

**seamap**

**environmental and  
biological atlas of  
the gulf of mexico  
1989**

**gulf states marine fisheries commission**

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# SEAMAP ENVIRONMENTAL AND BIOLOGICAL ATLAS OF THE GULF OF MEXICO, 1989

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## IN MEMORIAM

The 1989 SEAMAP Atlas is dedicated to the memory of our colleague, Elmer J. Gutherz, who died on 10 June 1991.

Elmer received his B.S. in 1957 from Idaho State College and a M.A. degree from U.C.L.A. in 1966. He was transferred from the Bureau of Commercial Fisheries Lab in Brunswick, GA to the Pascagoula facility in 1969. Elmer was Chief of the MARMAP Surveys Branch of the Resource Surveys Division, Mississippi Laboratories, National Marine Fisheries Service until his retirement in April 1991. His research efforts were directed toward zoogeography of marine fishes, resource assessment, systematics, and species training. Elmer was instrumental in developing the groundfish surveys operating out of the Mississippi Laboratories prior to SEAMAP and served on the SEAMAP shrimp and bottomfish workgroup from 1982 to 1990. Elmer's dedication, leadership in fishery science and sense of humor will be sorely missed by all who worked and sailed with him during his career.





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## INTRODUCTION

The Southeast Area Monitoring and Assessment Program (SEAMAP) is a State/Federal/university program for the collection, management and dissemination of fishery-independent data (information collected without direct reliance on statistics reported by commercial or recreational fishermen) in United States waters of the Gulf of Mexico (Eldridge 1988). A major SEAMAP objective is to provide a large, standardized data base needed by management agencies, industry and scientists to wisely manage and develop fishery resources for the least possible cost. To accomplish this goal, survey data must be disseminated in a useful format to SEAMAP participants, cooperators and other interested organizations.

The SEAMAP Program began in March 1981 when the National Marine Fisheries Service (NMFS), Southeast Fisheries Center (SEFC), presented a SEAMAP Strategic Plan (1981) to the Gulf States Marine Fisheries Commission (GSMFC). This strategic plan outlined the proposed program organization (goals, objectives, procedures, resource requirements, etc.); within the existing framework of the GSMFC, a SEAMAP Subcommittee was then formed. The Subcommittee consists of one representative from each state fishery management agency [Florida Department of Natural Resources (FDNR); Alabama Department of Conservation and Natural Resources (ADCNR); Mississippi Department of Wildlife, Fisheries and Parks (MDWFP), represented by the Gulf Coast Research Laboratory (GCRL); Louisiana Department of Wildlife and Fisheries (LDWF) and Texas Parks and Wildlife Department (TPWD)], one from NMFS Southeast Fisheries Center and a non-voting member representing the Gulf of Mexico Fishery Management Council. The Subcommittee organized and successfully coordinated a number of surveys between 1982 through 1988 (Table 1). The data has been published in atlases for the surveys in 1982 (Stuntz et al. 1985); 1983 (Thompson and Bane 1986a); 1984 (Thompson and Bane 1986b); 1985 (Thompson et al. 1988); 1986 (Sanders et al. 1990a); 1987 (Sanders et al. 1990b) and 1988 (Sanders et al. 1991). Environmental assessment activities occurred with each of the surveys found in Table 1.

In January 1989, the SEAMAP Subcommittee identified and began to plan the year's SEAMAP survey activities for the Gulf of Mexico. In keeping with the program goal of establishing a coordinated long-term resource data base, it was decided to continue the same types of survey activities conducted in 1982 through 1988. Overall survey objectives in 1982 to 1988 were to assess the distribution and abundance of recreational and commercial ichthyoplankton and trawl-caught organisms and document environmental factors that might affect their distribution and abundance. The basis for plankton work was primarily assessment of selected finfish and invertebrate eggs and larvae across the northern Gulf of Mexico (Sherman et al. 1983). The basis for the trawl surveys which started with the Texas Closure (Nichols 1982; 1984; Nichols and Poffenberger 1987), was to establish a seasonal data base to assess the abundance and distribution of the shrimp and groundfish stocks across the northern Gulf of Mexico.

A major purpose of SEAMAP is to provide resource survey data to State and Federal management agencies and universities participating in SEAMAP activities. This eighth in a series of SEAMAP environmental and biological atlases presents such data, in a summarized form, collected during the 1989 SEAMAP surveys. The area covered in the Gulf of Mexico for all SEAMAP survey activities during 1989 is shown in Figure 1.

## MATERIALS AND METHODS

Methodology for the 1989 SEAMAP surveys is similar to that of the 1982 through 1988 surveys. Sampling was conducted within the U.S. Exclusive Economic Zone (EEZ) and state territorial waters. Minor changes to biological, environmental and plankton data sheet format occurred in 1989.

Vessels that participated in collecting plankton and environmental data during the March-May survey included the NOAA Ship ALBATROSS IV (April 26-May 19) and the Florida vessel HERNAN CORTEZ II (May 11-16). The Louisiana vessel PELICAN collected plankton samples off Louisiana during its trawl survey (March 20-April 9).

Vessels that participated in the June-July Shrimp/Bottomfish Trawl Survey and concurrently sampled plankton and environmental data included an Alabama vessel (June 7 and July 11-14); the GCRL vessel TOMMY MUNRO (June 9-11 and July 7-11); the NOAA Ship OREGON II (June 18-July 16); Louisiana small inshore vessels (July 10-12); and the Louisiana vessel PELICAN (July 10-13). The TPWD vessels SABINE, MATAGORDA BAY, LAGUNA MADRE, GALVESTON BAY and ARANSAS BAY (June 2-20) did not sample plankton in conjunction with their summer survey.

Vessels that participated in collecting plankton and environmental data during the September-October plankton survey included an Alabama vessel (September 12); the NOAA Ship OREGON II (September 13-29); the GCRL vessel TOMMY MUNRO (September 16-19); and the Florida vessel HERNAN CORTEZ II (October 4-11).

Vessels that participated in the October-December Shrimp/Groundfish Trawl Survey and concurrently sampled plankton and environmental data included the NOAA Ship OREGON II (October 20-November 19); an Alabama vessel (October 25); the GCRL vessel TOMMY MUNRO (November 17-20); the Louisiana vessel PELICAN (October 2-5, November 11-12 and December 13-14); Louisiana inshore vessels (November 13-20). The TPWD vessels LAGUNA MADRE, SABINE, MATAGORDA BAY, GALVESTON BAY and ARANSAS BAY (November 1-21) did not sample plankton in conjunction with their fall survey.

## PLANKTON SURVEYS

Plankton samples were taken at stations arranged in a systematic grid across the Gulf of Mexico. Such a grid was chosen because of the large survey area. Stations were set at minimum intervals of 30 miles (1/2 degree). The exceptions were with LDWF vessels, which collected samples at the end of a trawl station and during the summer and fall trawl surveys which sampled plankton stations opportunistically due to time constraints of trawling. Also, during the March-May Plankton Survey, the ALBATROSS IV cruise track was sampled twice to determine the variability between stations sampled over a period of time.

Sampling gear and procedures were similar to those recommended by Kramer et al. (1972), Smith and Richardson (1977) and Posgay and Marak (1980). Plankton sampling gear consisted of standard 61-cm bongos and a 2x1-m neuston net for the large vessels. The bongos were fitted with 0.333-mm mesh nets with either hard (PVC) or soft (0.333-mm mesh net) cod ends. A flowmeter was mounted off-center in the mouth of each net to record the volume of water filtered. A 50-lb weight was attached approximately 1 m below the bongo frame attachment. The neuston net consisted of a 2x1-m pipe frame fitted with a 0.948-mm mesh net on which the cod end was tied off.

At each designated plankton station, either an oblique bongo/surface neuston tow or a surface neuston tow was made. In deep water bongo stations (more than 95 m) a standard oblique tow was made to 200 m, or to 5 m off the bottom at depths less than 200 m, with a payout speed of 50 m/min, 1-minute settling time, and a retrieval speed of 20 m/min, at a vessel speed of 1.5 knots to maintain a 45° angle. Neuston tows were made at the surface with the net half-submerged for 10 minutes at a vessel speed of 1.5 knots. The Louisiana vessels made plankton tows with small, 20-cm bongo nets with 0.333-mm mesh and soft cod ends.

Samples were preserved initially in 10% buffered formalin. After a 48-hr period, the bongo and neuston samples were transferred to 95% ethyl alcohol for final preservation, and subsequently shipped to the NMFS Miami Laboratory. The Miami Laboratory curated and computerized the sample data. The right bongo sample from each station were transshipped to the Polish Sorting Center (PSC) in Szczecin, Poland, for sorting and identification. Plankton samples from Louisiana vessels were retained by LDWF for sorting and identification at their facilities. Ichthyoplankton components (eggs and larvae) were removed from each sample and the fish larvae identified to the lowest feasible taxon (families in most cases).

Sorted ichthyoplankton specimens from PSC were returned to the SEAMAP Archiving Center, managed in conjunction with the FDNR, for long-term storage under museum-like conditions. Sorted ichthyoplankton samples from 1982 through 1988 are available for loan to researchers throughout

the country. Plankton volumes were determined according to procedures in Smith and Richardson (1977). The alternate bongo sample from each station was retained at GCRL as a backup for those samples transshipped to the PSC, in case of loss or damage during transit. These backup unsorted plankton samples containing zooplankton and phytoplankton are stored at the SEAMAP Invertebrate Plankton Archiving Center, managed in conjunction with GCRL, for use by researchers.

## ENVIRONMENTAL SURVEYS

Standardized methodology was used although the actual parameters measured varied among vessels participating in each survey. The following parameters were recorded:

Vessel: Vessel code for each vessel.

Station: Station identifiers varied by state and vessel.

Cruise: Cruise numbers varied by state and vessels.

Date: Month/Day/Year.

Time: Local time and time zone, recorded at the start of sampling.

Latitude/longitude: Recorded to seconds.

Barometric pressure: Recorded in millibars.

Wave height: Estimated visually in meters.

Wind speed and direction: Recorded in kilometers per hour with direction recorded in compass degrees from which the wind was blowing.

Air temperature: Recorded in Centigrade.

Cloud type: Types of clouds recorded in daylight stations.

Cloud cover: Estimated visually in percent cloud cover.

Secchi depth: Secchi depth in meters, estimated at each daylight station. Standard oceanographic 30-cm white discs were lowered until no longer visible, then raised until visible. If different depths were recorded, an average was used.

Water Color: Forel-Ule data was recorded.

The following parameters were measured at the surface, mid-depth and bottom; for bottom depths greater than 200 m, samples were taken at surface, 100 m and 200 m:

Water temperature: Temperatures were measured by a hand-held thermometer onboard ship, in situ electronic sensors, and in situ reversing thermometers. No attempt was made to intercalibrate the various instruments used on individual vessels although several vessels did sample together to calibrate other sampling gear. Some error can be expected.

Salinity: Salinity samples were collected by Niskin bottles and stored for laboratory analysis with a salinometer. Conductivity probes and refractometers were used on some vessels.

Chlorophyll: Chlorophyll samples were collected and frozen for later laboratory analysis. The general procedure for shipboard collection of chlorophyll was to collect more than 9 liters of water from the surface. This was kept stirred by bubbling air through it while filtration was being done. Three samples, to each of which a 1 ml, 1% (W/V), suspension of  $MgCO_3$  was added, of up to 3 liters of water from the 9 liter sample were filtered through GF/C filters. The 3 filters were placed individually in Petri dishes, wrapped in opaque material and frozen until analysis. Each of the three samples was analyzed separately in the laboratory. Values in the tables that follow, are the mean of the 3 samples.

Laboratory analyses for chlorophyll a and phaeophytin a (chlorophyll degradation product) were conducted by fluorometry and spectrophotometry. The general extraction procedures prior to measurement were similar. Samples analyzed by spectrophotometer included other chlorophyllous products but have not been included as data in this report. The methodology used is described in Strickland and Parsons (1972) and Jeffrey and Humphrey (1975). Some of the values have been deleted from the data base because of analytical errors.

Dissolved oxygen: Dissolved oxygen values were measured by electronic probes (depending on the vessel) or by the standard Winkler method. No attempts were made to intercalibrate the methods. When oxygen was measured in samples collected from a Niskin sampler, the oxygen bottles were allowed to overflow a minimum of 10 seconds to eliminate oxygen contamination. The tubing which delivered the water sample was inserted to the bottom of the bottle and withdrawn while the sample was still flowing. The oxygen bottles were sealed with a ground-glass stopper and analyzed onboard the vessels.

Turbidity: Turbidity values were measured by electronic probes (depending on the vessel).

## **Satellite Images**

Thermal data were collected by the Advanced Very High Resolution Radiometers (AVHRR) carried on the NOAA Polar Orbiter series of satellites. The data were analyzed by the National Environmental Satellite Data and Information Service (NESDIS).

## **TRAWL SURVEYS**

### **Louisiana March Trawl Survey**

Louisiana Department of Wildlife and Fisheries conducted a seasonal day/night trawl survey and concurrently took environmental samples at each trawl station and plankton samples opportunistically. The trawl survey was conducted as part of an effort to provide comparative information on critical life states of major Gulf species, especially shrimp, and associated environmental parameters in Louisiana and adjacent EEZ waters. The LDWF sampled day and night stations with a 40-ft shrimp trawl to depths of 22 fm. A stratified random station selection design was maintained. All organisms captured were identified, counted, measured and weighed.

### **June-July Shrimp/Bottomfish Survey**

The sampling strategy and a description of the statistical rationale for the sampling design are described by Nichols in the 1982 SEAMAP Atlas (Stuntz, et al. 1985). Briefly, the strategy was as follows: sampling sites were chosen randomly in five areas stratified by depth and statistical area. These areas are shrimp statistical zones 10-12, 13-15, 16-17, 18-19 and 20-22 (Figure 2). Trawl stations for NMFS, Mississippi and Louisiana vessels are made with a standard SEAMAP 40-ft net, 20-ft net for Texas vessels and 16-ft net for Louisiana inshore and Alabama vessels. All trawl data are summarized by 10-minute squares. Sample sites encompassed a 1 to 3 fm depth strata between 5 and 25 fm, and a 5-fm depth strata between 25 and 60 fm. Trawls were towed perpendicularly to the depth contours and covered the entire depth stratum on each station. Single tows were for a maximum of 60 minutes; for certain stations, a series of consecutive trawl tows was necessary to cover a given depth stratum, with a minimum individual tow across each stratum of 10 minutes and a maximum tow of 60 minutes. The Texas and Louisiana vessels did not cover a complete depth stratum on several stations because of the distance between depth stratum this tow times varied.

The LDWF used small vessels (less than 30 ft) to sample seven study areas in NMFS statistical zones 11, 12, 13, 14, 16 and 17, utilizing 16-ft shrimp trawls during daylight hours. Statistical zone 15 was not sampled, as stations were made along set transects occurring only in the five other zones with the 16-ft trawl. Six samples were taken weekly in each study area during the survey period. A sampling station consisted of a 10 minute tow at depths of 1, 3 and 5 fm made parallel to the depth contour.

All Penaeus spp. shrimp were separated from the trawl catch at each station. Total count and weight by species were recorded for each station. A sample of up to 200 shrimp of each species from every trawl was sexed and measured to obtain length-frequency information. Estimated total numbers were derived from the total weights of those processed. Other species of fishes and

invertebrates were identified, enumerated and weighed. Weights and individual measurements on all species other than commercial shrimp were also recorded.

## **October-December Shrimp/Groundfish Survey**

The design of the fall survey was identical to the June-July Shrimp/Bottomfish Survey. During the October-December survey trawl stations were made with the standard 40-ft, 20-ft and 16-ft SEAMAP net and covered NMFS shrimp statistical zones 11 through 22 (Figure 2).

Catch rates on all the vessels sampling were treated in the same manner as the June-July Shrimp/Bottomfish Survey.

## **RESULTS**

### **PLANKTON SURVEYS**

Approximately 4,300 lots of identified ichthyoplankton samples taken during 1989 surveys were returned from the PSC and LDWF to the SEAMAP Archiving Center. The data will be verified and incorporated into the SEAMAP data system.

Plankton stations for the March-May offshore plankton survey in conjunction with environmental stations are shown in Figure 3, the June-July Shrimp/Bottomfish survey stations are shown in Figure 4, the September-October plankton survey stations in conjunction with environmental stations are shown in Figure 5, and the October-December Shrimp/Groundfish survey stations are shown in Figure 6.

### **ENVIRONMENTAL SURVEYS**

Environmental data was collected in conjunction with each plankton station for the March-May (Figure 3) and September-October (Figure 5) plankton surveys. Environmental data stations for the June-July Shrimp/Bottomfish Survey are shown in Figure 7 and the October-December Shrimp/Groundfish Survey in Figure 8. Environmental sampling locations are summarized in Figures 7 and 8 by 10-minute squares. A complete listing of environmental stations and dates of sampling by vessel for all SEAMAP surveys is shown in Table 2. In Table 2 under statistical zone, the 99 codes are stations located outside the shrimp statistical zones.

Additional environmental information (Secchi readings, Forel-Ule, cloud cover, etc.) may be obtained from the SEAMAP Information System by contacting the SEAMAP Data Manager.

Satellite-derived sea-surface temperatures are shown for the months of March (Figure 9), April (Figure 10), May (Figure 11), June (Figure 12), July (Figure 13), August (Figure 14), September (Figure 15), October (Figure 16), November (Figure 17) and December (Figure 18).

### **TRAWL SURVEYS**

#### **Louisiana March Survey**

Louisiana Department of Wildlife and Fisheries conducted their seasonal day/night trawl survey in March 1989. Trawl station data can be found in Table 2 and the plankton/environmental stations are plotted in Figure 3. A species composition listing from the trawls is presented in Table 3, ranked in order of abundance within the categories of finfish, crustaceans and other invertebrates.

Tables 4a-6a present the biological data, from 40-ft nets, of the eight most abundant fish, six most abundant invertebrates and squids within NMFS statistical zones 13, 14 and 15 by depth stratum. Tables 4b-6b list the total catch and environmental data from the 40-ft nets within NMFS statistical zones 13, 14 and 15 depth stratum.

For all tables, the standard error of the mean (SEM) was calculated with the equation:

$$SEM = \frac{\alpha}{\sqrt{n}} \quad \text{where } \alpha = \text{population standard deviation} \\ \quad \quad \quad n = \text{number of samples}$$

On all tables, NUM = number per hour; all weights shown are in kilograms per hour.

For all "b" tables, discrepancies between catch and environmental data may appear in the number of samples (n). These discrepancies may be due to different sampling depths for trawl and environmental stations, unsuccessful trawl stations and/or stations where only plankton data was collected.

### June-July Shrimp/Bottomfish Survey

Shrimp and bottomfish sampling was conducted during June and July from off Gulf Shores, Alabama to Brownsville, Texas (Figure 19). The June-July Shrimp/Bottomfish Survey consisted primarily of biological trawl data and concomitant environmental and plankton data. A species composition listing from the 40-ft trawls is presented in Table 7, ranked in order of abundance, within the categories of finfish, crustaceans and other invertebrates. Species composition listing from 20-ft trawls is presented in Table 8 and the 16-ft trawls is presented in Table 9, ranked in the same order as with the 40-ft trawl.

Biological distributions of the ten most abundant finfish plus red snapper, three main penaeid shrimps, five most abundant non-Penaeus invertebrates and squid species, taken from Table 7, 8 and 9, are displayed in plots of number/hour and lb/hour in Figures 21-60. Data for the biological plots were computed from the 40-ft, 20-ft and 16-ft trawl data, standardized to 40-ft trawls using relative headrope length. In the plots of lb/hour, a zero value indicates less than 0.5 lb/hr taken; only stations where some of the species were taken are shown. During this time frame, the state of Florida did not participate in any survey activities.

Tables 10a-20a present the biological data, from the 40-ft nets, of the eight most abundant fish, six most abundant invertebrates and squid within NMFS statistical zones 10, 11 and 13 through 21, by depth stratum. Tables 10b-20b list the total catch and environmental data from the 40-ft nets within the NMFS statistical zone listed above, by depth stratum.

Tables 21a-26a present the biological data from the 20-ft nets of the eight most abundant fish, six most abundant invertebrates and squid within NMFS statistical zones 17 through 22, by depth stratum. Tables 21b-26b present the total catch and environmental data from the 20-ft nets within the NMFS statistical zones listed above, by depth stratum.

Tables 27a-33a present the biological data from the 16-ft nets of the eight most abundant fish, six most abundant invertebrates and squid within NMFS statistical zones 10, 11, 12, 13, 14, 16 and 17, inside 5 fm. Tables 27b-33b present the total catch and environmental data from the 16-ft nets within the NMFS statistical zones listed above, inside 5 fm.

Catch rates for the survey were computed with the same equations used to compute the Louisiana March Survey catch rates.

As in the Louisiana March Survey, discrepancies in the "b" tables may have occurred.

## October-December Shrimp/Groundfish Survey

Shrimp and Groundfish sampling was conducted during October through December from off Mobile Bay, Alabama to Brownsville, Texas (Figure 20). The October-December Shrimp/Groundfish Survey consisted of biological trawl data and concomitant environmental and plankton data. A species composition listing from the 40-ft trawls is presented in Table 34, 20-ft trawls in Table 35 and 16-ft trawls in Table 36. The species list for Tables 34 to 36 are ranked in order of abundance within the categories of finfish, crustaceans and other invertebrates.

Biological distributions of the ten most abundant finfish plus red snapper, three main penaeid shrimps, five most abundant non-Penaeus invertebrates and squid species, taken from Tables 34 to 36 are displayed in plots of number/hour and lb/hour in Figures 61 to 100. Data for the biological plots were computed from the 40-ft, 20-ft and from 16-ft trawl data, standardized to 40-ft trawls using relative headrope length. In the plots of lb/hour, a zero value indicates less than 0.5 lb/hr taken; only stations where some of the species were taken are shown. During this time frame, the state of Florida did not participate in any survey activities.

Tables 37a-47a present the biological data, from the 40-ft nets, of the eight most abundant fish, six most abundant invertebrates and squid species within NMFS statistical zones 11 through 21, by depth stratum. Tables 37b-47b list the total catch and environmental data from the 40-ft nets within the NMFS statistical zone listed above, by depth stratum.

Tables 48a-53a present the biological data from the 20-ft net used by TPWD of the eight most abundant finfish, six most abundant invertebrates and squid within NMFS shrimp statistical zones 17 through 22, by depth stratum. Tables 48b-53b present the total catch and environmental data from the 20-ft nets within the NMFS statistical zones listed above, by depth stratum.

Tables 54a-59a present the biological data from the 16-ft nets of the eight most abundant fish, six most abundant invertebrates and squid within NMFS statistical zones 11, 12, 13, 14, 16 and 17, inside 5 fm. Tables 54-59b present the total catch and environmental data from the 16-ft nets within the NMFS statistical zones listed above, inside 5 fm.

The catch data were calculated using the same equation that was used to compute catch rates for the Louisiana March Survey.

As in the Louisiana March Survey, discrepancies in the "b" tables may have occurred.

## REAL-TIME DATA MANAGEMENT

The SEAMAP Subcommittee agreed it was imperative to the success of the SEAMAP Program to distribute data on a near real-time basis to the fishing industry and others interested in SEAMAP. To distribute near real-time data, NMFS installed a data communications terminal aboard the NOAA Ship OREGON II. The terminal was designed to operate through the International Maritime Satellite (INMARSAT) system located in geostationary orbit above the equator. This enabled personnel aboard the vessel to transmit daily catch rates and environmental data to the NMFS computer system located at the NMFS Mississippi Laboratories in Pascagoula.

Summarized data were distributed weekly to over 300 individuals during the June-July Shrimp/Bottomfish Survey. The summarized data in the form of computer plots and data listings was sent to management agencies and industry members. These plots showed station locations, catches of brown, pink and white shrimp in lb/hr and count/lb and total finfish catch in lb/hr.

## DISCUSSION

The quasisynoptic SEAMAP sampling program and the intended long-term nature of the sampling programs have been designed to provide the baseline data set needed for fishery management and conservation. In 1985, the SEAMAP long-term baseline data was disrupted by the loss of the April-May Gulf-wide plankton and September Mackerel Survey. In 1986, the SEAMAP Subcommittee renewed its commitment for the collection of baseline plankton data. These ichthyoplankton samples are and will be used by researchers studying taxonomy, age and growth, bioenergetics and other life history aspects, as well as spawning biomass and recruitment. Information on species' relative distributions within the Gulf of Mexico can be analyzed with respect to environmental data to assess population abundance as a function of environmental change. In the same way, satellite data can be related to species distribution and changing conditions in the Gulf of Mexico.

Similar analyses and investigations are being undertaken with June-July Shrimp/Bottomfish Survey data and the October-December Shrimp/Groundfish Survey. These data sets will be utilized in resource management decisions, and because of the program's ability to process data quickly, the capability exists to optimize some fisheries on a real-time basis. The long-term data set on all of the species collected, not just those of commercial and recreational importance, offers an opportunity to examine ecological relationships, with the eventual goal of developing management models that take into account the multi-species nature of most Gulf fisheries. The value of the SEAMAP program lies in its use for both immediate and long-range management. In addition, there are many studies and other uses for SEAMAP data that are not mentioned here.

Much use has already been made of SEAMAP data. For example, during the past SEAMAP surveys an area of very low dissolved bottom oxygen was found off Louisiana in the summers of 1982, 1985, 1986 and 1987. The presence of this phenomenon and some of the related conditions and biological effects were reported by Leming and Stuntz (1984), and during such occurrences, SEAMAP has distributed special environmental bulletins and news releases to management agencies and the shrimp industry. In addition, SEAMAP data were used by some coastal states to determine the status of shrimp stocks and their movements just as the shrimping seasons were to be opened.

In 1982, 1983, 1984 and 1986 SEAMAP ichthyoplankton data were used to estimate spawning stock sizes of bluefin tuna in the Gulf of Mexico (McGowan and Richards 1986). SEAMAP ichthyoplankton data were also used to estimate spawning stock sizes of bluefin tuna in 1987 and 1988. The results of this work were recognized by the International Commission for the Conservation of Atlantic Tunas as a reliable index of stock size, thus precluding the need for a longline fishery in the Gulf which was proposed by Japan. Continuation of the ichthyoplankton surveys each spring by SEAMAP will provide information on Gulf of Mexico tuna stocks.

The SEAMAP data collected during the June-July Shrimp/Bottomfish Survey continue to be used extensively for fishery management purposes. In 1981, the Gulf of Mexico Fishery Management Council's plan for shrimp was implemented (Center for Wetland Resources 1980), with one management measure calling for the temporary closure to shrimping of the EEZ off Texas. This closure complements the traditional closure of the Texas territorial sea, normally June 1-July 15 of each year. The GMFMC determined that this type of closure would still allow small brown shrimp to be protected from harvest but would allow the taking of larger brown shrimp by fishermen in deeper waters.

National Marine Fisheries Service was charged with evaluating the effects of the Texas Closure and several reports were submitted to the Gulf Council in January 1990. Klima et al. (1990), summarized the 1989 Texas Closure and Nance et al. (1990) determined the objectives of the Texas Closure, regulations in 1988 and 1989 and the difference between a 15 nautical mile closure and a 200 nautical mile closure. After review of these data and other information, the Gulf Council voted to continue the Texas Closure in 1990.



## DATA REQUESTS

It is the policy of the SEAMAP Subcommittee that all verified non-confidential SEAMAP data, collected specimens and samples shall be available to all SEAMAP participants, other fishery researchers and management organizations approved by the Subcommittee. This atlas presents, to those individuals interested in the data or specimens, a chance to review the data in a summary form.

Data and specimen requests from SEAMAP participants, cooperators and others will normally be handled on a first-come, first-served and time-available basis. Because of personnel and funding limitations, however, certain priorities must be assigned to the data and specimen requests. These priorities are reviewed by the SEAMAP Subcommittee. For further information on SEAMAP data management, see the SEAMAP Operations Plan: 1985-1990 (Gulf States Marine Fisheries Commission 1984).

Data requests and inquiries, as well as requests for plankton samples, can be made by contacting the SEAMAP Coordinator, Gulf States Marine Fisheries Commission, P.O. Box 726, Ocean Springs, MS 39564; 601/875-5912.

Table 1. List of SEAMAP survey activities from 1982 to 1988.

SEAMAP SURVEY ACTIVITIES

YEAR	SPRING PLANKTON	SUMMER SHRIMP/BOTTOMFISH	BUTTERFISH	FALL PLANKTON	FALL SHRIMP/GROUNDFISH	WINTER PLANKTON
1982	APRIL-MAY	JUNE-JULY	--	--	--	--
1983	APRIL-MAY	JUNE-JULY	--	--	--	DECEMBER
1984	APRIL-MAY	JUNE-JULY	--	AUGUST	--	DECEMBER
1985	--	JUNE-JULY	JULY-AUGUST	SEPTEMBER	SEPTEMBER-DECEMBER	--
1986	APRIL-MAY	JUNE-JULY	MAY-JUNE	SEPTEMBER	OCTOBER-DECEMBER	--
1987	APRIL-MAY	JUNE-JULY	--	SEPTEMBER	SEPTEMBER-DECEMBER	--
1988	MARCH-MAY	JUNE-JULY	--	SEPTEMBER-OCTOBER	OCTOBER-DECEMBER	--

Table 2. Selected environmental parameters measured during 1989 SEAMAP surveys in the Gulf of Mexico, by individual vessel and survey.

NMFS,SEFC,MS.LABS,PASCAGOULA FACILITY  
SEAMAP ENVIRONMENTAL DATA  
LUMCON PELICAN

STA#	DATE		POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)		TEMPERATURE, °C			SALINITY, PPT			CL, MG/M <sup>3</sup>	DISSOLVED OXYGEN, PPM			GEAR
	MM/DD/YY	TIME	LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX	SUR	SUR	MID	MAX	
36385	3/20/89	1816	2854.1	9118.9	15	9	4	9	20.5	20.1	16.9	28.7	28.8	31.0	0.341	8.1	7.0	5.0	ST/PN
36386	3/20/89	1927	2854.2	9119.9	15	9	4	9	20.5	20.1	16.9	28.7	28.8	31.0	0.341	8.1	7.0	5.0	ST
36387	3/21/89	0731	2911.5	8945.3	13	13	7	13	21.8	17.9	19.9	14.6	28.9	35.2	24.181	12.1	6.9	2.0	ST/PN
36388	3/21/89	0921	2906.2	8941.6	13	22	10	20	21.0	20.3	32.0	12.3	32.0	36.1	29.387	12.5	6.2	2.9	ST/PN
36389	3/21/89	1106	2904.3	8941.8	13	26	12	26	20.6	19.8	20.4	13.9	33.0	36.4	34.687	12.4	6.9	2.3	ST/PN
36390	3/21/89	1333	2859.2	8931.8	13	24	7	17	21.5	17.2	20.7	14.5	29.8	36.3	20.538	11.8	6.6	2.9	ST/PN
36391	3/21/89	1502	2858.2	8930.5	13	31	14	26	20.9	20.9	20.1	10.9	36.4	36.6	9.611	11.8	5.4	4.0	ST/PN
36392	3/21/89	1710	2857.0	8928.9	13	39	13	27	21.3	20.8	20.2	8.3	36.4	36.4	11.949	11.8	4.3	5.0	ST/PN
36393	3/21/89	2044	2911.9	8944.9	13	15	6	13	22.5	17.7	20.1	11.9	28.4	35.6	22.714	11.2	6.3	1.4	ST
36394	3/21/89	2225	2906.5	8941.7	13	20	10	20	20.6	19.7	20.8	15.4	33.4	36.4	28.364	12.9	6.2	2.6	ST
36395	3/21/89	2334	2904.5	8941.7	13	26	13	25	20.2	20.5	20.0	15.8	35.7	36.5	31.355	12.7	5.3	2.6	ST
36396	3/22/89	0126	2859.0	8931.6	13	18	8	17	19.6	20.3	20.2	9.4	35.6	36.5	60.299	9.9	2.2	5.1	ST
36397	3/22/89	0247	2857.7	8931.6	13	40	12	25	16.9	20.4	19.9	2.6	36.5	36.5	3.371	9.2	5.3	4.2	ST
36398	3/22/89	0358	2857.0	8928.8	13	31	13	28	18.0	20.6	20.1	6.0	36.5	36.5	5.142	9.4	5.4	4.7	ST
36399	4/ 7/89	2313	2840.5	9014.1	14	33	13	31	21.2	21.5	19.8	24.9	34.2	36.5	2.984	8.6	6.1	4.6	ST
36400	4/ 8/89	0300	2836.3	9020.7	14	35	18	34	21.3	20.7	20.4	25.7	36.5	36.5	3.416	8.4	3.7	4.1	ST
36401	4/ 8/89	0603	2834.9	9057.4	14	24	12	22	21.5	21.6	20.7	23.4	25.2	25.8	0.126	7.1	6.5	4.1	ST
36402	4/ 8/89	0740	2834.9	9057.2	14	22	11	22	21.4	21.6	20.7	29.0	32.2	36.2	0.236	6.8	6.0	3.8	ST/PN
36403	4/ 8/89	1000	2838.9	9057.5	14	18	9	16	21.3	21.3	20.8	27.2	27.5	35.8	0.883	7.3	6.7	2.6	ST
36404	4/ 8/89	1510	2836.2	9020.9	14	35	17	35	21.8	21.0	20.4	30.8	35.5	36.5	1.439	7.7	4.7	4.4	ST
36405	4/ 8/89	1706	2840.0	9014.2	14	33		32	22.0		20.3	25.9		36.4	1.871	11.1		4.4	ST
36406	4/ 8/89	2349	2838.8	9057.7	14	18	6	14	21.7	21.3	20.6	26.2	27.8	36.2	3.661	7.7	4.2	2.9	ST
36407	4/ 9/89	0422	2851.9	9046.3	14	12	6	12	21.8	21.6	20.7	26.2	28.3	34.8	2.787	7.2	4.3	0.4	ST
36408	4/ 9/89	0649	2851.7	9046.6	14	15	5	11	21.8	21.7	20.9	23.7	26.7	34.5	6.498	7.7	5.2	0.8	ST

Table 2. Selected environmental parameters (cont'd)

NMFS,SEFC,MS.LABS,PASCAGOULA FACILITY																			
SEAMAP ENVIRONMENTAL DATA																			
ALBATROSS IV																			
STA#	DATE MM/DD/YY	TIME	POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)		TEMPERATURE, °C			SALINITY,PPT			CL, MG/M <sup>3</sup>	DISSOLVED OXYGEN,PPM			GEAR
			LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX	SUR	SUR	MID	MAX	
00005	4/26/89	0249	2430.3	8358.9	2	3294	100	200	28.3	21.1	17.2	36.1	36.5	36.3	0.037		6.0	6.8	PN
00006	4/26/89	0702	2429.9	8429.8	99	3455	100	200	24.2	19.1	15.5	36.1	36.5	36.1	0.027	6.6	5.5	5.6	PN
00007	4/26/89	1115	2430.1	8459.6	99	3294	100	200	25.0	22.0	18.0	35.3	36.6	36.1		9.1	6.8	5.7	PN
00008	4/26/89	1447	2459.9	8459.9	99	3272	100	200	25.2	22.0	17.5	36.6	36.5	35.8	0.037				PN
00009	4/26/89	1853	2459.8	8529.7	99	3242	100	200	27.2	18.8	13.8	35.8	36.5	35.7		6.2	5.2	4.9	PN
00010	4/26/89	2226	2500.2	8600.4	99	3226	100	200	25.0	20.5	16.0	36.4	36.5	35.9	0.032	8.0	5.8	5.5	PN
00011	4/27/89	0223	2530.1	8559.9	99	3149	100	200	25.2	19.9	14.5	36.3	36.5	35.8	0.027	6.4	5.9	5.0	PN
00012	4/27/89	0536	2529.9	8629.9	99	3275	100	200	24.5	19.5	14.0	36.6	36.6	35.9		7.1	5.3	5.6	PN
00013	4/27/89	1014	2559.8	8559.8	99	3158	100	200	25.1	20.5	17.5	36.7	36.6	36.1	0.027	6.5	5.5	5.4	PN
00014	4/27/89	1430	2629.8	8559.9	99	3109	100	200	27.2	20.4	16.6	36.2	36.5	36.3	0.057	6.4	6.8	5.2	PN
00015	4/27/89	2022	2659.8	8559.8	99	3124	100	200	27.1	23.0	17.1	36.2	36.7	36.3	0.053	7.5	7.1	6.2	PN
00016	4/28/89	0058	2730.0	8600.0	99	3134	100	200	26.2	20.6	16.6	36.4	36.3	36.2	0.062	7.2	8.0	6.0	PN
00017	4/28/89	0407	2800.0	8600.0	99	986	100	200	25.6	20.3	15.8	36.6	36.7	36.0		6.4	5.5	4.6	PN
00018	4/28/89	0755	2830.2	8559.7	99	339	100	200	23.7	19.7	15.3	36.4	36.4	36.1		6.5	5.4	5.0	PN
00019	4/28/89	1400	2830.0	8700.1	99	870	100	200	25.3	19.1	15.9	36.5	36.5	36.2	0.027	6.0	4.9	5.0	PN
00020	4/28/89	1721	2800.0	8700.1	99	2372	100	200	25.3	18.9	14.7	36.5	36.6	36.0	0.027	5.7	4.9	4.6	PN
00021	4/28/89	2136	2729.1	8700.0	99	2935	100	200	25.0	21.0	16.5	35.5	36.7	36.2	0.068	5.0	4.0	4.5	PN
00022	4/29/89	0054	2659.6	8700.0	99	2858	100	200	26.1	25.5	21.5	36.4	36.4	37.1	0.027	5.2	5.4	4.2	PN
00023	4/29/89	0440	2630.2	8700.1	99	2946	100	200	26.1	25.6	23.6	36.4	36.2	37.0		6.6		6.0	PN
00024	4/29/89	0730	2600.0	8700.2	99	3100	100	200	26.3	25.5	22.2	36.4	36.4	37.0	0.041	5.9	5.4	5.3	PN
00025	4/29/89	1126	2600.0	8730.0	99	3028	100	200	26.4	25.5	23.5	36.3	36.3	36.3		6.0	5.5	6.3	PN
00026	4/29/89	1453	2600.1	8800.2	99	2937	100	200	26.4	25.6	23.9	36.4	36.5	37.0		5.5	5.9	5.3	PN
00027	4/29/89	1842	2629.8	8759.9	99	2670	100	200	25.8	25.4	24.0	36.3	36.3	36.9		4.5	5.8	5.5	PN
00028	4/29/89	2207	2659.9	8759.8	99	2670	100	200	26.0	25.3	23.8	36.4	36.4	37.0	0.036	5.7	6.8	5.9	PN
00029	4/30/89	0149	2700.0	8830.2	99	2456	100	200	26.3	25.5	24.6	36.3	36.3	36.7	0.039	6.2	5.5	6.0	PN
00030	4/30/89	0511	2700.0	8900.0	99	2306	100	200	26.8	25.1	20.6	36.3	36.6	36.5		6.0	5.3	6.4	PN
00031	4/30/89	1013	2630.0	8900.1	99	2718	100	200	26.9	25.6	20.9	36.3	36.4	36.6	0.049	6.7	6.7	6.0	PN
00032	4/30/89	1431	2600.1	8900.0	99	2974	100	200	26.9	25.3	23.0	36.3	36.3	36.9	0.019	6.3	6.3	6.1	PN

Table 2. Selected environmental parameters (cont'd)

NMFS, SEFC, MS. LABS, PASCAGOULA FACILITY																			
SEAMAP ENVIRONMENTAL DATA																			
ALBATROSS IV																			
STA#	DATE	TIME	POSITION		STAT	DEPTH	SAMPLE		TEMPERATURE, °C			SALINITY, PPT			CL,	DISSOLVED			GEAR
			LAT	LONG			ZONE	(M)	MID	MAX	SUR	MID	MAX	SUR	MID	MAX	MG/M <sup>3</sup>	SUR	
00033	4/30/89	1856	2600.0	8929.7	99	3071	100	200	26.7	25.0	21.3	36.3	36.6	36.7	0.037	7.1	7.8	6.8	PN
00034	5/ 1/89	0025	2559.8	9000.3	99	3129	100	200	25.0	19.1	14.2	36.6	36.5	35.9	0.112	8.4	6.4	5.5	PN
00035	5/ 1/89	0427	2630.0	9000.0	99	2939	100	200	25.0	18.2	13.7	36.3	36.4	35.8	0.094	7.1	6.5	6.1	PN
00036	5/ 1/89	0758	2700.0	8959.9	99	2348	100	200				36.1	36.3	35.6	0.150	9.5	5.9	7.0	PN
00037	5/ 1/89	1200	2700.0	9030.1	99	1632	100	100	24.6	19.5	14.5	36.2	36.6	35.9	0.039	7.1	5.6	5.6	PN
00038	5/ 1/89	1452	2700.0	9100.1	99	1652	100	200	25.0	20.1	15.5	36.3	36.6	36.1	0.087	7.2	5.8	5.9	PN
00039	5/ 1/89	1841	2630.2	9100.0	99	2029	100	200	25.2	19.3	14.9	36.3	36.6	36.0	0.066	6.4	4.9	4.5	PN
00040	5/ 1/89	2152	2600.0	9058.8	99	3257	100	200	24.1	20.0	14.5	36.1	36.6	35.9	0.068	6.9	7.8	5.0	PN
00041	5/ 2/89	0130	2600.0	9130.0	99	1907	100	200	23.7	20.2	14.9	36.1	36.6	35.7	0.066	6.7	6.0	4.7	PN
00042	5/ 2/89	0455	2600.0	9159.7	99	2322	100	200	24.6	21.4	17.3	36.5	36.4	36.3	0.084	7.2	7.5	6.4	PN
00043	5/ 2/89	1017	2630.0	9159.7	99	1748	100	200	24.0	18.3	14.0	36.0	36.4	35.6	0.066	8.6	7.5	7.3	PN
00044	5/ 2/89	1335	2659.9	9159.8	99	1541	100	200	24.8	19.5	13.4	36.0	36.5	35.7	0.100	6.6	5.1	4.8	PN
00045	5/ 2/89	1700	2700.1	9259.9	99	1354	100	200	24.5	19.2	14.3	35.9	36.4	35.9	0.066	6.6	6.8	5.6	PN
00046	5/ 2/89	1957	2700.1	9259.9	99	1244	100	200	24.8	19.3	14.9	36.2	36.5	35.9	0.037	7.9	6.2	6.8	PN
00047	5/ 3/89	0255	2629.9	9400.1	99	1446	100	200	24.6	20.1	14.9	36.2	36.5	36.0	0.048	6.8	6.8	4.8	PN
00048	5/ 3/89	0621	2659.9	9400.0	99	957	100	200	24.3	20.1	14.5	36.3	36.3	35.8		6.7	6.5	4.9	PN
00049	5/ 3/89	1106	2730.1	9330.2	99	527	100	200	24.4	20.1	15.0	36.4	36.6	36.0	0.089	7.6	5.6	4.4	PN
00050	5/ 3/89	1514	2800.0	9259.8	17	99	45	90	23.7	21.3	18.8	36.2	36.2	36.4	0.075	6.5	6.9	6.2	PN
00051	5/ 3/89	1831	2800.0	9230.0	16	101	50	99	24.0	21.1	18.4	36.3	36.4	36.4	0.118				PN
00052	5/ 3/89	2126	2759.8	9159.9	16	121	60	119	23.9	21.2	18.3	38.1	36.4	36.4	0.084	6.8	6.7	4.8	PN
00053	5/ 4/89	0037	2759.9	9129.9	15	154	75	150	24.2	20.3	16.2	36.8	36.4	36.4	0.061	6.1	6.7	5.0	PN
00054	5/ 4/89	0328	2759.9	9059.9	15	145	72	145	24.0	20.7	16.2	36.5	36.5	36.1	0.037	6.7	7.0	4.3	PN
00055	5/ 4/89	0707	2759.9	9030.1	14	353	100	200	23.8	18.9	14.0	36.5	36.4	35.9	0.075	7.7	6.3	4.8	PN
00056	5/ 4/89	1059	2759.7	9000.0	14	549	100	200	23.6	19.0	13.4	36.5	36.6	35.8	0.061	8.8	6.6	5.2	PN
00057	5/ 4/89	1430	2800.0	8929.9	99	1024	100	200	25.1	20.6	14.8	36.5	36.5	36.6	0.030	6.8	6.6	6.3	PN
00058	5/ 4/89	1736	2800.1	8900.1	99	1259	100	200	26.1	22.2	16.7	36.6	36.3	36.6	0.037	8.0	8.6	6.5	PN
00059	5/ 4/89	2054	2800.3	8829.8	99	2044	100	200	26.9	25.3	21.1	36.4	36.6	36.5	0.047	6.2	6.0	5.8	PN
00060	5/ 4/89	2331	2800.1	8759.9	99	2348	100	200	26.8	25.8	21.4	36.4	36.5	36.7	0.053	6.6	6.2	5.8	PN

Table 2. Selected environmental parameters (cont'd)

NMFS, SEFC, MS. LABS, PASCAGOULA FACILITY  
SEAMAP ENVIRONMENTAL DATA  
ALBATROSS IV

STA#	DATE		POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)		TEMPERATURE, °C			SALINITY, PPT			CL, MG/M <sup>3</sup> SUR	DISSOLVED OXYGEN, PPM			GEAR
	MM/DD/YY	TIME	LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX		SUR	MID	MAX	
00061	5/ 5/89	0342	2830.0	8800.1	99	2380	100	200	25.2	22.0	17.2	36.6	36.5	36.3	0.027	6.4	7.3	5.2	PN
00062	5/ 5/89	0711	2859.9	8800.1	11	1468	100	200	24.1	19.3	15.4	36.3	36.6	36.1	0.193	7.0	5.5	5.1	PN
00063	5/ 5/89	1300	2859.8	8700.0	99	675	100	200	23.8	18.1	13.9	35.9	36.4	35.8		6.8	5.1	4.5	PN
00064	5/ 5/89	1622	2859.8	8630.1	99	346	95	195	24.4	18.4	14.7	35.5	36.3	35.9	0.039	7.0	6.2	5.5	PN
00065	5/ 5/89	1928	2900.1	8600.1	99	246	100	200	24.3	18.7	16.2	35.8	36.3	36.0	0.043	7.0	5.8	5.3	PN
00066	5/ 6/89	0015	2829.9	8530.0	8	190	95	190	23.8	18.7	14.5	36.3	36.5	35.9	0.030	6.8	5.7	4.6	PN
00067	5/ 6/89	0432	2759.9	8500.2	6	245	100	200	23.8	18.9	13.7	36.2	36.4	35.8		7.2	5.8	4.6	PN
00068	5/ 6/89	0828	2729.8	8459.9	5	392	100	200	24.6	19.4	14.5	36.3	36.3	35.8	0.080	6.9	6.4	5.1	PN
00069	5/ 6/89	1140	2659.9	8500.2	5	853	100	200	24.5	20.5	15.5	36.4	36.4	36.0	0.053	6.8	6.7	5.0	PN
00070	5/ 6/89	1523	2629.9	8500.2	99	3289	100	200	25.8	20.1	15.8	36.5	36.4	36.0	0.037	7.0	6.8	4.7	PN
00071	5/ 6/89	1834	2559.9	8500.0	99	3226	100	200	25.6	19.8	14.6	36.5	36.5	35.7		6.8	5.8	5.0	PN
00072	5/ 6/89	2228	2559.8	8430.0	99	856	100	200	25.9	20.0	14.0	36.5	36.4	35.7		7.0	6.5	5.8	PN
00073	5/ 7/89	0138	2600.1	8359.9	4	128	60	120	25.2	21.1	18.1	36.5	36.4	36.4	0.056	6.8	7.1	4.6	PN
00074	5/ 7/89	0516	2530.0	8359.9	3	130	65	129	24.8	21.6	17.6	36.4	36.4	36.3	0.063	6.8	6.9	5.0	PN
00075	5/ 7/89	0820	2459.9	8359.8	3	125	62	124	25.2	20.7	18.3	36.2	36.4	36.4	0.047	6.7	6.6	5.4	PN
00088	5/11/89	0930	2430.0	8359.8	2	826	100	200	25.7	19.5	14.4	36.3	36.5	35.9	0.112				PN
00089	5/11/89	1322	2430.1	8429.9	99	1097	100	200	26.7	21.8	18.3	36.4	36.4	36.4	0.053	6.1	6.6	5.3	PN
00090	5/11/89	1902	2430.0	8459.7	99	1116	100	200	27.0	22.5	18.4	36.3	36.4	36.5	0.053	6.6	7.4	6.3	PN
00091	5/11/89	2233	2459.9	8459.8	99	1037	100	191	25.8	19.4	14.5	36.5	36.4	35.8	0.056	6.7	5.6	4.8	PN
00092	5/12/89	0221	2500.1	8530.0	99	748	100	200	25.6	20.3	15.1	36.2	36.4	35.9	0.055	7.1	6.8	6.6	PN
00093	5/12/89	0603	2500.0	8559.6	99	1025	100	200	25.4	20.8	17.9	36.5	36.4	36.4		6.6	6.8	6.1	PN
00094	5/12/89	0942	2529.9	8559.8	99	3167	100	200	25.0	19.6	16.4	36.5	36.5	36.0	0.049	7.1			PN
00095	5/12/89	1245	2530.1	8630.0	99	2109	100	200	25.0	20.9	15.6	36.3	36.6	36.0	0.032				PN
00096	5/12/89	1653	2559.9	8559.9	99	3153	100	200	25.4	15.9	15.4								PN
00097	5/12/89	2028	2630.0	8559.9	99	2972	100	200	25.4	19.6	16.0	36.3	36.4	36.0	0.050				PN
00098	5/12/89	2331	2659.9	8559.8	99	3127	100	200	25.0	20.4	15.9	36.4	36.5	36.0	0.045				PN
00099	5/13/89	0318	2730.5	8600.1	99	2665	100	200	24.4	21.0	16.0	36.2	36.4	36.0	0.037				PN
00100	5/13/89	0629	2759.9	8559.8	99	970	100	200	24.8	20.0	16.2	36.4	36.5	36.1					PN

Table 2. Selected environmental parameters (cont'd)

