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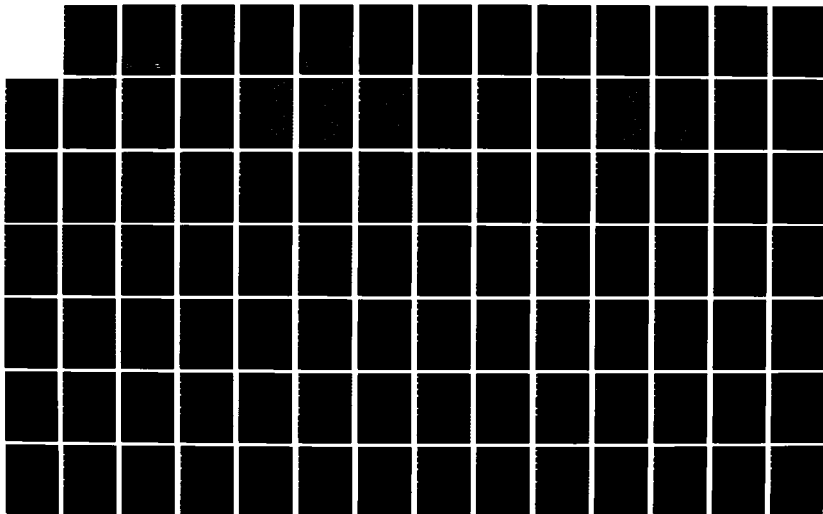
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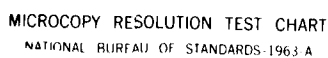
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APPLIED MARINE RESEARCH LABORATORY
OLD DOMINION UNIVERSITY
NORFOLK, VIRGINIA

CHARACTERIZATION OF MERO- AND ICHTHYOPLANKTON
COMMUNITIES WITHIN THE CHESAPEAKE BAY PLUME
OFF VIRGINIA BEACH, VIRGINIA DURING 1983-1984

By

Arthur J. Butt and Raymond W. Alden III

Final Report
For Period Ending December 1984

Prepared for the
Department of the Army
Norfolk District, Corps of Engineers
Fort Norfolk, 803 Front Street
Norfolk, Virginia 23510

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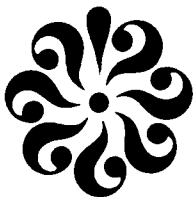


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**CHARACTERIZATION OF MERO- AND ICHTHYOPLANKTON
COMMUNITIES WITHIN THE CHESAPEAKE BAY PLUME
OFF VIRGINIA BEACH, VIRGINIA DURING 1983-1984**

By

Arthur J. Butt* and Raymond W. Alden III**

INTRODUCTION

The coastal zone has long been a source of sustenance for the human community. Because of its aesthetic and economic value there has occurred a continual ingress to this dynamic, yet finite area. The coastal zone with its dendritic estuaries serve as suitable habitat for innumerable aquatic species, many of which serve as recreational and commercial resources. However, as urbanization encroaches along the coastline, the pending impact of human activities on these valuable resources must be monitored.

A vital component of the routine operations around most coastal harbors and embayments is the maintenance dredging of navigational channels. Associated with this particular operation is the need for adequate disposal site. Recently, questions have been raised concerning the potential impact of dredged material disposal on the aquatic resources, in particular the plankton community. Unfortunately, there is a paucity of information re-

*Manager, Applied Marine Research Laboratory, Old Dominion University, Norfolk, VA.

**Director, Applied Marine Research Laboratory, Old Dominion University, Norfolk, VA.

lated specifically to this topic (Bell, 1973; Thompson, 1973; Hoss et al., 1974; DeCoursey and Vernberg, 1975). A review of information on the general composition, abundance and seasonality of zooplankton along much of the coastal zone is also lacking. Coastal zooplankton ecology has been studied along the Southeastern United States specifically from Cape Hatteras south to Florida (see reviews by Roberts, 1974; and Alden, 1977). Most of the studies focused on Gulf Stream communities off Florida; however, it is recognized that many of those zooplankton communities are distributed along the entire southeastern coastline. A distinct faunal divergence occurs at Cape Hatteras. The warmer Gulf stream waters flow offshore at the Cape and a cooler water faunal assemble is reported to the north.

Recent zooplankton studies off the Mid-Atlantic Bight are generally lacking (see review by Jeffries and Johnson, 1973). The bulk of the information deals with a few taxonomic groups limited to the fringing bays and sound. Despite its economical and military importance, Chesapeake Bay and its adjacent coastal waters has received relatively little attention (see review by Butt et al., 1985). In general, the studies show domination of the zooplankton community by a few major forms, particularly the holoplankters. Meroplankton studies in the Bay have been minimal and limited to individual species, their life cycles, distribution or general ecology. Information on detailed community structures, abundance and seasonality of meroplankton is basically absent.

Tidal fluctuations in the Bay and the corresponding Bay plume could dramatically affect larval distribution and recruitment patterns. It has been inferred that estuarine circulations

may determine the rate at which plankton populations must reproduce (Ketchum, 1954). The Chesapeake Bay supports a large species diversity that includes several major commercial and recreational fisheries. Therefore, transport mechanisms of commercially and ecologically important species need to be investigated.

The present study was designed to examine the spatial and temporal distribution patterns of important meroplankton in the waters off Virginia Beach, VA. The southern portion of the study area encompassed the Dam Neck Disposal Site (DNDS).

METHODS

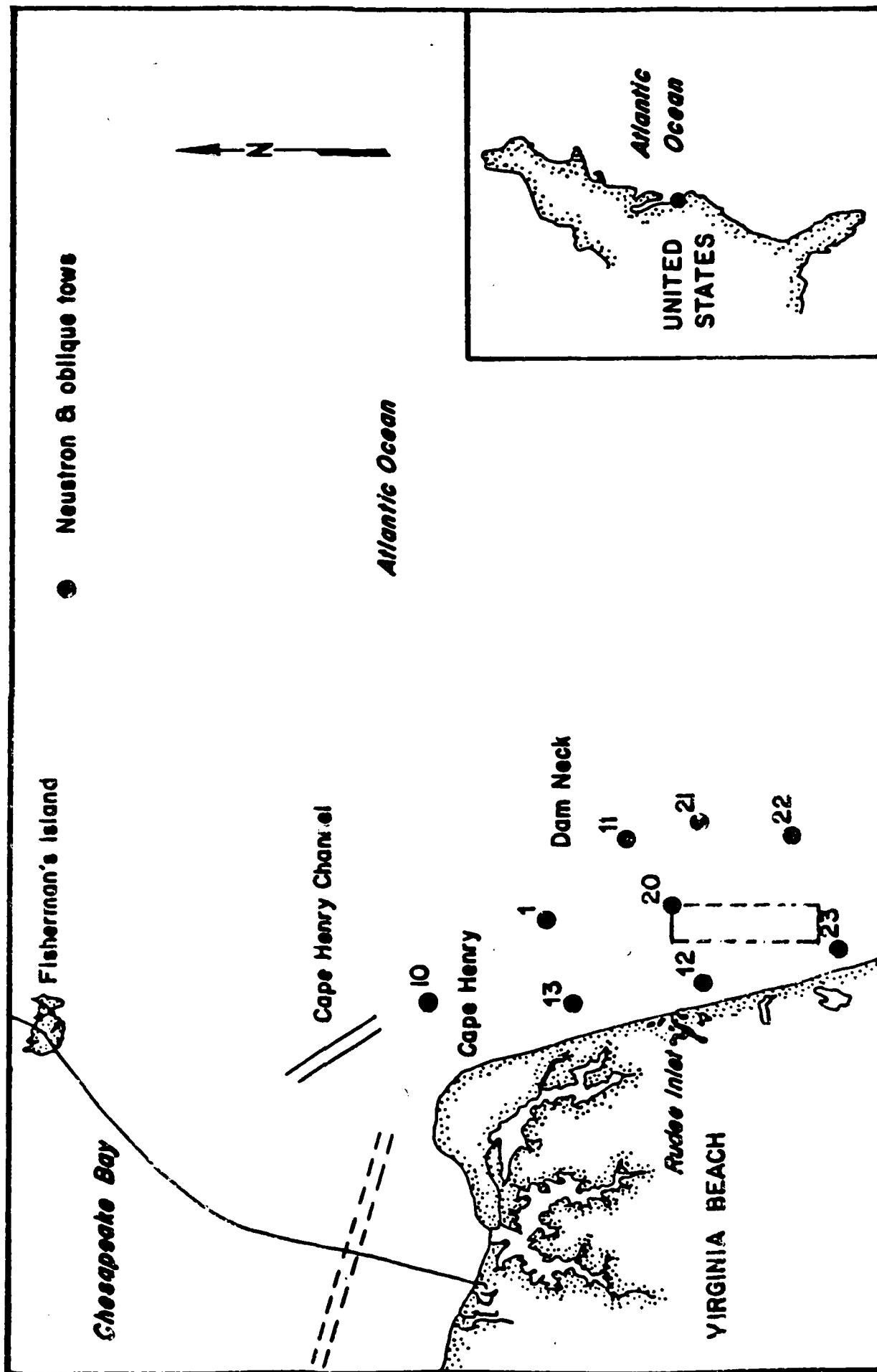
Study Area

The study was conducted between the 30 and 60 ft (9-18 m) contour lines, extending the mouth of Chesapeake Bay and southward along the coast. Virtually all the freshwater inflow to the study area is from the Bay. The outflow from Chesapeake Bay flows towards the south and joins with the southerly drift of shelf water along the Mid-Atlantic Bight. A clockwise eddy is reported along the inshore waters south of Cape Henry (Brehmer, 1971). There is a slight northerly flow of inshore bottom waters during the summer months. This long-shore drift is believed to begin as far south as False Cape. A strong density stratification is identified in the area, particularly during the warmer months. The low salinity surface water is characterized as part of the Bay plume that is strongly influenced by prevailing winds. An onshore and offshore surface transport of water off Rudee Inlet is reported during daily and/or seasonal trends. A detailed description of the water quality and physical parameters are presented by Alden and Butt (1985a,b).

Sampling Regime

Nine stations were monitored during the study period (Fig. 1). Five of the stations (1, 10, 11, 12 and 13) were positioned in a fan-shaped pattern to sample inshore waters and the water mass associated with the Bay plume. Zooplankton samples were collected monthly during the winter (October, 1983 - April, 1984) and semi-monthly during the summer months (May - September, 1984).

Figure 1. Study area off Virginia Beach, Virginia



A second sampling regime was begun in May (1984). Four additional stations were selected adjacent to the Dam Neck Disposal Site (Stations 20, 21, 22 and 23) (Fig. 1). Due to navigational restrictions in the study area, certain stations were located to adjust for navigational regulations (see Notice to Mariners, area 204.52 on NOAA chart 12207), yet allow for the acquisition of an extensive data base.

Plankton tows were collected with oblique bongo tows. Bongo nets (353 μ micron mesh) were towed in duplicate from approximately one meter above the bottom to the surface. The sea surface was sampled with a one-meter neuston net (353 μ micron mesh). Four neuston tows were made per station for five minutes each. Mechanical flow meters were used in each net to calculate relative abundance per volume.

The zooplankton samples were fixed with 7% buffered formaldehyde and transported to the laboratory for sorting. The CVS subsampling method was employed using sieve fractions of 2000 μ , 850 μ , 600 μ and 350 μ (Alden et al., 1982). Identifications and enumerations of meroplankton and ichthyoplankton were made.

Statistical Analysis

The number of taxonomic groups to be evaluated was reduced by a computer program which accepted only groups which exceeded an abundance level of 10/m³ in at least 5% of the observations. The groups meeting these a priori criteria were considered "numerically important". Further data reduction was accomplished by a Principal Components Analysis (PCA) on the covariance matrix

of the reduced data set. A series of seasonal multiple regression analysis models were run on each of the major PCA factors to determine the significance of month to month effects (linear and non-linear), geographic effects (north to south; west to east), tow types effects (neuston vs. oblique) as well as all appropriate interactions. Similar models have been described in detail for water quality and dissolved oxygen patterns at DND (Alden and Butt, 1985a,b).

RESULTS

Meroplankton Communities

Over 240 species were observed in the meroplankton collections taken at DNDs (Table A1). Table A2 presents summary statistics for each taxonomic group found in any given tow type/station combination. The statistical parameters presented for each taxon include the average of all cruise means (i.e. grand mean for the site/tow type), the standard error of that value, the maximum mean abundance value observed for the site/tow type, the percent occurrences, and the percent occurrences over 10/m³. The latter value was used as a selection criterion for data reduction.

It was decided to select only species that were either numerically or commercially important for a more detailed evaluation. Although the abundance and occurrence "filters" were somewhat arbitrary, direct examination of the data did not indicate that any "important" groups were excluded by these criteria.

Table A3 presents the taxonomic groups which were included as being "numerically important", along with information on the site/tow type combinations for which the criteria were met. The grand means for each site/tow type are presented again for comparison purposes. Twenty taxonomic groups met the criteria: bivalves veligers, fish eggs, Callinectes sapidus zoeae and megalopae, Cancer irroratus zoea, Crangon septemspinosa larvae, Anchoa mitchilli larvae, engraulid eggs, engraulid fry, gastropod veligers, larvaceans, Lucifer faxoni, Mysidopsis bigelowi, Neomysis americana, pagurid crab zoeae, phoronid larvae, pinnixid

crab zoeae, sciaenid eggs, Uca zoeae, and xanthid crab zoeae. It should be noted that some of the groups included were not truly meroplankton (e.g. the larvaceans, Lucifer shrimp, the mysids), but it was felt that the ecological role served by these groups may be trophically similar to many of the groups of the true meroplankton in terms of providing food for higher trophic levels (i.e. the body size and/or numbers of these groups make them potential food for juvenile fishes).

In addition to the numerically important groups, 15 groups believed to be of potential commercial importance to the region were added to the list for closer examination. These groups included: Cancer irroratus megalopae, penaeid shrimp larvae, bothid eggs, other (unidentified) fish eggs, Bothus ocellatus larvae, Etropus microstomus larvae, Paralichthys dentatus larvae, Scophthalmus aquosus larvae, Trinectes maculatus larvae, Cynoscion regalis larvae, Leiostomus xanthurus larvae, Micropogonias undulatus, Pomatomus saltatrix larvae, Ammodytes hexapterus larvae (because of the importance of this species as food for fish in the region), and Brevoortia tyrannus larvae.

Table A4 presents the data for these important taxonomic groups of the study area. For presentation purposes, the groups were assembled so that similar groups would be found on the same pages. The means and standard errors are presented only for cruises where there was at least one non-zero abundance value. This convention was adopted so that many pages of zeros would not have to be shown in the Table. Figs. A1 to A62 present the mean abundance of the groups found at the various sites over time for

both the oblique and neuston tows.

The blue crab Callinectes sapidus larvae clearly dominate all other forms when looking at the abundance patterns for commercial crustaceans. The grand mean abundance value for C. sapidus zoeae for all cruises, stations and tow types was approximately $15/m^3$ (see Fig. 2 for station and monthly trends). The values for other crustaceans were generally less than $1/m^3$. The C. sapidus zoeae appeared in late May and peaked in the neuston collections in June and July (Table A4; Figs. A1 and A2). Peak abundances for early stage zoeae (<600 microns) in neuston collections were taken from Station 10 in June and early July and from Stations 1, 20 and 22 by late July (Fig. A1). The zoeae from the oblique collections were found in maximum abundance at Stations 11, 21, 20, 22, and 1 in August (Fig. A2). The maximum abundance for C. sapidus megalopae was observed in neuston collections made at Station 20 ($\bar{x}=162/m^3$) and Station 11 ($\bar{x}=14/m^3$) in late September (Fig. A3). Lower levels of megalopae were also observed in the neuston tows from nearby stations (e.g. Stations 12, 23). (See Fig. 3 for station and monthly trends).

The rock crab zoeae Cancer irroratus were found in greatest abundance in the oblique tows rather than the neuston collections. This suggests that they are found somewhat lower in the water column (Figs. A5 and A6). The zoeae of the rock crab are found much earlier in the year than those of the blue crab, peaking in late April. Peak concentrations ($\bar{x}=120/m^3$) were observed at Station 21, the most offshore collection site. The abundance of the megalopa stage of this crab peaked in late May in the same basic area (Stations 11, 21, 22, and 20). However, there were

Figure 2. Mean monthly abundances ($\#/\text{m}^3 \log_{10}(x+1)$) (standard error) for blue crab zoea (*Callinectes sapidus*) from oblique (clear) and neuston (shaded) tows during 1984. (See Figure 1 for station numbers): a) June, b) July, c) August, and d) September.

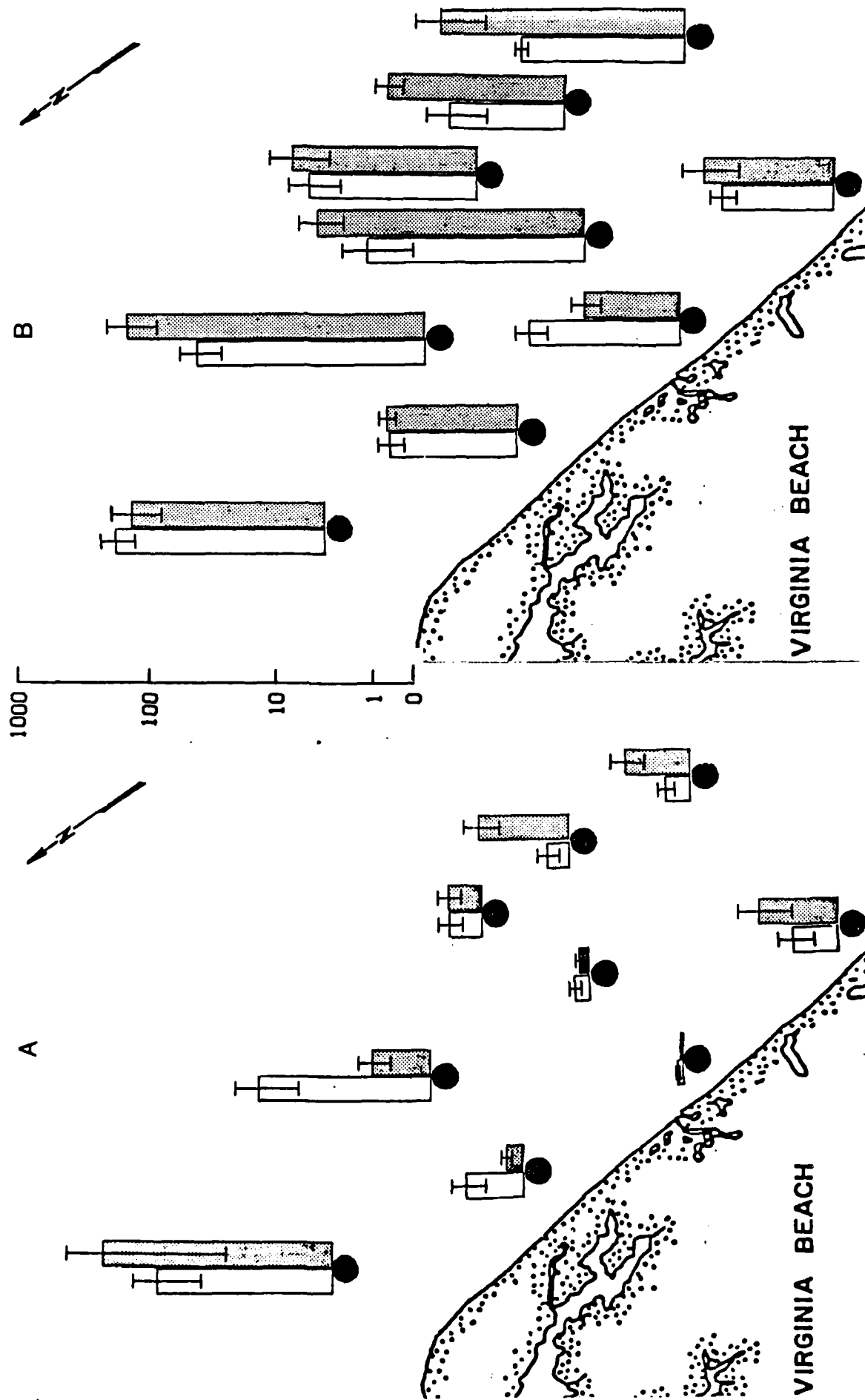


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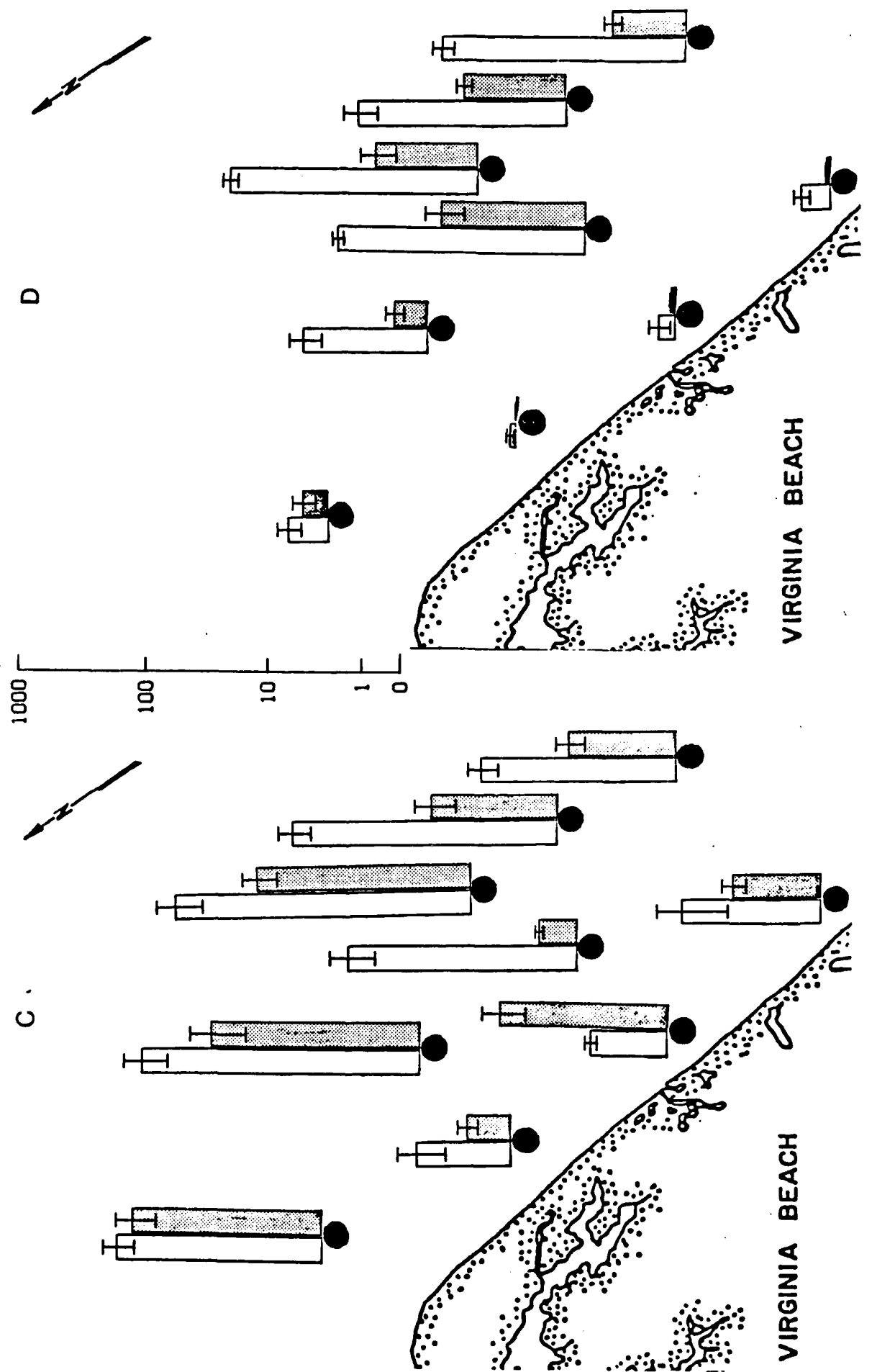
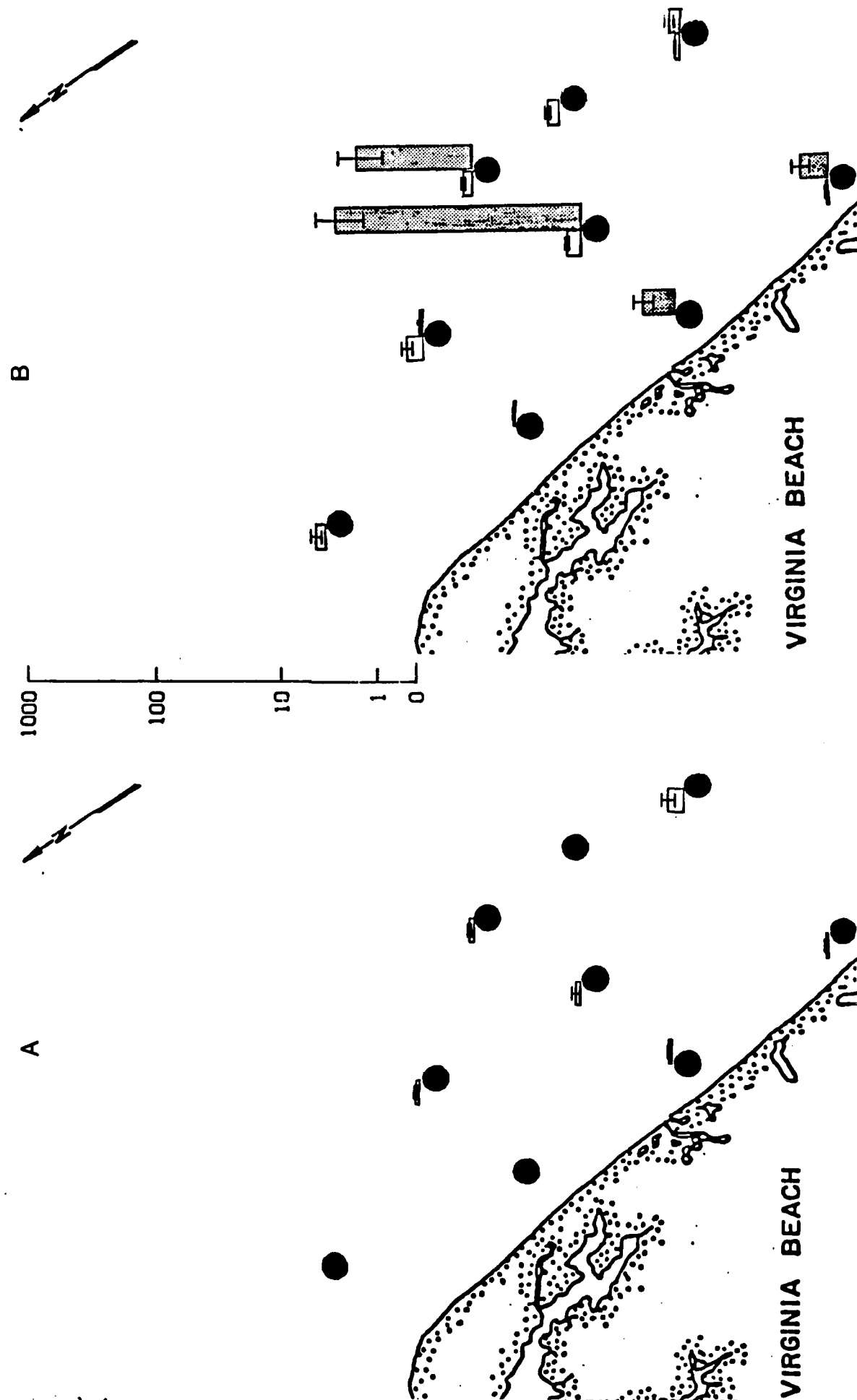


Figure 3. Mean monthly abundances ($\#/m^3 \log_{10}(x+1)$) (standard error) for blue crab megalopae (*Callinectes sapidus*) from oblique (clear) and neuston (shaded) tows during 1984. (See Figure 1 for station numbers): a) August and b) September.



greater abundances of this stage in the neuston tows, indicating that the larvae may have tended to migrate to the surface during development (Figs. A7 and A8). Very few larvae of penaeid shrimp were found in the vicinity of DNDs. Of those which were observed, most were found in September at the offshore stations (Stations 21, 22, 11 and 1) (Figs. A9 and A10).

The noncommercial decapod crustaceans were placed into similar taxonomic groups for ease of presentation. Xanthid (mud) crab zoeae were observed in oblique tows from July to September at the northern and inshore stations (Stations 1, 10, 13, and 20) (Figs. A11 and A12). Since much fewer xanthid zoeae were found in the neuston tows, it is assumed that this group resides in the subsurface layers (Fig. A12). Pinnixid (or pea) crab zoeae were observed later in the year (Aug. through Nov.). They too were found in the subsurface waters of the more inshore stations (Stations 10, 12, 13, 23, and 1) (Figs. A13 and A14). Pinnotheres spp. crab zoeae exhibited a similar pattern to the pinnixid zoeae, except that peak abundances occurred early in August (Figs. A15 and A16). The zoeae were found in the subsurface layers of the inner stations (10, 13, 20 and 1). Zoeae of Uca spp. (fiddler crabs) pulsed in abundance from June to September (Figs. A17 and A18). This pulsing is not surprising since Uca spp. females spawn according to a lunar cycle. Peak abundances occurred in the subsurface waters of Stations 10, 11, 21, 20 and 13 (Fig. A18). Pagurid (hermit crab) zoeae were also found in subsurface waters, but their period of occurrence extended from June through October, with a peak in late July (Figs. A19 and A20). Unlike most of the

other noncommercial crabs, the station exhibiting the greatest abundance of pagurid zoeae is not Station 10, but rather Station 13, followed by 20, 12 and 1.

Among the shrimp-like groups, the sand shrimp Crangon septemspinosus is by far the dominant form. The grand mean for this group was nearly $8/m^3$, while those of the remainder of the groups in this category were less than $0.5/m^3$. The period of occurrence of C. septemspinosus larvae begins in early March and peaks in May. Stations 20, 1, 10, 21, 11 and 13 exhibited the greatest abundance of larvae, which were generally in the subsurface layers (Figs. A21 and A22). Lucifer faxoni larvae began to occur in the study area in August and peaked in late September. Maximum numbers of L. faxoni larvae occurred at the offshore stations (Stations 22, 20, 11 and 21) (Figs. A23 and A24). Larvae of the mysid shrimp Mysidopsis bigelowi were observed in the Fall. Since the cruises during the Fall of 1983 only involved 5 stations, it is difficult to detect strong geographic patterns, but the offshore stations (1 and 11) had fairly high numbers of these larvae, as compared to the few reported from inshore stations (12 and 13) (Figs. A25 and A26). Virtually none of the larvae of this species were found in the neuston. Larvae of Neomysis americana, another mysid shrimp, peaked in October, May and the end of July. Maximum abundances were observed for the more inshore stations (13, 10, 12) (Figs. A27 and A28).

The bivalve veligers of the study area peaked several times over the year: in March (Station 13), in May (Station 10), and July (Stations 23, 20) (Figs. A29 and A30). Gastropod veligers peaked at the end of July at Stations, 20, 11, 21 and 13 (Figs.

A31 and A32). The veligers of both groups were found in greatest abundance in the subsurface waters.

Among the fish eggs, the engraulid eggs clearly were dominant (see Fig. 4 for station and monthly trends). The grand mean for this group was $43/m^3$, while the means of the remaining groups were less than $3/m^2$. The engraulid eggs began to increase in abundance in May and June, and peaked in late July - early August (Figs. A33 and A34). There was no clear-cut distinction between oblique and neuston tows for this group. High concentrations ($\bar{x} > 200/m^3$) of these eggs were found at Stations 22, 11, 10, 21, and 23. Bothid eggs exhibited a bimodal distribution: a small peak in April at Stations 11 and 1; and a larger peak in August at Stations 23, 11, 21, and 22 (Figs. A35 and A36). Bothid eggs tended to be found in greater abundance in the subsurface waters. Sciaenid eggs began to occur in late May and peaked by mid-August (Figs. A37 and A38). Maximum abundance values were observed at Stations 11, 22, 20, 23, 21, and 1. These eggs were also found in greater abundance in subsurface waters. The category "other fish eggs" contained all eggs which could not be identified as one of the three previous groups (Figs. A39 and A40). A large number of fish eggs were observed in Station 10 neuston tows at the end of July (Fig. A39). Station 13 neuston tows exhibited a moderately high abundance of fish eggs during the same period. The oblique tows taken at these stations at the same time contained only trace amounts of eggs, so it is apparent the high concentrations were floating at the surface. On the other hand, abundance peaks were noted in the oblique tows made at Stations 12, 11 and 20 during

Figure 4. Mean monthly abundances ($\#/\text{m}^3 \log_{10}(x+1)$) (standard error) for engraulid fish eggs (*Anchoa mitchilli*) from oblique (clear) and neuston (shaded) tows during 1984. (See Figure 1 for station numbers): a) May, b) June, c) July, d) August, and e) September.

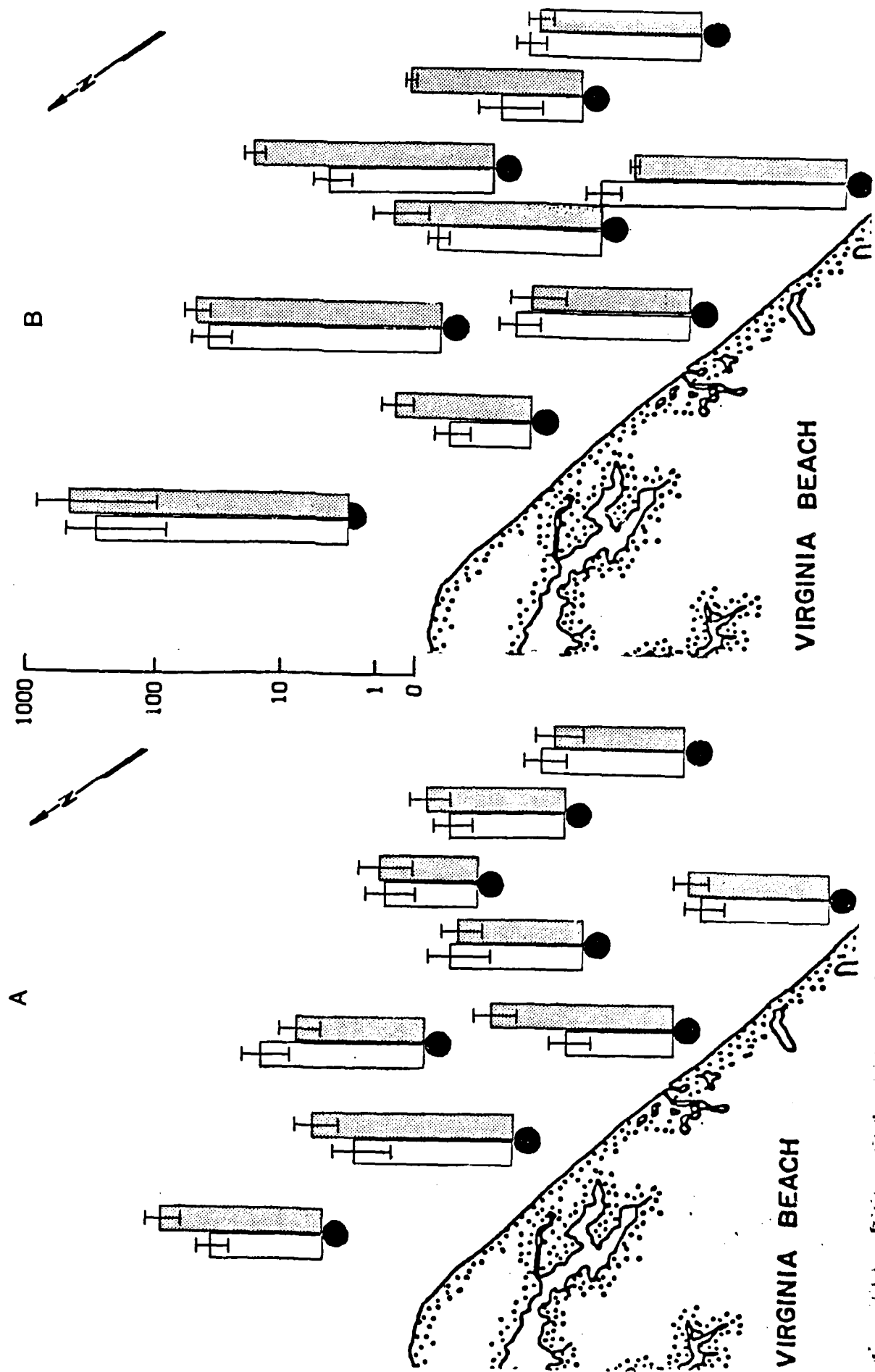


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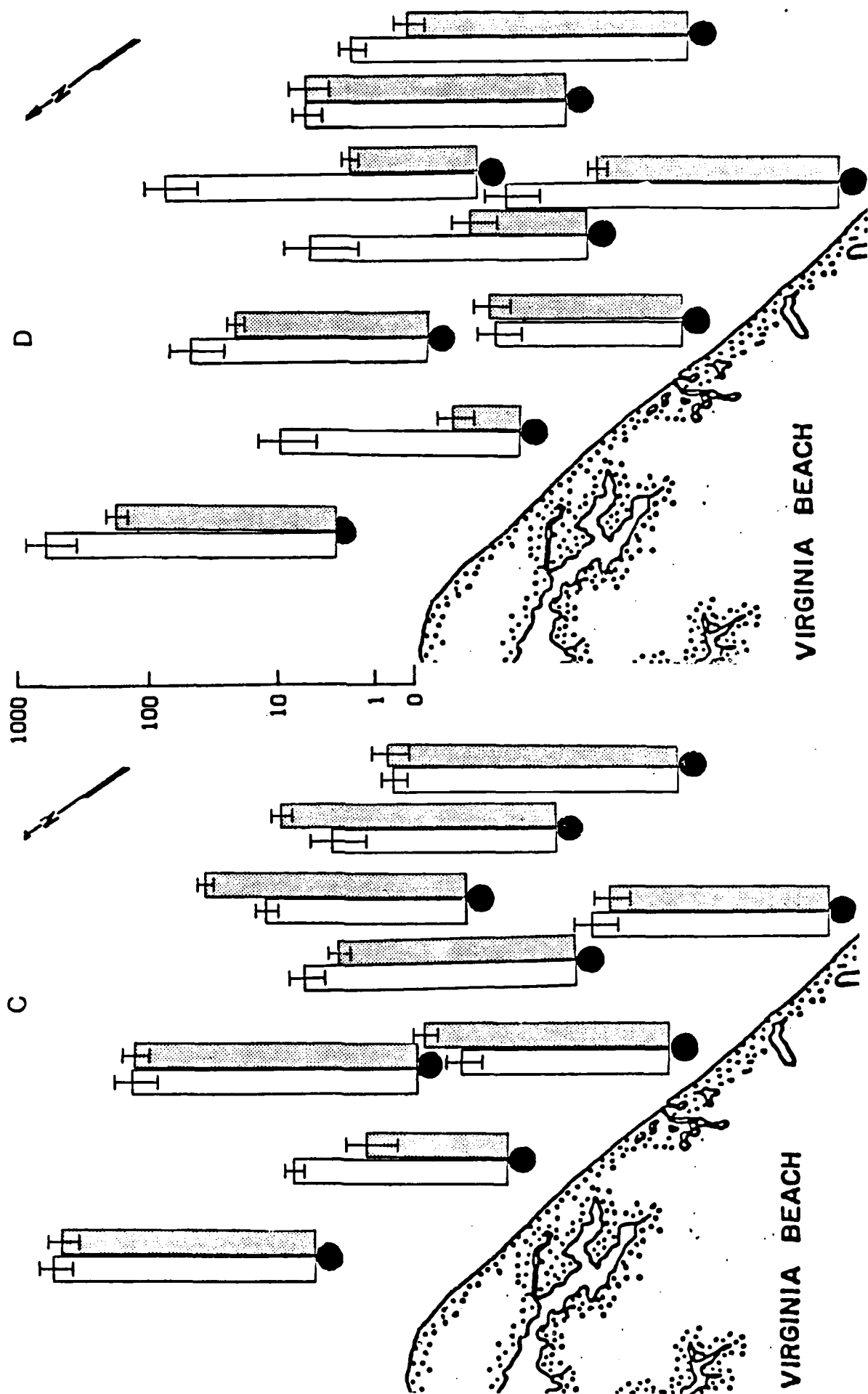


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August.

Fish larvae were only collected in fairly low numbers during the present study. Among the flatfishes, larvae of Bothus ocellatus and Trinectes maculatus were not observed in the study area. Etropus microstomus larvae were found in the subsurface waters of the offshore stations (11, 21, 1, 22) in late August (Figs. A41 and A42). Likewise, Paralichthys dentatus larvae also peaked in August in the subsurface layers of the offshore stations (22, 21, 11) (Figs. A43 and A44). Scophthalmus aquosus larvae exhibited a similar pattern except that maximum abundances were found at Station 23, followed by Stations 21 and 11 (Figs. A45 and A46). Of course, all of the flatfish larvae were found in trace amounts and with a great deal of variability. As a result, these "patterns" should not be regarded as being extremely significant.

Among the sciaenids, no larvae of the croaker Micropogonias undulatus were observed in the study area. Larvae of the spot Leiostomus xanthurus were observed in trace amounts at Station 11 in August. Larvae of the weakfish Cynoscion regalis occurred in August and September in the subsurface waters of various stations throughout the study area (Figs. A47 and A48).

In the category of "other fish", larvae of mullet (Mugil spp.) were seen only in trace levels ($<0.05/m^3$). Trace levels of blue fish (Pomatomus saltatrix) larvae were observed in the neuston tows from Stations 20, 23, 21, 11, and 1 in May (Figs. A49 and A50). Larvae of the sand lance (Ammodytes hexapterus) were observed in the surface waters of Stations 1 and 10 in December and February (Figs. A51 and A52), although there was some variability in the data. The larvae of the menhaden Brevoortia

tyrannus reached maximum abundance in the neuston layer of the offshore stations at the end of May (Figs. A53 and A54). The fish larvae exhibiting the greatest abundance during the present study were those of the Bay anchovy Anchoa mitchilli. This species probably is responsible for the vast majority of the numerous engraulid eggs and newly hatched engraulid fry observed in the region. The A. mitchilli larvae peaked in the subsurface waters of inshore stations (13, 10, 12, and 1) in August (Figs. A55 and A56). Engraulid fry, which were most likely A. mitchilli, were observed to reach maximum abundance in July at the more southern, offshore stations (21, 22, 20, 3) (Figs. A57 and A58).

Two additional plankton groups were included with the "important" forms of the region: the larvaceans and the phoronid larvae. The larvaceans are a holoplankton group which retains larval-like characteristics and lifestyle throughout its life cycle in the plankton. This group peaked in abundance in August and September at the subsurface waters of southern, offshore stations (21, 22, 11) (Figs. A59 and A60). In September, maximum values were observed at Station 23. The phoronid larvae were found in greatest numbers during the end of August in the subsurface waters of Stations 23, 10, 1, 11 and 20 (Figs. A61 and A62).

The data set was further reduced for statistical analysis by running a PCA on the covariance matrix of the data from the groups of numerical and/or commercial importance. It was found that the first three PCA factors explained 93% of the total variance and that the first six accounted for 99% (68%, 15%, 10%, 3%, 1%, 1%)

of the variance in the data set. In examining the factor loadings of the eigenvectors, it was discovered that each of the factors was highly loaded upon by a single taxon: 0.94 correlation between PCA1 and engraulid eggs; 0.89 between PCA2 and larvaceans; 0.91 between PCA3 and blue crab zoeae; 0.98 between PCA4 and sand shrimp larvae; 0.99 between PCA5 and "other" fish eggs; and 0.99 between PCA6 and blue crab megalopae. Thus, the variance of the meroplankton communities of the study area can be described by a few PCA factors. In turn, these factors are based upon only a few of the most dominant taxonomic groups.

In order to statistically evaluate the patterns, the PCA factors were subjected to a series of stepwise multiple regression analyses designed to account for the effects of month to month changes (linear and non-linear), tow type (neuston or oblique), station location (west to east; north to south), as well as all appropriate interactions. Although models were run for each season, the summer models were the ones of greatest interest. Table A5 presents the results of these regression analyses.

The models for PCA1 (the engraulid egg factor) confirm the significance of the patterns previously described qualitatively. In spring, the north-south variable has a negative coefficient, indicating that the eggs are found in significantly higher numbers at the northern end of the sampling pattern (e.g. Stations 10, 1, 11). However, the eggs are found in greatest abundance (i.e. NSWE has a positive coefficient) at the southern, offshore stations (Stations 21, 22, 11) during the summer months. The eggs tended to be found more in the subsurface levels than in the neuston during this period.

The PCA2 (larvacean factor) regression model for the summer season confirmed that abundances of the larvaceans were significantly higher at the more southern, offshore stations (21, 11, 22), particularly in the oblique tows. The PCA3 (blue crab zoeae) model indicated that the zoeae were in significantly higher concentrations (i.e. positive west to east coefficient) in the more offshore stations (e.g. Stations 1, 11, 20, 21, 10) than at the inshore stations. The spring PCA4 (Crangon septemspinosus factor) regression model indicated the larvae of this shrimp were found to be significantly higher in the subsurface layers (i.e. a negative "neuston" coefficient) and to be at higher concentrations in the northern stations (1, 10, 20, 11). The PCA5 (unidentified fish eggs) regression model for the summer season confirmed that these eggs were found in significantly higher numbers (i.e. a negative north-south by west-east coefficient) at the more northern, inshore stations (10, 12, 13). The PCA6 (blue crab megalopae) regression model for summer indicated that the megalopae are mainly in the neuston layer (positive neuston coefficient).

Although it would be possible to explore patterns in the data with other multivariate data reduction techniques (e.g. various types of classification or cluster analysis; PCA of the correlation matrix; discriminant analysis; MANOVA), they were not deemed necessary for the present descriptive report. Such techniques will be utilized to explore subtle patterns in the data set as a whole and for individual species, as time permits in the future.

DISCUSSION

It is important to understand the theory associated with abundance estimates reported for plankton collected during this study. Collections were made with nets designed to sample identical cross-sectional areas. The fundamental difference between the tow types was that the oblique tows sampled portions of the entire water column while the neuston nets fished the surface layer (top 10 cm) of the water mass(es). As a result, fishing success may vary between the two tow types for any particular species. The selectivity of the sampling method depends on the organism(s) sampled and their relative position in the water column. For example, some species (or life stages) may be found in a specific zone above or below the pycnocline or at the air-sea interface (neuston, pleuston, etc.). The neuston represented the zone of interest in this particular study.

If any species primarily inhabits the surface layer, then one would expect greater fishing success associated with the neuston tows versus the comparable oblique tows. Additional information can be inferred from tow differences for species that may reside above the pycnocline but is not limited to the surface water mass. The species abundances from both neuston and oblique tows should be comparable when averaged over the entire study area. Of course, several assumptions should be made: the upper layer is well mixed allowing for a homogeneous population of plankters and the oblique tows sample equally above and below the pycnocline. If a species inhabits the water mass below the pycnocline, then that species should be reported in the oblique tows but should

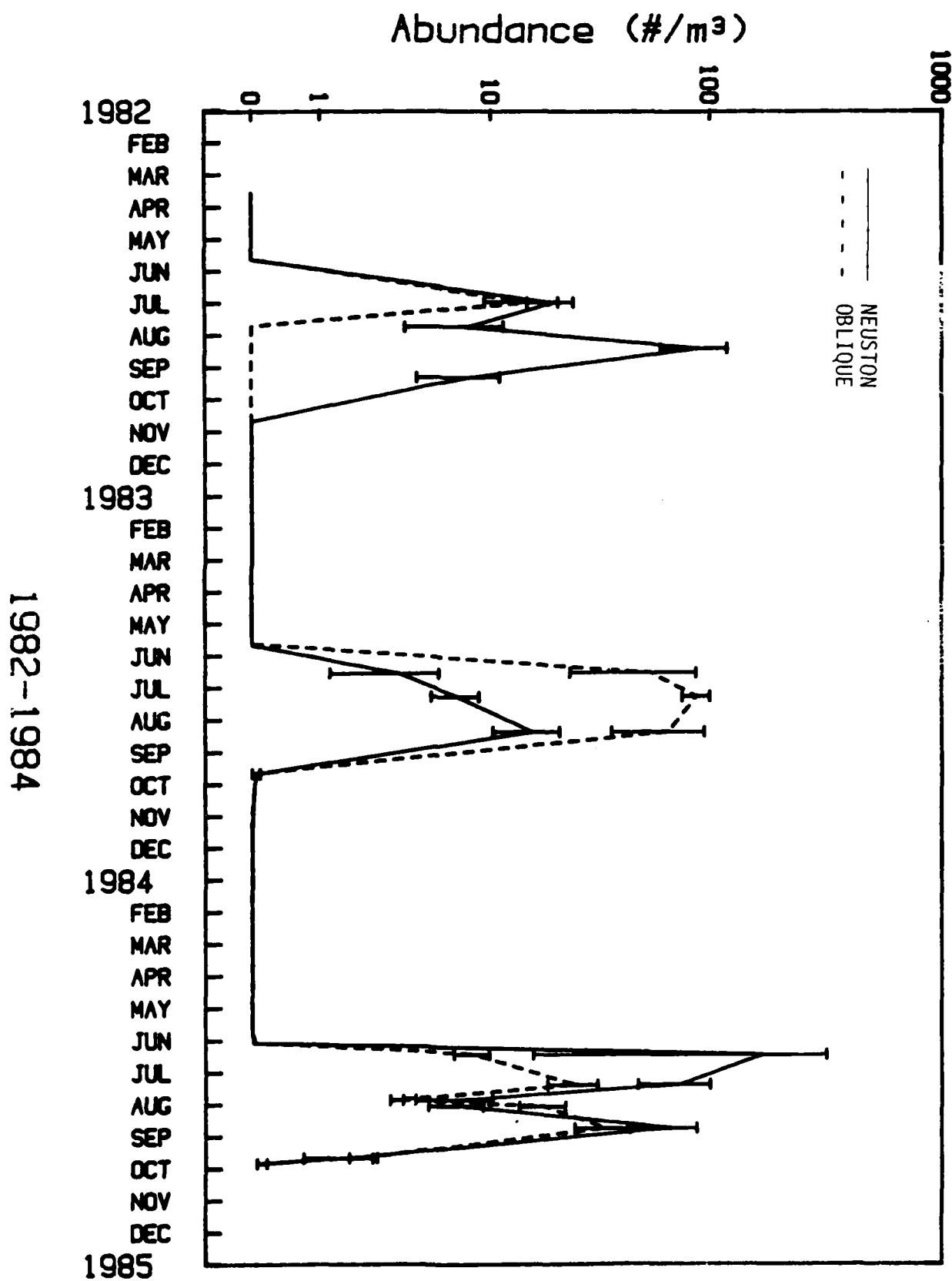
have little or no occurrences in the neuston tows.

Distributional Patterns

The meroplankton of the DNDS study area tends to be dominated by seasonal pulses of a relatively few dominant taxa. Nonetheless, it is useful to look at the distributional patterns of all of the major groups in order to attempt to understand the dynamic trends in the region.

