EA Report JCP91I2

# PROGRESS REPORT OF ECOLOGICAL STUDIES AT THE OYSTER CREEK NUCLEAR GENERATING STATION, APRIL-AUGUST 1979

Prepared for

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# CHAPTER 1: INTRODUCTION

This report presents the results of Environmental Technical Specifications monitoring at the Oyster Creek Nuclear Generating Station (OCNGS) for the period 1 April - 31 August 1979. Ecological Analysts (EA) conducted field studies from 1 June to 31 August 1979. The resulting data, along with April and May 1979 data collected by Ichthyological Associates (IA), are summarized here. This is the first report of aquatic biological monitoring 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 environs were described by Danila et al. (1979), based on literature reviews and their own studies. The OCNGS is a 620-MWe boiling-water reactor, located 3.2 km inland from Barnegat Bay in Lacey Township, New Jersey (Figure 1-1). During station operation, the south branch of Forked River serves as a cooling water intake canal, with stream-flow reversed; Oyster Creek is the discharge canal. Cooling water is discharged into Barnegat Bay, 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 potential or actual interaction of OCNGS and Barnegat Bay has been under study since 1966, as described by 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 (JCP&L 1978) produced 316(a) and (b) demonstrations which evaluated the previous studies, including the first two years of aquatic monitoring studies done by 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.

This report consists of brief descriptions of data gathered from April to August 1979, focusing primarily on tabular summaries. Field and laboratory methodologies are presented in Chapter 2. Chapters 3 through 7 treat, in turn, the results of Barnegat Bay fishery studies, impingement, entrainment, commercial catch data, and fish kill monitoring. 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.

A subsequent report will include detailed statistical analyses and comparisons involving the April 1979 - August 1980 data set, and previous studies at the site.

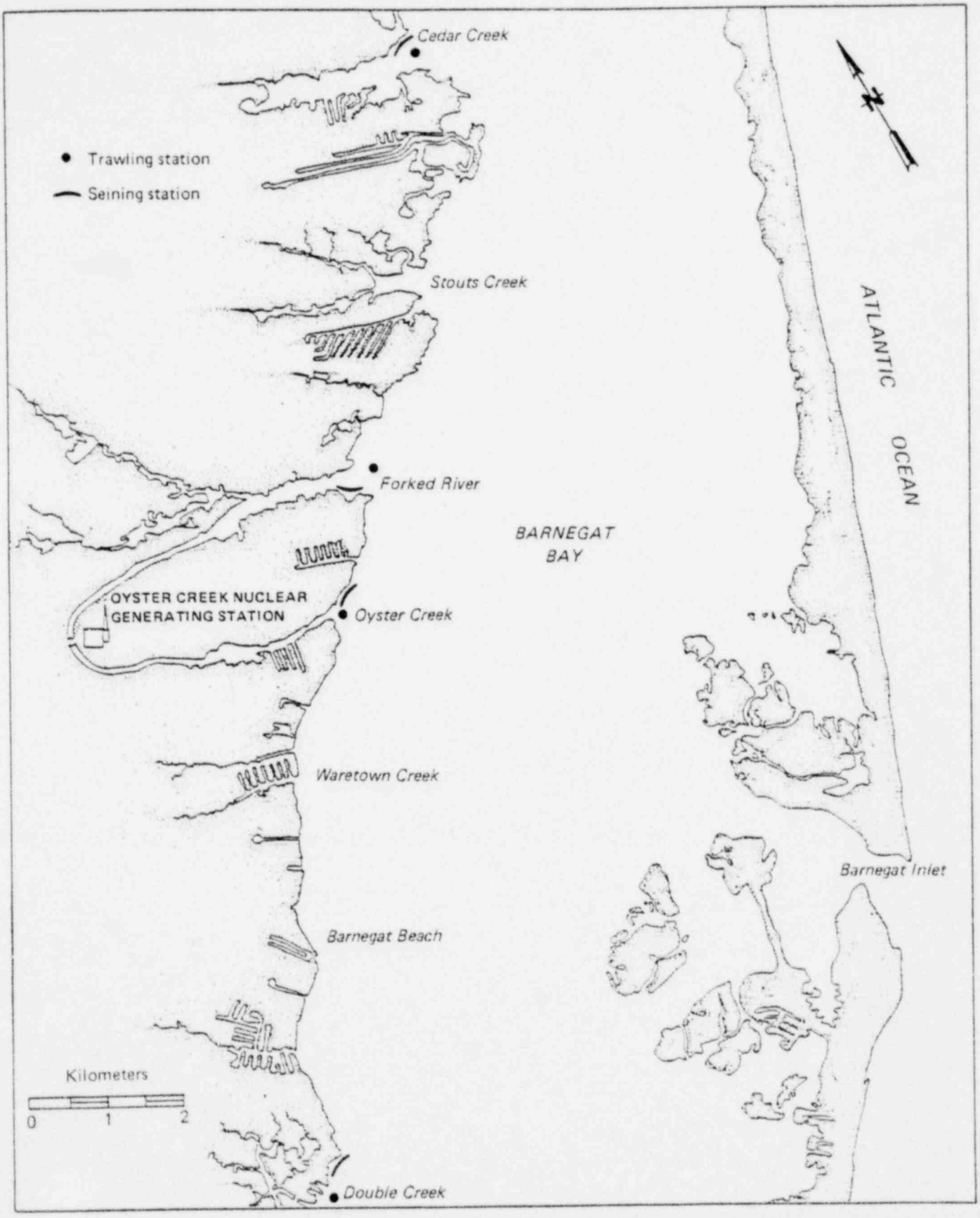


Figure 1-1. Map of the middle portion of Barnegat Bay showing trawling and seining locations (adapted from Tatham et al. 1978).

# CHAPTER 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). Three gears were employed: a 45.7-m x 2.4-m bag seine with 2.5-cm stretched mesh (April and May) or 1.3-cm stretched mesh (June-August); a 12.2-m x 1.8-m straight seine with 0.6-cm stretched mesh; and a 4.9-m semi-balloon otter trawl with 1.3-cm stretched mesh codend liner. With each gear, duplicate 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 1200 rpm.

After each replicate 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, and blue crab were measured to the nearest mm 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 a given 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 or preserved for possible subsequent measurement. When large amounts of shrimp and/or debris were encountered, subsampling was done and total shrimp counts were extrapolated. Any organism of questionable identification was preserved and returned to the laboratory for examination. Records were kept of any organisms having external parasites, disease, or morphological abnormalities.

## 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 square mesh. A smaller basket with identical mesh was placed in the sluiceway pit when the larger basket was removed for emptying.

Impingement collections were made over a 24-hour period once per week for a total of 31 sampling events and 255 individual collections. Each collection consisted of a 2-hour time period in which

1. all organisms were collected (2-hour collection and screenwash cycle),
2. one-half of the organisms were collected (1-hour collection and screenwash cycle), or
3. some fraction of organisms less than one-half were collected (continuous screenwash mode).

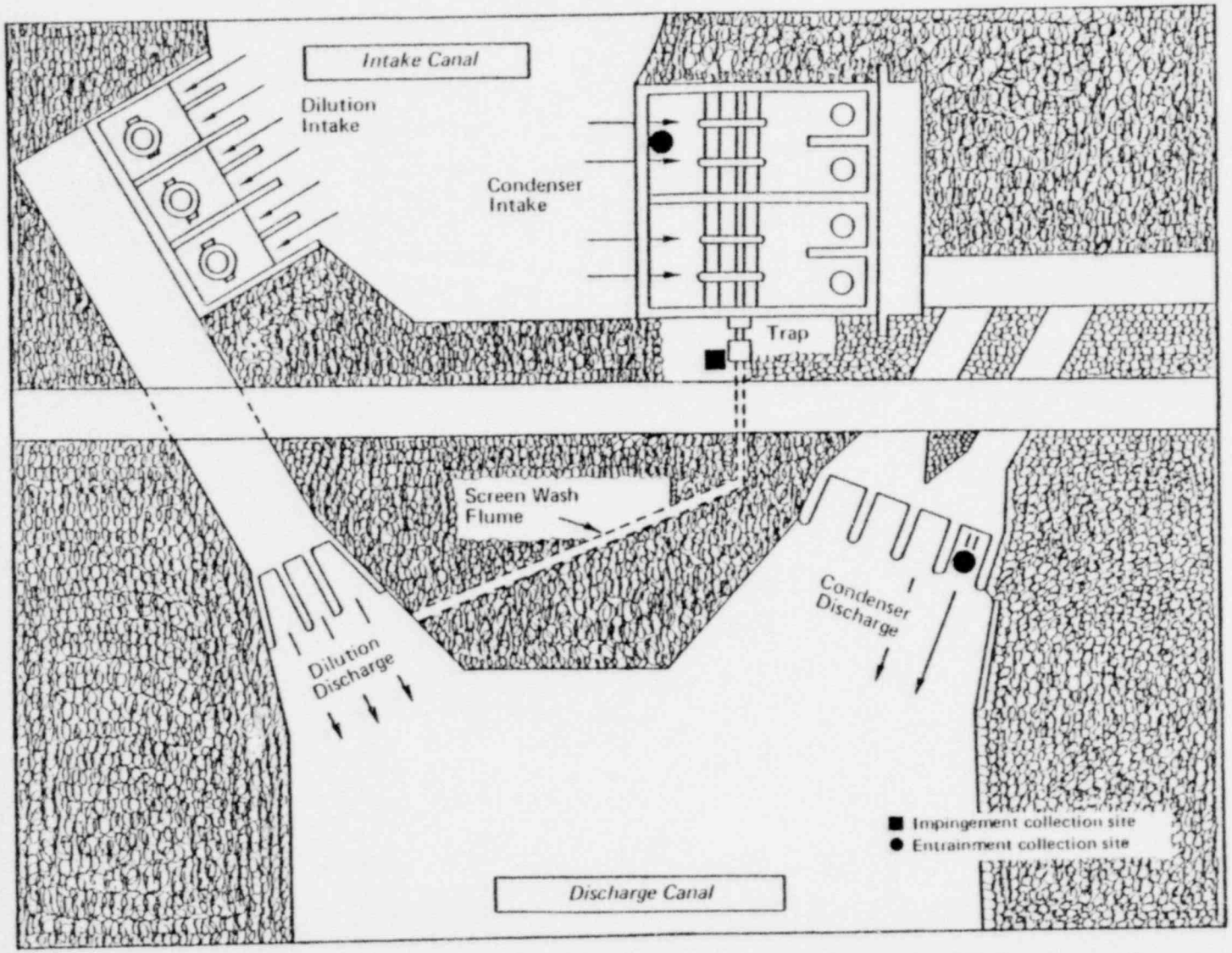


Figure 2-1. Diagram of the intake and discharge of the circulating water system and the dilution pumps at the Oyster Creek Nuclear Generating Station (adapted from Tatham et al. 1978).

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

This variable 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 higher debris and organism loads at night, the screens were normally 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.

The 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). Two samples were collected at each location two hours after sunset once each week. 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-µm 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 water column. A minimum of 10 cubic meters of water was filtered. 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 the samples were collected, they 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 observed were classified as either live, stunned, or dead and placed in labeled vials in 5 percent 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 possible taxon for ichthyoplankton, and to species for crustacean zoea (exception: to family for mud crab). 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

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

On 3 and 4 August 1979, EA responded to a request from JCP&L to investigate a possible fish kill at the mouth of Oyster Creek. Visual observations were made of the shoreline of Oyster Creek, water quality measurements (Section 2.6) were made at one station in the intake canal and three stations in Oyster Creek, and two 12.2-m seine hauls were made at the mouth of Oyster Creek.

## 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 Co. (YSI) Model 57 DO meter was used to measure DO; 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. During June and July of the study period, a Hydrolab Surveyor Model 6 was used to measure the above parameters. 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 m below the surface; at each trawling station they were made both before and after sampling at 0.5 m and just above the bottom. Measurements were made at the surface and bottom in the OCNGS intake during each screenwash or during each impingement collection if screens were operating continuously. 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 were then 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 (Chapter 5 and Appendix A) and a station-date catch matrix (Chapter 3).

Estimates were made of total impingement and entrainment for the period April-August 1979. Weekly total estimates of impingement were also computed.

2.7.1 Impingement Sampling

In the case of impingement, separate estimates were made for the April-May and the June-August periods. This was necessary because April and May samples collected by Ichthyological Associates were taken only at night (two night collections per week). Ecological Analysts collected the June through August samples which included both day and night collections (one continuous 24-hour sampling period per week). The computational methodologies for impingement estimates are given below.

During June-August 1979, the impingement sampling program at OCNGS 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. In periods when impingement was heavy, 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:

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

where

$\hat{I}$ = estimated total number (or weight) of organisms impinged in the June-August period
$L$ = total number of strata
$i$ = ordinal number for strata
$N_i$ = number of days in the $i^{th}$ stratum.

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

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

where

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

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

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

where

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

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

= estimated impingement of the $k^{th}$ diel period of the $j^{th}$ sample day of the $i^{th}$ 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 $ijkl^{th}$ block.

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

(Equation 2-5)

$$Var(\hat{I}) = \Sigma_{i=1}^{L} \frac{N_i}{n_i} \left[ (N_i - n_i) S_{1i}^2 + \Sigma_{j=1}^{ni} \Sigma_{n=1}^{2} \Sigma_{l=1}^{6} Var(\hat{Y}_{ijkl}) \right]$$

where

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

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

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

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

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

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

where

$\hat{I}_{ij}$ = estimated impingement for $j^{th}$ week of $i^{th}$ stratum
$\hat{Y}_{ij}$ = as defined above.

Impingement estimates for the April-May period were computed in a slightly different fashion than that described above for the June-August period. Because two night collections were made in each week during April and May, one week constitutes one stratum rather than two weeks as during the June-August period. Also, a different approach to the weekly estimates was necessitated for April and May. The weekly estimates were formed by averaging the estimated catches for the two nights sampled to form an estimate of catch per night for the week and then multiplying by seven to estimate impingement for the week. The formulas employed are

$$\hat{Y}_i = \bar{Y}_i \cdot 7 \qquad \text{(Equation 2-7)}$$

where

$\hat{Y}_i$ = estimated impingement for the $i^{th}$ week or $i^{th}$ stratum at night
$\bar{Y}_i$ = average nightly impingement for stratum i.

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

where

$n_i$ = number of samples for $i^{th}$ stratum
$\hat{Y}_{ij}$ = estimated impingement on the $j^{th}$ sample night of the $i^{th}$ stratum.

$$\hat{Y}_{ij} = \sum_{k=1}^{K} \frac{T_{Bijk}}{T_{sijk}} Y_{ijk} \qquad \text{(Equation 2-9)}$$

K = number of collections (blocks) for the $j^{th}$ night of $i^{th}$ stratum
$T_{sijk}$ = duration of the $k^{th}$ sample during the $j^{th}$ night of $i^{th}$ stratum
$T_{Bijk}$ = length of $k^{th}$ block of the $j^{th}$ night of the $i^{th}$ stratum
$Y_{ijk}$ = number of fish caught during $k^{th}$ sample of $j^{th}$ night of $i^{th}$ block.

### 2.7.2 Entrainment Sampling

The entrainment sampling program at OCNGS 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.

The time delimiters for diel stratification were determined by the average sunrise and sunset times for latitude 40° N during each stratum. The sampling units in the day were half of the daytime period and the sampling units at night were half of the nighttime period.

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 five or six were collected at night.

Each sample consisted o two sequential replicates to ensure that a sample of adequate duration was collected.

Using the data collected by this sampling frame, entrainment estimates were computed with the formulas

$$\hat{E} = \Sigma_{i=1}^{L} N_i \bar{Y}_i \qquad \text{(Equation 2-10)}$$

where

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

$$\bar{Y}_i = \frac{1}{n_i} \Sigma_{j=1}^{n_i} \hat{Y}_{ij} \qquad \text{(Equation 2-11)}$$

where

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

$$\hat{Y}_{ij} = \left(\frac{T_{ui}}{1440}\right) \left(\frac{V_{ij}}{V_{sij}}\right) Y_{ij} \qquad \text{(Equation 2-12)}$$

where

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

The variance of $\hat{E}$ was computed as (Equation 2-13)

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

where

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

and assuming $Y_{ij}$ ~ Poisson distribution

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

# CHAPTER 3: COMPOSITION AND ABUNDANCE TRENDS OF FINFISH AND SHELLFISH IN BARNEGAT BAY

The results of the April-August 1979 sampling with 45.7-m and 12.2-m seines and 4.9-m trawl are presented in this chapter. Water quality data associated with the biological sampling are included. A list of fish and macroinvertebrate species collected with all gear combined is presented in Table 3-1.

## 3.1 TRAWL DATA (4.9-m)

A total of 12,823 specimens comprising 32 species of finfish and 12 taxa of macroinvertebrates was collected by trawling (Table 3-2; see also Appendix A). The catch was dominated by the sand and grass shrimp (76.5 percent). The two most abundant finfish, winter flounder and bay anchovy, constituted 14.2 percent of the catch. The latter two species, along with the sand and grass shrimp, constituted nearly 91 percent of the entire catch.

The above-mentioned species, excepting the grass shrimp, are key species as designated in the Technical Specifications. The blue crab, also a key species, was fifth in order of abundance (Table 3-2), but constituted only 2.4 percent of the total catch. Additional key species encountered were the summer flounder, Atlantic menhaden, Atlantic silverside, bluefish, weakfish, northern pipefish, northern kingfish, and northern puffer. None of the latter were abundant; each constituted less than 1 percent of the total catch. Among the key species, only the striped bass was not encountered.

Variation among monthly catches was evident for the more abundant species (Table 3-3). Catches of sand shrimp were least variable, based on mean number per trawl haul. Mean catches were between 100 and 200 from April through July and dropped to 52.7 in August. Mean numbers of grass shrimp per trawl haul varied from 87.7 in July to 3.2 in August (counts of this species were not made in April and May). Winter flounder numbers were low in April, May, and August, and relatively high in June and July. Bay anchovy were relatively abundant during May through July, absent in April, and scarce in August.

Mean catches per trawl haul varied among the abundant species with respect to sampling station and day-night periods (Table 3-3). For the entire 5-month sampling period, average catches of sand shrimp were relatively low and uniform among all stations during day periods. Nighttime catches were also fairly uniform (overall means), but were 5-30 times as great as daytime catches. Grass shrimp were relatively low in abundance among all stations and day-night periods except for one large catch of 654/trawl at Double Creek at night, 10 July 1979. The pattern of winter flounder abundance was similar to that of grass shrimp; one relatively large nighttime catch at Double Creek on 10 July 1979 was the only marked difference from other stations. Bay anchovy were generally more abundant at Cedar Creek during daytime and least abundant at Oyster Creek, day or night.

Length-frequency tabulations were made for several abundant, key species (Table 3-4). Bay anchovy ranged from 17 to 98 mm, most being adults falling between 60 and 80 mm. The distribution among length intervals varied little among dates except for the greater proportion of 20-40-mm fish in August;

this may reflect recruitment of smaller fish to the gear at that time. The length range of winter flounder for the April-August 1979 period was 26-343 mm. The majority (82 percent) of specimens were young of the year between 40 and 80 mm.

The lengths of sand shrimp varied from 12 to 70 mm during June-August 1979, with over one-half measuring between 20 and 40 mm. The latter were probably a mixture of juveniles and adults, while all below 20 mm were juveniles and all above 40 mm were adults.

Carapace widths of blue crabs were rather evenly distributed between 7 and 172 mm. About 80 percent were subadults under 120 mm in carapace width. Some of these, however, may have been in their second summer and recently recruited to the spawning population.

3.2 SEINE DATA (45.7-m)

The results of April through August 1979 sampling with the 45.7-m seine are presented in Table 3-5 and Appendix B. Nine macroinvertebrate and 47 finfish species were encountered among 21,436 total specimens. The two most abundant species were the sand and grass shrimp, together accounting for 47.5 percent of the catch. The finfish component of the catch was dominated by Atlantic silverside and bay anchovy. These species, along with the lesser abundant fourspine stickleback, winter flounder, oyster toadfish, northern pipefish, and mummichog, made up 43.8 percent of the total catch of finfish and shellfish. No other species accounted for more than 1 percent.

Of those abundant species discussed above, the sand shrimp, Atlantic silverside, bay anchovy, winter flounder, and northern pipefish are key species as designated in the Technical Specifications. The blue crab, a key species, was less abundant, making up 2.65 percent of the overall catch (Table 3-5). Other key species that were encountered but were uncommon were: summer flounder, Atlantic menhaden, bluefish, weakfish, northern kingfish, and northern puffer. The striped bass, also a key species, was not collected.

Catches of sand shrimp, grass shrimp, bay anchovy, Atlantic silverside, and fourspine stickleback were examined to detect variation among dates, sampling stations, and day-night periods (Table 3-6). The mean number of sand shrimp per seine haul decreased from April to June, then increased through August. This may be a reflection of movement out of (and back into) shallow seining areas since trawl catches proved rather uniform, at least through the 10 July sampling period. Night catches of sand shrimp were much greater than day catches at all stations. Among daytime efforts, Forked River produced the highest overall mean catch, while Cedar Creek catches were highest among night efforts. Both cases were influenced by the large catches on 29 August 1979.

Overall mean catches of grass shrimp increased from 53.3/haul in June to 97.7 in July, then decreased to 29.2 in August. This pattern was primarily influenced by large July catches at Forked River and Oyster Creek. Catches among stations were variable with Forked River and Oyster Creek being most abundant. Night catches were consistently higher than day catches at all stations.

Bay anchovy appeared first in the May collections, increased in abundance through July, and decreased greatly in August (Table 3-6). Cedar Creek produced the largest catches and Double Creek the lowest. There appeared to be little day-night difference in catches.

Atlantic silverside were taken in all collections and were more abundant in July and August. Double Creek day catches were 1.5-2.5 times as great as day catches at other stations (overall means). Night catches were similar at all stations. Only Double Creek exhibited a consistent day-night difference (day catches greater).

Fourspine stickleback were abundant only in June. Double Creek produced the largest number and Oyster Creek the fewest. Day catches were greater than night catches at all stations. The abundance of this species at Double Creek was due to the presence of an extensive eelgrass bed, a preferred habitat for the fourspine stickleback.

The length-frequency distribution of bay anchovy captured by the 45.7-m seine revealed the majority of the catch to be adults between 60 and 80 mm (Table 3-7). The distribution shifted in August when the majority of captured specimens measured between 40 and 60 mm fork length, probably reflecting increased recruitment of juveniles to the gear.

Fork lengths of 2,515 Atlantic silversides ranged from 22 to 143 mm (Table 3-7). Adults over 100 mm dominated the April and May catches. In June, young of the year between 20 and 60 mm were recruited to the gear. This age class dominated the July and August samples.

Blue crabs measured from the 45.7-m seine catches ranged from 10 to 160 m carapace width (Table 3-7). The distribution was similar among the sampling dates, with specimens in the 20-40-mm range predominating in most months. The bulk of the catch were subadults (<120 mm), but some of the larger of these were probably recent recruits to the spawning population.

The sand shrimp measured ranged from 20 to 82 mm with most between 20 and 40 mm (not shown).

## 3.3 SEINE DATA (12.2-m)

A total of 9,929 specimens comprising 37 finfish species and 5 macroinvertebrate taxa were collected in Barnegat Bay during April-August 1979 (Table 3-8 and Appendix C). The sand shrimp predominated with over 4,000 specimens. The Atlantic silverside and bay anchovy were next in order of abundance, comprising approximately 28 and 15 percent of the catch, respectively. The grass shrimp (4 percent) and blue crab (1 percent) were the only other invertebrate taxa that accounted for one percent or more of the catch.

In terms of species and numbers, the catch was less than that made with the 45.7-m seine, as would be expected. The four top-ranked species were the same for both gears; however, Atlantic silverside were relatively more abundant, and grass shrimp less abundant, in the 12.2-m seine collections.

All of the species mentioned above as abundant in the 12.2-m seine collections are key species, as designated in the Technical Specifications, except

for the grass shrimp. The northern pipefish, also a key species, accounted for 2.3 percent of the catch. Other key species encountered were winter flounder, summer flounder, bluefish, northern kingfish, weakfish, and northern puffer; none of these were abundant.

Station-date catch matrixes, based on mean catch per seine haul, were constructed for bay anchovy, Atlantic silverside, sand shrimp, and grass shrimp (Table 3-9). These are discussed below with respect to date, station, and day-night catch differences.

Bay anchovy first appeared in the May collection and increased in abundance through the August collection. Cedar Creek yielded the largest mean catch, primarily due to the 29 August night collection. Forked River was next in abundance. Some day-night differences were observed, particularly at Cedar Creek and Oyster Creek, but they were not consistent.

The mean catch of Atlantic silverside per seine haul fluctuated over the study period with a peak of 87.9 on 27 June (Table 3-9). Catch differences among stations were not marked. Day catches were substantially larger than night catches at all stations except Oyster Creek. This is in contrast to the 45.7-m seine data (Section 3.2), where only Double Creek exhibited markedly larger day catches.

Sand shrimp abundance varied considerably over the study period, being high in April and low in July. There was little difference among stations for day collections, but night catches varied considerably. Night collections were substantially greater than day collections at all stations.

Grass shrimp data are tabulated only for June through August 1979 (Table 3-9). Overall, mean catches were similar in June and July and tripled in August. The August increase was primarily influenced by Forked River and Oyster Creek catches. Little day-night difference was detected except for the largest August catch of 66.5/haul at Oyster Creek (night).

The length-frequency distribution of bay anchovy caught with the 12.2-m seine is shown in Table 3-10. Relatively few were caught and measured in April through July, and most of these were adults between 60 and 80 mm fork length. In the August collection, young of the year were fully recruited to the gear, and these exhibited a peak of 258 specimens in the 20-40-mm range. This pattern was similar to that for bay anchovy caught with the 45.7-m seine (see Table 3-7), except that the August peak for the 45.7-m seine was in the 40-60-m range, probably reflecting the larger mesh size of that gear and greater escapement of <40-mm fish.

Fork lengths of Atlantic silverside captured during April-August 1979 ranged from 15 to 132 mm (Table 3-10). Adults in the 80-120-mm range dominated the April and May catches. Recruitment of young of the year produced large peaks in June, July, and August at 20-40 mm, 40-60 mm, and 60-80 mm, respectively, reflecting summer growth of the year's spawn. This pattern is similar to that shown for the 45.7-m seine catches (Table 3-7) except that relatively more large and fewer small specimens were collected with the larger seine, as evidenced by the mean lengths for each collection.

Most sand shrimp captured by the 12.2-m seine measured between 20 and 40 mm (Table 3-10). This size range dominated in all collections, but an increase in lengths below 20 mm was noted in June through August; this brought about by recruitment of young.

## 3.4 EXTERNAL PARASITES, DISEASE, AND MORPHOLOGICAL ABNORMALITIES

Examination of the organisms collected by trawl and seine during the June-August 1979 period revealed parasitic infections of three species of finfish. Twenty-nine (10.1 percent) of 286 mummichog captured during the period were infected with leeches. Of the 3,019 bay anchovy examined, 5 (0.2 percent) carried lerneaid copepods. A parasitic isopod was observed on the gill of one rough silverside. No symptoms of disease or morphological abnormalities were observed.

## 3.5 WATER QUALITY DATA ASSOCIATED WITH BARNEGAT BAY FISHERIES STUDIES

Measurements of dissolved oxygen (DO), pH, water temperature, and salinity were taken just beneath the surface at each seining location (Table 3-11). DO decreased from 10.8 to 5.8 mg/l, April to August, an expected response to rising water temperatures through the period. The minimum DO recorded was 4.3 mg/l at both Cedar Creek and Double Creek at night in August. There was little difference among stations or day-night periods during the study, except during the August sampling, when night values were about 2 mg/l lower than day values at all stations except Oyster Creek. This may have been a result of respiratory oxygen demand.

Water temperatures increased from 11.3 C in April to 27.9 C in August (Table 3-11, overall means). Temperatures were not appreciably different among Cedar Creek, Double Creek, and Forked River, but were substantially higher at the mouth of Oyster Creek, June through August, due to the discharge of OCNGS cooling water. The highest temperature recorded was 32.8 C at Oyster Creek on 29 August during the day.

The pH records during the study period ranged from 6.8 to 8.8 (Table 3-11). Most measurements were between 7 and 8. Differences among stations were not evident.

Salinity ranged from 6.3 ppt at Cedar Creek (day) on 27 June to 23.3 ppt at Oyster Creek (night) on 29 August (Table 3-11). Salinity values were similar among Forked River, Double Creek, and Oyster Creek, but markedly lower at Cedar Creek, June through August. This may be a result of freshwater input from Cedar Creek and other areas, coupled with the relative greater distance of Cedar Creek from the more saline waters of Barnegat Inlet, compared to the other sampling stations (discussed by Hoch 1979).

Surface water quality measurements taken in conjunction with trawl sampling are presented in Table 3-12. The data are essentially the same as those presented for seine collections, with the exception of water temperature. Temperatures consistently ranged approximately 1-4 C lower at trawl stations on most sampling dates, due to the lack of a shallow-water, inshore heating effect, which influenced seining stations.

TABLE 3-1 LIST OF FISH AND MACROINVERTEBRATES ENCOUNTERED DURING BARNEGAT BAY FISHERIES SAMPLING, APRIL-AUGUST 1979

| Scientific Name | Common Name |
|---|---|
| Dasyatis sayi | Bluntnose stingray |
| Anguilla rostrata | American eel |
| Alosa aestivalis | Blueback herring |
| Alosa pseudoharengus | Alewife |
| Brevoortia tyrannus | Atlantic menhaden |
| Anchoa hepsetus | Striped anchovy |
| Anchoa mitchilli | Bay anchovy |
| Opsanus tau | Oyster toadfish |
| Pollachius virens | Pollack |
| Urophycis chuss | Red hake |
| Urophycis regius | Spotted hake |
| Rissola marginata | Striped cusk-eel |
| Strongylura marina | Atlantic needlefish |
| Cyprinodon variegatus | Sheepshead minnow |
| Fundulus diaphanus | Banded killifish |
| Fundulus heteroclitus | Mummichog |
| Fundulus majalis | Striped killifish |
| Lucania parva | Rainwater killifish |
| Membras martinica | Rough silverside |
| Menidia beryllina | Tidewater silverside |
| Menidia menidia | Atlantic silverside |
| Apeltes quadracus | Fourspine stickleback |
| Gasterosteus aculeatus | Threespine stickleback |
| Hippocampus erectus | Lined seahorse |
| Syngnathus fuscus | Northern pipefish |
| Morone americana | White perch |
| Lepomis gibbosus | Pumpkinseed |
| Pomatomus saltatrix | Bluefish |
| Caranx hippos | Crevalle jack |
| Selene vomer | Lookdown |
| Trachinotus falcatus | Permit |
| Stenotomus chrysops | Scup |
| Bairdiella chrysura | Silver perch |
| Cynoscion regalis | Weakfish |
| Leiostomus xanthurus | Spot |
| Menticirrhus saxatilis | Northern kingfish |
| Tautoga onitis | Tautog |
| Tautogolabrus adspersus | Cunner |
| Mugil cephalus | Striped mullet |
| Mugil curema | White mullet |
| Chasmodes bosquianus | Striped blenny |
| Ammodytes americanus | American sand lance |
| Gobiosoma bosci | Naked goby |
| Prionotus evolans | Striped searobin |
| Etropis microstomus | Smallmouth flounder |
| Paralichthys dentatus | Summer flounder |
| Scophthalmus aquosus | Windowpane |
| Pseudopleuronectes americanus | Winter flounder |

TABLE 3-1 (CONT.)

| Scientific Name | Common Name |
|---|---|
| *Trinectes maculatus* | Hogchoker |
| *Sphoeroides maculatus* | Northern puffer |
| *Chilomycterus schoepfi* | Striped burrfish |
| *Busycon carica* | Knobbed whelk |
| *Limulus polyphemus* | Horseshoe crab |
| *Penaeus aztecus* | Brown shrimp |
| *Palaemonetes vulgaris* | Grass shrimp |
| *Hippolyte* sp. | Caridean shrimp |
| *Crangon septemspinosa* | Sand shrimp |
| *Callinectes sapidus* | Blue crab |
| *Ovalipes ocellatus* | Lady crab |
| Family Xanthidae | Mud crab |
| *Panopeus herbstii* | Mud crab |
| *Rhithropanopeus harrisii* | Mud crab |
| *Libinia dubia* | Spider crab |
| Class Asteroidea | Starfish |

TABLE 3-2 TOTAL NUMBER, PERCENT COMPOSITION, AND CUMULATIVE PERCENT OF FINFISH AND SHELLFISH CAUGHT BY OTTER TRAWL IN BARNEGAT BAY, APRIL-AUGUST 1979

| SPP. NAME | NUMBER | % | CUMU. % |
|---|---|---|---|
| CRANGON SEPTEMSPINOSA | 7940 | 61.920 | 61.920 |
| PALAEMONETES VULGARIS | 1658 | 12.930 | 74.850 |
| PSEUDOPLEURONECTES AMERI | 833 | 6.496 | 81.346 |
| ANCHOA MITCHILLI | 765 | 5.966 | 87.312 |
| CALLINECTES SAPIDUS | 308 | 2.402 | 89.714 |
| APELTES QUADRACUS | 217 | 1.692 | 91.406 |
| CRANGON SEPTEMSPIN ADULT | 175 | 1.365 | 92.771 |
| PSEUDOPLEURONEC AMER JUV | 122 | 0.951 | 93.722 |
| ANCHOA MITCHILLI ADULT | 102 | 0.795 | 94.518 |
| MENIDIA MENIDIA | 94 | 0.733 | 95.251 |
| CLASS ASTEROIDEA | 90 | 0.702 | 95.953 |
| SYNGNATHUS FUSCUS | 77 | 0.600 | 96.553 |
| OPSANUS TAU | 75 | 0.585 | 97.138 |
| PARALICHTHYS DENTATUS | 55 | 0.429 | 97.567 |
| TRINECTES MACULATUS | 42 | 0.328 | 97.894 |
| CRANGON SEPTEMSPIN JUV | 40 | 0.312 | 98.206 |
| SCOPHTHALMUS AQUOSUS | 36 | 0.281 | 98.487 |
| CYNOSCION REGALIS | 34 | 0.265 | 98.752 |
| LEIOSTOMUS XANTHURUS | 29 | 0.226 | 98.978 |
| ANGUILLA ROSTRATA | 19 | 0.148 | 99.127 |
| GOBIOSOMA BOSCI | 18 | 0.140 | 99.267 |
| TAUTOGA ONITIS | 15 | 0.117 | 99.384 |
| FAMILY XANTHIDAE | 15 | 0.117 | 99.501 |
| SPHOEROIDES MACULATUS | 8 | 0.062 | 99.563 |
| FUNDULUS HETEROCLITUS | 7 | 0.055 | 99.618 |
| RISSOLA MARGINATA | 6 | 0.047 | 99.665 |
| PANOPEUS HERBSTII | 5 | 0.039 | 99.704 |
| POMATOMUS SALTATRIX | 4 | 0.031 | 99.735 |
| PRIONOTUS EVOLANS | 4 | 0.031 | 99.766 |
| ANCHOA MITCHILLI LARVAE | 3 | 0.023 | 99.789 |
| UROPHYCIS REGIUS | 3 | 0.023 | 99.813 |
| RITHROPANOPEUS HARRISII | 3 | 0.023 | 99.836 |
| MORONE AMEPICANA | 2 | 0.016 | 99.852 |
| PSEUDOPLEURON AMER ADULT | 2 | 0.016 | 99.867 |
| OVALIPES OCELLATUS | 2 | 0.016 | 99.883 |
| DASYATIS SAYI | 1 | 0.008 | 99.891 |
| ALOSA AESTIVALIS | 1 | 0.008 | 99.899 |
| ALOSA PSEUDOHARENGUS | 1 | 0.008 | 99.906 |
| BREVOORTIA TYRANNUS | 1 | 0.008 | 99.914 |
| POLLACHIUS VIRENS | 1 | 0.008 | 99.922 |
| FUNDULUS DIAPHANUS | 1 | 0.008 | 99.930 |
| MENIDIA BERYLLINA | 1 | 0.008 | 99.938 |
| HIPPOCAMPUS ERECTUS | 1 | 0.008 | 99.945 |
| CARANX HIPPOS | 1 | 0.008 | 99.953 |
| STENOTOMUS CHRYSOPS | 1 | 0.008 | 99.961 |
| MENTICIRRHUS SAXATILIS | 1 | 0.008 | 99.969 |
| BUSYCON CARICA | 1 | 0.008 | 99.977 |
| LIMULUS POLYPHEMUS | 1 | 0.008 | 99.984 |
| PENAEUS AZTECUS | 1 | 0.008 | 99.992 |
| LIBINIA DUBIA | 1 | 0.008 | 100.000 |

Note: Lifestage is undetermined unless otherwise indicated.

TABLE 3-3 MEAN NUMBER PER TRAWL HAUL OF SAND SHRIMP, GRASS SHRIMP, WINTER FLOUNDER, AND BAY ANCHOVY, BARNEGAT BAY SAMPLING, APRIL-AUGUST 1979

## Sand Shrimp

| | STATION | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| DATE | CDCD | CDCN | FKRD | FKRN | DBCD | DBCN | OYCD | OYCN | MEAN |
| 17 APR 79 | 31.0 | -- | 74.0 | 510.0 | 28.5 | -- | 42.5 | 310.5 | 166.1 |
| 15 MAY 79 | 17.0 | -- | 5.0 | 376.5 | 16.0 | -- | 0.0 | 281.0 | 115.9 |
| 21 JUN 79 | 17.0 | 215.0 | 54.5 | 2.5 | 83.0 | 490.5 | 0.5 | 1.5 | 100.9 |
| 10 JUL 79 | 5.5 | 125.5 | 2.0 | 290.0 | 10.5 | 651.0 | 76.0 | 46.5 | 150.9 |
| 14 AUG 79 | 4.5 | 189.5 | 0.0 | 38.0 | 1.5 | 174.5 | 0.0 | 13.5 | 52.7 |
| MEAN | 15.0 | 169.0 | 27.1 | 243.4 | 27.9 | 438.7 | 23.8 | 130.6 | 114.9 |

## Grass Shrimp

| | STATION | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| DATE | CDCD | CDCN | FKRD | FKRN | DBCD | DBCN | OYCD | OYCN | MEAN |
| 21 JUN 79 | 4.0 | 5.0 | 16.0 | 0.0 | 31.0 | 44.0 | 4.5 | 0.0 | 13.6 |
| 10 JUL 79 | 0.0 | 2.0 | 3.5 | 12.0 | 10.5 | 654.0 | 2.0 | 17.5 | 87.7 |
| 14 AUG 79 | 0.5 | 0.0 | 1.0 | 14.5 | 0.5 | 8.5 | 0.0 | 0.5 | 3.2 |
| MEAN | 1.5 | 1.8 | 6.8 | 8.8 | 14.0 | 235.5 | 2.2 | 6.0 | 35.3 |

Note: CDC = Cedar Creek; FKR = Forked River; DBC = Double Creek; OYC = Oyster Creek.
Last letter of station code denotes day sampling (D) or night sampling (N).
Dash (--) indicates sampling not done.

TABLE 3-3 (CONT.)

## Winter Flounder

STATION

| DATE | CDCD | CDCN | FKRD | FKRN | DBCD | DBCN | OYCD | OYCN | MEAN |
|---|---|---|---|---|---|---|---|---|---|
| 17 APR 79 | 1.0 | -- | 1.0 | 8.0 | 2.0 | -- | 5.5 | 6.5 | 4.0 |
| 15 MAY 79 | 2.5 | -- | 0.5 | 5.5 | 0.5 | -- | 0.5 | 1.5 | 1.8 |
| 21 JUN 79 | 17.0 | 64.0 | 7.5 | 49.0 | 30.5 | 78.5 | 24.5 | 1.0 | 32.0 |
| 10 JUL 79 | 7.5 | 11.0 | 1.0 | 36.0 | 15.5 | 130.0 | 0.5 | 1.0 | 25.3 |
| 14 AUG 79 | 0.0 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 | 0.0 | 0.5 | 0.1 |
| MEAN | 5.6 | 17.2 | 2.0 | 19.8 | 9.7 | 69.5 | 6.2 | 2.1 | 13.5 |

## Bay Anchovy

STATION

| DATE | CDCD | CDCN | FKRD | FKRN | DBCD | DBCN | OYCD | OYCN | MEAN |
|---|---|---|---|---|---|---|---|---|---|
| 17 APR 79 | 0.0 | -- | 0.0 | 0.0 | 0.0 | -- | 0.0 | 0.0 | 0.0 |
| 15 MAY 79 | 16.0 | -- | 15.0 | 14.5 | 53.0 | -- | 0.0 | 5.5 | 17.3 |
| 21 JUN 79 | 51.0 | 13.0 | 2.5 | 13.0 | 7.0 | 16.0 | 17.0 | 0.0 | 15.1 |
| 10 JUL 79 | 95.0 | 11.0 | 12.5 | 16.5 | 34.5 | 13.5 | 1.5 | 0.0 | 23.1 |
| 14 AUG 79 | 1.5 | 3.5 | 5.5 | 11.5 | 3.0 | 3.5 | 1.5 | 3.5 | 4.2 |
| MEAN | 32.7 | 8.4 | 7.1 | 11.1 | 19.5 | 11.0 | 4.0 | 1.8 | 12.3 |

TABLE 3-4 LENGTH-FREQUENCY DISTRIBUTIONS OF BAY ANCHOVY, WINTER FLOUNDER, SAND SHRIMP, AND BLUE CRAB COLLECTED BY OTTER TRAWL, BARNEGAT BAY SAMPLING, APRIL-AUGUST 1979

Bay Anchovy

| DATE | N | X | SD | LENGTH INTERVALS (MM) 0.0-19.9 | 20.0-39.9 | 40.0-59.9 | 60.0-79.9 | 80.0-99.9 | 100.0-119.9 | RANGE MIN | MED | MAX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 17 APR 79 | 0 | 0.0 | 0.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0 | 0.0 | 0.0 |
| 15 MAY 79 | 154 | 69.7 | 9.5 | 0 | 0 | 17 | 107 | 30 | 0 | 41.0 | 69.0 | 90.0 |
| 21 JUN 79 | 175 | 72.2 | 11.3 | 1 | 0 | 18 | 111 | 45 | 0 | 18.0 | 71.0 | 98.0 |
| 10 JUL 79 | 224 | 71.5 | 7.4 | 0 | 0 | 12 | 175 | 37 | 0 | 44.0 | 71.0 | 90.0 |
| 14 AUG 79 | 64 | 38.6 | 18.3 | 4 | 38 | 10 | 11 | 1 | 0 | 17.0 | 32.5 | 83.0 |

Note: N = number of lengths; X = mean length; SD = standard deviation; NA = data not available; MIN = shortest length; MED = median length; MAX = greatest length.

## Winter Flounder

| DATE | LENGTH INTERVALS (MM) 0.0 - 19.9 | 20.0 - 39.9 | 40.0 - 59.9 | 60.0 - 79.9 | 80.0 - 99.9 | 100.0 - 119.9 | 120.0 - 139.9 | 140.0 - 159.9 | 160.0 - 179.9 |
|---|---|---|---|---|---|---|---|---|---|
| 17 APR 79 | 0 | 0 | 0 | 0 | 3 | 10 | 15 | 10 | 4 |
| 15 MAY 79 | 0 | 11 | 1 | 0 | 0 | 0 | 4 | 3 | 2 |
| 21 JUN 79 | 0 | 0 | 174 | 143 | 0 | 0 | 2 | 6 | 6 |
| 10 JUL 79 | 0 | 0 | 46 | 177 | 14 | 0 | 0 | 3 | 11 |
| 14 AUG 79 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |

| DATE | LENGTH INTERVALS (MM) 180.0 - 199.9 | 200.0 - 219.9 | 220.0 - 239.9 | 240.0 - 259.9 | 260.0 - 279.9 | 280.0 - 299.9 | 300.0 - 319.9 | 320.0 - 339.9 | 340.0 - 359.9 |
|---|---|---|---|---|---|---|---|---|---|
| 17 APR 79 | 2 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 1 |
| 15 MAY 79 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 21 JUN 79 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 JUL 79 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 AUG 79 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| DATE | N | X | SD | RANGE MIN | MED | MAX |
|---|---|---|---|---|---|---|
| 17 APR 79 | 48 | 145.3 | 48.3 | 90.0 | 131.0 | 343.0 |
| 15 MAY 79 | 21 | 80.0 | 55.6 | 26.0 | 39.0 | 175.0 |
| 21 JUN 79 | 335 | 64.1 | 25.2 | 42.0 | 59.0 | 189.0 |
| 10 JUL 79 | 256 | 74.3 | 28.8 | 42.0 | 67.0 | 200.0 |
| 14 AUG 79 | 2 | 119.5 | 58.5 | 61.0 | 119.5 | 178.0 |

TABLE 3-4 (CONT.)

