ROSTRATA        | 2.00             | 0.32        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.22        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| LUCANIA PARVA            | 1.00             | 0.16        | 2.00             | 0.51        | 0.00             | 0.00        | 0.00             | 0.00        | 6.00             | 2.75        | 4.00             | 0.65        | 1.00             | 0.20        | 0.00             | 0.00        |
| PSEUDOPLEURONECTES AMERI | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 0.39        | 0.00             | 0.00        |
| AMBLYPTES AMERICANUS     | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 4.00             | 0.88        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| OTHER SPECIES            | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.20        | 6.00             | 1.47        |

STATION TOTAL AND  
DATE

633.00 396.00 49.00 452.00 218.00 620.00 511.00 407.00 3286.00

OYSTERC

GEAR-40 SEI

DEC-1980

STATION

| SPECIES               | CUCN             |             | CUCD             |             | FKRD             |             | FKRN             |             | DRCD             |             | DRCN             |             | OYCD             |             | OYCN             |             |
|-----------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|
|                       | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |
| MENIDIA MENIDIA JUV   | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 0.09        |
| CRABGON SEPTEMPINDOSA | 2066.00          | 98.15       | 133.00           | 95.00       | 106.00           | 75.18       | 2096.00          | 82.04       | 25.00            | 78.12       | 1226.00          | 82.12       | 147.00           | 43.36       | 1531.00          | 67.62       |
| MENIDIA MENIDIA       | 2.00             | 0.10        | 0.00             | 0.00        | 26.00            | 18.44       | 1.00             | 0.04        | 3.00             | 9.37        | 18.00            | 1.21        | 170.00           | 50.15       | 423.00           | 18.68       |
| ANCHOA MITCHELLI      | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 50.00            | 2.21        |
| PALAEOMETES VULGARIS  | 9.00             | 0.43        | 2.00             | 1.43        | 7.00             | 4.96        | 396.00           | 15.50       | 1.00             | 3.12        | 17.00            | 1.14        | 2.00             | 0.59        | 80.00            | 3.53        |
| APELLES QUADRACUS     | 15.00            | 0.71        | 4.00             | 2.86        | 0.00             | 0.00        | 46.00            | 1.80        | 1.00             | 3.12        | 189.00           | 12.66       | 15.00            | 4.42        | 98.00            | 4.33        |
| CALLINECTES SAPIDUS   | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 8.00             | 0.35        |
| FUNDULUS HETEROCLITUS | 1.00             | 0.05        | 1.00             | 0.71        | 0.00             | 0.00        | 3.00             | 0.12        | 0.00             | 0.00        | 13.00            | 0.87        | 0.00             | 0.00        | 15.00            | 0.66        |
| SYNGNATHUS FUSCUS     | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.07        | 0.00             | 0.00        | 0.00             | 0.00        |
| FUNDULUS MAJALIS      | 2.00             | 0.10        | 0.00             | 0.00        | 0.00             | 0.00        | 10.00            | 0.39        | 0.00             | 0.00        | 18.00            | 1.21        | 0.00             | 0.00        | 16.00            | 0.71        |
| GOBIOSOMA BOSCI       | 1.00             | 0.05        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 3.12        | 3.00             | 0.20        | 3.00             | 0.88        | 7.00             | 0.31        |
| MENIDIA BERYLLINA     | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.07        | 0.00             | 0.00        | 1.00             | 0.04        |
| HIPPOLYTE SP          | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 0.13        | 0.00             | 0.00        | 3.00             | 0.13        |
| CYPRINODON VARIEGATUS | 3.00             | 0.14        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 3.12        | 4.00             | 0.27        | 1.00             | 0.29        | 1.00             | 0.04        |
| FAMILY XANTHIDAE JUV. | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.01        |
| ANGUILLA ROSTRATA     | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 20.00            | 0.88        |
| LUCANIA PARVA         | 6.00             | 0.29        | 0.00             | 0.00        | 1.00             | 0.71        | 3.00             | 0.12        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 4.00             | 0.18        |
| AMMODYTES AMERICANUS  | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.71        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.07        | 1.00             | 0.29        | 2.00             | 0.09        |
| OTHER SPECIES         | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 0.09        |

STATION TOTAL AND DATE

2105.00

140.00

141.00

2555.00

32.00

1493.00

339.00

2264.00

9069.00

JAN-1981

GEAR-40 SEI

OYSTERCR

STATION

| SPECIES                   | FKRD             |              | FKRN             |             | OYCD             |             | OYCN             |             | NUMBER<br>TOTAL | PCT<br>COMP |
|---------------------------|------------------|--------------|------------------|-------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>/COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |
| CRANGON SEPTemspINDOSA    | 16.00            | 76.19        | 300.00           | 31.32       | 2.00             | 16.67       | 177.00           | 95.16       | 495.00          | 42.06       |
| CRANGON SEPTemspIN JUV    | 0.00             | 0.00         | 613.00           | 63.99       | 0.00             | 0.00        | 0.00             | 0.00        | 613.00          | 52.08       |
| MENIDIA MENIDIA           | 2.00             | 9.52         | 0.00             | 0.00        | 5.00             | 41.67       | 0.00             | 0.00        | 7.00            | 0.59        |
| PALAEOMETES VULGARIS      | 0.00             | 0.00         | 18.00            | 1.88        | 0.00             | 0.00        | 0.00             | 0.00        | 18.00           | 1.53        |
| APELTES QUADRACUS         | 1.00             | 4.76         | 24.00            | 2.51        | 5.00             | 41.67       | 5.00             | 2.69        | 35.00           | 2.97        |
| FUNDULUS HETEROCLITUS     | 0.00             | 0.00         | 1.00             | 0.10        | 0.00             | 0.00        | 3.00             | 1.61        | 4.00            | 0.34        |
| FUNDULUS MAJALIS          | 0.00             | 0.00         | 1.00             | 0.10        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00            | 0.08        |
| MENIDIA BERYLLINA         | 2.00             | 9.52         | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.54        | 3.00            | 0.25        |
| AMMODYTES AMERICANUS      | 0.00             | 0.00         | 1.00             | 0.10        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00            | 0.08        |
| STATION TOTAL AND<br>DATE | 21.00            |              | 958.00           |             | 12.00            |             | 186.00           |             | 1177.00         |             |

DATE GROUPING

JAN-1981 7 JAN 81 TO 28 JAN 81

FEB-1981

GEAR-40 SEI

OYSTERCR

STATION

| SPECIES                | CDCN             |             | CDCD             |             | FKRD             |             | FKRN             |             | DBCD             |             | DBCN             |             | OYCD             |             | OYCN             |             |
|------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|
|                        | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |
| CRANGON SEPTEMSPINOSA  | 1660.00          | 98.22       | 42.00            | 68.85       | 34.00            | 66.67       | 121.00           | 26.95       | 36.00            | 9.00        | 421.00           | 47.25       | 134.00           | 35.26       | 745.00           | 46.13       |
| CRANGON SEPTEMSPIN JUV | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 291.00           | 64.81       | 287.00           | 71.75       | 229.00           | 25.70       | 0.00             | 0.00        | 298.00           | 18.45       |
| MENIDIA MENIDIA        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 4.00             | 0.89        | 49.00            | 12.25       | 2.00             | 0.22        | 134.00           | 35.26       | 457.00           | 28.30       |
| PALAEMONETES VULGARIS  | 3.00             | 0.18        | 1.00             | 1.64        | 6.00             | 11.76       | 2.00             | 0.45        | 15.00            | 3.75        | 42.00            | 4.71        | 4.00             | 1.05        | 18.00            | 1.11        |
| APELTES QUADRACUS      | 23.00            | 1.36        | 10.00            | 16.39       | 6.00             | 11.76       | 9.00             | 2.00        | 5.00             | 1.25        | 154.00           | 17.28       | 7.00             | 1.84        | 33.00            | 2.04        |
| CALLINECTES SAPTIDUS   | 0.00             | 0.00        | 4.00             | 6.56        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 15.00            | 0.93        |
| FUNDULUS HETEROCLITUS  | 1.00             | 0.06        | 2.00             | 3.28        | 5.00             | 9.80        | 20.00            | 4.45        | 0.00             | 0.00        | 20.00            | 2.24        | 18.00            | 4.74        | 12.00            | 0.74        |
| FUNDULUS MAJALIS       | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 20.00            | 2.24        | 52.00            | 13.68       | 22.00            | 1.36        |
| GOBIOSOMA BOSCI        | 1.00             | 0.06        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.02        |
| MENIDIA BERYLLINA      | 1.00             | 0.06        | 2.00             | 3.28        | 0.00             | 0.00        | 0.00             | 0.00        | 4.00             | 1.00        | 0.00             | 0.00        | 22.00            | 5.79        | 4.00             | 0.25        |
| HIPPOLYTE SP           | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.25        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| CYPRINODON VARIEGATUS  | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 0.22        | 8.00             | 2.11        | 1.00             | 0.06        |
| FAMILY XANTHIDAE JUV.  | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 0.45        | 2.00             | 0.50        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.06        |
| ANGUILLA ROSTRATA      | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 6.00             | 0.37        |
| PSEUDOPLEUROCTES AMERI | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.11        | 0.00             | 0.00        | 0.00             | 0.00        |
| CHASMODES BOSQUIANUS   | 1.00             | 0.06        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.25        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| OTHER SPECIES          | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.26        | 3.00             | 0.19        |

| STATION TOTAL AND DATE | 1690.00 | 61.00 | 51.00 | 449.00 | 400.00 | 891.00 | 380.00 | 1615.00 | 5537.00 |
|------------------------|---------|-------|-------|--------|--------|--------|--------|---------|---------|
|------------------------|---------|-------|-------|--------|--------|--------|--------|---------|---------|

OYSTERC

GEAR-40 SEI

MAR-1981

## STATION

| SPECIES                   | CDCN             |             | CDCD             |             | FKRD             |             | FKRN             |             | DBCD             |             | DBCN             |             | OYCD             |             | OYCN             |             | NUMBER<br>TOTAL | PCT<br>COMP |
|---------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |
| CRANGON SEPTEMSPINOSA     | 302.00           | 41.14       | 60.00            | 25.53       | 21.00            | 48.84       | 158.00           | 19.27       | 46.00            | 22.22       | 194.00           | 17.60       | 84.00            | 20.74       | 160.00           | 32.59       | 1025.00         | 25.39       |
| CRANGON SEPTEMSPIN JUV    | 358.00           | 48.77       | 153.00           | 65.11       | 0.00             | 0.00        | 478.00           | 58.29       | 155.00           | 74.88       | 743.00           | 67.42       | 311.00           | 76.79       | 223.00           | 45.42       | 2421.00         | 59.97       |
| MENIDIA MENIDIA           | 20.00            | 2.72        | 0.00             | 0.00        | 17.00            | 39.53       | 0.00             | 0.00        | 0.00             | 0.00        | 75.00            | 6.81        | 9.00             | 2.22        | 5.00             | 1.02        | 126.00          | 3.12        |
| PALAEOMETES SP.           | 20.00            | 2.72        | 1.00             | 0.43        | 3.00             | 6.98        | 70.00            | 8.54        | 1.00             | 0.48        | 30.00            | 2.72        | 0.00             | 0.00        | 24.00            | 4.89        | 149.00          | 3.69        |
| APELITES QUADRACUS        | 21.00            | 2.86        | 20.00            | 8.51        | 1.00             | 2.33        | 99.00            | 12.07       | 5.00             | 2.42        | 45.00            | 4.08        | 0.00             | 0.00        | 32.00            | 6.52        | 223.00          | 5.52        |
| CALLINectes SAPIDUS       | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.20        | 1.00            | 0.02        |
| FUNDULUS HETEROCLITUS     | 2.00             | 0.27        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 7.00             | 0.64        | 1.00             | 0.25        | 5.00             | 1.02        | 15.00           | 0.37        |
| SYNGNATHUS FUSCUS         | 1.00             | 0.14        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.09        | 0.00             | 0.00        | 1.00             | 0.20        | 3.00            | 0.07        |
| FUNDULUS MAJALIS          | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 2.33        | 13.00            | 1.59        | 0.00             | 0.00        | 1.00             | 0.09        | 0.00             | 0.00        | 0.00             | 0.00        | 18.00           | 0.45        |
| MENIDIA BERYLLINA         | 6.00             | 0.82        | 1.00             | 0.43        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 7.00            | 0.17        |
| CYPRINODON VARIEGATUS     | 2.00             | 0.27        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.20        | 34.00           | 0.07        |
| ANGUILLA ROSTRATA         | 2.00             | 0.27        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.12        | 0.00             | 0.00        | 6.00             | 0.54        | 0.00             | 0.00        | 25.00            | 5.09        | 34.00           | 0.84        |
| AMHODYTES AMERICANUS      | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.12        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 4.00             | 0.81        | 5.00            | 0.12        |
| OTHER SPECIES             | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 7.00             | 1.43        | 7.00            | 0.17        |
| STATION TOTAL AND<br>DATE | 734.00           |             | 235.00           |             | 43.00            |             | 820.00           |             | 207.00           |             | 1102.00          |             | 405.00           |             | 491.00           |             | 4037.00         |             |

OYSTERCR

GEAR-40 SEI

APR-1987

STATION

| SPECIES                | CDCN             |             | CQCD             |             | FKRD             |             | FKRN             |             | DBCD             |             | DBCN             |             | OYCD             |             | OYCN             |             | NUMBER TOTAL | PCT COMP |
|------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|--------------|----------|
|                        | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |              |          |
| CRANGON SEPTEMSPINOSA  | 85.00            | 14.36       | 14.00            | 63.64       | 12.00            | 6.35        | 101.00           | 17.94       | 77.00            | 7.86        | 112.00           | 3.80        | 73.00            | 20.08       | 234.00           | 14.42       | 708.00       | 9.74     |
| CRANGON SEPTEMSPIN JUV | 232.00           | 39.19       | 0.00             | 0.00        | 0.00             | 0.00        | 280.00           | 49.73       | 0.00             | 0.00        | 2121.00          | 72.00       | 0.00             | 0.00        | 1142.00          | 70.36       | 3775.00      | 51.95    |
| MERIDIA MERIDIA        | 15.00            | 2.53        | 1.00             | 4.55        | 31.00            | 16.40       | 52.00            | 9.24        | 546.00           | 55.71       | 0.00             | 0.00        | 106.00           | 30.20       | 0.30             | 0.00        | 751.00       | 10.34    |
| PALAEONETES SP.        | 70.00            | 11.82       | 2.00             | 9.09        | 0.00             | 0.00        | 96.00            | 17.05       | 12.00            | 1.22        | 123.00           | 4.18        | 83.00            | 23.65       | 66.00            | 4.07        | 452.00       | 6.22     |
| APELLETES QUADRATUS    | 95.00            | 16.05       | 2.00             | 9.09        | 3.00             | 1.59        | 4.00             | 0.71        | 21.00            | 2.14        | 217.00           | 7.37        | 36.00            | 10.26       | 28.00            | 1.73        | 406.00       | 5.59     |
| CALLINECTES SAPIDUS    | 62.00            | 10.47       | 1.00             | 4.55        | 4.00             | 2.12        | 6.00             | 1.07        | 7.00             | 0.71        | 128.00           | 4.34        | 13.00            | 3.70        | 94.00            | 5.79        | 315.00       | 4.34     |
| FUNDULUS HETEROCLITUS  | 6.00             | 1.01        | 0.00             | 0.00        | 130.00           | 68.78       | 10.00            | 1.78        | 159.00           | 16.22       | 157.00           | 5.33        | 17.00            | 4.84        | 6.00             | 0.37        | 485.00       | 6.67     |
| SYNGNATHUS FUSCUS      | 3.00             | 0.51        | 0.00             | 0.00        | 1.00             | 0.53        | 4.00             | 0.71        | 1.00             | 0.10        | 2.00             | 0.07        | 0.00             | 0.00        | 1.00             | 0.06        | 12.00        | 0.17     |
| FUNDULUS MAJALIS       | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.53        | 6.00             | 1.07        | 24.00            | 2.45        | 5.00             | 0.17        | 4.00             | 1.14        | 0.00             | 0.00        | 40.00        | 0.55     |
| GORTOSOMA BOSCI        | 1.00             | 0.17        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 7.00         | 0.10     |
| MERIDIA BERYLLINA      | 11.00            | 1.86        | 2.00             | 9.09        | 0.00             | 0.00        | 1.00             | 0.18        | 11.00            | 1.12        | 2.00             | 0.07        | 0.00             | 0.00        | 1.00             | 0.06        | 28.00        | 0.39     |
| HIPPOLYTE SP           | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.10        | 39.00            | 1.32        | 0.00             | 0.00        | 0.00             | 0.00        | 40.00        | 0.55     |
| MUGIL CEPHALUS         | 6.00             | 1.01        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.18        | 61.00            | 6.22        | 0.00             | 0.00        | 4.00             | 1.14        | 16.00            | 0.99        | 88.00        | 1.21     |
| OVALIPES OCELLATUS     | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.53        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00         | 0.01     |
| CYPRINODON VARIEGATUS  | 1.00             | 0.17        | 0.00             | 0.00        | 3.00             | 1.59        | 0.00             | 0.00        | 11.00            | 1.12        | 14.00            | 0.48        | 5.00             | 1.42        | 7.00             | 0.43        | 41.00        | 0.56     |
| FAMILY XANTHIDAE JUV.  | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 41.00            | 4.18        | 25.00            | 0.85        | 2.00             | 0.57        | 4.00             | 0.25        | 72.00        | 0.99     |
| ANGUILLA ROSTRATA      | 2.00             | 0.34        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.18        | 4.00             | 0.41        | 0.00             | 0.00        | 3.00             | 0.85        | 15.00            | 0.92        | 25.00        | 0.34     |
| LUCANIA PARVA          | 2.00             | 0.34        | 0.00             | 0.00        | 1.00             | 0.53        | 0.00             | 0.00        | 1.00             | 0.10        | 1.00             | 0.03        | 2.00             | 0.57        | 2.00             | 0.12        | 9.00         | 0.12     |
| PSEUDOPLEUROCTES AMERI | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 0.57        | 1.00             | 0.06        | 3.00         | 0.04     |
| LIBINIA DUBIA          | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.53        | 0.00             | 0.00        | 2.00             | 0.20        | 0.00             | 0.00        | 1.00             | 0.28        | 0.00             | 0.00        | 4.00         | 0.06     |
| OTHER SPECIES          | 1.00             | 0.17        | 0.00             | 0.00        | 1.00             | 0.53        | 1.00             | 0.18        | 1.00             | 0.10        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 4.00         | 0.06     |

| STATION DATE | TOTAL   | ANC     | TOTAL  | ANC     |
|--------------|---------|---------|--------|---------|
|              | 592.00  | 22.00   | 189.00 | 563.00  |
|              | 980.00  | 2946.00 | 351.00 | 1623.00 |
|              | 7266.00 |         |        |         |



STATION

| SPECIES                | CDCN          |          | CDCD          |          | FKPD          |          | FKRN          |          | DBCD          |          | DBCN          |          | OYCD          |          | OYCN          |          | NUMBER TOTAL | PCT COMP |
|------------------------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|--------------|----------|
|                        | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP |              |          |
| CRANGON SEPTENSPINOSA  | 45.00         | 46.87    | 2.00          | 10.53    | 36.00         | 24.32    | 148.00        | 20.79    | 25.00         | 24.75    | 98.00         | 23.96    | 11.00         | 25.58    | 149.00        | 22.24    | 514.00       | 23.38    |
| CRANGON SEPTENSPIN JUV | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 415.00        | 58.29    | 0.00          | 0.00     | 118.00        | 28.85    | 0.00          | 0.00     | 371.00        | 55.37    | 904.00       | 41.13    |
| MENIDIA MENIDIA        | 7.00          | 7.29     | 1.00          | 5.26     | 57.00         | 38.51    | 4.00          | 0.56     | 36.00         | 35.64    | 3.00          | 0.73     | 0.00          | 0.00     | 23.00         | 3.43     | 131.00       | 5.96     |
| ANCHOA MITCHILLI       | 1.00          | 1.04     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 1.00          | 0.15     | 2.00         | 0.09     |
| PALAEEMONETES SP.      | 37.00         | 38.54    | 12.00         | 63.16    | 15.00         | 10.14    | 103.00        | 14.47    | 11.00         | 10.89    | 152.00        | 37.16    | 12.00         | 27.91    | 69.00         | 10.30    | 411.00       | 18.70    |
| APELITES QUADRACUS     | 1.00          | 1.04     | 2.00          | 10.53    | 5.00          | 3.38     | 4.00          | 0.56     | 2.00          | 1.98     | 1.00          | 0.24     | 1.00          | 2.33     | 3.00          | 0.45     | 19.00        | 0.86     |
| CALLINECTES SAPIIDUS   | 3.00          | 3.12     | 0.00          | 0.00     | 3.00          | 2.03     | 3.00          | 0.42     | 2.00          | 1.98     | 8.00          | 1.96     | 0.00          | 0.00     | 21.00         | 3.13     | 40.00        | 1.82     |
| FUNDULUS HETEROCLITUS  | 1.00          | 1.04     | 2.00          | 10.53    | 4.00          | 2.70     | 12.00         | 1.69     | 4.00          | 3.96     | 10.00         | 2.44     | 3.00          | 6.98     | 4.00          | 0.60     | 40.00        | 1.82     |
| SYNGNATHUS FUSCUS      | 0.00          | 0.00     | 0.00          | 0.00     | 4.00          | 2.70     | 5.00          | 0.70     | 0.00          | 0.00     | 4.00          | 0.98     | 4.00          | 9.30     | 11.00         | 1.64     | 28.00        | 1.27     |
| FUNDULUS MAJALIS       | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 3.00          | 0.42     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 3.00         | 0.14     |
| GOBIOSOMA BOSCI        | 0.00          | 0.00     | 0.00          | 0.00     | 1.00          | 0.68     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 3.00          | 0.45     | 4.00         | 0.18     |
| MENIDIA BERYLLINA      | 0.00          | 0.00     | 0.00          | 0.00     | 1.00          | 0.68     | 2.00          | 0.28     | 8.00          | 7.92     | 0.00          | 0.00     | 6.00          | 13.95    | 1.00          | 0.15     | 18.00        | 0.82     |
| HIPPOLYTE SP           | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 7.00          | 1.71     | 0.00          | 0.00     | 0.00          | 0.00     | 7.00         | 0.32     |
| MUGIL CEPHALUS         | 0.00          | 0.00     | 0.00          | 0.00     | 16.00         | 10.81    | 3.00          | 0.42     | 0.00          | 0.00     | 3.00          | 0.73     | 4.00          | 9.30     | 8.00          | 1.19     | 34.00        | 1.55     |
| CYPRINODON VARIEGATUS  | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 1.00          | 0.24     | 0.00          | 0.00     | 1.00          | 0.15     | 2.00         | 0.09     |
| FAMILY XANTHIDAE JUV.  | 0.00          | 0.00     | 0.00          | 0.00     | 5.00          | 3.38     | 6.00          | 0.84     | 0.00          | 0.00     | 2.00          | 0.49     | 0.00          | 0.00     | 0.00          | 0.00     | 13.00        | 0.59     |
| ANGUILLA ROSTRATA      | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 1.00          | 0.14     | 0.00          | 0.00     | 2.00          | 0.49     | 1.00          | 2.33     | 2.00          | 0.30     | 6.00         | 0.27     |
| LUCANIA PARVA          | 1.00          | 1.04     | 0.00          | 0.00     | 1.00          | 0.63     | 2.00          | 0.28     | 13.00         | 12.87    | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 17.00        | 0.77     |
| LIBINIA DUBIA          | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 1.00          | 2.33     | 1.00          | 0.15     | 2.00         | 0.09     |
| OTHER SPECIES          | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 1.00          | 0.14     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 2.00          | 0.30     | 3.00         | 0.14     |

STATION TOTAL AND DATE

96.00 19.00 148.00 712.00 101.00 409.00 43.00 670.00 2198.00

OYSTERC

GEAR-40 'E1

JUN-1981

STATION

| SPECIES                 | CDCN          |          | CDDC          |          | FKRD          |          | FKRN          |          | DBCD          |          | DBCN          |          | OYCD          |          | OYCN          |          | NUMBER TOTAL | PCT COMP |
|-------------------------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|--------------|----------|
|                         | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP |              |          |
| MENIDIA MENIDIA JUV     | 404.00        | 47.20    | 187.00        | 68.00    | 9007.00       | 99.29    | 3040.00       | 70.39    | 2127.00       | 86.36    | 817.00        | 33.42    | 7700.00       | 87.32    | 21298.00      | 93.34    | 44560.00     | 87.30    |
| CRANGON SEPTEMPINOSA    | 15.00         | 1.75     | 7.00          | 2.55     | 45.00         | 0.50     | 471.00        | 10.91    | 4.00          | 0.16     | 53.00         | 2.17     | 18.00         | 0.20     | 16.00         | 0.07     | 629.00       | 1.23     |
| CRANGON SEPTEMPIN JUV   | 176.00        | 20.56    | 0.00          | 0.00     | 0.00          | 0.00     | 711.00        | 16.46    | 0.00          | 0.00     | 1340.00       | 54.81    | 145.00        | 1.54     | 1182.00       | 5.18     | 3554.00      | 6.96     |
| MENIDIA MENIDIA         | 16.00         | 1.87     | 1.00          | 0.36     | 0.00          | 0.00     | 22.00         | 0.51     | 78.00         | 3.17     | 62.00         | 2.54     | 823.00        | 9.33     | 8.00          | 0.04     | 1010.00      | 1.98     |
| ANCHOA MITCHELLI        | 2.00          | 0.23     | 0.00          | 0.00     | 0.00          | 0.00     | 4.00          | 0.09     | 158.00        | 6.41     | 12.00         | 0.49     | 73.00         | 0.83     | 55.00         | 0.24     | 304.00       | 0.60     |
| PALAEONETES SP.         | 142.00        | 16.59    | 27.00         | 9.82     | 0.00          | 0.00     | 28.00         | 0.65     | 32.00         | 1.30     | 112.00        | 4.58     | 29.00         | 0.33     | 186.00        | 0.82     | 556.00       | 1.09     |
| APELTES QUADRACUS       | 28.00         | 3.27     | 4.00          | 1.45     | 2.00          | 0.02     | 0.00          | 0.00     | 6.00          | 0.24     | 0.00          | 0.00     | 0.00          | 0.00     | 5.00          | 0.02     | 45.00        | 0.09     |
| CALLINECTES SAPIDUS     | 7.00          | 0.82     | 0.00          | 0.00     | 1.00          | 0.01     | 2.00          | 0.05     | 4.00          | 0.16     | 1.00          | 0.04     | 3.00          | 0.03     | 5.00          | 0.02     | 23.00        | 0.05     |
| FUNDULUS HETEROCILLITUS | 2.00          | 0.23     | 2.00          | 0.73     | 0.00          | 0.00     | 6.00          | 0.14     | 0.00          | 0.00     | 11.00         | 0.45     | 1.00          | 0.01     | 0.00          | 0.00     | 22.00        | 0.04     |
| SYNGNATHUS FUSCUS       | 54.00         | 6.31     | 2.00          | 0.73     | 0.00          | 0.00     | 4.00          | 0.09     | 8.00          | 0.32     | 2.00          | 0.08     | 6.00          | 0.07     | 27.00         | 0.12     | 103.00       | 0.20     |
| FUNDULUS MAJALIS        | 0.00          | 0.00     | 17.00         | 6.18     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 3.00          | 0.12     | 0.00          | 0.00     | 0.00          | 0.00     | 20.00        | 0.04     |
| GORIOSOMA BOSCI         | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 1.00          | 0.02     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 4.00          | 0.02     | 5.00         | 0.01     |
| MENIDIA BERYLLINA       | 6.00          | 0.70     | 19.00         | 6.91     | 0.00          | 0.00     | 0.00          | 0.00     | 33.00         | 1.34     | 18.00         | 0.74     | 0.00          | 0.00     | 4.00          | 0.02     | 80.00        | 0.16     |
| HIPPOLYTE SP            | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 1.00          | 0.04     | 2.00          | 0.08     | 0.00          | 0.00     | 1.00          | 0.00     | 4.00         | 0.01     |
| MUGIL CEPHALIS          | 0.00          | 0.00     | 0.00          | 0.00     | 2.00          | 0.02     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 2.00         | 0.00     |
| OVALIPES OCELLATUS      | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 4.00          | 0.09     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 4.00         | 0.01     |
| CYPRINODON VARIEGATUS   | 0.00          | 0.00     | 0.00          | 0.36     | 12.00         | 0.13     | 9.00          | 0.21     | 0.00          | 0.00     | 0.00          | 0.00     | 5.00          | 0.06     | 0.00          | 0.00     | 27.00        | 0.05     |
| STRONGYLURA MARINA      | 1.00          | 0.12     | 8.00          | 2.91     | 2.00          | 0.02     | 3.00          | 0.07     | 1.00          | 0.04     | 1.00          | 0.04     | 13.00         | 0.15     | 22.00         | 0.10     | 51.00        | 0.10     |
| ANGUILLA ROSSTRATA      | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 1.00          | 0.02     | 2.00          | 0.08     | 0.00          | 0.00     | 0.00          | 0.00     | 2.00          | 0.01     | 5.00         | 0.01     |
| OPSANUS TAU             | 1.00          | 0.12     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 1.00         | 0.00     |
| POMATOMUS SALTATRIX     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 1.00          | 0.04     | 0.00          | 0.00     | 0.00          | 0.00     | 7.00         | 0.01     |
| PSEUDOPLEURONETES AMERI | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 7.00          | 0.16     | 2.00          | 0.08     | 8.00          | 0.33     | 0.00          | 0.00     | 0.00          | 0.00     | 17.00        | 0.03     |
| CHASMOIDES BOSQUIANUS   | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 1.00          | 0.01     | 0.00          | 0.00     | 1.00         | 0.00     |
| SPHEROIDES MACULATUS    | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 1.00          | 0.04     | 1.00          | 0.04     | 1.00          | 0.01     | 1.00          | 0.00     | 4.00         | 0.01     |
| OTHER SPECIES           | 2.00          | 0.23     | 0.00          | 0.00     | 0.00          | 0.00     | 6.00          | 0.14     | 0.00          | 0.00     | 1.00          | 0.04     | 0.00          | 0.00     | 2.00          | 0.01     | 11.00        | 0.02     |
| STATION TOTAL AND DATE  | 856.00        |          | 275.00        |          | 9071.00       |          | 4319.00       |          | 2463.00       |          | 2445.00       |          | 8818.00       |          | 22818.00      |          | 51065.00     |          |

## STATION

| SPECIES                  | COCN             |             | COCG             |             | FKRD             |             | FKRN             |             | DBCD             |             | ERCN             |             | OYCD             |             | OYCN             |             | NUMBER<br>TOTAL | PCT<br>COMP |
|--------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                          | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |
| MENIDIA MERIDIA JUV      | 72.00            | 11.21       | 421.00           | 77.39       | 284.00           | 77.60       | 376.00           | 37.83       | 349.00           | 32.40       | 92.00            | 21.75       | 216.00           | 36.86       | 464.00           | 70.52       | 2274.00         | 42.99       |
| CRANGON SEPTEMSPINOSA    | 271.00           | 42.21       | 51.00            | 9.37        | 53.00            | 14.48       | 293.00           | 29.48       | 488.00           | 45.31       | 145.00           | 34.28       | 1.00             | 0.17        | 1.00             | 0.15        | 1303.00         | 24.63       |
| MENIDIA MERIDIA          | 67.00            | 10.44       | 5.00             | 0.92        | 5.00             | 1.37        | 3.00             | 0.30        | 7.00             | 0.65        | 47.00            | 11.11       | 266.00           | 45.39       | 0.00             | 0.00        | 400.00          | 7.56        |
| ANCHOA MITCHELLI         | 21.00            | 3.27        | 10.00            | 1.84        | 0.00             | 0.00        | 110.00           | 11.07       | 31.00            | 2.88        | 21.00            | 4.96        | 4.00             | 0.68        | 62.00            | 9.42        | 259.00          | 4.90        |
| PALAEMONETES SP.         | 48.00            | 7.48        | 11.00            | 2.02        | 0.00             | 0.00        | 5.00             | 0.50        | 38.00            | 3.53        | 32.00            | 7.57        | 66.00            | 11.26       | 58.00            | 8.81        | 258.00          | 4.88        |
| APELTES QUADRACUS        | 3.00             | 0.47        | 17.00            | 3.12        | 1.00             | 0.27        | 1.00             | 0.10        | 25.00            | 2.32        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 47.00           | 0.89        |
| CALLINectes SAPIDUS      | 11.00            | 1.71        | 21.00            | 3.86        | 5.00             | 1.37        | 23.00            | 2.31        | 18.00            | 1.67        | 1.00             | 0.24        | 15.00            | 2.56        | 16.00            | 2.43        | 110.00          | 2.08        |
| FUNDULUS HETEROCLITUS    | 1.00             | 0.16        | 1.00             | 0.18        | 0.00             | 0.00        | 7.00             | 0.70        | 1.00             | 0.09        | 8.00             | 1.89        | 0.00             | 0.00        | 0.00             | 0.00        | 18.00           | 0.34        |
| SYNGNATHUS FUSCUS        | 3.00             | 0.47        | 1.00             | 0.18        | 3.00             | 0.82        | 5.00             | 0.50        | 41.00            | 3.81        | 35.00            | 8.27        | 9.00             | 1.54        | 2.00             | 0.30        | 99.00           | 1.87        |
| FUNDULUS MAJALIS         | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.27        | 6.00             | 0.60        | 1.00             | 0.09        | 4.00             | 0.95        | 0.00             | 0.00        | 0.00             | 0.00        | 12.00           | 0.23        |
| GOBIOSOMA BOSCI          | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 3.00             | 0.30        | 3.00             | 0.28        | 2.00             | 0.47        | 1.00             | 0.17        | 5.00             | 0.76        | 14.00           | 0.26        |
| MENIDIA BERYLLINA        | 3.00             | 0.47        | 1.00             | 0.18        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 0.19        | 3.00             | 0.71        | 0.00             | 0.00        | 0.00             | 0.00        | 9.00            | 0.17        |
| HIPPOLYTE SP             | 1.00             | 0.16        | 1.00             | 0.18        | 0.00             | 0.00        | 0.00             | 0.00        | 60.00            | 5.57        | 25.00            | 5.91        | 1.00             | 0.17        | 4.00             | 0.61        | 92.00           | 1.74        |
| ANCHOA MITCHELLI JUV     | 140.00           | 21.81       | 0.00             | 0.00        | 0.00             | 0.00        | 127.00           | 12.78       | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 267.00          | 5.05        |
| MUGIL CEPHALUS           | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.15        | 1.00            | 0.02        |
| OVALIPES OCELLATUS       | 0.00             | 0.00        | 0.00             | 0.00        | 9.00             | 2.46        | 26.00            | 2.62        | 0.00             | 0.00        | 1.00             | 0.24        | 0.00             | 0.00        | 0.00             | 0.00        | 36.00           | 0.68        |
| CYPRINODON VARIEGATUS    | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.10        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00            | 0.02        |
| STRONGYLURA MARINA       | 0.00             | 0.00        | 1.00             | 0.18        | 0.00             | 0.00        | 2.00             | 0.20        | 3.00             | 0.28        | 1.00             | 0.24        | 0.00             | 0.00        | 25.00            | 3.80        | 32.00           | 0.60        |
| LUCANIA PARVA            | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.09        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.15        | 2.00            | 0.04        |
| CYNOSSION REGALIS        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 0.30        | 2.00            | 0.04        |
| OPSANUS TAU              | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 0.15        | 0.00             | 0.00        | 4.00             | 0.68        | 3.00             | 0.46        | 9.00            | 0.17        |
| POMATOMIUS SALTATRIX     | 1.00             | 0.16        | 1.00             | 0.18        | 3.00             | 0.82        | 1.00             | 0.10        | 4.00             | 0.37        | 4.00             | 0.95        | 1.00             | 0.17        | 0.00             | 0.00        | 15.00           | 0.28        |
| PSEUDOPLEURONECTES AMERI | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.09        | 1.00             | 0.24        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00            | 0.04        |
| TRACHINOTUS FALCATUS     | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.27        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.17        | 1.00             | 0.15        | 3.00            | 0.06        |
| CARANX HIPPOS            | 0.00             | 0.00        | 2.00             | 0.37        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.09        | 0.00             | 0.00        | 1.00             | 0.17        | 8.00             | 1.22        | 12.00           | 0.23        |
| SPHROEIDES MACULATUS     | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 4.00             | 0.40        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 4.00            | 0.08        |
| LIBINIA DUBIA            | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.15        | 1.00            | 0.02        |
| OTHER SPECIES            | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.27        | 1.00             | 0.10        | 1.00             | 0.09        | 1.00             | 0.24        | 0.00             | 0.00        | 4.00             | 0.61        | 8.00            | 0.15        |

STATION TOTAL AND

DATE 642.00 544.00 366.00 994.00 1077.00 423.00 586.00 658.00 5290.00

OYSTERC

GEAR-40 SEI

AUG-1981

STATION

| SPECIES                  | CDCN             |             | CDCD             |             | FKRD             |             | FKRN             |             | DBCD             |             | DBDN             |             | OYCD             |             | OYCN             |             | NUMBER TOTAL     |             | PCT COMP         |             |      |
|--------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------|
|                          | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |      |
| MENIDIA MENIDIA JUV      | 0.00             | 0.00        | 4.00             | 1.23        | 0.00             | 0.00        | 1.00             | 0.29        | 1.00             | 0.13        | 2.00             | 0.12        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 8.00        | 0.15 |
| CRANGON SEPIEMSPINOSA    | 798.00           | 77.18       | 15.00            | 4.62        | 112.00           | 16.49       | 84.00            | 24.49       | 9.00             | 1.17        | 392.00           | 23.31       | 0.00             | 0.00        | 0.00             | 0.00        | 67.00            | 12.59       | 1477.00          | 27.02       |      |
| MENIDIA MENIDIA          | 49.00            | 4.74        | 237.00           | 72.92       | 391.00           | 57.58       | 107.00           | 31.20       | 490.00           | 63.80       | 435.00           | 25.86       | 76.00            | 73.08       | 81.00            | 15.23       | 1866.00          | 34.13       | 1866.00          | 34.13       |      |
| ANCHOA MITCHELLI         | 144.00           | 13.93       | 60.00            | 18.46       | 22.00            | 3.24        | 41.00            | 11.95       | 177.00           | 23.05       | 487.00           | 28.95       | 1.00             | 0.96        | 54.00            | 10.15       | 986.00           | 18.04       | 986.00           | 18.04       |      |
| PALAEOMNETES SP.         | 1.00             | 0.10        | 1.00             | 0.31        | 5.00             | 0.74        | 1.00             | 0.29        | 1.00             | 0.13        | 25.00            | 1.49        | 0.00             | 0.00        | 41.00            | 7.71        | 75.00            | 1.37        | 75.00            | 1.37        |      |
| PALAEOMNETES VULGARIS    | 2.00             | 0.19        | 0.00             | 0.00        | 36.00            | 5.30        | 3.00             | 0.87        | 5.00             | 0.65        | 104.00           | 6.18        | 8.00             | 7.69        | 220.00           | 41.35       | 378.00           | 6.91        | 378.00           | 6.91        |      |
| APELITES QUADRACUS       | 1.00             | 0.10        | 0.00             | 0.00        | 8.00             | 1.18        | 0.00             | 0.00        | 3.00             | 0.39        | 1.00             | 0.06        | 0.00             | 0.00        | 0.00             | 0.00        | 13.00            | 0.24        | 13.00            | 0.24        |      |
| CALLINECTES SAPIIDUS     | 2.00             | 0.19        | 0.00             | 0.00        | 6.00             | 0.88        | 3.00             | 0.87        | 8.00             | 1.04        | 5.00             | 0.30        | 4.00             | 3.85        | 5.00             | 0.94        | 33.00            | 0.60        | 33.00            | 0.60        |      |
| FUNDULUS HETEROCLITUS    | 9.00             | 0.87        | 2.00             | 0.62        | 0.00             | 0.00        | 3.00             | 0.87        | 0.00             | 0.00        | 23.00            | 1.37        | 0.00             | 0.00        | 1.00             | 0.19        | 38.00            | 0.70        | 38.00            | 0.70        |      |
| FUNDULUS MAJALIS         | 1.00             | 0.10        | 0.00             | 0.00        | 20.00            | 2.95        | 4.00             | 1.17        | 24.00            | 3.12        | 24.00            | 1.43        | 2.00             | 1.92        | 4.00             | 0.75        | 79.00            | 1.45        | 79.00            | 1.45        |      |
| SYNGNATHUS FUSCUS        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.29        | 6.00             | 0.78        | 19.00            | 1.13        | 0.00             | 0.00        | 0.00             | 0.00        | 26.00            | 0.48        | 26.00            | 0.48        |      |
| FUNDULUS BOSCI           | 8.00             | 0.77        | 0.00             | 0.00        | 5.00             | 0.74        | 2.00             | 0.58        | 0.00             | 0.00        | 9.00             | 0.54        | 0.00             | 0.00        | 4.00             | 0.75        | 28.00            | 0.51        | 28.00            | 0.51        |      |
| MENIDIA BERYLLINA        | 1.00             | 0.10        | 2.00             | 0.62        | 0.00             | 0.00        | 0.00             | 0.00        | 16.00            | 2.08        | 3.00             | 0.18        | 0.00             | 0.00        | 0.00             | 0.00        | 22.00            | 0.40        | 22.00            | 0.40        |      |
| HIPPOLYTE SP             | 1.00             | 0.10        | 0.00             | 0.00        | 7.00             | 1.03        | 0.00             | 0.00        | 3.00             | 0.39        | 71.00            | 4.22        | 0.00             | 0.00        | 5.00             | 0.94        | 87.00            | 1.59        | 87.00            | 1.59        |      |
| MUGIL CEPHALUS           | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.29        | 11.00            | 1.43        | 17.00            | 1.01        | 3.00             | 2.88        | 16.00            | 3.01        | 109.00           | 1.99        | 109.00           | 1.99        |      |
| OVALIPES OCELLATUS       | 0.00             | 0.00        | 0.00             | 0.00        | 45.00            | 6.63        | 55.00            | 16.03       | 1.00             | 0.13        | 8.00             | 0.48        | 0.00             | 0.00        | 0.00             | 0.00        | 17.00            | 0.31        | 17.00            | 0.31        |      |
| STRONGYLURA MARINA       | 4.00             | 0.39        | 1.00             | 0.31        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.13        | 2.00             | 0.12        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 0.04        | 2.00             | 0.04        |      |
| LUCANIA PARVA            | 2.00             | 0.19        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 4.00             | 0.80        | 4.00             | 0.80        |      |
| CYNOSCOPTON REGALIS      | 5.00             | 0.48        | 0.00             | 0.00        | 6.00             | 0.88        | 10.00            | 2.92        | 3.00             | 0.39        | 17.00            | 1.01        | 0.00             | 0.00        | 0.00             | 0.00        | 43.00            | 0.79        | 43.00            | 0.79        |      |
| PALAEOMNETES INTERMEDIUS | 6.00             | 0.58        | 0.00             | 0.00        | 2.00             | 0.29        | 2.00             | 0.58        | 0.00             | 0.00        | 21.00            | 1.25        | 0.00             | 0.00        | 12.00            | 2.26        | 19.00            | 0.35        | 19.00            | 0.35        |      |
| OPSANUS TAU              | 0.00             | 0.00        | 0.00             | 0.00        | 7.00             | 1.03        | 1.00             | 0.29        | 2.00             | 0.26        | 2.00             | 0.12        | 2.00             | 1.92        | 5.00             | 0.94        | 8.00             | 0.15        | 8.00             | 0.15        |      |
| POMATOMUS SALTATRIX      | 0.00             | 0.00        | 2.00             | 0.62        | 1.00             | 0.15        | 0.00             | 0.00        | 1.00             | 0.13        | 2.00             | 0.12        | 2.00             | 1.92        | 0.00             | 0.00        | 2.00             | 0.04        | 2.00             | 0.04        |      |
| PSEUDOPLEURONECTES AMERI | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 0.12        | 0.00             | 0.00        | 0.00             | 0.00        | 7.00             | 0.13        | 7.00             | 0.13        |      |
| TRACHINOTUS FALCATUS     | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 4.00             | 1.17        | 0.00             | 0.00        | 3.00             | 0.18        | 0.00             | 0.00        | 0.00             | 0.00        | 18.00            | 0.33        | 18.00            | 0.33        |      |
| PRIONOTUS EVOLANS        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 15.00            | 4.37        | 1.00             | 0.13        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 6.00             | 0.11        | 6.00             | 0.11        |      |
| CARANX HIPPOS            | 0.00             | 0.00        | 0.00             | 0.00        | 2.00             | 0.29        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 3.00             | 2.88        | 1.00             | 0.19        | 6.00             | 0.04        | 6.00             | 0.04        |      |
| CHASMODES BOSQUIANUS     | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.15        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.96        | 0.00             | 0.00        | 1.00             | 0.02        | 1.00             | 0.02        |      |
| SPHEUROIDES MACULATUS    | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.13        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 1.00             | 0.00        | 1.00             | 0.00        |      |
| OTHER SPECIES            | 0.00             | 0.00        | 1.00             | 0.31        | 3.00             | 0.44        | 5.00             | 1.46        | 4.00             | 0.52        | 8.00             | 0.48        | 2.00             | 1.92        | 2.00             | 0.38        | 25.00            | 0.46        | 25.00            | 0.46        |      |