The distribution of blue crab larvae in the Chesapeake Bay and adjacent coastal waters has been the focus of investigations in recent years (see review by Butt et al., 1984). In general, these zoeae appear to move out of the Bay mouth in the surface plume waters and then move offshore. This pattern parallel that described by McConaugha et al. (1983) for zoeae collected at more northern, offshore stations. Provenzano et al. (1982) further contend that first stage larvae are transported offshore in the neuston layer, with peak concentrations occurring at night. However, their sampling methods and selective gear types tended to skew fishing success to the neuston collections (see Aron and Collard, 1969 for a discussion of the effects of different gear types/towing speeds on selectivity). Results from the present study support their general theory; however, the findings indicate that major concentrations of early stage zoeae may be found throughout the waters of the plume (above the pycnocline), rather than in just a narrow neuston layer (see Fig. 5 for three year comparison study at Station 10, 1982 - 1984). Once of the zoeae leave the Bay most were found offshore from the DNDS area.

Figure 5. Mean abundances (standard error) for blue crab zoea (*Callinectes sapidus*) collected from oblique and neuston tows at Station 10 from 1982 - 1984.



The blue crab megalopae were found in moderate numbers in the neuston of the southern stations of the study area in the late summer. Whether these megalopae are a successful component of the recruitment into the Bay is unknown. Their numbers are comparable with those observed in the offshore waters in the vicinity of the Norfolk Disposal Site (Butt et al., 1984; Johnson, 1982). These megalopae may represent a portion of the entire population which is being carried throughout the region on wind-driven currents of the surface layer until the time is right to drop into the deeper waters and re-enter the Bay (Johnson et al., 1983).

The larvae of the other major groups of decapod crabs exhibit distributional patterns very different from that of the blue crabs larvae. The rock crab Cancer irroratus is a coastal species which is of potential economic importance to the region. These crabs are caught by commercial fishermen trawling in coastal Virginian waters and are sold in seafood markets of the area. The zoeae of this species are, not too surprisingly, found at the most offshore stations of the study area, and the populations observed even at these stations probably represent only the inner fringe of the total larval stock of the species. Johnson (1982) classifies the larvae of C. irroratus as "retained shelf" forms because they seldom enter the Bay. Sandifer (1972) seldom found zoeae of this species in the lower Bay. The data from the present study tend to confirm the speculations by Johnson (1982) that the megalopae come to the surface to avoid entrainment into the Bay via bottom waters. These observations also tend to disprove the contention of Bigford (1979) that the megalopae are epibenthic. The maximum abundance of the megalopae were in the neuston tows at the most

offshore stations.

Most of the remaining decapod crab species observed during the present study can be considered to be "estuarine". The larvae of xanthid (mud) crabs have been previously reported to be found at the more inshore stations of most studies (Pinschmidt, 1963; Dudley and Judy, 1979; Sandifer, 1972; and Johnson, 1982). Likewise, Pinnotheres spp. crab larvae are retained, for the most part, in the middle to lower regions of estuaries (Pinschmidt, 1963; Tagatz, 1968; and Sandifer, 1972) or are associated with the mouth of the estuary (Dudley and Judy, 1971). The pinnixid crab larvae have also been reported to reach maximum abundance in the vicinity of the Bay mouth, but to decrease "precipitously" seaward (Sandifer, 1972; and Johnson, 1982).

All three groups of decapod crabs displayed similar larval distribution patterns in the study area. Fairly low concentrations of larvae were seen in the study area, but the highest levels tended to be observed in the subsurface waters of the northern stations near the Bay mouth. The larvae of these crabs apparently are among the few that end up in the inshore waters of the study area (e.g. Station 13). The larvae of these "estuarine" crabs transported beyond the Bay mouth descend to the deep waters and are carried back along the inshore northward gyre. A similar transport mechanism has been suggested for the suspended solid load of the plume (see Alden and Butt, 1985a,b). At this point, the crab larvae are in a position to reinvade the Bay's bottom waters, either as zoeae or following metamorphosis to megalopae. The larval stocks of these crabs moving through DNDS to the south

would be expected to be minimal.

The Uca spp. (fiddler) crab larvae have a slightly different distributional pattern reported in the literature. The female fiddler crabs spawn on the spring night-time high tide of summer months, so that larvae are carried seaward, out of the following spring ebb tide (Johnson, 1982; Christy and Stancyk, 1982). Thus, the Uca spp. are estuarine crabs that tend to be expelled rather than retained. Therefore, it not too surprising that relatively higher abundances of the larvae of this group of crabs were observed in the study area in comparison to those of the previous three groups. Nonetheless, the larvae were found concentrated in the subsurface waters of the more northern stations. Perhaps, this trend indicates an expulsion/reinvasion pattern of the zoeae moving farther offshore prior to reinvasion into the nearshore waters south of the Bay mouth. Thus, the Uca spp. zoea are somewhat more widespread in abundance throughout the study area, but the majority of the transport activity appears to be in the northern end.

The pagurid (hermit) crab larvae appear to have a slightly different larval distributional pattern. The larvae concentrated in the subsurface layers of the water column, with maximum abundances found around Rudee Inlet rather than the Bay mouth. Thus, the source of the larvae may have been populations of hermit crabs from Rudee Inlet and/or the inshore waters off Virginia Beach.

The few peneaid shrimp larvae that were observed were found at the offshore stations. Sick (1970) studied the distribution of peneaid shrimp larvae and concluded that development takes place

offshore and that larval stocks may be found 50 - 100 nautical miles from shore without being considered lost to the breeding populations. The larvae observed during the present study are probably either a very small subpopulation which come from North Carolina waters to the south or were produced by the very small adult populations of penaeids observed in Virginian waters. Either way, the numbers observed probably do not represent a significant larval stock for the region.

The larvae of the sand shrimp Crangon septemspinos has been reported as the dominant decapod larval form in previous studies of the Chesapeake Bay (Sandifer, 1972; Goy, 1976). In fact, Sandifer (1972) reported that the peak numbers of this species were generally of the same order of magnitude as the total concentrations of all other larval species combined. A similar trend was observed in the present study, where larval numbers for this species were only exceeded by those of Callinectes sapidus zoeae during peak conditions. It is believed that the C. septemspinos larvae observed in the study area are probably from an indigenous population, rather than the Bay, since the sand shrimp is one of the dominant epibenthic forms of the region (Dr. Dauer, personal communication). Also, the maximum concentrations were observed in the middle of the study area, rather than at the Bay mouth station. Moreover, C. septemspinos larvae represents one of the only meroplankton groups which has a distributional pattern concentrated at DNDs. The larvae were clearly in the subsurface layers and also appeared in the waters of the inshore region.

The larvae of the holoplanktonic decapod shrimp Lucifer

faxoni clearly displayed a distribution indicative of a more oceanic form. Maximum abundances were only observed at the offshore stations of the study area. Likewise, the larvae and adults of the coastal water mysid Mysidopsis bigelowi tended to only be found at the outer stations of the study area, probably as a fringe subpopulation of the populations known to occur farther offshore at the Norfolk Disposal Site (Dr. Dauer, personal communication). On the other hand, the estuarine mysid Neomysis americana had a distribution pattern that was more clearly indicative of a nearshore source: only the subsurface waters of nearshore stations exhibited high concentrations. Thus, none of these remaining crustacean groups had larval abundance patterns which concentrated significantly over DNDS.

The bivalve veligers displayed several peaks of abundance during the study. This is not too surprising because a number of different bivalves known to live in the area have different spawning times (Butt et al., 1985). However, the levels of abundance of the veligers were orders of magnitude lower than those observed for tows made in the Bay with a smaller mesh net (Butt et al., 1985). Even though the larger mesh (353 micron) net employed during the present study was not as efficient at collecting the veligers, it is felt that the low numbers observed are indicative of a low degree of activity in the region. As might be expected, no oyster larvae were observed during the present study. The gastropod veligers were found to peak at stations through the middle of the study area, possibly as a result of spawning by populations of gastropods endemic to region of the DNDS.

Among the fishes, Anchoa mitchilli appears to be the domi-

nant species in the study area. The engraulid eggs that dominate the plankton counts in the summer are believed to be A. mitchilli eggs. The larvae of this species has been shown to be an inshore form in previous studies (Fahay, 1975). The eggs appear to originate in the neuston of the northern stations, but are found throughout the water column of most of the outer stations of the study area. The engraulid fry first appeared at the southern, offshore stations, but by the time the larvae are clearly identifiable as A. mitchilli, they have made their way into the subsurface waters of the northern, inshore stations. At this point, the larvae are probably in the process of reinvading the Bay.

The remainder of the fish examined appear to spawn offshore of the study area. Only a few bothid and sciaenid eggs were collected, and they were collected at the more offshore stations. Fahay (1975) noted that many species of bothids and sciaenids spawn offshore and the larvae migrate inshore during development. The larvae of these groups were only found in trace amounts in the study area, so this region does not appear to be a major part of the reinvasion route into the Bay.

Nelson et al. (1977) have suggested that Brevoortia tyrannus populations from the Southeastern Bight spawn offshore and the larvae are carried back inshore by Ekman (wind-driven) transport of surface waters. The maximum numbers of larvae of this species were observed in the neuston of the most offshore station of the study area. A similar process may be occurring in the Bay region. However, the number of larvae were so low that it is doubtful whether the study area is a major part of the larval

transport route for this major fisheries species of the Bay. Larvae of the blue fish Pomatomus saltatrix exhibited a similar pattern. Larvae were found in the neuston tows of the offshore stations of the study area. However, like the menhaden larvae, the numbers of larvae of blue fish were far too low to indicate any definite pattern.

The only other major planktonic group observed in the study area were the larvaceans. Like the Lucifer faxoni populations, these forms clearly come from offshore, possibly from the Gulf Stream to the south where they are believed to play a major trophic role as a food source for planktonic food webs (Alldredge, 1972, 1976). They were observed primarily at the southern, more offshore stations of the study area, probably as a subpopulation of a larger offshore stock.

SUMMARY AND CONCLUSION

To summarize the significant patterns of meroplankton in the vicinity of the DNDS, many of the estuarine species stay to the north and inshore of the site (e.g. Xanthid, Pinnothesis, Pinnixid, and Uca crab larvae). A number of offshore spawners are found primarily seaward of DNDS (e.g. the Bothids, Sciaenids and most of the other fishes; the Cancer irroratus larvae, the penaeid shrimp larvae). The only species which apparently move through the study area in ecologically significant numbers are the blue crab (Callinectes sapidus) larvae, the Bay anchovy (Anchoa mitchilli) larvae, the larvaceans, and the sand shrimp (Crangon septemspinosus) larvae. This fact was made evident by the PCA analysis of the data which showed that over 97% of the variance in the data could be described by factors describing the abundance patterns of these few species. Even the blue crab zoeae tend to be found in greatest numbers along the Atlantic Channel stations, offshore of DNDS. So this particular area does not appear to represent a major larval transport route for any but the most common and commercially insignificant species (e.g. sand shrimp, Bay anchovies, and possibly gastropods and hermit crabs). The only possible exception would be the blue crab megalopae found in the neuston in the center of the study area. However, this population may represent only a small portion of the recruitment stock to the Bay. Previous studies have documented equal or greater concentrations of megalopae farther offshore.

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Figure A. Abundance ($\#/m^3$) of important meroplankton groups by date. The numbers indicate the mean values of four replicates for the tow type (tow type 2 = neuston; tow type 3 = obliques) at the station. The station identification is indicated, according to the following codes: 1=1; 2=10; 3=11; 4=12; 5=13; 6=20; 7=21; 8=22; 9=23.

Figure A1.

TUM TYPE=C

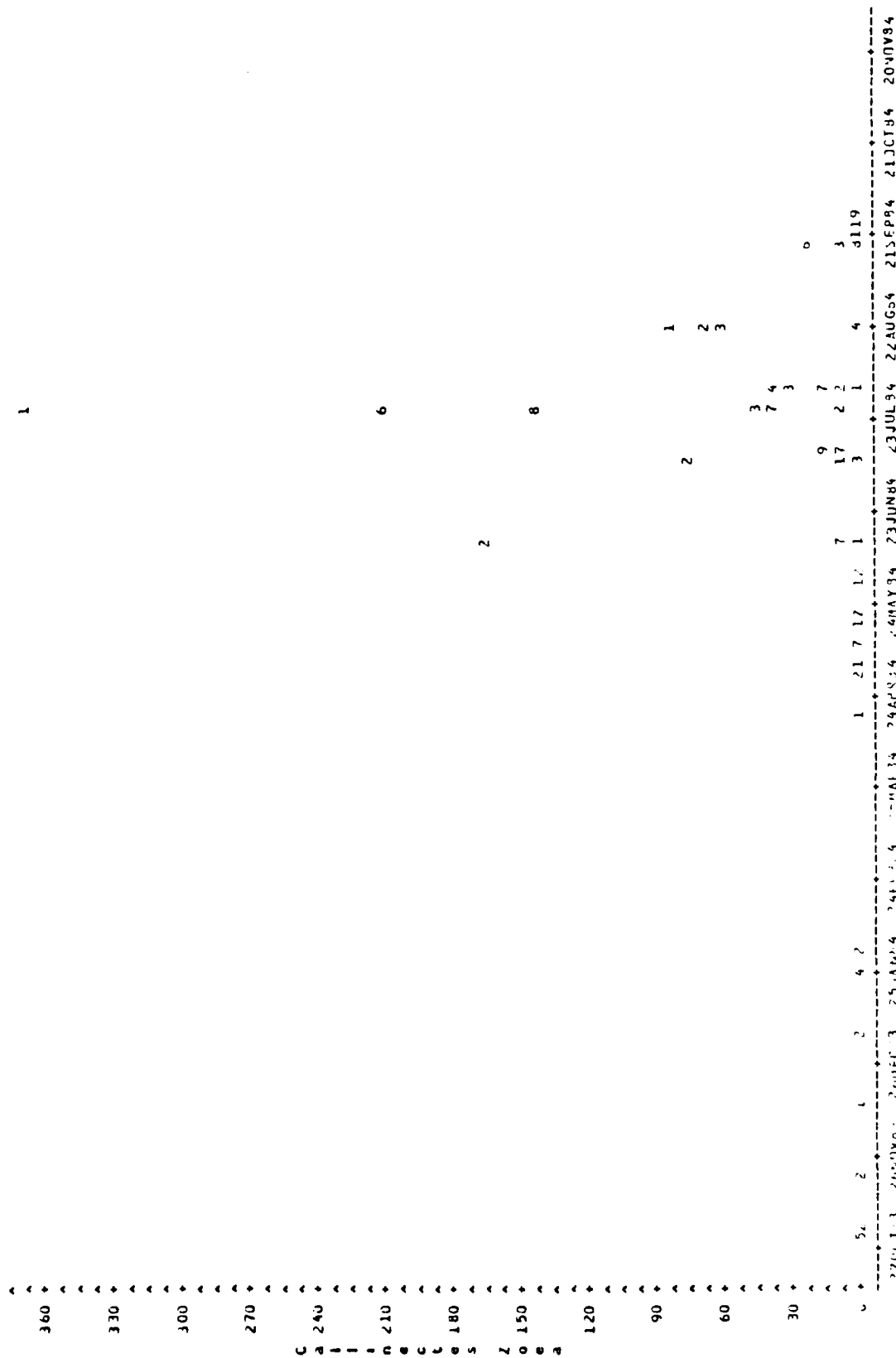
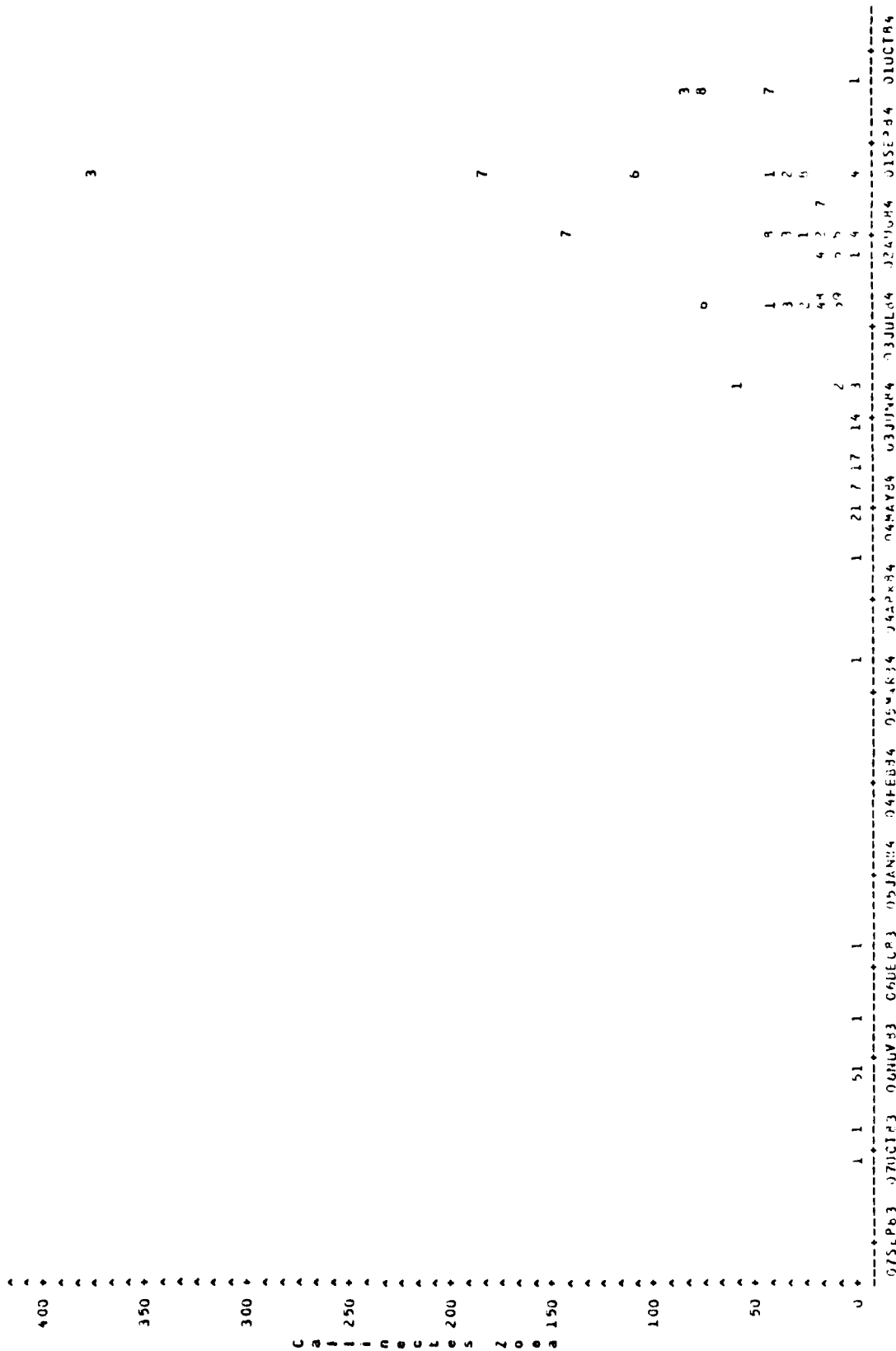


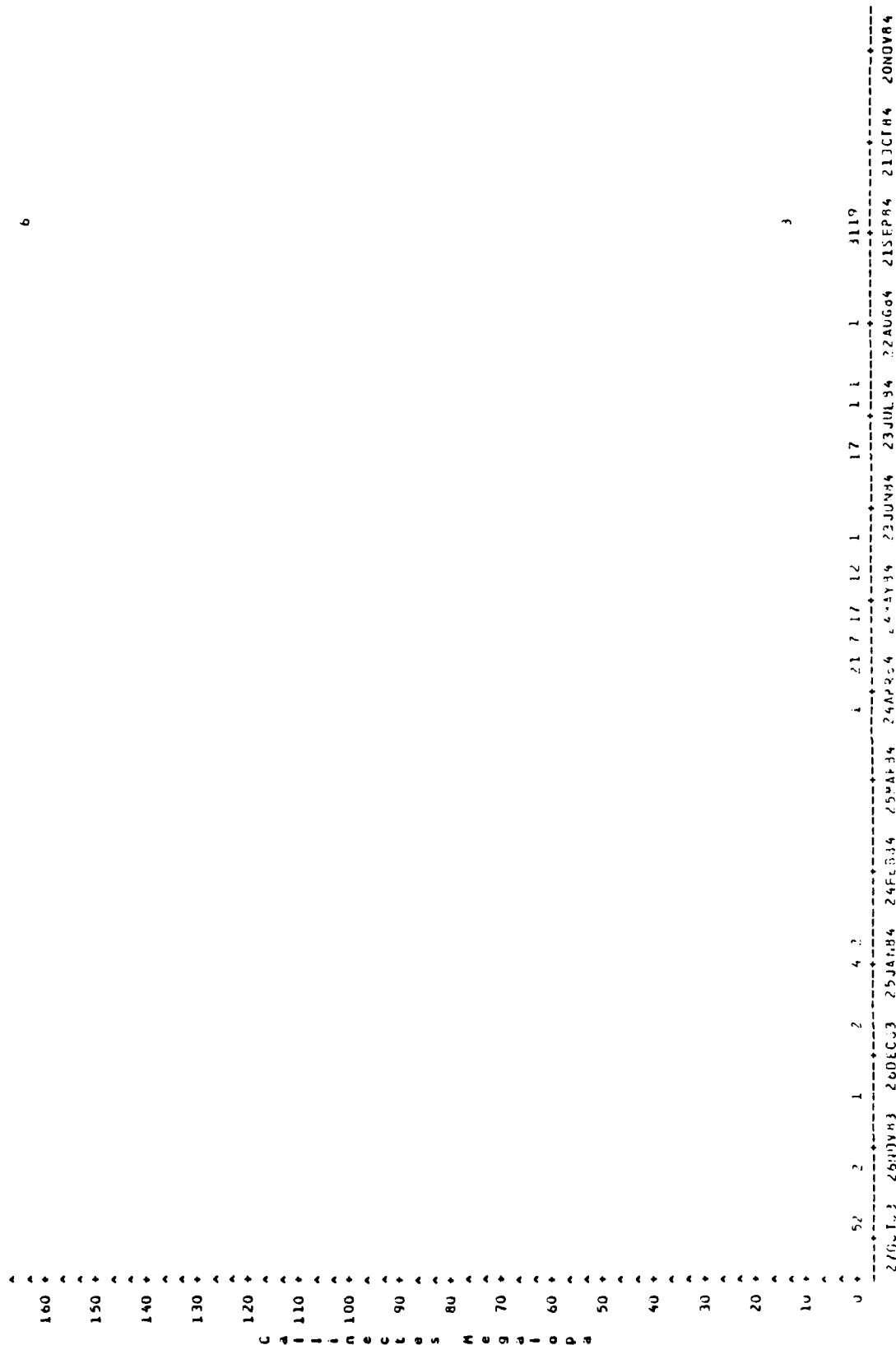
Figure A2.

TOW TYPE=3



NOTE: 43 GOS HEDEN

Figure A3.
TUM TYPE=2



NOTE: 77 HAS BEEN

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Figure A4.

TOW TYP=3



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SAMPLING DATE

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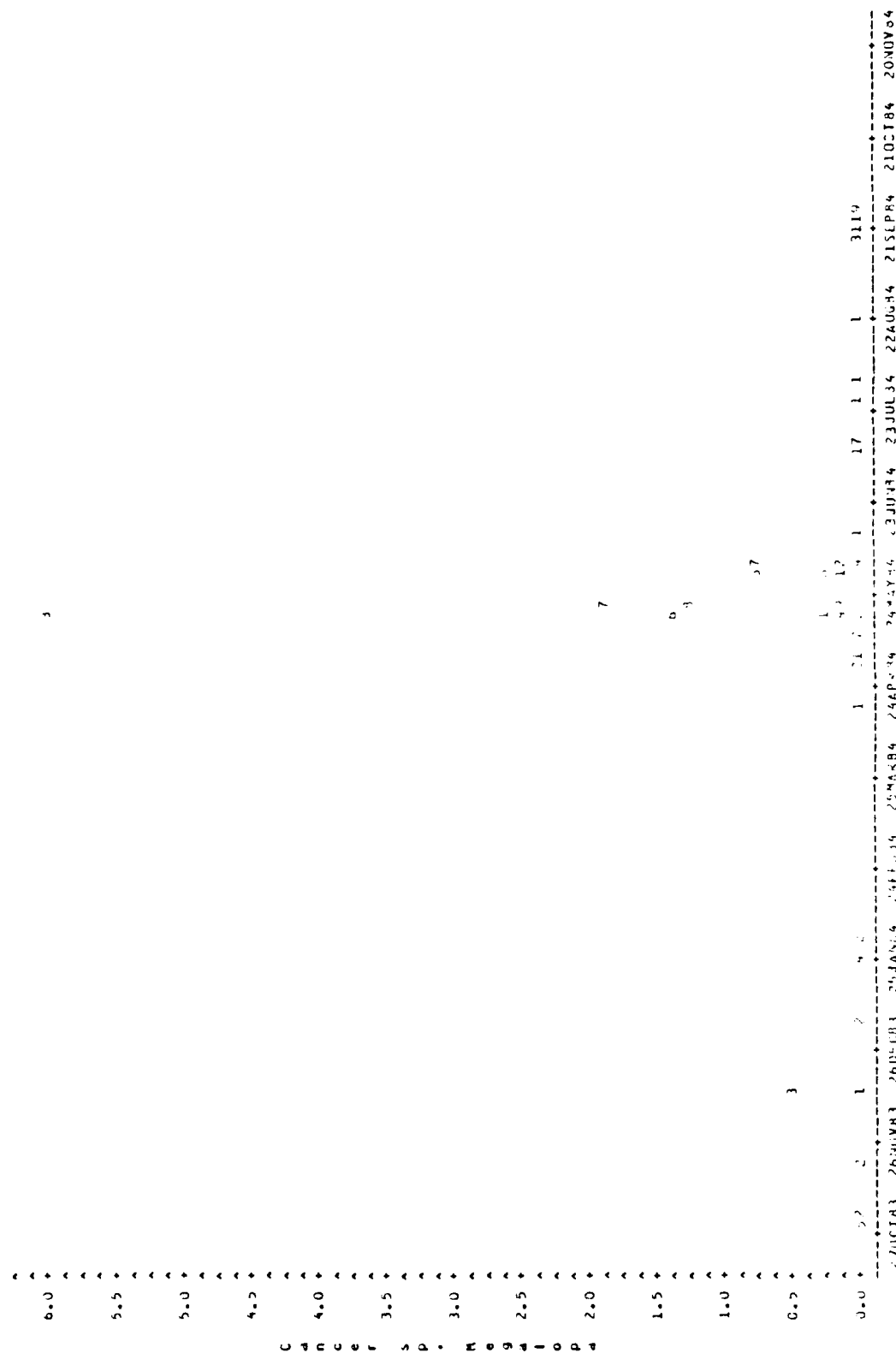
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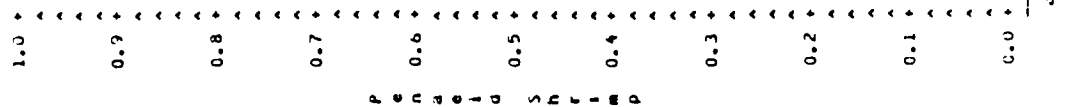


22-AY

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Figure A9.

TOW TYPE=2



NOTE: /3 J65 H1000

Figure A11.

TUM TYP. 12

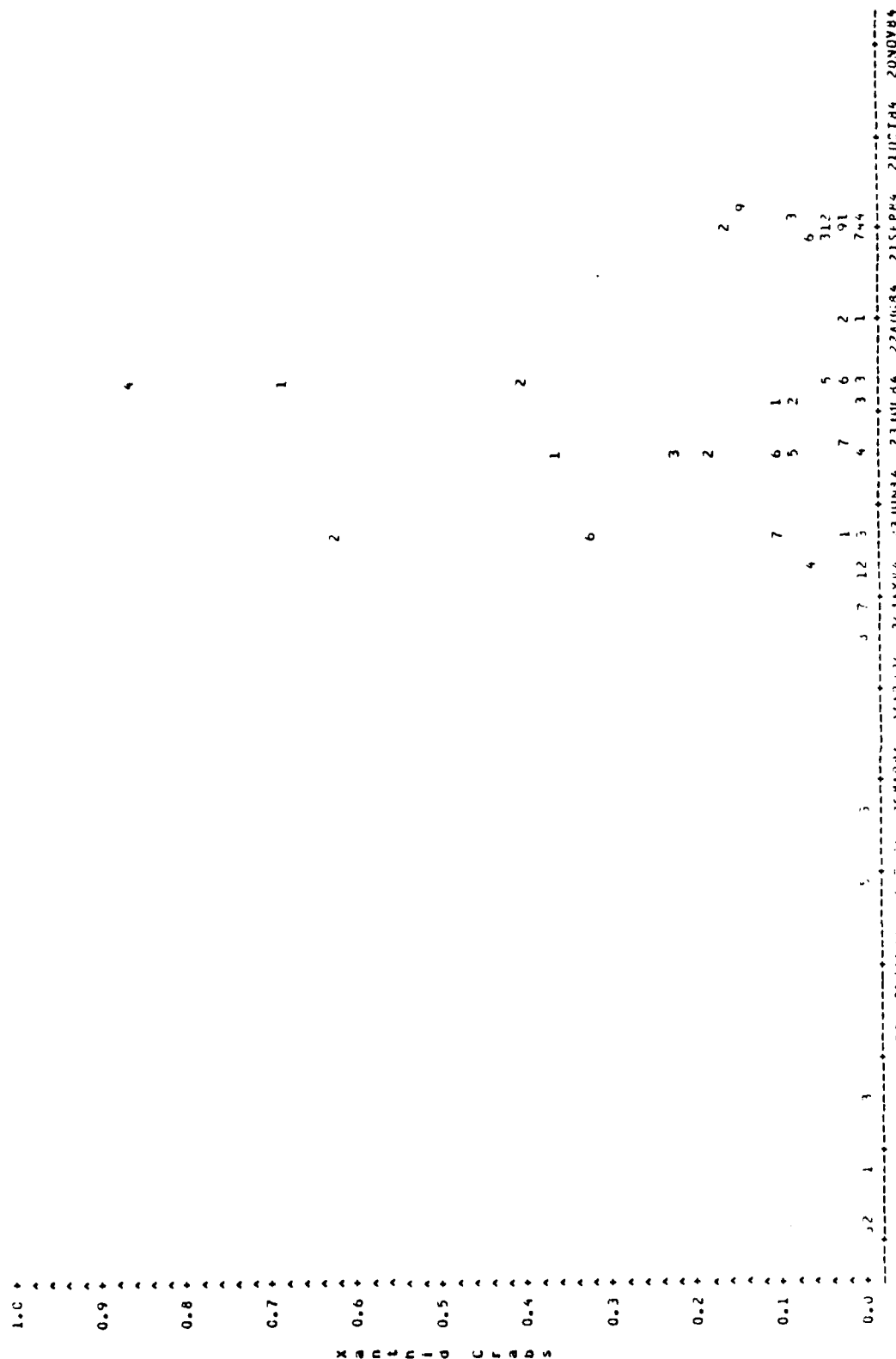
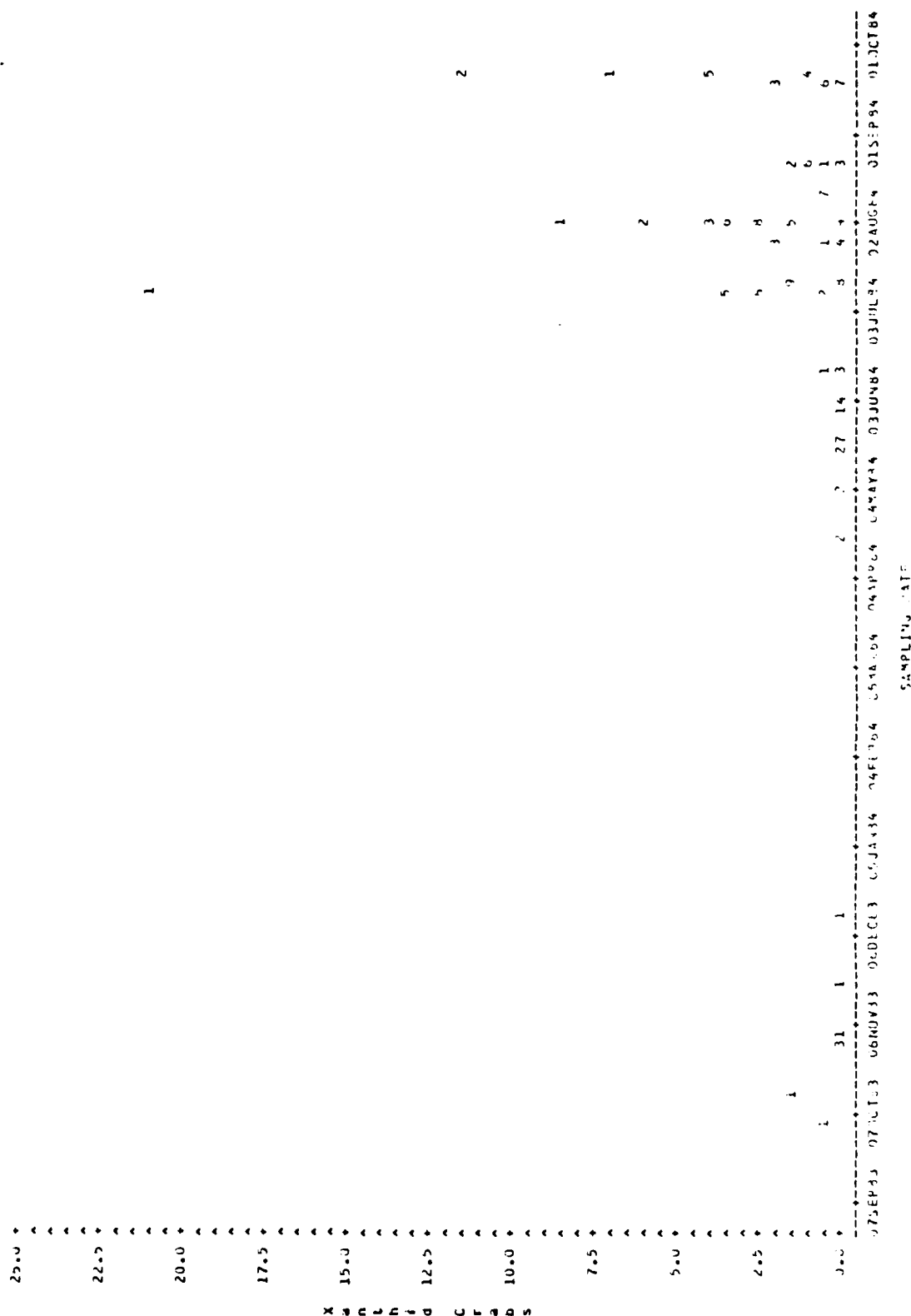


Figure A12.
ILW TYPE-3



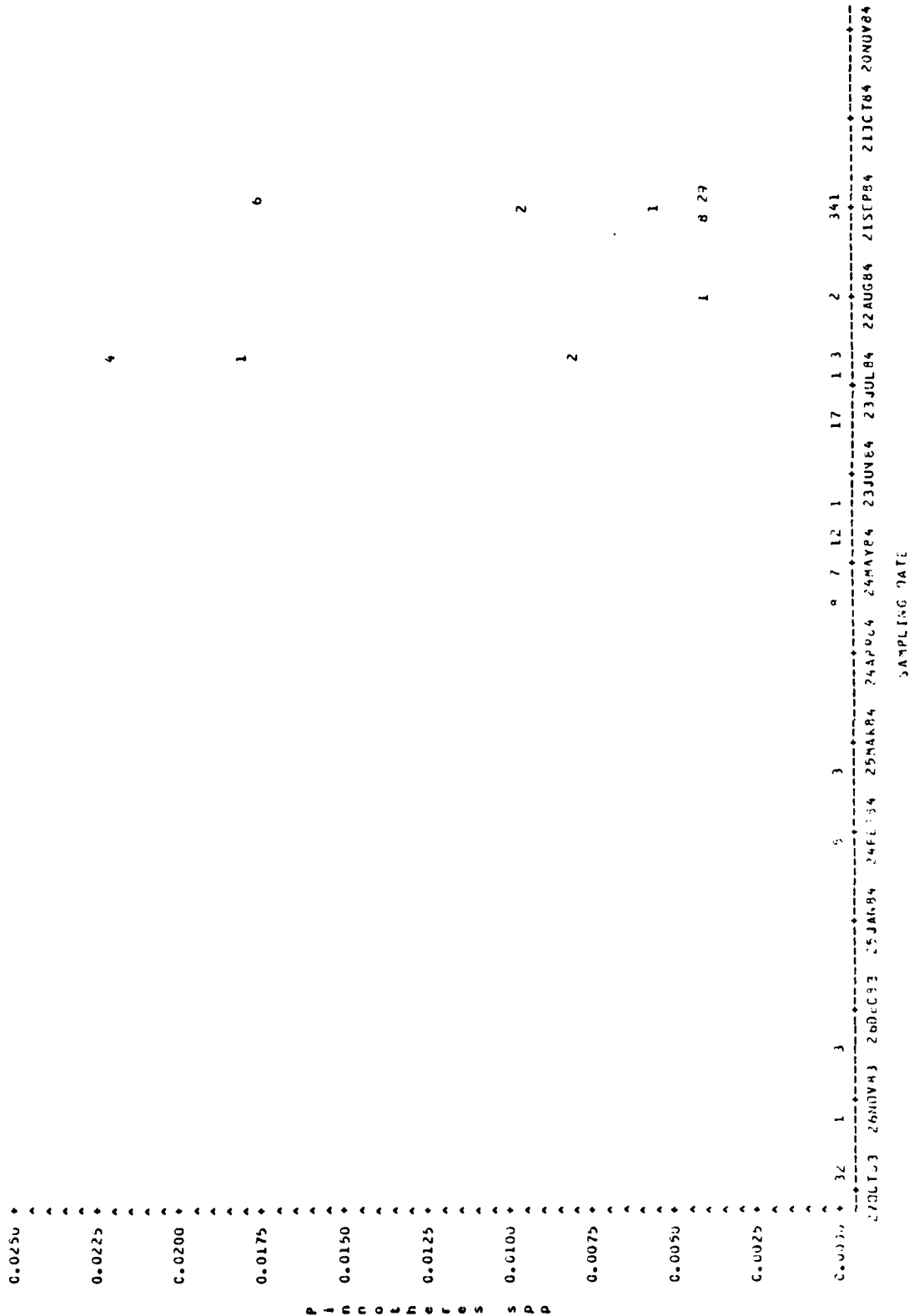
TOW TYPE=3

SAVING LIVES

NOTE: 32 CUBS HIDDEN

Figure A15.

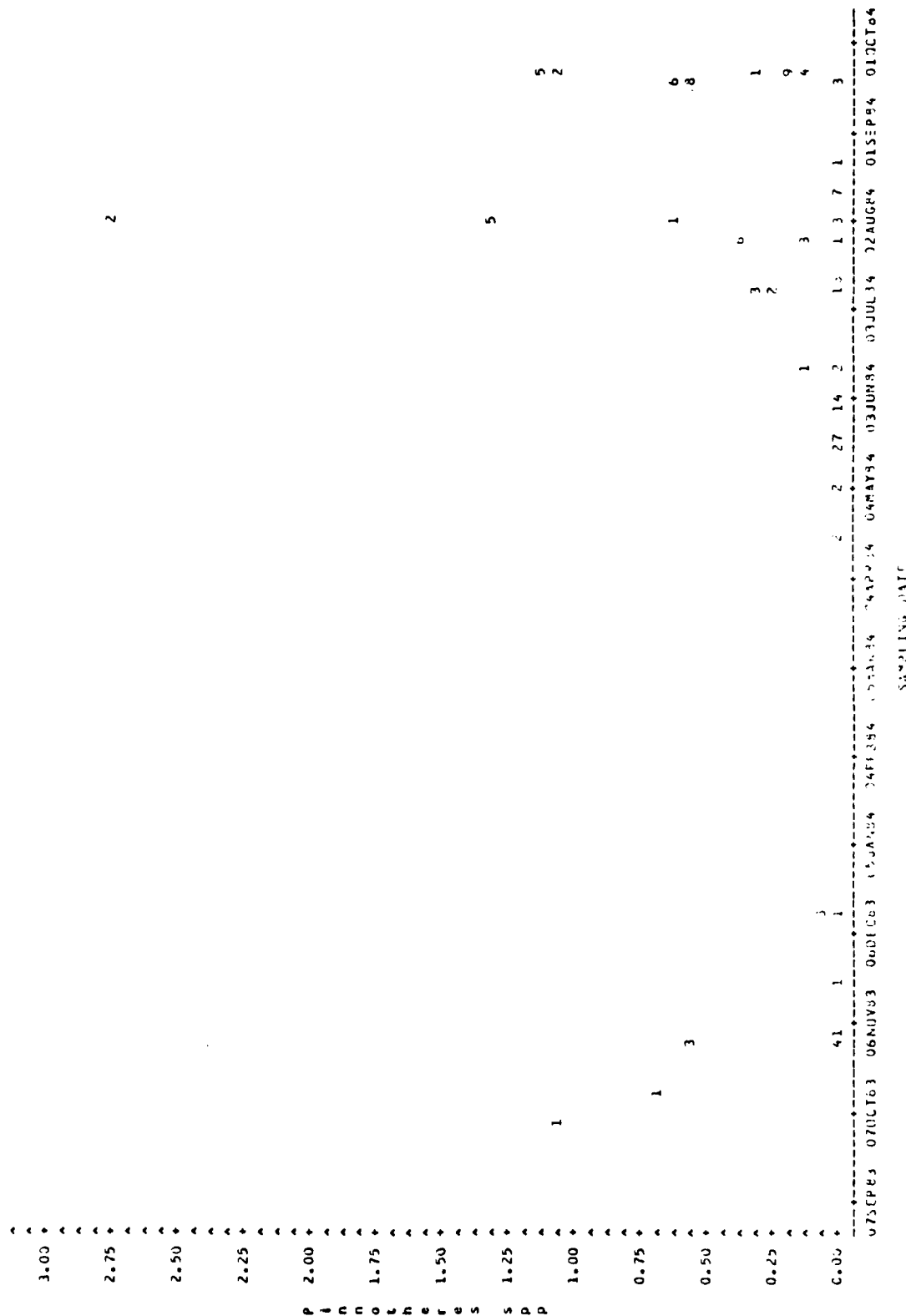
TUN TYPE=2



NOTE: 49 JGS HIGHER

Figure A16.

TOW TYPE=3



NOTE: 44 OBS MISSING

Figure A17.

TLW TYPE=2

2

20 +
18 +
16 +
14 +
12 +
10 +
8 +
6 +
4 +
2 +
0 +

U
C
A
S
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P

2

2

6

3119

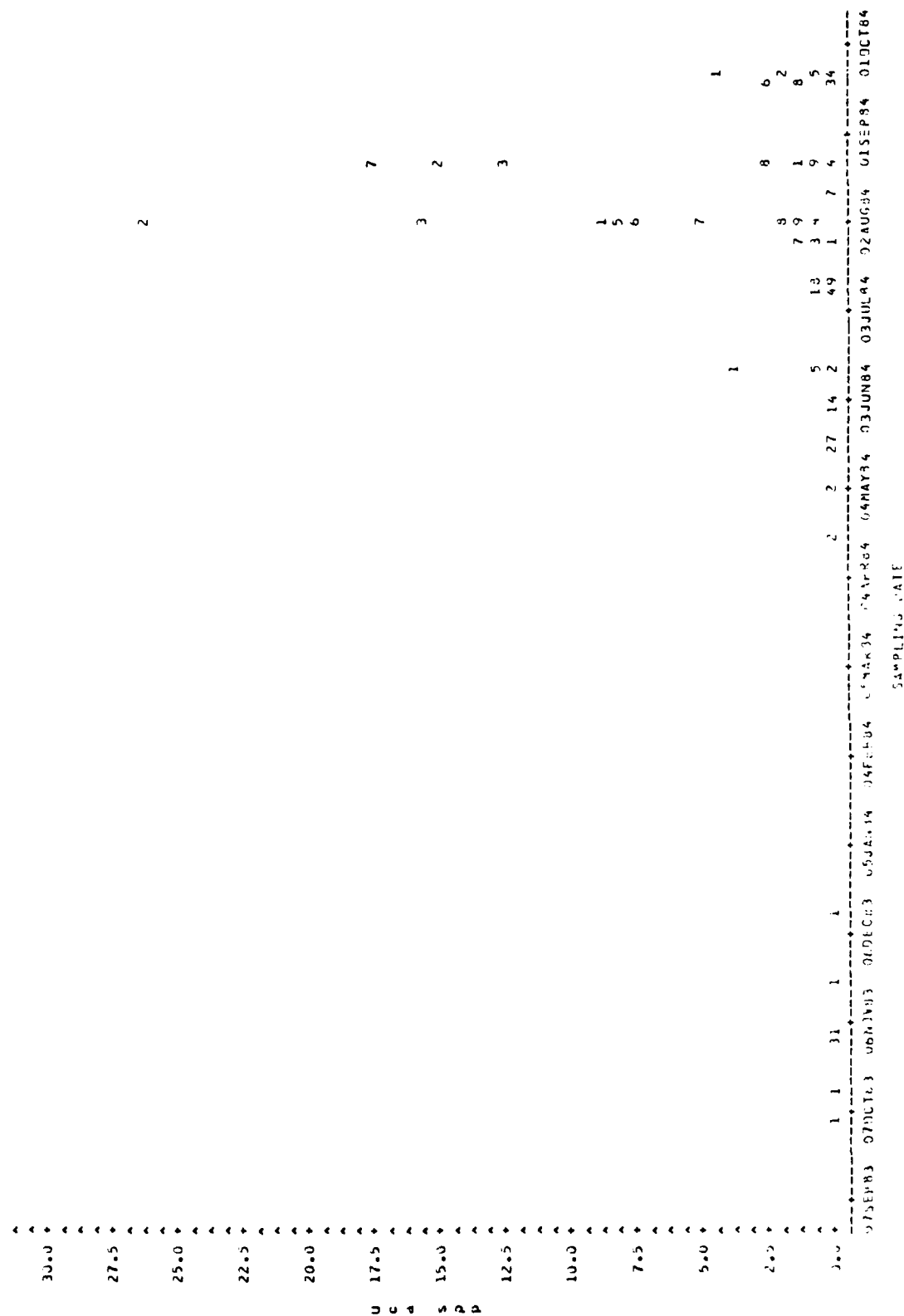
27OCT83 26NOV83 26DEC83 25JAN84 24FEB84 25MAR84 24APR84 24MAY84 23JUN84 23JUL84 22AUG84 21SEP84 21OCT84 20NOV84

SAMPLING DATE

NOTE: 4R 60S H10-16

Figure A18.

TCM TYPE=3



NOTE: 35 065 H10LEN

SAMPLING DATE

Figure A20.

TOW TYPE=3

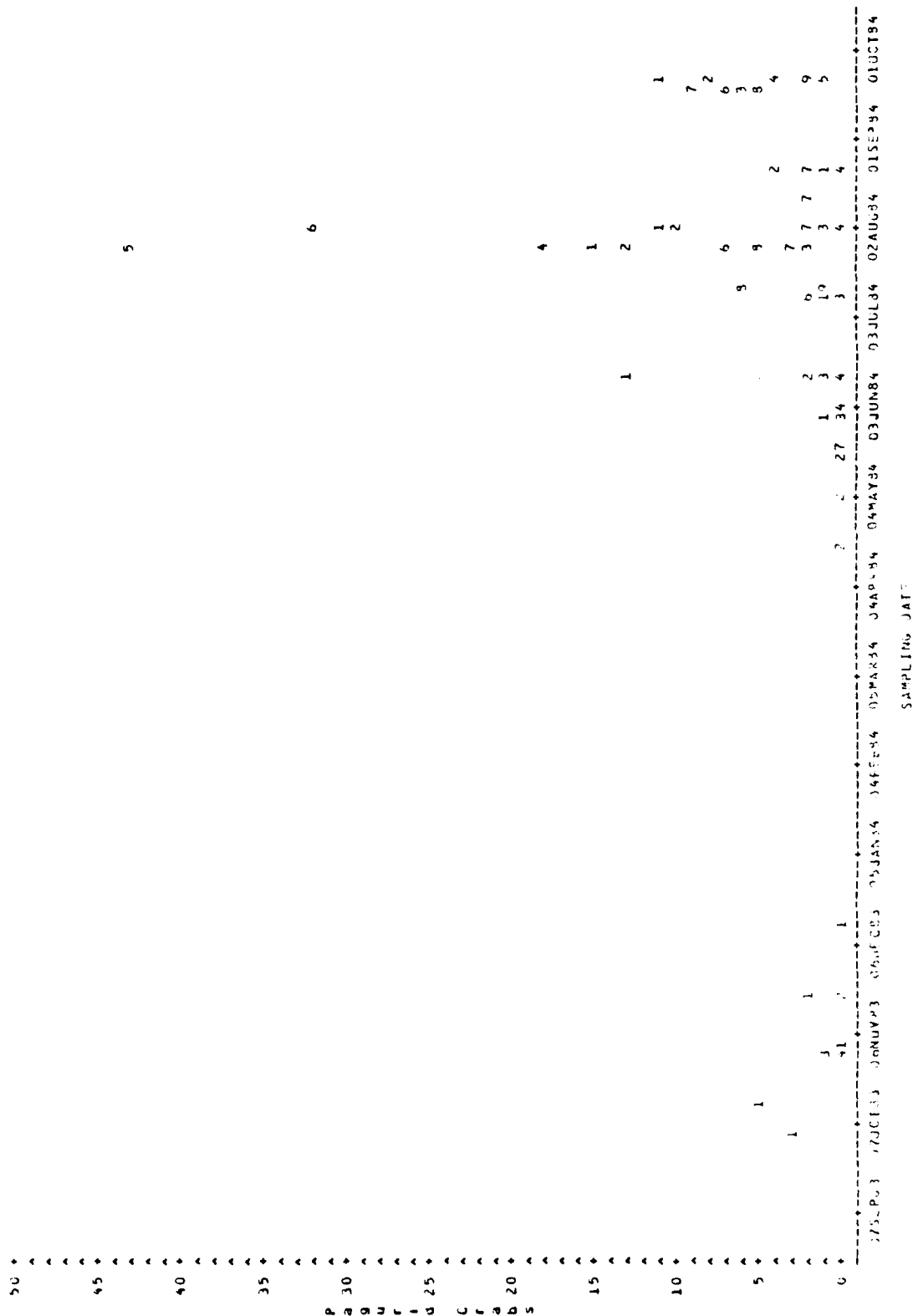
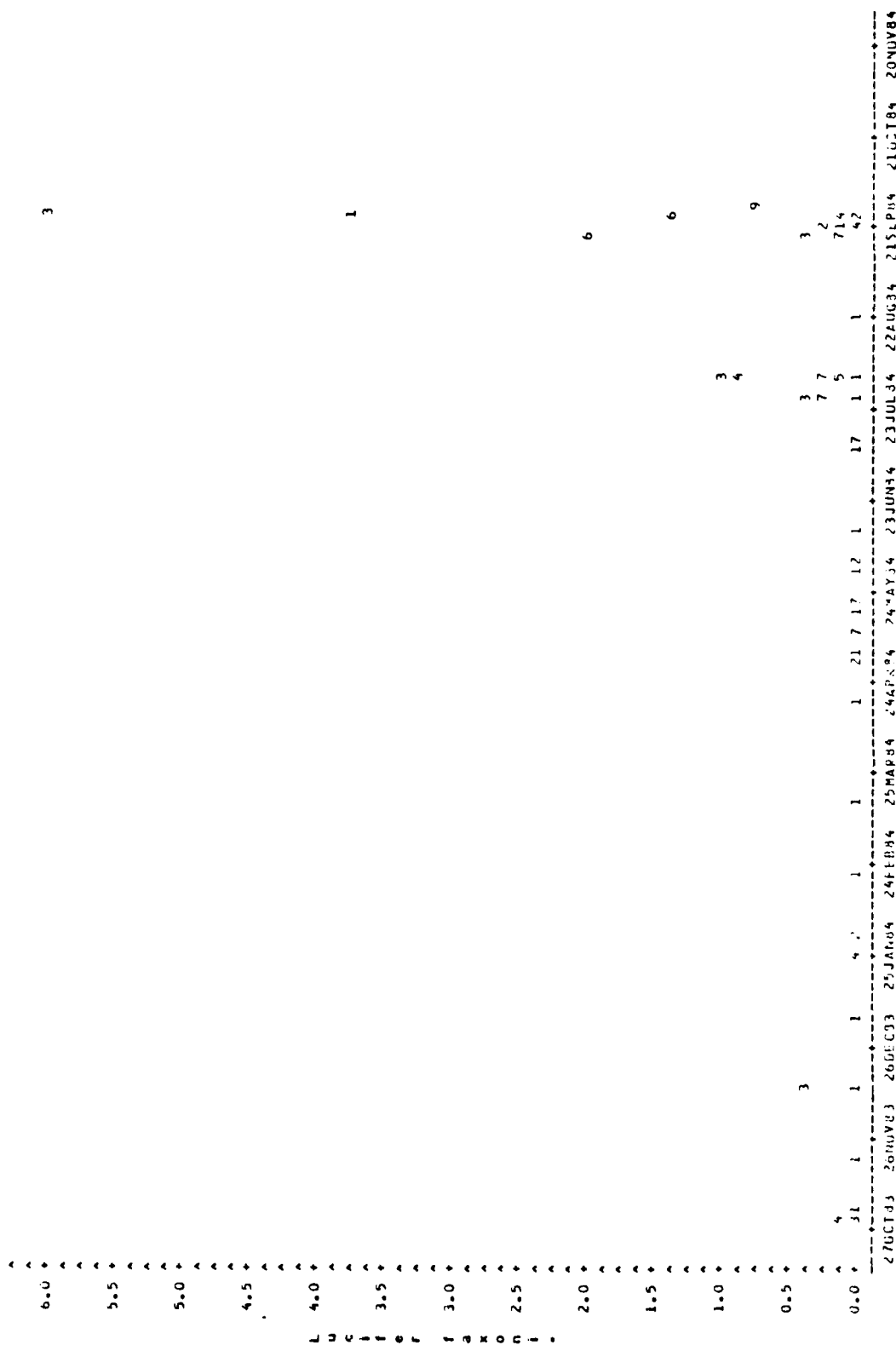


Figure A23.