## Sand Shrimp

| DATE | N | X | SD | LENGTH INTERVALS (MM) 0.0 19.9 | 20.0 39.9 | 40.0 59.9 | 60.0 79.9 | 80.0 99.9 | RANGE MIN | MED | MAX |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 17 APR 79 | 0 | 0.0 | 0.0 | 0 | 0 | 0 | 0 | 0 | 0.0 | 0.0 | 0.0 |
| 15 MAY 79 | 0 | 0.0 | 0.0 | 0 | 0 | 0 | 0 | 0 | 0.0 | 0.0 | 0.0 |
| 21 JUN 79 | 163 | 35.0 | 12.2 | 17 | 86 | 55 | 5 | 0 | 12.0 | 35.0 | 65.0 |
| 10 JUL 79 | 86 | 28.0 | 12.7 | 28 | 41 | 15 | 2 | 0 | 13.0 | 23.0 | 70.0 |
| 14 AUG 79 | 12 | 24.8 | 4.5 | 1 | 11 | 0 | 0 | 0 | 19.0 | 23.5 | 36.0 |

## Blue Crab

| DATE | LENGTH INTERVALS (MM) 0.0 19.9 | 20.0 39.9 | 40.0 59.9 | 60.0 79.9 | 80.0 99.9 |
|---|---|---|---|---|---|
| 17 APR 79 | 1 | 2 | 1 | 2 | 1 |
| 15 MAY 79 | 11 | 1 | 2 | 3 | 2 |
| 21 JUN 79 | 9 | 23 | 5 | 12 | 5 |
| 10 JUL 79 | 1 | 24 | 32 | 24 | 13 |
| 14 AUG 79 | 3 | 1 | 7 | 17 | 12 |

| DATE | N | X | SD | LENGTH INTERVALS (MM) 100.0 119.9 | 120.0 139.9 | 140.0 159.9 | 160.0 179.9 | 180.0 199.9 | RANGE MIN | MED | MAX |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 17 APR 79 | 8 | 58.6 | 30.4 | 1 | 0 | 0 | 0 | 0 | 18.0 | 61.5 | 111.0 |
| 15 MAY 79 | 22 | 44.3 | 39.8 | 2 | 0 | 1 | 0 | 0 | 7.0 | 24.5 | 145.0 |
| 21 JUN 79 | 87 | 76.1 | 49.3 | 8 | 12 | 12 | 1 | 0 | 12.0 | 72.0 | 164.0 |
| 10 JUL 79 | 130 | 74.2 | 38.4 | 14 | 9 | 12 | 1 | 0 | 18.0 | 65.5 | 163.0 |
| 14 AUG 79 | 60 | 87.8 | 35.7 | 9 | 5 | 5 | 1 | 0 | 15.0 | 86.0 | 172.0 |

TABLE 3-5 TOTAL NUMBER, PERCENT COMPOSITION, AND CUMULATIVE PERCENT OF FINFISH AND SHELLFISH CAUGHT BY 45.7-m SEINE IN BARNEGAT BAY, APRIL-AUGUST 1979

| SPP. NAME | NUMBER | % | CUMU. % |
|---|---|---|---|
| CRANGON SEPTEMSPINOSA | 7302 | 34.064 | 34.064 |
| PALAEMONETES VULGARIS | 2882 | 13.445 | 47.509 |
| ANCHOA MITCHILLI | 2551 | 11.901 | 59.409 |
| MENIDIA MENIDIA | 2367 | 11.042 | 70.452 |
| MENIDIA MENIDIA JUV | 1269 | 5.920 | 76.372 |
| APELTES QUADRACUS | 937 | 4.371 | 80.743 |
| MENIDIA MENIDIA ADULT | 856 | 3.993 | 84.736 |
| CALLINECTES SAPIDUS | 569 | 2.654 | 87.390 |
| PSEUDOPLEURONECTES AMERI | 403 | 1.880 | 89.270 |
| OPSANUS TAU | 396 | 1.847 | 91.118 |
| SYNGNATHUS FUSCUS | 362 | 1.689 | 92.806 |
| FUNDULUS HETEROCLITUS | 226 | 1.054 | 93.861 |
| MENIDIA BERYLLINA | 168 | 0.784 | 94.645 |
| STRONGYLURA MARINA | 131 | 0.611 | 95.256 |
| POMATOMUS SALTATRIX | 101 | 0.471 | 95.727 |
| MUGIL CEPHALUS | 99 | 0.462 | 96.189 |
| GOBIOSOMA BOSCI | 82 | 0.383 | 96.571 |
| CARANX HIPPOS | 78 | 0.364 | 96.935 |
| PARALICHTHYS DENTATUS | 70 | 0.327 | 97.262 |
| MENTICIRRHUS SAXATILIS | 63 | 0.294 | 97.556 |
| FUNDULUS DIAPHANUS | 61 | 0.285 | 97.840 |
| ANCHOA HEPSETUS | 54 | 0.252 | 98.092 |
| CYNOSCION REGALIS | 52 | 0.243 | 98.335 |
| TRINECTES MACULATUS | 48 | 0.224 | 98.559 |
| ANGUILLA ROSTRATA | 34 | 0.159 | 98.717 |
| BAIRDIELLA CHRYSURA | 33 | 0.154 | 98.871 |
| TAUTOGA ONITIS | 24 | 0.112 | 98.983 |
| RISSOLA MARGINATA | 23 | 0.107 | 99.090 |
| CHASMODES BOSQUIANUS | 19 | 0.089 | 99.179 |
| LEIOSTOMUS XANTHURUS | 17 | 0.079 | 99.258 |
| MUGIL CUREMA | 16 | 0.075 | 99.333 |
| FUNDULUS MAJALIS | 15 | 0.070 | 99.403 |
| MEMBRAS MARTINICA | 15 | 0.070 | 99.473 |
| ANCHOA MITCHILLI JUV | 13 | 0.061 | 99.534 |
| PRIONOTUS EVOLANS | 12 | 0.056 | 99.589 |
| CYPRINODON VARIEGATUS | 10 | 0.047 | 99.636 |
| LUCANIA PARVA | 9 | 0.042 | 99.678 |
| ALOSA PSEUDOHARENGUS | 7 | 0.033 | 99.711 |
| GASTEROSTEUS ACULEATUS | 6 | 0.028 | 99.739 |
| SCOPHTHALMUS AQUOSUS | 6 | 0.028 | 99.767 |
| ALOSA AESTIVALIS | 5 | 0.023 | 99.790 |
| SELENE VOMER | 5 | 0.023 | 99.813 |
| SPHOEROIDES MACULATUS | 5 | 0.023 | 99.837 |
| UROPHYCIS REGIUS | 4 | 0.019 | 99.855 |
| MORONE AMERICANA | 3 | 0.014 | 99.869 |
| TRACHINOTUS FALCATUS | 3 | 0.014 | 99.883 |
| CHILOMYCTERUS SCHOEPFI | 3 | 0.014 | 99.897 |
| PENAEUS AZTECUS | 3 | 0.014 | 99.911 |
| HIPPOLYTE SP | 3 | 0.014 | 99.925 |
| OVALIPFS OCELLATUS | 3 | 0.014 | 99.939 |
| FAMILY XANTHIDAE | 3 | 0.014 | 99.953 |
| BREVOORTIA TYRANNUS | 1 | 0.005 | 99.958 |
| POLLACHIUS VIRENS | 1 | 0.005 | 99.963 |
| FUNDULUS SP | 1 | 0.005 | 99.967 |
| HIPPOCAMPUS ERECTUS | 1 | 0.005 | 99.972 |
| LEPOMIS GIBBOSUS | 1 | 0.005 | 99.977 |
| SCIAENIDAE | 1 | 0.005 | 99.981 |
| TAUTOGOLABRUS ADSPERSUS | 1 | 0.005 | 99.986 |
| ETROPIS MICROSTOMUS | 1 | 0.005 | 99.991 |
| BUSYCON CARICA | 1 | 0.005 | 99.995 |
| PANOPEUS HERBSTII | 1 | 0.005 | 100.000 |

Note: Lifestage is undetermined unless otherwise indicated.

TABLE 3-6 MEAN NUMBER PER SEINE HAUL (45.7 m) OF SAND SHRIMP, GRASS SHRIMP, BAY ANCHOVY, ATLANTIC SILVERSIDE, AND FOURSPINE STICKLEBACK, BARNEGAT BAY SAMPLING, APRIL-AUGUST 1979

## Sand Shrimp

| | STATION | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| DATE | CDCD | CDCN | FKRD | FKRN | DBCD | DBCN | OYCD | OYCN | MEAN |
| 18 APR 79 | 24.5 | -- | 4.0 | 361.5 | 22.5 | -- | 9.0 | 542.0 | 160.6 |
| 16 MAY 79 | 1.0 | -- | 2.0 | 113.5 | 3.5 | -- | 4.5 | 97.5 | 37.0 |
| 27 JUN 79 | 0.5 | 69.0 | 6.5 | 42.5 | 4.0 | 21.0 | 0.5 | 12.0 | 19.5 |
| 17 JUL 79 | 38.0 | 161.5 | 43.0 | 149.5 | 10.5 | 324.5 | 0.0 | 52.5 | 97.4 |
| 29 AUG 79 | 6.0 | 698.0 | 12.0 | 483.5 | 12.0 | 313.5 | 0.5 | 4.5 | 191.3 |
| MEAN | 14.0 | 309.5 | 13.5 | 230.1 | 10.5 | 219.7 | 2.9 | 141.7 | 101.4 |

## Grass Shrimp

| | STATION | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| DATE | CDCD | CDCN | FKRD | FKRN | DBCD | DBCN | OYCD | OYCN | MEAN |
| 27 JUN 79 | 25.0 | 30.5 | 25.5 | 21.5 | 50.5 | 43.5 | 101.0 | 128.5 | 53.3 |
| 17 JUL 79 | 2.0 | 30.5 | 23.5 | 314.0 | 10.0 | 35.5 | 86.0 | 280.0 | 97.7 |
| 29 AUG 79 | 0.5 | 5.5 | 28.0 | 106.5 | 0.5 | 47.0 | 3.0 | 42.5 | 29.2 |
| MEAN | 9.2 | 22.2 | 25.7 | 147.3 | 20.3 | 42.0 | 63.3 | 150.3 | 60.0 |

Note: CDC = Cedar Creek; FKR = Forked River; DBC = Double Creek; OYC = Oyster Creek.
Last letter of station code denotes day sampling (D) or night sampling (N).
Dash (--) indicates sampling not done.

TABLE 3-6 (CONT.)

## Bay Anchovy

| DATE | STATION CDCD | CDCN | FKRD | FKRN | DBCD | DBCN | OYCD | OYCN | MEAN |
|---|---|---|---|---|---|---|---|---|---|
| 18 APR 79 | 0.0 | -- | 0.0 | 0.0 | 0.0 | -- | 0.0 | 0.0 | 0.0 |
| 16 MAY 79 | 0.0 | -- | 0.0 | 5.5 | 0.0 | -- | 5.0 | 20.5 | 5.2 |
| 27 JUN 79 | 7.5 | 50.0 | 98.5 | 32.0 | 8.0 | 6.5 | 11.5 | 34.0 | 31.0 |
| 17 JUL 79 | 470.5 | 339.0 | 46.0 | 37.0 | 0.0 | 4.0 | 13.5 | 4.0 | 114.3 |
| 29 AUG 79 | 0.0 | 5.0 | 3.5 | 71.0 | 0.0 | 2.0 | 0.0 | 7.5 | 11.1 |
| MEAN | 95.6 | 131.3 | 29.6 | 29.1 | 1.6 | 4.2 | 6.0 | 13.2 | 35.6 |

## Atlantic Silverside

| DATE | STATION CDCD | CDCN | FKRD | FKRN | DBCD | DBCN | OYCD | OYCN | MEAN |
|---|---|---|---|---|---|---|---|---|---|
| 18 APR 79 | 31.5 | -- | 3.0 | 3.0 | 136.5 | -- | 44.5 | 3.5 | 37.0 |
| 16 MAY 79 | 31.0 | -- | 5.5 | 14.5 | 43.0 | -- | 129.0 | 9.5 | 38.8 |
| 27 JUN 79 | 4.5 | 30.0 | 119.5 | 39.5 | 42.5 | 46.0 | 34.0 | 93.0 | 51.1 |
| 17 JUL 79 | 91.0 | 110.5 | 28.0 | 114.5 | 115.5 | 72.5 | 74.0 | 128.5 | 91.8 |
| 29 AUG 79 | 56.5 | 6.0 | 188.0 | 77.0 | 189.0 | 52.0 | 45.0 | 34.5 | 81.0 |
| MEAN | 42.9 | 48.8 | 68.8 | 49.7 | 105.3 | 56.8 | 65.3 | 53.8 | 62.4 |

## Fourspine Stickleback

| DATE | STATION CDCD | CDCN | FKRD | FKRN | DBCD | DBCN | OYCD | OYCN | MEAN |
|---|---|---|---|---|---|---|---|---|---|
| 18 APR 79 | 0.0 | -- | 0.0 | 0.0 | 3.5 | -- | 0.0 | 0.0 | 0.6 |
| 16 MAY 79 | 2.0 | -- | 2.5 | 0.0 | 14.5 | -- | 0.0 | 0.0 | 3.2 |
| 27 JUN 79 | 32.5 | 9.0 | 31.0 | 1.5 | 251.0 | 6.5 | 4.5 | 0.0 | 42.0 |
| 17 JUL 79 | 6.5 | 24.5 | 5.0 | 9.5 | 3.0 | 8.5 | 5.0 | 1.5 | 7.9 |
| 29 AUG 79 | 3.5 | 10.0 | 1.0 | 0.0 | 2.0 | 30.0 | 0.0 | 0.0 | 5.8 |
| MEAN | 8.9 | 14.5 | 7.9 | 2.2 | 54.8 | 15.0 | 1.9 | 0.3 | 13.0 |

TABLE 3-7 LENGTH-FREQUENCY DISTRIBUTIONS OF BAY ANCHOVY, ATLANTIC SILVERSIDE, AND BLUE CRAB COLLECTED BY 45.7-m SEINE, BARNEGAT BAY SAMPLING, APRIL-AUGUST 1979

Bay Anchovy

| DATE | N | X | SD | LENGTH INTERVALS (MM) 0.0 19.9 | 20.0 39.9 | 40.0 59.9 | 60.0 79.9 | 80.0 99.9 | 100.0 119.9 | RANGE MIN | MED | MAX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 18 APR 79 | 0 | 0.0 | 0.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0 | 0.0 | 0. |
| 16 MAY 79 | 45 | 72.0 | 7.3 | 0 | 0 | 1 | 38 | 6 | 0 | 56.0 | 72.0 | 90.0 |
| 27 JUN 79 | 302 | 67.9 | 8.4 | 0 | 1 | 49 | 227 | 25 | 0 | 25.0 | 68.0 | 93.0 |
| 17 JUL 79 | 316 | 68.0 | 7.7 | 0 | 1 | 44 | 245 | 26 | 0 | 37.0 | 67.5 | 86.0 |
| 29 AUG 79 | 112 | 48.4 | 10.0 | 0 | 16 | 83 | 13 | 0 | 0 | 23.0 | 46.5 | 79.0 |

Atlantic Silverside

| DATE | N | X | SD | LENGTH INTERVALS (MM) 0.0 19.9 | 20.0 39.9 | 40.0 59.9 | 60.0 79.9 | 80.0 99.9 | 100.0 119.9 | 120.0 139.9 | 140.0 159.9 | RANGE MIN | MED | MAX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 18 APR 79 | 140 | 105.3 | 10.0 | 0 | 0 | 0 | 3 | 26 | 105 | 5 | 1 | 60.0 | 106.0 | 143.0 |
| 16 MAY 79 | 211 | 107.4 | 7.7 | 0 | 0 | 0 | 0 | 33 | 169 | 9 | 0 | 85.0 | 108.0 | 129.0 |
| 27 JUN 79 | 537 | 82.9 | 25.4 | 0 | 54 | 85 | 31 | 195 | 163 | 9 | 0 | 22.0 | 91.0 | 122.0 |
| 17 JUL 79 | 871 | 70.8 | 21.9 | 0 | 3 | 422 | 138 | 174 | 130 | 4 | 0 | 24.0 | 60.0 | 128.0 |
| 29 AUG 79 | 756 | 76.6 | 12.7 | 0 | 0 | 31 | 488 | 176 | 59 | 2 | 0 | 49.0 | 75.0 | 125.0 |

Note: N = number of lengths; X = mean length; SD = standard deviation; NA = data not available; MIN = shortest length; MED = median length; MAX = greatest length.

TABLE 3-7 (CONT.)

Blue Crab

| DATE | LENGTH INTERVALS (MM) 0.0 19.9 | 20.0 39.9 | 40.0 59.9 | 60.0 79.9 | 80.0 99.9 |
|---|---|---|---|---|---|
| 18 APR 79 | 6 | 42 | 24 | 8 | 8 |
| 16 MAY 79 | 8 | 23 | 13 | 19 | 14 |
| 27 JUN 79 | 12 | 41 | 20 | 8 | 1 |
| 17 JUL 79 | 7 | 60 | 71 | 15 | 12 |
| 29 AUG 79 | 7 | 17 | 14 | 22 | 17 |

| DATE | N | X | SD | LENGTH INTERVALS (MM) 100.0 119.9 | 120.0 139.9 | 140.0 159.9 | 160.0 179.9 | 180.0 199.9 | RANGE MIN | MED | MAX |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 18 APR 79 | 90 | 43.4 | 2.4 | 2 | 0 | 0 | 0 | 0 | 12.0 | 37.0 | 101.0 |
| 16 MAY 79 | 86 | 60.2 | 33.7 | 4 | 2 | 3 | 0 | 0 | 10.0 | 56.0 | 157.0 |
| 27 JUN 79 | 87 | 41.4 | 27.3 | 1 | 3 | 1 | 0 | 0 | 13.0 | 33.0 | 140.0 |
| 17 JUL 79 | 182 | 55.2 | 32.0 | 3 | 3 | 11 | 0 | 0 | 11.0 | 45.5 | 158.0 |
| 29 AUG 79 | 97 | 71.2 | 37.9 | 8 | 5 | 6 | 1 | 0 | 12.0 | 66.0 | 160.0 |

TABLE 3-8 TOTAL NUMBER, PERCENT COMPOSITION, AND CUMULATIVE PERCENT OF FINFISH AND SHELLFISH CAUGHT BY 12.2-m SEINE IN BARNEGAT BAY, APRIL-AUGUST 1979

| SPP. NAME | NUMBER | % | CUMU. % |
|---|---|---|---|
| CRANGON SEPTEMSPINOSA | 4118 | 41.474 | 41.474 |
| MENIDIA MENIDIA | 2142 | 21.573 | 63.048 |
| ANCHOA MITCHILLI | 1305 | 13.143 | 76.191 |
| MENIDIA MENIDIA JUV | 634 | 6.385 | 82.576 |
| PALAEMONETES VULGARIS | 390 | 3.928 | 86.504 |
| APELTES QUADRACUS | 241 | 2.427 | 88.931 |
| SYNGNATHUS FUSCUS | 230 | 2.316 | 91.248 |
| ANCHOA MITCHILLI JUV | 168 | 1.692 | 92.940 |
| MENIDIA BERYLLINA | 158 | 1.591 | 94.531 |
| FUNDULUS HETEROCLITUS | 114 | 1.148 | 95.679 |
| CALLINECTES SAPIDUS | 101 | 1.017 | 96.697 |
| MENIDIA MENIDIA ADULT | 43 | 0.433 | 97.130 |
| FUNDULUS DIAPHANUS | 36 | 0.363 | 97.492 |
| PSEUDOPLEURONECTES AMERI | 34 | 0.342 | 97.835 |
| OPSANUS TAU | 31 | 0.312 | 98.147 |
| ANGUILLA ROSTRATA | 22 | 0.222 | 98.368 |
| GOBIOSOMA BOSCI | 20 | 0.201 | 98.570 |
| POMATOMUS SALTATRIX | 18 | 0.181 | 98.751 |
| STRONGYLURA MARINA | 17 | 0.171 | 98.922 |
| RISSOLA MARGINATA | 11 | 0.111 | 99.033 |
| MENTICIRRHUS SAXATILIS | 9 | 0.091 | 99.124 |
| MUGIL CUREMA | 9 | 0.091 | 99.214 |
| PSEUDOPLEURONEC AMER JUV | 9 | 0.091 | 99.305 |
| CYPRINODON VARIEGATUS | 8 | 0.081 | 99.386 |
| CARANX HIPPOS | 6 | 0.060 | 99.446 |
| FUNDULUS SP | 5 | 0.050 | 99.496 |
| FUNDULUS MAJALIS | 5 | 0.050 | 99.547 |
| CYNOSCION REGALIS | 5 | 0.050 | 99.597 |
| PRIONOTUS EVOLANS | 5 | 0.050 | 99.647 |
| GASTEROSTEUS ACULEATUS | 4 | 0.040 | 99.688 |
| MUGIL CEPHALUS | 4 | 0.040 | 99.728 |
| MEMBRAS MARTINICA | 3 | 0.030 | 99.758 |
| TRINECTES MACULATUS | 3 | 0.030 | 99.788 |
| SPHOEROIDES MACULATUS | 3 | 0.030 | 99.819 |
| MORONE AMERICANA | 2 | 0.020 | 99.839 |
| BAIRDIELLA CHRYSURA | 2 | 0.020 | 99.859 |
| LEIOSTOMUS XANTHURUS | 2 | 0.020 | 99.879 |
| AMMODYTES AMERICANUS | 2 | 0.020 | 99.899 |
| PARALICHTHYS DENTATUS | 2 | 0.020 | 99.919 |
| ALOSA PSEUDOHARENGUS | 1 | 0.010 | 99.929 |
| UROPHYCIS CHUSS | 1 | 0.010 | 99.940 |
| LUCANIA PARVA | 1 | 0.010 | 99.950 |
| LEPOMIS GIBBOSUS | 1 | 0.010 | 99.960 |
| TAUTOGA ONITIS | 1 | 0.010 | 99.970 |
| SCOPHTHALMUS AQUOSUS | 1 | 0.010 | 99.980 |
| PANOPEUS HERBSTII | 1 | 0.010 | 99.990 |
| CLASS ASTEROIDEA | 1 | 0.010 | 100.000 |

Note: Lifestage is undetermined unless otherwise indicated.

TABLE 3-9 MEAN NUMBER PER SEINE HAUL (12.2 m) OF BAY ANCHOVY, ATLANTIC SILVERSIDE, SAND SHRIMP, AND GRASS SHRIMP, BARNEGAT BAY SAMPLING, APRIL-AUGUST 1979

## Bay Anchovy

| | STATION | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| DATE | CDCD | CDCN | FKRD | FKRN | DBCD | DBCN | OYCD | OYCN | MEAN |
| 18 APR 79 | 0.0 | -- | 0.0 | 0.0 | 0.0 | -- | 0.0 | 0.0 | 0.0 |
| 16 MAY 79 | 0.0 | -- | 0.0 | 1.0 | 0.0 | -- | 0.0 | 17.0 | 3.0 |
| 27 JUN 79 | 0.0 | 15.0 | 8.0 | 3.5 | 1.0 | 0.5 | 0.5 | 4.0 | 4.1 |
| 17 JUL 79 | 57.5 | 8.0 | 11.0 | 6.0 | 0.0 | 0.0 | 0.5 | 0.0 | 10.4 |
| 29 AUG 79 | 1.0 | 464.5 | 60.0 | 43.0 | 0.0 | 6.0 | 0.0 | 28.5 | 75.4 |
| MEAN | 11.7 | 162.5 | 15.8 | 10.7 | 0.2 | 2.2 | 0.2 | 9.9 | 20.5 |

## Atlantic Silverside

| | STATION | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| DATE | CDCD | CDCN | FKRD | FKRN | DBCD | DBCN | OYCD | OYCN | MEAN |
| 18 APR 79 | 4.5 | -- | 0.0 | 0.0 | 65.5 | -- | 91.0 | 2.5 | 27.3 |
| 16 MAY 79 | 43.0 | -- | 0.5 | 7.5 | 5.5 | -- | 13.5 | 6.0 | 12.7 |
| 27 JUN 79 | 60.5 | 1.5 | 353.0 | 19.0 | 60.0 | 24.5 | 110.0 | 74.5 | 87.9 |
| 17 JUL 79 | 154.0 | 30.0 | 4.0 | 15.0 | 62.0 | 6.5 | 8.0 | 77.0 | 44.6 |
| 29 AUG 79 | 20.0 | 0.5 | 30.5 | 4.5 | 33.0 | 7.0 | 6.5 | 8.5 | 13.6 |
| MEAN | 56.4 | 10.7 | 77.6 | 9.2 | 45.2 | 12.7 | 45.8 | 33.7 | 39.2 |

Note: CDC = Cedar Creek; FKR = Forked River; DBC = Double Creek; OYC = Oyster Creek.
Last letter of station code denotes day sampling (D) or night sampling (N).
Dash (--) indicates sampling not done.

TABLE 3-9 (CONT.)

## Sand Shrimp

| DATE | STATION CDCD | CDCN | FKRD | FKRN | DBCD | DBCN | OYCD | OYCN | MEAN |
|---|---|---|---|---|---|---|---|---|---|
| 18 APR 79 | 29.0 | -- | 3.5 | 129.5 | 38.0 | -- | 90.5 | 583.5 | 145.7 |
| 16 MAY 79 | 0.0 | -- | 1.0 | 137.5 | 0.0 | -- | 0.0 | 61.0 | 33.3 |
| 27 JUN 79 | 3.0 | 195.5 | 0.0 | 36.0 | 20.5 | 82.0 | 33.5 | 8.5 | 47.4 |
| 17 JUL 79 | 1.0 | 61.5 | 2.0 | 30.5 | 0.0 | 24.5 | 0.0 | 1.0 | 15.1 |
| 29 AUG 79 | 15.0 | 341.5 | 3.5 | 106.5 | 0.5 | 19.0 | 0.0 | 0.0 | 60.8 |
| MEAN | 9.6 | 199.5 | 2.0 | 88.0 | 11.8 | 41.8 | 24.8 | 130.8 | 57.2 |

## Grass Shrimp

| DATE | STATION CDCD | CDCN | FKRD | FKRN | DBCD | DBCN | OYCD | OYCN | MEAN |
|---|---|---|---|---|---|---|---|---|---|
| 27 JUN 79 | 13.0 | 1.0 | 1.5 | 4.0 | 4.0 | 10.5 | 9.5 | 4.0 | 5.9 |
| 17 JUL 79 | 5.0 | 5.0 | 5.0 | 4.0 | 1.0 | 1.0 | 5.0 | 0.0 | 3.3 |
| 29 AUG 79 | 2.0 | 5.0 | 12.0 | 36.0 | 0.0 | 0.0 | 0.0 | 66.5 | 15.2 |
| MEAN | 6.7 | 3.7 | 6.2 | 14.7 | 1.7 | 3.8 | 4.8 | 23.5 | 8.1 |

TABLE 3-10 LENGTH-FREQUENCY DISTRIBUTIONS OF BAY ANCHOVY, ATLANTIC SILVERSIDE, AND SAND SHRIMP COLLECTED BY 12.2-m SEINE, BARNEGAT BAY SAMPLING, APRIL-AUGUST 1979

## Bay Anchovy

| DATE | N | X | SD | LENGTH INTERVALS (MM) 0.0–19.9 | 20.0–39.9 | 40.0–59.9 | 60.0–79.9 | 80.0–99.9 | 100.0–119.9 | RANGE MIN | MED | MAX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 18 APR 79 | 0 | 0.0 | 0.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0 | 0.0 | 0.0 |
| 16 MAY 79 | 21 | 70.0 | 8.1 | 0 | 0 | 2 | 16 | 3 | 0 | 53.0 | 67.0 | 90.0 |
| 27 JUN 79 | 49 | 71.3 | 11.3 | 0 | 1 | 3 | 34 | 11 | 0 | 20.0 | 71.0 | 89.0 |
| 17 JUL 79 | 110 | 63.7 | 12.1 | 0 | 9 | 11 | 85 | 5 | 0 | 29.0 | 65.0 | 92.0 |
| 29 AUG 79 | 309 | 26.5 | 7.7 | 33 | 258 | 17 | 1 | 0 | 0 | 15.0 | 25.0 | 70.0 |

## Atlantic Silverside

| DATE | N | X | SD | LENGTH INTERVALS (MM) 0.0–19.9 | 20.0–39.9 | 40.0–59.9 | 60.0–79.9 | 80.0–99.9 | 100.0–119.9 | 120.0–139.9 | 140.0–159.9 | RANGE MIN | MED | MAX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 18 APR 79 | 35 | 94.4 | 15.0 | 0 | 1 | 0 | 1 | 22 | 11 | 0 | 0 | 38.0 | 94.0 | 118.0 |
| 16 MAY 79 | 27 | 98.6 | 9.2 | 0 | 0 | 0 | 1 | 14 | 12 | 0 | 0 | 76.0 | 99.0 | 115.0 |
| 27 JUN 79 | 499 | 58.2 | 29.2 | 2 | 198 | 123 | 24 | 84 | 64 | 4 | 0 | 18.0 | 44.0 | 132.0 |
| 17 JUL 79 | 425 | 63.2 | 20.0 | 1 | 18 | 234 | 86 | 44 | 41 | 1 | 0 | 15.0 | 57.0 | 122.0 |
| 29 AUG 79 | 221 | 67.6 | 20.5 | 3 | 29 | 9 | 131 | 38 | 10 | 1 | 0 | 17.0 | 70.0 | 125.0 |

Note: N = number of lengths; X = mean length; SD = standard deviation; NA = data not available; MIN = shortest length; MED = median length; MAX = greatest length.

TABLE 3-10 (CONT.)

Sand Shrimp

| DATE | N | X | SD | LENGTH INTERVALS (MM) 0.0 19.9 | 20.0 39.9 | 40.0 59.9 | 60.0 79.9 | 80.0 99.9 | RANGE MIN | RANGE MED | RANGE MAX |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 18 APR 79 | 257 | 33.8 | 11.5 | 23 | 143 | 90 | 1 | 0 | 16.0 | 31.0 | 61.0 |
| 16 MAY 79 | 98 | 35.0 | 8.5 | 4 | 64 | 28 | 2 | 0 | 17.0 | 34.0 | 61.0 |
| 27 JUN 79 | 393 | 24.1 | 8.6 | 125 | 249 | 16 | 3 | 0 | 2.0 | 22.0 | 66.0 |
| 17 JUL 79 | 205 | 28.0 | 9.6 | 31 | 150 | 21 | 3 | 0 | 16.0 | 26.0 | 68.0 |
| 29 AUG 79 | 270 | 25.0 | 6.0 | 55 | 211 | 4 | 0 | 0 | 12.0 | 25.0 | 40.0 |

TABLE 3-11 SURFACE WATER QUALITY MEASUREMENTS ASSOCIATED WITH BARNEGAT BAY SEINE SAMPLING, APRIL-AUGUST 1979

Dissolved Oxygen (mg/l)

| | STATION | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| DATE | CDCD | CDCN | FKRD | FKRN | DBCD | DBCN | OYCD | OYCN | MEAN |
| 18 APR 79 | 11.2 | -- | 10.2 | 10.2 | 11.6 | -- | 11.2 | 10.2 | 10.8 |
| 16 MAY 79 | 8.2 | -- | 8.4 | 9.1 | 10.0 | -- | 8.2 | 8.2 | 8.7 |
| 27 JUN 79 | 8.3 | 7.5 | 8.4 | 6.8 | 8.2 | 7.5 | 7.8 | 7.8 | 7.8 |
| 17 JUL 79 | 7.6 | 8.1 | 6.8 | 7.2 | 7.0 | -- | 7.0 | 6.3 | 7.1 |
| 29 AUG 79 | 6.4 | 4.3 | 7.1 | 4.6 | 7.3 | 4.3 | 6.6 | 5.7 | 5.8 |
| MEAN | 8.3 | 6.6 | 8.2 | 7.6 | 8.8 | 5.9 | 8.2 | 7.6 | 7.9 |

Water Temperature (C)

| | STATION | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| DATE | CDCD | CDCN | FKRD | FKRN | DBCD | DBCN | OYCD | OYCN | MEAN |
| 18 APR 79 | 10.0 | -- | 13.0 | 9.1 | 13.2 | -- | 13.5 | 9.1 | 11.3 |
| 16 MAY 79 | 20.0 | -- | 20.0 | 17.9 | 23.0 | -- | 20.3 | 17.9 | 19.8 |
| 27 JUN 79 | 18.4 | 20.3 | 20.5 | 20.5 | 21.5 | 23.0 | 25.0 | 25.0 | 21.8 |
| 17 JUL 79 | 26.2 | 28.0 | 26.7 | 22.0 | 26.5 | -- | 29.5 | 30.0 | 27.0 |
| 29 AUG 79 | 25.0 | 25.5 | 29.0 | 28.0 | 27.7 | 25.0 | 32.8 | 30.0 | 27.9 |
| MEAN | 19.9 | 24.6 | 21.8 | 19.5 | 22.4 | 24.0 | 24.2 | 22.4 | 22.1 |

Note: CDC = Cedar Creek; FKR = Forked River; DBC = Double Creek; OYC = Oyster Creek.
Last letter of station code denotes day sampling (D) or night sampling (N).
Dash (--) indicates sampling not done. Data records are individual measurements.

TABLE 3-11 (CONT.)

## pH

| DATE | STATION CDCD | CDCN | FKRD | FKRN | DBCD | DBCN | OYCD | OYCN |
|---|---|---|---|---|---|---|---|---|
| 18 APR 79 | 7.9 | -- | 7.7 | 8.0 | 7.7 | -- | 7.8 | 8.0 |
| 16 MAY 79 | 7.8 | -- | 8.1 | 7.9 | 8.1 | -- | 7.8 | 7.8 |
| 27 JUN 79 | 7.2 | -- | 7.8 | -- | 7.7 | 8.8 | -- | -- |
| 17 JUL 79 | 7.5 | 7.3 | 7.7 | 7.8 | 7.7 | -- | 7.5 | 7.5 |
| 29 AUG 79 | 6.8 | 8.8 | 7.7 | 8.8 | 7.7 | -- | 7.6 | 8.3 |

## Salinity (ppt)

| DATE | STATION CDCD | CDCN | FKRD | FKRN | DBCD | DBCN | OYCD | OYCN | MEAN |
|---|---|---|---|---|---|---|---|---|---|
| 18 APR 79 | 18.0 | -- | 18.0 | 18.0 | 20.0 | -- | 20.0 | 15.0 | 18.2 |
| 16 MAY 79 | 18.0 | -- | 21.0 | 18.0 | 20.0 | -- | 18.0 | 17.0 | 18.7 |
| 27 JUN 79 | 6.3 | 8.0 | 18.4 | 17.8 | 20.5 | 20.5 | 17.3 | 15.8 | 15.6 |
| 17 JUL 79 | 14.4 | 13.7 | 19.2 | 18.9 | 22.0 | -- | 17.8 | 17.8 | 17.7 |
| 29 AUG 79 | 9.2 | 14.5 | 20.5 | 21.0 | 22.5 | -- | 21.2 | 23.3 | 18.9 |
| MEAN | 13.2 | 12.1 | 19.4 | 18.7 | 21.0 | 20.5 | 18.9 | 17.8 | 17.7 |

TABLE 3-12 SURFACE WATER QUALITY MEASUREMENTS ASSOCIATED WITH BARNEGAT BAY OTTER TRAWL SAMPLING, APRIL-AUGUST 1979

## Dissolved Oxygen (mg/l)

| | STATION | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| DATE | CDCD | CDCN | FKRD | FKRN | DBCD | DBCN | OYCD | OYCN | MEAN |
| 17 APR 79 | 9.6 | -- | 10.2 | 9.7 | 10.0 | -- | 9.6 | 9.5 | 9.8 |
| 15 MAY 79 | 8.2 | -- | 8.0 | 8.1 | 7.3 | -- | 7.2 | 8.2 | 7.8 |
| 21 JUN 79 | 9.1 | 8.9 | 9.2 | 6.4 | 10.1 | 8.0 | 8.6 | 7.6 | 8.5 |
| 10 JUL 79 | 7.9 | 8.1 | 7.6 | 7.8 | 7.6 | 6.8 | 7.2 | 7.1 | 7.5 |
| 14 AUG 79 | 7.2 | 6.7 | 7.2 | 7.0 | 8.1 | -- | 7.4 | 6.1 | 7.1 |
| MEAN | 8.4 | 7.7 | 8.4 | 7.8 | 8.6 | 7.4 | 8.0 | 7.7 | 8.1 |

## Water Temperature (C)

| | STATION | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| DATE | CDCD | CDCN | FKRD | FKRN | DBCD | DBCN | OYCD | OYCN | MEAN |
| 17 APR 79 | 9.5 | -- | 8.5 | 8.7 | 9.0 | -- | 12.0 | 13.0 | 10.1 |
| 15 MAY 79 | 16.4 | -- | 17.0 | 18.2 | 18.1 | -- | 18.0 | 18.8 | 17.8 |
| 21 JUN 79 | 22.5 | 23.0 | 22.5 | 23.0 | 24.5 | 22.5 | 27.0 | 28.0 | 24.2 |
| 10 JUL 79 | 22.5 | 23.5 | 23.0 | 25.0 | 22.5 | 22.5 | 27.5 | 28.0 | 24.3 |
| 14 AUG 79 | 20.5 | 22.0 | 21.5 | 21.5 | 21.0 | -- | 25.5 | 26.5 | 22.6 |
| MEAN | 18.3 | 22.8 | 18.5 | 19.3 | 19.0 | 22.5 | 22.0 | 22.9 | 20.3 |

Note: CDC = Cedar Creek; FKR = Forked River; DBC = Double Creek; OYC = Oyster Creek.
Last letter of station code denotes day sampling (D) or night sampling (N).
Dash (--) indicates sampling not done. Data records are individual measurements.

TABLE 3-12 (CONT.)

## pH

| DATE | STATION CDCD | CDCN | FKRD | FKRN | DBCD | DBCN | OYCD | OYCN |
|---|---|---|---|---|---|---|---|---|
| 17 APR 79 | 7.6 | -- | 8.0 | 8.0 | 8.0 | -- | 7.8 | 7.9 |
| 15 MAY 79 | 7.4 | -- | 8.0 | 7.8 | 7.8 | -- | 7.7 | 8.0 |
| 21 JUN 79 | 7.1 | 7.9 | 7.6 | 7.9 | 7.6 | 7.7 | 7.7 | 7.5 |
| 10 JUL 79 | 7.1 | 7.3 | 7.4 | 7.4 | 7.3 | 7.3 | 7.2 | 7.1 |
| 14 AUG 79 | 7.6 | 7.2 | 7.8 | 8.8 | 8.1 | -- | 7.9 | 7.1 |

## Salinity (ppt)

| DATE | STATION CDCD | CDCN | FKRD | FKRN | DBCD | DBCN | OYCD | OYCN | MEAN |
|---|---|---|---|---|---|---|---|---|---|
| 17 APR 79 | 12.0 | -- | 19.0 | 18.0 | 22.0 | -- | 20.0 | 16.0 | 17.8 |
| 15 MAY 79 | 4.0 | -- | 17.0 | 16.0 | 20.0 | -- | 16.0 | 15.0 | 14.7 |
| 21 JUN 79 | 12.7 | 15.8 | 17.8 | 19.8 | 20.9 | 21.3 | 18.5 | 18.5 | 18.3 |
| 10 JUL 79 | 14.4 | 15.8 | 20.5 | 19.8 | 23.4 | 22.6 | 19.8 | 19.2 | 19.4 |
| 14 AUG 79 | 16.0 | 13.5 | 21.5 | 21.5 | 26.0 | -- | 21.0 | 21.5 | 20.1 |
| MEAN | 11.8 | 14.9 | 19.2 | 19.0 | 22.5 | 21.9 | 19.1 | 18.0 | 18.2 |

# CHAPTER 4: IMPINGEMENT OF FINFISH AND MACROINVERTEBRATES ON THE INTAKE SCREENS

## 4.1 BIOLOGICAL DATA

Impingement collections from April through August 1979 yielded 78 taxa of which 20 were macroinvertebrates and 56 were finfish (Table 4-1). Vertebrates encountered, other than finfish, were the amphibian, Bufo fowleri, and the reptile, Malaclemys terrapin. Macroinvertebrates dominated the catch; sand shrimp accounted for 75 percent of the total, and, with the blue crab and grass shrimp, made up 91 percent of all organisms collected. The bay anchovy (5.5 percent) and northern pipefish (1.4 percent) were the only finfish that comprised more than 1 percent of all organisms collected.

All of the above species except grass shrimp are key species, as designated in the Technical Specifications, and thus will receive emphasis in the environmental monitoring at OCNGS. Eight other key species were taken in impingement collections but none were abundant. These were: Atlantic silverside, bluefish, weakfish, winter flounder, summer flounder, Atlantic menhaden, northern puffer, and northern kingfish (Table 4-1).

Estimates of total weekly impingement by number and weight were made for the April-May 1979 period (Tables 4-2 and 4-3) and the June-August 1979 period (Tables 4-4 and 4-5). Dividing the study period was necessary because April and May impingement samples were taken only at night, while both day and night samples were collected from June through August. Caution is necessitated in comparing impingement estimates between the two periods.

Estimates of total weekly impingement (night only) during April and May ranged from 22,628 during 13-19 May to 632,058 during 22-28 April (Table 4-2). In general, estimates were higher in April than in May, and were primarily influenced by fluctuations in numbers of the abundant sand shrimp. Bay anchovy were essentially absent at the beginning of April, but increased rapidly to a peak of an estimated night impingement catch of 28,490 during 22-28 April; thereafter, catches decreased to several thousand per week by the end of May. Atlantic silverside were abundant in early April but decreased by 90 percent or more by late May. Northern pipefish also were more abundant early in the period (6,920 during 1-7 April), but steadily decreased to 303 estimated impinged at night during 27 May - 2 June. Bluefish appeared first in mid-May and began to increase in abundance. Winter flounder were moderately abundant in April (200-581 per week), but became uncommon in May catches. Grass shrimp abundance fluctuated through the period, with peaks in early and late April and late May. Blue crab abundance peaked at over 18,000 per week (night) in late April, then decreased to 8,000 by the last week of May.

Weekly estimates of numbers of organisms impinged from June through August (Table 4-4) were considerably lower than weekly estimates for the April and May period, despite the inclusion of day samples in the former. The decrease in numbers of sand shrimp, to essentially zero in August, was responsible for the relatively low overall estimates. Bay anchovy numbers peaked at 17,048 during 24-30 June, and decreased thereafter, usually to several thousand per week. The progressive decrease in numbers of Atlantic silverside through the April and May period continued into June and they were uncommon after that.

Weekly estimates for northern pipefish ranged from 42 during 26-31 August to 1,405 during 15-21 July, considerably less then the abundance levels of April. The increase of bluefish in late May continued into June, with a peak impingement rate of 2,963 during 10-16 June. They essentially disappeared by the end of August. Winter flounder were relatively low in abundance in June and July and absent in August. The variable catches of grass shrimp continued in June and July, and they were greatly reduced in August. Blue crab numbers appeared to have increased from late May levels, and remained mostly between 10,000 and 20,000 per week for the June-August period. Weakfish appeared in impingement collections for the first time during 5-11 August, and peaked at an estimated 1,590 for the week, 26-31 August. Other key species, i.e., Atlantic menhaden, summer flounder, and northern puffer, contributed relatively little to the weekly estimated impingement totals.

Total numbers and weight impinged for the period April-May and June-August 1979 were computed with confidence limits for abundant and key species and for all organisms combined (Tables 4-6 and 4-7). As already demonstrated with the weekly estimates, the sand shrimp accounted for most of the impinged organisms, or an estimated 1,240,611 at night during the April-May period. The blue crab was second overall, with an estimated 86,893 impinged, and the grass shrimp was third most abundant with 77,896 impinged for that period. The blue crab had the greatest estimated weight (1,301.5 kg) for the April-May period.

The changes in abundance previously noted for the June-August period are evident in Table 4-7. The blue crab was most abundant, with an estimated 165,413 impinged, with a weight of 12,027 kg. The bay anchovy was second most abundant in terms of both numbers and weight. Although the estimated total number impinged during June-August (339,613) was much lower than the 1.5 million in April and May, the total estimated weight for June-August was five times as great as that for April and May, due primarily to blue crabs.

The composition of the impingement catch in general reflected the composition of the Barnegat Bay fisheries collections during the April-August 1979 period. However, there was little correlation between impingement and bay collections with respect to fluctuations in abundance of dominant species. The abundance of Atlantic silverside in bay collections increased to peaks in June (12.2-m seine) and July (45.7-m seine) (see Tables 3-6 and 3-9), a period when impingement of this species was quite low. The bay anchovy was not collected in bay sampling on 17-18 April, but was impinged in relatively high numbers in April. Large collections of sand shrimp were made in April in both bay and impingement sampling, but while sand shrimp abundance was remaining relatively high or peaking in bay collections in July and August (note Tables 3-3, 3-6, and 3-9), impingement abundance was greatly reduced in July and essentially zero in August (Table 4-4). The 9-fold increase in winter flounder abundance in June and July over April and May trawl collections (Table 3-3) was not duplicated in impingement (Tables 4-2 and 4-4).

The differences in species abundance shown above between impingement and bay collections may be due to a number of factors, one of the more important ones being water temperature. Miller (1979) pointed out that, for some species, despite their presence in Barnegat Bay for long periods, their impingement occurs over a relatively narrow temperature range.

As previously noted, both day and night impingement collections were made during June-August 1979, while only night collections were made in April and May 1979. To detect any differences between day and night impingement, average day and night catches were compared for the combined June-August period (Table 4-8). Every species that made up more than 1 percent of the catch overall, exhibited substantially higher impingement rates at night. The greater night rates ranged from a 2-fold difference for northern pipefish to a 44-fold difference for the grass shrimp. The average night impingement rate of 281.41 organisms per 12-hour sample represents 86 percent of combined day and night rates. This is quite close to the value of 83 percent for night impingement given by Miller (1978) for past studies at OCNGS.

## 4.2 WATER QUALITY DATA ASSOCIATED WITH IMPINGEMENT SAMPLING

Average water quality measurements for each impingement sampling date are given in Tables 4-9 through 4-12. Dissolved oxygen values ranged from a high of 12.0 mg/l on 10 April 1979 to a low 6.3 on 28 August. Daytime readings averaged slightly higher than nighttime readings, and bottom readings were slightly lower than surface readings, but significant diurnal or vertical stratification was not noted (Table 4-9). Water temperature at the intake ranged from 9.2 C on 9 April 1979 to 28.2 C on 28 August; little difference was noted between day and night and surface and bottom readings (Table 4-10). Values of pH ranged between 7.0 and 8.0 during the study period (Table 4-11). Salinity values fell between 12.1 and 21.7 ppt during the study (Table 4-12). Bottom waters were slightly more saline.