STATION TOTAL AND  
DATE

1034.00

325.00

679.00

343.00

768.00

1682.00

104.00

532.00

5467.00

## APPENDIX F: ICHTHYOPLANKTON ENTRAINMENT DATA

Appendix F is arranged by sampling date. The catch data are expressed as the mean number of organisms per 100 m<sup>3</sup> (NUMBER INDIVS) and percent composition (PCT COMP). The last (right-hand) column in each table contains the mean densities of intake and discharge samples. Sampling station designations are:

DSN1, 2, 3, and 4 = discharge night samples

DSD1, 2, 3, and 4 = discharge day samples

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GEAR-3680MG

OYSTERCR

STATION

| SPECIES                | INN1          |          | INN2          |          | DSN1          |          | DSN2          |          | NUMBER TOTAL | PCT COMP |
|------------------------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|--------------|----------|
|                        | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP |              |          |
| ANCHOA MITCHILLI LAR   | 0.00          | 0.00     | 12.40         | 50.00    | 0.00          | 0.00     | 11.40         | 20.00    | 5.95         | 16.26    |
| GOBIIDAE LAR           | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 22.80         | 40.00    | 5.70         | 15.57    |
| SYNGNATHUS FUSCUS JUV  | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 22.80         | 40.00    | 5.70         | 15.57    |
| ANCHOA MITCHILLI JUV   | 15.10         | 100.00   | 12.40         | 50.00    | 49.50         | 100.00   | 0.00          | 0.00     | 19.25        | 52.60    |
| STATION TOTAL AND DATE | 15.10         |          | 24.80         |          | 49.50         |          | 57.00         |          | 36.60        |          |



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OYSTERCR

| STATION                   | I1N1             |             | I1N2             |             | DSN1             |             | DSN2             |             | NUMBER<br>TOTAL | PCT<br>COMP |
|---------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |
| ANCHOA MITCHILLI LAR      | 0.00             | 0.00        | 32.20            | 60.67       | 5.90             | 50.00       | 0.00             | 0.00        | 10.28           | 43.40       |
| SYNGNATHUS FUSCUS JUV     | 0.00             | 0.00        | 10.70            | 19.96       | 0.00             | 0.00        | 9.40             | 100.00      | 5.03            | 21.22       |
| ATHERINIDAE LAR           | 0.00             | 0.00        | 10.70            | 19.96       | 0.00             | 0.00        | 0.00             | 0.00        | 2.67            | 11.30       |
| ANCHOA MITCHILLI JUV      | 13.90            | 100.00      | 0.00             | 0.00        | 8.90             | 50.00       | 0.00             | 0.00        | 5.70            | 24.08       |
| STATION TOTAL AND<br>DATE | 13.90            |             | 53.60            |             | 17.80            |             | 9.40             |             | 23.68           |             |

OYSTERCR

GEAR-3680NG

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STATION

| SPECIES                | INR1   |      | INR2   |        | DSR1   |       | DSR2   |        | TOTAL  |       |
|------------------------|--------|------|--------|--------|--------|-------|--------|--------|--------|-------|
|                        | NUMBER | PCT  | NUMBER | PCT    | NUMBER | PCT   | NUMBER | PCT    | NUMBER | PCT   |
| ANCHOA MITCHILLI LAR   | 0.00   | 0.00 | 9.50   | 100.00 | 19.20  | 50.00 | 0.00   | 0.00   | 7.18   | 49.23 |
| Gobiidae LAR           | 0.00   | 0.00 | 0.00   | 0.00   | 19.20  | 50.00 | 10.40  | 100.00 | 7.40   | 50.77 |
| STATION TOTAL AND DATE | 0.00   |      | 9.50   |        | 38.40  |       | 10.40  |        | 14.58  |       |

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GEAR-3680NG

OYSTERCR

STATION

| SPECIES                   | INN1             |             | INN2             |             | INN3             |             | INN4             |             | IND1             |             | IND2             |             | IND3             |             |
|---------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |
| ANCHOA MITCHILLI LAR      | 16.80            | 52.83       | 0.00             | 0.00        | 0.00             | 0.00        | 8.50             | 50.00       | 19.00            | 66.67       | 13.30            | 100.00      | 10.20            | 100.00      |
| GOBIIDAE LAR              | 9.40             | 29.56       | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| LABRIDAE EGG              | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| SYNGNATHUS FUSCUS JUV     | 5.60             | 17.61       | 0.00             | 0.00        | 0.00             | 0.00        | 8.50             | 50.00       | 9.50             | 33.33       | 0.00             | 0.00        | 0.00             | 0.00        |
| ANCHOA MITCHILLI JUV      | 0.00             | 0.00        | 0.00             | 0.00        | 11.20            | 100.00      | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| BREVORTIA TYRANNUS LAR    | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| STATION TOTAL AND<br>DATE | 31.80            |             | 0.00             |             | 11.20            |             | 17.00            |             | 28.50            |             | 13.30            |             | 10.20            |             |

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GEAR-36BONG

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## STATION

IND4                      DSN1                      DSN2                      DSN3                      DSN4                      DSD1                      DSD2

| SPECIES                 | IND4             |             | DSN1             |             | DSN2             |             | DSN3             |             | DSN4             |             | DSD1             |             | DSD2             |             |
|-------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|
|                         | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |
| ANCHOA MITCHILLI LAR    | 0.00             | 0.00        | 12.40            | 65.26       | 4.25             | 18.32       | 8.70             | 100.00      | 7.90             | 5.28        | 32.40            | 100.00      | 13.60            | 6.27        |
| GUBIIDAE LAR            | 0.00             | 0.00        | 0.00             | 0.00        | 7.35             | 31.68       | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 13.60            | 6.27        |
| LABRIDAE EGG            | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 125.80           | 84.15       | 0.00             | 0.00        | 176.20           | 81.20       |
| SYNGNATHUS FUSCUS JUV   | 11.50            | 100.00      | 6.60             | 34.74       | 11.60            | 50.00       | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 13.60            | 6.27        |
| ANCHOA MITCHILLI JUV    | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 7.90             | 5.28        | 0.00             | 0.00        | 0.00             | 0.00        |
| BREVOORTIA TYRANNUS LAR | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 7.90             | 5.28        | 0.00             | 0.00        | 0.00             | 0.00        |

## STATION TOTAL AND

|      |       |       |       |      |        |       |        |
|------|-------|-------|-------|------|--------|-------|--------|
| DATE | 11.50 | 19.00 | 23.20 | 8.70 | 149.50 | 32.40 | 217.00 |
|------|-------|-------|-------|------|--------|-------|--------|

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GEAR-36BONG

22 SEP 80

| STATION                   | DSD3             |             | DSD4             |             | NUMBER<br>TOTAL | PCT<br>COMP |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |
| ANCHOA MITCHILLI LAR      | 16.60            | 100.00      | 0.00             | 0.00        | 9.85            | 29.69       |
| GOBIIDAE LAR              | 0.00             | 0.00        | 0.00             | 0.00        | 2.36            | 7.09        |
| LABRIDAE EGG              | 0.00             | 0.00        | 0.00             | 0.00        | 15.10           | 45.40       |
| SYNGNATHUS FUSCUS JUV     | 0.00             | 0.00        | 0.00             | 0.00        | 4.54            | 13.66       |
| ANCHOA MITCHILLI JUV      | 0.00             | 0.00        | 0.00             | 0.00        | 0.96            | 2.88        |
| BREVOORTIA TYRANNUS LAR   | 0.00             | 0.00        | 0.00             | 0.00        | 0.40            | 1.19        |
| STATION TOTAL AND<br>DATE | TOTAL            |             |                  |             | 33.20           |             |

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GEAR-36BONG

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| STATION                   | INN1             |             | INN2             |             | DSN1             |             | DSN2             |             |                 |             |
|---------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |
| ANCHOA MITCHILLI JUV      | 15.50            | 100.00      | 73.80            | 100.00      | 0.00             | 0.00        | 0.00             | 0.00        | 22.33           | 100.00      |
| STATION TOTAL AND<br>DATE | TOTAL            |             |                  |             |                  |             |                  |             |                 |             |
|                           | 15.50            |             | 73.80            |             | 0.00             |             | 0.00             |             | 22.33           |             |



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GEAR-3680NG

OYSTER CR

STATION

| SPECIES                   | INN1   |       | INN2   |       | DSN1   |        | DSN2   |       | NUMBER TOTAL | PCT COMP |
|---------------------------|--------|-------|--------|-------|--------|--------|--------|-------|--------------|----------|
|                           | NUMBER | PCT   | NUMBER | PCT   | NUMBER | PCT    | NUMBER | PCT   |              |          |
| UNIDENTIFIED EGG          | 14.40  | 50.00 | 32.00  | 66.67 | 9.70   | 100.00 | 0.00   | 0.00  | 14.03        | 37.78    |
| SYNGNATHUS FUSCUS JUV     | 14.40  | 50.00 | 0.00   | 0.00  | 0.00   | 0.00   | 26.60  | 42.90 | 10.25        | 27.61    |
| PARALICHTHYS DENTATUS EGG | 0.00   | 0.00  | 16.00  | 33.33 | 0.00   | 0.00   | 17.70  | 28.55 | 8.43         | 22.69    |
| HIPPOCAMPUS ERECTUS JUV   | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00   | 17.70  | 28.55 | 4.43         | 11.92    |

STATION TOTAL AND DATE      28.80      48.00      9.70      62.00      37.13

OYSTERCR

GEAR-36BONG

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| STATION                   | INN1             |             | INN2             |             | DSN1             |             | DSN2             |             |                 |             |
|---------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |
| UNIDENTIFIED EGG          | 11.60            | 100.00      | 56.30            | 74.97       | 20.40            | 100.00      | 80.10            | 100.00      | 42.10           | 89.96       |
| SYNGNATHUS FUSCUS JUV     | 0.00             | 0.00        | 9.40             | 12.52       | 0.00             | 0.00        | 0.00             | 0.00        | 2.35            | 5.02        |
| PARALICHTHYS DENTATU EGG  | 0.00             | 0.00        | 9.40             | 12.52       | 0.00             | 0.00        | 0.00             | 0.00        | 2.35            | 5.02        |
| STATION TOTAL AND<br>DATE | 11.60            |             | 75.10            |             | 20.40            |             | 80.10            |             | 46.80           |             |

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GEAR-3680NG

OYSTERCR

STATION

| SPECIES                   | INN1   |       | INN2   |        | INN3   |      | INN4   |        | IND1   |        | IND2   |       | IND3   |        |
|---------------------------|--------|-------|--------|--------|--------|------|--------|--------|--------|--------|--------|-------|--------|--------|
|                           | NUMBER | PCT   | NUMBER | PCT    | NUMBER | PCT  | NUMBER | PCT    | NUMBER | PCT    | NUMBER | PCT   | NUMBER | PCT    |
|                           | INDIVS | COMP  | INDIVS | COMP   | INDIVS | COMP | INDIVS | COMP   | INDIVS | COMP   | INDIVS | COMP  | INDIVS | COMP   |
| ANCHOA MITCHELLI LAR      | 4.50   | 13.41 | 0.00   | 0.00   | 0.00   | 0.00 | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00  | 0.00   | 0.00   |
| UNIDENTIFIED EGG          | 29.05  | 86.59 | 20.10  | 100.00 | 0.00   | 0.00 | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00  | 0.00   | 0.00   |
| ANCHOA MITCHELLI JUV      | 0.00   | 0.00  | 0.00   | 0.00   | 0.00   | 0.00 | 7.70   | 100.00 | 0.00   | 0.00   | 10.70  | 20.04 | 0.00   | 0.00   |
| PARALICHTHYS DENTATUS EGG | 0.00   | 0.00  | 0.00   | 0.00   | 0.00   | 0.00 | 0.00   | 0.00   | 23.10  | 100.00 | 42.70  | 79.96 | 32.80  | 100.00 |
| PARALICHTHYS DENTATUS LAR | 0.00   | 0.00  | 0.00   | 0.00   | 0.00   | 0.00 | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00  | 0.00   | 0.00   |

STATION TOTAL AND  
DATE

33.55      20.10      0.00      7.70      23.10      53.40      32.80

OYSTERCR

GEAR-3680NG

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STATION

| SPECIES                   | IND4             |             | DSN1             |             | DSN2             |             | DSN3             |             | DSN4             |             | DSO1             |             | DSO2             |             |
|---------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |
| ANCHOA MITCHILLI LAR      | 0.00             | 0.00        | 4.90             | 27.53       | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| UNIDENTIFIED EGG          | 0.00             | 0.00        | 12.90            | 72.47       | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| ANCHOA MITCHILLI JUV      | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| PARALICHTHYS DENTATUS EGG | 12.40            | 100.00      | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 83.60            | 100.00      | 0.00             | 0.00        | 63.20            | 100.00      |
| PARALICHTHYS DENTATUS LAR | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 34.10            | 100.00      | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| STATION TOTAL AND<br>DATE | 12.40            |             | 17.80            |             | 0.00             |             | 34.10            |             | 83.60            |             | 0.00             |             | 63.20            |             |

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| STATION                   | DS03             |             | DS04             |             | NUMBER<br>TOTAL | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|-----------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |                 |             |
| ANCHOA MITCHILLI LAR      | 0.00             | 0.00        | 0.00             | 0.00        | 0.94            | 0.00        | 3.80            | 0.00        |
| UNIDENTIFIED EGG          | 0.00             | 0.00        | 0.00             | 0.00        | 6.21            | 0.00        | 25.06           | 0.00        |
| ANCHOA MITCHILLI JUV      | 0.00             | 0.00        | 0.00             | 0.00        | 0.92            | 0.00        | 3.71            | 0.00        |
| PARALICHTHYS DENTATU EGG  | 42.10            | 100.00      | 0.00             | 0.00        | 14.99           | 0.00        | 60.55           | 0.00        |
| PARALICHTHYS DENTATU LAR  | 0.00             | 0.00        | 0.00             | 0.00        | 1.70            | 0.00        | 6.88            | 0.00        |
| STATION TOTAL AND<br>DATE | 42.10            |             | 0.00             |             | 24.77           |             |                 |             |





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| STATION                | INN1   |        | INN2   |        | DSN1   |      | DSN2   |       |
|------------------------|--------|--------|--------|--------|--------|------|--------|-------|
| SPECIES                | NUMBER | PCT    | NUMBER | PCT    | NUMBER | PCT  | NUMBER | PCT   |
|                        | INDIVS | COMP   | INDIVS | COMP   | INDIVS | COMP | INDIVS | COMP  |
| GOBIOSOMA BOSCI JUV    | 26.20  | 100.00 | 14.70  | 100.00 | 0.00   | 0.00 | 0.00   | 0.00  |
| STATION TOTAL AND DATE | 26.20  |        | 14.70  |        | 0.00   |      | 0.00   | 10.23 |

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STATION

| SPECIES                   | INM1             |             | INM2             |             | DSM1             |             | DSM2             |             | NUMBER<br>TOTAL | PCT<br>COMP |
|---------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |
| OTHER SPECIES             | 0.00             | 0.00        | 0.00             | 0.00        | 8.40             | 100.00      | 0.00             | 0.00        | 2.10            | 100.00      |
| STATION TOTAL AND<br>DATE | 0.00             |             | 0.00             |             | 8.40             |             | 0.00             |             | 2.10            |             |

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OYSTERCR

| STATION                | INN1   |      | INN2   |        | INN3   |      | INN4   |      | IND1   |      | IND2   |      | IND3   |      |
|------------------------|--------|------|--------|--------|--------|------|--------|------|--------|------|--------|------|--------|------|
|                        | NUMBER | PCT  | NUMBER | PCT    | NUMBER | PCT  | NUMBER | PCT  | NUMBER | PCT  | NUMBER | PCT  | NUMBER | PCT  |
| SPECIES                | INDIVS | COMP | INDIVS | COMP   | INDIVS | COMP | INDIVS | COMP | INDIVS | COMP | INDIVS | COMP | INDIVS | COMP |
| GOB1050MA BOSCI ADULT  | 0.00   | 0.00 | 10.70  | 100.00 | 0.00   | 0.00 | 0.00   | 0.00 | 0.00   | 0.00 | 0.00   | 0.00 | 0.00   | 0.00 |
| STATION TOTAL AND DATE | 0.00   |      | 10.70  |        | 0.00   |      | 0.00   |      | 0.00   |      | 0.00   |      | 0.00   |      |

STATION OYSTERC GEAR-3680HG 24 NOV 80  
 IND4 DSN1 DSN2 DSN3 DSN4 DSD1 DSD2

| SPECIES                | IND4   |      | DSN1   |      | DSN2   |      | DSN3   |      | DSN4   |        | DSD1   |      | DSD2   |      |
|------------------------|--------|------|--------|------|--------|------|--------|------|--------|--------|--------|------|--------|------|
|                        | NUMBER | PCT  | NUMBER | PCT  | NUMBER | PCT  | NUMBER | PCT  | NUMBER | PCT    | NUMBER | PCT  | NUMBER | PCT  |
|                        | INDIVS | COMP | INDIVS | COMP | INDIVS | COMP | INDIVS | COMP | INDIVS | COMP   | INDIVS | COMP | INDIVS | COMP |
| GOBIOSOMA BOSCI ADULT  | 0.00   | 0.00 | 0.00   | 0.00 | 0.00   | 0.00 | 0.00   | 0.00 | 10.20  | 100.00 | 0.00   | 0.00 | 0.00   | 0.00 |
| STATION TOTAL AND DATE | 0.00   |      | 0.00   |      | 0.00   |      | 0.00   |      | 10.20  |        | 0.00   |      | 0.00   |      |

24 NOV 80

GEAR-3680NG

OYSTERCR

| STATION                | DSD3   |      | DSD4   |      | NUMBER PCT |      | NUMBER PCT |        |
|------------------------|--------|------|--------|------|------------|------|------------|--------|
| SPECIES                | NUMBER | PCT  | NUMBER | PCT  | INDIVS     | COMP | TOTAL      | COMP   |
| GOBIOSOMA BOSCI ADULT  | 0.00   | 0.00 | 0.00   | 0.00 | 0.00       | 0.00 | 1.31       | 100.00 |
| STATION TOTAL AND DATE | 0.00   |      | 0.00   |      | 0.00       |      | 1.31       |        |

1 DEC 80

GEAR-3680NG

OYSTERCR

STATION

| SPECIES                | INNE          |          | INN2          |          | DSN1          |          | DSN2          |          | NUMBER TOTAL | PCT COMP |
|------------------------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|--------------|----------|
|                        | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP |              |          |
| OTHER SPECIES          | 0.00          | 0.00     | 0.00          | 0.00     | 0.00          | 0.00     | 9.70          | 100.00   | 2.42         | 100.00   |
| STATION TOTAL AND DATE | 0.00          |          | 0.00          |          | 0.00          |          | 9.70          |          | 2.42         |          |



15 DEC 80

GEAR-36BONG

OYSTERCR

STATION

| SPECIES                   | INN1             |             | INN2             |             | DSN1             |             | DSN2             |             | NUMBER<br>TOTAL | PCT<br>COMP |
|---------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |
| AMPHODYTES AMERICANUS LAR | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 10.40            | 100.00      | 2.60            | 37.96       |
| APELTES QUADRACUS ADULT   | 0.00             | 0.00        | 8.70             | 100.00      | 0.00             | 0.00        | 0.00             | 0.00        | 2.17            | 31.75       |
| BREVOORTIA TYRANNUS LAR   | 8.30             | 100.00      | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 2.08            | 30.29       |
| STATION TOTAL AND<br>DATE | 8.30             |             | 8.70             |             | 0.00             |             | 10.40            |             | 6.85            |             |

OYSTERCR

GEAR-36BONG

23 DEC 80

STATION

|                           | INN1   |        | INN2   |      | INN3   |        | INN4   |        | IND1   |      | IND2   |        | IND3   |        |
|---------------------------|--------|--------|--------|------|--------|--------|--------|--------|--------|------|--------|--------|--------|--------|
| SPECIES                   | NUMBER | PCT    | NUMBER | PCT  | NUMBER | PCT    | NUMBER | PCT    | NUMBER | PCT  | NUMBER | PCT    | NUMBER | PCT    |
|                           | INDIVS | COMP   | INDIVS | COMP | INDIVS | COMP   | INDIVS | COMP   | INDIVS | COMP | INDIVS | COMP   | INDIVS | COMP   |
| AMBODYTES AMERICANUS LAR  | 8.60   | 100.00 | 0.00   | 0.00 | 8.50   | 100.00 | 41.80  | 100.00 | 0.00   | 0.00 | 22.70  | 100.00 | 29.80  | 100.00 |
| AMBODYTES QUADRACUS ADULT | 0.00   | 0.00   | 0.00   | 0.00 | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00 | 0.00   | 0.00   | 0.00   | 0.00   |
| STATION TOTAL             | 8.60   |        | 0.00   |      | 8.50   |        | 41.80  |        | 0.00   |      | 22.70  |        | 29.80  |        |

DATE

OYSTERCR

GEAR-36BONG

23 DEC 80

| STATION                   | IND4             |             | DSN1             |             | DSN2             |             | DSN3             |             | DSN4             |             | DSD1             |             | DSD2             |             |
|---------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|
| SPECIES                   | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |
| AMMODYTES AMERICANUS LAR  | 0.00             | 0.00        | 15.20            | 66.67       | 10.30            | 100.00      | 48.30            | 100.00      | 19.40            | 100.00      | 30.10            | 100.00      | 28.20            | 100.00      |
| APELTES QUADRACUS ADULT   | 0.00             | 0.00        | 7.60             | 33.33       | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| STATION TOTAL AND<br>DATE | 0.00             |             | 22.80            |             | 10.30            |             | 48.30            |             | 19.40            |             | 30.10            |             | 28.20            |             |

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GEAR-36BONG

23 DEC 80

| STATION                   | DSD3             |             | DSD4             |             | NUMBER<br>TOTAL | PCT<br>COMP |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |
| SPECIES                   |                  |             |                  |             |                 |             |
| AMMODYTES AMERICANUS LAR  | 33.90            | 100.00      | 7.80             | 100.00      | 19.04           | 97.57       |
| APELTES QUADRACUS ADULT   | 0.00             | 0.00        | 0.00             | 0.00        | 0.47            | 2.43        |
| STATION TOTAL AND<br>DATE | 33.90            |             | 7.80             |             | 19.51           |             |

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GEAR-36BONG

29 DEC 80

| STATION                   | INN1             |             | INN2             |             | DSN1             |             | DSN2             |             |                 |             |
|---------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|-----------------|-------------|
| SPECIES                   | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |
| AMPHODYTES AMERICANUS LAR | 34.10            | 100.00      | 32.70            | 100.00      | 19.20            | 100.00      | 49.80            | 100.00      | 33.95           | 100.00      |
| STATION TOTAL AND<br>DATE | 34.10            |             | 32.70            |             | 19.20            |             | 49.80            |             | 33.95           |             |

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GEAR-36BONG

13 JAN 81

| STATION                   | DSN1             |             | DSN2             |             |                 |             |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |
| AMMODYTES AMERICANUS LAR  | 69.20            | 100.00      | 53.00            | 100.00      | 61.10           | 100.00      |
| STATION TOTAL AND<br>DATE | TOTAL            | 69.20       | 53.00            |             | 61.10           |             |



20 JAN 81

GEAR-3680NG

OYSTERCR

STATION

| SPECIES                   | INN1             |             | INN2             |             | INN3             |             | INN4             |             | IND1             |             | IND2             |             | IND3             |             |
|---------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |
| PSEUDOPLEURONEC AMER EGG  | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| AMPHODYTES AMERICANUS LAR | 23.30            | 100.00      | 13.80            | 100.00      | 109.90           | 100.00      | 43.90            | 100.00      | 58.50            | 100.00      | 57.70            | 100.00      | 84.60            | 100.00      |
| STATION TOTAL AND<br>DATE | 23.30            |             | 13.80            |             | 109.90           |             | 43.90            |             | 58.50            |             | 57.70            |             | 84.60            |             |

OYSTERCR

GEAR-36BONG

20 JAN 81

| STATION                   | IND4             |             | DSN1             |             | DSN2             |             | DSN3             |             | DSN4             |             | DS01             |             | DS02             |             |
|---------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |
| PSEUDOPLEURONEC AMER EGG  | 0.00             | 0.00        | 0.00             | 0.00        | 11.20            | 8.35        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| AMMODYTES AMERICANUS LAR  | 15.00            | 100.00      | 34.60            | 100.00      | 123.00           | 91.65       | 156.10           | 100.00      | 66.50            | 100.00      | 74.00            | 100.00      | 84.80            | 100.00      |
| STATION TOTAL AND<br>DATE | 15.00            |             | 34.60            |             | 134.20           |             | 156.10           |             | 66.50            |             | 74.00            |             | 84.80            |             |

OYSTERCR

GEAR-36BONG

20 JAN 81

| STATION                   | DSD3             |             | DSD4             |             | NUMBER<br>TOTAL | PCT<br>COMP |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |
| PSEUDOPLEURONEC AMER EGG  | 0.00             | 0.00        | 0.00             | 0.00        | 0.70            | 1.10        |
| AMMODYTES AMERICANUS LAR  | 19.40            | 100.00      | 45.50            | 100.00      | 63.16           | 98.90       |
| STATION TOTAL AND<br>DATE | 19.40            |             | 45.50            |             | 63.86           |             |

26 JAN 81

GEAR-3680NG

OYSTERCR

STATION

| SPECIES                   | INN1             |             | INN2             |             | DSN1             |             | DSN2             |             | NUMBER<br>TOTAL | PCT<br>COMP |
|---------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |
| PSEUDOPLEURONEC AMER EGG  | 0.00             | 0.00        | 0.00             | 0.00        | 11.70            | 100.00      | 0.00             | 0.00        | 2.92            | 60.00       |
| AMPHIDYTES AMERICANUS LAR | 0.00             | 0.00        | 7.80             | 100.00      | 0.00             | 0.00        | 0.00             | 0.00        | 1.95            | 40.00       |
| STATION TOTAL AND<br>DATE | 0.00             |             | 7.80             |             | 11.70            |             | 0.00             |             | 4.88            |             |

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GEAR-36BONG

9 FEB 81

| STATION                   | INN1             |             | INN2             |             | DSN1             |             | DSN2             |             |                 |             |
|---------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |
| PSEUDOPLEURONEC AMER EGG  | 77.00            | 100.00      | 288.50           | 85.71       | 101.40           | 62.48       | 52.20            | 83.39       | 129.77          | 81.30       |
| AMMODYTES AMERICANUS LAR  | 0.00             | 0.00        | 48.10            | 14.29       | 60.90            | 37.52       | 10.40            | 16.61       | 29.85           | 18.70       |
| STATION TOTAL AND<br>DATE | 77.00            |             | 336.60           |             | 162.30           |             | 62.60            |             | 159.63          |             |

OYSTERCR

GEAR-36BONG

18 FEB 81

| STATION                   | INN1   |       | INN2   |       | INN3   |       | INNA   |       | IND1   |       | IND2   |       | IND3   |       |
|---------------------------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|
|                           | NUMBER | PCT   | NUMBER | PCT   | NUMBER | PCT   | NUMBER | PCT   | NUMBER | PCT   | NUMBER | PCT   | NUMBER | PCT   |
| SPECIES                   | INDIVS | COMP  | INDIVS | COMP  | INDIVS | COMP  | INDIVS | COMP  | INDIVS | COMP  | INDIVS | COMP  | INDIVS | COMP  |
| PSEUDOPLEUROPEC AMER EGG  | 181.60 | 64.28 | 303.30 | 63.64 | 280.10 | 62.51 | 230.30 | 64.85 | 166.30 | 63.64 | 74.20  | 33.33 | 115.50 | 60.00 |
| UNIDENTIFIED EGG          | 0.00   | 0.00  | 0.00   | 0.00  | 9.30   | 2.08  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 12.80  | 6.65  |
| AMPHODYTES AMERICANUS LAR | 100.90 | 35.72 | 121.30 | 25.45 | 65.40  | 14.59 | 28.80  | 8.11  | 59.40  | 22.73 | 106.00 | 47.62 | 0.00   | 0.00  |
| PSEUDOPLEUROPEC AMER LAR  | 0.00   | 0.00  | 52.00  | 10.91 | 84.00  | 18.75 | 76.80  | 21.63 | 35.60  | 13.62 | 42.40  | 19.05 | 64.20  | 33.35 |
| ANGUILLA ROSTRATA GLASS   | 0.00   | 0.00  | 0.00   | 0.00  | 9.30   | 2.08  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  |
| MYOXOCEPHALUS AENAEU LAR  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 19.20  | 5.41  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  |
| STATION TOTAL AND DATE    | 282.50 |       | 476.60 |       | 448.10 |       | 355.10 |       | 261.30 |       | 222.60 |       | 192.50 |       |



18 FEB 81

GEAR-36BONG

OYSTERC

| STATION                  | IND4   |       | DSH1   |      | DSN2     |       | DSN3   |       | DSM4   |       | DSD1   |       | DSD2   |       |
|--------------------------|--------|-------|--------|------|----------|-------|--------|-------|--------|-------|--------|-------|--------|-------|
|                          | NUMBER | PCT   | NUMBER | PCT  | NUMBER   | PCT   | NUMBER | PCT   | NUMBER | PCT   | NUMBER | PCT   | NUMBER | PCT   |
| SPECIES                  | INDIVS | COMP  | INDIVS | COMP | INDIVS   | COMP  | INDIVS | COMP  | INDIVS | COMP  | INDIVS | COMP  | INDIVS | COMP  |
| PSEUDOPLEURONEC AMER EGG | 164.60 | 55.18 | 575.40 | 2.14 | 18878.50 | 99.88 | 307.70 | 73.68 | 487.00 | 89.59 | 214.90 | 80.76 | 98.70  | 78.58 |
| UNIDENTIFIED EGG         | 0.00   | 0.00  | 0.00   | 0.00 | 0.00     | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  |
| AMMODYTES AMERICANUS LAR | 61.70  | 20.68 | 14.00  | 2.24 | 0.00     | 0.00  | 33.00  | 7.90  | 11.30  | 2.08  | 30.70  | 11.54 | 9.60   | 7.17  |
| PSEUDOPLEURONEC AMER LAR | 72.00  | 24.14 | 35.10  | 5.62 | 11.70    | 0.06  | 76.90  | 18.41 | 34.00  | 6.25  | 20.50  | 7.70  | 17.90  | 14.25 |
| ANGUILLA ROSTRATA GLASS  | 0.00   | 0.00  | 0.00   | 0.00 | 11.70    | 0.06  | 0.00   | 0.00  | 11.30  | 2.08  | 0.00   | 0.00  | 0.00   | 0.00  |
| MYOXOCEPHALUS AENAEU LAR | 0.00   | 0.00  | 0.00   | 0.00 | 0.00     | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  |
| STATION TOTAL AND DATE   | 298.30 |       | 624.50 |      | 18901.90 |       | 417.60 |       | 543.60 |       | 266.10 |       | 125.60 |       |

OYSTERCR

GEAR-36BONG

18 FEB 81

| STATION                   | DSD3             |             | DSD4             |             | NUMBER<br>TOTAL | PCT<br>COMP |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |
| PSEUDOPLEURONEC AMER EGG  | 112.80           | 64.98       | 209.50           | 76.49       | 1400.03         | 93.87       |
| UNIDENTIFIED EGG          | 0.00             | 0.00        | 0.00             | 0.00        | 1.38            | 0.09        |
| AMMODYTES AMERICANUS LAR  | 17.40            | 10.02       | 16.10            | 5.88        | 42.19           | 2.83        |
| PSEUDOPLEURONEC AMER LAR  | 43.40            | 25.00       | 48.30            | 17.63       | 44.68           | 3.00        |
| ANGUILLA ROSTRATA GLASS   | 0.00             | 0.00        | 0.00             | 0.00        | 2.02            | 0.14        |
| MYOXOCEPHALUS AENAEU LAR  | 0.00             | 0.00        | 0.00             | 0.00        | 1.20            | 0.08        |
| STATION TOTAL AND<br>DATE | TOTAL            | 173.60      | 273.90           |             | 1491.49         |             |

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GEAR-36BONG

23 FEB 81

| STATION                   | INN1             |             | INN2             |             | DSN1             |             | DSN2             |             |                 |             |
|---------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |
| PSEUDOPLEURONEC AMER EGG  | 67.10            | 38.47       | 55.50            | 30.02       | 107.30           | 56.27       | 124.50           | 55.56       | 88.60           | 45.78       |
| UNIDENTIFIED EGG          | 13.40            | 7.68        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 3.35            | 1.73        |
| AMMODYTES AMERICANUS LAR  | 67.10            | 38.47       | 37.00            | 20.01       | 0.00             | 0.00        | 49.80            | 22.22       | 38.47           | 19.88       |
| PSEUDOPLEURONEC AMER LAR  | 13.40            | 7.68        | 92.40            | 49.97       | 83.40            | 43.73       | 49.80            | 22.22       | 59.75           | 30.87       |
| ANGUILLA ROSTRATA GLASS   | 13.40            | 7.68        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 3.35            | 1.73        |
| STATION TOTAL AND<br>DATE |                  |             |                  |             |                  |             |                  |             |                 |             |
|                           | 174.40           |             | 184.90           |             | 190.70           |             | 224.10           |             | 193.52          |             |

OYSTERCR

GEAR-36BONG

2 MAR 81

| STATION                   | INN1             |             | INN2             |             | DSN1             |             | DSN2             |             | NUMBER<br>TOTAL | PCT<br>COMP |
|---------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |
| PSEUDOPLEURONEC AMER EGG  | 16.20            | 11.76       | 0.00             | 0.00        | 10.20            | 4.54        | 8.30             | 2.85        | 8.68            | 3.07        |
| UNIDENTIFIED EGG          | 0.00             | 0.00        | 8.60             | 1.81        | 10.20            | 4.54        | 0.00             | 0.00        | 4.70            | 1.67        |
| AMPHODYTES AMERICANUS LAR | 0.00             | 0.00        | 103.70           | 21.82       | 10.20            | 4.54        | 49.90            | 17.14       | 40.95           | 14.51       |
| PSEUDOPLEURONEC AMER LAR  | 113.40           | 82.35       | 363.00           | 76.37       | 183.70           | 81.83       | 224.70           | 77.16       | 221.20          | 78.39       |
| ANGUILLA ROSTRATA GLASS   | 8.10             | 5.88        | 0.00             | 0.00        | 10.20            | 4.54        | 8.30             | 2.85        | 6.65            | 2.36        |
| STATION TOTAL AND<br>DATE | TOTAL            |             | TOTAL            |             | TOTAL            |             | TOTAL            |             | TOTAL           |             |
|                           | 137.70           |             | 475.30           |             | 224.50           |             | 291.20           |             | 282.18          |             |

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GEAR-36BONG

9 MAR 81

| STATION                   | INN1             |             | INN2             |             | DSN1             |             | DSN2             |             | NUMBER<br>TOTAL | PCT<br>COMP |
|---------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |
| AMMODYTES AMERICANUS LAR  | 43.20            | 19.99       | 29.40            | 12.51       | 52.40            | 25.02       | 36.30            | 19.07       | 40.33           | 18.96       |
| PSEUDOPLEURONEC AMER LAR  | 129.70           | 60.02       | 195.80           | 83.32       | 148.30           | 70.82       | 154.10           | 80.93       | 156.98          | 73.79       |
| ANGUILLA ROSTRATA GLASS   | 32.40            | 14.99       | 9.80             | 4.17        | 8.70             | 4.15        | 0.00             | 0.00        | 12.73           | 5.98        |
| MYOXOCEPHALUS AENAEU LAR  | 10.80            | 5.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 2.70            | 1.27        |
| STATION TOTAL AND<br>DATE | 216.10           |             | 235.00           |             | 209.40           |             | 190.40           |             | 212.72          |             |

OYSTERC

GEAR-36BONG

16 MAR 81

STATION

| SPECIES                  | INN1             |             | INN2             |             | INN3             |             | INN4             |             | IND1             |             | IND2             |             | IND3             |             |
|--------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|
|                          | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |
| PSEUDOPLEURONEC AMER EGG | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| UNIDENTIFIED EGG         | 0.00             | 0.00        | 3.20             | 1.11        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| AMMOXYTES AMERICANUS LAR | 37.20            | 16.57       | 64.10            | 22.29       | 22.70            | 9.37        | 67.90            | 28.53       | 97.90            | 57.15       | 80.90            | 44.40       | 77.50            | 66.70       |
| PSEUDOPLEURONEC AMER LAR | 175.40           | 78.11       | 220.30           | 76.60       | 204.40           | 84.39       | 90.70            | 38.11       | 73.40            | 42.85       | 101.30           | 55.60       | 25.80            | 22.20       |
| ANGUILLA ROSTRATA GLASS  | 5.30             | 2.36        | 0.00             | 0.00        | 15.10            | 6.23        | 56.70            | 23.82       | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| MYOXOCEPHALUS AEMAEU LAR | 6.65             | 2.96        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 12.90            | 11.10       |
| APELTES QUADRACUS ADULT  | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 22.70            | 9.54        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| PARALICHTHYS DENTATU LAR | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |

STATION TOTAL AND

DATE 224.55 287.60 242.20 238.00 171.30 182.20 116.20

16 MAR 81

GEAR-36BONG

OYSTERCR

| STATION                  | IND4   |       | DSN1   |       | DSN2   |       | DSN3   |       | DSN4   |       | DSO1   |       | DSO2   |       |
|--------------------------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|
|                          | NUMBER | PCT   | NUMBER | PCT   | NUMBER | PCT   | NUMBER | PCT   | NUMBER | PCT   | NUMBER | PCT   | NUMBER | PCT   |
| SPECIES                  | INDIVS | COMP  | INDIVS | COMP  | INDIVS | COMP  | INDIVS | COMP  | INDIVS | COMP  | INDIVS | COMP  | INDIVS | COMP  |
| PSEUDOPLEURONEC AMER EGG | 0.00   | 0.00  | 0.00   | 0.00  | 5.10   | 1.10  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  |
| UNIDENTIFIED EGG         | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  |
| AMMODYTES AMERICANUS LAR | 18.90  | 33.33 | 66.15  | 23.86 | 149.55 | 34.54 | 79.70  | 18.93 | 121.20 | 40.75 | 124.80 | 57.14 | 81.30  | 33.35 |
| PSEUDOPLEURONEC AMER LAR | 37.80  | 66.67 | 196.90 | 71.02 | 278.35 | 64.28 | 329.90 | 78.36 | 165.20 | 55.55 | 93.60  | 42.86 | 153.50 | 62.96 |
| ANGUILLA ROSTRATA GLASS  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 11.40  | 2.71  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  |
| MYOXOCEPHALUS AENAEU LAR | 0.00   | 0.00  | 10.00  | 3.61  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 9.00   | 3.69  |
| APELTES QUADRACUS ADULT  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 11.00  | 3.70  | 0.00   | 0.00  | 0.00   | 0.00  |
| PARALICHTHYS DENTATU LAR | 0.00   | 0.00  | 4.20   | 1.51  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  |

STATION TOTAL AND DATE      56.70      277.25      421.00      297.40      218.40      243.80



16 MAR 81

GEAR-3GBONG

OYSTERCR

| STATION                   | DS03             |             | DS04             |             | NUMBER<br>TOTAL | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|-----------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |                 |             |
| PSEUDOPLEUROPEC AMER EGG  | 0.00             | 0.00        | 0.00             | 0.00        | 0.51            | 0.21        |                 |             |
| UNIDENTIFIED EGG          | 0.00             | 0.00        | 0.00             | 0.00        | 0.32            | 0.13        |                 |             |
| AMNODYTES AMERICANUS LAR  | 38.00            | 44.39       | 36.30            | 79.96       | 74.06           | 31.10       |                 |             |
| PSEUDOPLEUROPEC AMER LAR  | 38.10            | 44.51       | 9.10             | 20.04       | 153.24          | 64.34       |                 |             |
| ANGUILLA ROSTRATA GLASS   | 0.00             | 0.00        | 0.00             | 0.00        | 4.69            | 1.97        |                 |             |
| MYOXOCEPHALUS AEMAEU LAR  | 9.50             | 11.10       | 0.00             | 0.00        | 3.24            | 1.36        |                 |             |
| APELTES QUADRACUS ADULT   | 0.00             | 0.00        | 0.00             | 0.00        | 1.69            | 0.71        |                 |             |
| PARALICHTHYS DENTATU LAR  | 0.00             | 0.00        | 0.00             | 0.00        | 0.42            | 0.18        |                 |             |
| STATION TOTAL AND<br>DATE | 85.60            |             | 45.40            |             | 238.15          |             |                 |             |