NMFS,SEFC,MS.LABS,PASCAGOULA FACILITY																			
SEAMAP ENVIRONMENTAL DATA																			
ALBATROSS IV																			
STA#	DATE	TIME	POSITION		STAT	DEPTH	SAMPLE		TEMPERATURE, °C			SALINITY, PPT			CL,	DISSOLVED			GEAR
			LAT	LONG			ZONE	DEPTH	MID	MAX	SUR	MID	MAX	SUR	MID	MAX	MG/M <sup>3</sup>	SUR	
00101	5/13/89	1018	2830.0	8559.9	99	321	100	197	24.7	20.5	15.4	36.3	36.5	36.0	0.027				PN
00102	5/13/89	1409	2900.0	8630.0	99	371	100	200	24.0	18.5	14.0	35.5	36.3	35.7	0.081				PN
00103	5/13/89	1707	2900.0	8659.8	99	640	100	200	24.6	20.0	15.0	32.9	36.3	35.9	0.343				PN
00104	5/13/89	2039	2829.8	8700.0	99	840	100	200	26.6	23.4	16.9	36.4			0.034	7.8	7.1	6.8	PN
00105	5/13/89	2351	2759.8	8700.0	99	2796	100	200	26.5	25.4	18.7	36.3	36.4	36.3		7.1	6.8	7.4	PN
00106	5/14/89	0314	2729.8	8700.0	99	2930	100	200	26.6	25.4	20.4	36.3	36.3	36.4	0.019	9.4	10.2	10.4	PN
00107	5/14/89	0611	2659.9	8700.1	99	2857	100	200	26.5	25.3	19.4	36.2	36.4	36.4		6.7	7.3	7.3	PN
00108	5/14/89	0918	2629.6	8700.1	99	2898	100	185	25.6	23.1	19.2	36.3	36.5	36.6	0.066	6.6	6.9	5.6	PN
00109	5/14/89	1310	2559.9	8730.0	99	3032	100	200	26.6	25.5	22.5	36.2	36.3	36.9	0.027	6.8	6.9	6.7	PN
00110	5/14/89	1558	2559.8	8759.9	99	2851	100	200	26.2	25.6	24.1	36.2	36.2	36.8		6.5	6.9	6.6	PN
00111	5/14/89	2005	2629.8	8800.1	99	2622	100	200	26.2	25.5	23.7	36.2	36.2	36.8		6.1	6.2	5.8	PN
00112	5/14/89	2316	2659.9	8800.0	99	2672	100	200	26.0	25.5	23.2	34.5	36.3	36.9	0.071	6.1	6.3	5.3	PN
00113	5/15/89	0323	2700.0	8830.0	99	2471	100	200	26.2	24.7	20.5	36.1	36.5	36.4	0.047	6.8	6.6	6.6	PN
00114	5/15/89	0715	2700.0	8859.8	99	2306	101	186	26.0	22.2	16.5	36.1	36.4	36.1	0.080	6.5	6.8	4.5	PN
00115	5/15/89	1137	2630.1	8859.7	99	3087	100	200	26.2	25.3	22.5	36.2	36.3	36.8	0.100				PN
00116	5/15/89	1506	2600.0	8859.9	99	3109	100	200	26.8	25.7	24.4	36.2	36.2	36.7	0.034				PN
00117	5/15/89	1838	2600.0	8929.9	99	3075	100	200	26.9	25.7	23.5	36.3	36.2	36.8		6.1	6.5	6.0	PN
00118	5/15/89	2145	2559.9	8959.9	99	2926	100	200	26.8	25.4	22.9	36.2	36.3	36.9					PN
00119	5/16/89	0121	2630.2	8959.7	99	2853	100	200	27.1	25.3	21.5	36.3	36.3	36.8	0.000				PN
00120	5/16/89	0423	2659.9	8959.8	99	2344	100	200	25.3	21.3	16.1	36.4	36.5	36.1	0.061	7.0	6.6	5.8	PN
00121	5/16/89	0815	2659.9	9029.8	99	1501	100	200	25.3	22.0	16.6	36.4	36.5	36.2	0.056				PN
00122	5/16/89	1127	2659.9	9059.9	99	1640	100	200	25.7	21.5	16.6	36.1	36.5	36.1	0.075				PN
00123	5/16/89	1530	2629.9	9059.9	99	2052	100	200	26.5	23.5	19.0	36.1	36.4	36.2	0.057				PN
00124	5/16/89	1913	2600.2	9100.0	99	3259	100	200	27.4	25.5	20.6	36.3	36.5	36.7	0.199				PN
00125	5/16/89	2243	2559.9	9129.9	99	2275	97	195	27.2	24.9	20.4	36.3	36.6	36.7	0.027				PN
00126	5/17/89	0142	2600.0	9200.0	99	2336	100	200	27.1	23.8	19.2	36.3	36.5	36.6					PN
00127	5/17/89	0532	2629.9	9200.0	99	1680	100	200	26.4	22.9	17.1	36.4	36.5	36.1	0.040	6.6	6.7	5.2	PN
00128	5/17/89	0832	2700.1	9200.2	99	1440	90	179	26.1	20.0	15.1	35.8	36.4	35.9	0.122				PN

Table 2. Selected environmental parameters (cont'd)

NMFS, SEFC, MS. LABS, PASCAGOULA FACILITY  
SEAMAP ENVIRONMENTAL DATA  
ALBATROSS IV

STA#	DATE MM/DD/YY	TIME	POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)		TEMPERATURE, °C			SALINITY, PPT			CL, MG/M <sup>3</sup> SUR	DISSOLVED OXYGEN, PPM			GEAR
			LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX		SUR	MID	MAX	
00129	5/17/89	1715	2759.7	9300.0	17	104	52	104	25.4	21.4	18.9	34.7	36.2	36.3	0.056	6.3	6.3	5.9	PN
00130	5/17/89	2059	2800.1	9230.2	16	106	51	103	24.7	21.8	18.6	35.8	36.3	36.3					PN
00131	5/18/89	0001	2759.9	9200.0	16	115	58	115	25.4	21.7	18.7	36.1	36.2	36.3	0.039				PN
00132	5/18/89	0401	2800.0	9130.1	15	165	83	165	25.6	20.4	15.5	36.2	36.3	35.8	0.069				PN
00133	5/18/89	0703	2759.9	9100.0	15	150	75	150	25.5	20.7	16.3	36.3	36.2	36.1	0.062				PN
00134	5/18/89	1037	2759.8	9030.1	14	268	100	200	25.2	18.3	14.5	36.1	36.4	35.9	0.084				PN
00135	5/18/89	1341	2800.0	8959.9	14	529	100	200	25.3	18.5	14.1	36.1	36.4	35.7					PN
00136	5/18/89	1718	2759.9	8929.8	99	988	100	200	25.9	18.8	14.3	36.3	36.3	35.8	0.045				PN
00137	5/18/89	2016	2759.9	8900.1	99	1238	100	200	25.9	18.2	13.5	36.4	36.4	36.6	0.072				PN
00138	5/19/89	0000	2759.9	8830.0	99	2372	100	200	25.7	17.9	13.6	36.1	36.3	35.6	0.040				PN
00139	5/19/89	0337	2800.0	8759.9	99	2353	100	200	25.6	17.9	14.6	35.9	36.2	35.8					PN
00140	5/19/89	0713	2829.0	8759.8	99	2179	100	200	25.8	19.6	14.8	36.2	36.5	35.8	0.071				PN
00141	5/19/89	1011	2859.9	8800.1	11	1210	100	200	25.9	20.7	14.8	36.3	36.7	35.9	0.038				PN



Table 2. Selected environmental parameters (cont'd)

NMFS,SEFC,MS.LABS,PASCAGOULA FACILITY																			
SEAMAP ENVIRONMENTAL DATA																			
HERNAN CORTEZ II																			
STA#	DATE	TIME	POSITION		STAT	DEPTH	SAMPLE		TEMPERATURE, °C			SALINITY,PPT			CL,	DISSOLVED			GEAR
			LAT	LONG			ZONE	DEPTH	MID	MAX	SUR	MID	MAX	SUR	MID	MAX	MG/M <sup>3</sup>	SUR	
00001	5/11/89	1120	2430.0	8359.6	2	2200	100	200	25.9	20.4	15.6	36.3	36.0	0.125	6.0	5.3	4.5	PN	
00002	5/11/89	1630	2459.5	8359.5	3	116	55	110	26.2	22.3	20.0	36.5	36.9	0.160	6.2	6.5	5.2	PN	
00003	5/11/89	2130	2529.2	8400.1	3	122	58	116	25.2	21.6	19.0	36.5	36.5	0.180	6.5	6.9	4.1	PN	
00004	5/12/89	0235	2559.6	8400.0	4	119	57	114	25.1	22.1	19.3	36.8	36.4		6.5	6.8	5.5	PN	
00005	5/12/89	0640	2559.6	8429.6	99	195	90	190	24.7	20.6		36.4	36.6	0.170	6.4	5.0	4.6	PN	
00006	5/12/89	1058	2600.1	8500.1	99	3294	100	200	24.9	21.4	15.5	36.5	36.5		6.5	5.7	4.6	PN	
00007	5/12/89	1608	2629.6	8459.6	99	1440	100	200	25.3	20.7	17.6	36.7	36.5	0.080	6.3	5.7	4.8	PN	
00008	5/12/89	2107	2659.6	8500.0	5	1130	100	200	25.4	20.6	16.2	36.5	36.5	0.125	6.4	5.2	4.4	PN	
00009	5/13/89	0722	2729.5	8500.0	5	455	100	200	24.3	20.6	16.2	36.4	36.6	0.100	6.4	5.4	4.4	PN	
00010	5/13/89	1247	2759.5	8500.0	6	234	100	200	24.2	19.2	15.9	36.1	36.7	0.150	6.4	5.4	4.2	PN	
00011	5/13/89	1717	2759.6	8529.5	99	662	100	200	24.3	20.4	17.1	36.3	36.6	0.200	6.4	5.1	4.5	PN	
00012	5/13/89	2140	2759.6	8559.6	99	970	100	200	25.1	20.6	16.9	36.8	36.6		6.3	4.7	4.8	PN	
00013	5/14/89	0208	2829.5	8600.0	99	328	100	200				35.9	36.5	0.145				PN	
00014	5/14/89	0703	2859.6	8559.5	99	198	96	193	23.7	20.1	16.4	35.5	36.8	0.167	6.2	5.0	4.2	PN	
00015	5/14/89	1115	2900.0	8530.1	8	59	26	53	23.5	22.7	20.5	35.6	35.7	0.183	6.4	6.3	6.2	PN	
00016	5/14/89	1545	2830.1	8529.6	8	200	98	195	24.4	20.1	16.6	35.9	36.5	0.197	6.5	5.0	4.0	PN	
00017	5/14/89	1955	2829.6	8500.1	8	94	45	90	24.1	21.8	19.7	36.0	36.5	0.227	6.5	6.5	5.4	PN	
00018	5/15/89	0030	2859.0	8500.0	8	35	15	30	22.9	22.6	21.6	36.1	35.7	0.303	6.6	6.5	6.5	PN	
00019	5/15/89	0435	2859.6	8430.1	7	29	12	24	23.1	22.8	21.2	35.7	36.0	0.260	6.3	6.5	6.0	PN	
00020	5/15/89	0903	2830.0	8429.6	6	46	20	41	23.5	23.0	21.4	36.2	36.6	0.207	6.4	6.2	6.3	PN	
00021	5/15/89	1258	2829.6	8400.1	6	30	12	25	24.3	23.3	22.8	36.7	36.4	0.290	6.3	6.3	6.9	PN	
00022	5/15/89	1749	2859.6	8400.0	7	26	10	21	24.9	23.4	22.5			0.527	6.4	6.5	6.8	PN	
00023	5/15/89	2136	2900.0	8330.1	7	15	5	10	24.5	24.1	23.1	35.3	35.3	0.560	6.3	6.2	6.4	PN	
00024	5/16/89	0154	2830.1	8330.0	6	20	8	15	24.5	23.7	23.0	36.1	36.7	0.327	6.5	6.1	6.2	PN	
00025	5/16/89	0724	2800.0	8300.0	6	13	4	8	24.7	23.9	24.8	34.8	34.7	0.437	6.2	5.9	6.0	PN	

Table 2. Selected environmental parameters (cont'd)

NMFS, SEFC, MS. LABS, PASCAGOULA FACILITY  
SEAMAP ENVIRONMENTAL DATA  
SABINE

STA#	DATE MM/DD/YY	TIME	POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)			TEMPERATURE, °C			SALINITY, PPT			CL, MG/M <sup>3</sup> SUR	DISSOLVED OXYGEN, PPM			GEAR
			LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX	SUR		MID	MAX		
40001	6/ 2/89	1125	2935.6	9354.4	17	8	4	8	29.0	28.8	28.6				6.915	6.8	6.0	6.2	ST	
40002	6/ 2/89	1225	2934.6	9353.7	17	9	4	9	29.3	28.8	28.5				8.971	6.8	6.2	6.0	ST	
40003	6/ 2/89	1340	2934.4	9351.7	17	11	6	11	29.6	28.7	28.5				6.579	6.4	5.7	5.9	ST	
40004	6/ 2/89	1441	2933.4	9349.5	17	12	6	12	29.9	28.8	27.6				10.803	7.6	6.2	5.7	ST	
40005	6/ 2/89	1555	2931.5	9350.7	17	12	6	12	29.9	28.5	27.8				7.551	7.7	6.3	5.6	ST	
40006	6/ 2/89	1709	2933.5	9358.6	17	10	5	10	29.5	28.8	28.4				6.728	7.0	6.2	5.6	ST	
40007	6/ 2/89	1750	2935.4	9358.6	17	8	4	8	29.4	29.2	28.5				6.841	7.0	6.4	5.6	ST	
40008	6/ 2/89	1831	2937.4	9357.5	17	5	3	5	28.9	28.6	28.1				6.130	6.3	5.0	5.7	ST	
40009	6/20/89	0904	2934.4	9347.5	17	11	6	11	25.8	25.6	25.5				3.962	5.7	5.2	3.1	ST	
40010	6/20/89	1320	2937.7	9342.5	17	10	5	10	27.3	25.7	25.5				3.476	5.7	3.9	4.0	ST	
40011	6/20/89	1400	2937.6	9340.4	17	10	5	10	27.6	25.7	25.5				4.769	6.1	3.8	3.7	ST	
40012	6/20/89	1431	2938.7	9339.5	17	10	5	10	28.0	25.6	25.0				4.149	6.3	4.8	3.0	ST	
40013	6/20/89	1522	2936.6	9338.4	17	11	6	11	28.4	25.6	25.4				3.215	7.1	5.8	4.2	ST	
40014	6/20/89	1557	2937.5	9335.6	17	10	5	10	28.1	26.0	25.0				4.560	7.3	6.3	4.8	ST	
40015	6/20/89	1630	2939.5	9334.6	17	10	5	10	28.4	25.7	25.6				2.334	7.3	6.6	5.4	ST	
40016	6/20/89	1710	2940.7	9337.6	17	9	4	9	28.9	26.0	25.5				4.897	7.3	6.6	5.3	ST	

Table 2. Selected environmental parameters (cont'd)

NMFS, SEFC, MS. LABS, PASCAGOULA FACILITY																			
SEAMAP ENVIRONMENTAL DATA																			
MATAGORDA BAY																			
STA#	DATE		POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)		TEMPERATURE, °C			SALINITY, PPT			CL, MG/M <sup>3</sup>	DISSOLVED OXYGEN, PPM			GEAR
	MM/DD/YY	TIME	LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX	SUR	SUR	MID	MAX	
32001	6/ 6/89	0903	2752.6	9658.6	20	12	6	12	27.3	27.3	26.9		0.374	6.4	6.6	6.6	ST		
32002	6/ 6/89	0956	2754.6	9653.5	20	16	8	16	27.7	27.1	26.1		0.235	6.7	6.6	6.2	ST		
32003	6/ 6/89	1038	2755.5	9652.5	20	16	8	16	27.8	27.6	26.3		0.267	6.5	6.6	6.5	ST		
32004	6/ 6/89	1123	2757.5	9651.6	20	15	8	15	28.0	27.5	26.9			6.4	6.1	6.0	ST		
32005	6/ 6/89	1218	2754.8	9650.3	20	18	9	18	28.0	27.4	26.7		0.160	8.5	7.3	5.0	ST		
32006	6/ 6/89	1303	2753.5	9648.6	20	21	10	21	28.4	27.5	26.4		0.160	10.2	7.6	6.0	ST		
32007	6/ 6/89	1533	2750.7	9651.6	20	20	10	20	28.0	26.9	25.8		0.385	7.5	7.9	6.1	ST		
32008	6/ 6/89	1601	2751.5	9652.9	20	20	10	20	28.5	27.9	27.2		0.224	9.4	7.2	7.5	ST		
32009	6/19/89	0857	2752.4	9701.3	20	5	2	5	28.6	28.6	29.0		0.972	4.2	4.5	3.3	ST		
32010	6/19/89	0942	2751.4	9658.6	20	14	7	14	28.8	28.8	28.8		0.673	3.2	4.4	4.3	ST		
32011	6/19/89	1120	2740.7	9709.1	20	7	3	7	28.8	28.9	29.2		0.785	5.0	4.9	4.3	ST		
32012	6/19/89	1235	2736.6	9701.8	20	23	11	23	28.5	28.4	28.4		0.224	3.8	4.3	4.6	ST		
32013	6/19/89	1312	2737.7	9701.5	20	23	11	23	28.7	28.4	28.3		0.214	3.4	4.6	4.8	ST		
32014	6/19/89	1359	2740.5	9659.7	20	22	11	22	28.7	28.3	28.1		0.320	4.0	4.8	4.9	ST		
32015	6/20/89	0825	2744.9	9702.3	20	15	7	15	28.3	28.6	28.6		0.598	5.4	4.1	4.6	ST		
32016	6/20/89	0915	2746.4	9701.6	20	14	7	14	28.4	28.6	28.6		0.598	5.3	4.6	5.1	ST		

Table 2. Selected environmental parameters (cont'd)

NMFS, SEFC, MS. LABS, PASCAGOULA FACILITY  
SEAMAP ENVIRONMENTAL DATA  
LAGUNA MADRE

STA#	DATE MM/DD/YY	TIME	POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)		TEMPERATURE, °C			SALINITY, PPT			CL, MG/M <sup>3</sup>	DISSOLVED OXYGEN, PPM			GEAR
			LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX	SUR	SUR	MID	MAX	
33001	6/ 6/89	1015	2819.5	9614.4	19	19	9	19	27.6	27.0	24.6				1.196	6.1	6.0	5.2	ST
33002	6/ 6/89	1047	2819.5	9612.6	19	20	10	20	27.6	27.0	24.3				0.972	6.2	6.1	5.5	ST
33003	6/ 6/89	1140	2823.5	9607.4	19	18	9	18	28.9	26.6	24.0				1.234	6.1	6.2	4.5	ST
33004	6/ 6/89	1223	2825.4	9605.5	19	17	8	17	28.2	27.2	22.6				0.929	6.2	6.2	4.7	ST
33005	6/ 6/89	1255	2826.6	9607.5	19	15	7	15	29.3	26.9	23.6				1.271	6.2	6.3	3.5	ST
33006	6/ 6/89	1338	2829.4	9609.6	19	10	5	10	29.3	27.2	27.2				1.346	6.1	6.1	6.1	ST
33007	6/ 6/89	1446	2824.7	9613.4	19	15	7	15	29.8	28.0	25.2				1.794	6.1	6.2	4.3	ST
33008	6/ 6/89	1526	2823.5	9615.7	19	14	7	14	29.2	27.4	26.0				0.897	6.1	6.3	4.4	ST
33009	6/16/89	0737	2820.4	9616.7	19	17	8	17	27.0	27.0	27.1				0.919	6.0	6.1	6.1	ST
33010	6/16/89	0807	2819.4	9617.6	19	18	9	18	26.9	27.0	27.0				0.854	6.1	6.1	6.2	ST
33011	6/16/89	0844	2817.4	9615.6	19	20	10	20	26.7	26.7	26.7					6.1	6.2	6.3	ST
33012	6/16/89	0950	2811.4	9624.6	19	22	11	22	26.8	26.8	26.7					6.2	6.2	6.2	ST
33013	6/16/89	1133	2814.4	9628.7	19	12	6	12	27.2	27.3	27.3			2.392	6.1	6.0	5.9	ST	
33014	6/16/89	1222	2815.5	9626.6	19	13	7	13	27.5	27.5	27.3			3.247	6.0	6.0	5.9	ST	
33015	6/16/89	1305	2818.4	9623.6	19	12	6	12	27.7	27.4	27.2			4.336	6.0	5.9	6.1	ST	
33016	6/16/89	1340	2817.5	9621.7	19	16	8	16	27.4	27.1	26.9			0.961	5.9	6.1	6.2	ST	

Table 2. Selected environmental parameters (cont'd)

NMFS,SEFC,MS.LABS,PASCAGOULA FACILITY																			
SEAMAP ENVIRONMENTAL DATA																			
GALVESTON BAY																			
STA#	DATE		POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)		TEMPERATURE, °C			SALINITY, PPT			CL, MG/M <sup>3</sup>	DISSOLVED OXYGEN, PPM			GEAR
	MM/DD/YY	TIME	LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX	SUR	SUR	MID	MAX	
34001	6/ 6/89	0840	2918.6	9442.1	18	8	4	8	26.9	26.7	26.7	29.1	29.3	29.4	1.570	4.7	4.2	4.2	ST
34002	6/ 6/89	0921	2917.3	9438.7	18	11	6	11	27.7	27.5	26.0	28.0	28.8	30.3	0.673	6.4	6.2	3.2	ST
34003	6/ 6/89	0954	2918.9	9436.3	18	12	6	12	27.8	27.7	26.5	24.5	28.6	29.7	6.355	6.6	6.2	4.3	ST
34004	6/ 6/89	1022	2919.2	9436.8	18	12	6	12	27.9	27.6	26.6	21.1	28.1	29.8	7.401	6.7	6.3	4.2	ST
34005	6/ 6/89	1056	2921.7	9437.2	18	10	5	10	27.7	27.4	27.1	24.6	28.2	29.0	5.831	5.6	5.2	4.9	ST
34006	6/ 6/89	1156	2922.1	9428.7	18	13	6	13	28.7	27.5	26.3	23.4	28.3	29.9	4.560	6.8	6.1	3.1	ST
34007	6/ 6/89	1306	2924.7	9440.5	18	6	3	6	28.8	27.6	26.7	26.6	27.0	28.8	2.093	6.9	5.7	2.1	ST
34008	6/ 6/89	1350	2921.1	9440.6	18	11	5	11	29.1	27.1	26.6	26.2	28.0	29.0	2.617	7.1	4.1	2.1	ST
34009	6/19/89	0935	2913.9	9441.2	18	13	7	13	27.4	27.2	27.3	24.6	26.9	29.2	1.196	6.8	5.0	4.1	ST
34010	6/19/89	1006	2913.4	9442.9	18	13	7	13	27.7	27.3	27.6	24.7	27.4	29.0	1.196	7.0	6.9	7.1	ST
34011	6/19/89	1042	2913.8	9445.2	18	11	5	10	27.8	27.5	27.5	25.2	26.4	28.1	0.844	7.0	6.7	7.2	ST
34012	6/19/89	1117	2914.2	9446.7	18	11	5	10	27.9	27.8	27.3	24.9	27.4	28.2	0.929	7.1	7.1	4.0	ST
34013	6/19/89	1150	2913.8	9447.3	18	11	5	10	28.1	27.9	27.7	25.0	27.4	28.4	1.186	7.0	7.2	7.2	ST
34014	6/19/89	1227	2913.9	9450.2	18	8	4	8	28.1	27.7	27.1	26.0	27.3	27.7	1.420	6.9	6.6	5.1	ST
34015	6/19/89	1255	2913.1	9451.7	18	8	4	7	28.0	27.5	27.5	26.3	27.4	27.6	2.467	6.8	6.0	7.1	ST
34016	6/19/89	1337	2911.3	9447.6	18	13	6	12	28.4	27.4	27.3	25.6	29.5	30.8	1.009	7.1	6.2	6.2	ST

Table 2. Selected environmental parameters (cont'd)

NMFS, SEFC, MS. LABS, PASCAGOULA FACILITY  
SEAMAP ENVIRONMENTAL DATA  
ARANSAS BAY

STA#	DATE MM/DD/YY	TIME	POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)		TEMPERATURE, °C			SALINITY, PPT			CL, MG/M <sup>3</sup>	DISSOLVED OXYGEN, PPM			GEAR
			LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX	SUR	SUR	MID	MAX	
31001	6/ 7/89	0830	2603.9	9706.5	21	18	9	18	25.0	24.9	21.4				0.320	5.7	7.0	6.2	ST
31002	6/ 9/89	0835	2602.1	9705.6	21	19	10	19	24.7	21.5	21.3				0.459	6.6	6.0	5.7	ST
31003	6/ 9/89	0915	2601.1	9705.5	21	19	10	19	24.6	21.7	21.3				0.326	5.8	5.6	5.2	ST
31004	6/ 9/89	1006	2558.2	9705.6	22	19	10	19	24.8	21.2	21.1				0.459	5.5	5.4	4.4	ST
31005	6/ 9/89	1131	2605.3	9700.5	21	19	10	19	26.5	24.4	21.2				0.224	5.4	5.7	5.4	ST
31006	6/ 9/89	1215	2607.5	9700.6	21	26	13	26	26.6	25.6	22.4				0.326	5.5	5.6	6.1	ST
31007	6/ 9/89	1305	2606.3	9702.8	21	23	12	23	25.7	24.3	21.5				0.433	5.6	5.8	5.5	ST
31008	6/ 9/89	1347	2605.2	9703.7	21	21	11	21	25.6	23.8	21.4				0.336	5.7	5.9	5.5	ST
31009	6/20/89	0800	2605.4	9708.6	21	11	6	11	26.0	26.0	26.1				0.320	8.0	8.0	7.9	ST
31010	6/20/89	0919	2612.6	9703.5	21	20	10	20	28.0	28.1	28.8					7.3	9.0	6.9	ST
31011	6/20/89	0959	2615.3	9704.3	21	18	9	18	26.9	26.8	25.7				0.080	7.9	8.1	7.9	ST
31012	6/20/89	1110	2621.4	9704.5	21	21	11	21	26.9	26.6	26.6				0.096	8.1	8.3	8.1	ST
31013	6/20/89	1157	2619.7	9706.5	21	18	9	18	27.1	26.6	26.6					8.1	8.3	8.1	ST
31014	6/20/89	1245	2618.3	9709.6	21	16	8	16	27.0	26.5	26.4				0.137	8.0	8.2	8.1	ST
31015	6/20/89	1335	2615.3	9710.6	21	7	4	7	27.0	26.7	26.3				0.178	8.1	8.2	8.2	ST
31016	6/20/89	1417	2615.6	9707.4	21	18	9	18	26.9	26.5	26.5				0.112	8.4	8.4	8.2	ST

Table 2. Selected environmental parameters (cont'd)

NMFS,SEFC,MS.LABS,PASCAGOULA FACILITY  
 SEAMAP ENVIRONMENTAL DATA  
 ALABAMA INSHORE VESSELS

STA#	DATE		POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)		TEMPERATURE, °C			SALINITY, PPT		CL, MG/M <sup>3</sup> SUR	DISSOLVED OXYGEN, PPM			GEAR	
	MM/DD/YY	TIME	LAT	LONG			SUR	MID	MAX	SUR	MID	MAX	SUR		MID	MAX			
23001	6/ 7/89	1110	3009.5	8751.5	10	9	5	9	28.0	27.0	26.5	28.0	32.0	32.0		6.8	6.6	6.6	ST
23002	6/ 7/89	1209	3008.5	8750.2	10	13	7	13	28.5	28.0	26.5	28.0	30.0	32.0		6.8	9.0	7.4	ST
23003	6/ 7/89	1336	3014.2	8742.4	10	4	2	4	26.5		26.5	34.0		34.0		7.8		8.0	ST
23004	6/ 7/89	1440	3013.0	8738.5	10	9	5	9	27.0		26.5	30.0		31.0		7.2		7.4	ST
23005	6/ 7/89	1514	3015.1	8737.1	10	6	3	6	26.5		26.0	32.0		32.0		6.4		8.0	ST
23006	6/ 7/89	1557	3015.2	8736.2	10	7	4	7	26.0		26.0	32.0		32.0		7.4		7.0	ST
23007	6/ 7/89	1715	3014.2	8740.2	10	7	4	7	26.0		25.5	30.0		31.0		6.6		6.8	ST

Table 2. Selected environmental parameters (cont'd)

NMFS, SEFC, MS. LABS, PASCAGOULA FACILITY  
SEAMAP ENVIRONMENTAL DATA  
TOMMY MUNRO

STA#	DATE MM/DD/YY	TIME	POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)			TEMPERATURE, °C			SALINITY, PPT			CL, MG/M <sup>3</sup> SUR	DISSOLVED OXYGEN, PPM			GEAR
			LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX	SUR		MID	MAX		
17001	6/ 9/89	1953	2931.2	8741.9	10	54	26	53	26.6	22.0	20.7	16.4	36.4	36.6		5.9	6.5	5.4	ST	
17002	6/ 9/89	2303	2930.1	8744.5	10	55	27	54	26.5	21.4	20.3	31.7	36.5	36.8		6.2	6.6	5.7	ST	
17003	6/10/89	0337	2928.8	8747.8	10	59	30	58	25.8	21.2	19.6	32.7	36.3	36.5		6.3	6.2	5.1	ST	
17004	6/10/89	1140	2930.1	8730.0	10	65	32	64	26.0	22.6	22.0	32.0	36.4	35.1		5.9	5.6	4.8	PN	
17005	6/10/89	1838	2923.1	8803.2	11	79	34	77	26.7	21.3	19.2	31.6	36.0	36.4		6.4	6.7	4.6	ST	
17006	6/10/89	2158	2930.2	8800.3	11	43	21	42	26.2	22.0	20.0	30.7	30.7	35.7		5.6	6.0	5.0	PN	
17007	6/11/89	0400	3000.0	8830.1	11	24	12	23	26.0	25.8	21.3					6.2	6.1	5.0	PN	
17010	7/ 7/89	0705	2947.3	8834.5	11	25	12	23	27.0	24.5	21.0	27.8	34.8	36.2	2.860	6.0	4.8	4.8	ST	
17011	7/ 7/89	1012	2946.6	8827.1	11	31	15	30	27.0	24.0	21.5	28.0	35.8	36.3	1.934	6.0	5.2	5.2	ST	
17012	7/ 7/89	1351	2933.1	8838.8	11	21	10	19	27.5	27.0	23.0	29.3	35.1	35.8	2.467	7.8	4.8	4.4	ST	
17013	7/ 7/89	1641	2927.6	8844.6	11	25	12	24	28.5	26.0	25.5	25.3	36.2	36.1	2.897	9.0	5.4	6.0	ST	
17014	7/ 7/89	2018	2912.0	8854.5	11	34	16	33	27.0	21.5	20.0	6.0	35.9	36.4	30.353	16.0	5.0	5.2	ST	
17015	7/ 7/89	2328	2923.9	8847.7	11	30	14	29	27.7	23.5	21.5	20.9	36.1	36.3	8.280	16.0	7.0	5.9	ST	
17016	7/ 8/89	0216	2934.8	8833.6	11	33	16	31	27.0	23.0	21.0	28.9	35.8	36.4	1.084	7.4	5.8	5.0	ST	
17017	7/ 8/89	0620	2929.9	8830.2	11	48	24	47	27.0	22.5	20.1	22.4	36.1	36.3	6.672	12.4	5.4	5.0	PN	
17018	7/ 8/89	1026	2919.3	8850.7	11	41	20	40	28.0	23.0	20.8	9.4	36.2	36.4	20.895	15.0	6.5	5.8	ST	
17019	7/ 8/89	1300	2923.6	8846.6	11	18	9	17	29.0	26.5	24.1	15.5	35.4	36.2	21.082	12.2	6.0	6.4	ST	
17020	7/ 8/89	1635	2906.8	8842.2	11	92	45	90	28.5	21.5	18.0	19.1	36.4	36.4	18.765	12.4	6.6	4.7	ST	
17021	7/ 8/89	2138	2925.1	8806.3	11	55	26	52	28.0	24.0	21.0	25.6	36.0	36.3	1.962	10.2	6.0	5.1	ST	
17022	7/ 9/89	0035	2925.9	8758.1	10	67	33	66	28.0	23.0	21.0	29.0	36.0	36.5	0.336	5.6	6.0	4.8	ST	
17023	7/ 9/89	0651	2924.2	8812.5	11	57	28	55	27.0	23.5	21.0	30.4	36.0	36.4	0.953	6.3	5.4	4.8	ST	
17024	7/ 9/89	1025	2929.9	8800.0	11	44	22	42	29.0	24.0	22.0	27.6	35.4	36.4	0.336	7.8	5.2	5.5	PN	
17025	7/ 9/89	1429	2939.3	8741.2	10	35	17	34	28.0	27.5	23.8	25.4	34.3	36.2	0.451	7.0	5.4	5.2	ST	
17026	7/ 9/89	1916	2949.8	8754.5	10	30	15	29	28.3	27.0	22.0	29.5	30.0	36.3	0.308	7.0	6.0	5.2	ST	
17027	7/ 9/89	2131	2938.9	8750.2	10	44	22	43	28.0	25.5	22.5	26.1	34.7	36.4	0.252	6.0	5.2	5.4	ST	
17028	7/10/89	0004	2947.1	8755.2	10	37	18	36	28.0	26.2	22.0	29.2	32.8	36.2	0.262	5.8	5.6	5.2	ST	
17029	7/10/89	0329	2954.1	8757.2	10	28	13	27	26.5	26.5	21.0	29.6	30.3	36.0		6.6	6.3	5.3	ST	
17030	7/10/89	0653	2943.5	8816.1	11	37	18	36	26.5	25.0	22.0	29.1	32.4	36.0		6.2	4.8	4.6	ST	



Table 2. Selected environmental parameters (cont'd)

NMFS, SEFC, MS. LABS, PASCAGOULA FACILITY  
SEAMAP ENVIRONMENTAL DATA  
TOMMY MUNRO

STA#	DATE		POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS			TEMPERATURE, °C			SALINITY, PPT			CL, MG/M <sup>3</sup>	DISSOLVED OXYGEN, PPM			GEAR
	MM/DD/YY	TIME	LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX	SUR	SUR	MID	MAX		
17031	7/10/89	1104	3000.0	8800.0	11	22	10	21	28.2	27.0	23.5	28.1	30.1	35.8		5.6	6.0	5.0	PN	
17032	7/10/89	1326	3004.9	8751.4	10	18	9	17	27.5	26.5	24.0	26.4	31.3	35.4	1.663	6.4	5.7	4.5	ST	
17033	7/10/89	1656	3001.9	8754.6	10	19	9	18	28.5	27.0	23.5	23.1	30.0	35.5	1.402	7.2	6.7	5.2	ST	
17034	7/10/89	2010	3007.1	8751.1	10	15	8	14	28.0	26.0	24.7	24.5	34.9	1.514	6.3	5.0	4.6	ST		
17035	7/10/89	2229	3000.0	8759.8	11	23	12	22	28.5	25.5	23.0	27.3	32.9	35.8		5.8	4.5	5.3	ST	
17036	7/11/89	0001	2959.3	8758.8	10	24	12	23	27.8	26.0	23.5	27.4	32.2	35.8		6.0	4.6	5.0	ST	
17037	7/11/89	0349	2950.3	8829.0	11	31	15	30	27.5	26.0	21.0	24.3	32.7	36.0	2.486	7.4	5.6	4.9	ST	
17038	7/11/89	0815	2959.4	8845.5	11	12	6	11	27.0	28.0	25.4	24.1	32.8	32.8	1.486	6.4	7.2	3.6	ST	
17039	7/11/89	1010	3000.0	8830.0	11	25	12	24	28.0	26.0	21.1	26.0	32.7	35.5		6.3	5.5	2.9	PN	
17040	7/11/89	1147	2958.3	8826.7	11	28	14	27	28.1	24.5	21.3	28.0	34.8	35.6	0.729	7.0	4.2	3.0	ST	
17041	7/11/89	1429	2959.6	8826.1	11	25	12	24	28.8	26.2	22.8	26.8	32.9	35.3	0.953	7.0	5.4	3.3	ST	
17042	7/11/89	2001	3002.5	8830.3	11	20	10	19	29.0	26.0	22.1	21.8	31.5	34.8	1.318	6.8	6.1	1.6	ST	
17043	7/11/89	2248	3007.6	8852.0	11	11	5	10	28.0	28.0	24.0	22.3	23.1	34.0	2.168	6.6	5.8	1.5	ST	

Table 2. Selected environmental parameters (cont'd)

NMFS, SEFC, MS. LABS, PASCAGOULA FACILITY																			
SEAMAP ENVIRONMENTAL DATA																			
OREGON II																			
STA#	DATE	TIME	POSITION		STAT	DEPTH	SAMPLE DEPTHS		TEMPERATURE, °C			SALINITY, PPT			CL, MG/M <sup>3</sup>	DISSOLVED OXYGEN, PPM			GEAR
			LAT	LONG			ZONE	(M)	MID	MAX	SUR	MID	MAX	SUR	MID	MAX	SUR	SUR	
49851	6/18/89	0705	2953.6	8810.2	11	35	17	35	27.3	25.8	20.9	25.8	32.6	36.3		6.5	6.2	6.0	ST
49853	6/18/89	0948	2950.4	8802.7	11	34	18	34	27.0	26.8	21.4	26.7	31.7	36.4		7.4	7.0	6.0	ST
49855	6/18/89	1236	2943.8	8754.6	10	39	19	38				30.5	32.4	36.2		6.6	7.0	6.2	ST
49857	6/18/89	1420	2949.1	8750.7	10	35	17	34						35.9		7.8	6.5	6.2	ST
49859	6/18/89	1539	2954.7	8751.2	10	30	15	30				29.2	31.7	35.9		6.5	6.4	5.9	ST
49861	6/18/89	1720	3003.2	8746.1	10	25	12	25				27.9	30.6	35.7		5.7	5.5	4.6	ST
49863	6/18/89	1807	3002.6	8744.2	10	30	15	29											ST
49865	6/18/89	2111	3012.1	8728.5	10	17	9	16				27.2	27.5	33.5		6.2	6.2	5.0	ST
49867	6/19/89	0011	3002.8	8734.8	10	27	13	27				28.8	30.4	35.6		6.2	6.1	5.5	ST
49869	6/19/89	0213	3001.8	8748.6	10	19	9	18				29.7	29.9	35.2		6.4	6.4	5.3	ST
49871	6/19/89	0444	2952.6	8756.4	10	29	14	29				28.5	28.7	35.8		6.3	6.3	5.4	ST
49873	6/19/89	0621	3000.0	8800.0	11	23	11	23				29.9	30.2	35.4		5.6	6.9	4.6	PN
49874	6/19/89	2255	2959.1	8820.2	11	28	14	28	27.3	25.4	21.0	28.6	33.8	36.0	1.542	7.0	6.6	5.0	ST
49876	6/20/89	0035	2952.9	8822.4	11	32	16	32				16.9	17.7	21.2	0.467	7.3	7.9	5.2	ST
49878	6/20/89	0311	2944.2	8828.5	11	32	16	32	27.3	27.3	21.1	31.4	31.4	36.4	0.349	6.3	6.3	4.1	ST
49880	6/20/89	0646	2938.3	8846.2	11	15	7	15	27.2	27.2	27.2	31.1	31.1	35.2		6.3	5.9	4.5	ST
49882	6/20/89	1029	2921.5	8851.0	11	24	12	24	26.7	21.6	21.5	28.9	36.1	36.1	1.682	6.7	7.9	4.8	ST
49884	6/21/89	1546	2842.9	9412.1	18	28	14	28	28.3	27.9	23.4	32.1	32.1	35.6		6.2	6.1	5.1	ST
49886	6/21/89	1859	2835.0	9430.8	18	35	17	35	28.3	27.8	21.6	31.2	31.7	36.1	0.084	6.3	6.3	5.7	ST/PN
49888	6/21/89	2242	2831.4	9418.9	18	37	18	37	28.1	27.3	22.0	31.3	32.4	36.1	0.047	6.4	6.3	6.0	ST
49892	6/22/89	0247	2833.0	9411.0	18	36	18	36	28.0	27.6	22.5	31.7	32.0	36.2	0.083	6.5	6.5	5.4	ST
49894	6/24/89	1119	2925.4	9432.9	18	9	4	8	27.1	27.4	27.4	29.1	29.2	29.2		6.3	6.0	5.8	ST
49896	6/24/89	1434	2913.9	9444.5	18	14	6	13	27.5	27.5	27.5	28.8	28.9	29.0	0.243	5.6	5.7	5.5	ST
49898	6/28/89	1103	2619.7	9656.9	21	30	16	30	28.2	27.8	27.7	35.4	35.5	35.7	0.312	6.5	6.3	6.1	ST
49899	6/28/89	1229	2613.3	9656.1	21	31	15	30	28.4	27.9	27.8	35.4	35.5	35.7	1.762	6.2	6.0	5.9	ST
49900	6/28/89	1404	2607.9	9650.4	21	40	20	39	29.1	27.6	26.5	34.6	35.4	32.3	0.611	6.0	5.8	5.8	ST
49902	6/28/89	1858	2611.1	9623.0	21	88	44	88	28.3	24.1	19.7	36.4	36.4	36.3		7.8	7.8	5.4	ST
49903	6/28/89	2112	2604.7	9625.6	21	72	36	72	28.2	23.2	20.6	36.3	36.4	36.4	0.056	6.2	6.5	5.1	ST

Table 2. Selected environmental parameters (cont'd)

NMFS, SEFC, MS. LABS, PASCAGOULA FACILITY																			
SEAMAP ENVIRONMENTAL DATA																			
OREGON II																			
STA#	DATE	TIME	POSITION		STAT	DEPTH	SAMPLE DEPTHS		TEMPERATURE, °C			SALINITY, PPT			CL,	DISSOLVED OXYGEN, PPM			GEAR
			LAT	LONG			ZONE	DEPTH (M)	MID	MAX	SUR	MID	MAX	SUR	MID	MAX	SUR	SUR	
49904	6/29/89	0033	2602.3	9654.8	21	34	16	33	28.2	27.7	27.3	35.4	35.5	35.7	0.218	6.0	5.6	5.4	ST
49905	6/29/89	0204	2602.2	9702.7	21	25	12	24	28.0	28.0	27.3	36.0	36.0	35.4	0.156	6.2	6.2	6.4	ST
49906	6/29/89	0405	2612.5	9708.9	21	128	67	128	28.1	28.1	27.7	36.1	36.1	36.1	0.332	5.8	5.8	5.8	ST
49907	6/29/89	0449	2614.2	9709.7	21	15	6	15	28.0	28.1	27.8	36.0	36.1	36.0	0.280	5.9	5.7	5.6	ST
49908	6/29/89	0707	2600.1	9700.2	21	38	16	32	27.9	27.9	27.4	36.0	36.0	36.1	0.140	5.8	5.9	5.9	PN
49909	6/29/89	0854	2600.8	9708.1	21	8	5	8	27.8	27.7	27.7	36.2	36.2	36.2	0.847	5.3	5.3	5.2	ST
49910	6/29/89	1152	2625.0	9712.4	21	12	6	12	28.7	28.6	28.3	36.1	36.2	36.0	0.498	5.9	5.8	5.8	ST
49911	6/29/89	1235	2624.6	9708.8	21	15	7	14	28.4	28.3	28.2	35.9	35.9	35.9	0.230	6.0	6.0	5.9	ST
49912	6/29/89	1415	2626.2	9702.1	21	27	13	26	28.4	28.3	27.8	35.1	35.3	35.4	0.285	6.1	6.1	5.6	ST
49913	6/29/89	1615	2635.0	9649.3	21	44	22	44	28.4	26.2	23.2	34.6	35.9	36.3	0.107	6.1	5.9	6.1	ST
49914	6/29/89	1830	2641.4	9649.3	21	54	27	54	28.3	25.3	22.3	35.4	36.0	36.3	0.060	6.0	6.1	6.0	ST
49915	6/29/89	2107	2639.4	9656.8	21	40	20	40	28.6	27.3	23.3	34.8	35.3	36.3	0.103	5.9	5.8	6.0	ST
49916	6/30/89	0038	2629.4	9703.3	21	28	14	27	28.5	28.3	28.0	35.1	35.1	35.5	0.188	6.0	6.0	5.3	ST/PN
49917	6/30/89	0331	2652.3	9712.3	21	27	13	26	28.3	28.3	27.3	34.1	34.1	34.1	0.270	6.1	6.2	5.3	ST
49918	6/30/89	0533	2656.4	9705.2	21	33	16	33	28.1	27.9	26.6	35.1	35.1	36.0	0.654	6.0	6.1	5.7	ST
49919	6/30/89	0606	2657.2	9703.3	21	40	20	40	27.9	27.9	26.4	35.3	35.5	36.1	0.058	6.1	6.1	5.1	ST/PN
49920	6/30/89	0942	2650.1	9720.4	21	10	5	10	29.2	29.1	29.0	35.7	35.7	35.7	0.483	5.8	5.8	5.8	ST
49921	6/30/89	1051	2657.0	9718.3	21	16	8	16	28.8	28.8	28.7	35.4	35.4	35.4	0.409	5.9	5.9	5.9	ST
49922	6/30/89	1132	2657.7	9715.3	21	24	12	23	28.3	28.0	27.3	34.5	34.5	35.8	0.363	6.4	6.1	5.8	ST
49923	6/30/89	1234	2659.3	9711.5	21	28	14	27	28.3	28.0	26.6	34.4	34.8	36.1	0.263	6.4	6.4	5.4	ST
49924	6/30/89	1448	2709.2	9715.3	20	20	10	19	28.3	28.2	27.5	33.9	33.9	34.3	0.353	6.9	6.8	5.9	ST
49925	6/30/89	1534	2709.5	9712.1	20	25	13	25	28.2	28.0	27.4	33.7	34.1	35.2	0.486	6.5	6.6	5.9	ST
49926	6/30/89	1743	2716.9	9703.6	20	31	15	30	28.1	27.4	25.9	33.4	34.3	36.0		6.2	6.0	5.3	ST
49927	6/30/89	2057	2708.5	9721.1	20	9	5	9	28.9	28.9	28.9	34.6	34.6	34.6	0.773	6.0	6.1	6.2	ST
49928	6/30/89	2205	2705.7	9716.6	20	16	8	16	28.5	28.5	28.1	34.5	34.5	34.5	0.397	6.1	6.2	6.0	ST
49929	7/ 1/89	0233	2711.5	9635.8	20	87	43	86	27.7	21.8	19.9	35.3	36.3	36.3	0.105	6.3	6.4	5.0	ST
49931	7/ 1/89	0617	2715.1	9645.3	20	71	32	71	27.6	22.6	20.0	34.6	36.3	36.3		6.6	7.0	5.1	ST
49932	7/ 1/89	0913	2718.8	9631.4	20	91	45	91	27.6	21.2	19.6	35.2	36.4	36.3	0.077	6.1	6.5	4.8	ST

Table 2. Selected environmental parameters (cont'd)

NMFS, SEFC, MS. LABS, PASCAGOULA FACILITY																			
SEAMAP ENVIRONMENTAL DATA																			
OREGON II																			
STA#	DATE		POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)		TEMPERATURE, °C			SALINITY, PPT			CL, MG/M <sup>3</sup>	DISSOLVED OXYGEN, PPM			GEAR
	MM/DD/YY	TIME	LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX	SUR	SUR	SUR	MID	
49934	7/ 1/89	1220	2719.5	9635.1	20	72	36	72	27.4	21.6	19.6	34.3	36.4	36.3	0.107	6.2	6.5	4.9	ST
49935	7/ 1/89	1542	2728.1	9651.1	20	38	19	38	28.0	27.4	24.5	33.3	35.4	36.0	0.135	7.0	6.8	6.4	ST/PN
49936	7/ 1/89	1904	2732.3	9634.2	20	73	36	72	27.8	23.0	20.3	34.0	36.5	36.3	0.187	6.0	6.7	5.0	ST/PN
49937	7/ 1/89	2209	2720.6	9642.5	20	64	32	62	28.2	25.3	20.7	34.5	36.0	36.3	0.078	6.7	6.6	5.9	ST
49938	7/ 2/89	2346	2720.1	9647.5	20	46	22	44	27.9	27.2	22.4	33.8	35.7	36.2	0.053	6.4	6.2	6.1	ST
49939	7/ 2/89	0306	2732.3	9708.9	20	19	9	17	28.0	28.0	27.4	34.2	34.2	34.7	0.737	6.7	6.6	6.0	ST
49940	7/ 2/89	0510	2739.0	9659.2	20	24	11	22	28.1	28.1	26.4	33.9	34.0	35.4	0.265	6.5	6.4	6.3	ST
49941	7/ 2/89	0543	2738.9	9656.9	20	26	13	25	28.1	28.1	25.7	33.8	33.8	35.8	0.178	5.9	6.0	5.9	ST
49942	7/ 2/89	0817	2735.4	9708.7	20	16	8	16	28.0	28.0	27.4	34.2	34.3	34.7	0.903	6.5	6.5	6.2	ST
49943	7/ 2/89	1055	2742.9	9646.7	20	31	15	30	28.1	27.9	24.1	33.4	33.4	36.2	0.128	6.2	6.3	5.7	ST
49944	7/ 2/89	1354	2801.4	9637.7	19	21	10	19	28.1	28.0	26.5	33.2	33.4	35.3	0.267	6.4	6.4	5.3	ST/PN
49945	7/ 2/89	1831	2742.4	9557.5	20	91	45	90	27.6	20.8	18.6	36.1	36.3	36.3	0.038	6.1	6.3	4.8	ST
49946	7/ 2/89	2134	2735.6	9617.8	20	91	45	91	27.9	21.6	19.7	32.9	36.3	36.3	0.114	6.2	6.5	4.7	ST
49947	7/ 3/89	0040	2741.7	9644.2	20	36	16	33	28.0	27.7	23.0	33.3	34.1	36.3	0.093	6.4	6.5	6.0	ST
49948	7/ 3/89	0238	2746.4	9659.1	20	18	8	15	28.2	28.2	27.2	34.3	34.3	34.9	0.675	6.1	6.1	5.9	ST
49949	7/ 3/89	0422	2752.1	9700.9	20	11	5	11	28.8	28.9	28.9	34.2	34.2	34.2	0.226	6.4	6.4	6.4	ST
49950	7/ 3/89	0554	2757.7	9652.5	20	15	7	15	28.3	28.3	27.5	34.4	34.4	34.7	1.308	6.2	6.5	6.2	ST
49951	7/ 3/89	0943	2810.4	9623.2	19	24	12	22	28.1	28.0	23.9	33.3	33.3	36.0	0.179	6.1	6.1	5.2	ST
49952	7/ 3/89	1209	2818.5	9609.5	19	23	10	20	28.1	28.2	26.6	32.5	33.0	35.6	0.276	6.4	6.4	6.3	ST
49953	7/ 3/89	1451	2828.5	9559.9	19	17	8	17	28.1	28.0	27.1	32.9	32.9	34.5	0.208	6.3	6.3	6.0	ST/PN
49954	7/ 3/89	1918	2806.3	9559.7	19	33	16	33	27.9	26.8	24.7	31.9	35.1	35.2	0.184	6.3	6.1	5.9	ST/PN
49955	7/ 5/89	1838	2902.7	9416.8	18	16	8	16	28.2	26.8	26.3	24.3	28.3	33.0	0.841	7.8	6.2	3.2	ST
49956	7/ 5/89	2304	2846.6	9456.2	18	20	10	20	27.8	28.0	25.1	30.5	30.7	35.4	0.187	6.5	6.5	6.2	ST
49957	7/ 5/89	2344	2847.8	9456.5	18	17	8	16	28.0	28.0	26.8	31.1	31.1	32.8	0.280	6.3	6.4	5.0	ST
49958	7/ 6/89	0201	2900.0	9459.9	19	15	7	14	28.1	28.1	25.5	31.8	32.2	34.7	1.371	6.3	6.2	4.3	PN
49959	7/ 6/89	0436	2913.8	9448.7	18	11	5	11	27.1	27.2	26.9	32.4	32.4	32.6	1.073	6.8	6.7	4.7	ST
49960	7/ 6/89	0632	2910.5	9456.7	18	10	5	10	27.2	27.2	26.8			33.1	2.035	6.8	6.7	4.6	ST
49961	7/ 6/89	0924	2854.4	9448.3	18	17	9	17	28.0	28.1	26.2		31.3	34.3	0.454	6.5	6.5	6.4	ST/PN