TABLE 4-1 MEAN NUMBER PER SAMPLE, PERCENT COMPOSITION, AND CUMULATIVE PERCENT OF FINFISH, OTHER VERTEBRATES, AND MACRO-INVERTEBRATES IMPINGED AT THE OYSTER CREEK GENERATING STATION, APRIL-AUGUST 1979

| SPP. NAME | NUMBER | % | CUMU. % |
|---|---|---|---|
| CRANGON SEPTEMSPINOSA | 788.452 | 75.025 | 75.025 |
| CALLINECTES SAPIDUS | 104.325 | 9.927 | 84.952 |
| PALAEMONETES VULGARIS | 60.868 | 5.792 | 90.744 |
| ANCHOA MITCHILLI | 58.509 | 5.567 | 96.311 |
| SYNGNATHUS FUSCUS | 15.225 | 1.449 | 97.760 |
| MENIDIA MENIDIA | 6.620 | 0.630 | 98.390 |
| POMATOMUS SALTATRIX | 2.873 | 0.273 | 98.663 |
| CANCER IRRORATUS | 1.648 | 0.157 | 98.820 |
| ALOSA AESTIVALIS | 1.580 | 0.150 | 98.970 |
| TRINECTES MACULATUS | 1.330 | 0.127 | 99.097 |
| CYNOSCION REGALIS | 1.252 | 0.119 | 99.216 |
| OPSANUS TAU | 1.066 | 0.101 | 99.317 |
| GASTEROSTEUS ACULEATUS | 1.007 | 0.096 | 99.413 |
| ALOSA PSEUDOHARENGUS | 0.959 | 0.091 | 99.505 |
| PSEUDOPLEURONECTES AMERI | 0.891 | 0.085 | 99.589 |
| SCOPHTHALMUS AQUOSUS | 0.602 | 0.057 | 99.647 |
| LIMULUS POLYPHEMUS | 0.482 | 0.046 | 99.692 |
| OVALIPES OCELLATUS | 0.470 | 0.045 | 99.737 |
| APELTES QUADRACUS | 0.368 | 0.035 | 99.772 |
| PARALICHTHYS DENTATUS | 0.350 | 0.033 | 99.806 |
| TAUTOGA ONITIS | 0.236 | 0.022 | 99.828 |
| BREVOORTIA TYRANNUS | 0.193 | 0.018 | 99.846 |
| STRONGYLURA MARINA | 0.168 | 0.016 | 99.862 |
| FUNDULUS HETEROCLITUS | 0.150 | 0.014 | 99.877 |
| AMMODYTIDAE | 0.148 | 0.014 | 99.891 |
| CLASS POLYCHAETA | 0.134 | 0.013 | 99.904 |
| ANGUILLA ROSTRATA | 0.091 | 0.009 | 99.912 |
| ETROPIS MICROSTOMUS | 0.075 | 0.007 | 99.919 |
| CARANX HIPPOS | 0.073 | 0.007 | 99.926 |
| RISSOLA MARGINATA | 0.070 | 0.007 | 99.933 |
| UROPHYCIS REGIUS | 0.061 | 0.006 | 99.939 |
| CYPRINODON VARIEGATUS | 0.052 | 0.005 | 99.944 |
| SPHOEROIDES MACULATUS | 0.050 | 0.005 | 99.949 |
| PHYLUM NEMERTEA | 0.043 | 0.004 | 99.953 |
| GOBIOSOMA BOSCI | 0.041 | 0.004 | 99.957 |
| PRIONOTUS EVOLANS | 0.041 | 0.004 | 99.960 |
| ALOSA SP | 0.036 | 0.003 | 99.964 |
| CLASS SCYPHOZOA | 0.036 | 0.003 | 99.967 |
| LIBINIA DUBIA | 0.034 | 0.003 | 99.971 |
| FAMILY XANTHIDAE | 0.025 | 0.002 | 99.973 |
| MEMBRAS MARTINICA | 0.023 | 0.002 | 99.975 |
| PANOPEUS HERBSTII | 0.020 | 0.002 | 99.977 |
| MORONE AMERICANA | 0.018 | 0.002 | 99.979 |
| PENAEUS AZTECUS | 0.016 | 0.002 | 99.980 |
| TAUTOGOLABRUS ADSPERSUS | 0.014 | 0.001 | 99.982 |
| CLASS HOLOTHUROIDEA | 0.014 | 0.001 | 99.983 |

TABLE 4-1 (CONT.)

| SPP. NAME | NUMBER | % | CUMU. % |
|---|---|---|---|
| ESOX NIGER | 0.011 | 0.001 | 99.984 |
| MENIDIA SP | 0.009 | 0.001 | 99.985 |
| HIPPOCAMPUS ERECTUS | 0.009 | 0.001 | 99.986 |
| PEPRILUS TRIACANTHUS | 0.009 | 0.001 | 99.987 |
| CHILOMYCTERUS SCHOEPFI | 0.009 | 0.001 | 99.987 |
| NEOPANOPE TEXANA SAYI | 0.009 | 0.001 | 99.988 |
| MALACLEMYS TERRAPIN | 0.009 | 0.001 | 99.989 |
| DASYATIS SAYI | 0.007 | 0.001 | 99.990 |
| ANCHOA HEPSETUS | 0.007 | 0.001 | 99.990 |
| UROPHYCIS CHUSS | 0.007 | 0.001 | 99.991 |
| MENTICIRRHUS SAXATILIS | 0.007 | 0.001 | 99.992 |
| SPHYRAENA BOREALIS | 0.007 | 0.001 | 99.992 |
| PAGURUS LONGICARPUS | 0.007 | 0.001 | 99.993 |
| BUFO FOWLERI | 0.007 | 0.001 | 99.994 |
| FISH REMAINS | 0.005 | 0.000 | 99.994 |
| ALOSA SAPIDISSIMA | 0.005 | 0.000 | 99.995 |
| POLLACHIUS VIRENS | 0.005 | 0.000 | 99.995 |
| UROPHYCIS TENUIS | 0.005 | 0.000 | 99.995 |
| UROPHYCIS SP | 0.005 | 0.000 | 99.996 |
| MUGIL SP | 0.005 | 0.000 | 99.996 |
| MYOXOCEPHALUS AENAEUS | 0.005 | 0.000 | 99.997 |
| MONACANTHUS HISPIDUS | 0.005 | 0.000 | 99.997 |
| PAGURUS SPECIES | 0.005 | 0.000 | 99.998 |
| LITINIA EMARGINATA | 0.005 | 0.000 | 99.998 |
| FUNDULUS DIAPHANUS | 0.002 | 0.000 | 99.998 |
| FUNDULUS MAJALIS | 0.002 | 0.000 | 99.998 |
| MENIDIA BERYLLINA | 0.002 | 0.000 | 99.999 |
| LEPOMIS GIBBOSUS | 0.002 | 0.000 | 99.999 |
| ALECTIS CRINITUS | 0.002 | 0.000 | 99.999 |
| CHASMODES BOSQUIANUS | 0.002 | 0.000 | 99.999 |
| PRIONOTUS CAROLINUS | 0.002 | 0.000 | 100.000 |
| HOMARUS AMERICANUS | 0.002 | 0.000 | 100.000 |
| CLASS ASTEROIDEA | 0.002 | 0.000 | 100.000 |

TABLE 4-2 WEEKLY ESTIMATED NUMBERS OF FINFISH AND MACROINVERTEBRATES IMPINGED AT NIGHT AT THE OYSTER CREEK GENERATING STATION, APRIL AND MAY 1979

| Taxon | April | | | | May (-June) | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1-7 | 8-14 | 15-21 | 22-28 | 30-5 | 6-12 | 13-19 | 20-26 | 27-2 |
| Anguilla rostrata | 4 | 5 | 4 | 14 | 5 | 7 | 7 | 11 | 4 |
| Alosa aestivalis | 252 | 966 | 32 | 483 | 261 | 123 | 70 | 18 | 25 |
| Alosa pseudoharengus | 87 | 368 | 90 | 382 | 201 | 105 | 63 | 39 | 11 |
| Brevoortia tyrannus | 0 | 0 | 0 | 25 | 35 | 7 | 7 | 12 | 11 |
| Anchoa mitchilli | 4 | 222 | 704 | 28,490 | 9,609 | 4,417 | 2,804 | 3,186 | 2,700 |
| Opsanus tau | 0 | 23 | 28 | 67 | 35 | 91 | 102 | 158 | 180 |
| Rissola marginata | 4 | 9 | 11 | 14 | 0 | 0 | 0 | 14 | 0 |
| Strongylura marina | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Fundulus heteroclitus | 42 | 86 | 77 | 21 | 4 | 4 | 0 | 7 | 4 |
| Menidia menidia | 833 | 7,466 | 672 | 476 | 95 | 109 | 273 | 233 | 690 |
| Apeltes quadracus | 67 | 289 | 145 | 67 | 14 | 0 | 4 | 4 | 0 |
| Gasterosteus aculeatus | 144 | 900 | 279 | 130 | 26 | 11 | 42 | 22 | 53 |
| Syngnathus fuscus | 6,920 | 5,492 | 2,650 | 3,292 | 1,509 | 536 | 497 | 388 | 303 |
| Pomatomus saltatrix | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 48 | 778 |
| Caranx hippos | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cynoscion regalis | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| Menticirrhus saxatilis | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Tautoga onitis | 133 | 98 | 23 | 18 | 11 | 11 | 11 | 0 | 25 |
| Ammodytidae | 65 | 67 | 110 | 4 | 0 | 0 | 0 | 0 | 0 |
| Paralichthys dentatus | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 |
| Scophthalmus aquosus | 37 | 177 | 42 | 511 | 33 | 7 | 7 | 41 | 11 |
| Pseudopleuronectes americana | 200 | 84 | 21 | 581 | 32 | 4 | 18 | 7 | 64 |
| Trinectes maculatus | 25 | 33 | 16 | 168 | 110 | 42 | 116 | 426 | 106 |
| Sphoeroides maculatus | 0 | 0 | 0 | 0 | 0 | 4 | 18 | 14 | 7 |
| Class Polychaeta | 49 | 51 | 0 | 46 | 7 | 0 | 4 | 0 | 0 |
| Limulus polyphemus | 0 | 0 | 0 | 7 | 14 | 18 | 87 | 33 | 165 |
| Palaemonetes vulgaris | 21,788 | 9,126 | 3,989 | 12,943 | 7,000 | 1,771 | 3,630 | 12,604 | 5,046 |
| Crangon septemspinosa | 92,022 | 121,532 | 31,278 | 565,530 | 77,669 | 67,690 | 7,406 | 253,532 | 23,951 |

TABLE 4-2 (CONT.)

| Taxon | April | | | | May (-June) | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1-7 | 8-14 | 15-21 | 22-28 | 30-5 | 6-12 | 13-19 | 20-26 | 27-2 |
| Callinectes sapidus | 3,546 | 15,827 | 13,398 | 18,431 | 8,971 | 4,015 | 7,308 | 7,349 | 8,049 |
| Ovalipes ocellatus | 32 | 74 | 18 | 28 | 70 | 60 | 14 | 202 | 64 |
| Cancer irroratus | 221 | 520 | 629 | 266 | 355 | 133 | 98 | 75 | 87 |
| Total[a] | 126,522 | 163,513 | 54,277 | 632,058 | 106,110 | 79,191 | 22,628 | 278,499 | 42,395 |

(a) Total includes all species not shown above.

TABLE 4-3 WEEKLY ESTIMATED WEIGHT (kg) OF FINFISH AND MACROINVERTEBRATES IMPINGED AT NIGHT AT THE OYSTER CREEK GENERATING STATION, APRIL AND MAY 1979

| Taxon | April | | | | May (-June) | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1-7 | 8-14 | 15-21 | 22-28 | 30-5 | 6-12 | 13-19 | 20-26 | 27-2 |
| Anguilla rostrata | 0.42 | 0.71 | 0.60 | 0.19 | 0.51 | 0.16 | 0.71 | 0.34 | 0.16 |
| Alosa aestivalis | 3.69 | 6.60 | 0.21 | 15.38 | 6.59 | 2.48 | 0.81 | 0.07 | 0.34 |
| Alosa pseudoharengus | 1.99 | 6.18 | 2.70 | 24.57 | 9.91 | 4.35 | 1.04 | 0.85 | 0.22 |
| Brevoortia tyrannus | 0 | | 0 | 3.43 | 5.11 | 0.13 | 0.49 | 1.04 | 0.60 |
| Anchoa mitchilli | 0.01 | 0.51 | 1.23 | 66.16 | 18.00 | 6.57 | 4.76 | 4.45 | 6.61 |
| Opsanus tau | 0 | 0.13 | 0.52 | 8.65 | 1.70 | 9.29 | 5.38 | 10.07 | 18.08 |
| Rissola marginata | 0.01 | 0.02 | 0.17 | 0.07 | 0 | 0 | 0 | 0.05 | 0 |
| Strongylura marina | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Fundulus heteroclitus | 0.16 | 0.28 | 0.17 | 0.34 | 0 | 0.01 | 0 | 0.01 | 0 |
| Menidia menidia | 2.50 | 31.20 | 1.66 | 2.39 | 0.38 | 0.33 | 0.60 | 0.59 | 4.23 |
| Apeltes quadracus | 0.03 | 0.21 | 0.06 | 0.07 | 0.01 | 0 | 0 | 0.01 | 0 |
| Gasterosteus aculeatus | 0.21 | 1.65 | 0.36 | 0.27 | 0.06 | 0.01 | 0.05 | 0.02 | 0.07 |
| Syngnathus fuscus | 8.22 | 7.43 | 2.65 | 6.28 | 2.50 | 0.92 | 0.61 | 0.58 | 0.67 |
| Pomatomus saltatrix | 0 | | 0 | 0 | 0 | 0 | 0.01 | 0.02 | 0.49 |
| Caranx hippos | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cynoscion regalis | 0 | | 0 | 0 | 0 | 1.47 | 0 | 0 | 0 |
| Menticirrhus saxatilis | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Tautoga onitis | 0.52 | 0.55 | 0.18 | 0.07 | 0.05 | 0.16 | 0.06 | 0 | 0.58 |
| Ammodytidae | 0.29 | 0.47 | 0.40 | 0.03 | 0 | 0 | 0 | 0 | 0 |
| Paralichthys dentatus | 0 | | 0 | 0.20 | 0 | 0 | 0 | 0 | 0 |
| Scophthalmus aquosus | 0.04 | 0.70 | 0.48 | 2.83 | 0.08 | 0.03 | 0.27 | 0.28 | 0.22 |
| Pseudopleuronectes americana | 15.21 | 3.01 | 0.85 | 35.89 | 2.52 | 0.13 | 1.13 | 0.11 | 1.24 |
| Trinectes maculatus | 0.12 | 1.03 | 0.32 | 6.08 | 3.45 | 0.57 | 1.23 | 2.74 | 1.08 |
| Sphoeroides maculatus | 0 | | 0 | 0 | 0 | 0.14 | 0.70 | 1.29 | 0.55 |
| Class Polychaeta | 0.07 | 0.07 | 0 | 0.04 | 0.01 | 0 | 0 | 0 | 0 |
| Limulus polyphemus | 0 | | 0 | 2.45 | 7.93 | 8.46 | 35.23 | 12.90 | 304.49 |
| Palaemonetes vulgaris | 4.48 | 2.46 | 0.85 | 4.50 | 2.71 | 0.34 | 1.02 | 3.10 | 2.24 |
| Crangon septemspinosa | 43.96 | 52.44 | 12.56 | 409.97 | 37.61 | 28.14 | 2.16 | 90.12 | 11.79 |

TABLE 4-3 (CONT.)

| Taxon | April | | | | May (-June) | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1-7 | 8-14 | 15-21 | 22-28 | 30-5 | 6-12 | 13-19 | 20-26 | 27-2 |
| Callinectes sapidus | 4.05 | 31.69 | 29.06 | 139.17 | 252.07 | 152.67 | 178.11 | 129.10 | 385.60 |
| Ovalipes ocellatus | 0.05 | 0.19 | 0.03 | 0.06 | 0.05 | 0.18 | 0.04 | 0.54 | 0.42 |
| Cancer irroratus | 8.41 | 28.26 | 29.73 | 15.79 | 17.25 | 5.63 | 3.66 | 2.59 | 3.86 |
| Total[a] | 95.03 | 176.16 | 85.01 | 745.78 | 369.82 | 222.57 | 239.19 | 261.54 | 744.17 |

(a) Total includes all species not shown above.

TABLE 4-4 WEEKLY ESTIMATED NUMBERS OF FINFISH AND MACROINVERTEBRATES IMPINGED AT THE OYSTER CREEK GENERATING STATION, JUNE-AUGUST 1979

| Taxon | June | | | | July | | | | | August | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 3-9 | 10-16 | 17-23 | 24-30 | 1-7 | 8-14 | 15-21 | 22-28 | 29-4 | 5-11 | 12-18 | 19-25 | 26-31 |
| Anguilla rostrata | 28 | 7 | 14 | 43 | 7 | 7 | 114 | 0 | 0 | 0 | 0 | 0 | 0 |
| Alosa aestivalis | 43 | 35 | 42 | 14 | 66 | 57 | 83 | 69 | 63 | 92 | 131 | 14 | 56 |
| Alosa pseudoharengus | 49 | 14 | 0 | 57 | 35 | 95 | 0 | 0 | 0 | 0 | 41 | 0 | 14 |
| Brevoortia tyrannus | 7 | 14 | 0 | 108 | 7 | 39 | 42 | 66 | 35 | 14 | 117 | 29 | 62 |
| Anchoa mitchilli | 2,405 | 2,440 | 6,356 | 17,048 | 5,818 | 16,439 | 4,854 | 3,815 | 1,089 | 2,072 | 4,703 | 3,125 | 6,617 |
| Opsanus tau | 385 | 175 | 96 | 312 | 273 | 365 | 14 | 97 | 112 | 11 | 135 | 30 | 188 |
| Rissola marginata | 0 | 14 | 0 | 56 | 28 | 0 | 0 | 39 | 0 | 0 | 14 | 29 | 0 |
| Strongylura marina | 0 | 0 | 0 | 126 | 84 | 98 | 14 | 133 | 119 | 7 | 28 | 35 | 0 |
| Fundulus heteroclitus | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Menidia menidia | 309 | 133 | 112 | 29 | 21 | 0 | 98 | 20 | 0 | 30 | 35 | 14 | 11 |
| Apeltes quadracus | 21 | 7 | 0 | 14 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Gasterosteus aculeatus | 91 | 0 | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Syngnathus fuscus | 846 | 389 | 290 | 407 | 196 | 208 | 1,405 | 884 | 1,048 | 105 | 592 | 44 | 42 |
| Pomatomus saltatrix | 1,914 | 2,963 | 636 | 657 | 262 | 1,165 | 129 | 145 | 362 | 18 | 239 | 0 | 14 |
| Caranx hippos | 0 | 0 | 0 | 29 | 53 | 55 | 8 | 39 | 28 | 0 | 57 | 7 | 0 |
| Cynoscion regalis | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,673 | 422 | 1,100 | 1,590 |
| Menticirrhus saxatilis | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | 0 | 0 |
| Tautoga onitis | 14 | 0 | 0 | 0 | 7 | 11 | 49 | 0 | 0 | 7 | 0 | 0 | 0 |
| Ammodytidae | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Paralichthys dentatus | 7 | 0 | 60 | 86 | 150 | 714 | 0 | 28 | 146 | 0 | 35 | 11 | 66 |
| Scophthalmus aquosus | 85 | 49 | 7 | 14 | 28 | 57 | 0 | 0 | 62 | 0 | 0 | 0 | 0 |
| Pseudopleuronectes americana | 84 | 154 | 177 | 35 | 21 | 43 | 0 | 256 | 0 | 0 | 0 | 0 | 0 |
| Trinectes maculatus | 168 | 458 | 276 | 930 | 84 | 157 | 42 | 98 | 28 | 0 | 7 | 0 | 14 |
| Sphoeroides maculatus | 49 | 7 | 0 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Class Polychaeta | 0 | 7 | 67 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 0 |
| Limulus polyphemus | 309 | 112 | 325 | 118 | 70 | 35 | 28 | 0 | 0 | 7 | 21 | 17 | 0 |
| Palaemonetes vulgaris | 15,427 | 2,944 | 2,878 | 3,245 | 812 | 478 | 238 | 456 | 83 | 14 | 174 | 0 | 0 |
| Crangon septemspinosa | 26,776 | 1,139 | 1,883 | 5,778 | 168 | 616 | 115 | 1,193 | 27 | 0 | 0 | 14 | 0 |
| Callinectes sapidus | 8,994 | 13,467 | 7,073 | 14,080 | 10,221 | 11,118 | 12,135 | 21,247 | 12,869 | 6,094 | 13,919 | 17,098 | 19,504 |
| Ovalipes ocellatus | 77 | 42 | 46 | 10 | 14 | 0 | 0 | 0 | 28 | 0 | 83 | 37 | 0 |
| Cancer irroratus | 224 | 49 | 18 | 14 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total[a] | 58,438 | 24,715 | 20,595 | 43,345 | 18,540 | 31,927 | 19,443 | 28,694 | 16,213 | 10,184 | 20,934 | 21,710 | 28,251 |

(a) Total includes all species not shown above.

TABLE 4-5 WEEKLY ESTIMATED WEIGHT (kg) OF FINFISH AND MACROINVERTEBRATES IMPINGED AT THE OYSTER CREEK GENERATING STATION, JUNE-AUGUST 1979

| Taxon | June | | | | July | | | | | August | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 3-9 | 10-16 | 17-23 | 24-30 | 1-7 | 8-14 | 15-21 | 22-28 | 29-4 | 5-11 | 12-18 | 19-25 | 26-31 |
| Anguilla rostrata | 14.50 | 0.08 | 8.96 | 8.68 | 2.52 | 0.79 | 47.64 | 0 | 0 | 0 | 0 | 0 | 0 |
| Alosa aestivalis | 0.30 | 0.26 | 0.54 | 0.16 | 0.83 | 0.66 | 3.64 | 1.16 | 2.37 | 2.06 | 1.99 | 0.12 | 1.40 |
| Alosa pseudoharengus | 14.93 | 0.36 | 0 | 3.46 | 2.74 | 4.05 | 0 | 0 | 0 | 0 | 1.27 | 0 | 0.24 |
| Brevoortia tyrannus | 0 | 1.34 | 0 | 1.79 | 0.52 | 0.06 | 0.52 | 17.76 | 0.77 | 1.64 | 9.66 | 9.68 | 4.29 |
| Anchoa mitchilli | 9.46 | 5.83 | 13.03 | 47.22 | 9.73 | 45.93 | 20.00 | 15.91 | 5.80 | 5.16 | 13.12 | 10.06 | 19.71 |
| Opsanus tau | 42.89 | 15.49 | 19.00 | 32.56 | 34.04 | 20.63 | 0.15 | 20.62 | 90.72 | 0.02 | 12.33 | 7.81 | 1.01 |
| Rissola marginata | 0 | 0.18 | 0 | 1.16 | 0.78 | 0 | 0 | 2.46 | 0 | 0 | 0.08 | 1.87 | 0 |
| Strongylura marina | 0 | 0 | 0 | 0.42 | 0.06 | 0.06 | 0.01 | 0.87 | 0.69 | 0.01 | 0.08 | 0.06 | 0 |
| Fundulus heteroclitus | 0.03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Menidia menidia | 3.03 | 0.71 | 0.10 | 0.06 | 0.03 | 0 | 0.22 | 0.12 | 0 | 0.08 | 0.08 | 0.03 | 0.04 |
| Apeltes quadracus | 0.09 | 0 | 0 | 0.01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Gasterosteus aculeatus | 0.25 | 0 | 0.02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Syngnathus fuscus | 3.10 | 0.84 | 0.63 | 1.15 | 0.43 | 0.54 | 6.27 | 5.07 | 3.36 | 0.24 | 1.10 | 0.04 | 0.04 |
| Pomatomus saltatrix | 2.49 | 3.29 | 1.08 | 1.39 | 0.87 | 3.74 | 1.59 | 0.66 | 3.13 | 0.28 | 12.93 | 0.04 | 0.03 |
| Caranx hippos | 0 | 0 | 0 | 0.03 | 0.04 | 0.05 | 0.01 | 0.08 | 0.06 | 0 | 0.25 | 0 | 0 |
| Cynoscion regalis | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10.53 | 0.97 | 0.04 | 6.57 |
| Menticirrhus saxatilis | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.06 | 3.99 | 0 |
| Tautoga onitis | 1.03 | 0 | 0 | 0 | 4.90 | 0.14 | 5.59 | 0 | 0 | 0.13 | 0 | 0 | 0 |
| Ammodytidae | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Paralichthys dentatus | 1.76 | 0 | 0.75 | 1.28 | 3.32 | 15.96 | 0 | 2.18 | 15.16 | 0 | 2.93 | 0 | 7.71 |
| Scophthalmus aquosus | 4.20 | 1.44 | 0.14 | 1.16 | 2.11 | 3.34 | 0 | 0 | 9.06 | 0 | 0 | 1.57 | 0 |
| Pseudopleuronectes americana | 0.15 | 0.16 | 0.54 | 0.06 | 0.03 | 2.24 | 0 | 13.30 | 0 | 0 | 0 | 0 | 0 |
| Trinectes maculatus | 3.39 | 6.86 | 5.28 | 16.77 | 1.77 | 3.09 | 1.30 | 5.30 | 1.00 | 0 | 0.24 | 0 | 0.60 |
| Sphoeroides maculatus | 8.76 | 0.11 | 0 | 0 | 0 | 0.70 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Class Polychaeta | 0 | 0 | 0.07 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.01 | 0 | 0 |
| Limulus polyphemus | 461.62 | 73.33 | 587.70 | 87.40 | 54.21 | 21.23 | 14.94 | 0 | 0 | 3.89 | 14.89 | 13.72 | 0 |
| Palaemonetes vulgaris | 10.19 | 1.81 | 1.67 | 1.91 | 0.48 | 0.31 | 0.35 | 0.52 | 0.22 | 0.01 | 0.14 | 0 | 0 |
| Crangon septemspinosa | 16.06 | 0.87 | 1.08 | 3.31 | 0.07 | 0.47 | 0.21 | 1.34 | 0.05 | 0 | 0 | 0.01 | 0 |
| Callinectes sapidus | 917.84 | 509.82 | 306.36 | 493.79 | 401.04 | 560.21 | 1,591.32 | 1,543.04 | 1,812.48 | 351.74 | 898.57 | 1,537.58 | 1,280.19 |
| Ovalipes ocellatus | 1.12 | 0.33 | 0.30 | 0.06 | 0.10 | 0 | 0 | 0 | 1.29 | 0 | 0.56 | 0.08 | 0 |
| Cancer irroratus | 25.65 | 4.41 | 0.77 | 1.45 | 0 | 1.03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total[a] | 1,549.84 | 629.46 | 961.36 | 712.32 | 523.39 | 688.05 | 1,693.98 | 1,636.77 | 1,958.80 | 376.38 | 985.33 | 1,587.58 | 1,322.08 |

(a) Total includes all species not shown above.

TABLE 4-6 TOTAL ESTIMATED NUMBER AND WEIGHT (kg) WITH 80 PERCENT CONFIDENCE INTERVALS OF KEY AND ABUNDANT SPECIES IMPINGED AT NIGHT AT THE OYSTER CREEK GENERATING STATION, APRIL AND MAY 1979

| Species | Number | Weight |
|---|---|---|
| Brevoortia tyrannus | 96 ± 41 | 10.81 ± 6.67 |
| Anchoa mitchilli | 52,136 ± 35,384 | 108.32 ± 82.40 |
| Menidia menidia | 10,845 ± 8,159 | 43.87 ± 33.79 |
| Syngnathus fuscus | 21,584 ± 4,369 | 29.85 ± 9.54 |
| Pomatomus saltatrix | 837 ± 469 | 0.52 ± 0.10 |
| Cynoscion regalis | 4 ± 5 | 1.47 ± 2.05 |
| Paralichthys dentatus | 4 ± 5 | 0.20 ± 0.27 |
| Pseudopleuronectes americanus | 1,009 ± 855 | 60.11 ± 54.28 |
| Sphoeroides maculatus | 42 ± 23 | 2.68 ± 1.98 |
| Palaemonetes vulgaris | 77,896 ± 30,015 | 21.69 ± 7.80 |
| Crangon septemspinosa | 1,240,611 ± 687,132 | 688.75 ± 513.28 |
| Callinectes sapidus | 86,893 ± 29,309 | 1,301.52 ± 263.29 |
| Total[a] | 1,505,191 ± 754,160 | 2,939.27 ± 1,016.93 |

(a) Total includes all species not shown above.

TABLE 4-7 TOTAL ESTIMATED NUMBER AND WEIGHT (kg) WITH 80 PERCENT CONFIDENCE INTERVALS OF KEY AND ABUNDANT SPECIES IMPINGED AT THE OYSTER CREEK GENERATING STATION, JUNE-AUGUST 1979

| Species | Number | Weight |
|---|---|---|
| *Brevoortia tyrannus* | 524 ± 229 | 46.91 ± 27.65 |
| *Anchoa mitchilli* | 76,092 ± 23,481 | 218.93 ± 77.30 |
| *Menidia menidia* | 810 ± 332 | 4.46 ± 3.54 |
| *Syngnathus fuscus* | 6,424 ± 1,986 | 22.76 ± 6.43 |
| *Pomatomus saltatrix* | 8,492 ± 2,208 | 30.88 ± 19.75 |
| *Cynoscion regalis* | 4,637 ± 2,946 | 21.52 ± 17.51 |
| *Menticirrhus saxatilis* | 20 ± 31 | 0.05 ± 0.08 |
| *Paralichthys dentatus* | 1,298 ± 898 | 52.03 ± 31.43 |
| *Pseudopleuronectes americanus* | 769 ± 468 | 16.49 ± 20.56 |
| *Sphoeroides maculatus* | 71 ± 68 | 9.58 ± 13.20 |
| *Palaemonetes vulgaris* | 26,743 ± 19,033 | 17.62 ± 12.78 |
| *Crangon septemspinosa* | 37,709 ± 39,535 | 23.48 ± 23.47 |
| *Callinectes sapidus* | 165,413 ± 22,640 | 12,026.99 ± 2,475.51 |
| Total[a] | 339,613 ± 68,127 | 14,439.96 ± 2,925.45 |

(a) Total includes all species not shown above.

TABLE 4-8 MEAN NUMBER PER 12-HOUR SAMPLE AND PERCENT COMPOSITION OF FINFISH AND MACROINVERTEBRATES IMPINGED DURING THE NIGHT (INTN) AND DAY (INTD) AT THE OYSTER CREEK GENERATING STATION, JUNE-AUGUST 1979

| STATION | INTN | | INTD | | | |
|---|---|---|---|---|---|---|
| SPECIES | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER TOTAL | PCT COMP |
| CRANGON SEPTEMSPINOSA | 51.14 | 18.17 | 1.62 | 3.49 | 27.30 | 16.23 |
| CALLINECTES SAPIDUS | 118.76 | 42.20 | 26.48 | 57.27 | 74.33 | 44.20 |
| PALAEMONETES VULGARIS | 30.33 | 10.78 | 0.68 | 1.48 | 16.06 | 9.55 |
| ANCHOA MITCHILLI | 57.11 | 20.30 | 10.05 | 21.74 | 34.46 | 20.49 |
| SYNGNATHUS FUSCUS | 3.92 | 1.39 | 1.88 | 4.08 | 2.94 | 1.75 |
| MENIDIA MENIDIA | 0.79 | 0.28 | 0.31 | 0.67 | 0.56 | 0.33 |
| POMATOMUS SALTATRIX | 6.46 | 2.30 | 2.18 | 4.71 | 4.40 | 2.62 |
| CANCER IRRORATUS | 0.33 | 0.12 | 0.05 | 0.12 | 0.20 | 0.12 |
| ALOSA AESTIVALIS | 0.58 | 0.21 | 0.13 | 0.28 | 0.36 | 0.22 |
| TRINECTES MACULATUS | 1.91 | 0.68 | 0.14 | 0.30 | 1.06 | 0.63 |
| CYNOSCION REGALIS | 3.74 | 1.33 | 0.21 | 0.45 | 2.04 | 1.21 |
| OPSANUS TAU | 1.71 | 0.61 | 0.31 | 0.67 | 1.04 | 0.62 |
| GASTEROSTEUS ACULEATUS | 0.06 | 0.02 | 0.05 | 0.12 | 0.06 | 0.04 |
| ALOSA PSEUDOHARENGUS | 0.16 | 0.06 | 0.10 | 0.22 | 0.13 | 0.08 |
| PSEUDOPLEURONECTES AMERI | 0.35 | 0.12 | 0.32 | 0.68 | 0.33 | 0.20 |
| SCOPHTHALMUS AQUOSUS | 0.21 | 0.07 | 0.05 | 0.10 | 0.13 | 0.08 |
| LIMULUS POLYPHEMUS | 0.64 | 0.23 | 0.37 | 0.80 | 0.51 | 0.30 |
| OVALIPES OCELLATUS | 0.25 | 0.09 | 0.06 | 0.13 | 0.16 | 0.09 |
| APELTES QUADRACUS | 0.03 | 0.01 | 0.02 | 0.05 | 0.03 | 0.02 |
| PARALICHTHYS DENTATUS | 1.01 | 0.36 | 0.08 | 0.18 | 0.57 | 0.34 |
| TAUTOGA ONITIS | 0.04 | 0.01 | 0.05 | 0.10 | 0.04 | 0.02 |
| BREVOORTIA TYRANNUS | 0.32 | 0.11 | 0.12 | 0.27 | 0.23 | 0.13 |
| STRONGYLURA MARINA | 0.38 | 0.13 | 0.16 | 0.35 | 0.27 | 0.16 |
| FUNDULUS HETEROCLITUS | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| CLASS POLYCHAETA | 0.06 | 0.02 | 0.03 | 0.07 | 0.04 | 0.03 |
| ANGUILLA ROSTRATA | 0.10 | 0.04 | 0.06 | 0.13 | 0.08 | 0.05 |
| ETROPIS MICROSTOMUS | 0.07 | 0.03 | 0.01 | 0.02 | 0.04 | 0.02 |
| CARANX HIPPOS | 0.16 | 0.06 | 0.07 | 0.15 | 0.12 | 0.07 |
| RISSOLA MARGINATA | 0.10 | 0.04 | 0.03 | 0.07 | 0.07 | 0.04 |
| UROPHYCIS REGIUS | 0.00 | 0.00 | 0.05 | 0.10 | 0.02 | 0.01 |
| SPHOEROIDES MACULATUS | 0.05 | 0.02 | 0.04 | 0.08 | 0.04 | 0.03 |
| GOBIOSOMA BOSCI | 0.02 | 0.01 | 0.04 | 0.08 | 0.03 | 0.02 |
| PRIONOTUS EVOLANS | 0.11 | 0.04 | 0.02 | 0.03 | 0.07 | 0.04 |
| ALOSA SP | 0.05 | 0.02 | 0.07 | 0.15 | 0.06 | 0.04 |
| CLASS SCYPHOZOA | 0.00 | 0.00 | 0.12 | 0.25 | 0.06 | 0.03 |
| OTHER SPECIES | 0.43 | 0.15 | 0.29 | 0.63 | 0.36 | 0.22 |
| TOTAL | 281.41 | | 46.25 | | 168.18 | |

TABLE 4-9 MEAN DISSOLVED OXYGEN VALUES (mg/l) DURING NIGHT (INTN) AND DAY (INTD) IMPINGEMENT SAMPLING AT THE OYSTER CREEK GENERATING STATION, APRIL-AUGUST 1979

Surface

| DATE | INTN | INTD | MEAN |
|---|---|---|---|
| 2 APR 79 | 9.6 | -- | 9.6 |
| 9 APR 79 | 9.7 | -- | 9.7 |
| 16 APR 79 | 12.0 | -- | 12.0 |
| 23 APR 79 | 8.0 | -- | 8.0 |
| 30 APR 79 | 9.6 | -- | 9.6 |
| 7 MAY 79 | 7.9 | -- | 7.9 |
| 14 MAY 79 | 10.2 | -- | 10.2 |
| 21 MAY 79 | 8.0 | -- | 8.0 |
| 29 MAY 79 | 7.9 | -- | 7.9 |
| 6 JUN 79 | 9.1 | 9.5 | 9.4 |
| 13 JUN 79 | 9.1 | 9.1 | 9.1 |
| 20 JUN 79 | 9.3 | 9.5 | 9.4 |
| 26 JUN 79 | 7.9 | 9.1 | 8.5 |
| 3 JUL 79 | 8.1 | 8.4 | 8.3 |
| 9 JUL 79 | 7.3 | 7.9 | 7.6 |
| 16 JUL 79 | 7.5 | 7.8 | 7.6 |
| 23 JUL 79 | 6.5 | 7.0 | 6.8 |
| 30 JUL 79 | 7.6 | 7.5 | 7.6 |
| 6 AUG 79 | 7.0 | 7.4 | 7.2 |
| 13 AUG 79 | 7.8 | 8.0 | 7.9 |
| 20 AUG 79 | 7.6 | 7.6 | 7.6 |
| 28 AUG 79 | 6.3 | 6.5 | 6.4 |
| MEAN | 8.5 | 8.3 | 8.4 |

Bottom

| DATE | INTN | INTD | MEAN |
|---|---|---|---|
| 2 APR 79 | 9.9 | -- | 9.9 |
| 9 APR 79 | 9.9 | -- | 9.9 |
| 16 APR 79 | 11.6 | -- | 11.6 |
| 23 APR 79 | 8.4 | -- | 8.4 |
| 30 APR 79 | 9.2 | -- | 9.2 |
| 7 MAY 79 | 8.0 | -- | 8.0 |
| 14 MAY 79 | 10.0 | -- | 10.0 |
| 21 MAY 79 | 8.0 | -- | 8.0 |
| 29 MAY 79 | 7.7 | -- | 7.7 |
| 6 JUN 79 | 8.9 | 9.3 | 9.1 |
| 13 JUN 79 | 8.7 | 8.7 | 8.7 |
| 20 JUN 79 | 9.0 | 9.2 | 9.2 |
| 26 JUN 79 | 7.9 | 8.9 | 8.4 |
| 3 JUL 79 | 7.9 | 8.2 | 8.1 |
| 9 JUL 79 | 7.1 | 7.8 | 7.4 |
| 16 JUL 79 | 7.4 | 7.7 | 7.5 |
| 23 JUL 79 | 6.3 | 6.9 | 6.6 |
| 30 JUL 79 | 7.3 | 7.5 | 7.4 |
| 6 AUG 79 | 6.9 | 7.2 | 7.1 |
| 13 AUG 79 | 7.7 | 7.9 | 7.8 |
| 20 AUG 79 | 7.4 | 7.5 | 7.5 |
| 28 AUG 79 | 5.9 | 6.4 | 6.2 |
| MEAN | 8.1 | 8.0 | 8.1 |

Note: Dash (--) indicates sampling not done.

TABLE 4-10 MEAN WATER TEMPERATURE VALUES (C) DURING NIGHT (INTN) AND DAY (INTD) IMPINGEMENT SAMPLING AT THE OYSTER CREEK GENERATING STATION, APRIL-AUGUST 1979

| Surface | | | | Bottom | | | |
|---|---|---|---|---|---|---|---|
| DATE | INTN | INTD | MEAN | DATE | INTN | INTD | MEAN |
| 2 APR 79 | 9.8 | -- | 9.8 | 2 APR 79 | 10.6 | -- | 10.6 |
| 9 APR 79 | 9.2 | -- | 9.2 | 9 APR 79 | 9.0 | -- | 9.0 |
| 16 APR 79 | 10.1 | -- | 10.1 | 16 APR 79 | 10.2 | -- | 10.2 |
| 23 APR 79 | 16.1 | -- | 16.1 | 23 APR 79 | 15.9 | -- | 15.9 |
| 30 APR 79 | 15.7 | -- | 15.7 | 30 APR 79 | 15.8 | -- | 15.8 |
| 7 MAY 79 | 18.5 | -- | 18.5 | 7 MAY 79 | 18.5 | -- | 18.5 |
| 14 MAY 79 | 17.3 | -- | 17.3 | 14 MAY 79 | 17.5 | -- | 17.5 |
| 21 MAY 79 | 17.8 | -- | 17.8 | 21 MAY 79 | 18.1 | -- | 18.1 |
| 29 MAY 79 | 19.6 | -- | 19.6 | 29 MAY 79 | 19.8 | -- | 19.8 |
| 6 JUN 79 | 22.0 | 23.4 | 22.9 | 6 JUN 79 | 22.1 | 23.2 | 22.6 |
| 13 JUN 79 | 21.4 | 21.2 | 21.3 | 13 JUN 79 | 21.5 | 21.2 | 21.4 |
| 20 JUN 79 | 20.3 | 21.0 | 20.7 | 20 JUN 79 | 20.6 | 21.0 | 20.8 |
| 26 JUN 79 | 23.2 | 22.0 | 22.6 | 26 JUN 79 | 23.2 | 22.0 | 22.6 |
| 3 JUL 79 | 22.6 | 23.3 | 23.0 | 3 JUL 79 | 22.8 | 23.2 | 23.1 |
| 9 JUL 79 | 25.0 | 23.6 | 24.3 | 9 JUL 79 | 25.0 | 23.6 | 24.3 |
| 16 JUL 79 | 26.6 | 27.2 | 26.9 | 16 JUL 79 | 26.7 | 27.2 | 26.9 |
| 23 JUL 79 | 27.4 | 27.0 | 27.2 | 23 JUL 79 | 27.4 | 27.0 | 27.2 |
| 30 JUL 79 | 27.2 | 28.2 | 27.7 | 30 JUL 79 | 27.3 | 28.1 | 27.7 |
| 6 AUG 79 | 28.2 | 27.5 | 27.8 | 6 AUG 79 | 28.1 | 27.5 | 27.8 |
| 13 AUG 79 | 21.6 | 21.9 | 21.8 | 13 AUG 79 | 21.6 | 21.9 | 21.8 |
| 20 AUG 79 | 22.9 | 22.6 | 22.8 | 20 AUG 79 | 22.9 | 22.5 | 22.7 |
| 28 AUG 79 | 28.0 | 26.9 | 27.5 | 28 AUG 79 | 28.0 | 27.0 | 27.5 |
| MEAN | 19.6 | 24.1 | 21.3 | MEAN | 21.4 | 24.2 | 22.6 |

Note: Dash (--) indicates sampling not done.

TABLE 4-11 MEDIAN pH VALUES ASSOCIATED WITH IMPINGEMENT SAMPLING AT THE OYSTER CREEK GENERATING STATION INTAKE, APRIL-AUGUST 1979

| Week of | Night | | Day | |
|---|---|---|---|---|
| | Surface | Bottom | Surface | Bottom |
| 2 APR 79 | 7.7 | 7.7 | -- | -- |
| 9 APR 79 | 7.8 | 8.0 | -- | -- |
| 16 APR 79 | 8.2 | 8.2 | -- | -- |
| 23 APR 79 | 8.2 | 8.3 | -- | -- |
| 30 APR 79 | 7.9 | 7.9 | -- | -- |
| 7 MAY 79 | 8.2 | 8.2 | -- | -- |
| 14 MAY 79 | 8.2 | 8.3 | -- | -- |
| 21 MAY 79 | 8.1 | 8.2 | -- | -- |
| 28 MAY 79 | 7.8 | 8.2 | -- | -- |
| 4 JUN 79 | 7.7 | 7.7 | 7.5 | 7.5 |
| 11 JUN 79 | 7.8 | 7.8 | 7.7 | 7.6 |
| 18 JUN 79 | 8.1 | 8.1 | 9.0 | 8.7 |
| 25 JUN 79 | 7.8 | 7.7 | 7.8 | 7.6 |
| 2 JUL 79 | 7.6 | 7.4 | 7.5 | 7.4 |
| 9 JUL 79 | 7.2 | 7.1 | 7.4 | 7.4 |
| 16 JUL 79 | 7.8 | 7.6 | 7.7 | 7.6 |
| 23 JUL 79 | 7.2 | 7.1 | 7.2 | 7.2 |
| 30 JUL 79 | 7.4 | 7.1 | 7.1 | 7.2 |
| 6 AUG 79 | 7.5 | 7.4 | 7.4 | 7.5 |
| 13 AUG 79 | 7.4 | 7.2 | 7.3 | 7.4 |
| 20 AUG 79 | 7.5 | 7.9 | 7.2 | 7.1 |
| 27 AUG 79 | 7.8 | 7.8 | 7.7 | 7.8 |

Note: Dash (--) indicates sampling not done.

TABLE 4-12 MEAN SALINITY VALUES (ppt) DURING NIGHT (INTN) AND DAY (INTD) IMPINGEMENT SAMPLING AT THE OYSTER CREEK GENERATING STATION, APRIL-AUGUST 1979

| | Surface | | | Bottom | | |
|---|---|---|---|---|---|---|
| DATE | INTN | INTD | MEAN | INTN | INTD | MEAN |
| 2 APR 79 | 12.1 | -- | 12.1 | 13.8 | -- | 13.8 |
| 9 APR 79 | 16.2 | -- | 16.2 | 16.5 | -- | 16.5 |
| 16 APR 79 | 15.8 | -- | 15.8 | 16.5 | -- | 16.5 |
| 23 APR 79 | 16.3 | -- | 16.3 | 16.4 | -- | 16.4 |
| 30 APR 79 | 15.8 | -- | 15.8 | 15.9 | -- | 15.9 |
| 7 MAY 79 | 15.3 | -- | 15.3 | 15.4 | -- | 15.4 |
| 14 MAY 79 | 15.7 | -- | 15.7 | 15.8 | -- | 15.8 |
| 21 MAY 79 | 15.3 | -- | 15.3 | 15.5 | -- | 15.5 |
| 29 MAY 79 | 15.0 | -- | 15.0 | 15.3 | -- | 15.3 |
| 6 JUN 79 | 15.0 | 14.3 | 14.5 | 15.0 | 14.6 | 14.8 |
| 13 JUN 79 | 17.3 | 16.3 | 16.8 | 17.2 | 16.3 | 16.8 |
| 20 JUN 79 | 18.4 | 17.4 | 17.8 | 18.4 | 17.5 | 17.9 |
| 26 JUN 79 | 18.4 | 17.1 | 17.8 | 18.2 | 17.1 | 17.7 |
| 3 JUL 79 | 19.5 | 18.2 | 18.8 | 19.4 | 18.3 | 18.7 |
| 9 JUL 79 | 19.8 | 19.7 | 19.8 | 19.6 | 19.7 | 19.7 |
| 16 JUL 79 | 19.5 | 18.5 | 19.0 | 19.5 | 18.6 | 19.0 |
| 23 JUL 79 | 21.0 | 20.8 | 20.9 | 21.0 | 20.8 | 20.9 |
| 30 JUL 79 | 20.4 | 19.3 | 19.8 | 20.4 | 19.3 | 19.8 |
| 6 AUG 79 | 20.5 | 21.2 | 20.9 | 20.4 | 21.2 | 20.9 |
| 13 AUG 79 | 21.7 | 20.7 | 21.2 | 21.7 | 21.0 | 21.3 |
| 20 AUG 79 | 19.0 | 20.2 | 19.6 | 18.7 | 20.2 | 19.5 |
| 28 AUG 79 | 20.3 | 21.2 | 20.8 | 20.5 | 21.3 | 20.9 |
| MEAN | 17.2 | 18.2 | 17.6 | 18.0 | 18.7 | 18.3 |

Note: Dash (--) indicates sampling not done.

# CHAPTER 5: ENTRAINMENT OF ICHTHYOPLANKTON AND MACROINVERTEBRATES

## 5.1 ICHTHYOPLANKTON

The bay anchovy was the dominant species collected in entrainment samples during 2 April - 28 August 1979 (Table 5-1). Egg, larval, and juvenile stages of bay anchovy accounted for 91.5 percent of the total catch. The remainder was comprised of 17 other genera. Winter flounder larvae accounted for 3 percent of the total, sand lance was next in abundance (1.0 percent), and the rest were less than 1 percent.

In the following discussions of species abundance and temporal and day-night changes in density of ichthyoplankton, emphasis is placed on the key species designated in the Technical Specifications: winter flounder (larvae), Atlantic menhaden (larvae), bay anchovy (eggs and larvae), and northern pipefish (larvae).

Winter flounder larvae were most abundant in April, accounting for 75 percent of entrained organisms (Table 5-2). Their density decreased rapidly in the following months and they were last collected in June (0.07 percent) (Tables 5-3 through 5-6). Densities of this species follow an expected cycle showing greater abundance immediately after the spawning season (January-April) and a rapid decline as the larvae matured and became epibenthic.

Atlantic menhaden eggs and larvae occurred sporadically during this period. Their highest density was in May (Table 5-3) but each life stage was still less than 1 percent of total entrained organisms. No eggs or larvae were collected during June.

Entrainment of bay anchovy eggs and larvae followed the spawning cycle. None were collected in April, prior to the spawning season. In May, 84 percent of all entrained organisms were bay anchovy eggs and an additional 1 percent were bay anchovy larvae. The division between eggs and larvae changed during each succeeding month showing fewer eggs and more larvae entrained. By August (Table 5-6), less than 1 percent of entrained bay anchovy occurred as eggs, 44 percent as larvae, and 51 percent as juveniles.

Larval northern pipefish were collected in each month except May and August. Densities were less than 1 percent of the total organisms entrained during each month and were highest in July at 0.68 percent.

The percent composition of entrained ichthyoplankton reflects the spawning seasons of the affected species (Tables 5-2 through 5-6). Winter and early spring spawners (winter flounder and sand lance) were entrained in April, toward the end of their spawning seasons. Juvenile American eels (glass eel) were also entrained in April as they migrated toward brackish-water nursery areas.

These species were replaced in dominance in May by bay anchovy, which remained the dominant species through August. Other summer spawners (Gobiidae, Blennidae, and Atherinidae) increased and decreased during June through August, although on a lesser scale than bay anchovy.

Entrainment peaked in July as a result of increased spawning activity. Bay anchovy accounted for 96 percent of the entrained organisms in July. Entrainment densities were lowest in April and were dominated by winter flounder (75 percent) and sand lance (22 percent).

In order to compare day and night densities of ichthyoplankton, only the 24-hour data sets were examined to ensure equal representation of day and night samples (Tables 5-7 through 5-11). Winter flounder, sand lance, and Gobiidae larvae were taken in greater density in night samples than in day samples. Bay anchovy eggs were collected in greater density in day samples on 2 April and 23 July (Tables 5-7 and 5-10), but were equally abundant in both day and night samples on 14 June (Table 5-9). Bay anchovy larvae were about equally divided between day and night samples.

Viability determinations for bay anchovy, northern pipefish, and Gobiidae for the report period are presented in Table 5-12. For each taxon, fewer specimens were collected alive in the discharge than in the intake.

Only bay anchovy larvae and juveniles were collected in sufficient numbers for comparison between intake and discharge. Total dead larvae were nearly equal between intake and discharge from June through August. More alive and stunned larvae were present in the intake samples but these comprised a low percentage of the total collected. The preponderance of dead larvae at both the intake and discharge is a result of sampling mortality. Because of this, any plant-related mortality is masked, thus precluding a definitive statement concerning entrainment effects on bay anchovy larvae. Bay anchovy juveniles exhibited greater survival than larvae. Forty-one percent of the juveniles collected in the discharge were alive compared with 68 percent of those collected in the intake.

Estimates of total numbers entrained during the April-August 1979 period were made with confidence limits for key and abundant species and for total ichthyoplankton (Table 5-13). Bay anchovy eggs and larvae provided the highest estimates, accounting for 99 percent of all eggs and 89 percent of all larvae. Winter flounder and American sand lance larvae, entrained primarily in April, had the next highest estimates, $185.2 \times 10^6$ and $54.14 \times 10^6$, respectively. The above species and life stages, along with Atlantic menhaden and northern pipefish larvae, accounted for 96 percent of all eggs, larvae, and juveniles entrained at the OCNGS during the study period.

## 5.2 MACROINVERTEBRATES

To provide continuity with previous studies at the site, the intensity of identification performed on the zooplankton entrainment samples differed between intake and discharge samples, with the more thorough treatment being afforded the discharge samples. In the intake samples, many major groups were left at a lesser level of identification. In order to most adequately characterize the species collected, the discharge samples receive the most emphasis in the presentation of results.

The most abundant taxon overall in the discharge samples during the period April through August 1979 (Table 5-14) was Neomysis americana, totaling more than 21 percent of the catch. Only slightly less numerous in these samples

was the amphipod Gammarus comprising more than 20 percent of the discharge catch. Crangon septemspinosa zoeae and another amphipod, Ampelisca, ranked third and fourth, respectively. The next two positions were occupied by the cumaceans Oxyurostylis smithi and Leucon americanus. Zoeal stages of the crabs Panopeus herbstii and Neopanope texana sayi ranked next most numerous in the discharge samples, and cumulatively these first eight taxa accounted for more than 78 percent of the organisms collected.

The taxa collected in the intake samples are presented in Table 5-15. Fewer taxa appear because of the decreased level of identification; amphipods, C. septemspinosa zoeae, mysids, cumaceans, and xanthid zoeae together account for almost 82 percent of the total catch.