TOW TYPE=2



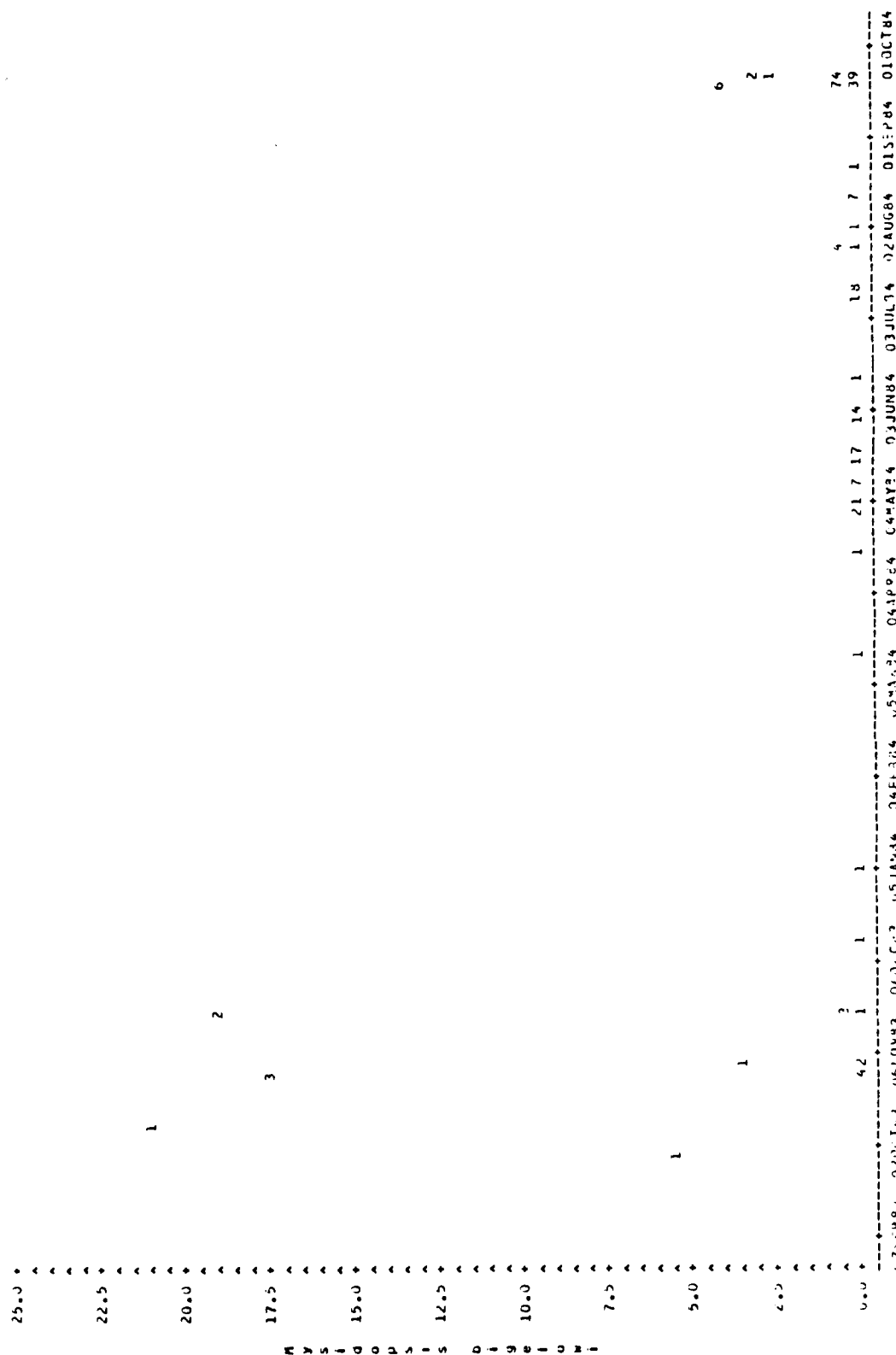
TLW TYPL=2

SM-2114, 1A7C

FILE: 77-165 HIGLEY

Figure A26.

TUM TYPE=J



SAMPLING DATE

DATE: 70 005 010000

TLH TYPE=2

[illegible]

NOTE: 69 JMS 1100EN.

51501 51502 51503 51504 51505 51506 51507 51508 51509 51510 51511 51512 51513 51514 51515 51516 51517 51518 51519 51520 51521 51522 51523 51524 51525 51526 51527 51528 51529 51530 51531 51532 51533 51534 51535 51536 51537 51538 51539 51540 51541 51542 51543 51544 51545 51546 51547 51548 51549 51550 51551 51552 51553 51554 51555 51556 51557 51558 51559 51560 51561 51562 51563 51564 51565 51566 51567 51568 51569 51570 51571 51572 51573 51574 51575 51576 51577 51578 51579 51580 51581 51582 51583 51584 51585 51586 51587 51588 51589 51590 51591 51592 51593 51594 51595 51596 51597 51598 51599 51600 51601 51602 51603 51604 51605 51606 51607 51608 51609 51610 51611 51612 51613 51614 51615 51616 51617 51618 51619 51620 51621 51622 51623 51624 51625 51626 51627 51628 51629 51630 51631 51632 51633 51634 51635 51636 51637 51638 51639 51640 51641 51642 51643 51644 51645 51646 51647 51648 51649 51650 51651 51652 51653 51654 51655 51656 51657 51658 51659 51660 51661 51662 51663 51664 51665 51666 51667 51668 51669 51670 51671 51672 51673 51674 51675 51676 51677 51678 51679 51680 51681 51682 51683 51684 51685 51686 51687 51688 51689 51690 51691 51692 51693 51694 51695 51696 51697 51698 51699 51700 51701 51702 51703 51704 51705 51706 51707 51708 51709 51710 51711 51712 51713 51714 51715 51716 51717 51718 51719 51720 51721 51722 51723 51724 51725 51726 51727 51728 51729 51730 51731 51732 51733 51734 51735 51736 51737 51738 51739 51740 51741 51742 51743 51744 51745 51746 51747 51748 51749 51750 51751 51752 51753 51754 51755 51756 51757 51758 51759 51760 51761 51762 51763 51764 51765 51766 51767 51768 51769 51770 51771 51772 51773 51774 51775 51776 51777 51778 51779 51780 51781 51782 51783 51784 51785 51786 51787 51788 51789 51790 51791 51792 51793 51794 51795 51796 51797 51798 51799 51800 51801 51802 51803 51804 51805 51806 51807 51808 51809 51810 51811 51812 51813 51814 51815 51816 51817 51818 51819 51820 51821 51822 51823 51824 51825 51826 51827 51828 51829 51830 51831 51832 51833 51834 51835 51836 51837 51838 51839 51840 51841 51842 51843 51844 51845 51846 51847 51848 51849 51850 51851 51852 51853 51854 51855 51856 51857 51858 51859 51860 51861 51862 51863 51864 51865 51866 51867 51868 51869 51870 51871 51872 51873 51874 51875 51876 51877 51878 51879 51880 51881 51882 51883 51884 51885 51886 51887 51888 51889 51890 51891 51892 51893 51894 51895 51896 51897 51898 51899 51900 51901 51902 51903 51904 51905 51906 51907 51908 51909 51910 51911 51912 51913 51914 51915 51916 51917 51918 51919 51920 51921 51922 51923 51924 51925 51926 51927 51928 51929 51930 51931 51932 51933 51934 51935 51936 51937 51938 51939 51940 51941 51942 51943 51944 51945 51946 51947 51948 51949 51950 51951 51952 51953 51954 51955 51956 51957 51958 51959 51960 51961 51962 51963 51964 51965 51966 51967 51968 51969 51970 51971 51972 51973 51974 51975 51976 51977 51978 51979 51980 51981 51982 51983 51984 51985 51986 51987 51988 51989 51990 51991 51992 51993 51994 51995 51996 51997 51998 51999 52000 52001 52002 52003 52004 52005 52006 52007 52008 52009 52010 52011 52012 52013 52014 52015 52016 52017 52018 52019 52020 52021 52022 52023 52024 52025 52026 52027 52028 52029 52030 52031 52032 52033 52034 52035 52036 52037 52038 52039 52040 52041 52042 52043 52044 52045 52046 52047 52048 52049 52050 52051 52052 52053 52054 52055 52056 52057 52058 52059 52060 52061 52062 52063 52064 52065 52066 52067 52068 52069 52070 52071 52072 52073 52074 52075 52076 52077 52078 52079 52080 52081 52082 52083 52084 52085 52086 52087 52088 52089 52090 52091 52092 52093 52094 52095 52096 52097 52098 52099 52100 52101 52102 52103 52104 52105 52106 52107 52108 52109 52110 52111 52112 52113 52114 52115 52116 52117 52118 52119 52120 52121 52122 52123 52124 52125 52126 52127 52128 52129 52130 52131 52132 52133 52134 52135 52136 52137 52138 52139 52140 52141 52142 52143 52144 52145 52146 52147 52148 52149 52150 52151 52152 52153 52154 52155 52156 52157 52158 52159 52160 52161 52162 52163 52164 52165 52166 52167 52168 52169 52170 52171 52172 52173 52174 52175 52176 52177 52178 52179 52180 52181 52182 52

TLW TYP_ = 3

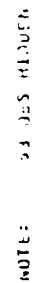
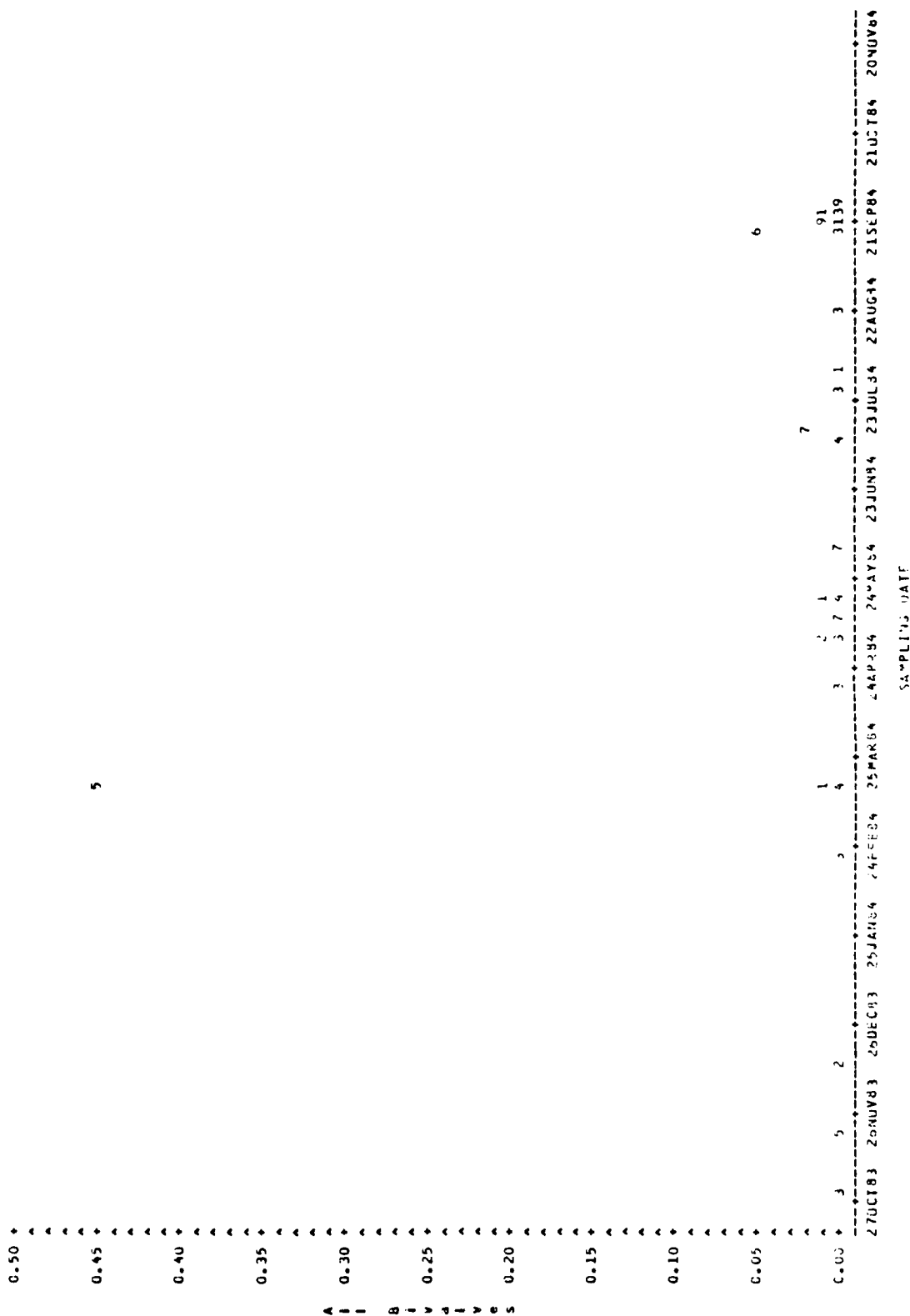


Figure A29.

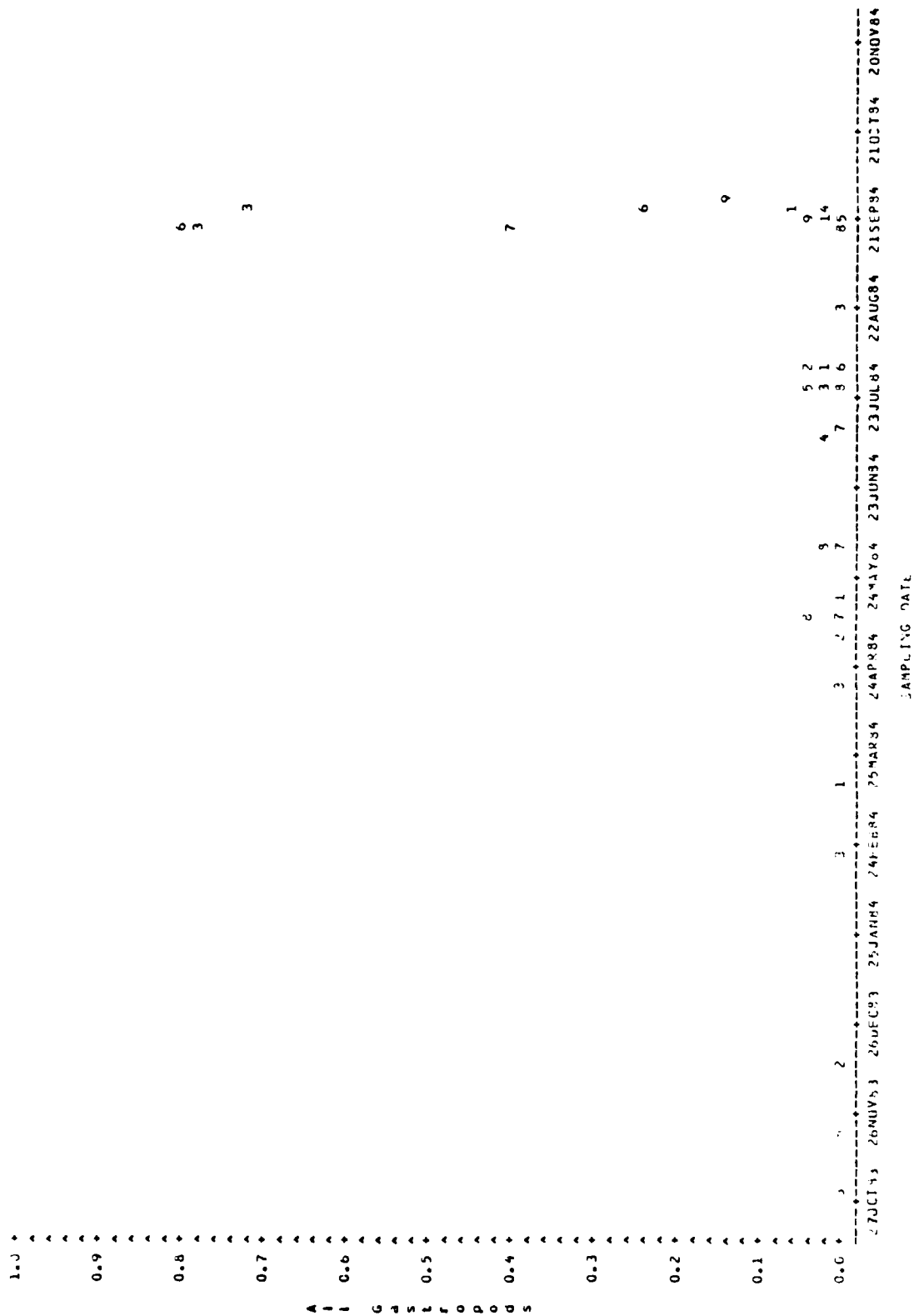
TUM TYPE=2



TUW TYPE=3

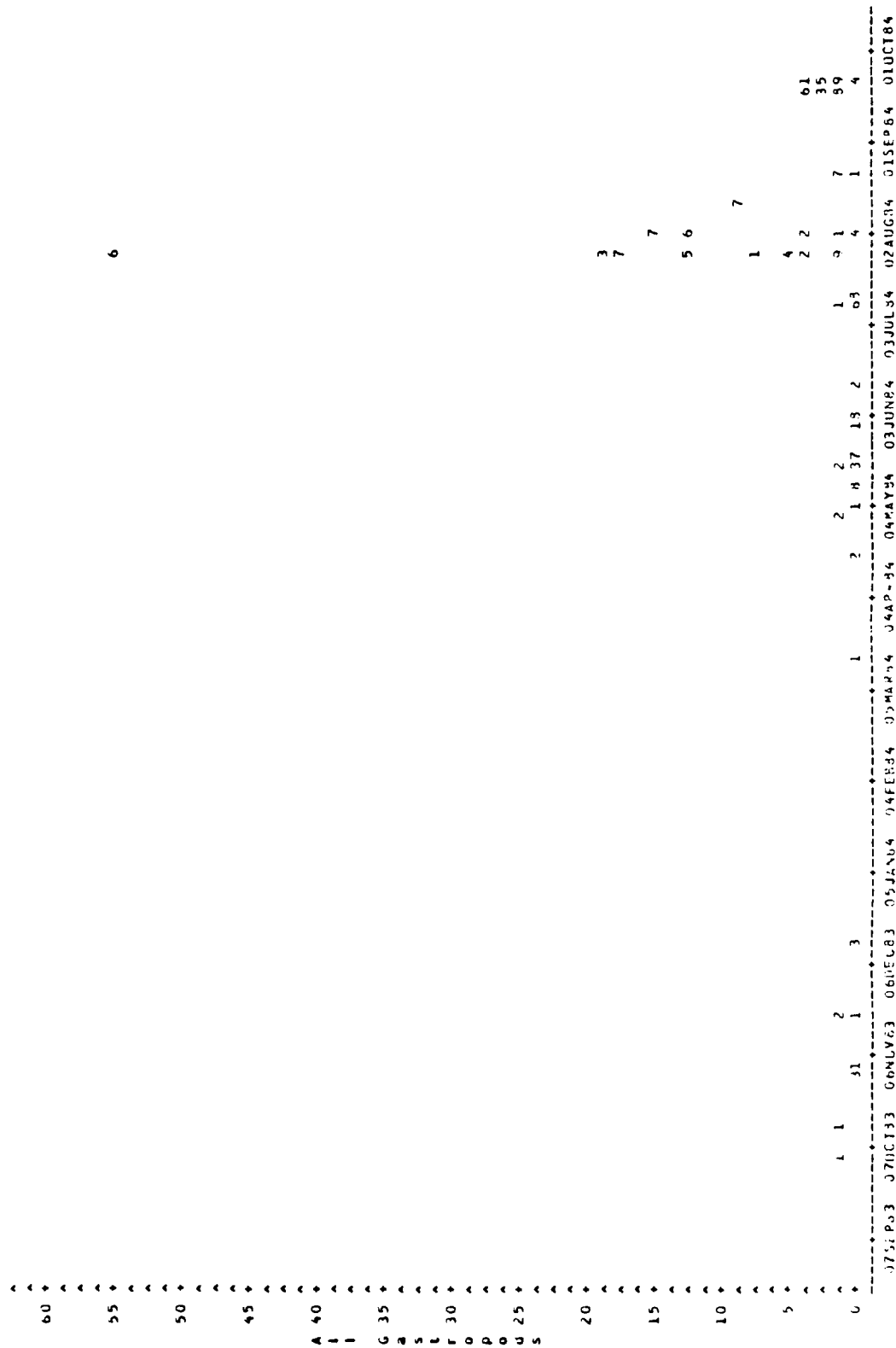
NOTE: 46 JCS HIDDEN

TUM TYPE=2



NOTE: 9 DJS MILDEN

Figure A32.
TOW TYPE=3

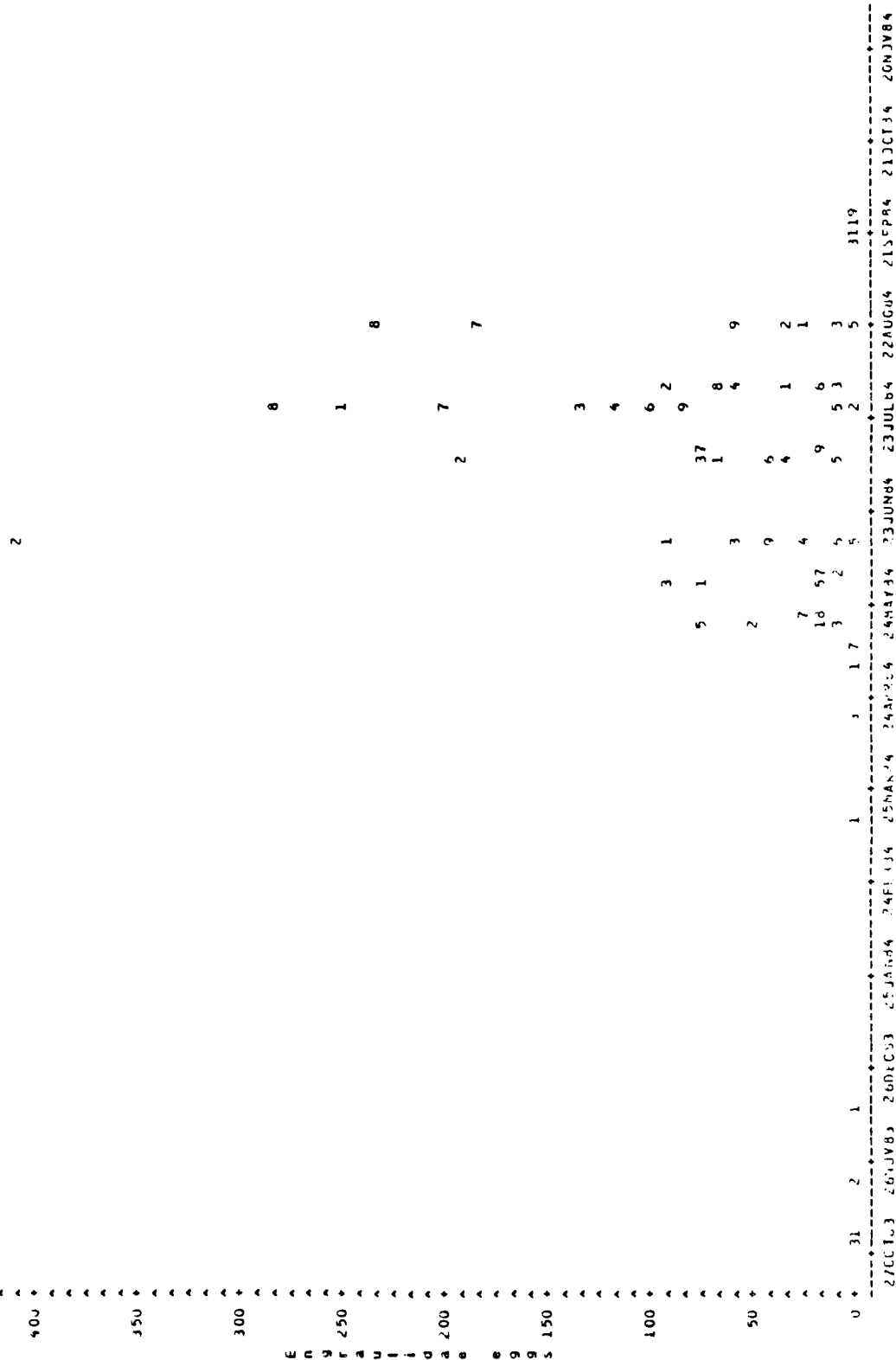


SAMPLING DATE

NOTE: 36 OBS. MISSING

Figure A33.

TOW TYPE=2



SAMPLING DATE

NOTE: 36 TUS H1355

TUB TYPF=3

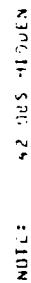
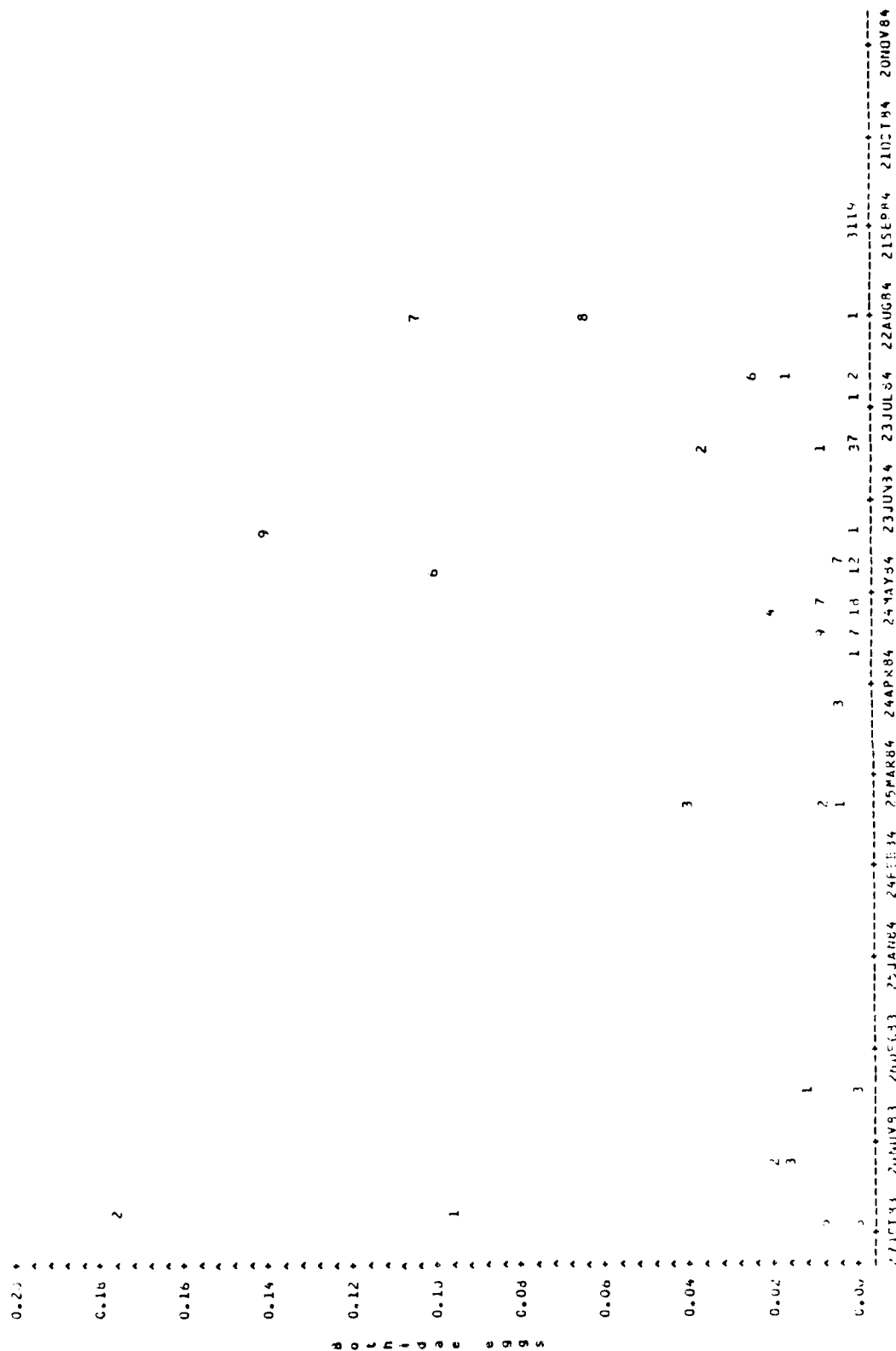


Figure A35.

TOW TYPE=2

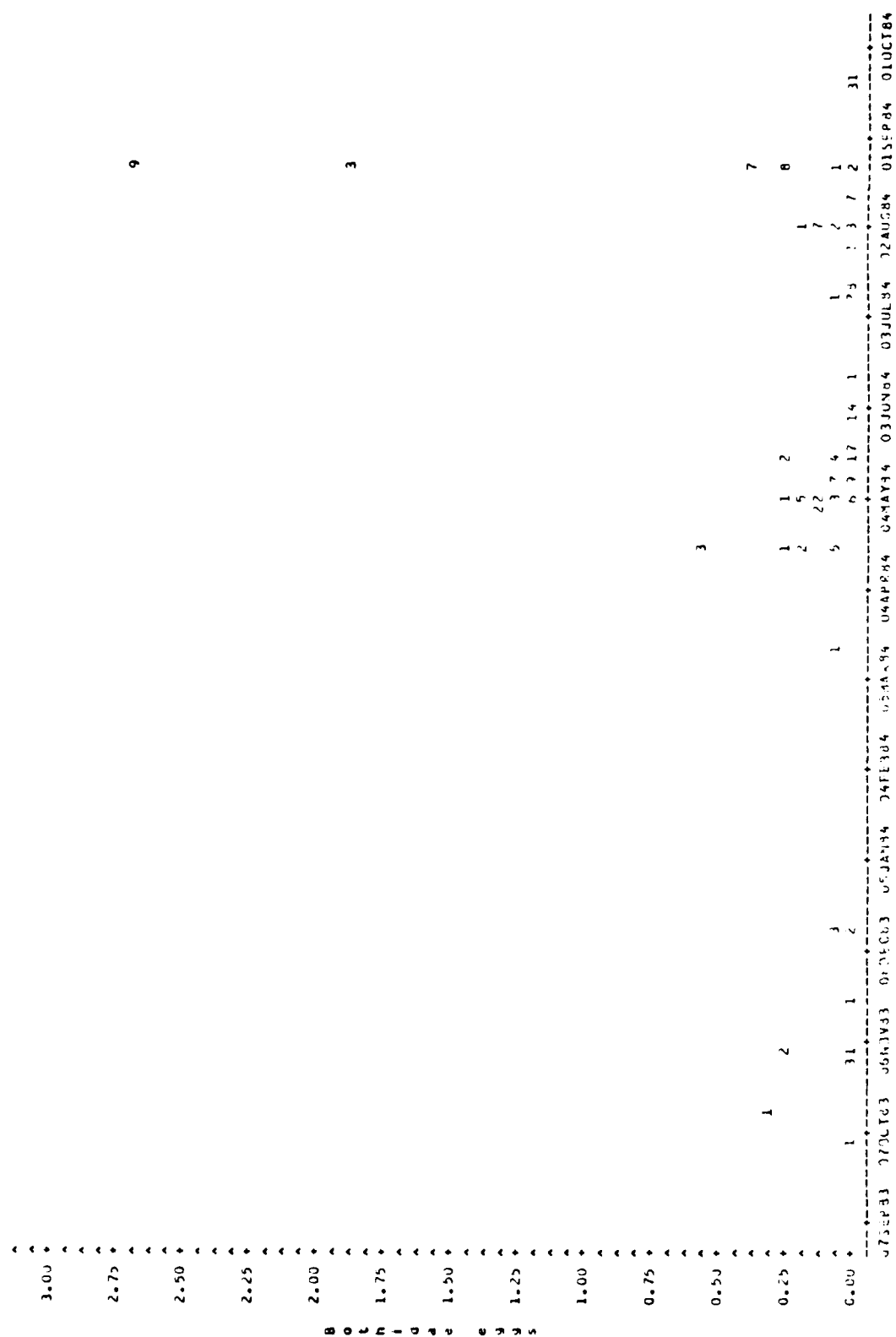


SAMPLING DATE

NOTE: 25 IS HIGHLIGHT

Figure A36.

TCM TYPE-3



SAMPLING DATE

NOTE: 54 GAS HIDDEN

Figure A37.

TUM TYPE=2

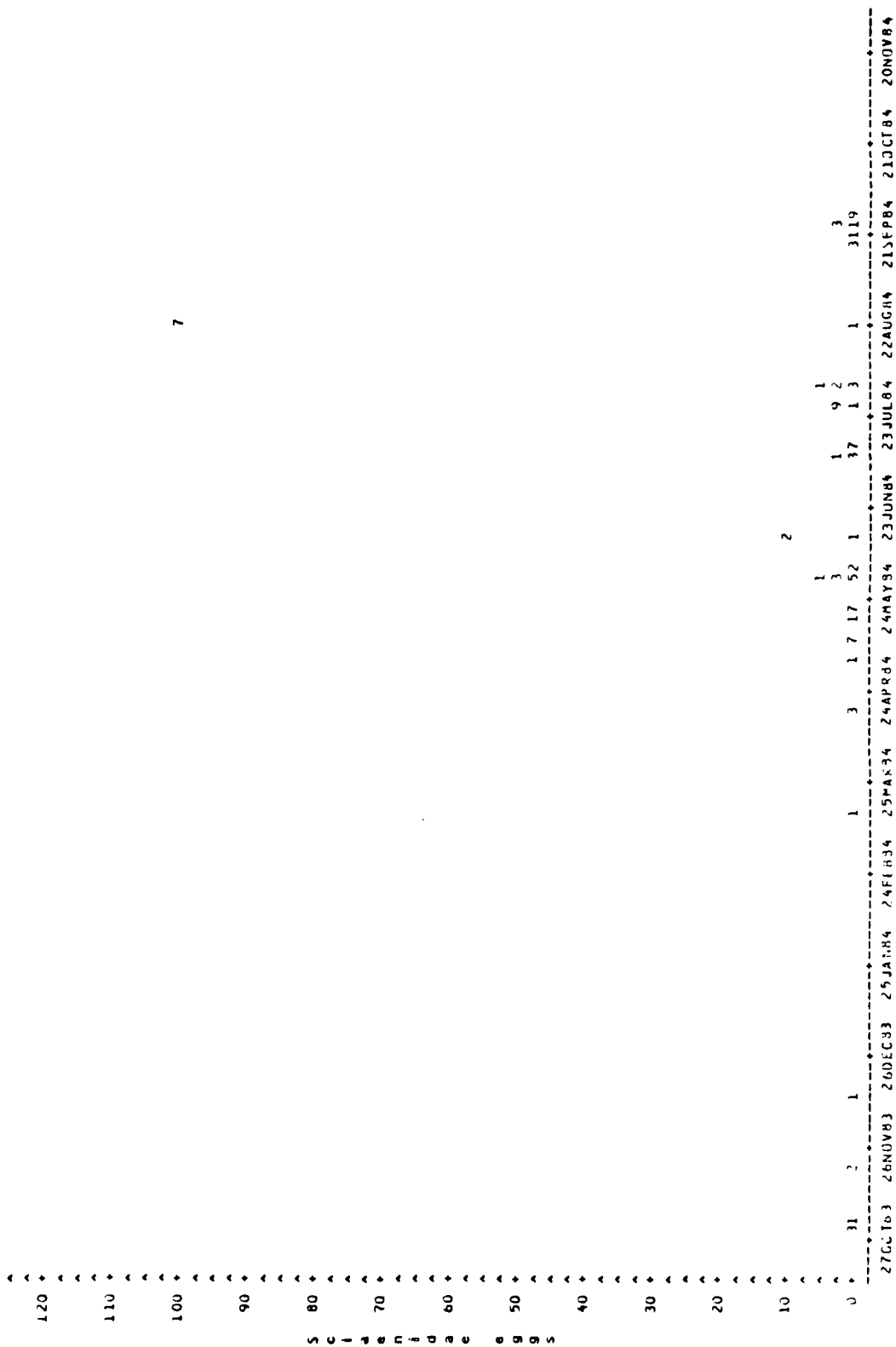
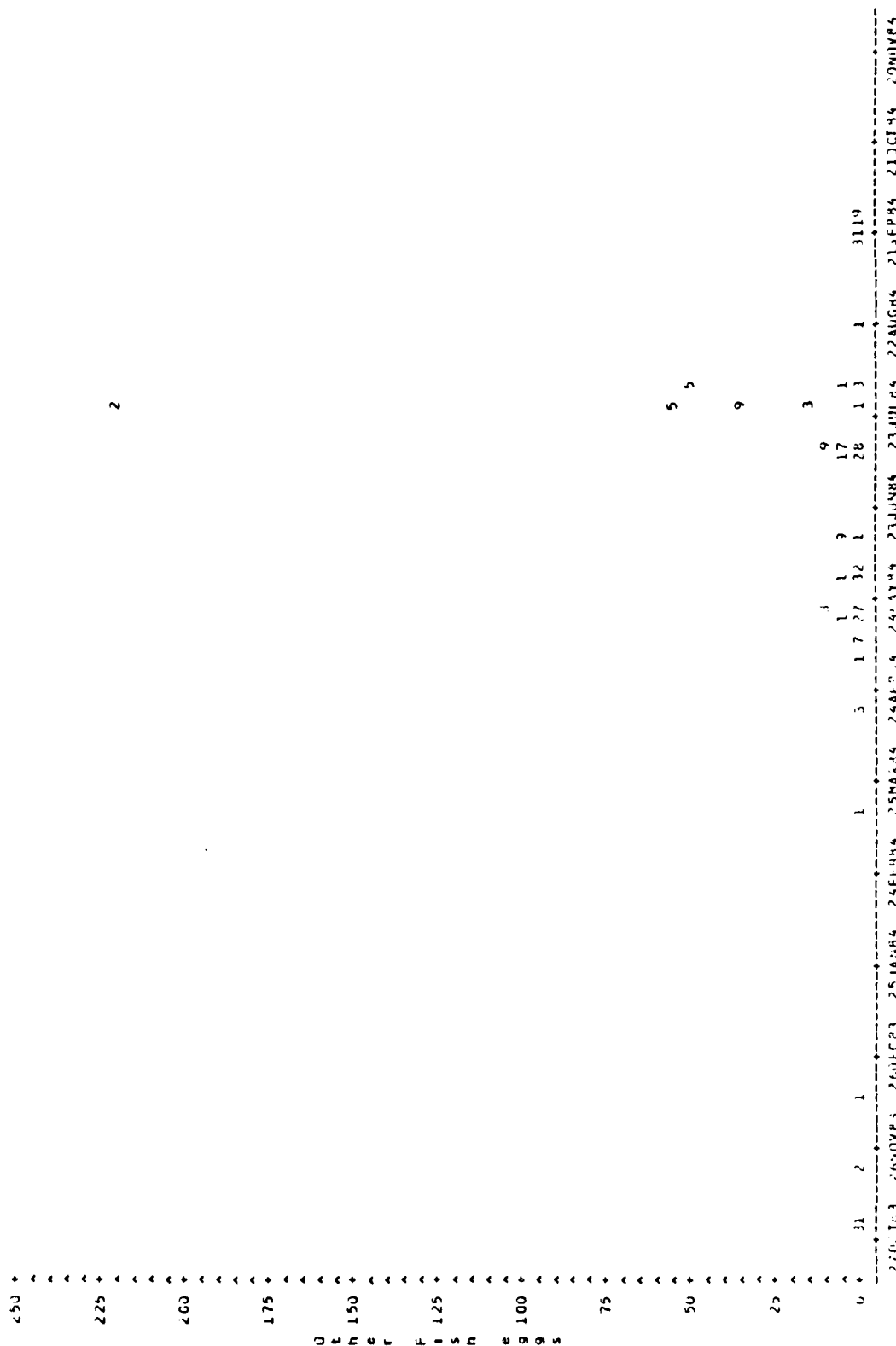


Figure A39.
TUM TYPE-2

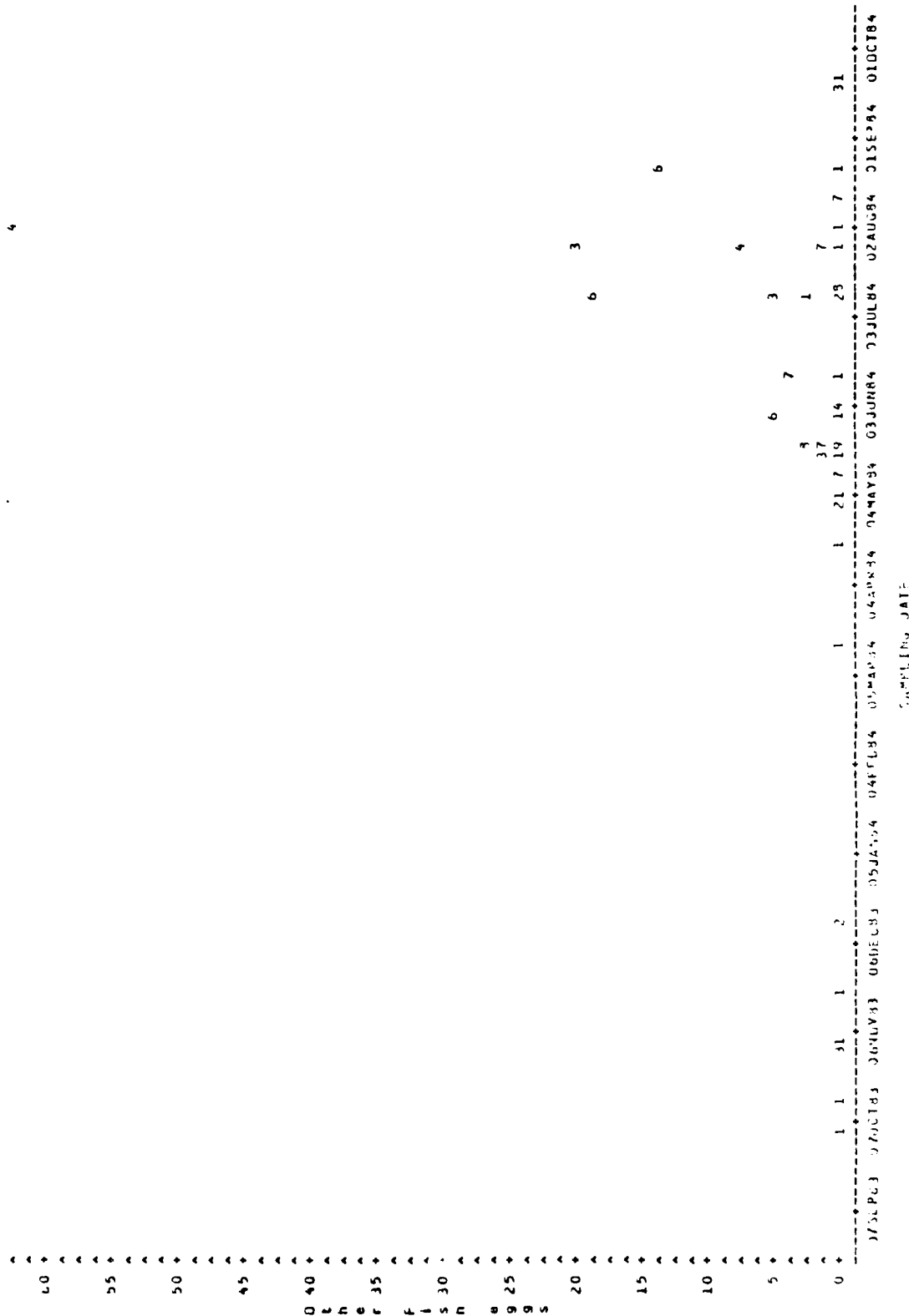


SAMPLE TAG DATE

NOTE: 01 JUL 1964

Figure A40.

TOW TYPE=J



NOTE: 02 OBS MINDED

SAMPLING DATE

TCM TYPED = 2

М. П. КОЗЛОВ

2

1

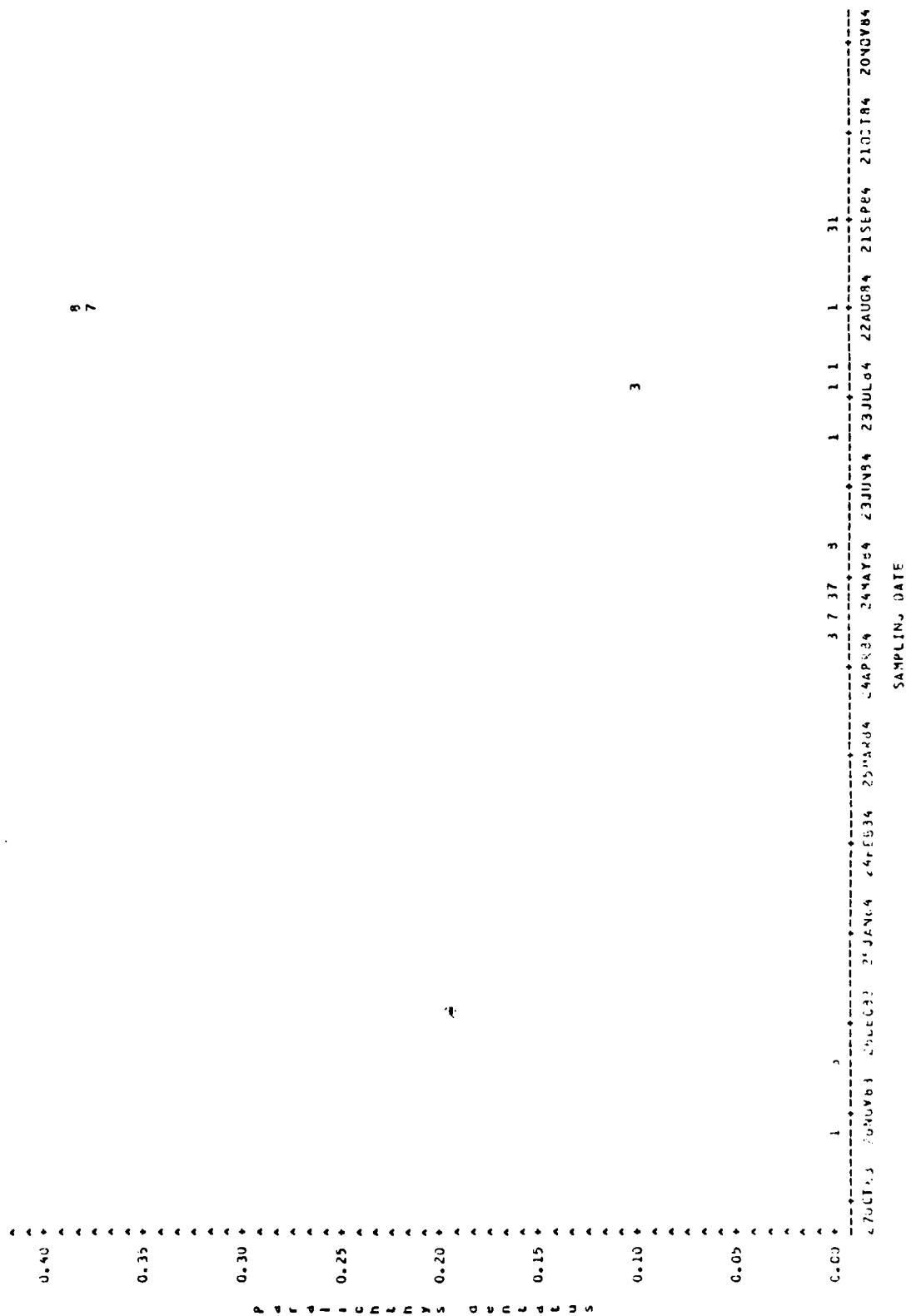
41

2

SAMPLING DATE

27 JUL 63 1600Z 06DEC 63 15JAN 64 04FEB 64 24FEB 64 15MAR 64 04APR 64 24APR 64 03JUN 64 23JUN 64 13JUL 64 22AUG 64

Figure A42.
TUM TYPE=J



NOTE: 22 NOV 83

Figure A43.