Table 2. Selected environmental parameters (cont'd)

NMFS, SEFC, MS. LABS, PASCAGOULA FACILITY																			
SEAMAP ENVIRONMENTAL DATA																			
OREGON II																			
STA#	DATE	TIME	POSITION		STAT	DEPTH	SAMPLE DEPTHS		TEMPERATURE, °C			SALINITY, PPT			CL, MG/M <sup>3</sup>	DISSOLVED OXYGEN, PPM			GEAR
			LAT	LONG			ZONE	(M)	MID	MAX	SUR	MID	MAX	SUR	MID	MAX	SUR	SUR	
49962	7/ 6/89	1145	2900.0	9430.0	18	17	9	17	28.0	27.0	25.1	26.9	29.6	34.8	1.485	6.1	6.1	5.7	PN
49963	7/ 6/89	1626	2830.0	9459.8	19	32	16	32	23.5	23.5	22.8	30.6	36.9	36.4	0.188	6.7	6.3	5.3	PN
49964	7/ 6/89	1924	2835.0	9518.2	19	24	13	24	29.1	28.2	22.4	32.7	33.1	36.5	0.078	6.3	6.5	5.3	ST
49965	7/ 6/89	2159	2835.4	9505.9	19	28	14	28	28.8	27.8	22.8	32.3	32.6	36.7	0.140	6.4	6.3	6.1	ST
49966	7/ 7/89	0020	2824.2	9515.7	19	33	16	32	28.2	27.7	21.5	32.2	32.9	37.2	0.169	6.5	6.5	5.4	ST
49967	7/ 7/89	0238	2837.7	9515.2	19	24	12	23	28.3	28.2	24.3	32.7	33.2	36.4	0.080	6.3	6.4	5.4	ST
49968	7/ 7/89	0555	2845.3	9534.8	19	9	4	9	27.5	27.4	27.4	34.8	34.8	34.8	1.296	6.0	5.7	5.5	ST
49969	7/ 7/89	0838	2836.5	9519.3	19	24	12	24	28.2	28.2	22.5	33.0	33.3	37.0	0.134	6.5	6.5	5.7	ST/PN
49970	7/ 7/89	1048	2820.7	9520.9	19	35	18	35	28.6	27.7	21.5	32.1	32.2	36.2		6.4	6.4	5.4	ST
49971	7/ 7/89	1439	2800.7	9520.9	19	46	23	45	28.2	26.4	21.8	33.0	35.7	36.3	0.088	6.3	6.4	6.1	ST
49973	7/ 7/89	2225	2802.8	9631.7	19	22	11	22	28.8	28.4	25.0	35.8	36.2	36.6	0.129	6.7	6.7	7.0	ST/PN
49974	7/ 8/89	0049	2804.3	9614.5	19	30	15	29	28.5	28.1	22.2	35.0	35.9	37.3	0.117	6.3	6.4	6.1	ST
49975	7/ 8/89	0336	2815.8	9553.5	19	27	13	26	28.4	28.7	22.8	34.4	35.4	37.2	0.038	6.4	6.3	6.2	ST
49976	7/ 8/89	0544	2829.3	9553.4	19	17	8	17	29.1	28.8	27.1	34.5	34.9	35.6	0.092	6.2	6.3	6.1	ST
49977	7/ 8/89	0924	2804.2	9555.3	19	38	19	38	28.5	28.6	22.6	35.4	35.6	36.9		6.2	6.1	6.3	ST
49978	7/ 8/89	1238	2757.6	9536.9	20	55	27	53	29.1	27.4	21.0	30.3	36.0	36.3	0.111	6.5	6.7	5.3	ST/PN
49980	7/ 8/89	1528	2752.2	9536.7	20	61	30	60	28.7	24.8	20.7	31.5	36.3	36.3	0.079	6.5	7.4	5.7	ST
49981	7/ 8/89	1826	2753.1	9523.1	20	80	40	80	28.7	31.3	18.7	35.5	36.9	36.7		6.3	6.5	4.5	ST
49982	7/ 8/89	2115	2747.2	9540.6	20	73	37	73	29.3	24.7	20.7	34.2	36.6	36.8	0.078	6.5	7.2	5.7	ST
49983	7/ 9/89	0008	2804.4	9542.4	19	45	23	45	28.7	28.7	21.8	31.4	34.4	36.8	0.070	6.3	6.3	6.0	ST
49984	7/ 9/89	0330	2827.2	9533.5	19	26	13	25	28.6	28.7	22.9	31.6	33.2	36.9	0.096	6.5	6.5	6.6	ST
49986	7/ 9/89	0729	2808.3	9516.4	19	54	27	54	28.4	23.2	21.0	35.2	36.4	36.3	0.094	6.4	6.9	5.9	ST
49987	7/ 9/89	1208	2800.7	9459.7	19	82	40	80	28.8	21.8	19.0	32.7	36.3	36.2	0.107	6.4	6.8	4.7	PN
49988	7/ 9/89	1431	2802.0	9446.0	18	71	35	70	29.0	22.9	19.6	34.0	36.9	36.8	0.084	6.3	6.8	4.8	ST
49989	7/ 9/89	1754	2759.9	9430.6	18	69	34	69	29.1	26.5	21.1	34.2	36.7	36.8	0.075	6.6	7.0	6.1	PN
49990	7/ 9/89	2044	2758.6	9440.9	18	80	40	80	28.7	23.6	19.9	35.2	36.7	36.8	0.039	6.5	7.2	5.3	ST
49991	7/ 9/89	2307	2758.7	9432.7	18	70	35	70	28.5	25.4	20.9	36.1	36.9	36.8	0.047	6.6	7.3	6.2	ST
49992	7/10/89	0156	2811.2	9422.7	18	53	26	52	29.2	24.8	21.6	30.1	36.0	36.2	0.100	6.8	6.9	6.3	ST

Table 2. Selected environmental parameters (cont'd)

NMFS,SEFC,MS.LABS,PASCAGOULA FACILITY  
SEAMAP ENVIRONMENTAL DATA  
OREGON II

STA#	DATE		POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)			TEMPERATURE, °C			SALINITY, PPT			CL, MG/M <sup>3</sup> SUR	DISSOLVED OXYGEN, PPM			GEAR
	MM/DD/YY	TIME	LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX	SUR		MID	MAX		
49994	7/10/89	0611	2755.1	9406.5	18	115	57	115	28.7	23.7	17.8	36.2	36.3	36.0		6.3	7.1	4.3	ST	
49995	7/10/89	1228	2821.6	9330.6	17	55	26	53	28.5	27.4	21.4	32.8	35.6	36.1	0.078	6.4	6.1	5.9	ST	
49996	7/10/89	1547	2829.2	9347.1	17	33	16	32	28.6	27.3	23.2	32.5	33.4	35.7	0.153	6.5	6.5	5.5	ST	
49997	7/10/89	1648	2839.9	9352.8	17	27	13	27	28.5	28.5	26.8				0.150	6.5	6.6	6.5	ST	
49998	7/10/89	2130	2918.9	9354.0	17	14	7	14	28.9	28.8	26.8	23.8	24.0	31.0		7.0	7.0	2.7	ST	
49999	7/11/89	0025	2908.2	9336.0	17	18	9	17	28.3	28.3	26.9	29.3	29.3	32.9	0.267	6.7	6.6	5.8	ST	
50000	7/11/89	0433	2847.1	9310.7	17	28	14	28	23.4	28.0	23.4	31.7	32.4	36.3	0.117	6.7	6.7	5.2	ST	
50001	7/11/89	0625	2839.1	9306.4	17	36	18	36	28.1	27.4	22.9	32.9	33.3	36.3		6.5	6.4	5.4	ST	
50002	7/11/89	0930	2852.5	9257.4	16	24	12	24	28.3	28.3	24.6	32.2	32.2	35.6	0.150	6.7	6.7	6.8	ST	
50003	7/11/89	1136	2847.9	9246.5	16	28	14	28	28.6	27.9	24.7	31.6	31.8	35.5	0.187	6.6	6.7	5.0	ST	
50004	7/11/89	1342	2834.5	9239.4	16	41	20	40	28.7	25.6	22.5	30.6	33.6	36.1	0.187	6.5	6.9	6.1	ST	
50005	7/11/89	1535	2831.8	9249.5	16	45	22	45	29.3	26.2	22.1	31.7	35.6	36.2	0.187	6.9	6.8	6.2	ST	
50007	7/11/89	2006	2810.0	9303.3	17	84	42	84	28.4	23.1	19.5	35.5	36.5	36.7	0.056	7.1	8.4	6.2	ST	
50008	7/11/89	2356	2834.5	9256.5	16	44	22	44	28.5	26.3	21.7	32.6	35.2	36.8	0.098	7.2	7.4	6.2	ST	
50009	7/12/89	0213	2834.5	9243.1	16	40	20	39	28.7	27.0	22.3	30.9	34.9	36.6	0.078	6.8	6.6	6.3	ST	
50010	7/12/89	0417	2844.6	9237.5	16	30	15	30	29.2	28.4	23.2	30.1	31.4	36.8	0.160	7.6	7.8	4.7	ST	
50011	7/12/89	0718	2859.5	9226.0	16	22	11	22	28.4	28.6	23.7	27.2	30.6	35.8	0.660	7.0	6.2	1.0	ST	
50012	7/12/89	0917	2903.0	9230.0	16	22	11	22	28.6	27.0	23.7	25.3	29.8	35.5	0.576	7.5	4.0	0.9	ST	
50013	7/12/89	1136	2909.8	9217.1	16	7	4	7	29.6	29.2	29.3	25.5	25.5	25.5	0.505	7.6	7.3	7.2	ST	
50014	7/12/89	1442	2916.5	9246.5	16	18	9	17	29.0	28.2	27.3	25.8	29.9	32.1	0.444	7.3	7.4	5.6	ST	
50015	7/12/89	1800	2921.5	9311.6	17	16	8	16	27.4	27.6	27.0	25.8	29.9	30.5	1.645	8.9	8.2	2.6	ST	
50016	7/12/89	2046	2928.1	9249.8	16	13	7	13	29.9	29.4	27.1	24.1	25.9	29.5	0.701	8.1	7.8	1.6	ST	
50017	7/12/89	2249	2933.7	9243.8	16	8	4	8	30.8	29.3	29.1	11.4	22.0	24.2	1.252	8.7	6.0	6.6	ST	
50018	7/13/89	0007	2931.2	9238.6	16	9	5	9	30.2	29.3	29.1	19.2	22.4	26.2	4.461	8.6	7.5	5.6	ST	
50019	7/13/89	0239	2913.3	9248.5	16	18	9	17	29.4	28.5	27.3	27.8	31.1	32.3	0.561	7.9	7.5	6.6	ST	
50020	7/13/89	0500	2856.2	9245.3	16	24	12	24	28.8	28.1	26.2	31.5	31.9	34.4	0.114	7.1	7.2	6.5	ST	
50021	7/13/89	0913	2909.8	9209.7	16	9	5	9	29.6	29.2	28.6	24.9	26.6	29.1	2.352	7.1	7.0	6.4	ST	
50022	7/13/89	1044	2903.0	9212.3	16	18	9	18	29.1	28.3	24.3	26.6	30.4	35.7	1.176	7.2	6.9	0.6	ST	

Table 2. Selected environmental parameters (cont'd)

NMFS,SEFC,MS.LABS,PASCAGOULA FACILITY																			
SEAMAP ENVIRONMENTAL DATA																			
OREGON II																			
STA#	DATE	TIME	POSITION		STAT	DEPTH	SAMPLE		TEMPERATURE, °C			SALINITY, PPT			CL,	DISSOLVED			GEAR
			LAT	LONG			ZONE	DEPTH	MID	MAX	SUR	MID	MAX	SUR	MID	MAX	MG/M <sup>3</sup>	SUR	
50023	7/13/89	1259	2848.5	9217.3	16	31	15	30	29.4	27.4	23.0	26.2	31.7	35.8	0.414	6.8	6.4	2.8	ST
50024	7/13/89	1700	2838.3	9229.8	16	35	17	35	29.5	28.0	22.9	32.2	35.4	36.0	0.068	7.1	7.5	7.6	ST/PN
50025	7/13/89	2032	2852.3	9230.4	16	29	15	29	29.4	28.9	26.2	29.2	31.9	33.4	0.363	7.5	7.4	5.1	ST
50026	7/13/89	2156	2848.4	9227.5	16	31	16	31	29.4	27.4	23.1	27.8	31.8	36.4	0.156	7.2	7.1	5.2	ST
50027	7/13/89	2346	2844.6	9218.3	16	35	18	35	29.0	28.1	23.4	28.3	32.1	36.5	0.196	7.1	6.9	5.2	ST
50028	7/14/89	0154	2857.0	9212.0	16	24	12	23	29.7	26.7	23.4	25.6	32.3	36.0	0.296	7.5	5.0	0.8	ST
50029	7/14/89	0325	2857.4	9205.3	16	22	11	21	29.3	28.6	23.3	26.8	31.2	36.2	0.230	7.8	7.7	0.9	ST
50030	7/14/89	0540	2906.6	9154.0	15	10	5	10	29.7	29.5	26.4	23.0	28.3	32.9	2.025	7.3	7.6	2.9	ST
50031	7/14/89	0734	2856.4	9155.5	15	21	10	21	29.0	29.1	24.3	28.2	28.4	35.6	0.280	8.0	9.3	3.5	ST
50032	7/14/89	0931	2857.8	9145.2	15	17	9	17	29.3	29.1	24.8	22.0	28.8	35.2	1.578	9.4	8.8	2.0	ST
50033	7/14/89	1107	2903.4	9144.1	15	9	4	9	29.2	29.4	29.1	19.9	24.8	28.8	6.417	8.5	8.6	7.6	ST
50034	7/14/89	1253	2852.7	9136.8	15	18	9	17	29.5	28.9	23.9	21.9	29.5	36.3	5.825	8.9	8.3	2.8	ST
50035	7/14/89	1527	2849.2	9120.3	15	12	6	11	29.5	27.3	25.5	26.7	32.0	34.8	3.131	9.3		3.4	ST
50036	7/14/89	1723	2835.6	9122.1	15	32	16	32	29.3	29.9	25.6	26.0	34.4	36.7	0.523	8.5	7.3	4.2	ST
50037	7/14/89	2054	2853.1	9152.9	15	22	11	22	29.0	27.6	23.3	27.2	31.4	36.5	0.675	8.3	6.9	2.9	ST
50038	7/14/89	2311	2859.7	9134.8	15	10	5	10	29.3	29.3	25.1	15.1	19.9	35.1	6.568	9.3	7.2	1.5	ST
50039	7/14/89	2350	2856.7	9134.8	15	16	8	15	29.4	28.7	24.1	19.7	30.5	35.7	3.750	8.4	7.5	1.4	ST
50040	7/15/89	0155	2847.0	9125.1	15	18	9	17	28.8	29.1	24.1	19.6	29.8	36.5	1.308	8.5	7.8	2.5	ST
50041	7/15/89	0424	2829.1	9122.4	15	43	22	42	29.1	27.8	21.9	29.3	35.9	36.8	0.187	8.1	7.2	5.4	ST
50043	7/15/89	0805	2834.0	9107.2	15	27	14	27	29.0	28.5	22.3	24.7	31.7	36.8	0.602	6.9	6.5	4.6	ST
50044	7/15/89	0954	2823.6	9059.6	15	44	22	44	29.1	26.6	22.2	26.2	34.5	36.9	0.822	7.7	6.0	6.5	ST
50045	7/15/89	1412	2821.1	9132.5	15	61	30	60	29.2	27.4	21.5	29.7	35.5	36.2	0.083	6.6	6.1	5.1	ST
50047	7/15/89	1754	2809.1	9145.5	15	80	40	80	28.9	25.3	20.6	35.4	36.7	36.7	0.091	7.4	7.9	6.3	ST
50048	7/15/89	2044	2809.9	9129.0	15	90	45	90	28.9	25.2	19.5	34.9	36.7	36.8	0.056	7.2	7.8	6.0	ST
50049	7/15/89	2247	2816.3	9128.7	15	72	36	72	28.9	26.3	21.0	31.0	36.7	36.7	0.100	7.5	7.9	6.7	ST
50051	7/16/89	0118	2821.1	9126.0	15	62	31	61	29.0	27.1	21.3	28.9	36.5	36.7	0.070	6.6	6.4	6.0	ST
50052	7/16/89	0540	2810.4	9109.0	15	88	44	88	28.9	22.1	19.6	29.7	36.6	36.7	0.150	7.5	7.6	5.9	ST
50053	7/16/89	0853	2812.6	9050.7	14	81	41	81	29.2	23.6	20.0	25.3	36.6	36.8	0.423	7.1	8.0	5.9	ST
50054	7/16/89	1124	2810.6	9033.0	14	91	46	91	29.1	23.1	20.2	23.9	36.7	36.8	0.582	7.7	8.1	5.5	ST

Table 2. Selected environmental parameters (cont'd)

NMFS,SEFC,MS.LABS,PASCAGOULA FACILITY																			
SEAMAP ENVIRONMENTAL DATA																			
LUMCON PELICAN																			
STA#	DATE	TIME	POSITION		STAT	DEPTH	SAMPLE		TEMPERATURE, °C			SALINITY, PPT			CL,	DISSOLVED			GEAR
			LAT	LONG			ZONE	DEPTH	MID	MAX	SUR	MID	MAX	SUR	MID	MAX	MG/M <sup>3</sup>	SUR	
36409	7/10/89	1710	2837.0	9029.9	14	27	10	21	29.7	27.7	24.2	27.5	33.8	35.8	0.273	6.1	5.4	1.3	ST/PN
36410	7/10/89	2037	2837.4	9030.1	14	26	10	21	29.3	29.1	24.0	28.7	29.2	35.8	0.138	6.0	5.7	1.0	ST
36411	7/11/89	0503	2856.0	9004.4	14	26	12	26	29.0	27.7	23.2	27.9	31.7	36.0	0.240	5.9	4.2	2.1	ST
36412	7/11/89	1137	2851.9	9003.0	14	35	15	32	29.6	26.5	22.4	27.6	35.3	36.2	0.113	5.9	5.1	3.8	ST/PN
36413	7/11/89	1317	2853.9	9001.3	14	31	15	31	30.0	26.7	22.5	27.6	35.2	36.2	0.172	5.8	5.1	4.2	ST/PN
36414	7/11/89	1519	2856.2	9004.4	14	27	12	25	30.1	27.6	23.1	28.0	32.3	36.0	0.214	5.9	4.4	2.1	ST/PN
36415	7/11/89	1956	2858.4	8932.9	13	35	15	28	28.6	23.6	22.6	31.5	35.8	36.6	18.973	10.6	4.3	4.2	ST/PN
36416	7/11/89	2125	2858.2	8932.6	13	33	15	28	28.6	23.6	22.6	31.5	35.8	36.1	18.973	10.6	4.3	4.2	ST
36417	7/11/89	2226	2859.2	8932.0	13	18	9	17	30.4	25.5	23.1	15.0	33.6	35.9	23.108	8.5	2.5	3.8	ST
36418	7/12/89	0049	2906.7	8941.4	13	20	11	19	30.1	27.4	22.9	16.8	32.2	36.0	10.283	8.5	4.1	0.9	ST
36419	7/12/89	0309	2910.7	8942.4	13	15	7	13	29.3	28.9	26.6	27.5	28.5	33.9	0.292	6.2	5.4	0.8	ST
36420	7/12/89	0506	2916.1	8945.1	13	7	3	7	30.9	29.4	28.7	10.1	26.1	27.6	20.818	8.6	6.1	4.5	ST
36421	7/12/89	0720	2915.8	8944.8	13	7	3	7	30.7	29.5	28.6	9.5	25.8	27.9	15.661	8.2	6.2	4.6	ST/PN
36422	7/12/89	0909	2910.6	8942.9	13	15	6	13	29.3	29.0	24.9	24.9	27.8	34.8	1.957	7.0	5.8	0.1	ST/PN
36423	7/12/89	1049	2906.4	8941.6	13	20	10	19	29.9	28.7	22.9	20.6	28.9	36.0	2.294	8.1	5.5	2.7	ST/PN
36424	7/12/89	1332	2859.2	8932.0	13	22	9	17	30.4	26.7	23.4	15.6	31.8	35.8	14.490	8.3	0.7	4.0	ST/PN
36425	7/12/89	2309	2835.2	9057.5	14	22	9	20	29.6	26.9	24.0	24.9	32.7	35.9	0.773	6.2	5.3	1.5	ST
36426	7/13/89	0108	2839.1	9057.5	14	16	8	16	29.9	27.3	24.5	22.4	31.3	35.7	1.009	6.9	4.0	0.7	ST
36427	7/13/89	0512	2855.4	9119.9	15	9	4	9	29.5	29.5	26.9	23.1	23.3	32.6	1.526	6.9	5.9	0.5	ST
36428	7/13/89	0716	2855.1	9119.7	15	9	4	8	29.4	29.4	27.3	23.0	23.0	31.4		6.7	5.7	0.6	ST/PN
36429	7/13/89	1111	2836.7	9057.6	14	18	7	14	30.1	27.9	24.6	21.2	31.2	35.7	1.009	6.7	2.7	0.6	ST/PN
36430	7/13/89	1253	2835.2	9057.6	14	24	11	21	30.0	27.1	23.6	21.5	33.8	36.0	0.773	6.7	1.2	2.8	ST/PN



Table 2. Selected environmental parameters (cont'd)

NMFS, SEFC, MS. LABS, PASCAGOULA FACILITY																			
SEAMAP ENVIRONMENTAL DATA																			
LOUISIANA INSHORE VESSELS																			
STA#	DATE	TIME	POSITION		STAT	DEPTH	SAMPLE DEPTHS		TEMPERATURE, °C			SALINITY, PPT			CL,	DISSOLVED			GEAR
			LAT	LONG			ZONE	DEPTH	MID	MAX	SUR	MID	MAX	SUR	MID	MAX	MG/M <sup>3</sup>	SUR	
36434	7/10/89	0950	2924.8	8904.3	12	9	9	29.0	26.9	22.5	32.9	9.088	8.3	7.1	ST/PN				
36435	7/10/89	1035	2926.9	8909.6	12	5	5	29.3	27.7	25.8	31.9	1.441	8.7	8.6	ST/PN				
36436	7/10/89	1114	2927.4	8912.2	12	2	2	29.0	28.5	28.2	29.8	18.966	9.8	8.3	ST/PN				
36437	7/11/89	0956	3003.1	8851.4	11	2	2	30.2	29.9	22.6	23.5	1.096	8.0	7.1	ST/PN				
36438	7/11/89	1028	3003.2	8851.3	11	5	5	30.3	30.4	22.6	23.8	1.501	7.9	3.1	ST/PN				
36439	7/11/89	1106	3003.1	8851.2	11	9	9	30.7	27.1	21.8	30.7	1.800	6.5	2.5	ST/PN				
36440	7/11/89	1249	2916.3	8956.0	13	2	2	32.8	30.6	6.3	10.2	23.390	9.4	9.9	ST/PN				
36441	7/11/89	1322	2915.1	8954.2	13	5	5	32.1	30.4	6.9	8.6	22.221	16.0	8.3	ST/PN				
36442	7/11/89	1354	2913.9	8952.7	13	9	9	32.1	29.8	8.7	27.7	31.880	14.7	12.1	ST/PN				
36443	7/12/89	0731	2856.2	9058.0	14	9	9	30.0	30.1	21.6	24.7	0.501	8.3	0.6	ST/PN				
36444	7/12/89	0836	2940.0	9322.0	17	9	9	29.8	28.7	12.9	19.0	1.915	7.2	6.2	ST/PN				
36445	7/12/89	0839	2901.0	9058.9	14	5	5	30.5	30.3	18.7	19.0	3.280	7.2	7.3	ST/PN				
36446	7/12/89	0919	2909.5	9209.5	16	9	9	29.2	29.0	24.5	28.4	1.587	7.5	1.9	ST/PN				
36447	7/12/89	0922	2944.0	9322.0	17	5	5	29.5	30.1	9.1	14.4	3.417	7.2	7.2	ST/PN				
36448	7/12/89	0934	2909.5	9058.3	14	2	2	30.9	30.6	11.1	13.0	7.744	6.3	6.4	ST/PN				
36449	7/12/89	0954	2945.0	9322.0	17	2	2	29.3	30.0	4.5	13.3	6.255	7.6	7.0	ST/PN				
36450	7/12/89	1028	2900.5	9035.7	14	9	9	31.8	25.3	20.8	35.4	0.742	8.3	7.0	ST/PN				
36451	7/12/89	1041	2919.3	9206.8	16	5	5	30.6	29.7	16.5	23.0	3.493	10.5	7.5	ST/PN				
36452	7/12/89	1120	2902.0	9035.7	14	5	5	31.6	31.6	12.8	21.9	8.352	9.1	7.2	ST/PN				
36453	7/12/89	1202	2934.0	9201.8	16	2	2	31.6	30.4	2.3	2.3	8.986	7.7	7.6	ST/PN				
36454	7/12/89	1220	2904.5	9035.7	14	2	2	31.9	31.2	14.8	16.0	7.588	9.3	9.0	ST/PN				

Table 2. Selected environmental parameters (cont'd)

NMFS,SEFC,MS.LABS,PASCAGOULA FACILITY  
 SEAMAP ENVIRONMENTAL DATA  
 ALABAMA INSHORE VESSELS

STA#	DATE MM/DD/YY	TIME	POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS		TEMPERATURE, °C			SALINITY, PPT		CL, MG/M <sup>3</sup> SUR	DISSOLVED OXYGEN, PPM			GEAR	
			LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID		MAX	SUR	MID		MAX
23001	7/11/89	0933	3013.7	8746.4	10	6	3	6	28.5		29.0	15.0		26.0		6.6		5.8	ST
23002	7/11/89	1141	3009.1	8802.2	11	12	6	12	30.0	29.5	28.0	14.0	24.0	26.0		6.2	6.4	3.6	ST
23003	7/11/89	1316	3014.5	8809.5	11	8	4	8	31.5		30.5	0.0		13.0		8.8		5.8	ST
23004	7/11/89	1409	3014.4	8811.2	11	8	4	8	32.0		28.0	4.0		24.0		8.2		3.6	ST
23005	7/11/89	1620	3008.0	8829.0	11	13	7	13	32.0	28.0	27.5	10.0	26.0	28.0		7.4	3.0	2.4	ST
23006	7/13/89	1940	3011.2	8825.4	11	7	4	7	29.0	24.5	24.5	12.0	28.0	27.0		6.4	1.4	0.8	ST
23007	7/13/89	2022	3009.0	8828.3	11	15	7	15	29.0	25.5	25.0	18.0	30.0	28.0		5.6	2.2	1.8	ST
23008	7/13/89	2120	3008.1	8819.0	11	18	9	18	28.0	26.0	25.5	28.0	28.0	30.0		5.8	2.2	3.4	ST
23009	7/13/89	2232	3013.7	8815.2	11	3	2	3	27.0		24.5	26.0		30.0		2.8		0.8	ST
23010	7/14/89	0001	3008.1	8806.7	11	14	7	14	25.0	25.0	24.5	22.0	30.0	30.0		3.6	1.6	1.8	ST

Table 2. Selected environmental parameters (cont'd)

NMFS, SEFC, MS. LABS, PASCAGOULA FACILITY  
 SEAMAP ENVIRONMENTAL DATA  
 ALABAMA INSHORE VESSELS

STA#	DATE		POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)		TEMPERATURE, °C			SALINITY, PPT			CL, MG/M <sup>3</sup>	DISSOLVED OXYGEN, PPM			GEAR
	MM/DD/YY	TIME	LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX	SUR	SUR	MID	MAX	
AL023	9/12/89	1619	3013.3	8804.8	11	3	3	29.0	30.0	24.0	25.0		6.0	6.0	PN				
AL024	9/12/89	1654	3014.2	8808.0	11	5	5	29.0	30.0	26.0	28.0		6.4	6.4	PN				
AL013	9/12/89	1752	3008.2	8807.5	11	12	12	28.0	28.0	27.0	30.0		4.8	4.0	PN				
AL012	9/12/89	1834	3007.4	8804.7	11	12	12	29.0	28.0	26.0	32.0		5.4	3.2	PN				
AL011	9/12/89	1904	3007.9	8802.0	11	12	12	29.0	28.0	30.0	28.0		7.6	3.8	PN				
AL021	9/12/89	1955	3012.3	8759.7	11	5	5	29.0	28.0	28.0	32.0		4.8	5.2	PN				
AL022	9/12/89	2109	3011.7	8802.7	11	14	14	28.0	29.0	24.0	25.0		5.6	7.6	PN				
AL031	9/12/89	2155	3015.8	8800.0	11	3	3	29.0	29.0	20.0	27.0		4.6	4.0	PN				
AL032	9/12/89	2223	3017.3	8802.0	11	6	6	28.0	28.0	17.0	21.0		6.0	2.8	PN				
AL033	9/12/89	2302	3017.0	8806.2	11	4	4	29.0	29.0	17.0	18.0		5.0	3.2	PN				

Table 2. Selected environmental parameters (cont'd)

NMFS,SEFC,MS.LABS,PASCAGOULA FACILITY																			
SEAMAP ENVIRONMENTAL DATA																			
OREGON II																			
STA#	DATE	TIME	POSITION		STAT	DEPTH	SAMPLE		TEMPERATURE, °C			SALINITY,PPT			CL,	DISSOLVED			GEAR
			LAT	LONG			ZONE	DEPTH	(M)	MID	MAX	SUR	MID	MAX	SUR	MID	MAX	MG/M <sup>3</sup>	
50301	9/13/89	1359	2559.5	9629.6	22	66	34	65	29.2	24.0	20.9	36.3	37.1	36.8		5.7	6.3	5.4	PN
50302	9/13/89	1713	2559.9	9700.0	21	25	12	25	29.6	29.3	29.0	36.8	36.7	36.6		6.4	6.4	6.7	PN
50303	9/13/89	2048	2630.0	9700.0	21	33	15	32	29.2	29.1	29.1	36.5	36.3	36.7		5.9	6.4	5.8	PN
50304	9/14/89	0004	2630.1	9630.0	21	84	41	83	29.2	27.2	21.6	36.3	36.8	36.8	0.073	5.9	6.4	5.5	PN
50305	9/14/89	0354	2659.7	9639.9	20	86	44	86	29.7	26.6	21.5	35.2	36.7	37.0	0.086	6.2	6.2	5.5	PN
50306	9/14/89	1135	2730.0	9700.1	20	25	14	24							0.224	6.4	6.5	5.7	PN
50307	9/14/89	1512	2730.0	9630.0	20	72	35	70	29.4	27.6	21.4	35.7	36.7	36.8	0.174	6.1	6.2	5.4	PN
50308	9/14/89	1841	2735.0	9600.0	20	142	71	142	28.9	19.1	15.8	36.4	36.8	36.4	0.126	6.1	4.5	4.3	PN
50309	9/14/89	2201	2759.9	9600.0	19	44	22	42	29.2	29.3	24.0	35.6	36.3	36.8	0.112	5.8	6.0	5.4	PN
50310	9/15/89	0124	2800.0	9630.0	19	26	13	25	29.4	29.5	29.4	33.0	33.9	34.7	0.255	6.0	6.1	6.0	PN
50311	9/15/89	0449	2820.0	9620.1	19	13	6	13	23.3	29.1	28.9	33.3	29.5	29.7	0.735	6.1	6.4	6.2	PN
50312	9/15/89	0750	2830.7	9500.2	19	12	6	12	29.0	29.0	29.0	28.5	28.5	28.5	0.654	6.2	6.2	6.3	PN
50313	9/15/89	1058	2830.0	9530.0	19	24	13	22	29.0	29.3	25.9	29.3	30.4	37.6	0.442	6.4	6.3	6.0	PN
50314	9/15/89	1430	2800.0	9530.0	19	53	26	52	29.0		22.9	36.6		36.8	0.087	6.0	6.0	5.5	PN
50315	9/15/89	1621	2745.1	9530.0	20	104	52	104	26.2	23.7	16.6	38.0	36.8	36.6	0.095	5.9	6.3	4.5	PN
50316	9/15/89	2010	2800.1	9459.1	18	79	40	77	28.9	26.1	20.1	34.5	36.8	36.8	0.094	6.1	6.6	4.8	PN
50317	9/15/89	2333	2830.0	9500.1	19	32	17	31	28.8	29.1	28.7	33.8	34.5	36.6	0.056	6.1	6.1	6.2	PN
50318	9/16/89	0321	2859.9	9500.0	19	17	8	16	28.9	29.0	29.0	26.2	26.5	27.3	0.874	6.4	6.4	6.0	PN
50319	9/16/89	0900	2926.9	9429.7	18	8	4	7	28.1	28.2	28.2	23.7	23.9	23.9	1.838	6.5	6.5	6.5	PN
50320	9/16/89	1200	2900.0	9429.9	18	17	8	16	28.8	29.0	29.8	28.7	29.0	33.6	0.393	6.2	6.1	5.2	PN
50321	9/16/89	1521	2831.0	9430.0	18	36	18	35	29.0	28.9	28.0	34.5	34.5	36.9	0.094	6.0	6.1	5.7	PN
50322	9/16/89	1844	2800.2	9430.0	18	68	34	68	28.7	28.2	20.9	33.9	36.6	36.9	0.095	6.1	6.2	5.0	PN
50323	9/16/89	2134	2800.1	9400.0	18	80	41	79	29.2	25.8	20.1	36.4	37.3	36.7	0.057	6.2	6.9	4.9	PN
50324	9/17/89	0115	2830.1	9400.1	18	41	19	38	28.7	29.2	24.2	34.5	35.5	36.8	0.069	6.7	6.6	6.8	PN
50325	9/17/89	0425	2900.1	9400.0	18	18	9	18	28.0	28.0	28.8	29.5	29.6	34.8	0.243	6.3	6.3	4.2	PN
50326	9/17/89	0740	2930.0	9400.0	18	11	5	11	27.6	27.6	28.1	22.1	22.2	25.4	1.215	7.0	7.0	6.6	PN
50327	9/17/89	1100	2930.1	9329.8	17	9	5	8	28.0	28.0	28.0	28.4	28.4	28.5	0.617	6.4	6.4	6.2	PN
50328	9/17/89	1429	2859.1	9329.8	17	21	10	20	28.5	28.4	28.0	30.9	31.8	34.5	0.191	6.4	6.3	3.6	PN

Table 2. Selected environmental parameters (cont'd)

NMFS, SEFC, MS. LABS, PASCAGOULA FACILITY																			
SEAMAP ENVIRONMENTAL DATA																			
OREGON II																			
STA#	DATE	TIME	POSITION		STAT	DEPTH	SAMPLE DEPTHS		TEMPERATURE, °C			SALINITY, PPT			CL,	DISSOLVED			GEAR
			LAT	LONG			ZONE	(M)	MID	MAX	SUR	MID	MAX	SUR	MID	MAX	MG/M <sup>3</sup>	SUR	
50329	9/17/89	1743	2830.0	9330.0	17	42	21	42	28.0	29.7	25.4	33.9	35.3	36.4	0.094	6.4	6.6	6.3	PN
50330	9/17/89	2113	2759.9	9329.9	17	93	45	90	28.9	24.1	19.0	34.2	36.9	36.8	0.054	6.1	6.6	4.2	PN
50331	9/18/89	0037	2800.1	9300.1	17	108	52	105	24.3	21.5	17.4	37.6	36.9	36.6	0.093	6.0	6.0	4.2	PN
50332	9/18/89	0445	2830.0	9259.9	17	44	22	44	28.3	29.2	22.4	33.7	35.9	36.6	0.098	6.3	6.3	4.3	PN
50333	9/18/89	0801	2900.0	9300.1	17	23	12	22	28.2	30.1	28.0	29.5	32.4	35.6	0.455	6.3	6.1	5.0	PN
50334	9/18/89	1125	2929.9	9300.0	17	12	7	11	28.2	28.2	28.9	27.3	27.4	28.1	0.679	6.1	6.1	5.9	PN
50336	9/18/89	1802	2900.1	9230.1	16	24	12	24	28.5	28.3	26.4	28.3	29.1	36.4	0.642	6.7	3.1	6.2	PN
50337	9/18/89	2115	2830.0	9229.9	16	49	24	47	28.4	27.4	22.1	32.3	36.2	36.8	0.287	6.4	6.3	5.4	PN
50338	9/19/89	0102	2800.1	9229.9	16	106	52	104	29.2	23.6	18.5	36.4	36.9	36.8	0.100	6.2	6.5	4.8	PN
50339	9/19/89	0642	2759.9	9159.8	16	118	59	118	29.3	25.7	19.0	36.8	36.9	36.8	0.050	6.2	6.7	5.0	PN
50340	9/19/89	1120	2830.0	9200.0	16	50	26	46	28.0	25.6	22.6	32.1	36.5	36.7	0.218	6.3	6.5	5.6	PN
50335	9/19/89	1427	2929.8	9232.1	16	9	4	8	27.4	27.0	27.5	24.9	26.1	26.5	2.480	7.8	7.6	6.7	PN
50341	9/19/89	1453	2900.0	9200.0	16	18	9	18	28.7	28.7	28.7	28.7	29.2	30.8	0.758	6.8	6.6	3.9	PN
50342	9/19/89	1830	2856.1	9130.0	15	13	6	13	28.6	28.6	28.6	27.7	27.7	28.0	0.997	6.5	6.6	6.2	PN
50343	9/19/89	2130	2829.8	9129.7	15	45	22	43	24.0	29.9	23.2	36.6	36.7	36.8	0.178	6.1	6.2	6.7	PN
50344	9/20/89	0116	2800.0	9130.0	15	160	79	159	29.2	23.5	16.7	36.7	36.8	36.5	0.056	6.1	6.5	4.9	PN
50345	9/20/89	0438	2800.0	9059.9	15	150	75	150	29.1	23.4	15.4	36.8	36.8	36.5	0.061	6.2	6.6	4.9	PN
50349	9/20/89	1039	2825.4	9100.0	15	40	20	37	28.6	29.1	24.2	33.4	35.3	38.4	0.386	6.1	6.1	5.7	PN
50351	9/23/89	0820	2900.0	9030.0	14	8	4	8	27.5	27.5	28.0	27.1	27.1	28.5	1.327	7.4	6.8	5.6	PN
50352	9/23/89	1108	2830.0	9030.1	14	38	18	36	27.8	28.7	28.7	35.2	36.3	36.3	0.142	6.2	6.0	3.8	PN
50353	9/23/89	1352	2805.2	9029.9	14	139	70	139	28.6	22.3	15.1	36.7	36.8	36.3		6.1	6.1	4.7	PN
50354	9/23/89	1708	2820.1	9000.1	14	108	54	108	28.6	23.3	17.0	36.5	36.8	36.6		6.1	6.5	4.5	PN
50355	9/23/89	1903	2830.2	9000.0	14	90	45	90	28.6	24.2	15.6	36.5	36.8	36.7	0.075	5.9	5.9	4.3	PN
50356	9/23/89	2221	2900.0	9000.1	14	24	12	23	27.7	28.7	27.0	29.9	35.9	36.5	2.003	7.2	6.2		PN
50357	9/24/89	0141	2900.2	8929.9	13	13	7	13	28.6	24.4	29.0	31.7	34.9	35.5	2.097	5.4	5.1	4.4	PN
50358	9/26/89	1329	2948.2	8530.0	8	18	9	18	26.7	26.9	23.4	32.3	32.8	37.7	1.682	7.0	6.7	4.5	PN
50359	9/26/89	1524	2930.0	8529.9	8	12	6	12	27.7	27.7	27.9	34.1	34.2	34.5	1.682	7.0	7.0	6.4	PN

Table 2. Selected environmental parameters (cont'd)

NMFS, SEFC, MS.LABS, PASCAGOULA FACILITY																			
SEAMAP ENVIRONMENTAL DATA																			
OREGON II																			
STA#	DATE	TIME	POSITION		STAT	DEPTH	SAMPLE DEPTHS		TEMPERATURE, °C			SALINITY, PPT			CL, MG/M <sup>3</sup>	DISSOLVED OXYGEN, PPM			GEAR
			LAT	LONG			ZONE	(M)	MID	MAX	SUR	MID	MAX	SUR	MID	MAX	SUR	SUR	
50360	9/26/89	1903	2930.7	8457.5	7	10	5	10	27.2	27.3	27.4	33.7	33.9	34.0	2.215	6.4	6.4	6.2	PN
50361	9/26/89	2130	2930.0	8430.1	7	24	12	22	22.1	28.0	28.0		35.5	35.5	1.165	6.0	7.1	6.3	PN
50362	9/27/89	0049	2946.3	8400.0	7	9	5	9	26.7	26.7	26.9	33.9	34.0	34.0	1.059	6.2	6.1	6.0	PN
50363	9/27/89	0235	2930.0	8400.1	7	19	10	19	27.7	27.7	27.7	35.2	35.5	35.5	0.694	6.2	6.1	6.0	PN
50365	9/27/89	0837	2859.9	8430.2	7	34	16	32	28.2	28.2	27.5	35.0	35.2	36.1	0.169	6.4	6.4	5.7	PN
50366	9/27/89	1128	2900.0	8500.0	8	39	19	37	14.4	27.8	26.2		34.6	36.5		6.2	6.2		PN
50367	9/27/89	1425	2900.0	8530.0	8	70	35	70	24.1	24.4	17.6	34.3	36.7	36.8	0.243	6.5	6.0	4.6	PN
50368	9/27/89	1718	2912.0	8600.0	99	192	96	192	27.6	16.0	13.0	35.2	36.5	36.0	0.131	6.5	5.1	4.2	PN
50369	9/27/89	2013	2930.0	8600.1	9	59	28	57	23.7	27.5	27.7	37.5	35.5	35.2	0.255	6.4	5.9	4.6	PN
50371	9/28/89	0317	3020.0	8630.0	9	20	10	20	26.5	26.6	26.6	32.7	32.8	32.8	0.358	6.5	6.5	6.4	PN
50372	9/28/89	0536	2959.9	8630.0	9	56	28	56	27.1	27.2	20.3	33.7	36.1	35.5	0.280	6.0	6.0	4.8	PN
50373	9/28/89	0912	2930.1	8629.7	9	205	104	203	27.5	16.5	12.7	34.0			0.231				PN
50374	9/28/89	1246	2948.2	8700.0	10	192	96	192	27.9	15.6	12.1				0.202	6.4	4.6	4.6	PN
50375	9/28/89	1504	3000.1	8700.0	10	71	36	71	27.1	29.5	18.5	33.8	36.7	36.8	0.339	6.5	6.5	4.7	PN
50376	9/28/89	1727	3020.0	8700.0	10	16	8	16	26.1	26.1	26.1	36.7	32.8	32.8	0.393	5.6	6.5	6.5	PN
50377	9/28/89	2027	3014.2	8730.0	10	12	6	12	25.3	25.3	25.3	32.1	32.1	32.1	1.148	6.6	6.6	6.4	PN
50378	9/28/89	2205	3000.0	8730.0	10	25	23	25	26.6	26.6	26.6	34.2	34.2	34.2	0.243	6.4	6.6	6.4	PN
50370	9/28/89	2351	3000.0	8600.1	9	30	15	30	27.0	27.0	26.5	32.3	32.4	35.5	0.299	6.5	6.4	5.1	PN
50379	9/29/89	0114	2930.0	8730.0	10	70	35	70	26.9	23.9	18.7	34.8	36.8	36.7	0.174	6.6	6.4	4.9	PN
50380	9/29/89	0435	2915.1	8800.1	11	250	123	245							0.411	6.5	5.0	4.5	PN
50381	9/29/89	0818	2912.9	8829.8	11	122	71	118	26.9	20.5	15.2	34.4	36.9	36.3	0.442	6.3	4.7	4.4	PN

Table 2. Selected environmental parameters (cont'd)

NMFS,SEFC,MS.LABS,PASCAGOULA FACILITY  
SEAMAP ENVIRONMENTAL DATA  
TOMMY MUNRO

STA#	DATE MM/DD/YY	TIME	POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)			TEMPERATURE, °C			SALINITY, PPT			CL, MG/M <sup>3</sup>	DISSOLVED OXYGEN, PPM			GEAR
			LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX	SUR	MID	MAX	SUR	MID	
17001	9/16/89	0727	3010.0	8719.9	10	17				26.8			32.0							PN
17002	9/16/89	0746	3004.9	8720.0	10	25				28.0			32.0							PN
17003	9/16/89	0923	2958.1	8720.0	10	28				27.5			32.0							PN
17004	9/16/89	1043	2952.6	8730.1	10	30				27.8			32.0							PN
17005	9/16/89	1143	2958.6	8730.1	10	28				28.0			32.0							PN
17006	9/16/89	1214	3005.0	8730.0	10	25				28.0			32.0							PN
17007	9/16/89	1334	3010.4	8730.0	10	20				28.2			31.0							PN
17008	9/16/89	1448	3010.4	8740.1	10	9				28.0			31.0							PN
17009	9/16/89	1534	3005.1	8740.0	10	17				28.0			33.0							PN
17010	9/16/89	1633	2958.7	8740.0	10	28				28.0			32.0							PN
17011	9/16/89	1734	2952.6	8740.0	10	32				28.0			32.0							PN
17012	9/16/89	1842	2946.5	8740.0	10	35				27.8			33.0							PN
17013	9/16/89	1948	2946.6	8749.1	10	36				27.7			33.0							PN
17014	9/16/89	2049	2952.6	8750.0	10	27				28.1			31.0							PN
17015	9/16/89	2140	2958.7	8750.0	10	26				28.0			30.0							PN
17016	9/16/89	2239	3005.0	8750.0	10	16				28.0			30.0							PN
17017	9/16/89	2328	3010.4	8750.0	10	7				27.9			30.0							PN
17018	9/17/89	0037	3010.4	8800.0	11	9				27.9			30.0							PN
17019	9/17/89	0125	3005.0	8800.0	11	15				27.9			28.0							PN
17020	9/17/89	0224	2958.6	8800.0	11	23				27.9			30.0							PN
17021	9/17/89	0358	2957.5	8800.0	11	31	15	30	27.9	27.9	24.0	30.2	35.9	0.280	5.9	5.8	3.8			PN
17022	9/17/89	0433	2952.6	8800.1	11	28				27.5			30.0							PN
17023	9/17/89	0538	2946.6	8800.0	11	32				27.9			30.0							PN
17024	9/17/89	0646	2946.1	8810.2	11	35				27.6			32.0							PN
17025	9/17/89	0801	2952.9	8810.2	11	32				27.8			31.0							PN
17026	9/17/89	0902	2958.7	8809.8	11	26				27.5			31.0							PN
17027	9/17/89	1010	3004.9	8810.0	11	17				27.4			29.0							PN
17028	9/17/89	1055	3010.0	8810.0	11	12				27.4			27.0							PN

Table 2. Selected environmental parameters (cont'd)

NMFS, SEFC, MS. LABS, PASCAGOULA FACILITY  
SEAMAP ENVIRONMENTAL DATA  
TOMMY MUNRO

STA#	DATE MM/DD/YY	TIME	POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)			TEMPERATURE, °C			SALINITY, PPT			CL, MG/M <sup>3</sup>	DISSOLVED OXYGEN, PPM			GEAR	
			LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX	SUR	MID	MAX	SUR	MID		MAX
17029	9/17/89	1158	3010.4	8820.0	11	9				27.5				30.0							PN
17030	9/17/89	1242	3005.1	8820.0	11	16				27.8				28.0							PN
17031	9/17/89	1340	2958.6	8820.0	11	27				27.5				30.0							PN
17032	9/17/89	1438	2952.6	8820.1	11	31				27.9				32.0							PN
17033	9/17/89	1531	2946.6	8820.0	11	33				27.9				28.0							PN
17034	9/17/89	1657	2940.7	8830.6	11	32				27.5				32.0							PN
17035	9/17/89	1756	2946.3	8830.4	11	29				27.7				32.0							PN
17036	9/17/89	1851	2952.7	8830.5	11	26				27.9				32.0							PN
17037	9/17/89	1949	2958.7	8830.4	11	25				27.6				32.0							PN
17038	9/17/89	2133	2958.7	8830.2	11	26	13	25		27.6	27.5	25.5		31.5	31.7	35.5	0.224	5.5	5.6	3.4	PN
17039	9/17/89	2205	3005.0	8830.5	11	15				27.8				30.0							PN
17040	9/17/89	2252	3010.1	8830.4	11	10				27.4				30.0							PN
17041	9/18/89	0013	3010.5	8841.0	11	12				27.0				29.0							PN
17042	9/18/89	0105	3005.1	8845.7	11	12				27.0				30.0							PN
17043	9/18/89	0208	2958.5	8841.0	11	16				27.5				30.0							PN
17044	9/18/89	0315	2952.6	8847.3	11	8				27.2				29.0							PN
17045	9/18/89	0402	2952.6	8841.1	11	16				27.5				29.0							PN
17046	9/18/89	0453	2946.6	8841.0	11	16				27.2				31.0							PN
17047	9/18/89	0558	2940.6	8847.4	11	11				27.2				31.0							PN
17048	9/18/89	0707	2934.7	8841.0	11	14				27.0				34.0							PN
17049	9/18/89	0832	2928.9	8830.4	11	49				27.6											PN
17050	9/18/89	1008	2928.5	8830.0	11	51	25	50		27.1	25.4	21.3		29.3	36.2	36.4	0.393	5.7	5.2	4.9	PN
17051	9/18/89	1135	2923.0	8841.0	11	48				28.0				30.0							PN
17052	9/18/89	1416	2925.0	8853.1	11	15				27.5				26.0							PN
17053	9/18/89	1550	2934.8	8855.0	11	7				27.5				28.0							PN
17054	9/18/89	1650	2928.7	8859.7	12	6				27.5				28.0							PN
17055	9/18/89	1812	2928.6	8859.6	12	8	4	7		27.5	27.5	27.5		28.9	29.0	29.1	0.729	6.0	5.7	5.7	PN
17056	9/18/89	1901	2921.8	8905.1	12	7				26.7				20.0							PN