23 MAR 81

GEAR-3680MG

OYSTERCR

| STATION                   | INN1   |       | INN2   |       | DSN1   |       | DSN2   |       | NUMBER TOTAL | PCT COMP |
|---------------------------|--------|-------|--------|-------|--------|-------|--------|-------|--------------|----------|
|                           | NUMBER | PCT   | NUMBER | PCT   | NUMBER | PCT   | NUMBER | PCT   |              |          |
| SPECIES                   | INDIVS | COMP  | INDIVS | COMP  | INDIVS | COMP  | INDIVS | COMP  |              |          |
| PSEUDOPLEURONEC AMER EGG  | 0.00   | 0.00  | 0.00   | 0.00  | 11.70  | 5.00  | 0.00   | 0.00  | 2.92         | 1.36     |
| AMPHIDYTES AMERICANUS LAR | 82.70  | 53.84 | 116.00 | 57.11 | 140.40 | 60.00 | 178.10 | 66.68 | 129.30       | 60.29    |
| PSEUDOPLEURONEC AMER LAR  | 59.10  | 38.48 | 87.10  | 42.89 | 58.50  | 25.00 | 89.00  | 33.32 | 73.42        | 34.24    |
| SCOPHTHALMUS AQUOSUS EGG  | 11.80  | 7.68  | 0.00   | 0.00  | 11.70  | 5.00  | 0.00   | 0.00  | 5.88         | 2.74     |
| MYOXOCEPHALUS AENAEU LAR  | 0.00   | 0.00  | 0.00   | 0.00  | 11.70  | 5.00  | 0.00   | 0.00  | 2.92         | 1.36     |
| STATION TOTAL AND DATE    | 153.60 |       | 203.10 |       | 234.00 |       | 267.10 |       | 214.45       |          |

30 MAR 81

GEAR-3380MS

OYSTERCR

STATION

| SPECIES                  | INN1   |       | INN2   |       | DSN1   |       | DSN2   |       | NUMBER TOTAL | PCT COMP |
|--------------------------|--------|-------|--------|-------|--------|-------|--------|-------|--------------|----------|
|                          | NUMBER | PCT   | NUMBER | PCT   | NUMBER | PCT   | NUMBER | PCT   |              |          |
| AMMODYTES AMERICANUS LAR | 44.20  | 50.06 | 32.60  | 59.93 | 23.80  | 42.96 | 19.60  | 24.97 | 30.05        | 43.46    |
| PSEUDOPLEURONEC AMER LAR | 17.60  | 19.93 | 10.90  | 20.04 | 15.80  | 28.52 | 29.50  | 37.58 | 18.45        | 26.68    |
| LABRIDAEGG               | 0.00   | 0.00  | 10.90  | 20.04 | 0.00   | 0.00  | 0.00   | 0.00  | 2.72         | 3.94     |
| SCOPHTHALMUS AQUOSUS EGG | 17.70  | 20.05 | 0.00   | 0.00  | 0.00   | 0.00  | 19.60  | 24.97 | 9.33         | 13.49    |
| ANGUILLA ROSTRATA GLASS  | 0.00   | 0.00  | 0.00   | 0.00  | 15.80  | 28.52 | 9.80   | 12.48 | 6.40         | 9.26     |
| MYOXOCEPHALUS AENAEU LAR | 8.80   | 9.97  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 2.20         | 3.18     |
| -----                    |        |       |        |       |        |       |        |       |              |          |
| STATION TOTAL AND        | 88.30  |       | 54.40  |       | 55.40  |       | 78.50  |       | 69.15        |          |
| DATE                     |        |       |        |       |        |       |        |       |              |          |

OYSTERCR

GEAR-36BONG

6 APR 81

| STATION                   | INN1             |             | INN2             |             | DSN1             |             | DSN2             |             | NUMBER<br>TOTAL | PCT<br>COMP |
|---------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |
| SPECIES                   |                  |             |                  |             |                  |             |                  |             |                 |             |
| AMMODYTES AMERICANUS LAR  | 160.00           | 82.35       | 134.90           | 78.94       | 67.10            | 62.53       | 112.60           | 64.75       | 118.65          | 73.42       |
| PSEUDOPLEURONEC AMER LAR  | 0.00             | 0.00        | 27.00            | 15.80       | 13.40            | 12.49       | 10.20            | 5.87        | 12.65           | 7.83        |
| SCOPHTHALMUS AQUOSUS EGG  | 0.00             | 0.00        | 0.00             | 0.00        | 26.80            | 24.98       | 0.00             | 0.00        | 6.70            | 4.15        |
| ANGUILLA ROSTRATA GLASS   | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 40.90            | 23.52       | 10.23           | 6.33        |
| MYOXOCEPHALUS AENAEU LAR  | 34.30            | 17.65       | 9.00             | 5.27        | 0.00             | 0.00        | 10.20            | 5.87        | 13.38           | 8.28        |
| STATION TOTAL AND<br>DATE | TOTAL            | 194.30      | 170.90           |             | 107.30           |             | 173.90           |             | 161.60          |             |

13 APR 81

GEAR-36B0MG

OYSTERCR

| STATION                   | IHN1   |        | INN2   |       | DSH1   |       | DSN2   |        | NUMBER |       | PCT    |      |
|---------------------------|--------|--------|--------|-------|--------|-------|--------|--------|--------|-------|--------|------|
|                           | INDIVS | COMP   | INDIVS | COMP  | INDIVS | COMP  | INDIVS | COMP   | INDIVS | COMP  | INDIVS | COMP |
| AMPHIDYTES AMERICANUS LAR | 18.10  | 100.00 | 25.20  | 40.00 | 114.40 | 80.00 | 23.60  | 100.00 | 45.33  | 73.19 |        |      |
| SCOPHTHALMUS AQUOSUS EGG  | 0.00   | 0.00   | 37.80  | 60.00 | 28.60  | 20.00 | 0.00   | 0.00   | 16.60  | 26.81 |        |      |
| STATION TOTAL AND<br>DATE | 18.10  |        | 63.00  |       | 143.00 |       | 23.60  |        | 61.93  |       |        |      |

20 APR 81

GEAR-3680NG

OYSTERCR

| STATION                   | INN1             |             | INN2             |             | INN3             |             | INN4             |             | IND1             |             | IND2             |             | IND3             |             |      |
|---------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |      |
| UNIDENTIFIED EGG          | 25.00            | 13.01       | 19.05            | 10.89       | 21.20            | 10.00       | 21.20            | 20.00       | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 35.80       | 9.62 |
| AMPHODYTES AMERICANUS LAR | 90.60            | 47.15       | 64.05            | 36.60       | 148.50           | 70.05       | 70.60            | 66.60       | 159.70           | 51.62       | 122.00           | 45.45       | 150.30           | 40.38       |      |
| PSEUDOPLEURONEC AMER LAR  | 15.10            | 7.86        | 8.35             | 4.77        | 0.00             | 0.00        | 0.00             | 0.00        | 20.00            | 6.46        | 16.20            | 6.04        | 21.50            | 5.78        |      |
| LABRIDAE EGG              | 29.45            | 15.33       | 42.75            | 24.43       | 14.10            | 6.65        | 7.10             | 6.70        | 39.90            | 12.90       | 24.40            | 9.09        | 35.80            | 9.62        |      |
| ATHERINIDAE LAR           | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00 |
| SCOPHTHALMUS AQUOSUS EGG  | 24.00            | 12.45       | 36.65            | 20.94       | 14.10            | 6.65        | 7.10             | 6.70        | 89.80            | 29.02       | 105.80           | 39.42       | 128.80           | 34.61       |      |
| ANGUILLA ROSTRATA GLASS   | 4.00             | 2.08        | 0.00             | 0.00        | 14.10            | 6.65        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00 |
| SCOPHTHALMUS AQUOSUS LAR  | 4.00             | 2.08        | 4.15             | 2.37        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00 |

STATION TOTAL AND DATE 192.15 175.00 212.00 106.00 309.40 268.40 372.20





OYSTERCR

GEAR-36BONG

20 APR 81

| STATION                   | DSD3             |             | DSD4             |             | NUMBER<br>TOTAL | PCT<br>COMP |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |
| UNIDENTIFIED EGG          | 140.50           | 35.30       | 113.00           | 33.34       | 35.35           | 14.21       |
| AMMODYTES AMERICANUS LAR  | 93.60            | 23.52       | 90.30            | 26.65       | 100.88          | 40.55       |
| PSEUDOPLEURONEC AMER LAR  | 39.00            | 9.80        | 15.00            | 4.43        | 16.32           | 6.56        |
| LABRIDAE EGG              | 39.00            | 9.80        | 67.80            | 20.01       | 34.94           | 14.05       |
| ATHERINIDAE LAR           | 0.00             | 0.00        | 0.00             | 0.00        | 1.00            | 0.40        |
| SCOPHTHALMUS AQUOSUS EGG  | 85.90            | 21.58       | 52.80            | 15.58       | 56.42           | 22.68       |
| ANGUILLA ROSTRATA GLASS   | 0.00             | 0.00        | 0.00             | 0.00        | 1.11            | 0.44        |
| SCOPHTHALMUS AQUOSUS LAR  | 0.00             | 0.00        | 0.00             | 0.00        | 2.75            | 1.11        |
| STATION TOTAL AND<br>DATE | 398.00           |             | 338.90           |             | 248.77          |             |

OYSTERCR

GEAR-3680MG

27 APR 81

STATION

| SPECIES                  | INN1   |       | INN2   |       | DSN1   |       | DSN2   |       | TOTAL  |       |
|--------------------------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|
|                          | NUMBER | PCT   | NUMBER | PCT   | NUMBER | PCT   | NUMBER | PCT   | NUMBER | PCT   |
|                          | INDIVS | COMP  | INDIVS | COMP  | INDIVS | COMP  | INDIVS | COMP  | TOTAL  | COMP  |
| UNIDENTIFIED EGG         | 16.60  | 16.63 | 16.20  | 24.96 | 42.60  | 42.86 | 41.00  | 50.06 | 29.10  | 33.64 |
| AMMODYTES AMERICANUS LAR | 33.30  | 33.37 | 8.10   | 12.48 | 0.00   | 0.00  | 0.00   | 0.00  | 10.35  | 11.97 |
| PSEUDOPLEURONEC AMER LAR | 0.00   | 0.00  | 0.00   | 0.00  | 7.10   | 7.14  | 0.00   | 0.00  | 1.77   | 2.05  |
| LABRIDAE EGG             | 49.90  | 50.00 | 24.40  | 37.60 | 35.50  | 35.71 | 34.10  | 41.64 | 35.98  | 41.59 |
| SCOPHTHALMUS AQUOSUS EGG | 0.00   | 0.00  | 16.20  | 24.96 | 14.20  | 14.29 | 0.00   | 0.00  | 7.60   | 8.79  |
| OTHER SPECIES            | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 6.80   | 8.30  | 1.70   | 1.97  |
| STATION TOTAL AND DATE   | 99.80  |       | 64.90  |       | 99.40  |       | 81.90  |       | 86.50  |       |

OYSTERCR

GEAR-36BONG

6 MAY 81

| STATION                   | INN2             |             | DSN1             |             | DSN2             |             |                 |             |
|---------------------------|------------------|-------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |
| ANCHOA MITCHILLI EGG      | 0.00             | 0.00        | 14.40            | 7.70        | 0.00             | 0.00        | 4.80            | 2.67        |
| UNIDENTIFIED EGG          | 0.00             | 0.00        | 14.40            | 7.70        | 7.60             | 4.00        | 7.33            | 4.07        |
| LABRIDAE EGG              | 153.60           | 94.12       | 129.40           | 69.20       | 144.50           | 76.01       | 142.50          | 79.12       |
| ATHERINIDAE LAR           | 9.60             | 5.88        | 7.20             | 3.85        | 0.00             | 0.00        | 5.60            | 3.11        |
| SCOPHTHALMUS AQUOSUS EGG  | 0.00             | 0.00        | 14.40            | 7.70        | 38.00            | 19.99       | 17.47           | 9.70        |
| SCOPHTHALMUS AQUOSUS LAR  | 0.00             | 0.00        | 7.20             | 3.85        | 0.00             | 0.00        | 2.40            | 1.33        |
| STATION TOTAL AND<br>DATE |                  |             |                  |             |                  |             |                 |             |
|                           | 163.20           |             | 187.00           |             | 190.10           |             | 180.10          |             |

OYSTERC

GEAR-36BONG

18 MAY 81

STATION

| SPECIES                   | 1NH1             |             | 1NH2             |             | 1NH3             |             | 1NH4             |             | 1ND1             |             | 1ND2             |             | 1ND3             |             |
|---------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |
| ANCHOA MITCHILLI EGG      | 628.85           | 76.64       | 672.30           | 84.50       | 133.30           | 37.93       | 108.00           | 50.00       | 509.40           | 86.37       | 530.40           | 88.90       | 550.30           | 100.00      |
| ANCHOA MITCHILLI LAR      | 65.35            | 7.96        | 26.20            | 3.29        | 72.70            | 20.69       | 43.20            | 20.00       | 13.40            | 2.27        | 0.00             | 0.00        | 0.00             | 0.00        |
| UNIDENTIFIED EGG          | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| AMMODYTES AMERICANUS LAR  | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 21.60            | 10.00       | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| PSEUDOPLEURONEC AMER LAR  | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| LARRIDAE EGG              | 82.10            | 10.01       | 78.00            | 9.80        | 24.20            | 6.89        | 0.00             | 0.00        | 53.60            | 9.09        | 22.10            | 3.70        | 0.00             | 0.00        |
| SYNGNATHUS FUSCUS JUV     | 0.00             | 0.00        | 0.00             | 0.00        | 97.00            | 27.60       | 21.60            | 10.00       | 13.40            | 2.27        | 44.10            | 7.39        | 0.00             | 0.00        |
| ATHERINIDAE LAR           | 27.65            | 3.37        | 19.10            | 2.40        | 12.10            | 3.44        | 21.60            | 10.00       | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| BREVOORTIA TYRANNUS EGG   | 5.60             | 0.68        | 0.00             | 0.00        | 12.10            | 3.44        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| ATHERINIDAE EGG           | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| MENIDIA BERYLLINA EGG     | 5.60             | 0.68        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| TAUTOGA ONITIS LAR        | 5.35             | 0.65        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| STATION TOTAL AND<br>DATE | 820.50           |             | 795.60           |             | 351.40           |             | 216.00           |             | 589.80           |             | 596.60           |             | 550.30           |             |

18 MAY 81

GEAR-3680MG

OYSTERCR

STATION

| SPECIES                   | IND4             |             | DSN1             |             | DSN2             |             | DSN3             |             | DSN4             |             | DS01             |             | DS02             |             |
|---------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |
| ANCHOA MITCHILLI EGG      | 357.10           | 93.12       | 505.65           | 78.86       | 591.70           | 80.22       | 33.30            | 20.04       | 123.60           | 55.20       | 293.30           | 78.95       | 344.60           | 72.14       |
| ANCHOA MITCHILLI LAR      | 0.00             | 0.00        | 0.00             | 0.00        | 5.20             | 0.70        | 0.00             | 0.00        | 15.40            | 6.88        | 29.30            | 7.89        | 47.00            | 9.84        |
| UNIDENTIFIED EGG          | 0.00             | 0.00        | 8.95             | 1.40        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 7.80             | 1.63        |
| AMMODYTES AMERICANUS LAR  | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| PSEUDOPLEUROPEC AMER LAR  | 13.20            | 3.44        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| LABRIDAE EGG              | 0.00             | 0.00        | 51.30            | 8.00        | 49.55            | 6.72        | 41.60            | 25.03       | 7.70             | 3.44        | 29.30            | 7.89        | 54.80            | 11.47       |
| SYNGNATHUS FUSCUS JUV     | 13.20            | 3.44        | 16.10            | 2.51        | 10.40            | 1.41        | 33.20            | 19.98       | 15.40            | 6.88        | 9.80             | 2.64        | 23.50            | 4.92        |
| ATHERINIDAE LAR           | 0.00             | 0.00        | 48.40            | 7.55        | 77.15            | 10.46       | 58.10            | 34.96       | 61.80            | 27.60       | 9.80             | 2.64        | 0.00             | 0.00        |
| BREVOORTIA TYRANNUS EGG   | 0.00             | 0.00        | 0.00             | 0.00        | 3.60             | 0.49        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| ATHERINIDAE EGG           | 0.00             | 0.00        | 10.80            | 1.68        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| MENIDIA BERYLLINA EGG     | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| TAUTOGA ONITIS LAR        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| STATION TOTAL AND<br>DATE | 383.50           |             | 641.20           |             | 737.60           |             | 166.20           |             | 223.90           |             | 371.50           |             | 477.70           |             |

OYSTERC

GEAR-36BONG

18 MAY 81

STATION

| SPECIES                   | DS03             |             | DS04             |             | NUMBER<br>TOTAL | PCT<br>COMP |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |
| ANCHOA MITCHILLI EGG      | 202.60           | 85.20       | 165.20           | 71.42       | 407.40          | 78.45       |
| ANCHOA MITCHILLI LAR      | 17.60            | 7.40        | 0.00             | 0.00        | 21.61           | 4.16        |
| UNIDENTIFIED EGG          | 0.00             | 0.00        | 0.00             | 0.00        | 1.29            | 0.25        |
| AMMODYTES AMERICANUS LAR  | 0.00             | 0.00        | 0.00             | 0.00        | 1.08            | 0.21        |
| PSEUDOPLEURONEC AMER LAR  | 0.00             | 0.00        | 0.00             | 0.00        | 0.66            | 0.13        |
| LABRIDAE EGG              | 17.60            | 7.40        | 66.10            | 28.58       | 41.94           | 8.08        |
| SYNGNATHUS FUSCUS JUV     | 0.00             | 0.00        | 0.00             | 0.00        | 16.21           | 3.12        |
| ATHERINIDAE LAR           | 0.00             | 0.00        | 0.00             | 0.00        | 25.40           | 4.89        |
| BREVOORTIA TYRANNUS EGG   | 0.00             | 0.00        | 0.00             | 0.00        | 1.52            | 0.29        |
| ATHERINIDAE EGG           | 0.00             | 0.00        | 0.00             | 0.00        | 1.08            | 0.21        |
| MENIDIA BERYLLINA EGG     | 0.00             | 0.00        | 0.00             | 0.00        | 0.56            | 0.11        |
| TAUTOGA ONITIS LAR        | 0.00             | 0.00        | 0.00             | 0.00        | 0.53            | 0.10        |
| STATION TOTAL AND<br>DATE | 237.80           |             | 231.30           |             | 519.29          |             |

26 MAY 81

GEAR-36BONG

OYSJERC

| STATION                  | INN1   |       | INN2   |       | DSN1   |       | DSN2   |       | NUMBER TOTAL | PCT COMP |
|--------------------------|--------|-------|--------|-------|--------|-------|--------|-------|--------------|----------|
|                          | NUMBER | PCT   | NUMBER | PCT   | NUMBER | PCT   | NUMBER | PCT   |              |          |
| ANCHOA MITCHILLI EGG     | 266.90 | 69.76 | 333.30 | 75.58 | 291.00 | 71.75 | 199.80 | 66.67 | 272.75       | 71.36    |
| ANCHOA MITCHILLI LAR     | 8.90   | 2.33  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 2.22         | 0.58     |
| UNIDENTIFIED EGG         | 0.00   | 0.00  | 10.80  | 2.45  | 0.00   | 0.00  | 0.00   | 0.00  | 2.70         | 0.71     |
| LABRIDAE EGG             | 17.80  | 4.65  | 43.00  | 9.75  | 17.60  | 4.34  | 27.20  | 9.08  | 26.40        | 6.91     |
| SYNGNATHUS FUSCUS JUV    | 35.60  | 9.30  | 0.00   | 0.00  | 0.00   | 0.00  | 18.20  | 6.07  | 13.45        | 3.52     |
| ATHERINIDAE LAR          | 53.40  | 13.96 | 53.90  | 12.22 | 88.20  | 21.75 | 54.50  | 18.18 | 62.50        | 16.35    |
| SPHOEROIDES MACULATU LAR | 0.00   | 0.00  | 0.00   | 0.00  | 8.80   | 2.17  | 0.00   | 0.00  | 2.20         | 0.58     |
| STATION TOTAL AND DATE   | 382.60 |       | 441.00 |       | 405.60 |       | 299.70 |       | 382.22       |          |



OYSTERCR

GEAR-36BONG

1 JUN 81

| STATION                   | INN1             |             | INN2             |             | DSN1             |             | DSN2             |             | NUMBER<br>TOTAL | PCT<br>COMP |
|---------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |
| ANCHOA MITCHILLI EGG      | 10408.60         | 80.94       | 5488.60          | 76.37       | 4341.40          | 76.83       | 7403.50          | 81.17       | 6910.52         | 79.39       |
| ANCHOA MITCHILLI LAR      | 424.00           | 3.30        | 831.10           | 11.56       | 272.80           | 4.83        | 509.40           | 5.59        | 509.33          | 5.85        |
| UNIDENTIFIED EGG          | 986.90           | 7.67        | 255.70           | 3.56        | 280.60           | 4.97        | 271.20           | 2.97        | 448.60          | 5.15        |
| GOBIIDAE LAR              | 0.00             | 0.00        | 9.10             | 0.13        | 0.00             | 0.00        | 0.00             | 0.00        | 2.28            | 0.03        |
| LABRIDAE EGG              | 123.40           | 0.96        | 0.00             | 0.00        | 31.20            | 0.55        | 65.70            | 0.72        | 55.08           | 0.63        |
| SYNGNATHUS FUSCUS JUV     | 7.70             | 0.06        | 146.10           | 2.03        | 54.60            | 0.97        | 65.80            | 0.72        | 68.55           | 0.79        |
| ATHERINIDAE LAR           | 123.30           | 0.96        | 246.70           | 3.43        | 233.90           | 4.14        | 304.00           | 3.33        | 226.98          | 2.61        |
| TRINECTES MACULATUS EGG   | 616.80           | 4.80        | 82.20            | 1.14        | 249.40           | 4.41        | 262.90           | 2.88        | 302.83          | 3.48        |
| BREVORTIA TYRANNUS EGG    | 154.20           | 1.20        | 109.60           | 1.52        | 187.10           | 3.31        | 197.20           | 2.16        | 162.02          | 1.86        |
| MENIDIA MENIDIA JUV       | 0.00             | 0.00        | 9.10             | 0.13        | 0.00             | 0.00        | 0.00             | 0.00        | 2.28            | 0.03        |
| SPHOERIDES MACULATU LAR   | 15.40            | 0.12        | 9.10             | 0.13        | 0.00             | 0.00        | 24.70            | 0.27        | 12.30           | 0.14        |
| SCOPHTHALMUS AQUOSUS LAR  | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 16.40            | 0.18        | 4.10            | 0.05        |
| STATION TOTAL AND<br>DATE | TOTAL            |             |                  |             |                  |             |                  |             |                 |             |
|                           | 12860.30         |             | 7187.30          |             | 5651.00          |             | 9120.80          |             | 8704.85         |             |

8 JUN 81

GEAR-36BONG

OYSTERCR

| STATION                 | INN1          |          | INN2          |          | DSM1          |          | DSM2          |          | NUMBER TOTAL | PCT COMP | PCT COMP |
|-------------------------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|--------------|----------|----------|
|                         | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP |              |          |          |
| ANCHOA MITCHELLI EGG    | 1379.70       | 70.76    | 1328.90       | 76.37    | 1961.90       | 78.64    | 1554.30       | 78.56    | 1556.20      | 76.26    | 76.26    |
| ANCHOA MITCHELLI LAR    | 205.20        | 10.52    | 162.50        | 9.34     | 85.70         | 3.44     | 87.00         | 4.40     | 135.10       | 6.62     | 6.62     |
| UNIDENTIFIED EGG        | 136.80        | 7.02     | 76.50         | 4.40     | 228.60        | 9.16     | 43.50         | 2.20     | 121.35       | 5.95     | 5.95     |
| GORIIDAE LAR            | 45.60         | 2.34     | 38.20         | 2.20     | 38.00         | 1.52     | 54.40         | 2.75     | 44.05        | 2.16     | 2.16     |
| LABRIDAE EGG            | 11.40         | 0.58     | 0.00          | 0.00     | 19.00         | 0.76     | 10.90         | 0.55     | 10.32        | 0.51     | 0.51     |
| SYNGNATHUS FUSCUS JUV   | 114.00        | 5.85     | 28.70         | 1.65     | 19.00         | 0.76     | 32.60         | 1.65     | 48.58        | 2.38     | 2.38     |
| ATHERINIDAE LAR         | 34.20         | 1.75     | 57.40         | 3.30     | 95.20         | 3.82     | 141.30        | 7.14     | 82.03        | 4.02     | 4.02     |
| MENIDIA MENIDIA JUV     | 11.40         | 0.58     | 9.60          | 0.55     | 19.00         | 0.76     | 43.50         | 2.20     | 20.88        | 1.02     | 1.02     |
| BLENNIIDAE LAR          | 0.00          | 0.00     | 9.60          | 0.55     | 0.00          | 0.00     | 10.90         | 0.55     | 5.13         | 0.25     | 0.25     |
| SPHOERIDES MACULATU LAR | 0.00          | 0.00     | 19.10         | 1.10     | 19.00         | 0.76     | 0.00          | 0.00     | 9.53         | 0.47     | 0.47     |
| TRINECTES MACULATUS LAR | 11.40         | 0.58     | 9.60          | 0.55     | 0.00          | 0.00     | 0.00          | 0.00     | 5.25         | 0.26     | 0.26     |
| OTHER SPECIES           | 0.00          | 0.00     | 0.00          | 0.00     | 9.50          | 0.38     | 0.00          | 0.00     | 2.38         | 0.12     | 0.12     |
| STATION TOTAL AND DATE  | 1949.70       |          | 1740.10       |          | 2494.90       |          | 1978.40       |          | 2040.78      |          |          |

OYSTERCR

GEAR-36RONG

15 JUN 81

STATION

| SPECIES                   | INN1             |             | INN2             |             | INN3             |             | INN4             |             | IND1             |             | IND2             |             | IND3             |             |
|---------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |
| ANCHOA MITCHILLI EGG      | 739.15           | 75.07       | 814.35           | 79.96       | 2713.80          | 85.63       | 3278.10          | 80.37       | 1081.70          | 65.78       | 751.80           | 70.00       | 953.20           | 76.06       |
| ANCHOA MITCHILLI LAR      | 89.95            | 9.14        | 49.50            | 4.86        | 74.40            | 2.35        | 193.30           | 4.74        | 264.90           | 16.11       | 83.50            | 7.77        | 97.10            | 7.75        |
| UNIDENTIFIED EGG          | 35.50            | 3.61        | 17.85            | 1.75        | 0.00             | 0.00        | 36.80            | 0.90        | 0.00             | 0.00        | 23.90            | 2.23        | 0.00             | 0.00        |
| GOBIIDAE LAR              | 49.15            | 4.99        | 68.90            | 6.77        | 241.60           | 7.62        | 451.20           | 11.06       | 297.90           | 18.11       | 191.00           | 17.78       | 44.10            | 3.52        |
| LABRIDAE EGG              | 5.25             | 0.53        | 8.55             | 0.84        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 79.40            | 6.34        |
| SYNGRATHUS FUSCUS JUV     | 50.55            | 5.13        | 41.45            | 4.07        | 102.20           | 3.22        | 82.80            | 2.03        | 0.00             | 0.00        | 23.80            | 2.22        | 0.00             | 0.00        |
| ATHERINIDAE LAR           | 0.60             | 0.00        | 8.50             | 0.83        | 37.20            | 1.17        | 36.80            | 0.90        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| TRINECTES MACULATUS EGG   | 5.25             | 0.53        | 5.05             | 0.50        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| MENIDIA MENIDIA JUV       | 5.25             | 0.53        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 79.40            | 6.34        |
| GOBIIDAE JUV              | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| BLENNIIDAE LAR            | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| HIPPICAMPUS ERECTUS JUV   | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| STRONGYLURA MARINA LAR    | 4.55             | 0.46        | 4.25             | 0.42        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| CHASMODES BOSQUIARIUS JUV | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| STATION TOTAL AND<br>DATE | 984.60           |             | 1013.40          |             | 3169.20          |             | 4079.00          |             | 1644.50          |             | 1074.00          |             | 1253.20          |             |

OYSTERC

GEAR-36BUNG

15 JUN 81

STATION

| SPECIES                   | IND4             |             | DSN1             |             | DSN2             |             | DSR3             |             | DSM4             |             | DSD1             |             | DSD3             |             |
|---------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |
| ANCHOA MITCHILLI EGG      | 897.80           | 77.68       | 1415.20          | 84.87       | 1069.30          | 80.67       | 4565.90          | 89.31       | 4124.10          | 90.35       | 498.60           | 61.00       | 918.10           | 70.16       |
| ANCHOA MITCHILLI LAR      | 154.80           | 13.39       | 53.85            | 3.23        | 55.80            | 4.21        | 39.00            | 0.76        | 70.10            | 1.54        | 179.70           | 21.98       | 114.80           | 8.77        |
| UNIDENTIFIED EGG          | 10.30            | 0.89        | 19.30            | 1.16        | 33.30            | 2.51        | 39.00            | 0.76        | 0.00             | 0.00        | 0.00             | 0.00        | 145.40           | 11.11       |
| GOBIIDAE LAR              | 61.90            | 5.36        | 125.90           | 7.55        | 80.75            | 6.09        | 351.20           | 6.87        | 0.00             | 0.00        | 110.10           | 13.47       | 38.30            | 2.93        |
| LABRIDAE EGG              | 20.60            | 1.78        | 0.00             | 0.00        | 23.45            | 1.77        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 76.50            | 5.85        |
| SYNGNATHUS FUSCUS JUV     | 10.30            | 0.89        | 33.75            | 2.02        | 47.15            | 3.56        | 87.90            | 1.72        | 40.00            | 0.88        | 11.60            | 1.42        | 7.70             | 0.59        |
| ATHERINIDAE LAR           | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 9.80             | 0.19        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| TRINECTES MACULATUS EGG   | 0.00             | 0.00        | 0.00             | 0.00        | 4.95             | 0.37        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| MENIDIA MENIDIA JUV       | 0.00             | 0.00        | 9.65             | 0.58        | 10.80            | 0.81        | 0.00             | 0.00        | 0.00             | 0.00        | 17.40            | 2.13        | 7.70             | 0.59        |
| GOBIIDAE JUV              | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 330.30           | 7.24        | 0.00             | 0.00        | 0.00             | 0.00        |
| BLENNIIDAE LAR            | 0.00             | 0.00        | 4.80             | 0.29        | 0.00             | 0.00        | 9.80             | 0.19        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| HIPPOCAMPUS ERECTUS JUV   | 0.00             | 0.00        | 4.95             | 0.30        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| STRONGYLURA MARINA LAR    | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| CHASMODES BOSQUIANUS JUV  | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 9.80             | 0.19        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| STATION TOTAL AND<br>DATE | 1155.70          |             | 1667.40          |             | 1325.50          |             | 5112.40          |             | 4564.50          |             | 817.40           |             | 1308.50          |             |

OYSTERCR

GEAR-36BONG

15 JUN 81

STATION

DSD4

| SPECIES                   | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |
|---------------------------|------------------|-------------|-----------------|-------------|
| ANCHOA MITCHILLI EGG      | 921.20           | 84.14       | 1514.75         | 81.61       |
| ANCHOA MITCHILLI LAR      | 86.80            | 7.93        | 97.72           | 5.26        |
| UNIDENTIFIED EGG          | 13.40            | 1.22        | 25.30           | 1.36        |
| GOBIIDAE LAR              | 40.10            | 3.66        | 130.36          | 7.02        |
| LABRIDAE EGG              | 26.70            | 2.44        | 14.62           | 0.79        |
| SYNGNATHUS FUSCUS JUV     | 6.70             | 0.61        | 37.83           | 2.04        |
| ATHERINIDAE LAR           | 0.00             | 0.00        | 5.31            | 0.29        |
| TRINECTES MACULATUS EGG   | 0.00             | 0.00        | 1.61            | 0.09        |
| MENIDIA MENIDIA JUV       | 0.00             | 0.00        | 8.21            | 0.44        |
| GOBIIDAE JUV              | 0.00             | 0.00        | 17.38           | 0.94        |
| BLENNIIDAE LAR            | 0.00             | 0.00        | 1.02            | 0.06        |
| HIPPOCAMPUS ERECTUS JUV   | 0.00             | 0.00        | 0.52            | 0.03        |
| STRONGYLURA MARINA LAR    | 0.00             | 0.00        | 0.93            | 0.05        |
| CHASMODES BOSQUIANUS JUV  | 0.00             | 0.00        | 0.52            | 0.03        |
| STATION TOTAL AND<br>DATE | TOTAL            | 1094.90     | 1856.06         |             |

OYSTERCR

GEAR-36BONG

22 JUN 81

| STATION                   | INN1             |             | INN2             |             | DSN1             |             | DSN2             |             | NUMBER<br>TOTAL | PCT<br>COMP |
|---------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |
| ANCHOA MITCHILLI EGG      | 1622.20          | 56.93       | 1023.00          | 45.45       | 5639.30          | 81.65       | 2786.70          | 58.56       | 2767.80         | 66.04       |
| ANCHOA MITCHILLI LAR      | 74.70            | 2.62        | 51.20            | 2.27        | 79.90            | 1.16        | 128.60           | 2.70        | 83.60           | 1.99        |
| UNIDENTIFIED EGG          | 896.50           | 31.46       | 844.00           | 37.50       | 867.60           | 12.56       | 1329.00          | 27.93       | 984.28          | 23.48       |
| GOBIIDAE LAR              | 192.10           | 6.74        | 255.90           | 11.37       | 251.10           | 3.64        | 364.40           | 7.66        | 265.88          | 6.34        |
| LABRIDAE EGG              | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 42.90            | 0.90        | 10.73           | 0.26        |
| SYNGNATHUS FUSCUS JUV     | 10.70            | 0.38        | 12.80            | 0.57        | 22.80            | 0.33        | 10.70            | 0.22        | 14.25           | 0.34        |
| ATHERINIDAE LAR           | 0.00             | 0.00        | 0.00             | 0.00        | 11.40            | 0.17        | 0.00             | 0.00        | 2.85            | 0.07        |
| TRINECTES MACULATUS EGG   | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 42.90            | 0.90        | 10.73           | 0.26        |
| MENIDIA MENIDIA JUV       | 32.00            | 1.12        | 38.40            | 1.71        | 34.20            | 0.50        | 42.80            | 0.90        | 36.85           | 0.88        |
| BLENNIIDAE LAR            | 21.30            | 0.75        | 25.60            | 1.14        | 0.00             | 0.00        | 0.00             | 0.00        | 11.72           | 0.28        |
| UNIDENTIFIED LAR          | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 10.70            | 0.22        | 2.67            | 0.06        |
| STATION TOTAL AND<br>DATE | TOTAL            | 2849.50     | 2250.90          |             | 6906.30          |             | 4758.70          |             | 4191.35         |             |

OYSTERCR

GEAR-36BONG

29 JUN 81

| STATION                   | INN1             |             | INN2             |             | DSN1             |             | DSN2             |             | NUMBER<br>TOTAL | PCT<br>COMP |
|---------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |
| ANCHOA MITCHILLI EGG      | 397.70           | 20.44       | 567.40           | 28.78       | 603.20           | 35.85       | 902.50           | 53.57       | 617.70          | 33.92       |
| ANCHOA MITCHILLI LAR      | 710.30           | 36.50       | 695.10           | 35.25       | 254.00           | 15.10       | 300.80           | 17.85       | 490.05          | 26.91       |
| UNIDENTIFIED EGG          | 340.90           | 17.52       | 297.90           | 15.11       | 587.30           | 34.90       | 324.90           | 19.29       | 387.75          | 21.29       |
| Gobiidae LAR              | 383.50           | 19.71       | 383.00           | 19.42       | 111.20           | 6.61        | 48.10            | 2.86        | 231.45          | 12.71       |
| SYNGNATHUS FUSCUS JUV     | 42.60            | 2.19        | 0.00             | 0.00        | 63.40            | 3.77        | 48.20            | 2.86        | 38.55           | 2.12        |
| ATHERINIDAE LAR           | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 24.10            | 1.43        | 6.03            | 0.33        |
| ANCHOA MITCHILLI JUV      | 42.60            | 2.19        | 14.20            | 0.72        | 15.90            | 0.94        | 0.00             | 0.00        | 18.17           | 1.00        |
| MENIDIA MENIDIA JUV       | 0.00             | 0.00        | 0.00             | 0.00        | 31.70            | 1.88        | 36.10            | 2.14        | 16.95           | 0.93        |
| BLENNIDAE LAR             | 28.40            | 1.46        | 0.00             | 0.00        | 15.90            | 0.94        | 0.00             | 0.00        | 11.07           | 0.61        |
| GOBIOSOMA BOSCI JUV       | 0.00             | 0.00        | 14.20            | 0.72        | 0.00             | 0.00        | 0.00             | 0.00        | 3.55            | 0.19        |
| STATION TOTAL AND<br>DATE |                  |             |                  |             |                  |             |                  |             |                 |             |
|                           | TOTAL            |             |                  |             |                  |             |                  |             |                 |             |
|                           | 1946.00          |             | 1971.80          |             | 1682.60          |             | 1684.70          |             | 1821.28         |             |



OYSTERCR

GEAR-36BONG

6 JUL 81

| STATION                   | INN1             |             | INN2             |             | DSN1             |             | DSN2             |             | NUMBER<br>TOTAL | PCT<br>COMP |
|---------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |
| ANCHOA MITCHILLI EGG      | 444.20           | 56.51       | 662.30           | 73.19       | 300.80           | 40.33       | 708.30           | 60.21       | 528.90          | 58.55       |
| ANCHOA MITCHILLI LAR      | 205.00           | 26.08       | 55.10            | 6.09        | 132.40           | 17.75       | 72.00            | 6.12        | 116.13          | 12.86       |
| UNIDENTIFIED EGG          | 34.20            | 4.35        | 22.10            | 2.44        | 36.10            | 4.84        | 0.00             | 0.00        | 23.10           | 2.56        |
| GOBIIDAE LAR              | 57.00            | 7.25        | 66.20            | 7.32        | 192.40           | 25.79       | 276.10           | 23.47       | 147.93          | 16.38       |
| SYNGNATHUS FUSCUS JUV     | 0.00             | 0.00        | 22.00            | 2.43        | 0.00             | 0.00        | 12.00            | 1.02        | 8.50            | 0.94        |
| TRINECTES MACULATUS EGG   | 11.40            | 1.45        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 2.85            | 0.32        |
| ANCHOA MITCHILLI JUV      | 22.80            | 2.90        | 77.20            | 8.53        | 84.20            | 11.29       | 84.00            | 7.14        | 67.05           | 7.42        |
| MENIDIA MENIDIA JUV       | 11.40            | 1.45        | 0.00             | 0.00        | 0.00             | 0.00        | 12.00            | 1.02        | 5.85            | 0.65        |
| UNIDENTIFIED FRAG. JUV    | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 12.00            | 1.02        | 3.00            | 0.33        |
| STATION TOTAL AND<br>DATE | 786.00           |             | 904.90           |             | 745.90           |             | 1176.40          |             | 903.30          |             |

OYSTERCR

GEAR-36BONG

13 JUL 81

| STATION                   | INN1             |             | INN2             |             | DSN1             |             | DSN2             |             |                 |             |
|---------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |
| ANCHOA MITCHILLI EGG      | 21.00            | 1.92        | 0.00             | 0.00        | 0.00             | 0.00        | 22.40            | 2.60        | 10.85           | 1.13        |
| ANCHOA MITCHILLI LAR      | 462.70           | 42.31       | 444.30           | 48.32       | 346.80           | 36.20       | 246.40           | 28.57       | 375.05          | 39.14       |
| UNIDENTIFIED EGG          | 462.70           | 42.31       | 289.30           | 31.46       | 272.50           | 28.44       | 470.30           | 54.54       | 373.70          | 39.00       |
| GOBIIDAE LAR              | 42.00            | 3.84        | 93.00            | 10.11       | 99.10            | 10.34       | 67.20            | 7.79        | 75.33           | 7.86        |
| SYNGNATHUS FUSCUS JUV     | 21.00            | 1.92        | 10.30            | 1.12        | 8.30             | 0.87        | 0.00             | 0.00        | 9.90            | 1.03        |
| ATHERINIDAE LAR           | 0.00             | 0.00        | 10.30            | 1.12        | 0.00             | 0.00        | 0.00             | 0.00        | 2.58            | 0.27        |
| TRINECTES MACULATUS EGG   | 31.50            | 2.88        | 51.70            | 5.62        | 214.70           | 22.41       | 44.80            | 5.20        | 85.67           | 8.94        |
| ANCHOA MITCHILLI JUV      | 42.10            | 3.85        | 20.60            | 2.24        | 8.30             | 0.87        | 0.00             | 0.00        | 17.75           | 1.85        |
| MENIDIA MENIDIA JUV       | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 11.20            | 1.30        | 2.80            | 0.29        |
| BLENNIIDAE LAR            | 10.50            | 0.96        | 0.00             | 0.00        | 8.30             | 0.87        | 0.00             | 0.00        | 4.70            | 0.49        |
| STATION TOTAL AND<br>DATE |                  |             |                  |             |                  |             |                  |             |                 |             |
|                           | 1093.50          |             | 919.50           |             | 958.00           |             | 862.30           |             | 958.33          |             |

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GEAR-36BONG

20 JUL 81

| STATION                   | INN1             |             | INN2             |             | INN3             |             | INN4             |             | IND1             |             | IND2             |             | IND3             |             |
|---------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |
| ANCHOA MITCHILLI EGG      | 110.45           | 10.77       | 342.05           | 26.55       | 5018.50          | 75.42       | 6355.10          | 81.93       | 7174.30          | 97.37       | 6481.50          | 95.89       | 3521.00          | 98.01       |
| ANCHOA MITCHILLI LAR      | 500.85           | 48.83       | 538.60           | 41.81       | 1070.10          | 16.08       | 778.70           | 10.04       | 100.10           | 1.36        | 226.40           | 3.35        | 17.80            | 0.50        |
| UNIDENTIFIED EGG          | 223.10           | 21.75       | 100.00           | 7.76        | 49.20            | 0.74        | 124.60           | 1.61        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| GOBIIDAE LAR              | 91.20            | 8.89        | 241.35           | 18.73       | 455.10           | 6.84        | 467.30           | 6.02        | 93.50            | 1.27        | 51.50            | 0.76        | 53.60            | 1.49        |
| SYNGNATHUS FUSCUS JUV     | 13.20            | 1.29        | 9.65             | 0.75        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| ATHERINIDAE LAR           | 6.05             | 0.59        | 0.00             | 0.00        | 0.00             | 0.00        | 15.60            | 0.20        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| TRINECTES MACULATUS EGG   | 35.20            | 3.43        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| ANCHOA MITCHILLI JUV      | 32.45            | 3.16        | 49.95            | 3.88        | 24.60            | 0.37        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| BLENNIIDAE LAR            | 13.20            | 1.29        | 6.65             | 0.52        | 12.30            | 0.18        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| CYNOSCION REGALIS JUV     | 0.00             | 0.00        | 0.00             | 0.00        | 12.30            | 0.18        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| UNIDENTIFIED LAR          | 0.00             | 0.00        | 0.00             | 0.00        | 12.30            | 0.18        | 15.60            | 0.20        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| GOBIIDAE EGG              | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| STATION TOTAL AND<br>DATE |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |
|                           | 1025.70          |             | 1288.25          |             | 6654.40          |             | 7756.90          |             | 7367.90          |             | 6759.40          |             | 3592.40          |             |