Neomysis americana and Crangon septemspinosa zoeae, two key species noted in the Technical Specifications, were among the most numerous of the macroinvertebrates collected in the discharge samples. C. septemspinosa of undetermined life stage were also collected in the discharge samples, but contributed only 0.8 percent to the total catch. Corophium tuberculatum is another species of interest which was relatively rare in the samples, accounting for slightly more than 0.5 percent of the organisms in the discharge samples. Callinectes sapidus zoeae were encountered infrequently in the discharge samples, comprising about 0.08 percent of the total catch; in addition zoeae of the genus Callinectes but of undetermined species contributed another 0.06 percent to the discharge catch. Megalopae which could be attributed with certainty to the species C. sapidus were not encountered in the discharge samples; however, megalopae of the genus Callinectes did comprise 0.01 percent of the catch.

The species composition and abundance of macrozooplankton in the discharge samples varied considerably during the period April through August 1979. Total abundance of all macroinvertebrates based on the mean of all discharge samples varied from a maximum of nearly 12,000 organisms per 100 cubic meters in April to a minimum of approximately 5,600 per 100 cubic meters in August (Tables 5-16 through 5-20).

In April, the discharge samples were dominated by the amphipod Gammarus, which comprised 65 percent of the catch (Table 5-16). Second and third ranked were Crangon septemspinosa zoeae and Neomysis americana with 12 and 4 percent of the catch, respectively. In May, the same three taxa were highest ranked but Gammarus was third rather than first in abundance (Table 5-17). C. septemspinosa zoeae were first with 40 percent of the discharge catch, while N. americana increased its relative share of the catch to almost 18 percent.

N. americana continued to increase both in terms of absolute abundance and relative percent composition in June dominating the catch with more than 37 percent of the organisms captured, or more than twice the abundance of the second ranked taxon, the amphipod Ampelisca (Table 5-18). In contrast to previous months, the taxa ranked after Ampelisca were closely grouped in abundance, with the cumacean Leucon americanus, zoeae of the crabs Neopanope texana sayi and Panopeus herbstii, and C. septemspinosa zoeae all comprising about 4 or 5 percent of the catch each.

N. americana reached its peak in abundance and relative percent composition in July, when it comprised slightly more than 30 percent of the organisms collected in the discharge (Table 5-19). Ampelisca was again the second most

abundant taxon, with 21 percent of the catch, while the cumacean Oxyurostylis smithi was third with 10 percent.

While the relative abundance and absolute abundance of N. americana declined slightly in August compared to previous months (Table 5-20), the mysids as a group remained the dominant factor in the discharge samples. N. americana ranked first, the cumacean O. smithi moved up to rank second and the third position was assumed by the mysid Mysidopsis bigelowi, which together with its relative N. americana comprised more than 40 percent of the organisms collected in the discharge during August.

The taxa collected in the intake samples for the period April through August 1979 are presented in Appendix D.

Discussions are presented below with respect to day and night differences in macroinvertebrate densities. The discharge station data are emphasized because of the lower taxonomic levels to which the organisms were identified.

A marked difference between day and night abundances existed each month during the period April through August 1979 in the discharge samples (Tables 5-21 through 5-25). Total zooplankton abundance was higher at night for all sampling periods.

Generally, night densities were higher than day densities for the key macroinvertebrate species during the five collection periods. However, in April, while C. septemspinosa zoeae were quite abundant at night and not found during the day, this was not the case for C. septemspinosa of undetermined life stage. In July, C. septemspinosa zoeae were relatively infrequent, and the difference between day and night samples was negligible in this case.

Other, less important species were generally more abundant at night than during the daytime although certain groups appeared to lack this diel variation. In April, the isopod Idotea baltica was more plentiful during the day; the isopod was, however, an insignificant part of the catch in either case. In the same collection, Sarsia comprised more than 14 percent of the day catch because of the paucity of other invertebrates and showed no diel difference in abundance. In May the polychaetes, represented by a number of different taxa, were insignificant in the night samples, but comprised more than 50 percent of the day sample. A similar trend, although not as striking in magnitude, continued in June, when in addition to the polychaetes, Corophium was not noticeably more abundant at night. In later collections the caprellid amphipods were also lacking in large changes in densities between day and night, as was the isopod Edotea triloba.

Total numbers entrained during the April-August 1979 period were estimated with confidence limits for key and abundant forms of macroinvertebrates (Table 5-26). The mysid Neomysis americana had the highest estimate, $7,902.29 \times 10^6$. The amphipods, Gammarus, Ampelisca, and Corophium tuberculatum, together accounted for nearly 25 percent of the total estimated entrained macroinvertebrates. Crangon septemspinosa zoeae were third most abundant with an estimated $4,144 \times 10^6$ entrained.

## 5.3 WATER QUALITY DATA ASSOCIATED WITH ENTRAINMENT SAMPLING

Mean dissolved oxygen values ranged from 6.3 to 10.4 mg/l at the intake, and 6.2 to 10.6 mg/l at the discharge, during the April-August 1979 entrainment study period (Table 5-27). Daytime surface readings at the intake averaged 1 mg/l lower than the corresponding discharge readings. Otherwise, little difference was noted between intake and discharge, day and night, or surface and bottom readings.

Water temperature values differed little between surface and bottom, but averaged about 1 C lower for daytime surface readings, compared to night readings, at the intake (Table 5-28). The average delta-T between intake and discharge was 6.8 C for night surface readings and 5.4 C for daytime surface readings. The maximum discharge temperature recorded was 38.0 C at the surface in the discharge at night on 28 August 1979.

Median pH values recorded ranged from 6.9 to 9.2 (Table 5-29). Differences between surface and bottom, day and night, and intake and discharge were minor and inconsistent.

Mean salinity values measured during the study period ranged from 7.0 ppt for the 2 April 1979 night-intake-surface samples, to 22.0 ppt on 13 August 1979 for the night-discharge-surface samples (Table 5-30). Surface samples were usually slightly higher at night than during the day. Differences were slight between surface and bottom, and intake and discharge.

Total chlorine was measured in the discharge canal during a number of entrainment collections through June and August 1979. Chlorine could not be detected in 18 of 24 measurements (75 percent) and never measured more than 0.1 mg/l.

TABLE 5-1 MEAN SAMPLE DENSITY (no./100m$^3$), PERCENT COMPOSITION, AND CUMULATIVE PERCENT OF ICHTHYOPLANKTON COLLECTED IN THE INTAKE AND DISCHARGE OF THE OYSTER CREEK GENERATING STATION, APRIL-AUGUST 1979

| SPP. NAME | NUMBER | % | CUMU. % |
|---|---|---|---|
| ANCHOA MITCHILLI EGG | 769.221 | 60.370 | 60.370 |
| ANCHOA MITCHILLI LAR | 324.535 | 25.470 | 85.840 |
| ANCHOA MITCHILLI JUV | 72.399 | 5.682 | 91.522 |
| PSEUDOPLEURONEC AMER LAR | 40.813 | 3.203 | 94.725 |
| AMMODYTES AMERICANUS LAR | 12.837 | 1.008 | 95.733 |
| GOBIIDAE LAR | 12.361 | 0.970 | 96.703 |
| ATHERINIDAE LAR | 7.298 | 0.573 | 97.276 |
| SYNGNATHUS FUSCUS JUV | 6.288 | 0.493 | 97.769 |
| MENIDIA BERYLLINA LAR | 5.255 | 0.412 | 98.181 |
| GOBIOSOMA BOSCI LAR | 5.007 | 0.393 | 98.574 |
| UNIDENTIFIED EGG | 3.877 | 0.304 | 98.879 |
| TRINECTES MACULATUS EGG | 2.282 | 0.179 | 99.058 |
| SYNGNATHUS FUSCUS LAR | 1.941 | 0.152 | 99.210 |
| LABRIDAE EGG | 1.632 | 0.128 | 99.338 |
| BLENNIDAE LAR | 1.609 | 0.126 | 99.464 |
| TAUTOGA ONITIS EGG | 1.372 | 0.108 | 99.572 |
| ANGUILLA ROSTRATA GLASS | 0.888 | 0.070 | 99.642 |
| BREVOORTIA TYRANNUS EGG | 0.764 | 0.060 | 99.702 |
| BREVOORTIA TYRANNUS LAR | 0.649 | 0.051 | 99.753 |
| ANCHOA MITCHILLI ADULT | 0.381 | 0.030 | 99.783 |
| MENIDIA MENIDIA EGG | 0.321 | 0.025 | 99.808 |
| SPHOEROIDES MACULATU LAR | 0.317 | 0.025 | 99.833 |
| MEMBRAS MARTINICA LAR | 0.297 | 0.023 | 99.856 |
| MEMBRAS MARTINICA JUV | 0.285 | 0.022 | 99.878 |
| MENIDIA MENIDIA JUV | 0.270 | 0.021 | 99.900 |
| APELTES QUADRACUS LAR | 0.173 | 0.014 | 99.913 |
| HIPPOCAMPUS ERECTUS JUV | 0.171 | 0.013 | 99.927 |
| GOBIOSOMA BOSCI JUV | 0.155 | 0.012 | 99.939 |
| TRINECTES MACULATUS LAR | 0.151 | 0.012 | 99.951 |
| PARALICHTHYS DENTATU LAR | 0.148 | 0.012 | 99.962 |
| CYNOSCION REGALIS JUV | 0.096 | 0.008 | 99.970 |
| UNIDENTIFIED LAR | 0.092 | 0.007 | 99.977 |
| SYNGNATHUS FUSCUS ADULT | 0.088 | 0.007 | 99.984 |
| CYNOSCION REGALIS LAR | 0.080 | 0.006 | 99.990 |
| MYOXOCEPHALUS SPP. LAR | 0.062 | 0.005 | 99.995 |
| TAUTOGOLABR ADSPERSU EGG | 0.026 | 0.002 | 99.997 |
| ANGUILLA ROSTRATA JUV | 0.023 | 0.002 | 99.999 |
| GASTEROSTEUS ACULEAT LAR | 0.016 | 0.001 | 100.000 |

TABLE 5-2 MEAN SAMPLE DENSITY (no./100 $m^3$) AND PERCENT COMPOSITION OF ICHTHYOPLANKTON COLLECTED AT THE OYSTER CREEK GENERATING STATION, APRIL 1979

| STATION | INTN | | INTD | | DSNT | | DSDA | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| SPECIES | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER TOTAL | PCT COMP |
| PSEUDOPLEURONEC AMER LAR | 223.57 | 71.60 | 244.35 | 83.39 | 184.43 | 75.00 | 151.13 | 74.33 | 203.02 | 74.59 |
| AMMODYTES AMERICANUS LAR | 77.34 | 24.77 | 47.35 | 16.16 | 52.66 | 21.42 | 47.70 | 23.46 | 60.89 | 22.37 |
| UNIDENTIFIED EGG | 0.00 | 0.00 | 0.00 | 0.00 | 0.60 | 0.24 | 0.00 | 0.00 | 0.21 | 0.08 |
| SYNGNATHUS FUSCUS LAR | 0.23 | 0.07 | 0.00 | 0.00 | 0.36 | 0.15 | 0.00 | 0.00 | 0.22 | 0.08 |
| ANGUILLA ROSTRATA GLASS | 4.93 | 1.58 | 0.70 | 0.24 | 5.85 | 2.38 | 0.00 | 0.00 | 4.07 | 1.50 |
| BREVOORTIA TYRANNUS EGG | 2.07 | 0.66 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.80 | 0.29 |
| MEMBRAS MARTINICA LAR | 2.51 | 0.80 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.97 | 0.36 |
| APELTES QUADRACUS LAR | 0.33 | 0.11 | 0.00 | 0.00 | 0.44 | 0.18 | 4.50 | 2.21 | 0.86 | 0.32 |
| PARALICHTHYS DENTATU LAR | 0.47 | 0.15 | 0.00 | 0.00 | 1.56 | 0.64 | 0.00 | 0.00 | 0.74 | 0.27 |
| MYOXOCEPHALUS SPP. LAR | 0.80 | 0.26 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.31 | 0.11 |
| GASTEROSTEUS ACULEAT LAR | 0.00 | 0.00 | 0.62 | 0.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.08 | 0.03 |
| TOTAL | 312.26 | | 293.02 | | 245.90 | | 203.32 | | 272.17 | |

Note: INTN = intake night; INTD = intake day; DSNT = discharge night; DSDA = discharge day.

TABLE 5-3 MEAN SAMPLE DENSITY (no./100 $m^3$) AND PERCENT COMPOSITION OF ICHTHYOPLANKTON COLLECTED AT THE OYSTER CREEK GENERATING STATION, MAY 1979

| STATION | INTN | | INTD | | DSNT | | DSDA | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| SPECIES | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER TOTAL | PCT COMP |
| ANCHOA MITCHILLI EGG | 506.87 | 88.73 | 82.95 | 52.32 | 498.01 | 86.27 | 0.00 | 0.00 | 370.74 | 83.79 |
| ANCHOA MITCHILLI LAR | 5.18 | 0.91 | 0.00 | 0.00 | 8.45 | 1.46 | 0.00 | 0.00 | 4.87 | 1.10 |
| PSEUDOPLEURONEC AMER LAR | 0.51 | 0.09 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.18 | 0.04 |
| AMMODYTES AMERICANUS LAR | 9.36 | 1.64 | 1.02 | 0.65 | 0.45 | 0.08 | 0.00 | 0.00 | 3.65 | 0.82 |
| ATHERINIDAE LAR | 0.28 | 0.05 | 0.87 | 0.55 | 58.70 | 10.17 | 1.33 | 1.97 | 21.38 | 4.83 |
| SYNGNATHUS FUSCUS JUV | 1.10 | 0.19 | 0.00 | 0.00 | 3.72 | 0.64 | 0.00 | 0.00 | 1.72 | 0.39 |
| MENIDIA BERYLLINA LAR | 46.37 | 8.12 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 16.56 | 3.74 |
| GOBIOSOMA BOSCI LAR | 0.42 | 0.07 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.15 | 0.03 |
| UNIDENTIFIED EGG | 0.42 | 0.07 | 0.00 | 0.00 | 3.22 | 0.56 | 1.45 | 2.16 | 1.51 | 0.34 |
| LABRIDAE EGG | 0.00 | 0.00 | 0.00 | 0.00 | 0.78 | 0.14 | 50.55 | 75.31 | 7.50 | 1.70 |
| TAUTOGA ONITIS EGG | 0.00 | 0.00 | 49.58 | 31.27 | 0.45 | 0.08 | 0.00 | 0.00 | 7.24 | 1.64 |
| BREVOORTIA TYRANNUS EGG | 0.00 | 0.00 | 2.92 | 1.84 | 0.39 | 0.07 | 4.20 | 6.26 | 1.16 | 0.26 |
| BREVOORTIA TYRANNUS LAR | 0.00 | 0.00 | 21.20 | 13.37 | 0.00 | 0.00 | 3.95 | 5.88 | 3.59 | 0.81 |
| ANCHOA MITCHILLI ADULT | 0.41 | 0.07 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.15 | 0.03 |
| MENIDIA MENIDIA EGG | 0.00 | 0.00 | 0.00 | 0.00 | 2.72 | 0.47 | 5.65 | 8.42 | 1.78 | 0.40 |
| TAUTOGOLABR ADSPERSU EGG | 0.00 | 0.00 | 0.00 | 0.00 | 0.40 | 0.07 | 0.00 | 0.00 | 0.14 | 0.03 |
| ANGUILLA ROSTRATA JUV | 0.35 | 0.06 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.12 | 0.03 |
| TOTAL | 571.27 | | 158.55 | | 577.29 | | 67.13 | | 442.44 | |

Note: INTN = intake night; INTD = intake day; DSNT = discharge night; DSDA = discharge day.

TABLE 5-4 MEAN SAMPLE DENSITY (no./100 $m^3$) AND PERCENT COMPOSITION OF ICHTHYOPLANKTON COLLECTED AT THE OYSTER CREEK GENERATING STATION, JUNE 1979

| STATION | INTN | | INTD | | DSNT | | DSDA | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| SPECIES | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER TOTAL | PCT COMP |
| ANCHOA MITCHILLI EGG | 1232.95 | 94.77 | 1070.15 | 95.54 | 1882.17 | 95.25 | 1029.90 | 96.31 | 1412.55 | 95.24 |
| ANCHOA MITCHILLI LAR | 5.69 | 0.44 | 11.25 | 1.00 | 18.61 | 0.94 | 13.03 | 1.22 | 12.15 | 0.82 |
| ANCHOA MITCHILLI JUV | 0.70 | 0.05 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.25 | 0.02 |
| PSEUDOPLEURONEC AMER LAR | 0.00 | 0.00 | 6.85 | 0.61 | 0.00 | 0.00 | 0.00 | 0.00 | 0.98 | 0.07 |
| SYNGNATHUS FUSCUS JUV | 3.52 | 0.27 | 0.00 | 0.00 | 2.11 | 0.11 | 0.00 | 0.00 | 2.01 | 0.14 |
| MENIDIA BERYLLINA LAR | 13.27 | 1.02 | 1.73 | 0.15 | 21.12 | 1.07 | 0.00 | 0.00 | 12.53 | 0.84 |
| GOBIOSOMA BOSCI LAR | 25.23 | 1.94 | 26.05 | 2.33 | 29.91 | 1.51 | 20.80 | 1.95 | 26.39 | 1.78 |
| UNIDENTIFIED EGG | 1.05 | 0.08 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.37 | 0.03 |
| TRINECTES MACULATUS EGG | 0.81 | 0.06 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.29 | 0.02 |
| SYNGNATHUS FUSCUS LAR | 12.41 | 0.95 | 4.05 | 0.36 | 12.76 | 0.65 | 3.75 | 0.35 | 10.10 | 0.68 |
| BLENNIDAE LAR | 5.42 | 0.42 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.94 | 0.13 |
| ANCHOA MITCHILLI ADULT | 0.00 | 0.00 | 0.00 | 0.00 | 3.11 | 0.16 | 0.00 | 0.00 | 1.11 | 0.07 |
| SPHOEROIDES MACULATU LAR | 0.00 | 0.00 | 0.00 | 0.00 | 1.51 | 0.08 | 1.85 | 0.17 | 0.80 | 0.05 |
| MEMBRAS MARTINICA LAR | 0.00 | 0.00 | 0.00 | 0.00 | 1.59 | 0.08 | 0.00 | 0.00 | 0.57 | 0.04 |
| MENIDIA MENIDIA JUV | 0.00 | 0.00 | 0.00 | 0.00 | 3.11 | 0.16 | 0.00 | 0.00 | 1.11 | 0.07 |
| TOTAL | 1301.05 | | 1120.07 | | 1976.00 | | 1069.33 | | 1483.15 | |

Note: INTN = intake night; INTD = intake day; DSNT = discharge night; DSDA = discharge day.

TABLE 5-5 MEAN SAMPLE DENSITY (no./100 $m^3$) AND PERCENT COMPOSITION OF ICHTHYOPLANKTON COLLECTED AT THE OYSTER CREEK GENERATING STATION, JULY 1979

| STATION | INTN | | INTD | | DSNT | | DSDA | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| SPECIES | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER TOTAL | PCT COMP |
| ANCHOA MITCHILLI EGG | 873.77 | 50.58 | 5257.08 | 84.81 | 982.71 | 43.86 | 5555.42 | 67.70 | 1923.36 | 61.18 |
| ANCHOA MITCHILLI LAR | 772.16 | 44.69 | 911.53 | 14.71 | 1092.66 | 48.77 | 2595.25 | 31.62 | 1114.85 | 35.46 |
| GOBIIDAE LAR | 18.56 | 1.07 | 7.48 | 0.12 | 82.62 | 3.69 | 15.15 | 0.18 | 41.86 | 1.33 |
| ATHERINIDAE LAR | 12.12 | 0.70 | 0.00 | 0.00 | 19.95 | 0.89 | 0.00 | 0.00 | 12.47 | 0.40 |
| SYNGNATHUS FUSCUS JUV | 12.76 | 0.74 | 12.03 | 0.19 | 20.60 | 0.92 | 16.52 | 0.20 | 16.15 | 0.51 |
| GOBIOSOMA BOSCI LAR | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 8.27 | 0.10 | 0.92 | 0.03 |
| UNIDENTIFIED EGG | 9.88 | 0.57 | 4.88 | 0.08 | 21.54 | 0.96 | 5.53 | 0.07 | 13.37 | 0.43 |
| TRINECTES MACULATUS EGG | 17.04 | 0.99 | 0.00 | 0.00 | 7.65 | 0.34 | 0.00 | 0.00 | 9.60 | 0.31 |
| SYNGNATHUS FUSCUS LAR | 0.00 | 0.00 | 0.00 | 0.00 | 0.80 | 0.04 | 0.00 | 0.00 | 0.31 | 0.01 |
| LABRIDAE EGG | 0.57 | 0.03 | 0.00 | 0.00 | 2.49 | 0.11 | 0.00 | 0.00 | 1.19 | 0.04 |
| BLENNIDAE LAR | 7.72 | 0.45 | 5.40 | 0.09 | 3.56 | 0.16 | 3.92 | 0.05 | 5.42 | 0.17 |
| TAUTOGA ONITIS EGG | 0.00 | 0.00 | 0.00 | 0.00 | 0.70 | 0.03 | 0.00 | 0.00 | 0.27 | 0.01 |
| ANGUILLA ROSTRATA GLASS | 0.82 | 0.05 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.32 | 0.01 |
| BREVOORTIA TYRANNUS EGG | 1.26 | 0.07 | 0.00 | 0.00 | 0.59 | 0.03 | 0.00 | 0.00 | 0.72 | 0.02 |
| SPHOEROIDES MACULATU LAR | 0.00 | 0.00 | 0.00 | 0.00 | 1.91 | 0.09 | 0.00 | 0.00 | 0.74 | 0.02 |
| TRINECTES MACULATUS LAR | 0.00 | 0.00 | 0.00 | 0.00 | 0.89 | 0.04 | .75 | 0.03 | 0.65 | 0.02 |
| CYNOSCION REGALIS JUV | 0.00 | 0.00 | 0.00 | 0.00 | 1.06 | 0.05 | 0.00 | 0.00 | 0.41 | 0.01 |
| UNIDENTIFIED LAR | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 3.58 | 0.04 | 0.40 | 0.01 |
| SYNGNATHUS FUSCUS ADULT | 0.97 | 0.06 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.38 | 0.01 |
| CYNOSCION REGALIS LAR | 0.00 | 0.00 | 0.00 | 0.00 | 0.89 | 0.04 | 0.00 | 0.00 | 0.34 | 0.01 |
| TOTAL | 1727.65 | | 6198.38 | | 2240.62 | | 8206.40 | | 3143.75 | |

Note: INTN = intake night; INTD = intake day; DSNT = discharge night; DSDA = discharge day.

TABLE 5-6 MEAN SAMPLE DENSITY (no./100 $m^3$) AND PERCENT COMPOSITION OF ICHTHYOPLANKTON COLLECTED AT THE OYSTER CREEK GENERATING STATION, AUGUST 1979

| STATION | INTN | | INTD | | DSNT | | DSDA | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| SPECIES | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER TOTAL | PCT COMP |
| ANCHOA MITCHILLI EGG | 2.09 | 0.22 | 0.00 | 0.00 | 2.61 | 0.36 | 0.00 | 0.00 | 1.76 | 0.26 |
| ANCHOA MITCHILLI LAR | 351.43 | 36.70 | 216.03 | 89.65 | 329.73 | 45.28 | 163.45 | 84.11 | 302.87 | 44.12 |
| ANCHOA MITCHILLI JUV | 564.93 | 59.00 | 0.00 | 0.00 | 367.57 | 50.48 | 6.20 | 3.19 | 350.46 | 51.05 |
| GOBIIDAE LAR | 12.08 | 1.26 | 22.05 | 9.15 | 12.58 | 1.73 | 6.15 | 3.16 | 12.78 | 1.86 |
| ATHERINIDAE LAR | 3.55 | 0.37 | 0.00 | 0.00 | 3.42 | 0.47 | 0.00 | 0.00 | 2.61 | 0.38 |
| SYNGNATHUS FUSCUS JUV | 15.88 | 1.66 | 0.00 | 0.00 | 8.19 | 1.13 | 0.00 | 0.00 | 9.03 | 1.31 |
| UNIDENTIFIED EGG | 0.89 | 0.09 | 0.00 | 0.00 | 0.00 | 0.00 | 12.38 | 6 37 | 1.88 | 0.27 |
| BREVOORTIA TYRANNUS EGG | 0.00 | 0.00 | 0.00 | 0.00 | 2.93 | 0.40 | 0.00 | 0.00 | 1.10 | 0.16 |
| ANCHOA MITCHILLI ADULT | 0.89 | 0.09 | 0.00 | 0.00 | 1.10 | 0.15 | 0.00 | 0.00 | 0.75 | 0.11 |
| MEMBRAS MARTINICA JUV | 2.66 | 0.28 | 0.00 | 0.00 | 0.00 | 0.00 | 3.05 | 1.57 | 1.38 | 0.20 |
| MENIDIA MENIDIA JUV | 0.89 | 0.09 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.33 | 0.05 |
| HIPPOCAMPUS ERECTUS JUV | 2.21 | 0.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.83 | 0.12 |
| GOBIOSOMA BOSCI JUV | 0.00 | 0.00 | 2.90 | 1.20 | 0.00 | 0.00 | 3.10 | 1.60 | 0.75 | 0.11 |
| TOTAL | 957.51 | | 240.98 | | 728.13 | | 194.32 | | 686.53 | |

Note: INTN = intake night; INTD = intake day; DSNT = discharge night; DSDA = discharge day.

TABLE 5-7 MEAN SAMPLE DENSITY (no./100 $m^3$) AND PERCENT COMPOSITION OF ICHTHYOPLANKTON COLLECTED AT THE OYSTER CREEK GENERATING STATION, 2-3 APRIL 1979

| STATION | INTN | | INTD | | DSNT | | DSDA | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| SPECIES | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER TOTAL | PCT COMP |
| PSEUDOPLEURONEC AMER LAR | 362.73 | 74.91 | 244.35 | 83.39 | 190.88 | 73.56 | 151.13 | 74.33 | 237.27 | 76.54 |
| AMMODYTES AMERICANUS LAR | 109.75 | 22.67 | 47.35 | 16.16 | 49.40 | 19.04 | 47.70 | 23.46 | 63.55 | 20.50 |
| SYNGNATHUS FUSCUS LAR | 0.70 | 0.14 | 0.00 | 0.00 | 1.00 | 0.39 | 0.00 | 0.00 | 0.43 | 0.14 |
| ANGUILLA ROSTRATA GLASS | 8.60 | 1.78 | 0.70 | 0.24 | 12.70 | 4.89 | 0.00 | 0.00 | 5.50 | 1.77 |
| APELTES QUADRACUS LAR | 1.00 | 0.21 | 0.00 | 0.00 | 1.20 | 0.46 | 4.50 | 2.21 | 1.68 | 0.54 |
| PARALICHTHYS DENTATU LAR | 1.42 | 0.29 | 0.00 | 0.00 | 4.30 | 1.66 | 0.00 | 0.00 | 1.43 | 0.46 |
| GASTEROSTEUS ACULEAT LAR | 0.00 | 0.00 | 0.62 | 0.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.16 | 0.05 |
| TOTAL | 484.20 | | 293.02 | | 259.48 | | 203.32 | | 310.01 | |

Note: INTN = intake night; INTD = intake day; DSNT = discharge night; DSDA = discharge day.

TABLE 5-8 MEAN SAMPLE DENSITY (no./100 $m^3$) AND PERCENT COMPOSITION OF ICHTHYOPLANKTON COLLECTED AT THE OYSTER CREEK GENERATING STATION, 7-8 MAY 1979

| STATION | INTN | | INTD | | DSNT | | DSDA | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| SPECIES | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER TOTAL | PCT COMP |
| ANCHOA MITCHILLI EGG | 0.00 | 0.00 | 82.95 | 52.32 | 1.90 | 11.69 | 0.00 | 0.00 | 21.21 | 33.81 |
| PSEUDOPLEURONEC AMER LAR | 1.27 | 14.13 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.32 | 0.51 |
| AMMODYTES AMERICANUS LAR | 2.53 | 27.98 | 1.02 | 0.65 | 1.13 | 6.92 | 0.00 | 0.00 | 1.17 | 1.86 |
| ATHERINIDAE LAR | 0.00 | 0.00 | 0.87 | 0.55 | 1.93 | 11.85 | 1.33 | 1.97 | 1.03 | 1.64 |
| MENIDIA BERYLLINA LAR | 2.10 | 23.27 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.52 | 0.84 |
| GOBIOSOMA BOSCI LAR | 1.05 | 11.63 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.26 | 0.42 |
| UNIDENTIFIED EGG | 1.05 | 11.63 | 0.00 | 0.00 | 6.25 | 38.46 | 1.45 | 2.16 | 2.19 | 3.49 |
| LABRIDAE EGG | 0.00 | 0.00 | 0.00 | 0.00 | 1.95 | 12.00 | 50.55 | 75.31 | 13.13 | 20.92 |
| TAUTOGA ONITIS EGG | 0.00 | 0.00 | 49.58 | 31.27 | 1.13 | 6.92 | 0.00 | 0.00 | 12.68 | 20.20 |
| BREVOORTIA TYRANNUS EGG | 0.00 | 0.00 | 2.92 | 1.84 | 0.98 | 6.00 | 4.20 | 6.26 | 2.03 | 3.23 |
| BREVOORTIA TYRANNUS LAR | 0.00 | 0.00 | 21.20 | 13.37 | 0.00 | 0.00 | 3.95 | 5.88 | 6.29 | 10.02 |
| ANCHOA MITCHILLI ADULT | 1.02 | 11.36 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.26 | 0.41 |
| MENIDIA MENIDIA EGG | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5.65 | 8.42 | 1.41 | 2.25 |
| TAUTOGOLABR ADSPERSU EGG | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 6.15 | 0.00 | 0.00 | 0.25 | 0.40 |
| TOTAL | 9.02 | | 158.55 | | 16.25 | | 67.13 | | 62.74 | |

Note: INTN = intake night; INTD = intake day; DSNT = discharge night; DSDA = discharge day.

TABLE 5-9 MEAN SAMPLE DENSITY (no./100$m^3$) AND PERCENT COMPOSITION OF ICHTHYOPLANKTON COLLECTED AT THE OYSTER CREEK GENERATING STATION, 14-15 JUNE 1979

| STATION | INTN | | INTD | | DSNT | | DSDA | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| SPECIES | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER TOTAL | PCT COMP |
| ANCHOA MITCHILLI EGG | 1063.35 | 89.90 | 1070.15 | 95.54 | 1935.63 | 94.43 | 1029.90 | 96.31 | 1274.76 | 94.04 |
| ANCHOA MITCHILLI LAR | 10.20 | 0.86 | 11.25 | 1.00 | 19.30 | 0.94 | 13.03 | 1.22 | 13.44 | 0.99 |
| ANCHOA MITCHILLI JUV | 1.75 | 0.15 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.44 | 0.03 |
| PSEUDOPLEURONEC AMER LAR | 0.00 | 0.00 | 6.85 | 0.61 | 0.00 | 0.00 | 0.00 | 0.00 | 1.71 | 0.13 |
| SYNGNATHUS FUSCUS JUV | 2.13 | 0.18 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.53 | 0.04 |
| MENIDIA BERYLLINA LAR | 28.92 | 2.45 | 1.73 | 0.15 | 29.52 | 1.44 | 0.00 | 0.00 | 15.04 | 1.11 |
| GOBIOSOMA BOSCI LAR | 52.95 | 4.48 | 26.05 | 2.33 | 45.15 | 2.20 | 20.80 | 1.95 | 36.24 | 2.67 |
| TRINECTES MACULATUS EGG | 2.03 | 0.17 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.51 | 0.04 |
| SYNGNATHUS FUSCUS LAR | 13.03 | 1.10 | 4.05 | 0.36 | 12.55 | 0.61 | 3.75 | 0.35 | 8.34 | 0.62 |
| BLENNIDAE LAR | 8.48 | 0.72 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.12 | 0.16 |
| SPHOEROIDES MACULATU LAR | 0.00 | 0.00 | 0.00 | 0.00 | 3.78 | 0.18 | 1.85 | 0.17 | 1.41 | 0.10 |
| MEMBRAS MARTINICA LAR | 0.00 | 0.00 | 0.00 | 0.00 | 3.97 | 0.19 | 0.00 | 0.00 | 0.99 | 0.07 |
| TOTAL | 1182.82 | | 1120.07 | | 2049.90 | | 1069.33 | | 1355.53 | |

Note: INTN = intake night; INTD = intake day; DSNT = discharge night; DSDA = discharge day.

TABLE 5-10 MEAN SAMPLE DENSITY (no./100 $m^3$) AND PERCENT COMPOSITION OF ICHTHYOPLANKTON COLLECTED AT THE OYSTER CREEK GENERATING STATION, 23-24 JULY 1979

| STATION | INTN | | INTD | | DSNT | | DSDA | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| SPECIES | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER TOTAL | PCT COMP |
| ANCHOA MITCHILLI EGG | 626.07 | 43.24 | 5257.08 | 84.81 | 780.60 | 33.02 | 5555.42 | 67.70 | 2584.50 | 64.22 |
| ANCHOA MITCHILLI LAR | 763.00 | 52.70 | 911.53 | 14.71 | 1463.40 | 61.90 | 2595.25 | 31.62 | 1369.28 | 34.02 |
| GOBIIDAE LAR | 11.92 | 0.82 | 7.48 | 0.12 | 55.02 | 2.33 | 15.15 | 0.18 | 24.61 | 0.61 |
| ATHERINIDAE LAR | 17.93 | 1.24 | 0.00 | 0.00 | 23.52 | 0.99 | 0.00 | 0.00 | 12.43 | 0.31 |
| SYNGNATHUS FUSCUS JUV | 4.92 | 0.34 | 12.03 | 0.19 | 15.18 | 0.64 | 16.52 | 0.20 | 11.74 | 0.29 |
| GOBIOSOMA BOSCI LAR | 0.00 | 0.00 | 3.00 | 0.00 | 0.00 | 0.00 | 8.27 | 0.10 | 1.65 | 0.04 |
| UNIDENTIFIED EGG | 9.72 | 0.67 | 4.88 | 0.08 | 9.13 | 0.39 | 5.53 | 0.07 | 7.73 | 0.19 |
| TRINECTES MACULATUS EGG | 3.63 | 0.25 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.09 | 0.03 |
| SYNGNATHUS FUSCUS LAR | 0.00 | 0.00 | 0.00 | 0.00 | 1.87 | 0.08 | 0.00 | 0.00 | 0.56 | 0.01 |
| LABRIDAE EGG | 1.33 | 0.09 | 0.00 | 0.00 | 5.82 | 0.25 | 0.00 | 0.00 | 2.14 | 0.05 |
| BLENNIDAE LAR | 9.42 | 0.65 | 5.40 | 0.09 | 3.93 | 0.17 | 3.92 | 0.05 | 5.87 | 0.15 |
| SPHOEROIDES MACULATU LAR | 0.00 | 0.00 | 0.00 | 0.00 | 1.47 | 0.06 | 0.00 | 0.00 | 0.44 | 0.01 |
| TRINECTES MACULATUS LAR | 0.00 | 0.00 | 0.00 | 0.00 | 2.07 | 0.09 | 2.75 | 0.03 | 1.17 | 0.03 |
| UNIDENTIFIED LAR | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 3.58 | 0.04 | 0.72 | 0.02 |
| CYNOSCION REGALIS LAR | 0.00 | 0.00 | 0.00 | 0.00 | 2.07 | 0.09 | 0.00 | 0.00 | 0.62 | 0.02 |
| TOTAL | 1447.93 | | 6198.38 | | 2364.07 | | 8206.40 | | 4024.56 | |

Note: INTN = intake night; INTD = intake day; DSNT = discharge night; DSDA = discharge day.

TABLE 5-11 MEAN SAMPLE DENSITY (no./100 $m^3$) AND PERCENT COMPOSITION OF ICHTHYOPLANKTON COLLECTED AT THE OYSTER CREEK GENERATING STATION, 20-21 AUGUST 1979

| STATION | INTN | | INTD | | DSNT | | DSDA | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| SPECIES | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER TOTAL | PCT COMP |
| ANCHOA MITCHILLI LAR | 255.92 | 63.11 | 216.03 | 89.65 | 227.40 | 61.95 | 163.45 | 84.11 | 220.89 | 69.28 |
| ANCHOA MITCHILLI JUV | 90.42 | 22.30 | 0.00 | 0.00 | 104.65 | 28.51 | 6.20 | 3.19 | 59.76 | 18.74 |
| GOBIIDAE LAR | 12.35 | 3.05 | 22.05 | 9.15 | 18.65 | 5.08 | 6.15 | 3.16 | 14.94 | 4.69 |
| ATHERINIDAE LAR | 5.32 | 1.31 | 0.00 | 0.00 | 2.63 | 0.72 | 0.00 | 0.00 | 2.38 | 0.75 |
| SYNGNATHUS FUSCUS JUV | 31.75 | 7.83 | 0.00 | 0.00 | 7.87 | 2.14 | 0.00 | 0.00 | 11.89 | 3.73 |
| UNIDENTIFIED EGG | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 12.38 | 6.37 | 2.47 | 0.78 |
| BREVOORTIA TYRANNUS EGG | 0.00 | 0.00 | 0.00 | 0.00 | 5.87 | 1.60 | 0.00 | 0.00 | 1.76 | 0.55 |
| MEMBRAS MARTINICA JUV | 5.32 | 1.31 | 0.00 | 0.00 | 0.00 | 0.00 | 3.05 | 1.57 | 2.20 | 0.69 |
| HIPPOCAMPUS ERECTUS JUV | 4.42 | 1.09 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.33 | 0.42 |
| GOBIOSOMA BOSCI JUV | 0.00 | 0.00 | 2.90 | 1.20 | 0.00 | 0.00 | 3.10 | 1.60 | 1.20 | 0.38 |
| TOTAL | 405.48 | | 240.98 | | 367.07 | | 194.32 | | 318.83 | |

Note: INTN = intake night; INTD = intake day; DSNT = discharge night; DSDA = discharge day.

TABLE 5-12 NUMBER OF LIVE (L), STUNNED (S), AND DEAD (D) SPECIMENS OF SIX TAXA COLLECTED IN ENTRAINMENT SAMPLES AT THE OYSTER CREEK GENERATING STATION, JUNE-AUGUST 1979

| Taxa | Month | Intake | | | Discharge | | |
|---|---|---|---|---|---|---|---|
| | | L | S | D | L | S | D |
| Bay anchovy larvae | JUN | 0 | 3 | 7 | 0 | 0 | 7 |
| | JUL | 13 | 23 | 605 | 0 | 0 | 565 |
| | AUG | 7 | 3 | 125 | 2 | 0 | 209 |
| | Total | 20 | 29 | 737 | 2 | 0 | 781 |
| Bay anchovy juveniles | JUN | 0 | 0 | 1 | 0 | 0 | 0 |
| | JUL | 0 | 0 | 0 | 0 | 0 | 0 |
| | AUG | 249 | 51 | 65 | 85 | 10 | 114 |
| | Total | 249 | 51 | 66 | 85 | 10 | 114 |
| Northern pipefish larvae | JUN | 12 | 1 | 3 | 8 | 2 | 3 |
| | JUL | 0 | 0 | 0 | 0 | 0 | 1 |
| | AUG | 0 | 0 | 0 | 0 | 0 | 0 |
| | Total | 12 | 1 | 3 | 8 | 2 | 4 |
| Northern pipefish juveniles | JUN | 2 | 0 | 0 | 0 | 0 | 0 |
| | JUL | 12 | 3 | 1 | 0 | 0 | 11 |
| | AUG | 6 | 0 | 1 | 1 | 1 | 2 |
| | Total | 20 | 3 | 2 | 1 | 1 | 13 |
| Gobiidae larvae | JUN | 0 | 0 | 0 | 0 | 0 | 0 |
| | JUL | 14 | 0 | 5 | 0 | 0 | 57 |
| | AUG | 8 | 0 | 3 | 2 | 1 | 3 |
| | Total | 22 | 0 | 8 | 2 | 1 | 60 |
| Naked goby larvae | JUN | 8 | 1 | 10 | 2 | 1 | 13 |
| | JUL | 0 | 0 | 0 | 0 | 0 | 0 |
| | AUG | 0 | 0 | 0 | 0 | 0 | 0 |
| | Total | 8 | 1 | 10 | 2 | 1 | 13 |

TABLE 5-13 ESTIMATED NUMBERS OF KEY AND ABUNDANT ICHTHYOPLANKTON ENTRAINED AT THE OYSTER CREEK GENERATING STATION, APRIL-AUGUST 1979

| Species and Life Stages | Estimated Number Entrained ($\times 10^6$) | 80 Percent Confidence Level ($\times 10^6$) |
|---|---|---|
| *Brevoortia tyrannus* larvae | 2.02 | ± 3.28 |
| *Anchoa mitchilli* eggs | 8,760.98 | ± 1,440.75 |
| *Anchoa mitchilli* larvae | 3,756.35 | ± 455.82 |
| *Syngnathus fuscus* larvae | 11.87 | ± 7.72 |
| *Ammodytes americanus* larvae | 54.14 | ± 29.38 |
| *Pseudopleuronectes americanus* larvae | 185.21 | ± 115.86 |
| Total eggs | 8,836.36 | ± 1,439.99 |
| Total larvae | 4,212.51 | ± 461.71 |
| Total juveniles and adults | 292.27 | ± 301.29 |
| Total entrainment | 13,341.13 | ± 1,567.74 |

TABLE 5-14 MEAN SAMPLE DENSITY (no./100m$^3$), PERCENT COMPOSITION, AND CUMULATIVE PERCENT OF MACROINVERTEBRATES COLLECTED IN THE DISCHARGE OF THE OYSTER CREEK GENERATING STATION, APRIL-AUGUST 1979

| SPP. NAME | NUMBER | % | CUMU. % |
|---|---|---|---|
| NEOMYSIS AMERICANA | 1867.857 | 21.845 | 21.845 |
| GAMMARUS SP | 1766.856 | 20.664 | 42.510 |
| CRANGON SEPTEMSPINO ZOEA | 975.464 | 11.409 | 53.918 |
| AMPELISCA SP | 903.045 | 10.562 | 64.480 |
| OXYUROSTYLIS SMITHI | 443.439 | 5.186 | 69.666 |
| LEUCON AMERICANUS | 268.149 | 3.136 | 72.802 |
| PANOPEUS HERBSTII ZOEA | 248.313 | 2.904 | 75.706 |
| NEOPANOPE TE SAYI ZOEA | 235.782 | 2.758 | 78.464 |
| MYSIDOPSIS BIGELOWI | 171.769 | 2.009 | 80.473 |
| SUBCLASS OSTRACODA | 153.745 | 1.798 | 82.271 |
| MICRODEUTOPUS GRYLLOTALP | 129.126 | 1.510 | 83.781 |
| CLASS POLYCHAETA LAR | 128.766 | 1.506 | 85.287 |
| FAMILY CAPITELLIDAE | 95.401 | 1.116 | 86.403 |
| SUBORDER CAPRELLIDAE | 82.792 | 0.968 | 87.371 |
| EDOTEA TRILOBA | 81.003 | 0.947 | 88.318 |
| SARSIA SP | 79.568 | 0.931 | 89.249 |
| CRANGON SEPTEMSPINOSA | 68.445 | 0.801 | 90.049 |
| PARAMETEPELLA CYPRIS | 65.860 | 0.770 | 90.820 |
| IDOTEA BALTICA | 52.155 | 0.610 | 91.430 |
| PALAEMONETES SP ZOEA | 50.338 | 0.589 | 92.018 |
| COROPHIUM TUBERCULATUM | 45.434 | 0.531 | 92.550 |
| MELITA NITIDA | 41.145 | 0.481 | 93.031 |
| POLYDORA LIGNI | 40.739 | 0.476 | 93.507 |
| MICROPROTOPUS RANEYI | 38.921 | 0.455 | 93.963 |
| MONOCULODES EDWARDSI | 37.570 | 0.439 | 94.402 |
| POLYDORA SP LAR | 33.787 | 0.395 | 94.797 |
| SUBCLS CIRRIPEDIA CYPRID | 28.743 | 0.336 | 95.133 |
| CYCLASPIS VARIANS | 25.573 | 0.299 | 95.433 |
| ORDER AMPHIPODA | 23.686 | 0.277 | 95.710 |
| COROPHIUM SP | 21.291 | 0.249 | 95.959 |
| UPOGEBIA AFFINIS ZOEA | 19.996 | 0.234 | 96.192 |
| POLYDORA SP | 17.375 | 0.203 | 96.396 |
| NEOPANOP TEXANA SAYI | 14.687 | 0.172 | 96.567 |
| SUBORDER AEOLIDACEA | 11.786 | 0.138 | 96.705 |
| NEREIS SP EPITOKE | 10.705 | 0.125 | 96.830 |
| FAMILY MYSIDAE | 10.629 | 0.124 | 96.955 |
| RHITHROPANOPEUS HARRISII | 10.178 | 0.119 | 97.074 |
| FAMILY SPIONIDA | 9.394 | 0.110 | 97.184 |
| LEPTOCHEIRUS PLUMMULOSUS | 9.327 | 0.109 | 97.293 |
| OBELIA SP | 9.153 | 0.107 | 97.400 |
| PANOPEUS HERBSTII | 9.051 | 0.106 | 97.506 |
| GAMMARUS MUCRONATUS | 8.878 | 0.104 | 97.609 |
| GAMMARUS ANNULATUS | 8.792 | 0.103 | 97.712 |
| STENOTHE SP | 8.606 | 0.101 | 97.813 |
| AUTOLYTUS SP | 7.858 | 0.092 | 97.905 |
| ORDER NUDIBRANCHIA | 7.760 | 0.091 | 97.996 |

TABLE 5-14 (CONT.)

| SPP. NAME | NUMBER | % | CUMU. % |
|---|---|---|---|
| ORDER ACTINIARIA | 7.640 | 0.089 | 98.085 |
| CALLINECTES SAPIDUS ZOEA | 7.121 | 0.083 | 98.168 |
| MARGELOPSIS GIBBESI | 6.875 | 0.080 | 98.249 |
| PAGURUS SP ZOEA | 6.579 | 0.077 | 98.326 |
| ELASMOPUS LEVIS | 6.457 | 0.076 | 98.401 |
| NEREIS SP | 6.108 | 0.071 | 98.473 |
| SUBCLAS CIRRIPEDIA ADULT | 6.045 | 0.071 | 98.543 |
| LEPTOSYNAPTA SP | 5.947 | 0.070 | 98.613 |
| CLASS POLYCHAETA | 5.801 | 0.068 | 98.681 |
| FAMILY AMPHARETIDAE | 5.795 | 0.068 | 98.748 |
| FAMILY SYLLIDAE | 5.775 | 0.068 | 98.816 |
| COROPHIUM ASCHERUSICUM | 5.448 | 0.064 | 98.880 |
| SUBORDER DORIDACEA | 5.261 | 0.062 | 98.941 |
| CLASS PYCNOGONIDA | 5.121 | 0.060 | 99.001 |
| CALLINECTES SP ZOEA | 4.875 | 0.057 | 99.058 |
| FAMILY PHYLLODOCIDAE | 4.816 | 0.056 | 99.114 |
| CLASS GASTROPODA | 4.523 | 0.053 | 99.167 |
| FAMILY HAUSTORIIDAE | 4.255 | 0.050 | 99.217 |
| CRANGON SEPTEMSPIN ADULT | 4.105 | 0.048 | 99.265 |
| SECTION BRACHYURA MEGALP | 3.696 | 0.043 | 99.308 |
| PARACAPRELLA TENUIS | 3.387 | 0.040 | 99.348 |
| CLASS PELECYPODA | 3.273 | 0.038 | 99.386 |
| CYMADUSA COMPTA | 3.265 | 0.038 | 99.424 |
| UCA SP ZOEA | 2.844 | 0.033 | 99.458 |
| SPHAEROSYLLIS ERINACEUS | 2.809 | 0.033 | 99.491 |
| PARAMETOPELLA SP | 2.290 | 0.027 | 99.517 |
| SECTION BRACHYURA ZOEA | 2.190 | 0.026 | 99.543 |
| RATHKEA OCTOPUNCTATA | 2.171 | 0.025 | 99.568 |
| UNCIOLA SP | 2.031 | 0.024 | 99.592 |
| SAGITTA SP | 1.975 | 0.023 | 99.615 |
| FAMILY MYSIDAE JUV | 1.921 | 0.022 | 99.638 |
| LIBINIA SP ZOEA | 1.839 | 0.022 | 99.659 |
| PALAEMONETES VULGARIS | 1.826 | 0.021 | 99.680 |
| FAMILY SERPULIDAE | 1.740 | 0.020 | 99.701 |
| CYATHURA POLITA | 1.569 | 0.018 | 99.719 |
| PALAEMONETES SP | 1.158 | 0.014 | 99.733 |
| CLASS HYDROZOA | 1.108 | 0.013 | 99.746 |
| COROPHIUM INSIDIOSUM | 1.071 | 0.013 | 99.758 |
| ORDER CERIANTHARIA LAR | 1.048 | 0.012 | 99.770 |
| SCOLOPLOS SP | 1.039 | 0.012 | 99.783 |
| COROPHIUM BONELLI | 0.999 | 0.012 | 99.794 |
| CALLINECTES SP MEGALOP | 0.823 | 0.010 | 99.804 |
| ERICHTHONIUS SP | 0.719 | 0.008 | 99.812 |
| CLASS ANTHOZA | 0.704 | 0.008 | 99.821 |
| CLASS ASCIDIACEA | 0.688 | 0.008 | 99.829 |
| LIRONECA OVALIS | 0.656 | 0.008 | 99.836 |
| ORDER DECAPODA ZOEA | 0.640 | 0.007 | 99.844 |
| CERAPUS TUBULARIS | 0.609 | 0.007 | 99.851 |