Table 2. Selected environmental parameters (cont'd)

NMFS, SEFC, MS. LABS, PASCAGOULA FACILITY  
 SEAMAP ENVIRONMENTAL DATA  
 TOMMY MUNRO

STA#	DATE		POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)		TEMPERATURE, °C			SALINITY, PPT			CL, MG/M <sup>3</sup>	DISSOLVED OXYGEN, PPM			GEAR
	MM/DD/YY	TIME	LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX	SUR	SUR	MID	MAX	
17057	9/18/89	2047	2926.6	8917.5	12	4			25.8			11.0							PN
17058	9/18/89	2219	2936.2	8910.0	12	4			26.6			25.0							PN
17059	9/19/89	0007	2940.1	8904.6	12	7			26.5			28.0							PN
17060	9/19/89	0151	2948.9	8901.5	12	4			26.9			27.0							PN
17061	9/19/89	0255	2955.0	8858.0	11	4			26.9			28.0							PN
17062	9/19/89	0355	3002.0	8858.0	11	7			27.0			29.0							PN
17063	9/19/89	0611	3001.5	8858.1	11	7	4	7	27.0	26.8	26.8	29.5	29.0	29.1	3.738	6.4	6.2	6.2	PN
17064	9/19/89	0554	3009.2	8859.9	12	8			26.4			28.0							PN
17065	9/19/89	0702	3010.4	8850.4	11	9			26.6			29.0							PN

Table 2. Selected environmental parameters (cont'd)

NMFS,SEFC,MS.LABS,PASCAGOULA FACILITY																				
SEAMAP ENVIRONMENTAL DATA																				
LUMCON PELICAN																				
STA#	DATE	TIME	POSITION		STAT	DEPTH	SAMPLE DEPTHS			TEMPERATURE, °C			SALINITY,PPT			CL, MG/M <sup>3</sup>	DISSOLVED			GEAR
							DEPTH	MID	MAX								OXYGEN,PPM			
	MM/DD/YY		LAT	LONG	ZONE	(M)			SUR	MID	MAX	SUR	MID	MAX	SUR	SUR	MID	MAX		
36455	10/ 2/89	1800	2853.8	9040.3	14	11	4	7	26.4	26.4	26.9	30.5	31.4	33.1	5.050	7.6	6.1	5.5	ST/PN	
36456	10/ 2/89	1951	2853.9	9040.1	14	11	4	8	26.5	26.4	27.0	30.5	31.5	33.2	4.676	7.7	6.0	5.0	ST	
36457	10/ 2/89	2357	2831.7	9031.0	14	34	17	34	26.1	27.2	27.5	27.5	34.6	36.1	6.611	8.3	6.6	5.3	ST	
36458	10/ 3/89	0135	2831.3	9035.1	14	33	16	33	26.5	27.3	27.6	28.9	35.4	36.1	6.904	8.4	5.6	5.8	ST	
36459	10/ 3/89	0422	2835.0	9052.3	14	20	10	20	26.8	27.6	27.4	33.0	35.0	35.0	0.853	7.1	6.0	5.0	ST	
36460	10/ 3/89	0533	2834.3	9052.9	14	22	11	22	26.6	27.6	27.4	32.9	35.0	35.0	0.841	7.6	5.9	5.7	ST	
36461	10/ 3/89	0927	2832.7	9032.6	14	35	17	34	25.7	27.6	27.7	27.1	33.5	35.9	6.611	8.2	5.6	4.5	ST/PN	
36462	10/ 3/89	1118	2832.0	9036.0	14	33	14	30	26.3	27.3	27.7	28.2	34.7	36.0	5.957	8.7	6.5	5.4	ST/PN	
36463	10/ 3/89	1423	2836.0	9054.2	14	20	9	18	27.3	27.9	27.4	33.4	34.8	34.9	0.572	7.2	5.7	6.0	ST/PN	
36464	10/ 3/89	1624	2835.1	9054.5	14	22	10	20	27.1	27.8	27.4	33.4	34.9	34.9	0.691	7.2	6.5	6.1	ST/PN	
36465	10/ 3/89	1810	2840.2	9052.9	14	16	7	14	27.0	27.4	27.3	31.4	33.8	34.6	1.514	8.0	5.5	6.1	ST/PN	
36466	10/ 3/89	1948	2840.1	9052.9	14	16	7	14	27.0	27.4	27.3	31.4	33.8	34.6	1.514	8.0	5.5	6.1	ST	
36467	10/ 3/89	2203	2842.4	9102.3	15	13	6	11	26.8	26.8	26.8	32.2	32.2	32.3	2.871	7.0	6.7	6.2	ST	
36468	10/ 4/89	0125	2834.8	9119.9	15	29	14	28	27.3	27.3	27.4	35.7	35.7	35.9	0.285	6.4	6.3	5.9	ST	
36469	10/ 4/89	0408	2850.5	9121.1	15	15	7	14	24.8	25.1	25.8	29.2	31.0	32.1	1.267	6.7	6.6	3.4	ST	
36470	10/ 4/89	0727	2850.6	9120.8	15	15	7	14	25.0	25.6	26.1	28.5	30.9	32.2	1.841	7.1	5.6	2.4	ST/PN	
36471	10/ 4/89	1019	2835.3	9119.0	15	29	14	28	26.7	27.5	27.6	33.7	35.4	35.8	0.631	6.2	6.1	5.9	ST/PN	
36472	10/ 4/89	1401	2842.3	9102.5	15	13	5	11	27.1	26.9	26.8	31.7	32.1	32.6	2.648	7.8	7.3	6.5	ST/PN	
36473	10/ 4/89	2248	2859.0	8953.8	13	29	14	29	26.3	26.9	27.1	29.3	31.6	32.7	3.021	8.1	5.1	3.2	ST	
36474	10/ 5/89	0120	2903.9	8940.6	13	29	13	27	26.2	27.2	27.7	26.1	32.1	34.5	8.015	9.3	4.2	4.6	ST	
36475	10/ 5/89	0426	2912.7	8957.6	13	7	2	7	25.8	25.8	26.2	27.4	27.4	29.6	10.204	8.0	7.7	5.0	ST	
36476	10/ 5/89	0717	2911.4	8956.8	13	9	4	7	25.8	26.2	26.2	27.4	28.3	29.9	9.950	7.7	7.5	3.6	ST/PN	
36477	10/ 5/89	1042	2902.7	8939.1	13	27	12	26	25.9	26.2	27.8	28.1	30.5	34.9	12.630	9.0	4.5	5.3	ST/PN	
36478	10/ 5/89	1346	2859.2	8957.4	13	26	13	24	26.9	26.9	26.3	32.7	32.7	32.7	11.202	9.0	3.6	3.6	ST/PN	

Table 2. Selected environmental parameters (cont'd)

NMFS, SEFC, MS. LABS, PASCAGOULA FACILITY																			
SEAMAP ENVIRONMENTAL DATA																			
HERNAN CORTEZ II																			
STA#	DATE	TIME	POSITION		STAT	DEPTH	SAMPLE		TEMPERATURE, °C			SALINITY, PPT			CL,	DISSOLVED			GEAR
			LAT	LONG			ZONE	DEPTH	MID	MAX	SUR	MID	MAX	SUR	MID	MAX	MG/M <sup>3</sup>	SUR	
89226	10/ 4/89	1700	2729.6	8259.6	5	17	6	12	29.2	29.0	28.9	36.1	35.8	36.0	0.718	6.3	6.2	6.1	PN
89227	10/ 4/89	2112	2730.0	8330.0	5	38	17	34	28.9	28.9	28.2	35.3	35.5	36.2	0.097	6.2	6.2	6.3	PN
89228	10/ 5/89	0052	2730.0	8359.6	5	56	28	56	28.0	28.0	21.1	34.9	34.8	36.7	0.050	6.0	6.0	4.2	PN
89229	10/ 5/89	0433	2730.0	8429.5	5	125	57	114	28.1	22.4	17.0	35.0	36.3	36.2	0.100	5.9	5.7	4.4	PN
89230	10/ 5/89	0900	2700.1	8429.6	5	163	79	158	28.3	21.4	16.7	35.0	36.9	36.0	0.133	6.0	4.6	4.1	PN
89231	10/ 5/89	1443	2700.1	8400.1	5	76	35	70	28.5	26.3	19.9	36.3	36.5	0.223	6.1	6.2	5.0	PN	
89232	10/ 5/89	1905	2700.0	8330.1	5	47	21	42	28.7	28.8	24.0	35.7	35.0	36.5	0.157	6.1	6.2	6.1	PN
89233	10/ 5/89	2242	2700.0	8300.1	5	31	12	25	29.1	29.3	29.3	36.7	36.1	36.1	0.595	6.5	6.7	6.6	PN
89234	10/ 6/89	0225	2659.6	8230.0	5	9	2	4	28.4	28.6	28.8	36.2	35.3	36.0	1.343	6.5	6.6	6.6	PN
89235	10/ 6/89	0625	2630.1	8230.0	4	18	6	12	28.8	29.0	29.0	36.4	36.2	36.0	1.280	5.8	5.8	5.8	PN
89236	10/ 6/89	0957	2629.6	8259.6	4	35	15	30	28.8	29.4	29.4	36.5	36.0	37.2	0.223	5.9	5.9	5.9	PN
89237	10/ 6/89	1321	2630.0	8329.4	4	52	23	46	28.6	28.7	24.4	34.7	35.4	37.0	0.103	6.0	6.0	5.6	PN
89238	10/ 6/89	1700	2629.6	8359.6	4	113	54	108	28.6	28.5	18.5	35.5	36.7	36.5	0.083	6.0	6.3	4.6	PN
89239	10/ 6/89	2056	2629.6	8429.6	99	177	86	172	28.0	22.0	19.0	38.1	36.5	36.1	0.170	6.0	5.1	5.2	PN
89240	10/ 7/89	0103	2600.0	8430.0	99	194	94	188	28.5	23.9	17.1	36.5	36.7	36.4	0.160	5.9	5.6	5.5	PN
89241	10/ 7/89	0650	2559.3	8359.6	3	125	60	120	28.2	22.3	17.2	35.7	37.2	36.3	0.173	6.0	5.6	4.5	PN
89242	10/ 7/89	1025	2600.0	8330.0	4	58	27	54	28.6	28.7	17.5	34.9	36.1	36.7	0.080	6.0	6.2	4.0	PN
89243	10/ 7/89	1454	2600.0	8300.0	4	44	19	38	29.7	29.6	29.3	36.0	37.5	36.4	0.297	5.9	5.9	5.8	PN
89244	10/ 7/89	1825	2559.6	8230.0	4	26	10	20	29.7	29.1	29.6	36.3	36.5	37.6	0.380	5.8	6.0	5.8	PN
89245	10/ 7/89	2323	2530.0	8200.0	3	17	6	12	29.4	29.7	29.7	36.7	37.8	36.6	1.667	6.0	6.0	6.0	PN
89246	10/ 8/89	0258	2529.6	8229.6	3	29	12	24	29.1	29.2	29.6	36.1	36.1	37.1	0.513	5.9	5.9	5.9	PN
89247	10/ 8/89	0640	2529.6	8259.6	3	47	21	42	29.1	29.1	25.7	36.3	36.1	36.3	0.213	6.2	6.2	4.8	PN
89248	10/ 8/89	1012	2529.6	8329.6	3	64	29	58	28.8	28.9	20.7	34.6	36.1	37.4	0.207	5.9	6.1	4.2	PN
89249	10/ 8/89	1355	2529.6	8359.5	3	128	61	122	29.5	25.1	20.5	36.2	36.8	36.4	0.130	6.0	5.6	5.8	PN
89250	10/ 8/89	1840	2529.6	8429.6	99	439	100	200	29.1	27.2	24.8	36.5	37.3	36.8	0.157	5.9	5.8	5.2	PN
89251	10/ 8/89	2240	2459.6	8425.2	99	1372	100	200	29.0	26.9	22.5	36.5	37.0	37.0	0.163	5.9	5.9	5.4	PN
89252	10/ 9/89	0323	2430.0	8400.1	2	1829	100	200	28.6	25.7	20.0	36.3	36.6	36.5	0.147	6.0	6.0	5.1	PN
89253	10/ 9/89	0654	2400.0	8359.6	2	2194	100	200	28.6	26.6	20.5	36.3	36.6	37.5	0.150	5.9	5.8	5.4	PN

Table 2. Selected environmental parameters (cont'd)

NMFS,SEFC,MS.LABS,PASCAGOULA FACILITY  
 SEAMAP ENVIRONMENTAL DATA  
 HERNAN CORTEZ II

STA#	DATE		POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS		TEMPERATURE, °C			SALINITY, PPT			CL, MG/M <sup>3</sup>	DISSOLVED OXYGEN, PPM			GEAR
	MM/DD/YY	TIME	LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX	SUR	SUR	MID	MAX	
89254	10/ 9/89	1353	2429.3	8330.1	2	366	97	197	29.5	21.8	17.0	35.6	36.3	35.5	0.203	6.0	4.5	4.3	PN
89255	10/ 9/89	1810	2459.5	8330.0	3	64	29	58	28.8	28.3	19.9	35.7	37.1	36.6	0.200	6.0	6.3	4.3	PN
89256	10/ 9/89	2156	2459.6	8300.1	3	46	20	40	28.9	28.9	26.5	35.5	36.0	36.4	0.177	5.8	6.1	6.3	PN
89257	10/10/89	1942	2459.5	8230.0	3	29	12	24	29.3	29.3	29.2	35.9	35.9	35.9	0.667	5.9	6.0	5.9	PN
89258	10/10/89	2322	2500.1	8159.6	3	18	6	13	28.7	28.6	28.6	36.5	36.2	37.0	1.000	5.7	5.9	6.0	PN
89259	10/11/89	0315	2459.5	8130.0	3	8	1	3	28.4	28.5	28.7	36.7	37.4	36.7	0.623	5.8	5.8	5.9	PN
89260	10/11/89	0714	2529.5	8129.6	3	7	1	2	27.8	27.9	27.6	36.4	36.4	36.4	2.963	5.7	5.9	5.9	PN
89261	10/11/89	1232	2559.6	8159.6	4	11	3	6	29.0	29.1	28.7	36.2	36.2	36.0	1.277	5.5	4.5	5.1	PN

Table 2. Selected environmental parameters (cont'd)

NMFS,SEFC,MS.LABS,PASCAGOULA FACILITY																			
SEAMAP ENVIRONMENTAL DATA																			
OREGON II																			
STA#	DATE	TIME	POSITION		STAT	DEPTH	SAMPLE		TEMPERATURE, °C			SALINITY, PPT			CL, MG/M <sup>3</sup>	DISSOLVED			GEAR
			LAT	LONG			ZONE	DEPTH	MID	MAX	SUR	MID	MAX	SUR		MID	MAX	SUR	
50422	10/20/89	1520	2630.0	9630.0	21	84	42	84	26.9	26.6	24.0	36.6	36.7	36.6	0.455	6.4	6.6	5.9	PN
50423	10/20/89	1947	2601.0	9700.5	21	24	12	23	24.7	24.7	24.8	32.1	32.2	32.6		6.9	6.7	6.7	PN
50424	10/20/89	2124	2603.2	9655.0	21	32	16	32	25.0	25.0	25.3	32.5	32.8	33.5	0.579	7.1	6.8	6.6	ST
50426	10/20/89	2336	2603.9	9641.5	21	44	22	44	24.7	25.7	26.4	33.0	34.8	35.9	0.411	7.1	6.6	6.3	ST
50430	10/21/89	0404	2615.3	9623.3	21	77	38	77	26.4	26.4	20.8	36.8	36.9	36.2	0.137	6.6	6.5	5.2	ST
50432	10/21/89	0515	2617.2	9612.9	21	80	38	79	26.4	26.4	26.4	36.7	36.9	36.9	0.112	6.7	6.7	6.6	ST
50434	10/21/89	0825	2606.9	9625.6	21	72	36	72	26.2	26.2	25.7	36.7	36.8	36.8	0.199	6.8	6.7	6.5	ST
50436	10/21/89	1045	2610.7	9633.2	21	53	26	53	24.4	26.2	25.8	33.3	35.8	36.8	0.511	6.9	6.6	6.2	ST
50438	10/21/89	1432	2601.5	9650.7	21	40	20	40	24.8	24.9	25.6	33.2	33.2	34.7	0.536	7.1	7.0	6.6	ST
50440	10/21/89	1732	2600.1	9707.9	21	9	4	8	23.5	23.5	23.5	32.1	32.1	32.1	0.748	9.4	9.4	9.2	ST
50442	10/21/89	1841	2607.4	9708.6	21	11	5	10	23.8	23.8	24.0	31.8	31.9	32.0	0.598	8.9	8.6	8.5	ST
50444	10/21/89	2023	2609.3	9708.7	21	15	7	15	23.8	23.8	23.9	31.8	31.7	31.8	0.523	7.5		7.6	ST
50446	10/21/89	2157	2614.3	9703.7	21	18	9	18	24.5	24.5	24.6	31.9	31.8	31.8	0.598	7.3	7.3	7.2	ST
50448	10/21/89	2333	2618.1	9705.9	21	17	8	17	24.1	24.1	24.6	31.7	31.6	31.8	0.698	7.0	7.3	7.3	ST
50450	10/22/89	0117	2623.1	9708.2	21	18	9	18	23.9	24.0	24.8	31.6	31.5	32.5	0.583	7.0	7.3	6.7	ST
50452	10/22/89	0323	2633.2	9714.6	21	12	6	12	23.4	23.4	23.4	31.1	31.0	31.0	0.486	7.2	7.5	7.3	ST
50454	10/22/89	0532	2630.2	9700.0	21	36	18	36	24.4	25.3	26.5		31.9	36.0	0.542	6.8	6.9	6.6	PN
50456	10/22/89	0746	2623.8	9700.5	21	34	17	34	24.6	25.2	26.5	32.0	32.2	36.0	0.498	6.9	6.9	6.6	ST
50458	10/22/89	0951	2614.4	9701.2	21	26	13	26	24.7	24.8	26.0	32.5	32.5	35.0	0.567	6.6	6.8	6.2	ST
50460	10/22/89	1142	2622.3	9711.1	21	15	7	15	23.5	23.5	23.4	31.6	31.6	31.7	0.533	6.7	6.9	6.8	ST
50462	10/22/89	1239	2623.6	9711.0	21	14	7	14	23.7	23.5	24.7	31.6	31.5	32.8	0.573	8.2	9.0	7.9	ST
50464	10/22/89	1435	2632.6	9703.4	21	31	15	31	24.5	25.6	26.4	31.9	33.7	36.0	0.523	8.4	9.0	8.1	ST
50466	10/22/89	1522	2635.1	9706.4	21	16	8	16	24.5	24.0	26.5	31.8	32.0	35.8	0.517	7.9	8.2	7.5	ST
50468	10/22/89	1801	2655.4	9718.0	21	20	10	20	23.8	25.8	26.2	31.2	35.3	31.3		7.3	7.9	6.8	ST
50470	10/22/89	2012	2649.8	9713.8	21	21	10	21	24.3	25.0	26.3	31.1	32.7	0.0		7.5	7.7	6.5	ST
50472	10/22/89	2230	2648.9	9700.2	21	38	19	38	24.4	26.6	25.7	32.0	35.6	36.5	0.249	7.3	6.7	6.6	ST
50474	10/23/89	0055	2658.9	9701.1	21	40	20	40	24.1	24.1	26.3	31.2	34.8	36.5	0.303	7.4	7.4	6.3	ST
50476	10/23/89	0201	2700.0	9703.6	20	36	18	36	24.0	26.1	26.4	31.1	31.1	36.3	0.274	7.0	7.4	6.5	ST

Table 2. Selected environmental parameters (cont'd)

NMFS,SEFC,MS.LABS,PASCAGOULA FACILITY																			
SEAMAP ENVIRONMENTAL DATA																			
OREGON II																			
STA#	DATE MM/DD/YY	TIME	POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)		TEMPERATURE, °C			SALINITY, PPT			CL, MG/M <sup>3</sup> SUR	DISSOLVED OXYGEN, PPM			GEAR
			LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX		SUR	MID	MAX	
50478	10/23/89	0341	2705.2	9705.6	20	35	16	34	24.0	25.5	26.5	30.8	31.1	36.3	0.262	7.2	7.5	6.3	ST
50480	10/23/89	0438	2706.8	9708.9	20	27	15	27	24.2	24.3	26.6	31.5	31.4	36.2	0.187				ST
50482	10/23/89	0610	2712.4	9709.3	20	27	14	27	24.2	24.4	26.5	31.6	31.5	36.1		7.2	6.9	6.2	ST
50484	10/23/89	0826	2715.9	9717.3	20	16	8	16	24.8	24.8	26.0	33.5	33.5	35.4	0.910	6.7	6.7	6.3	ST
50486	10/23/89	0958	2722.4	9713.0	20	20	10	20	24.4	25.0	26.3	32.9	32.8	35.7	0.679	7.0	7.5	6.1	ST
50488	10/23/89	1222	2716.0	9657.1	20	40	20	40	24.1	26.4	26.6	31.4	36.0	36.6		7.2	6.5	6.1	ST
50490	10/23/89	1636	2648.8	9641.7	21	87	44	87	24.3	26.6	17.7	31.8	36.5	36.1	0.150	7.0	6.7	4.7	ST
50491	10/23/89	2004	2700.0	9700.2	20	40	20	40	24.7	26.6	25.4	32.0	36.4	36.5	0.194	7.3	6.8	6.7	PN
50492	10/23/89	2302	2710.2	9721.1	20	11	6	11	26.0	26.0	26.3	35.4	35.2	35.3	1.542	6.7	7.1	6.5	ST
50494	10/24/89	0151	2733.4	9712.6	20	13	7	13	25.2	25.2	25.7	34.1	34.1	35.0	1.099	6.8	7.1	6.2	ST
50496	10/24/89	0413	2732.7	9702.1	20	26	13	26	24.1	26.1	26.2	31.4	31.2	35.9	0.231	7.2	7.5	6.1	ST/PN
50498	10/24/89	0723	2725.8	9703.4	20	25	12	24	24.4	24.7	26.6	32.0	32.1	35.9	0.162	6.9	7.1	6.4	ST
50500	10/24/89	0914	2722.1	9700.3	20	32	16	32	24.4	25.6	26.6	31.7	32.7	36.3	0.193	6.7	6.8	6.2	ST
50502	10/24/89	1048	2726.2	9656.0	20	32	16	32	24.5	25.3	26.4	31.8	34.1	36.3	0.573	7.0	6.8	6.4	ST
50504	10/24/89	1214	2727.2	9647.9	20	45	27	45	23.8	26.6	25.4	31.4	36.1	36.5	0.346	7.1	6.5	5.7	ST
50506	10/24/89	1517	2723.0	9628.3	20	92	46	92	26.1	26.3	17.9	35.8	36.6	36.1	0.094	7.0	7.1	4.5	ST
50510	10/24/89	1839	2731.2	9634.3	20	62	31	62	23.7	26.4	20.7	30.7	36.4		0.224	6.8	6.7	6.4	ST
50512	10/24/89	2127	2733.7	9637.5	20	54	27	54	23.8	26.4	23.8	30.2	35.7	36.3	0.159	7.5	7.2	6.5	ST
50514	10/25/89	0024	2730.1	9630.1	20	74	37	74	24.0	26.2	19.5	33.2	36.0		0.118	7.2	7.6	6.2	PN
50516	10/25/89	0237	2720.2	9642.3	20	64	32	64	24.5	26.0	21.8	34.3	36.5		0.212	7.9	7.8	7.7	ST
50518	10/25/89	0428	2715.2	9636.9	20	74	36	74	24.3	26.5	18.4	32.7			0.156	6.9	6.9	5.8	ST
50520	10/25/89	0952	2756.0	9643.0	20	22	11	22	24.5	24.7	25.9	32.4	32.6	35.3	0.231	6.5	6.5	5.0	ST
50521	10/25/89	1155	2800.1	9629.8	19	27	13	27	24.1	24.9	25.8	31.7	32.2	35.3	0.143	6.6	6.6	5.5	PN
50522	10/25/89	1513	2807.4	9604.3	19	33	17	33	23.6	24.6	25.4	29.2	32.2	35.1	0.187	6.9	6.5	5.5	ST/PN
50524	10/25/89	1948	2755.4	9642.5	20	21	10	21	24.5	24.7	25.7				0.206	6.6	6.2	5.4	ST
50526	10/25/89	2139	2801.4	9652.6	19	11	6	11	23.9	23.9	24.0	31.8	31.8	32.0	0.579	6.7	6.7	6.7	ST
50528	10/26/89	0035	2813.1	9632.2	19	12	6	12	24.1	24.1	24.2	31.2	31.2	31.2	0.855	7.0	7.0	6.9	ST
50530	10/26/89	0238	2817.7	9622.8	19	16	8	16	23.6	23.6	24.0	30.3	30.2	30.2	0.458	7.2	7.3	7.2	ST

Table 2. Selected environmental parameters (cont'd)

NMFS, SEFC, MS. LABS, PASCAGOULA FACILITY  
SEAMAP ENVIRONMENTAL DATA  
OREGON II

STA#	DATE MM/DD/YY	TIME	POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)			TEMPERATURE, °C			SALINITY, PPT			CL, MG/M <sup>3</sup> SUR	DISSOLVED OXYGEN, PPM			GEAR
			LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX	SUR		MID	MAX		
50532	10/26/89	0515	2820.7	9605.3	19	18	9	17	23.5	23.7	24.3	29.8	29.8	33.1	0.231	7.0	7.2	5.7	ST	
50534	10/26/89	0802	2823.7	9551.4	19	24	12	24	23.6	23.8	24.8	32.0	32.0	34.0	0.137	6.7	6.7	5.7	ST	
50536	10/26/89	1036	2819.5	9540.0	19	26	13	26	23.2	24.3	24.9	30.3	33.4	34.5	0.215	7.1	6.8	5.8	ST	
50538	10/26/89	1332	2800.2	9530.0	19	55	27	55	25.0	25.0	24.1	35.4	35.5	36.2	0.078	6.4	6.4	5.4	PN	
50540	10/26/89	1446	2758.0	9535.2	20	55	27	55	24.9	25.0	23.7	34.9	35.7	36.1	0.089	6.4	6.5	6.2	ST	
50544	10/26/89	1802	2750.2	9525.4	20	82	41	80	25.3	25.4	17.8	35.7	36.0	36.4	0.168	6.2	6.2	4.1	ST	
50546	10/26/89	1937	2749.4	9522.9	20	124	62	124	25.2	21.3	17.3	36.0	36.4	36.2	0.206	6.3	6.1	4.4	ST	
50548	10/26/89	2309	2747.4	9538.5	20	71	35	71	25.5	25.5	19.6	35.9	35.9	36.4		6.2	6.2	5.8	ST	
50550	10/27/89	0317	2817.1	9542.3	19	29	14	29	23.1	24.9	25.1	30.6	34.5	34.8	0.268	6.8	5.7	5.8	ST	
50552	10/27/89	0420	2814.4	9536.1	19	36	18	36	23.5	24.5	25.2	31.6	33.8	35.3	0.137	6.9	6.8	6.6	ST	
50554	10/27/89	0630	2821.3	9520.8	19	32	16	31	23.1	24.5	24.8	30.4	30.4	34.2	0.162	7.0	6.9	6.1	ST	
50556	10/27/89	0917	2819.3	9516.3	19	35	17	35	24.1	25.3	25.3	33.8	35.4	36.0	0.206	6.7	6.4	6.2	ST	
50562	10/27/89	1354	2804.9	9515.2	19	56	27	54	24.8	25.1	21.3	35.1	35.7	36.2	0.119	7.4	7.5	6.8	ST	
50564	10/27/89	1558	2758.8	9507.8	19	75	37	74	24.9	25.0	18.9	35.7	36.1	36.4	0.040	6.5	6.5	4.2	ST	
50565	10/27/89	1824	2800.0	9500.0	19	77	38	76	25.2	25.1	18.7	36.2	36.2	36.4	0.112	6.5	6.6	6.6	PN	
50566	10/27/89	1939	2802.7	9500.3	19	74	37	74	25.0	25.0	19.2	36.1	36.1	36.4	0.143	6.8	6.9	4.5	ST	
50568	10/27/89	2154	2805.6	9450.2	18	53	26	53	25.1	25.1	20.4	36.0	35.9	36.3	0.174	7.0	7.0	5.4	ST	
50570	10/28/89	0050	2818.4	9508.9	19	37	18	37	24.2	24.3	24.7	33.8	34.2	35.5	0.080	6.8	6.7	6.2	ST	
50572	10/28/89	0245	2829.0	9505.2	19	32	16	32	23.9	24.0	24.1	33.6	34.0	34.3	0.144	6.7	6.8	6.5	ST/PN	
50574	10/28/89	0519	2838.0	9510.3	19	28	14	27	23.4	23.4	24.0	32.9	32.8	33.1	0.224	6.7	6.9	6.8	ST	
50576	10/28/89	0910	2853.4	9507.6	19	18	9	18	22.5	22.5	23.0	28.8	28.8	30.0	0.673	7.3	7.4	6.9	ST	
50578	10/28/89	1130	2848.5	9523.2	19	13	6	13	22.8	22.8	23.4	28.6	28.6	28.8	1.059	7.2	7.1	6.9	ST	
50580	10/28/89	1403	2830.0	9530.0	19	26	13	26	23.4	23.4	23.9	32.5	32.5	32.9	0.430	7.1	6.9	7.0	PN	
50582	10/28/89	1526	2834.1	9539.6	19	18	9	17	23.3	23.1	23.5	30.2	30.4	30.4	0.486	7.3	7.0	6.9	ST	
50584	10/28/89	1705	2836.6	9550.7	19	12	6	11	23.7	23.3	23.5	29.9	29.9	30.1	0.981	7.4	7.9	7.5	ST	
50586	10/28/89	1915	2834.1	9555.7	19	14	7	14	23.7	23.4	23.5	30.0	30.1	30.1	0.916	7.5	8.2	8.0	ST/PN	
50588	10/28/89	2201	2835.7	9534.7	19	19	9	19	23.1	23.1	23.2	29.8	29.8	29.9	0.673	7.4	7.6	7.6	ST	
50590	10/29/89	0230	2843.8	9452.3	18	26	13	26	23.2	23.3	23.6	31.9	31.9	32.2	0.536	7.4	7.3	7.0	ST	

Table 2. Selected environmental parameters (cont'd)

NMFS, SEFC, MS. LABS, PASCAGOULA FACILITY  
SEAMAP ENVIRONMENTAL DATA  
OREGON II

STA#	DATE MM/DD/YY	TIME	POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)		TEMPERATURE, °C			SALINITY, PPT			CL, MG/M <sup>3</sup>	DISSOLVED OXYGEN, PPM			GEAR
			LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX	SUR	SUR	MID	MAX	
50592	10/29/89	0519	2907.6	9455.3	18	15	7	14	22.2	22.2	22.9	26.2	26.2	27.4	1.271	7.2	7.2	7.6	ST
50593	10/29/89	0741	2859.8	9500.4	19	15	7	14	22.4	22.4	22.4	28.3	28.3	29.5		7.2	7.3	7.2	PN
50594	10/29/89	1038	2845.0	9441.3	18	24	12	24	23.7	23.7	23.6	34.0	34.0	34.0	0.592	7.3	7.3	7.4	ST
50596	10/29/89	1124	2842.1	9442.2	18	26	13	26	23.7	23.8	24.2	34.1	34.1	34.6	0.704	6.8	7.0	6.5	ST
50598	10/29/89	1316	2838.9	9446.4	18	29	17	29	23.1	24.1	24.2	32.5	34.6	34.6	0.224	7.1	6.6	6.5	ST
50600	10/29/89	1536	2825.4	9440.7	18	40	20	40	24.5	24.6	25.1	35.0	35.6	35.4	0.196	6.7	6.4	6.6	ST
50604	10/29/89	2301	2847.8	9406.4	18	24	12	24	24.2	24.2	24.2	35.4	35.4	35.4	0.243	6.5	6.4	6.4	ST
50606	10/30/89	0225	2826.9	9423.2	18	40	20	40	24.6	24.6	24.9	35.6	35.7	35.9	0.122	6.5	6.4	6.5	ST
50612	10/30/89	0943	2759.6	9429.6	18	74	37	74	26.1	25.9	19.5	36.3	36.4	36.4	0.078	5.9	5.8	4.0	ST/PN
50614	10/30/89	1108	2759.0	9435.2	18	77	38	77	24.9	25.0	19.5	36.2	36.2	36.4	0.162	7.4	6.3	4.7	ST
50616	10/30/89	1535	2831.5	9427.6	18	37	18	37	24.5	24.5	24.8	35.4	35.5	35.8	0.218	7.6	7.0	6.7	ST/PN
50618	10/30/89	2037	2819.5	9427.4	18	47	23	47	24.8	25.0	24.9	35.8	35.8	36.3	0.125	6.6	6.6	6.2	ST
50624	10/31/89	0420	2802.4	9344.9	17	75	36	73	24.5	24.9	18.3	36.0	36.2	36.4	0.093	6.6	6.6	4.9	ST
50626	10/31/89	0839	2829.9	9400.0	18	40	20	40	24.5	24.5	24.9	36.0	35.9	36.4	0.617	6.8	7.0	6.4	PN
50628	10/31/89	1048	2839.8	9405.0	18	29	15	29	24.1	24.1	24.2	35.5	35.5	35.4	0.361	6.8	6.6	6.6	ST
50630	10/31/89	1357	2855.3	9420.7	18	19	9	19	23.4	23.4	23.4	34.4	34.3	34.3	0.573	7.2	7.1	7.1	ST
50632	10/31/89	1810	2934.1	9415.8	18	9	5	9	21.7	21.7	21.7	34.9	24.9	26.1	0.860	7.2	7.2	6.9	ST
50633	10/31/89	2123	2930.0	9400.1	18	13	6	13	21.9	21.9	22.0	27.6	27.6	28.0	0.741	7.5	7.3	6.7	PN
50634	11/ 1/89	0053	2900.0	9400.0	18	21	10	21	23.3	23.4	23.5	34.0	34.1	34.0	0.754	6.9	6.8	7.0	PN
50635	11/ 1/89	0441	2859.9	9430.1	18	17	8	16	23.0	23.0	23.2	33.4	33.3	33.4		7.2	7.2	7.1	PN
50636	11/ 3/89	1643	2912.6	9441.8	18	15	7	14	20.8	20.8	21.1	27.8	27.9	28.6	1.210	7.8	7.4	7.6	ST
50638	11/ 4/89	2359	2911.5	9326.5	17	16	8	15	22.4	22.4	22.4	34.0	34.1	34.1	0.773	7.1	6.9	6.9	ST
50640	11/ 4/89	0058	2906.7	9326.5	17	19	9	19	22.6	22.6	22.6	33.9	34.4	34.4	0.850	6.9	6.7	6.7	ST
50642	11/ 5/89	1341	2933.3	9356.7	17	10	5	10	20.7	20.2	20.1	27.9	28.2	28.3	1.072	7.5	7.5	7.2	ST
50644	11/ 5/89	1706	2938.8	9338.7	17	10	4	9	20.8	21.0	20.8	28.1	29.0	29.2	1.358	7.5	7.3	7.1	ST
50646	11/ 5/89	1932	2929.7	9330.1	17	10	5	9	21.3	21.3	21.2	32.1	32.1	32.1		8.2	8.2	8.0	PN
50648	11/ 6/89	0016	2933.2	9300.7	17	11	5	10	20.9	20.8	21.1	29.9	30.1	30.5	2.118	7.2	7.3	7.3	ST/PN
50650	11/ 6/89	0249	2921.4	9302.4	17	12	6	12	21.9	21.9	21.9	33.2	33.2	33.2	0.776	7.4	6.9	6.8	ST



Table 2. Selected environmental parameters (cont'd)

NMFS, SEFC, MS. LABS, PASCAGOULA FACILITY																			
SEAMAP ENVIRONMENTAL DATA																			
OREGON II																			
STA#	DATE		POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)		TEMPERATURE, °C			SALINITY, PPT			CL, MG/M <sup>3</sup>	DISSOLVED OXYGEN, PPM			GEAR
	MM/DD/YY	TIME	LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX	SUR	SUR	MID	MAX	
50652	11/ 6/89	0729	2915.3	9344.9	17	12	6	11	21.7	21.7	21.7	33.3	33.3	33.3	0.570	7.1	7.2	7.2	ST
50654	11/ 6/89	1017	2910.4	9323.6	17	16	8	15	22.2	22.2	22.3	33.6	33.7	33.8	0.573	6.9	6.8	6.6	ST
50655	11/ 6/89	1156	2900.1	9329.7	17	22	11	21	23.0	22.8	22.7	34.6	34.6	34.6		6.8	6.7	6.6	PN
50656	11/ 6/89	1405	2850.9	9328.7	17	20	10	20	23.0	23.3	23.4	34.5	35.6	35.8		6.9	6.7	6.6	ST
50658	11/ 6/89	1544	2844.6	9324.0	17	27	18	27	23.7	23.7	23.6	35.9	36.0	35.9	0.754	6.7	6.6	6.6	ST
50660	11/ 6/89	1730	2849.9	9323.1	17	22	10	21	23.7	23.4	23.4	35.7	35.7	35.7	0.299	6.5	6.6	6.7	ST
50662	11/ 6/89	1836	2840.9	9321.2	17	32	16	31	23.9	23.7	23.7	35.9	36.0	36.0	0.257	6.5	6.5	6.4	ST
50664	11/ 6/89	2058	2837.8	9313.5	17	34	17	33	23.7	24.0	24.0	35.8	36.2	36.4	0.093	6.5	6.5	6.2	ST
50666	11/ 6/89	2326	2827.7	9313.9	17	44	22	43	24.0	24.0	24.1	36.2	36.5	36.6	0.212	6.6	6.5	6.4	ST
50670	11/ 7/89	0434	2831.1	9339.3	17	34	17	33	23.9	23.7	23.8	35.9	35.9	36.0	0.224	6.7	6.5	6.3	ST/PN
50672	11/ 7/89	0742	2840.4	9339.1	17	32	16	31	23.0	23.1	23.6	34.9	35.3	35.7	0.243	6.8	6.6	6.7	ST
50674	11/ 7/89	0934	2831.0	9339.8	17	38	19	37	23.9	23.9	23.9	35.9	36.0	36.1	0.206	6.6	6.5	6.5	ST
50676	11/ 7/89	1208	2822.1	9351.0	17	53	26	52	24.9	24.5	21.9	36.5	36.5	36.8	0.254	6.5	6.6	4.8	ST
50680	11/ 7/89	1849	2806.7	9308.1	17	80	40	80	24.5	24.5	18.6	36.5	36.7	36.9	0.252	6.6	6.5	5.8	ST
50682	11/ 7/89	2323	2837.1	9258.4	16	32	16	30	23.9	23.8	24.1	35.8	36.1	36.3	0.098	6.6	6.5	6.3	ST
50684	11/ 8/89	0210	2824.0	9239.0	16	53	26	53	24.4	24.2	23.8	36.6	36.6	36.8	0.193	6.6	6.6	5.4	ST
50690	11/ 8/89	0803	2807.3	9241.0	16	82	41	82	25.0	24.8	18.2	36.6	36.5	37.8	0.125	6.5	6.4	4.6	ST
50692	11/ 8/89	0935	2802.0	9241.1	16	102	51	100	25.7	25.5	17.7	36.7	36.7	36.7	0.087	6.4	6.3	4.5	ST
50694	11/ 8/89	1419	2830.0	9300.0	17	43	21	43	24.8	24.9	24.6	36.6	36.7	36.7	0.137	6.4	6.3	6.2	PN
50696	11/ 8/89	1544	2836.3	9301.5	17	36	18	36	24.9	24.7	24.6	36.6	36.5	36.7	0.151	6.6	6.5	6.5	ST
50698	11/ 8/89	1750	2847.4	9253.2	16	27	13	26	23.9	23.4	23.9	34.8	35.1	36.0	0.243	6.8	6.5	6.4	ST
50699	11/ 8/89	2004	2859.8	9300.0	17	22	11	20	23.1	23.1	23.1	33.7	33.9	34.2		6.6	6.6	6.6	PN
50700	11/ 8/89	2159	2905.9	9248.7	16	22	11	20	23.3	23.3	23.1	33.8	33.9	34.1	0.193	6.7	6.9	6.5	ST
50702	11/ 9/89	0147	2931.2	9250.1	16	11	5	11	21.2	21.3	21.8	26.0	27.8	30.9	1.215	7.2	7.0	4.6	ST
50704	11/ 9/89	0305	2934.1	9249.6	16	9	4	9	21.1	21.2	21.7	26.6	28.0	31.8	3.252	8.3	8.1	7.3	ST
50706	11/ 9/89	0717	2910.5	9228.9	16	16	8	15	21.9	28.9	22.5	31.7	31.9	33.2	1.047	5.9	5.9	5.4	ST
50708	11/ 9/89	0839	2910.3	9223.0	16	12	6	11	21.9	21.9	22.3	31.0	31.1	32.9	1.308	7.2	7.1	6.7	ST
50710	11/ 9/89	1047	2904.2	9216.7	16	18	9	17	22.4	22.5	23.5	32.9	33.0	34.8	0.299	7.1	7.1	6.1	ST
50712	11/ 9/89	1340	2901.5	9158.2	15	16	8	16	22.7	22.7	22.7	29.6	33.0	33.2	0.666	7.0	6.8	6.5	ST/PN

Table 2. Selected environmental parameters (cont'd)

NMFS, SEFC, MS. LABS, PASCAGOULA FACILITY																			
SEAMAP ENVIRONMENTAL DATA																			
OREGON II																			
STA#	DATE	TIME	POSITION		STAT	DEPTH	SAMPLE DEPTHS		TEMPERATURE, °C			SALINITY, PPT			CL,	DISSOLVED			GEAR
			LAT	LONG			ZONE	(M)	MID	MAX	SUR	MID	MAX	SUR	MID	MAX	MG/M <sup>3</sup>	SUR	
50714	11/ 9/89	1703	2900.2	9228.3	16	24	12	24	22.6	22.5	24.4	33.1	33.2	35.9	0.417	7.7	7.5	5.5	ST/PN
50716	11/ 9/89	2017	2911.6	9231.8	16	17	8	16	22.1	22.2	22.3	32.0	32.7	32.9		6.6	6.4	6.4	ST
50718	11/ 9/89	2306	2901.1	9221.1	16	21	10	20	22.9	23.0	23.3	33.9	33.9	34.4	0.305	6.8	6.7	6.3	ST
50720	11/10/89	0207	2850.3	9206.5	16	27	13	27	23.0	23.3	24.4	34.1	34.4	36.3	0.259	6.6	6.5	5.2	ST
50722	11/10/89	0522	2844.2	9233.8	16	31	16	31	23.7	23.8	24.2	35.4	35.7	36.3	0.383	6.6	6.5	6.2	ST
50724	11/10/89	0816	2853.6	9241.3	16	25	12	24	22.9	23.6	23.8	34.7	35.3	35.6	0.542	6.6	6.5	6.3	ST
50726	11/10/89	1015	2843.3	9241.6	16	31	15	29	23.3	24.0	24.1	35.1	35.8	36.5	0.355	6.5	6.2	5.5	ST
50728	11/10/89	1338	2837.3	9219.7	16	38	19	38	24.3	24.3	24.3	36.5	36.6	36.6	0.206	6.5	6.5	6.3	ST/PN
50732	11/10/89	1910	2852.4	9157.1	15	23	12	23	23.1	23.1	23.9	33.8	34.0	35.5	0.305	6.3	6.3	5.7	ST
50734	11/10/89	2349	2835.9	9133.2	15	34	17	33	23.6	23.9	24.2	35.0	35.3	36.1	0.206	6.6	6.4	5.6	ST/PN
50736	11/11/89	0300	2842.2	9114.5	15	16	8	16	22.9	22.9	23.0	32.2	32.6	32.7	0.834	6.8	6.7	6.4	ST
50738	11/11/89	0718	2845.7	9110.7	15	10	5	10	22.6	22.6	22.6	31.7	32.1	32.1	0.966	6.7	6.6	6.7	ST
50740	11/11/89	0834	2844.3	9115.2	15	15	8	14	22.8	22.8	22.9	32.6	32.5	32.6	1.008	6.9	6.9	6.7	ST
50742	11/11/89	1055	2840.8	9111.5	15	16	8	15	22.9	23.4	23.5	32.7	33.8	34.5		7.0	6.9	6.3	ST
50744	11/11/89	1505	2834.3	9122.2	15	33	16	33	23.7	24.0	24.2	35.1	36.0	36.6	0.237	6.7	6.6	5.7	ST
50746	11/11/89	1648	2833.7	9114.8	15	33	16	33	23.6	24.1	24.2	34.8	35.8	36.3	0.343	6.8	6.5	5.8	ST
50748	11/11/89	1925	2828.7	9101.3	15	35	17	34	24.0	24.1	24.3	36.0	36.2	36.5	0.143	6.5	6.6	5.5	ST
50750	11/11/89	2049	2832.3	9056.7	14	28	14	27	23.8	23.8	24.4	35.4	35.5	36.3	0.162	6.7	6.7	5.8	ST
50752	11/11/89	2303	2836.6	9105.7	15	22	11	21	23.4	23.5	23.7	34.4	34.5	34.9	0.493	6.8	6.8	6.1	ST
50754	11/11/89	2358	2842.2	9107.2	15	12	6	12	22.9	22.9	22.9	32.7	32.7	32.9	1.224	7.0	7.0	6.7	ST
50756	11/12/89	0308	2851.6	9052.3	14	9	4	9	22.6	22.6	22.8	31.7	31.8	31.8	2.153	7.1	7.0	7.0	ST
50758	11/12/89	0842	2811.4	9133.5	15	80	40	79	24.6	24.6	19.0	36.7	36.7	36.8	0.150	6.7	4.4	6.5	ST
50760	11/12/89	1333	2808.2	9213.2	16	80	41	80	25.2	24.5	18.8	36.6	36.6	36.8	0.075	6.9	7.0	4.7	ST
50762	11/12/89	1645	2836.1	9202.7	16	48	24	47	24.4	24.5	24.5	36.7	36.7	36.7	0.224	7.0	7.0	7.0	ST/PN
50764	11/12/89	2035	2818.7	9202.5	16	62	31	60	24.3	24.4	20.6	36.6	36.7	36.8	0.098	6.8	6.8	4.5	ST
50768	11/13/89	0147	2826.7	9141.7	15	53	26	53	24.0	24.0	21.8	36.3	36.4	36.8		6.6	6.5	3.6	ST
50772	11/13/89	0554	2812.6	9130.1	15	81	40	80	24.4	24.5	19.1	36.4	36.4	36.1		6.5	7.6	6.5	ST
50774	11/13/89	0940	2819.7	9115.9	15	61	30	59	24.2	24.2	22.7	36.5	36.5	36.7	0.187	6.6	6.5	4.4	ST
50776	11/13/89	1400	2822.3	9045.0	14	44	22	44	24.1	24.2	24.2	36.2	36.4	36.5	0.199	6.9	6.9	6.3	ST

Table 2. Selected environmental parameters (cont'd)

NMFS, SEFC, MS. LABS, PASCAGOULA FACILITY																			
SEAMAP ENVIRONMENTAL DATA																			
OREGON II																			
STA#	DATE	TIME	POSITION		STAT	DEPTH	SAMPLE DEPTHS		TEMPERATURE, °C			SALINITY, PPT			CL, MG/M <sup>3</sup>	DISSOLVED OXYGEN, PPM			GEAR
			LAT	LONG			ZONE	(M)	MID	MAX	SUR	MID	MAX	SUR		MID	MAX	SUR	
50778	11/13/89	1708	2832.7	9050.1	14	24	12	24	23.8	23.8	26.6	35.8	35.8	35.8	0.430	6.8	6.9	6.5	ST/PN
50780	11/13/89	2052	2825.8	9108.9	15	44	22	42	24.0	24.2	23.9	36.2	36.5	36.6	0.268	6.8	6.4	5.7	ST
50782	11/14/89	0255	2817.1	9015.0	14	78	39	78	24.4	24.4	19.7	36.6	36.7	36.8	0.224	7.0	7.0	4.9	ST
50786	11/14/89	0537	2812.7	9011.3	14	126	62	125	24.6	24.5	17.7	36.7	36.4	36.7	0.120	7.8	7.2	5.1	ST
50788	11/14/89	0944	2837.9	9030.0	14	21	10	20	23.9	23.9	24.2	35.7	35.7	36.1	0.528	7.2	7.2	6.2	ST
50790	11/14/89	1156	2833.7	9039.8	14	21	10	20	24.1	23.9	24.1	36.1	36.3	36.5	0.430	6.9	6.7	6.7	ST
50792	11/14/89	1319	2831.9	9035.9	14	31	15	31	24.3	24.0	24.1	36.2	36.3	36.5	0.626	7.0	7.0	6.9	ST
50794	11/14/89	1407	2828.2	9033.0	14	39	19	39	24.3	24.2	23.8	36.4	36.5	36.6	0.217	7.1	7.0	5.9	ST/PN
50796	11/14/89	1724	2838.2	9031.6	14	20	10	20	24.1	23.9	24.3	35.7	35.7	36.3	0.374	7.1	7.2	6.0	ST
50798	11/14/89	2023	2857.8	9027.2	14	13	7	12	23.0	22.9	23.4	29.7	31.6	33.5	1.243	8.7	8.5	8.0	ST
50800	11/14/89	2127	2900.3	9023.9	14	10	5	9	22.8	22.8	23.3	29.1	29.1	33.2	2.196	6.7	6.2	5.6	ST/PN
50802	11/15/89	0045	2902.7	9006.0	14	14	7	14	22.9	23.2	24.0	30.1	32.3	35.4	2.495	8.4	7.7	7.1	ST
50804	11/15/89	0235	2857.0	8958.1	13	29	15	29	23.3	24.0	24.2	33.1	35.5	36.5	0.636	7.2	7.0	6.3	ST
50806	11/15/89	0514	2839.8	8958.9	13	79	39	79	24.4	24.5	19.5	36.2	36.7	36.8	0.530	7.2	7.0	4.5	ST
50808	11/15/89	0657	2840.8	8959.1	13	73	36	73	24.4	24.5	19.6	36.8	36.7	36.9	0.181	6.8	7.0	4.3	ST
50810	11/15/89	0834	2841.0	9002.4	14	57	30	56	24.2	24.2	24.4	36.5	36.5	36.7	0.189	8.0	6.9	6.6	ST
50812	11/15/89	0914	2840.0	9004.5	14	63	32	62	24.5	24.4	21.3	36.6	36.6	37.0	0.125	6.8	6.8	4.6	ST
50814	11/15/89	1145	2846.3	9018.6	14	22	11	21	24.7	24.7	24.1	33.0	35.8	36.7	1.093	7.0	5.0	5.4	ST
50816	11/15/89	1236	2843.7	9018.3	14	26	13	26	24.0	24.8	24.2	33.9	36.3	36.6	1.178	6.6	4.6	6.0	ST
50818	11/15/89	1533	2901.1	9019.4	14	9	4	9	23.2	23.3	23.4	29.3	29.0	32.6	4.458	8.2	8.1	5.6	ST
50820	11/15/89	1911	2844.3	8951.1	13	73	37	72	23.5	24.2	19.4	32.5	36.6	36.8	3.626	7.5	6.2	4.2	ST
50822	11/15/89	2150	2901.8	8951.4	13	29	15	27	23.2			32.1			2.537	7.3	7.0	3.6	
50824	11/16/89	0719	2914.8	8951.2	13	10	5	10	22.0	22.1	23.8	29.1	29.3	33.8	2.280	5.8	5.3	5.5	ST
50826	11/16/89	1008	2901.6	9000.5	14	20	10	19	23.2	23.2	24.1	34.4	34.4	36.5	0.897	6.8	6.8	6.0	ST/PN
50828	11/16/89	1205	2851.8	8952.2	13	44	22	44	22.5	24.4	21.5	30.6	36.5	37.2		7.8	6.6	3.1	ST
50830	11/16/89	1347	2844.5	8947.3	13	80	40	80	23.1	23.6	19.1	32.9	36.6	36.8	3.023	7.7	6.2	4.8	ST
50832	11/16/89	1639	2904.6	8946.2	13	29	14	28	22.8	23.0	23.7	32.6	32.8	36.6	8.373	7.4	7.2	4.1	ST
50834	11/16/89	1900	2902.2	8950.8	13	30	15	30	22.6	22.8	24.0	32.2	32.7	36.6	5.986	7.5	7.3	5.0	ST
50836	11/16/89	2055	2905.6	8942.2	13	22	11	21	22.5	22.7	23.6	32.2	32.6	36.6	4.696	7.4	7.5	5.1	ST