TCN TYPE=2

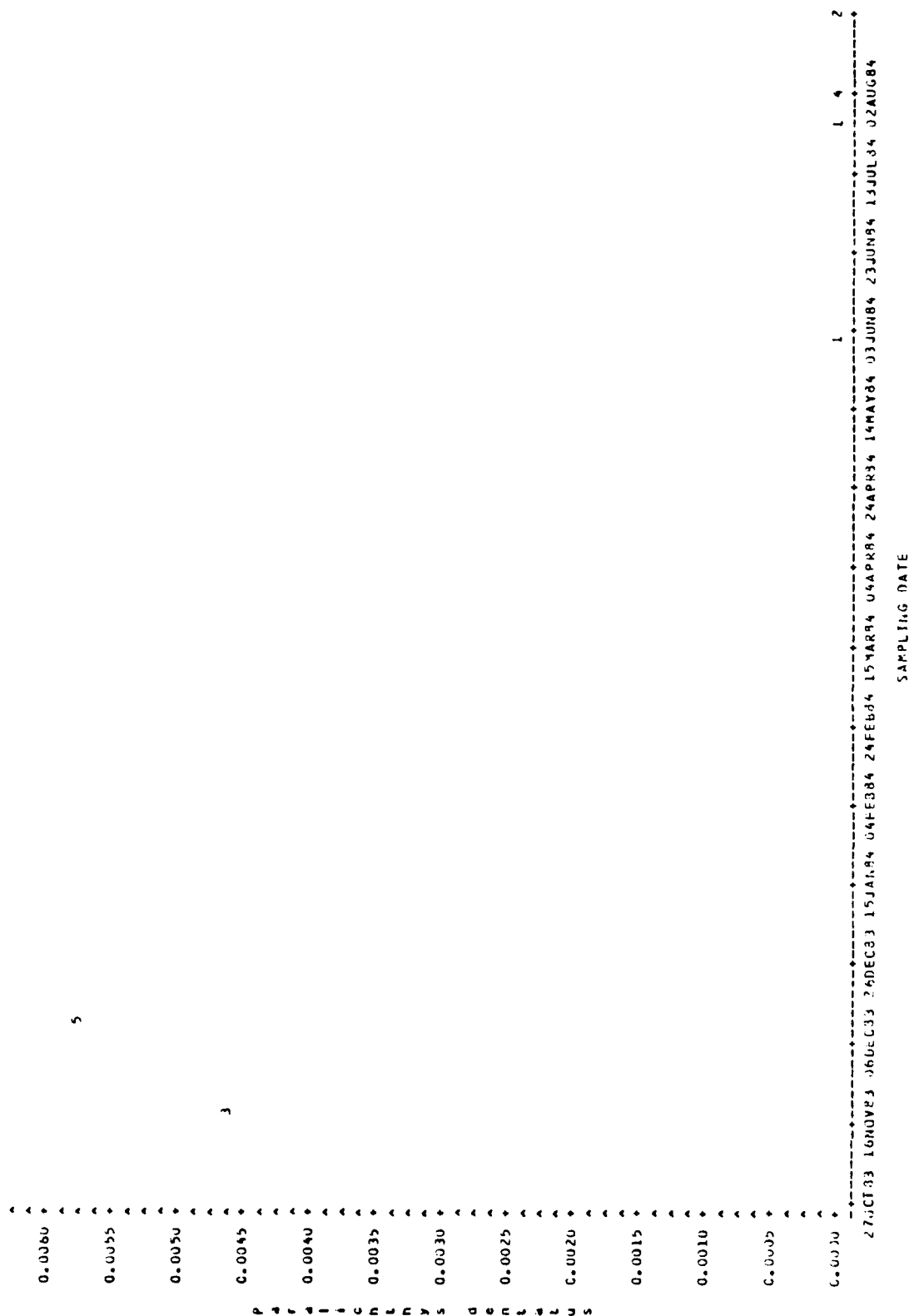
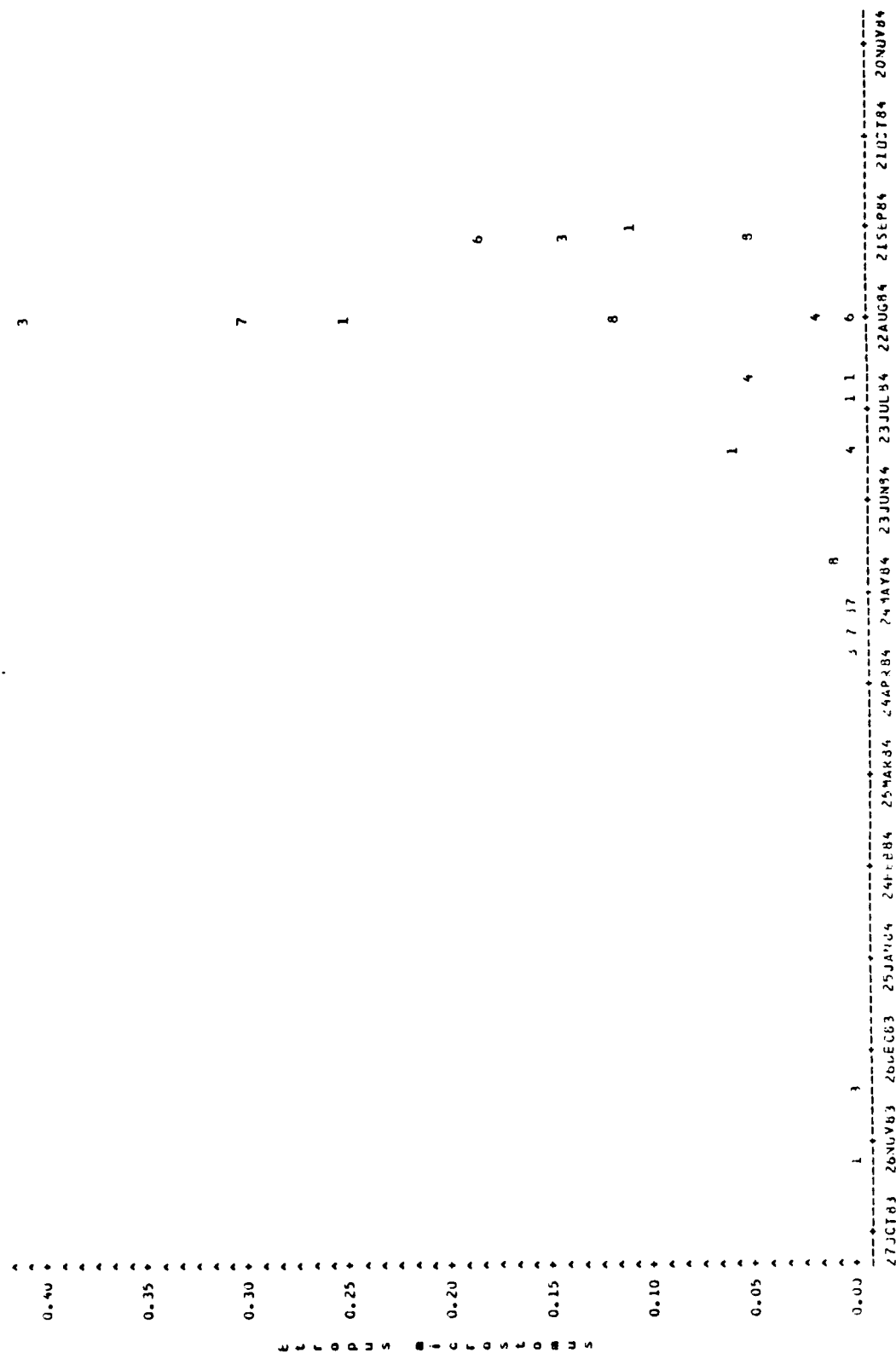


Figure A44.

TGW TYPE=3



SAMPLING DATE

NOTE: 16 OBS INCLUDED

Figure A45.
TUM TYPE=C

0.012 *
0.011 *
0.010 *
0.009 *
0.008 *
0.007 *
0.006 *
0.005 *
0.004 *
0.003 *
0.002 *
0.001 *
0.000 *

S
C
O
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E
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U
S

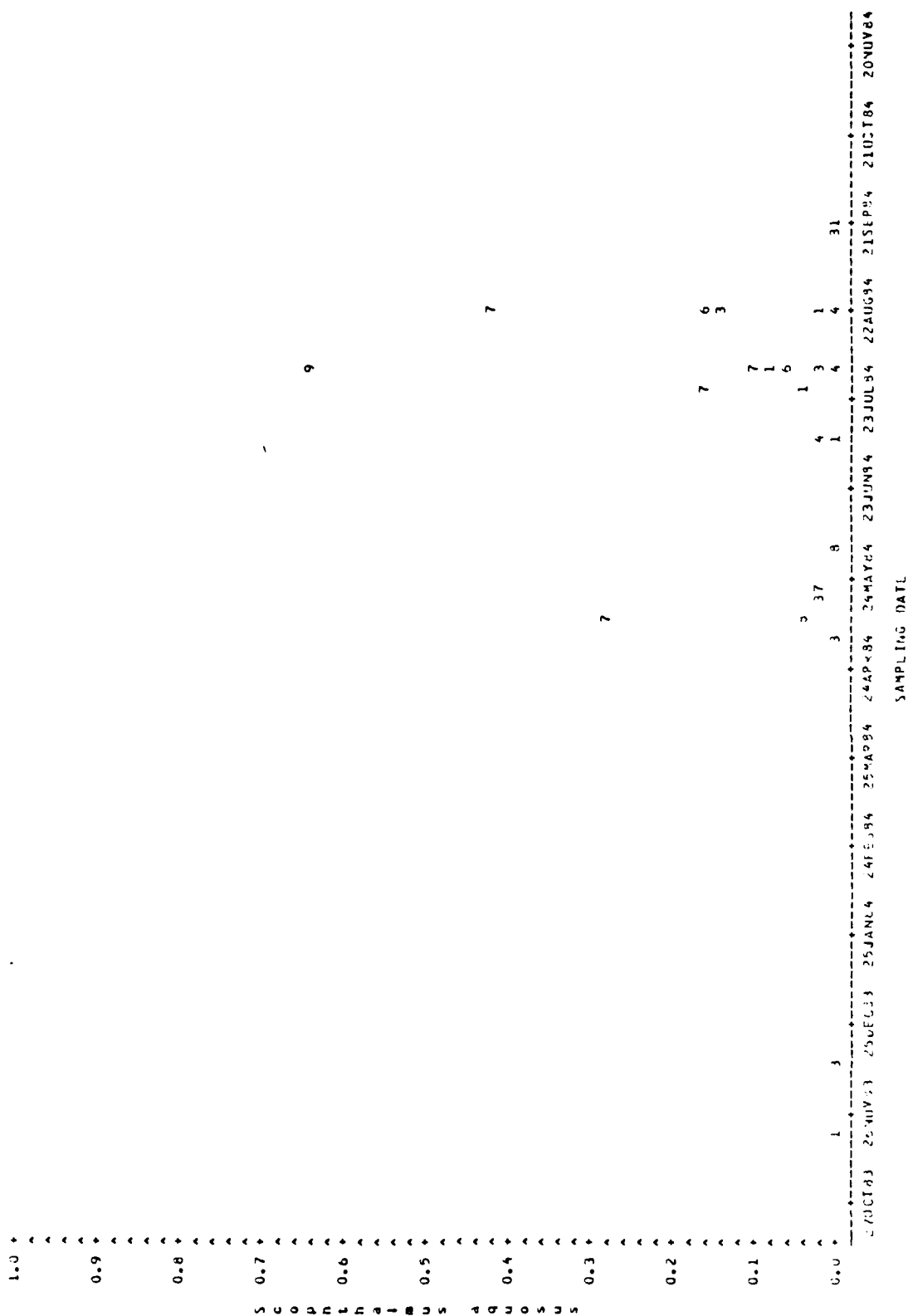
3 5

27JUL83 10N30U3 0700L03 25DEC83 15JAN84 14FEB84 24FEB84 14MAR84 14APR84 14MAY84 03JUN84 23JUN84 13JUL84 12AUG84

SAMPLING DATE

Figure A46.

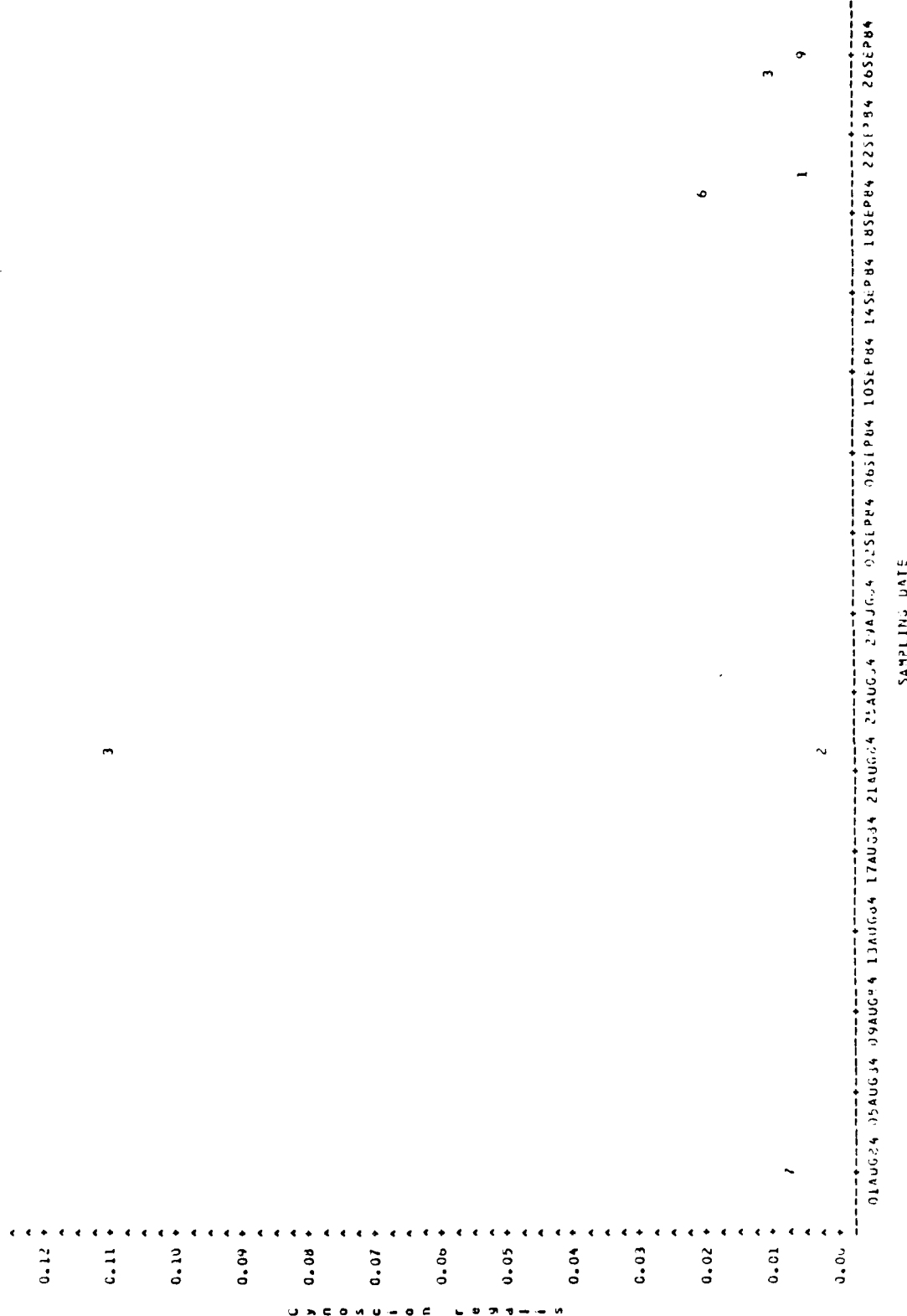
TOW TYPE=3



SAMPLING DATE

NOTE: 13 JUL 84

Figure A47.
TOW TYPE=2



NOTE: 1.065 HIGHER

Figure A48.

TUM TYPE=3



11 JUL 84 19 JUL 84 27 JUL 84 04 AUG 84 12 AUG 84 20 AUG 84 26 AUG 84 05 SEP 84 13 SEP 84

SAMPLING DATE

NOTE: 2 OBS HIDDEN

$$T_{UL} \approx T_{YP_L} \approx C$$

DATE: 13 JUL 64

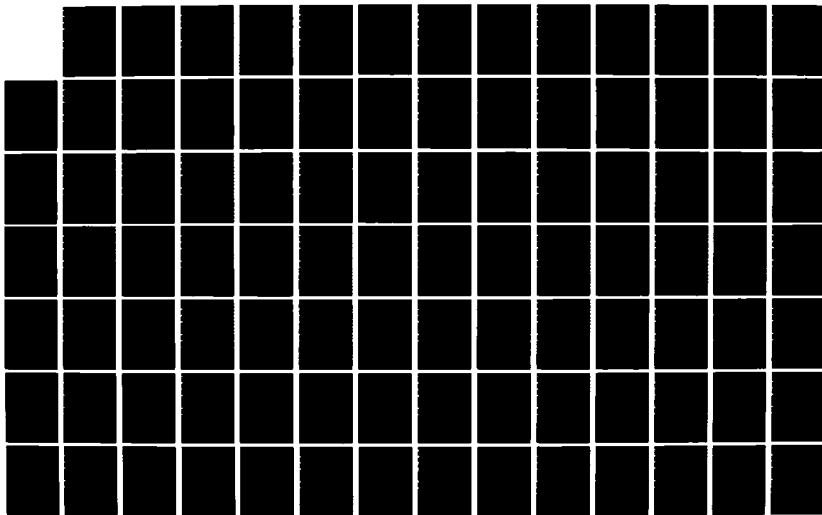
AD-A165 213

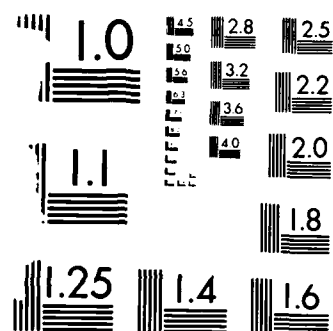
CHARACTERIZATION OF MERO-AND ICTHYOPLANKTON
COMMUNITIES WITHIN THE CHESA. (U) OLD DOMINION UNIV
NORFOLK VA APPLIED MARINE RESEARCH LAB A J BUTT ET AL.
MAR 85 DACH65-81-C-0051 FFG 6/6

2/3

UNCLASSIFIED

NL





MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS 1963-A

Figure A50.

TOW TYP=3

2

0.070035

P O R T A L C O M B U S S A R I L L A L L I K

0.000000

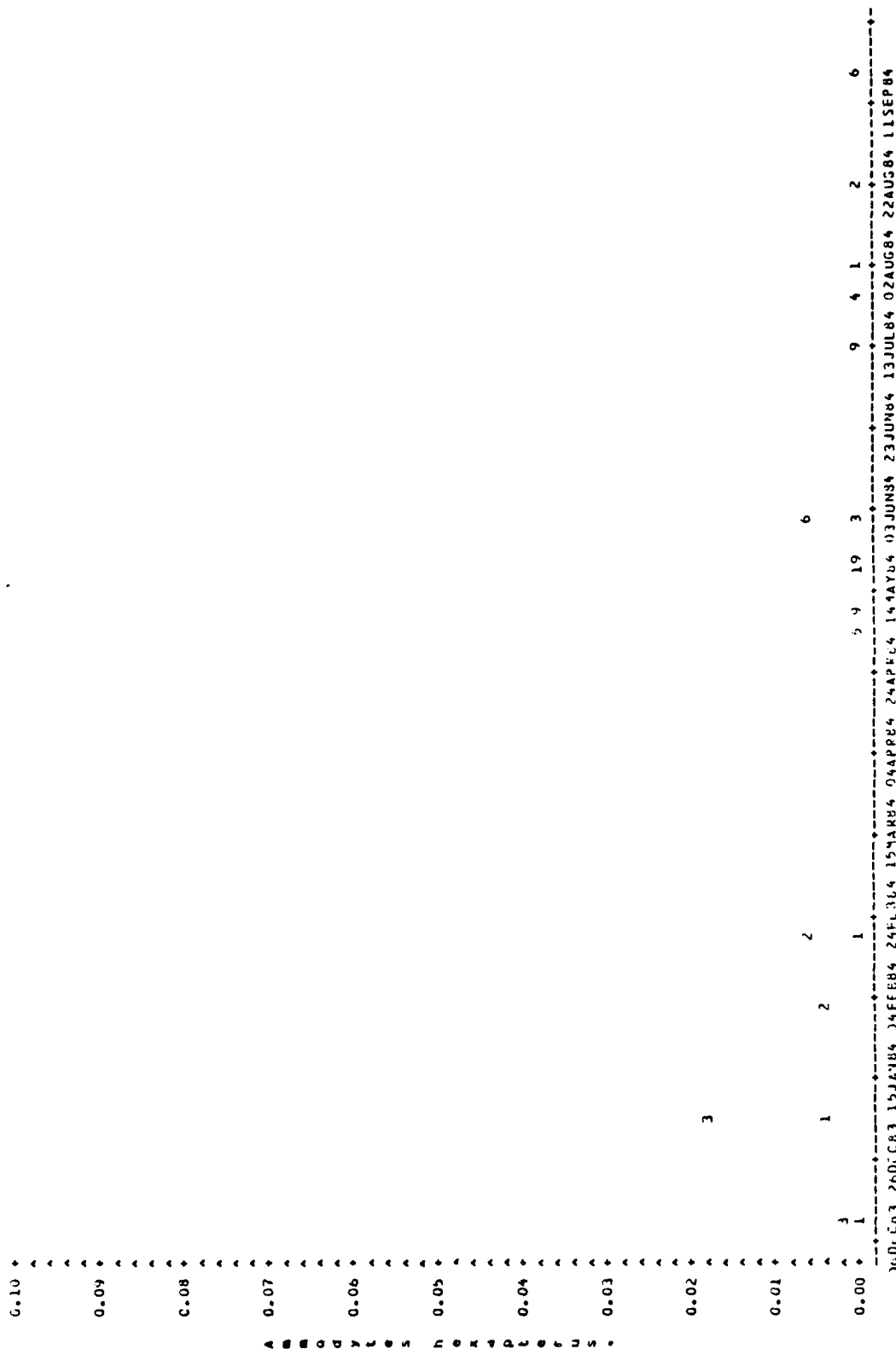
27JUL83 26JUL83 26DEC83 25JAN84 24FEB84 25APR84 24MAY84 23JUN84 23JUL84 22AUG84 21SEP84 21OCT84 20NOV84

SAMPLING DATE

NOTE: 27 035 HIGHER

Figure A51.

TLM TYPL=2



NOTE: 13 DMS HIDDEN

Figure A52.
Tub Type = 3

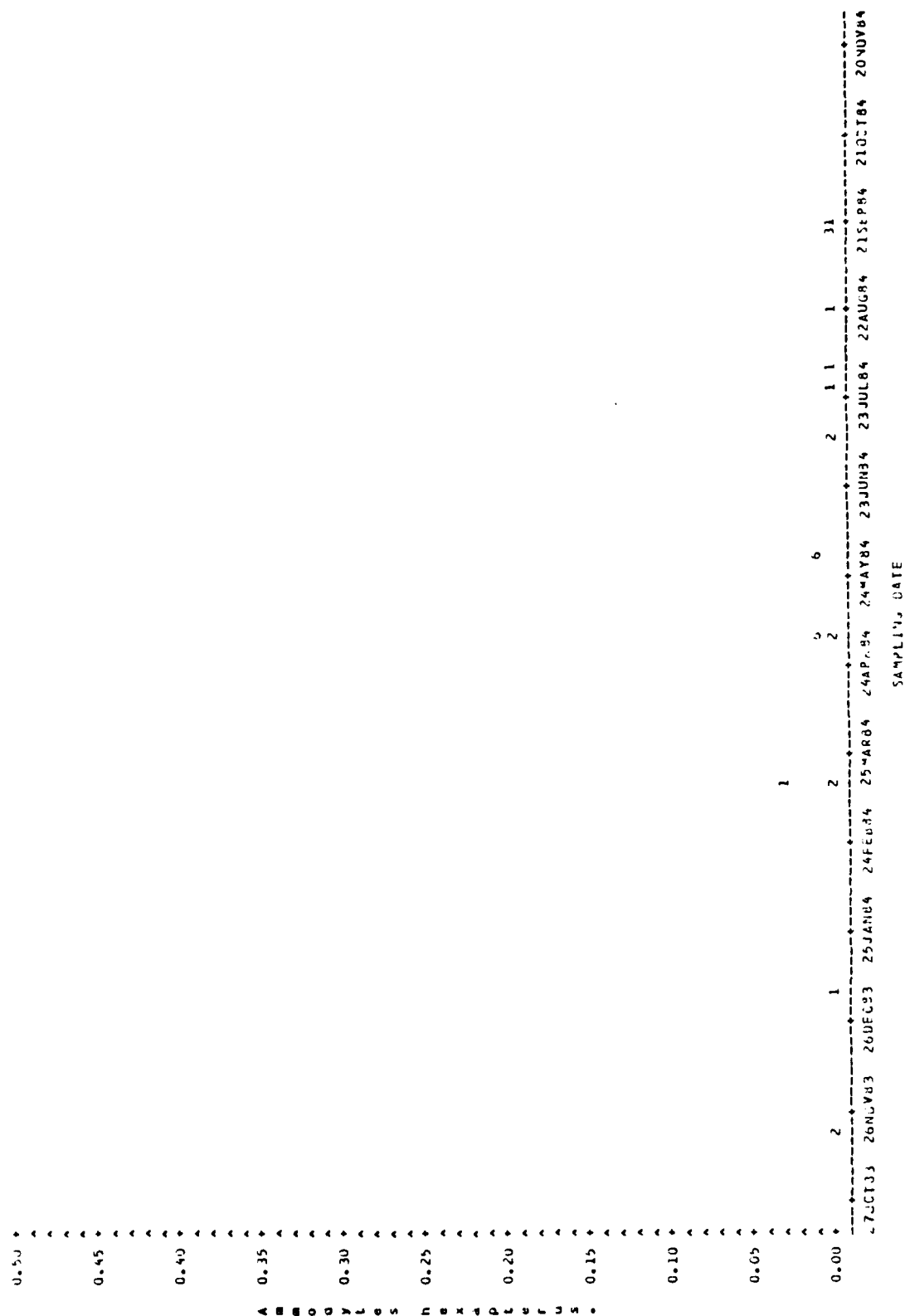
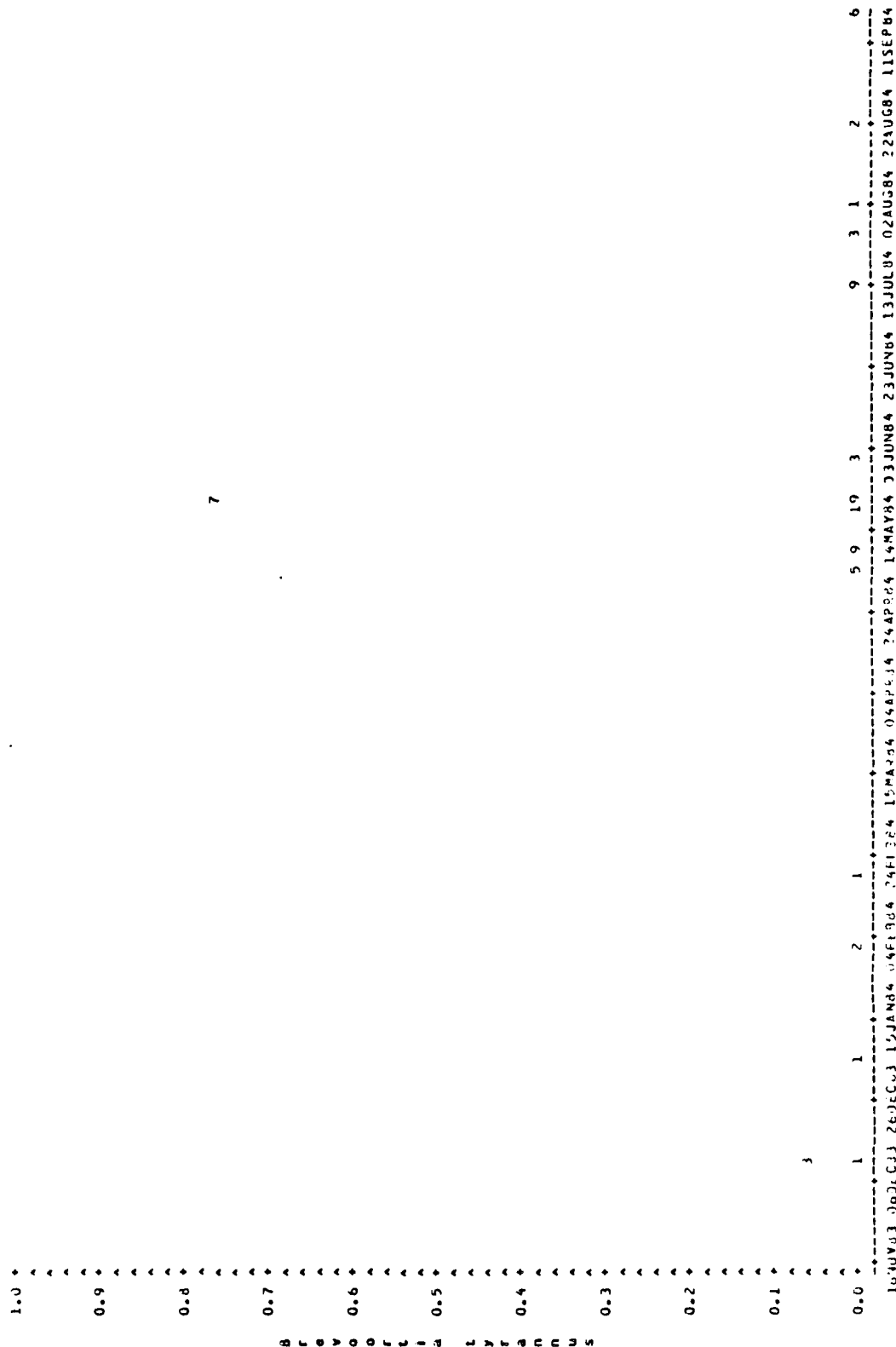


Figure A53.

TUM TYPE=2

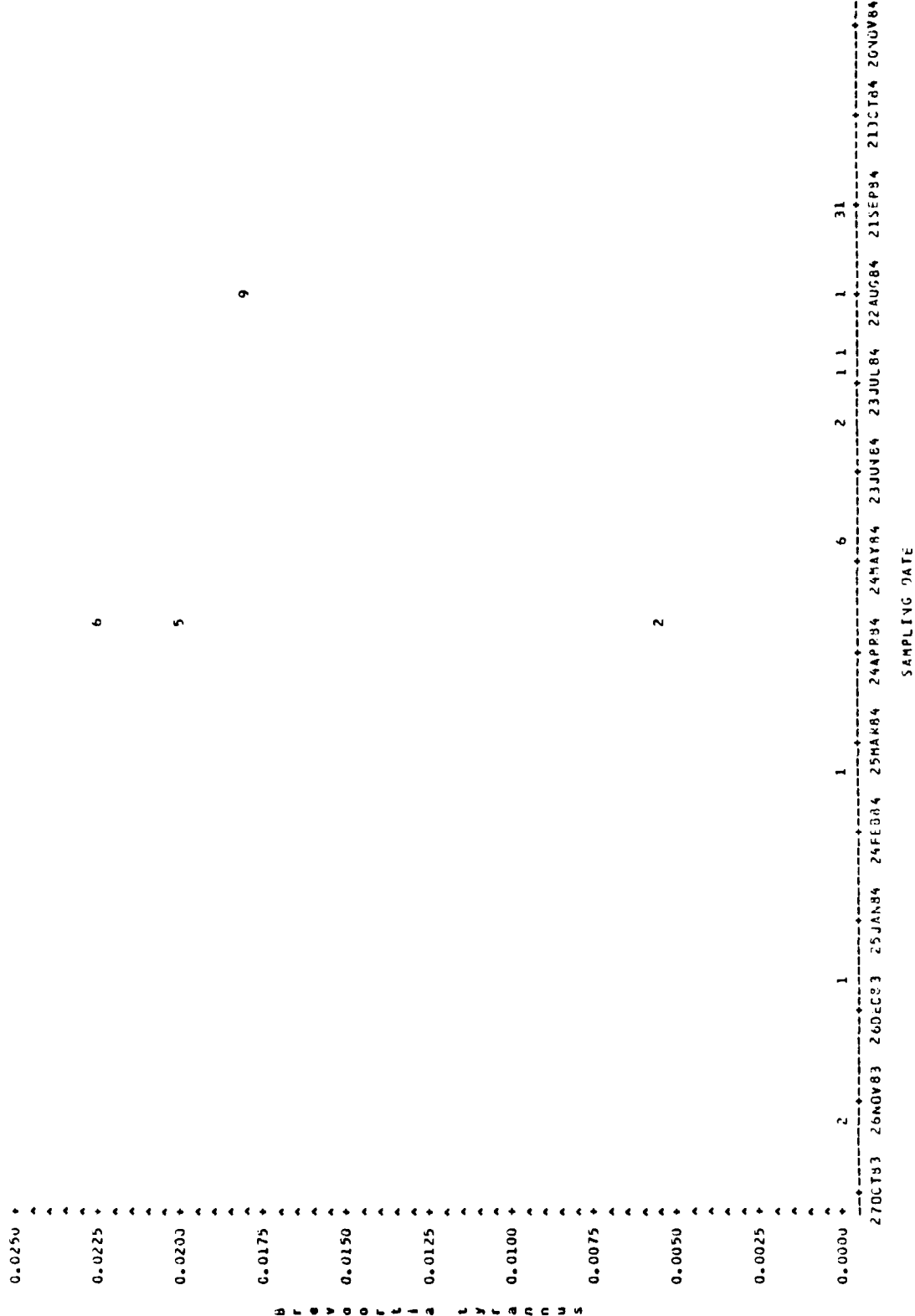


SAMPLE DATE

NOTE: 17 GOS HIGHER

Figure A54.

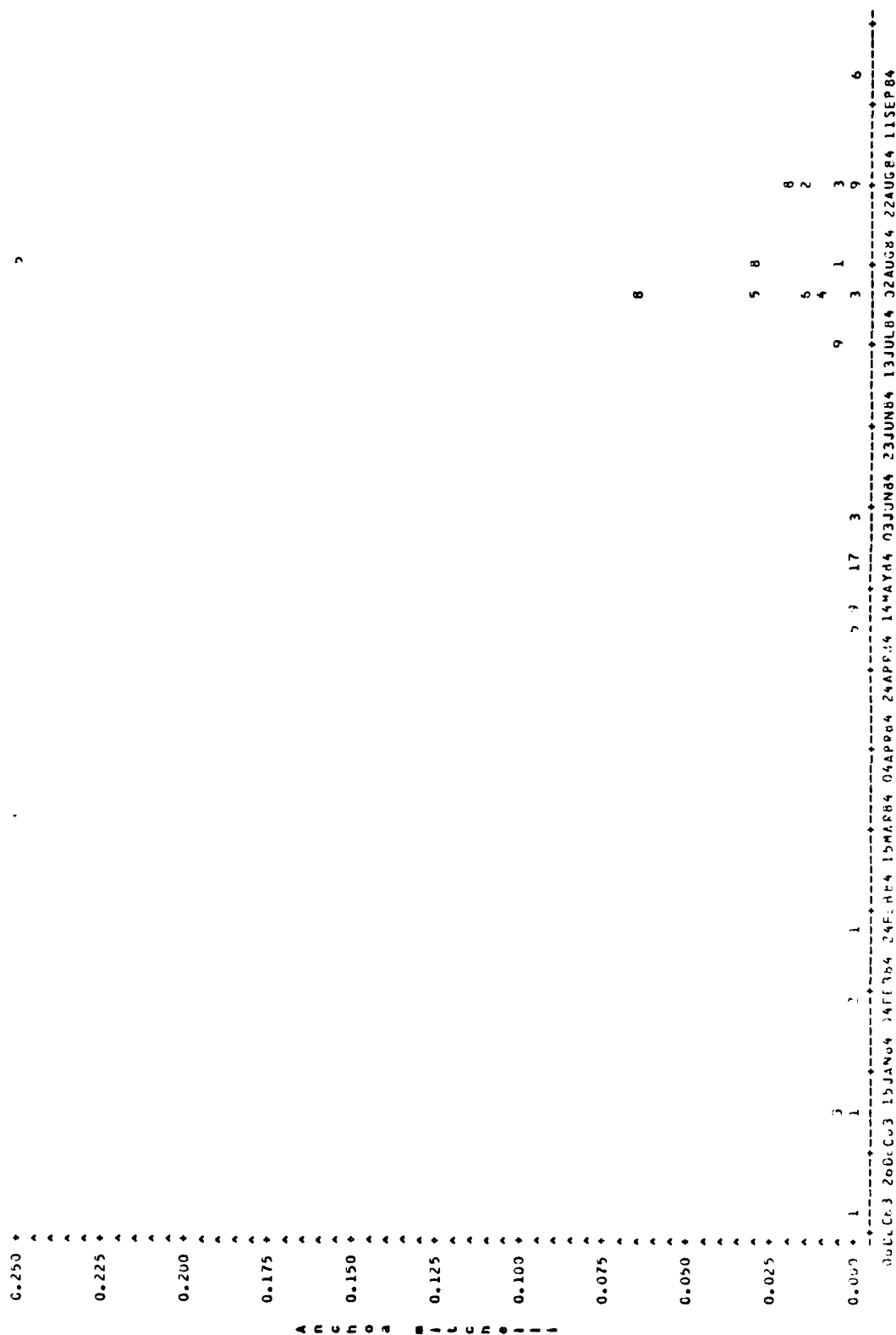
TUM TYPE=3



NOTE: 25 DUS HIDDEN

Figure A55.

TOW TYPE=2

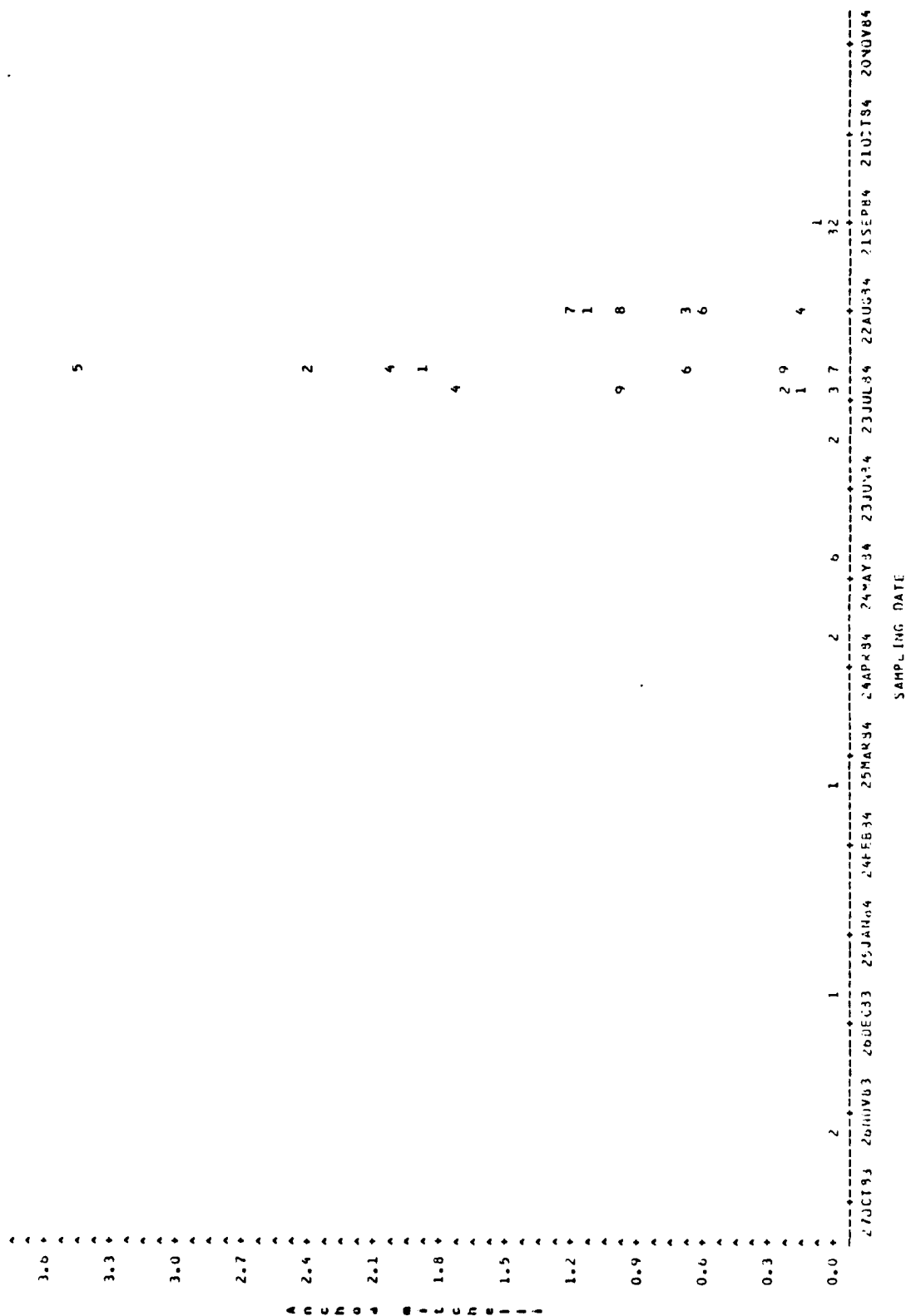


SAMPLING DATE

NOTE: 9.005 HIDDEN

Figure A56.

TUM TYPE=J



NOTE: 12 335 HIGDEN

TYPE = 2

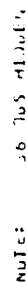


Figure A58.

TOW TYPE=3

	1	1	31	1	1	1	1	1	1	2	22	7	17	14	1	19	1	7	1	3	7	31
16																						
15																						
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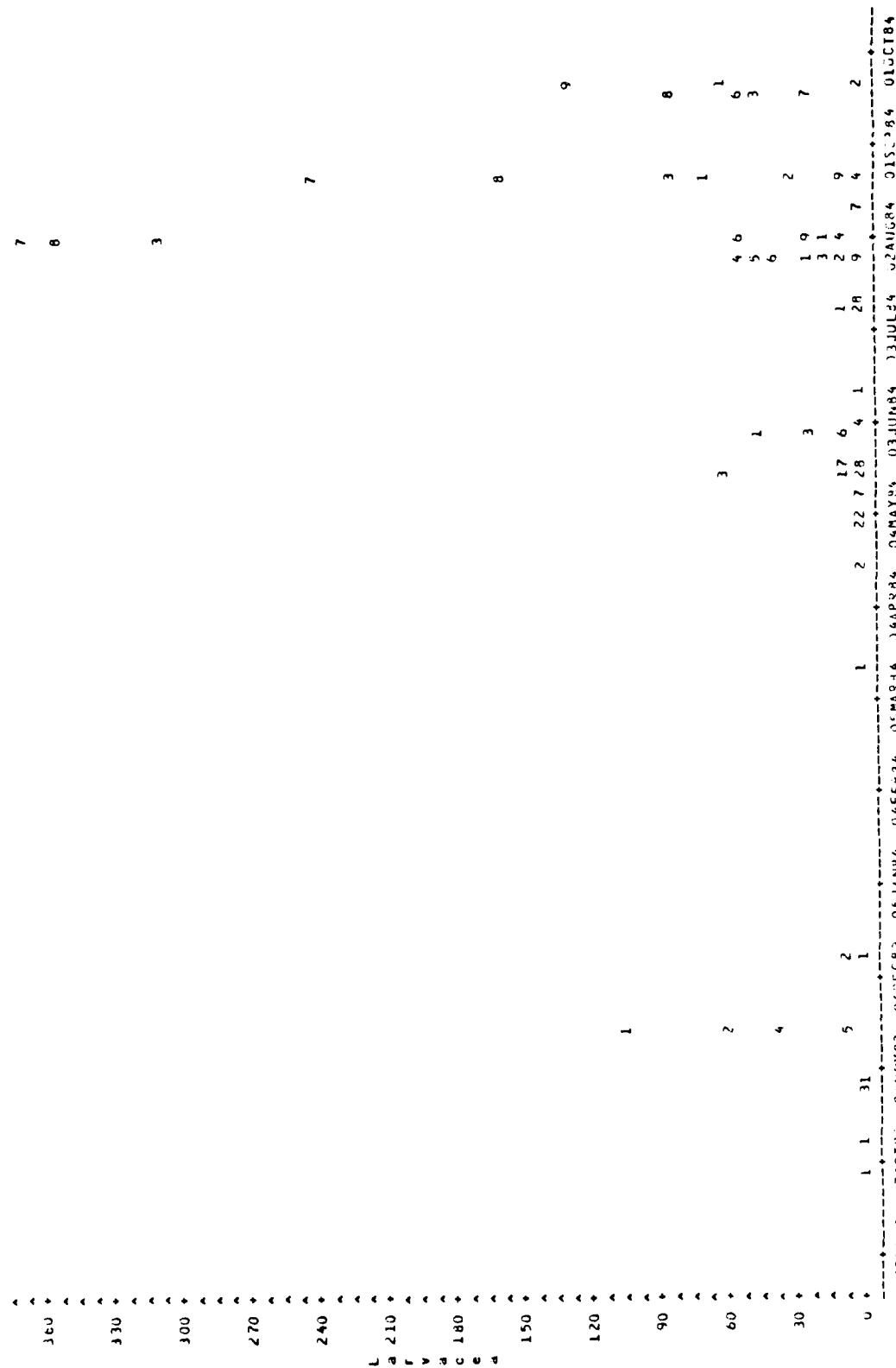
NOTE: 56 UDS HIQUEN

SAMPLING DATE

075-PB3 07JUL83 06JUL83 08DEC83 05JAN84 04FEB84 05MAR84 04APR84 03MAY84 03JUN84 03JUL84 02AUG84 01SEP84 01OCT84

Figure A60.

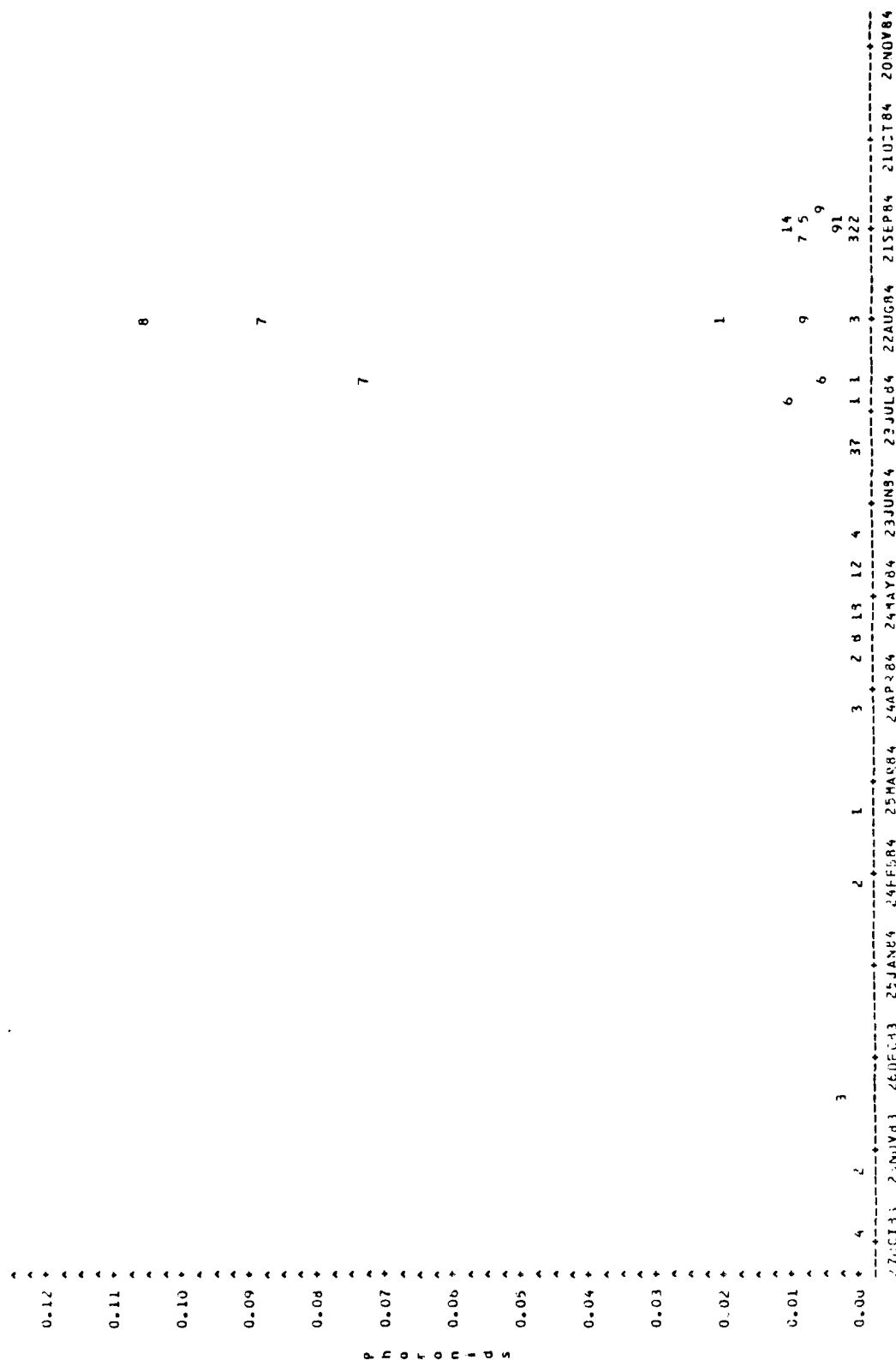
TCW TYPE=J



SAMPLING DATE

NOTE: 40 HAS HIDDEN

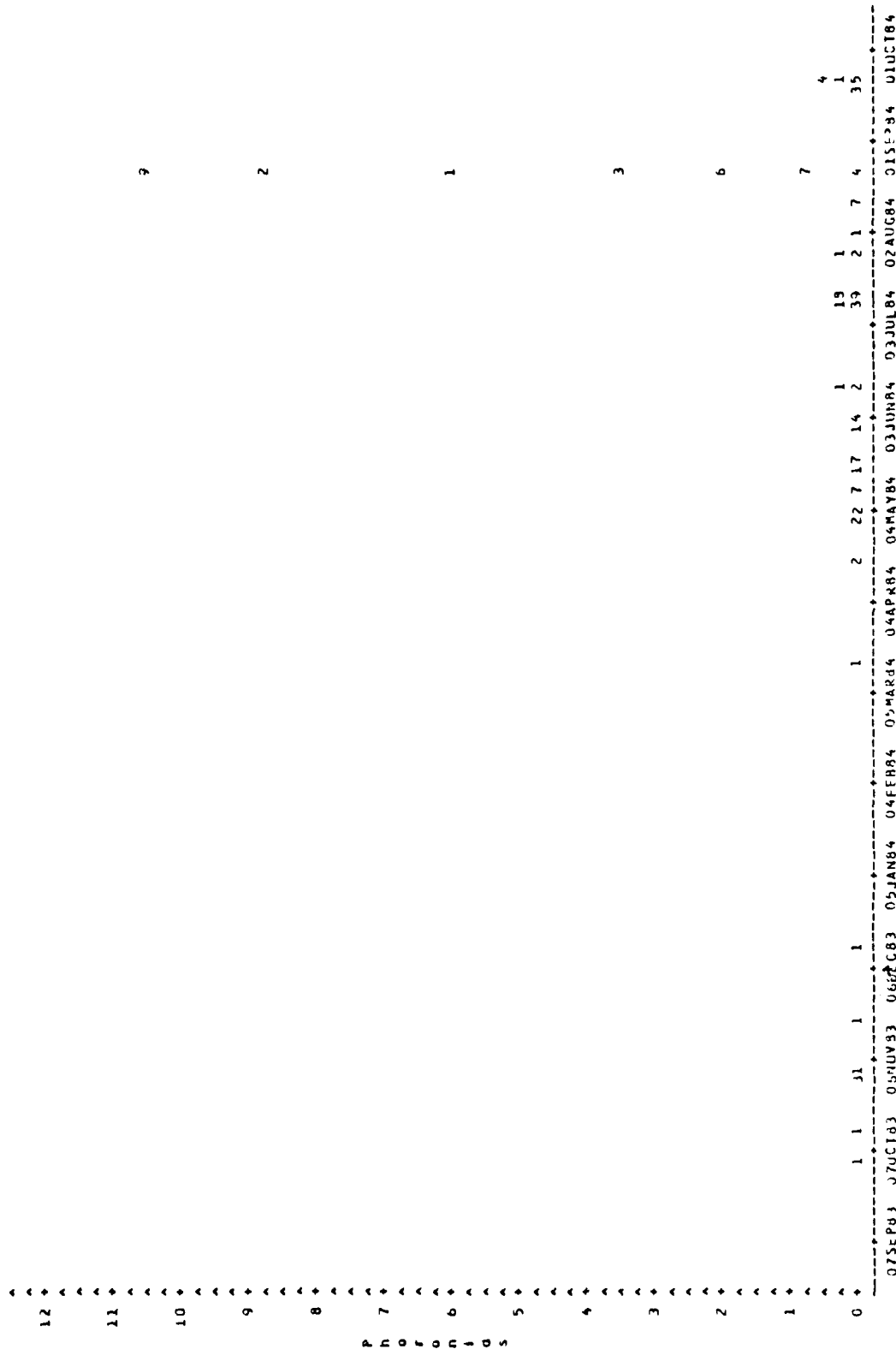
TYW TYPc = 2



NOTE: 44 DIS ALUUFM

Figure A62.