OYSTERCR

GEAR-3680NG

20 JUL 81

STATION

| SPECIES                 | IND4             |             | DSM1             |             | DSN2             |             | DSN3             |             | DSN4             |             | DSD1             |             | DSD2             |             |
|-------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|
|                         | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |
| ANCHOA MITCHILLI EGG    | 2748.60          | 92.41       | 164.20           | 18.67       | 408.50           | 42.18       | 4077.70          | 87.70       | 6111.70          | 93.06       | 8747.20          | 98.71       | 6650.40          | 97.84       |
| ANCHOA MITCHILLI LAR    | 144.60           | 4.86        | 345.45           | 39.28       | 255.45           | 26.38       | 334.40           | 7.19        | 193.80           | 2.95        | 79.70            | 0.90        | 134.50           | 1.98        |
| UNIDENTIFIED EGG        | 0.00             | 0.00        | 211.35           | 24.03       | 93.45            | 9.65        | 21.60            | 0.46        | 45.60            | 0.69        | 0.00             | 0.00        | 0.00             | 0.00        |
| Gobiidae LAR            | 63.20            | 2.12        | 99.90            | 11.36       | 110.90           | 11.45       | 183.40           | 3.94        | 182.40           | 2.78        | 34.20            | 0.39        | 12.20            | 0.18        |
| SYNGNATHUS FUSCUS JUV   | 0.00             | 0.00        | 0.00             | 0.00        | 13.50            | 1.39        | 10.80            | 0.23        | 11.40            | 0.17        | 0.00             | 0.00        | 0.00             | 0.00        |
| ATHERINIDAE LAR         | 0.00             | 0.00        | 0.00             | 0.00        | 6.35             | 0.66        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| TRINECTES MACULATUS EGG | 0.00             | 0.00        | 0.00             | 0.00        | 6.35             | 0.66        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| ANCHOA MITCHILLI JUV    | 0.00             | 0.00        | 48.55            | 5.52        | 67.25            | 6.94        | 21.60            | 0.46        | 22.80            | 0.35        | 0.00             | 0.00        | 0.00             | 0.00        |
| BLENNIIDAE LAR          | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| CYNOSSION REGALIS JUV   | 0.00             | 0.00        | 10.00            | 1.14        | 6.75             | 0.70        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| UNIDENTIFIED LAR        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| Gobiidae EGG            | 18.10            | 0.61        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |

STATION TOTAL AND

DATE 2974.50 979.45 968.50 4649.50 6567.70 8861.10 6797.10

20 JUL 81

GEAR-36BONG

OYSTERCR

STATION

DS03

DS04

| SPECIES                 | DS03             |             | DS04             |             | TOTAL           |             |
|-------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                         | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |
| ANCHOA MITCHILLI EGG    | 4127.00          | 97.07       | 3267.70          | 97.58       | 3316.56         | 85.14       |
| ANCHOA MITCHILLI LAR    | 79.40            | 1.87        | 57.90            | 1.73        | 324.90          | 8.34        |
| UNIDENTIFIED EGG        | 0.00             | 0.00        | 0.00             | 0.00        | 74.84           | 1.92        |
| Gobiidae LAR            | 45.30            | 1.07        | 11.60            | 0.35        | 137.00          | 3.52        |
| SYNGNATHUS FUSCUS JUV   | 0.00             | 0.00        | 0.00             | 0.00        | 4.75            | 0.12        |
| ATHERINIDAE LAR         | 0.00             | 0.00        | 11.60            | 0.35        | 2.60            | 0.07        |
| TRINectes MACULATUS EGG | 0.00             | 0.00        | 0.00             | 0.00        | 4.15            | 0.11        |
| ANCHOA MITCHILLI JUV    | 0.00             | 0.00        | 0.00             | 0.00        | 23.27           | 0.60        |
| BLENNIIDAE LAR          | 0.00             | 0.00        | 0.00             | 0.00        | 2.60            | 0.07        |
| CYNOSCION REGALIS JUV   | 0.00             | 0.00        | 0.00             | 0.00        | 2.29            | 0.06        |
| UNIDENTIFIED LAR        | 0.00             | 0.00        | 0.00             | 0.00        | 1.40            | 0.04        |
| Gobiidae EGG            | 0.00             | 0.00        | 0.00             | 0.00        | 0.91            | 0.02        |

STATION TOTAL AND DATE  
 4251.70 3348.80 3895.26

OYSTERCR

GEAR-36BONG

27 JUL 81

| STATION                   | INN1             |             | INN2             |             | DSN1             |             | DSN2             |             | NUMBER<br>TOTAL | PCT<br>COMP |
|---------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |
| ANCHOA MITCHILLI EGG      | 287.40           | 39.73       | 851.30           | 70.15       | 304.30           | 35.00       | 1521.00          | 77.90       | 741.00          | 62.28       |
| ANCHOA MITCHILLI LAR      | 188.30           | 26.03       | 186.00           | 15.33       | 130.50           | 15.01       | 97.10            | 4.97        | 150.47          | 12.65       |
| UNIDENTIFIED EGG          | 158.60           | 21.92       | 156.60           | 12.90       | 358.70           | 41.25       | 269.70           | 13.81       | 235.90          | 19.83       |
| GOBIIDAE LAR              | 29.70            | 4.11        | 0.00             | 0.00        | 54.30            | 6.24        | 21.60            | 1.11        | 26.40           | 2.22        |
| SYNGNATHUS FUSCUS JUV     | 0.00             | 0.00        | 9.80             | 0.81        | 0.00             | 0.00        | 0.00             | 0.00        | 2.45            | 0.21        |
| TRINECTES MACULATUS EGG   | 39.60            | 5.47        | 0.00             | 0.00        | 0.00             | 0.00        | 10.80            | 0.55        | 12.60           | 1.06        |
| ANCHOA MITCHILLI JUV      | 9.90             | 1.37        | 9.80             | 0.81        | 21.70            | 2.50        | 10.80            | 0.55        | 13.05           | 1.10        |
| BLENNIIDAE LAR            | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 10.80            | 0.55        | 2.70            | 0.23        |
| CYNOSCION REGALIS JUV     | 9.90             | 1.37        | 0.00             | 0.00        | 0.00             | 0.00        | 10.80            | 0.55        | 5.18            | 0.43        |
| STATION TOTAL AND<br>DATE |                  |             |                  |             |                  |             |                  |             |                 |             |
|                           | 723.40           |             | 1213.50          |             | 869.50           |             | 1952.60          |             | 1189.75         |             |

OYSTERCR

GEAR-36BONG

3 AUG 81

| STATION                   | INN1             |             | INN2             |             | DSN1             |             | DSN2             |             | NUMBER<br>TOTAL | PCT<br>COMP |
|---------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |
| ANCHOA MITCHILLI EGG      | 775.70           | 77.89       | 1376.10          | 89.40       | 869.50           | 82.76       | 1841.40          | 89.44       | 1215.70         | 86.15       |
| ANCHOA MITCHILLI LAR      | 146.80           | 14.74       | 102.00           | 6.63        | 96.60            | 9.19        | 102.30           | 4.97        | 111.93          | 7.93        |
| UNIDENTIFIED EGG          | 31.40            | 3.15        | 51.00            | 3.31        | 60.40            | 5.75        | 51.20            | 2.49        | 48.50           | 3.44        |
| GOBIIDAE LAR              | 31.50            | 3.16        | 10.20            | 0.66        | 24.20            | 2.30        | 38.40            | 1.87        | 26.08           | 1.85        |
| ANCHOA MITCHILLI JUV      | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 25.60            | 1.24        | 6.40            | 0.45        |
| BLENNIIDAE LAR            | 10.50            | 1.05        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 2.63            | 0.19        |
| STATION TOTAL AND<br>DATE | 995.90           |             | 1539.30          |             | 1050.80          |             | 2058.90          |             | 1411.23         |             |



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GEAR-36BONG

10 AUG 81

| STATION                   | INN1             |             | INN2             |             | DSN1             |             | DSN2             |             | NUMBER<br>TOTAL | PCT<br>COMP |
|---------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |
| ANCHOA MITCHILLI EGG      | 1377.90          | 93.52       | 2193.10          | 94.36       | 1747.60          | 88.89       | 2559.80          | 95.54       | 1969.60         | 93.31       |
| ANCHOA MITCHILLI LAR      | 81.90            | 5.56        | 65.50            | 2.82        | 36.40            | 1.85        | 47.80            | 1.78        | 57.90           | 2.74        |
| GOBIDAE LAR               | 0.00             | 0.00        | 65.50            | 2.82        | 145.70           | 7.41        | 59.80            | 2.23        | 67.75           | 3.21        |
| ANCHOA MITCHILLI JUV      | 13.60            | 0.92        | 0.00             | 0.00        | 36.40            | 1.85        | 12.00            | 0.45        | 15.50           | 0.73        |
| STATION TOTAL AND<br>DATE |                  |             |                  |             |                  |             |                  |             |                 |             |
|                           | 1473.40          |             | 2324.10          |             | 1966.10          |             | 2679.40          |             | 2110.75         |             |

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GEAR-3680NG

31 AUG 81

STATION

| SPECIES                   | INN1             |             | INN2             |             | INN3             |             | INN4             |             | IND1             |             | IND2             |             | IND3             |             |
|---------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |
| ANCHOA MITCHILLI EGG      | 649.60           | 66.37       | 400.70           | 62.33       | 118.70           | 26.00       | 0.00             | 0.00        | 859.70           | 93.55       | 855.00           | 88.77       | 833.30           | 71.69       |
| ANCHOA MITCHILLI LAR      | 311.00           | 31.77       | 195.70           | 30.44       | 274.00           | 60.01       | 298.30           | 91.31       | 49.40            | 5.38        | 108.20           | 11.23       | 296.10           | 25.47       |
| GOBIIDAE LAR              | 9.10             | 0.93        | 46.50            | 7.23        | 45.70            | 10.01       | 28.40            | 8.69        | 9.90             | 1.08        | 0.00             | 0.00        | 0.00             | 0.00        |
| SYNGNATHUS FUSCUS JUV     | 9.10             | 0.93        | 0.00             | 0.00        | 18.20            | 3.99        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 22.00            | 1.89        |
| ATHERINIDAE LAR           | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| HIPPOCAMPUS ERECTUS JUV   | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 11.00            | 0.95        |
| STATION TOTAL AND<br>DATE | 978.80           |             | 642.90           |             | 456.60           |             | 326.70           |             | 919.00           |             | 963.20           |             | 1162.40          |             |

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GEAR-3600MG

31 AUG 81

STATION

| SPECIES                 | IND4    |       | DSN1    |       | DSN2   |       | DSN3   |       | DSM4   |       | DSD1   |       | DSD2    |       |
|-------------------------|---------|-------|---------|-------|--------|-------|--------|-------|--------|-------|--------|-------|---------|-------|
|                         | NUMBER  | PCT   | NUMBER  | PCT   | NUMBER | PCT   | NUMBER | PCT   | NUMBER | PCT   | NUMBER | PCT   | NUMBER  | PCT   |
|                         | INDIVS  | COMP  | INDIVS  | COMP  | INDIVS | COMP  | INDIVS | COMP  | INDIVS | COMP  | INDIVS | COMP  | INDIVS  | COMP  |
| ANCHOA MITCHILLI EGG    | 959.40  | 81.73 | 705.90  | 69.47 | 517.60 | 78.34 | 87.60  | 30.76 | 118.20 | 26.67 | 784.60 | 86.76 | 1107.70 | 87.80 |
| ANCHOA MITCHILLI LAR    | 180.60  | 15.38 | 267.40  | 26.32 | 99.10  | 15.00 | 131.40 | 46.14 | 310.20 | 69.99 | 53.20  | 5.88  | 92.30   | 7.32  |
| GOBIDAE LAR             | 22.60   | 1.93  | 42.80   | 4.21  | 44.00  | 6.66  | 54.80  | 19.24 | 14.80  | 3.34  | 26.60  | 2.94  | 46.20   | 3.66  |
| SYNGRATHUS FUSCUS JUV   | 11.30   | 0.96  | 0.00    | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 39.90  | 4.41  | 15.40   | 1.22  |
| ATHERINIDAE LAR         | 0.00    | 0.00  | 0.00    | 0.00  | 0.00   | 0.00  | 11.00  | 3.86  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00    | 0.00  |
| HIPPOCAMPUS ERECTUS JUV | 0.00    | 0.00  | 0.00    | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   | 0.00  | 0.00    | 0.00  |
| STATION TOTAL AND DATE  | 1173.90 |       | 1016.10 |       | 660.70 |       | 284.80 |       | 443.20 |       | 904.30 |       | 1261.60 |       |

## APPENDIX G: MACROINVERTEBRATE ENTRAINMENT DATA (DISCHARGE)

Appendix G is arranged by sampling date. The catch data are expressed as number of organisms per 100 m<sup>3</sup> (NUMBER INDIVS) and percent composition (PCT COMP). Data are provided for each individual sample for each sampling date. Sampling station designations are:

DSN1, 2, 3, and 4 = discharge night samples  
DSD1, 2, 3, and 4 = discharge day samples

The last (right-hand) column in each table contains unweighted mean densities (night sampling only) or weighted mean densities (combined day and night sampling).

| STATION                   | DSN1     |       | DSN2     |       |          |       |
|---------------------------|----------|-------|----------|-------|----------|-------|
|                           | NUMBER   | PCT   | NUMBER   | PCT   | NUMBER   | PCT   |
| SPECIES                   | INDIVS   | COMP  | INDIVS   | COMP  | TOTAL    | COMP  |
| NEOMYSIS AMERICANA        | 4455.40  | 29.80 | 5193.60  | 39.04 | 4824.50  | 34.15 |
| AMPELISCA SP              | 1485.10  | 9.93  | 1161.70  | 8.73  | 1323.40  | 9.37  |
| JASSA FALCATA             | 247.50   | 1.66  | 22.80    | 0.17  | 135.15   | 0.96  |
| SUBCLASS OSTRACODA        | 2722.80  | 18.21 | 2460.10  | 18.49 | 2591.45  | 18.34 |
| NEOPANOPE TEXA SAYI ZOEAE | 49.50    | 0.33  | 113.90   | 0.86  | 81.70    | 0.58  |
| COROPHIUM SP              | 148.50   | 0.99  | 182.20   | 1.37  | 165.35   | 1.17  |
| SUBORDER CAPRELLIDEA      | 297.00   | 1.99  | 159.50   | 1.20  | 228.25   | 1.62  |
| PANOPEUS HERBSTII ZOEAE   | 841.60   | 5.63  | 432.80   | 3.25  | 637.20   | 4.51  |
| LEUCON AMERICANUS         | 1138.60  | 7.62  | 455.60   | 3.42  | 797.10   | 5.64  |
| MYSIDOPSIS BIGELOWI       | 1386.10  | 9.27  | 1640.10  | 12.33 | 1513.10  | 10.71 |
| OXYUROSTYLIS SMITHI       | 792.10   | 5.30  | 318.90   | 2.40  | 555.50   | 3.93  |
| STENOTHOE SP              | 0.00     | 0.00  | 91.10    | 0.68  | 45.55    | 0.32  |
| CLASS PYCNOGONIDA         | 297.00   | 1.99  | 45.60    | 0.34  | 171.30   | 1.21  |
| PALAEMONETES SP ZOEAE     | 49.50    | 0.33  | 22.80    | 0.17  | 36.15    | 0.26  |
| CRANGON SEPTEMPINOSA      | 0.00     | 0.00  | 22.80    | 0.17  | 11.40    | 0.08  |
| UPOGEBIA AFFINIS ZOEAE    | 0.00     | 0.00  | 22.80    | 0.17  | 11.40    | 0.08  |
| CERAPUS TUBULARIS         | 148.50   | 0.99  | 159.50   | 1.20  | 154.00   | 1.09  |
| ELASMOPOUS LEVIS          | 49.50    | 0.33  | 0.00     | 0.00  | 24.75    | 0.18  |
| IDOTEA BALTICA            | 49.50    | 0.33  | 22.80    | 0.17  | 36.15    | 0.26  |
| BATEA CATHARINENSIS       | 0.00     | 0.00  | 68.30    | 0.51  | 34.15    | 0.24  |
| EDOTEA TRILOBA            | 99.00    | 0.66  | 113.90   | 0.86  | 106.45   | 0.75  |
| MICROPROTOPUS RANEYI      | 49.50    | 0.33  | 22.80    | 0.17  | 36.15    | 0.26  |
| MELITA NIGIDA             | 99.00    | 0.66  | 68.30    | 0.51  | 83.65    | 0.59  |
| MONOCULODES EDWARDSI      | 99.00    | 0.66  | 182.20   | 1.37  | 140.60   | 1.00  |
| CYDADUSA COMPTA           | 99.00    | 0.66  | 0.00     | 0.00  | 49.50    | 0.35  |
| ORDER AMPHIPODA           | 0.00     | 0.00  | 22.80    | 0.17  | 11.40    | 0.08  |
| ERICHTHONIUS SP           | 0.00     | 0.00  | 22.80    | 0.17  | 11.40    | 0.08  |
| OTHER SPECIES             | 346.50   | 2.32  | 273.40   | 2.06  | 309.95   | 2.19  |
| STATION TOTAL AND DATE    | TOTAL    |       |          |       |          |       |
|                           | 14950.20 |       | 13303.10 |       | 14126.65 |       |

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| STATION                   | DSN1             |             | DSN2             |             | NUMBER<br>TOTAL | PCT<br>COMP |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |
| NEOMYSIS AMERICANA        | 2590.90          | 26.16       | 3157.90          | 37.17       | 2874.40         | 31.25       |
| AMPELISCA SP              | 425.90           | 4.30        | 338.30           | 3.98        | 382.10          | 4.15        |
| JASSA FALCATA             | 0.00             | 0.00        | 37.60            | 0.44        | 18.80           | 0.20        |
| SUBCLASS OSTRACODA        | 1242.20          | 12.54       | 1391.00          | 16.37       | 1316.60         | 14.31       |
| NEOPANOPE TEXA SAYI ZOEAE | 106.50           | 1.08        | 0.00             | 0.00        | 53.25           | 0.58        |
| COROPHIUM SP              | 319.40           | 3.23        | 225.60           | 2.66        | 272.50          | 2.96        |
| SUBORDER CAPRELLIDEA      | 745.30           | 7.53        | 676.70           | 7.96        | 711.00          | 7.73        |
| LEUCON AMERICANUS         | 1810.10          | 18.28       | 601.50           | 7.08        | 1205.80         | 13.11       |
| MYSIDOPSIS BIGELOWI       | 993.80           | 10.04       | 601.50           | 7.08        | 797.65          | 8.67        |
| OXYUROSTYLIS SMITHI       | 638.90           | 6.45        | 188.00           | 2.21        | 413.45          | 4.49        |
| STENOTHOE SP              | 71.00            | 0.72        | 0.00             | 0.00        | 35.50           | 0.39        |
| CLASS PYCNOGONIDA         | 106.50           | 1.08        | 225.60           | 2.66        | 166.05          | 1.80        |
| CRANGON SEPTEMSPINOSA     | 0.00             | 0.00        | 37.60            | 0.44        | 18.80           | 0.20        |
| UPOGEBIA AFFINIS ZOEAE    | 0.00             | 0.00        | 37.60            | 0.44        | 18.80           | 0.20        |
| CERAPUS TUBULARIS         | 35.50            | 0.36        | 37.60            | 0.44        | 36.55           | 0.40        |
| BATEA CATHARINENSIS       | 0.00             | 0.00        | 37.60            | 0.44        | 18.80           | 0.20        |
| EDOTEA TRILOBA            | 213.00           | 2.15        | 112.80           | 1.33        | 162.90          | 1.77        |
| MICROPROTOPUS RANEYI      | 35.50            | 0.36        | 37.60            | 0.44        | 36.55           | 0.40        |
| MELITA NITIDA             | 142.00           | 1.43        | 112.80           | 1.33        | 127.40          | 1.38        |
| COROPHIUM ACHERUSICUM     | 0.00             | 0.00        | 75.20            | 0.89        | 37.60           | 0.41        |
| AEQUOREA SP               | 0.00             | 0.00        | 75.20            | 0.89        | 37.60           | 0.41        |
| CYADUSA COMPTA            | 0.00             | 0.00        | 112.80           | 1.33        | 56.40           | 0.61        |
| ORDER AMPHIPODA           | 0.00             | 0.00        | 75.20            | 0.89        | 37.60           | 0.41        |
| MICRODEUTOPUS GRYLLOTALP  | 0.00             | 0.00        | 75.20            | 0.89        | 37.60           | 0.41        |
| ERICHTHONIUS SP           | 35.50            | 0.36        | 0.00             | 0.00        | 17.75           | 0.19        |
| OTHER SPECIES             | 390.50           | 3.94        | 225.60           | 2.66        | 308.05          | 3.35        |
| STATION TOTAL AND<br>DATE |                  | 9902.50     | 8496.50          |             | 9199.50         |             |

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| STATION                   | DSN1             |             | DSN2             |             |                 |             |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |
| NEOMYSIS AMERICANA        | 8315.70          | 56.54       | 7132.40          | 58.71       | 7724.05         | 57.53       |
| AMPELISCA SP              | 1155.00          | 7.85        | 583.90           | 4.81        | 869.45          | 6.48        |
| JASSA FALCATA             | 0.00             | 0.00        | 83.40            | 0.69        | 41.70           | 0.31        |
| SUBCLASS OSTRACODA        | 654.50           | 4.45        | 834.20           | 6.87        | 744.35          | 5.54        |
| COROPHIUM SP              | 539.00           | 3.67        | 41.70            | 0.34        | 290.35          | 2.16        |
| SUBORDER CAPRELLIDEA      | 1385.90          | 9.42        | 834.20           | 6.87        | 1110.05         | 8.27        |
| LEUCON AMERICANUS         | 500.50           | 3.40        | 542.20           | 4.46        | 521.35          | 3.88        |
| MYSIDOPSIS BIGELOWI       | 0.00             | 0.00        | 583.90           | 4.81        | 291.95          | 2.17        |
| OXYUROSTYLIS SMITHI       | 269.50           | 1.83        | 333.70           | 2.75        | 301.60          | 2.25        |
| STENOTHOE SP              | 77.00            | 0.52        | 0.00             | 0.00        | 38.50           | 0.29        |
| CLASS PYCNOGONIDA         | 924.00           | 6.28        | 250.30           | 2.06        | 587.15          | 4.37        |
| CRANGON SEPTEMSPINOSA     | 77.00            | 0.52        | 0.00             | 0.00        | 38.50           | 0.29        |
| CERAPUS TUBULARIS         | 154.00           | 1.05        | 250.30           | 2.06        | 202.15          | 1.51        |
| ELASMOPUS LEVIS           | 0.00             | 0.00        | 41.70            | 0.34        | 20.85           | 0.16        |
| EDOTEA TRILOBA            | 77.00            | 0.52        | 125.10           | 1.03        | 101.05          | 0.75        |
| MICROPROTOPUS RANEYI      | 0.00             | 0.00        | 83.40            | 0.69        | 41.70           | 0.31        |
| MELITA NITIDA             | 154.00           | 1.05        | 125.10           | 1.03        | 139.55          | 1.04        |
| AEQUOREA SP               | 0.00             | 0.00        | 83.40            | 0.69        | 41.70           | 0.31        |
| CYADUSA COMPTA            | 0.00             | 0.00        | 41.70            | 0.34        | 20.85           | 0.16        |
| ORDER AMPHIPODA           | 0.00             | 0.00        | 41.70            | 0.34        | 20.85           | 0.16        |
| MICRODEUTOPUS GRYLLOTALP  | 0.00             | 0.00        | 41.70            | 0.34        | 20.85           | 0.16        |
| ERICHTHONIUS SP           | 231.00           | 1.57        | 41.70            | 0.34        | 136.35          | 1.02        |
| OTHER SPECIES             | 192.50           | 1.31        | 52.10            | 0.43        | 122.30          | 0.91        |
| STATION TOTAL AND<br>DATE | TOTAL            | 14706.60    | 12147.80         |             | 13427.20        |             |



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| STATION                   | DSN1             |             | DSN2             |             | DSN3             |             | DSN4             |             | DSD1             |             | DSD2             |             | DSD3             |             |
|---------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |
| MEOMYSIS AMERICANA        | 12685.80         | 63.61       | 14470.15         | 73.56       | 46911.00         | 87.84       | 58867.90         | 91.23       | 1729.70          | 32.86       | 989.20           | 35.26       | 1629.30          | 52.40       |
| ARPEX. ISCA SP            | 1517.55          | 7.61        | 538.15           | 2.74        | 488.70           | 0.92        | 503.10           | 0.78        | 0.00             | 0.00        | 13.60            | 0.48        | 16.60            | 0.53        |
| JASSA FALCATA             | 33.05            | 0.17        | 0.00             | 0.00        | 0.00             | 0.00        | 62.90            | 0.10        | 345.90           | 6.57        | 81.30            | 2.90        | 49.90            | 1.60        |
| SUBCLASS OSTRACODA        | 1610.35          | 8.07        | 1211.35          | 6.16        | 1116.90          | 2.09        | 440.30           | 0.68        | 32.40            | 0.62        | 0.00             | 0.00        | 16.60            | 0.53        |
| NEOPAROE TEXA SAYI ZOEAE  | 0.00             | 0.00        | 58.90            | 0.30        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| COROPHIUM SP              | 263.85           | 1.32        | 195.40           | 0.99        | 209.40           | 0.39        | 314.50           | 0.49        | 129.70           | 2.46        | 94.93            | 3.38        | 116.40           | 3.74        |
| SUBORDER CAPRELLIDEA      | 1464.10          | 7.34        | 1161.35          | 5.90        | 977.30           | 1.83        | 2012.60          | 3.12        | 821.60           | 15.61       | 569.10           | 20.29       | 498.80           | 16.04       |
| LEUCON AMERICANUS         | 449.05           | 2.25        | 415.65           | 2.11        | 488.70           | 0.92        | 125.80           | 0.19        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| MYSIDOPSIS BIGELOWI       | 210.80           | 1.06        | 0.00             | 0.00        | 1954.60          | 3.66        | 0.00             | 0.00        | 32.40            | 0.62        | 0.00             | 0.00        | 33.30            | 1.07        |
| OXYUROSTYLIS SMITHI       | 92.40            | 0.46        | 97.70            | 0.52        | 139.60           | 0.26        | 0.00             | 0.00        | 10.80            | 0.21        | 0.00             | 0.00        | 16.60            | 0.53        |
| STEMOTHOE SP              | 26.35            | 0.13        | 34.15            | 0.17        | 0.00             | 0.00        | 314.50           | 0.49        | 1081.10          | 20.54       | 325.20           | 11.59       | 33.30            | 1.07        |
| CLASS PYCNOGONIDA         | 402.30           | 2.02        | 553.55           | 2.81        | 139.60           | 0.26        | 503.10           | 0.78        | 378.40           | 7.19        | 67.80            | 2.42        | 199.50           | 6.42        |
| UPOGEBIA AFFINIS ZOEAE    | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 62.90            | 0.10        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| CERAPUS TURULARIS         | 171.45           | 0.86        | 215.55           | 1.10        | 69.80            | 0.13        | 0.00             | 0.00        | 86.50            | 1.64        | 81.30            | 2.90        | 66.50            | 2.14        |
| ELASMOPIUS LEVIS          | 33.05            | 0.17        | 0.00             | 0.00        | 0.00             | 0.00        | 62.90            | 0.10        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| IDOTEA BALTICA            | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| BATEA CATHARTIENSIS       | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 62.90            | 0.10        | 43.20            | 0.82        | 0.00             | 0.00        | 0.00             | 0.00        |
| EDOTEA TRILOBA            | 171.45           | 0.86        | 34.15            | 0.17        | 0.00             | 0.00        | 62.90            | 0.10        | 0.00             | 0.00        | 27.10            | 0.97        | 49.90            | 1.60        |
| MICROPROTOPUS RANEYI      | 52.70            | 0.26        | 117.80           | 0.60        | 0.00             | 0.00        | 62.90            | 0.10        | 43.20            | 0.82        | 0.00             | 0.00        | 0.00             | 0.00        |
| MELITA NITIDA             | 92.40            | 0.46        | 34.15            | 0.17        | 139.60           | 0.26        | 125.80           | 0.19        | 129.70           | 2.46        | 13.60            | 0.48        | 0.00             | 0.00        |
| COROPHIUM ACHERUSICUM     | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 125.80           | 0.19        | 0.00             | 0.00        | 54.20            | 1.93        | 0.00             | 0.00        |
| MONOCULODES EDWARDSI      | 0.00             | 0.00        | 29.45            | 0.15        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| AQUOREA SP                | 105.40           | 0.53        | 165.95           | 0.84        | 349.00           | 0.65        | 251.60           | 0.39        | 270.30           | 5.13        | 420.10           | 14.98       | 232.80           | 7.49        |
| ORDER AMPHIPODA           | 0.00             | 0.00        | 0.00             | 0.00        | 69.80            | 0.13        | 251.60           | 0.39        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| AUTOLYTUS SP              | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 10.80            | 0.21        | 13.60            | 0.48        | 0.00             | 0.00        |
| TURRITOPSIS NUTRICOLA     | 303.60           | 1.52        | 181.45           | 0.92        | 139.60           | 0.26        | 314.50           | 0.49        | 86.50            | 1.64        | 0.00             | 0.00        | 116.40           | 3.74        |
| MICRODEUTOPUS GRYLLOLALP  | 33.05            | 0.17        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 13.60            | 0.48        | 0.00             | 0.00        |
| ERICHTHONIUS SP           | 59.40            | 0.30        | 34.15            | 0.17        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| OTHER SPECIES             | 164.80           | 0.83        | 122.50           | 0.62        | 209.40           | 0.39        | 0.00             | 0.00        | 32.40            | 0.62        | 40.70            | 1.45        | 33.20            | 1.07        |
| STATION TOTAL AND<br>DATE | 19942.91         |             | 19671.50         |             | 53403.00         |             | 64528.50         |             | 5264.60          |             | 2805.30          |             | 3109.10          |             |

STATION

DS04

SPECIES

| NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |
|------------------|-------------|-----------------|-------------|
|------------------|-------------|-----------------|-------------|

|                           |         |       |          |       |
|---------------------------|---------|-------|----------|-------|
| NEOMYSIS AMERICANA        | 1521.20 | 42.96 | 16596.02 | 78.33 |
| AMPELISCA SP              | 0.00    | 0.00  | 513.34   | 2.42  |
| JASSA FALCATA             | 149.60  | 4.22  | 75.57    | 0.36  |
| SUBCLASS OSTRACOIDA       | 0.00    | 0.00  | 724.96   | 3.42  |
| NEOPANOPE TEXA SAYI ZOEAE | 0.00    | 0.00  | 11.78    | 0.06  |
| COROPHIUM SP              | 324.20  | 9.15  | 210.76   | 0.99  |
| SUBORDER CAPRELLIDEA      | 598.50  | 16.90 | 1072.88  | 5.06  |
| LEUCON AMERICANUS         | 0.00    | 0.00  | 234.39   | 1.11  |
| MYSIDOPSIS BIGELOWI       | 0.00    | 0.00  | 244.19   | 1.15  |
| OXYUROSTYLIS SMITHI       | 0.00    | 0.00  | 54.72    | 0.26  |
| STENOTHOE SP              | 149.60  | 4.22  | 202.47   | 0.96  |
| CLASS PYCNOGONIDA         | 37.40   | 1.06  | 323.75   | 1.53  |
| UPOGEBIA AFFINIS ZOEAE    | 0.00    | 0.00  | 6.29     | 0.03  |
| CERAPUS TUBULARIS         | 99.80   | 2.82  | 117.79   | 0.56  |
| ELASMOPIUS LEVIS          | 0.00    | 0.00  | 12.90    | 0.06  |
| IDOTEA BALTICA            | 12.50   | 0.35  | 1.25     | 0.01  |
| BATEA CATHARINENSIS       | 0.00    | 0.00  | 10.61    | 0.05  |
| EDOTEA TRILOBEA           | 37.40   | 1.06  | 58.85    | 0.28  |
| MICROPROTOPUS RAREYI      | 0.00    | 0.00  | 44.71    | 0.21  |
| MELITA NITIDA             | 74.86   | 2.11  | 73.66    | 0.35  |
| COROPHIUM ACHERSIICUM     | 0.00    | 0.00  | 18.00    | 0.08  |
| MONOCULODES EDWARDST      | 0.00    | 0.00  | 5.89     | 0.03  |
| AEGIOUREA SP              | 399.00  | 11.27 | 246.55   | 1.16  |
| ORDER AMPHIPODA           | 0.00    | 0.00  | 32.14    | 0.15  |
| AUTOLYTUS SP              | 0.00    | 0.00  | 2.44     | 0.01  |
| TURRITOPSIS NUTRICOLA     | 37.40   | 1.06  | 166.45   | 0.79  |
| MICRODEUTOPUS GRYLLOLALP  | 0.00    | 0.00  | 7.97     | 0.04  |
| ERICHTHONIUS SP           | 24.90   | 0.70  | 21.20    | 0.10  |
| OTHER SPECIES             | 75.00   | 2.12  | 96.53    | 0.46  |

| STATION TOTAL AND<br>DATE | TOTAL    |
|---------------------------|----------|
|                           | 3541.30  |
|                           | 21188.06 |

OYSTERCR

GEAR-36BONG

29 SEP 80

| STATION                   | DSN1             |             | DSN2             |             | NUMBER<br>TOTAL | PCT<br>COMP |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |
| SPECIES                   |                  |             |                  |             |                 |             |
| NEOMYSIS AMERICANA        | 13584.90         | 72.79       | 14623.70         | 61.82       | 14104.30        | 66.66       |
| AMPELISCA SP              | 1200.70          | 6.43        | 2293.90          | 9.70        | 1747.30         | 8.26        |
| JASSA FALCATA             | 34.30            | 0.18        | 0.00             | 0.00        | 17.15           | 0.08        |
| SUBCLASS OSTRACODA        | 1818.20          | 9.74        | 3727.60          | 15.76       | 2772.90         | 13.11       |
| COROPHIUM SP              | 171.50           | 0.92        | 143.40           | 0.61        | 157.45          | 0.74        |
| SUBORDER CAPRELLIDEA      | 171.50           | 0.92        | 645.20           | 2.73        | 408.35          | 1.93        |
| LEUCON AMERICANUS         | 240.10           | 1.29        | 430.10           | 1.82        | 335.10          | 1.58        |
| MYSIDOPSIS BIGELOWI       | 823.30           | 4.41        | 860.20           | 3.64        | 841.75          | 3.98        |
| OXYUROSTYLIS SMITHI       | 34.30            | 0.18        | 143.40           | 0.61        | 88.85           | 0.42        |
| STENOTHOE SP              | 34.30            | 0.18        | 71.70            | 0.30        | 53.00           | 0.25        |
| CLASS PYCNOGONIDA         | 240.10           | 1.29        | 430.10           | 1.82        | 335.10          | 1.58        |
| CERAPUS TUBULARIS         | 0.00             | 0.00        | 143.40           | 0.61        | 71.70           | 0.34        |
| EDOTEA TRILOBA            | 34.30            | 0.18        | 71.70            | 0.30        | 53.00           | 0.25        |
| COROPHIUM ACHERUSICUM     | 34.30            | 0.18        | 0.00             | 0.00        | 17.15           | 0.08        |
| AEQUOREA SP               | 34.30            | 0.18        | 71.70            | 0.30        | 53.00           | 0.25        |
| CYADUSA COMPTA            | 34.30            | 0.18        | 0.00             | 0.00        | 17.15           | 0.08        |
| TURRITOPSIS NUTRICOLA     | 34.30            | 0.18        | 0.00             | 0.00        | 17.15           | 0.08        |
| OTHER SPECIES             | 137.20           | 0.74        | 0.00             | 0.00        | 68.60           | 0.32        |
| STATION TOTAL AND<br>DATE | TOTAL            | 18661.90    | 23656.10         |             | 21159.00        |             |

OYSTERC

GEAR 36BONG

6 OCT 80

STATION

DSN1

DSN2

SPECIES

| SPECIES | DSN1             |             | DSN2             |             | TOTAL           |             |
|---------|------------------|-------------|------------------|-------------|-----------------|-------------|
|         | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |

|                          |          |       |          |       |          |       |
|--------------------------|----------|-------|----------|-------|----------|-------|
| NEOMYSIS AMERICANA       | 16418.20 | 83.88 | 20974.30 | 99.09 | 18696.25 | 86.72 |
| AMPELISCA SP             | 406.60   | 2.08  | 283.40   | 1.20  | 345.00   | 1.60  |
| JASSA FALCATA            | 58.10    | 0.30  | 70.90    | 0.30  | 64.50    | 0.30  |
| CRANGON SEPTEMSPINO ZOEA | 38.70    | 0.20  | 0.00     | 0.00  | 19.35    | 0.09  |
| SUBCLASS OSTRACODA       | 1045.50  | 5.34  | 974.30   | 4.14  | 1009.90  | 4.68  |
| COROPHIUM SP             | 116.20   | 0.59  | 159.40   | 0.68  | 137.80   | 0.64  |
| SUBORDER CAPRELLIDEA     | 329.10   | 1.68  | 283.40   | 1.20  | 306.25   | 1.42  |
| LEUCON AMERICANUS        | 135.50   | 0.69  | 88.60    | 0.38  | 112.05   | 0.52  |
| MYSIDOPSIS BIGELOWI      | 309.80   | 1.58  | 0.00     | 0.00  | 154.90   | 0.72  |
| OXYUROSTYLIS SMITHI      | 77.40    | 0.40  | 35.40    | 0.15  | 56.40    | 0.26  |
| STENOTHOE SP             | 77.40    | 0.40  | 17.70    | 0.08  | 47.55    | 0.22  |
| CLASS PYCNOGONIDA        | 193.60   | 0.99  | 70.90    | 0.30  | 132.25   | 0.61  |
| IDOTEA BALTICA           | 0.00     | 0.00  | 35.40    | 0.15  | 17.70    | 0.08  |
| BATEA CATHARINENSIS      | 19.40    | 0.10  | 0.00     | 0.00  | 9.70     | 0.04  |
| EDOTEA TRILoba           | 19.40    | 0.10  | 35.40    | 0.15  | 27.40    | 0.13  |
| MICROPOTOPUS RAMEYI      | 0.00     | 0.00  | 17.70    | 0.08  | 8.85     | 0.04  |
| MELITA NITIDA            | 19.40    | 0.10  | 17.70    | 0.08  | 18.55    | 0.09  |
| COROPHIUM ACHERUSICUM    | 38.70    | 0.20  | 0.00     | 0.00  | 19.35    | 0.09  |
| SAGITTA SP               | 19.40    | 0.10  | 0.00     | 0.00  | 9.70     | 0.04  |
| AEGUOREA SP              | 154.90   | 0.79  | 301.20   | 1.28  | 228.05   | 1.06  |
| CYADUSA COMPTA           | 19.40    | 0.10  | 35.40    | 0.15  | 27.40    | 0.13  |
| ORDER AMPHIPODA          | 0.00     | 0.00  | 17.70    | 0.08  | 8.85     | 0.04  |
| TURRITOPSIS NUTRICOLA    | 19.40    | 0.10  | 17.70    | 0.08  | 18.55    | 0.09  |
| ERICTHONIUS SP           | 0.00     | 0.00  | 17.70    | 0.08  | 8.85     | 0.04  |
| OTHER SPECIES            | 58.10    | 0.30  | 88.50    | 0.38  | 73.30    | 0.34  |

| STATION TOTAL AND<br>DATE | DSN1 | DSN2 | TOTAL |
|---------------------------|------|------|-------|
|---------------------------|------|------|-------|

|          |          |          |
|----------|----------|----------|
| 19574.20 | 23542.70 | 21558.44 |
|----------|----------|----------|

OYSTERCR

GEAR-36BONG

13 OCT 80

| STATION                            | DSN1             |             | DSN2             |             | NUMBER<br>TOTAL | PCT<br>COMP |
|------------------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                                    | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |
| NEOMYSIS AMERICANA                 | 5889.60          | 69.23       | 5525.50          | 66.35       | 5707.55         | 67.80       |
| AMPELISCA SP                       | 0.00             | 0.00        | 160.20           | 1.92        | 80.10           | 0.95        |
| JASSA FALCATA                      | 0.00             | 0.00        | 40.00            | 0.48        | 20.00           | 0.24        |
| CRANGON SEPTEMPINO Z <sup>EA</sup> | 163.60           | 1.92        | 0.00             | 0.00        | 81.80           | 0.97        |
| SUBCLASS OSTRACODA                 | 736.20           | 8.65        | 560.60           | 6.73        | 648.40          | 7.70        |
| COROPHIUM SP                       | 490.80           | 5.77        | 240.20           | 2.88        | 365.50          | 4.34        |
| SUBORDER CAPRELLIDEA               | 81.80            | 0.96        | 600.60           | 7.21        | 341.20          | 4.05        |
| LEUCON AMERICANUS                  | 81.80            | 0.96        | 280.30           | 3.37        | 181.05          | 2.15        |
| MYSIDOPSIS BIGELOWI                | 0.00             | 0.00        | 240.20           | 2.88        | 120.10          | 1.43        |
| OXYUROSTYLIS SMITHI                | 163.60           | 1.92        | 120.10           | 1.44        | 141.85          | 1.69        |
| CLASS PYCNOGONIDA                  | 163.60           | 1.92        | 120.10           | 1.44        | 141.85          | 1.69        |
| CERAPUS TUBULARIS                  | 163.60           | 1.92        | 80.10            | 0.96        | 121.85          | 1.45        |
| BATEA CATHARINENSIS                | 0.00             | 0.00        | 120.10           | 1.44        | 60.05           | 0.71        |
| EDOTEA TRILOBA                     | 163.60           | 1.92        | 40.00            | 0.48        | 101.80          | 1.21        |
| COROPHIUM ACHERSICUM               | 0.00             | 0.00        | 80.10            | 0.96        | 40.05           | 0.48        |
| AEQUOREA SP                        | 0.00             | 0.00        | 40.00            | 0.48        | 20.00           | 0.24        |
| OTHER SPECIES                      | 409.00           | 4.81        | 80.00            | 0.96        | 244.50          | 2.90        |
| STATION TOTAL AND<br>DATE          | 8507.20          |             | 8328.10          |             | 8417.65         |             |