Table 2. Selected environmental parameters (cont'd)

NMFS, SEFC, MS. LABS, PASCAGOULA FACILITY																			
SEAMAP ENVIRONMENTAL DATA																			
OREGON II																			
STA#	DATE		POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)		TEMPERATURE, °C			SALINITY, PPT			CL, MG/M <sup>3</sup> SUR	DISSOLVED OXYGEN, PPM			GEAR
	MM/DD/YY	TIME	LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX		SUR	MID	MAX	
50838	11/16/89	2237	2902.6	8940.9	13	32	16	31	22.5	23.2	23.3	32.4	32.9	36.7	6.946	7.4	6.7	5.1	ST/PN
50840	11/16/89	2316	2859.3	8942.2	13	48	24	48	22.5	24.5	21.0	32.5	36.1	36.8	7.354	7.3	6.6	4.1	ST
50842	11/17/89	0530	2903.1	8859.4	11	48	23	46	21.6	22.8	21.2	32.7	34.1	36.9	1.271	7.0	6.5	5.1	ST
50844	11/17/89	0640	2901.2	8859.1	13	55	27	55	21.8	23.2	20.2	32.9	34.9	36.9	1.131	7.2	6.2	5.0	ST
50846	11/17/89	0941	2906.3	8848.4	11	86	43	85	23.2	24.2	17.1	35.2	36.4	36.6	1.056	6.9		6.6	ST
50848	11/17/89	1158	2910.5	8846.8	11	70	35	70	23.2	24.3	18.0	35.2	36.5	36.8	1.140	7.0	6.5	4.8	ST
50850	11/17/89	1427	2906.8	8857.4	11	24	12	24	17.1	21.4	22.0	22.8	32.6	33.2	0.633	8.4	7.0	6.7	ST
50851	11/17/89	1601	2859.7	8859.7	13	66	33	66	22.3	23.7	20.0	33.6	35.3	36.9	1.113	6.2	6.0	5.0	PN
50852	11/17/89	1723	2904.5	8859.6	13	24	12	24	17.8	21.2	21.7	24.5	32.4	33.3	2.691	7.5	7.4	6.8	ST
50854	11/17/89	2018	2912.4	8840.3	11	71	36	71	23.6	23.8	20.7	35.8	36.0	36.6	0.480	7.0	6.8	4.7	ST
50856	11/17/89	2356	2927.4	8852.2	11	14	7	13	21.3	21.4	21.4	33.6	34.2	34.2	0.794	7.2	7.1	7.2	ST
50858	11/18/89	0137	2926.6	8842.7	11	32	16	32	21.8	22.8	23.0	33.8	35.3	36.3	0.766	6.9	6.5	5.4	ST
50860	11/18/89	0308	2931.2	8838.2	11	28	14	28	22.2	22.3	22.4	34.9	35.1	35.2		7.4	7.1	7.2	ST
50862	11/18/89	0637	2927.5	8843.1	11	23	11	22	21.9	22.5	22.9	34.9	35.3	35.5	0.692	7.2	7.5	7.4	ST
50864	11/18/89	0813	2928.1	8848.8	11	16	8	16	21.5	21.5	21.5	34.3	34.5	34.5	1.402	7.7	7.4	7.4	ST
50866	11/18/89	0947	2921.0	8847.6	11	42	21	41	21.8	22.6	20.5	33.7	35.1	37.0	0.935	7.2	6.9	5.0	ST
50868	11/18/89	1205	2918.6	8854.2	11	30	15	29	19.7	20.9	22.5	30.8	33.2	35.1	1.991	8.3	7.7	7.3	ST
50870	11/18/89	1241	2916.3	8853.7	11	47	23	47	20.5	22.8	18.5	30.9	34.4	36.8	1.561	7.7	6.8	4.9	ST
50872	11/18/89	1434	2918.4	8856.1	11	25	12	25	19.5	20.8	22.5	31.1	32.9	35.1	1.785	8.7	8.3	7.5	ST
50874	11/18/89	1730	2930.0	8830.0	11	50	25	50	22.7	22.8	21.5	34.7	35.0	36.9	1.022	7.6	7.4	6.0	PN
50876	11/18/89	1950	2923.9	8824.6	11	54	26	52	23.2	23.3	22.7	35.6	35.9	36.7	0.561	7.7	7.9	6.5	ST
50880	11/18/89	2310	2916.1	8828.7	11	66	33	66	23.5	23.6	21.7	36.1	36.1	36.8		7.0	7.0	5.8	ST
50882	11/19/89	0316	2915.4	8816.3	11	88	44	88	23.3	23.5	20.2	36.0	36.4	36.8		7.4	7.2	5.2	ST
50884	11/19/89	0613	2918.2	8810.3	11	91	45	90	23.2	23.5	19.6	36.0	36.4	36.7		9.2	8.7	6.2	ST
50886	11/19/89	0954	2916.4	8821.2	11	77	38	76	23.3	23.3	21.7	36.0	36.1	36.8		7.1	7.0	5.8	ST
50888	11/19/89	1344	2925.2	8802.1	11	59	29	59	23.0	23.0	22.6	35.8	35.9	36.0		6.9	6.8	4.9	ST
50889	11/19/89	1519	2930.0	8800.0	11	43	21	43	23.0	23.1	22.9	35.8	35.9	36.0		6.8	6.7	6.3	PN
50890	11/19/89	1828	2929.3	8806.5	11	44	22	44	22.3	22.4	21.9	35.5	35.5	36.8		7.1	6.9	5.2	ST

Table 2. Selected environmental parameters (cont'd)

NMFS, SEFC, MS. LABS, PASCAGOULA FACILITY  
SEAMAP ENVIRONMENTAL DATA  
LAGUNA MADRE

STA#	DATE MM/DD/YY	TIME	POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)		TEMPERATURE, °C			SALINITY, PPT			CL, MG/M <sup>3</sup>	DISSOLVED OXYGEN, PPM			GEAR
			LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX	SUR	SUR	MID	MAX	
33001	11/ 1/89	0831	2750.4	9659.8	20	13	7	13	22.8	22.8	22.8					6.9	7.1	7.4	ST
33002	11/ 1/89	0954	2756.4	9651.7	20	15	7	15	22.5	22.6	22.6					6.8	6.7	6.6	ST
33003	11/ 1/89	1041	2752.6	9650.6	20	20	10	20	22.7	22.7	22.7					6.6	6.6	6.7	ST
33004	11/ 1/89	1122	2751.6	9653.4	20	19	9	19	22.4	22.6	22.8					6.7	6.6	6.4	ST
33005	11/ 1/89	1214	2746.6	9654.6	20	22	11	22	22.7	22.7	23.0					6.6	6.5	6.1	ST
33006	11/ 1/89	1245	2746.5	9655.5	20	21	10	21	22.7	22.7	23.1					6.6	6.5	6.1	ST
33007	11/ 1/89	1321	2746.7	9657.2	20	19	9	19	22.8	22.8	23.2					6.7	6.6	6.0	ST
33008	11/ 1/89	1405	2748.6	9659.3	20	15	7	15	22.9	22.8	22.7					6.6	6.6	6.3	ST
33009	11/21/89	0956	2741.7	9708.3	20	11	5	11	12.5	20.1	20.2					7.6	6.9	6.9	ST
33010	11/21/89	1030	2740.6	9707.5	20	13	6	13	19.5	19.5	20.4					7.7	7.6	7.5	ST
33011	11/21/89	1106	2739.6	9708.5	20	13	6	13	19.5	19.4	20.3					7.7	7.7	7.6	ST
33012	11/21/89	1141	2738.6	9708.4	20	13	7	13	19.5	19.6	20.4					7.4	7.3	7.4	ST
33013	11/21/89	1221	2737.4	9705.6	20	18	9	18	20.1	20.5	20.5					7.5	7.4	7.3	ST
33014	11/21/89	1251	2738.5	9704.5	20	18	9	18	20.3	20.6	20.5					7.6	7.2	7.4	ST
33015	11/21/89	1346	2740.3	9700.7	20	21	10	21	20.8	20.8	20.7					7.6	7.2	7.1	ST
33016	11/21/89	1448	2746.4	9659.5	20	18	9	18	19.6	20.2	19.2					7.8	7.3	7.6	ST

Table 2. Selected environmental parameters (cont'd)

NMFS, SEFC, MS. LABS, PASCAGOULA FACILITY  
SEAMAP ENVIRONMENTAL DATA  
ALABAMA INSHORE VESSELS

STA#	DATE MM/DD/YY	TIME	POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)		TEMPERATURE, °C			SALINITY, PPT			CL, MG/M <sup>3</sup> SUR	DISSOLVED OXYGEN, PPM			GEAR
			LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX		SUR	MID	MAX	
AL001	10/25/89	1004	3010.0	8801.5	11	12	6	12	23.0	22.0	22.0	30.0	30.0	31.0		4.8	5.0	5.0	ST
AL002	10/25/89	1108	3010.1	8806.3	11	13	7	13	21.0	22.0	23.0	30.0	30.0	31.0		6.0	4.8	6.8	ST
AL003	10/25/89	1203	3010.1	8811.1	11	16	8	16	20.0	21.0	22.0	30.0	30.0	30.0		6.6	7.0	3.2	ST
AL004	10/25/89	1310	3008.6	8818.1	11	17	9	17	21.0	21.0	22.0	30.5	31.0	33.0		7.2	7.6	7.4	ST
AL005	10/25/89	1355	3007.7	8820.1	11	15	7	15	20.0	20.0	21.0	30.0	30.0	31.0		6.6	6.8	5.6	ST
AL006	10/25/89	1450	3012.1	8821.1	11	6	3	6	21.0	21.0	22.0	28.0	29.0	29.0		8.0		5.6	ST
AL007	10/25/89	1815	3012.0	8822.2	11	7	4	7	20.0	20.5	20.0	29.0	30.0	30.0		8.8		7.8	ST
AL008	10/25/89	1825	3011.4	8821.9	11	10	5	10	20.0	20.0	21.0	30.0	30.0	32.0		4.6		5.6	ST
AL009	10/25/89	1916	3010.8	8821.6	11	11	6	11	20.5	20.0	21.0	30.0	30.0	30.0		7.2		4.8	ST
AL010	10/25/89	2012	3009.9	8821.7	11	12	6	12	20.0	20.0	20.0	30.0	30.0	28.0		8.2		6.0	ST
AL011	10/25/89	2152	3013.0	8811.3	11	9	5	9	20.0	20.0	21.0	29.0	30.0	30.0		5.6		7.2	ST
AL012	10/25/89	2300	3008.0	8808.1	11	15	8	15	22.0	20.0	22.0	30.0	30.0	30.0		7.0		5.0	ST

Table 2. Selected environmental parameters (cont'd)

NMFS, SEFC, MS. LABS, PASCAGOULA FACILITY  
SEAMAP ENVIRONMENTAL DATA  
SABINE

STA#	DATE		POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)			TEMPERATURE, °C			SALINITY, PPT		CL, MG/M <sup>3</sup> SUR	DISSOLVED OXYGEN, PPM			GEAR
	MM/DD/YY	TIME	LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX		SUR	MID	MAX	
40001	11/ 7/89	0906	2938.6	9351.6	17	5	3	5	17.2	16.7	16.8				8.5	7.6	5.5	ST	
40002	11/ 7/89	0944	2937.6	9351.4	17	6	3	6	17.5	17.2	17.0				8.2	7.7	5.2	ST	
40003	11/ 7/89	1018	2937.6	9350.6	17	6	3	6	17.4	17.0	17.0				8.0	7.2	4.8	ST	
40004	11/ 7/89	1100	2936.5	9350.5	17	7	4	7	17.2	17.3	17.5				8.1	7.5	5.1	ST	
40005	11/ 7/89	1154	2933.5	9350.5	17	12	6	12	18.2	17.5	17.6				8.0	6.7	5.5	ST	
40006	11/ 7/89	1247	2933.5	9347.5	17	12	6	12	18.5	17.5	17.6				7.8	6.9	5.8	ST	
40007	11/ 7/89	1402	2938.5	9338.5	17	10	5	10	18.1	17.5	17.5				8.0	7.6	5.8	ST	
40008	11/ 7/89	1455	2942.5	9336.5	17	7	4	7	17.6	17.1	17.5				8.2	7.6	5.8	ST	
40009	11/21/89	0937	2935.5	9353.7	17	8	4	8	14.1	14.9	14.9				7.6	7.6	7.5	ST	
40010	11/21/89	1013	2933.5	9352.8	17	12	6	12	14.0	15.2	15.4				7.7	7.4	6.7	ST	
40011	11/21/89	1043	2933.5	9353.5	17	11	6	11	15.2	15.3	15.4				7.4	7.4	6.7	ST	
40012	11/21/89	1127	2932.5	9356.4	17	12	6	12	15.5	15.3	15.6				7.5	7.3	6.7	ST	
40013	11/21/89	1211	2932.4	9359.3	17	11	6	11	15.6	15.4	15.5				7.5	7.3	6.7	ST	
40014	11/21/89	1335	2936.6	9303.4	17	7	4	7	15.1	14.9	15.1				7.9	7.5	6.8	ST	
40015	11/21/89	1423	2940.6	9300.4	17	2	1	2	14.4	14.1	13.1				7.9	7.6	6.3	ST	
40016	11/21/89	1515	2939.6	9354.5	17	4	2	4	14.4	14.1	13.9				8.0	7.9	6.9	ST	

Table 2. Selected environmental parameters (cont'd)

NMFS, SEFC, MS. LABS, PASCAGOULA FACILITY  
SEAMAP ENVIRONMENTAL DATA  
MATAGORDA BAY

STA#	DATE		POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)		TEMPERATURE, °C			SALINITY, PPT			CL, MG/M <sup>3</sup>	DISSOLVED OXYGEN, PPM			GEAR
	MM/DD/YY	TIME	LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX	SUR	SUR	MID	MAX	
32001	11/10/89	1033	2822.4	9616.5	19	15	7	15	21.3	21.4	21.5					7.3	7.3	6.5	ST
32002	11/10/89	1110	2822.4	9614.6	19	16	8	16	21.5	21.3	21.5					7.6	7.9	7.2	ST
32003	11/10/89	1200	2818.5	9613.5	19	21	11	21	21.5	21.7	21.9					7.4	7.2	7.0	ST
32004	11/10/89	1319	2823.5	9603.7	19	20	10	20	21.6	21.6	21.7					7.4	7.4	6.4	ST
32005	11/10/89	1401	2825.5	9606.6	19	18	9	18	21.6	21.2	21.3					7.5	7.1	6.8	ST
32006	11/10/89	1449	2826.5	9608.7	19	15	8	15	21.3	21.1	21.1					7.7	7.0	6.9	ST
32007	11/10/89	1527	2826.6	9612.7	19	11	6	11	21.6	21.4	21.3					7.8	7.5	7.3	ST
32008	11/10/89	1600	2828.3	9614.5	19	4	2	4	21.6	21.5	21.5					7.9	7.7	7.7	ST
32009	11/21/89	0954	2820.5	9617.5	19	17	8	17	18.8	19.4	19.3					7.3	7.0	7.2	ST
32010	11/21/89	1038	2816.4	9618.5	19	20	10	20	19.4	20.5	20.6					7.8	7.0	6.7	ST
32011	11/21/89	1151	2811.5	9625.5	19	20	10	20	20.2	20.7	21.4					7.4	6.9	6.8	ST
32012	11/21/89	1227	2812.2	9626.4	19	19	10	19	19.3	19.8	19.7					7.7	6.8	6.6	ST
32013	11/21/89	1304	2814.5	9627.5	19	15	7	15	19.8	19.7	19.7					7.5	6.9	6.8	ST
32014	11/21/89	1334	2815.6	9629.4	19	11	5	11	19.6	19.7	19.7					7.6	7.1	6.9	ST
32015	11/21/89	1443	2822.5	9620.5	19	9	5	9	19.5	19.1	19.2					8.0	6.9	6.5	ST
32016	11/21/89	1515	2823.5	9621.5	19	6	3	6	19.6	19.2	19.2					8.3	7.1	6.7	ST



Table 2. Selected environmental parameters (cont'd)

NMFS, SEFC, MS. LABS, PASCAGOULA FACILITY  
SEAMAP ENVIRONMENTAL DATA  
GALVESTON BAY

STA#	DATE		POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)		TEMPERATURE, °C			SALINITY, PPT			CL, MG/M <sup>3</sup> SUR	DISSOLVED OXYGEN, PPM			GEAR
	MM/DD/YY	TIME	LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX		SUR	MID	MAX	
34001	11/12/89	0746	2918.9	9441.3	18	9	5	9	20.8	20.8	21.3	25.3	25.5	29.6		7.5	7.2	6.0	ST
34002	11/12/89	0814	2918.3	9442.9	18	6	3	6	20.8	20.7	21.1	25.5	25.6	28.4		7.5	7.2	6.3	ST
34003	11/12/89	0838	2918.8	9444.2	18	4	2	4	21.0	21.0	20.9	25.0	25.1	25.2		7.4	7.4	7.6	ST
34004	11/12/89	0911	2917.2	9445.9	18	5	2	5	20.8	20.8	20.8	25.3	25.3	25.5		7.6	7.6	7.4	ST
34005	11/12/89	0950	2918.1	9439.6	18	9	5	9	21.0	21.3	21.6	25.5	28.7	30.8		7.4	6.0	5.8	ST
34006	11/12/89	1021	2918.2	9436.6	18	13	6	13	21.1	20.9	21.9	25.6	27.0	31.9		7.1	7.3	5.4	ST
34007	11/12/89	1119	2927.9	9433.2	18	6	3	6	21.1	21.0	20.9	24.9	25.2	25.6		7.2	7.0	5.6	ST
34008	11/12/89	1211	2922.9	9441.4	18	6	3	6	21.3	21.2	21.0	25.1	25.1	26.4		7.7	7.7	6.8	ST
34009	11/21/89	0955	2915.7	9443.3	18	9	4	9	18.5	18.3	17.9	27.0	27.1	27.1		7.5	7.5	7.8	ST
34010	11/21/89	1023	2914.3	9441.8	18	13	6	12	18.5	18.8	18.9	27.2	27.6	28.7		7.4	7.4	7.6	ST
34011	11/21/89	1047	2913.9	9442.2	18	13	6	12	18.6	18.9	18.9	27.0	27.7	28.8		7.4	7.4	7.6	ST
34012	11/21/89	1120	2912.1	9440.7	18	16	8	15	18.9	18.9	19.3	27.4	19.3	30.3		7.4	7.4	7.6	ST
34013	11/21/89	1153	2912.8	9444.4	18	13	6	12	19.0	18.9	18.9	27.1	27.8	28.9		7.4	7.3	7.4	ST
34014	11/21/89	1237	2906.6	9448.3	18	16	8	16	19.6	19.5	19.4	27.8	29.3	31.1		7.5	7.2	7.5	ST
34015	11/21/89	1326	2912.3	9454.0	18	7	3	6	18.8	18.3	18.1	27.2	27.4	27.2		7.6	7.6	7.8	ST
34016	11/21/89	1348	2913.5	9453.1	18	3	1	3	18.7	18.7	18.4	27.2	27.6	27.0		7.5	7.6	7.4	ST

Table 2. Selected environmental parameters (cont'd)

NMFS, SEFC, MS. LABS, PASCAGOULA FACILITY																			
SEAMAP ENVIRONMENTAL DATA																			
ARANSAS BAY																			
STA#	DATE	TIME	POSITION		STAT	DEPTH	SAMPLE		TEMPERATURE, °C			SALINITY, PPT			CL, MG/M <sup>3</sup>	DISSOLVED			GEAR
			LAT	LONG			ZONE	(M)	MID	MAX	SUR	MID	MAX	SUR		MID	MAX	SUR	
31001	11/13/89	0841	2601.3	9706.4	21	16	8	16	24.0	24.0	24.0					7.0	7.0	7.1	ST
31002	11/13/89	0940	2558.2	9702.5	22	23	12	23	24.0	24.0	24.0					7.0	7.0	7.1	ST
31003	11/13/89	1037	2604.3	9702.5	21	23	12	23	24.1	24.0	24.0					7.0	7.1	7.3	ST
31004	11/13/89	1115	2605.4	9704.6	21	20	10	20	24.1	24.0	24.0					7.1	7.1	7.2	ST
31005	11/13/89	1211	2606.4	9659.6	21	26	13	26	24.2	24.2	24.4					7.0	6.9	6.7	ST
31006	11/13/89	1255	2607.6	9702.7	21	23	12	23	24.2	24.1	24.4					7.1	7.1	6.6	ST
31007	11/13/89	1348	2610.6	9707.6	21	18	9	18	24.3	24.2	24.1					7.1	7.2	7.2	ST
31008	11/13/89	1440	2606.5	9709.6	21	6	3	6	24.3	24.3	24.2					7.2	7.3	7.3	ST
31009	11/21/89	0950	2611.3	9704.5	21	20	10	20	21.9	21.9	21.8					5.7	5.8	6.1	ST
31010	11/21/89	1014	2611.5	9702.4	21	23	12	23	21.9	21.8	21.8					5.8	5.7	5.8	ST
31011	11/21/89	1055	2614.4	9701.5	21	25	18	25	21.8	21.7	21.8					5.7	5.6	5.6	ST
31012	11/21/89	1145	2620.3	9702.4	21	24	12	24	21.8	21.5	21.6					5.9	5.7	5.7	ST
31013	11/21/89	1234	2619.4	9707.6	21	17	9	17	22.1	21.6	21.5					5.7	5.8	5.9	ST
31014	11/21/89	1316	2616.2	9706.7	21	18	9	18	22.4	21.7	21.6					5.8	5.9	5.6	ST
31015	11/21/89	1400	2614.7	9705.6	21	19	10	19	22.4	21.8	21.8					5.9	5.9	5.9	ST
31016	11/21/89	1435	2614.7	9707.7	21	17	9	17	22.4	21.9	21.8								ST

Table 2. Selected environmental parameters (cont'd)

NMFS, SEFC, MS. LABS, PASCAGOULA FACILITY  
SEAMAP ENVIRONMENTAL DATA  
LUMCON PELICAN

STA#	DATE		POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS		TEMPERATURE, °C			SALINITY, PPT			CL, MG/M <sup>3</sup> SUR	DISSOLVED OXYGEN, PPM			GEAR
	MM/DD/YY	TIME	LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX		SUR	MID	MAX	
36481	11/11/89	0723	2845.7	9110.9	15	13	5	12	22.8	22.8	22.8	31.7	31.7	31.7		7.2	7.1	7.0	ST
36482	11/11/89	0839	2845.3	9114.5	15	15	8	15	23.0	23.0	23.0	32.2	32.1	32.2		6.7	6.7	6.3	ST
36483	11/11/89	1315	2840.6	9111.8	15	18	9	17	22.8	23.2	23.4	32.5	33.7	34.2		7.5	7.0	6.7	ST
36484	11/11/89	1507	2834.7	9122.4	15	35	16	32	23.9	24.1	24.4	34.5	35.6	36.1		9.7	6.4	5.6	ST
36485	11/11/89	1652	2834.7	9114.8	15	32	16	32	23.7	24.2	24.3	34.4	35.4	35.9		6.6	6.4	5.5	ST
36486	11/11/89	1931	2829.0	9101.7	15	35	18	35	24.1	24.2	24.4	35.8	35.8	36.1		6.5	6.7	5.2	ST
36487	11/11/89	2051	2833.3	9056.9	14	28	15	28	23.9	23.9	24.5	35.1	35.1	36.0		6.7	6.7	5.5	ST
36488	11/11/89	2307	2837.0	9105.3	15	22	11	22	23.5	25.6	24.3	34.0	34.0	35.4		7.2	6.6	5.6	ST
36489	11/12/89	0001	2840.9	9107.1	15	13	7	12	22.9	23.0	23.6	32.2	32.3	33.5		7.0	7.2	5.6	ST
36490	11/12/89	0313	2851.5	9052.5	14	10	5	10	23.0	23.0	23.1	31.5	31.5	31.5		7.1	7.0	6.9	ST

Table 2. Selected environmental parameters (cont'd)

NMFS, SEFC, MS. LABS, PASCAGOULA FACILITY  
SEAMAP ENVIRONMENTAL DATA  
LOUISIANA INSHORE VESSELS

STA#	DATE		POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)		TEMPERATURE, °C			SALINITY, PPT			CL, MG/M <sup>3</sup>	DISSOLVED OXYGEN, PPM			GEAR
	MM/DD/YY	TIME	LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX	SUR	SUR	MID	MAX	
36479	11/13/89	1127	2909.5	9209.5	16	9	9	22.4	22.2	30.3	30.2	2.101	7.9	8.0	ST/PN				
36480	11/13/89	1235	2919.3	9206.8	16	5	5	22.3	21.7	26.0	26.2	3.930	8.6	8.2	ST/PN				
36481	11/13/89	1409	2934.0	9201.8	16	2	2	22.7	22.7	10.6	10.6	8.993	9.8	9.9	ST/PN				
36482	11/14/89	0934	2916.3	8956.0	13	2	2	22.1	21.8	25.7	27.7	4.495	7.7	7.4	ST/PN				
36483	11/14/89	0952	3003.1	8851.4	11	2	2	21.4	21.1	29.0	28.9	0.931	7.3	7.9	ST/PN				
36484	11/14/89	1010	2915.1	8954.2	13	4	4	22.2	22.1	25.1	26.4	5.734	7.9	7.5	ST/PN				
36485	11/14/89	1047	3003.2	8851.3	11	5	5	21.3	20.7	29.2	29.5	0.701	8.4	8.2	ST/PN				
36486	11/14/89	1054	2913.9	8952.7	13	9	9	22.5	22.0	25.2	26.3	4.804	8.1	7.7	ST/PN				
36487	11/14/89	1116	3003.1	8851.2	11	9	9	20.8	26.9			1.223	8.9	8.7	ST/PN				
36488	11/14/89	1200	2900.5	9035.7	14	9	9	23.3	22.1	29.5	29.5	2.153	8.0	7.9	ST/PN				
36489	11/14/89	1253	2902.0	9035.7	14	5	5	22.9	22.9	28.9	25.9	3.958	8.1	7.6	ST/PN				
36490	11/14/89	1347	2904.5	9035.7	14	2	2	22.8	22.5	29.5	28.8	3.598	7.7	7.6	ST/PN				
36491	11/15/89	0758	2856.2	9058.0	14	9	9	23.0	23.0	31.3	31.6	0.714	8.6	8.3	ST/PN				
36492	11/15/89	0846	2901.0	9058.9	14	5	5	23.5	23.4	30.7	30.6	1.065	7.9	9.1	ST/PN				
36494	11/17/89	0919	2940.0	9320.0	17	9	9	18.6	19.3	28.5	28.8	0.677	7.8	6.9	ST/PN				
36495	11/17/89	1004	2944.0	9322.0	17	5	5	18.3	18.3	26.6	26.6	6.464	8.1	6.7	ST/PN				
36496	11/17/89	1035	2945.0	9322.0	17	2	2	17.5	17.5	26.6	26.6	6.729	8.7	8.5	ST/PN				
36497	11/20/89	1110	2924.8	8904.3	12	9	9	17.7	17.8	26.2	31.4		9.0	8.6	ST/PN				
36498	11/20/89	1219	2926.9	8909.6	12	5	5	18.1	16.9	25.1	27.3		9.2	8.7	ST/PN				
36499	11/20/89	1307	2927.4	8912.2	12	2	2	18.8	17.0	23.3	26.5		9.6	8.6	ST/PN				

Table 2. Selected environmental parameters (cont'd)

NMFS, SEFC, MS. LABS, PASCAGOULA FACILITY  
SEAMAP ENVIRONMENTAL DATA  
TOMMY MUNRO

STA#	DATE MM/DD/YY	TIME	POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)			TEMPERATURE, °C			SALINITY, PPT			CL, MG/M <sup>3</sup>	DISSOLVED OXYGEN, PPM			GEAR
			LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX	SUR	SUR	MID	MAX		
17001	11/17/89	1556	3011.9	8838.0	11	11	5	10	17.2	17.9	18.6	29.2	27.8	31.9	2.660	8.7	7.0	7.0	ST	
17002	11/17/89	1838	2957.4	8829.9	11	27	13	26	20.5	19.8	20.1	33.9	34.0	35.7	0.421	6.9	6.8	5.2	ST	
17003	11/17/89	2109	2955.1	8834.5	11	24	12	23	19.9	20.0	20.0	34.2	34.3	34.3	0.365	6.6	6.6	6.6	ST	
17004	11/17/89	2331	2953.3	8838.7	11	20	10	19	19.6	19.7	19.9	33.4	33.6	33.8	0.486	6.3	6.3	6.2	ST	
17005	11/18/89	1117	2952.9	8848.3	11	9	4	8	18.0	17.9	17.5	31.8	31.4	31.4	2.271	6.9	6.9	6.8	ST	
17006	11/18/89	1301	2948.2	8849.7	11	6	3	5	17.8	17.0	17.0	31.1	31.0	31.0	2.019	6.8	6.9	6.9	ST	
17007	11/18/89	1450	2948.7	8837.8	11	21	10	20	19.8	19.7	19.6	33.8	33.7	33.7	0.701	6.6	6.5	6.5	ST	
17008	11/18/89	1838	2947.8	8837.6	11	19	9	18	19.8	19.8	19.8	34.0	34.0	34.0	0.514	6.6	6.6	6.6	ST	
17009	11/18/89	2041	2952.5	8844.2	11	14	7	13	19.0	19.0	19.0	32.9	32.8	32.8	1.271	6.6	6.4	6.4	ST	
17010	11/18/89	2240	2948.0	8849.4	11	7	3	6	18.0	17.0	17.0	31.3	31.3	31.2	1.551	6.8	6.8	6.8	ST	
17011	11/19/89	1057	2937.3	8831.2	11	37	18	36	20.3	21.0	20.3	34.2	34.9	36.4	0.981	6.6		5.4	ST	
17012	11/19/89	1330	2930.0	8830.0	11	50	25	49	21.5	21.8	19.7	35.0	35.3	36.4	0.935	6.2	6.1	5.0	PN	
17013	11/19/89	1541	2930.7	8837.7	11	35	17	34	20.5	20.4	20.4	34.2	34.5	36.5	1.065	6.3	6.2	4.9	ST	
17014	11/19/89	1824	2930.6	8838.8	11	30	15	29	20.3	20.0	21.0	34.1	34.2	36.1	1.131	6.4	6.4	5.3	ST	
17015	11/19/89	2115	2932.8	8900.2	12	6	3	5	17.7	17.6	17.7	32.0	32.0	32.0	1.813	6.9	6.7	6.8	ST	
17016	11/20/89	1015	3000.0	8830.0	11	26	13	25	19.9	19.7	19.8	34.2	34.1	34.2	0.308	6.7	6.6	6.5	PN	
17017	11/20/89	1220	3001.3	8824.8	11	24	12	23	20.0	19.9	19.8	34.1	34.3	34.4	0.393	7.1	7.1	6.9	ST	
17018	11/20/89	1353	3000.3	8817.9	11	26	13	25	20.0	20.0	20.1	33.8	34.0	34.1	0.322	7.3	7.2	6.9	ST	
17019	11/20/89	1600	3000.0	8800.0	11	21	10	20	19.7	19.2	20.2	32.5	33.1	34.1		7.4	7.1	6.2	PN	
17020	11/20/89	1901	2947.0	8810.5	11	37	18	36	20.8	20.3	20.2	35.1	35.2	36.3	0.533	6.3	6.3	4.9	ST	

Table 2. Selected environmental parameters (cont'd)

NMFS, SEFC, MS. LABS, PASCAGOULA FACILITY																			
SEAMAP ENVIRONMENTAL DATA																			
LUMCON PELICAN																			
STA#	DATE		POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)		TEMPERATURE, °C			SALINITY, PPT			CL, MG/M <sup>3</sup>	DISSOLVED OXYGEN, PPM			GEAR
	MM/DD/YY	TIME	LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX	SUR	SUR	MID	MAX	
36513	12/13/89	1404	2841.0	9031.9	14	18	8	18	19.1	19.1	21.1	34.5	34.5	35.8	0.747	6.6	6.5	5.5	ST/PN
36514	12/13/89	1606	2830.1	9035.7	14	35	17	35	19.1	19.2	21.8	34.4	34.5	36.1	0.268	7.1	6.7	4.7	ST/PN
36515	12/13/89	1803	2830.1	9035.6	14	35	17	35	19.1	19.2	21.8	34.4	34.5	36.1	0.268	7.1	6.7	4.7	ST
36516	12/13/89	2055	2841.2	9031.9	14	20	10	20	19.3	19.3	19.4	34.9	34.9	34.9	0.630	6.6	6.5	6.0	ST
36517	12/13/89	2314	2830.6	9039.1	14	31	15	31	18.7	18.7	21.5	34.2	34.2	36.0	0.509	7.1	6.7	4.5	ST
36518	12/14/89	0109	2834.8	9045.7	14	20	9	20	18.1	18.1	19.5	33.8	33.9	34.5	0.509	13.6	7.3	5.9	ST
36519	12/14/89	0212	2832.9	9044.5	14	24	12	24	17.5	17.5	21.4	33.7	33.7	35.8	0.502	7.2	6.9	5.4	ST
36520	12/14/89	0322	2830.8	9047.4	14	31	15	31	17.1	17.5	21.3	33.5	33.6	36.0	0.731	7.3	7.3	5.4	ST
36521	12/14/89	0518	2833.0	9056.5	14	26	5	26	15.3	15.5	21.0	32.2	32.4	35.8	1.135	7.8	8.0	5.6	ST
36522	12/14/89	0745	2833.1	9057.0	14	25	12	25	15.4	17.0	21.0	32.2	33.4	35.9	1.736	8.6	7.1	4.9	ST/PN
36523	12/14/89	1018	2834.5	9045.3	14	18	9	18	17.8	17.8	19.4	33.8	33.9	34.5	0.720	7.5	7.2	6.4	ST/PN
36524	12/14/89	1055	2833.0	9044.4	14	23	10	23	18.3	18.3	21.4	34.0	34.1	35.9	0.700	7.4	7.1	5.0	ST/PN
36525	12/14/89	1302	2830.6	9047.5	14	30	14	30	17.7	17.6	21.6	33.7	33.9	36.1	0.739	7.4	7.3	5.6	ST/PN
36526	12/14/89	1513	2831.2	9039.0	14	30	14	30	18.7	18.7	21.4	36.0	34.2	34.2	0.801	11.3	12.4	10.9	ST/PN
36527	12/14/89	1841	2851.8	9044.7	14	14	7	14	17.3	17.3	17.3	32.9	32.9	32.9	0.865	7.5	7.0	7.3	ST
36528	12/14/89	2319	2834.7	9056.8	14	22	9	22	15.2	15.4	20.9	32.1	32.7	35.8	1.330	8.5	8.0	5.6	ST

Table 3. 1989 Louisiana March Survey species composition list, 24 trawl stations, using a 40-ft trawl. Species with a total weight of less than 0.0277 kg (0.05 lbs) are indicated on table as 0.0 kg.

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OF OCCURRENCE
<u>Finfishes</u>					
<i>Trachurus lathami</i>	rough scad	2522	17.0	8	33.3
<i>Anchoa mitchilli</i>	bay anchovy	1325	3.7	6	25.0
<i>Micropogonias undulatus</i>	Atlantic croaker	1318	9.9	14	58.3
<i>Syacium gunteri</i>	shoal flounder	1065	14.5	18	75.0
<i>Cynoscion nothus</i>	silver seatrout	1002	17.7	14	58.3
<i>Prionotus longispinosus</i>	bigeye searobin	977	4.3	18	75.0
<i>Anchoa hepsetus</i>	striped anchovy	870	5.0	10	41.7
<i>Diplectrum bivittatum</i>	dwarf sand perch	798	15.5	16	66.7
<i>Pristipomoides aquilonaris</i>	wenchman	720	10.6	10	41.7
<i>Trichiurus lepturus</i>	Atlantic cutlassfish	481	17.4	9	37.5
<i>Sphoeroides parvus</i>	least puffer	380	1.8	15	62.5
<i>Peprilus burti</i>	gulf butterflyfish	292	15.5	11	45.8
<i>Scomber japonicus</i>	chub mackerel	284	2.9	3	12.5
<i>Serranus atrobranchus</i>	blackear bass	273	1.7	9	37.5
<i>Bollmannia communis</i>	ragged goby	266	1.2	14	58.3
<i>Etropus crossotus</i>	fringed flounder	261	3.3	12	50.0
<i>Synodus foetens</i>	inshore lizardfish	213	4.2	12	50.0
<i>Cynoscion arenarius</i>	sand seatrout	189	10.2	15	62.5
<i>Centropristis philadelphica</i>	rock sea bass	183	3.8	9	37.5
<i>Prionotus tribulus</i>	bighead searobin	175	0.8	8	33.3
<i>Polydactylus octonemus</i>	Atlantic threadfin	118	0.5	1	4.2
<i>Arius felis</i>	hardhead catfish	117	15.6	3	12.5
<i>Citharichthys spilopterus</i>	bay whiff	108	1.2	10	41.7
<i>Symphurus plagiosa</i>	blackcheek tonguefish	102	1.4	11	45.8
<i>Saurida brasiliensis</i>	largescale lizardfish	96	0.8	6	25.0
<i>Harengula jaguana</i>	scaled sardine	85	2.0	6	25.0
<i>Stenotomus caprinus</i>	longspine porgy	58	0.3	4	16.7
<i>Lepophidium brevibarbe</i>	blackedge cusk-eel	43	1.2	7	29.2
<i>Urophycis floridana</i>	southern hake	42	1.7	9	37.5
<i>Leiostomus xanthurus</i>	spot	42	3.1	3	12.5
<i>Prionotus rubio</i>	blackwing searobin	31	0.8	8	33.3
<i>Antennarius radiosus</i>	singlespot frogfish	27	0.0	8	33.3
<i>Upeneus parvus</i>	dwarf goatfish	25	0.1	3	12.5
<i>Larimus fasciatus</i>	banded drum	22	0.1	5	20.8
<i>Etrumeus teres</i>	round herring	18	0.5	3	12.5

Table 3. SEAMAP Species Composition (cont'd.)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OF OCCURRENCE
<i>Porichthys plectrodon</i>	Atlantic midshipman	17	0.4	3	12.5
<i>Halieutichthys aculeatus</i>	pancake batfish	17	0.1	6	25.0
<i>Scorpaena calcarata</i>	smoothhead scorpionfish	14	0.1	4	16.7
<i>Menticirrhus americanus</i>	southern kingfish	11	0.9	2	8.3
<i>Anchoviella perfasciata</i>	flat anchovy	10	0.1	2	8.3
<i>Hildebrandia flava</i>	yellow conger	9	1.1	2	8.3
<i>Hoplunnis macrurus</i>	freckled pike-conger	9	0.1	3	12.5
<i>Ogcocephalus declivirostris</i>	slantbrow batfish	8	0.1	4	16.7
<i>Diplectrum formosum</i>	sand perch	7	0.1	1	4.2
<i>Brevoortia patronus</i>	gulf menhaden	6	0.4	2	8.3
<i>Engyophrys senta</i>	spiny flounder	6	0.0	2	8.3
<i>Paralichthys lethostigma</i>	southern flounder	5	0.0	1	4.2
<i>Monacanthus hispidus</i>	planehead filefish	5	0.0	4	16.7
<i>Menticirrhus littoralis</i>	gulf kingfish	5	1.3	1	4.2
<i>Prionotus stearnsi</i>	shortwing searobin	4	0.0	2	8.3
<i>Gymnothorax nigromarginatus</i>	blackedge moray	4	0.2	2	8.3
<i>Lutjanus campechanus</i>	red snapper	4	0.2	2	8.3
<i>Ogcocephalus radiatus</i>	polka-dot batfish	4	0.0	1	4.2
<i>Lutjanus synagris</i>	lane snapper	2	0.4	1	4.2
<i>Ancylopsetta quadrocellata</i>	ocellated flounder	2	0.0	1	4.2
<i>Stellifer lanceolatus</i>	star drum	2	0.0	1	4.2
<i>Peprilus alepidotus</i>	harvestfish	2	0.9	1	4.2
<i>Brotula barbata</i>	bearded brotula	1	0.0	1	4.2
<i>Ophidion welshi</i>	crested cusk-eel	1	0.0	1	4.2
<i>Archosargus probatocephalus</i>	sheepshead	1	1.0	1	4.2
<i>Astroscopus y-graecum</i>	southern stargazer	1	0.1	1	4.2
<i>Chaetodipterus faber</i>	Atlantic spadefish	1	0.0	1	4.2
<i>Chilomycterus schoepfi</i>	striped burrfish	1	0.3	1	4.2
<i>Serraniculus pumilio</i>	pygmy sea bass	1	0.0	1	4.2
<i>Priacanthus arenatus</i>	bigeye	1	0.0	1	4.2
<i>Bregmaceros atlanticus</i>	antenna codlet	1	0.0	1	4.2
<u>Crustaceans</u>					
<i>Trachypenaeus similis</i>	roughback shrimp	19345	63.4	19	79.2
<i>Sicyonia dorsalis</i>	lesser rock shrimp	2847	6.5	18	75.0
<i>Callinectes similis</i>	lesser blue crab	1402	21.2	24	100.0
<i>Squilla empusa</i>	mantis shrimp	1056	11.1	21	87.5
<i>Trachypenaeus constrictus</i>	roughneck shrimp	516	1.4	7	29.2



Table 3. SEAMAP Species Composition (cont'd.)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OF OCCURRENCE
Portunus gibbesii	iridescent swimming crab	321	2.3	19	79.2
Ovalipes floridanus	Florida lady crab	257	0.4	5	20.8
Callinectes sapidus	blue crab	175	6.9	10	41.7
Sicyonia brevirostris	brown rock shrimp	83	0.8	3	12.5
Squilla chydrea	mantis shrimp	72	0.5	7	29.2
Penaeus setiferus	white shrimp	65	2.0	18	75.0
Penaeus aztecus	brown shrimp	46	0.7	13	54.2
Portunus spinicarpus	longspine swimming crab	44	0.0	3	12.5
Solenocera vioscai	humpback shrimp	38	0.0	5	20.8
Portunus spinimanus	blotched swimming crab	35	0.8	4	16.7
Penaeus duorarum	pink shrimp	34	1.2	12	50.0
Libinia emarginata	portly spider crab	9	1.9	5	20.8
Alpheus spp.	snapping shrimps	6	0.0	1	4.2
Libinia dubia	longnose spider crab	5	0.1	1	4.2
Arenaeus cribrarius	speckled swimming crab	2	0.0	1	4.2
Sicyonia burkenroadi	spiny rock shrimp	2	0.0	1	4.2
Calappa sulcata	yellow box crab	2	0.6	2	8.3
Anasimus latus	stilt spider crab	1	0.0	1	4.2
Alpheus heterochelis	big-clawed snapping shrimp	1	0.0	1	4.2
<u>Others</u>					
Loligo pealeii	longfin squid	1025	13.5	16	66.7
Lolliguncula brevis	Atlantic brief squid	990	9.0	19	79.2
Loligo spp.	squids	153	3.5	2	8.3
Loligo pleii	arrow squid	2	0.0	1	4.2

Table 4a  
 Statistical Zone 13  
 40-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 13 during the 1989 Louisiana March trawl survey by depth stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken. No trawl samples were taken in depths less than 5 fm or greater than 30 fm.

SPECIES	0- 5 FM					6-10 FM					11-20 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Trachypenaues															
<i>similis</i>	0.0	0.00	0.0	0.00	0	443.1	85.81	0.7	0.04	2	2797.6	980.72	10.3	3.84	9
Sicyonia															
<i>dorsalis</i>	0.0	0.00	0.0	0.00	0	21.3	7.63	0.0	0.00	2	1356.2	449.69	3.2	1.11	9
Squilla															
<i>spp.</i>	0.0	0.00	0.0	0.00	0	415.3	118.03	2.2	0.61	2	307.1	118.71	3.6	1.68	9
Callinectes															
<i>similis</i>	0.0	0.00	0.0	0.00	0	124.2	53.08	0.5	0.22	2	486.7	199.35	7.9	5.11	9
Trachypenaues															
<i>constrictus</i>	0.0	0.00	0.0	0.00	0	8.5	0.35	0.0	0.00	2	93.7	93.29	0.2	0.24	9
Portunus															
<i>gibbesii</i>	0.0	0.00	0.0	0.00	0	27.0	24.80	0.1	0.12	2	58.1	30.01	0.4	0.25	9
Anchoa															
<i>mitchilli</i>	0.0	0.00	0.0	0.00	0	1292.6	1243.74	3.3	3.01	2	20.6	20.63	0.1	0.06	9
Cynoscion															
<i>nothus</i>	0.0	0.00	0.0	0.00	0	34.4	34.44	0.7	0.71	2	548.4	281.22	9.8	4.73	9
Pristipomoides															
<i>aquilonaris</i>	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	2	425.6	236.73	6.2	3.37	9
Diplectrum															
<i>bivittatum</i>	0.0	0.00	0.0	0.00	0	2.2	2.22	0.1	0.05	2	433.7	217.54	8.5	3.98	9
Syacium															
<i>gunteri</i>	0.0	0.00	0.0	0.00	0	1.4	1.36	0.0	0.00	2	258.5	76.05	2.8	0.78	9
Trichiurus															
<i>lepturus</i>	0.0	0.00	0.0	0.00	0	43.6	43.64	0.9	0.93	2	202.9	179.67	8.5	7.72	9
Bollmannia															
<i>communis</i>	0.0	0.00	0.0	0.00	0	1.4	1.36	0.0	0.00	2	134.5	48.15	0.6	0.20	9
Serranus															
<i>atrobranchus</i>	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	2	124.4	73.72	0.7	0.41	9
Squid	0.0	0.00	0.0	0.00	0	239.6	128.54	1.7	0.62	2	377.1	99.29	5.0	1.37	9

Table 4a (cont'd.)  
 Statistical Zone 13  
 40-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 13 during the 1989 Louisiana March trawl survey by depth stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken. No trawl samples were taken in depths less than 5 fm or greater than 30 fm.

SPECIES	21-30 FM					31-40 FM					>40 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Trachypenaeus															
<u>similis</u>	780.0	0.00	2.2	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Sicyonia															
<u>dorsalis</u>	1578.0	0.00	3.8	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Squilla															
<u>spp.</u>	492.0	0.00	7.1	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Callinectes															
<u>similis</u>	324.0	0.00	4.6	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Trachypenaeus															
<u>constrictus</u>	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Portunus															
<u>gibbesii</u>	72.0	0.00	0.5	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Anchoa															
<u>mitchilli</u>	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Cynoscion															
<u>nothus</u>	72.0	0.00	1.1	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Pristipomoides															
<u>aquilonaris</u>	324.0	0.00	5.7	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Diplectrum															
<u>bivittatum</u>	48.0	0.00	1.1	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Syacium															
<u>gunteri</u>	24.0	0.00	1.1	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Trichiurus															
<u>lepturus</u>	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Bollmannia															
<u>communis</u>	186.0	0.00	0.5	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Serranus															
<u>atrobranchus</u>	198.0	0.00	2.5	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Squid															
	108.0	0.00	1.6	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0

Table 4b  
 Statistical Zone 13  
 40-ft trawls

Summary of the mean total catch and environmental data (X), the standard error of the mean (SEM) and the number of samples taken (n) during the 1989 Louisiana March trawl survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m<sup>3</sup>, and oxygen in ppm. No trawl samples were taken in depths less than 5 fm or greater than 30 fm.