Total Type = 3



NOTE: 61 025 H10EN

TABLE A1. List of taxonomic groups observed at the DNDS study area
Oct. 1983 - Sept. 1984.

ANNELIDA : POLYCHAETA

Polychaeta	Autolytus spp
Polychaeta	Capitellidae
Polychaeta	Mageloniidae
Polychaeta	Nephtys sp
Polychaeta	Nereidae
Polychaeta	Nereis succinea Heteronereid
Polychaeta	Spionidae
Polychaeta	Syllides verilli
Polychaeta	Terebelliidae spp
Polychaeta	Tomopteris spp
Polychaeta	Trochophores & Nectochaetes
Polychaete A	
Polychaete F	

MOLLUSCA

All Bivalves
Anadara spp
Bivalve B
Bivalve I
Gastropods
Nemertine Piliidium larva
Other Bivalves
Spisula solidissima

ARTHROPODA : CRUSTACEA

Acetes caroliniae
 Alphaeus heterochaetis
 Alphaeus normanni
 Barnacle nauplius
 Bowmaniella dissimilis
 Callinassa spp
 Callinectes sp megalopa
 Callinectes sp zoea
 Cancellaria reticulata
 Cancer #2 zoea
 Cancer irroratus zoea
 Cancer sp megalopa
 Crangon septemspinosa
 Dissodactylus melittae zoea
 Emerita talpoida
 Euceramus praeiongus
 Hippolyte pleuracantha
 Lepidopa websteri
 Leptochela serratorbita
 Libinia dubia Megalopa
 Libinia emarginata Megalopa
 Libinia spp zoea
 Lucifer Faxonii
 Megalopa A
 Megalopa B
 Metamysidopsis
 Mysid
 Mysidopsis bigelowi
 Naushonia crangonoides
 Neomysis americana
 Ocyropsis sp zoea
 Ogyropsis lilicola
 Ovalipes quadripennis megalopa
 Ovalipes quadripennis zoea
 Ovalipes zoea
 Pagurid Crabs
 Palaemonetes spp
 Palaemonidae palaemoninae
 Penaeid shrimp
 Persephone punctata
 Pinnixa spp
 Pinnothereus spp
 Pinnothereus zoea
 Portunid crab
 Portunus sp zoea
 Portunus spinicarpus Megalopa
 Sesarma sp zoea
 Shrimp 6
 Squilla (empusa?) protozoea
 Squillid Antizoea
 Uca spp
 Upoecibia affinis
 Xanthid Crabs

VERTEBRATA : PISCES

All Fishes	
Ammodytidae	<i>Ammodytes hexapterus</i>
Anthrinidae	<i>Membras martinica</i>
Atherinidae	<i>Menidia menidia</i>
Belontiidae	<i>Tylosurus crocodillus</i>
Blenniidae	<i>Hypsoblennius henlizi</i>
Bothidae	<i>Etropus microstomus</i>
Buthidae	<i>Paralichthys dentatus</i>
Bothidae	<i>Scophthalmus aquasus</i>
Bothidae egg	
Ruthidae spp	
Clupeidae	<i>Brevoortia tyrannus</i>
Cynoglossidae	<i>Symphurus plagiusa</i>
Engraulidae	<i>Anchoa mitchelli</i>
Engraulidae egg	
Engraulidae fry	
Fish - unknown	
Gadidae	<i>Urophycis regius</i>
Gobiocucidae	<i>Gobiosox strumosus</i>
Gobiidae	<i>Gobiosoma bosci</i>
Hemiramphidae	<i>Hyporhamphus unifasciatus</i>
Lophiidae	<i>Lophius americana</i>
Mugilidae	<i>Mugil sp</i>
Ophidiidae	<i>Rissolia marginala</i>
Other Fish Eggs	
Pomatomidae	<i>Pomatomus saltatrix</i>
Sciaenidae	<i>Cynoscion regalis</i>
Sciaenidae	<i>Leiostomus xanthurus</i>
Sciaenidae egg	
Sciaenidae spp	
Strumetidae	<i>Peprilus triacanthus</i>
Syngnathidae	<i>Hippocampus eralus</i>
Syngnathidae	<i>Syngnathus fuscus</i>
Tetraodontidae	<i>Sphaeroides maculatus</i>
Triglidae	<i>Pionotus carolinus</i>
Unidentifiable fish	

MISCELLANEOUS

Larvacea
Phoronida

Table A2. Summary statistics for each station/tow type combination. Tow type = 2 are the neuston tows, while tow type = 3 are the obliques. The "MNMNABUN" column are the grand means of the individual cruise means (n=4) for the station/tow type, while "SEMABUN" are the standard errors of these values. The "MXMNABUN" are the maximum cruise means observed for the station/tow type. The "POCCUR" column is the percent occurrence of the groups for the station/tow type. The "PCOVER" values represent the percent occurrence of the groups over an abundance level of $10/m^3$ for the station/tow type.

15:21 FRIDAY, MARCH 1, 1985 1

SAS

TYPE=2 SITE=1

NAME	MNABUN	SEMNABUN	MXNRABUN	POCCUR	PCOVER
Engraulidae egg	62.5974	25.4483	245.949	52.9412	41.1765
Callinectes sp zoea	57.3084	44.9236	364.425	47.0588	11.7647
Other Fish Eggs	4.1350	1.2960	6.723	35.2941	.
All Fish eggs	2.9181	1.1559	11.098	76.4706	5.8824
Larvae	2.0879	1.5277	9.688	35.2941	.
Sciaenidae egg	1.4431	0.5506	4.375	52.9412	.
Granon septemspinosa	0.9290	0.4632	4.669	70.5882	.
Lucifer faxoni	0.6645	0.6152	3.738	35.2941	.
Engraulidae fry	0.5000	0.3650	2.306	35.2941	.
Polychaeta	0.4284	0.4119	2.487	35.2941	.
Uca spp	0.3325	0.1446	0.969	47.0588	.
Xanthid Crabs	0.2055	0.1082	0.678	35.2941	.
Cancer sp megalopa	0.1988	0.0667	0.265	11.7647	.
Upogebia affinis	0.1891	0.0782	0.527	35.2941	.
Cancer irroratus zoea	0.1692	0.1403	0.869	35.2941	.
Palaeomonetes spp	0.1611	0.0964	0.508	29.4118	.
Ovalipes quadripennis zoea	0.1317	0.0576	0.380	35.2941	.
Squilla Antiozea	0.1243	0.0757	0.451	35.2941	.
Anthriscidae	0.0917	0.0418	0.239	29.4118	.
Callinassa spp	0.0761	.	0.076	5.8824	.
Emerita talpoida	0.0616	0.0522	0.218	23.5294	.
Megalopa A	0.0493	.	0.049	5.8824	.
Polychaeta	0.0388	0.0255	0.064	11.7647	.
Blenniidae	0.0377	.	0.038	5.8824	.
Gastropods	0.0363	0.0164	0.069	17.6471	.
Pagurid Crabs	0.0337	0.0104	0.061	23.5294	.
Callinectes sp megalopa	0.0277	0.0146	0.097	35.2941	.
Bothidae egg	0.0274	0.0173	0.096	29.4118	.
Nysidopsis bigelowi	0.0263	0.0237	0.050	11.7647	.
Panaeid shrimp	0.0236	0.0200	0.044	11.7647	.
Polychaeta	0.0215	.	0.022	5.8824	.
Capitellidae	0.0166	0.0112	0.028	11.7647	.
Ocyrops sp zoea	0.0163	0.0066	0.028	23.5294	.
Neomysis americana	0.0123	.	0.013	5.8824	.
Naushonia crangonoides	0.0127	0.0002	0.013	11.7647	.
Other Bivalves	0.0111	0.0051	0.021	17.6471	.
Phoronida	0.0109	0.0018	0.013	17.6471	.
All Bivalves	0.0103	.	0.011	5.8824	.
Portunus sp zoea	0.0096	0.0043	0.018	17.6471	.
Polychaeta	0.0091	0.0038	0.013	11.7647	.
Squilla (lepusa?) protozoa	0.0090	0.0016	0.011	17.6471	.
Atherinidae	0.0090	0.0045	0.018	17.6471	.
Pinnotheres spp	0.0046	0.0029	0.012	11.7647	.
Bothidae	0.0077	0.0035	0.011	11.7647	.
Eucaramus praetonyus	0.0072	.	0.007	5.8824	.
Bivalve B	0.0067	.	0.007	5.8824	.
Portunus spinicarpus Megalopa	0.0064	0.0019	0.012	23.5294	.
Pinnixa spp	0.0062	.	0.006	5.8824	.
Pomatoidae	0.0062	0.0030	0.009	11.7647	.
Polychaeta	0.0062	.	0.006	5.8824	.
Terebellidae spp	0.0054	.	0.005	5.8824	.
Clupeidae	0.0054	.	0.005	5.8824	.
Mugil sp	0.0054	.	0.005	5.8824	.
Nemertine Plitidia larva	0.0045	.	0.004	5.8824	.
Amodytes	0.0045	.	0.004	5.8824	.
Amodytes hexapterus	0.0045	.	0.004	5.8824	.
Anchoa mitchelli	0.0045	.	0.004	5.8824	.

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SAS

TYPE=2 SITE=1

NAME	MNMHABUN	SEMHABUN	MXMHABUN	POCCJR	PCOVER
Polychaeta	0.00442000	.	0.00442000	5.8824	.
Sciaenidae	0.00422500	.	0.00422500	5.8824	.
Triptidae	0.00422500	.	0.00422500	5.8824	.
Libinia dubia Megalopa	0.00422500	.	0.00422500	5.8824	.
Bowmanella dissimilis	0.00393417	0.000278322	0.00448750	17.6471	.
Lepidopa weusteri	0.00382250	.	0.00382250	5.8824	.
Oxyridas limicola	0.00360750	.	0.00360750	5.8824	.
Gadidae	0.00360750	.	0.00360750	5.8824	.
Urophysis regius					

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SAS

TYPE=2 SITE=10

NAME	MXNABUN	SEMABUN	MXNABUN	POCCUR	PCOVER
Engraulidae egg	87.4714	45.8234	412.359	47.3684	26.3158
Other Fish Eggs	37.7029	36.1289	219.318	31.5789	5.2632
Callinectes sp zoea	35.3619	18.8975	165.678	47.3684	15.7895
All Fisheggs	20.1181	18.2360	220.465	63.1579	5.2632
Crangon septemspinosa	8.4074	7.9170	95.458	63.1579	5.2632
Uca spp	3.0858	2.4355	19.970	42.1053	5.2632
Sciaenidae egg	1.4957	0.8800	9.057	52.6316	.
Palaeomonetes spp	1.0713	0.8089	5.085	31.5789	.
Ovalipes quadripennis zoea	0.2723	0.2551	1.803	36.8421	.
Upogebia affinis	0.2547	0.0965	0.723	31.5789	.
Stomatidae	0.2213	0.2148	0.436	10.5263	.
Xanthid Crabs	0.2145	0.0839	0.625	36.8421	.
Cancer irroratus zoea	0.2137	0.1628	1.830	57.8947	.
Engraulidae fry	0.1622	0.0398	0.208	15.7895	.
Squilla Antizoea	0.1599	0.1411	0.723	26.3158	.
Larvacea	0.1591	0.0837	0.638	36.8421	.
Gobiosucidae	0.1490	0.1435	0.436	15.7895	.
Atherinidae	0.1091	0.0642	0.470	36.8421	.
Blenniidae	0.0954	0.0806	0.256	15.7895	.
Cancer sp megalopa	0.0918	0.0588	0.151	10.5263	.
Anthrinidae	0.0885	0.0611	0.386	31.5789	.
Polychaeta	0.0686	0.0491	0.443	47.3684	.
Polychaeta	0.0665	0.0352	0.130	21.0526	.
Lucifer Faxoni	0.0655	0.0305	0.213	31.5789	.
Bothidae egg	0.0604	0.0386	0.175	21.0526	.
Ocyropsis sp zoea	0.0430	0.0371	0.117	15.7895	.
Pagurid Crabs	0.0377	0.0377	0.070	10.5263	.
Emerita talpoida	0.0326	.	0.033	5.2632	.
Pinnixa spp	0.0313	0.0165	0.079	21.0526	.
Callinassa spp	0.0307	0.0233	0.077	15.7895	.
Polychaeta	0.0229	0.0113	0.034	10.5263	.
Gastropods	0.0226	0.0080	0.033	15.7895	.
Polychaeta	0.0168	0.0049	0.041	47.3684	.
Eucermus praelongus	0.0140	.	0.014	5.2632	.
Libinia emarginata Megalopa	0.0139	.	0.014	5.2632	.
Engraulidae	0.0138	.	0.014	5.2632	.
All Bivalves	0.0129	.	0.013	5.2632	.
Cancer #2 zoea	0.0125	0.0074	0.027	15.7895	.
Mysidopsis bigelowi	0.0105	.	0.027	5.2632	.
Bivalve I	0.0096	.	0.010	5.2632	.
Other Bivalves	0.0093	0.0041	0.017	15.7895	.
Penaeid shrimp	0.0077	.	0.009	5.2632	.
Neartine Pilidium larva	0.0073	0.0024	0.011	15.7895	.
Callinectes sp megalopa	0.0077	0.0010	0.009	10.5263	.
Bowmanella dissimilis	0.0076	0.0028	0.013	15.7895	.
Neomysis americana	0.0072	0.0017	0.009	15.7895	.
Pinnotheres spp	0.0065	0.0029	0.009	10.5263	.
Lebridium websteri	0.0056	.	0.006	5.2632	.
Portunus spinicarpus Megalopa	0.0050	0.0008	0.006	10.5263	.
Squilla (expsa?) protozoea	0.0044	.	0.005	5.2632	.
Lophidae	0.0047	.	0.005	5.2632	.
Libinia dubia Megalopa	0.0047	0.0005	0.005	10.5263	.
Amudytidae	0.0041	0.0005	0.005	10.5263	.
Gadidae	0.0041	0.0005	0.005	10.5263	.

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SAS

TYPE 2 SITE=10

NAME	1	MNA3UN	SENNABUN	MXMNABUN	POCCUR	PCOVER
Polychaeta	0.00381000	.	.	0.00381000	5.26316	.
Nephtys sp	0.00363500	.	.	0.00363500	5.26316	.
Bothidae	0.00344750	.	.	0.00344750	5.26316	.
Scophthalmus aquasus	0.00335750	.	.	0.00335750	5.26316	.
Libinia spp zoea	0.00313000	.	.	0.00313000	5.26316	.
Divalve B						
Sciaenidae						
Cynoscion regalis						

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SAS

TYPE=2 SITE=11

NAME	MMNABUN	SEMNABUN	MXMNABUN	POCCJR	PCOVER
Engraulidae egg	38.7913	15.0588	131.995	58.8235	23.5294
Callinectes sp zoea	19.2298	8.3830	58.891	47.0588	23.5294
Larvacea	11.7856	6.5088	54.636	58.8235	17.6471
Other Fish Eggs	4.0918	4.0552	16.257	23.5294	5.9824
Callinectes sp megalopa	3.5372	3.5046	14.051	23.5294	5.8824
Cancer irroratus zoea	2.6977	2.6654	18.690	41.1765	5.8824
Cancer sp megalopa	2.4514	1.7967	6.040	17.6471	5.8824
All Fish eggs	1.8115	1.1666	16.908	82.3529	5.8824
Lucifer Faxoni	1.3585	0.9317	5.965	35.2941	5.8824
Sciaenidae egg	0.8937	0.3115	3.402	58.8235	5.8824
Squillid Antizoea	0.7847	0.7541	4.555	35.2941	5.8824
Engraulidae fry	0.2832	0.1784	0.793	23.5294	5.8824
Gastropods	0.2529	0.1569	0.772	35.2941	5.8824
Crangon septemspinosa	0.1542	0.0757	0.840	64.7059	5.8824
Megalopa A	0.1462	0.1416	0.288	11.7647	5.8824
Palaemonetes spp	0.1397	0.1243	0.512	23.5294	5.8824
Ovalipes quadripennis zoea	0.1209	0.0713	0.366	29.4118	5.8824
Upogebia affinis	0.1194	0.0758	0.408	29.4118	5.8824
Nemertine Pliidium larva	0.1113	0.0999	0.411	23.5294	5.8824
Uca spp	0.0969	0.0207	0.189	41.1765	5.8824
Xanthid Crabs	0.0867	0.0479	0.224	23.5294	5.8824
Pinnixa spp	0.0807	0.0318	0.153	29.4118	5.8824
Sciaenidae	0.0607	0.0497	0.110	11.7647	5.8824
Brevoortia tyrannus	0.0590	0.0249	0.059	5.8824	5.8824
Hypsooblennius hentzi	0.0421	0.0313	0.088	17.6471	5.8824
Urophycis regius	0.0400	0.0339	0.071	11.7647	5.8824
Alpheus heterochaelis	0.0393	0.0142	0.039	5.8824	5.8824
Meagras martinica	0.0361	0.0142	0.065	23.5294	5.8824
Polychaeta	0.0351	0.0351	0.035	5.8824	5.8824
Portunus spinicarpus Megalopa	0.0345	0.0113	0.048	17.6471	5.8824
Bomaniella dissimilis	0.0344	0.0163	0.051	11.7647	5.8824
Polychaeta	0.0335	0.0226	0.146	35.2941	5.8824
Spionidae	0.0335	0.0226	0.146	35.2941	5.8824
Ocyropsis sp zoea	0.0321	0.0321	0.032	5.8824	5.8824
Lophius americanus	0.0307	0.0206	0.071	17.6471	5.8824
Ammodytes hexapterus	0.0251	0.0100	0.060	35.2941	5.8824
pagurid Crabs	0.0251	0.0099	0.038	17.6471	5.8824
Bothidae egg	0.0191	0.0099	0.038	17.6471	5.8824
Libinia spp zoea	0.0180	0.0180	0.018	5.8824	5.8824
Nereidae	0.0179	0.0060	0.022	11.7647	5.8824
Terebellidae spp	0.0160	0.0060	0.022	11.7647	5.8824
Portunus sp zoea	0.0139	0.0089	0.014	23.5294	5.8824
Squilla (tempus?) protozoea	0.0137	0.0089	0.040	23.5294	5.8824
Penaeid shrimp	0.0103	0.0103	0.010	5.8824	5.8824
Callinassa spp	0.0098	0.0038	0.016	17.6471	5.8824
Tetraodontidae	0.0097	0.0038	0.009	5.8824	5.8824
Sphaeroides maculatus	0.0084	0.0047	0.008	5.8824	5.8824
Libinia dubia Megalopa	0.0073	0.0047	0.022	23.5294	5.8824
Mysidopsis uliyelowi	0.0073	0.0047	0.007	5.8824	5.8824
Metamysidopsis	0.0073	0.0047	0.007	5.8824	5.8824
Portunus crab	0.0073	0.0047	0.007	5.8824	5.8824
Bivalve I	0.0073	0.0036	0.011	11.7647	5.8824
Atherinidae	0.0072	0.0045	0.021	23.5294	5.8824
Synbranchia fuscus	0.0067	0.0045	0.007	5.8824	5.8824
Neomysis americana	0.0064	0.0044	0.007	11.7647	5.8824
Ogyrides limicola	0.0062	0.0044	0.006	5.8824	5.8824

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SAS

TYPE=2 SITE=11

NAME	MMNABUN	SEMNABUN	MXNABUN	POCCUR	PCOVER
Pomatomidae	0.00541500	0.00088500	0.00630000	11.7647	.
Euceraus praelongus	0.00495000	0.00127500	0.00622500	11.7647	.
Engraulidae	0.00479167	0.00038619	0.00550750	17.6471	.
Anchoa mitchelli	0.00464750	.	0.00464750	5.8824	.
Paralichthys dentatus	0.00382083	0.00122298	0.00620250	17.6471	.
Polychaeta	0.00378125	0.00076125	0.00454250	11.7647	.
Autolytus spp	0.00378125	0.00076125	0.00454250	11.7647	.
Other Bivalves	0.00293500	.	0.00293500	5.8824	.
All Bivalves	0.00288250	.	0.00288250	5.8824	.
Capitellidae	0.00275500	.	0.00275500	5.8824	.
Mugil sp	0.00275500	.	0.00275500	5.8824	.
Lepidopoda websteri	0.00259000	.	0.00259000	5.8824	.
Tylosurus crocodilis	0.00259000	.	0.00259000	5.8824	.
Belontiidae	0.00246000	.	0.00246000	5.8824	.
Phoronida	0.00246000	.	0.00246000	5.8824	.
Acetes caroliniae	0.00246000	.	0.00246000	5.8824	.

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SAS

TYPE=2 SITE=12

NAME	MMNABUN	SENNABUN	MYNABUN	POCCUR	PCOVER
Engraulidae egg	32.6810	12.5539	114.847	50.0000	27.7778
Callinectes sp zoea	5.9777	4.7039	38.307	44.4444	5.5556
Squilla Antiozea	2.4462	2.4242	9.719	22.2222	.
All Fishes	0.6045	0.2867	3.289	61.1111	.
Upogebia affinis	0.4934	0.4805	1.935	22.2222	.
Sciaenidae egg	0.4628	0.1434	1.309	50.0000	.
Menbrus martinica	0.4298	0.1707	0.963	27.7778	.
Other Fish Eggs	0.4094	0.3201	1.981	33.3333	.
Crangon septemspinosa	0.3969	0.2096	2.489	72.2222	.
Engraulidae fry	0.3672	0.0679	0.500	16.6667	.
Larvacea	0.3609	0.1856	1.827	61.1111	.
Callinectes sp megalopa	0.2781	0.2480	1.515	33.3333	.
Xanthid Crabs	0.1862	0.1696	0.863	27.7778	.
Lucifer Faxoni	0.1731	0.1234	0.899	38.8889	.
Uca spp	0.1333	0.0874	0.650	38.8889	.
Atherinidae	0.1200	0.1147	0.693	33.3333	.
Palaeomonetes spp	0.1052	0.0585	0.209	16.6667	.
Ocyropsis sp zoea	0.1004	0.0893	0.190	11.1111	.
Davillipes quadripennis zoea	0.0888	0.0888	0.229	27.7778	.
Pagurid Crabs	0.0751	0.0512	0.176	16.6667	.
Cancer sp megalopa	0.0653	0.0301	0.122	16.6667	.
Cancer irroratus zoea	0.0572	0.0271	0.156	27.7778	.
Pinnixa spp	0.0349	0.0268	0.088	16.6667	.
Polychaeta	0.0338	0.0078	0.042	11.1111	.
Splonidae	0.0323	0.0115	0.098	50.0000	.
Capitellidae	0.0297	.	0.030	5.5556	.
Emerita talpoida	0.0296	0.0110	0.041	11.1111	.
Autolytus spp	0.0292	0.0189	0.048	11.1111	.
Polychaeta	0.0245	.	0.025	5.5556	.
Callinassa spp	0.0220	.	0.022	5.5556	.
Pinnotheres spp	0.0164	.	0.016	5.5556	.
Bothidae egg	0.0140	0.0044	0.018	11.1111	.
Mysidopsis bligewi	0.0121	0.0014	0.014	11.1111	.
Engraulidae	0.0116	.	0.012	5.5556	.
Anchoa mitchelli	0.0116	0.0058	0.023	16.6667	.
Megalopa A	0.0098	0.0058	0.016	11.1111	.
Squilla (tempusa?) protozoea	0.0098	.	0.010	5.5556	.
Scophthalmus aquasus	0.0096	.	0.010	5.5556	.
Phoronida	0.0092	.	0.009	5.5556	.
Tylosurus crocodilis	0.0082	0.0036	0.015	16.6667	.
Hyposoblennius hentzi	0.0079	.	0.008	5.5556	.
Urophycis regalis	0.0076	0.0034	0.011	11.1111	.
Nereidae	0.0076	0.0010	0.009	11.1111	.
Nemertine Pilidium larva	0.0076	0.0018	0.013	27.7778	.
Gastropods	0.0065	0.0022	0.009	11.1111	.
Oxyrhis italica	0.0054	0.0010	0.008	27.7778	.
Neomysis americana	0.0353	0.0003	0.006	11.1111	.
Libinia spp zoea	0.0348	.	0.005	5.5556	.
Other Bivalves	0.0048	.	0.005	5.5556	.
All Bivalves	0.0047	.	0.005	5.5556	.
Portunus spinicarpus Megalopa	0.0047	.	0.005	5.5556	.
Sciaenidae	0.0031	.	0.003	5.5556	.
Cynocion regalis	0.0020	.	0.002	5.5556	.
Bowditchella dissimilis	0.0020	.	0.002	5.5556	.

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SAS

TYPE=2 SITE=13

NAME	MMNABUN	SEMNABUN	MYMNABUN	POCCJR	PCOVER
Other Fish Eggs	18.4534	10.7463	53.1210	33.3333	11.1111
Engraulidae egg	13.8503	7.9027	74.4586	50.0000	22.2222
All Fish eggs	12.8154	7.7154	53.8495	50.0000	11.1111
Callinectes sp zoea	2.6299	1.4596	11.0206	44.4444	5.5556
Crangon septemspinosa	1.4449	0.9634	10.0103	72.2222	5.5556
Sciaenidae egg	0.5761	0.1679	1.6263	44.4444	.
Squilla Antizoea	0.4672	0.2644	0.9572	22.2222	.
Bothidae spp	0.2788	.	0.2788	5.5556	.
Palaeomonetes spp	0.2672	0.1073	0.5076	22.2222	.
Other Bivalves	0.2269	0.2232	0.4501	11.1111	.
All Bivalves	0.2269	0.2232	0.4501	11.1111	.
Larvae	0.2057	0.1024	0.9200	50.0000	.
Engraulidae fry	0.1467	0.0580	0.2714	27.7778	.
Anchoa mitchelli	0.1407	0.1085	0.2492	11.1111	.
Engraulidae	0.1194	0.0895	0.5630	33.3333	.
Anthriniidae	0.1126	0.0449	0.3734	44.4444	.
Uca spp	0.1051	0.0837	0.3555	22.2222	.
Upogebia affinis	0.0819	0.0760	0.1579	11.1111	.
Cancer sp megalopa	0.0726	0.0581	0.1882	16.6667	.
Squilla (empusa?) protozoa	0.0647	.	0.0647	5.5556	.
Megalopa A	0.0613	0.0332	0.2658	44.4444	.
Polychaeta	0.0389	0.0110	0.0594	22.2222	.
Atherinidae	0.0389	0.0254	0.2405	50.0000	.
Cancer irritatus zoea	0.0370	0.0188	0.1056	27.7778	.
Ovalipes quadrupennis zoea	0.0346	0.0133	0.0606	16.6667	.
Callinectes sp megalopa	0.0270	0.0118	0.0742	33.3333	.
Xanthid Crabs	0.0260	0.0125	0.0385	11.1111	.
Bleniidae	0.0220	.	0.0220	5.5556	.
Hypsoblennius hentzi	0.0204	0.0122	0.0567	22.2222	.
Naushonia crangonoides	0.0203	.	0.0203	5.5556	.
Euceramus praeiongus	0.0191	0.0079	0.0715	44.4444	.
Decapode sp zoea	0.0191	0.0054	0.0211	11.1111	.
Lucifer Faxoni	0.0157	0.0054	0.0264	11.1111	.
Callinassa spp	0.0150	0.0114	0.0219	22.2222	.
Mysidopsis biyelowi	0.0145	0.0038	0.0309	16.6667	.
Pagurid Crabs	0.0134	0.0088	0.0491	38.8889	.
Gastropods	0.0128	0.0061	0.0257	22.2222	.
Neomysis americana	0.0120	0.0050	0.0257	22.2222	.
Emerita talpoida	0.0115	.	0.0115	5.5556	.
Hippolyte pleuracantha	0.0109	.	0.0109	5.5556	.
Polychaeta	0.0097	.	0.0097	5.5556	.
Nereidae	0.0084	.	0.0084	5.5556	.
Bothidae egg	0.0067	.	0.0067	5.5556	.
Portunus spinicarpus Megalopa	0.0064	.	0.0064	5.5556	.
Lophius americana	0.0063	.	0.0063	5.5556	.
Polychaeta	0.0059	.	0.0059	16.6667	.
Pinnixa spp	0.0057	0.0012	0.0076	5.5556	.
Libinia spp zoea	0.0057	.	0.0057	5.5556	.
Bothidae	0.0051	.	0.0051	5.5556	.
Paralichthys dentatus	0.0046	.	0.0046	5.5556	.
Tetraodonidae	0.0041	0.0000	0.0041	11.1111	.
Sphaeroides maculatus	0.0041	.	0.0041	5.5556	.
Nemertine Piliolum larva	0.0041	.	0.0041	5.5556	.
Gadidae	0.0041	.	0.0041	5.5556	.
Urophysis regius	0.0041	.	0.0041	5.5556	.
Bivalve I	0.0041	.	0.0041	5.5556	.
Autolytus spp	0.0034	0.0011	0.0060	22.2222	.
Polychaeta	0.0034	0.0041	0.0041	11.1111	.
Bomantella dissimilis	0.0034	0.0002	0.0041	11.1111	.
Pomatidae	0.0034	.	0.0034	5.5556	.
Pomatumus saltatrix	0.0034	.	0.0034	5.5556	.

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SAS

TYPE=2 SITE=20

NAME	MYMABUV	SEMNABUN	MYMABUN	POCCJR	PCOVER
Callinectes sp megalopa	54.2352	54.1957	162.627	30.0030	10.0000
Callinectes sp zoea	30.1541	25.5254	207.733	80.0000	20.0000
Engraulidae egg	27.9187	11.9526	97.241	90.0000	50.0000
Larvacea	7.7549	4.7819	30.182	80.0030	20.0000
Nemertine Ptilidium larva	2.2337	.	2.234	10.0000	.
All Fish eggs	1.1300	0.4283	3.943	90.0030	.
Other Fish Eggs	0.8416	0.4819	2.164	60.0030	.
Cancer sp megalopa	0.8038	0.5805	1.384	20.0030	.
Lucifer Faxoni	0.7449	0.3966	1.993	50.0030	.
Sciaenidae egg	0.5551	0.1889	1.553	90.0000	.
Polychaeta	0.5115	0.4886	1.489	30.0000	.
Cancer irritatus zoea	0.4843	0.4461	1.376	30.0000	.
Squilla (empusa?) protozoa	0.4248	0.4123	0.837	20.0000	.
Crangon septemspinosa	0.4138	0.2608	1.423	50.0030	.
Pennaeid shrimp	0.4027	0.2953	0.698	20.0000	.
Gastropods	0.3454	0.2329	0.791	30.0000	.
Palaeomonetes spp	0.2492	0.2261	0.927	40.0000	.
Squillid Antizoea	0.2078	0.0798	0.378	40.0030	.
Uca spp	0.1791	0.1089	0.702	60.0000	.
Upogebia affinis	0.1469	0.0581	0.388	60.0000	.
Xanthid Crabs	0.1071	0.0555	0.321	50.0030	.
Ovalipes quadrupensis zoea	0.0732	0.0537	0.285	50.0030	.
Pagurid Crabs	0.0698	0.0574	0.299	50.0000	.
Gadidae	0.0693	0.0527	0.122	20.0000	.
Botulidae egg	0.0521	0.0364	0.098	20.0000	.
Engraulidae fry	0.0588	0.0328	0.152	40.0030	.
Bommanietia dissimilis	0.0562	.	0.056	10.0000	.
Mysid	0.0560	.	0.056	10.0000	.
Pinnixa spp	0.0545	0.0472	0.149	30.0030	.
Bivalve B	0.0499	.	0.050	10.0030	.
All Bivalves	0.0494	.	0.050	10.0000	.
Blenniidae	0.0440	0.0260	0.096	30.0000	.
Megalopa A	0.0417	.	0.042	10.0030	.
Polychaeta	0.0363	0.0191	0.055	20.0030	.
Emerita talpoida	0.0208	.	0.021	10.0000	.
Sciaenidae	0.0195	0.0047	0.019	10.0030	.
Portunus spinicarpus Megalopa	0.0188	.	0.024	20.0030	.
Pinnotheres spp	0.0175	.	0.018	10.0000	.
Polychaeta	0.0173	.	0.017	10.0000	.
Anthrionidae	0.0144	0.0092	0.033	30.0030	.
Eucercamus praelongus	0.0133	.	0.013	10.0000	.
Callinassa spp	0.0112	.	0.011	10.0030	.
Engraulidae	0.0104	0.0064	0.017	20.0000	.
Polychaeta	0.0087	.	0.009	10.0030	.
Cabellidae	0.0075	0.0007	0.008	20.0000	.
Ucypode sp zoea	0.0063	0.0024	0.012	30.0030	.
Pomatoidae	0.0063	0.0025	0.009	20.0030	.
Phoronida	0.0063	0.0005	0.007	30.0030	.
Atherinidae	0.0064	0.0005	0.008	20.0030	.
Polychaeta	0.0054	0.0021	0.005	10.0030	.
Ammodytidae	0.0054	.	0.005	10.0000	.
Lophiidae	0.0054	.	0.005	10.0030	.
Gobiidae	0.0047	.	0.004	10.0030	.
Tetractinidae	0.0041	.	0.004	10.0030	.
Sunarioides maculatus	0.0041	.	0.004	10.0030	.
Mugilidae	0.0041	.	0.004	10.0030	.

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SAS

TYPE=2 SITE=21

NAME	MMNABUN	SEMABUN	MYNABUN	POCCUR	PCOVER
Engraulidae egg	61.4061	25.4153	200.179	100.000	77.7778
All Fishes	12.4146	11.0279	100.483	100.030	11.1111
Sciaenidae egg	11.3199	11.1326	100.379	100.030	11.1111
Callinectes sp zoea	10.5573	4.4126	34.657	77.778	22.2222
Nemertine Pilidium larva	4.0589	.	4.059	11.111	.
Larvae	3.0255	2.0685	11.161	55.556	11.1111
Other Fish Eggs	2.4343	1.2885	6.218	44.444	.
Cancer sp megalopa	1.2908	0.5576	1.848	22.222	.
Brevoortia tyrannus	0.7681	.	0.768	11.111	.
Cruceidae	0.5370	0.3379	1.884	55.556	.
Crangon septemspinosa	0.2793	0.2234	0.725	33.333	.
Cancer irroratus zoea	0.2764	0.2422	1.245	55.556	.
Squilla Antizoea	0.2582	0.1207	0.554	44.444	.
Engraulidae fry	0.1880	.	0.188	11.111	.
Polychaeta	0.1698	0.0667	0.305	44.444	.
Lucifer Faxoni	0.1434	0.1207	0.504	44.444	.
Upogebia affinis	0.1384	0.1314	0.401	33.333	.
Gastropods	0.1279	0.0609	0.482	88.889	.
Uca spp	0.1264	0.0901	0.305	33.333	.
Palaemonetes spp	0.0998	0.0960	0.196	22.222	.
Anthraxidae	0.0803	0.0723	0.153	22.222	.
Ocyrops sp zoea	0.0792	0.0321	0.229	66.667	.
Membras martinica	0.0700	.	0.070	12.111	.
Polychaeta	0.0601	0.0538	0.275	55.556	.
Polychaeta	0.0558	0.0246	0.087	33.333	.
Atherinidae	0.0539	0.0380	0.167	44.444	.
Phoronida	0.0478	.	0.048	11.111	.
Ovalipes quadripennis zoea	0.0441	0.0209	0.107	55.556	.
Pennaeid shrimp	0.0388	0.0330	0.105	33.333	.
Xanthid Crabs	0.0363	.	0.036	11.111	.
Bothidae egg	0.0297	.	0.030	11.111	.
Sesarma sp zoea	0.0260	0.0090	0.039	33.333	.
Anchoa mitchelli	0.0232	.	0.023	11.111	.
Portunus spinicarpus Megalopa	0.0232	.	0.023	11.111	.
Other Bivalves	0.0232	.	0.023	11.111	.
All Bivalves	0.0193	0.0113	0.031	22.222	.
Polychaeta	0.0137	.	0.014	11.111	.
Tetraodontidae	0.0137	.	0.014	11.111	.
Sphaeroides maculatus	0.0133	0.0052	0.023	33.333	.
Ammodytes hexapterus	0.0123	.	0.012	11.111	.
Callinectes sp megalopa	0.0112	0.0049	0.016	22.222	.
Libinia spp zoea	0.0100	0.0062	0.016	22.222	.
Squilla (empusa?) protozoa	0.0099	.	0.010	11.111	.
Pagurid Crabs	0.0099	.	0.010	11.111	.
Polychaeta f	0.0099	.	0.010	11.111	.
Pomatodus saltatrix	0.0083	.	0.008	11.111	.
Sciaenidae	0.0077	.	0.008	11.111	.
Cynocion regalis	0.0077	.	0.008	11.111	.
Neomysis americana	0.0073	.	0.007	11.111	.
Emerita talpoida	0.0073	.	0.007	11.111	.
Gadidae	0.0054	.	0.005	11.111	.
Urophycis regius	0.0054	.	0.005	11.111	.
Hyporhamphus unifasciatus	0.0045	0.0004	0.005	22.222	.
Hypoblenius hantz	0.0045	.	0.005	11.111	.
Stromateidae	0.0045	0.0001	0.004	22.222	.
Peprilus triacanthus	0.0041	.	0.004	11.111	.
Polychaeta	0.0041	.	0.004	11.111	.
Autolytus spp	0.0041	.	0.004	11.111	.
Alpheus normanni	0.0041	.	0.004	11.111	.

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TYPE=2 SITE=22

NAME	MNMNABUN	SEMNABUN	MXMNABUN	PUCCLR	PCOVER
Engraulidae egg	78.1376	35.1172	280.747	100.000	77.7778
Callinectes sp zoea	20.3795	16.9518	138.791	88.889	11.1111
All Fish eggs	12.5713	10.8800	99.211	100.000	11.1111
Sciaenidae egg	11.1689	10.9974	99.146	100.000	11.1111
Cancer irroratus zoea	8.7473	8.7278	17.475	22.222	11.1111
Other Fish Eggs	2.5109	1.8452	9.672	55.556	.
Larvacea	2.0595	0.8036	5.567	77.778	.
Crangon septemspinosa	1.9742	1.7317	8.894	55.556	.
Cancer sp megalopa	0.7065	0.6041	1.311	22.222	.
Bleniidae	0.3471	0.3349	1.017	33.333	.
Hypsoblennius hentzi	0.2050	0.0756	0.370	44.444	.
Squillid Antizoea	0.1255	0.0644	0.239	33.333	.
Lucifer Faxoni	0.1210	0.0858	0.376	44.444	.
Upogebia affinis	0.1163	0.0405	0.271	66.667	.
Uca spp	0.1066	0.1034	0.210	22.222	.
Callinectes sp megalopa	0.1040	.	0.104	11.111	.
Phoronida	0.0870	0.0511	0.222	44.444	.
Engraulidae fry	0.0795	0.0683	0.216	33.333	.
Ovalipes quadripennis zoea	0.0726	0.0595	0.369	66.667	.
Squilla (tempusall) protozoea	0.0646	.	0.065	11.111	.
Gochnidae egg	0.0628	0.0503	0.213	44.444	.
Palaeomonetes spp	0.0494	0.0312	0.081	22.222	.
Terebellidae spp	0.0464	0.0034	0.050	22.222	.
Portunus spinicarpus Megalopa	0.0374	0.0138	0.064	33.333	.
Anchoa mitchellii	0.0365	0.0235	0.083	33.333	.
Atherinidae	0.0363	0.0192	0.074	33.333	.
Menidia menidia	0.0302	0.0033	0.033	22.222	.
Xanthid Crabs	0.0164	.	0.016	11.111	.
Ocyropsis sp zoea	0.0164	.	0.016	11.111	.
Alpheus normanni	0.0159	0.0038	0.030	66.667	.
Pinnixa spp	0.0156	0.0122	0.028	22.222	.
Polychaeta	0.0150	0.0042	0.027	44.444	.
Anthriscidae	0.0135	0.0043	0.033	66.667	.
Membras martinica	0.0090	0.0018	0.015	55.556	.
Emerita talpoida	0.0087	.	0.009	11.111	.
Gastropods	0.0077	.	0.008	11.111	.
Pagurid Crabs	0.0065	.	0.006	11.111	.
Urophysalis regius	0.0049	.	0.005	11.111	.
Autolytus spp	0.0045	.	0.004	11.111	.
Polychaeta	0.0039	.	0.004	11.111	.
Lepidopa websteri	0.0033	0.0001	0.004	22.222	.
Mugil sp					
Callinassa spp					
Pinnotheres spp					
Pomatopus saltatrix					

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SAS

TYPE=2 SITC=23

NAME	MMNABUN	SEMABUN	MXNABUN	PUCGJR	PCOVER
Engraulidae egg	34.9033	11.4505	87.7547	100.000	66.6667
Other Fish Eggs	7.6496	5.3026	33.1773	66.667	11.1111
All Fishes	5.4373	3.8053	34.7924	100.030	11.1111
Callinectes sp zoea	4.1057	1.6610	12.4310	77.778	11.1111
Larvacea	3.4204	2.4691	15.5548	66.667	11.1111
Squilla Antilzoea	0.3749	0.5685	2.8489	55.556	.
Sciaenidae egg	0.3214	0.1840	1.6151	100.030	.
Engraulidae fry	0.2743	0.1967	0.4710	22.222	.
Squilla (empusa?) protozoea	0.2647	.	0.2647	11.111	.
Cancer irroratus zoea	0.2536	0.2125	0.8870	44.444	.
Callinectes sp megalopa	0.2112	0.2141	1.2916	66.667	.
Lucifer Faxoni	0.2158	0.1703	0.7237	44.444	.
Ovalipes quadripennis zoea	0.1567	0.0879	0.5204	66.667	.
Polychaeta Capitellidae	0.1175	0.1069	0.2244	22.222	.
Pinnixa spp	0.1111	.	0.1111	11.111	.
Emerita talpoida	0.1046	0.0531	0.2359	44.444	.
Palaeomonetes spp	0.0960	0.0754	0.3211	44.444	.
Gastropods	0.0946	0.0457	0.1403	22.222	.
Anthruridae Membras martinica	0.0861	0.0737	0.2333	33.333	.
Cancer sp megalopa	0.0825	.	0.0825	11.111	.
Mysidopsis bigelowi	0.0798	0.0045	0.0844	22.222	.
Bathidae egg	0.0724	0.0663	0.1389	22.222	.
Atherinidae Menidia menidia	0.0703	0.0488	0.2138	44.444	.
Uca spp	0.0608	0.0160	0.1090	66.667	.
Upogebia affinis	0.0569	0.0340	0.2010	66.667	.
Ocypode sp zoea	0.0551	.	0.0551	11.111	.
Xanthid Crabs	0.0508	0.0396	0.1300	33.333	.
Crangon septemspinosa	0.0445	0.0326	0.2070	66.667	.
Penaeid shrimp	0.0440	.	0.0440	11.111	.
Libinia spp zoea	0.0221	.	0.0221	11.111	.
Euceramus praelongus	0.0220	.	0.0220	11.111	.
Pagurid Crabs	0.0200	0.0135	0.0740	55.556	.
Metamysidopsis	0.0160	.	0.0160	11.111	.
Other Bivalves	0.0124	.	0.0124	11.111	.
All Bivalves	0.0124	.	0.0124	11.111	.
Polychaeta Spionidae	0.0106	0.0015	0.0124	11.111	.
Pomatodidae Pomatomus saltatrix	0.0105	.	0.0128	33.333	.
Bleniidae Hypsoblenius hentzi	0.0091	0.0056	0.0105	11.111	.
Callinassa spp	0.0084	.	0.0148	22.222	.
Triglidae Prionotus carolinus	0.0080	.	0.0084	11.111	.
Clupeidae Brevoortia tyrannus	0.0052	0.0009	0.0080	22.222	.
Phoronida	0.0040	0.0009	0.0063	33.333	.
Uyrrides limicola	0.0044	.	0.0044	11.111	.
Nemertine Pitidium larva	0.0044	.	0.0044	11.111	.
Acetes caroliniae	0.0044	.	0.0044	11.111	.
Portunus spinicarpus Mejalopa	0.0044	0.0008	0.0052	22.222	.
Polychaeta Nereidae	0.0043	.	0.0043	11.111	.
Bivalva I	0.0041	.	0.0041	11.111	.
Sciaenidae Cynoscion regalis	0.0041	.	0.0041	11.111	.
Bommatella dissimilis	0.0041	.	0.0041	11.111	.
Pinnotheres spp	0.0041	0.0003	0.0046	33.333	.
Engraulidae Anchoa mitchelli	0.0035	.	0.0040	11.111	.

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SAS

TYPE-3 SITE-1

NAME	MNMNABUN	SEMNAABUN	MXMNABUN	POCCJR	PCOVER
Engraulidae egg	69.8048	27.2637	237.373	52.9412	35.2941
Callinectes sp zoea	24.0905	8.6787	57.283	41.1765	23.5294
Larvacea	23.8054	8.5312	102.904	82.3529	41.1765
Crangon septemspinosa	22.3392	9.6451	141.775	94.1176	29.4118
Sciaenidae egg	5.8952	2.3827	22.427	64.7059	23.5294
Upogebia affinis	5.2960	3.3944	24.776	41.1765	5.8824
Pagurid Crabs	5.2381	1.6279	15.042	70.5882	23.5294
Mysidopsis bigelowi	4.7081	2.8554	21.171	41.1765	5.8824
All Fishes	4.6275	1.9162	22.495	88.2353	23.5294
Xanthid Crabs	3.9994	2.1497	21.247	58.8235	5.8824
Uca spp	2.7919	1.1866	8.645	41.1765	.
Ovalipes quadripennis zoea	2.3134	1.1207	11.665	58.8235	5.8824
Lucifer Faxoni	2.1468	1.5630	15.885	58.8235	5.8824
Palaeomonetes spp	1.8839	1.5524	11.166	41.1765	5.8824
Polychaeta	1.6498	1.4539	10.362	41.1765	5.8824
Bowmanella dissimilis	1.5515	0.8679	5.849	41.1765	.
Gastropods	1.5212	0.6692	7.587	64.7059	.
Pinnixa spp	1.3077	0.5404	5.516	58.8235	.
Phoronida	0.9850	0.8461	6.059	41.1765	.
Other Bivalves	0.9784	0.9478	1.926	11.7647	.
Neomysis americana	0.8935	0.3971	4.287	64.7059	.
Polychaeta	0.8195	0.3704	2.887	41.1765	.
Terebellidae spp	0.8182	0.5191	6.932	76.4736	.
Cancer irroratus zoea	0.8043	0.2852	2.176	52.9412	.
Euceraeus praetongus	0.7588	.	0.759	5.8824	.
Polychaete F	0.7352	0.2731	3.585	88.2353	.
Polychaeta	0.6545	0.3761	1.909	29.4118	.
Engraulidae	0.5985	.	0.599	5.8824	.
Tetraodontidae	0.5589	0.5101	3.107	35.2941	.
Sphaeroides maculatus	0.5354	.	0.535	5.8824	.
Other Fish Eggs	0.5187	0.4696	1.926	23.5294	.
Dissodactylus mellittae zoea	0.5095	.	0.510	5.8824	.
All Bivalves	0.5018	0.2604	0.966	23.5294	.
Capitellidae	0.4387	0.2277	0.819	17.6471	.
Acetes caroliniae	0.4340	0.0960	0.876	41.1765	.
Polychaeta	0.4299	0.3154	2.312	41.1765	.
Emerita talpoida	0.3781	0.2785	1.749	35.2941	.
Callinassa spp	0.3678	0.1420	1.084	47.0588	.
Squilla Antiozea	0.3660	0.1029	0.645	23.5294	.
Pinnothores spp	0.3505	0.2950	1.823	35.2941	.
Ogyrides limicola	0.2850	0.2136	0.499	11.7647	.
Engraulidae fry	0.2677	0.1327	0.964	41.1765	.
Ocyropsis sp zoea	0.2626	0.2350	0.498	11.7647	.
Libinia spp zoea	0.2007	.	0.201	5.8824	.
Cynoglossidae	0.1962	0.1128	0.527	23.5294	.
Symphurus plagiosa	0.1731	0.0357	0.291	41.1765	.
Mysid	0.1652	0.1493	0.613	23.5294	.
Sciaenidae	0.1473	0.1001	0.643	35.2941	.
Cynocion regalis	0.1384	0.0563	0.246	17.6471	.
Bathidae egg	0.1246	0.0335	0.221	23.5294	.
Penaeid shrimp	0.1147	.	0.115	5.8824	.
Callinectes sp megalopa	0.1141	0.0515	0.196	17.6471	.
Callinectes sp megalopa	0.0931	0.0411	0.175	17.6471	.
Bathidae	0.0931	0.0411	0.175	17.6471	.
Bivalve I	0.0931	0.0411	0.175	17.6471	.
Polychaete A	0.0931	0.0411	0.175	17.6471	.
Blenniidae	0.0931	0.0411	0.175	17.6471	.
Hypoblenius hentzi	0.0931	0.0411	0.175	17.6471	.
Cancer 22 zoea	0.0931	0.0411	0.175	17.6471	.
Trigloide	0.0931	0.0411	0.175	17.6471	.