TABLE 5-14 (CONT.)

| SPP. NAME | NUMBER | % | CUMU. % |
|---|---|---|---|
| FAMILY AORIDAE | 0.595 | 0.007 | 99.858 |
| LISTRIELLA BARNARDI | 0.592 | 0.007 | 99.865 |
| CLASS HOLOTHUROIDEA | 0.588 | 0.007 | 99.872 |
| NEMOPSIS BACHEI | 0.510 | 0.006 | 99.878 |
| NEREIS SUCCINEA | 0.510 | 0.006 | 99.884 |
| EURYPANOPEUS DEPRESSUS | 0.487 | 0.006 | 99.889 |
| FAMILY XANTHIDAE ZOEA | 0.474 | 0.006 | 99.895 |
| CLASS TURBELLARIA | 0.465 | 0.005 | 99.900 |
| SUDCLASS CIRRIPEDIA JUV | 0.413 | 0.005 | 99.905 |
| STYLOCH ELLIPTICUS | 0.404 | 0.005 | 99.910 |
| PAGURUS LONGICARPUS ZOEA | 0.384 | 0.004 | 99.914 |
| MYTILUS EDULIS | 0.377 | 0.004 | 99.919 |
| PARANAITIS KASTERIENSIS | 0.375 | 0.004 | 99.923 |
| INVERTEBRATE FRAGMENTS | 0.369 | 0.004 | 99.927 |
| PALAEMONETES VULGA ADULT | 0.365 | 0.004 | 99.932 |
| GLYCERA SP | 0.344 | 0.004 | 99.936 |
| PINNIXA SP ZOEA | 0.344 | 0.004 | 99.940 |
| ETEONE HETEROPODA | 0.335 | 0.004 | 99.944 |
| CYATHURA BURBANCKI | 0.335 | 0.004 | 99.948 |
| SUBORDER GAMMARIDEA | 0.316 | 0.004 | 99.951 |
| HYDROIDES DIANTHUS | 0.300 | 0.004 | 99.955 |
| FAMILY ERGASILIDAE | 0.291 | 0.003 | 99.958 |
| PHYLUM NEMERTEA | 0.274 | 0.003 | 99.961 |
| CALIGUS SP | 0.269 | 0.003 | 99.965 |
| LYSIANOPSIS ALBA | 0.269 | 0.003 | 99.968 |
| HETEROMYSIS FORMOSA | 0.261 | 0.003 | 99.971 |
| MYSIDOBDELLA SP | 0.248 | 0.003 | 99.974 |
| ORDER CERIANTHARIA | 0.232 | 0.003 | 99.976 |
| MYSIDOBDELLA BOREALIS | 0.232 | 0.003 | 99.979 |
| PAGURUS LONGICARPUS | 0.232 | 0.003 | 99.982 |
| SCOLOPLOS ROBUSTUS | 0.196 | 0.002 | 99.984 |
| SUBORDER REPTANTIA | 0.188 | 0.002 | 99.986 |
| AEQUOREA SP | 0.160 | 0.002 | 99.988 |
| PHYLUM PLATYHELMINTHES | 0.151 | 0.002 | 99.990 |
| LIBINIA SP | 0.151 | 0.002 | 99.992 |
| CALLINECTES SAPIDUS | 0.149 | 0.002 | 99.993 |
| AMPITHOE LONGIMANA | 0.127 | 0.001 | 99.995 |
| LIMULUS POLYPHEMUS JUV | 0.108 | 0.001 | 99.996 |
| EUMIDA SANGUINEA | 0.096 | 0.001 | 99.997 |
| STREBLOSPIO BENEDICTI | 0.091 | 0.001 | 99.998 |
| PODOCERUS SP | 0.091 | 0.001 | 99.999 |
| CIROLANA CONCHARUM | 0.047 | 0.001 | 100.000 |

TABLE 5-15 MEAN SAMPLE DENSITY (no./100m$^3$), PERCENT COMPOSITION, AND CUMULATIVE PERCENT OF MACROINVERTEBRATES COLLECTED IN THE INTAKE OF THE OYSTER CREEK GENERATING STATION, APRIL-AUGUST 1979

| SPP. NAME | NUMBER | % | CUMU. % |
|---|---|---|---|
| ORDER AMPHIPODA | 2909.216 | 43.794 | 43.794 |
| CRANGON SEPTEMSPINO ZOEA | 910.131 | 13.701 | 57.495 |
| FAMILY MYSIDAE | 861.738 | 12.972 | 70.467 |
| ORDER CUMACEA | 405.325 | 6.102 | 76.569 |
| FAMILY XANTHIDAE ZOEA | 350.791 | 5.281 | 81.849 |
| MNEMIOPSIS LEIDYI | 317.264 | 4.776 | 86.625 |
| CLASS POLYCHAETA | 122.421 | 1.843 | 88.468 |
| SUBCLAS CIRRIPEDIA LARVA | 105.390 | 1.586 | 90.055 |
| SUBCLASS OSTRACODA | 100.565 | 1.514 | 91.568 |
| SARSIA SP | 76.926 | 1.158 | 92.726 |
| CRANGON SEPTEMSPINOSA | 70.544 | 1.062 | 93.788 |
| ORDER MYSIDACEA | 65.681 | 0.989 | 94.777 |
| CLASS POLYCHAETA LAR | 65.384 | 0.984 | 95.761 |
| ORDER ISOPODA | 64.490 | 0.971 | 96.732 |
| PALAEMONETES SP ZOEA | 48.556 | 0.731 | 97.463 |
| SUBORDER CAPRELLIDAE | 27.631 | 0.416 | 97.879 |
| HYDROMEDUSAE | 19.079 | 0.287 | 98.166 |
| ORDER NUDIBRANCHIA | 17.478 | 0.263 | 98.429 |
| OXYUROSTYLIS SMITHI | 13.306 | 0.200 | 98.630 |
| LEUCON AMERICANUS | 8.517 | 0.128 | 98.758 |
| OBELIA SP | 7.357 | 0.111 | 98.869 |
| SECTION BRACHYURA MEGALP | 5.386 | 0.081 | 98.950 |
| CLASS PYCNOGONIDA | 4.617 | 0.070 | 99.019 |
| UPOGEBIA AFFINIS ZOEA | 4.244 | 0.064 | 99.083 |
| CYCLASPIS VARIANS | 4.242 | 0.064 | 99.147 |
| CRANGON SEPTEMSPIN ADULT | 4.086 | 0.062 | 99.208 |
| CLASS GASTROPODA | 3.774 | 0.057 | 99.265 |
| CLASS PELECYPODA | 3.306 | 0.050 | 99.315 |
| NEREIS SP EPITOKE | 3.138 | 0.047 | 99.362 |
| SUBCLAS CIRRIPEDIA ADULT | 3.049 | 0.046 | 99.408 |
| SUBCLS CIRRIPEDIA CYPRID | 2.739 | 0.041 | 99.449 |
| FAMILY CANCERIDAE ZOEA | 2.731 | 0.041 | 99.490 |
| FAMILY HAUSTORIIDAE | 2.553 | 0.038 | 99.529 |
| IDOTEA BALTICA | 2.300 | 0.035 | 99.564 |
| ORDER ACTINIARIA | 2.257 | 0.034 | 99.598 |
| PHYLUM NEMERTEA | 2.201 | 0.033 | 99.631 |
| PAGURUS SP ZOEA | 2.127 | 0.032 | 99.663 |
| SUBORDER AEOLIDACEA | 1.765 | 0.027 | 99.689 |
| LEPTOSYNAPTA SP | 1.600 | 0.024 | 99.713 |
| EDOTEA TRILOBA | 1.475 | 0.022 | 99.736 |
| SAGITTA SP | 1.464 | 0.022 | 99.758 |
| RATHKEA OCTOPUNCTATA | 1.431 | 0.022 | 99.779 |
| CLASS HYDROZOA | 1.288 | 0.019 | 99.799 |
| CLASS TURBELLARIA | 1.062 | 0.016 | 99.815 |
| CALLINECTES SAPIDUS ZOEA | 0.935 | 0.014 | 99.829 |
| ORDER CERIANTHARIA LAR | 0.835 | 0.013 | 99.841 |

TABLE 5-15 (CONT.)

| SPP. NAME | NUMBER | % | CUMU. % |
|---|---|---|---|
| CLASS OLIGOCHAETA | 0.649 | 0.010 | 99.851 |
| SUDCLASS CIRRIPEDIA JUV | 0.629 | 0.009 | 99.860 |
| PALAEMONETES SP | 0.549 | 0.008 | 99.869 |
| PALAEMONETES VULGARIS | 0.526 | 0.008 | 99.877 |
| CLASS HOLOTHUROIDEA | 0.522 | 0.008 | 99.884 |
| LIBINIA SP ZOEA | 0.483 | 0.007 | 99.892 |
| AUTOLYTUS SP | 0.430 | 0.006 | 99.898 |
| ORDER CERIANTHARIA | 0.429 | 0.006 | 99.905 |
| CRANGON SEPTEMSPINOS JUV | 0.417 | 0.006 | 99.911 |
| PALAEMONETES VULGA ADULT | 0.387 | 0.006 | 99.917 |
| CLASS SCYPHOZOA EPHYRA | 0.365 | 0.005 | 99.922 |
| PANOPEUS HERBSTII ZOEA | 0.361 | 0.005 | 99.928 |
| PHYLUM CHAETOGNATHA | 0.327 | 0.005 | 99.933 |
| POLYDORA SP | 0.295 | 0.004 | 99.937 |
| SECTION BRACHYURA ZOEA | 0.286 | 0.004 | 99.941 |
| UCA SP ZOEA | 0.275 | 0.004 | 99.945 |
| CALIGUS SP | 0.252 | 0.004 | 99.949 |
| CLASS ANTHOZA | 0.248 | 0.004 | 99.953 |
| CALLINECTES SP ZOEA | 0.240 | 0.004 | 99.957 |
| CLASS POLYCHAETA ADULT | 0.238 | 0.004 | 99.960 |
| NEREIS SP | 0.230 | 0.003 | 99.964 |
| MARGELOPSIS GIBBESI | 0.219 | 0.003 | 99.967 |
| PAGURUS LONGICARPUS ZOEA | 0.213 | 0.003 | 99.970 |
| FAMILY SPIONIDA | 0.200 | 0.003 | 99.973 |
| FAMILY NEREIS EPITOKE | 0.153 | 0.002 | 99.975 |
| PINNIXA SP ZOEA | 0.153 | 0.002 | 99.978 |
| HIPPOLYTE SP ZOEA | 0.149 | 0.002 | 99.980 |
| UPOGEBIA SP ZOEA | 0.149 | 0.002 | 99.982 |
| FAMILY PHYLLODOCIDAE | 0.143 | 0.002 | 99.984 |
| FAMILY SYLLIDAE | 0.131 | 0.002 | 99.986 |
| NEMOPSIS BACHEI | 0.125 | 0.002 | 99.988 |
| ORDER ACARI | 0.122 | 0.002 | 99.990 |
| NEREIS SP ADULT | 0.105 | 0.002 | 99.992 |
| CLASS ASCIDIACEA | 0.105 | 0.002 | 99.993 |
| NEREIS SUCCINEA | 0.074 | 0.001 | 99.994 |
| ORDER TANAIDACEA | 0.073 | 0.001 | 99.996 |
| CIROLANA CONCHARUM | 0.052 | 0.001 | 99.996 |
| CALLINECTES SAPIDUS JUV | 0.049 | 0.001 | 99.997 |
| PALAEMONETES INTERMEDIUS | 0.045 | 0.001 | 99.998 |
| PALAEMONETES PUGIO ADULT | 0.042 | 0.001 | 99.998 |
| CALLINECTES SAPIDUS | 0.039 | 0.001 | 99.999 |
| GLYCERA AMERICANA | 0.036 | 0.001 | 99.999 |
| ORDER TRICHOPTERA | 0.036 | 0.001 | 100.000 |

TABLE 5-16 MEAN SAMPLE DENSITY (no./100m$^3$) AND PERCENT COMPOSITION OF MACROINVERTEBRATES COLLECTED IN THE DISCHARGE OF THE OYSTER CREEK GENERATING STATION, APRIL 1979

| STATION | DSNT | | DSDA | | | |
|---|---|---|---|---|---|---|
| SPECIES | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER TOTAL | PCT COMP |
| NEOMYSIS AMERICANA | 735.71 | 4.87 | 29.27 | 1.04 | 547.33 | 4.62 |
| GAMMARUS SP | 9898.98 | 65.50 | 1880.93 | 66.63 | 7760.83 | 65.58 |
| CRANGON SEPTEMSPINO ZOEA | 1939.36 | 12.83 | 0.00 | 0.00 | 1422.20 | 12.02 |
| AMPELISCA SP | 589.77 | 3.90 | 4.93 | 0.17 | 433.81 | 3.67 |
| OXYUROSTYLIS SMITHI | 127.70 | 0.85 | 1.10 | 0.04 | 93.94 | 0.79 |
| LEUCON AMERICANUS | 162.20 | 1.07 | 6.32 | 0.22 | 120.63 | 1.02 |
| MICRODEUTOPUS GRYLLOTALP | 90.98 | 0.60 | 2.33 | 0.08 | 67.34 | 0.57 |
| CLASS POLYCHAETA LAR | 270.03 | 1.79 | 20.88 | 0.74 | 203.59 | 1.72 |
| FAMILY CAPITELLIDAE | 128.49 | 0.85 | 0.00 | 0.00 | 94.23 | 0.80 |
| EDOTEA TRILOBA | 11.06 | 0.07 | 0.00 | 0.00 | 8.11 | 0.07 |
| SARSIA SP | 402.27 | 2.66 | 401.20 | 14.21 | 401.99 | 3.40 |
| CRANGON SEPTEMSPINOSA | 256.87 | 1.70 | 417.60 | 14.79 | 299.73 | 2.53 |
| IDOTEA BALTICA | 2.76 | 0.02 | 13.35 | 0.47 | 5.59 | 0.05 |
| COROPHIUM TUBERCULATUM | 33.94 | 0.22 | 5.22 | 0.19 | 26.28 | 0.22 |
| MELITA NITIDA | 2.88 | 0.02 | 0.00 | 0.00 | 2.11 | 0.02 |
| POLYDORA LIGNI | 83.52 | 0.55 | 0.00 | 0.00 | 61.25 | 0.52 |
| MICROPROTOPUS RANEYI | 18.20 | 0.12 | 0.00 | 0.00 | 13.35 | 0.11 |
| MONOCULODES EDWARDSI | 16.12 | 0.11 | 0.00 | 0.00 | 11.82 | 0.10 |
| SUBCLS CIRRIPEDIA CYPRID | 33.14 | 0.22 | 21.98 | 0.78 | 30.16 | 0.25 |
| CYCLASPIS VARIANS | 13.63 | 0.09 | 0.00 | 0.00 | 9.99 | 0.08 |
| ORDER AMPHIPODA | 8.31 | 0.05 | 0.00 | 0.00 | 6.09 | 0.05 |
| COROPHIUM SP | 19.04 | 0.13 | 0.00 | 0.00 | 13.96 | 0.12 |
| POLYDORA SP | 28.47 | 0.19 | 2.33 | 0.08 | 21.50 | 0.18 |
| SUBORDER AEOLIDACEA | 12.23 | 0.08 | 0.00 | 0.00 | 8.97 | 0.08 |
| FAMILY SPIONIDA | 1.64 | 0.01 | 0.00 | 0.00 | 1.20 | 0.01 |
| OTHER SPECIES | 224.68 | 1.49 | 15.45 | 0.55 | 168.89 | 1.43 |
| TOTAL | 15111.99 | | 2822.87 | | 11834.90 | |

Note: DSNT = discharge night; DSDA = discharge day.

TABLE 5-17 MEAN SAMPLE DENSITY (no./100m$^3$) AND PERCENT COMPOSITION OF MACROINVERTEBRATES COLLECTED IN THE DISCHARGE OF THE OYSTER CREEK GENERATING STATION, MAY 1979

| STATION | DSNT | | DSDA | | | |
|---|---|---|---|---|---|---|
| SPECIES | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER TOTAL | PCT COMP |
| NEOMYSIS AMERICANA | 2122.75 | 21.91 | 94.40 | 1.58 | 1543.22 | 17.88 |
| GAMMARUS SP | 1883.90 | 19.44 | 110.65 | 1.85 | 1377.26 | 15.96 |
| CRANGON SEPTEMSPINO ZOEA | 3934.39 | 40.61 | 2250.58 | 37.65 | 3453.30 | 40.02 |
| AMPELISCA SP | 176.87 | 1.83 | 2.72 | 0.05 | 127.11 | 1.47 |
| OXYUROSTYLIS SMITHI | 186.65 | 1.93 | 0.00 | 0.00 | 133.32 | 1.55 |
| LEUCON AMERICANUS | 50.17 | 0.52 | 0.00 | 0.00 | 35.84 | 0.42 |
| PANOPEUS HERBSTII ZOEA | 3.23 | 0.03 | 0.00 | 0.00 | 2.31 | 0.03 |
| NEOPANOPE TE SAYI ZOEA | 107.77 | 1.11 | 0.00 | 0.00 | 76.98 | 0.89 |
| MYSIDOPSIS BIGELOWI | 3.12 | 0.03 | 0.00 | 0.00 | 2.23 | 0.03 |
| MICRODEUTOPUS GRYLLOTALP | 392.16 | 4.05 | 11.55 | 0.19 | 283.41 | 3.28 |
| CLASS POLYCHAETA LAR | 133.46 | 1.38 | 1364.60 | 22.83 | 485.21 | 5.62 |
| FAMILY CAPITELLIDAE | 20.20 | 0.21 | 1425.00 | 23.84 | 421.87 | 4.89 |
| SUBORDER CAPRELLIDAE | 8.00 | 0.08 | 0.00 | 0.00 | 5.71 | 0.07 |
| EDOTEA TRILOBA | 2.62 | 0.03 | 0.00 | 0.00 | 1.87 | 0.02 |
| SARSIA SP | 3.23 | 0.03 | 16.15 | 0.27 | 6.92 | 0.08 |
| CRANGON SEPTEMSPINOSA | 53.38 | 0.55 | 0.00 | 0.00 | 38.13 | 0.44 |
| PARAMETEPELLA CYPRIS | 20.84 | 0.22 | 5.78 | 0.10 | 16.54 | 0.19 |
| IDOTEA BALTICA | 11.27 | 0.12 | 11.05 | 0.18 | 11.21 | 0.13 |
| PALAEMONETES SP ZOEA | 17.04 | 0.18 | 1.45 | 0.02 | 12.59 | 0.15 |
| COROPHIUM TUBERCULATUM | 22.21 | 0.23 | 8.15 | 0.14 | 18.19 | 0.21 |
| MELITA NITIDA | 16.59 | 0.17 | 0.00 | 0.00 | 11.85 | 0.14 |
| MICROPROTOPUS RANEYI | 38.61 | 0.40 | 0.00 | 0.00 | 27.58 | 0.32 |
| MONOCULODES EDWARDSI | 19.06 | 0.20 | 0.00 | 0.00 | 13.61 | 0.16 |
| POLYDORA SP LAR | 81.79 | 0.84 | 445.93 | 7.46 | 185.83 | 2.15 |
| SUBCLS CIRRIPEDIA CYPRID | 138.32 | 1.43 | 94.40 | 1.58 | 125.77 | 1.46 |
| ORDER AMPHIPODA | 19.53 | 0.20 | 0.00 | 0.00 | 13.95 | 0.16 |
| COROPHIUM SP | 10.01 | 0.10 | 0.00 | 0.00 | 7.15 | 0.08 |
| POLYDORA SP | 25.12 | 0.26 | 0.00 | 0.00 | 17.94 | 0.21 |
| SUBORDER AEOLIDACEA | 14.99 | 0.15 | 13.25 | 0.22 | 14.49 | 0.17 |
| NEREIS SP EPITOKE | 3.42 | 0.04 | 0.00 | 0.00 | 2.44 | 0.03 |
| FAMILY MYSIDAE | 4.49 | 0.05 | 0.00 | 0.00 | 3.21 | 0.04 |
| RHITHROPANOPEUS HARRISII | 5.38 | 0.06 | 0.00 | 0.00 | 3.84 | 0.04 |
| FAMILY SPIONIDA | 3.57 | 0.04 | 0.00 | 0.00 | 2.55 | 0.03 |
| OTHER SPECIES | 154.96 | 1.60 | 121.68 | 2.04 | 145.45 | 1.69 |
| TOTAL | 9689.11 | | 5977.32 | | 8628.60 | |

Note: DSNT = discharge night; DSDA = discharge day.

TABLE 5-18 MEAN SAMPLE DENSITY (no./100m$^3$) AND PERCENT COMPOSITION OF MACROINVERTEBRATES COLLECTED IN THE DISCHARGE OF THE OYSTER CREEK GENERATING STATION, JUNE 1979

| STATION | DSNT | | DSDA | | | |
|---|---|---|---|---|---|---|
| SPECIES | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER TOTAL | PCT COMP |
| NEOMYSIS AMERICANA | 3162.19 | 39.71 | 168.90 | 11.59 | 2306.96 | 37.79 |
| GAMMARUS SP | 27.31 | 0.34 | 13.55 | 0.93 | 23.38 | 0.38 |
| CRANGON SEPTEMSPINO ZOEA | 448.22 | 5.63 | 98.25 | 6.74 | 348.23 | 5.70 |
| AMPELISCA SP | 1153.44 | 14.48 | 31.50 | 2.16 | 832.89 | 13.64 |
| OXYUROSTYLIS SMITHI | 175.91 | 2.21 | 9.37 | 0.64 | 128.33 | 2.10 |
| LEUCON AMERICANUS | 520.33 | 6.53 | 0.00 | 0.00 | 371.66 | 6.09 |
| PANOPEUS HERBSTII ZOEA | 326.51 | 4.10 | 120.38 | 8.26 | 267.61 | 4.38 |
| NEOPANOPE TE SAYI ZOEA | 473.05 | 5.94 | 38.05 | 2.61 | 348.76 | 5.71 |
| MYSIDOPSIS BIGELOWI | 2.89 | 0.04 | 0.00 | 0.00 | 2.06 | 0.03 |
| SUBCLASS OSTRACODA | 225.96 | 2.84 | 41.23 | 2.83 | 173.18 | 2.84 |
| MICRODEUTOPUS GRYLLOTALP | 314.74 | 3.95 | 125.60 | 8.62 | 260.70 | 4.27 |
| EDOTEA TRILOBA | 36.41 | 0.46 | 49.83 | 3.42 | 40.24 | 0.66 |
| IDOTEA BALTICA | 8.85 | 0.11 | 16.70 | 1.15 | 11.09 | 0.18 |
| PALAEMONETES SP ZOEA | 147.17 | 1.85 | 0.00 | 0.00 | 105.12 | 1.72 |
| COROPHIUM TUBERCULATUM | 126.97 | 1.59 | 115.80 | 7.95 | 123.78 | 2.03 |
| MELITA NITIDA | 107.21 | 1.35 | 33.78 | 2.32 | 86.23 | 1.41 |
| POLYDORA LIGNI | 126.05 | 1.58 | 239.42 | 16.44 | 158.44 | 2.60 |
| MICROPROTOPUS RANEY[illegible] | 37.53 | 0.47 | 10.75 | 0.74 | 29.88 | 0.49 |
| MONOCULODES EDWARDS[illegible] | 11.91 | 0.15 | 0.00 | 0.00 | 8.51 | 0.14 |
| CYCLASPIS VARIANS | 17.28 | 0.22 | 0.00 | 0.00 | 12.34 | 0.20 |
| ORDER AMPHIPODA | 4.90 | 0.06 | 0.00 | 0.00 | 3.50 | 0.06 |
| COROPHIUM SP | 43.59 | 0.55 | 84.13 | 5.77 | 55.17 | 0.90 |
| UPOGEBIA AFFINIS ZOEA | 13.94 | 0.18 | 0.00 | 0.00 | 9.96 | 0.16 |
| NEOPANOP TEXANA SAYI | 37.60 | 0.47 | 0.00 | 0.00 | 26.86 | 0.44 |
| RHITHROPANOPEUS HARRISII | 11.43 | 0.14 | 85.65 | 5.88 | 32.64 | 0.53 |
| OTHER SPECIES | 402.67 | 5.06 | 173.87 | 11.94 | 337.30 | 5.53 |
| TOTAL | 7964.06 | | 1456.75 | | 6104.83 | |

Note: DSNT = discharge night; DSDA = discharge day.

TABLE 5-19 MEAN SAMPLE DENSITY (no./100m$^3$) AND PERCENT COMPOSITION OF MACROINVERTEBRATES COLLECTED IN THE DISCHARGE OF THE OYSTER CREEK GENERATING STATION, JULY 1979

| STATION | DSNT | | DSDA | | | |
|---|---|---|---|---|---|---|
| SPECIES | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER TOTAL | PCT COMP |
| NEOMYSIS AMERICANA | 4025.91 | 31.55 | 156.60 | 10.29 | 3166.06 | 30.85 |
| CRANGON SEPTEMSPINO ZOEA | 31.13 | 0.24 | 30.13 | 1.98 | 30.91 | 0.30 |
| AMPELISCA SP | 3023.90 | 23.70 | 64.40 | 4.23 | 2366.23 | 23.06 |
| OXYUROSTYLIS SMITHI | 1220.99 | 9.57 | 57.38 | 3.77 | 962.41 | 9.38 |
| LEUCON AMERICANUS | 706.71 | 5.54 | 10.05 | 0.66 | 551.89 | 5.38 |
| PANOPEUS HERBSTII ZOEA | 820.56 | 6.43 | 232.85 | 15.30 | 689.96 | 6.72 |
| NEOPANOPE TE SAYI ZOEA | 455.64 | 3.57 | 254.63 | 16.74 | 410.97 | 4.00 |
| MYSIDOPSIS BIGELOWI | 116.21 | 0.91 | 10.40 | 0.68 | 92.69 | 0.90 |
| SUBCLASS OSTRACODA | 299.58 | 2.35 | 69.98 | 4.60 | 248.56 | 2.42 |
| MICRODEUTOPUS GRYLLOTALP | 67.85 | 0.53 | 21.05 | 1.38 | 57.45 | 0.56 |
| CLASS POLYCHAETA LAR | 1.51 | 0.01 | 3.92 | 0.26 | 2.05 | 0.02 |
| FAMILY CAPITELLIDAE | 0.70 | 0.01 | 0.00 | 0.00 | 0.54 | 0.01 |
| SUBORDER CAPRELLIDAE | 137.23 | 1.08 | 172.33 | 11.33 | 145.03 | 1.41 |
| EDOTEA TRILOBA | 169.45 | 1.33 | 59.05 | 3.88 | 144.92 | 1.41 |
| CRANGON SEPTEMSPINOSA | 6.01 | 0.05 | 0.00 | 0.00 | 4.67 | 0.05 |
| PARAMETEPELLA CYPRIS | 223.11 | 1.75 | 116.95 | 7.69 | 199.52 | 1.94 |
| IDOTEA BALTICA | 227.54 | 1.78 | 36.10 | 2.37 | 184.99 | 1.80 |
| PALAEMONETES SP ZOEA | 109.46 | 0.86 | 43.23 | 2.84 | 94.74 | 0.92 |
| COROPHIUM TUBERCULATUM | 70.94 | 0.56 | 15.57 | 1.02 | 58.63 | 0.57 |
| MELITA NITIDA | 49.36 | 0.39 | 24.63 | 1.62 | 43.86 | 0.43 |
| MICROPROTOPUS RANEYI | 116.54 | 0.91 | 16.63 | 1.09 | 94.33 | 0.92 |
| MONOCULODES EDWARDSI | 107.90 | 0.85 | 0.00 | 0.00 | 83.92 | 0.82 |
| CYCLASPIS VARIANS | 76.56 | 0.60 | 0.00 | 0.00 | 59.54 | 0.58 |
| ORDER AMPHIPODA | 64.81 | 0.51 | 6.33 | 0.42 | 51.82 | 0.50 |
| COROPHIUM SP | 28.49 | 0.22 | 7.50 | 0.49 | 23.82 | 0.23 |
| UPOGEBIA AFFINIS ZOEA | 70.45 | 0.55 | 14.83 | 0.97 | 58.09 | 0.57 |
| POLYDORA SP | 53.56 | 0.42 | 3.58 | 0.23 | 42.46 | 0.41 |
| NEOPANOP TEXANA SAYI | 53.92 | 0.42 | 0.00 | 0.00 | 41.94 | 0.41 |
| SUBORDER AEOLIDACEA | 20.57 | 0.16 | 0.00 | 0.00 | 16.00 | 0.16 |
| NEREIS SP EPITOKE | 22.16 | 0.17 | 3.72 | 0.24 | 18.06 | 0.18 |
| RHITHROPANOPEUS HARRISII | 14.99 | 0.12 | 6.33 | 0.42 | 13.07 | 0.13 |
| FAMILY SPIONIDA | 47.83 | 0.37 | 0.00 | 0.00 | 37.20 | 0.36 |
| OTHER SPECIES | 318.09 | 2.49 | 83.37 | 5.48 | 265.93 | 2.59 |
| TOTAL | 12759.65 | | 1521.50 | | 10262.29 | |

Note: DSNT = discharge night; DSDA = discharge day.

TABLE 5-20 MEAN SAMPLE DENSITY (no./100m$^3$) AND PERCENT COMPOSITION OF MACROINVERTEBRATES COLLECTED IN THE DISCHARGE OF THE OYSTER CREEK GENERATING STATION, AUGUST 1979

| STATION | DSNT | | DSDA | | | |
|---|---|---|---|---|---|---|
| SPECIES | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER TOTAL | PCT COMP |
| NEOMYSIS AMERICANA | 1939.20 | 28.28 | 363.25 | 19.20 | 1545.21 | 27.51 |
| GAMMARUS SP | 2.21 | 0.03 | 0.00 | 0.00 | 1.66 | 0.03 |
| AMPELISCA SP | 568.25 | 8.29 | 44.03 | 2.33 | 437.19 | 7.78 |
| OXYUROSTYLIS SMITHI | 942.53 | 13.74 | 109.70 | 5.80 | 734.33 | 13.07 |
| LEUCON AMERICANUS | 261.48 | 3.81 | 15.28 | 0.81 | 199.93 | 3.56 |
| PANOPEUS HERBSTII ZOEA | 196.54 | 2.87 | 140.88 | 7.45 | 182.63 | 3.25 |
| NEOPANOPE TE SAYI ZOEA | 323.93 | 4.72 | 227.53 | 12.03 | 299.83 | 5.34 |
| MYSIDOPSIS BIGELOWI | 924.77 | 13.48 | 100.08 | 5.29 | 718.60 | 12.79 |
| SUBCLASS OSTRACODA | 401.33 | 5.85 | 31.00 | 1.64 | 308.74 | 5.50 |
| MICRODEUTOPUS GRYLLOTALP | 19.77 | 0.29 | 10.90 | 0.58 | 17.56 | 0.31 |
| CLASS POLYCHAETA LAR | 2.61 | 0.04 | 0.00 | 0.00 | 1.96 | 0.03 |
| FAMILY CAPITELLIDAE | 1.73 | 0.03 | 0.00 | 0.00 | 1.29 | 0.02 |
| SUBORDER CAPRELLIDAE | 221.81 | 3.23 | 255.70 | 13.52 | 230.28 | 4.10 |
| EDOTEA TRILOBA | 178.82 | 2.61 | 192.90 | 10.20 | 182.34 | 3.25 |
| CRANGON SEPTEMSPINOSA | 13.03 | 0.19 | 0.00 | 0.00 | 9.78 | 0.17 |
| PARAMETEPELLA CYPRIS | 84.89 | 1.24 | 57.42 | 3.04 | 78.03 | 1.39 |
| IDOTEA BALTICA | 21.55 | 0.31 | 7.85 | 0.42 | 18.13 | 0.32 |
| PALAEMONETES SP ZOEA | 41.51 | 0.61 | 6.15 | 0.33 | 32.67 | 0.58 |
| COROPHIUM TUBERCULATUM | 5.10 | 0.07 | 0.00 | 0.00 | 3.83 | 0.07 |
| MELITA NITIDA | 74.52 | 1.09 | 19.93 | 1.05 | 60.87 | 1.08 |
| MICROPROTOPUS RANEYI | 23.49 | 0.34 | 3.10 | 0.16 | 18.39 | 0.33 |
| MONOCULODES EDWARDSI | 74.61 | 1.09 | 0.00 | 0.00 | 55.96 | 1.00 |
| CYCLASPIS VARIANS | 47.88 | 0.70 | 0.00 | 0.00 | 35.91 | 0.64 |
| ORDER AMPHIPODA | 41.22 | 0.60 | 15.20 | 0.80 | 34.71 | 0.62 |
| COROPHIUM SP | 5.74 | 0.08 | 14.95 | 0.79 | 8.04 | 0.14 |
| UPOGEBIA AFFINIS ZOEA | 29.56 | 0.43 | 0.00 | 0.00 | 22.17 | 0.39 |
| SUBORDER AEOLIDACEA | 20.47 | 0.30 | 9.13 | 0.48 | 17.63 | 0.31 |
| NEREIS SP EPITOKE | 38.75 | 0.57 | 0.00 | 0.00 | 29.06 | 0.52 |
| FAMILY MYSIDAE | 60.33 | 0.88 | 12.38 | 0.65 | 48.34 | 0.86 |
| RHITHROPANOPEUS HARRISII | 3.15 | 0.05 | 0.00 | 0.00 | 2.36 | 0.04 |
| OTHER SPECIES | 287.27 | 4.19 | 254.15 | 13.44 | 278.99 | 4.97 |
| TOTAL | 6858.05 | | 1891.48 | | 5616.41 | |

Note: DSNT = discharge night; DSDA = discharge day.

TABLE 5-21 MEAN SAMPLE DENSITY (no./100 $m^3$) AND PERCENT COMPOSITION OF MACROINVERTEBRATES COLLECTED AT THE OYSTER CREEK GENERATING STATION, 2 APRIL 1979

| STATION | INTN | | INTD | | DSNT | | DSDA | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| SPECIES | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER TOTAL | PCT COMP |
| ORDER AMPHIPODA | 25328.35 | 87.46 | 808.30 | 45.55 | 9.00 | 0.04 | 0.00 | 0.00 | 6536.41 | 44.56 |
| CRANGON SEPTEMSPINO ZOEA | 1654.80 | 5.71 | 0.00 | 0.00 | 1770.47 | 7.05 | 0.00 | 0.00 | 856.32 | 5.84 |
| NEOMYSIS AMERICANA | 0.00 | 0.00 | 0.00 | 0.00 | 825.13 | 3.29 | 29.27 | 1.04 | 213.60 | 1.46 |
| GAMMARUS SP | 0.00 | 0.00 | 0.00 | 0.00 | 20009.50 | 79.68 | 1880.93 | 66.63 | 5472.61 | 37.31 |
| AMPELISCA SP | 0.00 | 0.00 | 0.00 | 0.00 | 435.08 | 1.73 | 4.93 | 0.17 | 110.00 | 0.75 |
| OXYUROSTYLIS SMITHI | 222.60 | 0.77 | 0.00 | 0.00 | 173.22 | 0.69 | 1.10 | 0.04 | 99.23 | 0.68 |
| LEUCON AMERICANUS | 32.63 | 0.11 | 1.25 | 0.07 | 51.40 | 0.20 | 6.32 | 0.22 | 22.90 | 0.16 |
| CLASS POLYCHAETA LAR | 22.75 | 0.08 | 21.63 | 1.22 | 4.50 | 0.02 | 20.88 | 0.74 | 17.44 | 0.12 |
| SARSIA SP | 469.93 | 1.62 | 326.68 | 18.41 | 408.13 | 1.63 | 401.20 | 14.21 | 401.48 | 2.74 |
| CRANGON SEPTEMSPINOSA | 698.97 | 2.41 | 547.65 | 30.86 | 515.83 | 2.05 | 417.60 | 14.79 | 545.01 | 3.72 |
| MICRODEUTOPUS GRYLLOTALP | 0.00 | 0.00 | 0.00 | 0.00 | 223.10 | 0.89 | 2.33 | 0.08 | 56.36 | 0.38 |
| SUBORDER CAPRELLIDAE | 0.00 | 0.00 | 1.25 | 0.07 | 0.00 | 0.00 | 0.00 | 0.00 | 0.31 | 0.00 |
| EDOTEA TRILOBA | 22.93 | 0.08 | 1.25 | 0.07 | 25.95 | 0.10 | 0.00 | 0.00 | 12.53 | 0.09 |
| ORDER MYSIDACEA | 338.88 | 1.17 | 5.18 | 0.29 | 0.00 | 0.00 | 0.00 | 0.00 | 86.01 | 0.59 |
| IDOTEA BALTICA | 9.37 | 0.03 | 6.70 | 0.38 | 7.60 | 0.03 | 13.35 | 0.47 | 9.26 | 0.06 |
| COROPHIUM TUBERCULATUM | 0.00 | 0.00 | 0.00 | 0.00 | 34.95 | 0.14 | 5.22 | 0.19 | 10.04 | 0.07 |
| MELITA NITIDA | 0.00 | 0.00 | 0.00 | 0.00 | 7.93 | 0.03 | 0.00 | 0.00 | 1.98 | 0.01 |
| POLYDORA LIGNI | 0.00 | 0.00 | 0.00 | 0.00 | 229.68 | 0.91 | 0.00 | 0.00 | 57.42 | 0.39 |
| MICROPROTOPUS RANEYI | 0.00 | 0.00 | 0.00 | 0.00 | 38.83 | 0.15 | 0.00 | 0.00 | 9.71 | 0.07 |
| MONOCULODES EDWARDSI | 0.00 | 0.00 | 0.00 | 0.00 | 16.93 | 0.07 | 0.00 | 0.00 | 4.23 | 0.03 |
| SUBCLS CIRRIPEDIA CYPRID | 17.08 | 0.06 | 8.08 | 0.46 | 50.95 | 0.20 | 21.98 | 0.78 | 24.52 | 0.17 |
| CYCLASPIS VARIANS | 52.70 | 0.18 | 3.93 | 0.22 | 24.23 | 0.10 | 0.00 | 0.00 | 20.21 | 0.14 |
| OTHER SPECIES | 88.05 | 0.30 | 42.58 | 2.40 | 250.60 | 1.00 | 17.77 | 0.63 | 99.75 | 0.68 |
| TOTAL | 28959.03 | | 1774.45 | | 25112.98 | | 2822.87 | | 14667.33 | |

Note: INTN = intake night; INTD = intake day; DSNT = discharge night; DSDA = discharge day.

TABLE 5-22 MEAN SAMPLE DENSITY (no./100m$^3$) AND PERCENT COMPOSITION OF MACROINVERTEBRATES COLLECTED AT THE OYSTER CREEK GENERATING STATION, 7 MAY 1979

| STATION | INTN | | INTD | | DSNT | | DSDA | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| SPECIES | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER TOTAL | PCT COMP |
| ORDER AMPHIPODA | 2207.40 | 20.42 | 63.05 | 1.32 | 24.63 | 0.19 | 0.00 | 0.00 | 464.86 | 5.44 |
| CRANGON SEPTEMSPINO ZOEA | 6586.27 | 60.93 | 2291.95 | 47.86 | 6456.75 | 49.11 | 2250.58 | 37.65 | 4250.39 | 49.78 |
| NEOMYSIS AMERICANA | 0.00 | 0.00 | 0.00 | 0.00 | 1831.33 | 13.93 | 94.40 | 1.58 | 513.53 | 6.01 |
| GAMMARUS SP | 0.00 | 0.00 | 0.00 | 0.00 | 3389.95 | 25.78 | 110.65 | 1.85 | 933.49 | 10.93 |
| AMPELISCA SP | 0.00 | 0.00 | 0.00 | 0.00 | 148.05 | 1.13 | 2.72 | 0.05 | 40.21 | 0.47 |
| FAMILY MYSIDAE | 1349.00 | 12.48 | 18.45 | 0.39 | 0.00 | 0.00 | 0.00 | 0.00 | 274.72 | 3.22 |
| OXYUROSTYLIS SMITHI | 0.00 | 0.00 | 0.00 | 0.00 | 191.13 | 1.45 | 0.00 | 0.00 | 50.97 | 0.60 |
| ORDER CUMACEA | 139.87 | 1.29 | 10.25 | 0.21 | 0.00 | 0.00 | 0.00 | 0.00 | 30.71 | 0.36 |
| FAMILY XANTHIDAE ZOEA | 0.00 | 0.00 | 1.90 | 0.04 | 0.00 | 0.00 | 0.00 | 0.00 | 0.51 | 0.01 |
| LEUCON AMERICANUS | 0.00 | 0.00 | 0.00 | 0.00 | 24.55 | 0.19 | 0.00 | 0.00 | 6.55 | 0.08 |
| SUBCLASS OSTRACODA | 87.03 | 0.81 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 17.41 | 0.20 |
| PANOPEUS HERBSTII ZOEA | 9.27 | 0.09 | 0.00 | 0.00 | 8.07 | 0.06 | 0.00 | 0.00 | 4.01 | 0.05 |
| CLASS POLYCHAETA LAR | 0.00 | 0.00 | 0.00 | 0.00 | 203.38 | 1.55 | 1364.60 | 22.83 | 418.13 | 4.90 |
| MYSIDOPSIS BIGELOWI | 0.00 | 0.00 | 0.00 | 0.00 | 7.80 | 0.06 | 0.00 | 0.00 | 2.08 | 0.02 |
| SARSIA SP | 0.00 | 0.00 | 0.00 | 0.00 | 8.07 | 0.06 | 16.15 | 0.27 | 6.46 | 0.08 |
| CRANGON SEPTEMSPINOSA | 22.30 | 0.21 | 0.00 | 0.00 | 107.13 | 0.81 | 0.00 | 0.00 | 33.03 | 0.39 |
| MICRODEUTOPUS GRYLLOTALP | 0.00 | 0.00 | 0.00 | 0.00 | 17.85 | 0.14 | 11.55 | 0.19 | 7.84 | 0.09 |
| CLASS POLYCHAETA | 337.37 | 3.12 | 312.55 | 6.53 | 0.00 | 0.00 | 5.78 | 0.10 | 152.36 | 1.78 |
| SUBCLAS CIRRIPEDIA LARVA | 20.37 | 0.19 | 1954.70 | 40.82 | 0.00 | 0.00 | 0.00 | 0.00 | 525.33 | 6.15 |
| PALAEMONETES SP ZOEA | 0.00 | 0.00 | 0.00 | 0.00 | 0.95 | 0.01 | 1.45 | 0.02 | 0.64 | 0.01 |
| FAMILY CAPITELLIDAE | 0.00 | 0.00 | 0.00 | 0.00 | 32.35 | 0.25 | 1425.00 | 23.84 | 388.63 | 4.55 |
| PARAMETOPELLA CYPRIS | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5.78 | 0.10 | 1.54 | 0.02 |
| ORDER ISOPODA | 4.20 | 0.04 | 0.87 | 0.02 | 0.00 | 0.00 | 0.00 | 0.00 | 1.07 | 0.01 |
| IDOTEA BALTICA | 0.00 | 0.00 | 0.00 | 0.00 | 16.73 | 0.13 | 11.05 | 0.18 | 7.41 | 0.09 |
| COROPHIUM TUBERCULATUM | 0.00 | 0.00 | 0.00 | 0.00 | 23.50 | 0.18 | 8.15 | 0.14 | 8.44 | 0.10 |
| MICROPROTOPUS RANEYI | 0.00 | 0.00 | 0.00 | 0.00 | 17.85 | 0.14 | 0.00 | 0.00 | 4.76 | 0.06 |
| MONOCULODES EDWARDSI | 0.00 | 0.00 | 0.00 | 0.00 | 41.10 | 0.31 | 0.00 | 0.00 | 10.96 | 0.13 |
| POLYDORA SP LAR | 0.00 | 0.00 | 0.00 | 0.00 | 70.57 | 0.54 | 445.93 | 7.46 | 137.73 | 1.61 |
| SUBCLS CIRRIPEDIA CYPRID | 0.00 | 0.00 | 8.27 | 0.17 | 323.23 | 2.46 | 94.40 | 1.58 | 113.57 | 1.33 |
| ORDER NUDIBRANCHIA | 6.87 | 0.06 | 0.87 | 0.02 | 0.00 | 0.00 | 0.00 | 0.00 | 1.61 | 0.02 |
| OTHER SPECIES | 39.60 | 0.37 | 125.73 | 2.63 | 203.40 | 1.55 | 129.15 | 2.16 | 130.13 | 1.52 |
| TOTAL | 10809.53 | | 4788.60 | | 13148.35 | | 5977.32 | | 8539.04 | |

Note: INTN = intake night; INTD = intake day; DSNT = discharge night; DSDA = discharge day.