Environmental category	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm		
	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	0.0	0.00	0	16.0	3.86	2	92.1	22.38	9	49.1	0.00	1	0.0	0.00	0	0.0	0.00	0
Total finfish kg	0.0	0.00	0	9.8	3.79	2	56.6	18.84	9	30.0	0.00	1	0.0	0.00	0	0.0	0.00	0
Total crustacean kg	0.0	0.00	0	3.9	0.16	2	30.2	9.71	9	19.1	0.00	1	0.0	0.00	0	0.0	0.00	0
Total others kg	0.0	0.00	0	1.7	0.73	2	4.8	1.47	9	2.7	0.00	1	0.0	0.00	0	0.0	0.00	0
Surface temperature	0.0	0.00	0	21.3	0.86	3	20.4	0.42	7	19.1	2.18	2	0.0	0.00	0	0.0	0.00	0
Midwater temperature	0.0	0.00	0	18.7	0.83	3	19.8	0.47	7	20.6	0.18	2	0.0	0.00	0	0.0	0.00	0
Bottom temperature	0.0	0.00	0	20.1	0.07	3	22.0	1.67	7	20.0	0.17	2	0.0	0.00	0	0.0	0.00	0
Surface salinity	0.0	0.00	0	12.0	1.49	3	12.7	1.29	7	5.5	2.87	2	0.0	0.00	0	0.0	0.00	0
Midwater salinity	0.0	0.00	0	30.9	2.34	3	33.8	0.95	7	36.4	0.07	2	0.0	0.00	0	0.0	0.00	0
Bottom salinity	0.0	0.00	0	35.8	0.37	3	36.4	0.05	7	36.5	0.06	2	0.0	0.00	0	0.0	0.00	0
Surface chlorophyll	0.0	0.00	0	35.7	12.29	3	22.7	4.31	7	7.7	4.29	2	0.0	0.00	0	0.0	0.00	0
Midwater chlorophyll	0.0	0.00	0	6.7	2.50	3	2.6	1.06	7	0.7	0.27	2	0.0	0.00	0	0.0	0.00	0
Bottom chlorophyll	0.0	0.00	0	4.7	2.36	3	3.7	0.94	7	0.8	0.19	2	0.0	0.00	0	0.0	0.00	0
Surface oxygen	0.0	0.00	0	11.1	0.64	3	11.9	0.45	7	10.5	1.30	2	0.0	0.00	0	0.0	0.00	0
Midwater oxygen	0.0	0.00	0	5.1	1.48	3	6.0	0.24	7	4.8	0.50	2	0.0	0.00	0	0.0	0.00	0
Bottom oxygen	0.0	0.00	0	2.8	1.15	3	3.1	0.33	7	4.6	0.40	2	0.0	0.00	0	0.0	0.00	0

Table 5a  
 Statistical Zone 14  
 40-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 14 during the 1989 Louisiana March trawl survey by depth stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken. No trawl samples were taken in depths less than 5 fm or greater than 20 fm.

SPECIES	0- 5 FM					6-10 FM					11-20 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Trachypenaeus															
<i>similis</i>	0.0	0.00	0.0	0.00	0	3978.0	3978.00	12.0	11.97	4	3204.3	2024.93	12.5	7.36	6
Sicyonia															
<i>dorsalis</i>	0.0	0.00	0.0	0.00	0	28.5	18.33	0.1	0.03	4	246.5	208.45	0.4	0.36	6
Callinectes															
<i>similis</i>	0.0	0.00	0.0	0.00	0	134.3	118.67	1.6	1.39	4	81.8	50.94	2.8	1.58	6
Squilla															
<i>spp.</i>	0.0	0.00	0.0	0.00	0	27.3	25.32	0.4	0.38	4	57.4	27.43	0.8	0.43	6
Portunus															
<i>gibbesii</i>	0.0	0.00	0.0	0.00	0	16.2	16.20	0.1	0.11	4	58.6	25.19	0.6	0.27	6
Trachypenaeus															
<i>constrictus</i>	0.0	0.00	0.0	0.00	0	74.4	74.40	0.2	0.22	4	0.0	0.00	0.0	0.00	6
Trachurus															
<i>lathami</i>	0.0	0.00	0.0	0.00	0	122.9	122.86	0.9	0.88	4	1239.1	899.80	7.6	4.49	6
Anchoa															
<i>hepsetus</i>	0.0	0.00	0.0	0.00	0	552.9	552.86	2.4	2.37	4	18.2	7.71	0.4	0.17	6
Syacium															
<i>gunteri</i>	0.0	0.00	0.0	0.00	0	115.3	99.81	1.4	1.00	4	243.9	145.46	4.2	2.48	6
Prionotus															
<i>longispinosus</i>	0.0	0.00	0.0	0.00	0	265.7	247.01	0.9	0.89	4	81.1	42.26	0.9	0.51	6
Scomber															
<i>japonicus</i>	0.0	0.00	0.0	0.00	0	158.6	158.57	1.9	1.85	4	35.0	22.47	0.2	0.10	6
Sphoeroides															
<i>parvus</i>	0.0	0.00	0.0	0.00	0	18.3	15.62	0.1	0.11	4	94.2	53.20	0.4	0.26	6
Centropristis															
<i>philadelphia</i>	0.0	0.00	0.0	0.00	0	6.6	6.60	0.0	0.03	4	77.3	41.96	1.8	1.43	6
Peprilus															
<i>burti</i>	0.0	0.00	0.0	0.00	0	13.9	12.98	0.9	0.87	4	91.5	55.65	6.0	3.85	6
Squid															
	0.0	0.00	0.0	0.00	0	460.7	347.34	5.3	4.32	4	393.4	167.97	5.0	2.11	6

Table 5b  
 Statistical Zone 14  
 40-ft trawls

Summary of the mean total catch and environmental data (X), the standard error of the mean (SEM) and the number of samples taken (n)<sub>3</sub> during the 1989 Louisiana March trawl survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m<sup>3</sup>, and oxygen in ppm. No trawl samples were taken in depths less than 5 fm or greater than 20 fm.

Environmental category	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm		
	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	0.0	0.00	0	31.6	19.09	4	58.8	11.90	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total finfish kg	0.0	0.00	0	11.8	6.12	4	32.2	5.18	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total crustacean kg	0.0	0.00	0	14.7	14.73	4	20.3	8.74	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total others kg	0.0	0.00	0	5.4	4.34	4	4.8	2.13	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface temperature	0.0	0.00	0	21.7	0.11	4	21.5	0.12	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater temperature	0.0	0.00	0	21.5	0.12	4	21.3	0.18	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom temperature	0.0	0.00	0	20.7	0.07	4	20.4	0.14	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface salinity	0.0	0.00	0	25.8	0.76	4	26.6	1.12	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater salinity	0.0	0.00	0	27.6	0.33	4	32.7	2.00	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom salinity	0.0	0.00	0	35.4	0.40	4	34.6	1.78	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface chlorophyll	0.0	0.00	0	3.5	1.17	4	1.7	0.56	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater chlorophyll	0.0	0.00	0	1.2	0.26	3	0.7	0.12	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom chlorophyll	0.0	0.00	0	4.0	0.97	4	0.8	0.10	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface oxygen	0.0	0.00	0	7.5	0.13	4	8.3	0.63	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater oxygen	0.0	0.00	0	5.1	0.58	4	5.4	0.52	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom oxygen	0.0	0.00	0	1.7	0.63	4	4.2	0.12	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0

Table 6a  
 Statistical Zone 15  
 40-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 15 during the 1989 Louisiana March trawl survey by depth stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken. No trawl samples were taken in depths greater than 5 fm.

SPECIES	0- 5 FM					6-10 FM					11-20 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Trachypenaeus															
<u>similis</u>	3303.1	1904.87	6.5	2.87	2	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Trachypenaeus															
<u>constrictus</u>	340.2	4.17	0.9	0.12	2	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Ovalipes															
<u>floridanus</u>	288.5	134.54	0.5	0.22	2	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Callinectes															
<u>similis</u>	176.3	87.65	0.5	0.16	2	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Portunus															
<u>gibbesii</u>	87.4	32.61	0.4	0.15	2	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Squilla															
<u>spp.</u>	68.3	18.72	1.2	0.15	2	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Micropogonias															
<u>undulatus</u>	1602.7	971.35	5.6	2.17	2	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Anchoa															
<u>mitchilli</u>	359.0	254.02	1.2	0.93	2	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Prionotus															
<u>longispinosus</u>	250.6	28.57	0.6	0.15	2	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Arius															
<u>felis</u>	150.1	108.13	20.0	13.96	2	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Prionotus															
<u>tribulus</u>	123.5	29.54	0.4	0.03	2	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Trichiurus															
<u>lepturus</u>	78.1	60.13	0.7	0.58	2	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Cynoscion															
<u>arenarius</u>	77.5	51.46	0.1	0.14	2	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Urophycis															
<u>floridanus</u>	27.3	11.67	0.8	0.56	2	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Squid															
	112.1	73.11	0.9	0.51	2	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0

Table 6b  
 Statistical Zone 15  
 40-ft trawls

Summary of the mean total catch and environmental data (X), the standard error of the mean (SEM) and the number of samples taken (n) during the 1989 Louisiana March trawl survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m<sup>3</sup>, and oxygen in ppm. No trawl samples were taken in depths greater than 5 fm.

Environmental category	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm		
	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	43.7	9.63	2	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total finfish kg	32.1	12.98	2	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total crustacean kg	11.1	3.94	2	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total others kg	0.6	0.59	2	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface temperature	20.5	0.00	2	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater temperature	20.1	0.00	2	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom temperature	16.9	0.00	2	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface salinity	28.7	0.00	2	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater salinity	28.8	0.00	2	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom salinity	31.0	0.00	2	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface chlorophyll	0.3	0.00	2	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater chlorophyll	0.4	0.00	2	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom chlorophyll	0.7	0.00	2	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface oxygen	8.1	0.00	2	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater oxygen	7.0	0.00	2	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom oxygen	5.0	0.00	2	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0



Table 7. 1989 June-July Shrimp and Bottomfish Survey species composition list, 227 trawl stations, for those vessels that used a 40-ft trawl. Species with a total weight of less than 0.0277 kg (0.05 lbs) are indicated on table as 0.0 kg.

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER	TOTAL WEIGHT	NUMBER OF	% FREQUENCY OF OCCURRENCE
		CAUGHT	CAUGHT (KG)	TOWS WHERE CAUGHT	
<u>Finfishes</u>					
Stenotomus caprinus	longspine porgy	42189	617.7	151	66.5
Micropogonias undulatus	Atlantic croaker	39416	877.3	57	25.1
Peprilus burti	gulf butterfish	26389	615.3	126	55.5
Trachurus lathami	rough scad	20069	252.0	74	32.6
Prionotus longispinosus	bigeye searobin	19396	112.8	62	27.3
Chloroscombrus chrysurus	Atlantic bumper	6417	220.0	81	35.7
Saurida brasiliensis	largescale lizardfish	6182	49.4	71	31.3
Serranus atrobranchus	blackear bass	5304	28.7	59	26.0
Centropristis philadelphica	rock sea bass	3812	68.7	100	44.1
Trichiurus lepturus	Atlantic cutlassfish	3695	101.9	49	21.6
Leiostomus xanthurus	spot	3286	117.6	43	18.9
Polydactylus octonemus	Atlantic threadfin	3246	80.8	36	15.9
Syacium papillosum	dusky flounder	2641	101.3	59	26.0
Synodus foetens	inshore lizardfish	2420	181.0	123	54.2
Upeneus parvus	dwarf goatfish	2383	28.2	98	43.2
Anchoviella perfasciata	flat anchovy	2282	7.5	6	2.6
Anchoa mitchilli	bay anchovy	2222	6.0	26	11.5
Diplectrum bivittatum	dwarf sand perch	2201	53.0	100	44.1
Prionotus stearnsi	shortwing searobin	1834	19.0	55	24.2
Anchoa hepsetus	striped anchovy	1780	35.0	39	17.2
Cynoscion arenarius	sand seatrout	1778	96.0	47	20.7
Cynoscion nothus	silver seatrout	1723	55.1	32	14.1
Lagodon rhomboides	pinfish	1491	88.5	74	32.6
Syacium spp.	lefteye flounders	1441	29.0	42	18.5
Etropus crossotus	fringed flounder	1357	16.9	48	21.1
Cynoscion spp.	seatrouts	1258	14.5	12	5.3
Syacium gunteri	shoal flounder	1150	33.8	34	15.0
Harengula jaguana	scaled sardine	1115	24.1	43	18.9
Brevoortia patronus	gulf menhaden	1062	40.7	15	6.6
Prionotus paralatus	Mexican searobin	984	18.2	43	18.9
Etrumeus teres	round herring	902	8.6	17	7.5
Lepophidium brevibarbe	blackedge cusk-eel	861	17.1	45	19.8
Peprilus alepidotus	harvestfish	858	38.7	20	8.8
Bellator militaris	horned searobin	739	9.2	17	7.5
Arius felis	hardhead catfish	735	129.8	28	12.3

Table 7. SEAMAP Species Composition (cont'd.)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER	TOTAL WEIGHT	NUMBER OF	% FREQUENCY
		CAUGHT	CAUGHT (KG)	TOWS WHERE CAUGHT	OF OCCURRENCE
<i>Prionotus roseus</i>	bluespotted searobin	724	11.3	19	8.4
<i>Anchoviella perfasciata</i>	flat anchovy	715	4.3	11	4.8
<i>Bollmannia communis</i>	ragged goby	685	3.9	16	7.0
<i>Pristipomoides aquilonaris</i>	wenchman	659	50.2	46	20.3
<i>Prionotus rubio</i>	blackwing searobin	638	26.5	37	16.3
<i>Decapterus punctatus</i>	round scad	576	6.5	16	7.0
<i>Symphurus plagiusa</i>	blackcheek tonguefish	533	6.2	24	10.6
<i>Porichthys plectrodon</i>	Atlantic midshipman	485	6.5	52	22.9
<i>Sardinella aurita</i>	Spanish sardine	471	6.7	18	7.9
<i>Scorpaena calcarata</i>	smoothhead scorpionfish	467	6.8	23	10.1
<i>Etropus microstomus</i>	smallmouth flounder	457	3.3	13	5.7
<i>Caranx crysos</i>	blue runner	436	13.0	5	2.2
<i>Sphoeroides parvus</i>	least puffer	430	3.0	50	22.0
<i>Halieutichthys aculeatus</i>	pancake batfish	379	3.0	34	15.0
<i>Larimus fasciatus</i>	banded drum	364	8.2	11	4.8
<i>Citharichthys spilopterus</i>	bay whiff	356	4.0	25	11.0
<i>Prionotus tribulus</i>	bighead searobin	339	6.2	26	11.5
<i>Selene setapinnis</i>	Atlantic moonfish	332	17.8	43	18.9
<i>Symphurus civitatus</i>	offshore tonguefish	316	4.2	12	5.3
<i>Anchoa nasuta</i>	longnose anchovy	292	0.6	8	3.5
<i>Monacanthus hispidus</i>	planehead filefish	277	4.0	40	17.6
<i>Lutjanus campechanus</i>	red snapper	261	22.4	43	18.9
<i>Centropristis striata</i>	black sea bass	247	11.5	9	4.0
<i>Lagocephalus laevigatus</i>	smooth puffer	233	6.5	40	17.6
<i>Stellifer lanceolatus</i>	star drum	213	3.3	5	2.2
<i>Opisthonema oglinum</i>	Atlantic thread herring	189	9.3	19	8.4
<i>Trichopsetta ventralis</i>	sash flounder	182	4.7	11	4.8
<i>Synodus poeyi</i>	offshore lizardfish	175	2.0	20	8.8
<i>Monacanthus setifer</i>	pygmy filefish	174	0.6	11	4.8
<i>Scomber japonicus</i>	chub mackerel	160	8.1	9	4.0
<i>Menticirrhus americanus</i>	southern kingfish	156	13.8	11	4.8
<i>Eucinostomus gula</i>	silver jenny	153	5.5	13	5.7
<i>Scomberomorus cavalla</i>	king mackerel	142	8.2	16	7.0
<i>Trachinocephalus myops</i>	snakefish	130	7.5	12	5.3
<i>Ogcocephalus</i> spp.	batfishes	121	1.8	15	6.6
<i>Diplectrum formosum</i>	sand perch	104	10.0	21	9.3
<i>Anchoa lyolepis</i>	dusky anchovy	103	0.3	2	0.9
<i>Scomberomorus maculatus</i>	Spanish mackerel	101	9.2	14	6.2
<i>Haemulon aurolineatum</i>	tomtate	100	5.2	8	3.5

Table 7. SEAMAP Species Composition (cont'd.)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OF OCCURRENCE
<i>Lepophidium jeannae</i>	mottled cusk-eel	99	3.9	5	2.2
<i>Engraulis eurystole</i>	silver anchovy	98	0.7	2	0.9
<i>Bagre marinus</i>	gafftopsail catfish	98	0.5	4	1.8
<i>Balistes capriscus</i>	gray triggerfish	96	6.5	18	7.9
<i>Urophycis floridana</i>	southern hake	90	8.6	16	7.0
<i>Selar crumenophthalmus</i>	bigeye scad	87	5.9	14	6.2
<i>Prionotus scitulus</i>	leopard searobin	86	0.8	5	2.2
<i>Sphoeroides testudineus</i>	checkered puffer	77	0.5	4	1.8
<i>Sphyræna guachancho</i>	guaguanche	67	8.6	18	7.9
<i>Cyclopsetta chittendeni</i>	Mexican flounder	66	6.5	17	7.5
<i>Brotula barbata</i>	bearded brotula	65	11.3	11	4.8
<i>Hoplunnis macrurus</i>	freckled pike-conger	65	0.4	14	6.2
<i>Chaetodipterus faber</i>	Atlantic spadefish	53	0.6	7	3.1
<i>Orthopristis chrysoptera</i>	pigfish	53	4.7	13	5.7
<i>Lutjanus synagris</i>	lane snapper	53	7.1	9	4.0
<i>Symphurus diomedianus</i>	spottedfin tonguefish	52	1.2	3	1.3
<i>Engyophrys senta</i>	spiny flounder	50	0.3	6	2.6
<i>Peristedion gracile</i>	slender searobin	48	0.3	1	0.4
<i>Caulolatilus intermedius</i>	anchor tilefish	43	7.0	8	3.5
<i>Prionotus ophryas</i>	bandtail searobin	41	1.4	7	3.1
<i>Centropristis ocyura</i>	bank sea bass	40	1.0	3	1.3
<i>Gymnothorax nigromarginatus</i>	blackedge moray	37	5.4	10	4.4
<i>Ogcocephalus nasutus</i>	shortnose batfish	34	0.6	8	3.5
<i>Prionotus alatus</i>	spiny searobin	33	0.3	1	0.4
<i>Gymnarchus texae</i>	fringed sole	33	0.3	10	4.4
<i>Bellator</i> spp.	searobins	32	0.3	1	0.4
<i>Equetus umbrosus</i>	cubbyu	30	1.9	5	2.2
<i>Priacanthus arenatus</i>	bigeye	29	2.5	11	4.8
<i>Serranus notospilus</i>	saddle bass	29	0.1	1	0.4
<i>Rhomboplites aurorubens</i>	vermillion snapper	28	1.1	4	1.8
Bothidae	lefteye flounders	27	1.3	2	0.9
<i>Etropus</i> spp.	lefteye flounders	27	0.2	2	0.9
<i>Citharichthys macrops</i>	spotted whiff	25	0.3	11	4.8
<i>Ophidion welshi</i>	crested cusk-eel	25	0.4	10	4.4
<i>Ancylopsetta quadrocellata</i>	ocellated flounder	23	1.5	12	5.3
<i>Mullus auratus</i>	red goatfish	22	1.4	6	2.6
<i>Hoplunnis</i> spp.	pike-congers	22	0.6	6	2.6
<i>Serranus phoebe</i>	tattler	20	0.1	4	1.8
<i>Ancylopsetta dilecta</i>	three-eye flounder	20	2.0	6	2.6

Table 7. SEAMAP Species Composition (cont'd.)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OF OCCURRENCE
<i>Selene vomer</i>	lookdown	19	0.0	3	1.3
<i>Sardinella</i> spp.	sardine	19	0.1	1	0.4
<i>Rhizoprionodon terraenovae</i>	Atlantic sharpnose shark	19	20.2	10	4.4
<i>Kathetostoma albigutta</i>	lancer stargazer	18	0.2	5	2.2
<i>Lactophrys quadricornis</i>	scrawled cowfish	18	3.0	6	2.6
<i>Arionma bondi</i>	silver-rag	17	0.3	3	1.3
<i>Ophidion holbrooki</i>	bank cusk-eel	17	1.5	4	1.8
<i>Seriola fasciata</i>	lesser amberjack	17	2.3	2	0.9
<i>Hemicarax amblyrhynchus</i>	bluntnose jack	16	1.1	3	1.3
<i>Paralichthys lethostigma</i>	southern flounder	16	5.1	13	5.7
<i>Gymnothorax saxicola</i>	honeycomb moray	16	1.5	2	0.9
<i>Paralichthys albigutta</i>	gulf flounder	15	4.7	3	1.3
<i>Sphoeroides dorsalis</i>	marbled puffer	15	0.3	1	0.4
<i>Prionotus martis</i>	barred searobin	14	0.3	3	1.3
<i>Serranus subligarius</i>	belted sandfish	14	0.2	1	0.4
<i>Raja eglanteria</i>	clearnose skate	13	6.7	5	2.2
<i>Bairdiella chrysoura</i>	silver perch	12	0.3	3	1.3
<i>Lepophidium</i> spp.	cusk-eels	11	0.6	3	1.3
<i>Astroscopus y-graecum</i>	southern stargazer	11	2.7	2	0.9
<i>Equetus</i> spp.	drums	11	0.4	2	0.9
<i>Calamus calamus</i>	saucereye porgy	11	1.5	2	0.9
<i>Aluterus schoepfi</i>	orange filefish	11	7.5	5	2.2
<i>Sardinella brasiliensis</i>	orangespot sardine	11	0.2	1	0.4
<i>Hildebrandia flava</i>	yellow conger	10	5.6	3	1.3
<i>Steindachneria argentea</i>	luminous hake	10	0.2	1	0.4
<i>Bregmaceros atlanticus</i>	antenna codlet	9	0.0	2	0.9
<i>Ogcocephalus parvus</i>	roughback batfish	8	0.1	2	0.9
<i>Monacanthus ciliatus</i>	fringed filefish	8	0.0	1	0.4
<i>Cyclopsetta fimbriata</i>	spotfin flounder	8	1.5	1	0.4
<i>Gobionellus hastatus</i>	sharptail goby	8	0.0	1	0.4
<i>Neomerinthe hemingwayi</i>	spinycheek scorpionfish	8	4.2	3	1.3
<i>Equetus acuminatus</i>	high-hat	8	0.6	3	1.3
<i>Equetus lanceolatus</i>	jackknife fish	7	0.2	1	0.4
<i>Caranx hippos</i>	crevalle jack	7	1.7	1	0.4
<i>Peristedion</i> spp.	searobins	7	0.2	1	0.4
<i>Echiophis</i> spp.	snake eels	7	3.2	1	0.4
<i>Urophycis cirrata</i>	gulf hake	6	0.1	3	1.3
<i>Fistularia tabacaria</i>	bluespotted cornetfish	6	0.1	2	0.9
<i>Antennarius striatus</i>	striated frogfish	6	0.2	2	0.9

Table 7. SEAMAP Species Composition (cont'd.)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OF OCCURRENCE
Caulolatilus microps	blueline tilefish	6	0.6	3	1.3
Rypticus maculatus	whitespotted soapfish	5	0.2	2	0.9
Trachinotus carolinus	Florida pompano	5	0.9	2	0.9
Hippocampus spp.	seahorses	5	0.0	1	0.4
Myrophis punctatus	speckled worm eel	5	1.9	2	0.9
Ogcocephalus corniger	longnose batfish	5	0.0	2	0.9
Ogcocephalus radiatus	polka-dot batfish	4	0.6	2	0.9
Serranidae	sea basses	4	0.2	1	0.4
Mustelus canis	smooth dogfish	4	9.6	3	1.3
Dorosoma petenense	threadfin shad	4	0.5	2	0.9
Carcharhinus acronotus	blacknose shark	4	3.1	1	0.4
Lutjanus spp.	snappers	4	0.5	1	0.4
Decapterus macarellus	mackerel scad	4	0.0	1	0.4
Lonchopisthus micrognathus	swordtail jawfish	4	0.0	1	0.4
Antennarius radiosus	singlespot frogfish	4	0.0	3	1.3
Trinectes maculatus	hogchoker	3	0.1	3	1.3
Prionotus spp.	searobins	3	0.0	1	0.4
Scorpaenidae	scorpionfishes	3	0.0	1	0.4
Decodon puellaris	red hogfish	3	0.1	1	0.4
Caranx spp.	jacks	3	0.2	1	0.4
Raja texana	roundel skate	3	2.1	3	1.3
Synodus intermedius	sand diver	3	0.2	2	0.9
Sphryaena barracuda	great barracuda	3	0.4	1	0.4
Bathyanthias mexicanus	yellowtail bass	3	0.0	1	0.4
Ophichthus gomesi	shrimp eel	3	0.0	1	0.4
Cypselurus exsiliens	bandwing flyingfish	3	0.0	1	0.4
Fistularia petimba	red cornetfish	2	0.0	1	0.4
Synodus spp.	lizardfishes	2	0.0	1	0.4
Dasyatis americana	southern stingray	2	3.2	2	0.9
Rajidae	skates	2	2.4	1	0.4
Sphyrna lewini	scalloped hammerhead	2	2.0	2	0.9
Alosa chrysochloris	skipjack herring	2	0.1	1	0.4
Ophidion grayi	blotched cusk-eel	2	0.4	2	0.9
Odontoscion dentex	reef croaker	2	0.4	2	0.9
Menticirrhus littoralis	gulf kingfish	1	0.3	1	0.4
Hemipteronotus novacula	pearly razorfish	1	0.0	1	0.4
Echeneis naucrates	sharksucker	1	0.1	1	0.4
Pomatomus saltatrix	bluefish	1	0.3	1	0.4
Rypticus bistrispinus	freckled soapfish	1	0.0	1	0.4

Table 7. SEAMAP Species Composition (cont'd.)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OF OCCURRENCE
<i>Serraniculus pumilio</i>	pygmy sea bass	1	0.0	1	0.4
<i>Antennarius ocellatus</i>	ocellated frogfish	1	0.0	1	0.4
<i>Chilomycterus schoepfi</i>	striped burrfish	1	0.4	1	0.4
<i>Narcine brasiliensis</i>	lesser electric ray	1	0.1	1	0.4
<i>Hippocampus erectus</i>	lined seahorse	1	0.0	1	0.4
Exocoetidae	flyingfishes	1	0.0	1	0.4
Ophichthidae	snake eels	1	0.0	1	0.4
<i>Hoplunnis tenuis</i>	spotted pike conger	1	0.0	1	0.4
<i>Squatina dumeril</i>	Atlantic angel shark	1	2.7	1	0.4
<u>Crustaceans</u>					
<i>Trachypenaeus similis</i>	roughback shrimp	32152	140.1	54	23.8
<i>Penaeus aztecus</i>	brown shrimp	26071	367.2	158	69.6
<i>Callinectes similis</i>	lesser blue crab	17858	187.7	119	52.4
<i>Trachypenaeus</i> spp.	roughneck shrimps	6732	33.8	16	7.0
<i>Sicyonia brevirostris</i>	brown rock shrimp	5456	54.7	62	27.3
<i>Squilla empusa</i>	mantis shrimp	5328	59.8	66	29.1
<i>Sicyonia dorsalis</i>	lesser rock shrimp	3546	8.8	53	23.3
<i>Portunus spinicarpus</i>	longspine swimming crab	2645	16.9	35	15.4
<i>Trachypenaeus constrictus</i>	roughneck shrimp	2122	3.4	5	2.2
<i>Portunus gibbesii</i>	irridescent swimming crab	1902	7.7	49	21.6
<i>Penaeus duorarum</i>	pink shrimp	1877	30.6	38	16.7
<i>Xiphopenaeus kroyeri</i>	seabob	472	1.3	2	0.9
<i>Solenocera</i> spp.	humpback shrimps	470	1.6	13	5.7
<i>Penaeus setiferus</i>	white shrimp	369	16.0	45	19.8
<i>Solenocera vioscai</i>	humpback shrimp	322	0.8	7	3.1
<i>Callinectes sapidus</i>	blue crab	316	17.6	26	11.5
<i>Squilla</i> spp.	mantis shrimps	179	2.0	14	6.2
<i>Portunus spinimanus</i>	blotched swimming crab	143	3.5	26	11.5
<i>Anasimus latus</i>	stilt spider crab	95	0.3	8	3.5
<i>Squilla chydarea</i>	mantis shrimp	95	2.0	9	4.0
<i>Parapenaeus</i> spp.	penaeid shrimps	86	0.4	3	1.3
<i>Sicyonia burkenroadi</i>	spiny rock shrimp	67	0.0	4	1.8
<i>Calappa sulcata</i>	yellow box crab	59	14.5	21	9.3
<i>Arenaeus cribrarius</i>	speckled swimming crab	50	1.1	5	2.2
Paguridae	right-handed hermit crabs	38	0.1	1	0.4
<i>Hepatus epheliticus</i>	calico crab	22	2.5	7	3.1
<i>Parthenope granulata</i>	bladetooth elbow crab	21	0.0	5	2.2

Table 7. SEAMAP Species Composition (cont'd.)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OF OCCURRENCE
<i>Stenorhynchus seticornis</i>	yellowline arrow crab	15	0.0	7	3.1
<i>Scyllarus chacei</i>	chace slipper lobster	15	0.1	2	0.9
<i>Solenocera atlantidis</i>	dwarf humpback shrimp	15	0.0	1	0.4
<i>Squilla lijdingi</i>	mantis shrimp	14	0.1	2	0.9
<i>Ovalipes stephensoni</i>	coarsehand lady crab	10	0.4	3	1.3
Xanthidae	mud crabs	9	0.0	3	1.3
<i>Plesionika edwardsii</i>	soldier striped shrimp	9	0.0	1	0.4
Caridea	caridean shrimps	7	0.0	1	0.4
<i>Calappa flammea</i>	flame box crab	7	2.7	4	1.8
<i>Porcellana sigsbeiana</i>	striped porcelain crab	7	0.0	2	0.9
<i>Raninoides louisianensis</i>	gulf frog crab	6	0.0	3	1.3
<i>Libinia emarginata</i>	portly spider crab	6	2.4	4	1.8
<i>Scyllarus</i> spp.	slipper lobsters	6	0.0	3	1.3
<i>Ovalipes floridanus</i>	Florida lady crab	4	0.0	1	0.4
<i>Xiphopenaeus</i> spp.	seabobs	3	0.0	1	0.4
<i>Sicyonia typica</i>	kinglet rock shrimp	2	0.0	1	0.4
<i>Leiolambrus nitidus</i>	white elbow crab	2	0.0	1	0.4
<i>Parthenope</i> spp.	elbow crabs	1	0.0	1	0.4
<i>Speocarcinus lobatus</i>	gulf squareback crab	1	0.0	1	0.4
<i>Scyllarides aequinoctialis</i>	Spanish slipper lobster	1	0.0	1	0.4
<i>Libinia dubia</i>	longnose spider crab	1	0.1	1	0.4
<i>Libinia</i> spp.	spider crabs	1	0.0	1	0.4
<i>Persephona mediterranea</i>	mottled purse crab	1	0.0	1	0.4
<i>Sicyonia stimpsoni</i>	eyespot rock shrimp	1	0.0	1	0.4
<i>Myopsis quinquespinosa</i>	five-spined purse crab	1	0.0	1	0.4
<i>Panopeus herbstii</i>	Atlantic mud crab	1	0.0	1	0.4
<u>Others</u>					
<i>Loligo pealeii</i>	longfin squid	17891	290.4	141	62.1
<i>Loligo pleii</i>	arrow squid	2170	37.0	30	13.2
<i>Lolliguncula brevis</i>	Atlantic brief squid	2143	26.0	58	25.6
Myopsida	squids	1258	11.6	11	4.8
<i>Renilla mulleri</i>	short-stemmed sea pansy	1030	3.6	2	0.9
<i>Amusium papyraceum</i>	paper scallop	436	6.9	17	7.5
Ophiuroidea	brittlestars	336	1.8	2	0.9
<i>Argopecten gibbus</i>	calico scallop	159	0.5	5	2.2
Asteroidea	starfishes	123	0.5	18	7.9
<i>Aurelia</i> spp.	jellyfishes	107	1.7	14	6.2

Table 7. SEAMAP Species Composition (cont'd.)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER	TOTAL WEIGHT	NUMBER OF	% FREQUENCY OF OCCURRENCE
		CAUGHT	CAUGHT (KG)	TOWS WHERE CAUGHT	
Pecten spp.	scallops	90	0.2	1	0.4
Luidia spp.	sea stars	38	1.0	1	0.4
Chrysaora quinquecirrha	sea nettle	26	1.0	5	2.2
Bryozoa	moss animals	12	0.5	1	0.4
Clypeaster spp.	cake urchins	9	1.0	3	1.3
Coelenterata	coelenterates	9	1.0	1	0.4
Scutellidae	sand dollars	6	0.7	3	1.3
Scyphozoa	jellyfishes	5	0.0	1	0.4
Ctenophora	comb jellies	4	0.0	1	0.4
Mellita quinquiesperforata	five-slotted sand dollar	4	0.2	1	0.4
Semaeostomae	jellyfishes	4	0.9	2	0.9
Barnea truncata	Atlantic mud-piddock	4	0.0	1	0.4
Tellina spp.	tellin shells	3	0.0	1	0.4
Tunicata	tunicates	3	0.0	1	0.4
Aplysia spp.	sea hares	3	0.0	2	0.9
Nudibranchia	sea slugs	2	0.0	1	0.4
Fasciolaria tulipa	true tulip	2	0.7	1	0.4
Sconsia striata	royal bonnet	2	0.0	1	0.4
Octopus vulgaris	common Atlantic octopus	2	0.5	1	0.4
Octopus spp.	octopuses	2	0.5	2	0.9
Sargassum spp.	sargassum	2	0.4	2	0.9
Stomolophus meleagris	many-mouthed sea jelly	2	0.2	1	0.4
Actiniaria spp.	sea anemones	1	0.0	1	0.4
Anthozoa	anthozoans	1	0.0	1	0.4
Sinum perspectivum	white baby-ear	1	0.0	1	0.4



Table 8. 1989 June-July SEAMAP Shrimp and Bottomfish Survey species composition list, 80 trawl stations, for those vessels that used a 20-ft trawl. Species with a total weight of less than 0.0277 kg (0.05 lbs) are indicated on table as 0.0 kg.

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OF OCCURRENCE
<u>Finfishes</u>					
<i>Micropogonias undulatus</i>	Atlantic croaker	5548	105.7	64	80.0
<i>Leiostomus xanthurus</i>	spot	1585	28.6	49	61.3
<i>Polydactylus octonemus</i>	Atlantic threadfin	1282	21.1	52	65.0
<i>Cynoscion arenarius</i>	sand seatrout	593	9.9	49	61.3
<i>Cynoscion nothus</i>	silver seatrout	479	11.5	44	55.0
<i>Syacium gunteri</i>	shoal flounder	278	3.0	28	35.0
<i>Lagodon rhomboides</i>	pinfish	160	3.1	20	25.0
<i>Trichiurus lepturus</i>	Atlantic cutlassfish	134	2.8	29	36.2
<i>Symphurus plagiusa</i>	blackcheek tonguefish	129	2.2	21	26.3
<i>Prionotus longispinosus</i>	bigeye searobin	116	0.5	15	18.8
<i>Prionotus rubio</i>	blackwing searobin	97	0.5	13	16.3
<i>Larimus fasciatus</i>	banded drum	91	1.9	25	31.3
<i>Stellifer lanceolatus</i>	star drum	82	1.0	18	22.5
<i>Etropus crossotus</i>	fringed flounder	59	0.4	15	18.8
<i>Lagocephalus laevigatus</i>	smooth puffer	57	0.5	19	23.7
<i>Peprilus burti</i>	gulf butterflyfish	46	0.5	22	27.5
<i>Orthopristis chrysoptera</i>	pigfish	38	0.4	11	13.8
<i>Monacanthus hispidus</i>	planehead filefish	32	0.1	18	22.5
<i>Bairdiella chrysoura</i>	silver perch	31	1.2	12	15.0
<i>Anchoa mitchilli</i>	bay anchovy	30	0.0	14	17.5
<i>Menticirrhus americanus</i>	southern kingfish	27	1.4	14	17.5
<i>Stenotomus caprinus</i>	longspine porgy	26	0.0	10	12.5
<i>Peprilus alepidotus</i>	harvestfish	23	0.1	12	15.0
<i>Brevoortia patronus</i>	gulf menhaden	23	1.1	12	15.0
<i>Chloroscombrus chrysurus</i>	Atlantic bumper	18	0.3	8	10.0
<i>Prionotus tribulus</i>	bighead searobin	17	0.1	12	15.0
<i>Selene setapinnis</i>	Atlantic moonfish	12	0.0	8	10.0
<i>Anchoa hepsetus</i>	striped anchovy	12	0.1	5	6.3
<i>Upeneus parvus</i>	dwarf goatfish	10	0.0	7	8.8
<i>Citharichthys spilopterus</i>	bay whiff	9	0.0	5	6.3
<i>Arius felis</i>	hardhead catfish	8	0.7	5	6.3
<i>Anchoa nasuta</i>	longnose anchovy	7	0.0	1	1.3
<i>Selene vomer</i>	lookdown	7	0.0	6	7.5
<i>Ancylopsetta quadrocellata</i>	ocellated flounder	5	0.1	4	5.0
<i>Porichthys plectrodon</i>	Atlantic midshipman	5	0.2	3	3.7

Table 8. SEAMAP Species Composition (cont'd.)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OF OCCURRENCE
<i>Centropristis philadelphica</i>	rock sea bass	4	0.1	3	3.7
<i>Lutjanus campechanus</i>	red snapper	4	0.0	4	5.0
<i>Synodus foetens</i>	inshore lizardfish	4	0.1	2	2.5
<i>Hippocampus erectus</i>	lined seahorse	3	0.0	3	3.7
<i>Urophycis floridana</i>	southern hake	3	0.1	2	2.5
<i>Harengula jaguana</i>	scaled sardine	3	0.0	2	2.5
<i>Scomberomorus maculatus</i>	Spanish mackerel	3	0.0	3	3.7
<i>Trinectes maculatus</i>	hogchoker	3	0.0	3	3.7
<i>Lepophidium brevibarbe</i>	blackedge cusk-eel	2	0.0	1	1.3
<i>Menticirrhus littoralis</i>	gulf kingfish	2	0.1	1	1.3
<i>Diplectrum bivittatum</i>	dwarf sand perch	2	0.0	1	1.3
<i>Synodus poeyi</i>	offshore lizardfish	2	0.0	2	2.5
<i>Trachinocephalus myops</i>	snakefish	1	0.0	1	1.3
<i>Dasyatis sabina</i>	Atlantic stringray	1	0.2	1	1.3
<i>Trachurus lathami</i>	rough scad	1	0.0	1	1.3
<i>Conodon nobilis</i>	barred grunt	1	0.0	1	1.3
<i>Pristipomoides aquilonaris</i>	wenchman	1	0.0	1	1.3
<i>Scomberomorus cavalla</i>	king mackerel	1	0.0	1	1.3
<i>Chaetodipterus faber</i>	Atlantic spadefish	1	0.0	1	1.3
Bothidae	lefteye flounders	1	0.0	1	1.3
<i>Achirus lineatus</i>	lined sole	1	0.0	1	1.3
<i>Balistes capriscus</i>	gray triggerfish	1	0.0	1	1.3
<i>Chilomycterus schoepfi</i>	striped burrfish	1	0.0	1	1.3
<i>Ogcocephalus radiatus</i>	polka-dot batfish	1	0.1	1	1.3
<i>Aluterus scriptus</i>	scrawled filefish	1	0.0	1	1.3
<i>Sphoeroides parvus</i>	least puffer	1	0.0	1	1.3
<u>Crustaceans</u>					
<i>Penaeus aztecus</i>	brown shrimp	6776	51.2	68	85.0
<i>Callinectes similis</i>	lesser blue crab	1864	9.2	63	78.8
<i>Trachypenaeus similis</i>	roughback shrimp	1089	2.9	19	23.7
<i>Squilla empusa</i>	mantis shrimp	297	3.0	37	46.3
<i>Trachypenaeus</i> spp.	roughneck shrimps	247	1.0	15	18.8
<i>Penaeus duorarum</i>	pink shrimp	89	0.9	11	13.8
<i>Arenaeus cribrarius</i>	speckled swimming crab	75	1.3	19	23.7
<i>Sicyonia dorsalis</i>	lesser rock shrimp	73	0.1	21	26.3
<i>Callinectes sapidus</i>	blue crab	57	6.1	22	27.5
<i>Penaeus setiferus</i>	white shrimp	55	2.3	31	38.8

Table 8. SEAMAP Species Composition (cont'd.)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OF OCCURRENCE
<i>Portunus gibbesii</i>	iridescent swimming crab	31	0.2	19	23.7
<i>Persephona crinita</i>	pink purse crab	30	0.0	11	13.8
<i>Portunus sayi</i>	sargassum swimming crab	27	0.1	18	22.5
<i>Portunus spinimanus</i>	blotched swimming crab	23	0.3	9	11.3
<i>Persephona mediterranea</i>	mottled purse crab	17	0.0	10	12.5
<i>Pagurus pollicaris</i>	flatclaw hermit crab	16	0.1	13	16.3
<i>Ovalipes stephensoni</i>	coarsehand lady crab	15	0.1	13	16.3
<i>Hepatus epheliticus</i>	calico crab	9	0.2	7	8.8
<i>Sicyonia brevirostris</i>	brown rock shrimp	7	0.0	4	5.0
<i>Portunus spinicarpus</i>	longspine swimming crab	6	0.0	2	2.5
<i>Calappa sulcata</i>	yellow box crab	6	0.3	5	6.3
<i>Dromidia antillensis</i>	hairy sponge crab	6	0.0	3	3.7
<i>Squilla neglecta</i>	mantis shrimp	5	0.0	2	2.5
<i>Xiphopenaeus kroyeri</i>	seabob	4	0.0	3	3.7
<i>Trachypenaeus constrictus</i>	roughneck shrimp	4	0.0	2	2.5
<i>Libinia dubia</i>	longnose spider crab	4	0.0	4	5.0
<i>Libinia emarginata</i>	portly spider crab	2	0.0	2	2.5
<i>Speocarcinus lobatus</i>	gulf squareback crab	2	0.0	2	2.5
Portunidae	swimming crabs	1	0.0	1	1.3
<i>Podochela sidneyi</i>	shortfinger neck crab	1	0.0	1	1.3
<i>Alpheus heterochelis</i>	big-clawed snapping shrimp	1	0.0	1	1.3
<i>Alpheus</i> spp.	snapping shrimps	1	0.0	1	1.3
<i>Petrochirus diogenes</i>	giant hermit crab	1	0.0	1	1.3
<i>Clibanarius vittatus</i>	thinstripe hermit crab	1	0.0	1	1.3
<i>Sicyonia typica</i>	kinglet rock shrimp	1	0.0	1	1.3
<u>Others</u>					
<i>Lolliguncula brevis</i>	Atlantic brief squid	726	8.6	62	77.5
<i>Renilla mulleri</i>	short-stemmed sea pansy	335	1.4	21	26.3
<i>Dactylometra quinquecirrha</i>	compass jellyfish	222	2.5	25	31.3
<i>Chiropsalmus quadrumanus</i>	jellyfish	81	0.7	6	7.5
Actinidae	sea anemones	35	0.0	13	16.3
<i>Luidia clathrata</i>	sea star	22	0.5	12	15.0
<i>Loligo pealeii</i>	longfin squid	22	0.4	10	12.5
<i>Thais haemastoma</i>	rocksnail	13	0.2	6	7.5
<i>Busycon perversum</i>	perverse whelk	9	0.5	8	10.0
Asteroidea	starfishes	9	0.1	4	5.0
<i>Murex fulvescens</i>	giant eastern murex	7	1.4	5	6.3

Table 8. SEAMAP Species Composition (cont'd.)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER	TOTAL WEIGHT	NUMBER OF	% FREQUENCY
		CAUGHT	CAUGHT (KG)	TOWS WHERE CAUGHT	OF OCCURRENCE
Ophiolepis elegans	brittle star	5	0.0	2	2.5
Cantharus cancellarius	cancellate cantharus	4	0.0	3	3.7
Chione clenchi	Clench venus	3	0.0	1	1.3
Aplysia willcoxi	seahare	3	0.3	1	1.3
Astropecten antillensis	beaded sea star	3	0.0	3	3.7
Astropecten duplicatus	spiny beaded sea star	3	0.0	2	2.5
Holothuroidea	sea cucumbers	2	0.0	2	2.5
Aurelia aurita	moon jellyfish	2	0.1	1	1.3
Neverita duplicata	shark eye	2	0.0	2	2.5
Architectonica nobilis	common sundial	1	0.0	1	1.3
Octopus vulgaris	common Atlantic octopus	1	0.0	1	1.3

Table 9. 1989 June-July SEAMAP Shrimp and Bottomfish Survey species composition list, 29 trawl stations, for those vessels that used a 16-ft trawl. Species with a total weight of less than 0.0277 kg (0.05 lbs) are indicated on table as 0.0 kg.

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OF OCCURRENCE
<u>Finfishes</u>					
Anchoa mitchilli	bay anchovy	6019	4.7	15	51.7
Chloroscombrus chrysurus	Atlantic bumper	1059	2.7	9	31.0
Brevoortia patronus	gulf menhaden	277	0.7	2	6.9
Arius felis	hardhead catfish	248	23.0	15	51.7
Cynoscion arenarius	sand seatrout	247	1.1	7	24.1
Micropogonias undulatus	Atlantic croaker	229	6.0	11	37.9
Leiostomus xanthurus	spot	169	7.4	8	27.6
Anchoa hepsetus	striped anchovy	133	0.2	13	44.8
Anchoa nasuta	longnose anchovy	99	0.1	2	6.9
Stellifer lanceolatus	star drum	71	0.2	4	13.8
Peprilus alepidotus	harvestfish	71	0.4	8	27.6
Bagre marinus	gafftopsail catfish	62	0.5	3	10.3
Selene setapinnis	Atlantic moonfish	43	0.1	5	17.2
Polydactylus octonemus	Atlantic threadfin	26	0.5	5	17.2
Peprilus burti	gulf butterfish	26	0.2	6	20.7
Chaetodipterus faber	Atlantic spadefish	22	0.1	6	20.7
Prionotus tribulus	bighead searobin	22	0.4	4	13.8
Sphoeroides parvus	least puffer	17	0.0	5	17.2
Symphurus plagiusa	blackcheek tonguefish	16	0.4	7	24.1
Prionotus scitulus	leopard searobin	15	0.3	5	17.2
Bairdiella chrysoura	silver perch	10	0.5	2	6.9
Etropus crossotus	fringed flounder	9	0.0	6	20.7
Orthopristis chrysoptera	pigfish	7	0.3	3	10.3
Prionotus longispinosus	bigeye searobin	7	0.1	4	13.8
Trichiurus lepturus	Atlantic cutlassfish	6	0.2	2	6.9
Menticirrhus americanus	southern kingfish	6	0.2	3	10.3
Citharichthys macrops	spotted whiff	6	0.1	2	6.9
Syacium gunteri	shoal flounder	4	0.0	2	6.9
Stenotomus caprinus	longspine porgy	4	0.0	3	10.3
Diplectrum bivittatum	dwarf sand perch	4	0.1	2	6.9
Synodus foetens	inshore lizardfish	4	0.1	3	10.3
Harengula jaguana	scaled sardine	3	0.0	1	3.4
Cynoscion nothus	silver seatrout	3	0.1	2	6.9
Scomberomorus maculatus	Spanish mackerel	3	0.0	2	6.9
Ophidion welshi	crested cusk-eel	3	0.1	2	6.9

Table 9. SEAMAP Species Composition (cont'd.)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OF OCCURRENCE
<i>Citharichthys spilopterus</i>	bay whiff	3	0.0	3	10.3
<i>Trinectes maculatus</i>	hogchoker	3	0.0	2	6.9
<i>Monacanthus hispidus</i>	planehead filefish	2	0.0	2	6.9
<i>Opsanus beta</i>	gulf toadfish	2	0.1	1	3.4
<i>Archosargus probatocephalus</i>	sheepshead	2	1.0	1	3.4
<i>Dorosoma cepedianum</i>	gizzard shad	2	0.0	1	3.4
<i>Dorosoma petenense</i>	threadfin shad	1	0.0	1	3.4
<i>Larimus fasciatus</i>	banded drum	1	0.0	1	3.4
<i>Ophidion holbrooki</i>	bank cusk-eel	1	0.0	1	3.4
<i>Abudefduf saxatilis</i>	sergeant major	1	0.0	1	3.4
<i>Trachinotus carolinus</i>	Florida pompano	1	0.0	1	3.4
<i>Eucinostomus gula</i>	silver jenny	1	0.1	1	3.4
<i>Lutjanus griseus</i>	grey snapper	1	0.0	1	3.4
<i>Diplectrum formosum</i>	sand perch	1	0.0	1	3.4
<i>Sphyræna guachancho</i>	guaguanche	1	0.0	1	3.4
<i>Selene vomer</i>	lookdown	1	0.0	1	3.4
<i>Caranx hippos</i>	crevalle jack	1	0.0	1	3.4
<i>Caranx bartholomæi</i>	yellowjack	1	0.0	1	3.4
<i>Achirus lineatus</i>	lined sole	1	0.0	1	3.4
<i>Etropus microstomus</i>	smallmouth flounder	1	0.0	1	3.4
<u>Crustaceans</u>					
<i>Penaeus aztecus</i>	brown shrimp	179	1.0	14	48.3
<i>Penaeus duorarum</i>	pink shrimp	88	0.9	4	13.8
<i>Callinectes sapidus</i>	blue crab	52	5.2	13	44.8
<i>Callinectes similis</i>	lesser blue crab	40	0.5	9	31.0
<i>Palaemon</i> spp.	grass shrimps	34	0.0	1	3.4
<i>Penaeus setiferus</i>	white shrimp	30	0.1	4	13.8
<i>Hepatus epheliticus</i>	calico crab	5	0.1	2	6.9
<i>Xiphopenaeus kroyeri</i>	seabob	4	0.0	2	6.9
<i>Portunus spinicarpus</i>	longspine swimming crab	4	0.0	2	6.9
<i>Portunus gibbesii</i>	irridescent swimming crab	3	0.0	3	10.3
<i>Ovalipes stephensoni</i>	coarsehand lady crab	3	0.0	3	10.3
<i>Libinia dubia</i>	longnose spider crab	3	0.0	1	3.4
<i>Macrobrachium ohione</i>	Ohio shrimp	2	0.0	1	3.4
<i>Portunus sayi</i>	sargassum swimming crab	2	0.0	2	6.9
<i>Calappa flammea</i>	flame box crab	1	0.1	1	3.4
<i>Metoporphaphis calcarata</i>	false arrow crab	1	0.0	1	3.4

Table 9. SEAMAP Species Composition (cont'd.)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OF OCCURRENCE
<i>Sicyonia dorsalis</i>	lesser rock shrimp	1	0.0	1	3.4
<i>Libinia</i> spp.	spider crabs	1	0.0	1	3.4
<i>Trachypenaeus similis</i>	roughback shrimp	1	0.0	1	3.4
<i>Squilla empusa</i>	mantis shrimp	1	0.1	1	3.4
<u>Others</u>					
<i>Mellita quinquiesperforata</i>	five-slotted sand dollar	533	1.9	5	17.2
<i>Lolliguncula brevis</i>	Atlantic brief squid	81	0.9	6	20.7
<i>Chrysaora quinquecirrha</i>	sea nettle	36	2.0	3	10.3
<i>Luidia clathrata</i>	sea star	7	0.2	3	10.3
Ascidiacea	sea squirts	3	0.2	2	6.9
<i>Thais haemastoma</i>	rocksnail	3	0.1	1	3.4
<i>Dinocardium robustum</i>	Atlantic giant-cockle	3	1.3	2	6.9
<i>Anadara ovalis</i>	blood ark	2	0.0	1	3.4
<i>Loligo pealeii</i>	longfin squid	1	0.0	1	3.4

Table 10a  
 Statistical Zone 10  
 40-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 10 during the 1989 June-July Shrimp and Bottomfish Survey by depth stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken. No trawl samples were taken in depths greater than 40 fm.