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SAS

TYPE=3 SITE=1

NAME	MMNABUN	SEMABUN	MYMNABUN	POCCJR	PCOVER
Naushonia crangonoides	0.0926419	0.0357297	0.179597	23.5294	.
Squilla (empusa?) protozoa	0.0925687	0.0429369	0.238247	35.2941	.
Lophidae	0.0814050	.	0.081405	5.8824	.
Lepidopa websteri	0.0776567	0.0353621	0.113910	17.6471	.
Hemiramphidae	0.0632125	.	0.063212	5.8824	.
Gobiesocidae	0.0596875	0.0410829	0.141397	17.6471	.
Bivalve B	0.0589587	0.0451312	0.104090	11.7647	.
Alpheus normanni	0.0587662	0.0515987	0.110365	11.7647	.
Polychaeta	0.0543361	0.0193308	0.14207	41.1765	.
Libinia eaeiginata Megalopa	0.0522100	0.042175	0.096427	11.7647	.
Neerline Ptilidium larva	0.0520303	0.0371328	0.125347	17.6471	.
Sciaenidae spp	0.0460675	.	0.048067	5.8824	.
Hippolyte pleuracantha	0.0436737	0.0189564	0.096062	23.5294	.
Nereidae	0.0427354	0.0272332	0.205362	41.1755	.
Gobiosoma boscl	0.0411019	0.0123793	0.078067	23.5294	.
Bothidae	0.0359037	0.0180447	0.082747	23.5294	.
Atherinidae	0.0286675	.	0.028667	5.8824	.
DUMMY	0.0286675	.	0.028667	5.8824	.
Persephone punctata	0.0276575	.	0.027657	5.8824	.
Megalopa A	0.0211625	0.0094412	0.040040	17.6471	.
Amodytidae	0.0162112	0.0118537	0.028065	11.7647	.
Cancer sp megalopa	0.0160308	0.0087916	0.032977	17.6471	.
Anthriniidae	0.0152687	0.0054737	0.020742	11.7647	.
Portunid crab	0.0139275	.	0.013927	5.8824	.
Portunus spinicarpus Megalopa	0.0128737	0.0012562	0.014130	11.7647	.
Ophidae	0.0071675	.	0.007167	5.8824	.
Libinia dubia Megalopa	0.0056750	.	0.005675	5.8824	.
Palaeomonidae palaeomonidae	0.0055375	.	0.005537	5.8824	.

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SAS

TYPE=3 SITE=10

NAME	MXMABUN	SEMABUN	MXMABUN	POCCJR	PCOVER
Engraulidae egg	108.846	67.9808	489.793	50.000	42.8571
Crangon septemspinosa	25.263	11.2329	122.676	92.857	28.5714
Callinectes sp zoea	14.869	5.1416	33.413	42.857	21.4286
Larvacea	11.633	5.7289	56.870	71.429	21.4286
Upogebia affinis	7.739	2.8972	17.760	35.714	14.2857
Uca spp	7.382	4.4675	26.211	42.857	14.2857
Sciaenidae egg	4.503	2.6704	22.600	57.143	7.1429
Mysidopsis bigelowi	3.169	2.6416	18.792	50.000	7.1429
Cancer irroratus zoea	3.127	1.9231	17.418	71.429	14.2857
Callinassa spp	3.081	2.4530	12.822	35.714	7.1429
Neomysis americana	3.048	2.1823	17.842	57.143	7.1429
Pagurid Crabs	3.035	1.2769	12.638	85.714	7.1429
All Fishes	2.863	1.6104	22.798	100.000	7.1429
Xanthid Crabs	2.590	1.4960	11.727	57.143	7.1429
Gastropods	2.241	0.6109	4.124	50.000	.
Polychaeta	2.041	0.5980	7.139	85.714	.
Engraulidae fry	1.862	1.4648	4.755	21.429	.
Qualipes quadripennis zoea	1.738	1.1829	7.617	42.857	.
Phoronida	1.604	1.4436	8.817	42.857	.
Pinnixa spp	1.370	0.7182	6.482	64.286	.
Hippolyte pleuracantha	1.322	1.2308	2.553	14.286	.
Bomantella dissimilis	1.028	0.8386	5.171	42.857	.
Pinnothetes spp	1.022	0.6234	2.759	28.571	.
Polychaeta	0.981	0.8431	2.660	21.429	.
All Bivalves	0.886	0.2578	2.121	57.143	.
Squilla Antilozoa	0.760	0.7263	2.938	28.571	.
Other givalves	0.758	0.2022	1.286	57.143	.
Emerita talpoida	0.683	0.4631	2.980	42.857	.
Euceramus praeformis	0.681	0.3391	2.588	50.000	.
Bivalve I	0.555	0.4795	3.425	50.000	.
Engraulidae	0.541	0.4711	2.417	35.714	.
Unidentifiable fish	0.520	.	0.520	7.143	.
Spisula solidissima	0.481	0.3893	0.671	14.286	.
Gobiidae	0.449	0.1596	0.609	14.286	.
Gobiosoma bosci	0.428	0.1669	0.764	28.571	.
Polychaeta	0.355	.	0.355	7.143	.
Callinectes sp megalopa	0.342	0.2172	0.776	21.429	.
Sciaenidae	0.315	0.2215	0.537	14.286	.
Pinnothetes zoea	0.303	0.1674	0.951	35.714	.
Lucifer Faxoni	0.273	.	0.273	7.143	.
Metamysidopsis	0.273	0.0850	0.732	57.143	.
Palaemonetes spp	0.252	0.0961	0.828	64.286	.
Nereidae	0.247	0.1247	0.849	42.857	.
Autolytus spp	0.242	.	0.242	7.143	.
Prionotus carolinus	0.189	.	0.189	7.143	.
Newerline ptilidium larva	0.162	0.0615	0.305	28.571	.
Neushonia crangonoides	0.129	0.1222	0.251	14.286	.
Ocyropsis sp zoea	0.118	0.0306	0.246	64.286	.
Bathidae egg	0.113	0.0339	0.231	21.429	.
Polychaeta	0.104	0.0496	0.194	14.286	.
Acetes caroliniae	0.094	.	0.094	7.143	.
Capitellidae	0.081	.	0.081	7.143	.
Polychaeta A	0.075	.	0.075	7.143	.
Polychaeta F	0.071	.	0.071	7.143	.
Pomatidae	.	.	.	.	.
Pomatium salatrix	.	.	.	.	.

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TYPE=3 SITE=19

NAME	MMNABUN	SEMABUN	MXMABUN	POCCUR	PCOVER
Penaeid shrimp	0.0640375	0.0062425	0.070300	14.2857	.
Bothidae	0.0632312	0.0238463	0.087077	14.2857	.
Bivalve B	0.0604400	.	0.060440	7.1429	.
Cynoglossidae	0.0578150	.	0.057815	7.1429	.
Cancer #2 zoea	0.0560800	.	0.056080	7.1429	.
Ogyridae ilicicola	0.0513275	0.0441025	0.095430	14.2857	.
Amodytidae	0.0505887	0.0466112	0.097200	14.2857	.
Amodytes hexapterus	0.0504617	0.0426503	0.135635	21.4286	.
Other Fish eggs	0.0458725	0.0206872	0.099690	28.5714	.
Libinia spp zoea	0.0389467	0.0194370	0.070080	21.4286	.
Gobiesocidae	0.0364750	0.0105821	0.063940	35.7143	.
Gobiosox strumosus	0.0363600	.	0.036360	7.1429	.
Squilla (tempus?) protozoea	0.0298075	0.0061250	0.035932	14.2857	.
Dissodactylus meiliatae zoea	0.0259233	0.0091625	0.036585	21.4286	.
Libinia dubia Megalopa	0.0162825	0.0015725	0.017855	14.2857	.
Atherinidae	0.0138975	.	0.013897	7.1429	.
Shrimp b	0.0117125	.	0.011712	7.1429	.
Megalopa A	0.0079350	.	0.007935	7.1429	.
Syngnathidae	0.0059925	.	0.005992	7.1429	.
Syngnathus fuscus	0.0055875	.	0.005587	7.1429	.
Hippocampus eratus	0.0035825	.	0.003582	7.1429	.
Brevoortia tyrannus					
Rissola marginata					

TYPE=3 SITE=11

NAME	MMNABUN	SEMNABUN	MMNABUN	POCCJR	PCDYER
Callinectes sp zoea	88.7420	58.6161	375.352	42.857	28.5714
Engraulidae egg	79.8056	59.9075	497.510	57.143	35.7143
Larvacea	58.3393	29.3606	310.220	71.429	50.0000
Crangon septempinnosa	15.1371	7.4267	70.892	85.714	28.5714
All Fish eggs	6.7144	3.6773	48.022	100.000	14.2857
Sciaenidae egg	6.4305	4.6639	48.009	71.429	7.1429
Other Fish Eggs	5.4571	3.8404	20.428	35.714	7.1429
Uca spp	4.1465	2.5141	15.371	50.000	14.2857
Engraulidae fry	3.2952	1.8028	6.485	21.429	.
Myxidopsis bigelovi	3.0420	2.9321	17.701	42.857	7.1429
Neomysis americana	3.0059	1.7962	8.108	35.714	.
Gastropods	2.8502	1.8640	19.194	71.429	7.1429
Cancer irroratus zoea	2.6285	1.1821	8.694	57.143	.
Quailpes quadripennis zoea	2.1116	1.1048	8.578	57.143	.
Lucifer Faxonii	1.9304	0.7902	5.243	42.857	.
Pagurid Crabs	1.3216	0.5716	6.187	71.429	.
Xanthid Crabs	1.1728	0.5553	3.755	50.000	.
Membras martinica	1.1007	.	1.101	7.143	.
Triglididae	1.0378	0.8298	1.868	14.286	.
Upogebia affinis	0.9400	0.5131	3.730	50.000	.
Phoronida	0.9163	0.8277	3.396	28.571	.
Emerita talpoida	0.7732	0.4116	2.785	42.857	.
Bommarilia dissimilis	0.7457	0.0325	0.778	14.286	.
Squilla Antilzoea	0.5851	0.2840	1.379	28.571	.
Polychaeta	0.5843	0.3110	1.488	28.571	.
Unidentifiable fish	0.5795	.	0.579	7.143	.
Pinnixa spp	0.5233	0.3299	2.162	42.857	.
Nemertine Pitidium larva	0.4871	0.2646	0.937	21.429	.
Bothidae egg	0.3844	0.2639	1.906	50.000	.
Polychaeta	0.3812	0.0998	0.966	78.571	.
Trachophores & Nectochaetes	0.3570	0.3110	1.019	21.429	.
Sciaenidae	0.3367	0.1505	0.637	21.429	.
Cynocion regalis	0.3090	0.1980	1.271	42.857	.
Euceramys praeelongus	0.3057	0.0499	0.356	14.286	.
Squilla tempusati protozoea	0.2961	.	0.296	7.143	.
Bivalve I	0.2754	0.1323	0.408	14.286	.
Etropus microstomus	0.2536	0.2233	0.700	21.429	.
Anchoa mitchelli	0.2325	.	0.248	7.143	.
Leleostomus xanthurus	0.2254	0.2090	0.441	14.286	.
Callinassa spp	0.2194	0.1108	0.415	21.429	.
Pinnotheres spp	0.2030	0.1061	0.587	35.714	.
All Bivalves	0.2007	0.1182	0.556	28.571	.
Other Bivalves	0.1960	0.1175	0.314	14.286	.
Cynoglossidae	0.1955	.	0.196	7.143	.
Symphurus playlusa	0.1797	0.1047	0.180	7.143	.
Atherinidae	0.1756	0.1756	0.375	21.429	.
Portunus sp zoea	0.1703	0.1565	0.640	28.571	.
Cancer sp megalopa	0.1687	0.0038	0.172	14.286	.
Pennaeid shrimp	0.1624	0.1491	0.312	14.286	.
Callinectes sp megalopa	0.1332	0.1250	0.258	14.286	.
Lepidopa websteri	0.1327	0.0574	0.148	50.000	.
Libinia dubia Megalopa	0.1155	0.1055	0.224	14.286	.
Palaeomonetes spp	0.1015	0.0474	0.232	28.571	.
Cancer #2 zoea	0.1015	0.0474	0.232	28.571	.
Polychaeta	0.1015	0.0474	0.232	28.571	.
Nereidae	0.1015	0.0474	0.232	28.571	.

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TYPE=3 SITE=11

NAME	MMNABUN	SENNABUN	MMNABUN	POCCJR	PCOVER
Dissodactylus mellitae zoea	0.0992725	.	0.099272	7.1429	.
Bothidae	0.0975350	.	0.097535	7.1429	.
Acetes caroliniae	0.0860625	.	0.086062	7.1429	.
Hippolyte pleuracantha	0.0770025	.	0.077002	7.1429	.
Naushonia crangonoides	0.0624475	0.0108775	0.073325	14.2857	.
Amodytidae	0.0482325	.	0.048292	7.1429	.
Gobiesocidae	0.0482925	.	0.048292	7.1429	.
Gobiosox strumosus	0.0447800	.	0.044780	7.1429	.
Portunus spinicarpus Megalopa	0.0433412	0.0199462	0.063287	14.2857	.
Opilioideae	0.0360257	0.0194718	0.148312	50.0000	.
Bothidae	0.0350950	.	0.035095	7.1429	.
Libinia emarginata Megalopa	0.0318525	.	0.031852	7.1429	.
Megalopa d	0.0313300	0.0223525	0.053682	14.2857	.
Stromateidae	0.0310225	0.0215350	0.052557	14.2857	.
Lophiidae	0.0309275	.	0.030927	7.1429	.
Pinnotheres zoea	0.0248100	.	0.024810	7.1429	.
Polychaeta	0.0193765	0.0072154	0.039292	35.7143	.
Autolytus spp	0.0165925	0.0032625	0.019855	14.2857	.
Libinia spp zoea	0.0140900	0.0038982	0.019207	21.4286	.
Bleniidae	0.0099275	.	0.009927	7.1429	.
Fish - unknown	0.0091800	.	0.009180	7.1429	.
Anadara spp	0.0089800	.	0.008980	7.1429	.
Cancellaria reticulata		.			.

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SAS

TYPE=3 SITE=12

NAME	MMNABUN	SEMABUN	MXNABUN	POCCJR	PCOVER
Engraulidae egg	23.1668	8.2268	67.5314	57.1429	35.7143
Other Fish Eggs	17.6375	15.0545	62.4404	28.5714	7.1429
Larvacea	9.2943	5.6329	52.4468	78.5714	14.2857
All Fish eggs	6.8622	5.7386	63.6410	78.5714	7.1429
Callinectes sp zoea	4.7325	2.2843	14.1584	50.0000	14.2857
Callinassa spp	4.4489	4.3634	8.6123	14.2857	
Pagurid Crabs	4.3906	3.3856	17.5716	35.7143	7.1429
Polychaete F	3.9638		3.9638	7.1429	
Euceramus praelongus	2.8385	2.4328	7.6813	21.4286	
Crangon septemspinosa	2.2786	0.8478	9.3598	85.7143	
Libinia spp zoea	1.4358	1.4078	2.8435	14.2857	
Engraulidae	1.3021	0.5827	2.0166	21.4286	
Anchoa mitchelli	1.1719	0.4691	1.8256	21.4286	
Neomysis americana	1.1137	1.0046	5.1253	35.7143	
Gastropods	1.0112	0.8358	5.9564	50.0000	
Pinnixa spp	0.8726	0.6954	3.6422	35.7143	
Emerita talpoida	0.7534		0.7534	7.1429	
Polychaeta Capitellidae	0.7060	0.3038	1.8835	35.7143	
Upogebia affinis	0.6611	0.4146	1.4344	21.4286	
Bomanteilla dissimilis	0.6171	0.3329	2.6532	57.1429	
Polychaeta Spionidae	0.6037	0.1919	1.3346	57.1429	
Sciaenidae egg	0.4951		0.4951	7.1429	
Ammodytes hexapterus	0.4830	0.2849	1.1408	28.5714	
Squilla Antilozoa	0.4771	0.4690	0.9461	14.2857	
Polychaeta Magelonidae	0.3564	0.2482	0.8357	21.4286	
Engraulidae fry	0.3438	0.2816	1.1865	28.5714	
Polychaeta Terebellidae spp	0.3047		0.3047	7.1429	
Bivalve I	0.2520		0.2520	7.1429	
Polychaete A	0.2512	0.1276	0.9663	50.0000	
Xanthid Crabs	0.2108	0.1148	0.6498	35.7143	
Cancer irroratus zoea	0.1915		0.1915	7.1429	
Mysid	0.1776	0.1056	0.6607	42.8571	
Lucifer Faxoni	0.1706	0.0894	0.4342	28.5714	
Phoronida	0.1600	0.0836	0.4892	42.8571	
Mysidopsis bigelowi	0.1323		0.1323	7.1429	
Pinnotheres spp	0.1186	0.0682	0.5769	57.1429	
Uca spp	0.1128	0.0570	0.2699	35.7143	
Ovalipes quadripennis zoea	0.0589	0.0284	0.1103	21.4286	
Other Bivalves	0.0589	0.0284	0.1103	21.4286	
All Bivalves	0.0560		0.0560	7.1429	
Gobiosoma strumosus	0.0467	0.0422	0.0890	14.2857	
Polychaeta Nereidae	0.0390	0.0191	0.0582	14.2857	
Callinectes sp megalopa	0.0361	0.0173	0.0535	14.2857	
Bothidae Etropus microstomus	0.0338		0.0338	7.1429	
Dissodactylus melittae zoea	0.0270	0.0064	0.0640	57.1429	
Palaeomonetes spp	0.0261	0.0088	0.0467	28.5714	
Bothidae egg	0.0242	0.0196	0.0438	14.2857	
Megalopa A	0.0242		0.0242	7.1429	
Polychaeta Trochophores & Nectochaetes	0.0194		0.0194	7.1429	
Ogyrides limicola	0.0194	0.0074	0.0268	14.2857	
Sciaenidae Cynoscion regalis	0.0187		0.0187	7.1429	
Nemertine Pilidium larva	0.0174		0.0247	21.4286	
Bleniidae Hypsoblennius hentzi	0.0169	0.0001	0.0171	14.2857	
Polychaeta Autolytus spp	0.0154		0.0154	7.1429	
Bothidae Scopelthalmus aquasus					

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TYPE=3 SITE=12

NAME	MNMNABUN	SENNABUN	MYMNABUN	POCCJR	PCOVER
Anthriniidae	0.0148775	.	0.0148775	7.1429	.
Membras martinica	0.013375	0.00254030	0.0183575	21.4286	.
Hippolyte pleuracantha	0.0108425	0.00530000	0.0161425	14.2857	.
Squilla (empusa?) protozoa	0.0101500	.	0.0101500	7.1429	.
Lepidopa websteri	0.0072475	0.00220750	0.0094550	14.2857	.
Atherinidae	0.0050400	.	0.0050400	7.1429	.
Gobiidae	0.0046675	.	0.0046675	7.1429	.
Penaeid shrimp					

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SAS

TYPE=3 SITE=13

NAME	MMNAJUN	SEMNABUN	MXMNABUN	POCCJR	PCOVER
Engraulidae egg	45.8681	20.9279	143.378	46.1538	30.7692
Crangon septemspinosa	12.7353	5.3654	60.756	92.3077	30.7692
Larvacea	8.0376	5.8188	42.527	53.8452	7.6923
Pagurid Crabs	6.4408	6.1266	43.186	53.8462	7.6923
Callinectes sp zoea	4.8483	1.8142	11.486	46.1538	7.6923
Engraulidae fry	2.8724	1.3555	4.228	15.3846	.
Gastropods	2.6554	1.7295	12.813	53.8462	7.6923
Neomysis americana	2.2937	1.7713	9.322	38.4615	.
Eucarum praelongus	1.5486	1.3860	9.832	53.8462	.
Uca spp	1.5320	1.3031	8.041	46.1538	.
Squilla Antiozea	1.3869	1.1228	3.611	23.0759	.
Xanthid Crabs	1.2764	0.6059	4.185	61.5385	.
Sciaenidae egg	1.2734	0.6395	4.760	53.8462	.
Anchoa mitchelli	1.1979	1.1170	3.430	23.0759	.
Polychaeta	1.1244	0.5926	2.177	23.0759	.
Terebellidae spp	1.0219	0.9551	3.887	30.7692	.
Other Bivalves	1.0219	0.9551	3.887	30.7692	.
All Bivalves	0.9123	0.5749	3.604	46.1538	.
Emerita talpoida	0.8967	0.4583	3.376	53.8462	.
Pinnixa spp	0.8593	0.3664	2.587	53.8452	.
Polychaeta	0.8367	0.4317	1.268	15.3846	.
Bivalve I	0.8026	0.4361	3.445	61.5385	.
Upogebia affinis	0.7674	0.3838	1.171	15.3846	.
Bomaniella dissimilis	0.7701	0.4033	4.760	92.3077	.
All Fishes	0.7246	0.5651	3.520	46.1538	.
Ovalipes quadripennis zoea	0.4710	0.3602	0.831	15.3846	.
Polychaeta	0.3767	0.2224	1.334	53.8462	.
Magelonidae	0.3500	0.1756	1.037	38.4615	.
Pinnotheres spp	0.3159	0.2999	0.899	15.3846	.
Lucifer Faxoni	0.3124	0.1684	0.899	46.1538	.
Callinassa spp	0.2975	0.1221	0.582	30.7692	.
Mysidopsis bigelowi	0.2985	0.2464	0.505	15.3846	.
Gobiidae	0.2541	0.2190	0.473	15.3846	.
Sciaenidae	0.2527	0.1984	1.229	46.1538	.
Cynocion regalis	0.2369	0.0948	0.730	61.5385	.
Autolytus spp	0.2307	0.1063	0.679	53.8452	.
Palaeomonetes spp	0.1523	0.1221	0.396	23.0759	.
Cancer irroratus zoea	0.1380	0.0981	0.236	15.3846	.
Amodytes hexapterus	0.0725	0.0573	0.150	15.3846	.
Libinia spp zoea	0.0720	0.0166	0.111	30.7692	.
Polychaeta	0.0720	0.0305	0.161	30.7692	.
Trochophores & Nectochaetes	0.0690	0.0604	0.129	15.3846	.
Nereidae	0.0595	.	0.059	7.6923	.
Penaeid shrimp	0.0585	0.0292	0.088	15.3846	.
Nemertine Piliidium larva	0.0519	.	0.052	7.6923	.
Polychaeta	0.0511	.	0.051	7.6923	.
Capitellidae	0.0504	0.0240	0.146	38.4615	.
Uyrrhus illecebra	0.0284	0.0135	0.053	15.3846	.
Pinnotheres zoea	0.0269	.	0.028	7.6923	.
Bienidae	0.0256	0.0189	0.027	7.6923	.
Hypsooblennius hentzi	0.0239	.	0.045	15.3846	.
Leptodopa weusteri	0.0239	.	0.024	7.6923	.
Ocyropsis sp zoea	0.0239	.	0.024	7.6923	.
Boithidae	0.0239	.	0.024	7.6923	.
Scophthalmus aquasus	0.0239	.	0.024	7.6923	.
Dissoedactylus bellidae zoea	0.0239	.	0.024	7.6923	.
Lophidae	0.0239	.	0.024	7.6923	.
Lophius americana	0.0239	.	0.024	7.6923	.
Acetes caroliniae	0.0239	0.0041	0.028	15.3846	.

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SAS

TYPE=3 SITE=13

NAME	MNNABUN	SENNABUN	MXNNABUN	POCCJR	PCOVER
Polychaeta	0.0206625	.	0.0206625	7.6923	.
Clupeidae	0.0198975	.	0.0198975	7.6923	.
Bothidae	0.0192000	.	0.0192000	7.6923	.
Atherinidae	0.0162500	0.00510030	0.0276150	30.7692	.
Libinia dubia	0.0155925	.	0.0155925	7.6923	.
Other Fish eggs	0.0132500	0.00076571	0.0142850	23.0759	.
Alpheidae	0.0130800	.	0.0130800	7.6923	.
Palaeomonidae	0.0093425	.	0.0093425	7.6923	.
Callinectes sp	0.0083962	0.00330875	0.0117050	15.3846	.
Metamysidopsis	0.0082500	.	0.0082500	7.6923	.
Syngnathidae	0.0071187	0.00129125	0.0084100	15.3846	.
Squilla (empusa?)	0.0044050	.	0.0064050	7.6923	.
Hippolyte pleuracantha	0.0047475	.	0.0047475	7.6923	.

TYPE=3 SITE=20

NAME	MMNABUN	SEMABUN	MXMABUN	POCCJR	PCOVER
Engraulidae egg	74.4136	34.7401	279.222	88.889	66.6667
Callinectes sp zoea	42.3037	16.8642	105.736	77.778	55.5556
Crangon septemspinosa	29.9550	15.9749	125.610	100.000	44.4444
Larvacea	26.6733	9.7563	64.351	88.889	44.4444
All Fisheggs	11.2565	3.8662	27.281	100.000	44.4444
Gastropods	10.3100	7.6762	55.311	77.778	22.2222
Nemertine Pilidium larva	7.8738	.	7.874	11.111	.
Sciaenidae egg	7.7857	3.0821	26.473	88.889	22.2222
Other Fish Eggs	7.7156	3.8199	19.335	55.556	22.2222
Pagurid Crabs	5.3801	3.4436	31.887	100.000	11.1111
All Bivalves	4.3939	4.1606	12.711	33.333	11.1111
Other Bivalves	4.3592	4.1771	12.711	33.333	11.1111
Blvalve I	4.2258	.	4.226	11.111	.
Engraulidae fry	3.8799	2.1764	7.984	44.444	.
Ovalipes zoea	3.3955	.	3.395	11.111	.
Lucifer Faxoni	2.9804	2.6469	10.912	44.444	11.1111
Upogebia affinis	2.8220	1.3290	7.797	55.556	.
Polychaeta	2.2059	1.7960	7.583	44.444	.
Terebellidae spp	2.0310	1.1805	7.720	66.667	.
Uca spp	1.9533	1.0929	5.101	44.444	.
Cancer irroratus zoea	1.8432	1.3017	5.615	44.444	.
Euceramus praelongus	1.7837	1.0753	7.775	77.778	.
Ovalipes quadripennis zoea	1.7080	0.2795	1.987	22.222	.
Libinia spp zoea	1.5327	0.6204	3.449	55.556	.
Xanthid Crabs	1.1533	0.8428	4.442	55.556	.
Squillid Antizoea	1.1043	0.9924	4.078	44.444	.
Mysidopsis olivetowi	0.9927	.	0.993	11.111	.
Mysid	0.9279	0.3272	2.718	100.000	.
Polychaeta	0.7282	0.5705	1.868	33.333	.
Spionidae	0.6835	0.2970	1.386	44.444	.
Bowmanella dissimilis	0.5457	0.0924	0.652	33.333	.
Pinnixa spp	0.5028	.	0.503	11.111	.
Pinnotheres spp	0.4907	0.2040	1.405	66.667	.
Libinia dubia Megalopa	0.4849	.	0.485	11.111	.
Emerita talpoida	0.4553	0.3850	1.994	55.556	.
Dissodactylus mellitae zoea	0.4450	0.4217	0.867	22.222	.
Phoronida	0.4275	.	0.428	11.111	.
Nereidae	0.4020	0.3165	0.719	22.222	.
Polychaeta	0.3785	.	0.379	11.111	.
Rissola marginata	0.3559	0.2867	0.643	22.222	.
Cynocion regalis	0.3063	0.1424	0.686	55.556	.
Triglidiae	0.2927	0.2109	0.919	44.444	.
Callinassa spp	0.2910	0.0846	0.569	66.667	.
Anchoa mitchelli	0.2410	0.2760	0.561	22.222	.
Palaemonetes spp	0.2088	0.0520	0.261	22.222	.
Naushonia crangonoides	0.2063	0.1952	0.402	22.222	.
Callinectes sp megalopa	0.1872	.	0.187	11.111	.
Acetes caroliniae	0.1803	0.0654	0.246	22.222	.
Bohridae	0.1759	.	0.176	11.111	.
Etropus microstomus	0.1640	.	0.164	11.111	.
Neomysis americana	0.1315	0.0480	0.244	55.556	.
Shrimp	0.1311	0.0070	0.138	22.222	.
Ogyrides limicola	0.1305	0.0746	0.205	22.222	.
Hypsiolenius hentzi	0.1133	.	0.119	11.111	.
Polychaeta					
Trochophores & Vectocnaetes					
Cancer sp megalopa					
Polychaete f					

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SAS

TYPE=3 SITE=20

NAME	MNMNABUN	SEMNAABUN	MXMNAABUN	POCCJR	PCOVER
Bothidae egg	0.111182	0.0615627	0.264700	44.4444	.
Bivalve B	0.104045	.	0.104045	11.1111	.
Polychaeta	0.103295	.	0.103295	11.1111	.
Capitellidae	0.098472	0.0787075	0.177180	22.2222	.
Magelonidae	0.079257	0.0435918	0.162632	33.3333	.
Bothidae	0.070215	0.0060500	0.076265	22.2222	.
Portunus spinicarpus	0.057270	.	0.057270	11.1111	.
Megalopa	0.056985	0.0282625	0.085247	22.2222	.
Cynoglossidae	0.052104	0.0141305	0.075720	33.3333	.
Squilla (empusa?) protozoa	0.037435	0.0317175	0.069152	22.2222	.
Planothères zoea	0.037081	0.0314677	0.100005	33.3333	.
Polychaeta	0.027297	.	0.027297	11.1111	.
Megalopa A	0.022512	.	0.022512	11.1111	.
Clupeidae	0.014988	0.0041037	0.020325	33.3333	.
Lepidopa websteri	0.010805	.	0.010805	11.1111	.
Ocyropsae sp zoea	0.008580	.	0.008580	11.1111	.
Polychaeta	0.008385	.	0.008385	11.1111	.
Lophiidae	0.007455	.	0.007455	11.1111	.
Alpheidae heterochaelis	0.007455	.	0.007455	11.1111	.
Synbranchidae	0.007104	0.0014763	0.008580	22.2222	.
Amphipoda	0.006865	.	0.006865	11.1111	.
Anthriniidae	0.005627	.	0.005627	11.1111	.
Fish - unknown	.	.	.	.	.

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SAS

TYPE=3 SITE=21

NAME	MMNABUN	SEMNABUN	MXMNABUN	POCCUR	PCOVER
Larvacea	81.6500	49.4779	364.588	100.000	50.0000
Callinectes sp zoea	65.4075	31.6971	182.643	75.000	50.0000
Engaulidae egg	56.5384	23.0484	166.729	87.500	62.5000
Crangon septemspinosa	26.4070	14.1104	90.284	75.000	37.5000
Cancer irroratus zoea	21.2674	20.2822	122.669	75.000	12.5000
Gastropods	7.7802	2.9869	17.416	75.000	25.0000
All Fishes	7.6524	2.6207	18.183	100.000	37.5000
Sciaenidae egg	6.8100	2.6595	18.038	100.000	37.5000
Sesarma sp zoea	6.0664	.	6.066	12.500	.
Engaulidae fry	5.5183	3.3394	14.484	50.000	12.5000
Nemertine Pilidium larva	4.0252	4.025	4.025	12.500	.
Uca spp	3.9213	2.7926	17.409	75.000	12.5000
Pagurid Crabs	2.5312	1.1257	8.874	87.500	.
Other Fish Eggs	2.0525	0.7739	3.506	37.500	.
Ovalipes quadripennis zoea	2.0438	1.0675	7.044	75.000	.
Lucifer Faxoni	1.9216	1.0845	4.631	50.000	.
Polychaeta	1.1245	0.4903	4.275	100.000	.
Euceramus praelongus	1.0922	0.7356	3.906	62.500	.
Xanthid Crabs	0.9173	0.6601	4.203	75.000	.
Upogebia affinis	0.6750	0.2441	1.641	75.000	.
Polychaeta	0.5944	0.2337	1.197	62.500	.
Bowmanella dissimilis	0.5352	0.2388	0.838	37.500	.
Polychaete F	0.5211	.	0.521	12.500	.
Sciaenidae	0.4736	0.2371	0.711	25.000	.
Squilla Antiozea	0.4472	0.2493	1.192	50.000	.
Polychaeta	0.4389	0.4298	1.298	37.500	.
Emerita talpoida	0.3960	0.1965	1.300	75.000	.
Neomysis americana	0.3875	.	0.388	12.500	.
Bothidae	0.3792	.	0.378	12.500	.
Squilla (empusa?) protozoa	0.3620	0.2598	1.380	62.500	.
Engaulidae	0.3577	0.2872	1.214	50.000	.
Bothidae	0.3041	.	0.304	12.500	.
Pinnixa spp	0.3035	0.1322	0.789	62.500	.
Lepidopa websteri	0.3025	0.1574	0.460	25.000	.
Phoronida	0.2759	0.2191	0.714	37.500	.
Palaemonidae palaemoninae	0.2634	.	0.263	12.500	.
Hippolyte pleuracantha	0.2537	.	0.254	12.500	.
Triglyidae	0.2426	0.0159	0.258	25.000	.
Palaemonetes spp	0.2358	0.0259	0.284	62.500	.
Bothidae	0.1987	0.0707	0.422	62.500	.
Bothidae egg	0.1939	0.1044	0.194	37.500	.
Myxidopsis bijelowi	0.1652	0.0897	0.421	50.000	.
Gobiosuciidae	0.1652	.	0.165	12.500	.
Atherinidae	0.1590	0.0729	0.159	12.500	.
Libinia spp zoea	0.1225	.	0.268	37.500	.
Cancer sp megalopa	0.1223	.	0.122	12.500	.
Callinectes sp megalopa	0.1147	0.1071	0.222	25.000	.
Ovalipes quadripennis megalopa	0.1014	.	0.101	12.500	.
Penaeid shrimp	0.0957	0.0241	0.168	50.000	.
Gallianassa spp	0.0933	0.0766	0.246	37.500	.
Polychaeta	0.0867	0.0282	0.149	50.000	.
Naushonia crangonoides	0.0824	0.0101	0.093	25.000	.
Lupinidae	0.0707	0.0613	0.132	25.000	.
Other Bivalves	0.0593	0.0612	0.131	25.000	.

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SAS

TYPE=3 SITE=21

NAME	MNMABUN	SEMNABUN	MXMNABUN	POCCJR	PCOVER
All Bivalves	0.0606483	0.0363962	0.130510	37.5000	.
Stromateidae	0.0454000	.	0.045400	12.5000	.
Bivalve 8	0.0434250	.	0.043425	12.5000	.
Polychaeta	0.0327525	.	0.032752	12.5000	.
Bivalve I	0.0322792	0.0101092	0.043425	37.5000	.
Megalopa I	0.0168125	.	0.016812	12.5000	.
Megalopa A	0.0096350	.	0.009635	12.5000	.
Portunus spinicarpus	0.0090275	.	0.009027	12.5000	.
Sciaenidae	0.0084475	.	0.008447	12.5000	.
Libinia dubia	0.0069512	0.0024462	0.009397	25.0000	.
Polychaeta	0.0059450	.	0.005945	12.5000	.
Barnacle nauplius	0.0056950	.	0.005695	12.5000	.
Ophidae					
Rissolia marginata					

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SAS

TYPE=3 SITE=22

NAME	MMNABUN	SEMNABUN	MXMNABUN	POCCJR	PCOVER
Engraulidae egg	135.024	59.9406	501.720	100.030	77.7778
Larvae	67.521	39.7267	351.255	100.030	44.4444
Callinectes sp zoea	25.103	10.1584	77.773	77.778	55.5556
All Fish eggs	9.871	5.1378	45.347	100.030	22.2222
Sciaenidae egg	9.336	5.1502	45.111	100.030	22.2222
Grangon septemspinosa	9.112	4.0716	31.341	88.889	22.2222
Engraulidae fry	4.236	2.8955	9.827	33.333	
Lucifer faxoni	3.988	3.8017	15.633	44.444	11.1111
Cancer irroratus zoea	3.756	2.3311	10.823	55.556	11.1111
Pagurid Crabs	2.636	0.9842	5.501	77.778	
Sesarma sp zoea	1.669		1.669	11.111	
Ovalipes quadripennis zoea	1.415	0.6592	4.987	77.778	
Nemertine Pilidium larva	1.380		1.380	11.111	
Gastropods	1.223	0.6314	4.727	77.778	
Uca spp	0.883	0.3434	2.687	88.889	
Bomaniella dissimilis	0.839	0.4904	1.329	22.222	
Polychaeta	0.807	0.2320	1.269	33.333	
Terebellidae spp	0.716	0.6970	2.110	33.333	
All Bivalves	0.705	0.3953	2.444	66.667	
Upogebia affinis	0.673	0.4651	1.981	44.444	
Other Fish Eggs	0.667	0.6333	1.301	22.222	
Bivalve B	0.650		0.650	11.111	
Dryidides limicola	0.543	0.2400	0.783	22.222	
Squilla (tempusa?) protozoa	0.511	0.4844	0.996	22.222	
Engraulidae	0.485	0.3638	2.291	66.667	
Anchoa mitchelli	0.419	0.1947	0.635	33.333	
Xanthid Crabs	0.406	0.4026	0.809	22.222	
Pinnotheres spp	0.387		0.387	11.111	
Other Bivalves	0.385	0.3430	0.729	22.222	
Bothidae	0.363	0.2959	0.659	22.222	
Paralichthys dentatus	0.335	0.1014	0.695	66.667	
Penaeid shrimp	0.314		0.314	11.111	
Sciaenidae	0.312	0.1219	1.103	100.000	
Emerita talpoida	0.280	0.0719	0.352	22.222	
Cynocion regalis	0.249	0.2009	0.648	33.333	
Myxidopsis biyefowi	0.243	0.1697	0.751	44.444	
Polychaeta	0.228	0.1394	0.776	55.556	
Triglidae	0.220	0.1994	0.419	22.222	
Prionotus carolinus	0.154	0.1107	0.260	22.222	
Callinectes sp megalopa	0.144		0.144	11.111	
Euceraus praetongus	0.141		0.141	11.111	
Squilla Antiozea	0.120	0.0717	0.267	33.333	
Naushonia crangonoides	0.116		0.116	44.444	
Megalopa A	0.109		0.109	33.333	
Polychaeta	0.093	0.0883	0.386	44.444	
Syllides verilli	0.092	0.0752	0.244	33.333	
Libinia spp zoea	0.085	0.0283	0.110	22.222	
Rissola marginata	0.068	0.0421	0.110	22.222	
Callinassa spp	0.066	0.0257	0.194	77.778	
Bothidae egg	0.061		0.061	11.111	
Blennidae	0.051	0.0239	0.127	55.556	
Hypsooblennius hantzi	0.047	0.0335	0.121	33.333	
Hippolyte pleuracantha	0.032	0.0472	0.147	33.333	
Neomysis americana	0.026				
Phoronida	0.025				
Polychaeta	0.023				
Nereidae	0.021				
Palaeomonetes spp	0.019				
Polychaeta	0.017				
Trochophores & Nectochaetes	0.015				
Pinnixa spp	0.014				
Butidae	0.013				
Etrupus microstomus	0.012				
Cancer sp megalopa	0.011				

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SAS

TYPE=3 SITE=22

NAME	MNMABUN	SEMABUN	MXMABUN	POCCUR	PCOVER
Polychaeta	0.0508412	0.0457038	0.0965450	22.2222	.
Portunus spinicarpus Megalopa	0.0449250	.	0.0449250	11.1111	.
Polychaeta F	0.0404875	.	0.0404875	11.1111	.
Ovalipes quadripennis megalopa	0.0327200	.	0.0327200	11.1111	.
Polychaeta	0.0305175	.	0.0305175	11.1111	.
Synagmidae	0.0294225	.	0.0294225	11.1111	.
Bothidae	0.0216017	0.0079031	0.0367450	33.3333	.
Polychaeta	0.0203950	.	0.0203950	11.1111	.
Gobiesocidae	0.0183287	0.0087162	0.0270450	22.2222	.
Bivalve I	0.0179525	.	0.0179525	11.1111	.
Cynoglossidae	0.0163037	0.0008962	0.0172000	22.2222	.
Pinnotheres zoea	0.0151575	.	0.0151575	11.1111	.
Libinia dubia Megalopa	0.0132700	.	0.0132700	11.1111	.
Lophidae	0.0103287	0.0027812	0.0131100	22.2222	.
Stomatidae	0.0077487	0.0018637	0.0096125	22.2222	.
Synagmidae	0.0077025	.	0.0077025	11.1111	.
Ocypode sp zoea	0.0040575	.	0.0040575	11.1111	.

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SAS

TYPE=3 SITE=23

NAME	MXNABUN	SENNABUN	MXNABUN	POCCUR	PCOVER
Engraulidae egg	149.019	79.0800	502.136	85.714	71.4286
Laracea	23.671	17.4809	127.218	100.000	28.5714
Crangon septemspinosa	7.085	3.7044	27.350	100.000	28.5714
Callinectes sp zoea	6.955	3.2753	19.309	71.429	14.2857
Other Bivalves	5.903	5.8862	11.790	28.571	14.2857
All Bivalves	5.903	5.8862	11.790	28.571	14.2857
All Fishes	5.540	3.2630	24.497	100.000	14.2857
Sciaenidae egg	5.064	3.2960	24.422	100.000	14.2857
Phoronida	3.617	3.4827	10.562	42.857	14.2857
Emerita talpoida	2.540	1.2112	7.176	71.429	.
Xanthid Crabs	2.365	0.6491	4.232	57.143	.
Pagurid Crabs	1.838	0.8817	5.003	71.429	.
Engraulidae fry	1.779	0.8822	2.681	42.857	.
Callinassa spp	1.678	1.5705	4.819	42.857	.
Bowmanella dissimilis	1.614	1.4439	4.498	42.857	.
Upoebia affinis	1.384	0.6636	3.933	71.429	.
Euceraus praelongus	1.350	0.7538	4.302	71.429	.
Bothidae egg	1.347	1.3254	2.672	28.571	.
Polychaeta	1.265	0.8025	2.845	42.857	.
Capitellidae	1.197	0.6165	3.465	71.429	.
Polychaeta	1.136	0.4691	2.677	71.429	.
Pinnixa spp	0.623	0.2375	1.008	42.857	.
Engraulidae	0.510	0.2167	1.194	71.429	.
Uca spp	0.459	0.1136	0.572	28.571	.
Mysid	0.447	0.2999	1.041	42.857	.
Cancer irroratus zoea	0.447	0.2999	1.041	42.857	.
Gastropods	0.383	0.2129	1.301	85.714	.
Nemertine Ptilidium larva	0.380	0.3710	0.751	28.571	.
Ovalipes quadripennis zoea	0.359	0.1227	0.770	71.429	.
Polychaete A	0.356	.	0.356	14.286	.
Polychaeta	0.354	0.1182	0.555	42.857	.
Bothidae	0.341	0.3065	0.647	28.571	.
Lucifer Faxoni	0.318	0.2833	1.167	57.143	.
Squillid Antizoea	0.298	0.2580	0.813	42.857	.
Polychaete F	0.289	0.2652	0.555	28.571	.
Palaeomonetes spp	0.265	0.1382	0.601	57.143	.
Libinia spp zoea	0.236	0.1274	0.364	28.571	.
Sciaenidae	0.232	0.1010	0.426	42.857	.
Neomysis americana	0.227	0.1216	0.348	28.571	.
Polychaeta	0.216	0.1973	0.611	42.857	.
Other Fish Eggs	0.214	0.1706	0.553	42.857	.
Ophiidae	0.200	.	0.206	14.286	.
Pennaeid shrimp	0.165	0.1560	0.321	28.571	.
Mysidopsis bigelowi	0.149	0.1221	0.393	42.857	.
Bivalve I	0.101	0.0793	0.180	28.571	.
Ogyrids Ilaticola	0.086	.	0.086	14.286	.
Polychaeta	0.075	0.0341	0.085	14.286	.
Pinnotheres spp	0.077	0.0341	0.163	57.143	.
Hippolyte pleuracantha	0.066	.	0.066	14.286	.
Callinectes sp megalopa	0.054	0.0219	0.081	28.571	.
Lepidopa websteri	0.037	.	0.037	14.286	.
Polychaeta	0.032	0.0228	0.054	28.571	.
Portunus spinicarpus megalopa	0.023	.	0.028	14.286	.
Stomatelidae	0.018	0.0110	0.039	28.571	.
Oleniidae	0.027	0.0203	0.048	28.571	.
Hypsoleptus nentzi					

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SAS

TYPE=3 SITE=23

NAME	MMNABUN	SENNABUN	MMNABUN	POCCUR	PCOVER
Ovalipes quadripennis megalopa	0.0266550	.	0.0266550	14.2857	.
Naushonia crangonoides	0.0260962	0.0170362	0.0431325	28.5714	.
Polychaeta Nereis succinea Heteronereid	0.0241625	.	0.0241625	14.2857	.
Squilla (empusa?) protozoa	0.0216542	0.0129456	0.0474400	42.8571	.
Ocyropsis sp zoea	0.0187325	.	0.0187325	14.2857	.
Clupeidae	0.0181200	.	0.0181200	14.2857	.
Leptochela serratorbita	0.0172375	.	0.0172375	14.2857	.
Atherinidae Menidia menidia	0.0165867	0.0062017	0.0271825	42.8571	.
Libinia dubia Megalopa	0.0160075	.	0.0160075	14.2857	.
Dissodactylus megalopa zoea	0.0158950	0.0006725	0.0165675	28.5714	.
Polychaeta Autolytus spp	0.0151375	0.0025869	0.0195750	42.8571	.
Cancer sp megalopa	0.0120825	.	0.0120825	14.2857	.
Lophidae Lophius americanus	0.0086175	.	0.0086175	14.2857	.
Megalopa A	0.0053375	.	0.0053375	14.2857	.

TYPE=2

NAME	MMNABUN	SENNABUN	MXNABUN	PCOCCUR	PCOVER	FILTER2
Engraulidae egg	48.5262	8.07841	412.359	65.0744	39.5825	9
Callinectes sp zoea	21.2159	6.62138	354.425	56.3492	13.4921	9
Other Fish Eggs	9.2614	4.66560	219.318	38.8889	3.4683	4
All Fishes	7.4808	2.32481	220.465	75.3968	6.3492	7
Callinectes sp megalopa	5.0110	4.52023	152.627	28.5714	1.5873	2
Larvae	3.6148	1.18657	54.636	54.7619	5.5556	4
Sciaenidae egg	3.1213	1.70348	100.379	65.0794	1.5873	2
Crangon septemspinosa	1.8606	1.17149	35.458	65.0744	1.5873	2
Cancer irroratus zoea	0.8737	0.50469	18.690	39.6825	1.5873	2
Cancer sp megalopa	0.7358	0.31954	6.040	15.0794	.	.
Nemertine Plidium larva	0.5647	0.36728	4.059	9.5238	.	.
Squilla Antiozea	0.5538	0.25199	9.719	34.1270	.	.
Uca spp	0.5159	0.31306	19.970	50.7937	0.7937	1
Lucifer Faxoni	0.3988	0.14715	5.965	38.6889	.	.
Palaeomonetes spp	0.3024	0.13782	5.085	29.3651	.	.
Bothidae spp	0.2788	.	0.279	0.7937	.	.
Engraulidae fry	0.2463	0.06817	2.306	27.7778	.	.
Upogebia affinis	0.1763	0.04722	1.935	35.7143	.	.
Clupeidae	0.1686	0.15023	0.768	3.9683	.	.
Brevoortia tyrannus	0.1490	0.14351	0.436	2.3810	.	.
Stomatidae	0.1490	0.14353	0.436	2.3810	.	.
Gobiosoma strumosus	0.1259	0.03564	0.963	28.5714	.	.
Gobiosoma martinica	0.1237	0.04148	1.803	36.5079	.	.
Uvalipes quadrupennis zoea	0.1180	0.02894	0.863	34.9206	.	.
Xanthid Crabs	0.1043	0.05098	2.487	44.4444	.	.
Polychaeta	0.1028	0.03824	0.791	26.9841	.	.
Gastropods	0.0982	0.06739	0.698	7.9365	.	.
Penaeid shrimp	0.0785	0.03802	0.837	19.0476	.	.
Squilla (tempus?) protozoa	0.0785	0.04624	1.017	17.4603	.	.
Hyposbiennius hentzi	0.0617	0.02218	0.693	30.9524	.	.
Atherinidae	0.0604	0.03345	0.288	6.3492	.	.
Megalopa A	0.0560	.	0.056	0.7937	.	.
Mysid	0.0537	0.04409	0.450	7.9365	.	.
Other Bivalves	0.0497	0.03659	0.450	9.5238	.	.
All Bivalves	0.0496	0.03518	0.224	4.7619	.	.
Caprellidae	0.0480	0.01586	0.188	11.1111	.	.
Terebellidae spp	0.0442	0.01433	0.190	12.6984	.	.
Ocyropsis sp zoea	0.0425	0.01469	0.236	16.6667	.	.
Emerita talpoida	0.0403	0.01078	0.153	19.0476	.	.
Pinnixa spp	0.0402	0.01015	0.175	18.2540	.	.
Bothidae egg	0.0393	.	0.039	0.7937	.	.
Alpheus heterochaelis	0.0363	.	0.036	0.7937	.	.
Sesarma sp zoea	0.0351	.	0.035	0.7937	.	.
Polychaeta	0.0329	0.01602	0.035	0.7937	.	.
Mageloniidae	0.0322	0.00936	0.249	11.9048	.	.
Anchoa mitchelli	0.0307	0.01345	0.299	28.5714	.	.
Pagurid Crabs	0.0296	0.01739	0.070	3.9683	.	.
Trachophores & Nectochaetes	0.0224	0.00853	0.443	20.6349	.	.
Autolytus spp	0.0224	0.00694	0.104	11.9048	.	.
Mytilopsis bigelovi	0.0220	0.01059	0.122	9.5238	.	.
Gastropods	0.0215	0.00443	0.050	12.6984	.	.
Urophysis regius	0.0214	0.00702	0.077	10.3175	.	.
Portunus spinicarpus Megalopa	0.0205	0.01301	0.110	6.3492	.	.
Callinectes spp	0.0201	0.01490	0.050	2.3810	.	.
Sciaenidae						
Lynceon regalis						
Bivalve						

TYPE=2

NAME	MHNNABUN	SENNABUN	MXNNABUN	PCOCUR	PCOVER	FILTER2
Polychaeta	0.0191170	0.00538494	0.0543050	8.7302	.	.
Nereidae	0.0173762	0.00461375	0.0219900	1.5873	.	.
Neosonia crangonoides	0.0156272	0.00812969	0.0709650	6.3492	.	.
Amoebidae	0.0146687	0.00176125	0.0164300	1.5873	.	.
Cancer #2 zoa	0.0142259	0.00454650	0.0567000	8.7302	.	.
Euceramys praelongus	0.0138825	.	0.0138825	0.7937	.	.
Libinia emarginata Megalopa	0.0124375	0.00476975	0.0562000	11.1111	.	.
Bowamiteila dissimilis	0.0123800	0.00156250	0.0139425	1.5873	.	.
Portunus sp zoa	0.0122169	0.00664576	0.0321325	3.1746	.	.
Lophidae	0.0116700	0.00432000	0.0159900	1.5873	.	.
Metaeysidopsis	0.0114650	.	0.0114650	0.7937	.	.
Hippolyte pleuracantha	0.0102512	0.00612375	0.0163750	1.5873	.	.
Alpheus normanni	0.0102493	0.00275596	0.0220775	5.5556	.	.
Libinia spp zoa	0.0102384	0.00234656	0.0490525	17.4603	.	.
Neomysis americana	0.0098925	.	0.0098925	0.7937	.	.
Polychaeta F	0.0095842	0.00220285	0.0219975	7.9365	.	.
Planothores spp	0.0079569	0.00213403	0.0136825	3.1746	.	.
Tetradontidae	0.0077287	0.00182503	0.0116600	3.1746	.	.
Bothidae	0.0073500	.	0.0073500	0.7937	.	.
Portunid crab	0.0066900	.	0.0066900	0.7937	.	.
Syngnathidae	0.0066605	0.00165658	0.0109400	3.9683	.	.
Blivale I	0.0062748	0.00090498	0.0115200	8.7302	.	.
Pomatomus saltatrix	0.0061100	0.00188500	0.0379950	1.5873	.	.
Frigillidae	0.0059950	0.00324250	0.0392375	1.5873	.	.
Belonidae	0.0057767	0.00130268	0.0383650	2.3810	.	.
Libinia duolia Megalopa	0.0054315	0.00091361	0.0386475	3.9683	.	.
Gerrides limicola	0.0053825	.	0.0353825	0.7937	.	.
Hemirhamphidae	0.0052385	0.00123168	0.0394825	3.9683	.	.
Lepidopa websteri	0.0051712	0.00092375	0.0356950	1.5873	.	.
Bothidae	0.0046650	.	0.0346650	0.7937	.	.
Gobiidae	0.0042975	0.00054420	0.0353825	3.1746	.	.
Mugil sp	0.0038100	.	0.0338100	0.7937	.	.
Polychaeta	0.0034275	0.00096750	0.0343950	1.5873	.	.
Neptlys sp						
Aceles caroliniae						

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SAS

TYPE=3

NAME	MNMABUN	SEMYABUN	MXMABUN	PCOCCUR	PCYVER	FILTER2
Engraulidae egg	82.2019	15.5446	502.136	64.7619	46.6667	9
Larvacea	33.7090	7.7694	354.588	80.0000	32.3810	9
Callinectes sp zoea	30.7295	7.8350	375.352	54.2857	27.5190	9
Crangon septempinnosa	16.8232	3.1117	141.775	90.4762	26.6667	8
All Fish eggs	5.7985	1.1156	53.641	94.2857	17.1429	8
Sciaenidae egg	5.4632	1.0938	68.009	72.3810	13.3333	7
Other Fish Eggs	4.1513	1.8703	52.440	34.2857	3.8095	3
Sesarma sp zoea	3.8678	2.1986	6.066	1.9048	.	.
Pagurid Crabs	3.6935	0.8128	43.186	70.4762	7.6190	5
Cancer irroratus zoea	3.6252	2.0298	122.669	58.0952	3.8095	3
Ovalipes zoea	3.3955	.	3.395	0.9524	.	.
Gastropods	3.2543	0.9536	55.311	62.8571	5.7143	4
Engraulidae fry	2.5815	0.9426	14.484	29.5238	0.9524	4
Uca spp	2.5141	0.6677	26.211	56.1905	4.7619	3
Upogebia affinis	2.2520	0.5961	24.776	51.4286	2.8571	2
Mysidopsis bigelowi	1.9377	0.7752	21.171	40.0000	2.8571	3
Xanthid Crabs	1.7448	0.4363	21.247	58.0952	1.9048	2
Neomysis americana	1.6042	0.5332	17.842	39.0476	0.9524	1
Lucifer Faxoni	1.5461	0.5111	15.885	45.7143	2.8571	3
Ovalipes quadrupennis zoea	1.5302	0.3217	11.665	57.1429	0.9524	1
Other Bivalves	1.2974	0.5642	12.711	28.5714	1.3048	2
All Bivalves	1.2222	0.5029	12.711	32.3810	1.3048	2
Neomysis praelongus	1.1374	0.5918	7.874	13.3333	.	.
Euceramus praelongus	1.0754	0.2804	9.832	47.6190	.	.
Bowmanella dissimilis	1.0447	0.2821	5.849	29.5238	.	.
Callinassa spp	1.0367	0.4479	12.822	33.3333	0.9524	1
Polychaeta	0.9144	0.1361	7.139	80.0000	.	.
Phoronida	0.8989	0.1913	6.482	55.2381	.	.
Pinnixa sp	0.8650	0.3600	10.582	39.0476	0.9524	1
Polychaeta	0.8057	0.2142	7.583	35.2381	.	.
Terebellidae spp	0.7858	0.1732	7.176	50.4762	.	.
Eerita talpoida	0.7575	0.4686	3.964	7.6190	.	.
Polychaeta F	0.6514	0.4467	10.362	21.9048	0.9524	1
Trochophores & Nectochaetes	0.6440	0.1661	4.442	36.1905	.	.
Squid Antizoea	0.6088	0.1473	3.430	31.4286	.	.
Engraulidae	0.5985	0.0296	0.599	0.9524	.	.
Tetraodontidae Sphaeroides maculatus	0.5499	0.0296	0.579	1.9048	.	.
Unidentified fish	0.5392	0.2710	2.845	9.5238	.	.
Polychaeta Capitellidae	0.5090	0.2374	4.226	20.9524	.	.
Bivalve I	0.4815	0.3893	0.871	1.9048	.	.
Spisula solidissima	0.4604	0.1498	0.993	4.7619	.	.
Mysid	0.4394	0.1702	2.660	15.2381	.	.
Polychaeta Maylandia	0.4029	0.0947	2.759	33.3333	.	.
Pinnotheres spp	0.3698	0.1950	11.166	57.1429	0.9524	1
Palaemonetes spp	0.3655	0.1531	1.868	10.4762	.	.
Trigiliidae	0.3606	0.1268	2.844	26.6667	.	.
Libinia sp zoea	0.2875	0.0950	0.387	21.9048	.	.
Paralichthys dentatus	0.2545	0.0550	0.776	10.4762	.	.
Bothidae	0.2511	0.1102	0.960	13.3333	.	.
Sciaenidae Cynoscion regalis	0.2394	0.1784	2.553	6.6667	.	.
Aetes caroliniae	0.2372	0.1777	1.301	10.4762	.	.
Hippolyte pleuracantha	0.2308	0.0705	0.650	10.4762	.	.
Bivalve II	0.2105	0.2175	1.101	4.7619	.	.
Ugricides limicola	0.2105	0.2175	1.101	4.7619	.	.
Anthriscidae	0.2105	0.2175	1.101	4.7619	.	.
Nemobius martinica	0.2105	0.2175	1.101	4.7619	.	.
Bostrichidae	0.2105	0.2175	1.101	4.7619	.	.