## STATION

USD3

USD2

DSD1

DSN4

DSN3

DSN2

DSN1

| SPECIES                 | DSN1             |             | DSN2             |             | DSN3             |             | DSN4             |             | DSD1             |             | USD2             |             | USD3             |             |
|-------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|
|                         | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |
| NEOMYSIS AMERICANA      | 4105.60          | 51.09       | 4266.35          | 63.41       | 3890.80          | 58.76       | 4597.70          | 55.00       | 3832.30          | 73.85       | 2402.56          | 60.32       | 220.80           | 13.64       |
| AMPELISCA SP            | 64.90            | 0.81        | 138.50           | 2.06        | 34.10            | 0.52        | 167.20           | 2.00        | 0.00             | 0.00        | 63.20            | 1.59        | 0.00             | 0.00        |
| JASSA FALCATA           | 155.25           | 1.93        | 202.65           | 3.01        | 375.40           | 5.67        | 794.10           | 9.50        | 199.60           | 3.85        | 147.50           | 3.70        | 147.20           | 9.09        |
| CRANGON SEPTESPINO ZOEA | 0.00             | 0.00        | 0.00             | 0.00        | 34.10            | 0.52        | 83.60            | 1.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| SUBCLASS OSTRACODA      | 1653.55          | 20.58       | 604.35           | 8.98        | 477.80           | 7.22        | 1128.50          | 13.50       | 119.80           | 2.31        | 0.00             | 0.00        | 0.00             | 0.00        |
| COROPHIUM SP            | 265.90           | 3.31        | 276.65           | 4.11        | 307.20           | 4.64        | 543.40           | 6.50        | 439.10           | 8.46        | 569.00           | 14.29       | 546.80           | 33.77       |
| SUBORDER CAPRELLIDEA    | 532.15           | 6.62        | 337.25           | 5.01        | 648.50           | 9.79        | 334.40           | 4.00        | 279.40           | 5.38        | 400.40           | 10.05       | 420.60           | 25.97       |
| LEUCON AMERICANUS       | 617.40           | 7.68        | 392.35           | 5.83        | 0.00             | 0.00        | 125.40           | 1.50        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| MYSIDOPSIS BIGELOWI     | 122.80           | 1.53        | 18.90            | 0.28        | 273.00           | 4.12        | 83.60            | 1.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| OXYUROSTYLIS SMITHI     | 52.00            | 0.65        | 51.20            | 0.76        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| STENOCHOE SP            | 64.90            | 0.81        | 51.20            | 0.76        | 170.60           | 2.58        | 0.00             | 0.00        | 39.90            | 0.77        | 84.30            | 2.12        | 63.10            | 3.90        |
| CLASS PYCNOGONIDA       | 77.40            | 0.96        | 39.75            | 0.59        | 204.80           | 3.09        | 83.60            | 1.00        | 159.70           | 3.08        | 147.50           | 3.70        | 42.10            | 2.60        |
| CERAPUS TUBULARIS       | 54.90            | 0.81        | 32.30            | 0.48        | 34.10            | 0.52        | 125.40           | 1.50        | 0.00             | 0.00        | 0.00             | 0.00        | 63.10            | 3.90        |
| ELASMOPIUS LEVIS        | 0.00             | 0.00        | 39.75            | 0.59        | 0.00             | 0.00        | 41.80            | 0.50        | 0.00             | 0.00        | 0.00             | 0.00        | 21.00            | 1.30        |
| IDOTEA BALTICA          | 0.00             | 0.00        | 11.40            | 0.17        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| BATEA CATHARINENSIS     | 12.90            | 0.16        | 9.45             | 0.14        | 0.00             | 0.00        | 41.80            | 0.50        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| EDOTEA TRILOBA          | 58.25            | 0.72        | 22.85            | 0.34        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 21.10            | 0.53        | 0.00             | 0.00        |
| MICROPROTOPUS RANEYI    | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 21.10            | 0.53        | 0.00             | 0.00        |
| MELITA NITIDA           | 12.90            | 0.16        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| COROPHIUM ACHERUSICUM   | 58.65            | 0.73        | 136.55           | 2.03        | 68.30            | 1.03        | 0.00             | 0.00        | 0.00             | 0.00        | 84.30            | 2.12        | 0.00             | 0.00        |
| AECQUOREA SP            | 12.90            | 0.16        | 0.00             | 0.00        | 34.10            | 0.52        | 125.40           | 1.50        | 39.90            | 0.77        | 0.00             | 0.00        | 0.00             | 0.00        |
| CYMAUSA COMPTA          | 0.00             | 0.00        | 11.40            | 0.17        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| ORDER AMPHIPODA         | 12.90            | 0.16        | 9.45             | 0.14        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| TURRITOPSIS NUTRICOLA   | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 41.80            | 0.50        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| ERICHTHONIUS SP         | 12.90            | 0.16        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| OTHER SPECIES           | 77.80            | 0.97        | 75.95            | 1.13        | 68.20            | 1.03        | 41.80            | 0.50        | 79.80            | 1.54        | 42.10            | 1.06        | 94.60            | 5.84        |

STATION TOTAL AND  
DATE

8035.95

6728.25

6621.00

8359.50

5189.50

3983.00

1619.30

OYSTERCR

GEAR-36BONG

20 OCT 80

| STATION                  |        | DSD4  |         |         |  |
|--------------------------|--------|-------|---------|---------|--|
| SPECIES                  | NUMBER | PCT   | NUMBER  | PCT     |  |
|                          | INDIVS | COMP  | TOTAL   | COMP    |  |
| NEOMYSIS AMERICANA       | 162.60 | 11.69 | 3185.06 | 56.18   |  |
| AMPELISCA SP             | 0.00   | 0.00  | 67.13   | 1.18    |  |
| JASSA FALCATA            | 180.70 | 12.99 | 256.03  | 4.52    |  |
| CRANGON SEPTEMPINO ZOEAE | 18.10  | 1.30  | 13.58   | 0.24    |  |
| SUBCLASS OSTRACODA       | 18.10  | 1.30  | 626.00  | 11.04   |  |
| COROPHIUM SP             | 578.10 | 41.55 | 406.87  | 7.18    |  |
| SUBORDER CAPRELLIDEA     | 216.80 | 15.58 | 403.89  | 7.12    |  |
| LEUCON AMERICANUS        | 0.00   | 0.00  | 214.49  | 3.78    |  |
| MYSIDOPSIS BIGELOWI      | 0.00   | 0.00  | 64.00   | 1.13    |  |
| OXYUROSTYLIS SMITHI      | 0.00   | 0.00  | 20.64   | 0.36    |  |
| STENOTHOE SP             | 36.10  | 2.59  | 62.62   | 1.10    |  |
| CLASS PYCNOGONIDA        | 72.30  | 5.20  | 94.43   | 1.67    |  |
| CERAPUS TUBULARIS        | 36.10  | 2.59  | 45.31   | 0.80    |  |
| ELASMOPUS LEVIS          | 0.00   | 0.00  | 14.23   | 0.25    |  |
| IDOTEA BALTICA           | 0.00   | 0.00  | 2.28    | 0.04    |  |
| BATEA CATHARINENSIS      | 0.00   | 0.00  | 8.65    | 0.15    |  |
| EDOTEA TRILOBA           | 72.30  | 5.20  | 25.56   | 0.45    |  |
| MICROPROTOPUS RANEYI     | 0.00   | 0.00  | 2.11    | 0.04    |  |
| MELITA NITIDA            | 0.00   | 0.00  | 2.58    | 0.05    |  |
| COROPHIUM ACHERUSICUM    | 0.00   | 0.00  | 54.30   | 0.96    |  |
| AEQUOREA SP              | 0.00   | 0.00  | 22.52   | 0.40    |  |
| CYMAUSA COMPTA           | 0.00   | 0.00  | 2.28    | 0.04    |  |
| ORDER AMPHIPODA          | 0.00   | 0.00  | 4.47    | 0.08    |  |
| TURRITOPSIS NUTRICOLA    | 0.00   | 0.00  | 4.18    | 0.07    |  |
| ERICHTHONIUS SP          | 0.00   | 0.00  | 2.58    | 0.05    |  |
| OTHER SPECIES            | 0.00   | 0.00  | 63.40   | 1.12    |  |
| STATION TOTAL AND DATE   |        | TOTAL | 1391.20 | 5669.19 |  |



OYSTERCR

GEAR-36BONG

27 OCT 80

| STATION                   | DSN1             |             | DSN2             |             | TOTAL           |             |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |
| NEOMYSIS AMERICANA        | 4879.10          | 55.77       | 6776.20          | 53.12       | 5827.65         | 54.20       |
| AMPELISCA SP              | 294.40           | 3.37        | 50.60            | 0.40        | 172.50          | 1.60        |
| JASSA FALCATA             | 126.20           | 1.44        | 151.70           | 1.19        | 138.95          | 1.29        |
| GAMMARUS SP               | 42.10            | 0.48        | 50.60            | 0.40        | 46.35           | 0.43        |
| SUBCLASS OSTRACODA        | 420.60           | 4.81        | 708.00           | 5.55        | 564.30          | 5.25        |
| COROPHIUM SP              | 378.50           | 4.33        | 657.40           | 5.15        | 517.95          | 4.82        |
| SUBORDER CAPRELLIDEA      | 420.60           | 4.81        | 556.30           | 4.36        | 488.45          | 4.54        |
| LEUCON AMERICANUS         | 84.10            | 0.96        | 0.00             | 0.00        | 42.05           | 0.39        |
| MYSIDOPSIS BIGELOWI       | 1430.10          | 16.35       | 3034.10          | 23.79       | 2232.10         | 20.76       |
| OXYUROSTYLIS SMITHI       | 84.10            | 0.96        | 0.00             | 0.00        | 42.05           | 0.39        |
| STENOTHOE SP              | 0.00             | 0.00        | 151.70           | 1.19        | 75.85           | 0.71        |
| CLASS PYCNOGONIDA         | 168.20           | 1.92        | 50.60            | 0.40        | 109.40          | 1.02        |
| BATEA CATHARINENSIS       | 0.00             | 0.00        | 101.10           | 0.79        | 50.55           | 0.47        |
| EDOTEA TRILOBA            | 0.00             | 0.00        | 50.60            | 0.40        | 25.30           | 0.24        |
| MICROPROTOPUS RANEYI      | 0.00             | 0.00        | 101.10           | 0.79        | 50.55           | 0.47        |
| MELITA NITIDA             | 84.10            | 0.96        | 0.00             | 0.00        | 42.05           | 0.39        |
| MONOCULODES EDWARDSI      | 42.10            | 0.48        | 0.00             | 0.00        | 21.05           | 0.20        |
| CYMADESA COMPTA           | 168.20           | 1.92        | 101.10           | 0.79        | 134.65          | 1.25        |
| ORDER AMPHIPODA           | 42.10            | 0.48        | 0.00             | 0.00        | 21.05           | 0.20        |
| OTHER SPECIES             | 84.20            | 0.96        | 215.00           | 1.69        | 149.60          | 1.39        |
| STATION TOTAL AND<br>DATE | TOTAL            | 8748.70     | 12756.10         |             | 10752.40        |             |

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GEAR-36BONG

3 NOV 80

| STATION                   | DSN1             |             | DSN2             |             | NUMBER<br>TOTAL | PCT<br>COMP |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |
| NEOMYSIS AMERICANA        | 6622.90          | 53.56       | 10567.60         | 70.72       | 8595.25         | 62.95       |
| AMPELISCA SP              | 367.90           | 2.98        | 165.10           | 1.10        | 266.50          | 1.95        |
| JASSA FALCATA             | 210.20           | 1.70        | 82.60            | 0.55        | 146.40          | 1.07        |
| CRANGON SEPTEMPINO ZOEAE  | 210.20           | 1.70        | 0.00             | 0.00        | 105.10          | 0.77        |
| SUBCLASS OSTRACODA        | 578.20           | 4.68        | 495.40           | 3.32        | 536.80          | 3.93        |
| COROPHIUM SP              | 1156.40          | 9.35        | 577.90           | 3.87        | 867.15          | 6.35        |
| SUBORDER CAPRELLIDEA      | 1629.40          | 13.18       | 1155.80          | 7.73        | 1392.60         | 10.20       |
| LEUCON AMERICANUS         | 735.90           | 5.95        | 0.00             | 0.00        | 367.95          | 2.69        |
| MYSIDOPSIS BIGELOWI       | 315.40           | 2.55        | 0.00             | 0.00        | 157.70          | 1.15        |
| OXYUROSTYLIS SMITHI       | 52.60            | 0.43        | 0.00             | 0.00        | 26.30           | 0.19        |
| STENOTHOE SP              | 105.10           | 0.85        | 82.60            | 0.55        | 93.85           | 0.69        |
| CLASS PYCNOGONIDA         | 105.10           | 0.85        | 165.10           | 1.10        | 135.10          | 0.99        |
| ELASMOPUS LEVIS           | 52.60            | 0.43        | 82.60            | 0.55        | 67.60           | 0.50        |
| BATEA CATHARINENSIS       | 52.60            | 0.43        | 82.60            | 0.55        | 67.60           | 0.50        |
| EDOTEA TRILOBA            | 52.60            | 0.43        | 0.00             | 0.00        | 26.30           | 0.19        |
| CYADUSA COMPTA            | 52.60            | 0.43        | 0.00             | 0.00        | 26.30           | 0.19        |
| OTHER SPECIES             | 65.70            | 0.53        | 1486.10          | 9.94        | 775.90          | 5.68        |
| STATION TOTAL AND<br>DATE | 12365.40         |             | 14943.40         |             | 13654.40        |             |

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GEAR-36BONG

17 NOV 80

| STATION                   | DSN1             |             | DSN2             |             | TOTAL           |             |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |
| NEOMYSIS AMERICANA        | 1261.60          | 47.47       | 1838.40          | 50.56       | 1550.00         | 49.26       |
| AMPELISCA SP              | 84.10            | 3.16        | 60.60            | 1.67        | 72.35           | 2.30        |
| JASSA FALCATA             | 420.50           | 15.82       | 363.60           | 10.00       | 392.05          | 12.46       |
| CRANGON SEPTEMPINO ZOEAE  | 67.30            | 2.53        | 20.20            | 0.56        | 43.75           | 1.39        |
| GAMMARUS SP               | 0.00             | 0.00        | 40.40            | 1.11        | 20.20           | 0.64        |
| SUBCLASS OSTRACODA        | 16.80            | 0.63        | 20.20            | 0.56        | 18.50           | 0.59        |
| COROPHIUM SP              | 117.70           | 4.43        | 202.00           | 5.56        | 159.85          | 5.08        |
| SUBORDER CAPRELLIDEA      | 201.90           | 7.60        | 343.40           | 9.44        | 272.65          | 8.66        |
| LEUCON AMERICANUS         | 185.00           | 6.96        | 303.00           | 8.33        | 244.00          | 7.75        |
| MYSIDOPSIS BIGELOWI       | 50.50            | 1.90        | 80.80            | 2.22        | 65.65           | 2.09        |
| OXYUROSTYLIS SMITHI       | 16.80            | 0.63        | 141.40           | 3.89        | 79.10           | 2.51        |
| STENOTHOE SP              | 33.60            | 1.26        | 20.20            | 0.56        | 26.90           | 0.85        |
| CLASS PYCNOGONIDA         | 33.60            | 1.26        | 40.40            | 1.11        | 37.00           | 1.18        |
| CRANGON SEPTEMPIMOSA      | 16.80            | 0.63        | 0.00             | 0.00        | 8.40            | 0.27        |
| CERAPUS TUBULARIS         | 33.60            | 1.26        | 20.20            | 0.56        | 26.90           | 0.85        |
| ELASMOPUS LEVIS           | 0.00             | 0.00        | 20.20            | 0.56        | 10.10           | 0.32        |
| IDOTEA BALTICA            | 8.40             | 0.32        | 0.00             | 0.00        | 4.20            | 0.13        |
| BATEA CATHARINENSIS       | 16.80            | 0.63        | 20.20            | 0.56        | 18.50           | 0.59        |
| MELITA NITIDA             | 33.60            | 1.26        | 20.20            | 0.56        | 26.90           | 0.85        |
| MONOCULODES EDWARDSI      | 0.00             | 0.00        | 20.20            | 0.56        | 10.10           | 0.32        |
| SAGITTA SP                | 16.80            | 0.63        | 0.00             | 0.00        | 8.40            | 0.27        |
| ORDER AMPHIPODA           | 16.80            | 0.63        | 0.00             | 0.00        | 8.40            | 0.27        |
| OTHER SPECIES             | 25.20            | 0.95        | 60.60            | 1.67        | 42.90           | 1.36        |
| STATION TOTAL AND<br>DATE | 2657.40          |             | 3636.20          |             | 3146.80         |             |

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GEAR-36BONG

24 NOV 80

| STATION                   | DSN1             |             | DSN2             |             | DSN3             |             | DSN4             |             | DSO1             |             | DSO2             |             | DSO3             |             |
|---------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |
| NEOMYSIS AMERICANA        | 1070.20          | 72.00       | 1229.20          | 77.62       | 4394.60          | 82.35       | 4467.00          | 89.61       | 1395.70          | 67.31       | 1006.70          | 66.97       | 259.50           | 72.97       |
| AMPELISCA SP              | 35.70            | 2.40        | 33.20            | 2.10        | 22.40            | 0.42        | 20.30            | 0.41        | 0.00             | 0.00        | 0.00             | 0.00        | 15.30            | 1.35        |
| JASSA FALCATA             | 83.20            | 5.60        | 11.10            | 0.70        | 78.50            | 1.47        | 40.60            | 0.81        | 40.70            | 1.96        | 147.70           | 9.83        | 91.60            | 8.11        |
| CRANGON SEPTENSPINO ZOEAE | 23.80            | 1.60        | 33.20            | 2.10        | 56.10            | 1.05        | 0.00             | 0.00        | 13.60            | 0.66        | 26.80            | 1.78        | 0.00             | 0.00        |
| GAMMARUS SP               | 0.00             | 0.00        | 11.10            | 0.70        | 11.20            | 0.21        | 0.00             | 0.00        | 13.60            | 0.66        | 0.00             | 0.00        | 0.00             | 0.00        |
| SUBCLASS OSTRACODA        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| COROPHILIDAE SP           | 71.30            | 4.80        | 22.10            | 1.40        | 78.50            | 1.47        | 81.20            | 1.63        | 311.70           | 15.03       | 134.20           | 8.93        | 595.40           | 52.69       |
| SUBORDER CAPRELLIDAE      | 71.30            | 4.80        | 55.40            | 3.50        | 56.10            | 1.05        | 40.60            | 0.81        | 67.80            | 3.27        | 53.70            | 3.57        | 76.30            | 6.75        |
| LEUCON AMERICANUS         | 35.70            | 2.40        | 14.10            | 0.70        | 269.10           | 5.04        | 233.50           | 4.68        | 81.30            | 3.92        | 0.00             | 0.00        | 0.00             | 0.00        |
| MYSIDOPSIS BIGELOWI       | 11.90            | 0.80        | 22.10            | 1.40        | 179.40           | 3.36        | 0.00             | 0.00        | 81.30            | 3.92        | 26.80            | 1.78        | 15.30            | 1.35        |
| OXYURSTYLIS SMITHI        | 11.90            | 0.80        | 22.10            | 1.40        | 33.60            | 0.63        | 20.30            | 0.41        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| STENOHOE SP               | 0.00             | 0.00        | 11.10            | 0.70        | 22.40            | 0.42        | 20.30            | 0.41        | 0.00             | 0.00        | 53.70            | 3.57        | 15.30            | 1.35        |
| CLASS PYCNOGONIDA         | 0.00             | 0.00        | 11.10            | 0.70        | 0.00             | 0.00        | 0.00             | 0.00        | 27.10            | 1.31        | 13.40            | 0.89        | 15.30            | 1.35        |
| CRANGON SEPTENSPINOSA     | 11.90            | 0.80        | 11.10            | 0.70        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| CERAPUS TUBULARIS         | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 15.30            | 1.35        |
| IDOTEA BALTICA            | 0.00             | 0.00        | 0.00             | 0.00        | 22.40            | 0.42        | 20.30            | 0.41        | 0.00             | 0.00        | 13.40            | 0.89        | 15.30            | 1.35        |
| BATEA CATHARINENSIS       | 23.80            | 1.60        | 0.00             | 0.00        | 33.60            | 0.63        | 10.20            | 0.20        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| MELITA NITIDA             | 0.00             | 0.00        | 11.10            | 0.70        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| MONOCULOIDES EDWARDSI     | 11.90            | 0.80        | 0.00             | 0.00        | 44.80            | 0.84        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| SAGITTA SP                | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| ORDER AMPHIPODA           | 0.00             | 0.00        | 11.10            | 0.70        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| OTHER SPECIES             | 23.80            | 1.60        | 77.50            | 4.89        | 33.60            | 0.63        | 30.50            | 0.61        | 40.70            | 1.96        | 26.80            | 1.78        | 15.30            | 1.35        |

STATION TOTAL AND DATE 1486.40 1583.60 5336.30 4984.80 2073.50 1503.20 1129.90

| STATION                   |        | DSD4   |         |       |  |
|---------------------------|--------|--------|---------|-------|--|
| SPECIES                   | NUMBER | PCT    | NUMBER  | PCT   |  |
|                           | INDIVS | COMP   | TOTAL   | COMP  |  |
| NEOMYSIS AMERICANA        | 368.70 | 42.10  | 1773.95 | 74.80 |  |
| AMPELISCA SP              | 0.00   | 0.00   | 15.86   | 0.67  |  |
| JASSA FALCATA             | 92.20  | 10.53  | 73.20   | 3.09  |  |
| CRANGON SEPTemspino ZOEAE | 0.00   | 0.00   | 19.19   | 0.81  |  |
| GAMMARUS SP               | 0.00   | 0.00   | 4.49    | 0.19  |  |
| SUBCLASS OSTRACODA        | 15.40  | 1.76   | 1.92    | 0.08  |  |
| COROPHIUM SP              | 215.10 | 24.56  | 188.69  | 7.96  |  |
| SUBORDER CAPRELLIDEA      | 61.40  | 7.01   | 60.33   | 2.54  |  |
| LEUCON AMERICANUS         | 0.00   | 0.00   | 78.84   | 3.32  |  |
| MYSIDOPSIS BIGELOWI       | 15.40  | 1.76   | 44.02   | 1.86  |  |
| OXYUROSTYLIS SMITHI       | 0.00   | 0.00   | 10.99   | 0.46  |  |
| STENOTHOE SP              | 15.40  | 1.76   | 17.27   | 0.73  |  |
| CLASS PYCNOGONIDA         | 61.40  | 7.01   | 16.04   | 0.68  |  |
| CRANGON SEPTemspinosa     | 0.00   | 0.00   | 2.88    | 0.12  |  |
| CERAPUS TUBULARIS         | 0.00   | 0.00   | 1.91    | 0.08  |  |
| IDOTEA BALTICA            | 0.00   | 0.00   | 8.93    | 0.38  |  |
| BATEA CATHARINENSIS       | 0.00   | 0.00   | 8.45    | 0.36  |  |
| MELITA NITIDA             | 0.00   | 0.00   | 1.39    | 0.06  |  |
| MONOCULODES EDWARDSI      | 0.00   | 0.00   | 7.09    | 0.30  |  |
| SAGITTA SP                | 30.70  | 3.51   | 3.84    | 0.16  |  |
| ORDER AMPHIPODA           | 0.00   | 0.00   | 1.39    | 0.06  |  |
| OTHER SPECIES             | 0.00   | 0.00   | 31.03   | 1.31  |  |
| STATION TOTAL AND<br>DATE | TOTAL  | 875.70 | 2371.68 |       |  |

OYSTERCR

GEAR-36BONG

1 DEC 80

| STATION                   | DSN1             |             | DSN2             |             | NUMBER<br>TOTAL | PCT<br>COMP |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |
| NEOMYSIS AMERICANA        | 793.00           | 41.63       | 1003.90          | 34.67       | 898.45          | 37.43       |
| AMPELISCA SP              | 193.40           | 10.15       | 270.30           | 9.33        | 231.85          | 9.66        |
| JASSA FALCATA             | 193.40           | 10.15       | 193.10           | 6.67        | 193.25          | 8.05        |
| CRANGON SEPTemspino ZOEa  | 0.00             | 0.00        | 77.20            | 2.67        | 38.60           | 1.61        |
| GAMMARUS SP               | 77.40            | 4.06        | 38.60            | 1.33        | 58.00           | 2.42        |
| SUBCLASS OSTRACODA        | 38.70            | 2.03        | 57.90            | 2.00        | 48.30           | 2.01        |
| COROPHIUM SP              | 77.40            | 4.06        | 77.20            | 2.67        | 77.30           | 3.22        |
| SUBORDER CAPRELLIDEA      | 77.40            | 4.06        | 270.30           | 9.33        | 173.85          | 7.24        |
| LEUCON AMERICANUS         | 116.10           | 6.09        | 328.20           | 11.33       | 222.15          | 9.25        |
| MYSIDOPSIS BIGELOWI       | 19.30            | 1.01        | 57.90            | 2.00        | 38.60           | 1.61        |
| OXYUROSTYLIS SMITHI       | 77.40            | 4.06        | 77.20            | 2.67        | 77.30           | 3.22        |
| STENOTHOE SP              | 19.30            | 1.01        | 0.00             | 0.00        | 9.65            | 0.40        |
| CLASS PYCNOGONIDA         | 19.30            | 1.01        | 135.10           | 4.67        | 77.20           | 3.22        |
| CRANGON SEPTemspinosa     | 58.00            | 3.04        | 106.20           | 3.67        | 82.10           | 3.42        |
| CERAPUS TUBULARIS         | 0.00             | 0.00        | 19.30            | 0.67        | 9.65            | 0.40        |
| ELASMOPUS LEVIS           | 19.30            | 1.01        | 38.60            | 1.33        | 28.95           | 1.21        |
| IDOTEA BALTICA            | 9.70             | 0.51        | 0.00             | 0.00        | 4.85            | 0.20        |
| BATEA CATHARINENSIS       | 19.30            | 1.01        | 38.60            | 1.33        | 28.95           | 1.21        |
| EDOTEA TRILOBA            | 0.00             | 0.00        | 19.30            | 0.67        | 9.65            | 0.40        |
| MONOCULODES EDWARDSI      | 19.30            | 1.01        | 38.60            | 1.33        | 28.95           | 1.21        |
| ORDER AMPHIPODA           | 0.00             | 0.00        | 19.30            | 0.67        | 9.65            | 0.40        |
| ERICHTHONIUS SP           | 19.30            | 1.01        | 0.00             | 0.00        | 9.65            | 0.40        |
| OTHER SPECIES             | 58.00            | 3.04        | 29.00            | 1.00        | 43.50           | 1.81        |
| STATION TOTAL AND<br>DATE |                  | 1905.00     | 2895.80          |             | 2400.40         |             |

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GEAR-36BONG

15 DEC 80

| STATION                   | DSN1             |             | DSN2             |             | NUMBER<br>TOTAL | PCT<br>COMP |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |
| SPECIES                   |                  |             |                  |             |                 |             |
| NEOMYSIS AMERICANA        | 357.80           | 37.87       | 352.00           | 33.33       | 354.90          | 35.47       |
| JASSA FALCATA             | 367.00           | 38.84       | 320.90           | 30.38       | 343.95          | 34.38       |
| CRANGON SEPTemspino ZOEa  | 18.30            | 1.94        | 0.00             | 0.00        | 9.15            | 0.91        |
| GAMMARUS SP               | 9.20             | 0.97        | 20.70            | 1.96        | 14.95           | 1.49        |
| COROPHIUM SP              | 36.70            | 3.88        | 93.20            | 8.82        | 64.95           | 6.49        |
| SUBORDER CAPRELLIDEA      | 27.50            | 2.91        | 31.10            | 2.94        | 29.30           | 2.93        |
| LEUCON AMERICANUS         | 27.50            | 2.91        | 31.10            | 2.94        | 29.30           | 2.93        |
| MYSIDOPSIS BIGELOWI       | 27.50            | 2.91        | 62.10            | 5.88        | 44.80           | 4.48        |
| STENOTHOE SP              | 9.20             | 0.97        | 10.40            | 0.98        | 9.80            | 0.98        |
| CLASS PYCNOGONIDA         | 9.20             | 0.97        | 0.00             | 0.00        | 4.60            | 0.46        |
| CRANGON SEPTemspinosa     | 27.50            | 2.91        | 62.10            | 5.88        | 44.80           | 4.48        |
| MONOCULODES EDWARDSI      | 0.00             | 0.00        | 20.70            | 1.96        | 10.35           | 1.03        |
| SAGITTA SP                | 27.50            | 2.91        | 31.10            | 2.94        | 29.30           | 2.93        |
| AUTOLYTUS SP              | 0.00             | 0.00        | 10.40            | 0.98        | 5.20            | 0.52        |
| OTHER SPECIES             | 0.00             | 0.00        | 10.40            | 0.98        | 5.20            | 0.52        |
| STATION TOTAL AND<br>DATE | TOTAL            |             |                  |             |                 |             |
|                           | 944.90           |             | 1056.20          |             | 1000.55         |             |



OYSTERC

GEAR-3680MG

23 DEC 80

| STATION                   | DSN1             |             | DSN2             |             | DSN3             |             | DSM4             |             | DSO1             |             | DSO2             |             | DSO3             |             |
|---------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |
| NEOMYSIS AMERICANA        | 198.20           | 1.33        | 462.00           | 24.46       | 4405.80          | 78.49       | 3336.60          | 73.19       | 1624.10          | 62.43       | 1317.00          | 54.27       | 398.30           | 36.43       |
| JASSA FALCATA             | 9756.10          | 65.68       | 1047.20          | 53.43       | 637.70           | 11.36       | 611.10           | 13.40       | 691.70           | 26.59       | 827.80           | 34.11       | 483.10           | 44.19       |
| CRANGON SEPTemspino ZOEAE | 0.00             | 0.00        | 10.30            | 0.55        | 19.30            | 0.34        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 8.50             | 0.78        |
| GAMMARUS SP               | 243.90           | 1.64        | 0.00             | 0.00        | 38.60            | 0.69        | 29.10            | 0.64        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| COROPHUM SP               | 4146.30          | 27.91       | 143.70           | 7.61        | 115.90           | 2.06        | 19.40            | 0.43        | 90.20            | 3.47        | 56.40            | 2.32        | 76.30            | 6.98        |
| SUBORDER CAPRELLIDEA      | 7.60             | 0.05        | 41.10            | 2.18        | 0.00             | 0.00        | 19.40            | 0.43        | 30.10            | 1.16        | 18.80            | 0.77        | 8.50             | 0.78        |
| LEUCON AMERICANUS         | 22.90            | 0.15        | 10.30            | 0.55        | 38.60            | 0.69        | 38.80            | 0.85        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| MYSIDOPSIS BIGELOWI       | 0.00             | 0.00        | 20.50            | 1.09        | 77.30            | 1.38        | 116.40           | 2.55        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| OXYUROSTYLIS SMITHI       | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 9.70             | 0.21        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| STENOHOE SP               | 243.90           | 1.64        | 0.00             | 0.00        | 38.60            | 0.69        | 38.80            | 0.85        | 90.20            | 3.47        | 0.00             | 0.00        | 33.90            | 3.10        |
| CLASS PYCNOGONIDA         | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 9.70             | 0.21        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| CRANGON SEPTemspinosa     | 61.00            | 0.41        | 112.90           | 5.98        | 48.30            | 0.86        | 97.00            | 2.13        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| CERAPUS TUBULARIS         | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 18.80            | 0.77        | 8.50             | 0.78        |
| MONOCULODES EDWARDSI      | 0.00             | 0.00        | 0.00             | 0.00        | 19.30            | 0.34        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| SAGITTA SP                | 76.20            | 0.51        | 20.50            | 1.09        | 164.30           | 2.93        | 155.20           | 3.40        | 75.20            | 2.89        | 150.50           | 6.20        | 50.80            | 4.65        |
| AUTOLYTUS SP              | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 9.70             | 0.21        | 0.00             | 0.00        | 18.80            | 0.77        | 16.90            | 1.55        |
| OTHER SPECIES             | 99.00            | 0.67        | 20.60            | 1.09        | 9.70             | 0.17        | 67.90            | 1.49        | 0.00             | 0.00        | 18.80            | 0.77        | 0.00             | 0.00        |
| STATION TOTAL AND<br>DATE | 14855.10         |             | 1889.10          |             | 5613.40          |             | 4558.80          |             | 2601.50          |             | 2426.90          |             | 1093.30          |             |

| STATION                  |        | DSD4   |         |       |  |
|--------------------------|--------|--------|---------|-------|--|
| SPECIES                  | NUMBER | PCT    | NUMBER  | PCT   |  |
|                          | INDIVS | COMP   | TOTAL   | COMP  |  |
| NEOMYSIS AMERICANA       | 179.70 | 20.72  | 1490.21 | 35.16 |  |
| JASSA FALCATA            | 476.60 | 54.96  | 1816.41 | 42.86 |  |
| CRANGON SEPTemspino ZOEa | 15.60  | 1.80   | 6.71    | 0.16  |  |
| GAMMARUS SP              | 0.00   | 0.00   | 38.95   | 0.92  |  |
| COROPHIUM SP             | 62.50  | 7.21   | 588.84  | 13.89 |  |
| SUBORDER CAPRELLIDEA     | 15.60  | 1.80   | 17.64   | 0.42  |  |
| LEUCON AMERICANUS        | 0.00   | 0.00   | 14.89   | 0.35  |  |
| MYSIDOPSIS BIGELOWI      | 7.80   | 0.90   | 27.75   | 0.65  |  |
| OXYUROSTYLIS SMITHI      | 0.00   | 0.00   | 1.21    | 0.03  |  |
| STENOTHOE SP             | 0.00   | 0.00   | 55.67   | 1.31  |  |
| CLASS PYCNOGONIDA        | 0.00   | 0.00   | 1.21    | 0.03  |  |
| CRANGON SEPTemspinosa    | 0.00   | 0.00   | 39.90   | 0.94  |  |
| CERAPUS TUBULARIS        | 7.80   | 0.90   | 4.39    | 0.10  |  |
| MONOCULODES EDWARDSI     | 0.00   | 0.00   | 2.41    | 0.06  |  |
| SAGITTA SP               | 70.30  | 8.11   | 95.38   | 2.25  |  |
| AUTOLYTUS SP             | 7.80   | 0.90   | 6.65    | 0.16  |  |
| OTHER SPECIES            | 23.40  | 2.70   | 29.92   | 0.71  |  |
| STATION TOTAL AND        |        |        |         |       |  |
| DATE                     | TOTAL  | 867.10 | 4238.15 |       |  |

OYSTERCR

GEAR-36BONG

29 DEC 80

| STATION                   | DSN1             |             | DSN2             |             | TOTAL           |             |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |
| NECMYSIS AMERICANA        | 1264.40          | 45.05       | 1155.40          | 45.49       | 1209.90         | 45.26       |
| AMPELISCA SP              | 19.20            | 0.68        | 0.00             | 0.00        | 9.60            | 0.36        |
| JASSA FALCATA             | 823.80           | 29.35       | 776.90           | 30.59       | 800.35          | 29.94       |
| GAMMARUS SP               | 95.80            | 3.41        | 59.80            | 2.35        | 77.80           | 2.91        |
| COROPHIUM SP              | 114.90           | 4.09        | 99.60            | 3.92        | 107.25          | 4.01        |
| SUBORDER CAPRELLIDEA      | 57.50            | 2.05        | 19.90            | 0.78        | 38.70           | 1.45        |
| LEUCON AMERICANUS         | 172.40           | 6.14        | 199.20           | 7.84        | 185.80          | 6.95        |
| STENOTHOE SP              | 19.20            | 0.68        | 39.80            | 1.57        | 29.50           | 1.10        |
| CRANGON SEPTEMPINOSA      | 38.30            | 1.36        | 49.80            | 1.96        | 44.05           | 1.65        |
| EDOTEA TRILOBA            | 19.20            | 0.68        | 0.00             | 0.00        | 9.60            | 0.36        |
| MONOCULODES EDWARDSI      | 38.30            | 1.36        | 39.80            | 1.57        | 39.05           | 1.46        |
| SAGITTA SP                | 105.40           | 3.76        | 79.70            | 3.14        | 92.55           | 3.46        |
| OTHER SPECIES             | 38.30            | 1.36        | 19.90            | 0.78        | 29.10           | 1.09        |
| STATION TOTAL AND<br>DATE | 2806.70          |             | 2539.80          |             | 2673.25         |             |

OYSTERCR

GEAR-36BONG

13 JAN 81

| STATION                   | DSN1             |             | DSN2             |             |                 |             |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |
| NEOMYSIS AMERICANA        | 60.60            | 2.97        | 95.40            | 6.76        | 78.00           | 4.52        |
| JASSA FALCATA             | 1263.00          | 61.85       | 880.20           | 62.42       | 1071.60         | 62.08       |
| GAMMARUS SP               | 51.90            | 2.54        | 21.20            | 1.50        | 36.55           | 2.12        |
| SUBCLASS OSTRACODA        | 8.70             | 0.43        | 21.20            | 1.50        | 14.95           | 0.87        |
| COROPHIUM SP              | 190.30           | 9.32        | 63.60            | 4.51        | 126.95          | 7.35        |
| SUBORDER CAPRELLIDEA      | 51.90            | 2.54        | 0.00             | 0.00        | 25.95           | 1.50        |
| LEUCON AMERICANUS         | 60.60            | 2.97        | 63.60            | 4.51        | 62.10           | 3.60        |
| STENOTHOE SP              | 34.60            | 1.69        | 31.80            | 2.25        | 33.20           | 1.92        |
| CRANGON SEPTEMSPINOSA     | 8.70             | 0.43        | 0.00             | 0.00        | 4.35            | 0.25        |
| CERAPUS TUBULARIS         | 34.60            | 1.69        | 0.00             | 0.00        | 17.30           | 1.00        |
| ELASMOPIUS LEVIS          | 17.30            | 0.85        | 0.00             | 0.00        | 8.65            | 0.50        |
| MONOCULODES EDWARDSI      | 51.90            | 2.54        | 31.80            | 2.25        | 41.85           | 2.42        |
| SAGITTA SP                | 69.20            | 3.39        | 84.80            | 6.01        | 77.00           | 4.46        |
| OTHER SPECIES             | 138.60           | 6.79        | 116.60           | 8.27        | 127.60          | 7.39        |
| STATION TOTAL AND<br>DATE | TOTAL            | 2041.90     | 1410.20          |             | 1726.05         |             |

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GEAR-36BONG

20 JAN 81

STATION

DS03

DS02

DS01

DS04

DS03

DS02

DS01

| SPECIES               | DS01             |             | DS02             |             | DS03             |             | DS04             |             | DS01             |             | DS02             |             | DS03             |             |
|-----------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|
|                       | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |
| NEOMYSIS AMERICANA    | 242.20           | 12.39       | 425.10           | 15.90       | 2070.70          | 42.00       | 1773.80          | 44.44       | 592.20           | 9.68        | 432.60           | 15.27       | 368.60           | 21.23       |
| JASSA FALCATA         | 1280.30          | 65.49       | 1610.70          | 50.25       | 2169.30          | 44.00       | 1640.80          | 41.11       | 3109.20          | 50.80       | 2171.30          | 76.64       | 1183.30          | 68.15       |
| GAMMARUS SP           | 0.00             | 0.00        | 89.50            | 3.35        | 65.70            | 1.33        | 22.20            | 0.56        | 0.00             | 0.00        | 33.90            | 1.20        | 19.40            | 1.12        |
| SUBCLASS OSTRACODA    | 0.00             | 0.00        | 22.40            | 0.84        | 32.90            | 0.67        | 33.30            | 0.83        | 0.00             | 0.00        | 0.00             | 0.00        | 9.70             | 0.56        |
| COROPHIUM SP          | 103.80           | 5.31        | 44.70            | 1.67        | 98.60            | 2.00        | 66.50            | 1.67        | 1431.20          | 23.39       | 0.00             | 0.00        | 38.80            | 2.23        |
| SUBORDER CAPRELLIDEA  | 17.30            | 0.88        | 134.20           | 5.02        | 164.30           | 3.33        | 88.70            | 2.22        | 49.40            | 0.81        | 67.90            | 2.40        | 0.00             | 0.00        |
| SARSIA SP             | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 8.50             | 0.30        | 0.00             | 0.00        |
| LEUCON AMERICANUS     | 103.80           | 5.31        | 89.50            | 3.35        | 131.50           | 2.67        | 122.00           | 3.06        | 0.00             | 0.00        | 8.50             | 0.30        | 9.70             | 0.56        |
| MYSIDOPSIS BIGELOWI   | 17.30            | 0.88        | 11.20            | 0.42        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| OXYUROSTYLIS SMITHI   | 17.30            | 0.88        | 0.00             | 0.00        | 16.40            | 0.33        | 22.20            | 0.56        | 0.00             | 0.00        | 8.50             | 0.30        | 9.70             | 0.56        |
| STENOHOE SP           | 17.30            | 0.88        | 44.70            | 1.67        | 65.70            | 1.33        | 66.50            | 1.67        | 296.10           | 4.84        | 0.00             | 0.00        | 19.40            | 1.12        |
| CLASS PYCNOGONIDA     | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 9.70             | 0.56        |
| CRANGON SEPTEMPINOSA  | 17.30            | 0.88        | 0.00             | 0.00        | 8.20             | 0.17        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| CERAPUS TUBULARIS     | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 22.20            | 0.56        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| ELASMOPIUS LEVIS      | 34.60            | 1.77        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 33.90            | 1.20        | 0.00             | 0.00        |
| EDOTEA TRILOBA        | 0.00             | 0.00        | 11.20            | 0.42        | 8.20             | 0.17        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 9.70             | 0.56        |
| RATHKEA OCTOPUNCTATA  | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| COROPHIUM ACHERUSICUM | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 197.40           | 3.23        | 0.00             | 0.00        | 0.00             | 0.00        |
| MONOCULODUS EDWARDSI  | 34.60            | 1.77        | 134.20           | 5.02        | 0.00             | 0.00        | 22.20            | 0.56        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| SAGITTA SP            | 34.60            | 1.77        | 0.00             | 0.00        | 24.70            | 0.50        | 33.30            | 0.83        | 98.70            | 1.61        | 50.90            | 1.80        | 29.10            | 1.68        |
| AUTOLYTUS SP          | 0.00             | 0.00        | 0.00             | 0.00        | 16.40            | 0.33        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| ERICHTHIUS SP         | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 49.40            | 0.81        | 0.00             | 0.00        | 0.00             | 0.00        |
| OTHER SPECIES         | 34.60            | 1.77        | 55.90            | 2.09        | 57.50            | 1.17        | 77.70            | 1.95        | 296.30           | 4.84        | 17.00            | 0.60        | 19.40            | 1.12        |

| STATION TOTAL AND DATE | 1955.00 | 2673.30 | 4930.10 | 3991.40 | 6119.90 | 2833.00 | 1736.20 |
|------------------------|---------|---------|---------|---------|---------|---------|---------|
|------------------------|---------|---------|---------|---------|---------|---------|---------|

| STATION                   |         | DSD4    |         |       |  |
|---------------------------|---------|---------|---------|-------|--|
| SPECIES                   | NUMBER  | PCT     | NUMBER  | PCT   |  |
|                           | INDIVS  | COMP    | TOTAL   | COMP  |  |
| NEOMYSIS AMERICANA        | 364.10  | 3.90    | 783.66  | 18.68 |  |
| JASSA FALCATA             | 4186.60 | 44.88   | 2168.94 | 51.69 |  |
| GAMMARUS SP               | 0.00    | 0.00    | 28.84   | 0.69  |  |
| SUBCLASS OSTRACODA        | 0.00    | 0.00    | 12.29   | 0.29  |  |
| COROPHIUM SP              | 4732.70 | 50.73   | 814.54  | 19.41 |  |
| SUBORDER CAPRELLIDEA      | 0.00    | 0.00    | 65.23   | 1.55  |  |
| SARSIA SP                 | 0.00    | 0.00    | 1.06    | 0.03  |  |
| LEUCON AMERICANUS         | 0.00    | 0.00    | 58.13   | 1.39  |  |
| MYSIDOPSIS BIGELOWI       | 0.00    | 0.00    | 3.56    | 0.08  |  |
| OXYUROSTYLIS SMITHI       | 0.00    | 0.00    | 9.26    | 0.22  |  |
| STENOTHOE SP              | 0.00    | 0.00    | 63.71   | 1.52  |  |
| CLASS PYCNOGONIDA         | 0.00    | 0.00    | 1.21    | 0.03  |  |
| CRANGON SEPTemspINOSA     | 0.00    | 0.00    | 3.19    | 0.08  |  |
| CERAPUS TUBULARIS         | 0.00    | 0.00    | 2.78    | 0.07  |  |
| ELASMOPUS LEVIS           | 0.00    | 0.00    | 8.56    | 0.20  |  |
| EDOTEA TRILOBA            | 0.00    | 0.00    | 3.64    | 0.09  |  |
| RATHKEA OCTOPUNCTATA      | 0.00    | 0.00    | 1.21    | 0.03  |  |
| COROPHIUM ACHERUSICUM     | 0.00    | 0.00    | 24.67   | 0.59  |  |
| MONOCULODES EDWARDSI      | 0.00    | 0.00    | 23.88   | 0.57  |  |
| SAGITTA SP                | 34.10   | 0.37    | 38.18   | 0.91  |  |
| AUTOLYTUS SP              | 0.00    | 0.00    | 2.05    | 0.05  |  |
| ERICHTHONIUS SP           | 0.00    | 0.00    | 6.18    | 0.15  |  |
| OTHER SPECIES             | 11.40   | 0.12    | 71.23   | 1.70  |  |
| STATION TOTAL AND<br>DATE | TOTAL   | 9328.90 | 4195.98 |       |  |