SPECIES	0- 5 FM					6-10 FM					11-20 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Portunus															
<i>spincarpus</i>	0.0	0.00	0.0	0.00	1	3.2	3.18	0.0	0.02	5	68.0	47.45	0.5	0.33	12
Sicyonia															
<i>brevirostris</i>	0.0	0.00	0.0	0.00	1	48.8	32.08	0.4	0.25	5	228.3	119.71	3.6	1.98	12
Penaeus															
<i>duorarum</i>	0.0	0.00	0.0	0.00	1	55.3	37.99	1.6	1.14	5	12.9	11.40	0.5	0.47	12
Anasimus															
<i>latus</i>	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	5	8.0	5.11	0.0	0.01	12
Callinectes															
<i>similis</i>	0.0	0.00	0.0	0.00	1	40.5	39.62	0.7	0.69	5	1.0	0.54	0.0	0.00	12
Solenocera															
<i>vioscai</i>	0.0	0.00	0.0	0.00	1	0.4	0.35	0.0	0.00	5	10.2	6.88	0.0	0.00	12
Trachurus															
<i>lathami</i>	4224.0	0.00	5.5	0.00	1	10091.4	10077.16	11.6	11.41	5	27.5	20.10	0.2	0.16	12
Stenotomus															
<i>caprinus</i>	18.0	0.00	0.3	0.00	1	1491.0	734.93	10.9	6.61	5	267.0	225.82	2.1	1.80	12
Syacium															
<i>papillosum</i>	6.0	0.00	0.0	0.00	1	14.0	7.52	0.4	0.22	5	225.6	109.18	8.4	3.97	12
Bellator															
<i>militaris</i>	0.0	0.00	0.0	0.00	1	0.6	0.63	0.0	0.00	5	10.6	6.05	0.0	0.03	12
Prionotus															
<i>roseus</i>	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	5	65.0	43.79	0.9	0.59	12
Decapterus															
<i>punctatus</i>	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	5	225.0	225.00	1.1	1.14	12
Syacium															
<i>spp.</i>	0.0	0.00	0.0	0.00	1	1.9	1.89	0.0	0.03	5	6.0	3.52	0.1	0.04	12
Prionotus															
<i>rubio</i>	0.0	0.00	0.0	0.00	1	1.9	1.89	0.0	0.03	5	14.9	6.99	0.9	0.53	12
Squid	3090.0	0.00	34.1	0.00	1	462.7	265.79	7.6	4.48	5	98.1	39.43	1.2	0.45	12



Table 10a (cont'd.)  
 Statistical Zone 10  
 40-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 10 during the 1989 June-July Shrimp and Bottomfish Survey by depth stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken. No trawl samples were taken in depths greater than 40 fm.

SPECIES	21-30 FM					31-40 FM					>40 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Portunus															
<i>spini</i> carpus	241.0	235.40	2.6	2.54	2	714.0	0.00	1.6	0.00	1	0.0	0.00	0.0	0.00	0
Sicyonia															
<i>brevi</i> rostris	52.2	47.78	0.3	0.29	2	263.0	0.00	3.9	0.00	1	0.0	0.00	0.0	0.00	0
Penaeus															
<i>duor</i> arum	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0
Anasimus															
<i>latus</i>	0.0	0.00	0.0	0.00	2	31.0	0.00	0.1	0.00	1	0.0	0.00	0.0	0.00	0
Callinectes															
<i>similis</i>	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0
Solenocera															
<i>vioscai</i>	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0
Trachurus															
<i>lathami</i>	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0
Stenotomus															
<i>caprinus</i>	3.3	2.17	0.1	0.12	2	157.0	0.00	7.3	0.00	1	0.0	0.00	0.0	0.00	0
Syacium															
<i>papillosum</i>	54.3	3.43	5.7	0.63	2	145.0	0.00	8.6	0.00	1	0.0	0.00	0.0	0.00	0
Bellator															
<i>militaris</i>	240.8	237.42	3.9	3.82	2	271.0	0.00	3.0	0.00	1	0.0	0.00	0.0	0.00	0
Prionotus															
<i>roseus</i>	38.8	6.62	1.7	0.01	2	67.0	0.00	2.5	0.00	1	0.0	0.00	0.0	0.00	0
Decapterus															
<i>punctatus</i>	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0
Syacium															
<i>spp.</i>	13.3	13.33	0.4	0.38	2	318.0	0.00	6.7	0.00	1	0.0	0.00	0.0	0.00	0
Prionotus															
<i>rubio</i>	101.5	25.15	9.0	2.01	2	8.0	0.00	0.9	0.00	1	0.0	0.00	0.0	0.00	0
Squid															
	86.7	86.67	1.9	1.87	2	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0

Table 10b  
 Statistical Zone 10  
 40-ft trawls

Summary of the mean total catch and environmental data (X), the standard error of the mean (SEM) and the number of samples taken (n) during the 1989 June-July Shrimp and Bottomfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m<sup>3</sup>, and oxygen in ppm. No trawl samples were taken in depths greater than 40 fm.

Environmental category	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm		
	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	40.9	0.00	1	52.3	16.88	5	36.4	11.77	12	46.2	8.33	2	83.6	0.00	1	0.0	0.00	0
Total finfish kg	5.5	0.00	1	39.5	12.29	5	29.4	9.25	12	40.1	6.22	2	78.2	0.00	1	0.0	0.00	0
Total crustacean kg	0.0	0.00	1	3.1	2.50	5	4.9	2.65	12	4.0	3.47	2	5.5	0.00	1	0.0	0.00	0
Total others kg	35.5	0.00	1	8.7	4.47	5	2.1	0.63	12	2.2	1.35	2	0.0	0.00	1	0.0	0.00	0
Surface temperature	28.0	0.00	1	28.1	0.24	4	27.7	0.32	5	27.0	0.48	3	26.6	0.70	3	0.0	0.00	0
Midwater temperature	27.0	0.00	1	26.9	0.43	4	26.6	0.27	5	23.0	1.28	3	22.3	0.54	3	0.0	0.00	0
Bottom temperature	26.5	0.00	1	24.7	0.66	4	22.5	0.52	5	21.2	0.68	3	20.9	0.70	3	0.0	0.00	0
Surface salinity	28.0	0.00	1	26.5	0.98	6	28.4	0.44	9	26.2	3.46	4	31.2	1.12	3	0.0	0.00	0
Midwater salinity	32.0	0.00	1	29.7	0.63	5	31.2	0.57	9	35.0	0.95	4	36.3	0.12	3	0.0	0.00	0
Bottom salinity	32.0	0.00	1	34.4	0.57	6	35.9	0.08	10	36.5	0.12	4	36.0	0.47	3	0.0	0.00	0
Surface chlorophyll	0.0	0.00	0	1.5	0.08	3	0.3	0.06	3	0.3	0.00	1	0.3	0.00	1	0.0	0.00	0
Midwater chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface oxygen	6.8	0.00	1	6.6	0.15	6	6.5	0.20	10	6.2	0.15	4	5.9	0.20	3	0.0	0.00	0
Midwater oxygen	6.6	0.00	1	6.5	0.56	6	5.9	0.19	10	6.3	0.39	4	5.9	0.18	3	0.0	0.00	0
Bottom oxygen	6.6	0.00	1	5.3	0.43	6	5.4	0.14	10	5.7	0.19	4	4.9	0.10	3	0.0	0.00	0

Table 11a  
 Statistical Zone 11  
 40-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 11 during the 1989 June-July Shrimp and Bottomfish Survey by depth stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken.

SPECIES	0- 5 FM					6-10 FM					11-20 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Callinectes															
<u>similis</u>	54.0	12.00	1.2	0.68	2	1073.4	900.97	16.6	14.17	8	1311.6	782.06	10.8	4.54	19
Trachypenaeus															
<u>similis</u>	0.0	0.00	0.0	0.00	2	81.2	80.24	0.1	0.08	8	1031.8	610.02	4.4	2.62	19
Trachypenaeus															
<u>spp.</u>	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	8	173.8	122.80	0.8	0.49	19
Sicyonia															
<u>dorsalis</u>	0.0	0.00	0.0	0.00	2	12.3	11.96	0.1	0.07	8	331.4	158.03	0.7	0.29	19
Portunus															
<u>gibbesii</u>	0.0	0.00	0.0	0.00	2	72.0	56.32	0.3	0.16	8	160.1	52.39	0.6	0.21	19
Trachypenaeus															
<u>constrictus</u>	0.0	0.00	0.0	0.00	2	963.8	641.54	1.8	1.59	8	0.0	0.00	0.0	0.00	19
Stenotomus															
<u>caprinus</u>	0.0	0.00	0.0	0.00	2	1132.3	1008.31	6.2	5.04	8	1062.7	305.98	9.8	2.86	19
Saurida															
<u>brasiliensis</u>	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	8	331.0	204.33	3.6	1.94	19
Serranus															
<u>atrobranchus</u>	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	8	291.8	152.65	1.7	0.83	19
Diplectrum															
<u>bivittatum</u>	3.0	3.00	0.1	0.14	2	35.0	28.89	0.2	0.13	8	132.8	40.56	3.3	1.03	19
Syacium															
<u>papillosum</u>	0.0	0.00	0.0	0.00	2	5.5	3.79	0.1	0.04	8	50.1	17.42	1.3	0.48	19
Anchoa															
<u>hepsetus</u>	99.0	99.00	0.5	0.55	2	282.5	276.83	1.0	0.91	8	32.3	19.77	1.9	1.53	19
Syacium															
<u>spp.</u>	0.0	0.00	0.0	0.00	2	0.6	0.60	0.0	0.01	8	157.8	75.34	2.8	1.39	19
Prionotus															
<u>longispinosus</u>	33.0	33.00	0.1	0.14	2	161.4	108.12	1.0	0.71	8	95.4	53.58	1.0	0.54	19
Squid															
	1185.0	963.00	15.5	13.91	2	401.9	164.42	3.8	1.43	8	467.1	175.97	6.6	2.29	19

Table 11a (cont'd.)  
 Statistical Zone 11  
 40-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 11 during the 1989 June-July Shrimp and Bottomfish Survey by depth stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken.

SPECIES	21-30 FM					31-40 FM					>40 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Callinectes															
<i>similis</i>	155.8	155.79	1.2	1.24	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	1
Trachypenaeus															
<i>similis</i>	45.3	45.26	0.1	0.14	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	1
Trachypenaeus															
spp.	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	1
Sicyonia															
<i>dorsalis</i>	93.7	93.68	0.2	0.24	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	1
Portunus															
<i>gibbesii</i>	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	1
Trachypenaeus															
<i>constrictus</i>	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	1
Stenotomus															
<i>caprinus</i>	571.6	366.89	27.5	18.13	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	1
Saurida															
<i>brasiliensis</i>	557.5	478.29	4.0	3.35	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	1
Serranus															
<i>atrobranchus</i>	259.6	255.47	2.5	2.47	3	0.0	0.00	0.0	0.00	0	416.3	0.00	5.1	0.00	1
Diplectrum															
<i>bivittatum</i>	5.6	1.82	0.1	0.03	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	1
Syacium															
<i>papillosum</i>	357.0	232.01	13.9	7.99	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	1
Anchoa															
<i>hepsetus</i>	203.2	203.16	4.2	4.16	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	1
Syacium															
spp.	27.4	27.37	0.6	0.57	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	1
Prionotus															
<i>longispinosus</i>	43.2	40.04	0.5	0.46	3	0.0	0.00	0.0	0.00	0	5.6	0.00	0.8	0.00	1
Squid	979.1	705.34	13.5	9.45	3	0.0	0.00	0.0	0.00	0	532.5	0.00	11.2	0.00	1

Table 11b  
 Statistical Zone 11  
 40-ft trawls

Summary of the mean total catch and environmental data (X), the standard error of the mean (SEM) and the number of samples taken (n) during the 1989 June-July Shrimp and Bottomfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m<sup>3</sup>, and oxygen in ppm.

Environmental category	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm		
	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	55.9	23.18	2	56.6	24.13	8	69.1	14.25	19	100.2	30.59	3	0.0	0.00	0	137.2	0.00	1
Total finfish kg	32.7	30.00	2	27.5	16.07	8	37.7	7.84	19	76.3	26.00	3	0.0	0.00	0	126.1	0.00	1
Total crustacean kg	1.4	1.36	2	24.8	17.40	8	24.3	8.48	19	10.4	7.69	3	0.0	0.00	0	0.9	0.00	1
Total others kg	21.8	8.18	2	4.1	1.54	8	7.2	2.64	19	13.2	9.47	3	0.0	0.00	0	11.1	0.00	1
Surface temperature	30.3	1.25	2	28.4	0.66	9	27.5	0.17	21	27.6	0.48	5	27.0	0.00	1	27.6	0.90	2
Midwater temperature	24.5	0.00	1	27.1	0.48	9	25.2	0.36	21	23.1	0.40	5	23.5	0.00	1	21.4	0.10	2
Bottom temperature	27.5	3.00	2	25.7	0.50	9	21.8	0.26	21	20.8	0.36	5	21.0	0.00	1	18.6	0.60	2
Surface salinity	6.0	6.00	2	20.6	2.27	9	25.7	1.17	22	23.1	3.70	5	30.4	0.00	1	25.3	6.22	2
Midwater salinity	28.0	0.00	1	28.9	1.36	9	32.9	0.83	22	34.9	1.05	5	36.0	0.00	1	36.2	0.16	2
Bottom salinity	20.0	7.00	2	31.1	1.19	9	35.3	0.68	22	36.2	0.13	5	36.4	0.00	1	36.4	0.03	2
Surface chlorophyll	0.0	0.00	0	8.2	6.42	3	4.0	1.95	15	7.5	4.67	4	1.0	0.00	1	18.8	0.00	1
Midwater chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface oxygen	7.6	1.20	2	6.7	0.77	9	7.5	0.58	23	10.2	1.66	5	6.3	0.00	1	9.4	3.00	2
Midwater oxygen	1.4	0.00	1	4.5	0.73	9	5.9	0.21	23	5.8	0.23	5	5.4	0.00	1	6.7	0.05	2
Bottom oxygen	3.3	2.50	2	3.2	0.52	9	4.7	0.23	23	5.3	0.16	5	4.8	0.00	1	4.7	0.05	2

Table 12a  
 Statistical Zone 13  
 40-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 13 during the 1989 June-July Shrimp and Bottomfish Survey by depth stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken. No trawl samples were taken in depths greater than 20 fm.

SPECIES	0- 5 FM					6-10 FM					11-20 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
<i>Trachypenaeus</i>															
<i>similis</i>	8.0	8.00	0.0	0.05	2	3044.0	3008.07	14.5	14.32	3	6181.9	3388.59	29.7	16.80	5
<i>Squilla</i>															
<i>SDP.</i>	9.0	9.00	0.0	0.05	2	444.0	402.73	4.7	4.49	3	701.5	328.12	6.4	3.29	5
<i>Callinectes</i>															
<i>similis</i>	10.0	10.00	0.1	0.09	2	698.7	676.79	8.0	7.86	3	772.5	365.38	9.1	4.44	5
<i>Sicyonia</i>															
<i>dorsalis</i>	0.0	0.00	0.0	0.00	2	342.7	341.67	0.5	0.45	3	614.0	466.44	1.1	0.82	5
<i>Solenocera</i>															
<i>vioscai</i>	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	3	285.6	184.52	1.0	0.65	5
<i>Penaeus</i>															
<i>aztecus</i>	73.5	49.50	0.8	0.48	2	6.9	5.62	0.1	0.09	3	53.5	29.22	0.9	0.47	5
<i>Prionotus</i>															
<i>longispinosus</i>	195.0	165.00	0.5	0.39	2	441.3	221.87	2.8	1.46	3	6090.7	5767.04	31.8	28.61	5
<i>Trichiurus</i>															
<i>lepturus</i>	8.5	6.50	0.4	0.41	2	23.5	21.23	0.3	0.26	3	1719.7	1525.21	36.2	34.04	5
<i>Centropristis</i>															
<i>philadelphica</i>	1.0	1.00	0.0	0.00	2	39.3	29.04	0.3	0.26	3	626.7	550.87	3.1	2.28	5
<i>Anchoa</i>															
<i>mitchilli</i>	274.0	266.00	0.4	0.41	2	197.9	151.34	0.2	0.14	3	345.6	215.56	1.3	0.89	5
<i>Stenotomus</i>															
<i>caprinus</i>	0.0	0.00	0.0	0.00	2	32.0	32.00	0.4	0.36	3	208.8	151.46	2.5	1.84	5
<i>Bollmannia</i>															
<i>communis</i>	0.0	0.00	0.0	0.00	2	118.0	118.00	0.8	0.82	3	319.2	170.51	1.7	0.88	5
<i>Syacium</i>															
<i>gunteri</i>	0.0	0.00	0.0	0.00	2	256.7	255.67	4.0	3.98	3	188.3	70.11	3.4	1.48	5
<i>Micropogonias</i>															
<i>undulatus</i>	32.0	2.00	1.4	0.16	2	4.7	4.67	0.2	0.18	3	135.8	129.48	4.4	4.11	5
<i>Squid</i>	35.5	33.50	0.5	0.55	2	101.2	93.50	2.6	2.53	3	751.7	317.44	9.5	3.02	5

Table 12b  
 Statistical Zone 13  
 40-ft trawls

Summary of the mean total catch and environmental data (X), the standard error of the mean (SEM) and the number of samples taken (n) during the 1989 June-July Shrimp and Bottomfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m<sup>3</sup>, and oxygen in ppm. No trawl samples were taken in depths greater than 20 fm.

Environmental category	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm		
	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	30.5	24.09	2	50.9	45.48	3	173.3	43.83	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total finfish kg	7.3	3.64	2	15.5	12.72	3	113.3	40.51	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total crustacean kg	1.8	0.91	2	31.6	30.56	3	50.3	20.24	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total others kg	0.7	0.68	2	2.7	2.73	3	9.7	3.02	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface temperature	30.8	0.11	2	29.7	0.38	3	29.5	0.38	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater temperature	29.4	0.04	2	27.8	1.15	3	26.0	1.03	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom temperature	28.7	0.04	2	24.9	1.01	3	22.9	0.14	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface salinity	9.8	0.34	2	22.4	3.81	3	23.2	3.49	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater salinity	26.0	0.14	2	30.0	1.85	3	32.9	1.31	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom salinity	27.8	0.17	2	34.9	0.57	3	36.1	0.13	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface chlorophyll	18.2	2.58	2	8.5	7.34	3	13.0	3.13	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater chlorophyll	2.5	0.97	2	1.0	0.18	3	0.9	0.34	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom chlorophyll	5.3	0.12	2	2.5	0.37	3	1.9	0.27	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface oxygen	8.4	0.20	2	7.2	0.67	3	9.2	0.57	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater oxygen	6.2	0.05	2	4.6	1.04	3	3.8	0.81	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom oxygen	4.5	0.05	2	1.6	1.13	3	3.2	0.64	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0

Table 13a  
 Statistical Zone 14  
 40-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 14 during the 1989 June-July Shrimp and Bottomfish Survey by depth stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken. No trawl samples were taken in depths less than 5 fm.

SPECIES	0- 5 FM					6-10 FM					11-20 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Trachypenaeus															
<u>similis</u>	0.0	0.00	0.0	0.00	0	318.0	318.00	1.0	1.00	2	4284.7	2334.07	18.2	9.52	8
Callinectes															
<u>similis</u>	0.0	0.00	0.0	0.00	0	80.0	74.00	0.8	0.73	2	1399.1	757.05	12.1	5.58	8
Squilla															
<u>spp.</u>	0.0	0.00	0.0	0.00	0	322.0	322.00	2.1	2.14	2	96.6	43.67	0.8	0.36	8
Penaeus															
<u>aztecus</u>	0.0	0.00	0.0	0.00	0	1.0	1.00	0.0	0.00	2	133.9	70.52	1.8	0.85	8
Portunus															
<u>gibbesii</u>	0.0	0.00	0.0	0.00	0	20.0	20.00	0.1	0.09	2	19.3	12.66	0.1	0.04	8
Penaeus															
<u>setiferus</u>	0.0	0.00	0.0	0.00	0	1.0	1.00	0.0	0.05	2	12.8	8.79	0.6	0.38	8
Stenotomus															
<u>caprinus</u>	0.0	0.00	0.0	0.00	0	13.0	11.00	0.1	0.14	2	1494.5	683.05	12.3	6.34	8
Prionotus															
<u>longispinosus</u>	0.0	0.00	0.0	0.00	0	623.0	623.00	3.6	3.64	2	827.2	351.54	7.7	3.24	8
Saurida															
<u>brasiliensis</u>	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	2	331.5	215.81	2.7	1.78	8
Etropus															
<u>crossotus</u>	0.0	0.00	0.0	0.00	0	8.0	0.00	0.1	0.00	2	315.8	153.57	3.9	1.90	8
Peprilus															
<u>burti</u>	0.0	0.00	0.0	0.00	0	4.0	4.00	0.0	0.00	2	248.8	186.70	7.0	5.30	8
Cynoscion															
<u>arenarius</u>	0.0	0.00	0.0	0.00	0	1.0	1.00	0.0	0.00	2	261.6	162.27	7.5	3.53	8
Syacium															
<u>gunteri</u>	0.0	0.00	0.0	0.00	0	12.0	12.00	0.2	0.18	2	208.0	116.77	3.1	1.72	8
Chloroscombrus															
<u>chrysurus</u>	0.0	0.00	0.0	0.00	0	85.0	85.00	4.5	4.45	2	122.2	104.39	3.3	2.05	8
Squid															
	0.0	0.00	0.0	0.00	0	99.0	83.00	1.8	1.32	2	484.5	231.35	7.7	3.86	8



Table 13a (cont'd.)  
 Statistical Zone 14  
 40-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 14 during the 1989 June-July Shrimp and Bottomfish Survey by depth stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken. No trawl samples were taken in depths less than 5 fm.

SPECIES	21-30 FM					31-40 FM					>40 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
<u>Trachypenaeus</u>															
<u>similis</u>	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	2
<u>Callinectes</u>															
<u>similis</u>	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	2
<u>Squilla</u>															
<u>spp.</u>	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	2
<u>Penaeus</u>															
<u>aztecus</u>	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	1.8	1.82	0.1	0.08	2
<u>Portunus</u>															
<u>gibbesii</u>	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	2
<u>Penaeus</u>															
<u>setiferus</u>	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	2
<u>Stenotomus</u>															
<u>caprinus</u>	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	65.4	9.15	3.8	0.88	2
<u>Prionotus</u>															
<u>longispinosus</u>	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	0.9	0.91	0.2	0.17	2
<u>Saurida</u>															
<u>brasiliensis</u>	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	3.1	3.13	0.0	0.00	2
<u>Etropus</u>															
<u>crossotus</u>	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	2
<u>Peprilus</u>															
<u>burti</u>	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	46.8	16.82	2.0	0.34	2
<u>Cynoscion</u>															
<u>arenarius</u>	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	2
<u>Syacium</u>															
<u>gunteri</u>	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	2
<u>Chloroscombrus</u>															
<u>chrysurus</u>	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	2
<u>Squid</u>	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	88.9	19.83	1.6	1.02	2

Table 13b  
 Statistical Zone 14  
 40-ft trawls

Summary of the mean total catch and environmental data (X), the standard error of the mean (SEM) and the number of samples taken (n) during the 1989 June-July Shrimp and Bottomfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m<sup>3</sup>, and oxygen in ppm. No trawl samples were taken in depths less than 5 fm.

Environmental category	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm		
	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	0.0	0.00	0	19.5	6.82	2	113.6	29.78	8	0.0	0.00	0	0.0	0.00	0	26.8	6.15	2
Total finfish kg	0.0	0.00	0	13.2	4.09	2	72.1	20.84	8	0.0	0.00	0	0.0	0.00	0	25.0	5.14	2
Total crustacean kg	0.0	0.00	0	4.1	4.09	2	33.8	15.48	8	0.0	0.00	0	0.0	0.00	0	0.0	0.00	2
Total others kg	0.0	0.00	0	1.4	1.36	2	7.4	3.82	8	0.0	0.00	0	0.0	0.00	0	1.8	1.01	2
Surface temperature	0.0	0.00	0	30.0	0.10	2	29.7	0.13	8	0.0	0.00	0	0.0	0.00	0	29.1	0.02	2
Midwater temperature	0.0	0.00	0	27.6	0.27	2	27.4	0.29	8	0.0	0.00	0	0.0	0.00	0	23.3	0.23	2
Bottom temperature	0.0	0.00	0	24.6	0.09	2	23.4	0.24	8	0.0	0.00	0	0.0	0.00	0	20.1	0.10	2
Surface salinity	0.0	0.00	0	21.8	0.60	2	26.7	0.84	8	0.0	0.00	0	0.0	0.00	0	24.6	0.72	2
Midwater salinity	0.0	0.00	0	31.3	0.05	2	33.0	0.71	8	0.0	0.00	0	0.0	0.00	0	36.6	0.06	2
Bottom salinity	0.0	0.00	0	35.7	0.03	2	36.0	0.06	8	0.0	0.00	0	0.0	0.00	0	36.8	0.01	2
Surface chlorophyll	0.0	0.00	0	1.0	0.00	2	0.3	0.10	8	0.0	0.00	0	0.0	0.00	0	0.5	0.08	2
Midwater chlorophyll	0.0	0.00	0	3.8	0.00	2	1.8	0.69	8	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom chlorophyll	0.0	0.00	0	2.0	0.00	2	1.9	0.84	8	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface oxygen	0.0	0.00	0	6.8	0.10	2	6.1	0.10	8	0.0	0.00	0	0.0	0.00	0	7.4	0.30	2
Midwater oxygen	0.0	0.00	0	3.4	0.65	2	4.5	0.51	8	0.0	0.00	0	0.0	0.00	0	8.1	0.05	2
Bottom oxygen	0.0	0.00	0	0.7	0.05	2	2.4	0.41	8	0.0	0.00	0	0.0	0.00	0	5.7	0.20	2

Table 14a  
 Statistical Zone 15  
 40-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 15 during the 1989 June-July Shrimp and Bottomfish Survey by depth stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken.

SPECIES	0- 5 FM					6-10 FM					11-20 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Trachypenaeus															
<i>similis</i>	0.0	0.00	0.0	0.00	3	2.3	2.32	0.0	0.00	5	501.2	495.94	2.0	2.00	6
Trachypenaeus															
<i>spp.</i>	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	5	351.4	351.35	2.7	2.69	6
Sicyonia															
<i>dorsalis</i>	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	5	1.4	1.35	0.0	0.02	6
Callinectes															
<i>similis</i>	8.7	4.67	0.1	0.05	3	1.3	1.33	0.0	0.02	5	173.6	158.24	0.8	0.65	6
Squilla															
<i>spp.</i>	29.3	23.59	0.2	0.14	3	0.0	0.00	0.0	0.00	5	34.8	26.35	0.4	0.38	6
Penaeus															
<i>aztecus</i>	4.2	4.21	0.0	0.05	3	31.8	31.80	0.4	0.35	5	14.8	8.50	0.3	0.16	6
Stenotomus															
<i>caprinus</i>	0.0	0.00	0.0	0.00	3	3.6	3.01	0.0	0.04	5	1257.8	889.98	6.1	4.07	6
Micropogonias															
<i>undulatus</i>	0.0	0.00	0.0	0.00	3	2915.2	2914.70	81.1	81.11	5	16.6	15.21	0.7	0.64	6
Peprilus															
<i>burti</i>	1.3	1.33	0.0	0.00	3	1.0	1.04	0.0	0.00	5	874.3	805.78	34.2	32.43	6
Anchoviella															
<i>spp.</i>	1591.6	1591.58	4.0	4.02	3	5.7	5.74	0.0	0.00	5	124.7	124.74	0.7	0.74	6
Trachurus															
<i>lathami</i>	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	5	359.6	341.49	6.7	6.30	6
Serranus															
<i>atrobranchus</i>	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	5	4.4	4.37	0.0	0.03	6
Prionotus															
<i>stearnsi</i>	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	6
Centropristis															
<i>philadelphica</i>	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	5	65.7	50.70	0.2	0.15	6
Squid	78.6	59.72	0.5	0.24	3	254.7	194.65	1.3	0.79	5	475.3	210.06	8.0	3.67	6

Table 14a (cont'd.)  
 Statistical Zone 15  
 40-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 15 during the 1989 June-July Shrimp and Bottomfish Survey by depth stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken.

SPECIES	21-30 FM					31-40 FM					>40 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Trachypenaeus															
<i>similis</i>	35.7	35.67	0.0	0.00	3	0.5	0.50	0.0	0.00	5	0.0	0.00	0.0	0.00	2
Trachypenaeus															
spp.	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	2
Sicyonia															
<i>dorsalis</i>	322.9	315.06	1.0	0.86	3	19.6	19.60	0.0	0.01	5	0.0	0.00	0.0	0.00	2
Callinectes															
<i>similis</i>	143.0	143.00	0.5	0.45	3	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	2
Squilla															
spp.	148.5	121.35	3.6	3.56	3	21.4	17.99	0.0	0.01	5	0.0	0.00	0.0	0.00	2
Penaeus															
<i>aztecus</i>	91.1	51.61	2.1	1.15	3	52.8	17.97	1.7	0.45	5	8.9	3.12	0.4	0.15	2
Stenotomus															
<i>caprinus</i>	196.8	116.18	2.0	1.13	3	331.8	65.17	14.4	3.83	5	145.2	7.15	6.7	0.87	2
Micropogonias															
<i>undulatus</i>	0.0	0.00	0.0	0.00	3	5.2	3.56	0.7	0.45	5	0.0	0.00	0.0	0.00	2
Peprilus															
<i>burti</i>	1296.5	654.16	58.4	30.10	3	78.2	46.17	5.5	3.48	5	124.2	28.15	8.5	1.07	2
Anchoviella															
spp.	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	2
Trachurus															
<i>lathami</i>	191.7	148.22	3.9	3.78	3	6.8	6.80	0.4	0.43	5	183.7	113.31	8.5	6.46	2
Serranus															
<i>atrobranchus</i>	316.4	304.80	1.0	0.82	3	92.0	39.25	0.8	0.34	5	0.0	0.00	0.0	0.00	2
Prionotus															
<i>stearnsi</i>	27.8	16.31	0.1	0.05	3	48.7	34.11	0.3	0.15	5	298.9	285.08	4.6	4.47	2
Centropristis															
<i>philadelphica</i>	163.2	140.07	1.6	1.23	3	16.2	8.27	0.5	0.33	5	8.0	8.00	1.1	1.07	2
Squid															
	247.1	219.50	1.9	1.79	3	4.2	3.29	0.0	0.00	5	226.2	12.77	3.1	1.14	2

Table 14b  
 Statistical Zone 15  
 40-ft trawls

Summary of the mean total catch and environmental data (X), the standard error of the mean (SEM) and the number of samples taken (n) during the 1989 June-July Shrimp and Bottomfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m<sup>3</sup>, and oxygen in ppm.

Environmental category	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm		
	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	13.3	9.26	3	94.3	84.12	5	71.5	38.97	6	85.9	28.30	3	40.7	13.18	5	41.6	17.48	2
Total finfish kg	11.3	9.44	3	92.1	83.59	5	58.1	37.56	6	76.7	31.30	3	38.8	13.50	5	38.1	16.03	2
Total crustacean kg	0.3	0.30	3	0.8	0.82	5	6.2	3.95	6	7.4	4.88	3	1.8	0.47	5	0.2	0.23	2
Total others kg	0.8	0.42	3	1.3	0.81	5	7.9	3.59	6	1.9	1.89	3	0.1	0.09	5	3.3	1.22	2
Surface temperature	29.4	0.09	5	29.3	0.13	5	29.1	0.06	4	29.1	0.04	2	29.0	0.10	3	28.9	0.03	3
Midwater temperature	29.4	0.04	5	28.6	0.33	5	28.8	0.49	4	27.2	0.63	2	26.9	0.31	3	24.2	1.06	3
Bottom temperature	26.9	0.65	5	24.5	0.30	5	23.8	0.70	4	22.0	0.11	2	21.2	0.14	3	19.9	0.34	3
Surface salinity	20.8	1.55	5	22.0	1.29	5	26.5	0.76	4	27.8	1.55	2	29.9	0.60	3	33.3	1.81	3
Midwater salinity	23.9	1.37	5	30.1	0.53	5	31.4	1.23	4	35.2	0.69	2	36.2	0.37	3	36.7	0.03	3
Bottom salinity	32.1	1.04	5	35.7	0.32	5	36.4	0.28	4	36.9	0.05	2	36.6	0.16	3	36.7	0.01	3
Surface chlorophyll	4.1	1.37	4	3.1	0.82	5	0.5	0.09	4	0.5	0.32	2	0.1	0.01	3	0.1	0.03	3
Midwater chlorophyll	2.8	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom chlorophyll	3.6	0.96	4	2.1	0.42	4	2.0	1.09	4	0.7	0.00	1	0.0	0.00	0	0.0	0.00	0
Surface oxygen	7.7	0.50	5	8.9	0.20	5	7.9	0.36	4	7.9	0.20	2	6.9	0.30	3	7.4	0.09	3
Midwater oxygen	7.0	0.54	5	8.1	0.29	4	7.5	0.62	4	6.6	0.60	2	6.8	0.56	3	7.8	0.09	3
Bottom oxygen	2.6	1.32	5	2.4	0.34	5	3.8	0.38	4	6.0	0.55	2	5.9	0.46	3	6.1	0.12	3

Table 15a  
 Statistical Zone 16  
 40-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 16 during the 1989 June-July Shrimp and Bottomfish Survey by depth stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken. No trawl samples were taken in depths greater than 30 fm.

SPECIES	0- 5 FM					6-10 FM					11-20 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Trachypenaeus															
<i>similis</i>	0.0	0.00	0.0	0.00	2	11.3	11.27	0.0	0.03	5	128.1	124.05	0.2	0.21	14
Penaeus															
<i>aztecus</i>	65.0	65.00	0.2	0.23	2	125.5	77.91	1.9	1.37	5	67.3	26.79	1.0	0.43	14
Squilla															
<i>spp.</i>	0.0	0.00	0.0	0.00	2	3.3	3.27	0.0	0.00	5	94.4	57.36	0.7	0.45	14
Trachypenaeus															
<i>spp.</i>	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	5	96.0	65.19	0.3	0.18	14
Sicyonia															
<i>breviostris</i>	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	5	3.2	1.45	0.0	0.01	14
Xiphopenaeus															
<i>kroyeri</i>	371.7	371.67	1.3	1.29	2	106.7	106.71	0.2	0.21	5	0.0	0.00	0.0	0.00	14
Micropogonias															
<i>undulatus</i>	4608.0	3018.00	113.8	98.08	2	3893.2	1977.90	53.1	22.90	5	3.8	3.15	0.3	0.22	14
Peprilus															
<i>burti</i>	117.0	117.00	4.0	3.95	2	298.0	293.25	6.0	5.88	5	2472.9	2470.08	37.6	37.48	14
Stenotoæmus															
<i>caprinus</i>	261.7	261.67	1.3	1.29	2	67.5	61.49	0.5	0.38	5	823.6	281.45	5.4	2.08	14
Trachurus															
<i>lathami</i>	0.0	0.00	0.0	0.00	2	2.1	2.14	0.2	0.21	5	397.7	392.38	5.7	5.57	14
Polydactylus															
<i>octonemus</i>	1857.0	1587.00	50.2	46.67	2	445.6	236.13	9.7	4.80	5	0.0	0.00	0.0	0.00	14
Serranus															
<i>atrobranchus</i>	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	5	139.3	77.09	0.3	0.17	14
Saurida															
<i>brasiliensis</i>	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	5	122.6	57.06	0.5	0.24	14
Brevoortia															
<i>patronus</i>	1597.3	499.33	59.0	27.47	2	26.0	23.00	1.5	1.00	5	0.0	0.00	0.0	0.00	14
Squid															
	110.0	100.00	1.5	1.21	2	72.8	44.85	0.6	0.33	5	301.5	171.30	4.6	2.93	14

Table 15a (cont'd.)  
 Statistical Zone 16  
 40-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 16 during the 1989 June-July Shrimp and Bottomfish Survey by depth stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken. No trawl samples were taken in depths greater than 30 fm.

SPECIES	21-30 FM					31-40 FM					>40 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Trachypenaeus															
<i>similis</i>	21.0	18.12	0.0	0.01	4	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Penaeus</i>															
<i>aztecus</i>	51.4	26.31	1.2	0.68	4	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Squilla</i>															
<i>spp.</i>	14.9	9.75	0.2	0.14	4	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Trachypenaeus															
<i>spp.</i>	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Sicyonia</i>															
<i>brevirostris</i>	144.9	87.75	1.7	1.03	4	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Xiphopenaeus</i>															
<i>kroyeri</i>	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Micropogonias</i>															
<i>undulatus</i>	3.4	1.22	0.4	0.13	4	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Peprilus</i>															
<i>burti</i>	30.3	20.57	2.1	1.49	4	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Stenotomus</i>															
<i>caprinus</i>	320.1	88.88	13.7	4.34	4	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Trachurus</i>															
<i>lathami</i>	67.0	42.03	1.1	0.81	4	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Polydactylus</i>															
<i>octonemus</i>	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Serranus</i>															
<i>atrobranchus</i>	110.8	87.02	0.4	0.35	4	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Saurida</i>															
<i>brasiliensis</i>	75.0	39.14	0.4	0.21	4	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Brevoortia</i>															
<i>patronus</i>	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Squid</i>	187.4	108.13	2.3	1.51	4	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0

Table 15b  
 Statistical Zone 16  
 40-ft trawls

Summary of the mean total catch and environmental data (X), the standard error of the mean (SEM) and the number of samples taken (n) during the 1989 June-July Shrimp and Bottomfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m<sup>3</sup>, and oxygen in ppm. No trawl samples were taken in depths greater than 30 fm.

Environmental category	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm		
	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	337.1	262.88	2	108.3	28.96	5	67.8	47.41	14	40.6	15.64	4	0.0	0.00	0	0.0	0.00	0
Total finfish kg	331.4	263.18	2	104.1	29.45	5	60.1	44.85	14	34.5	15.02	4	0.0	0.00	0	0.0	0.00	0
Total crustacean kg	3.0	3.03	2	3.5	1.86	5	2.8	1.29	14	3.6	1.38	4	0.0	0.00	0	0.0	0.00	0
Total others kg	2.1	0.61	2	0.5	0.36	5	4.7	2.95	14	2.3	1.48	4	0.0	0.00	0	0.0	0.00	0
Surface temperature	30.0	0.28	4	29.3	0.21	4	29.0	0.13	13	28.8	0.16	4	0.0	0.00	0	0.0	0.00	0
Midwater temperature	29.2	0.02	4	28.6	0.27	4	28.0	0.18	13	26.3	0.28	4	0.0	0.00	0	0.0	0.00	0
Bottom temperature	29.0	0.15	4	26.5	0.75	4	23.9	0.32	13	22.1	0.18	4	0.0	0.00	0	0.0	0.00	0
Surface salinity	20.2	3.27	4	26.1	0.77	4	28.7	0.70	13	31.5	0.44	4	0.0	0.00	0	0.0	0.00	0
Midwater salinity	24.1	1.13	4	29.3	1.18	4	31.8	0.35	13	34.8	0.45	4	0.0	0.00	0	0.0	0.00	0
Bottom salinity	26.2	1.04	4	32.4	1.28	4	35.7	0.25	13	36.4	0.18	4	0.0	0.00	0	0.0	0.00	0
Surface chlorophyll	2.1	0.86	4	0.7	0.16	4	0.3	0.05	13	0.1	0.03	4	0.0	0.00	0	0.0	0.00	0
Midwater chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	1	0.0	0.00	0	0.0	0.00	0
Bottom chlorophyll	4.7	3.08	4	2.0	1.15	3	1.3	0.37	10	0.1	0.01	2	0.0	0.00	0	0.0	0.00	0
Surface oxygen	8.0	0.39	4	7.6	0.22	4	7.2	0.10	13	6.9	0.14	4	0.0	0.00	0	0.0	0.00	0
Midwater oxygen	7.0	0.33	4	7.4	0.19	4	6.7	0.30	13	6.9	0.17	4	0.0	0.00	0	0.0	0.00	0
Bottom oxygen	6.5	0.33	4	3.6	1.47	4	4.0	0.68	13	6.2	0.04	4	0.0	0.00	0	0.0	0.00	0



Table 16a  
 Statistical Zone 17  
 40-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 17 during the 1989 June-July Shrimp and Bottomfish Survey by depth stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken. No trawl samples were taken in depths less than 5 fm or greater than 20 fm.

SPECIES	0- 5 FM					6-10 FM					11-20 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Callinectes															
<i>similis</i>	0.0	0.00	0.0	0.00	0	448.4	442.99	2.2	2.22	2	532.1	525.46	7.1	7.00	5
Sicyonia															
<i>brevirostris</i>	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	2	304.0	294.65	2.0	1.90	5
Trachypenaeus															
<i>similis</i>	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	2	141.8	141.85	0.5	0.52	5
Squilla															
<i>spp.</i>	0.0	0.00	0.0	0.00	0	245.1	245.14	2.2	2.22	2	42.6	26.12	0.5	0.31	5
Trachypenaeus															
<i>spp.</i>	0.0	0.00	0.0	0.00	0	275.1	275.14	1.5	1.48	2	0.0	0.00	0.0	0.00	5
Portunus															
<i>gibbesii</i>	0.0	0.00	0.0	0.00	0	148.3	148.29	0.7	0.74	2	6.8	6.77	0.0	0.00	5
Micropogonias															
<i>undulatus</i>	0.0	0.00	0.0	0.00	0	5346.9	5346.86	148.8	148.83	2	6.8	6.77	0.2	0.17	5
Stenotomus															
<i>caprinus</i>	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	2	555.9	196.98	13.3	4.36	5
Prionotus															
<i>longispinosus</i>	0.0	0.00	0.0	0.00	0	275.1	275.14	1.5	1.48	2	210.5	210.46	1.0	1.03	5
Peprilus															
<i>burti</i>	0.0	0.00	0.0	0.00	0	5.5	5.45	0.0	0.00	2	332.0	332.00	2.8	2.77	5
Chloroscombrus															
<i>chrysurus</i>	0.0	0.00	0.0	0.00	0	7.7	7.71	0.7	0.70	2	186.3	133.59	8.4	6.81	5
Peprilus															
<i>alepidotus</i>	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	2	598.8	598.80	42.9	42.87	5
Leiostomus															
<i>xanthurus</i>	0.0	0.00	0.0	0.00	0	59.1	59.14	3.7	3.74	2	305.4	265.76	30.3	26.70	5
Syacium															
<i>papillosum</i>	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	2	75.5	35.05	1.4	0.66	5
Squid	0.0	0.00	0.0	0.00	0	40.9	40.91	0.2	0.25	2	30.7	24.33	0.3	0.24	5

Table 16b  
 Statistical Zone 17  
 40-ft trawls

Summary of the mean total catch and environmental data (X), the standard error of the mean (SEM) and the number of samples taken (n) during the 1989 June-July Shrimp and Bottomfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m<sup>3</sup>, and oxygen in ppm. No trawl samples were taken in depths less than 5 fm or greater than 20 fm.

Environmental category	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm		
	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	0.0	0.00	0	182.9	175.50	2	150.3	88.96	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total finfish kg	0.0	0.00	0	170.4	165.44	2	138.4	92.01	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total crustacean kg	0.0	0.00	0	10.5	10.52	2	11.7	7.40	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total others kg	0.0	0.00	0	0.8	0.78	2	0.2	0.20	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface temperature	0.0	0.00	0	28.2	0.43	3	27.1	1.27	4	28.5	0.00	1	0.0	0.00	0	28.4	0.00	1
Midwater temperature	0.0	0.00	0	28.2	0.36	3	27.8	0.26	4	27.4	0.00	1	0.0	0.00	0	23.1	0.00	1
Bottom temperature	0.0	0.00	0	26.9	0.07	3	24.1	0.90	4	21.4	0.00	1	0.0	0.00	0	19.5	0.00	1
Surface salinity	0.0	0.00	0	26.3	1.60	3	32.4	0.36	3	32.8	0.00	1	0.0	0.00	0	35.5	0.00	1
Midwater salinity	0.0	0.00	0	27.7	1.87	3	33.0	0.30	3	35.6	0.00	1	0.0	0.00	0	36.5	0.00	1
Bottom salinity	0.0	0.00	0	31.5	0.73	3	36.1	0.22	3	36.1	0.00	1	0.0	0.00	0	36.7	0.00	1
Surface chlorophyll	0.0	0.00	0	1.0	0.69	2	0.1	0.01	3	0.1	0.00	1	0.0	0.00	0	0.1	0.00	1
Midwater chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface oxygen	0.0	0.00	0	7.5	0.69	3	6.6	0.05	4	6.4	0.00	1	0.0	0.00	0	7.1	0.00	1
Midwater oxygen	0.0	0.00	0	7.3	0.48	3	6.6	0.06	4	6.1	0.00	1	0.0	0.00	0	8.4	0.00	1
Bottom oxygen	0.0	0.00	0	3.7	1.05	3	5.7	0.29	4	5.9	0.00	1	0.0	0.00	0	6.2	0.00	1

Table 17a  
 Statistical Zone 18  
 40-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 18 during the 1989 June-July Shrimp and Bottomfish Survey by depth stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken.

SPECIES	0- 5 FM					6-10 FM					11-20 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Penaeus															
aztecus	87.3	0.00	1.7	0.00	1	208.4	162.67	3.0	2.29	5	648.1	471.30	9.1	5.14	5
Sicyonia															
brevirostris	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	5	249.4	226.40	1.8	1.76	5
Trachypenaeus															
spp.	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	5	173.3	115.32	1.0	0.68	5
Penaeus															
duorarum	0.0	0.00	0.0	0.00	1	127.2	126.85	2.0	2.02	5	44.7	42.05	0.8	0.71	5
Callinectes															
similis	354.5	0.00	7.2	0.00	1	46.8	37.57	0.6	0.53	5	28.6	14.53	0.3	0.22	5
Portunus															
spincarpus	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	5	1.0	1.00	0.0	0.00	5
Micropogonias															
undulatus	13134.5	0.00	368.4	0.00	1	2283.2	1762.61	60.4	45.91	5	0.0	0.00	0.0	0.00	5
Stenotomus															
caprinus	0.0	0.00	0.0	0.00	1	67.7	67.73	0.3	0.32	5	385.0	162.83	5.8	3.47	5
Chloroscombrus															
chrysurus	70.9	0.00	3.5	0.00	1	355.6	237.65	13.4	8.02	5	66.9	46.65	3.0	2.07	5
Trachurus															
lathamii	0.0	0.00	0.0	0.00	1	0.6	0.61	0.0	0.02	5	33.1	22.90	0.6	0.41	5
Upeneus															
parvus	0.0	0.00	0.0	0.00	1	12.0	12.00	0.1	0.12	5	54.2	39.54	0.5	0.43	5
Cynoscion															
nothus	1210.9	0.00	42.9	0.00	1	87.1	79.00	3.2	2.70	5	0.0	0.00	0.0	0.00	5
Peprilus															
burti	0.0	0.00	0.0	0.00	1	1.7	1.42	0.0	0.03	5	63.3	34.68	2.5	1.45	5
Leiostomus															
xanthurus	38.2	0.00	0.2	0.00	1	62.6	40.01	2.3	1.23	5	0.0	0.00	0.0	0.00	5
Squid	0.0	0.00	0.0	0.00	1	149.1	97.88	2.3	1.68	5	133.4	53.19	2.3	1.12	5

Table 17a (cont'd.)  
 Statistical Zone 18  
 40-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 18 during the 1989 June-July Shrimp and Bottomfish Survey by depth stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken.

SPECIES	21-30 FM					31-40 FM					>40 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
<i>Penaeus</i>															
<i>aztecus</i>	253.5	166.50	7.1	3.38	2	5.8	2.62	0.4	0.10	2	1.4	0.00	0.1	0.00	1
<i>Sicyonia</i>															
<i>brevirostris</i>	265.4	39.61	2.8	0.98	2	82.0	78.82	1.3	1.13	2	0.0	0.00	0.0	0.00	1
<i>Trachypenaeus</i>															
<i>spp.</i>	45.8	45.79	0.3	0.25	2	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1
<i>Penaeus</i>															
<i>duorarum</i>	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1
<i>Callinectes</i>															
<i>similis</i>	5.5	5.53	0.0	0.04	2	16.8	16.80	0.1	0.05	2	0.0	0.00	0.0	0.00	1
<i>Portunus</i>															
<i>spinicarpus</i>	96.0	96.00	0.4	0.41	2	16.8	16.80	0.1	0.05	2	69.5	0.00	0.3	0.00	1
<i>Micropogonias</i>															
<i>undulatus</i>	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1
<i>Stenotomus</i>															
<i>caprinus</i>	340.2	168.21	12.0	2.94	2	188.6	108.22	11.3	1.07	2	81.8	0.00	4.5	0.00	1
<i>Chloroscombrus</i>															
<i>chrysurus</i>	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1
<i>Trachurus</i>															
<i>lathami</i>	0.0	0.00	0.0	0.00	2	1.6	1.58	0.1	0.07	2	774.5	0.00	22.2	0.00	1
<i>Upeneus</i>															
<i>parvus</i>	42.1	32.11	0.7	0.26	2	26.9	17.31	1.0	0.88	2	167.7	0.00	3.5	0.00	1
<i>Cynoscion</i>															
<i>nothus</i>	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1
<i>Peprilus</i>															
<i>burti</i>	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	2	47.7	0.00	2.9	0.00	1
<i>Leiostomus</i>															
<i>xanthurus</i>	0.8	0.79	0.1	0.14	2	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1
<i>Squid</i>	30.8	22.84	0.6	0.38	2	1.6	1.58	0.1	0.14	2	31.4	0.00	0.6	0.00	1

Table 17b  
 Statistical Zone 18  
 40-ft trawls

Summary of the mean total catch and environmental data (X), the standard error of the mean (SEM) and the number of samples taken (n) during the 1989 June-July Shrimp and Bottomfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m<sup>3</sup>, and oxygen in ppm.