TABLE 5-23 MEAN SAMPLE DENSITY (no./100 $m^3$) AND PERCENT COMPOSITION OF MACROINVERTEBRATES COLLECTED AT THE OYSTER CREEK GENERATING STATION, 14 JUNE 1979

| STATION | INTN | | INTD | | DSNT | | DSDA | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| SPECIES | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER TOTAL | PCT COMP |
| ORDER AMPHIPODA | 3546.45 | 39.81 | 290.58 | 23.80 | 0.00 | 0.00 | 0.00 | 0.00 | 959.26 | 17.83 |
| CRANGON SEPTEMSPINO ZOEA | 26.00 | 0.29 | 24.73 | 2.03 | 310.67 | 3.13 | 98.25 | 6.74 | 114.91 | 2.14 |
| NEOMYSIS AMERICANA | 0.00 | 0.00 | 0.00 | 0.00 | 4706.90 | 47.40 | 168.90 | 11.59 | 1218.95 | 22.66 |
| GAMMARUS SP | 0.00 | 0.00 | 0.00 | 0.00 | 28.80 | 0.29 | 13.55 | 0.93 | 10.59 | 0.20 |
| AMPELISCA SP | 0.00 | 0.00 | 0.00 | 0.00 | 1516.60 | 15.27 | 31.50 | 2.16 | 387.02 | 7.19 |
| FAMILY MYSIDAE | 3494.05 | 39.22 | 155.50 | 12.74 | 0.00 | 0.00 | 0.00 | 0.00 | 912.39 | 16.96 |
| OXYUROSTYLIS SMITHI | 0.60 | 0.00 | 0.00 | 0.00 | 278.92 | 2.81 | 9.37 | 0.64 | 72.07 | 1.34 |
| ORDER CUMACEA | 539.10 | 6.05 | 11.55 | 0.95 | 0.00 | 0.00 | 0.00 | 0.00 | 137.66 | 2.56 |
| FAMILY XANTHIDAE ZOEA | 461.70 | 5.18 | 202.10 | 16.55 | 0.00 | 0.00 | 0.00 | 0.00 | 165.95 | 3.08 |
| LEUCON AMERICANUS | 0.00 | 0.00 | 0.00 | 0.00 | 488.08 | 4.91 | 0.00 | 0.00 | 122.02 | 2.27 |
| SUBCLASS OSTRACODA | 101.80 | 1.14 | 89.75 | 7.35 | 175.95 | 1.77 | 41.23 | 2.83 | 102.18 | 1.90 |
| PANOPEUS HERBSTII ZOEA | 0.00 | 0.00 | 0.00 | 0.00 | 798.38 | 8.04 | 120.38 | 8.26 | 229.69 | 4.27 |
| NEOPANOPE TE SAYI ZOEA | 0.00 | 0.00 | 0.00 | 0.00 | 96.52 | 0.97 | 38.05 | 2.61 | 33.64 | 0.63 |
| MYSIDOPSIS BIGELOWI | 0.00 | 0.00 | 0.00 | 0.00 | 7.22 | 0.07 | 0.00 | 0.00 | 1.81 | 0.03 |
| MICRODEUTOPUS GRYLLOTALP | 0.00 | 0.00 | 0.00 | 0.00 | 383.33 | 3.86 | 125.60 | 8.62 | 127.23 | 2.37 |
| CLASS POLYCHAETA | 362.90 | 4.07 | 325.73 | 26.68 | 0.00 | 0.00 | 0.00 | 0.00 | 172.16 | 3.20 |
| PALAEMONETES SP ZOEA | 77.75 | 0.87 | 0.00 | 0.00 | 79.55 | 0.80 | 0.00 | 0.00 | 39.33 | 0.73 |
| EDOTEA TRILOBA | 0.00 | 0.00 | 0.00 | 0.00 | 56.28 | 0.57 | 49.83 | 3.42 | 26.53 | 0.49 |
| ORDER ISOPODA | 78.72 | 0.88 | 70.88 | 5.81 | 0.00 | 0.00 | 0.00 | 0.00 | 37.40 | 0.70 |
| IDOTEA BALTICA | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 16.70 | 1.15 | 4.18 | 0.08 |
| COROPHIUM TUBERCULATUM | 0.00 | 0.00 | 0.00 | 0.00 | 159.18 | 1.60 | 115.80 | 7.95 | 68.74 | 1.28 |
| MELITA NITIDA | 0.00 | 0.00 | 0.00 | 0.00 | 128.28 | 1.29 | 33.78 | 2.32 | 40.51 | 0.75 |
| POLYDORA LIGNI | 0.00 | 0.00 | 0.00 | 0.00 | 120.47 | 1.21 | 239.42 | 16.44 | 89.97 | 1.67 |
| MICROPROTOPUS RANEYI | 0.00 | 0.00 | 0.00 | 0.00 | 43.88 | 0.44 | 10.75 | 0.74 | 13.66 | 0.25 |
| MONOCULODES EDWARDSI | 0.00 | 0.00 | 0.00 | 0.00 | 15.18 | 0.15 | 0.00 | 0.00 | 3.79 | 0.07 |
| CYCLASPIS VARIANS | 0.00 | 0.00 | 0.00 | 0.00 | 17.40 | 0.18 | 0.00 | 0.00 | 4.35 | 0.08 |
| ORDER NUDIBRANCHIA | 143.97 | 1.62 | 24.73 | 2.03 | 50.03 | 0.50 | 41.40 | 2.84 | 65.03 | 1.21 |
| OTHER SPECIES | 76.10 | 0.85 | 25.33 | 2.07 | 469.30 | 4.73 | 302.25 | 20.75 | 218.24 | 4.06 |
| TOTAL | 8908.55 | | 1220.85 | | 9930.90 | | 1456.75 | | 5379.26 | |

Note: INTN = intake night; INTD = intake day; DSNT = discharge night; DSDA = discharge day.

TABLE 5-24 MEAN SAMPLE DENSITY (no./100m$^3$) AND PERCENT COMPOSITION OF MACROINVERTEBRATES COLLECTED AT THE OYSTER CREEK GENERATING STATION, 23 JULY 1979

| STATION | INTN | | INTD | | DSNT | | DSDA | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| SPECIES | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER TOTAL | PCT COMP |
| ORDER AMPHIPODA | 2703.05 | 48.88 | 48.28 | 9.41 | 0.00 | 0.00 | 6.33 | 0.42 | 821.84 | 14.57 |
| CRANGON SEPTEMSPINO ZOEA | 10.80 | 0.20 | 14.85 | 2.90 | 24.40 | 0.20 | 30.13 | 1.98 | 19.56 | 0.35 |
| NEOMYSIS AMERICANA | 0.00 | 0.00 | 0.00 | 0.00 | 4129.80 | 34.66 | 156.60 | 10.29 | 1270.26 | 22.52 |
| AMPELISCA SP | 0.00 | 0.00 | 0.00 | 0.00 | 2700.70 | 22.67 | 64.40 | 4.23 | 823.09 | 14.59 |
| FAMILY MYSIDAE | 396.72 | 7.17 | 34.53 | 6.73 | 0.00 | 0.00 | 0.00 | 0.00 | 125.92 | 2.23 |
| OXYUROSTYLIS SMITHI | 0.00 | 0.00 | 0.00 | 0.00 | 1404.70 | 11.79 | 57.38 | 3.77 | 432.89 | 7.68 |
| ORDER CUMACEA | 1131.57 | 20.46 | 25.25 | 4.92 | 0.00 | 0.00 | 0.00 | 0.00 | 344.52 | 6.11 |
| FAMILY XANTHIDAE ZOEA | 387.63 | 7.01 | 175.25 | 34.17 | 0.00 | 0.00 | 0.00 | 0.00 | 151.34 | 2.68 |
| MNEMIOPSIS LEIDYI | 15.10 | 0.27 | 23.77 | 4.64 | 0.00 | 0.00 | 0.00 | 0.00 | 9.29 | 0.16 |
| LEUCON AMERICANUS | 0.00 | 0.00 | 0.00 | 0.00 | 894.63 | 7.51 | 10.05 | 0.66 | 270.40 | 4.79 |
| SUBCLASS OSTRACODA | 270.23 | 4.89 | 28.33 | 5.52 | 454.90 | 3.82 | 69.98 | 4.60 | 237.20 | 4.21 |
| PANOPEUS HERBSTII ZOEA | 0.00 | 0.00 | 0.00 | 0.00 | 392.45 | 3.29 | 232.85 | 15.30 | 164.31 | 2.91 |
| NEOPANOPE TE SAYI ZOEA | 0.00 | 0.00 | 0.00 | 0.00 | 325.43 | 2.73 | 254.63 | 16.74 | 148.55 | 2.63 |
| CLASS POLYCHAETA LAR | 1.33 | 0.02 | 0.00 | 0.00 | 3.53 | 0.03 | 3.92 | 0.26 | 2.25 | 0.04 |
| MYSIDOPSIS BIGELOWI | 0.00 | 0.00 | 0.00 | 0.00 | 122.73 | 1.03 | 10.40 | 0.68 | 38.90 | 0.69 |
| CRANGON SEPTEMSPINOSA | 1.73 | 0.03 | 0.00 | 0.00 | 9.33 | 0.08 | 0.00 | 0.00 | 3.32 | 0.06 |
| MICRODEUTOPUS GRYLLOTALP | 0.00 | 0.00 | 0.00 | 0.00 | 47.97 | 0.40 | 21.05 | 1.38 | 18.60 | 0.33 |
| CLASS POLYCHAETA | 10.32 | 0.19 | 9.33 | 1.82 | 1.98 | 0.02 | 2.75 | 0.18 | 6.11 | 0.11 |
| SUBORDER CAPRELLIDAE | 30.13 | 0.54 | 31.93 | 6.22 | 125.40 | 1.05 | 172.33 | 11.33 | 87.51 | 1.55 |
| PALAEMONETES SP ZOEA | 49.43 | 0.89 | 22.78 | 4.44 | 87.80 | 0.74 | 43.23 | 2.84 | 54.37 | 0.96 |
| EDOTEA TRILOBA | 0.00 | 0.00 | 0.00 | 0.00 | 135.28 | 1.14 | 59.05 | 3.88 | 52.40 | 0.93 |
| PARAMETEPELLA CYPRIS | 0.00 | 0.00 | 0.00 | 0.00 | 254.23 | 2.13 | 116.95 | 7.69 | 99.66 | 1.77 |
| ORDER MYSIDACEA | 352.08 | 6.37 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 105.63 | 1.87 |
| ORDER ISOPODA | 95.52 | 1.73 | 21.73 | 4.24 | 0.00 | 0.00 | 0.00 | 0.00 | 33.00 | 0.59 |
| IDOTEA BALTICA | 0.00 | 0.00 | 0.00 | 0.00 | 56.62 | 0.48 | 36.10 | 2.37 | 24.21 | 0.43 |
| COROPHIUM TUBERCULATUM | 0.00 | 0.00 | 0.00 | 0.00 | 3.98 | 0.03 | 15.57 | 1.02 | 4.31 | 0.08 |
| MELITA NITIDA | 0.00 | 0.00 | 0.00 | 0.00 | 15.70 | 0.13 | 24.63 | 1.62 | 9.64 | 0.17 |
| MICROPROTOPUS RANEYI | 0.00 | 0.00 | 0.00 | 0.00 | 53.55 | 0.45 | 16.63 | 1.09 | 19.39 | 0.34 |
| MONOCULODES EDWARDSI | 0.00 | 0.00 | 0.00 | 0.00 | 148.62 | 1.25 | 0.00 | 0.00 | 44.58 | 0.79 |
| CYCLASPIS VARIANS | 0.00 | 0.00 | 0.00 | 0.00 | 93.67 | 0.79 | 0.00 | 0.00 | 28.10 | 0.50 |
| ORDER NUDIBRANCHIA | 1.73 | 0.03 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.52 | 0.01 |
| OTHER SPECIES | 72.48 | 1.31 | 76.88 | 14.99 | 426.73 | 3.58 | 116.57 | 7.66 | 188.45 | 3.34 |
| TOTAL | 5529.87 | | 512.87 | | 11914.14 | | 1521.50 | | 5640.08 | |

Note: INTN = intake night; INTD = intake day; DSNT = discharge night; DSDA = discharge day.

TABLE 5-25 MEAN SAMPLE DENSITY (no./100 $m^3$) AND PERCENT COMPOSITION OF MACROINVERTEBRATES COLLECTED AT THE OYSTER CREEK GENERATING STATION, 20 AUGUST 1979

| STATION | INTN | | INTD | | DSNT | | DSDA | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| SPECIES | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER TOTAL | PCT COMP |
| ORDER AMPHIPODA | 653.85 | 13.08 | 28.00 | 1.77 | 36.72 | 0.54 | 15.20 | 0.80 | 215.81 | 5.08 |
| NEOMYSIS AMERICANA | 0.00 | 0.00 | 0.00 | 0.00 | 2327.57 | 34.05 | 363.25 | 19.20 | 770.92 | 18.16 |
| AMPELISCA SP | 0.00 | 0.00 | 0.00 | 0.00 | 553.15 | 8.09 | 44.03 | 2.33 | 174.75 | 4.12 |
| FAMILY MYSIDAE | 1013.15 | 20.26 | 169.95 | 10.77 | 44.17 | 0.65 | 12.38 | 0.65 | 353.66 | 8.33 |
| OXYUROSTYLIS SMITHI | 0.00 | 0.00 | 0.00 | 0.00 | 1150.22 | 16.83 | 109.70 | 5.80 | 367.00 | 8.65 |
| ORDER CUMACEA | 838.78 | 16.77 | 25.63 | 1.62 | 0.00 | 0.00 | 0.00 | 0.00 | 256.76 | 6.05 |
| FAMILY XANTHIDAE ZOEA | 228.38 | 4.57 | 222.30 | 14.09 | 6.08 | 0.09 | 0.00 | 0.00 | 114.80 | 2.70 |
| MNEMIOPSIS LEIDYI | 1823.40 | 36.47 | 948.53 | 60.12 | 0.00 | 0.00 | 0.00 | 0.00 | 736.72 | 17.36 |
| LEUCON AMERICANUS | 0.00 | 0.00 | 0.00 | 0.00 | 265.15 | 3.88 | 15.28 | 0.81 | 82.60 | 1.95 |
| SUBCLASS OSTRACODA | 159.60 | 3.19 | 19.70 | 1.25 | 273.72 | 4.00 | 31.00 | 1.64 | 140.13 | 3.30 |
| PANOPEUS HERBSTII ZOEA | 0.00 | 0.00 | 0.00 | 0.00 | 123.50 | 1.81 | 140.88 | 7.45 | 65.22 | 1.54 |
| NEOPANOPE TE SAYI ZOEA | 0.00 | 0.00 | 0.00 | 0.00 | 245.58 | 3.59 | 227.53 | 12.03 | 119.18 | 2.81 |
| MYSIDOPSIS BIGELOWI | 0.00 | 0.00 | 0.00 | 0.00 | 852.40 | 12.47 | 100.08 | 5.29 | 275.74 | 6.50 |
| CRANGON SEPTEMSPINOSA | 4.42 | 0.09 | 0.00 | 0.00 | 26.07 | 0.38 | 0.00 | 0.00 | 9.15 | 0.22 |
| MICRODEUTOPUS GRYLLOTALP | 0.00 | 0.00 | 0.00 | 0.00 | 13.83 | 0.20 | 10.90 | 0.58 | 6.33 | 0.15 |
| CLASS POLYCHAETA | 31.42 | 0.63 | 11.73 | 0.74 | 16.10 | 0.24 | 0.00 | 0.00 | 16.60 | 0.39 |
| SUBORDER CAPRELLIDAE | 40.03 | 0.80 | 29.68 | 1.88 | 180.20 | 2.64 | 255.70 | 13.52 | 123.15 | 2.90 |
| PALAEMONETES SP ZOEA | 35.87 | 0.72 | 18.73 | 1.19 | 33.33 | 0.49 | 6.15 | 0.33 | 25.74 | 0.61 |
| EDOTEA TRILOBA | 0.00 | 0.00 | 0.00 | 0.00 | 140.42 | 2.05 | 192.90 | 10.20 | 80.71 | 1.90 |
| PARAMETEPELLA CYPRIS | 0.00 | 0.00 | 0.00 | 0.00 | 31.78 | 0.46 | 57.42 | 3.04 | 21.02 | 0.50 |
| ORDER ISOPODA | 86.42 | 1.73 | 11.98 | 0.76 | 0.00 | 0.00 | 0.00 | 0.00 | 28.32 | 0.67 |
| IDOTEA BALTICA | 0.00 | 0.00 | 0.00 | 0.00 | 28.12 | 0.41 | 7.85 | 0.42 | 10.00 | 0.24 |
| COROPHIUM TUBERCULATUM | 0.00 | 0.00 | 0.00 | 0.00 | 3.88 | 0.06 | 0.00 | 0.00 | 1.16 | 0.03 |
| MELITA NITIDA | 0.00 | 0.00 | 0.00 | 0.00 | 65.45 | 0.96 | 19.93 | 1.05 | 23.62 | 0.56 |
| MICROPROTOPUS RANEYI | 0.00 | 0.00 | 0.00 | 0.00 | 21.52 | 0.31 | 3.10 | 0.16 | 7.07 | 0.17 |
| MONOCULODES EDWARDSI | 0.00 | 0.00 | 0.00 | 0.00 | 67.22 | 0.98 | 0.00 | 0.00 | 20.17 | 0.48 |
| CYCLASPIS VARIANS | 0.00 | 0.00 | 0.00 | 0.00 | 23.68 | 0.35 | 0.00 | 0.00 | 7.11 | 0.17 |
| OTHER SPECIES | 84.93 | 1.70 | 91.45 | 5.80 | 306.00 | 4.48 | 278.23 | 14.71 | 191.21 | 4.50 |
| TOTAL | 5000.25 | | 1577.65 | | 6835.85 | | 1891.48 | | 4244.66 | |

Note: INTN = intake night; INTD = intake day; DSNT = discharge night; DSDA = discharge day.

TABLE 5-26 ESTIMATED NUMBERS OF KEY AND ABUNDANT MACROINVERTEBRATES ENTRAINED AT THE OYSTER CREEK GENERATING STATION, APRIL-AUGUST 1979

| Species and Life Stages[a] | Estimated Number Entrained ($\times 10^6$) | 80 Percent Confidence Level ($\times 10^6$) |
|---|---|---|
| *Neomysis americana* | 7,902.29 | ± 1,404.91 |
| *Oxyurostylis smithi* | 1,833.26 | ± 264.90 |
| *Gammarus* spp. | 5,131.52 | ± 1,657.14 |
| *Ampelisca* spp. | 3,606.33 | ± 609.79 |
| *Corophium tuberculatum* | 289.29 | ± 52.52 |
| *Crangon septemspinosa* adult | 18.62 | ± 14.15 |
| *Crangon septemspinosa* zoeae | 4,144.01 | ± 1,003.63 |
| *Crangon septemspinosa* | 254.66 | ± 64.95 |
| Total entrained | 36,995.35 | ± 3,424.35 |

(a) Life stage undetermined unless otherwise specified.

TABLE 5-27 MEAN DISSOLVED OXYGEN MEASUREMENTS (mg/l) ASSOCIATED WITH ENTRAINMENT SAMPLING AT THE OYSTER CREEK GENERATING STATION, APRIL-AUGUST 1979

| | Intake | | | | Discharge | | | |
|---|---|---|---|---|---|---|---|---|
| | Night | | Day | | Night | | Day | |
| Date | Surface | Bottom | Surface | Bottom | Surface | Bottom | Surface | Bottom |
| 2 APR | 10.0 | 9.5 | 9.8 | 9.8 | 10.6 | -- | 9.8 | -- |
| 9 APR | 10.1 | 10.4 | -- | -- | 9.5 | -- | -- | -- |
| 16 APR | 10.4 | 10.8 | -- | -- | 10.5 | -- | -- | -- |
| 23 APR | 9.6 | 9.6 | -- | -- | 10.0 | -- | -- | -- |
| 30 APR | 8.9 | 8.5 | -- | -- | 9.3 | -- | -- | -- |
| 7 MAY | 8.4 | 8.4 | 11.1 | 11.4 | 8.0 | -- | 7.3 | -- |
| 14 MAY | 8.6 | 8.5 | -- | -- | 8.5 | -- | -- | -- |
| 21 MAY | 8.7 | 8.7 | -- | -- | 9.7 | -- | -- | -- |
| 28 MAY | 8.8 | 8.9 | -- | -- | 8.4 | -- | -- | -- |
| 6 JUN | 9.6 | 9.4 | -- | -- | 9.6 | -- | -- | -- |
| 14 JUN | 8.9 | 8.6 | 9.4 | 8.8 | 9.8 | 8.9 | 9.7 | 8.8 |
| 18 JUN | 8.8 | 8.6 | -- | -- | 7.8 | -- | -- | -- |
| 25 JUN | 8.9 | 8.7 | -- | -- | 8.3 | -- | -- | -- |
| 2 JUL | 7.8 | 7.7 | -- | -- | 8.1 | -- | -- | -- |
| 9 JUL | 7.2 | 7.1 | -- | -- | 6.7 | -- | -- | -- |
| 16 JUL | 7.7 | 7.5 | -- | -- | 5.8 | -- | -- | -- |
| 23 JUL | 6.6 | 6.4 | 7.1 | 6.9 | 6.6 | -- | 7.2 | -- |
| 30 JUL | 7.8 | 7.6 | -- | -- | 6.4 | -- | -- | -- |
| 6 AUG | 7.5 | 7.4 | -- | -- | 8.4 | -- | -- | -- |
| 13 AUG | 7.6 | 7.3 | -- | -- | 6.9 | -- | -- | -- |
| 20 AUG | 8.0 | 7.6 | 8.5 | 8.4 | 7.3 | -- | 6.9 | -- |
| 28 AUG | 6.6 | 6.3 | -- | -- | 6.2 | -- | -- | -- |
| Mean | 8.4 | 8.2 | 9.2 | 9.1 | 8.2 | 8.9 | 8.2 | 8.8 |

Note: Dash (--) indicates data not taken.

TABLE 5-28 MEAN WATER TEMPERATURE MEASUREMENTS (C) ASSOCIATED WITH ENTRAINMENT SAMPLING AT THE OYSTER CREEK GENERATING STATION, APRIL-AUGUST 1979

| | Intake | | | | Discharge | | | |
|---|---|---|---|---|---|---|---|---|
| | Night | | Day | | Night | | Day | |
| Date | Surface | Bottom | Surface | Bottom | Surface | Bottom | Surface | Bottom |
| 2 APR | 10.5 | 11.1 | 10.5 | 10.5 | 11.0 | -- | 12.0 | -- |
| 9 APR | 7.2 | 7.5 | -- | -- | 16.0 | -- | -- | -- |
| 16 APR | 9.4 | 10.1 | -- | -- | 19.0 | -- | -- | -- |
| 23 APR | 15.0 | 15.0 | -- | -- | 22.5 | -- | -- | -- |
| 30 APR | 17.1 | 17.5 | -- | -- | 26.0 | -- | -- | -- |
| 7 MAY | 17.3 | 17.1 | 16.9 | 16.7 | 17.0 | -- | 16.9 | -- |
| 14 MAY | 18.0 | 17.7 | -- | -- | 17.5 | -- | -- | -- |
| 21 MAY | 17.4 | 17.5 | -- | -- | 17.7 | -- | -- | -- |
| 28 MAY | 19.6 | 19.4 | -- | -- | 19.3 | -- | -- | -- |
| 6 JUN | 22.1 | 22.2 | -- | -- | 29.0 | -- | -- | -- |
| 14 JUN | 22.0 | 22.0 | 21.4 | 21.4 | 29.5 | 29.8 | 28.6 | 28.6 |
| 18 JUN | 20.7 | 20.6 | -- | -- | 33.0 | -- | -- | -- |
| 25 JUN | 22.0 | 22.0 | -- | -- | 29.5 | -- | -- | -- |
| 2 JUL | 28.0 | 28.0 | -- | -- | 31.8 | -- | -- | -- |
| 9 JUL | 26.0 | 26.0 | -- | -- | 34.8 | -- | -- | -- |
| 16 JUL | 27.3 | 27.3 | -- | -- | 35.5 | -- | -- | -- |
| 23 JUL | 27.8 | 28.0 | 27.2 | 27.1 | 36.3 | -- | 35.9 | -- |
| 30 JUL | 27.5 | 27.5 | -- | -- | 36.0 | -- | -- | -- |
| 6 AUG | 28.8 | 28.8 | -- | -- | 38.0 | -- | -- | -- |
| 13 AUG | 22.0 | 22.0 | -- | -- | 32.1 | -- | -- | -- |
| 20 AUG | 22.8 | 23.2 | 23.1 | 23.3 | 33.3 | -- | 32.5 | -- |
| 28 AUG | 27.5 | 27.5 | -- | -- | 38.0 | -- | -- | -- |
| Mean | 20.9 | 21.0 | 19.8 | 19.8 | 27.7 | 29.8 | 25.2 | 28.6 |

Note: Dash (--) indicates data not taken.

TABLE 5-29 MEDIAN pH MEASUREMENTS ASSOCIATED WITH ENTRAINMENT SAMPLING AT THE OYSTER CREEK GENERATING STATION, APRIL-AUGUST 1979

| | Intake | | | | Discharge | | | |
|---|---|---|---|---|---|---|---|---|
| | Night | | Day | | Night | | Day | |
| Date | Surface | Bottom | Surface | Bottom | Surface | Bottom | Surface | Bottom |
| 2 APR | 7.6 | 7.6 | 7.8 | 7.7 | 7.3 | -- | 7.6 | -- |
| 9 APR | 8.0 | 7.9 | -- | -- | 7.4 | -- | -- | -- |
| 16 APR | 8.3 | 8.4 | -- | -- | 7.8 | -- | -- | -- |
| 23 APR | 8.3 | 8.3 | -- | -- | 7.8 | -- | -- | -- |
| 30 APR | 7.9 | 8.0 | -- | -- | 7.8 | -- | -- | -- |
| 7 MAY | 8.2 | 8.2 | 8.0 | 8.0 | 7.7 | -- | 7.9 | -- |
| 14 MAY | 7.8 | 7.8 | -- | -- | 7.9 | -- | -- | -- |
| 21 MAY | 8.2 | 8.3 | -- | -- | 7.8 | -- | -- | -- |
| 28 MAY | 8.5 | 8.4 | -- | -- | 7.8 | -- | -- | -- |
| 6 JUN | 8.0 | 8.0 | -- | -- | 7.8 | -- | -- | -- |
| 14 JUN | 7.8 | 7.7 | 7.8 | 7.6 | 8.7 | 8.7 | 8.9 | 9.2 |
| 18 JUN | 8.4 | 8.3 | -- | -- | 7.5 | -- | -- | -- |
| 25 JUN | 7.8 | 7.5 | -- | -- | 7.9 | -- | -- | -- |
| 2 JUL | 7.3 | 6.9 | -- | -- | 8.0 | -- | -- | -- |
| 9 JUL | 6.9 | 6.9 | -- | -- | 9.0 | -- | -- | -- |
| 16 JUL | 7.6 | 7.5 | -- | -- | 8.9 | -- | -- | -- |
| 23 JUL | 7.3 | 7.3 | 7.2 | 7.2 | 7.4 | -- | 7.9 | -- |
| 30 JUL | 7.1 | 7.1 | -- | -- | 7.9 | -- | -- | -- |
| 6 AUG | 7.2 | 7.4 | -- | -- | 7.7 | -- | -- | -- |
| 13 AUG | 7.2 | 7.2 | -- | -- | 7.6 | -- | -- | -- |
| 20 AUG | 7.8 | 7.9 | 8.0 | 8.0 | 7.3 | -- | 7.9 | -- |
| 28 AUG | 7.8 | 7.7 | -- | -- | 7.2 | -- | -- | -- |

Note: Dash (--) indicates data not taken.

TABLE 5-30 MEAN SALINITY MEASUREMENTS (ppt) ASSOCIATED WITH ENTRAINMENT SAMPLING AT THE OYSTER CREEK GENERATING STATION, APRIL-AUGUST 1979

| | Intake | | | | Discharge | | | |
|---|---|---|---|---|---|---|---|---|
| | Night | | Day | | Night | | Day | |
| Date | Surface | Bottom | Surface | Bottom | Surface | Bottom | Surface | Bottom |
| 2 APR | 7.0 | 12.0 | 12.3 | 13.0 | 11.3 | -- | 14.5 | -- |
| 9 APR | 14.0 | 15.0 | -- | -- | 14.5 | -- | -- | -- |
| 16 APR | 16.5 | 17.5 | -- | -- | 16.0 | -- | -- | -- |
| 23 APR | 16.3 | 15.5 | -- | -- | 17.0 | -- | -- | -- |
| 30 APR | 16.0 | 16.0 | -- | -- | 17.0 | -- | -- | -- |
| 7 MAY | 15.3 | 15.3 | 18.0 | 18.0 | 18.0 | -- | 17.8 | -- |
| 14 MAY | 15.0 | 15.0 | -- | -- | 15.0 | -- | -- | -- |
| 21 MAY | 15.5 | 16.0 | -- | -- | 16.0 | -- | -- | -- |
| 28 MAY | 16.0 | 16.0 | -- | -- | 16.0 | -- | -- | -- |
| 6 JUN | 14.6 | 14.6 | -- | -- | 13.7 | -- | -- | -- |
| 14 JUN | 16.0 | 15.9 | 16.1 | 16.2 | 15.8 | 15.8 | 16.7 | 16.7 |
| 18 JUN | 17.7 | 17.8 | -- | -- | 18.5 | -- | -- | -- |
| 25 JUN | 17.8 | 17.7 | -- | -- | 18.9 | -- | -- | -- |
| 2 JUL | 21.3 | 20.5 | -- | -- | 19.2 | -- | -- | -- |
| 9 JUL | 19.5 | 19.5 | -- | -- | 19.1 | -- | -- | -- |
| 16 JUL | 19.5 | 19.5 | -- | -- | 18.4 | -- | -- | -- |
| 23 JUL | 21.0 | 21.0 | 20.3 | 20.3 | 20.6 | -- | 20.4 | -- |
| 30 JUL | 20.1 | 20.1 | -- | -- | 20.5 | -- | -- | -- |
| 6 AUG | 20.5 | 20.5 | -- | -- | 18.0 | -- | -- | -- |
| 13 AUG | 20.1 | 20.1 | -- | -- | 22.0 | -- | -- | -- |
| 20 AUG | 19.6 | 19.5 | 20.5 | 20.4 | 20.3 | -- | 21.3 | -- |
| 28 AUG | 20.0 | 20.0 | -- | -- | 21.2 | -- | -- | -- |
| Mean | 17.2 | 17.6 | 17.4 | 17.6 | 17.7 | 15.8 | 18.1 | 16.7 |

Note: Dash (--) indicates data not taken.

# CHAPTER 6: COMMERCIAL LANDINGS OF FINFISH AND SHELLFISH

Commercial landings data were compiled for Ocean County and Altantic County, New Jersey, and Barnegat Bay (Tables 6-1 through 6-3, respectively). Data for Altantic and Ocean counties were available only for April, May, and June of the April-August 1979 reporting period. Complete Barnegat Bay data were available for American eel, blue crab, and hard clam, while only April data were obtained for the winter flounder, white perch, and mixed fish species.

Landings of the hard clam produced the greatest value in both Ocean and Atlantic counties (Tables 6-1 and 6-2). During the April-June 1979 period, 68,528 kg of hard clams valued at $253,875 were landed in Ocean County; Altantic County catches were about 40 percent less. Summer flounder catches in Ocean County produced the greatest weight and the second highest value ($160,935). This species ranked second by weight and value in Atlantic County, but represented only 20 percent of the Ocean County catch. Bluefish (weight) and American eel (dollar value) ranked third in the Ocean County landings. Blue crab was third highest in both weight and value in Atlantic County. With the exception of the alewife, catches of all species were lower in Atlantic County compared with Ocean County. Some differences were substantial, as was the case for bluefish, summer flounder, and hard clam.

The Barnegat Bay data are less complete, but nonetheless afford some comparisons. Of the three species for which five months of data were available, the hard clam produced the greatest weight and value, followed by blue crab and American eel. Winter flounder and white perch were reported only for April, at 2,418 and 2,095 kg, respectively.

For some species, the Barnegat Bay landings represent part or all of the Ocean County landings of those species. The Barnegat Bay hard clam landings constituted from 25 (April) to 35 percent (June) of the Ocean County landings. Similarly, 35-44 percent of the American eel landings reported for Ocean County were Barnegat Bay landings. The Barnegat Bay landings of winter flounder and white perch in April and blue crab in May and June represent the entire catch reported for Ocean County. The importance of Barnegat Bay to the Ocean County commercial fishery was discussed by Boyle (1979) who indicated that, since 1970, all Ocean County landings of alewife, white perch, and blue crab were produced in the bay. Also, American eel, winter flounder, and hard clams from the bay contributed substantial portions to the Ocean County landings.

In a subsequent report, commercial landing data will be compared to OCNGS impingement data and to Barnegat Bay seine and trawl data. Particular attention will be paid to any correlation of occurrence and abundance trends between commercial catches and sampling data.

TABLE 6-1 TOTAL REPORTED COMMERCIAL LANDINGS (kg) AND VALUE OF FINFISH AND SHELLFISH SPECIES TAKEN FROM OCEAN COUNTY, NEW JERSEY, APRIL THROUGH JUNE 1979

| Species | April | | May | | June | | Total | |
|---|---|---|---|---|---|---|---|---|
| | Weight (kg) | Value ($) | Weight (kg) | Value ($) | Weight (kg) | Value ($) | Weight (kg) | Value ($) |
| Alewife | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Bluefish | 86 | 43 | 1,108 | 510 | 14,589 | 6,766 | 15,783 | 7,319 |
| American eel | 2,327 | 2,560 | 3,682 | 4,860 | 3,327 | 4,392 | 9,336 | 11,812 |
| Winter flounder | 2,423 | 1,864 | 2,332 | 932 | 4,532 | 2,035 | 9,287 | 4,831 |
| Summer flounder | 37,944 | 54,904 | 4,401 | 8,330 | 47,993 | 97,701 | 90,338 | 160,935 |
| Weakfish | 6,390 | 4,219 | 2,905 | 1,916 | 566 | 447 | 9,861 | 6,582 |
| White perch | 2,095 | 1,383 | 0 | 0 | 0 | 0 | 2,095 | 1,383 |
| Blue crab | 0 | 0 | 1,818 | 1,500 | 5,909 | 4,875 | 7,727 | 6,375 |
| Hard clam (meats) | 18,428 | 60,990 | 20,809 | 80,115 | 29,291 | 112,770 | 68,528 | 253,875 |

TABLE 6-2 TOTAL REPORTED COMMERCIAL LANDINGS (kg) AND VALUE OF FINFISH AND SHELLFISH SPECIES TAKEN FROM ATLANTIC COUNTY, NEW JERSEY, APRIL THROUGH JUNE 1979

| Species | April | | May | | June | | Total | |
|---|---|---|---|---|---|---|---|---|
| | Weight (kg) | Value ($) | Weight (kg) | Value ($) | Weight (kg) | Value ($) | Weight (kg) | Value ($) |
| Alewife | 682 | 105 | 0 | 0 | 0 | 0 | 682 | 105 |
| Bluefish | 14 | 12 | 10 | 4 | 0 | 0 | 24 | 16 |
| American eel | 636 | 700 | 1,255 | 1,656 | 1,318 | 1,740 | 3,209 | 4,096 |
| Winter flounder | 896 | 682 | 82 | 61 | 0 | 0 | 978 | 743 |
| Summer flounder | 0 | 0 | 1,636 | 2,590 | 15,916 | 23,962 | 17,552 | 26,552 |
| Weakfish | 1,522 | 1,397 | 308 | 271 | 50 | 27 | 1,880 | 1,695 |
| White perch | 1,755 | 1,158 | 0 | 0 | 0 | 0 | 1,755 | 1,158 |
| Blue crab | 0 | 0 | 1,091 | 900 | 4,000 | 3,300 | 5,091 | 4,200 |
| Hard clam (meats) | 14,332 | 47,295 | 13,841 | 53,287 | 13,718 | 52,815 | 41,891 | 153,397 |

TABLE 6-3 TOTAL REPORTED COMMERCIAL LANDINGS (kg) AND VALUE OF FINFISH AND SHELLFISH SPECIES TAKEN FROM BARNEGAT BAY, NEW JERSEY, APRIL THROUGH JUNE 1979

| | April | | May | | June | | July | | August | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Species | Weight (kg) | Value ($) | Weight (kg) | Value ($) | Weight (kg) | Value ($) | Weight (kg) | Value ($) | Weight (kg) | Value ($) | Weight (kg) | Value ($) |
| American eel | 818 | 900 | 1,182 | 1,560 | 1,459 | 1,926 | 1,323 | 1,455 | 1,000 | 990 | 5,782 | 6,831 |
| Winter flounder | 2,418 | 1,862 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| White perch | 2,095 | 1,383 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Mixed fish (other species) | 372 | 82 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Blue crab | 0 | 0 | 1,818 | 1,500 | 5,909 | 4,875 | 6,055 | 4,662 | 5,473 | 4,214 | 19,255 | 15,251 |
| Hard clam (meats) | 4,618 | 15,247 | 6,241 | 24,034 | 10,250 | 39,470 | 11,968 | 47,401 | 9,918 | 38,185 | 42,995 | 164,337 |

Note: Dash (--) indicates data not available.

# CHAPTER 7: FISH KILL MONITORING

The Environmental Technical Specifications require that Oyster Creek be examined for dead fish any time the OCNGS shuts down and the intake water temperatures are below 8.5 C. In addition, any fish kill in the vicinity of the OCNGS while the station is operating is classified as an "Unusual or Important Environmental Event," and must be reported promptly to the Nuclear Regulatory Commission. One fish kill occurred near the OCNGS during the April-August 1979 reporting period. This kill occurred on 3 August 1979 while the station was operating and was reported to the NRC on 10 September 1979 (JCP&L 1979).

In response to the reported fish kill, EA made observations and measurements near the OCNGS on 3 and 4 August 1979. On both days water quality measurements were taken at one location in the intake canal and three locations in Oyster Creek. On 4 August, a shoreline census of dead fish was conducted and two 12.2-m seine hauls were made at the mouth of Oyster Creek.

Shoreline areas censused were the beach north of the mouth of Oyster Creek, and Oyster Creek at the Route 9 bridge, and near the JCP&L boat ramp. Dead or dying fish were observed only on the beach north of the mouth of Oyster Creek; six moribund striped bass, eight dead oyster toadfish, and two dead northern puffer were sighted along approximately 365 m of beach line.

The seine hauls at the mouth of Oyster Creek produced 182 specimens of six species (Table 7-1). Atlantic silverside made up 96 percent of the catch. None of the specimens appeared stressed.

Water quality measurements made on 3 and 4 August are presented in Tables 7-2 and 7-3. Intake water temperatures (south branch of Forked River) were rather high on both days, 29 and 30 C. The discharge canal (Oyster Creek) ranged from 33.0 to 33.7 C. Dissolved oxygen, salinity, and pH appeared normal for a warmwater, mesohaline area.

TABLE 7-1 FISH COLLECTED AT THE MOUTH OF OYSTER CREEK USING A 12.2-m SEINE, 4 AUGUST 1979

| Common Name | Seine No. 1 | Seine No. 2 |
|---|---|---|
| Atlantic silverside | 108 | 66 |
| Crevalle jack | 1 | 0 |
| Mummichog | 2 | 1 |
| Northern kingfish | 1 | 0 |
| Permit | 1 | 0 |
| Bay anchovy | 0 | 2 |

TABLE 7-2 WATER QUALITY INFORMATION OBTAINED AFTER THE REPORTED FISH KILL AT OYSTER CREEK GENERATING STATION, 3 AUGUST 1979

| Station | Water Temp. (C) | Salinity (ppt) | Dissolved Oxygen (ppm) | Air Temp. (C) | Time (hrs) |
|---|---|---|---|---|---|
| South Branch of Forked River at Route 9 | 30.0 | 19.7 | 6.4 | 27.5 | 2240 |
| Oyster Creek at Route 9 (south side) | 33.0 | 20.5 | 6.0 | 27.0 | 2250 |
| Oyster Creek at Route 9 (north side) | 33.0 | 20.5 | 5.8 | 27.0 | 2302 |
| Oyster Creek at boat ramp | 33.0 | 20.5 | 5.5 | 26.5 | 2312 |

TABLE 7-3 WATER QUALITY INFORMATION OBTAINED AFTER THE REPORTED FISH KILL AT OYSTER CREEK GENERATING STATION, 4 AUGUST 1979

| Station | Water Temp. (C) | Salinity (ppt) | Dissolved Oxygen (ppm) | Air Temp. (C) | pH | Time (hrs) |
|---|---|---|---|---|---|---|
| South Branch of Forked River at Route 9 | 29.0 | 18.8 | 5.7 | 28.0 | 6.8 | 0836 |
| Oyster Creek at Route 9 (south side) | 33.5 | 17.8 | 5.4 | 28.0 | 7.7 | 0850 |
| Oyster Creek at Route 9 (north side) | 33.7 | 18.7 | 5.6 | 27.5 | 7.4 | 0900 |
| Oyster Creek at boat ramp | 33.5 | 18.2 | 5.3 | 27.5 | 7.3 | 0937 |
| Mouth of Oyster Creek | 33.0 | 17.9 | 6.1 | 27.5 | 7.5 | 0937 |

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# APPENDIX A: OTTER TRAWL DATA

Appendix A is arranged by sampling date. The catch data are expressed as total specimens captured at a station (NUMBER INDIVS) and percent composition (PCT COMP). The sampling stations are identified by the first three letters of the 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).

| STATION | CDCD | | FKRD | | FKRN | | DBCD | |
|---|---|---|---|---|---|---|---|---|
| SPECIES | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP |
| CRANGON SEPTEMSPINOSA | 62.00 | 88.57 | 148.00 | 94.27 | 1020.00 | 95.51 | 57.00 | 64.77 |
| PSEUDOPLEURONECTES AMERI | 2.00 | 2.86 | 2.00 | 1.27 | 16.00 | 1.50 | 4.00 | 4.55 |
| CALLINECTES SAPIDUS | 4.00 | 5.71 | 0.00 | 0.00 | 1.00 | 0.09 | 0.00 | 0.00 |
| APELTES QUADRACUS | 1.00 | 1.43 | 3.00 | 1.91 | 22.00 | 2.06 | 15.00 | 17.05 |
| MENIDIA MENIDIA | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 11.00 | 12.50 |
| SYNGNATHUS FUSCUS | 0.00 | 0.00 | 3.00 | 1.91 | 4.00 | 0.37 | 1.00 | 1.14 |
| OPSANUS TAU | 1.00 | 1.43 | 0.00 | 0.00 | 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 |
| SCOPHTHALMUS AQUOSUS | 0.00 | 0.00 | 0.00 | 0.00 | 3.00 | 0.28 | 0.00 | 0.00 |
| ANGUILLA ROSTRATA | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.09 | 0.00 | 0.00 |
| UROPHYCIS REGIUS | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.09 | 0.00 | 0.00 |
| MORONE AMERICANA | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| ALOSA AESTIVALIS | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| ALOSA PSEUDOHARENGUS | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| OTHER SPECIES | 0.00 | 0.00 | 1.00 | 0.64 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOTAL | 70.00 | | 157.00 | | 1068.00 | | 88.00 | |

| STATION | OYCD | | OYCN | | | |
|---|---|---|---|---|---|---|
| SPECIES | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER TOTAL | PCT COMP |
| CRANGON SEPTEMSPINOSA | 85.00 | 86.73 | 621.00 | 94.09 | 1993.00 | 93.09 |
| PSEUDOPLEURONECTES AMERI | 11.00 | 11.22 | 13.00 | 1.97 | 48.00 | 2.24 |
| CALLINECTES SAPIDUS | 0.00 | 0.00 | 3.00 | 0.45 | 8.00 | 0.37 |
| APELTES QUADRACUS | 0.00 | 0.00 | 4.00 | 0.61 | 45.00 | 2.10 |
| MENIDIA MENIDIA | 0.00 | 0.00 | 0.00 | 0.00 | 11.00 | 0.51 |
| SYNGNATHUS FUSCUS | 1.00 | 1.02 | 0.00 | 0.00 | 9.00 | 0.42 |
| OPSANUS TAU | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.05 |
| TRINECTES MACULATUS | 0.00 | 0.00 | 9.00 | 1.36 | 9.00 | 0.42 |
| SCOPHTHALMUS AQUOSUS | 0.00 | 0.00 | 3.00 | 0.45 | 6.00 | 0.28 |
| ANGUILLA ROSTRATA | 0.00 | 0.00 | 2.00 | 0.30 | 3.00 | 0.14 |
| UROPHYCIS REGIUS | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.05 |
| MORONE AMERICANA | 0.00 | 0.00 | 2.00 | 0.30 | 2.00 | 0.09 |
| ALOSA AESTIVALIS | 0.00 | 0.00 | 1.00 | 0.15 | 1.00 | 0.05 |
| ALOSA PSEUDOHARENGUS | 1.00 | 1.02 | 0.00 | 0.00 | 1.00 | 0.05 |
| OTHER SPECIES | 0.00 | 0.00 | 2.00 | 0.30 | 3.00 | 0.14 |
| TOTAL | 98.00 | | 660.00 | | 2141.00 | |

| STATION | CDCD | | FKRD | | FKRN | | DBCD | |
|---|---|---|---|---|---|---|---|---|
| SPECIES | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP |
| CRANGON SEPTEMSPINOSA | 34.00 | 34.69 | 10.00 | 20.00 | 753.00 | 93.42 | 32.00 | 21.77 |
| PSEUDOPLEURONECTES AMERI | 5.00 | 5.10 | 1.00 | 2.00 | 11.00 | 1.36 | 1.00 | 0.68 |
| ANCHOA MITCHILLI | 32.00 | 32.65 | 30.00 | 60.00 | 29.00 | 3.60 | 106.00 | 72.11 |
| CALLINECTES SAPIDUS | 5.00 | 5.10 | 6.00 | 12.00 | 1.00 | 0.12 | 0.00 | 0.00 |
| APELTES QUADRACUS | 1.00 | 1.02 | 0.00 | 0.00 | 2.00 | 0.25 | 4.00 | 2.72 |
| MENIDIA MENIDIA | 20.00 | 20.41 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 1.36 |
| SYNGNATHUS FUSCUS | 0.00 | 0.00 | 2.00 | 4.00 | 4.00 | 0.50 | 0.00 | 0.00 |
| OPSANUS TAU | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.12 | 0.00 | 0.00 |
| TRINECTES MACULATUS | 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 | 2.00 | 0.25 | 0.00 | 0.00 |
| ANGUILLA ROSTRATA | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.12 | 2.00 | 1.36 |
| GOBIOSOMA BOSCI | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| TAUTOGA ONITIS | 0.00 | 0.00 | 1.00 | 2.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| UROPHYCIS REGIUS | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.25 | 0.00 | 0.00 |
| OTHER SPECIES | 1.00 | 1.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOTAL | 98.00 | | 50.00 | | 806.00 | | 147.00 | |

| STATION | OYCD | | OYCN | | | |
|---|---|---|---|---|---|---|
| SPECIES | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER TOTAL | PCT COMP |
| CRANGON SEPTEMSPINOSA | 0.00 | 0.00 | 562.00 | 94.93 | 1391.00 | 81.97 |
| PSEUDOPLEURONECTES AMERI | 1.00 | 25.00 | 3.00 | 0.51 | 22.00 | 1.30 |
| ANCHOA MITCHILLI | 0.00 | 0.00 | 11.00 | 1.86 | 208.00 | 12.26 |
| CALLINECTES SAPIDUS | 1.00 | 25.00 | 9.00 | 1.52 | 22.00 | 1.30 |
| APELTES QUADRACUS | 0.00 | 0.00 | 0.00 | 0.00 | 7.00 | 0.41 |
| MENIDIA MENIDIA | 0.00 | 0.00 | 0.00 | 0.00 | 22.00 | 1.30 |
| SYNGNATHUS FUSCUS | 1.00 | 25.00 | 1.00 | 0.17 | 8.00 | 0.47 |
| OPSANUS TAU | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.06 |
| TRINECTES MACULATUS | 0.00 | 0.00 | 2.00 | 0.34 | 2.00 | 0.12 |
| SCOPHTHALMUS AQUOSUS | 0.00 | 0.00 | 1.00 | 0.17 | 3.00 | 0.18 |
| ANGUILLA ROSTRATA | 0.00 | 0.00 | 0.00 | 0.00 | 3.00 | 0.18 |
| GOBIOSOMA BOSCI | 0.00 | 0.00 | 1.00 | 0.17 | 1.00 | 0.06 |
| TAUTOGA ONITIS | 1.00 | 25.00 | 2.00 | 0.34 | 4.00 | 0.24 |
| UROPHYCIS REGIUS | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.12 |
| OTHER SPECIES | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.06 |
| TOTAL | 4.00 | | 592.00 | | 1697.00 | |