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GEAR-36BONG

26 JAN 81

| STATION                   | DSN1             |             | DSN2             |             | NUMBER<br>TOTAL | PCT<br>COMP |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |
| SPECIES                   |                  |             |                  |             |                 |             |
| NEOMYSIS AMERICANA        | 269.30           | 7.35        | 425.00           | 8.96        | 347.15          | 8.26        |
| AMPELISCA SP              | 327.90           | 8.95        | 971.40           | 20.47       | 649.65          | 15.45       |
| JASSA FALCATA             | 2388.80          | 65.18       | 2532.50          | 53.38       | 2460.65         | 58.52       |
| GAMMARUS SP               | 93.70            | 2.56        | 208.20           | 4.39        | 150.95          | 3.59        |
| SUBCLASS OSTRACODA        | 11.70            | 0.32        | 0.00             | 0.00        | 5.85            | 0.14        |
| COROPHIUM SP              | 93.70            | 2.56        | 208.20           | 4.39        | 150.95          | 3.59        |
| SUBORDER CAPRELLIDEA      | 0.00             | 0.00        | 34.70            | 0.73        | 17.35           | 0.41        |
| LEUCON AMERICANUS         | 163.90           | 4.47        | 26.00            | 0.55        | 94.95           | 2.26        |
| MYSIDOPSIS BIGELOWI       | 0.00             | 0.00        | 8.70             | 0.18        | 4.35            | 0.10        |
| OXYUROSTYLIS SMITHI       | 11.70            | 0.32        | 8.70             | 0.18        | 10.20           | 0.24        |
| STENOTHOE SP              | 93.70            | 2.56        | 34.70            | 0.73        | 64.20           | 1.53        |
| CRANGON SEPTEMPINOSA      | 11.70            | 0.32        | 52.00            | 1.10        | 31.85           | 0.76        |
| ELASMOPUS LEVIS           | 46.80            | 1.28        | 0.00             | 0.00        | 23.40           | 0.56        |
| EDDTEA TRILGABA           | 11.70            | 0.32        | 0.00             | 0.00        | 5.85            | 0.14        |
| MONOCULODES EDWARDSI      | 46.80            | 1.28        | 34.70            | 0.73        | 40.75           | 0.97        |
| SAGITTA SP                | 35.10            | 0.96        | 26.00            | 0.55        | 30.55           | 0.73        |
| OTHER SPECIES             | 58.50            | 1.60        | 173.60           | 3.66        | 116.05          | 2.76        |
| STATION TOTAL AND<br>DATE | TOTAL            | 3665.00     | 4744.40          |             | 4204.70         |             |



OYSTERCR

GEAR-36BONG

9 FEB 81

| STATION                   | DSN1             |             | DSN2             |             | NUMBER<br>TOTAL | PCT<br>COMP |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |
| SPECIES                   |                  |             |                  |             |                 |             |
| NEOMYSIS AMERICANA        | 2109.50          | 45.71       | 2089.90          | 41.67       | 2099.70         | 43.61       |
| AMPELISCA SP              | 40.60            | 0.88        | 0.00             | 0.00        | 20.30           | 0.42        |
| JASSA FALCATA             | 1906.70          | 41.32       | 1880.90          | 37.50       | 1893.80         | 39.33       |
| CRANGON SEPTEMSPINO ZOEAE | 0.00             | 0.00        | 10.40            | 0.21        | 5.20            | 0.11        |
| GAMMARUS SP               | 40.60            | 0.88        | 125.40           | 2.50        | 83.00           | 1.72        |
| COROPHUM SP               | 121.70           | 2.64        | 418.00           | 8.33        | 269.85          | 5.60        |
| STENOTHOE SP              | 0.00             | 0.00        | 125.40           | 2.50        | 62.70           | 1.30        |
| CRANGON SEPTEMSPINOSA     | 172.40           | 3.74        | 156.70           | 3.12        | 164.55          | 3.42        |
| EDOTEA TRILOBA            | 0.00             | 0.00        | 10.40            | 0.21        | 5.20            | 0.11        |
| MONOCULODES EDWARDSI      | 121.70           | 2.64        | 83.60            | 1.67        | 102.65          | 2.13        |
| SAGITTA SP                | 71.00            | 1.54        | 104.50           | 2.08        | 87.75           | 1.82        |
| OTHER SPECIES             | 30.40            | 0.66        | 10.40            | 0.21        | 20.40           | 0.42        |
| STATION TOTAL AND<br>DATE | TOTAL            | 4614.60     | 5015.60          |             | 4815.10         |             |

OYSTERCR

GEAR-36RONG

18 FEB 81

| STATION                   | DSN1             |             | DSN2             |             | DSN3             |             | DSN4             |             | DSD1             |             | DSD2             |             | DSD3             |             |
|---------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |
| NEOMYSIS AMERICANA        | 1319.30          | 16.45       | 2009.30          | 27.13       | 3780.20          | 48.59       | 4801.80          | 55.50       | 143.30           | 5.49        | 98.70            | 5.12        | 86.80            | 1.99        |
| AMPELISCA SP              | 112.30           | 1.40        | 93.50            | 1.26        | 263.70           | 3.39        | 317.10           | 3.66        | 81.90            | 3.14        | 0.00             | 0.00        | 0.00             | 0.00        |
| JASSA FALCATA             | 4042.10          | 50.39       | 3177.60          | 42.90       | 2461.50          | 31.64       | 1993.20          | 23.04       | 1760.50          | 67.46       | 1435.00          | 74.41       | 3368.10          | 77.29       |
| CRANGON SEPTEMSPINO ZOEAE | 28.10            | 0.35        | 11.70            | 0.16        | 98.90            | 1.27        | 79.30            | 0.92        | 10.20            | 0.39        | 0.00             | 0.00        | 0.00             | 0.00        |
| GAMMARUS SP               | 898.20           | 11.20       | 1028.00          | 13.88       | 263.70           | 3.39        | 407.70           | 4.71        | 0.00             | 0.00        | 0.00             | 0.00        | 34.70            | 0.80        |
| SUBCLASS OSTRACODA        | 0.00             | 0.00        | 0.00             | 0.00        | 54.90            | 0.71        | 101.90           | 1.18        | 10.20            | 0.39        | 0.00             | 0.00        | 0.00             | 0.00        |
| COROPHILUM SP             | 1010.50          | 12.60       | 654.20           | 8.83        | 175.80           | 2.26        | 226.50           | 2.62        | 327.50           | 12.55       | 107.60           | 5.58        | 555.60           | 12.75       |
| SUBORDER CAPRELLIDEA      | 0.00             | 0.00        | 93.50            | 1.26        | 0.00             | 0.00        | 45.30            | 0.52        | 0.00             | 0.00        | 35.90            | 1.86        | 34.70            | 0.80        |
| SARZIA SP                 | 56.10            | 0.70        | 0.00             | 0.00        | 274.70           | 3.53        | 305.80           | 3.53        | 112.60           | 4.31        | 44.80            | 2.32        | 69.40            | 1.59        |
| LEUCON AMERICANUS         | 56.10            | 0.70        | 58.40            | 0.79        | 33.00            | 0.42        | 34.00            | 0.39        | 10.20            | 0.39        | 9.00             | 0.47        | 0.00             | 0.00        |
| MYSIDOPSIS BIGELOWI       | 0.00             | 0.00        | 0.00             | 0.00        | 44.00            | 0.57        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| OXYUROSTYLIS SMITHI       | 28.10            | 0.35        | 35.00            | 0.47        | 22.00            | 0.28        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 8.70             | 0.20        |
| STENOHOE SP               | 224.60           | 2.80        | 0.00             | 0.00        | 175.80           | 2.26        | 90.60            | 1.05        | 0.00             | 0.00        | 0.00             | 0.00        | 69.40            | 1.59        |
| CLASS PYCNOGONIDA         | 0.00             | 0.00        | 11.70            | 0.16        | 0.00             | 0.00        | 22.70            | 0.26        | 10.20            | 0.39        | 9.00             | 0.47        | 0.00             | 0.00        |
| CRANGON SEPTEMSPINOSA     | 56.10            | 0.70        | 70.10            | 0.95        | 33.00            | 0.42        | 34.00            | 0.39        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| ELASMOPIUS LEVINS         | 112.30           | 1.40        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 35.90            | 1.86        | 0.00             | 0.00        |
| BATEA CATHARTENSIS        | 0.00             | 0.00        | 93.50            | 1.26        | 0.00             | 0.00        | 45.30            | 0.52        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| EDOTEA TRILOBA            | 0.00             | 0.00        | 0.00             | 0.00        | 11.00            | 0.14        | 11.30            | 0.13        | 0.00             | 0.00        | 0.00             | 0.00        | 8.70             | 0.20        |
| MELITA NITIDA             | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 45.30            | 0.52        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| RATHEKA OCTOPUNCTATA      | 0.00             | 0.00        | 0.00             | 0.00        | 22.00            | 0.28        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 8.70             | 0.20        |
| COROPHILUM ACHERUSICUM    | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 35.90            | 1.86        | 0.00             | 0.00        |
| SAGITTIA SP               | 77.20            | 0.96        | 11.70            | 0.16        | 54.90            | 0.71        | 22.70            | 0.26        | 40.90            | 1.57        | 71.70            | 3.72        | 43.40            | 1.00        |
| ERICHTHONIUS SP           | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 45.30            | 0.52        | 40.90            | 1.57        | 0.00             | 0.00        | 34.70            | 0.80        |
| OTHER SPECIES             | 0.00             | 0.00        | 58.50            | 0.79        | 11.00            | 0.14        | 22.60            | 0.26        | 61.40            | 2.35        | 44.90            | 2.33        | 34.70            | 0.80        |
| STATION TOTAL AND<br>DATE | 8021.00          |             | 7406.70          |             | 7780.10          |             | 8652.40          |             | 2609.80          |             | 1928.40          |             | 4357.60          |             |

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GEAR-26BONG

18 FEB 81

| STATION                   |                  | DSD4        |                 |             |  |
|---------------------------|------------------|-------------|-----------------|-------------|--|
| SPECIES                   | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |  |
| NEOMYSIS AMERICANA        | 40.30            | 1.45        | 1534.96         | 28.20       |  |
| AMPELISCA SP              | 0.00             | 0.00        | 108.56          | 1.99        |  |
| JASSA FALCATA             | 2288.50          | 82.08       | 2565.81         | 47.14       |  |
| CRANGON SEPTemspino ZOEAE | 8.10             | 0.29        | 29.54           | 0.54        |  |
| GAMMARUS SP               | 32.20            | 1.15        | 333.06          | 6.12        |  |
| SUBCLASS OSTRACODA        | 0.00             | 0.00        | 20.88           | 0.38        |  |
| COROPHIUM SP              | 161.20           | 5.78        | 402.36          | 7.39        |  |
| SUBORDER CAPRELLIDEA      | 0.00             | 0.00        | 26.18           | 0.48        |  |
| SARSIA SP                 | 24.20            | 0.87        | 110.95          | 2.04        |  |
| LEUCON AMERICANUS         | 0.00             | 0.00        | 25.09           | 0.46        |  |
| MYSIDOPSIS BIGELOWI       | 0.00             | 0.00        | 5.50            | 0.10        |  |
| OXYUROSTYLIS SMITHI       | 0.00             | 0.00        | 11.73           | 0.22        |  |
| STENOTHOE SP              | 64.50            | 2.31        | 78.11           | 1.44        |  |
| CLASS PYCNOGONIDA         | 32.20            | 1.15        | 10.73           | 0.20        |  |
| CRANGON SEPTemspinosa     | 0.00             | 0.00        | 24.15           | 0.44        |  |
| ELASMOPUS LEVIS           | 0.00             | 0.00        | 18.53           | 0.34        |  |
| BATEA CATHARINENSIS       | 32.20            | 1.15        | 21.38           | 0.39        |  |
| EDOTEA TRILOBA            | 0.00             | 0.00        | 3.88            | 0.07        |  |
| MELITA NITIDA             | 0.00             | 0.00        | 5.66            | 0.10        |  |
| RATHKEA OCTOPUNCTATA      | 8.10             | 0.29        | 4.85            | 0.09        |  |
| COROPHIUM ACHERUSICUM     | 0.00             | 0.00        | 4.49            | 0.08        |  |
| SAGITTA SP                | 80.60            | 2.89        | 50.39           | 0.93        |  |
| ERICHTHONIUS SP           | 0.00             | 0.00        | 15.11           | 0.28        |  |
| OTHER SPECIES             | 16.20            | 0.58        | 31.16           | 0.57        |  |
| STATION TOTAL AND<br>DATE | TOTAL            | 2788.30     | 5443.04         |             |  |

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GEAR-36BONG

23 FEB 81

| STATION                   | DSN1             |             | DSN2             |             | NUMBER<br>TOTAL | PCT<br>COMP |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |
| SPECIES                   |                  |             |                  |             |                 |             |
| NEOMYSIS AMERICANA        | 6579.30          | 33.84       | 6276.50          | 41.24       | 6427.90         | 37.09       |
| AMPELISCA SP              | 381.40           | 1.96        | 298.90           | 1.96        | 340.15          | 1.96        |
| JASSA FALCATA             | 3051.30          | 15.70       | 2689.90          | 17.68       | 2870.60         | 16.57       |
| CRANGON SEPTemspino ZOEAE | 95.40            | 0.49        | 298.90           | 1.96        | 197.15          | 1.14        |
| GAMMARUS SP               | 7056.00          | 36.30       | 4184.30          | 27.50       | 5620.15         | 32.43       |
| COROPHIUM SP              | 572.10           | 2.94        | 697.40           | 4.58        | 634.75          | 3.66        |
| SUBORDER CAPRELLIDEA      | 381.40           | 1.96        | 0.00             | 0.00        | 190.70          | 1.10        |
| OXYUROSTYLIS SMITHI       | 95.40            | 0.49        | 99.60            | 0.65        | 97.50           | 0.56        |
| CLASS PYCNOGONIDA         | 381.40           | 1.96        | 0.00             | 0.00        | 190.70          | 1.10        |
| CRANGON SEPTemspinosa     | 166.90           | 0.86        | 174.30           | 1.15        | 170.60          | 0.98        |
| BATEA CATHARINENSIS       | 0.00             | 0.00        | 99.60            | 0.65        | 49.80           | 0.29        |
| MONOCULODES EDWARDSI      | 381.40           | 1.96        | 199.30           | 1.31        | 290.35          | 1.68        |
| ORDER AMPHIPODA           | 0.00             | 0.00        | 99.60            | 0.65        | 49.80           | 0.29        |
| OTHER SPECIES             | 298.00           | 1.53        | 99.60            | 0.65        | 198.80          | 1.15        |
| STATION TOTAL AND<br>DATE |                  |             |                  |             |                 |             |
|                           | 19440.00         |             | 15217.90         |             | 17328.95        |             |

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GEAR-36B0HC

2 MAR 81

## STATION

DSN1 DSN2

| SPECIES                  | DSN1             |             | DSN2             |             | NUMBER<br>TOTAL | PCT<br>COMP |
|--------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                          | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |
| NEOMYSIS AMERICANA       | 938.80           | 12.09       | 624.00           | 9.53        | 781.40          | 10.92       |
| AMPELISCA SP             | 81.60            | 1.05        | 0.00             | 0.00        | 40.80           | 0.57        |
| JASSA FALCATA            | 3918.40          | 50.46       | 2861.90          | 43.71       | 3390.15         | 47.37       |
| CRANGON SEPTemspimo ZOEA | 183.70           | 2.37        | 232.90           | 3.56        | 208.30          | 2.91        |
| GAMMARUS SP              | 1387.80          | 17.87       | 998.30           | 15.25       | 1193.05         | 16.67       |
| COROPHUM SP              | 326.50           | 4.20        | 266.20           | 4.07        | 296.35          | 4.14        |
| SUBORDER CAPRELLIDEA     | 81.60            | 1.05        | 0.00             | 0.00        | 40.80           | 0.57        |
| SARSIA SP                | 489.80           | 6.31        | 1181.40          | 18.04       | 835.60          | 11.68       |
| LEUCON AMERICANUS        | 61.20            | 0.79        | 58.20            | 0.89        | 59.70           | 0.83        |
| MYSTIDOPSIS BIGELOWI     | 20.40            | 0.26        | 0.00             | 0.00        | 10.20           | 0.14        |
| OXYUROSTYLIS SMITHI      | 40.80            | 0.53        | 66.60            | 1.02        | 53.70           | 0.75        |
| STENOHOE SP              | 0.00             | 0.00        | 66.60            | 1.02        | 33.30           | 0.47        |
| CLASS PYGMOGONIDA        | 20.40            | 0.26        | 8.30             | 0.13        | 14.35           | 0.20        |
| CRANGON SEPTemspimosa    | 30.60            | 0.39        | 41.60            | 0.64        | 36.10           | 0.50        |
| ELASMOPOUS LEVIS         | 0.00             | 0.00        | 66.60            | 1.02        | 33.30           | 0.47        |
| RATHKEA OCTOPUNCTATA     | 61.20            | 0.79        | 49.90            | 0.76        | 55.55           | 0.78        |
| MONOCULODES EDWARDSI     | 81.60            | 1.05        | 0.00             | 0.00        | 40.80           | 0.57        |
| SAGITTA SP               | 0.00             | 0.00        | 8.30             | 0.13        | 4.15            | 0.06        |
| AUTOLYTUS SP             | 40.80            | 0.53        | 0.00             | 0.00        | 20.40           | 0.29        |
| OTHER SPECIES            | 0.00             | 0.00        | 16.60            | 0.25        | 8.30            | 0.12        |

STATION TOTAL AND  
DATE

7765.20 6547.40 7156.30

OYSTERCR

GEAR-36BONG

9 MAR 81

| STATION                   | DSN1             |             | DSN2             |             | NUMBER<br>TOTAL | PCT<br>COMP |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |
| NEOMYSIS AMERICANA        | 2966.80          | 42.34       | 2864.90          | 49.69       | 2915.85         | 45.66       |
| JASSA FALCATA             | 1675.40          | 23.91       | 1269.30          | 22.01       | 1472.35         | 23.05       |
| CRANGON SEPTemspino ZOEa  | 279.20           | 3.98        | 262.90           | 4.56        | 271.05          | 4.24        |
| GAMMARUS SP               | 663.20           | 9.46        | 290.10           | 5.03        | 476.65          | 7.46        |
| COROPHIUM SP              | 174.50           | 2.49        | 72.50            | 1.26        | 123.50          | 1.93        |
| SUBORDER CAPRELLIDEA      | 69.80            | 1.00        | 36.30            | 0.63        | 53.05           | 0.83        |
| SARPSIA SP                | 488.70           | 6.97        | 525.80           | 9.12        | 507.25          | 7.94        |
| LEUCON AMERICANUS         | 69.80            | 1.00        | 54.40            | 0.94        | 62.10           | 0.97        |
| MYSIDOPSIS BIGELOWI       | 34.90            | 0.50        | 36.30            | 0.63        | 35.60           | 0.56        |
| OXYUROSTYLIS SMITHI       | 104.70           | 1.49        | 72.50            | 1.26        | 88.50           | 1.39        |
| STENOTHOE SP              | 34.90            | 0.50        | 0.00             | 0.00        | 17.45           | 0.27        |
| CRANGON SEPTemspinosa     | 61.10            | 0.87        | 63.50            | 1.10        | 62.30           | 0.98        |
| MICROPROTOPUS RANEYI      | 0.00             | 0.00        | 72.50            | 1.26        | 36.25           | 0.57        |
| RATHKEA OCTOPUNCTATA      | 209.40           | 2.99        | 54.40            | 0.94        | 131.90          | 2.07        |
| COROPHIUM ACHERUSICUM     | 69.80            | 1.00        | 0.00             | 0.00        | 34.90           | 0.55        |
| MONOCULODES EDWARDSI      | 0.00             | 0.00        | 72.50            | 1.26        | 36.25           | 0.57        |
| SAGITTA SP                | 0.00             | 0.00        | 9.10             | 0.16        | 4.55            | 0.07        |
| ORDER AMPHIPODA           | 34.90            | 0.50        | 0.00             | 0.00        | 17.45           | 0.27        |
| OTHER SPECIES             | 69.80            | 1.00        | 9.10             | 0.16        | 39.45           | 0.62        |
| STATION TOTAL AND<br>DATE | 7006.90          |             | 5766.10          |             | 5386.50         |             |

## STATION

| SPECIES                   | DSN1             |             | DSN2             |             | DSN3             |             | DSN4             |             | DSD1             |             | DSD2             |             | DSD3             |             |
|---------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |
| NEOMYSIS AMERICANA        | 3227.45          | 34.03       | 5138.30          | 42.70       | 15290.10         | 67.57       | 10037.70         | 74.10       | 1081.10          | 26.73       | 1353.80          | 31.78       | 2514.30          | 49.52       |
| AMPELISCA SP              | 20.10            | 0.21        | 77.55            | 0.64        | 45.50            | 0.20        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| JASSA FALCATA             | 878.70           | 9.26        | 1259.55          | 10.47       | 1774.70          | 7.84        | 1189.40          | 5.38        | 1309.80          | 32.39       | 1227.40          | 28.81       | 1523.80          | 30.08       |
| CRANGON SEPTemspINO ZOEAE | 1171.45          | 12.35       | 1480.65          | 12.30       | 1228.70          | 5.43        | 947.10           | 4.28        | 467.80           | 11.57       | 577.60           | 13.56       | 257.10           | 5.07        |
| GAMMARUS SP               | 731.65           | 7.71        | 949.35           | 7.89        | 819.10           | 3.62        | 440.50           | 1.99        | 20.80            | 0.51        | 18.10            | 0.42        | 76.20            | 1.50        |
| SUBCLASS OSTRACODA        | 0.00             | 0.00        | 4.60             | 0.04        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| COROPHIUM SP              | 90.55            | 0.95        | 96.00            | 0.80        | 45.50            | 0.20        | 176.20           | 0.80        | 41.50            | 1.03        | 18.10            | 0.42        | 152.40           | 3.01        |
| SUBORDER CAPRELLIDEA      | 214.75           | 2.26        | 59.10            | 0.49        | 136.50           | 0.60        | 88.10            | 0.40        | 41.60            | 1.03        | 90.30            | 2.12        | 76.20            | 1.50        |
| SARSA SP                  | 2283.30          | 24.07       | 2189.85          | 18.20       | 2002.30          | 8.85        | 2290.70          | 10.36       | 997.90           | 24.68       | 794.20           | 18.64       | 285.70           | 5.64        |
| LEUCON AMERICANUS         | 234.85           | 2.48        | 69.20            | 0.58        | 273.00           | 1.21        | 88.10            | 0.40        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| MYSIDOPSIS BIGELOWI       | 20.10            | 0.21        | 40.65            | 0.34        | 182.00           | 0.80        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| OXYUROSTYLIS SMITHI       | 53.70            | 0.57        | 13.85            | 0.12        | 0.00             | 0.00        | 22.00            | 0.10        | 10.40            | 0.26        | 0.00             | 0.00        | 0.00             | 0.00        |
| STENOHOE SP               | 40.15            | 0.42        | 18.45            | 0.15        | 136.50           | 0.60        | 44.10            | 0.20        | 20.80            | 0.51        | 18.10            | 0.42        | 38.10            | 0.75        |
| CLASS PYCNOGONIDA         | 16.80            | 0.18        | 4.60             | 0.04        | 45.50            | 0.20        | 0.00             | 0.00        | 20.80            | 0.51        | 0.00             | 0.00        | 0.00             | 0.00        |
| CRANGON SEPTemspINOSA     | 95.60            | 1.01        | 82.15            | 0.68        | 11.40            | 0.05        | 88.10            | 0.40        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| CERAPUS TUBULARIS         | 16.80            | 0.18        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| ELASMOPIUS LEVIS          | 16.80            | 0.18        | 0.00             | 0.00        | 0.00             | 0.00        | 44.10            | 0.20        | 20.80            | 0.51        | 18.10            | 0.42        | 0.00             | 0.00        |
| EDOTEA TRILOBA            | 16.80            | 0.18        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| MICROPROTOPUS RANEYI      | 16.80            | 0.18        | 40.65            | 0.34        | 0.00             | 0.00        | 44.10            | 0.20        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| RATHEKA OCTOPUNCTATA      | 188.15           | 1.98        | 295.50           | 2.46        | 318.50           | 1.41        | 88.10            | 0.40        | 0.00             | 0.00        | 90.30            | 2.12        | 76.20            | 1.50        |
| COROPHIUM ACHERUSICUM     | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 44.10            | 0.20        | 0.00             | 0.00        | 18.10            | 0.42        | 0.00             | 0.00        |
| MONOCULOIDES EDWARDSI     | 16.80            | 0.18        | 40.65            | 0.34        | 45.50            | 0.20        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| SAGITTA SP                | 16.80            | 0.18        | 49.90            | 0.41        | 45.50            | 0.20        | 22.00            | 0.10        | 0.00             | 0.00        | 0.00             | 0.00        | 9.50             | 0.19        |
| ERICHTHONIUS SP           | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 18.10            | 0.42        | 0.00             | 0.00        |
| OTHER SPECIES             | 117.25           | 1.24        | 123.30           | 1.02        | 227.50           | 1.01        | 110.10           | 0.50        | 10.40            | 0.26        | 18.10            | 0.42        | 19.00            | 0.38        |
| STATION TOTAL AND DATE    | 9485.35          |             | 12033.85         |             | 22627.80         |             | 22114.50         |             | 4043.80          |             | 4260.30          |             | 5066.60          |             |



OYSTERCR

GEAR-36BONG

16 MAR 81

| STATION                   |                  | DSD4        |                 |             |  |
|---------------------------|------------------|-------------|-----------------|-------------|--|
| SPECIES                   | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |  |
| NEOMYSIS AMERICANA        | 2069.00          | 44.53       | 5542.75         | 52.39       |  |
| AMPELISCA SP              | 0.00             | 0.00        | 24.08           | 0.23        |  |
| JASSA FALCATA             | 1343.00          | 28.91       | 1264.46         | 11.95       |  |
| CRANGON SEPTemspino ZOEAE | 208.70           | 4.49        | 899.12          | 8.50        |  |
| GAMMARUS SP               | 72.60            | 1.56        | 480.93          | 4.55        |  |
| SUBCLASS OSTRACODA        | 0.00             | 0.00        | 0.92            | 0.01        |  |
| COROPHIUM SP              | 145.20           | 3.13        | 95.21           | 0.90        |  |
| SUBORDER CAPRELLIDEA      | 145.20           | 3.13        | 112.56          | 1.06        |  |
| SARSIA SP                 | 544.50           | 11.72       | 1586.16         | 14.99       |  |
| LEUCON AMERICANUS         | 0.00             | 0.00        | 96.92           | 0.92        |  |
| MYSIDOPSIS BIGELOWI       | 0.00             | 0.00        | 30.35           | 0.29        |  |
| OXYUROSTYLIS SMITHI       | 0.00             | 0.00        | 16.75           | 0.16        |  |
| STEMOTHOE SP              | 36.30            | 0.78        | 41.11           | 0.39        |  |
| CLASS PYCNOGONIDA         | 9.10             | 0.20        | 11.82           | 0.11        |  |
| CRANGON SEPTemspinosa     | 0.00             | 0.00        | 45.50           | 0.43        |  |
| CERAPUS TUBULARIS         | 0.00             | 0.00        | 7.17            | 0.07        |  |
| ELASMOPUS LEVIS           | 0.00             | 0.00        | 11.66           | 0.11        |  |
| EDOTEA TRILOBA            | 0.00             | 0.00        | 3.36            | 0.03        |  |
| MICROPROTOPUS RANEYI      | 0.00             | 0.00        | 15.90           | 0.15        |  |
| RATHKEA OCTOPUNCTATA      | 18.10            | 0.39        | 155.85          | 1.47        |  |
| COROPHIUM ACHERUSICUM     | 36.30            | 0.78        | 9.85            | 0.09        |  |
| MONOCULODES EDWARDSI      | 0.00             | 0.00        | 16.04           | 0.15        |  |
| SAGITTA SP                | 0.00             | 0.00        | 21.04           | 0.20        |  |
| ERICHTHONIUS SP           | 0.00             | 0.00        | 1.81            | 0.02        |  |
| OTHER SPECIES             | 18.20            | 0.39        | 88.44           | 0.84        |  |
| STATION TOTAL AND<br>DATE | TOTAL            | 4646.20     | 10579.76        |             |  |

OYSTERCR

GEAR-36BONG

23 MAR 81

| STATION                   | DSN1             |             | DSN2             |             | NUMBER<br>TOTAL | PCT<br>COMP |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |
| NEOMYSIS AMERICANA        | 2576.10          | 43.05       | 2900.80          | 42.30       | 2738.45         | 42.65       |
| AMPELISCA SP              | 46.80            | 0.78        | 330.80           | 4.82        | 188.80          | 2.94        |
| JASSA FALCATA             | 1171.00          | 19.57       | 763.40           | 11.13       | 967.20          | 15.06       |
| CRANGON SEPTEMSPINO ZOEAE | 702.60           | 11.74       | 1094.10          | 15.96       | 898.35          | 13.99       |
| GAMMARUS SP               | 515.20           | 8.61        | 432.60           | 6.31        | 473.90          | 7.38        |
| COROPHIUM SP              | 0.00             | 0.00        | 25.40            | 0.37        | 12.70           | 0.20        |
| SUBORDER CAPRELLIDEA      | 46.80            | 0.78        | 50.90            | 0.74        | 48.85           | 0.76        |
| SARSIA SP                 | 374.70           | 6.26        | 788.80           | 11.50       | 581.75          | 9.06        |
| LEUCON AMERICANUS         | 140.50           | 2.35        | 229.00           | 3.34        | 184.75          | 2.88        |
| OXYUROSTYLIS SMITHI       | 0.00             | 0.00        | 50.90            | 0.74        | 25.45           | 0.40        |
| STENOHOE SP               | 93.70            | 1.57        | 25.40            | 0.37        | 59.55           | 0.93        |
| CRANGON SEPTEMSPINOSA     | 58.50            | 0.98        | 25.40            | 0.37        | 41.95           | 0.65        |
| EDOTEA TRILOBA            | 46.80            | 0.78        | 0.00             | 0.00        | 23.40           | 0.36        |
| COROPHIUM ACHERUSICUM     | 46.80            | 0.78        | 25.40            | 0.37        | 36.10           | 0.56        |
| MONOCULODES EDWARDSI      | 0.00             | 0.00        | 25.40            | 0.37        | 12.70           | 0.20        |
| SAGITTA SP                | 23.40            | 0.39        | 50.90            | 0.74        | 37.15           | 0.58        |
| ORDER AMPHIPODA           | 0.00             | 0.00        | 25.40            | 0.37        | 12.70           | 0.20        |
| ERICHTHONIUS SP           | 46.80            | 0.78        | 0.00             | 0.00        | 23.40           | 0.36        |
| OTHER SPECIES             | 93.60            | 1.56        | 12.70            | 0.19        | 53.15           | 0.83        |
| STATION TOTAL AND<br>DATE | TOTAL            | 5983.30     | 6857.30          |             | 6420.30         |             |

OYSTERCR

GEAR-36BONG

30 MAR 81

| STATION                   | DSN1             |             | DSN2             |             |                 |             |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |
| NEOMYSIS AMERICANA        | 810.20           | 5.16        | 785.90           | 4.58        | 798.05          | 4.85        |
| AMPELISCA SP              | 254.20           | 1.62        | 943.00           | 5.50        | 598.60          | 3.54        |
| JASSA FALCATA             | 889.60           | 5.66        | 1728.90          | 10.08       | 1309.25         | 7.97        |
| CRANGON SEPTEMSPINO ZOEAE | 1239.10          | 7.89        | 785.90           | 4.58        | 1012.50         | 6.16        |
| GAMMARUS SP               | 8768.90          | 55.81       | 8801.60          | 51.32       | 8785.25         | 53.47       |
| SUBCLASS OSTRACODA        | 79.40            | 0.51        | 98.20            | 0.57        | 88.80           | 0.54        |
| SUBORDER CAPRELLIDEA      | 0.00             | 0.00        | 157.20           | 0.92        | 78.60           | 0.48        |
| SARSIA SP                 | 3177.10          | 20.22       | 2868.40          | 16.72       | 3022.75         | 18.40       |
| LEUCON AMERICANUS         | 47.70            | 0.30        | 216.10           | 1.26        | 131.90          | 0.80        |
| OXYIROSTYLIS SMITHI       | 127.10           | 0.81        | 157.20           | 0.92        | 142.15          | 0.87        |
| STENOTHOE SP              | 127.10           | 0.81        | 157.20           | 0.92        | 142.15          | 0.87        |
| CLASS PYCNOGONIDA         | 15.90            | 0.10        | 39.30            | 0.23        | 27.60           | 0.17        |
| EDOTEA TRILOBA            | 0.00             | 0.00        | 19.60            | 0.11        | 9.80            | 0.06        |
| COROPHIUM ACHERUSICUM     | 0.00             | 0.00        | 157.20           | 0.92        | 78.60           | 0.48        |
| SAGITTA SP                | 7.90             | 0.05        | 0.00             | 0.00        | 3.95            | 0.02        |
| ORDER AMPHIPODA           | 127.10           | 0.81        | 0.00             | 0.00        | 63.55           | 0.39        |
| AUTOLYTUS SP              | 15.90            | 0.10        | 39.30            | 0.23        | 27.60           | 0.17        |
| ERICHTHONIUS SP           | 0.00             | 0.00        | 157.20           | 0.92        | 78.60           | 0.48        |
| OTHER SPECIES             | 23.80            | 0.15        | 39.20            | 0.23        | 31.50           | 0.19        |
| STATION TOTAL AND<br>DATE |                  | 15/11.00    | 17151.40         |             | 16431.20        |             |

OYSTERCR

GEAR-36BONG

6 APR 81

| STATION                   | DSN1             |             | DSN2             |             | NUMBER<br>TOTAL | PCT<br>COMP |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |
| NEOMYSIS AMERICANA        | 12241.60         | 57.21       | 4503.60          | 34.48       | 8372.60         | 48.60       |
| AMPELISCA SP              | 1932.90          | 9.03        | 1310.10          | 10.03       | 1621.50         | 9.41        |
| JASSA FALCATA             | 536.90           | 2.51        | 163.80           | 1.25        | 350.35          | 2.03        |
| CRANGON SEPTEMSPINO ZOEAE | 671.10           | 3.14        | 1719.50          | 13.17       | 1195.30         | 6.94        |
| GAMMARUS SP               | 5154.40          | 24.09       | 2456.50          | 18.81       | 3805.45         | 22.09       |
| SUBCLASS OSTRACODA        | 214.80           | 1.00        | 81.90            | 0.63        | 148.35          | 0.86        |
| SUBORDER CAPRELLIDEA      | 107.40           | 0.50        | 245.60           | 1.88        | 176.50          | 1.02        |
| SARSIA SP                 | 214.80           | 1.00        | 1801.40          | 13.79       | 1008.10         | 5.85        |
| LEUCON AMERICANUS         | 214.80           | 1.00        | 368.50           | 2.82        | 291.65          | 1.69        |
| OXYUROSTYLIS SMITHI       | 0.00             | 0.00        | 40.90            | 0.31        | 20.45           | 0.12        |
| EDOTEA TRILOBA            | 0.00             | 0.00        | 122.80           | 0.94        | 61.40           | 0.36        |
| MICROPROTOPUS RANEYI      | 107.40           | 0.50        | 0.00             | 0.00        | 53.70           | 0.31        |
| RATHKEA OCTOPUNCTATA      | 0.00             | 0.00        | 81.90            | 0.63        | 40.95           | 0.24        |
| SAGITTA SP                | 0.00             | 0.00        | 40.90            | 0.31        | 20.45           | 0.12        |
| AUTOLYTUS SP              | 0.00             | 0.00        | 81.90            | 0.63        | 40.95           | 0.24        |
| OTHER SPECIES             | 0.00             | 0.00        | 40.90            | 0.31        | 20.45           | 0.12        |
| STATION TOTAL AND<br>DATE | TOTAL            | 21396.10    | 13060.20         |             | 17228.15        |             |

OYSTERCR

GEAR-36BONG

13 APR 81

| STATION                   | DSN1             |             | DSN2             |             | NUMBER<br>TOTAL | PCT<br>COMP |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |
| NEOMYSIS AMERICANA        | 6981.40          | 21.14       | 5754.70          | 16.28       | 6368.05         | 18.63       |
| AMPELISCA SP              | 2746.80          | 8.32        | 2452.80          | 6.94        | 2599.80         | 7.60        |
| JASSA FALCATA             | 915.60           | 2.77        | 1132.10          | 3.20        | 1023.85         | 2.99        |
| CRANGON SEPTEMSPINO ZOEAE | 5951.40          | 18.02       | 4528.30          | 12.81       | 5239.85         | 15.33       |
| GAMMARUS SP               | 15336.20         | 46.45       | 20000.00         | 56.57       | 17668.10        | 51.68       |
| SUBCLASS OSTRACODA        | 0.00             | 0.00        | 94.30            | 0.27        | 47.15           | 0.14        |
| SUBORDER CAPRELLIDEA      | 228.90           | 0.69        | 0.00             | 0.00        | 114.45          | 0.33        |
| SARSIA SP                 | 114.40           | 0.35        | 0.00             | 0.00        | 57.20           | 0.17        |
| LEUCON AMERICANUS         | 114.40           | 0.35        | 377.40           | 1.07        | 245.90          | 0.72        |
| MYSIDOPSIS BIGELOWI       | 0.00             | 0.00        | 188.70           | 0.53        | 94.35           | 0.28        |
| OXYUROSTYLIS SMITHI       | 114.40           | 0.35        | 0.00             | 0.00        | 57.20           | 0.17        |
| CRANGON SEPTEMSPINOSA     | 157.40           | 0.48        | 106.10           | 0.30        | 131.75          | 0.39        |
| IDOTEA BALTICA            | 114.40           | 0.35        | 0.00             | 0.00        | 57.20           | 0.17        |
| MICROPROTOPIUS RANEYI     | 0.00             | 0.00        | 188.70           | 0.53        | 94.35           | 0.28        |
| RATHKEA OCTOPUNCTATA      | 0.00             | 0.00        | 188.70           | 0.53        | 94.35           | 0.28        |
| COROPHIUM ACHERUSICUM     | 0.00             | 0.00        | 188.70           | 0.53        | 94.35           | 0.28        |
| OTHER SPECIES             | 243.10           | 0.74        | 153.30           | 0.43        | 198.20          | 0.58        |
| STATION TOTAL AND<br>DATE | 33018.40         |             | 35353.80         |             | 34186.10        |             |