NAME	MNNABUN	SENNABUN	MXNNABUN	PCOCCUR	PCOVER	FILTER2
Portunus sp zoea	0.179682		0.17968	0.9524	.	.
Gobiidae	0.176137	0.078106	0.60894	8.5714	.	.
Squilla (tempus?) protozoea	0.173901	0.061435	1.38037	23.8095	.	.
Polychaete A	0.172122	0.056992	0.3583	4.7619	.	.
Penseld shrimp	0.170797	0.052269	0.91863	23.8095	.	.
Naushonia crangonoides	0.149996	0.041147	0.61569	19.0476	.	.
Callinectes sp megalopa	0.149657	0.039887	0.64842	20.9524	.	.
Polychaeta	0.143825		0.14382	0.9524	.	.
Metamysidopsis	0.140619	0.132369	0.27299	1.9048	.	.
Polychaeta	0.137808	0.037052	0.86669	32.3810	.	.
Bothidae	0.132490	0.034229	0.40770	12.3810	.	.
Dissoedactylus mellittae zoea	0.129648	0.064044	0.53542	9.5238	.	.
Sciaenidae	0.128406	0.119379	0.24778	1.9048	.	.
Cynoglossidae	0.124638	0.055900	0.49760	8.5714	.	.
Pinnotheres zoea	0.114720	0.071323	0.53696	6.6667	.	.
Ocyropsis sp zoea	0.111248	0.062551	0.49859	7.6190	.	.
Ophiidae	0.107101	0.052198	0.42751	7.6190	.	.
Amodytidae	0.106891	0.053027	0.49509	9.5238	.	.
Polychaeta	0.104974	0.040423	1.22880	34.2857	.	.
Cancer B2 zoea	0.095393	0.034174	0.22401	5.7143	.	.
Leptodopa websteri	0.095378	0.035851	0.45994	13.3333	.	.
Shrimp 6	0.094919	0.091021	0.17594	1.9048	.	.
Palaeomonidae palaeomoninae	0.092747	0.085315	0.26336	2.8571	.	.
Bothidae	0.090772	0.027284	0.64707	26.6667	.	.
Cancer sp megalopa	0.086654	0.030350	0.37472	12.3810	.	.
Libinia dubia Megalopa	0.082355	0.047499	0.50275	10.4762	.	.
Megalopa A	0.072108	0.035999	0.44145	12.3810	.	.
Pomatidae	0.070635		0.07063	0.9524	.	.
Bleniidae	0.064242	0.014253	0.24440	27.6190	.	.
Hemiramphidae	0.063212		0.06321	0.9524	.	.
Alphaeus normanni	0.058766	0.051599	0.11036	1.9048	.	.
Gobiesocidae	0.054733	0.016031	0.16523	10.4762	.	.
Uvalipes quadrupennis megalopa	0.053577	0.023954	0.10136	2.8571	.	.
Sciaenidae spp	0.048067		0.04807	0.9524	.	.
Libinia emarginata Megalopa	0.046505	0.026159	0.09643	2.8571	.	.
Atherinidae	0.038934	0.015932	0.19553	13.3333	.	.
Portunus spinicarpus Megalopa	0.036729	0.008858	0.07626	7.6190	.	.
Lophidae	0.034634	0.013303	0.13195	9.5238	.	.
Megalopa B	0.031852		0.03185	0.9524	.	.
DUMRY	0.028667		0.02867	0.9524	.	.
Persephone punctata	0.027657		0.02766	0.9524	.	.
Stomatidae	0.025554	0.007486	0.05368	6.6667	.	.
Polychaeta	0.024162		0.02416	0.9524	.	.
Nereis succinea Heteronereid	0.021701	0.005042	0.03275	3.8095	.	.
Synbranchidae	0.017707	0.011715	0.02942	1.9048	.	.
Leptochela serratorbita	0.017237		0.01724	0.9524	.	.
Clepeidae	0.016529	0.003757	0.02251	3.8095	.	.
Brevoortia tyrannus	0.013427		0.01393	0.9524	.	.
Portunid crab	0.010267	0.002512	0.01308	1.9048	.	.
Alphaeus heterochaelis	0.009180		0.00918	0.9524	.	.
Anadara spp	0.008980		0.00898	0.9524	.	.
Cancellaria reticulata	0.007777		0.00993	1.9048	.	.
Fish - unknown	0.007460	0.000450	0.00641	4.7619	.	.
Synbranchidae	0.005945		0.00594	0.9524	.	.
Barnacle nauplius					.	.

Table A3. The taxonomic groups that met the abundance/occurrence criteria of $10/m^3$ in at least 5% of all observations and the station/tow types for which they met the criteria. The "MNMNABUND" column has the same meaning as in Table A2.

TYPES & SITES OVER 10/P3 AND OVER 5% ABUNDANCE 15:21 FRIDAY, MARCH 1, 1985 35

----- SPECIES NAME=All Bivalves TOM TYPE=3 -----
 SITE MNMABUN
 20 4.39388
 23 5.90348

----- SPECIES NAME=All Fisheggs TOM TYPE=2 -----
 SITE MNMABUN
 11 1.8115
 1 2.9181
 23 5.4373
 21 12.4146
 22 12.5710
 13 12.8154
 10 20.1181

----- SPECIES NAME=All Fisheggs TOM TYPE=3 -----
 SITE MNMABUN
 10 2.6633
 1 4.6275
 23 5.5401
 11 6.7344
 12 6.8622
 21 7.6524
 22 9.6710
 20 11.2565

----- SPECIES NAME=Callinassa spp TOM TYPE=3 -----
 SITE MNMABUN
 10 3.08131

----- SPECIES NAME=Callinectes sp megalopa TOM TYPE=2 -----
 SITE MNMABUN
 11 3.5372
 20 54.2352

TYPES & SITES OVER 10/43 AND OVER 5% ABUNDANCE 15:21 FRIDAY, MARCH 1, 1985 36

SPECIES NAME=Callinectes sp zoea TOM TYPE=2

SITE	MMNABUN
13	2.0299
23	4.1057
12	5.9777
21	10.5573
11	19.2298
22	20.3795
20	30.1541
10	35.3619
1	57.3084

SPECIES NAME=Callinectes sp zoea TOM TYPE=3

SITE	MMNABUN
12	4.7325
13	4.8480
23	6.9551
10	14.8690
1	24.0905
22	25.1026
20	42.3037
21	65.4075
11	98.7420

SPECIES NAME=Cancer irroratus zoea TOM TYPE=2

SITE	MMNABUN
11	2.69771
22	8.74733

SPECIES NAME=Cancer irroratus zoea TOM TYPE=3

SITE	MMNABUN
10	3.1266
22	3.7562
21	21.2674

SPECIES NAME=Cragon septempinnosa TOM TYPE=2

SITE	MMNABUN
13	1.44494
10	9.40742

TYPES & SITES OVER 10/MJ AND OVER 5% ABUNDANCE 15:21 FRIDAY, MARCH 1, 1985 37

SPECIES NAME=Cragon septempinos TOM TYPE=3

SITE	MNMNABUN
23	7.0851
22	9.1116
13	12.7368
11	15.1371
1	22.3392
10	25.2634
21	26.4070
20	29.9550

SPECIES NAME=Engraulidae egg TOM TYPE=2

SITE	MNMNABUN
13	13.8503
20	27.9187
12	32.6810
23	34.9033
11	38.7913
21	61.4061
1	62.5974
22	78.1976
10	97.4714

SPECIES NAME=Engraulidae egg TOM TYPE=3

SITE	MNMNABUN
12	23.187
13	45.868
21	56.538
1	69.805
20	74.414
11	79.806
10	108.846
22	135.024
23	149.019

SPECIES NAME=Engraulidae fry TOM TYPE=3

SITE	MNMNABUN
21	5.51830

SPECIES NAME=Gastropods TOM TYPE=3

SITE	MNMNABUN
13	2.0554
11	2.0502
21	7.7902

YPLS 6 SITES OVER 10/HJ AND OVER 5% ABUNDANCE 14:02 SATURDAY, MARCH 2, 1985 38

----- SPECIES NAME=Gastropods TON TYPE=3 -----

SITE	MMNNABUN
20	10.3100

----- SPECIES NAME=Larvacea TON TYPE=2 -----

SITE	MMNNABUN
21	3.0255
23	3.4204
20	7.7549
11	11.7856

----- SPECIES NAME=Larvacea TON TYPE=3 -----

SITE	MMNNABUN
13	8.0376
12	9.2943
10	11.6334
23	23.6708
1	23.8054
20	26.6733
11	58.3390
22	67.5214
21	81.6600

----- SPECIES NAME=Lucifer Paxonii TON TYPE=3 -----

SITE	MMNNABUN
1	2.14679
20	2.98036
22	3.98825

----- SPECIES NAME=Nysidopsis bigelowi TON TYPE=3 -----

SITE	MMNNABUN
11	3.04199
10	3.16925
1	4.70813

----- SPECIES NAME=Neonysys americana TON TYPE=3 -----

SITE	MMNNABUN
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TYPES & SITES OVER 10/M3 AND OVER 5% ABUNDANCE 15:21 FRIDAY, MARCH 1, 1985 39

----- SPECIES NAME=Other Bivalves TOM TYPE=3 -----

SITE	MMNABUN
20	4.35920
23	5.90348

----- SPECIES NAME=Other Fish Eggs TOM TYPE=2 -----

SITE	MMNABUN
11	4.0918
23	7.6496
13	18.4534
10	37.7029

----- SPECIES NAME=Other Fish Eggs TOM TYPE=3 -----

SITE	MMNABUN
11	5.4571
20	7.7156
12	17.6375

----- SPECIES NAME=Ovalipes quadripennis zoea TOM TYPE=3 -----

SITE	MMNABUN
1	2.31336

----- SPECIES NAME=Pagurid Crabs TOM TYPE=3 -----

SITE	MMNABUN
10	3.03531
12	4.39061
1	5.23412
20	5.38008
13	6.44083

----- SPECIES NAME=Palaemonetes spp TOM TYPE=3 -----

SITE	MMNABUN
1	1.88394

----- SPECIES NAME=Phoronida TOM TYPE=3 -----

SITE	MMNABUN
23	3.61699

TYPES & SITES OVER 10/M3 AND OVER 5% ABUNDANCE 15:21 FRIDAY, MARCH 1, 1985 40

----- SPECIES NAME=Polychaeta Trochophores & Nectochaeta: TOW TYPE=3 -----

SITE	MNNABUN
1	1.64982

----- SPECIES NAME=Sciaenidae egg TOW TYPE=2 -----

SITE	MNNABUN
22	11.1689
21	11.3199

----- SPECIES NAME=Sciaenidae egg TOW TYPE=3 -----

SITE	MNNABUN
10	4.50920
23	5.06368
1	5.89520
11	6.43055
21	6.81001
20	7.78571
22	9.33584

----- SPECIES NAME=Uca spp TOW TYPE=2 -----

SITE	MNNABUN
10	3.08579

----- SPECIES NAME=Uca spp TOW TYPE=3 -----

SITE	MNNABUN
21	3.92129
11	4.14648
10	7.38204

----- SPECIES NAME=Upogebia affinis TOW TYPE=3 -----

SITE	MNNABUN
1	5.29600
10	7.73876

----- SPECIES NAME=Xanthid Crabs TOW TYPE=3 -----

SITE	MNNABUN
10	2.58971
1	3.39336

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TYPES & SITES OVER 10/43 AND OVER 5% ABUNDANCE

SPECIES NAME=All divalves

TYPE	SITE	MNNA3UN
3	20	4.39388
3	23	5.90346

SPECIES NAME=All Fish eggs

TYPE	SITE	MNNA3UN
2	11	1.8115
2	1	2.9181
2	23	5.4373
2	21	12.4146
2	22	12.5710
2	13	12.8154
2	10	20.1181
3	10	2.6533
3	1	4.6275
3	23	5.5401
3	11	6.7344
3	12	6.8522
3	21	7.6524
3	22	9.6710
3	20	11.2565

SPECIES NAME=Callinassa spp

TYPE	SITE	MNNA3UN
3	10	3.08131

SPECIES NAME=Callinectes sp megalopa

TYPE	SITE	MNNA3UN
2	11	3.5372
2	20	54.2352

SPECIES NAME=Callinectes sp zoea

TYPE	SITE	MNNA3UN
2	13	2.6299
2	23	4.1357
2	12	5.9777
2	21	10.5573
2	11	19.2299
2	22	20.3795
2	20	30.1541
2	10	35.3519
2	1	57.3384
3	12	4.7325

TYPES & SITES OVER 10/M3 AND OVER 52 ABUNDANCE 15:21 FRIDAY, MARCH 1, 1985 42

SPECIES NAME=Callinectes sp. zoea

TYPE	SITE	MMNA3UN
3	13	4.8480
3	23	6.9551
3	10	14.8690
3	1	24.0705
3	22	25.1326
3	20	42.3037
3	21	65.4775
3	11	88.7420

SPECIES NAME=Cancer irroratus zoea

TYPE	SITE	MMNA3UN
2	11	2.6977
2	22	8.7473
3	10	3.1266
3	22	3.7562
3	21	21.2574

SPECIES NAME=Cranion septemspinosa

TYPE	SITE	MMNA3UN
2	13	1.4449
2	10	8.4374
3	23	7.0351
3	22	9.1116
3	13	12.7168
3	11	15.1371
3	1	22.3392
3	10	25.2534
3	21	26.4370
3	20	29.9550

SPECIES NAME=Engraulidae egg

TYPE	SITE	MMNA3UN
2	13	13.9550
2	20	27.3119
2	12	32.581
2	23	34.303
2	11	38.791
2	21	61.406
2	1	62.597
2	22	78.198
2	10	87.471
3	12	23.187
3	13	45.368
3	21	56.538
3	1	69.305

TYPES & SITES OVER 10/M3 AND OVER 5% ABUNDANCE 15:21 FRIDAY, MARCH 1, 1985 43

SPECIES NAME=Engraulidae egg			
TYPE	SITE	MMNA3UN	
3	20	74.414	
3	11	79.306	
3	10	108.346	
3	22	135.224	
3	23	149.319	

SPECIES NAME=Engraulidae fry			
TYPE	SITE	MMNA3UN	
3	21	5.51330	

SPECIES NAME=Gastropods			
TYPE	SITE	MMNA3UN	
3	13	2.6554	
3	11	2.8502	
3	21	7.7902	
3	20	10.3100	

SPECIES NAME=Larvacea			
TYPE	SITE	MMNA3UN	
2	21	3.0255	
2	23	3.4204	
2	20	7.7549	
2	11	11.7956	
3	13	8.0376	
3	12	9.2343	
3	10	11.6334	
3	23	23.6708	
3	1	23.8354	
3	20	26.6733	
3	11	58.3390	
3	22	67.5214	
3	21	81.6500	

SPECIES NAME=Lucifer Fakoni			
TYPE	SITE	MMNA3UN	
3	1	2.14579	
3	20	2.99336	
3	22	3.38325	

TYPES & SITES OVER 10/M3 AND OVER 5% ABUNDANCE 15:21 FRIDAY, MARCH 1, 1985 44

SPECIES NAME=Mysidopsis bigelowi

TYPE	SITE	MNNA3UN
3	11	3.04199
3	10	3.16725
3	1	4.70513

SPECIES NAME=Neomysis americana

TYPE	SITE	MNNA3UN
3	10	3.04921

SPECIES NAME=Other Bivalves

TYPE	SITE	MNNA3UN
3	20	4.35920
3	23	5.90348

SPECIES NAME=Other Fish Eggs

TYPE	SITE	MNNA3UN
2	11	4.0318
2	23	7.6496
2	13	18.4534
2	10	37.7229
3	11	5.4571
3	20	7.7156
3	12	17.6375

SPECIES NAME=Ovalipes quadripennis zoea

TYPE	SITE	MNNA3UN
3	1	2.31336

SPECIES NAME=Pagurid Crabs

TYPE	SITE	MNNA3UN
3	10	3.03531
3	12	4.39261
3	1	5.23912
3	20	5.38708
3	13	6.44383

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TYPE 5 SITES OVER 10/M3 AND OVER 5% ABUNDANCE

----- SPECIES NAME=Palaeomonetes spp -----

TYPE	SITE	MNNA3UN
3	1	1.88394

----- SPECIES NAME=Phoronida -----

TYPE	SITE	MNNA3UN
3	23	3.61599

----- SPECIES NAME=Polychaeta Trochophores & Nectochaetes -----

TYPE	SITE	MNNA3UN
3	1	1.64382

----- SPECIES NAME=Scaleniidae egg -----

TYPE	SITE	MNNA3UN
2	22	11.1589
2	21	11.3199
3	10	4.5392
3	23	5.0537
3	1	5.8352
3	11	6.4305
3	21	6.8100
3	20	7.7957
3	22	9.3358

----- SPECIES NAME=Uca spp -----

TYPE	SITE	MNNA3UN
2	10	3.08579
3	21	3.92129
3	11	4.14548
3	10	7.38204

----- SPECIES NAME=Upogebia affinis -----

TYPE	SITE	MNNA3UN
3	1	5.29500
3	10	7.73876

TYPES & SITES OVER 10/M3 AND OVER 5% ABUNDANCE 15:21 FRIDAY, MARCH 1, 1985 46

SPECIES NAME=Xanthid Crabs

TYPE	SITE	MMNA3UN
3	10	2.58771
3	1	3.99736

Table A4. The abundance data for important meroplankton groups of the study area. The values are the means of four replicates, while the values in parentheses are the standard errors.

 COMMERCIAL CRUSTACEANS
 SUMMARY OF TOWS AT STATION 1
 MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Callinectes sp. Megalopa	Callinectes sp. Zoea	Cancer atua zoea	Cancer atua Megalop
11DEC83	0.00 (0.00)	0.00 (.)	0.00 (.)	0.00 (.)
18APR84	0.00 (.)	0.00 (.)	0.03 (0.02)	0.00 (.)
03MAY84	0.00 (.)	0.00 (.)	0.00 (0.00)	0.00 (.)
18MAY84	0.00 (.)	0.00 (.)	0.87 (0.25)	0.27 (0.06)
01JUN84	0.00 (.)	0.01 (0.01)	0.08 (0.04)	0.13 (0.08)
13JUN84	0.00 (.)	3.54 (0.85)	0.00 (.)	0.00 (.)
11JUL84	0.00 (.)	5.96 (1.96)	0.01 (0.01)	0.00 (.)
26JUL84	0.01 (0.01)	364.42 (78.19)	0.00 (.)	0.00 (.)
01AUG84	0.01 (0.01)	2.79 (0.11)	0.03 (0.03)	0.00 (.)
22AUG84	0.01 (0.01)	80.16 (28.34)	0.00 (.)	0.00 (.)
20SEP84	0.03 (0.01)	1.43 (0.34)	0.00 (.)	0.00 (.)
25SEP84	0.10 (0.08)	0.15 (0.03)	0.00 (.)	0.00 (.)

COMMERCIAL CRUSTACEANS
SUMMARY OF TOWS AT STATION 1
MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Callinectes sp. Megalopa	Callinectes sp. Zoea	Cancer status	Cancer error status	Cancer error status
03OCT83	0.01 (0.01)	0.00 (.)	0.45 (0.16)	0.00 (.)	0.00 (.)
13OCT83	0.10 (0.04)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)
01NOV83	0.00 (.)	0.00 (.)	0.15 (0.12)	0.00 (.)	0.00 (.)
19NOV83	0.00 (.)	0.00 (.)	0.12 (0.04)	0.00 (0.00)	0.00 (0.00)
11DEC83	0.00 (.)	0.00 (.)	0.01 (0.01)	0.00 (.)	0.00 (.)
14MAR84	0.00 (.)	0.00 (.)	0.02 (0.02)	0.00 (.)	0.00 (.)
18APR84	0.00 (.)	0.00 (.)	1.09 (0.46)	0.00 (.)	0.00 (.)
03MAY84	0.00 (.)	0.00 (.)	0.93 (0.09)	0.00 (.)	0.00 (.)
18MAY84	0.00 (.)	0.00 (.)	0.85 (0.46)	0.01 (0.01)	0.01 (0.01)
01JUN84	0.00 (.)	0.00 (0.00)	0.07 (0.50)	0.03 (0.03)	0.03 (0.03)
13JUN84	0.00 (.)	57.28 (23.33)	0.01 (0.01)	0.00 (.)	0.00 (.)
11JUL84	0.07 (0.07)	44.57 (12.66)	0.01 (0.01)	0.00 (.)	0.00 (.)
26JUL84	0.00 (.)	2.71 (0.03)	0.28 (0.13)	0.00 (.)	0.00 (.)
01AUG84	0.05 (0.05)	21.82 (4.44)	0.00 (.)	0.00 (.)	0.00 (.)
22AUG84	0.01 (0.01)	38.19 (12.40)	0.00 (.)	0.00 (.)	0.00 (.)
20SEP84	0.64 (0.14)	4.06 (1.42)	0.04 (0.03)	0.00 (.)	0.00 (.)

COMMERCIAL CRUSTACEANS
SUMMARY OF TOWS AT STATION 10
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Callinectes sp. Megalopa	Callinectes sp. Zoea	Cancer atus zoea	Cancer atus Megalop	Cancer error
02NOV83	0.00 (.)	0.01 (0.01)	0.00 (.)	0.00 (.)	0.00 (.)
19NOV83	0.00 (.)	0.00 (.)	0.06 (0.02)	0.00 (.)	0.00 (.)
04JAN84	0.00 (.)	0.00 (.)	0.01 (0.01)	0.00 (.)	0.00 (.)
02FEB84	0.00 (.)	0.00 (.)	0.00 (0.00)	0.00 (.)	0.00 (.)
18APR84	0.00 (.)	0.00 (.)	0.00 (0.00)	0.00 (.)	0.00 (.)
02MAY84	0.00 (.)	0.00 (.)	0.01 (0.01)	0.00 (.)	0.00 (.)
03MAY84	0.00 (.)	0.00 (.)	0.01 (0.01)	0.00 (.)	0.00 (.)
18MAY84	0.00 (.)	0.00 (.)	0.21 (0.07)	0.03 (0.01)	0.03 (0.01)
02JUN84	0.00 (.)	0.01 (0.01)	0.10 (0.02)	0.15 (0.05)	0.15 (0.05)
13JUN84	0.00 (.)	165.68 (150.01)	1.83 (1.72)	0.00 (.)	0.00 (.)
11JUL84	0.00 (.)	72.33 (25.63)	0.03 (0.03)	0.00 (.)	0.00 (.)
26JUL84	0.00 (.)	7.02 (2.96)	0.00 (.)	0.00 (.)	0.00 (.)
01AUG84	0.01 (0.00)	6.92 (2.14)	0.10 (0.07)	0.00 (.)	0.00 (.)
22AUG84	0.00 (0.00)	64.70 (21.26)	0.00 (.)	0.00 (.)	0.00 (.)
20SEP84	0.01 (0.01)	1.49 (0.82)	0.00 (.)	0.00 (.)	0.00 (.)
25SEP84	0.00 (.)	0.10 (0.05)	0.00 (.)	0.00 (.)	0.00 (.)

 COMMERCIAL CRUSTACEANS
 SUMMARY OF TOWS AT STATION 10
 MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Callinectes sp. Megalopa	Callinectes sp. Zoea	Cancer atus zoea	Cancer error atus zoea	Cancer error atus Megalop
11DEC83	0.00 (.)	0.00 (.)	0.03 (0.03)	0.00 (.)	0.00 (.)
14MAR84	0.00 (.)	0.00 (.)	0.00 (0.00)	0.00 (.)	0.00 (.)
18APR84	0.00 (.)	0.00 (.)	0.47 (0.08)	0.00 (.)	0.00 (.)
02MAY84	0.00 (.)	0.00 (.)	17.42 (12.50)	0.00 (.)	0.00 (.)
03MAY84	0.00 (.)	0.00 (.)	11.18 (1.45)	0.00 (.)	0.00 (.)
18MAY84	0.00 (.)	0.00 (.)	1.33 (0.95)	0.00 (.)	0.00 (.)
13JUN84	0.00 (.)	0.10 (1.61)	0.01 (0.01)	0.00 (.)	0.00 (.)
11JUL84	0.00 (.)	24.61 (6.33)	0.27 (0.25)	0.00 (.)	0.00 (.)
26JUL84	0.00 (.)	3.22 (0.27)	0.19 (0.10)	0.00 (.)	0.00 (.)
01AUG84	0.00 (.)	17.82 (4.37)	0.35 (0.35)	0.00 (.)	0.00 (.)
22AUG84	0.00 (.)	33.41 (8.93)	0.00 (.)	0.00 (.)	0.00 (.)
20SEP84	0.36 (0.19)	2.06 (0.42)	0.00 (.)	0.00 (.)	0.00 (.)

COMMERCIAL CRUSTACEANS
SUMMARY OF TOWS AT STATION 11
MEAN OF 4 353 U NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Callinectes sp. Megalopa	Callinectes sp. Zoea	Cancer atus zoea	Cancer atus megalop	Cancer error
19NOV83	0.00 (0.00)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)
11DEC83	0.00 (.)	0.00 (.)	0.01 (0.00)	0.50 (0.11)	0.50 (0.11)
04JAN84	0.00 (.)	0.00 (.)	0.02 (0.02)	0.00 (.)	0.00 (.)
18APR84	0.00 (.)	0.00 (.)	0.01 (0.01)	0.00 (.)	0.00 (.)
03MAY84	0.00 (.)	0.00 (.)	0.01 (0.01)	0.00 (.)	0.00 (.)
18MAY84	0.00 (.)	0.00 (.)	13.69 (5.77)	0.04 (4.23)	0.04 (4.23)
01JUN84	0.00 (.)	0.01 (0.01)	0.14 (0.05)	0.31 (0.34)	0.31 (0.34)
13JUN84	0.00 (.)	1.61 (0.47)	0.01 (0.01)	0.00 (.)	0.00 (.)
11JUL84	0.00 (.)	2.56 (0.53)	0.00 (.)	0.00 (.)	0.00 (.)
26JUL84	0.00 (.)	47.02 (19.59)	0.00 (.)	0.00 (.)	0.00 (.)
01AUG84	0.06 (0.02)	33.10 (18.46)	0.00 (.)	0.00 (.)	0.00 (.)
22AUG84	0.00 (.)	58.89 (21.37)	0.00 (.)	0.00 (.)	0.00 (.)
19SEP84	0.04 (0.04)	10.48 (0.79)	0.00 (.)	0.00 (.)	0.00 (.)
25SEP84	14.05 (3.34)	0.17 (0.07)	0.00 (.)	0.00 (.)	0.00 (.)

 COMMERCIAL CRUSTACEANS
 SUMMARY OF TOWS AT STATION 11
 MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER MEIER CUBED (STD ERROR)

DATE	Callinectes sp. Megalopa	Callinectes sp. Zoea	Cancer Error atus Zoea	Cancer Error atus Megalop
19NOV83	0.00 (.)	0.00 (.)	0.24 (0.04)	0.02 (0.01)
18APR84	0.00 (.)	0.00 (.)	8.69 (3.14)	0.00 (.)
03MAY84	0.00 (.)	0.00 (.)	6.98 (2.05)	0.00 (.)
18MAY84	0.00 (.)	0.00 (.)	2.51 (0.71)	0.13 (0.05)
01JUN84	0.00 (.)	0.00 (.)	0.21 (0.11)	0.37 (0.10)
13JUN84	0.00 (.)	1.55 (0.50)	0.59 (0.59)	0.00 (.)
11JUL84	0.00 (.)	32.46 (13.10)	0.00 (.)	0.00 (.)
26JUL84	0.00 (.)	3.76 (1.16)	1.57 (0.95)	0.00 (.)
01AUG84	0.00 (.)	34.70 (17.51)	0.24 (0.14)	0.00 (.)
22AUG84	0.17 (0.03)	375.35 (102.23)	0.00 (.)	0.00 (.)
19SEP84	0.16 (0.04)	84.64 (11.79)	0.00 (.)	0.00 (.)

COMMERCIAL CRUSTACEANS
 SUMMARY OF TOWS AT STATION 12
 MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Callinectes sp. Megalopa	Callinectes sp. Zoea	Cancer error atus zoea	Cancer error atus Megalopa
19NOV83	0.02 (0.02)	0.00 (.)	0.00 (.)	0.05 (0.03)
25JAN84	0.00 (.)	0.00 (.)	0.01 (0.01)	0.00 (.)
18APR84	0.00 (.)	0.00 (.)	0.01 (0.01)	0.00 (.)
18MAY84	0.00 (.)	0.00 (.)	0.06 (0.01)	0.12 (0.01)
02JUN84	0.00 (0.00)	0.03 (0.02)	0.05 (0.04)	0.02 (0.01)
13JUN84	0.00 (.)	0.03 (0.01)	0.00 (.)	0.00 (.)
11JUL84	0.00 (.)	1.29 (0.51)	0.00 (.)	0.00 (.)
26JUL84	0.01 (0.01)	7.45 (1.50)	0.00 (.)	0.00 (.)
01AUG84	0.12 (0.04)	39.31 (5.11)	0.16 (0.16)	0.00 (.)
22AUG84	0.00 (0.00)	0.55 (0.32)	0.00 (.)	0.00 (.)
20SEP84	0.00 (.)	0.04 (0.01)	0.00 (.)	0.00 (.)
25SEP84	1.01 (0.21)	0.13 (0.04)	0.00 (.)	0.00 (.)

 COMMERCIAL CRUSTACEANS
 SUMMARY OF TOWS AT STATION 12
 MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

 DATE Callinectes sp. Megalopa Callinectes sp. Zoea Cancer error atus zoea Cancer error atus Megalopa
 18APR84 0.00 (.) 0.00 (.) 0.19 (0.06) 0.00 (.)
 03MAY84 0.00 (.) 0.00 (.) 0.04 (0.03) 0.00 (.)
 02JUN84 0.00 (.) 0.01 (0.01) 0.65 (0.65) 0.00 (.)
 13JUN84 0.00 (.) 0.20 (0.03) 0.02 (0.02) 0.00 (.)
 11JUL84 0.00 (.) 14.16 (3.54) 0.00 (.) 0.00 (.)
 26JUL84 0.00 (.) 12.58 (7.77) 0.16 (0.16) 0.00 (.)
 01AUG84 0.00 (.) 2.96 (0.13) 0.00 (.) 0.00 (.)
 22AUG84 0.06 (0.02) 2.90 (0.93) 0.00 (.) 0.00 (.)
 20SEP84 0.02 (0.01) 0.33 (0.25) 0.00 (.) 0.00 (.)

COMMERCIAL CRUSTACEANS
SUMMARY OF TOWS AT STATION 13
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUPPL (STD ER2JR)

DATE	Callinectes sp. Megalopa	Callinectes sp. Zoea	Cancer Error atus zoea	Cancer Error atus Megalopa
29OCT83	0.00 (.)	0.00 (.)	0.01 (0.00)	0.00 (.)
19NOV83	0.00 (.)	0.00 (.)	0.02 (0.01)	0.00 (.)
11DEC83	0.00 (.)	0.00 (.)	0.01 (0.01)	0.01 (0.01)
25JAN84	0.00 (.)	0.00 (.)	0.00 (0.00)	0.00 (.)
18APR84	0.00 (.)	0.00 (.)	0.01 (0.01)	0.00 (.)
18MAY84	0.00 (.)	0.00 (.)	0.01 (0.01)	0.00 (.)
01JUN84	0.00 (.)	0.05 (0.03)	0.24 (0.03)	0.16 (0.10)
13JUN84	0.00 (.)	0.61 (0.14)	0.00 (.)	0.00 (.)
11JUL84	0.00 (.)	6.98 (0.55)	0.03 (0.03)	0.00 (.)
26JUL84	0.00 (.)	11.02 (2.65)	0.00 (.)	0.00 (.)
01AUG84	0.03 (0.01)	2.01 (0.51)	0.01 (0.01)	0.00 (.)
22AUG84	0.00 (.)	0.32 (0.04)	0.00 (.)	0.00 (.)
20SEP84	0.02 (0.02)	0.03 (0.02)	0.00 (.)	0.00 (.)
25SEP84	0.06 (0.02)	0.02 (0.01)	0.00 (.)	0.00 (.)

 COMMERCIAL CRUSTACEANS
 SUMMARY OF TOWS AT STATION 13
 MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Callinectes sp. Megalopa	Callinectes sp. Zoea	Cancer irror atus zoea	Cancer irror atus Megalop
29OCT83	0.00 (.)	0.00 (.)	0.05 (0.02)	0.00 (.)
18APR84	0.00 (.)	0.00 (.)	0.32 (0.15)	0.00 (.)
03MAY84	0.00 (.)	0.00 (.)	0.68 (0.34)	0.00 (.)
18MAY84	0.00 (.)	0.00 (.)	0.01 (0.01)	0.00 (.)
13JUN84	0.00 (.)	3.50 (1.00)	0.01 (0.01)	0.00 (.)
11JUL84	0.00 (.)	11.49 (3.63)	0.00 (.)	0.00 (.)
26JUL84	0.00 (.)	5.15 (1.17)	0.53 (0.28)	0.00 (.)
01AUG84	0.00 (.)	8.29 (3.60)	0.02 (0.02)	0.00 (.)
22AUG84	0.01 (0.01)	0.57 (0.52)	0.00 (.)	0.00 (.)
20SEP84	0.01 (0.01)	0.09 (0.07)	0.00 (.)	0.00 (.)

 COMMERCIAL CRUSTACEANS
 SUMMARY OF TOWS AT STATION 20
 MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Callinectes sp. Megalopa	Callinectes sp. Zoea	Cancer error atus Zoea	Cancer error atus Megalop
18MAY84	0.00 (.)	0.00 (.)	1.38 (0.41)	1.38 (0.10)
01JUN84	0.01 (0.01)	0.04 (0.03)	0.05 (0.02)	0.22 (0.12)
13JUN84	0.00 (.)	0.30 (0.12)	0.00 (.)	0.00 (.)
11JUL84	0.00 (.)	6.73 (0.72)	0.03 (0.03)	0.00 (.)
26JUL84	0.00 (.)	207.73 (28.12)	0.00 (.)	0.00 (.)
01AUG84	0.00 (.)	0.98 (0.18)	0.00 (.)	0.00 (.)
22AUG84	0.00 (.)	0.93 (0.24)	0.00 (.)	0.00 (.)
19SEP84	0.07 (0.02)	23.66 (3.21)	0.00 (.)	0.00 (.)
25SEP84	162.63 (24.96)	0.66 (0.32)	0.00 (.)	0.00 (.)

 COMMERCIAL CRUSTACEANS
 SUMMARY OF TOWS AT STATION 20
 MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (ST'D ERROR)

DATE	Callinectes sp. Megalopa	Callinectes sp. Zoea	Cancer Irror atus zoea	Cancer Irror atus Megalop
03MAY84	0.00 (.)	0.00 (.)	5.10 (0.88)	0.00 (.)
18MAY84	0.00 (.)	0.00 (.)	1.22 (0.62)	0.21 (0.17)
01JUN84	0.00 (.)	0.01 (0.01)	0.05 (0.03)	0.06 (0.04)
13JUN84	0.00 (.)	0.56 (0.19)	0.00 (.)	0.00 (.)
11JUL84	0.00 (.)	75.80 (49.08)	0.00 (.)	0.00 (.)
26JUL84	0.00 (.)	15.21 (7.88)	1.44 (0.53)	0.00 (.)
01AUG84	0.16 (0.16)	14.52 (4.38)	0.00 (.)	0.00 (.)
22AUG84	0.00 (.)	105.74 (35.02)	0.00 (.)	0.00 (.)
19SEP84	0.26 (0.05)	84.28 (8.57)	0.00 (.)	0.00 (.)

 COMMERCIAL CRUSTACEANS
 SUMMARY OF TOWS AT STATION 21
 MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Callinectes sp. Megalopa	Callinectes sp. Zoea	Cancer error atus zoea	Cancer error atus megalop
09MAY84	0.00 (.)	0.00 (.)	0.73 (0.44)	0.00 (.)
21MAY84	0.00 (.)	0.00 (.)	0.04 (0.02)	1.05 (0.33)
02JUN84	0.00 (0.00)	0.09 (0.05)	0.08 (0.02)	0.73 (0.38)
14JUN84	0.00 (.)	7.73 (0.94)	0.00 (.)	0.00 (.)
12JUL84	0.00 (.)	9.03 (1.44)	0.00 (.)	0.00 (.)
26JUL84	0.00 (.)	34.66 (5.45)	0.00 (.)	0.00 (.)
01AUG84	0.02 (0.01)	14.96 (5.37)	0.00 (.)	0.00 (.)
21AUG84	0.00 (.)	2.27 (0.03)	0.00 (.)	0.00 (.)
19SEP84	0.01 (0.01)	5.16 (0.87)	0.00 (.)	0.00 (.)

 COMMERCIAL CRUSTACEANS
 SUMMARY OF TOWS AT STATION 21
 MEAN UF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Callinectes sp. Megalopa	Callinectes sp. Zoea	Cancer Error atus zoea	Cancer Error atus Megalop
09MAY84	0.00 (.)	0.00 (.)	122.67 (21.15)	0.00 (.)
21MAY84	0.00 (.)	0.00 (.)	1.75 (0.36)	0.12 (0.03)
14JUN84	0.00 (.)	0.92 (0.48)	0.09 (0.07)	0.00 (.)
26JUL84	0.00 (.)	6.55 (3.69)	1.40 (1.29)	0.00 (.)
01AUG84	0.00 (.)	142.83 (67.46)	1.48 (1.35)	0.00 (.)
12AUG84	0.00 (.)	18.90 (4.21)	0.22 (0.18)	0.00 (.)
21AUG84	0.01 (0.01)	182.64 (52.78)	0.00 (.)	0.00 (.)
19SEP84	0.22 (0.06)	40.61 (12.23)	0.00 (.)	0.00 (.)

 COMMERCIAL CRUSTACEANS
 SUMMARY OF TOWS AT STATION 22
 MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Callinectes sp. Megalopa	Callinectes sp. Zoea	Cancer irror atus zoea	Cancer irror atus megalon
09MAY84	0.00 (.)	0.05 (0.05)	17.48 (2.51)	0.00 (.)
21MAY84	0.00 (.)	0.00 (.)	0.02 (6.01)	1.31 (0.13)
02JUN84	0.00 (.)	0.01 (0.01)	0.00 (.)	0.19 (0.06)
14JUN84	0.00 (.)	4.20 (0.30)	0.00 (.)	0.00 (.)
12JUL84	0.00 (.)	5.70 (1.43)	0.00 (.)	0.00 (.)
26JUL84	0.00 (.)	138.79 (67.39)	0.00 (.)	0.00 (.)
01AUG84	0.00 (.)	9.51 (2.42)	0.00 (.)	0.00 (.)
21AUG84	0.00 (0.00)	2.69 (6.33)	0.00 (.)	0.00 (.)
19SEP84	0.21 (0.10)	2.69 (0.59)	0.00 (.)	0.00 (.)

 COMMERCIAL CRUSTACEANS
 SUMMARY OF TOWS AT STATION 22
 MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (SIG ERROR)

DATE	Callinectes sp. Megalops	Callinectes sp. Zoea	Cancer error atus zoea	Cancer error atus megalop
09MAY84	0.00 (.)	0.00 (.)	10.82 (1.38)	0.00 (0.00)
21MAY84	0.01 (0.01)	0.00 (.)	7.88 (0.60)	0.15 (0.04)
02JUN84	0.00 (.)	0.05 (0.03)	0.01 (0.01)	0.01 (0.01)
13JUN84	0.00 (.)	1.62 (0.30)	0.00 (.)	0.00 (.)
12JUL84	0.00 (.)	16.39 (2.79)	0.05 (0.05)	0.00 (.)
26JUL84	0.00 (.)	16.94 (3.10)	0.03 (0.03)	0.00 (.)
01AUG84	0.00 (.)	39.54 (17.03)	0.00 (.)	0.00 (.)
21AUG84	0.05 (0.22)	24.00 (6.36)	0.00 (.)	0.00 (.)
19SEP84	0.08 (0.01)	77.77 (15.30)	0.00 (.)	0.00 (.)

12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000 1001 1002 1003 1004 1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1020 1021 1022 1023 1024 1025 1026 1027 1028 1029 1030 1031 1032 1033 1034 1035 1036 1037 1038 1039 1040 1041 1042 1043 1044 1045

 COMMERCIAL CRUSTACEANS
 SUMMARY OF TOWS AT STATION 23
 MEAN OF 4 353 OBLIQUE TOWS IN NOS PER METER CUBED; (STD ERROR)

DATE	Callinectes sp. Megalopa	Callinectes sp. Zoea	Cancer Error atus Zoea	Cancer Error atus Megalop
09MAY84	0.00 (.)	0.00 (.)	1.04 (0.13)	0.00 (.)
21MAY84	0.00 (.)	0.00 (.)	0.22 (0.12)	0.00 (.)
12JUL84	0.00 (.)	4.83 (0.54)	0.00 (.)	0.00 (.)
26JUL84	0.00 (.)	7.23 (3.30)	0.02 (0.03)	0.00 (.)
01AUG84	0.00 (.)	19.31 (13.04)	0.00 (.)	0.00 (.)
21AUG84	0.08 (0.67)	2.73 (0.76)	0.00 (.)	0.01 (0.01)
20SEP84	0.04 (0.63)	0.67 (0.24)	0.00 (.)	0.00 (.)

FISH EGGS

SUMMARY OF TOWS AT STATION 1

MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Engraulidae Eggs	Rothidae Eggs	Scleroptera Eggs	Other Fish Eggs
030CT83	0.00 (.)	0.00 (.)	0.02 (0.02)	0.00 (.)
130CT83	0.00 (.)	0.29 (0.10)	0.00 (.)	0.00 (.)
01NOV83	0.00 (.)	0.00 (.)	0.00 (.)	0.01 (0.01)
19NOV83	0.00 (.)	0.00 (.)	0.03 (0.03)	0.01 (0.01)
14MAR84	0.01 (0.01)	0.08 (0.04)	0.00 (.)	0.00 (.)
18APR84	0.00 (.)	0.27 (0.08)	0.00 (.)	0.00 (.)
03MAY84	0.00 (.)	0.23 (0.12)	0.21 (0.16)	0.02 (0.02)
18MAY84	3.98 (1.27)	0.00 (.)	0.28 (0.25)	0.14 (0.14)
01JUN84	43.59 (16.73)	0.00 (.)	1.21 (0.09)	0.06 (0.05)
13JUN84	122.52 (60.39)	0.00 (.)	10.63 (4.47)	0.00 (.)
11JUL84	143.29 (57.73)	0.09 (0.09)	10.22 (4.36)	3.11 (1.83)
26JUL84	55.66 (5.48)	0.00 (.)	2.54 (1.19)	0.00 (.)
01AUG84	237.37 (74.90)	0.19 (0.19)	16.63 (3.82)	0.00 (.)
22AUG84	21.66 (2.30)	0.07 (0.05)	22.43 (5.02)	0.00 (.)
20SEP84	0.16 (0.10)	0.00 (.)	0.62 (0.06)	0.00 (.)

FISH EGGS
SUMMARY OF TOWS AT STATION 1
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Engraulidae Eggs	Rothidae Eggs	Sciaenidae Eggs	Other Fish Eggs
01NOV83	0.00 (.)	0.10 (0.02)	0.00 (.)	0.00 (.)
11DEC83	0.00 (.)	0.01 (0.00)	0.00 (.)	0.00 (.)
14MAR84	0.00 (.)	0.00 (0.00)	0.00 (.)	0.00 (.)
03MAY84	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (0.00)
18MAY84	18.34 (2.38)	0.00 (.)	0.18 (0.11)	6.47 (0.11)
01JUN84	73.08 (28.36)	0.00 (.)	4.37 (3.10)	6.72 (5.37)
13JUN84	94.41 (29.89)	0.00 (.)	0.59 (0.16)	0.14 (0.14)
11JUL84	69.66 (17.99)	0.01 (0.00)	1.41 (0.31)	5.63 (2.91)
26JUL84	245.95 (22.92)	0.00 (.)	1.20 (0.41)	0.00 (.)
01AUG84	36.20 (8.57)	0.02 (0.02)	4.10 (0.55)	5.85 (3.41)
22AUG84	25.51 (3.95)	0.00 (.)	0.90 (0.37)	0.00 (.)
20SEP84	0.11 (0.07)	0.00 (.)	0.16 (0.04)	0.00 (.)
25SEP84	0.12 (0.08)	0.00 (.)	0.09 (0.01)	0.00 (.)

FISH EGGS
SUMMARY OF TOWS AT STATION 10
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Engraulidae Eggs	Bothidae Eggs	Sciaenidae Eggs	Other Fish Eggs
02NOV83	0.00 (.)	0.17 (0.04)	0.01 (0.01)	0.00 (.)
19NOV83	0.00 (.)	0.02 (0.01)	0.00 (.)	0.00 (.)
14MAR84	0.00 (.)	0.01 (0.00)	0.00 (.)	0.00 (.)
18MAY84	47.02 (12.00)	0.00 (.)	0.07 (0.07)	0.00 (.)
02JUN84	8.23 (2.53)	0.00 (.)	0.05 (0.02)	0.50 (0.24)
13JUN84	412.36 (361.39)	0.00 (.)	9.06 (8.61)	0.93 (0.93)
11JUL84	195.39 (15.81)	0.04 (0.02)	2.13 (0.54)	0.00 (0.00)
26JUL84	0.43 (0.25)	0.00 (.)	1.15 (0.63)	219.32 (13.36)
01AUG84	92.64 (3.27)	0.00 (.)	2.01 (0.40)	4.48 (4.05)
22AUG84	31.11 (7.00)	0.00 (.)	0.35 (0.35)	0.98 (0.96)
20SEP84	0.05 (0.03)	0.00 (.)	0.13 (0.03)	0.00 (.)
25SEP84	0.02 (0.01)	0.00 (.)	0.00 (0.00)	0.00 (.)