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| STATION | CDCN | | CDCD | | FKRD | | FKRN | | DBCD | | DBCN | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SPECIES | 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 | 0.00 | 0.00 | 34.00 | 17.26 | 109.00 | 48.66 | 5.00 | 2.98 | 166.00 | 49.11 | 981.00 | 75.11 |
| PALAEMONETES VULGARIS | 5.00 | 1.60 | 8.00 | 4.06 | 32.00 | 14.29 | 0.00 | 0.00 | 62.00 | 18.34 | 88.00 | 6.74 |
| PSEUDOPLEURONECTES AMERI | 64.00 | 20.51 | 0.00 | 0.00 | 15.00 | 6.70 | 98.00 | 58.33 | 20.00 | 5.92 | 157.00 | 12.02 |
| ANCHOA MITCHILLI | 13.00 | 4.17 | 0.00 | 0.00 | 5.00 | 2.23 | 26.00 | 15.48 | 14.00 | 4.14 | 32.00 | 2.45 |
| CALLINECTES SAPIDUS | 7.00 | 2.24 | 8.00 | 4.06 | 5.00 | 2.23 | 15.00 | 8.93 | 17.00 | 5.03 | 8.00 | 0.61 |
| APELTES QUADRACUS | 1.00 | 0.32 | 7.00 | 3.55 | 1.00 | 0.45 | 0.00 | 0.00 | 1.00 | 0.30 | 0.00 | 0.00 |
| CRANGON SEPTEMSPIN ADULT | 175.00 | 56.09 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| PSEUDOPLEURONEC AMER JUV | 0.00 | 0.00 | 34.00 | 17.26 | 0.00 | 0.00 | 0.00 | 0.00 | 41.00 | 12.13 | 0.00 | 0.00 |
| ANCHOA MITCHILLI ADULT | 0.00 | 0.00 | 102.00 | 51.78 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| MENIDIA MENIDIA | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 4.00 | 0.31 |
| CLASS ASTEROIDEA | 0.00 | 0.00 | 0.00 | 0.00 | 42.00 | 18.75 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| SYNGNATHUS FUSCUS | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.89 | 5.00 | 2.98 | 2.00 | 0.59 | 6.00 | 0.46 |
| OPSANUS TAU | 0.00 | 0.00 | 1.00 | 0.51 | 1.00 | 0.45 | 6.00 | 3.57 | 1.00 | 0.30 | 11.00 | 0.84 |
| PARALICHTHYS DENTATUS | 0.00 | 0.00 | 1.00 | 0.51 | 2.00 | 0.89 | 7.00 | 4.17 | 6.00 | 1.78 | 0.00 | 0.00 |
| TRINECTES MACULATUS | 4.00 | 1.28 | 1.00 | 0.51 | 1.00 | 0.45 | 1.00 | 0.60 | 0.00 | 0.00 | 0.00 | 0.00 |
| CRANGON SEPTEMSPIN JUV | 40.00 | 12.82 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| SCOPHTHALMUS AQUOSUS | 3.00 | 0.96 | 0.00 | 0.00 | 1.00 | 0.45 | 0.00 | 0.00 | 0.00 | 0.00 | 18.00 | 1.38 |
| 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 |
| ANGUILLA ROSTRATA | 0.00 | 0.00 | 1.00 | 0.51 | 0.00 | 0.00 | 2.00 | 1.19 | 0.00 | 0.00 | 0.00 | 0.00 |
| GOBIOSOMA BOSCI | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.59 | 0.00 | 0.00 |
| TAUTOGA ONITIS | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.59 | 0.00 | 0.00 |
| FAMILY XANTHIDAE | 0.00 | 0.00 | 0.00 | 0.00 | 6.00 | 2.68 | 2.00 | 1.19 | 0.00 | 0.00 | 1.00 | 0.08 |
| POMATOMUS SALTATRIX | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.45 | 0.00 | 0.00 | 3.00 | 0.89 | 0.00 | 0.00 |
| PSEUDOPLEURON AMER 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 |
| OVALIPES OCELLATUS | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.30 | 0.00 | 0.00 |
| OTHER SPECIES | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.45 | 1.00 | 0.60 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOTAL | 312.00 | | 197.00 | | 224.00 | | 168.00 | | 338.00 | | 1306.00 | |

| STATION | OYCD | | OYCN | | | |
|---|---|---|---|---|---|---|
| SPECIES | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER TOTAL | PCT COMP |
| CRANGON SEPTEMSPINOSA | 1.00 | 0.71 | 3.00 | 12.00 | 1299.00 | 47.93 |
| PALAEMONETES VULGARIS | 9.00 | 6.43 | 0.00 | 0.00 | 204.00 | 7.53 |
| PSEUDOPLEURONECTES AMERI | 0.00 | 0.00 | 2.00 | 8.00 | 356.00 | 13.14 |
| ANCHOA MITCHILLI | 34.00 | 24.29 | 0.00 | 0.00 | 124.00 | 4.58 |
| CALLINECTES SAPIDUS | 18.00 | 12.86 | 9.00 | 36.00 | 87.00 | 3.21 |
| APELTES QUADRACUS | 13.00 | 9.29 | 0.00 | 0.00 | 23.00 | 0.85 |
| CRANGON SEPTEMSPIN ADULT | 0.00 | 0.00 | 0.00 | 0.00 | 175.00 | 6.46 |
| PSEUDOPLEURONEC AMER JUV | 47.00 | 33.57 | 0.00 | 0.00 | 122.00 | 4.50 |
| ANCHOA MITCHILLI ADULT | 0.00 | 0.00 | 0.00 | 0.00 | 102.00 | 3.76 |
| MENIDIA MENIDIA | 0.00 | 0.00 | 0.00 | 0.00 | 4.00 | 0.15 |
| CLASS ASTEROIDEA | 0.00 | 0.00 | 0.00 | 0.00 | 42.00 | 1.55 |
| SYNGNATHUS FUSCUS | 0.00 | 0.00 | 0.00 | 0.00 | 15.00 | 0.55 |
| OPSANUS TAU | 0.00 | 0.00 | 3.00 | 12.00 | 23.00 | 0.85 |
| PARALICHTHYS DENTATUS | 0.00 | 0.00 | 0.00 | 0.00 | 16.00 | 0.59 |
| TRINECTES MACULATUS | 2.00 | 1.43 | 6.00 | 24.00 | 15.00 | 0.55 |
| CRANGON SEPTEMSPIN JUV | 0.00 | 0.00 | 0.00 | 0.00 | 40.00 | 1.48 |
| SCOPHTHALMUS AQUOSUS | 5.00 | 3.57 | 0.00 | 0.00 | 27.00 | 1.00 |
| CYNOSCION REGALIS | 2.00 | 1.43 | 0.00 | 0.00 | 2.00 | 0.07 |
| ANGUILLA ROSTRATA | 5.00 | 3.57 | 0.00 | 0.00 | 8.00 | 0.30 |
| GOBIOSOMA BOSCI | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.07 |
| TAUTOGA ONITIS | 2.00 | 1.43 | 1.00 | 4.00 | 5.00 | 0.18 |
| FAMILY XANTHIDAE | 0.00 | 0.00 | 1.00 | 4.00 | 10.00 | 0.37 |
| POMATOMUS SALTATRIX | 0.00 | 0.00 | 0.00 | 0.00 | 4.00 | 0.15 |
| PSEUDOPLEURON AMER ADULT | 2.00 | 1.43 | 0.00 | 0.00 | 2.00 | 0.07 |
| OVALIPES OCELLATUS | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.04 |
| OTHER SPECIES | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.07 |
| TOTAL | 140.00 | | 25.00 | | 2710.00 | |

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| STATION | CDCN | | CDCD | | FKRD | | FKRN | | DBCD | | DBCN | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SPECIES | 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 | 251.00 | 80.45 | 11.00 | 4.89 | 4.00 | 5.71 | 580.00 | 79.13 | 21.00 | 12.21 | 1302.00 | 41.02 |
| PALAEMONETES VULGARIS | 4.00 | 1.28 | 0.00 | 0.00 | 7.00 | 10.00 | 24.00 | 3.27 | 21.00 | 12.21 | 1308.00 | 41.21 |
| PSEUDOPLEURONECTES AMERI | 22.00 | 7.05 | 15.00 | 6.67 | 2.00 | 2.86 | 72.00 | 9.82 | 31.00 | 18.02 | 260.00 | 8.19 |
| ANCHOA MITCHILLI | 22.00 | 7.05 | 190.00 | 84.44 | 25.00 | 35.71 | 33.00 | 4.50 | 69.00 | 40.12 | 27.00 | 0.85 |
| CALLINECTES SAPIDUS | 2.00 | 0.64 | 5.00 | 2.22 | 2.00 | 2.86 | 8.00 | 1.09 | 17.00 | 9.88 | 33.00 | 1.04 |
| AFELTES QUADRACUS | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 3.00 | 1.74 | 131.00 | 4.13 |
| MENIDIA MENIDIA | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.14 | 3.00 | 1.74 | 53.00 | 1.67 |
| CLASS ASTEROIDEA | 0.00 | 0.00 | 0.00 | 0.00 | 26.00 | 37.14 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| SYNGNATHUS FUSCUS | 4.00 | 1.28 | 1.00 | 0.44 | 0.00 | 0.00 | 2.00 | 0.27 | 5.00 | 2.91 | 21.00 | 0.66 |
| OPSANUS TAU | 2.00 | 0.64 | 0.00 | 0.00 | 1.00 | 1.43 | 1.00 | 0.14 | 0.00 | 0.00 | 16.00 | 0.50 |
| PARALICHTHYS DENTATUS | 3.00 | 0.96 | 1.00 | 0.44 | 0.00 | 0.00 | 9.00 | 1.23 | 1.00 | 0.58 | 4.00 | 0.13 |
| TRINECTES MACULATUS | 1.00 | 0.32 | 2.00 | 0.89 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| ANGUILLA ROSTRATA | 1.00 | 0.32 | 0.00 | 0.00 | 1.00 | 1.43 | 1.00 | 0.14 | 0.00 | 0.00 | 2.00 | 0.06 |
| GOBIOSOMA BOSCI | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.58 | 0.00 | 0.00 |
| TAUTOGA ONITIS | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 3.00 | 0.09 |
| FAMILY XANTHIDAE | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 2.86 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| SPHOEROIDES MACULATUS | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 6.00 | 0.19 |
| FUNDULUS HETEROCLITUS | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 7.00 | 0.22 |
| RISSOLA MARGINATA | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| PRIONOTUS EVOLANS | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.14 | 0.00 | 0.00 | 0.00 | 0.00 |
| RITHROPANOPEUS HARRISII | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.14 | 0.00 | 0.00 | 0.00 | 0.00 |
| DASYATIS 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 |
| OTHER SPECIES | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.03 |
| TOTAL | 312.00 | | 225.00 | | 70.00 | | 733.00 | | 172.00 | | 3174.00 | |

| STATION | OYCD | | OYCN | | | |
|---|---|---|---|---|---|---|
| SPECIES | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER TOTAL | PCT COMP |
| CRANGON SEPTEMSPINOSA | 152.00 | 80.42 | 93.00 | 43.26 | 24 [illegible].00 | 47.43 |
| PALAEMONETES VULGARIS | 4.00 | 2.12 | 35.00 | 16.28 | 1409.00 | 27.56 |
| PSEUDOPLEURONECTES AMERI | 1.00 | 0.53 | 2.00 | 0.93 | 405.00 | 7.96 |
| ANCHOA MITCHILLI | 3.00 | 1.59 | 0.00 | 0.00 | 369.00 | 7.25 |
| CALLINECTES SAPIDUS | 19.00 | 10.05 | 45.00 | 20.93 | 131.00 | 2.57 |
| APELTES QUADRACUS | 0.00 | 0.00 | 0.00 | 0.00 | 134.00 | 2.63 |
| MENIDIA MENIDIA | 0.00 | 0.00 | 0.00 | 0.00 | 57.00 | 1.12 |
| CLASS ASTEROIDEA | 0.00 | 0.00 | 0.00 | 0.00 | 26.00 | 0.51 |
| SYNGNATHUS FUSCUS | 1.00 | 0.53 | 2.00 | 0.93 | 36.00 | 0.71 |
| OPSANUS TAU | 5.00 | 2.65 | 16.00 | 7.44 | 41.00 | 0.81 |
| PARALICHTHYS DENTATUS | 2.00 | 1.06 | 2.00 | 0.93 | 22.00 | 0.43 |
| TRINECTES MACULATUS | 0.00 | 0.00 | 10.00 | 4.65 | 13.00 | 0.26 |
| ANGUILLA ROSTRATA | 0.00 | 0.00 | 0.00 | 0.00 | 5.00 | 0.10 |
| GOBIOSOMA BOSCI | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.02 |
| TAUTOGA ONITIS | 1.00 | 0.53 | 0.00 | 0.00 | 4.00 | 0.08 |
| FAMILY XANTHIDAE | 1.00 | 0.53 | 0.00 | 0.00 | 3.00 | 0.06 |
| SPHOEROIDES MACULATUS | 0.00 | 0.00 | 2.00 | 0.93 | 8.00 | 0.16 |
| FUNDULUS HETEROCLITUS | 0.00 | 0.00 | 0.00 | 0.00 | 7.00 | 0.14 |
| RISSOLA MARGINATA | 0.00 | 0.00 | 6.00 | 2.79 | 6.00 | 0.12 |
| PRIONOTUS EVOLANS | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.02 |
| RITHROPANOPEUS HARRISII | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.02 |
| DASYATIS SAYI | 0.00 | 0.00 | 1.00 | 0.47 | 1.00 | 0.02 |
| OTHER SPECIES | 0.00 | 0.00 | 1.00 | 0.47 | 2.00 | 0.04 |
| TOTAL | 189.00 | | 215.00 | | 5090.00 | |

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| STATION | CDCN | | CDCD | | FKRD | | FKRN | | DBCD | | DBCN | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SPECIES | 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 | 379.00 | 92.21 | 9.00 | 45.00 | 0.00 | 0.00 | 76.00 | 42.22 | 3.00 | 9.09 | 349.00 | 86.39 |
| PALAEMONETES VULGARIS | 0.00 | 0.00 | 1.00 | 5.00 | 2.00 | 9.09 | 29.00 | 16.11 | 1.00 | 3.03 | 17.00 | 4.21 |
| PSEUDOPLEURONECTES AMERI | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.56 | 0.00 | 0.00 | 0.00 | 0.00 |
| ANCHOA MITCHILLI | 7.00 | 1.70 | 0.00 | 0.00 | 11.00 | 50.00 | 23.00 | 12.78 | 6.00 | 18.18 | 7.00 | 1.73 |
| CALLINECTES SAPIDUS | 14.00 | 3.41 | 2.00 | 10.00 | 5.00 | 22.73 | 1.00 | 0.56 | 10.00 | 30.30 | 6.00 | 1.49 |
| APELTES QUADRACUS | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 3.03 | 7.00 | 1.73 |
| CLASS ASTEROIDEA | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 21.00 | 11.67 | 0.00 | 0.00 | 0.00 | 0.00 |
| SYNGNATHUS FUSCUS | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 4.55 | 5.00 | 2.78 | 1.00 | 3.03 | 2.00 | 0.50 |
| OPSANUS TAU | 2.00 | 0.49 | 0.00 | 0.00 | 1.00 | 4.55 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.25 |
| PARALICHTHYS DENTATUS | 1.00 | 0.24 | 4.00 | 20.00 | 0.00 | 0.00 | 2.00 | 1.11 | 6.00 | 18.18 | 4.00 | 0.99 |
| 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 |
| CYNOSCION REGALIS | 4.00 | 0.97 | 1.00 | 5.00 | 0.00 | 0.00 | 7.00 | 3.89 | 5.00 | 15.15 | 9.00 | 2.23 |
| LEIOSTOMUS XANTHURUS | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 4.55 | 3.00 | 1.67 | 0.00 | 0.00 | 0.00 | 0.00 |
| GOBIOSOMA BOSCI | 4.00 | 0.97 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.56 | 0.00 | 0.00 | 1.00 | 0.25 |
| TAUTOGA ONITIS | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.56 | 0.00 | 0.00 | 0.00 | 0.00 |
| FAMILY XANTHIDAE | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 1.11 | 0.00 | 0.00 | 0.00 | 0.00 |
| PANOPEUS HERBSTII | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5.00 | 2.78 | 0.00 | 0.00 | 0.00 | 0.00 |
| PRIONOTUS EVOLANS | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 3.00 | 1.67 | 0.00 | 0.00 | 0.00 | 0.00 |
| ANCHOA MITCHILLI LARVAE | 0.00 | 0.00 | 3.00 | 15.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RITHROPANOPEUS HARRISII | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 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 |
| OTHER SPECIES | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 4.55 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.25 |
| TOTAL | 411.00 | | 20.00 | | 22.00 | | 180.00 | | 33.00 | | 404.00 | |

| STATION | OYCD | | OYCN | | | |
|---|---|---|---|---|---|---|
| SPECIES | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER TOTAL | PCT COMP |
| CRANGON SEPTEMSPINOSA | 0.00 | 0.00 | 27.00 | 39.13 | 843.00 | 71.14 |
| PALAEMONETES VULGARIS | 0.00 | 0.00 | 1.00 | 1.45 | 51.00 | 4.30 |
| PSEUDOPLEURONECTES AMERI | 0.00 | 0.00 | 1.00 | 1.45 | 2.00 | 0.17 |
| ANCHOA MITCHILLI | 3.00 | 6.52 | 7.00 | 10.14 | 64.00 | 5.40 |
| CALLINECTES SAPIDUS | 10.00 | 21.74 | 12.00 | 17.39 | 60.00 | 5.06 |
| APELTES QUADRACUS | 0.00 | 0.00 | 0.00 | 0.00 | 8.00 | 0.68 |
| CLASS ASTEROIDEA | 0.00 | 0.00 | 1.00 | 1.45 | 22.00 | 1.86 |
| SYNGNATHUS FUSCUS | 0.00 | 0.00 | 0.00 | 0.00 | 9.00 | 0.76 |
| OPSANUS TAU | 3.00 | 6.52 | 2.00 | 2.90 | 9.00 | 0.76 |
| PARALICHTHYS DENTATUS | 0.00 | 0.00 | 0.00 | 0.00 | 17.00 | 1.43 |
| TRINECTES MACULATUS | 0.00 | 0.00 | 3.00 | 4.35 | 3.00 | 0.25 |
| CYNOSCION REGALIS | 4.00 | 8.70 | 2.00 | 2.90 | 32.00 | 2.70 |
| LEIOSTOMUS XANTHURUS | 25.00 | 54.35 | 0.00 | 0.00 | 29.00 | 2.45 |
| GOBIOSOMA BOSCI | 0.00 | 0.00 | 8.00 | 11.59 | 14.00 | 1.18 |
| TAUTOGA ONITIS | 0.00 | 0.00 | 1.00 | 1.45 | 2.00 | 0.17 |
| FAMILY XANTHIDAE | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.17 |
| PANOPEUS HERBSTII | 0.00 | 0.00 | 0.00 | 0.00 | 5.00 | 0.42 |
| PRIONOTUS EVOLANS | 0.00 | 0.00 | 0.00 | 0.00 | 3.00 | 0.25 |
| ANCHOA MITCHILLI LARVAE | 0.00 | 0.00 | 0.00 | 0.00 | 3.00 | 0.25 |
| RITHROPANOPEUS HARRISII | 0.00 | 0.00 | 2.00 | 2.90 | 2.00 | 0.17 |
| OVALIPES OCELLATUS | 0.00 | 0.00 | 1.00 | 1.45 | 1.00 | 0.08 |
| OTHER SPECIES | 1.00 | 2.17 | 1.00 | 1.45 | 4.00 | 0.34 |
| TOTAL | 46.00 | | 69.00 | | 1185.00 | |

# APPENDIX B: 45.7-m SEINE DATA

Appendix B is arranged by sampling date. The catch data are expressed as total specimens captured at a station (NUMBER INDIVS) and percent composition (PCT COMP). The sampling stations are identified by the first three letters of the 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).

| STATION | CDCD | | FKRD | | FKRN | | PBCD | |
|---|---|---|---|---|---|---|---|---|
| SPECIES | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP |
| CRANGON SEPTEMSPINOSA | 49.00 | 38.58 | 8.00 | 38.10 | 723.00 | 91.63 | 45.00 | 12.43 |
| MENIDIA MENIDIA | 63.00 | 49.61 | 6.00 | 28.57 | 6.00 | 0.76 | 273.00 | 75.41 |
| APELTES QUADRACUS | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 7.00 | 1.93 |
| CALLINECTES SAPIDUS | 3.00 | 2.36 | 0.00 | 0.00 | 45.00 | 5.70 | 8.00 | 2.21 |
| PSEUDOPLEURONECTES AMERI | 0.00 | 0.00 | 6.00 | 28.57 | 5.00 | 0.63 | 7.00 | 1.93 |
| SYNGNATHUS FUSCUS | 9.00 | 7.09 | 1.00 | 4.76 | 4.00 | 0.51 | 14.00 | 3.87 |
| FUNDULUS HETEROCLITUS | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.25 | 1.00 | 0.28 |
| TRINECTES MACULATUS | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.13 | 0.00 | 0.00 |
| ANGUILLA ROSTRATA | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.13 | 0.00 | 0.00 |
| FUNDULUS MAJALIS | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.55 |
| CYPRINODON VARIEGATUS | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.25 | 5.00 | 1.38 |
| ALOSA PSEUDOHARENGUS | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| OTHER SPECIES | 3.00 | 2.36 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOTAL | 127.00 | | 21.00 | | 789.00 | | 362.00 | |

| STATION | OYCD | | OYCN | | | |
|---|---|---|---|---|---|---|
| SPECIES | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER TOTAL | PCT COMP |
| CRANGON SEPTEMSPINOSA | 18.00 | 16.51 | 1084.00 | 95.09 | 1927.00 | 75.63 |
| MENIDIA MENIDIA | 89.00 | 81.65 | 7.00 | 0.61 | 444.00 | 17.43 |
| APELTES QUADRACUS | 0.00 | 0.00 | 0.00 | 0.00 | 7.00 | 0.27 |
| CALLINECTES SAPIDUS | 2.00 | 1.83 | 33.00 | 2.89 | 91.00 | 3.57 |
| PSEUDOPLEURONECTES AMERI | 0.00 | 0.00 | 5.00 | 0.44 | 23.00 | 0.90 |
| SYNGNATHUS FUSCUS | 0.00 | 0.00 | 1.00 | 0.09 | 29.00 | 1.14 |
| FUNDULUS HETEROCLITUS | 0.00 | 0.00 | 3.00 | 0.26 | 6.00 | 0.24 |
| TRINECTES MACULATUS | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.04 |
| ANGUILLA ROSTRATA | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.04 |
| FUNDULUS MAJALIS | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.08 |
| CYPRINODON VARIEGATUS | 0.00 | 0.00 | 2.00 | 0.18 | 9.00 | 0.35 |
| ALOSA PSEUDOHARENGUS | 0.00 | 0.00 | 1.00 | 0.09 | 1.00 | 0.04 |
| OTHER SPECIES | 0.00 | 0.00 | 4.00 | 0.35 | 7.00 | 0.27 |
| TOTAL | 109.00 | | 1140.00 | | 2548.00 | |

| STATION | CDCD | | FKRD | | FKRN | | DBCD | |
|---|---|---|---|---|---|---|---|---|
| SPECIES | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP |
| CRANGON SEPTEMSPINOSA | 2.00 | 1.61 | 4.00 | 11.43 | 227.00 | 70.72 | 7.00 | 3.48 |
| ANCHOA MITCHILLI | 0.00 | 0.00 | 0.00 | 0.00 | 11.00 | 3.43 | 0.00 | 0.00 |
| MENIDIA MENIDIA | 62.00 | 50.00 | 11.00 | 31.43 | 29.00 | 9.03 | 86.00 | 42.79 |
| APELTES QUADRACUS | 4.00 | 3.23 | 5.00 | 14.29 | 0.00 | 0.00 | 29.00 | 14.43 |
| CALLINECTES SAPIDUS | 15.00 | 12.10 | 3.00 | 8.57 | 17.00 | 5.30 | 26.00 | 12.94 |
| PSEUDOPLEURONECTES AMERI | 2.00 | 1.61 | 0.00 | 0.00 | 20.00 | 6.23 | 0.00 | 0.00 |
| OPSANUS TAU | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.31 | 1.00 | 0.50 |
| SYNGNATHUS FUSCUS | 23.00 | 18.55 | 8.00 | 22.86 | 1.00 | 0.31 | 27.00 | 13.43 |
| FUNDULUS HETEROCLITUS | 9.00 | 7.26 | 0.00 | 0.00 | 2.00 | 0.62 | 14.00 | 6.97 |
| MENIDIA BERYLLINA | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 1.00 |
| STRONGYLURA MARINA | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| FUNDULUS DIAPHANUS | 5.00 | 4.03 | 0.00 | 0.00 | 0.00 | 0.00 | 3.00 | 1.49 |
| TRINECTES MACULATUS | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.62 | 0.00 | 0.00 |
| ANGUILLA ROSTRATA | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 1.00 |
| TAUTOGA ONITIS | 1.00 | 0.81 | 1.00 | 2.86 | 0.00 | 0.00 | 1.00 | 0.50 |
| RISSOLA MARGINATA | 0.00 | 0.00 | 0.00 | 0.00 | 4.00 | 1.25 | 0.00 | 0.00 |
| CYPRINODON VARIEGATUS | 1.00 | 0.81 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| OTHER SPECIES | 0.00 | 0.00 | 3.00 | 8.57 | 7.00 | 2.18 | 3.00 | 1.49 |
| TOTAL | 124.00 | | 35.00 | | 321.00 | | 201.00 | |

| STATION | OYCD | | OYCN | | | |
|---|---|---|---|---|---|---|
| SPECIES | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER TOTAL | PCT COMP |
| CRANGON SEPTEMSPINOSA | 9.00 | 3.07 | 195.00 | 65.44 | 444.00 | 34.91 |
| ANCHOA MITCHILLI | 10.00 | 3.41 | 41.00 | 13.76 | 62.00 | 4.87 |
| MENIDIA MENIDIA | 258.00 | 88.05 | 19.00 | 6.38 | 465.00 | 36.56 |
| APELTES QUADRACUS | 0.00 | 0.00 | 0.00 | 0.00 | 38.00 | 2.99 |
| CALLINECTES SAPIDUS | 7.00 | 2.39 | 18.00 | 6.04 | 86.00 | 6.76 |
| PSEUDOPLEURONECTES AMERI | 0.00 | 0.00 | 3.00 | 1.01 | 25.00 | 1.97 |
| OPSANUS TAU | 0.00 | 0.00 | 5.00 | 1.68 | 7.00 | 0.55 |
| SYNGNATHUS FUSCUS | 7.00 | 2.39 | 11.00 | 3.69 | 77.00 | 6.05 |
| FUNDULUS HETEROCLITUS | 0.00 | 0.00 | 0.00 | 0.00 | 25.00 | 1.97 |
| MENIDIA BERYLLINA | 0.00 | 0.00 | 1.00 | 0.34 | 3.00 | 0.24 |
| STRONGYLURA MARINA | 1.00 | 0.34 | 0.00 | 0.00 | 1.00 | 0.08 |
| FUNDULUS DIAPHANUS | 0.00 | 0.00 | 0.00 | 0.00 | 8.00 | 0.63 |
| TRINECTES MACULATUS | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.16 |
| ANGUILLA ROSTRATA | 1.00 | 0.34 | 0.00 | 0.00 | 3.00 | 0.24 |
| TAUTOGA ONITIS | 0.00 | 0.00 | 0.00 | 0.00 | 3.00 | 0.24 |
| RISSOLA MARGINATA | 0.00 | 0.00 | 0.00 | 0.00 | 4.00 | 0.31 |
| CYPRINODON VARIEGATUS | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.08 |
| OTHER SPECIES | 0.00 | 0.00 | 5.00 | 1.68 | 18.00 | 1.42 |
| TOTAL | 293.00 | | 298.00 | | 1272.00 | |

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| STATION | CDCN | | CDCD | | FKRD | | FKRN | | DBCD | | DBCN | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SPECIES | 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 | 138.00 | 22.96 | 1.00 | 0.32 | 13.00 | 2.07 | 85.00 | 25.68 | 8.00 | 0.90 | 42.00 | 14.48 |
| PALAEMONETES VULGARIS | 61.00 | 10.15 | 50.00 | 15.97 | 51.00 | 8.12 | 43.00 | 12.99 | 101.00 | 11.40 | 87.00 | 30.00 |
| ANCHOA MITCHILLI | 100.00 | 16.64 | 15.00 | 4.79 | 197.00 | 31.37 | 64.00 | 19.34 | 16.00 | 1.81 | 13.00 | 4.48 |
| MENIDIA MENIDIA | 60.00 | 9.98 | 9.00 | 2.88 | 239.00 | 38.06 | 79.00 | 23.87 | 85.00 | 9.59 | 92.00 | 31.72 |
| APELTES QUADRACUS | 18.00 | 3.00 | 65.00 | 20.77 | 62.00 | 9.87 | 3.00 | 0.91 | 502.00 | 56.66 | 13.00 | 4.48 |
| CALLINECTES SAPIDUS | 28.00 | 4.66 | 2.00 | 0.64 | 10.00 | 1.59 | 1.00 | 0.30 | 25.00 | 2.82 | 7.00 | 2.41 |
| PSEUDOPLEURONECTES AMERI | 112.00 | 18.64 | 0.00 | 0.00 | 17.00 | 2.71 | 35.00 | 10.57 | 20.00 | 2.26 | 6.00 | 2.07 |
| OPSANUS TAU | 3.00 | 0.50 | 0.00 | 0.00 | 3.00 | 0.48 | 6.00 | 1.81 | 1.00 | 0.11 | 3.00 | 1.03 |
| SYNGNATHUS FUSCUS | 5.00 | 0.83 | 7.00 | 2.24 | 7.00 | 1.11 | 2.00 | 0.60 | 6.00 | 0.68 | 5.00 | 1.72 |
| FUNDULUS HETEROCLITUS | 36.00 | 5.99 | 9.00 | 2.88 | 1.00 | 0.16 | 0.00 | 0.00 | 25.00 | 2.82 | 7.00 | 2.41 |
| MENIDIA BERYLLINA | 12.00 | 2.00 | 145.00 | 46.33 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| STRONGYLURA MARINA | 0.00 | 0.00 | 2.00 | 0.64 | 3.00 | 0.48 | 0.00 | 0.00 | 9.00 | 1.02 | 0.00 | 0.00 |
| POMATOMUS SALTATRIX | 5.00 | 0.83 | 1.00 | 0.32 | 10.00 | 1.59 | 4.00 | 1.21 | 33.00 | 3.72 | 10.00 | 3.45 |
| GOBIOSOMA BOSCI | 4.00 | 0.67 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.11 | 1.00 | 0.34 |
| CARANX HIPPOS | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.11 | 0.00 | 0.00 |
| PARALICHTHYS DENTATUS | 5.00 | 0.83 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.60 | 0.00 | 0.00 | 0.00 | 0.00 |
| FUNDULUS DIAPHANUS | 0.00 | 0.00 | 6.00 | 1.92 | 0.00 | 0.00 | 0.00 | 0.00 | 42.00 | 4.74 | 0.00 | 0.00 |
| TRINECTES MACULATUS | 3.00 | 0.50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| ANGUILLA ROSTRATA | 2.00 | 0.33 | 0.00 | 0.00 | 3.00 | 0.48 | 2.00 | 0.60 | 0.00 | 0.00 | 0.00 | 0.00 |
| TAUTOGA ONITIS | 2.00 | 0.33 | 0.00 | 0.00 | 11.00 | 1.75 | 0.00 | 0.00 | 3.00 | 0.34 | 0.00 | 0.00 |
| RISSOLA MARGINATA | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5.00 | 1.51 | 0.00 | 0.00 | 0.00 | 0.00 |
| LEIOSTOMUS XANTHURUS | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| MUGIL CUREMA | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.16 | 0.00 | 0.00 | 0.00 | 0.00 | 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 | 3.00 | 1.03 |
| LUCANIA PARVA | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 7.00 | 0.79 | 0.00 | 0.00 |
| ALOSA PSEUDOHARENGUS | 6.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| OTHER SPECIES | 1.00 | 0.17 | 1.00 | 0.32 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.11 | 1.00 | 0.34 |
| TOTAL | 601.00 | | 313.00 | | 628.00 | | 331.00 | | 886.00 | | 290.00 | |

| STATION | OYCD | | OYCN | | | |
|---|---|---|---|---|---|---|
| SPECIES | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER TOTAL | PCT COMP |
| CRANGON SEPTEMSPINOSA | 1.00 | 0.26 | 24.00 | 4.01 | 312.00 | 7.74 |
| PALAEMONETES VULGARIS | 202.00 | 52.47 | 257.00 | 42.90 | 852.00 | 21.13 |
| ANCHOA MITCHILLI | 23.00 | 5.97 | 68.00 | 11.35 | 496.00 | 12.30 |
| MENIDIA MENIDIA | 68.00 | 17.66 | 186.00 | 31.05 | 818.00 | 20.28 |
| APELTES QUADRACUS | 9.00 | 2.34 | 0.00 | 0.00 | 672.00 | 16.66 |
| CALLINECTES SAPIDUS | 6.00 | 1.56 | 8.00 | 1.34 | 87.00 | 2.16 |
| PSEUDOPLEURONECTES AMERI | 1.00 | 0.26 | 1.00 | 0.17 | 192.00 | 4.76 |
| OPSANUS TAU | 1.00 | 0.26 | 8.00 | 1.34 | 25.00 | 0.62 |
| SYNGNATHUS FUSCUS | 4.00 | 1.04 | 4.00 | 0.67 | 40.00 | 0.99 |
| FUNDULUS HETEROCLITUS | 0.00 | 0.00 | 0.00 | 0.00 | 78.00 | 1.93 |
| MENIDIA BERYLLINA | 0.00 | 0.00 | 4.00 | 0.67 | 161.00 | 3.99 |
| STRONGYLURA MARINA | 66.00 | 17.14 | 9.00 | 1.50 | 89.00 | 2.21 |
| POMATOMUS SALTATRIX | 1.00 | 0.26 | 2.00 | 0.33 | 66.00 | 1.64 |
| GOBIOSOMA BOSCI | 0.00 | 0.00 | 0.00 | 0.00 | 6.00 | 0.15 |
| CARANX HIPPOS | 0.00 | 0.00 | 5.00 | 0.83 | 6.00 | 0.15 |
| PARALICHTHYS DENTATUS | 0.00 | 0.00 | 0.00 | 0.00 | 7.00 | 0.17 |
| FUNDULUS DIAPHANUS | 1.00 | 0.26 | 0.00 | 0.00 | 49.00 | 1.21 |
| TRINECTES MACULATUS | 0.00 | 0.00 | 1.00 | 0.17 | 4.00 | 0.10 |
| ANGUILLA ROSTRATA | 0.00 | 0.00 | 0.00 | 0.00 | 7.00 | 0.17 |
| TAUTOGA ONITIS | 0.00 | 0.00 | 0.00 | 0.00 | 16.00 | 0.40 |
| RISSOLA MARGINATA | 0.00 | 0.00 | 5.00 | 0.83 | 10.00 | 0.25 |
| LEIOSTOMUS XANTHURUS | 1.00 | 0.26 | 2.00 | 0.33 | 3.00 | 0.07 |
| MUGIL CUREMA | 1.00 | 0.26 | 7.00 | 1.17 | 9.00 | 0.22 |
| MEMBRAS MARTINICA | 0.00 | 0.00 | 8.00 | 1.34 | 11.00 | 0.27 |
| LUCANIA PARV[illegible] | 0.00 | 0.00 | 0.00 | 0.00 | 7.00 | 0.17 |
| ALOSA PSEUDO [illegible]RENGUS | 0.00 | 0.00 | 0.00 | 0.00 | 6.00 | 0.15 |
| OTHER SPECIES | 0.00 | 0.00 | 0.00 | 0.00 | 4.00 | 0.10 |
| TOTAL | 385.00 | | 599.00 | | 4033.00 | |

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| STATION | CDCN | | CDCD | | FKRD | | FKRN | | DBCD | | DBCN | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SPECIES | 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 | 323.00 | 21.55 | 76.00 | 5.58 | 86.00 | 22.69 | 299.00 | 21.99 | 21.00 | 4.84 | 649.00 | 65.56 |
| PALAEMONETES VULGARIS | 61.00 | 4.07 | 4.00 | 0.29 | 47.00 | 12.40 | 628.00 | 46.18 | 20.00 | 4.61 | 71.00 | 7.17 |
| ANCHOA MITCHILLI | 678.00 | 45.23 | 941.00 | 69.09 | 92.00 | 24.27 | 74.00 | 5.44 | 0.00 | 0.00 | 8.00 | 0.81 |
| MENIDIA MENIDIA | 45.00 | 3.00 | 0.00 | 0.00 | 28.00 | 7.39 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| MENIDIA MENIDIA JUV | 139.00 | 9.27 | 134.00 | 9.84 | 20.00 | 5.28 | 71.00 | 5.22 | 207.00 | 47.70 | 102.00 | 10.30 |
| APELTES QUADRACUS | 49.00 | 3.27 | 13.00 | 0.95 | 10.00 | 2.64 | 19.00 | 1.40 | 6.00 | 1.38 | 17.00 | 1.72 |
| MENIDIA MENIDIA ADULT | 37.00 | 2.47 | 48.00 | 3.52 | 8.00 | 2.11 | 158.00 | 11.62 | 24.00 | 5.53 | 43.00 | 4.34 |
| CALLINECTES SAPIDUS | 12.00 | 0.80 | 28.00 | 2.06 | 36.00 | 9.50 | 3.00 | 0.22 | 75.00 | 17.28 | 12.00 | 1.21 |
| PSEUDOPLEURONECTES AMERI | 27.00 | 1.80 | 59.00 | 4.33 | 27.00 | 7.12 | 18.00 | 1.32 | 5.00 | 1.15 | 12.00 | 1.21 |
| OPSANUS TAU | 1.00 | 0.07 | 0.00 | 0.00 | 1.00 | 0.26 | 10.00 | 0.74 | 3.00 | 0.69 | 2.00 | 0.20 |
| SYNGNATHUS FUSCUS | 78.00 | 5.20 | 27.00 | 1.98 | 7.00 | 1.85 | 25.00 | 1.84 | 5.00 | 1.15 | 2.00 | 0.20 |
| FUNDULUS HETEROCLITUS | 8.00 | 0.53 | 5.00 | 0.37 | 4.00 | 1.06 | 16.00 | 1.18 | 52.00 | 11.98 | 22.00 | 2.22 |
| MENIDIA BERYLLINA | 2.00 | 0.13 | 1.00 | 0.07 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| STRONGYLURA MARINA | 1.00 | 0.07 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.07 | 0.00 | 0.00 | 0.00 | 0.00 |
| POMATOMUS SALTATRIX | 0.00 | 0.00 | 4.00 | 0.29 | 1.00 | 0.26 | 4.00 | 0.29 | 3.00 | 0.69 | 21.00 | 2.12 |
| MUGIL CEPHALUS | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 8.00 | 1.84 | 1.00 | 0.10 |
| GOBIOSOMA BOSCI | 1.00 | 0.07 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.23 | 0.00 | 0.00 |
| 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 |
| PARALICHTHYS DENTATUS | 16.00 | 1.07 | 19.00 | 1.40 | 2.00 | 0.53 | 5.00 | 0.37 | 0.00 | 0.00 | 12.00 | 1.21 |
| FUNDULUS DIAPHANUS | 2.00 | 0.13 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.20 |
| TRINECTES MACULATUS | 11.00 | 0.73 | 3.00 | 0.22 | 7.00 | 1.85 | 15.00 | 1.10 | 0.00 | 0.00 | 0.00 | 0.00 |
| ANGUILLA ROSTRATA | 3.00 | 0.20 | 0.00 | 0.00 | 0.00 | 0.00 | 4.00 | 0.29 | 0.00 | 0.00 | 1.00 | 0.10 |
| TAUTOGA ONITIS | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.53 | 2.00 | 0.15 | 0.00 | 0.00 | 0.00 | 0.00 |
| RISSOLA MARGINATA | 1.00 | 0.07 | 0.00 | 0.00 | 0.00 | 0.00 | 4.00 | 0.29 | 0.00 | 0.00 | 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 |
| LEIOSTOMUS XANTHURUS | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.10 |
| MUGIL CUREMA | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.26 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.10 |
| FUNDULUS MAJALIS | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 10.00 | 1.01 |
| MEMBRAS MARTINICA | 3.00 | 0.20 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.07 | 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 | 1.00 | 0.23 | 0.00 | 0.00 |
| OTHER SPECIES | 1.00 | 0.07 | 0.00 | 0.00 | 0.00 | 0.00 | 3.00 | 0.22 | 3.00 | 0.69 | 1.00 | 0.10 |
| TOTAL | 1499.00 | | 1362.00 | | 379.00 | | 1360.00 | | 434.00 | | 990.00 | |

| STATION | OYCD | | OYCN | | | |
|---|---|---|---|---|---|---|
| SPECIES | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER TOTAL | PCT COMP |
| CRANGON SEPTEMSPINOSA | 0.00 | 0.00 | 105.00 | 9.41 | 1559.00 | 20.37 |
| PALAEMONETES VULGARIS | 172.00 | 33.53 | 560.00 | 50.18 | 1563.00 | 20.42 |
| ANCHOA MITCHILLI | 27.00 | 5.26 | 8.00 | 0.72 | 1828.00 | 23.89 |
| MENIDIA MENIDIA | 0.00 | 0.00 | 0.00 | 0.00 | 73.00 | 0.95 |
| MENIDIA MENIDIA JUV | 94.00 | 18.32 | 223.00 | 19.98 | 990.00 | 12.94 |
| APELTES QUADRACUS | 10.00 | 1.95 | 3.00 | 0.27 | 127.00 | 1.66 |
| MENIDIA MENIDIA ADULT | 54.00 | 10.53 | 34.00 | 3.05 | 406.00 | 5.31 |
| CALLINECTES SAPIDUS | 26.00 | 5.07 | 16.00 | 1.43 | 208.00 | 2.72 |
| PSEUDOPLEURONECTES AMERI | 0.00 | 0.00 | 0.00 | 0.00 | 148.00 | 1.93 |
| OPSANUS TAU | 41.00 | 7.99 | 62.00 | 5.56 | 120.00 | 1.57 |
| SYNGNATHUS FUSCUS | 12.00 | 2.34 | 13.00 | 1.16 | 169.00 | 2.21 |
| FUNDULUS HETEROCLITUS | 1.00 | 0.19 | 3.00 | 0.27 | 111.00 | 1.45 |
| MENIDIA BERYLLINA | 0.00 | 0.00 | 0.00 | 0.00 | 3.00 | 0.04 |
| STRONGYLURA MARINA | 4.00 | 0.78 | 4.00 | 0.36 | 10.00 | 0.13 |
| POMATOMUS SALTATRIX | 1.00 | 0.19 | 0.00 | 0.00 | 34.00 | 0.44 |
| MUGIL CEPHALUS | 55.00 | 10.72 | 10.00 | 0.90 | 74.00 | 0.97 |
| GOBIOSOMA BOSCI | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.03 |
| CARANX HIPPOS | 4.00 | 0.78 | 61.00 | 5.47 | 65.00 | 0.85 |
| PARALICHTHYS DENTATUS | 1.00 | 0.19 | 0.00 | 0.00 | 55.00 | 0.72 |
| FUNDULUS DIAPHANUS | 0.00 | 0.00 | 0.00 | 0.00 | 4.00 | 0.05 |
| TRINECTES MACULATUS | 0.00 | 0.00 | 1.00 | 0.09 | 37.00 | 0.48 |
| ANGUILLA ROSTRATA | 2.00 | 0.39 | 5.00 | 0.45 | 15.00 | 0.20 |
| TAUTOGA ONITIS | 1.00 | 0.19 | 0.00 | 0.00 | 5.00 | 0.07 |
| RISSOLA MARGINATA | 0.00 | 0.00 | 0.00 | 0.00 | 5.00 | 0.07 |
| CHASMODES BOSQUIANUS | 1.00 | 0.19 | 3.00 | 0.27 | 4.00 | 0.05 |
| LEIOSTOMUS XANTHURUS | 1.00 | 0.19 | 0.00 | 0.00 | 2.00 | 0.03 |
| MUGIL CUREMA | 1.00 | 0.19 | 0.00 | 0.00 | 3.00 | 0.04 |
| FUNDULUS MAJALIS | 0.00 | 0.00 | 0.00 | 0.00 | 10.00 | 0.13 |
| MEMBRAS MARTINICA | 0.00 | 0.00 | 0.00 | 0.00 | 4.00 | 0.05 |
| LUCANIA PARVA | 1.00 | 0.19 | 0.00 | 0.00 | 2.00 | 0.03 |
| OTHER SPECIES | 4.00 | 0.78 | 5.00 | 0.45 | 17.00 | 0.22 |
| TOTAL | 513.00 | | 1116.00 | | 7653.00 | |

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| STATION | CDCN | | CDCD | | FKRD | | FKRN | | DBCD | | DBCN | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SPECIES | 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 | 1396.00 | 87.69 | 12.00 | 7.23 | 787.00 | 45.23 | 204.00 | 39.46 | 24.00 | 5.06 | 627.00 | 66.42 |
| PALAEMONETES VULGARIS | 11.00 | 0.69 | 1.00 | 0.60 | 175.00 | 10.06 | 94.00 | 18.18 | 1.00 | 0.21 | 94.00 | 9.96 |
| ANCHOA MITCHILLI | 10.00 | 0.63 | 0.00 | 0.00 | 71.00 | 4.08 | 65.00 | 12.57 | 0.00 | 0.00 | 4.00 | 0.42 |
| MENIDIA MENIDIA | 12.00 | 0.75 | 56.00 | 33.73 | 144.00 | 8.28 | 55.00 | 10.64 | 100.00 | 21.10 | 104.00 | 11.02 |
| MENIDIA MENIDIA JUV | 0.00 | 0.00 | 0.00 | 0.00 | 279.00 | 16.03 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| APELTES QUADRACUS | 20.00 | 1.26 | 7.00 | 4.22 | 2.00 | 0.11 | 0.00 | 0.00 | 4.00 | 0.84 | 60.00 | 6.36 |
| MENIDIA MENIDIA ADULT | 0.00 | 0.00 | 57.00 | 34.34 | 52.00 | 2.99 | 0.00 | 0.00 | 278.00 | 58.65 | 0.00 | 0.00 |
| CALLINECTES SAPIDUS | 11.00 | 0.69 | 0.00 | 0.00 | 38.00 | 2.18 | 5.00 | 0.97 | 5.00 | 1.05 | 4.00 | 0.42 |
| PSEUDOPLEURONECTES AMERI | 2.00 | 0.13 | 1.00 | 0.60 | 7.00 | 0.40 | 0.00 | 0.00 | 1.00 | 0.21 | 4.00 | 0.42 |
| OPSANUS TAU | 84.00 | 5.28 | 15.00 | 9.04 | 10.00 | 0.57 | 19.00 | 3.68 | 2.00 | 0.42 | 16.00 | 1.69 |
| SYNGNATHUS FUSCUS | 16.00 | 1.01 | 2.00 | 1.20 | 9.00 | 0.52 | 1.00 | 0.19 | 9.00 | 1.90 | 3.00 | 0.32 |
| FUNDULUS HETEROCLITUS | 1.00 | 0.06 | 0.00 | 0.00 | 2.00 | 0.11 | 2.00 | 0.39 | 0.00 | 0.00 | 0.00 | 0.00 |
| MENIDIA BERYLLINA | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.21 | 0.00 | 0.00 |
| STRONGYLURA MARINA | 0.00 | 0.00 | 2.00 | 1.20 | 1.00 | 0.06 | 0.00 | 0.00 | 10.00 | 2.11 | 3.00 | 0.32 |
| POMATOMUS SALTATRIX | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.06 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| MUGIL CEPHALUS | 1.00 | 0.06 | 7.00 | 4.22 | 9.00 | 0.52 | 2.00 | 0.39 | 3.00 | 0.63 | 2.00 | 0.21 |
| GOBIOSOMA BOSCI | 11.00 | 0.69 | 0.00 | 0.00 | 16.00 | 0.92 | 17.00 | 3.29 | 2.00 | 0.42 | 9.00 | 0.95 |
| 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 |
| PARALICHTHYS DENTATUS | 1.00 | 0.06 | 0.00 | 0.00 | 3.00 | 0.17 | 2.00 | 0.39 | 1.00 | 0.21 | 1.00 | 0.11 |
| MENTICIRRHUS SAXATILIS | 0.00 | 0.00 | 0.00 | 0.00 | 23.00 | 1.32 | 9.00 | 1.74 | 25.00 | 5.27 | 0.00 | 0.00 |
| ANCHOA HEPSETUS | 0.00 | 0.00 | 4.00 | 2.41 | 32.00 | 1.84 | 11.00 | 2.13 | 1.00 | 0.21 | 1.00 | 0.11 |
| CYNOSCION REGALIS | 4.00 | 0.25 | 1.00 | 0.60 | 35.00 | 2.01 | 7.00 | 1.35 | 0.00 | 0.00 | 3.00 | 0.32 |
| TRINECTES MACULATUS | 0.00 | 0.00 | 0.00 | 0.00 | 4.00 | 0.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| ANGUILLA ROSTRATA | 7.00 | 0.44 | 0.00 | 0.00 | 1.00 | 0.06 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| BAIRDIELLA CHRYSURA | 0.00 | 0.00 | 0.00 | 0.00 | 9.00 | 0.52 | 14.00 | 2.71 | 0.00 | 0.00 | 3.00 | 0.32 |
| RISSOLA MARGINATA | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.06 | 3.00 | 0.58 | 0.00 | 0.00 | 0.00 | 0.00 |
| CHASMODES BOSQUIANUS | 5.00 | 0.31 | 1.00 | 0.60 | 3.00 | 0.17 | 1.00 | 0.19 | 1.00 | 0.21 | 0.00 | 0.00 |
| LEIOSTOMUS XANTHURUS | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.06 | 2.00 | 0.39 | 2.00 | 0.42 | 0.00 | 0.00 |
| MUGIL CUREMA | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.06 | 0.00 | 0.00 | 3.00 | 0.63 | 0.00 | 0.00 |
| FUNDULUS MAJALIS | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.11 |
| ANCHOA MITCHILLI JUV | 0.00 | 0.00 | 0.00 | 0.00 | 13.00 | 0.75 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| PRIONOTUS EVOLANS | 0.00 | 0.00 | 0.00 | 0.00 | 6.00 | 0.34 | 3.00 | 0.58 | 0.00 | 0.00 | 0.00 | 0.00 |
| OTHER SPECIES | 0.00 | 0.00 | 0.00 | 0.00 | 5.00 | 0.29 | 1.00 | 0.19 | 1.00 | 0.21 | 5.00 | 0.53 |
| TOTAL | 1592.00 | | 166.00 | | 1740.00 | | 517.00 | | 474.00 | | 944.00 | |

| STATION | OYCD | | OYCN | | | |
|---|---|---|---|---|---|---|
| SPECIES | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER TOTAL | PCT COMP |
| CRANGON SEPTEMSPINOSA | 1.00 | 0.65 | 9.00 | 2.63 | 3060.00 | 51.60 |
| PALAEMONETES VULGARIS | 6.00 | 3.87 | 85.00 | 24.85 | 467.00 | 7.88 |
| ANCHOA MITCHILLI | 0.00 | 0.00 | 15.00 | 4.39 | 165.00 | 2.78 |
| MENIDIA MENIDIA | 27.00 | 17.42 | 69.00 | 20.18 | 567.00 | 9.56 |
| MENIDIA MENIDIA JUV | 0.00 | 0.00 | 0.00 | 0.00 | 279.00 | 4.70 |
| APELTES QUADRACUS | 0.00 | 0.00 | 0.00 | 0.00 | 93.00 | 1.57 |
| MENIDIA MENIDIA ADULT | 63.00 | 40.65 | 0.00 | 0.00 | 450.00 | 7.59 |
| CALLINECTES SAPIDUS | 13.00 | 8.39 | 21.00 | 6.14 | 97.00 | 1.64 |
| PSEUDOPLEURONECTES AMERI | 0.00 | 0.00 | 0.00 | 0.00 | 15.00 | 0.25 |
| OPSANUS TAU | 16.00 | 10.32 | 82.00 | 23.98 | 244.00 | 4.11 |
| SYNGNATHUS FUSCUS | 1.00 | 0.65 | 6.00 | 1.75 | 47.00 | 0.79 |
| FUNDULUS HETEROCLITUS | 0.00 | 0.00 | 1.00 | 0.29 | 6.00 | 0.10 |
| MENIDIA BERYLLINA | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.02 |
| STRONGYLURA MARINA | 14.00 | 9.03 | 1.00 | 0.29 | 31.00 | 0.52 |
| POMATOMUS SALTATRIX | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.02 |
| MUGIL CEPHALUS | 0.00 | 0.00 | 1.00 | 0.29 | 25.00 | 0.42 |
| GOBIOSOMA BOSCI | 0.00 | 0.00 | 19.00 | 5.56 | 74.00 | 1.25 |
| CARANX HIPPOS | 6.00 | 3.87 | 1.00 | 0.29 | 7.00 | 0.12 |
| PARALICHTHYS DENTATUS | 0.00 | 0.00 | 0.00 | 0.00 | 8.00 | 0.13 |
| MENTICIRRHUS SAXATILIS | 1.00 | 0.65 | 5.00 | 1.46 | 63.00 | 1.06 |
| ANCHOA HEPSETUS | 2.00 | 1.29 | 3.00 | 0.88 | 54.00 | 0.91 |
| CYNOSCION REGALIS | 1.00 | 0.65 | 1.00 | 0.29 | 52.00 | 0.88 |
| TRINECTES MACULATUS | 0.00 | 0.00 | 0.00 | 0.00 | 4.00 | 0.07 |
| ANGUILLA ROSTRATA | 0.00 | 0.00 | 0.00 | 0.00 | 8.00 | 0.13 |
| BAIRDIELLA CHRYSURA | 0.00 | 0.00 | 7.00 | 2.05 | 33.00 | 0.56 |
| RISSOLA MARGINATA | 0.00 | 0.00 | 0.00 | 0.00 | 4.00 | 0.07 |
| CHASMODES BOSQUIANUS | 0.00 | 0.00 | 4.00 | 1.17 | 15.00 | 0.25 |
| LEIOSTOMUS XANTHURUS | 0.00 | 0.00 | 7.00 | 2.05 | 12.00 | 0.20 |
| MUGIL CUREMA | 0.00 | 0.00 | 0.00 | 0.00 | 4.00 | 0.07 |
| FUNDULUS MAJALIS | 0.00 | 0.00 | 2.00 | 0.58 | 3.00 | 0.05 |
| ANCHOA MITCHILLI JUV | 0.00 | 0.00 | 0.00 | 0.00 | 13.00 | 0.22 |
| PRIONOTUS EVOLANS | 1.00 | 0.65 | 2.00 | 0.58 | 12.00 | 0.20 |
| OTHER SPECIES | 3.00 | 1.94 | 1.00 | 0.29 | 16.00 | 0.27 |
| TOTAL | 155.00 | | 342.00 | | 5930.00 | |