OYSTERCR

GEAR-3680MG

20 APR 81

STATION

| SPECIES                   | DSN1             |             | DSN2             |             | DSN3             |             | DSN4             |             | DSD1             |             | DSD2             |             | DSD3             |             |
|---------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |
| NEOMYSIS AMERICANA        | 4157.20          | 20.26       | 6836.65          | 25.13       | 23935.30         | 56.55       | 22304.40         | 51.43       | 2242.70          | 12.21       | 3038.00          | 11.31       | 2560.50          | 8.01        |
| AMPELLISCA SP             | 911.80           | 4.44        | 729.05           | 2.68        | 862.50           | 2.04        | 455.20           | 1.05        | 56.80            | 0.31        | 7.00             | 0.00        | 0.00             | 0.00        |
| JASSA FALCATA             | 1383.60          | 6.74        | 3079.30          | 11.32       | 1078.20          | 2.55        | 1820.80          | 4.20        | 709.70           | 3.86        | 945.10           | 3.52        | 999.20           | 3.13        |
| CRANGON SEPTEMPINO ZOEAE  | 8884.40          | 43.30       | 11972.05         | 44.01       | 5606.50          | 13.25       | 4551.90          | 10.50       | 13853.80         | 75.42       | 21063.30         | 78.39       | 26729.10         | 83.66       |
| GAMMARUS SP               | 3696.05          | 18.01       | 2674.75          | 9.83        | 8625.30          | 20.38       | 12517.80         | 28.86       | 56.80            | 0.31        | 506.30           | 1.88        | 468.40           | 1.47        |
| SUBCLASS OSTRACODA        | 152.05           | 0.74        | 70.25            | 0.26        | 0.00             | 0.00        | 42.70            | 0.10        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| COROPHIUM SP              | 124.45           | 0.61        | 0.00             | 0.00        | 215.60           | 0.51        | 0.00             | 0.00        | 56.80            | 0.31        | 33.80            | 0.13        | 93.70            | 0.29        |
| SUBORDER CAPRELLIDEA      | 0.00             | 0.00        | 70.25            | 0.26        | 0.00             | 0.00        | 0.00             | 0.00        | 28.40            | 0.15        | 0.00             | 0.00        | 31.20            | 0.10        |
| SARSA SP                  | 255.35           | 1.24        | 177.65           | 0.65        | 215.60           | 0.51        | 184.90           | 0.43        | 794.90           | 4.33        | 371.30           | 1.38        | 281.00           | 0.88        |
| LEUCON AMERICANUS         | 159.15           | 0.78        | 247.85           | 0.91        | 323.50           | 0.76        | 120.90           | 0.28        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| OXYUROSTYLIS SMITHI       | 55.15            | 0.27        | 177.65           | 0.65        | 0.00             | 0.00        | 71.10            | 0.16        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| STENOHOE SP               | 27.60            | 0.13        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 93.70            | 0.29        |
| CLASS PYCNOGONIDA         | 0.00             | 0.00        | 53.70            | 0.20        | 0.00             | 0.00        | 7.10             | 0.02        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| CRANGON SEPTEMPINOSA      | 0.00             | 0.00        | 0.00             | 0.00        | 1098.40          | 2.60        | 1138.00          | 2.62        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| CERAPUS TUBULARIS         | 27.60            | 0.13        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| ELASMOPIUS LEVIS          | 0.00             | 0.00        | 53.70            | 0.20        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| IDOTEA BALTICA            | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| IDOTEA TRILOBA            | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 14.20            | 0.03        | 28.40            | 0.15        | 0.00             | 0.00        | 0.00             | 0.00        |
| MICROPOTOPUS RANEYI       | 0.00             | 0.00        | 35.10            | 0.13        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 31.20            | 0.10        |
| RATHREA OCTOPUNCTATA      | 227.75           | 1.11        | 105.35           | 0.39        | 323.50           | 0.76        | 14.20            | 0.03        | 113.60           | 0.62        | 270.00           | 1.00        | 249.80           | 0.78        |
| COROPHIUM ACHERUSICUM     | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 28.40            | 0.15        | 0.00             | 0.00        | 31.20            | 0.10        |
| MONOCULODES EDWARDSI      | 0.00             | 0.00        | 35.10            | 0.13        | 0.00             | 0.00        | 0.00             | 0.00        | 28.40            | 0.15        | 0.00             | 0.00        | 0.00             | 0.00        |
| SAGITTIA SP               | 96.90            | 0.47        | 123.95           | 0.46        | 40.40            | 0.10        | 42.70            | 0.10        | 198.70           | 1.08        | 168.80           | 0.63        | 288.80           | 0.90        |
| ORDER AMPHIPODA           | 0.00             | 0.00        | 35.10            | 0.13        | 0.00             | 0.00        | 0.00             | 0.00        | 28.40            | 0.15        | 33.80            | 0.13        | 0.00             | 0.00        |
| AUTOLYTUS SP              | 152.05           | 0.74        | 406.90           | 1.50        | 0.00             | 0.00        | 42.70            | 0.10        | 28.40            | 0.15        | 0.00             | 0.00        | 0.00             | 0.00        |
| MICROEUTOPUS GRYLLOLALP   | 27.60            | 0.13        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| OTHER SPECIES             | 179.65           | 0.88        | 316.05           | 1.16        | 0.00             | 0.00        | 42.60            | 0.10        | 113.60           | 0.62        | 438.90           | 1.63        | 93.70            | 0.29        |
| STATION TOTAL AND<br>DATE | 20518.35         |             | 27200.40         |             | 42324.80         |             | 43371.20         |             | 18367.80         |             | 26869.30         |             | 31951.50         |             |

OYSTERCR

GEAR-36BONG

20 APR 81

| STATION                   |                  | DSD4        |                 |             |  |
|---------------------------|------------------|-------------|-----------------|-------------|--|
| SPECIES                   | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |  |
| NEOMYSIS AMERICANA        | 1808.60          | 7.67        | 7787.72         | 27.63       |  |
| AMPELISCA SP              | 0.00             | 0.00        | 465.62          | 1.65        |  |
| JASSA FALCATA             | 904.30           | 3.84        | 1538.31         | 5.46        |  |
| CRANGON SEPTEMSPINO ZOEAE | 19532.80         | 82.87       | 13305.03        | 47.20       |  |
| GAMMARUS SP               | 422.00           | 1.79        | 3533.82         | 12.54       |  |
| SUBCLASS OSTRACODA        | 0.00             | 0.00        | 48.73           | 0.17        |  |
| COROPHIUM SP              | 90.40            | 0.38        | 73.92           | 0.26        |  |
| SUBORDER CAPRELLIDEA      | 0.00             | 0.00        | 20.01           | 0.07        |  |
| SARSIA SP                 | 331.60           | 1.41        | 304.53          | 1.08        |  |
| LEUCON AMERICANUS         | 0.00             | 0.00        | 125.84          | 0.45        |  |
| OXYUROSTYLIS SMITHI       | 30.10            | 0.13        | 56.68           | 0.20        |  |
| STENOTHOE SP              | 0.00             | 0.00        | 14.89           | 0.05        |  |
| CLASS PYCNOGONIDA         | 0.00             | 0.00        | 11.45           | 0.04        |  |
| CRANGON SEPTEMSPINOSA     | 0.00             | 0.00        | 223.64          | 0.79        |  |
| CERAPUS TUBULARIS         | 30.10            | 0.13        | 8.53            | 0.03        |  |
| ELASMOPUS LEVIS           | 0.00             | 0.00        | 10.74           | 0.04        |  |
| IDOTEA BALTICA            | 30.10            | 0.13        | 3.01            | 0.01        |  |
| EDOTEA TRILOBATA          | 0.00             | 0.00        | 4.26            | 0.02        |  |
| MICROPROTOPUS RANEYI      | 0.00             | 0.00        | 10.14           | 0.04        |  |
| RATHKEA OCTOPUNCTATA      | 120.60           | 0.51        | 175.79          | 0.62        |  |
| COROPHIUM ACHERUSICUM     | 0.00             | 0.00        | 5.96            | 0.02        |  |
| MONOCULODES EDWARDSI      | 0.00             | 0.00        | 9.86            | 0.03        |  |
| SAGITTA SP                | 60.30            | 0.26        | 124.14          | 0.44        |  |
| ORDER AMPHIPODA           | 0.00             | 0.00        | 13.24           | 0.05        |  |
| AUTOLYTUS SP              | 30.10            | 0.13        | 121.91          | 0.43        |  |
| MICRODEUTOPUS GRYLLOTALP  | 0.00             | 0.00        | 5.52            | 0.02        |  |
| OTHER SPECIES             | 180.80           | 0.77        | 186.10          | 0.66        |  |
| STATION TOTAL AND<br>DATE | TOTAL            | 23571.80    | 28189.39        |             |  |



| STATION                   | DSN1             |             | DSN2             |             |                 |             |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |
| NEOMYSIS AMERICANA        | 3461.00          | 16.63       | 6006.80          | 20.06       | 4733.90         | 18.66       |
| AMPELISCA SP              | 1361.70          | 6.54        | 873.70           | 2.92        | 1117.70         | 4.40        |
| JASSA FALCATA             | 1588.70          | 7.63        | 3494.90          | 11.67       | 2541.80         | 10.02       |
| CRANGON SEPTEMSPINO ZOEAE | 1021.30          | 4.91        | 3003.40          | 10.03       | 2012.35         | 7.93        |
| GAMMARUS SP               | 11801.40         | 56.71       | 14198.00         | 47.42       | 12999.70        | 51.23       |
| SUBCLASS OSTRACODA        | 397.20           | 1.91        | 709.90           | 2.37        | 553.55          | 2.18        |
| LEUCON AMERICANUS         | 170.20           | 0.82        | 273.00           | 0.91        | 221.60          | 0.87        |
| OXYUROSTYLIS SMITHI       | 198.60           | 0.95        | 54.60            | 0.18        | 126.60          | 0.50        |
| STENOTHOE SP              | 227.00           | 1.09        | 0 00             | 0.00        | 113.50          | 0.45        |
| CRANGON SEPTEMSPINOSA     | 425.50           | 2.04        | 505.10           | 1.69        | 465.30          | 1.83        |
| IDOTEA BALICA             | 56.70            | 0.27        | 0 00             | 0.00        | 28.35           | 0.11        |
| RATHKEA OCTOPUNCTATA      | 0.00             | 0.00        | 109.20           | 0.36        | 54.60           | 0.22        |
| SAGITTA SP                | 28.40            | 0.14        | 54.60            | 0.18        | 41.50           | 0.16        |
| AUTOLYTUS SP              | 28.40            | 0.14        | 327.60           | 1.09        | 178.00          | 0.70        |
| OTHER SPECIES             | 42.60            | 0.20        | 327.60           | 1.09        | 185.10          | 0.73        |
| STATION TOTAL AND<br>DATE | TOTAL            | 20808.70    | 29938.40         |             | 25373.55        |             |

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GEAR-36BONG

6 MAY 81

| STATION                   | DSN1             |             | DSN2             |             | NUMBER<br>TOTAL | PCT<br>COMP |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |
| SPECIES                   |                  |             |                  |             |                 |             |
| NEOMYSIS AMERICANA        | 6556.40          | 17.62       | 5718.60          | 26.75       | 6137.50         | 20.95       |
| AMPELISCA SP              | 1380.30          | 3.71        | 608.40           | 2.85        | 994.35          | 3.39        |
| JASSA FALCATA             | 1380.30          | 3.71        | 2068.40          | 9.68        | 1724.35         | 5.89        |
| CRANGON SEPTemspino ZOEa  | 4140.90          | 11.13       | 3954.40          | 18.50       | 4047.65         | 13.82       |
| GAMMARUS SP               | 17483.80         | 47.00       | 6327.00          | 29.60       | 11905.40        | 40.65       |
| SUBCLASS OSTRACODA        | 1265.30          | 3.40        | 912.50           | 4.27        | 1088.90         | 3.72        |
| COROPHIUM SP              | 920.20           | 2.47        | 365.00           | 1.71        | 642.60          | 2.19        |
| SUBORDER CAPRELLIDEA      | 460.10           | 1.24        | 121.70           | 0.57        | 290.90          | 0.99        |
| PANOPEUS HERBSTII ZOEa    | 115.00           | 0.31        | 0.00             | 0.00        | 57.50           | 0.20        |
| LEUCON AMERICANUS         | 345.10           | 0.93        | 60.80            | 0.28        | 202.95          | 0.69        |
| OXYUROSTYLIS SMITHI       | 0.00             | 0.00        | 182.50           | 0.85        | 91.25           | 0.31        |
| STENOTHOE SP              | 460.10           | 1.24        | 121.70           | 0.57        | 290.90          | 0.99        |
| CRANGON SEPTemspinosa     | 467.30           | 1.26        | 494.30           | 2.31        | 480.80          | 1.64        |
| ELASMOPUS LEVIS           | 920.20           | 2.47        | 0.00             | 0.00        | 460.10          | 1.57        |
| IDOTEa BALTICA            | 345.10           | 0.93        | 60.80            | 0.28        | 202.95          | 0.69        |
| IDOTEa TRILOBA            | 0.00             | 0.00        | 60.80            | 0.28        | 30.40           | 0.10        |
| COROPHIUM ACHERUSICUM     | 460.10           | 1.24        | 0.00             | 0.00        | 230.05          | 0.79        |
| AUTOLYTUS SP              | 230.10           | 0.62        | 243.30           | 1.14        | 236.70          | 0.81        |
| OTHER SPECIES             | 273.20           | 0.73        | 76.00            | 0.36        | 174.60          | 0.60        |
| STATION TOTAL AND<br>DATE | TOTAL            |             |                  |             |                 |             |
|                           | 37203.50         |             | 21376.20         |             | 29289.85        |             |

## STATION

DSD3

DSD2

DSD1

DSD4

DSN3

DSN2

DSN1

| SPECIES                   | DSN1             |             | DSN2             |             | DSN3             |             | DSD4             |             | DSD1             |             | DSD2             |             | DSD3             |             |
|---------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |
| NEOMYS AMERICANA          | 797.60           | 9.64        | 944.65           | 9.38        | 448.90           | 7.94        | 494.20           | 6.37        | 78.20            | 3.85        | 101.80           | 7.10        | 44.10            | 4.28        |
| AMPELISCA SP              | 1320.15          | 15.96       | 1844.70          | 18.31       | 565.30           | 10.00       | 834.00           | 10.76       | 58.70            | 2.89        | 47.00            | 3.28        | 35.20            | 3.42        |
| JASSA FALCATA             | 696.35           | 8.42        | 879.00           | 8.73        | 332.50           | 5.88        | 494.20           | 6.37        | 635.40           | 31.25       | 391.50           | 27.32       | 405.30           | 39.32       |
| CRANGON SEPTEMSPINO ZOEAE | 243.50           | 2.94        | 457.40           | 4.54        | 482.10           | 8.53        | 803.10           | 10.36       | 635.40           | 31.25       | 469.90           | 32.80       | 193.80           | 18.80       |
| GAMMARUS SP               | 881.65           | 10.66       | 1320.85          | 13.11       | 299.30           | 5.29        | 401.50           | 5.18        | 39.10            | 1.92        | 0.00             | 0.00        | 17.60            | 1.71        |
| SUBCLASS OSTRACODA        | 3757.95          | 45.43       | 3962.90          | 39.35       | 2892.80          | 51.18       | 4139.00          | 53.39       | 136.90           | 6.73        | 39.20            | 2.74        | 52.90            | 5.13        |
| COROPHUM SP               | 72.10            | 0.87        | 182.25           | 1.81        | 99.80            | 1.77        | 92.70            | 1.20        | 156.40           | 7.69        | 109.60           | 7.65        | 88.10            | 8.55        |
| SUBORDER CAPRELLIDEA      | 43.25            | 0.52        | 7.20             | 0.07        | 99.80            | 1.77        | 0.00             | 0.00        | 19.60            | 0.96        | 31.30            | 2.18        | 26.40            | 2.56        |
| LEUCON AMERICANUS         | 43.00            | 0.52        | 21.55            | 0.21        | 16.60            | 0.29        | 92.70            | 1.20        | 0.00             | 0.00        | 7.80             | 0.54        | 0.00             | 0.00        |
| OXYUROSTYLIS SMITHI       | 100.40           | 1.21        | 77.55            | 0.77        | 166.30           | 2.94        | 61.80            | 0.80        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| STENOHOE SP               | 93.50            | 1.13        | 41.60            | 0.41        | 33.30            | 0.59        | 92.70            | 1.20        | 88.00            | 4.33        | 62.60            | 4.37        | 8.80             | 0.85        |
| CLASS PYCNOGONIDA         | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| CRANGON SEPTEMSPINOSA     | 14.40            | 0.17        | 17.60            | 0.17        | 0.00             | 0.00        | 61.80            | 0.80        | 9.80             | 0.48        | 0.00             | 0.00        | 0.00             | 0.00        |
| CERAPUS TUBULARIS         | 14.40            | 0.17        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| CLASMOPIUS LEVIS          | 14.40            | 0.17        | 0.00             | 0.00        | 0.00             | 0.00        | 30.90            | 0.40        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| LOOITEA BALTICA           | 0.00             | 0.00        | 42.35            | 0.42        | 16.60            | 0.29        | 30.90            | 0.40        | 29.30            | 1.44        | 15.70            | 1.10        | 0.00             | 0.00        |
| EDOTEA TRILOBA            | 7.20             | 0.09        | 0.00             | 0.00        | 16.60            | 0.29        | 0.00             | 0.00        | 9.80             | 0.48        | 7.80             | 0.54        | 8.80             | 0.85        |
| MICROPROTOPUS RANEYI      | 14.40            | 0.17        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| MELITA NITIDA             | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 17.60            | 1.71        |
| COROPHUM ACHERUSICUM      | 43.25            | 0.52        | 115.05           | 1.14        | 133.00           | 2.35        | 30.90            | 0.40        | 29.30            | 1.44        | 62.60            | 4.37        | 52.90            | 5.13        |
| SAGITTA SP                | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| ORDER AMPHIPODA           | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 8.80             | 0.85        |
| AUTOLYTUS SP              | 0.00             | 0.00        | 21.55            | 0.21        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| ERICHTHONIUS SP           | 0.00             | 0.00        | 28.75            | 0.29        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| OTHER SPECIES             | 114.85           | 1.39        | 107.20           | 1.06        | 49.80            | 0.88        | 92.60            | 1.19        | 107.60           | 5.29        | 62.50            | 4.36        | 61.60            | 5.98        |

STATION TOTAL AND  
DATE

8272.35

10072.15

5652.70

7753.00

2033.50

1432.80

1030.70

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GEAR-36BONG

18 MAY 81

| STATION                   | DSD4                     |                  |             |                 |             |
|---------------------------|--------------------------|------------------|-------------|-----------------|-------------|
|                           | SPECIES                  | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |
|                           | NEOMYSIS AMERICANA       | 33.00            | 3.44        | 468.47          | 8.43        |
|                           | AMPELISCA SP             | 0.00             | 0.00        | 786.99          | 14.17       |
|                           | JASSA FALCATA            | 437.70           | 45.68       | 584.73          | 10.53       |
|                           | CRANGON SEPTEMPINO ZOEAE | 156.90           | 16.38       | 414.30          | 7.46        |
|                           | GAMMARUS SP              | 16.50            | 1.72        | 517.90          | 9.32        |
|                           | SUBCLASS OSTRACODA       | 24.80            | 2.59        | 2272.73         | 40.91       |
|                           | COROPHIUM SP             | 156.90           | 16.38       | 121.22          | 2.18        |
|                           | SUBORDER CAPRELLIDEA     | 33.00            | 3.44        | 31.10           | 0.56        |
|                           | LEUCON AMERICANUS        | 0.00             | 0.00        | 24.62           | 0.44        |
|                           | OXYUROSTYLIS SMITHI      | 0.00             | 0.00        | 58.40           | 1.05        |
|                           | STENOTHOE SP             | 33.00            | 3.44        | 58.86           | 1.06        |
|                           | CLASS PYCNOGONIDA        | 0.00             | 0.00        | 1.66            | 0.03        |
|                           | CRANGON SEPTEMPINOSA     | 0.00             | 0.00        | 13.56           | 0.24        |
|                           | CRAPUS TUBULARIS         | 0.00             | 0.00        | 2.88            | 0.05        |
|                           | ELASMOPUS LEVIS          | 0.00             | 0.00        | 5.97            | 0.11        |
|                           | IDOTEA BALTICA           | 8.30             | 0.87        | 18.55           | 0.33        |
|                           | IDOTEA TRILOBA           | 0.00             | 0.00        | 5.74            | 0.10        |
|                           | MICROPROTOPUS RANEYI     | 0.00             | 0.00        | 2.88            | 0.05        |
|                           | MELITA NITIDA            | 0.00             | 0.00        | 3.33            | 0.06        |
|                           | COROPHIUM ACHERUSICUM    | 8.30             | 0.87        | 63.36           | 1.14        |
|                           | SAGITTA SP               | 8.30             | 0.87        | 0.83            | 0.01        |
|                           | ORDER AMPHIPODA          | 0.00             | 0.00        | 0.88            | 0.02        |
|                           | AUTOLYTUS SP             | 0.00             | 0.00        | 4.31            | 0.08        |
|                           | ERICHTHONIUS SP          | 0.00             | 0.00        | 5.75            | 0.10        |
|                           | OTHER SPECIES            | 41.40            | 4.32        | 85.96           | 1.55        |
| STATION TOTAL AND<br>DATE | TOTAL                    | 958.10           |             | 5554.98         |             |

OYSTERCR

GEAR-36BONG

26 MAY 81

| STATION                   | DSN1             |             | DSN2             |             | NUMBER<br>TOTAL | PCT<br>COMP |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |
| NEOMYSIS AMERICANA        | 4797.20          | 17.59       | 5740.20          | 75.60       | 5268.70         | 30.22       |
| AMPELISCA SP              | 13827.20         | 50.70       | 0.00             | 0.00        | 6913.60         | 39.66       |
| JASSA FALCATA             | 846.60           | 3.10        | 0.00             | 0.00        | 423.30          | 2.43        |
| CRANGON SEPTEMSPINO ZOEAE | 352.70           | 1.29        | 0.00             | 0.00        | 176.35          | 1.01        |
| GAMMARUS SP               | 1410.90          | 5.17        | 0.00             | 0.00        | 705.45          | 4.05        |
| SUBCLASS OSTRACODA        | 4162.30          | 15.26       | 0.00             | 0.00        | 2081.15         | 11.94       |
| NEOPANOPE TEXA SAYI ZOEAE | 70.50            | 0.26        | 0.00             | 0.00        | 35.25           | 0.20        |
| COROPHIUM SP              | 282.20           | 1.03        | 290.60           | 3.83        | 286.40          | 1.64        |
| SUBORDER CAPRELLIDEA      | 0.00             | 0.00        | 145.30           | 1.91        | 72.65           | 0.42        |
| LEUCON AMERICANUS         | 211.60           | 0.78        | 0.00             | 0.00        | 105.80          | 0.61        |
| OXYUROSTYLIS SMITHI       | 282.20           | 1.03        | 145.30           | 1.91        | 213.75          | 1.23        |
| STENOTHOE SP              | 282.20           | 1.03        | 145.30           | 1.91        | 213.75          | 1.23        |
| PALAEMONETES SP ZOEAE     | 0.00             | 0.00        | 145.30           | 1.91        | 72.65           | 0.42        |
| CRANGON SEPTEMSPINOSA     | 396.80           | 1.45        | 345.10           | 4.54        | 370.95          | 2.13        |
| CERAPUS TUBULARIS         | 0.00             | 0.00        | 145.30           | 1.91        | 72.65           | 0.42        |
| IDOTEA BALTICA            | 0.00             | 0.00        | 72.70            | 0.96        | 36.35           | 0.21        |
| EDOTEA TRILOBA            | 0.00             | 0.00        | 72.70            | 0.96        | 36.35           | 0.21        |
| MONOCULODES EDWARDSI      | 0.00             | 0.00        | 145.30           | 1.91        | 72.65           | 0.42        |
| OTHER SPECIES             | 352.70           | 1.29        | 199.90           | 2.63        | 276.30          | 1.58        |
| STATION TOTAL AND<br>DATE | TOTAL            | 27275.10    | 7593.00          |             | 17434.05        |             |

OYSTERCR

GEAR-36BONG

1 JUN 81

| STATION                   | DSN1             |             | DSN2             |             |                 |             |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|
| SPECIES                   | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |
| NEOMYSIS AMERICANA        | 2190.20          | 7.39        | 1848.80          | 3.38        | 2019.50         | 4.79        |
| AMPELISCA SP              | 11901.80         | 40.18       | 24774.00         | 45.36       | 18337.90        | 43.54       |
| JASSA FALCATA             | 1254.90          | 4.24        | 1848.80          | 3.38        | 1551.85         | 3.68        |
| CRANGON SEPTEMSPINO ZOEAE | 2439.60          | 8.24        | 4601.50          | 8.42        | 3520.55         | 8.36        |
| GAMMARUS SP               | 997.70           | 3.37        | 2374.70          | 4.35        | 1686.20         | 4.00        |
| SUBCLASS OSTRACODA        | 2517.50          | 8.50        | 7272.00          | 13.31       | 4894.75         | 11.62       |
| NEOPANOPE TEXA SAYI ZOEAE | 5042.90          | 17.03       | 5603.90          | 10.26       | 5323.40         | 12.64       |
| COROPHUM SP               | 249.40           | 0.84        | 0.00             | 0.00        | 124.70          | 0.30        |
| SUBORDER CAPRELLIDEA      | 257.20           | 0.87        | 525.90           | 0.96        | 391.55          | 0.93        |
| LEUCON AMERICANUS         | 319.60           | 1.08        | 1183.20          | 2.17        | 751.40          | 1.78        |
| OXYUROSTYLIS SMITHI       | 257.20           | 0.87        | 1331.10          | 2.44        | 794.15          | 1.89        |
| STENOTHOE SP              | 498.80           | 1.68        | 262.90           | 0.48        | 380.85          | 0.90        |
| CLASS PYCNOGONIDA         | 62.40            | 0.21        | 0.00             | 0.00        | 31.20           | 0.07        |
| PALAEONETES SP ZOEAE      | 631.30           | 2.13        | 525.90           | 0.96        | 578.60          | 1.37        |
| CRANGON SEPTEMSPINOSA     | 62.40            | 0.21        | 90.40            | 0.17        | 76.40           | 0.18        |
| IDOTEA BALTICA            | 62.40            | 0.21        | 0.00             | 0.00        | 31.20           | 0.07        |
| EDOTEA TRILOBA            | 62.40            | 0.21        | 0.00             | 0.00        | 31.20           | 0.07        |
| RHITHROPANOPEUS HAR ZOEAE | 374.10           | 1.26        | 1183.20          | 2.17        | 778.65          | 1.85        |
| MELITA NITIDA             | 124.70           | 0.42        | 534.10           | 0.98        | 329.40          | 0.78        |
| OTHER SPECIES             | 311.80           | 1.05        | 657.40           | 1.20        | 484.60          | 1.15        |
| STATION TOTAL AND<br>DATE | 29618.30         |             | 54617.80         |             | 42118.05        |             |

| STATION                   | DSN1             |             | DSN2             |             | NUMBER<br>TOTAL | NUMBER<br>TOTAL | PCT<br>COMP | PCT<br>COMP |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-----------------|-------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |                 |             |             |
| NEOMYS AMERICANA          | 2704.80          | 8.34        | 3521.70          | 9.75        | 3113.25         | 9.08            |             |             |
| AMPELISCA SP              | 19504.80         | 60.13       | 21913.00         | 60.67       | 20708.90        | 60.41           |             |             |
| JASSA FALCATA             | 1828.60          | 5.64        | 1739.10          | 4.81        | 1783.85         | 5.20            |             |             |
| CRANGON SEPTemspINO ZOEA  | 228.00           | 0.70        | 217.40           | 0.60        | 223.00          | 0.65            |             |             |
| GAMMARUS SP               | 304.80           | 0.94        | 695.70           | 1.93        | 500.25          | 1.46            |             |             |
| SUBCLASS OSTRACODA        | 2171.40          | 6.69        | 1782.60          | 4.94        | 1977.00         | 5.77            |             |             |
| NEOPANOPE TEXA SAYI ZOEA  | 1409.50          | 4.35        | 1565.20          | 4.33        | 1487.35         | 4.34            |             |             |
| COROPHIUM SP              | 0.00             | 0.00        | 347.80           | 0.96        | 173.90          | 0.51            |             |             |
| SUBORDER CAPRELLIDEA      | 304.80           | 0.94        | 347.80           | 0.96        | 326.30          | 0.95            |             |             |
| PANOPEUS HERBSTII ZOEA    | 152.40           | 0.47        | 87.00            | 0.24        | 119.70          | 0.35            |             |             |
| LEUCON AMERICANUS         | 457.10           | 1.41        | 347.80           | 0.96        | 402.45          | 1.17            |             |             |
| OXYUROSTYLIS SMITHI       | 495.20           | 1.53        | 521.70           | 1.44        | 508.45          | 1.48            |             |             |
| STENOHOE SP               | 304.80           | 0.94        | 347.80           | 0.96        | 326.30          | 0.95            |             |             |
| CLASS Pycnogonida         | 0.00             | 0.00        | 43.50            | 0.12        | 1.75            | 0.06            |             |             |
| PALAEMONETES SP ZOEA      | 342.90           | 1.06        | 260.90           | 0.72        | 30.90           | 0.88            |             |             |
| CRANGON SEPTemspINOSA     | 123.80           | 0.38        | 87.00            | 0.24        | 105.40          | 0.31            |             |             |
| UPOGEBIA AFFINIS ZOEA     | 38.10            | 0.12        | 173.90           | 0.48        | 106.00          | 0.31            |             |             |
| ELASMOPIUS LEVIS          | 304.80           | 0.94        | 0.00             | 0.00        | 152.40          | 0.44            |             |             |
| IDOTEA BALTICA            | 38.10            | 0.12        | 260.90           | 0.72        | 149.50          | 0.44            |             |             |
| BATEA CATHARTINENSIS      | 304.80           | 0.94        | 0.00             | 0.00        | 152.40          | 0.44            |             |             |
| EDOTEA TRILOBA            | 114.30           | 0.35        | 87.00            | 0.24        | 100.65          | 0.29            |             |             |
| RHITHROPANOPEUS HAR ZOEA  | 304.80           | 0.94        | 478.30           | 1.32        | 391.55          | 1.14            |             |             |
| MICRODEUTOPIUS GRYPHOTALP | 304.80           | 0.94        | 347.80           | 0.96        | 326.30          | 0.95            |             |             |
| OTHER SPECIES             | 695.20           | 2.14        | 945.80           | 2.62        | 820.50          | 2.39            |             |             |
| STATION TOTAL AND<br>DATE | 32438.40         |             | 36119.70         |             | 34279.05        |                 |             |             |



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GEAR-36BONG

15 JUN 81

| STATION                   | DSN1             |             | DSN2             |             | DSN3             |             | DSN4             |             | DSD1             |             | DSD2             |             | DSD3             |             |
|---------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |
| NEOMYSIS AMERICANA        | 3400.90          | 12.77       | 6278.35          | 20.61       | 8770.70          | 30.68       | 8648.60          | 40.09       | 591.30           | 15.36       | 377.70           | 11.44       | 397.90           | 13.83       |
| AMPELISCA SP              | 9839.35          | 36.95       | 7109.75          | 23.34       | 2819.50          | 9.86        | 1601.60          | 7.42        | 46.40            | 1.21        | 0.00             | 0.00        | 30.60            | 1.06        |
| JASSA FALCATA             | 857.35           | 3.22        | 1198.35          | 3.93        | 1882.90          | 6.59        | 1361.40          | 6.31        | 881.29           | 22.89       | 1445.00          | 43.78       | 1163.00          | 40.42       |
| CRANGON SEPTEMPINO ZOEAE  | 78.00            | 0.29        | 46.90            | 0.15        | 87.80            | 0.31        | 80.10            | 0.37        | 0.00             | 0.00        | 24.60            | 0.75        | 38.30            | 1.33        |
| GAMMARUS SP               | 0.00             | 0.00        | 187.55           | 0.62        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| SUBCLASS OSTRACODA        | 1051.95          | 3.95        | 1092.65          | 3.59        | 780.50           | 2.73        | 1121.10          | 5.20        | 0.00             | 0.00        | 57.50            | 1.74        | 15.30            | 0.53        |
| NEOPANOPE TEXA SAYI ZOEAE | 5568.30          | 20.91       | 7292.90          | 23.94       | 4243.90          | 14.85       | 4324.30          | 20.05       | 1020.30          | 26.50       | 591.10           | 17.91       | 237.20           | 8.24        |
| COROPHIUM SP              | 231.45           | 0.87        | 157.80           | 0.52        | 78.00            | 0.27        | 320.30           | 1.48        | 115.90           | 3.01        | 98.50            | 2.98        | 91.80            | 3.19        |
| SUBORDER CAPRELLIDEA      | 0.00             | 0.00        | 172.70           | 0.57        | 156.10           | 0.55        | 0.00             | 0.00        | 0.00             | 0.00        | 32.80            | 0.99        | 0.00             | 0.00        |
| PANOPEUS HERBSTII ZOEAE   | 1087.05          | 4.08        | 3152.95          | 10.35       | 5970.70          | 20.89       | 2882.90          | 13.36       | 834.80           | 21.69       | 164.20           | 4.98        | 107.10           | 3.72        |
| LEUCON AMERICANUS         | 1075.20          | 4.04        | 266.45           | 0.87        | 78.00            | 0.27        | 80.10            | 0.37        | 11.60            | 0.30        | 0.00             | 0.00        | 0.00             | 0.00        |
| OXYUROSTYLIS SMITHI       | 679.80           | 2.55        | 298.50           | 0.98        | 624.40           | 2.18        | 320.30           | 1.48        | 0.00             | 0.00        | 0.00             | 0.00        | 15.30            | 0.53        |
| STENOTHOE SP              | 157.80           | 0.59        | 78.90            | 0.26        | 156.10           | 0.55        | 160.20           | 0.74        | 46.40            | 1.21        | 131.40           | 3.98        | 214.20           | 7.44        |
| CLASS PYCNOGONIDA         | 135.40           | 0.51        | 165.25           | 0.54        | 0.00             | 0.00        | 80.10            | 0.37        | 0.00             | 0.00        | 8.20             | 0.25        | 0.00             | 0.00        |
| PALAEONETES SP ZOEAE      | 372.10           | 1.40        | 532.95           | 1.75        | 478.00           | 1.67        | 160.20           | 0.74        | 0.00             | 0.00        | 16.40            | 0.50        | 7.70             | 0.27        |
| CRANGON SEPTEMPINOSA      | 34.15            | 0.13        | 49.00            | 0.16        | 39.00            | 0.14        | 20.00            | 0.09        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| UPOGEBIA AFFINIS ZOEAE    | 506.70           | 1.90        | 895.40           | 2.94        | 546.30           | 1.91        | 80.10            | 0.37        | 69.60            | 1.81        | 106.70           | 3.23        | 0.00             | 0.00        |
| CERAPUS TUBULARIS         | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 32.80            | 0.99        | 0.00             | 0.00        |
| ELASMOPUS LEVIS           | 156.05           | 0.59        | 345.35           | 1.13        | 0.00             | 0.00        | 0.00             | 0.00        | 46.40            | 1.21        | 0.00             | 0.00        | 30.60            | 1.06        |
| IDOTEA BALTICA            | 431.30           | 1.62        | 540.40           | 1.77        | 468.30           | 1.64        | 50.10            | 0.23        | 58.00            | 1.51        | 57.50            | 1.74        | 137.70           | 4.79        |
| BATEA CATHARINENSIS       | 0.00             | 0.00        | 93.80            | 0.31        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| EDOTEA TRILOBA            | 77.15            | 0.29        | 219.60           | 0.72        | 78.00            | 0.27        | 20.00            | 0.09        | 11.60            | 0.30        | 16.40            | 0.50        | 15.30            | 0.53        |
| RHITHROPANOPEUS HAR ZOEAE | 117.45           | 0.44        | 0.00             | 0.00        | 312.20           | 1.09        | 0.00             | 0.00        | 0.00             | 0.00        | 32.80            | 0.99        | 45.90            | 1.60        |
| MELITA NITIDA             | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 80.10            | 0.37        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| COROPHIUM ACHERUSICUM     | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| MONOCULODES EDWARDSI      | 154.30           | 0.58        | 0.00             | 0.00        | 156.10           | 0.55        | 80.10            | 0.37        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| CYADUSA COMPTA            | 77.15            | 0.29        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| ORDER AMPHIPODA           | 0.00             | 0.00        | 0.00             | 0.00        | 234.10           | 0.82        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 30.60            | 1.06        |
| OTHER SPECIES             | 543.40           | 2.04        | 291.05           | 0.96        | 624.20           | 2.18        | 100.10           | 0.46        | 116.00           | 3.01        | 106.70           | 3.23        | 298.60           | 10.38       |
| STATION TOTAL AND<br>DATE | 26632.30         |             | 30466.55         |             | 28584.80         |             | 21571.70         |             | 3849.50          |             | 3300.30          |             | 2877.10          |             |

STATION

DSD4

| SPECIES                  | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |
|--------------------------|------------------|-------------|-----------------|-------------|
| NEOMYSIS AMERICANA       | 267.00           | 6.62        | 3841.17         | 21.53       |
| AMPELISCA SP             | 80.10            | 1.99        | 3847.64         | 21.57       |
| JASSA FALCATA            | 1815.80          | 45.03       | 1266.07         | 7.10        |
| CRANGON SEPTemsp INO ZOE | 40.10            | 0.99        | 52.07           | 0.29        |
| GAMMARUS SP              | 0.00             | 0.00        | 37.51           | 0.21        |
| SUBCLASS OSTRACODA       | 13.40            | 0.33        | 627.70          | 3.52        |
| NEOPANOPE TEXA SAYI ZOE  | 534.00           | 13.24       | 3667.32         | 20.56       |
| COROPHIUM SP             | 186.90           | 4.63        | 166.99          | 0.94        |
| SUBORDER CAPRELLIDEA     | 80.10            | 1.99        | 61.44           | 0.34        |
| PANCOPEUS HERBSTII ZOE   | 93.50            | 2.32        | 1853.32         | 10.39       |
| LEUCON AMERICANUS        | 0.00             | 0.00        | 285.30          | 1.60        |
| OXYUROSTYLIS SMITHI      | 40.10            | 0.99        | 295.67          | 1.66        |
| STENOHOE SP              | 213.60           | 5.30        | 139.53          | 0.78        |
| CLASS PYCNOGONIDA        | 13.40            | 0.33        | 70.30           | 0.39        |
| PALAEONETES SP ZOE       | 0.00             | 0.00        | 247.24          | 1.39        |
| CRANGON SEPTemsp INOSA   | 0.00             | 0.00        | 22.53           | 0.13        |
| UPOGEBIA AFFINIS ZOE     | 13.40            | 0.33        | 362.03          | 2.03        |
| CERAPUS TUBULARIS        | 26.70            | 0.66        | 5.95            | 0.03        |
| ELASMOPIUS LEVIS         | 26.70            | 0.66        | 110.65          | 0.62        |
| IDOTEA BALTICA           | 146.90           | 3.64        | 286.19          | 1.60        |
| BATEA CATHARINENSIS      | 0.00             | 0.00        | 18.76           | 0.11        |
| EDOTEA TRILOBA           | 40.10            | 0.99        | 77.49           | 0.43        |
| RHITHROANOPEUS HAR ZOE   | 93.50            | 2.32        | 71.93           | 0.40        |
| MELITA NITIDA            | 0.00             | 0.00        | 8.01            | 0.04        |
| COROPHIUM ACHERUSICUM    | 26.70            | 0.66        | 2.67            | 0.01        |
| MONOCULODES EDWARDSI     | 0.00             | 0.00        | 54.48           | 0.31        |
| CYNADUSA COMPTA          | 0.00             | 0.00        | 15.43           | 0.07        |
| ORDER AMPHIPODA          | 0.00             | 0.00        | 26.47           | 0.15        |
| OTHER SPECIES            | 280.60           | 6.96        | 319.51          | 1.79        |

STATION TOTAL AND DATE 4032.60 17841.36

OYSTERCR

GEAR-36BONG

22 JUN 81

| STATION                   | DSN1             |             | DSN2             |             | NUMBER<br>TOTAL | PCT<br>COMP |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |
| NEOMYSIS AMERICANA        | 3113.70          | 10.52       | 3215.40          | 10.14       | 3114.55         | 10.32       |
| AMPELISCA SP              | 18310.50         | 63.90       | 20921.80         | 65.99       | 19616.15        | 65.00       |
| JASSA FALCATA             | 2922.40          | 10.20       | 1725.60          | 5.44        | 2324.00         | 7.70        |
| CRANGON SEPTEMSPINO ZOEAE | 45.70            | 0.16        | 42.90            | 0.14        | 44.30           | 0.15        |
| GAMMARUS SP               | 0.00             | 0.00        | 343.00           | 1.08        | 171.50          | 0.57        |
| SUBCLASS OSTROCODA        | 684.90           | 2.39        | 686.00           | 2.16        | 685.45          | 2.27        |
| NEOPANOPE TEXA SAYI ZOEAE | 867.60           | 3.03        | 1157.60          | 3.65        | 1012.60         | 3.36        |
| PANOPEUS HERBSTII ZOEAE   | 45.70            | 0.16        | 85.70            | 0.27        | 65.70           | 0.22        |
| LEUCON AMERICANUS         | 456.60           | 1.59        | 686.00           | 2.16        | 571.30          | 1.89        |
| MYSIDOPSIS BIGELOWI       | 0.00             | 0.00        | 42.90            | 0.14        | 21.45           | 0.07        |
| OXYUROSTYLIS SMITHI       | 913.20           | 3.19        | 1200.40          | 3.79        | 1056.80         | 3.50        |
| STENOTHOE SP              | 182.60           | 0.64        | 0.00             | 0.00        | 91.30           | 0.30        |
| CLASS PYCNOGONIDA         | 45.70            | 0.16        | 85.70            | 0.27        | 65.70           | 0.22        |
| PALAEONETES SP ZOEAE      | 274.00           | 0.96        | 300.10           | 0.95        | 287.05          | 0.95        |
| CRANGON SEPTEMSPINOSA     | 79.90            | 0.28        | 128.60           | 0.41        | 104.25          | 0.35        |
| UPOGEBIA AFFINIS ZOEAE    | 137.00           | 0.48        | 128.60           | 0.41        | 132.80          | 0.44        |
| IDOTEA BALTICA            | 45.70            | 0.16        | 0.00             | 0.00        | 22.85           | 0.08        |
| EDOTEA TRILOBA            | 11.40            | 0.04        | 85.70            | 0.27        | 48.55           | 0.16        |
| RHITHROpanopeus HAR ZOEAE | 182.60           | 0.64        | 85.70            | 0.27        | 134.15          | 0.44        |
| MELITA NITIDA             | 0.00             | 0.00        | 343.00           | 1.08        | 171.50          | 0.57        |
| MONOCULODES EDWARDSI      | 0.00             | 0.00        | 343.00           | 1.08        | 171.50          | 0.57        |
| CYADUSA COMPTA            | 11.40            | 0.04        | 0.00             | 0.00        | 5.70            | 0.02        |
| ORDER AMPHIPODA           | 182.60           | 0.64        | 0.00             | 0.00        | 91.30           | 0.30        |
| MICRODEUTOPUS GRYLLOTALP  | 182.60           | 0.64        | 0.00             | 0.00        | 91.30           | 0.30        |
| OTHER SPECIES             | 57.10            | 0.20        | 96.50            | 0.30        | 76.80           | 0.25        |
| STATION TOTAL AND<br>DATE | 28652.90         |             | 31704.20         |             | 30178.55        |             |