FISH EGGS
SUMMARY OF TOWS AT STATION 10
MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD EXPJR)

DATE	Engraulidae Eggs	Bothidae Eggs	Sciaenidae Eggs	Other Fish Eggs
02NOV83	0.00 (.)	0.25 (0.02)	0.00 (.)	0.00 (.)
19NOV83	0.00 (.)	0.02 (0.02)	0.12 (0.04)	0.00 (.)
11DEC83	0.00 (.)	0.02 (0.02)	0.00 (.)	0.00 (.)
14MAR84	0.00 (.)	0.06 (0.03)	0.00 (.)	0.00 (.)
18APR84	0.00 (.)	0.22 (0.09)	0.00 (.)	0.00 (.)
02MAY84	0.00 (.)	0.10 (0.05)	0.00 (.)	0.01 (0.01)
03MAY84	0.00 (.)	0.11 (0.04)	0.00 (.)	0.00 (.)
18MAY84	18.27 (2.58)	0.23 (0.14)	0.07 (0.07)	0.00 (.)
13JUN84	14.59 (5.37)	0.00 (.)	1.02 (0.36)	0.00 (.)
11JUL84	186.92 (33.32)	0.00 (.)	4.72 (3.03)	0.00 (0.00)
26JUL84	37.93 (8.16)	0.00 (.)	2.56 (0.92)	0.00 (.)
01AUG84	489.79 (123.06)	0.06 (0.06)	22.60 (7.23)	0.14 (0.09)
22AUG84	14.41 (2.03)	0.00 (.)	4.55 (0.77)	0.00 (.)
20SEP84	0.01 (0.01)	0.00 (.)	0.34 (0.08)	0.00 (.)

FISH EGGS
SUMMARY OF TOWS AT STATION 11
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Engraulidae Eggs	Rothidae Eggs	Sciaenidae Eggs	Other Fish Eggs
29OCT83	0.00 (.)	0.00 (.)	0.00 (.)	0.09 (0.01)
19NOV83	0.00 (.)	0.01 (0.01)	0.00 (.)	0.00 (.)
11DEC83	0.00 (0.00)	0.00 (.)	0.02 (0.01)	0.01 (0.01)
14MAR84	0.00 (.)	0.04 (0.01)	0.00 (.)	0.00 (.)
18APR84	0.00 (.)	0.00 (0.00)	0.00 (.)	0.00 (.)
18MAY84	9.72 (4.05)	0.00 (.)	0.26 (0.21)	0.00 (.)
01JUN84	89.83 (22.10)	0.00 (.)	3.40 (0.48)	0.00 (.)
13JUN84	59.71 (17.51)	0.00 (.)	0.21 (0.13)	0.00 (.)
11JUL84	78.37 (15.01)	0.00 (.)	0.94 (0.15)	0.00 (.)
26JUL84	132.00 (18.62)	0.00 (.)	0.65 (0.36)	15.26 (16.26)
01AUG84	8.98 (3.15)	0.00 (.)	0.25 (0.05)	0.00 (.)
22AUG84	9.02 (0.92)	0.00 (.)	1.01 (0.23)	0.00 (.)
19SEP84	0.19 (0.11)	0.00 (.)	0.75 (0.13)	0.01 (0.01)
25SEP84	0.09 (0.05)	0.00 (.)	1.44 (0.20)	0.00 (.)

FISH EGGS
SUMMARY OF TOWS AT STATION 11
MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Engraulidae Eggs	Bothidae Eggs	Sciaenidae Eggs	Other Fish Eggs
29OCT83	0.00 (.)	0.00 (.)	0.25 (0.17)	0.00 (.)
19NOV83	0.00 (.)	0.00 (.)	0.00 (.)	0.09 (0.03)
11DEC83	0.00 (.)	0.06 (0.02)	0.00 (.)	0.00 (.)
14MAR84	0.00 (.)	0.04 (0.01)	0.00 (.)	0.00 (.)
18APR84	0.00 (.)	0.56 (0.11)	0.00 (.)	0.00 (.)
03MAY84	0.00 (.)	0.09 (0.06)	0.16 (0.16)	0.00 (.)
18MAY84	8.64 (3.28)	0.02 (0.01)	0.31 (0.25)	1.22 (0.46)
01JUN84	6.32 (2.15)	0.00 (.)	0.67 (0.23)	0.00 (.)
13JUN84	30.38 (9.82)	0.00 (.)	0.53 (0.20)	0.58 (0.58)
11JUL84	46.90 (10.69)	0.00 (.)	2.86 (0.69)	4.97 (4.96)
26JUL84	24.77 (7.88)	0.00 (.)	5.54 (1.37)	20.43 (9.83)
01AUG84	497.51 (157.58)	0.01 (0.01)	48.01 (14.04)	0.00 (.)
22AUG84	23.72 (2.99)	1.91 (1.14)	5.07 (0.83)	0.00 (.)
19SEP84	0.20 (0.15)	0.00 (.)	0.88 (0.05)	0.00 (.)

FISH EGGS

SUMMARY OF TOWS AT STATION 12

MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Engraulidae Eggs	Bothidae Eggs	Sciaenidae Eggs	Other Fish Eggs
29OCT83	0.00 (.)	0.00 (.)	0.00 (.)	0.02 (0.01)
14MAR84	0.00 (.)	0.01 (0.01)	0.00 (.)	0.00 (.)
18MAY84	51.03 (3.79)	0.02 (0.02)	0.13 (0.08)	0.05 (0.03)
02JUN84	4.30 (0.37)	0.00 (.)	0.46 (0.20)	0.39 (0.38)
13JUN84	29.45 (14.43)	0.00 (.)	0.01 (0.01)	0.00 (0.00)
11JUL84	36.00 (6.56)	0.00 (.)	1.31 (0.20)	1.98 (1.98)
26JUL84	114.85 (16.53)	0.00 (.)	0.85 (0.31)	0.00 (.)
01AUG84	54.93 (3.85)	0.00 (.)	0.65 (0.15)	0.00 (.)
22AUG84	4.37 (1.31)	0.00 (.)	0.01 (0.01)	0.00 (.)
20SEP84	0.12 (0.03)	0.00 (.)	0.21 (0.03)	0.00 (.)
25SEP84	0.04 (0.01)	0.00 (.)	0.52 (0.03)	0.01 (0.01)

FISH EGGS
SUMMARY OF TOWS AT STATION 12
MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Engraulidae Eggs	Bothidae Eggs	Sciaenidae Eggs	Other Fish Eggs
29OCT83	0.00 (.)	0.01 (0.01)	0.00 (.)	0.00 (.)
19NOV83	0.00 (.)	0.01 (0.01)	0.00 (.)	0.00 (.)
03MAY84	0.00 (.)	0.05 (0.03)	0.00 (.)	0.00 (.)
18MAY84	11.91 (2.40)	0.03 (0.03)	0.01 (0.01)	0.03 (0.02)
02JUN84	2.26 (0.26)	0.00 (.)	0.12 (0.03)	0.00 (.)
13JUN84	41.92 (7.25)	0.00 (.)	0.25 (0.14)	0.01 (0.01)
11JUL84	67.53 (8.05)	0.00 (.)	1.18 (0.34)	0.00 (.)
26JUL84	8.76 (5.24)	0.00 (.)	1.33 (0.73)	8.07 (8.07)
01AUG84	35.35 (19.51)	0.00 (.)	1.20 (0.23)	62.44 (40.23)
22AUG84	17.33 (6.50)	0.00 (.)	0.28 (0.07)	0.00 (.)
20SEP84	0.45 (0.33)	0.00 (.)	0.45 (0.05)	0.00 (.)

FISH EGGS
SUMMARY OF TOWS AT STATION 13
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Engraulidae Eggs	Bothidae Eggs	Sciaenidae Eggs	Other Fish Eggs
29OCT83	0.00 (.)	0.01 (0.00)	0.00 (.)	0.00 (0.00)
18MAY84	74.46 (7.15)	0.00 (.)	0.07 (0.05)	0.00 (.)
01JUN84	19.34 (0.83)	0.00 (.)	0.66 (0.10)	4.11 (1.42)
13JUN84	2.18 (0.44)	0.00 (.)	0.23 (0.04)	0.73 (0.42)
11JUL84	11.26 (3.39)	0.00 (.)	0.45 (0.09)	1.11 (1.11)
26JUL84	12.42 (11.43)	0.00 (.)	0.73 (0.14)	53.12 (20.48)
01AUG84	4.30 (1.62)	0.00 (.)	1.63 (0.65)	51.64 (4.96)
22AUG84	0.34 (0.07)	0.00 (.)	0.00 (.)	0.00 (.)
20SEP84	0.12 (0.04)	0.00 (.)	0.37 (0.15)	0.00 (.)
25SEP84	0.17 (0.06)	0.00 (.)	0.47 (0.07)	0.00 (.)

FISH EGGS
SUMMARY OF TOWS AT STATION 13
MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Engraulidae Eggs	Bothidae Eggs	Sciaenidae Eggs	Other Fish Eggs
29OCT83	0.00 (.)	0.00 (.)	0.00 (.)	0.01 (0.01)
19NOV83	0.00 (.)	0.03 (0.03)	0.00 (.)	0.00 (.)
14MAR84	0.00 (.)	0.06 (0.03)	0.00 (.)	0.00 (.)
18APR84	0.00 (.)	0.04 (0.04)	0.00 (.)	0.00 (.)
03MAY84	0.00 (.)	0.16 (0.08)	0.00 (.)	0.00 (.)
18MAY84	32.92 (12.34)	0.00 (.)	0.22 (0.15)	0.01 (0.01)
13JUN84	6.61 (1.06)	0.00 (.)	0.27 (0.05)	0.00 (.)
11JUL84	42.91 (10.68)	0.00 (.)	0.69 (0.16)	0.00 (.)
26JUL84	47.25 (13.41)	0.00 (.)	2.19 (0.81)	0.00 (.)
01AUG84	143.38 (50.33)	0.00 (.)	4.76 (1.57)	0.00 (.)
22AUG84	2.15 (1.53)	0.00 (.)	0.11 (0.03)	0.00 (.)
20SEP84	0.00 (.)	0.00 (.)	0.67 (0.10)	0.01 (0.01)

FISH EGGS
SUMMARY OF TOWS AT STATION 20
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Engraulidae Lggs	Bothidae Lggs	Sciaenidae Lggs	Other Fish Eggs
18MAY84	16.75 (2.39)	0.00 (.)	0.19 (0.07)	0.02 (0.01)
01JUN84	75.81 (31.89)	0.10 (0.08)	0.57 (0.20)	0.31 (0.28)
13JUN84	6.54 (1.10)	0.00 (.)	0.03 (0.05)	0.00 (0.00)
11JUL84	40.17 (10.51)	0.00 (.)	0.41 (0.22)	0.00 (.)
26JUL84	97.24 (14.59)	0.00 (.)	0.04 (0.09)	0.01 (0.01)
01AUG84	12.61 (4.63)	0.03 (0.02)	1.55 (0.39)	2.36 (2.36)
22AUG84	1.16 (0.44)	0.00 (.)	0.01 (0.01)	2.35 (0.73)
19SEP84	0.85 (0.41)	0.00 (.)	1.24 (0.12)	0.00 (.)
25SEP84	0.14 (0.06)	0.00 (.)	0.93 (0.07)	0.00 (.)

FISH EGGS
SUMMARY OF TOWS AT STATION 20
MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Engraulidae Eggs	Bothidae Eggs	Sciaenidae Eggs	Other Fish Eggs
03MAY84	0.00 (.)	0.01 (0.01)	0.00 (.)	0.00 (.)
18MAY84	19.57 (8.79)	0.26 (0.14)	2.15 (1.52)	0.00 (.)
01JUN84	24.89 (5.14)	0.00 (.)	1.29 (0.31)	5.21 (1.05)
13JUN84	11.03 (1.66)	0.00 (.)	0.64 (0.14)	0.00 (.)
11JUL84	132.75 (64.97)	0.00 (.)	7.95 (3.68)	19.33 (15.56)
26JUL84	123.10 (55.03)	0.00 (.)	12.12 (4.63)	0.20 (0.20)
01AUG84	279.22 (137.58)	0.16 (0.16)	26.47 (16.14)	0.11 (0.11)
22AUG84	4.63 (1.00)	0.01 (0.01)	9.79 (1.13)	13.73 (1.57)
19SEP84	0.13 (0.08)	0.00 (.)	1.88 (0.23)	0.00 (.)

 FISH EGGS
 SUMMARY OF TOWS AT STATION 21
 MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Engraulidae Eggs	Gobthidae Eggs	Sciaenidae Eggs	Other Fish Eggs
09MAY84	0.07 (0.01)	0.00 (.)	0.12 (0.05)	0.00 (.)
21MAY84	22.42 (1.64)	0.01 (0.01)	0.01 (0.01)	1.91 (1.91)
02JUN84	19.64 (3.94)	0.00 (0.00)	0.07 (0.05)	0.93 (0.54)
14JUN84	22.02 (2.27)	0.00 (.)	0.09 (0.06)	0.68 (0.27)
12JUL84	75.51 (17.03)	0.00 (.)	0.14 (0.05)	6.22 (6.22)
26JUL84	200.16 (10.83)	0.00 (.)	0.06 (0.05)	0.00 (.)
01AUG84	32.88 (5.82)	0.00 (.)	0.22 (0.14)	0.00 (.)
21AUG84	179.49 (51.86)	0.10 (0.07)	100.33 (54.09)	0.00 (.)
19SEP84	0.45 (0.15)	0.00 (.)	0.79 (0.14)	0.00 (.)

 FISH EGGS
 SUMMARY OF TOWS AT STATION 21
 MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Engraulidae Eggs	Bothidae Eggs	Scleridae Eggs	Other Fish Eggs
09MAY84	0.00 (.)	0.04 (0.04)	0.04 (0.04)	0.00 (.)
21MAY84	13.99 (1.21)	0.00 (.)	0.45 (0.15)	0.86 (0.86)
14JUN84	6.67 (4.09)	0.00 (.)	0.90 (0.61)	3.51 (2.19)
26JUL84	55.52 (25.76)	0.00 (.)	12.57 (4.70)	1.79 (1.79)
01AUG84	166.73 (73.34)	0.15 (0.15)	18.04 (6.07)	0.00 (.)
12AUG84	45.47 (10.37)	0.00 (.)	6.19 (1.69)	0.00 (.)
21AUG84	107.23 (18.92)	0.39 (0.24)	15.62 (2.20)	0.00 (.)
19SEP84	0.16 (0.16)	0.00 (.)	0.66 (0.07)	0.00 (.)

FISH EGGS
SUMMARY OF TOWS AT STATION 22
MEAN OF 4 353 U NEUSTON TOWS IN NOS PER PETER CUBED (STD ERROR)

DATE	Engraulidae Eggs	Bothidae Eggs	Sciaenidae Eggs	Other Fish Eggs
09MAY84	0.03 (0.00)	0.00 (.)	0.03 (0.00)	0.08 (0.08)
21MAY84	18.17 (5.42)	0.00 (.)	0.10 (0.10)	9.57 (2.66)
02JUN84	10.30 (6.43)	0.00 (.)	0.03 (0.03)	0.31 (0.31)
14JUN84	24.30 (2.53)	0.00 (.)	0.15 (0.15)	0.00 (.)
12JUL84	71.41 (5.39)	0.00 (.)	0.10 (0.04)	0.00 (.)
26JUL84	280.75 (93.55)	0.00 (.)	0.03 (0.03)	2.44 (2.44)
01AUG84	64.36 (12.24)	0.00 (.)	0.14 (0.09)	0.04 (0.03)
21AUG84	233.82 (56.10)	0.00 (0.04)	99.15 (14.53)	0.00 (.)
19SEP84	0.14 (0.04)	0.00 (.)	0.59 (0.14)	0.00 (.)

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CHARACTERIZATION OF MERO-AND ICHTHYOPLANKTON
COMMUNITIES WITHIN THE CHESA. (U) OLD DOMINION UNIV
NORFOLK VA APPLIED MARINE RESEARCH LAB A J BUTT ET AL.

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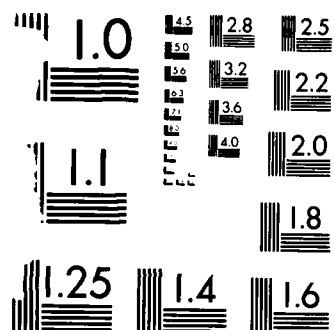
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MICROCOPY RESOLUTION TEST CHART
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FISH EGGS
SUMMARY OF TOWS AT STATION 22
MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Engraulidae Eggs	Bothidae Eggs	Sciaenidae Eggs	Other Fish Eggs
09MAY84	0.05 (0.02)	0.08 (0.03)	0.04 (0.03)	0.00 (.)
21MAY84	24.02 (3.49)	0.00 (.)	3.89 (3.53)	1.98 (1.98)
02JUN84	13.32 (1.54)	0.00 (.)	0.13 (0.05)	0.01 (0.01)
13JUN84	29.50 (11.08)	0.00 (.)	2.12 (1.18)	0.00 (.)
12JUL84	81.09 (12.33)	0.00 (.)	2.89 (0.67)	0.00 (.)
26JUL84	242.87 (46.88)	0.01 (0.01)	4.60 (1.89)	0.69 (0.23)
01AUG84	322.28 (128.53)	0.00 (.)	24.59 (10.94)	0.01 (0.01)
21AUG84	501.72 (149.82)	0.24 (0.10)	45.11 (19.54)	0.00 (.)
19SEP84	0.37 (0.35)	0.00 (.)	0.54 (0.18)	0.00 (.)

 FISH EGGS
 SUMMARY OF TOWS AT STATION 23
 MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Engraulidae Lggs	Bothidae Lggs	Sciaenidae Lggs	Other Fish Eggs
09MAY84	2.05 (0.53)	0.01 (0.01)	0.00 (0.02)	0.18 (0.04)
21MAY84	21.57 (2.77)	0.00 (.)	0.09 (0.03)	0.03 (0.02)
14JUN84	45.75 (4.04)	0.14 (0.14)	0.11 (0.06)	3.38 (2.60)
12JUL84	18.47 (6.96)	0.00 (.)	0.09 (0.02)	9.08 (5.31)
26JUL84	79.46 (21.10)	0.00 (.)	1.62 (1.17)	33.18 (19.49)
01AUG84	87.75 (13.22)	0.00 (.)	0.85 (0.12)	0.05 (0.03)
21AUG84	59.04 (20.49)	0.00 (.)	0.03 (0.02)	0.00 (.)
20SEP84	0.00 (0.00)	0.00 (.)	0.03 (0.01)	0.00 (.)
26SEP84	0.03 (0.02)	0.00 (.)	0.06 (0.01)	0.00 (.)

 FISH EGGS
 SUMMARY OF TOWS AT STATION 23
 MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Engraulidae t ggs	Rothidae Eggs	Sciaenidae Eggs	Other Fish Eggs
09MAY84	1.34 (0.26)	0.02 (0.02)	0.04 (0.02)	0.55 (0.26)
21MAY84	17.07 (4.02)	0.00 (.)	0.30 (0.14)	0.01 (0.01)
12JUL84	39.66 (3.60)	0.00 (.)	2.82 (1.12)	0.00 (.)
26JUL84	92.47 (49.01)	0.00 (.)	4.82 (2.23)	0.00 (.)
01AUG84	502.14 (344.10)	0.00 (.)	24.42 (19.72)	0.07 (0.07)
21AUG84	241.44 (56.13)	2.67 (1.38)	2.82 (1.15)	0.00 (.)
20SEP84	0.00 (.)	0.00 (.)	0.23 (0.03)	0.00 (.)

FISHES - 1
SUMMARY OF TOWS AT STATION 1
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Etropus microstomus	Paralichthys dentatus	Scophthalmus aquosus	Engraulidae Fry
01JUN84	0.00 (.)	0.00 (.)	0.01 (0.01)	0.01 (0.01)
26JUL84	0.00 (.)	0.00 (.)	0.01 (0.01)	0.09 (0.09)
01AUG84	0.00 (.)	0.00 (.)	0.00 (.)	0.35 (0.14)
22AUG84	0.00 (.)	0.00 (.)	0.00 (.)	0.03 (0.02)
20SEP84	0.00 (.)	0.00 (.)	0.00 (.)	0.21 (0.05)
25SEP84	0.00 (.)	0.00 (.)	0.00 (.)	2.31 (1.62)

MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CURED (STD ERROR)

DATE	Etropus microstomus	Paralichthys dentatus	Scophthalmus aquosus	Engraulidae Fry
19NOV83	0.00 (.)	0.00 (.)	0.00 (0.00)	0.00 (.)
18MAY84	0.00 (.)	0.00 (.)	0.00 (.)	0.01 (0.01)
11JUL84	0.06 (0.06)	0.00 (.)	0.00 (.)	0.05 (0.05)
26JUL84	0.00 (.)	0.00 (.)	0.00 (0.05)	1.82 (0.88)
01AUG84	0.00 (.)	0.00 (.)	0.00 (0.05)	0.13 (0.13)
22AUG84	0.25 (0.23)	0.00 (.)	0.01 (0.01)	0.08 (0.08)
20SEP84	0.11 (0.06)	0.00 (.)	0.00 (.)	0.01 (0.01)

FISHES - 1
SUMMARY OF TOWS AT STATION 10
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Etropus microstomus	Paralichthys dentatus	Scophthalmus aquosus	Engraulidae Fry
26JUL84	0.00 (.)	0.00 (.)	0.00 (.)	0.20 (0.14)
01AUG84	0.00 (.)	0.00 (.)	0.00 (.)	0.08 (0.05)
22AUG84	0.00 (.)	0.00 (.)	0.00 (0.00)	0.00 (.)
25SEP84	0.00 (.)	0.00 (.)	0.00 (.)	0.21 (0.07)

MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Etropus microstomus	Paralichthys dentatus	Scophthalmus aquosus	Engraulidae Fry
26JUL84	0.00 (.)	0.00 (.)	0.04 (0.04)	0.82 (0.49)
01AUG84	0.00 (.)	0.00 (.)	0.00 (0.00)	4.75 (3.50)
20SEP84	0.00 (.)	0.00 (.)	0.00 (.)	0.01 (0.01)

 FISHES - 1
 SUMMARY OF TOWS AT STATION 12
 MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Etropus microstomus	Paralichthys dentatus	Scophthalmus aquosus	Engraulidae Fry
26JUL84	0.00 (.)	0.00 (.)	0.00 (.)	0.33 (0.21)
01AUG84	0.00 (.)	0.00 (.)	0.01 (0.01)	0.50 (0.20)
25SEP84	0.00 (.)	0.00 (.)	0.00 (.)	0.28 (0.24)

 MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Etropus microstomus	Paralichthys dentatus	Scophthalmus aquosus	Engraulidae Fry
11JUL84	0.00 (.)	0.00 (.)	0.02 (0.02)	0.00 (.)
26JUL84	0.00 (.)	0.00 (.)	0.00 (.)	0.23 (0.23)
01AUG84	0.05 (0.05)	0.00 (.)	0.00 (.)	0.84 (0.50)
22AUG84	0.02 (0.01)	0.00 (.)	0.00 (.)	0.00 (.)
20SEP84	0.00 (.)	0.00 (.)	0.00 (.)	0.01 (0.01)

FISHES - 1
SUMMARY OF TOWS AT STATION 13
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Etropus microstomus	Paralichthys dentatus	Scophthalmus aquosus	Engraulidae Fry
11DEC83	0.00 (.)	0.01 (0.01)	0.00 (.)	0.00 (.)
01JUN84	0.00 (.)	0.00 (.)	0.00 (.)	0.01 (0.01)
26JUL84	0.00 (.)	0.00 (.)	0.00 (.)	0.26 (0.16)
01AUG84	0.00 (.)	0.00 (.)	0.00 (.)	0.19 (0.09)
22AUG84	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (0.00)
25SEP84	0.00 (.)	0.00 (.)	0.00 (.)	0.27 (0.22)

MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Etropus microstomus	Paralichthys dentatus	Scophthalmus aquosus	Engraulidae Fry
18MAY84	0.00 (.)	0.00 (.)	0.03 (0.02)	0.00 (.)
26JUL84	0.00 (.)	0.00 (.)	0.00 (.)	4.23 (0.97)
01AUG84	0.00 (.)	0.00 (.)	0.00 (.)	1.52 (0.51)
22AUG84	0.02 (0.02)	0.00 (.)	0.00 (.)	0.00 (.)

 FISHES - 1
 SUMMARY OF TOWS AT STATION 20
 MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Etropus microstomus	Paralichthys dentatus	Scophthalmus aquosus	Engraulidae Fry
26JUL84	0.00 (.)	0.00 (.)	0.00 (.)	0.06 (0.06)
01AUG84	0.00 (.)	0.00 (.)	0.00 (.)	0.15 (0.03)
19SEP84	0.00 (.)	0.00 (.)	0.00 (.)	0.02 (0.02)
25SEP84	0.00 (.)	0.00 (.)	0.00 (.)	0.01 (0.01)

 MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Etropus microstomus	Paralichthys dentatus	Scophthalmus aquosus	Engraulidae Fry
18MAY84	0.00 (.)	0.00 (.)	0.02 (0.02)	0.00 (.)
26JUL84	0.00 (.)	0.00 (.)	0.00 (.)	7.30 (4.17)
01AUG84	0.00 (.)	0.00 (.)	0.06 (0.06)	7.98 (6.71)
22AUG84	0.00 (.)	0.00 (.)	0.12 (0.09)	0.13 (0.13)
19SEP84	0.19 (0.14)	0.00 (.)	0.00 (.)	0.11 (0.11)

FISHES - 1
SUMMARY OF TOWS AT STATION 21
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Etropus microstomus	Paralichthys dentatus	Scophthalmus aquosus	Engraulidae Fry
26JUL84	0.00 (.)	0.00 (.)	0.00 (.)	0.55 (0.32)
01AUG84	0.00 (.)	0.00 (.)	0.00 (.)	0.34 (0.17)
21AUG84	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (0.00)
19SEP84	0.00 (.)	0.00 (.)	0.00 (.)	0.13 (0.05)

MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Etropus microstomus	Paralichthys dentatus	Scophthalmus aquosus	Engraulidae Fry
09MAY84	0.00 (.)	0.00 (.)	0.28 (0.23)	0.00 (.)
21MAY84	0.00 (.)	0.00 (.)	0.01 (0.01)	0.00 (.)
26JUL84	0.00 (.)	0.00 (.)	0.17 (0.12)	14.48 (7.09)
01AUG84	0.00 (.)	0.00 (.)	0.11 (0.11)	5.75 (3.40)
21AUG84	0.30 (0.30)	0.38 (0.22)	0.42 (0.26)	0.40 (0.40)
19SEP84	0.00 (.)	0.00 (.)	0.00 (.)	0.44 (0.24)

 FISHES - 1
 SUMMARY OF TOWS AT STATION 22
 MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Etropus microstomus	Paralichthys dentatus	Scophthalmus aquosus	Engraulidae Fry
21MAY84	0.00 (.)	0.00 (.)	0.00 (.)	0.01 (0.01)
26JUL84	0.00 (.)	0.00 (.)	0.00 (.)	0.22 (0.12)
01AUG84	0.00 (.)	0.00 (.)	0.00 (.)	0.11 (0.11)
21AUG84	0.00 (.)	0.00 (.)	0.00 (.)	0.01 (0.01)

 MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Etropus microstomus	Paralichthys dentatus	Scophthalmus aquosus	Engraulidae Fry
09MAY84	0.00 (.)	0.00 (.)	0.04 (0.04)	0.00 (.)
21MAY84	0.00 (.)	0.00 (.)	0.01 (0.01)	0.00 (.)
02JUN84	0.01 (0.01)	0.00 (.)	0.00 (.)	0.00 (.)
26JUL84	0.00 (.)	0.00 (.)	0.00 (.)	2.75 (1.29)
01AUG84	0.00 (.)	0.00 (.)	0.02 (0.02)	9.83 (5.29)
21AUG84	0.12 (0.10)	0.39 (0.39)	0.00 (.)	0.13 (0.13)
19SEP84	0.05 (0.03)	0.00 (.)	0.00 (.)	0.00 (.)

FISHES - 1
SUMMARY OF TOWS AT STATION 23
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Etropus microstomus	Paralichthys dentatus	Scophthalmus aquosus	Ingraulidae Fry
26JUL84	0.00 (.)	0.00 (.)	0.00 (.)	0.47 (0.20)
20SEP84	0.00 (.)	0.00 (.)	0.00 (.)	0.06 (0.07)

MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Etropus microstomus	Paralichthys dentatus	Scophthalmus aquosus	Ingraulidae Fry
09MAY84	0.00 (.)	0.00 (.)	0.00 (0.00)	0.00 (.)
21MAY84	0.00 (.)	0.00 (.)	0.00 (.)	0.01 (0.01)
26JUL84	0.00 (.)	0.00 (.)	0.00 (.)	2.64 (1.35)
01AUG84	0.00 (.)	0.00 (.)	0.00 (0.05)	2.68 (2.68)

 SCIAENIDS AND OTHER FISH
 SUMMARY OF TOWS AT STATION 1
 MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Cynoscion regalis	Leiostomus xanthurus	Ammodytes hexapterus	Anchoa mitchelli
04JAN84	0.00 (.)	0.00 (.)	0.00 (0.00)	0.00 (.)
01AUG84	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (0.00)
20SEP84	0.00 (0.00)	0.00 (.)	0.00 (.)	0.00 (.)

 MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Cynoscion regalis	Leiostomus xanthurus	Ammodytes hexapterus	Anchoa mitchelli
04JAN84	0.00 (.)	0.00 (.)	0.00 (0.00)	0.00 (.)
14MAR84	0.00 (.)	0.00 (.)	0.03 (0.03)	0.01 (0.01)
11JUL84	0.05 (0.05)	0.00 (.)	0.00 (.)	0.00 (.)
26JUL84	0.00 (.)	0.00 (.)	0.00 (.)	0.17 (0.17)
01AUG84	0.06 (0.06)	0.00 (.)	0.00 (.)	1.91 (1.13)
22AUG84	0.15 (0.10)	0.00 (.)	0.00 (.)	1.14 (0.45)
20SEP84	0.53 (0.18)	0.00 (.)	0.00 (.)	0.05 (0.04)

SCIAENIDS AND OTHER FISH
SUMMARY OF TOWS AT STATION 10
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Cynoscion regalis	Leiostomus xanthurus	Ammodytes hexapterus	Anchoa mitchelli
02FEB84	0.00 (.)	0.00 (.)	0.00 (0.00)	0.00 (.)
19FEB84	0.00 (.)	0.00 (.)	0.01 (0.01)	0.00 (.)
22AUG84	0.00 (0.00)	0.00 (.)	0.00 (.)	0.01 (0.01)

MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Cynoscion regalis	Leiostomus xanthurus	Ammodytes hexapterus	Anchoa mitchelli
19NOV83	0.00 (.)	0.00 (.)	0.00 (.)	0.01 (0.01)
14MAR84	0.00 (.)	0.00 (.)	0.00 (0.00)	0.00 (.)
11JUL84	0.00 (.)	0.00 (.)	0.00 (.)	0.01 (0.01)
26JUL84	0.00 (.)	0.00 (.)	0.10 (0.06)	0.24 (0.19)
01AUG84	0.15 (0.13)	0.00 (.)	0.00 (.)	2.42 (0.92)
22AUG84	0.78 (0.30)	0.00 (.)	0.00 (.)	0.00 (.)
20SEP84	0.10 (0.06)	0.00 (.)	0.00 (.)	0.03 (0.01)

 SCIAENIDS AND OTHER FISH
 SUMMARY OF TOWS AT STATION 11
 MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Cynoscion regalis	Leiostomus xanthurus	Ammodytes hexapterus	Anchoa mitchelli
11DEC83	0.00 (.)	0.00 (.)	0.00 (0.00)	0.00 (.)
04JAN84	0.00 (.)	0.00 (.)	0.02 (0.01)	0.00 (0.00)
26JUL84	0.00 (.)	0.00 (.)	0.07 (0.06)	0.00 (.)
01AUG84	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (0.00)
22AUG84	0.11 (0.09)	0.00 (.)	0.00 (.)	0.01 (0.00)
25SEP84	0.01 (0.01)	0.00 (.)	0.00 (.)	0.00 (.)

 MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Cynoscion regalis	Leiostomus xanthurus	Ammodytes hexapterus	Anchoa mitchelli
26JUL84	0.00 (.)	0.00 (.)	0.05 (0.05)	0.03 (0.03)
01AUG84	0.64 (0.62)	0.00 (.)	0.00 (.)	0.00 (.)
22AUG84	0.17 (0.06)	0.25 (0.15)	0.00 (.)	0.70 (0.42)
19SEP84	0.21 (0.10)	0.00 (.)	0.00 (.)	0.03 (0.02)

SCIAENIDS AND OTHER FISH
SUMMARY OF TOWS AT STATION 12
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Cynoscion regalis	Leiostomus xanthurus	Ammodytes hexapterus	Anchoa mitchelli
26JUL84	0.00 (.)	0.00 (.)	0.00 (.)	0.01 (0.01)
22AUG84	0.00 (0.00)	0.00 (.)	0.00 (.)	0.00 (.)

MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Cynoscion regalis	Leiostomus xanthurus	Ammodytes hexapterus	Anchoa mitchelli
26JUL84	0.00 (.)	0.00 (.)	0.50 (0.50)	1.74 (1.32)
01AUG84	0.00 (.)	0.00 (.)	0.00 (.)	2.02 (0.89)
22AUG84	0.01 (0.01)	0.00 (.)	0.00 (.)	0.15 (0.11)
20SEP84	0.03 (0.02)	0.00 (.)	0.00 (.)	0.00 (.)

SCIAENIDS AND OTHER FISH
SUMMARY OF TOWS AT STATION 13
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Cynoscion regalis	Leiostomus xanthurus	Ammodytes hexapterus	Anchoa mitchelli
26JUL84	0.00 (.)	0.00 (.)	0.00 (.)	0.03 (0.03)
01AUG84	0.00 (.)	0.00 (.)	0.00 (.)	0.25 (0.10)

MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Cynoscion regalis	Leiostomus xanthurus	Ammodytes hexapterus	Anchoa mitchelli
01AUG84	0.47 (0.24)	0.00 (.)	0.33 (0.31)	3.43 (2.09)
22AUG84	0.00 (.)	0.00 (.)	0.05 (0.04)	0.16 (0.16)
20SEP84	0.04 (0.02)	0.00 (.)	0.00 (.)	0.00 (0.00)

SCIAENIDS AND OTHER FISH
SUMMARY OF TOWS AT STATION 20
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Cynoscion regalis	Leiostomus xanthurus	Ammodytes hexapterus	Anchoa mitchelli
01JUN84	0.00 (.)	0.00 (.)	0.01 (0.01)	0.00 (.)
26JUL84	0.00 (.)	0.00 (.)	0.00 (.)	0.02 (0.02)
22AUG84	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (0.00)
19SEP84	0.02 (0.01)	0.00 (.)	0.00 (.)	0.00 (.)

MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Cynoscion regalis	Leiostomus xanthurus	Ammodytes hexapterus	Anchoa mitchelli
03MAY84	0.00 (.)	0.00 (.)	0.01 (0.01)	0.00 (.)
01JUN84	0.00 (.)	0.00 (.)	0.01 (0.01)	0.00 (.)
11JUL84	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (0.00)
26JUL84	0.00 (.)	0.00 (.)	0.00 (.)	0.25 (0.11)
01AUG84	0.09 (0.05)	0.00 (.)	0.00 (.)	0.69 (0.29)
22AUG84	0.00 (.)	0.00 (.)	0.00 (.)	0.58 (0.17)
19SEP84	0.72 (0.21)	0.00 (.)	0.00 (.)	0.01 (0.01)

SCIAENIDS AND OTHER FISH
SUMMARY OF TOWS AT STATION 21
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Cynoscion regalis	Leiostomus xanthurus	Ammodytes hexapterus	Anchoa mitchelli
21MAY84	0.00 (.)	0.00 (.)	0.01 (0.01)	0.00 (.)
26JUL84	0.00 (.)	0.00 (.)	0.00 (.)	0.03 (0.03)
01AUG84	0.01 (0.01)	0.00 (.)	0.00 (.)	0.00 (.)

MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Cynoscion regalis	Leiostomus xanthurus	Ammodytes hexapterus	Anchoa mitchelli
26JUL84	0.00 (.)	0.00 (.)	0.00 (.)	0.16 (0.16)
01AUG84	0.00 (.)	0.00 (.)	0.00 (.)	0.04 (0.04)
21AUG84	0.24 (0.24)	0.00 (.)	0.00 (.)	1.21 (0.17)
19SEP84	0.71 (0.29)	0.71 (0.01)	0.00 (.)	0.02 (0.02)

SCIAENIDS AND OTHER FISH
SUMMARY OF TOWS AT STATION 22
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Cynoscion regalis	Leiostomus xanthurus	Ammodytes hexapterus	Anchoa mitchelli
26JUL84	0.00 (.)	0.00 (.)	0.00 (.)	0.06 (0.06)
01AUG84	0.00 (.)	0.00 (.)	0.00 (.)	0.03 (0.03)
21AUG84	0.00 (.)	0.00 (.)	0.00 (.)	0.02 (0.01)

MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Cynoscion regalis	Leiostomus xanthurus	Ammodytes hexapterus	Anchoa mitchelli
26JUL84	0.00 (.)	0.00 (.)	0.00 (.)	0.03 (0.03)
21AUG84	0.66 (0.38)	0.00 (.)	0.00 (.)	1.00 (0.54)
19SEP84	0.07 (0.07)	0.00 (.)	0.00 (.)	0.00 (.)

SCIAENIDS AND OTHER FISH
SUMMARY OF TOWS AT STATION 23
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Cynoscion regalis	Leiostomus xanthurus	Ammodytes hexapterus	Anchoa mitchelli
12JUL84	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (0.00)
26SEP84	0.00 (0.00)	0.00 (.)	0.00 (.)	0.00 (.)

MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Cynoscion regalis	Leiostomus xanthurus	Ammodytes hexapterus	Anchoa mitchelli
26JUL84	0.00 (.)	0.00 (.)	0.00 (.)	1.01 (0.12)
01AUG84	0.43 (0.30)	0.00 (.)	0.00 (.)	0.19 (0.14)
21AUG84	0.09 (0.05)	0.00 (.)	0.00 (.)	0.67 (0.21)
20SEP84	0.18 (0.18)	0.00 (.)	0.00 (.)	0.00 (.)

 MISCELLANEOUS PHYLA
 SUMMARY OF TOWS AT STATION 1
 MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD EXPUR)

DATE	Larvacea	Phoronida
01JUN84	9.69 (6.59)	0.00 (.)
26JUL84	0.03 (0.03)	0.00 (.)
01AUG84	0.74 (0.11)	0.00 (.)
22AUG84	0.34 (0.34)	0.02 (0.01)
20SEP84	1.13 (0.43)	0.01 (0.01)
25SEP84	0.60 (0.14)	0.00 (0.00)

 MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Larvacea	Phoronida
03OCT83	3.39 (2.52)	0.00 (.)
13OCT83	0.37 (0.08)	0.00 (.)
01NOV83	0.01 (0.01)	0.00 (.)
19NOV83	102.90 (29.11)	0.07 (0.07)
11DEC83	1.18 (0.22)	0.00 (.)
14MAR84	0.01 (0.01)	0.02 (0.02)
18MAY84	9.28 (5.09)	0.00 (.)
01JUN84	41.63 (17.24)	0.00 (.)
13JUN84	1.66 (0.96)	0.17 (0.17)
11JUL84	10.68 (10.41)	0.19 (0.19)
26JUL84	21.11 (11.22)	0.25 (0.16)
01AUG84	14.87 (0.70)	0.00 (.)
22AUG84	65.70 (19.88)	6.06 (0.90)
20SEP84	60.48 (8.16)	0.13 (0.06)

MISCELLANEOUS PHYLA
SUMMARY OF TOWS AT STATION 10
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE Larvacea Phoronida

19NOV83	0.12 (0.03)	0.00 (.)
19FEB84	0.01 (0.01)	0.00 (.)
18MAY84	0.04 (0.04)	0.00 (.)
02JUN84	0.01 (0.01)	0.00 (.)
01AUG84	0.19 (0.03)	0.00 (.)
20SEP84	0.64 (0.43)	0.00 (.)
25SEP84	0.12 (0.04)	0.00 (.)

MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE Larvacea Phoronida

02NOV83	0.05 (0.01)	0.00 (.)
19NOV83	56.87 (8.18)	0.00 (.)
11DEC83	5.17 (2.16)	0.00 (.)
14MAR84	0.00 (.)	0.06 (0.03)
18MAY84	0.21 (0.21)	0.00 (.)
13JUN84	0.04 (0.04)	0.00 (.)
11JUL84	0.16 (0.05)	0.36 (0.09)
26JUL84	7.12 (1.65)	0.04 (0.02)
01AUG84	16.55 (8.42)	0.09 (0.09)
22AUG84	26.63 (6.01)	8.82 (3.44)
20SEP84	3.54 (0.57)	0.26 (0.04)

 MISCELLANEOUS PHYLA
 SUMMARY OF TOWS AT STATION 11
 MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Larvacea	Phoronida
19NOV83	0.04 (0.03)	0.00 (.)
11DEC83	0.01 (0.01)	0.00 (0.00)
18MAY84	0.03 (0.02)	0.00 (.)
01JUN84	42.95 (15.77)	0.00 (.)
11JUL84	0.01 (0.01)	0.00 (.)
26JUL84	0.50 (0.13)	0.00 (.)
01AUG84	0.24 (0.06)	0.00 (.)
22AUG84	0.16 (0.06)	0.00 (.)
19SEP84	54.64 (8.68)	0.00 (.)
25SEP84	19.28 (6.41)	0.00 (.)

 MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Larvacea	Phoronida
19NOV83	56.44 (11.79)	0.00 (.)
11DEC83	0.86 (0.27)	0.00 (.)
14MAR84	0.00 (.)	0.02 (0.01)
03MAY84	0.00 (.)	0.03 (0.03)
18MAY84	56.89 (16.65)	0.00 (.)
01JUN84	19.10 (6.34)	0.00 (.)
13JUN84	0.19 (0.19)	0.00 (.)
11JUL84	0.20 (0.12)	0.00 (.)
26JUL84	15.93 (6.74)	0.22 (0.13)
01AUG84	310.22 (220.65)	0.00 (.)
22AUG84	80.59 (21.53)	3.40 (0.68)
19SEP84	42.97 (10.52)	0.00 (.)

 MISCELLANEOUS PHYLA
 SUMMARY OF TOWS AT STATION 12
 MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Larvacea	Phoronida
29OCT83	0.00 (0.00)	0.00 (.)
19NOV83	0.24 (0.12)	0.00 (.)
18MAY84	0.02 (0.02)	0.00 (.)
02JUN84	0.03 (0.01)	0.00 (.)
13JUN84	0.00 (0.00)	0.00 (.)
11JUL84	0.02 (0.02)	0.00 (.)
26JUL84	0.04 (0.04)	0.00 (.)
01AUG84	1.83 (0.37)	0.00 (.)
22AUG84	0.05 (0.02)	0.00 (.)
20SEP84	0.48 (0.11)	0.00 (.)
25SEP84	1.26 (0.30)	0.01 (0.01)

 MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Larvacea	Phoronida
29OCT83	0.01 (0.01)	0.00 (.)
19NOV83	40.68 (10.50)	0.00 (.)
11DEC83	0.04 (0.04)	0.00 (.)
18MAY84	0.40 (0.16)	0.00 (.)
02JUN84	0.04 (0.03)	0.00 (.)
13JUN84	0.01 (0.01)	0.00 (.)
11JUL84	0.01 (0.01)	0.00 (.)
26JUL84	52.45 (30.66)	0.04 (0.04)
01AUG84	5.09 (0.83)	0.12 (0.05)
22AUG84	0.59 (0.17)	0.09 (0.05)
20SEP84	2.93 (0.35)	0.43 (0.16)

 MISCELLANEOUS PHYLA
 SUMMARY OF TOWS AT STATION 13
 MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Larvacea	Phoronida
19NOV83	0.09 (0.04)	0.00 (.)
19FEB84	0.01 (0.01)	0.00 (.)
18MAY84	0.01 (0.01)	0.00 (.)
01JUN84	0.18 (0.07)	0.00 (.)
26JUL84	0.08 (0.03)	0.00 (.)
01AUG84	0.92 (0.34)	0.00 (.)
22AUG84	0.02 (0.01)	0.00 (.)
20SEP84	0.05 (0.02)	0.00 (.)
25SEP84	0.49 (0.14)	0.01 (0.00)

 MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Larvacea	Phoronida
19NOV83	5.15 (1.75)	0.00 (.)
11DEC83	1.01 (0.65)	0.00 (.)
18MAY84	0.71 (0.71)	0.00 (.)
13JUN84	0.02 (0.02)	0.00 (.)
26JUL84	42.53 (10.37)	0.11 (0.11)
01AUG84	6.09 (1.77)	0.08 (0.06)
22AUG84	0.00 (.)	0.03 (0.02)
20SEP84	0.76 (0.26)	0.08 (0.03)

MISCELLANEOUS PHYLA
SUMMARY OF TOWS AT STATION 20
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Larvacea	Phoronida
18MAY84	0.02 (0.02)	0.00 (.)
01JUN84	1.90 (0.61)	0.00 (.)
13JUN84	0.00 (0.00)	0.00 (.)
26JUL84	0.18 (0.11)	0.01 (0.01)
01AUG84	0.65 (0.14)	0.00 (0.00)
22AUG84	0.00 (0.00)	0.00 (.)
19SEP84	30.18 (3.99)	0.00 (.)
25SEP84	29.10 (11.00)	0.00 (.)

MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Larvacea	Phoronida
03MAY84	0.00 (.)	0.09 (0.09)
18MAY84	2.61 (2.61)	0.00 (.)
01JUN84	4.71 (0.89)	0.00 (.)
13JUN84	0.07 (0.05)	0.02 (0.02)
11JUL84	0.30 (0.14)	0.11 (0.11)
26JUL84	35.77 (11.63)	0.00 (.)
01AUG84	52.92 (23.51)	0.06 (0.06)
22AUG84	64.35 (34.19)	1.99 (0.59)
19SEP84	52.65 (8.69)	0.00 (.)

MISCELLANEOUS PHYLA
 SUMMARY OF TOWS AT STATION 21
 MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Larvacea	Phoronida
02JUN84	0.07 (0.04)	0.00 (.)
26JUL84	0.57 (0.24)	0.00 (.)
01AUG84	2.34 (0.50)	0.07 (0.07)
21AUG84	0.98 (0.17)	0.09 (0.08)
19SEP84	11.16 (2.49)	0.01 (0.01)

MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Larvacea	Phoronida
09MAY84	0.06 (0.06)	0.00 (.)
21MAY84	7.64 (3.18)	0.00 (.)
14JUN84	0.65 (0.60)	0.07 (0.04)
26JUL84	23.40 (17.06)	0.00 (.)
01AUG84	364.59 (172.52)	0.00 (.)
12AUG84	0.34 (0.14)	0.05 (0.04)
21AUG84	237.81 (53.01)	0.71 (0.35)
19SEP84	18.79 (5.35)	0.00 (.)

MISCELLANEOUS PHYLA
SUMMARY OF TOWS AT STATION 22
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Larvacea	Phoronida
09MAY84	0.02 (0.02)	0.00 (.)
02JUN84	0.94 (0.89)	0.00 (.)
12JUL84	0.01 (0.01)	0.00 (.)
26JUL84	1.27 (0.98)	0.00 (.)
01AUG84	2.45 (0.18)	0.00 (.)
21AUG84	4.16 (0.86)	0.10 (0.10)
19SEP84	5.57 (3.17)	0.00 (.)

MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Larvacea	Phoronida
09MAY84	0.49 (0.49)	0.00 (.)
21MAY84	0.64 (0.46)	0.00 (.)
02JUN84	0.32 (0.21)	0.00 (.)
13JUN84	0.39 (0.32)	0.05 (0.04)
12JUL84	0.61 (0.24)	0.18 (0.18)
26JUL84	16.68 (6.79)	0.04 (0.03)
01AUG84	351.26 (171.47)	0.04 (0.04)
21AUG84	156.38 (33.91)	0.03 (0.03)
19SEP84	80.93 (22.05)	0.00 (.)

 MISCELLANEOUS PHYLA
 SUMMARY OF TOWS AT STATION 23
 MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Larvacea	Phoronida
12JUL84	0.07 (0.03)	0.00 (.)
26JUL84	0.10 (0.09)	0.00 (.)
01AUG84	2.05 (0.67)	0.00 (.)
21AUG84	0.12 (0.05)	0.01 (0.01)
20SEP84	15.55 (3.10)	0.00 (0.00)
26SEP84	2.63 (0.28)	0.00 (0.00)

 MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Larvacea	Phoronida
09MAY84	0.01 (0.01)	0.00 (.)
21MAY84	3.90 (2.23)	0.00 (.)
12JUL84	0.19 (0.11)	0.00 (.)
26JUL84	3.41 (0.68)	0.00 (.)
01AUG84	21.21 (13.64)	0.09 (0.09)
21AUG84	9.76 (1.94)	10.58 (4.07)
20SEP84	127.22 (42.52)	0.18 (0.08)

Table A5. Results of multiple regression analysis of month to month, geographic and tow type effects on the major PCA factors. Only those values which were significant at the $\alpha=0.01$ level were selected. The direction of the effect (+ or -), the contributions to R^2 and the P values are indicated.

Dependent Variables	Independent Variables (R^2 ; P)		
	Fall	Winter	Spring
PCA1	Neuston(-; 0.10; $p<0.001$)	Neuston(-; 0.21; $p<0.001$)	Month ² (+; 0.05; $p<0.001$) NS(-; 0.02; $p<0.001$)
PCA2	Neuston(-; 0.10; $p<0.001$)	Neuston(+; 0.21; $p<0.001$)	Month ² by neuston (-; 0.03; $p<0.001$) NS by neuston (+; 0.04; $p<0.001$)
PCA3	Neuston(+; 0.10; $p<0.001$)	Neuston(+; 0.21; $p<0.001$)	-
PCA4	Neuston(-; 0.14; $p<0.001$)	Neuston(-; 0.21; $p<0.001$)	Neuston(-; 0.20; $p<0.001$) NS(-; 0.03; $p<0.001$)
PCA5	Month by neuston (-; 0.09; $p<0.001$)	Neuston(-; 0.21; $p<0.001$)	WE(+; 0.03; $p<0.007$) WE by neuston (-; 0.03; $p<0.006$)
PCA6	Neuston(+; 0.12; $p<0.001$)	Neuston(-; 0.19; $p<0.001$)	NS(-; 0.03; $p<0.001$) Month ² (+; 0.03; $p<0.001$)
			Month ² by neuston(-; 0.07; $p<0.001$) Month ² (-; 0.03; $p<0.001$) Month(+; 0.05; $p<0.001$) NS by WE(+; 0.03; $p<0.001$) NS by WE(+; 0.05; $p<0.001$) NS by WE by neuston (-; 0.06; $p<0.001$) Month(+; 0.03; $p<0.001$) Neuston(+; 0.03; $p<0.001$) WE(+; 0.03; $p<0.001$) WE by neuston(-; 0.04; $p<0.001$) Month(+; 0.05; $p<0.001$) Month(-; 0.03; $p<0.003$) NS by WE(-; 0.03; $p<0.001$) Month ² (-; 0.03; $p<0.001$) Month ² (+; 0.03; $p<0.001$) Neuston(+; 0.08; $p<0.001$)

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