# APPENDIX C: 12.2-m SEINE DATA

Appendix C is arranged by sampling date. The catch data are expressed as total specimens captured at a station (NUMBER INDIVS) and percent composition (PCT COMP). The sampling stations are identified by the first three letters of the 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).

| STATION | CDCD | | FERD | | FERN | | DBCD | |
|---|---|---|---|---|---|---|---|---|
| SPECIES | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP |
| CRANGON SEPTEMSPINOSA | 58.00 | 86.57 | 7.00 | 77.78 | 259.00 | 91.84 | 76.00 | 33.48 |
| MENIDIA MENIDIA | 9.00 | 13.43 | 0.00 | 0.00 | 0.00 | 0.00 | 131.00 | 57.71 |
| APELTES QUADRACUS | 0.00 | 0.00 | 2.00 | 22.22 | 11.00 | 3.90 | 3.00 | 1.32 |
| SYNGNATHUS FUSCUS | 0.00 | 0.00 | 0.00 | 0.00 | 3.00 | 1.06 | 0.00 | 0.00 |
| MENIDIA BERYLLINA | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.35 | 10.00 | 4.41 |
| FUNDULUS HETEROCLITUS | 0.00 | 0.00 | 0.00 | 0.00 | 4.00 | 1.42 | 3.00 | 1.32 |
| CALLINECTES SAPIDUS | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.71 | 1.00 | 0.44 |
| PSEUDOPLEURONECTES AMERI | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| ANGUILLA ROSTRATA | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.35 | 0.00 | 0.00 |
| GOBIOSOMA BOSCI | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| MUGIL CUREMA | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.88 |
| CYPRINODON VARIEGATUS | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.44 |
| GASTEROSTEUS ACULEATUS | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| MUGIL CEPHALUS | 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 | 1.00 | 0.35 | 0.00 | 0.00 |
| TOTAL | 67.00 | | 9.00 | | 282.00 | | 227.00 | |

| STATION | OYCD | | OYCN | | | |
|---|---|---|---|---|---|---|
| SPECIES | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER TOTAL | PCT COMP |
| CRANGON SEPTEMSPINOSA | 181.00 | 49.32 | 1167.00 | 96.53 | 1748.00 | 80.89 |
| MENIDIA MENIDIA | 182.00 | 49.59 | 5.00 | 0.41 | 327.00 | 15.13 |
| APELTES QUADRACUS | 0.00 | 0.00 | 16.00 | 1.32 | 32.00 | 1.48 |
| SYNGNATHUS FUSCUS | 0.00 | 0.00 | 2.00 | 0.17 | 5.00 | 0.23 |
| MENIDIA BERYLLINA | 1.00 | 0.27 | 2.00 | 0.17 | 14.00 | 0.65 |
| FUNDULUS HETEROCLITUS | 0.00 | 0.00 | 3.00 | 0.25 | 10.00 | 0.46 |
| CALLINECTES SAPIDUS | 1.00 | 0.27 | 7.00 | 0.58 | 11.00 | 0.51 |
| PSEUDOPLEURONECTES AMERI | 1.00 | 0.27 | 0.00 | 0.00 | 1.00 | 0.05 |
| ANGUILLA ROSTRATA | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.05 |
| GOBIOSOMA BOSCI | 0.00 | 0.00 | 2.00 | 0.17 | 2.00 | 0.09 |
| MUGIL CUREMA | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.09 |
| CYPRINODON VARIEGATUS | 1.00 | 0.27 | 2.00 | 0.17 | 4.00 | 0.19 |
| GASTEROSTEUS ACULEATUS | 0.00 | 0.00 | 1.00 | 0.08 | 1.00 | 0.05 |
| MUGIL CEPHALUS | 0.00 | 0.00 | 1.00 | 0.08 | 1.00 | 0.05 |
| OTHER SPECIES | 0.00 | 0.00 | 1.00 | 0.08 | 2.00 | 0.09 |
| TOTAL | 367.00 | | 1209.00 | | 2161.00 | |

| STATION | CDCD | | FKRD | | FKRN | | OBCD | |
|---|---|---|---|---|---|---|---|---|
| SPECIES | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP |
| CRANGON SEPTEMSPINOSA | 0.00 | 0.00 | 2.00 | 22.22 | 275.00 | 87.58 | 0.00 | 0.00 |
| MENIDIA MENIDIA | 86.00 | 51.81 | 1.00 | 11.11 | 15.00 | 4.78 | 11.00 | 30.56 |
| ANCHOA MITCHILLI | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.64 | 0.00 | 0.00 |
| APELTES QUADRACUS | 3.00 | 1.81 | 0.00 | 0.00 | 0.00 | 0.00 | 5.00 | 13.89 |
| SYNGNATHUS FUSCUS | 3.00 | 1.81 | 1.00 | 11.11 | 2.00 | 0.64 | 4.00 | 11.11 |
| MENIDIA BERYLLINA | 33.00 | 19.88 | 2.00 | 22.22 | 1.00 | 0.32 | 6.00 | 16.67 |
| FUNDULUS HETEROCLITUS | 10.00 | 6.02 | 0.00 | 0.00 | 2.00 | 0.64 | 3.00 | 8.33 |
| CALLINECTES SAPIDUS | 0.00 | 0.00 | 1.00 | 11.11 | 5.00 | 1.59 | 5.00 | 13.89 |
| FUNDULUS DIAPHANUS | 29.00 | 17.47 | 0.00 | 0.00 | 6.00 | 1.91 | 0.00 | 0.00 |
| PSEUDOPLEURONECTES AMERI | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.64 | 0.00 | 0.00 |
| RISSOLA MARGINATA | 0.00 | 0.00 | 0.00 | 0.00 | 4.00 | 1.27 | 0.00 | 0.00 |
| CYPRINODON VARIEGATUS | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| GASTEROSTEUS ACULEATUS | 1.00 | 0.60 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 5.56 |
| AMMODYTES AMERICANUS | 0.00 | 0.00 | 2.00 | 22.22 | 0.00 | 0.00 | 0.00 | 0.00 |
| OTHER SPECIES | 1.00 | 0.60 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOTAL | 166.00 | | 9.00 | | 314.00 | | 36.00 | |

| STATION | OYCD | | OYCN | | | |
|---|---|---|---|---|---|---|
| SPECIES | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER TOTAL | PCT COMP |
| CRANGON SEPTEMSPINOSA | 0.00 | 0.00 | 122.00 | 62.56 | 399.00 | 52.92 |
| MENIDIA MENIDIA | 27.00 | 79.41 | 12.00 | 6.15 | 152.00 | 20.16 |
| ANCHOA MITCHILLI | 0.00 | 0.00 | 34.00 | 17.44 | 36.00 | 4.77 |
| APELTES QUADRACUS | 0.00 | 0.00 | 0.00 | 0.00 | 8.00 | 1.06 |
| SYNGNATHUS FUSCUS | 2.00 | 5.88 | 4.00 | 2.05 | 16.00 | 2.12 |
| MENIDIA BERYLLINA | 1.00 | 2.94 | 0.00 | 0.00 | 43.00 | 5.70 |
| FUNDULUS HETEROCLITUS | 0.00 | 0.00 | 5.00 | 2.56 | 20.00 | 2.65 |
| CALLINECTES SAPIDUS | 2.00 | 5.88 | 14.00 | 7.18 | 27.00 | 3.58 |
| FUNDULUS DIAPHANUS | 0.00 | 0.00 | 0.00 | 0.00 | 35.00 | 4.64 |
| PSEUDOPLEURONECTES AMERI | 0.00 | 0.00 | 1.00 | 0.51 | 3.00 | 0.40 |
| RISSOLA MARGINATA | 0.00 | 0.00 | 3.00 | 1.54 | 7.00 | 0.93 |
| CYPRINODON VARIEGATUS | 2.00 | 5.88 | 0.00 | 0.00 | 2.00 | 0.27 |
| GASTEROSTEUS ACULEATUS | 0.00 | 0.00 | 0.00 | 0.00 | 3.00 | 0.40 |
| AMMODYTES AMERICANUS | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.27 |
| OTHER SPECIES | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.13 |
| TOTAL | 34.00 | | 195.00 | | 754.00 | |

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| STATION | CDCN | | CDCD | | FKRD | | FKRN | | DBCD | | DBCN | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SPECIES | 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 | 391.00 | 84.09 | 6.00 | 1.35 | 0.00 | 0.00 | 72.00 | 53.33 | 41.00 | 19.52 | 164.00 | 66.40 |
| MENIDIA MENIDIA | 3.00 | 0.65 | 62.00 | 13.90 | 706.00 | 95.79 | 38.00 | 28.15 | 59.00 | 28.10 | 49.00 | 19.84 |
| ANCHOA MITCHILLI | 30.00 | 6.45 | 0.00 | 0.00 | 16.00 | 2.17 | 7.00 | 5.19 | 2.00 | 0.95 | 1.00 | 0.40 |
| MENIDIA MENIDIA JUV | 0.00 | 0.00 | 59.00 | 13.23 | 0.00 | 0.00 | 0.00 | 0.00 | 61.00 | 29.05 | 0.00 | 0.00 |
| PALAEMONETES VULGARIS | 2.00 | 0.43 | 26.00 | 5.83 | 3.00 | 0.41 | 8.00 | 5.93 | 8.00 | 3.81 | 21.00 | 8.50 |
| APELTES QUADRACUS | 1.00 | 0.22 | 167.00 | 37.44 | 3.00 | 0.41 | 0.00 | 0.00 | 11.00 | 5.24 | 0.00 | 0.00 |
| SYNGNATHUS FUSCUS | 0.00 | 0.00 | 12.00 | 2.69 | 1.00 | 0.14 | 1.00 | 0.74 | 4.00 | 1.90 | 0.00 | 0.00 |
| MENIDIA BERYLLINA | 3.00 | 0.65 | 85.00 | 19.06 | 0.00 | 0.00 | 0.00 | 0.00 | 5.00 | 2.38 | 0.00 | 0.00 |
| FUNDULUS HETEROCLITUS | 2.00 | 0.43 | 11.00 | 2.47 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| CALLINECTES SAPIDUS | 5.00 | 1.08 | 2.00 | 0.45 | 0.00 | 0.00 | 1.00 | 0.74 | 4.00 | 1.90 | 0.00 | 0.00 |
| PSEUDOPLEURONECTES AMERI | 8.00 | 1.72 | 1.00 | 0.22 | 0.00 | 0.00 | 2.00 | 1.48 | 6.00 | 2.86 | 8.00 | 3.24 |
| OPSANUS TAU | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.74 | 0.00 | 0.00 | 0.00 | 0.00 |
| ANGUILLA ROSTRATA | 5.00 | 1.08 | 4.00 | 0.90 | 2.00 | 0.27 | 1.00 | 0.74 | 1.00 | 0.48 | 0.00 | 0.00 |
| GOBIOSOMA BOSCI | 1.00 | 0.22 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| POMATOMUS SALTATRIX | 0.00 | 0.00 | 0.00 | 0.00 | 5.00 | 0.68 | 1.00 | 0.74 | 4.00 | 1.90 | 3.00 | 1.21 |
| STRONGYLURA MARINA | 0.00 | 0.00 | 10.00 | 2.24 | 1.00 | 0.14 | 0.00 | 0.00 | 3.00 | 1.43 | 0.00 | 0.00 |
| RISSOLA MARGINATA | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.74 | 0.00 | 0.00 | 0.00 | 0.00 |
| MUGIL CUREMA | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| PSEUDOPLEURONEC AMER JUV | 9.00 | 1.94 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| FUNDULUS SP | 0.00 | 0.00 | 1.00 | 0.22 | 0.00 | 0.00 | 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 | 0.00 | 0.00 | 1.00 | 0.40 |
| 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 |
| TRINECTES MACULATUS | 1.00 | 0.22 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.74 | 0.00 | 0.00 | 0.00 | 0.00 |
| MORONE AMERICANA | 1.00 | 0.22 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.74 | 0.00 | 0.00 | 0.00 | 0.00 |
| LEIOSTOMUS XANTHURUS | 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 | 3.00 | 0.65 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.48 | 0.00 | 0.00 |
| TOTAL | 465.00 | | 446.00 | | 737.00 | | 135.00 | | 210.00 | | 247.00 | |

| STATION | OYCD | | OYCN | | | |
|---|---|---|---|---|---|---|
| SPECIES | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER TOTAL | PCT COMP |
| CRANGON SEPTEMSPINOSA | 67.00 | 20.62 | 17.00 | 8.54 | 758.00 | 27.42 |
| MENIDIA MENIDIA | 220.00 | 67.69 | 149.00 | 74.87 | 1286.00 | 46.53 |
| ANCHOA MITCHILLI | 1.00 | 0.31 | 8.00 | 4.02 | 65.00 | 2.35 |
| MENIDIA MENIDIA JUV | 0.00 | 0.00 | 0.00 | 0.00 | 120.00 | 4.34 |
| PALAEMONETES VULGARIS | 19.00 | 5.85 | 8.00 | 4.02 | 95.00 | 3.44 |
| APELTES QUADRACUS | 0.00 | 0.00 | 1.00 | 0.50 | 183.00 | 6.62 |
| SYNGNATHUS FUSCUS | 2.00 | 0.62 | 0.00 | 0.00 | 20.00 | 0.72 |
| MENIDIA BERYLLINA | 0.00 | 0.00 | 1.00 | 0.50 | 94.00 | 3.40 |
| FUNDULUS HETEROCLITUS | 0.00 | 0.00 | 0.00 | 0.00 | 13.00 | 0.47 |
| CALLINECTES SAPIDUS | 11.00 | 3.38 | 2.00 | 1.01 | 25.00 | 0.90 |
| PSEUDOPLEURONECTES AMERI | 1.00 | 0.31 | 1.00 | 0.50 | 27.00 | 0.98 |
| OPSANUS TAU | 0.00 | 0.00 | 2.00 | 1.01 | 3.00 | 0.11 |
| ANGUILLA ROSTRATA | 0.00 | 0.00 | 1.00 | 0.50 | 14.00 | 0.51 |
| GOBIOSOMA BOSCI | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.04 |
| POMATOMUS SALTATRIX | 0.00 | 0.00 | 3.00 | 1.51 | 16.00 | 0.58 |
| STRONGYLURA MARINA | 0.00 | 0.00 | 0.00 | 0.00 | 14.00 | 0.51 |
| RISSOLA MARGINATA | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.04 |
| MUGIL CUREMA | 3.00 | 0.92 | 2.00 | 1.01 | 5.00 | 0.18 |
| PSEUDOPLEURONEC AMER JUV | 0.00 | 0.00 | 0.00 | 0.00 | 9.00 | 0.33 |
| FUNDULUS SP | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.04 |
| FUNDULUS MAJALIS | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.04 |
| MEMBRAS MARTINICA | 0.00 | 0.00 | 1.00 | 0.50 | 1.00 | 0.04 |
| TRINECTES MACULATUS | 0.00 | 0.00 | 1.00 | 0.50 | 3.00 | 0.11 |
| MORONE AMERICANA | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.07 |
| LEIOSTOMUS XANTHURUS | 1.00 | 0.31 | 1.00 | 0.50 | 2.00 | 0.07 |
| OTHER SPECIES | 0.00 | 0.00 | 1.00 | 0.50 | 5.00 | 0.18 |
| TOTAL | 325.00 | | 199.00 | | 2764.00 | |

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| STATION | CDCN | | CDCD | | FKRD | | FKRN | | DBCD | | DBCN | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SPECIES | 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 | 123.00 | 51.90 | 2.00 | 0.42 | 4.00 | 7.69 | 61.00 | 47.66 | 0.00 | 0.00 | 49.00 | 52.69 |
| MENIDIA MENIDIA | 60.00 | 25.32 | 29.00 | 6.16 | 8.00 | 15.38 | 30.00 | 23.44 | 0.00 | 0.00 | 13.00 | 13.98 |
| ANCHOA MITCHILLI | 16.00 | 6.75 | 115.00 | 24.42 | 22.00 | 42.31 | 12.00 | 9.37 | 0.00 | 0.00 | 0.00 | 0.00 |
| MENIDIA MENIDIA JUV | 0.00 | 0.00 | 272.00 | 57.75 | 0.00 | 0.00 | 0.00 | 0.00 | 105.00 | 57.07 | 0.00 | 0.00 |
| PALAEMONETES VULGARIS | 10.00 | 4.22 | 10.00 | 2.12 | 10.00 | 19.23 | 8.00 | 6.25 | 2.00 | 1.09 | 2.00 | 2.15 |
| APELTES QUADRACUS | 2.00 | 0.84 | 8.00 | 1.70 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.54 | 1.00 | 1.08 |
| SYNGNATHUS FUSCUS | 18.00 | 7.59 | 23.00 | 4.88 | 3.00 | 5.77 | 11.00 | 8.59 | 3.00 | 1.63 | 0.00 | 0.00 |
| MENIDIA BERYLLINA | 0.00 | 0.00 | 2.00 | 0.42 | 0.00 | 0.00 | 0.00 | 0.00 | 3.00 | 1.63 | 1.00 | 1.08 |
| FUNDULUS HETEROCLITUS | 5.00 | 2.11 | 1.00 | 0.21 | 4.00 | 7.69 | 2.00 | 1.56 | 39.00 | 21.20 | 12.00 | 12.90 |
| CALLINECTES SAPIDUS | 1.00 | 0.42 | 1.00 | 0.21 | 0.00 | 0.00 | 2.00 | 1.56 | 9.00 | 4.89 | 0.00 | 0.00 |
| MENIDIA MENIDIA ADULT | 0.00 | 0.00 | 7.00 | 1.49 | 0.00 | 0.00 | 0.00 | 0.00 | 19.00 | 10.33 | 0.00 | 0.00 |
| FUNDULUS DIAPHANUS | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 1.08 |
| PSEUDOPLEURONECTES AMERI | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 1.92 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 2.15 |
| OPSANUS TAU | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| ANGUILLA ROSTRATA | 1.00 | 0.42 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5.00 | 5.38 |
| GOBIOSOMA BOSCI | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 1.08 |
| POMATOMUS SALTATRIX | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.54 | 1.00 | 1.08 |
| STRONGYLURA MARINA | 0.00 | 0.00 | 1.00 | 0.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RISSOLA MARGINATA | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 1.56 | 0.00 | 0.00 | 0.00 | 0.00 |
| MUGIL CUREMA | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.54 | 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 | 2.15 |
| 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 |
| FUNDULUS MAJALIS | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.54 | 2.00 | 2.15 |
| MUGIL CEPHALUS | 1.00 | 0.42 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 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 |
| OTHER SPECIES | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 1.08 |
| TOTAL | 237.00 | | 471.00 | | 52.00 | | 128.00 | | 184.00 | | 93.00 | |

| STATION | OYCD | | OYCN | | | |
|---|---|---|---|---|---|---|
| SPECIES | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER TOTAL | PCT COMP |
| CRANGON SEPTEMSPINOSA | 0.00 | 0.00 | 2.00 | 1.12 | 241.00 | 17.54 |
| MENIDIA MENIDIA | 16.00 | 51.61 | 0.00 | 0.00 | 156.00 | 11.35 |
| ANCHOA MITCHILLI | 1.00 | 3.23 | 0.00 | 0.00 | 166.00 | 12.08 |
| MENIDIA MENIDIA JUV | 0.00 | 0.00 | 137.00 | 76.97 | 514.00 | 37.41 |
| PALAEMONETES VULGARIS | 10.00 | 32.26 | 0.00 | 0.00 | 52.00 | 3.78 |
| APELTES QUADRACUS | 0.00 | 0.00 | 0.00 | 0.00 | 12.00 | 0.87 |
| SYNGNATHUS FUSCUS | 1.00 | 3.23 | 3.00 | 1.69 | 62.00 | 4.51 |
| MENIDIA BERYLLINA | 0.00 | 0.00 | 0.00 | 0.00 | 6.00 | 0.44 |
| FUNDULUS HETEROCLITUS | 0.00 | 0.00 | 2.00 | 1.12 | 65.00 | 4.73 |
| CALLINECTES SAPIDUS | 1.00 | 3.23 | 1.00 | 0.56 | 15.00 | 1.09 |
| MENIDIA MENIDIA ADULT | 0.00 | 0.00 | 17.00 | 9.55 | 43.00 | 3.13 |
| FUNDULUS DIAPHANUS | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.07 |
| PSEUDOPLEURONECTES AMERI | 0.00 | 0.00 | 0.00 | 0.00 | 3.00 | 0.22 |
| OPSANUS TAU | 2.00 | 6.45 | 1.00 | 0.56 | 3.00 | 0.22 |
| ANGUILLA ROSTRATA | 0.00 | 0.00 | 1.00 | 0.56 | 7.00 | 0.51 |
| GOBIOSOMA BOSCI | 0.00 | 0.00 | 3.00 | 1.69 | 4.00 | 0.29 |
| POMATOMUS SALTATRIX | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.15 |
| STRONGYLURA MARINA | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.07 |
| RISSOLA MARGINATA | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.15 |
| MUGIL CUREMA | 0.00 | 0.00 | 1.00 | 0.56 | 2.00 | 0.15 |
| CYPRINODON VARIEGATUS | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.15 |
| CARANX HIPPOS | 0.00 | 0.00 | 6.00 | 3.37 | 6.00 | 0.44 |
| FUNDULUS MAJALIS | 0.00 | 0.00 | 0.00 | 0.00 | 3.00 | 0.22 |
| MUGIL CEPHALUS | 0.00 | 0.00 | 2.00 | 1.12 | 3.00 | 0.22 |
| MEMBRAS MARTINICA | 0.00 | 0.00 | 2.00 | 1.12 | 2.00 | 0.15 |
| OTHER SPECIES | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.07 |
| TOTAL | 31.00 | | 178.00 | | 1374.00 | |

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| STATION | CDCN | | CDCD | | FKRD | | FKRN | | DBCD | | DBCN | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SPECIES | 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 | 683.00 | 41.57 | 30.00 | 28.30 | 7.00 | 3.10 | 213.00 | 43.38 | 1.00 | 1.45 | 38.00 | 53.52 |
| MENIDIA MENIDIA | 1.00 | 0.06 | 40.00 | 37.74 | 61.00 | 26.99 | 9.00 | 1.83 | 66.00 | 95.65 | 14.00 | 19.72 |
| ANCHOA MITCHILLI | 929.00 | 56.54 | 2.00 | 1.89 | 17.00 | 7.52 | 21.00 | 4.28 | 0.00 | 0.00 | 12.00 | 16.90 |
| PALAEMONETES VULGARIS | 10.00 | 0.61 | 4.00 | 3.77 | 24.00 | 10.62 | 72.00 | 14.66 | 0.00 | 0.00 | 0.00 | 0.00 |
| APELTES QUADRACUS | 1.00 | 0.06 | 5.00 | 4.72 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| SYNGNATHUS FUSCUS | 7.00 | 0.43 | 18.00 | 16.98 | 4.00 | 1.77 | 95.00 | 19.35 | 0.00 | 0.00 | 2.00 | 2.82 |
| ANCHOA MITCHILLI JUV | 0.00 | 0.00 | 0.00 | 0.00 | 103.00 | 45.58 | 65.00 | 13.24 | 0.00 | 0.00 | 0.00 | 0.00 |
| MENIDIA BERYLLINA | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 1.45 | 0.00 | 0.00 |
| FUNDULUS HETEROCLITUS | 1.00 | 0.06 | 0.00 | 0.00 | 0.00 | 0.00 | 4.00 | 0.81 | 0.00 | 0.00 | 1.00 | 1.41 |
| CALLINECTES SAPIDUS | 3.00 | 0.18 | 0.00 | 0.00 | 4.00 | 1.77 | 1.00 | 0.20 | 0.00 | 0.00 | 2.00 | 2.82 |
| OPSANUS TAU | 0.00 | 0.00 | 2.00 | 1.89 | 3.00 | 1.33 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| GOBIOSOMA BOSCI | 3.00 | 0.18 | 1.00 | 0.94 | 0.00 | 0.00 | 1.00 | 0.20 | 0.00 | 0.00 | 0.00 | 0.00 |
| STRONGYLURA MARINA | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 2.82 |
| RISSOLA MARGINATA | 1.00 | 0.06 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| MENTICIRRHUS SAXATILIS | 2.00 | 0.12 | 0.00 | 0.00 | 0.00 | 0.00 | 5.00 | 1.02 | 0.00 | 0.00 | 0.00 | 0.00 |
| FUNDULUS SP | 0.00 | 0.00 | 4.00 | 3.77 | 0.00 | 0.00 | 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 | 1.45 | 0.00 | 0.00 |
| CYNOSCION REGALIS | 2.00 | 0.12 | 0.00 | 0.00 | 1.00 | 0.44 | 2.00 | 0.41 | 0.00 | 0.00 | 0.00 | 0.00 |
| PRIONOTUS EVOLANS | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.20 | 0.00 | 0.00 | 0.00 | 0.00 |
| SPHOEROIDES MACULATUS | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.44 | 2.00 | 0.41 | 0.00 | 0.00 | 0.00 | 0.00 |
| BAIRDIELLA CHRYSURA | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.44 | 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 |
| TOTAL | 1643.00 | | 106[illegible].00 | | 226.00 | | 491.00 | | 69.00 | | 71.00 | |

| STATION | OYCD | | OYCN | | | |
|---|---|---|---|---|---|---|
| SPECIES | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER TOTAL | PCT COMP |
| CRANGON SEPTEMSPINOSA | 0.00 | 0.00 | 0.00 | 0.00 | 972.00 | 33.80 |
| MENIDIA MENIDIA | 13.00 | 86.67 | 17.00 | 6.67 | 221.00 | 7.68 |
| ANCHOA MITCHILLI | 0.00 | 0.00 | 57.00 | 22.35 | 1038.00 | 36.09 |
| PALAEMONETES VULGARIS | 0.00 | 0.00 | 133.00 | 52.16 | 243.00 | 8.45 |
| APELTES QUADRACUS | 0.00 | 0.00 | 0.00 | 0.00 | 6.00 | 0.21 |
| SYNGNATHUS FUSCUS | 0.00 | 0.00 | 1.00 | 0.39 | 127.00 | 4.42 |
| ANCHOA MITCHILLI JUV | 0.00 | 0.00 | 0.00 | 0.00 | 168.00 | 5.84 |
| MENIDIA BERYLLINA | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.03 |
| FUNDULUS HETEROCLITUS | 0.00 | 0.00 | 0.00 | 0.00 | 6.00 | 0.21 |
| CALLINECTES SAPIDUS | 0.00 | 0.00 | 13.00 | 5.10 | 23.00 | 0.80 |
| OPSANUS TAU | 1.00 | 6.67 | 19.00 | 7.45 | 25.00 | 0.87 |
| GOBIOSOMA BOSCI | 1.00 | 6.67 | 7.00 | 2.75 | 13.00 | 0.45 |
| STRONGYLURA MARINA | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.07 |
| RISSOLA MARGINATA | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.03 |
| MENTICIRRHUS SAXATILIS | 0.00 | 0.00 | 2.00 | 0.78 | 9.00 | 0.31 |
| FUNDULUS SP | 0.00 | 0.00 | 0.00 | 0.00 | 4.00 | 0.14 |
| FUNDULUS MAJALIS | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.03 |
| CYNOSCION REGALIS | 0.00 | 0.00 | 0.00 | 0.00 | 5.00 | 0.17 |
| PRIONOTUS EVOLANS | 0.00 | 0.00 | 4.00 | 1.57 | 5.00 | 0.17 |
| SPHOEROIDES MACULATUS | 0.00 | 0.00 | 0.00 | 0.00 | 3.00 | 0.10 |
| BAIRDIELLA CHRYSURA | 0.00 | 0.00 | 1.00 | 0.39 | 2.00 | 0.07 |
| OTHER SPECIES | 0.00 | 0.00 | 1.00 | 0.39 | 1.00 | 0.03 |
| TOTAL | 15.00 | | 255.00 | | 2876.00 | |

# APPENDIX D: INTAKE MACROINVERTEBRATE DATA

Appendix D is arranged by sampling month. The catch data are expressed as the mean number of organisms per 100 $m^3$ (NUMBER INDIVS) and percent composition (PCT COMP). The sampling stations are intake night (INNT) and intake day (INDA).

| STATION | INNT | | INDA | | | |
|---|---|---|---|---|---|---|
| SPECIES | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER TOTAL | PCT COMP |
| ORDER AMPHIPODA | 10549.68 | 73.10 | 808.30 | 45.55 | 8114.34 | 72.01 |
| CRANGON SEPTEMSPINO ZOEA | 1918.05 | 13.29 | 0.00 | 0.00 | 1438.54 | 12.77 |
| FAMILY MYSIDAE | 259.63 | 1.80 | 0.00 | 0.00 | 194.72 | 1.73 |
| ORDER CUMACEA | 94.68 | 0.66 | 0.00 | 0.00 | 71.01 | 0.63 |
| CLASS POLYCHAETA | 25.03 | 0.17 | 0.00 | 0.00 | 18.77 | 0.17 |
| SUBCLAS CIRRIPEDIA LARVA | 19.04 | 0.13 | 0.00 | 0.00 | 14.28 | 0.13 |
| SUBCLASS OSTRACODA | 2.64 | 0.02 | 0.00 | 0.00 | 1.98 | 0.02 |
| SARSIA SP | 384.72 | 2.67 | 326.68 | 18.41 | 370.21 | 3.29 |
| CRANGON SEPTEMSPINOSA | 259.56 | 1.80 | 547.65 | 30.86 | 331.58 | 2.94 |
| ORDER MYSIDACEA | 129.82 | 0.90 | 5.18 | 0.29 | 98.66 | 0.88 |
| CLASS POLYCHAETA LAR | 411.68 | 2.85 | 21.63 | 1.22 | 314.16 | 2.79 |
| SUBORDER CAPRELLIDAE | 0.00 | 0.00 | 1.25 | 0.07 | 0.31 | 0.00 |
| HYDROMEDUSAE | 69.45 | 0.48 | 0.00 | 0.00 | 52.09 | 0.46 |
| OXYUROSTYLIS SMITHI | 85.38 | 0.59 | 0.00 | 0.00 | 64.04 | 0.57 |
| LEUCON AMERICANUS | 54.23 | 0.38 | 1.25 | 0.07 | 40.99 | 0.36 |
| OBELIA SP | 41.68 | 0.29 | 16.58 | 0.93 | 35.41 | 0.31 |
| CYCLASPIS VARIANS | 25.91 | 0.18 | 3.93 | 0.22 | 20.41 | 0.18 |
| CRANGON SEPTEMSPIN ADULT | 3.57 | 0.02 | 0.00 | 0.00 | 2.68 | 0.02 |
| CLASS PELECYPODA | 9.29 | 0.06 | 6.70 | 0.38 | 8.64 | 0.08 |
| SUBCLS CIRRIPEDIA CYPRID | 12.13 | 0.08 | 8.08 | 0.46 | 11.11 | 0.10 |
| FAMILY HAUSTORIIDAE | 15.52 | 0.11 | 0.00 | 0.00 | 11.64 | 0.10 |
| IDOTEA BALTICA | 3.12 | 0.02 | 6.70 | 0.38 | 4.02 | 0.04 |
| SUBORDER AEOLIDACEA | 0.00 | 0.00 | 1.40 | 0.08 | 0.35 | 0.00 |
| OTHER SPECIES | 57.71 | 0.40 | 19.15 | 1.08 | 48.07 | 0.43 |
| TOTAL | 14432.54 | | 1774.45 | | 11268.01 | |

| STATION | INNT | | INDA | | | |
|---|---|---|---|---|---|---|
| SPECIES | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER TOTAL | PCT COMP |
| ORDER AMPHIPODA | 1520.28 | 19.75 | 63.05 | 1.32 | 1071.90 | 15.76 |
| CRANGON SEPTEMSPINO ZOEA | 4149.68 | 53.90 | 2291.95 | 47.86 | 3578.07 | 52.60 |
| FAMILY MYSIDAE | 1429.74 | 18.57 | 18.45 | 0.39 | 995.50 | 14.63 |
| ORDER CUMACEA | 121.17 | 1.57 | 10.25 | 0.21 | 87.04 | 1.28 |
| FAMILY XANTHIDAE ZOEA | 40.71 | 0.53 | 1.90 | 0.04 | 28.77 | 0.42 |
| CLASS POLYCHAETA | 271.47 | 3.53 | 312.55 | 6.53 | 284.11 | 4.18 |
| SUBCLAS CIRRIPEDIA LARVA | 7.52 | 0.10 | 1954.70 | 40.82 | 606.65 | 8.92 |
| SUBCLASS OSTRACODA | 99.72 | 1.30 | 0.00 | 0.00 | 69.04 | 1.01 |
| CRANGON SEPTEMSPINOSA | 7.43 | 0.10 | 0.00 | 0.00 | 5.15 | 0.08 |
| ORDER ISOPODA | 9.26 | 0.12 | 0.87 | 0.02 | 6.66 | 0.10 |
| PALAEMONETES SP ZOEA | 2.29 | 0.03 | 0.00 | 0.00 | 1.58 | 0.02 |
| HYDROMEDUSAE | 2.76 | 0.04 | 90.93 | 1.90 | 29.88 | 0.44 |
| ORDER NUDIBRANCHIA | 5.84 | 0.08 | 0.87 | 0.02 | 4.32 | 0.06 |
| CRANGON SEPTEMSPIN ADULT | 5.33 | 0.07 | 0.00 | 0.00 | 3.69 | 0.05 |
| CLASS GASTROPODA | 0.73 | 0.01 | 0.00 | 0.00 | 0.51 | 0.01 |
| CLASS PELECYPODA | 4.42 | 0.06 | 2.05 | 0.04 | 3.69 | 0.05 |
| SUBCLAS CIRRIPEDIA ADULT | 7.06 | 0.09 | 0.00 | 0.00 | 4.88 | 0.07 |
| SUBCLS CIRRIPEDIA CYPRID | 0.00 | 0.00 | 8.27 | 0.17 | 2.55 | 0.04 |
| PHYLUM NEMERTEA | 0.00 | 0.00 | 28.65 | 0.60 | 8.82 | 0.13 |
| OTHER SPECIES | 12.90 | 0.17 | 4.10 | 0.09 | 10.19 | 0.15 |
| TOTAL | 7698.31 | | 4788.60 | | 6803.02 | |

| STATION | INNT | | INDA | | | |
|---|---|---|---|---|---|---|
| SPECIES | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER TOTAL | PCT COMP |
| ORDER AMPHIPODA | 2765.35 | 38.37 | 290.58 | 23.80 | 2058.27 | 37.44 |
| CRANGON SEPTEMSPINO ZOEA | 27.45 | 0.38 | 24.73 | 2.03 | 26.67 | 0.49 |
| FAMILY MYSIDAE | 2258.76 | 31.34 | 155.50 | 12.74 | 1657.83 | 30.16 |
| ORDER CUMACEA | 590.90 | 8.20 | 11.55 | 0.95 | 425.37 | 7.74 |
| FAMILY XANTHIDAE ZOEA | 770.67 | 10.69 | 202.10 | 16.55 | 608.22 | 11.06 |
| CLASS POLYCHAETA | 278.96 | 3.87 | 325.73 | 26.68 | 292.32 | 5.32 |
| SUBCLASS OSTRACODA | 131.34 | 1.82 | 89.75 | 7.35 | 119.46 | 2.17 |
| ORDER ISOPODA | 45.80 | 0.64 | 70.88 | 5.81 | 52.96 | 0.96 |
| PALAEMONETES SP ZOEA | 151.01 | 2.10 | 0.00 | 0.00 | 107.86 | 1.96 |
| HYDROMEDUSAE | 0.56 | 0.01 | 0.00 | 0.00 | 0.40 | 0.01 |
| ORDER NUDIBRANCHIA | 112.74 | 1.56 | 24.73 | 2.03 | 87.59 | 1.59 |
| UPOGEBIA AFFINIS ZOEA | 1.10 | 0.02 | 0.00 | 0.00 | 0.79 | 0.01 |
| CRANGON SEPTEMSPIN ADULT | 22.37 | 0.31 | 0.00 | 0.00 | 15.98 | 0.29 |
| CLASS PELECYPODA | 3.71 | 0.05 | 7.80 | 0.64 | 4.88 | 0.09 |
| NEREIS SP EPITOKE | 1.05 | 0.01 | 0.00 | 0.00 | 0.75 | 0.01 |
| SUBCLAS CIRRIPEDIA ADULT | 14.36 | 0.20 | 6.93 | 0.57 | 12.24 | 0.22 |
| ORDER ACTINIARIA | 4.66 | 0.06 | 0.00 | 0.00 | 3.33 | 0.06 |
| PHYLUM NEMERTEA | 5.49 | 0.08 | 0.00 | 0.00 | 3.92 | 0.07 |
| OTHER SPECIES | 21.11 | 0.29 | 10.60 | 0.87 | 18.11 | 0.33 |
| TOTAL | 7207.39 | | 1220.85 | | 5496.95 | |

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| STATION | INNT | | INDA | | | |
|---|---|---|---|---|---|---|
| SPECIES | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER TOTAL | PCT COMP |
| ORDER AMPHIPODA | 2563.63 | 41.99 | 48.28 | 9.41 | 2004.66 | 41.23 |
| CRANGON SEPTEMSPINO ZOEA | 8.27 | 0.14 | 14.85 | 2.90 | 9.73 | 0.20 |
| FAMILY MYSIDAE | 663.63 | 10.87 | 34.53 | 6 73 | 523.83 | 10.77 |
| ORDER CUMACEA | 989.49 | 16.21 | 25.25 | 4.92 | 775.22 | 15.94 |
| FAMILY XANTHIDAE ZOEA | 889.69 | 14.57 | 175.25 | 34.17 | 730.92 | 15.03 |
| MNEMIOPSIS LEIDYI | 61.31 | 1.00 | 23.77 | 4.64 | 52.97 | 1.09 |
| CLASS POLYCHAETA | 45.04 | 0.74 | 9.33 | 1.82 | 37.11 | 0.76 |
| SUBCLASS OSTRACODA | 162.18 | 2.66 | 28.33 | 5.52 | 132.43 | 2.72 |
| CRANGON SEPTEMSPINOSA | 1.48 | 0.02 | 0.00 | 0.00 | 1.15 | 0.02 |
| ORDER MYSIDACEA | 248.49 | 4.07 | 0.00 | 0.00 | 193.27 | 3.97 |
| CLASS POLYCHAETA LAR | 0.57 | 0.01 | 0.00 | 0.00 | 0.44 | 0.01 |
| ORDER ISOPODA | 208.69 | 3.42 | 21.73 | 4.24 | 167.14 | 3.44 |
| PALAEMONETES SP ZOEA | 114.66 | 1.88 | 22.78 | 4.44 | 94.24 | 1.94 |
| SUBORDER CAPRELLIDAE | 59.57 | 0.98 | 31.93 | 6.22 | 53.43 | 1.10 |
| HYDROMEDUSAE | 17.26 | 0.28 | 0.00 | 0.00 | 13.42 | 0.28 |
| ORDER NUDIBRANCHIA | 4.53 | 0.07 | 0.00 | 0.00 | 3.52 | 0.07 |
| SECTION BRACHYURA MEGALP | 12.15 | 0.20 | 0.00 | 0.00 | 9.45 | 0.19 |
| CLASS PYCNOGONIDA | 6.47 | 0.11 | 2.42 | 0.47 | 5.57 | 0.11 |
| UPOGEBIA AFFINIS ZOEA | 15.85 | 0.26 | 0.00 | 0.00 | 12.33 | 0.25 |
| NEREIS SP EPITOKE | 5.30 | 0.09 | 2.42 | 0.47 | 4.66 | 0.10 |
| FAMILY CANCERIDAE ZOEA | 0.00 | 0.00 | 52.58 | 10.25 | 11.68 | 0.24 |
| FAMILY HAUSTORIIDAE | 0.74 | 0.01 | 0.00 | 0.00 | 0.58 | 0.01 |
| ORDER ACTINIARIA | 5.44 | 0.09 | 0.00 | 0.00 | 4.23 | 0.09 |
| PAGURUS SP ZOEA | 4.39 | 0.07 | 7.53 | 1.47 | 5.08 | 0.10 |
| SUBORDER AEOLIDACEA | 0.00 | 0.00 | 2.70 | 0.53 | 0.60 | 0.01 |
| OTHER SPECIES | 16.53 | 0.27 | 9.23 | 1.80 | 14.91 | 0.31 |
| TOTAL | 6105.35 | | 512.87 | | 4862.58 | |

| STATION | INNT | | INDA | | | |
|---|---|---|---|---|---|---|
| SPECIES | NUMBER INDIVS | PCT COMP | NUMBER INDIVS | PCT COMP | NUMBER TOTAL | PCT COMP |
| ORDER AMPHIPODA | 1269.48 | 21.16 | 28.00 | 1.77 | 959.11 | 19.60 |
| FAMILY MYSIDAE | 1414.88 | 23.59 | 169.95 | 10.77 | 1103.64 | 22.55 |
| ORDER CUMACEA | 744.23 | 12.41 | 25.63 | 1.62 | 564.58 | 11.54 |
| FAMILY XANTHIDAE ZOEA | 339.67 | 5.66 | 222.30 | 14.09 | 310.33 | 6.34 |
| MNEMIOPSIS LEIDYI | 1640.15 | 27.34 | 948.53 | 60.12 | 1467.24 | 29.98 |
| CLASS POLYCHAETA | 52.12 | 0.87 | 11.73 | 0.74 | 42.02 | 0.86 |
| SUBCLASS OSTRACODA | 223.28 | 3.72 | 19.70 | 1.25 | 172.38 | 3.52 |
| CRANGON SEPTEMSPINOSA | 3.25 | 0.05 | 0.00 | 0.00 | 2.44 | 0.05 |
| ORDER ISOPODA | 90.08 | 1.50 | 11.98 | 0.76 | 70.55 | 1.44 |
| PALAEMONETES SP ZOEA | 36.40 | 0.61 | 18.73 | 1.19 | 31.98 | 0.65 |
| SUBORDER CAPRELLIDAE | 86.85 | 1.45 | 29.68 | 1.88 | 72.56 | 1.48 |
| SECTION BRACHYURA MEGALP | 20.38 | 0.34 | 0.00 | 0.00 | 15.29 | 0.31 |
| CLASS PYCNOGONIDA | 19.33 | 0.32 | 5.80 | 0.37 | 15.95 | 0.33 |
| UPOGEBIA AFFINIS ZOEA | 7.83 | 0.13 | 0.00 | 0.00 | 5.87 | 0.12 |
| CLASS GASTROPODA | 0.00 | 0.00 | 71.00 | 4.50 | 17.75 | 0.36 |
| NEREIS SP EPITOKE | 12.27 | 0.20 | 0.00 | 0.00 | 9.20 | 0.19 |
| IDOTEA BALTICA | 9.40 | 0.16 | 0.00 | 0.00 | 7.05 | 0.14 |
| ORDER ACTINIARIA | 4.25 | 0.07 | 0.00 | 0.00 | 3.19 | 0.07 |
| PAGURUS SP ZOEA | 6.03 | 0.10 | 0.00 | 0.00 | 4.52 | 0.09 |
| SUBORDER AEOLIDACEA | 7.04 | 0.12 | 8.75 | 0.55 | 7.47 | 0.15 |
| OTHER SPECIES | 11.88 | 0.20 | 5.90 | 0.37 | 10.39 | 0.21 |
| TOTAL | 5998.78 | | 1577.65 | | 4893.49 | |