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GEAR-3GBONG

29 JUN 81

| STATION                   | DSN1             |             | DSN2             |             | NUMBER<br>TOTAL | PCT<br>COMP |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |
| NEOMYSIS AMERICANA        | 1254.00          | 4.43        | 1672.70          | 8.54        | 1463.35         | 6.11        |
| AMPELISCA SP              | 3555.60          | 12.56       | 1456.10          | 7.43        | 2505.85         | 10.46       |
| JASSA FALCATA             | 888.90           | 3.14        | 914.60           | 4.67        | 901.75          | 3.76        |
| SUBCLASS OSTRACODA        | 13333.30         | 47.08       | 10433.20         | 53.5        | 11883.25        | 49.61       |
| NEOPANOPE TEXA SAYI ZOEAE | 4698.40          | 16.59       | 2117.90          | 10.81       | 3408.15         | 14.23       |
| COROPHIUM SP              | 381.00           | 1.35        | 96.30            | 0.49        | 238.65          | 1.00        |
| PANOPEUS HERBSTII ZOEAE   | 1396.80          | 4.93        | 1432.00          | 7.31        | 1414.40         | 5.90        |
| LEUCON AMERICANUS         | 111.10           | 0.39        | 0.00             | 0.00        | 55.55           | 0.23        |
| MYSIDOPSIS BIGELOWI       | 95.20            | 0.34        | 48.10            | 0.25        | 71.65           | 0.30        |
| OXYUROSTYLIS SMITHI       | 333.30           | 1.18        | 288.80           | 1.47        | 311.05          | 1.30        |
| STENTHORE SP              | 381.00           | 1.35        | 192.50           | 0.98        | 286.75          | 1.20        |
| CLASS PYCNOGONIDA         | 206.30           | 0.73        | 156.40           | 0.80        | 181.35          | 0.76        |
| PALAEONETES SP ZOEAE      | 301.60           | 1.07        | 60.20            | 0.31        | 180.90          | 0.76        |
| UPOGEBIA AFFINIS ZOEAE    | 111.10           | 0.39        | 0.00             | 0.00        | 55.55           | 0.23        |
| CERAPUS TUBULARIS         | 127.00           | 0.45        | 48.10            | 0.25        | 87.55           | 0.37        |
| ELASMOPUS LEVIS           | 254.00           | 0.90        | 96.30            | 0.49        | 175.15          | 0.73        |
| IDOTEA BALTICA            | 15.90            | 0.06        | 120.30           | 0.61        | 68.10           | 0.28        |
| EDOTEA TRILOBA            | 47.60            | 0.17        | 0.00             | 0.00        | 23.80           | 0.10        |
| RHITHROPANOPEUS HAR ZOEAE | 0.00             | 0.00        | 144.40           | 0.74        | 72.20           | 0.30        |
| MICROPROTOPUS RANEYI      | 0.00             | 0.00        | 144.40           | 0.74        | 72.20           | 0.30        |
| MELITA NITIDA             | 254.00           | 0.90        | 48.10            | 0.25        | 151.05          | 0.63        |
| ORDER AMPHIPODA           | 127.00           | 0.45        | 0.00             | 0.00        | 63.50           | 0.27        |
| ERICHTHONIUS SP           | 254.00           | 0.90        | 0.00             | 0.00        | 127.00          | 0.53        |
| OTHER SPECIES             | 190.50           | 0.67        | 120.40           | 0.61        | 155.45          | 0.65        |
| STATION TOTAL AND<br>DATE | TOTAL            | 28317.60    | 19590.80         |             | 23954.20        |             |

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GEAR-36RONG

6 JUL 81

| STATION | SPECIES                   | DSM1             |             | DSM2             |             | NUMBER<br>TOTAL | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |
|---------|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|-----------------|-------------|
|         |                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |                 |             |
|         | NEOMYSIS AMERICANA        | 1756.90          | 14.04       | 2833.10          | 20.43       | 2295.00         | 17.40       |                 |             |
|         | AMPELISCA SP              | 2695.50          | 21.54       | 2785.10          | 20.09       | 2740.30         | 20.78       |                 |             |
|         | JASSA FALCATA             | 3080.60          | 24.62       | 3841.50          | 27.71       | 3461.05         | 26.24       |                 |             |
|         | SUBCLASS OSTRACODA        | 770.20           | 6.15        | 624.20           | 4.50        | 697.20          | 5.29        |                 |             |
|         | NEOPANOPE TEXA SAYI ZOEAE | 168.50           | 1.35        | 384.20           | 2.77        | 276.35          | 2.10        |                 |             |
|         | COROPHUM SP               | 285.80           | 2.31        | 192.10           | 1.39        | 240.45          | 1.82        |                 |             |
|         | SUBORDER CAPRELLIDEA      | 288.80           | 2.31        | 288.10           | 2.08        | 288.45          | 2.19        |                 |             |
|         | PANOPEUS HERBSTII ZOEAE   | 96.30            | 0.77        | 48.00            | 0.35        | 72.15           | 0.55        |                 |             |
|         | LEUCON AMERICANUS         | 216.60           | 1.73        | 192.10           | 1.39        | 204.35          | 1.55        |                 |             |
|         | MYSTIDOPSIS BIGELOWI      | 96.30            | 0.77        | 384.20           | 2.77        | 240.25          | 1.82        |                 |             |
|         | OXYUROSTYLIS SMITHI       | 746.10           | 5.96        | 864.30           | 6.23        | 805.20          | 6.10        |                 |             |
|         | STEMOTHOE SP              | 481.30           | 3.85        | 96.00            | 0.69        | 288.65          | 2.19        |                 |             |
|         | CLASS PYCNOGONIDA         | 192.50           | 1.54        | 48.00            | 0.35        | 120.25          | 0.91        |                 |             |
|         | PALAEONETES SP ZOEAE      | 120.30           | 0.96        | 144.10           | 1.04        | 132.20          | 1.00        |                 |             |
|         | CRANGON SEPTEMSPINOSA     | 48.10            | 0.38        | 72.00            | 0.52        | 60.05           | 0.46        |                 |             |
|         | UPOGBEIA AFFINIS ZOEAE    | 24.10            | 0.19        | 0.00             | 0.00        | 12.05           | 0.09        |                 |             |
|         | CERAPUS TUBULARIS         | 96.30            | 0.77        | 0.00             | 0.00        | 48.15           | 0.37        |                 |             |
|         | ELASMOPIUS LEVIS          | 192.50           | 1.54        | 96.00            | 0.69        | 144.25          | 1.09        |                 |             |
|         | IDOTEA BALTICA            | 96.30            | 0.77        | 48.00            | 0.35        | 72.15           | 0.55        |                 |             |
|         | BATEA CATHARTINENSIS      | 481.30           | 3.85        | 192.10           | 1.39        | 336.70          | 2.55        |                 |             |
|         | EDOTEA TRILOBA            | 192.50           | 1.54        | 0.00             | 0.00        | 96.25           | 0.73        |                 |             |
|         | RHITHROPANOPEUS HAR ZOEAE | 24.10            | 0.19        | 48.00            | 0.35        | 36.05           | 0.27        |                 |             |
|         | MELITA NITIDA             | 0.00             | 0.00        | 192.10           | 1.39        | 96.05           | 0.73        |                 |             |
|         | MONOCULODES EDWARDSI      | 96.30            | 0.77        | 0.00             | 0.00        | 48.15           | 0.37        |                 |             |
|         | CYMAUSA COMPTA            | 0.00             | 0.00        | 96.00            | 0.69        | 48.00           | 0.36        |                 |             |
|         | ORDER AMPHIPODA           | 0.00             | 0.00        | 192.10           | 1.39        | 96.05           | 0.73        |                 |             |
|         | OTHER SPECIES             | 264.90           | 2.12        | 204.00           | 1.47        | 234.45          | 1.78        |                 |             |
|         | STATION TOTAL AND<br>DATE | 12515.10         |             | 13865.30         |             | 13190.20        |             |                 |             |

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| STATION                   | DSN1             |             | DSN2             |             |                 |             |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |
| NEOMYSIS AMERICANA        | 290.90           | 5.20        | 806.30           | 4.08        | 898.60          | 4.63        |
| AMPELISCA SP              | 5945.50          | 31.21       | 5576.70          | 28.23       | 5761.10         | 29.69       |
| JASSA FALCATA             | 1981.80          | 10.40       | 1791.70          | 9.07        | 1886.75         | 9.72        |
| SUBCLASS OSTRACODA        | 792.70           | 4.16        | 593.50           | 3.00        | 693.10          | 3.57        |
| NEOPANOPE TEXA SAYI ZOEAE | 3104.90          | 16.30       | 3953.00          | 20.01       | 3528.95         | 18.19       |
| COROPHIUM SP              | 132.10           | 0.69        | 179.20           | 0.91        | 155.65          | 0.80        |
| SUBORDER CAPRELLIDEA      | 0.00             | 0.00        | 358.30           | 1.81        | 179.15          | 0.92        |
| PANOPEUS HERBSTII ZOEAE   | 2312.10          | 12.14       | 3684.20          | 18.65       | 2998.15         | 15.45       |
| LEUCON AMERICANUS         | 528.50           | 2.77        | 89.60            | 0.45        | 309.05          | 1.59        |
| MYSIDOPSIS BIGELOWI       | 132.10           | 0.69        | 123.20           | 0.62        | 127.65          | 0.66        |
| OXYUROSTYLIS SMITHI       | 330.30           | 1.73        | 313.50           | 1.59        | 321.90          | 1.66        |
| STENOHOE SP               | 660.60           | 3.47        | 358.30           | 1.81        | 509.45          | 2.63        |
| CLASS PYCNOGONIDA         | 231.20           | 1.21        | 134.40           | 0.68        | 182.80          | 0.94        |
| PALAEMONETES SP ZOEAE     | 231.20           | 1.21        | 179.20           | 0.91        | 205.20          | 1.06        |
| CRANGON SEPTEMSPINOSA     | 16.50            | 0.09        | 11.20            | 0.06        | 13.85           | 0.07        |
| UPOGEBIA AFFINIS ZOEAE    | 330.30           | 1.73        | 313.50           | 1.59        | 321.90          | 1.66        |
| CERAPUS TUBULARIS         | 132.10           | 0.69        | 0.00             | 0.00        | 66.05           | 0.34        |
| ELASMOPUS LEVIS           | 0.00             | 0.00        | 179.20           | 0.91        | 89.60           | 0.46        |
| IDOTEA BALTICA            | 33.00            | 0.17        | 44.80            | 0.23        | 38.90           | 0.20        |
| BATEA CATHARINENSIS       | 132.10           | 0.69        | 358.30           | 1.81        | 245.20          | 1.26        |
| RHITHROANOPEUS HAR ZOEAE  | 132.10           | 0.69        | 44.80            | 0.23        | 88.45           | 0.46        |
| MICROPROTOPIUS RANEYI     | 264.20           | 1.39        | 0.00             | 0.00        | 132.10          | 0.68        |
| ORDER AMPHIPODA           | 0.00             | 0.00        | 179.20           | 0.91        | 89.60           | 0.46        |
| TURRITOPSIS NUTRICOLA     | 66.10            | 0.35        | 44.80            | 0.23        | 55.45           | 0.29        |
| OTHER SPECIES             | 569.70           | 2.99        | 436.80           | 2.21        | 503.25          | 2.59        |
| STATION TOTAL AND<br>DATE | TOTAL            | 19050.00    | 19753.70         |             | 19401.85        |             |



| STATION                   | DSN1             |             | DSN2             |             | DSN3             |             | DSN4             |             | DSD1             |             | DSD2             |             | DSD3             |             |
|---------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |
| NEOMYSIS AMERICANA        | 4118.85          | 13.72       | 6530.85          | 21.66       | 1812.30          | 17.87       | 1459.50          | 14.32       | 136.70           | 5.15        | 48.90            | 0.57        | 170.10           | 4.08        |
| AMPELISCA SP              | 14804.90         | 49.32       | 11424.75         | 37.89       | 2330.10          | 22.98       | 1277.10          | 12.53       | 45.60            | 1.72        | 97.80            | 1.15        | 136.10           | 3.26        |
| JASSA FALCATA             | 1233.00          | 4.11        | 2163.10          | 7.17        | 690.40           | 6.81        | 1459.50          | 14.32       | 911.20           | 34.33       | 3520.80          | 41.38       | 1315.20          | 31.52       |
| GAMMARUS SP               | 160.00           | 0.53        | 50.85            | 0.17        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| SUBCLASS OSTRACODA        | 1770.60          | 5.90        | 2305.05          | 7.64        | 906.10           | 8.94        | 1505.10          | 14.77       | 102.50           | 3.86        | 146.70           | 1.72        | 56.70            | 1.36        |
| NEOPANOPE TEXA SAYI ZOEAE | 1222.65          | 4.07        | 1443.30          | 4.79        | 560.90           | 5.53        | 592.90           | 5.82        | 216.40           | 8.15        | 48.90            | 0.57        | 158.70           | 3.80        |
| COROPHIUM SP              | 822.35           | 2.74        | 362.40           | 1.20        | 172.60           | 1.70        | 273.70           | 2.69        | 136.70           | 5.15        | 391.20           | 4.60        | 272.10           | 6.52        |
| SUBORDER CAPRELLIDEA      | 320.00           | 1.07        | 419.80           | 1.39        | 431.50           | 4.26        | 456.10           | 4.47        | 182.20           | 6.86        | 1271.40          | 14.94       | 453.50           | 10.87       |
| PANOPEUS HERBSTII ZOEAE   | 360.00           | 1.20        | 482.20           | 1.60        | 215.70           | 2.13        | 91.20            | 0.89        | 22.80            | 0.86        | 97.80            | 1.15        | 102.00           | 2.44        |
| LEUCON AMERICANUS         | 257.05           | 0.86        | 133.65           | 0.44        | 43.10            | 0.43        | 45.60            | 0.45        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| MYSIDOPSIS BIGELOWI       | 725.00           | 2.42        | 1692.45          | 5.61        | 1078.70          | 10.64       | 821.00           | 8.05        | 11.40            | 0.43        | 0.00             | 0.00        | 22.70            | 0.54        |
| OXYUROSTYLIS SMITHI       | 279.70           | 0.93        | 373.70           | 1.24        | 215.70           | 2.13        | 182.40           | 1.79        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| STENOTHOE SP              | 502.35           | 1.67        | 203.30           | 0.67        | 258.90           | 2.55        | 273.70           | 2.69        | 182.20           | 6.86        | 1467.00          | 17.24       | 362.80           | 8.70        |
| CLASS PYCNOGONIDA         | 262.65           | 0.87        | 236.95           | 0.79        | 517.80           | 5.11        | 136.80           | 1.34        | 136.70           | 5.15        | 391.20           | 4.60        | 147.40           | 3.53        |
| PALAEONETES SP ZOEAE      | 377.05           | 1.26        | 345.20           | 1.14        | 215.70           | 2.13        | 273.70           | 2.69        | 34.20            | 1.29        | 0.00             | 0.00        | 45.40            | 1.09        |
| CRANGON SEPTEMSPINOSA     | 60.00            | 0.20        | 66.85            | 0.22        | 0.00             | 0.00        | 22.80            | 0.22        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| UPOGEBIA AFFINIS ZOEAE    | 80.00            | 0.27        | 77.90            | 0.26        | 129.40           | 1.28        | 91.20            | 0.89        | 22.80            | 0.86        | 48.90            | 0.57        | 11.30            | 0.27        |
| CERAPUS TUBULARIS         | 114.10           | 0.38        | 50.85            | 0.17        | 0.00             | 0.00        | 182.40           | 1.79        | 91.10            | 3.43        | 97.80            | 1.15        | 226.80           | 5.44        |
| ELASMOPUS LEVIS           | 274.10           | 0.91        | 101.65           | 0.34        | 0.00             | 0.00        | 273.70           | 2.69        | 0.00             | 0.00        | 97.80            | 1.15        | 226.80           | 5.44        |
| IDOTEA BALTICA            | 0.00             | 0.00        | 50.85            | 0.17        | 0.00             | 0.00        | 0.00             | 0.00        | 11.40            | 0.43        | 0.00             | 0.00        | 0.00             | 0.00        |
| BATEA CATHARTINENSIS      | 114.10           | 0.38        | 216.50           | 0.72        | 86.30            | 0.85        | 91.20            | 0.89        | 45.60            | 1.72        | 0.00             | 0.00        | 45.40            | 1.09        |
| EDOTEA TRILOBA            | 28.55            | 0.10        | 54.15            | 0.18        | 0.00             | 0.00        | 0.00             | 0.00        | 22.80            | 0.86        | 0.00             | 0.00        | 34.00            | 0.81        |
| RHITHROPANOPEUS HAR ZOEAE | 160.00           | 0.53        | 54.15            | 0.18        | 0.00             | 0.00        | 0.00             | 0.00        | 45.60            | 1.72        | 48.90            | 0.57        | 68.00            | 1.63        |
| MICROPROTOPUS RANEYI      | 274.10           | 0.91        | 159.10           | 0.53        | 86.30            | 0.85        | 182.40           | 1.79        | 0.00             | 0.00        | 0.00             | 0.00        | 45.40            | 1.09        |
| MELITA NITIDA             | 0.00             | 0.00        | 216.50           | 0.72        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| COROPHIUM ACHERUSICUM     | 0.00             | 0.00        | 0.00             | 0.00        | 86.30            | 0.85        | 0.00             | 0.00        | 136.70           | 5.15        | 0.00             | 0.00        | 0.00             | 0.00        |
| MONOCULODES EDWARDSI      | 274.10           | 0.91        | 50.85            | 0.17        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| CYADUSA COMPTA            | 594.10           | 1.98        | 159.10           | 0.53        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| ORDER AMPHIPODA           | 114.10           | 0.38        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 91.10            | 3.43        | 0.00             | 0.00        | 0.00             | 0.00        |
| TURRITOPSIS NUTRICOLA     | 28.55            | 0.10        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| MICRODEUTOPUS GRYLLOTALP  | 274.10           | 0.91        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| ERICHTHONIUS SP           | 0.00             | 0.00        | 101.65           | 0.34        | 0.00             | 0.00        | 91.20            | 0.89        | 0.00             | 0.00        | 195.60           | 2.30        | 45.40            | 1.09        |
| OTHER SPECIES             | 414.20           | 1.38        | 623.95           | 2.07        | 301.80           | 2.98        | 410.40           | 4.03        | 68.40            | 2.58        | 537.90           | 6.32        | 226.70           | 5.43        |
| STATION TOTAL AND<br>DATE | 30020.25         |             | 30151.60         |             | 10139.60         |             | 10193.60         |             | 2654.10          |             | 8508.60          |             | 4172.50          |             |



| STATION                         |                  | DSD4        |                 |             |  |
|---------------------------------|------------------|-------------|-----------------|-------------|--|
| SPECIES                         | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |  |
| NEOMYSIS AMERICANA              | 46.30            | 1.14        | 2497.32         | 15.60       |  |
| AMPELISCA SP                    | 92.70            | 2.29        | 5643.87         | 35.26       |  |
| JASSA FALCATA                   | 1854.00          | 45.72       | 1654.33         | 10.34       |  |
| GAMMARUS SP                     | 0.00             | 0.00        | 42.17           | 0.26        |  |
| SUBCLASS OSTRACODA              | 32.70            | 2.29        | 1096.11         | 6.85        |  |
| NEOPANOPE TEXA SAYI ZOEAE       | 254.90           | 6.29        | 716.46          | 4.48        |  |
| COROPHIUM SP                    | 231.70           | 5.71        | 384.75          | 2.40        |  |
| SUBORDER CAPRELLIDEA            | 46.30            | 1.14        | 432.06          | 2.70        |  |
| PANOPEUS HERBSTII ZOEAE         | 231.70           | 5.71        | 244.56          | 1.53        |  |
| LEUCON AMERICANUS               | 0.00             | 0.00        | 87.01           | 0.54        |  |
| MYSIDOPSIS BIGELOWI             | 69.50            | 1.71        | 683.82          | 4.27        |  |
| OXYUROSTYLIS SMITHI             | 0.00             | 0.00        | 170.49          | 1.07        |  |
| STENTHOE SP                     | 278.10           | 6.86        | 423.40          | 2.65        |  |
| CLASS PYCNOGONIDA               | 115.90           | 2.86        | 244.50          | 1.53        |  |
| PALAEONETES SP ZOEAE            | 46.30            | 1.14        | 205.98          | 1.29        |  |
| CRANGON SEPTEMPINOSA            | 0.00             | 0.00        | 27.65           | 0.17        |  |
| UPOGEBIA AFFINIS ZOEAE          | 69.50            | 1.71        | 68.89           | 0.43        |  |
| CERAPUS TUBULARIS               | 185.40           | 4.57        | 111.34          | 0.70        |  |
| ELASMOPUS LEVIS                 | 46.30            | 1.14        | 139.61          | 0.87        |  |
| IDOTEA BALTICA                  | 0.00             | 0.00        | 11.31           | 0.07        |  |
| BATEA CATHARINENSIS             | 0.00             | 0.00        | 92.97           | 0.58        |  |
| EDOTEA TRILOBA                  | 0.00             | 0.00        | 22.22           | 0.14        |  |
| RHITHRO-PANOPEUS HAR ZOEAE      | 23.20            | 0.57        | 61.40           | 0.38        |  |
| MICROPROTOPUS RANEYI            | 0.00             | 0.00        | 118.05          | 0.74        |  |
| MELITA NITIDA                   | 46.30            | 1.14        | 47.93           | 0.30        |  |
| COROPHIUM ACHERUSICUM           | 46.30            | 1.14        | 26.93           | 0.17        |  |
| MONGCULODES EDWARDSI            | 0.00             | 0.00        | 64.99           | 0.41        |  |
| CYADUSA COMPTA                  | 0.00             | 0.00        | 150.64          | 0.94        |  |
| ORDER AMPHIPODA                 | 0.00             | 0.00        | 31.93           | 0.20        |  |
| TURRITOPSIS NUTRICOLA           | 0.00             | 0.00        | 5.71            | 0.04        |  |
| MICRODEUTOPUS GRYLLOLALP        | 46.30            | 1.14        | 59.45           | 0.37        |  |
| ERICHTHONIUS SP                 | 46.30            | 1.14        | 58.18           | 0.36        |  |
| OTHER SPECIES                   | 185.50           | 4.57        | 380.70          | 2.38        |  |
| STATION TOTAL AND<br>DATE TOTAL | 4055.20          |             | 16006.75        |             |  |

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| STATION                   | DSN1             |             | DSN2             |             | NUMBER<br>TOTAL | PCT<br>COMP |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |
| SPECIFS                   |                  |             |                  |             |                 |             |
| NEOMYSIS AMERICANA        | 893.70           | 4.35        | 767.30           | 3.91        | 830.50          | 4.13        |
| AMPELISCA SP              | 8502.40          | 41.36       | 7979.50          | 40.62       | 8240.95         | 41.00       |
| JASSA FALCATA             | 1835.70          | 8.93        | 1534.50          | 7.81        | 1685.10         | 8.38        |
| SUBCLASS OSTRACODA        | 2512.10          | 12.22       | 1892.60          | 9.64        | 2202.35         | 10.96       |
| NEOPANOPE TEXA SAYI ZOEAE | 3333.30          | 16.22       | 2813.30          | 14.32       | 3073.30         | 15.29       |
| COROPHIUM SP              | 579.70           | 2.82        | 102.30           | 0.52        | 341.00          | 1.70        |
| SUBORDER CAPRELLIDEA      | 193.20           | 0.94        | 204.60           | 1.04        | 198.90          | 0.99        |
| PANOPEUS HERBSTII ZOEAE   | 241.50           | 1.17        | 102.30           | 0.52        | 171.90          | 0.86        |
| LEUCON AMERICANUS         | 96.60            | 0.47        | 358.10           | 1.82        | 227.35          | 1.13        |
| MYSIDOPSIS BIGELOWI       | 217.40           | 1.06        | 204.60           | 1.04        | 211.00          | 1.05        |
| OXYUROSTYLIS SMITHI       | 241.50           | 1.17        | 153.50           | 0.78        | 197.50          | 0.98        |
| STENOHOE SP               | 386.50           | 1.88        | 409.20           | 2.08        | 397.85          | 1.98        |
| CLASS PYCNOGONIDA         | 241.50           | 1.17        | 613.80           | 3.12        | 427.65          | 2.13        |
| PALAEONETES SP ZOEAE      | 193.20           | 0.94        | 51.20            | 0.26        | 122.20          | 0.61        |
| CRANGON SEPTEMSPINOSA     | 24.20            | 0.12        | 0.00             | 0.00        | 12.10           | 0.06        |
| UPOGEBIA AFFINIS ZOEAE    | 72.50            | 0.35        | 306.90           | 1.56        | 189.70          | 0.94        |
| CERAPUS TUBULARIS         | 193.20           | 0.94        | 204.60           | 1.04        | 198.90          | 0.99        |
| ELASMOPUS LEVIS           | 289.90           | 1.41        | 102.30           | 0.52        | 196.10          | 0.98        |
| IDOTEA BALTICA            | 24.20            | 0.12        | 51.20            | 0.26        | 37.70           | 0.19        |
| BATEA CATHARINENSIS       | 56.60            | 0.47        | 102.30           | 0.52        | 99.45           | 0.49        |
| EDOTEA TRILOBA            | 24.20            | 0.12        | 51.20            | 0.26        | 37.70           | 0.19        |
| RHITHROPANOPEUS HAR ZOEAE | 96.60            | 0.47        | 0.00             | 0.00        | 48.30           | 0.24        |
| MICROPROTOPUS RANEYI      | 96.60            | 0.47        | 409.20           | 2.08        | 252.90          | 1.26        |
| COROPHIUM ACHERUSICUM     | 0.00             | 0.00        | 306.90           | 1.56        | 153.45          | 0.76        |
| CYMAUSA COMPTA            | 0.00             | 0.00        | 102.30           | 0.52        | 51.15           | 0.25        |
| ORDER AMPHIPODA           | 96.60            | 0.47        | 0.00             | 0.00        | 48.30           | 0.24        |
| MICRODEUTOPUS GRYLLOLALP  | 0.00             | 0.00        | 102.30           | 0.52        | 51.15           | 0.25        |
| OTHER SPECIES             | 72.60            | 0.35        | 716.30           | 3.65        | 394.45          | 1.96        |
| STATION TOTAL AND<br>DATE | 20555.50         |             | 19642.30         |             | 20098.90        |             |

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GEAR-36BONG

27 JUL 81

| STATION                   | DSN1             |             | DSN2             |             | NUMBER<br>TOTAL | PCT<br>COMP |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |
| SPECIES                   |                  |             |                  |             |                 |             |
| NEOMYSIS AMERICANA        | 478.30           | 1.71        | 172.60           | 0.78        | 325.45          | 1.30        |
| AMPELISCA SP              | 15652.20         | 56.12       | 14153.20         | 63.75       | 14902.70        | 59.50       |
| JASSA FALCATA             | 1391.30          | 4.99        | 863.00           | 3.89        | 1127.15         | 4.50        |
| SUBCLASS OSTRACODA        | 3956.50          | 14.19       | 2977.30          | 13.41       | 3466.90         | 13.84       |
| NEOPANOPE TEXA SAYI ZOEAE | 1087.00          | 3.90        | 1121.90          | 5.05        | 1104.45         | 4.41        |
| COROPHIUM SP              | 0.00             | 0.00        | 172.60           | 0.78        | 86.30           | 0.34        |
| SUBORDER CAPRELLIDEA      | 695.70           | 2.49        | 0.00             | 0.00        | 347.85          | 1.39        |
| PANOPEUS HERBSTII ZOEAE   | 1000.00          | 3.59        | 776.70           | 3.50        | 888.35          | 3.55        |
| LEUCON AMERICANUS         | 130.40           | 0.47        | 86.30            | 0.39        | 108.35          | 0.43        |
| MYSIDOPSIS BIGELOWI       | 456.50           | 1.64        | 258.90           | 1.17        | 357.70          | 1.43        |
| XYUROSTYLIS SMITHI        | 260.90           | 0.94        | 258.90           | 1.17        | 259.90          | 1.04        |
| STENOTHOE SP              | 695.70           | 2.49        | 172.60           | 0.78        | 434.15          | 1.73        |
| CLASS PYCNOGONIDA         | 130.40           | 0.47        | 129.40           | 0.58        | 129.90          | 0.52        |
| PALAEONETES SP ZOEAE      | 326.10           | 1.17        | 215.70           | 0.97        | 270.90          | 1.08        |
| UPOGEBIA AFFINIS ZOEAE    | 152.20           | 0.55        | 86.30            | 0.39        | 119.25          | 0.48        |
| CERAPUS TUBULARIS         | 695.70           | 2.49        | 0.00             | 0.00        | 347.85          | 1.39        |
| IDOTEA BALTICA            | 130.40           | 0.47        | 0.00             | 0.00        | 65.20           | 0.26        |
| MICROPROTOPUS RANEYI      | 347.80           | 1.25        | 345.20           | 1.55        | 346.50          | 1.38        |
| ORDER AMPHIPODA           | 0.00             | 0.00        | 172.60           | 0.78        | 86.30           | 0.34        |
| OTHER SPECIES             | 304.30           | 1.09        | 237.30           | 1.07        | 270.80          | 1.08        |
| STATION TOTAL AND<br>DATE | TOTAL            |             |                  |             |                 |             |
|                           | 27891.40         |             | 22200.50         |             | 25045.95        |             |

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GEAR-36BONG

10 AUG 81

| STATION                   | DSH1             |             | DSH2             |             | NUMBER<br>TOTAL | PCT<br>COMP |
|---------------------------|------------------|-------------|------------------|-------------|-----------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |                 |             |
| NEOMYSIS AMERICANA        | 679.60           | 2.50        | 574.20           | 2.63        | 626.90          | 2.56        |
| AMPELISCA SP              | 7378.60          | 27.16       | 4976.10          | 22.79       | 6177.35         | 25.21       |
| JASSA FALCATA             | 3883.50          | 14.29       | 2870.80          | 13.15       | 3377.15         | 13.78       |
| SUBCLASS OSTRACODA        | 5534.00          | 20.37       | 4234.40          | 19.40       | 4884.20         | 19.93       |
| NEOPANOPE TEXA SAYI ZOEAE | 3495.10          | 12.86       | 3253.60          | 14.90       | 3374.35         | 13.77       |
| COROPHIUM SP              | 776.70           | 2.86        | 191.40           | 0.88        | 484.05          | 1.98        |
| SUBORDER CAPRELLIDEA      | 582.50           | 2.14        | 191.40           | 0.88        | 386.95          | 1.58        |
| PANOPEUS HERBSTII ZOEAE   | 873.80           | 3.22        | 1052.60          | 4.82        | 963.20          | 3.93        |
| LEUCON AMERICANUS         | 194.20           | 0.71        | 0.00             | 0.00        | 97.10           | 0.40        |
| MYSIDOPSIS BIGELOWI       | 48.50            | 0.18        | 287.10           | 1.32        | 167.80          | 0.68        |
| OXYUROSTYLIS SMITHI       | 534.00           | 1.97        | 0.00             | 0.00        | 267.00          | 1.09        |
| STENOTHOE SP              | 388.30           | 1.43        | 574.20           | 2.63        | 481.25          | 1.96        |
| CLASS PYCNOGONIDA         | 242.70           | 0.89        | 765.60           | 3.51        | 504.15          | 2.06        |
| PALAEONETES SP ZOEAE      | 97.10            | 0.36        | 191.40           | 0.88        | 144.25          | 0.59        |
| CRANGON SEPTESPINOSA      | 24.30            | 0.09        | 12.00            | 0.05        | 18.15           | 0.07        |
| UPOGEBIA AFFINIS ZOEAE    | 0.00             | 0.00        | 191.40           | 0.88        | 95.70           | 0.39        |
| CERAPUS TUBULARIS         | 194.20           | 0.71        | 191.40           | 0.88        | 192.80          | 0.79        |
| IDOTEA BALTICA            | 97.10            | 0.36        | 0.00             | 0.00        | 48.55           | 0.20        |
| BATEA CATHARINENSIS       | 776.70           | 2.86        | 382.80           | 1.75        | 579.75          | 2.37        |
| EDOTEA TRILOBA            | 145.60           | 0.54        | 191.40           | 0.88        | 168.50          | 0.69        |
| MICROPROTOPUS RANEYI      | 194.20           | 0.71        | 0.00             | 0.00        | 97.10           | 0.40        |
| MELITA NITIDA             | 0.00             | 0.00        | 382.80           | 1.75        | 191.40          | 0.78        |
| COROPHIUM ACHERUSICUM     | 194.20           | 0.71        | 382.80           | 1.75        | 288.50          | 1.18        |
| TURRITOPSIS NUTRICOLA     | 48.50            | 0.18        | 95.70            | 0.44        | 72.10           | 0.29        |
| MICRODEUTOPUS GRYLLOTALP  | 194.20           | 0.71        | 0.00             | 0.00        | 97.10           | 0.40        |
| OTHER SPECIES             | 594.50           | 2.19        | 837.40           | 3.84        | 715.95          | 2.92        |
| STATION TOTAL AND<br>DATE | 27172.10         |             | 21830.50         |             | 24501.30        |             |

| STATION                   | DSN1             |             | DSN2             |             | DSN3             |             | DSN4             |             | DSO1             |             | DSO2             |             | DSO3             |             |
|---------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|
|                           | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>INDIVS | PCT<br>COMP |
| NEOMYSIS AMERICANA        | 1369.00          | 28.83       | 1079.30          | 23.45       | 558.60           | 14.01       | 457.90           | 14.09       | 13.30            | 0.54        | 0.00             | 0.00        | 0.00             | 0.00        |
| AMPELISCA SP              | 181.80           | 3.83        | 143.20           | 3.11        | 87.60            | 2.20        | 14.80            | 0.46        | 0.00             | 0.00        | 0.00             | 0.00        | 12.30            | 0.77        |
| JASSA FALCATA             | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 13.30            | 0.54        | 15.40            | 0.64        | 0.00             | 0.00        |
| GAMMARUS SP               | 0.00             | 0.00        | 11.00            | 0.24        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| SUBCLASS OSTRACOIDA       | 310.20           | 6.52        | 330.40           | 7.18        | 416.20           | 10.44       | 280.60           | 8.63        | 39.90            | 1.61        | 46.20            | 1.92        | 0.00             | 0.00        |
| NEOPANOE TEXA SAYI ZOEAE  | 1336.90          | 28.15       | 1013.20          | 22.01       | 1292.40          | 32.41       | 886.30           | 27.27       | 1755.30          | 70.96       | 1538.50          | 64.10       | 876.50           | 55.06       |
| COROPHUM SP               | 10.70            | 0.23        | 0.00             | 0.00        | 43.80            | 1.10        | 14.80            | 0.46        | 39.90            | 1.61        | 30.80            | 1.28        | 37.00            | 2.32        |
| SUBORDER CAPRELLIDEA      | 0.00             | 0.00        | 0.00             | 0.00        | 54.80            | 1.37        | 29.50            | 0.91        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| PANOEUS HERBSTII ZOEAE    | 96.30            | 2.03        | 132.20           | 2.87        | 118.20           | 3.64        | 118.20           | 3.64        | 53.20            | 2.15        | 92.30            | 3.85        | 37.00            | 2.32        |
| LEUCON AMERICANUS         | 10.70            | 0.23        | 33.00            | 0.72        | 32.90            | 0.83        | 14.80            | 0.46        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| MYSIDOPSIS BIGELOWI       | 310.20           | 6.53        | 286.30           | 6.22        | 175.20           | 4.39        | 177.30           | 5.46        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| OXYUROSTYLIS SMITHI       | 149.70           | 3.15        | 88.10            | 1.91        | 153.30           | 3.84        | 192.00           | 5.91        | 0.00             | 0.00        | 0.00             | 0.00        | 12.30            | 0.77        |
| STEMOTHOE SP              | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 14.80            | 0.46        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| CLASS PYCNOGONIDA         | 42.80            | 0.90        | 44.10            | 0.96        | 87.60            | 2.20        | 29.50            | 0.91        | 0.00             | 0.00        | 15.40            | 0.64        | 12.30            | 0.77        |
| PALAEONETES SP ZOEAE      | 149.70           | 3.15        | 396.50           | 8.61        | 186.20           | 4.67        | 177.30           | 5.46        | 146.30           | 5.91        | 153.80           | 6.41        | 98.80            | 6.21        |
| UPOGEBIA AFFINIS ZOEAE    | 0.00             | 0.00        | 22.00            | 0.48        | 0.00             | 0.00        | 0.00             | 0.00        | 26.60            | 1.08        | 30.80            | 1.28        | 12.30            | 0.77        |
| CERAPUS TUBULARIS         | 10.70            | 0.23        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| ELASMOPOUS LEVIS          | 10.70            | 0.23        | 11.00            | 0.24        | 0.00             | 0.00        | 29.50            | 0.91        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| IDOTEAE BALTICA           | 181.80           | 3.83        | 143.20           | 3.11        | 142.40           | 3.57        | 132.90           | 4.09        | 13.30            | 0.54        | 46.20            | 1.92        | 98.80            | 6.21        |
| BATEA CATHARINENSIS       | 10.70            | 0.23        | 33.00            | 0.72        | 11.00            | 0.28        | 29.50            | 0.91        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| EIDOTEAE TRILOBA          | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 15.40            | 0.64        | 12.30            | 0.77        |
| RHITHROPAEUS PAR ZOEAE    | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 61.50            | 2.56        | 0.00             | 0.00        |
| MICROPOTOPUS RAPEYI       | 0.00             | 0.00        | 0.00             | 0.00        | 11.00            | 0.28        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| MELITA NITIDA             | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 14.80            | 0.46        | 13.30            | 0.54        | 0.00             | 0.00        | 12.30            | 0.77        |
| COROPHUM ACHERUSICUM      | 0.00             | 0.00        | 0.00             | 0.00        | 11.00            | 0.28        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| MONOCULODES EDWARDSI      | 10.70            | 0.23        | 0.00             | 0.00        | 0.00             | 0.00        | 14.80            | 0.46        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| CYMAUSA COMPTA            | 0.00             | 0.00        | 33.00            | 0.72        | 0.00             | 0.00        | 44.30            | 1.36        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| ORDER AMPHIPODA           | 21.40            | 0.45        | 0.00             | 0.00        | 11.00            | 0.28        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 12.30            | 0.77        |
| AUTOLYTUS SP              | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| TURRITOPSIS NUTRICOLA     | 10.70            | 0.23        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        | 0.00             | 0.00        |
| ERICHTHONIUS SP           | 0.00             | 0.00        | 0.00             | 0.00        | 11.00            | 0.28        | 0.00             | 0.00        | 53.20            | 2.15        | 0.00             | 0.00        | 24.70            | 1.55        |
| OTHER SPECIES             | 524.20           | 11.04       | 803.90           | 17.46       | 701.30           | 17.59       | 576.20           | 17.73       | 305.90           | 12.37       | 354.00           | 14.75       | 333.10           | 20.92       |
| STATION TOTAL AND<br>DATE | 4748.90          |             | 4603.40          |             | 3987.30          |             | 3249.80          |             | 2473.50          |             | 2400.30          |             | 1592.00          |             |

OYSTERCR

GEAR-36DONG

31 AUG 81

| STATION                         | DSD4                      |                  |             |                 |             |
|---------------------------------|---------------------------|------------------|-------------|-----------------|-------------|
|                                 | SPECIES                   | NUMBER<br>INDIVS | PCT<br>COMP | NUMBER<br>TOTAL | PCT<br>COMP |
|                                 | NEOMYSIS AMERICANA        | 40.60            | 2.61        | 439.84          | 14.30       |
|                                 | AMPELISCA SP              | 0.00             | 0.00        | 54.96           | 1.79        |
|                                 | JASSA FALCATA             | 13.50            | 0.87        | 5.28            | 0.17        |
|                                 | GAMMARIUS SP              | 0.00             | 0.00        | 1.38            | 0.04        |
|                                 | SUBCLASS OSTRACODA        | 13.50            | 0.87        | 179.63          | 5.84        |
|                                 | NEOPANOPE TEXA SAYI ZOEAE | 744.20           | 47.82       | 1180.41         | 38.37       |
|                                 | COROPHIUM SP              | 13.50            | 0.87        | 23.81           | 0.77        |
|                                 | SUBORDER CAPRELLIDEA      | 0.00             | 0.00        | 10.54           | 0.34        |
|                                 | PANOPEUS HERBSTII ZOEAE   | 67.70            | 4.35        | 74.61           | 2.43        |
|                                 | LEUCON AMERICANUS         | 0.00             | 0.00        | 11.43           | 0.37        |
|                                 | MYSIDOPSIS BIGELOWI       | 13.50            | 0.87        | 120.31          | 3.91        |
|                                 | OXYUROSTYLIS SMITHI       | 0.00             | 0.00        | 74.43           | 2.42        |
|                                 | STENOCHOE SP              | 0.00             | 0.00        | 1.85            | 0.06        |
|                                 | CLASS PYCNOGONIDA         | 0.00             | 0.00        | 28.96           | 0.94        |
|                                 | PALAEONETES SP ZOEAE      | 135.30           | 8.69        | 180.49          | 5.87        |
|                                 | UPOGEBIA AFFINIS ZOEAE    | 27.10            | 1.74        | 14.85           | 0.48        |
|                                 | CERAPUS TUBULARIS         | 0.00             | 0.00        | 1.34            | 0.04        |
|                                 | ELASMOPUS LEVIS           | 27.10            | 1.74        | 9.79            | 0.32        |
|                                 | IDOTEA BALTICA            | 67.70            | 4.35        | 103.29          | 3.36        |
|                                 | BATEA CATHARINENSIS       | 0.00             | 0.00        | 10.53           | 0.34        |
|                                 | EDOTEA TRILOBA            | 13.50            | 0.87        | 5.15            | 0.17        |
|                                 | RHITHROPANOPEUS HAR ZOEAE | 0.00             | 0.00        | 7.69            | 0.25        |
|                                 | MICROPROTOPUS RANEYI      | 0.00             | 0.00        | 1.38            | 0.04        |
|                                 | MELITA NITIDA             | 0.00             | 0.00        | 5.05            | 0.16        |
|                                 | COROPHIUM ACHERUSICUM     | 0.00             | 0.00        | 1.38            | 0.04        |
|                                 | MONOCULODES EDWARDSI      | 0.00             | 0.00        | 3.19            | 0.10        |
|                                 | CYADUSA COMPTA            | 0.00             | 0.00        | 9.66            | 0.31        |
|                                 | ORDER AMPHIPODA           | 0.00             | 0.00        | 5.59            | 0.18        |
|                                 | AUTOLYTUS SP              | 13.50            | 0.87        | 1.69            | 0.05        |
|                                 | TURRITOPSIS MUTRICOLA     | 0.00             | 0.00        | 11.07           | 0.36        |
|                                 | ERICHTHONIUS SP           | 0.00             | 0.00        | 1.38            | 0.04        |
|                                 | OTHER SPECIES             | 365.40           | 23.48       | 495.50          | 16.11       |
| STATION TOTAL AND<br>DATE TOTAL |                           | 1556.10          |             | 3076.41         |             |