Environmental category	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm		
	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	443.8	0.00	1	96.6	45.95	5	36.8	5.40	5	31.0	9.19	2	21.0	1.94	2	38.4	0.00	1
Total finfish kg	428.9	0.00	1	85.7	46.37	5	19.4	4.71	5	19.9	6.69	2	18.7	2.86	2	36.6	0.00	1
Total crustacean kg	12.4	0.00	1	8.4	4.92	5	14.8	6.85	5	10.8	2.14	2	1.6	1.64	2	0.6	0.00	1
Total others kg	0.0	0.00	1	2.4	1.76	5	2.4	1.17	5	0.4	0.36	2	0.0	0.00	2	1.2	0.00	1
Surface temperature	27.2	0.04	2	27.8	0.17	6	28.1	0.09	5	29.2	0.00	1	28.9	0.19	3	28.7	0.02	2
Midwater temperature	27.3	0.10	2	27.4	0.22	6	27.7	0.12	5	24.8	0.00	1	24.9	1.07	3	23.6	0.09	2
Bottom temperature	27.1	0.32	2	26.5	0.34	6	22.9	0.63	5	21.6	0.00	1	20.6	0.46	3	18.8	1.07	2
Surface salinity	29.1	0.00	1	28.7	1.45	5	31.4	0.26	5	30.1	0.00	1	34.7	0.66	3	35.7	0.50	2
Midwater salinity	29.2	0.00	1	30.3	0.65	6	31.8	0.29	5	36.0	0.00	1	36.8	0.06	3	36.5	0.21	2
Bottom salinity	31.1	1.97	2	32.8	0.83	6	35.9	0.15	5	36.2	0.00	1	36.8	0.03	3	36.4	0.37	2
Surface chlorophyll	2.0	0.00	1	0.7	0.20	6	0.1	0.03	4	0.1	0.00	1	0.1	0.01	3	0.0	0.00	1
Midwater chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface oxygen	6.6	0.25	2	6.5	0.30	6	6.4	0.06	5	6.8	0.00	1	6.5	0.10	3	6.4	0.10	2
Midwater oxygen	6.3	0.35	2	6.3	0.14	6	6.3	0.07	5	6.9	0.00	1	7.0	0.15	3	7.2	0.05	2
Bottom oxygen	5.2	0.60	2	5.1	0.45	6	5.7	0.20	5	6.3	0.00	1	5.7	0.45	3	4.8	0.50	2

Table 18a  
 Statistical Zone 19  
 40-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 19 during the 1989 June-July Shrimp and Bottomfish Survey by depth stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken. No trawl samples were taken in depths greater than 30 fm.

SPECIES	0- 5 FM					6-10 FM					11-20 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Penaeus															
<i>aztecus</i>	15.0	0.00	0.3	0.00	1	376.5	74.45	7.0	0.45	2	570.6	172.03	9.9	2.82	14
Trachypenaeus															
<i>similis</i>	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	2	205.2	100.99	1.0	0.51	14
Callinectes															
<i>similis</i>	0.0	0.00	0.0	0.00	1	56.0	56.00	0.8	0.77	2	15.9	4.58	0.3	0.11	14
Squilla															
<i>spp.</i>	0.0	0.00	0.0	0.00	1	34.0	34.00	0.0	0.05	2	18.3	9.30	0.3	0.22	14
Trachypenaeus															
<i>spp.</i>	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	2	27.6	27.55	0.1	0.06	14
Sicyonia															
<i>dorsalis</i>	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	2	3.7	1.72	0.0	0.02	14
Trachurus															
<i>lathamii</i>	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	2	47.5	40.12	0.8	0.61	14
Stenotomus															
<i>caprinus</i>	0.0	0.00	0.0	0.00	1	28.2	28.18	0.2	0.17	2	89.2	33.32	0.5	0.20	14
Micropogonias															
<i>undulatus</i>	975.0	0.00	34.1	0.00	1	975.9	974.09	30.6	30.59	2	0.1	0.13	0.0	0.00	14
Peprilus															
<i>burti</i>	240.0	0.00	12.4	0.00	1	245.7	199.73	6.0	2.96	2	54.4	19.87	0.7	0.26	14
Chloroscombrus															
<i>chrysurus</i>	341.3	0.00	12.4	0.00	1	44.5	15.45	2.4	1.45	2	87.8	49.55	2.9	1.60	14
Cynoscion															
<i>nothus</i>	907.5	0.00	37.5	0.00	1	393.4	360.64	4.8	2.05	2	0.4	0.32	0.0	0.02	14
Harengula															
<i>jaguana</i>	0.0	0.00	0.0	0.00	1	74.8	28.82	3.0	0.76	2	60.7	53.24	0.8	0.57	14
Sardinella															
<i>aurita</i>	11.3	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	2	34.0	23.39	0.4	0.24	14
Squid															
	0.0	0.00	0.0	0.00	1	67.6	0.36	0.8	0.70	2	103.1	24.51	1.8	0.42	14

Table 18a (cont'd.)  
 Statistical Zone 19  
 40-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 19 during the 1989 June-July Shrimp and Bottomfish Survey by depth stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken. No trawl samples were taken in depths greater than 30 fm.

SPECIES	21-30 FM					31-40 FM					>40 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Penaeus															
aztecus	213.2	166.79	3.8	2.72	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Trachypenaeus															
similis	37.7	37.67	0.2	0.18	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Callinectes															
similis	6.5	5.33	0.1	0.09	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Squilla															
spp.	7.0	6.80	0.2	0.18	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Trachypenaeus															
spp.	0.2	0.18	0.0	0.01	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Sicyonia															
dorsalis	6.4	5.94	0.1	0.09	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Trachurus															
lathami	261.6	173.34	5.5	3.60	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Stenotomus															
caprinus	137.2	77.99	5.4	3.04	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Micropogonias															
undulatus	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Peprilus															
burti	31.4	15.20	1.8	0.92	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Chloroscombrus															
chrysurus	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Cynoscion															
nothus	0.5	0.50	0.1	0.09	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Harengula															
jaguana	0.9	0.91	0.1	0.06	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Sardinella															
aurita	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Squid	87.3	28.05	1.8	0.62	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0

Table 18b  
 Statistical Zone 19  
 40-ft trawls

Summary of the mean total catch and environmental data (X), the standard error of the mean (SEM) and the number of samples taken (n) during the 1989 June-July Shrimp and Bottomfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m<sup>3</sup>, and oxygen in ppm. No trawl samples were taken in depths greater than 30 fm.

Environmental category	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm		
	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	114.2	0.00	1	78.3	43.55	2	24.0	3.18	14	23.0	9.03	6	0.0	0.00	0	0.0	0.00	0
Total finfish kg	112.5	0.00	1	67.4	41.74	2	10.2	2.84	14	16.7	8.15	6	0.0	0.00	0	0.0	0.00	0
Total crustacean kg	3.4	0.00	1	9.6	2.19	2	11.7	3.39	14	4.5	3.29	6	0.0	0.00	0	0.0	0.00	0
Total others kg	0.0	0.00	1	0.8	0.83	2	1.8	0.43	14	1.8	0.62	6	0.0	0.00	0	0.0	0.00	0
Surface temperature	27.5	0.00	1	28.5	0.33	3	28.1	0.34	15	28.4	0.11	4	0.0	0.00	0	28.8	0.00	1
Midwater temperature	27.4	0.00	1	28.3	0.26	3	27.7	0.33	15	26.7	1.29	4	0.0	0.00	0	21.8	0.00	1
Bottom temperature	27.4	0.00	1	26.6	0.53	3	23.5	0.42	15	21.8	0.32	4	0.0	0.00	0	19.0	0.00	1
Surface salinity	34.8	0.00	1	33.1	0.79	3	32.9	0.35	15	33.8	0.94	4	0.0	0.00	0	32.7	0.00	1
Midwater salinity	34.8	0.00	1	33.3	0.81	3	34.0	0.38	15	35.5	0.41	4	0.0	0.00	0	36.3	0.00	1
Bottom salinity	34.8	0.00	1	34.9	0.36	3	36.4	0.17	15	36.6	0.17	4	0.0	0.00	0	36.2	0.00	1
Surface chlorophyll	1.3	0.00	1	0.6	0.41	3	0.1	0.02	14	0.1	0.01	3	0.0	0.00	0	0.1	0.00	1
Midwater chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface oxygen	6.0	0.00	1	6.3	0.03	3	6.4	0.04	15	6.3	0.04	4	0.0	0.00	0	6.4	0.00	1
Midwater oxygen	5.7	0.00	1	6.3	0.03	3	6.4	0.04	15	6.4	0.17	4	0.0	0.00	0	6.8	0.00	1
Bottom oxygen	5.5	0.00	1	5.5	0.58	3	5.8	0.14	15	6.1	0.09	4	0.0	0.00	0	4.7	0.00	1



Table 19a  
 Statistical Zone 20  
 40-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 20 during the 1989 June-July Shrimp and Bottomfish Survey by depth stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken.

SPECIES	0- 5 FM					6-10 FM					11-20 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Penaeus															
<u>aztecus</u>	72.0	0.00	1.6	0.00	1	1008.5	446.60	10.6	4.05	5	1226.8	484.55	14.4	6.13	8
Callinectes															
<u>similis</u>	120.0	0.00	1.1	0.00	1	356.6	136.80	4.1	2.16	5	236.4	148.58	1.3	0.87	8
Trachypenaeus															
<u>constrictus</u>	0.0	0.00	0.0	0.00	1	28.8	28.80	0.2	0.15	5	250.9	193.44	0.2	0.14	8
Trachypenaeus															
<u>similis</u>	0.0	0.00	0.0	0.00	1	143.1	91.77	0.2	0.15	5	20.1	20.13	0.0	0.04	8
Trachypenaeus															
<u>spp.</u>	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	8
Solenocera															
<u>spp.</u>	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	8
Micropogonias															
<u>undulatus</u>	930.0	0.00	12.5	0.00	1	910.7	583.43	24.1	15.76	5	256.2	159.96	8.7	5.63	8
Peprilus															
<u>burti</u>	72.0	0.00	1.1	0.00	1	13.2	6.88	0.3	0.17	5	424.0	212.40	7.3	4.32	8
Leiostomus															
<u>xanthurus</u>	3522.0	0.00	51.0	0.00	1	638.0	221.42	15.8	5.78	5	15.8	15.75	0.4	0.44	8
Trachurus															
<u>lathami</u>	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	5	1.2	0.61	0.0	0.03	8
Stenotomus															
<u>caprinus</u>	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	5	37.3	25.44	0.3	0.17	8
Cynoscion															
<u>spp.</u>	0.0	0.00	0.0	0.00	1	306.1	206.71	6.5	4.84	5	129.7	67.05	1.3	0.70	8
Chloroscombrus															
<u>chrysurus</u>	0.0	0.00	0.0	0.00	1	71.1	43.74	1.9	1.16	5	184.3	113.72	5.8	3.05	8
Prionotus															
<u>paralatus</u>	0.0	0.00	0.0	0.00	1	18.3	18.29	0.0	0.03	5	1.2	1.18	0.0	0.00	8
Squid															
<u>spp.</u>	0.0	0.00	0.0	0.00	1	37.6	14.29	0.6	0.48	5	230.8	48.68	3.3	1.17	8

Table 19a (cont'd.)  
 Statistical Zone 20  
 40-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 20 during the 1989 June-July Shrimp and Bottomfish Survey by depth stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken.

SPECIES	21-30 FM					31-40 FM					>40 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
<i>Penaeus</i>															
<i>aztecus</i>	306.8	298.63	2.6	2.53	3	124.1	78.34	2.4	1.03	6	14.2	8.45	0.5	0.27	8
<i>Callinectes</i>															
<i>similis</i>	18.4	15.82	0.2	0.16	3	9.8	9.83	0.1	0.07	6	0.2	0.19	0.0	0.01	8
<i>Trachypenaeus</i>															
<i>constrictus</i>	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	8
<i>Trachypenaeus</i>															
<i>similis</i>	32.7	32.67	0.1	0.06	3	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	8
<i>Trachypenaeus</i>															
<i>spp.</i>	0.0	0.00	0.0	0.00	3	60.7	60.67	0.3	0.28	6	0.0	0.00	0.0	0.00	8
<i>Solenocera</i>															
<i>spp.</i>	0.0	0.00	0.0	0.00	3	21.2	20.57	0.1	0.10	6	5.6	5.35	0.0	0.04	8
<i>Micropogonias</i>															
<i>undulatus</i>	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	8
<i>Peprilus</i>															
<i>burti</i>	41.3	40.34	2.8	2.77	3	38.0	20.98	2.6	1.41	6	65.8	22.84	4.5	1.62	8
<i>Leiostomus</i>															
<i>xanthurus</i>	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	8
<i>Trachurus</i>															
<i>lathamii</i>	21.9	11.03	0.5	0.25	3	218.3	134.79	5.3	3.23	6	54.2	18.11	1.9	0.71	8
<i>Stenotomus</i>															
<i>caprinus</i>	28.2	26.41	1.1	1.11	3	119.1	58.24	6.0	3.33	6	149.1	29.82	8.0	1.73	8
<i>Cynoscion</i>															
<i>spp.</i>	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	8
<i>Chloroscombrus</i>															
<i>chrysurus</i>	1.0	1.03	0.0	0.05	3	0.0	0.00	0.0	0.00	6	0.5	0.50	0.0	0.02	8
<i>Prionotus</i>															
<i>paralatus</i>	0.0	0.00	0.0	0.00	3	26.5	26.30	0.7	0.68	6	40.2	20.59	1.4	0.75	8
<i>Squid</i>	171.1	110.92	3.1	2.30	3	136.7	71.55	3.0	1.41	6	98.8	43.88	2.7	1.51	8

Table 19b  
 Statistical Zone 20  
 40-ft trawls

Summary of the mean total catch and environmental data (X), the standard error of the mean (SEM) and the number of samples taken (n) during the 1989 June-July Shrimp and Bottomfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m<sup>3</sup>, and oxygen in ppm.

Environmental category	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm		
	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	117.3	0.00	1	85.4	17.01	5	52.7	15.63	8	12.7	1.86	3	29.7	6.60	6	35.2	7.37	8
Total finfish kg	106.4	0.00	1	65.8	15.18	5	33.1	9.97	8	6.6	4.48	3	23.1	6.36	6	30.1	7.67	8
Total crustacean kg	8.2	0.00	1	17.9	5.88	5	15.9	6.96	8	2.9	2.88	3	3.5	1.45	6	1.4	0.60	8
Total others kg	2.7	0.00	1	1.1	0.52	5	3.3	1.23	8	3.2	2.26	3	3.2	1.41	6	3.3	1.47	8
Surface temperature	28.9	0.00	1	28.3	0.13	6	28.1	0.03	7	28.3	0.38	3	28.2	0.29	6	27.9	0.21	5
Midwater temperature	28.9	0.00	1	28.3	0.13	6	27.9	0.11	7	27.3	0.06	3	23.7	0.61	6	23.3	2.00	5
Bottom temperature	28.9	0.00	1	27.8	0.26	6	25.7	0.63	7	22.6	1.02	3	20.3	0.19	6	19.3	0.26	5
Surface salinity	34.6	0.00	1	34.3	0.05	6	33.6	0.10	7	32.4	1.10	3	33.9	0.48	6	35.0	0.56	5
Midwater salinity	34.6	0.00	1	34.3	0.05	6	34.0	0.11	7	35.7	0.15	3	36.3	0.08	6	36.4	0.10	5
Bottom salinity	34.6	0.00	1	34.6	0.09	6	35.6	0.26	7	36.2	0.10	3	36.4	0.08	6	36.4	0.09	5
Surface chlorophyll	0.8	0.00	1	0.7	0.16	6	0.3	0.06	6	0.1	0.02	3	0.1	0.02	5	0.1	0.02	4
Midwater chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface oxygen	6.0	0.00	1	6.3	0.10	6	6.4	0.12	7	6.6	0.19	3	6.4	0.11	6	6.2	0.04	5
Midwater oxygen	6.1	0.00	1	6.4	0.08	6	6.4	0.11	7	6.6	0.19	3	6.9	0.15	6	6.4	0.04	5
Bottom oxygen	6.2	0.00	1	6.1	0.07	6	5.9	0.12	7	5.9	0.33	3	5.4	0.18	6	4.8	0.08	5

Table 20a  
 Statistical Zone 21  
 40-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 21 during the 1989 June-July Shrimp and Bottomfish Survey by depth stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken.

SPECIES	0- 5 FM					6-10 FM					11-20 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Penaeus															
aztecus	0.0	0.00	0.0	0.00	1	51.0	34.84	0.5	0.37	6	1436.3	773.28	12.2	5.84	11
Trachypenaeus															
spp.	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	6	20.6	20.61	0.1	0.06	11
Penaeus															
duorarum	0.0	0.00	0.0	0.00	1	70.0	44.38	0.8	0.54	6	248.5	166.51	3.4	2.29	11
Trachypenaeus															
similis	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	6	107.9	99.98	0.3	0.27	11
Callinectes															
similis	0.0	0.00	0.0	0.00	1	10.0	10.00	0.1	0.09	6	51.2	37.62	0.6	0.43	11
Squilla															
spp.	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	6	11.2	4.99	0.3	0.16	11
Trachurus															
lathami	0.0	0.00	0.0	0.00	1	2.3	2.27	0.0	0.00	6	2.9	2.04	0.0	0.03	11
Chloroscombrus															
chrysurus	402.0	0.00	7.9	0.00	1	398.8	200.11	9.9	4.42	6	237.0	176.13	6.1	4.53	11
Peprilus															
burti	540.0	0.00	7.9	0.00	1	42.5	23.41	0.8	0.45	6	31.8	10.51	0.5	0.23	11
Stenotomus															
caprinus	0.0	0.00	0.0	0.00	1	237.8	195.36	3.5	3.39	6	81.6	35.43	0.3	0.16	11
Leiostomus															
xanthurus	138.0	0.00	3.5	0.00	1	592.0	463.94	12.8	8.00	6	7.0	2.84	0.2	0.13	11
Anchoviella															
perfasciata	0.0	0.00	0.0	0.00	1	6.5	5.93	0.0	0.00	6	0.8	0.78	0.0	0.00	11
Upeneus															
parvus	348.0	0.00	7.1	0.00	1	149.6	51.65	2.1	0.93	6	30.3	13.35	0.2	0.12	11
Lagodon															
rhomboides	252.0	0.00	6.5	0.00	1	249.4	191.35	3.3	1.86	6	2.4	1.04	0.0	0.03	11
Squid	228.0	0.00	4.4	0.00	1	428.3	94.74	8.7	1.91	6	161.4	32.25	2.6	0.56	11

Table 20a (cont'd.)

Statistical Zone 21

40-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 21 during the 1989 June-July Shrimp and Bottomfish Survey by depth stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken.

SPECIES	21-30 FM					31-40 FM					>40 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
<i>Penaeus aztecus</i>	104.5	91.35	1.7	1.53	5	0.0	0.00	0.0	0.00	1	9.2	0.00	0.0	0.00	1
<i>Trachypenaeus</i> spp.	205.8	205.83	0.8	0.83	5	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
<i>Penaeus duorarum</i>	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
<i>Trachypenaeus similis</i>	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
<i>Callinectes similis</i>	33.8	32.51	0.4	0.41	5	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
<i>Squilla</i> spp.	4.5	4.47	0.1	0.15	5	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
<i>Trachurus lathami</i>	400.2	190.67	8.4	3.80	5	16.4	0.00	0.2	0.00	1	886.2	0.00	27.7	0.00	1
<i>Chloroscombrus chrysurus</i>	2.6	2.62	0.1	0.09	5	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
<i>Peprilus burti</i>	181.1	138.62	2.9	1.93	5	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
<i>Stenotomus caprinus</i>	16.5	16.47	0.0	0.04	5	376.4	0.00	17.7	0.00	1	13.8	0.00	0.8	0.00	1
<i>Leiostomus xanthurus</i>	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
<i>Anchoviella perfasciata</i>	113.7	95.64	0.9	0.74	5	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
<i>Upeneus parvus</i>	10.3	6.43	0.1	0.04	5	65.5	0.00	2.7	0.00	1	13.8	0.00	0.8	0.00	1
<i>Lagodon rhomboides</i>	1.8	1.13	0.1	0.04	5	19.1	0.00	1.4	0.00	1	0.0	0.00	0.0	0.00	1
Squid	274.4	44.80	5.9	1.73	5	0.0	0.00	0.0	0.00	1	110.8	0.00	2.3	0.00	1

Table 20b  
 Statistical Zone 21  
 40-ft trawls

Summary of the mean total catch and environmental data (X), the standard error of the mean (SEM) and the number of samples taken (n) during the 1989 June-July Shrimp and Bottomfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m<sup>3</sup>, and oxygen in ppm.

Environmental category	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm		
	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	51.8	0.00	1	55.1	19.76	6	32.8	5.91	11	26.0	4.81	5	34.7	0.00	1	37.8	0.00	1
Total finfish kg	49.1	0.00	1	45.2	19.56	6	13.4	5.22	11	16.8	5.12	5	34.7	0.00	1	33.6	0.00	1
Total crustacean kg	0.0	0.00	1	1.8	0.91	6	16.9	5.98	11	3.2	2.91	5	0.0	0.00	1	0.0	0.00	1
Total others kg	5.5	0.00	1	8.9	2.16	6	2.6	0.64	11	6.0	1.72	5	0.0	0.00	1	4.2	0.00	1
Surface temperature	28.5	0.72	2	28.5	0.17	4	28.3	0.05	10	28.4	0.18	6	28.2	0.00	1	28.2	0.08	2
Midwater temperature	28.4	0.68	2	28.4	0.15	4	28.0	0.07	10	27.0	0.42	6	23.2	0.00	1	26.1	2.01	2
Bottom temperature	28.3	0.66	2	28.3	0.19	4	27.4	0.15	10	24.9	0.88	6	20.6	0.00	1	23.7	3.98	2
Surface salinity	35.9	0.24	2	35.8	0.15	4	35.0	0.18	10	35.1	0.23	6	36.3	0.00	1	36.3	0.12	2
Midwater salinity	35.9	0.23	2	35.9	0.17	4	35.2	0.18	10	35.7	0.14	6	36.4	0.00	1	36.2	0.11	2
Bottom salinity	35.9	0.24	2	35.9	0.15	4	35.5	0.17	10	35.6	0.65	6	36.4	0.00	1	36.2	0.13	2
Surface chlorophyll	0.7	0.18	2	0.4	0.06	4	0.4	0.15	10	0.2	0.09	6	0.1	0.00	1	0.3	0.00	1
Midwater chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface oxygen	5.5	0.25	2	5.9	0.02	4	6.2	0.06	10	6.0	0.05	6	6.2	0.00	1	6.8	1.00	2
Midwater oxygen	5.5	0.25	2	5.9	0.06	4	6.1	0.07	10	5.9	0.06	6	6.5	0.00	1	6.8	1.00	2
Bottom oxygen	5.5	0.30	2	5.8	0.07	4	5.7	0.12	10	5.8	0.15	6	5.1	0.00	1	5.6	0.20	2

Table 21a  
 Statistical Zone 17  
 20-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 17 during the 1989 June-July Shrimp and Bottomfish Survey by depth stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken. No trawl samples were taken in depths greater than 10 fm.

SPECIES	0- 5 FM					6-10 FM					11-20 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
<i>Penaeus aztecus</i>	225.0	88.63	1.8	0.71	8	302.3	195.81	2.7	1.85	8	0.0	0.00	0.0	0.00	0
<i>Callinectes similis</i>	84.8	32.50	0.2	0.10	8	89.3	46.94	0.2	0.11	8	0.0	0.00	0.0	0.00	0
<i>Callinectes sapidus</i>	9.0	3.40	0.3	0.13	8	2.3	1.58	0.3	0.23	8	0.0	0.00	0.0	0.00	0
<i>Portunus sayi</i>	3.0	1.96	0.0	0.00	8	4.5	2.95	0.0	0.03	8	0.0	0.00	0.0	0.00	0
<i>Penaeus setiferus</i>	3.0	1.60	0.1	0.05	8	3.8	1.58	0.1	0.05	8	0.0	0.00	0.0	0.00	0
<i>Arenaeus cribrarius</i>	3.8	2.25	0.0	0.00	8	2.3	2.25	0.0	0.00	8	0.0	0.00	0.0	0.00	0
<i>Micropogonias undulatus</i>	481.5	151.72	8.9	3.34	8	239.3	108.21	3.1	1.30	8	0.0	0.00	0.0	0.00	0
<i>Leiostomus xanthurus</i>	45.0	38.25	0.8	0.70	8	32.3	17.85	0.6	0.33	8	0.0	0.00	0.0	0.00	0
<i>Cynoscion arenarius</i>	55.5	20.28	0.8	0.25	8	17.3	7.56	0.3	0.11	8	0.0	0.00	0.0	0.00	0
<i>Cynoscion nothus</i>	37.5	10.31	0.6	0.28	8	21.0	15.87	0.4	0.34	8	0.0	0.00	0.0	0.00	0
<i>Polydactylus octonemus</i>	22.5	9.26	0.5	0.22	8	20.3	11.34	0.4	0.26	8	0.0	0.00	0.0	0.00	0
<i>Stellifer lanceolatus</i>	14.3	7.85	0.2	0.10	8	11.3	8.13	0.2	0.14	8	0.0	0.00	0.0	0.00	0
<i>Peprilus burti</i>	5.3	2.39	0.1	0.07	8	11.3	4.73	0.2	0.09	8	0.0	0.00	0.0	0.00	0
<i>Trichiurus lepturus</i>	4.5	2.95	0.2	0.17	8	5.3	2.88	0.2	0.14	8	0.0	0.00	0.0	0.00	0
<i>Squid</i>	37.5	8.98	0.6	0.15	8	163.5	42.32	1.9	0.54	8	0.0	0.00	0.0	0.00	0

Table 21b  
 Statistical Zone 17  
 20-ft trawls

Summary of the mean total catch and environmental data (X), the standard error of the mean (SEM) and the number of samples taken (n) during the 1989 June-July Shrimp and Bottomfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m<sup>3</sup>, and oxygen in ppm. No trawl samples were taken in depths greater than 10 fm.

	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm		
Environmental category	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	17.0	3.49	8	11.9	3.09	8	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total finfish kg	12.3	3.72	8	6.1	1.69	8	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total crustacean kg	2.4	1.09	8	3.4	2.35	8	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total others kg	1.7	1.02	8	2.0	0.68	8	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface temperature	28.6	0.23	11	28.7	0.78	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater temperature	27.2	0.48	11	27.4	0.75	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom temperature	26.7	0.49	11	27.0	0.63	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface salinity	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater salinity	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom salinity	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface chlorophyll	5.4	0.57	11	6.4	1.36	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom chlorophyll	2.7	0.38	6	2.2	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface oxygen	6.7	0.16	11	6.9	0.38	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater oxygen	5.6	0.32	11	5.8	0.20	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom oxygen	5.0	0.31	11	4.9	0.54	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0



Table 22a  
 Statistical Zone 18  
 20-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 18 during the 1989 June-July Shrimp and Bottomfish Survey by depth stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken. No trawl samples were taken in depths greater than 10 fm.

SPECIES	0- 5 FM					6-10 FM					11-20 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Penaeus															
<u>aztecus</u>	339.6	149.57	2.3	0.92	5	488.2	110.42	3.7	0.82	11	0.0	0.00	0.0	0.00	0
Callinectes															
<u>similis</u>	348.0	262.31	0.9	0.60	5	199.1	64.12	0.9	0.27	11	0.0	0.00	0.0	0.00	0
Squilla															
<u>spp.</u>	12.0	12.00	0.1	0.05	5	26.7	9.24	0.2	0.08	11	0.0	0.00	0.0	0.00	0
Penaeus															
<u>setiferus</u>	13.2	2.24	0.5	0.09	5	9.3	2.60	0.4	0.12	11	0.0	0.00	0.0	0.00	0
Callinectes															
<u>sapidus</u>	13.2	11.76	1.4	0.92	5	8.2	4.74	0.8	0.29	11	0.0	0.00	0.0	0.00	0
Trachypenaeus															
<u>similis</u>	3.6	3.60	0.0	0.00	5	10.4	4.93	0.0	0.00	11	0.0	0.00	0.0	0.00	0
Micropogonias															
<u>undulatus</u>	397.2	107.24	6.4	1.83	5	1090.4	207.76	21.0	4.18	11	0.0	0.00	0.0	0.00	0
Leiostomus															
<u>xanthurus</u>	82.8	53.41	1.4	0.91	5	291.3	164.06	4.9	2.17	11	0.0	0.00	0.0	0.00	0
Cynoscion															
<u>arenarius</u>	87.6	32.84	1.5	0.55	5	120.5	22.16	2.5	0.63	11	0.0	0.00	0.0	0.00	0
Polydactylus															
<u>octonemus</u>	25.2	13.34	0.5	0.20	5	70.9	11.66	1.6	0.31	11	0.0	0.00	0.0	0.00	0
Stellifer															
<u>lanceolatus</u>	33.6	19.77	0.3	0.17	5	10.9	4.11	0.2	0.09	11	0.0	0.00	0.0	0.00	0
Larimus															
<u>fasciatus</u>	16.8	6.12	0.4	0.14	5	12.0	6.05	0.2	0.12	11	0.0	0.00	0.0	0.00	0
Prionotus															
<u>longispinusus</u>	4.8	4.80	0.0	0.00	5	5.5	3.83	0.0	0.02	11	0.0	0.00	0.0	0.00	0
Anchoa															
<u>mitchilli</u>	10.8	10.80	0.0	0.00	5	2.2	1.22	0.0	0.00	11	0.0	0.00	0.0	0.00	0
Squid															
<u></u>	24.0	9.86	0.4	0.18	5	51.8	15.74	0.7	0.19	11	0.0	0.00	0.0	0.00	0

Table 22b  
 Statistical Zone 18  
 20-ft trawls

Summary of the mean total catch and environmental data (X), the standard error of the mean (SEM) and the number of samples taken (n) during the 1989 June-July Shrimp and Bottomfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m<sup>3</sup>, and oxygen in ppm. No trawl samples were taken in depths greater than 10 fm.

Environmental category	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm		
	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	16.9	3.49	5	38.4	4.25	11	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total finfish kg	11.5	1.81	5	30.7	4.59	11	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total crustacean kg	5.5	2.28	5	6.0	1.03	11	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total others kg	0.0	0.00	5	1.5	0.43	11	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface temperature	27.9	0.32	5	28.0	0.15	11	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater temperature	27.4	0.17	5	27.5	0.07	11	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom temperature	27.0	0.14	5	27.0	0.17	11	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface salinity	26.5	0.73	5	24.8	0.51	11	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater salinity	27.8	0.42	5	27.9	0.27	11	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom salinity	28.5	0.36	5	29.3	0.26	11	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface chlorophyll	2.7	0.81	5	2.5	0.73	11	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface oxygen	6.2	0.44	5	6.9	0.07	11	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater oxygen	5.5	0.40	5	6.2	0.28	11	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom oxygen	4.7	0.81	5	4.8	0.55	11	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0

Table 23a  
 Statistical Zone 19  
 20-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 19 during the 1989 June-July Shrimp and Bottomfish Survey by depth stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken. No trawl samples were taken in depths less than 5 fm or greater than 20 fm.

SPECIES	0- 5 FM					6-10 FM					11-20 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Penaeus															
<u>aztecus</u>	0.0	0.00	0.0	0.00	0	310.5	102.96	2.9	0.76	12	945.0	731.18	11.0	8.50	4
Callinectes															
<u>similis</u>	0.0	0.00	0.0	0.00	0	285.0	90.04	1.5	0.32	12	138.0	26.50	1.4	0.83	4
Trachypenaeus															
<u>spp.</u>	0.0	0.00	0.0	0.00	0	83.5	22.73	0.3	0.11	12	120.0	42.21	0.4	0.14	4
Squilla															
<u>spp.</u>	0.0	0.00	0.0	0.00	0	69.0	17.61	0.8	0.20	12	39.0	14.39	0.3	0.07	4
Penaeus															
<u>setiferus</u>	0.0	0.00	0.0	0.00	0	7.0	2.65	0.3	0.10	12	1.5	1.50	0.1	0.07	4
Callinectes															
<u>sapidus</u>	0.0	0.00	0.0	0.00	0	5.0	3.21	0.8	0.50	12	4.5	2.87	0.8	0.65	4
Micropogonias															
<u>undulatus</u>	0.0	0.00	0.0	0.00	0	868.5	193.09	18.2	4.16	12	36.0	20.35	1.0	0.58	4
Leiostomus															
<u>xanthurus</u>	0.0	0.00	0.0	0.00	0	104.0	69.52	1.9	1.24	12	3.0	3.00	0.1	0.07	4
Cynoscion															
<u>arenarius</u>	0.0	0.00	0.0	0.00	0	52.5	10.78	0.5	0.16	12	106.5	71.05	0.8	0.43	4
Polydactylus															
<u>octonemus</u>	0.0	0.00	0.0	0.00	0	42.5	8.72	0.8	0.17	12	129.0	71.18	2.3	1.30	4
Cynoscion															
<u>nothus</u>	0.0	0.00	0.0	0.00	0	38.0	7.21	1.0	0.26	12	25.5	7.89	0.4	0.24	4
Prionotus															
<u>rubio</u>	0.0	0.00	0.0	0.00	0	26.5	12.03	0.2	0.09	12	28.5	19.19	0.1	0.08	4
Syacium															
<u>gunteri</u>	0.0	0.00	0.0	0.00	0	7.0	4.10	0.0	0.02	12	72.0	39.72	0.5	0.23	4
Lagodon															
<u>rhomboides</u>	0.0	0.00	0.0	0.00	0	21.5	15.69	0.5	0.38	12	6.0	2.45	0.1	0.08	4
Squid															
<u>Squid</u>	0.0	0.00	0.0	0.00	0	46.0	8.84	0.6	0.12	12	103.5	38.45	1.2	0.50	4

Table 23b  
 Statistical Zone 19  
 20-ft trawls

Summary of the mean total catch and environmental data (X), the standard error of the mean (SEM) and the number of samples taken (n) during the 1989 June-July Shrimp and Bottomfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m<sup>3</sup>, and oxygen in ppm. No trawl samples were taken in depths less than 5 fm or greater than 20 fm.

Environmental category	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm		
	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total																		
catch kg	0.0	0.00	0	33.2	3.66	12	23.9	9.41	4	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total																		
finfish kg	0.0	0.00	0	24.8	3.94	12	7.5	2.05	4	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total																		
crustacean kg	0.0	0.00	0	6.8	1.14	12	14.3	8.13	4	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total																		
others kg	0.0	0.00	0	0.9	0.39	12	2.0	0.68	4	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface																		
temperature	29.3	0.00	1	28.1	0.29	12	27.0	0.28	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater																		
temperature	27.2	0.00	1	27.2	0.10	12	26.8	0.09	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom																		
temperature	27.2	0.00	1	25.7	0.48	12	25.9	0.80	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface																		
salinity	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater																		
salinity	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom																		
salinity	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface																		
chlorophyll	1.3	0.00	1	1.7	0.32	12	1.0	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater																		
chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom																		
chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface																		
oxygen	6.1	0.00	1	6.1	0.02	12	6.2	0.03	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater																		
oxygen	6.1	0.00	1	6.1	0.04	12	6.2	0.03	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom																		
oxygen	6.1	0.00	1	5.2	0.27	12	6.0	0.25	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0

Table 24a  
 Statistical Zone 20  
 20-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 20 during the 1989 June-July Shrimp and Bottomfish Survey by depth stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken. No trawl samples were taken in depths greater than 20 fm.

SPECIES	0- 5 FM					6-10 FM					11-20 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Penaeus															
aztecus	0.0	0.00	0.0	0.00	2	1168.5	680.01	7.4	4.46	8	1913.0	831.07	11.8	3.34	6
Trachypenaeus															
similis	0.0	0.00	0.0	0.00	2	56.3	48.13	0.2	0.14	8	988.0	405.58	2.6	0.93	6
Callinectes															
similis	0.0	0.00	0.0	0.00	2	74.3	47.09	0.6	0.39	8	192.0	41.08	1.2	0.39	6
Penaeus															
duorarum	0.0	0.00	0.0	0.00	2	57.8	37.64	0.5	0.35	8	4.0	2.00	0.1	0.06	6
Squilla															
spp.	0.0	0.00	0.0	0.00	2	39.0	15.59	0.5	0.21	8	24.0	11.59	0.3	0.20	6
Arenaeus															
cribrarius	45.0	33.00	0.8	0.27	2	18.0	9.69	0.2	0.11	8	1.0	1.00	0.0	0.00	6
Polydactylus															
octonemus	6.0	6.00	0.0	0.00	2	170.3	101.16	2.3	1.46	8	673.0	213.22	10.5	2.97	6
Leiostomus															
xanthurus	66.0	66.00	1.0	0.95	2	419.3	221.01	8.0	4.16	8	57.0	28.39	1.1	0.61	6
Micropogonias															
undulatus	0.0	0.00	0.0	0.00	2	214.5	83.61	3.2	1.29	8	121.0	58.06	3.0	1.23	6
Cynoscion															
nothus	3.0	3.00	0.0	0.00	2	184.5	110.17	4.5	2.79	8	53.0	13.54	1.5	0.36	6
Symphurus															
plagiusa	0.0	0.00	0.0	0.00	2	15.0	6.41	0.2	0.10	8	82.0	23.73	1.5	0.41	6
Prionotus															
longispinosus	0.0	0.00	0.0	0.00	2	8.3	7.43	0.1	0.07	8	86.0	29.05	0.4	0.13	6
Trichiurus															
lepturus	0.0	0.00	0.0	0.00	2	47.3	23.55	0.5	0.23	8	32.0	17.50	0.6	0.35	6
Syacium															
gunteri	0.0	0.00	0.0	0.00	2	4.5	1.88	0.0	0.00	8	75.0	45.98	0.6	0.36	6
Squid	3.0	3.00	0.0	0.00	2	54.0	13.65	0.5	0.15	8	123.0	30.47	1.1	0.40	6

Table 24b  
 Statistical Zone 20  
 20-ft trawls

Summary of the mean total catch and environmental data (X), the standard error of the mean (SEM) and the number of samples taken (n) during the 1989 June-July Shrimp and Bottomfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m<sup>3</sup>, and oxygen in ppm. No trawl samples were taken in depths greater than 20 fm.

Environmental category	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm		
	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	1.4	1.36	2	31.4	12.24	8	39.1	2.87	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total finfish kg	1.4	1.36	2	20.5	8.59	8	20.9	1.82	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total crustacean kg	0.0	0.00	2	9.5	5.38	8	16.4	4.17	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total others kg	0.0	0.00	2	0.3	0.34	8	0.9	0.57	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface temperature	28.7	0.10	2	28.0	0.16	8	28.5	0.11	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater temperature	28.8	0.15	2	27.9	0.24	8	27.9	0.25	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom temperature	29.1	0.10	2	27.4	0.39	8	27.4	0.44	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface salinity	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater salinity	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom salinity	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface chlorophyll	0.9	0.09	2	0.4	0.08	7	0.3	0.03	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface oxygen	4.6	0.40	2	6.1	0.53	8	6.4	1.24	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater oxygen	4.7	0.20	2	5.8	0.43	8	6.1	0.68	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom oxygen	3.8	0.50	2	5.5	0.32	8	5.7	0.45	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0

Table 25a  
 Statistical Zone 21  
 20-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 21 during the 1989 June-July Shrimp and Bottomfish Survey by depth stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken. No trawl samples were taken in depths greater than 20 fm.

SPECIES	0- 5 FM					6-10 FM					11-20 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Penaeus															
aztecus	0.0	0.00	0.0	0.00	1	76.5	64.85	0.8	0.64	8	8.0	3.69	0.0	0.05	6
Sicyonia															
dorsalis	0.0	0.00	0.0	0.00	1	15.8	7.77	0.0	0.00	8	11.0	4.22	0.0	0.00	6
Portunus															
spinimanus	0.0	0.00	0.0	0.00	1	11.3	4.60	0.2	0.07	8	5.0	3.92	0.0	0.05	6
Callinectes															
similis	0.0	0.00	0.0	0.00	1	10.5	6.29	0.1	0.07	8	3.0	2.05	0.0	0.00	6
Arenaeus															
cribrarius	0.0	0.00	0.0	0.00	1	11.3	11.25	0.4	0.44	8	0.0	0.00	0.0	0.00	6
Sicyonia															
brevirostris	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	8	7.0	2.41	0.0	0.00	6
Syacium															
gunteri	0.0	0.00	0.0	0.00	1	36.0	17.27	0.5	0.20	8	78.0	14.20	1.3	0.21	6
Micropogonias															
undulatus	0.0	0.00	0.0	0.00	1	66.0	63.47	1.3	1.22	8	0.0	0.00	0.0	0.00	6
Lagodon															
rhomboides	0.0	0.00	0.0	0.00	1	62.3	62.25	1.0	0.99	8	0.0	0.00	0.0	0.00	6
Stenotomus															
caprinus	0.0	0.00	0.0	0.00	1	9.0	4.09	0.0	0.03	8	14.0	4.29	0.0	0.00	6
Leiostomus															
xanthurus	0.0	0.00	0.0	0.00	1	15.8	11.50	0.2	0.17	8	0.0	0.00	0.0	0.00	6
Orthopristis															
chrysoptera	0.0	0.00	0.0	0.00	1	13.5	13.50	0.2	0.17	8	0.0	0.00	0.0	0.00	6
Cynoscion															
arenarius	0.0	0.00	0.0	0.00	1	12.0	12.00	0.4	0.38	8	0.0	0.00	0.0	0.00	6
Prionotus															
tribulus	6.0	0.00	0.0	0.00	1	3.8	2.52	0.1	0.04	8	1.0	1.00	0.0	0.00	6
Squid	18.0	0.00	0.0	0.00	1	3.8	3.75	0.1	0.07	8	0.0	0.00	0.0	0.00	6

Table 25b  
 Statistical Zone 21  
 20-ft trawls

Summary of the mean total catch and environmental data (X), the standard error of the mean (SEM) and the number of samples taken (n) during the 1989 June-July Shrimp and Bottomfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m<sup>3</sup>, and oxygen in ppm. No trawl samples were taken in depths greater than 20 fm.

Environmental category	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm		
	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	0.0	0.00	1	6.8	4.58	8	2.7	0.70	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total finfish kg	0.0	0.00	1	3.4	3.04	8	1.4	0.61	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total crustacean kg	0.0	0.00	1	1.7	1.36	8	0.0	0.00	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total others kg	0.0	0.00	1	1.0	0.50	8	0.5	0.45	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface temperature	27.0	0.00	1	26.1	0.35	9	26.6	0.44	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater temperature	26.7	0.00	1	25.0	0.70	9	25.7	0.78	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom temperature	26.3	0.00	1	24.1	0.88	9	24.1	1.50	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface salinity	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater salinity	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom salinity	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface chlorophyll	0.2	0.00	1	0.2	0.05	8	0.3	0.07	4	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface oxygen	8.1	0.00	1	7.1	0.40	9	6.4	0.53	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater oxygen	8.2	0.00	1	7.3	0.40	9	6.9	0.72	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom oxygen	8.2	0.00	1	7.0	0.43	9	6.4	0.49	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0



Table 26a  
 Statistical Zone 22  
 20-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 22 during the 1989 June-July Shrimp and Bottomfish Survey by depth stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken. No trawl samples were taken in depths less than 5 fm or greater than 10 fm.

SPECIES	0- 5 FM					6-10 FM					11-20 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
<i>Penaeus</i>															
<i>aztecus</i>	0.0	0.00	0.0	0.00	0	378.0	0.00	3.8	0.00	1	0.0	0.00	0.0	0.00	0
<i>Callinectes</i>															
<i>similis</i>	0.0	0.00	0.0	0.00	0	42.0	0.00	0.5	0.00	1	0.0	0.00	0.0	0.00	0
<i>Sicyonia</i>															
<i>dorsalis</i>	0.0	0.00	0.0	0.00	0	18.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0
<i>Portunus</i>															
<i>spinimanus</i>	0.0	0.00	0.0	0.00	0	12.0	0.00	0.3	0.00	1	0.0	0.00	0.0	0.00	0
<i>Persephona</i>															
<i>mediterranea</i>	0.0	0.00	0.0	0.00	0	12.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0
<i>Penaeus</i>															
<i>duorarum</i>	0.0	0.00	0.0	0.00	0	12.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0
<i>Leiostomus</i>															
<i>xanthurus</i>	0.0	0.00	0.0	0.00	0	60.0	0.00	1.1	0.00	1	0.0	0.00	0.0	0.00	0
<i>Syacium</i>															
<i>gunteri</i>	0.0	0.00	0.0	0.00	0	54.0	0.00	0.8	0.00	1	0.0	0.00	0.0	0.00	0
<i>Prionotus</i>															
<i>tribulus</i>	0.0	0.00	0.0	0.00	0	6.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0
<i>Selene</i>															
<i>setapinnis</i>	0.0	0.00	0.0	0.00	0	6.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0
<i>Micropogonias</i>															
<i>undulatus</i>	0.0	0.00	0.0	0.00	0	6.0	0.00	0.3	0.00	1	0.0	0.00	0.0	0.00	0
<i>Cynoscion</i>															
<i>arenarius</i>	0.0	0.00	0.0	0.00	0	6.0	0.00	0.3	0.00	1	0.0	0.00	0.0	0.00	0

Table 26b  
 Statistical Zone 22  
 20-ft trawls

Summary of the mean total catch and environmental data (X), the standard error of the mean (SEM) and the number of samples taken (n) during the 1989 June-July Shrimp and Bottomfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m<sup>3</sup>, and oxygen in ppm. No trawl samples were taken in depths less than 5 fm or greater than 10 fm.

Environmental category	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm		
	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	0.0	0.00	0	8.2	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total finfish kg	0.0	0.00	0	2.7	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total crustacean kg	0.0	0.00	0	5.5	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total others kg	0.0	0.00	0	0.0	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface temperature	0.0	0.00	0	24.8	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater temperature	0.0	0.00	0	21.2	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom temperature	0.0	0.00	0	21.1	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface salinity	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater salinity	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom salinity	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface chlorophyll	0.0	0.00	0	0.5	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface oxygen	0.0	0.00	0	5.5	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater oxygen	0.0	0.00	0	5.4	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom oxygen	0.0	0.00	0	4.4	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0

Table 27a  
 Statistical Zone 10  
 16-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 10 during the 1989 June-July Shrimp and Bottomfish Survey by depth stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken. No trawl samples were taken in depths greater than 5 fm.

SPECIES	0- 5 FM					6-10 FM					11-20 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Penaeus <u>duorarum</u>	88.0	82.04	0.9	0.76	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Penaeus <u>aztecus</u>	50.0	30.42	0.5	0.25	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Callinectes <u>similis</u>	10.0	6.69	0.3	0.23	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Hepatus <u>epheliticus</u>	5.0	3.92	0.1	0.06	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Ovalipes <u>stephensoni</u>	3.0	1.34	0.0	0.05	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Libinia <u>dubia</u>	3.0	3.00	0.0	0.05	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Arius <u>felis</u>	169.0	66.95	13.9	5.31	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Leiostomus <u>xanthurus</u>	161.0	55.22	7.2	2.58	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Micropogonias <u>undulatus</u>	127.0	125.80	2.8	2.72	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Anchoa <u>nasuta</u>	87.0	87.00	0.1	0.14	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Selene <u>setapinnis</u>	31.0	31.00	0.1	0.09	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Prionotus <u>tribulus</u>	21.0	11.77	0.4	0.27	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Anchoa <u>hepsetus</u>	20.0	10.24	0.1	0.09	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Peprilus <u>burti</u>	17.0	13.72	0.1	0.06	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Squid	60.0	58.81	0.6	0.59	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0

Table 27b  
 Statistical Zone 10  
 16-ft trawls

Summary of the mean total catch and environmental data (X), the standard error of the mean (SEM) and the number of samples taken (n) during the 1989 June-July Shrimp and Bottomfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m<sup>3</sup>, and oxygen in ppm. No trawl samples were taken in depths greater than 5 fm.

Environmental category	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm		
	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	34.1	7.61	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total finfish kg	26.8	6.81	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total crustacean kg	2.3	1.30	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total others kg	5.0	1.48	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface temperature	26.8	0.38	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater temperature	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom temperature	26.6	0.51	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface salinity	28.8	2.83	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater salinity	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom salinity	31.0	1.10	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface oxygen	7.0	0.23	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater oxygen	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom oxygen	7.2	0.34	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0

Table 28a  
 Statistical Zone 11  
 16-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 11 during the 1989 June-July Shrimp and Bottomfish Survey by depth stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken. No trawl samples were taken in depths greater than 5 fm.

SPECIES	0- 5 FM					6-10 FM					11-20 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Callinectes															
<u>similis</u>	10.8	4.80	0.1	0.07	5	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Portunus															
<u>spinicarpus</u>	4.8	2.94	0.0	0.00	5	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Callinectes															
<u>sapidus</u>	2.4	1.47	0.4	0.27	5	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Squilla															
<u>spp.</u>	1.2	1.20	0.1	0.11	5	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Arius															
<u>felis</u>	57.6	37.69	6.1	3.75	5	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Micropogonias															
<u>undulatus</u>	7.2	4.80	0.3	0.20	5	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Prionotus															
<u>longispinosus</u>	3.6	3.60	0.1	0.05	5	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Selene															
<u>setapinnis</u>	3.6	3.60	0.1	0.05	5	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Anchoa															
<u>mitchilli</u>	2.4	1.47	0.1	0.05	5	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Menticirrhus															
<u>americanus</u>	2.4	2.40	0.2	0.22	5	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Archosargus															
<u>probatocephalus</u>	2.4	2.40	1.1	1.15	5	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Prionotus															
<u>tribulus</u>	1.2	1.20	0.0	0.00	5	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Squid															
	13.2	9.37	0.3	0.21	5	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0

Table 28b  
 Statistical Zone 11  
 16-ft trawls

Summary of the mean total catch and environmental data (X), the standard error of the mean (SEM) and the number of samples taken (n) during the 1989 June-July Shrimp and Bottomfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m<sup>3</sup>, and oxygen in ppm. No trawl samples were taken in depths greater than 5 fm.

Environmental category	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm		
	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	9.8	4.92	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total finfish kg	7.6	4.08	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total crustacean kg	0.5	0.55	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total others kg	1.1	1.09	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface temperature	30.0	0.82	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater temperature	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom temperature	28.0	1.06	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface salinity	19.4	3.92	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater salinity	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom salinity	26.4	1.62	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface chlorophyll	1.5	0.20	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface oxygen	6.7	1.02	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater oxygen	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom oxygen	3.4	1.03	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0

Table 29a  
 Statistical Zone 12  
 16-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 12 during the 1989 June-July Shrimp and Bottomfish Survey by depth stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken. No trawl samples were taken in depths greater than 5 fm.

SPECIES	0- 5 FM					6-10 FM					11-20 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Callinectes															
<u>sapidus</u>	4.0	2.00	0.2	0.09	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Penaeus															
<u>aztecus</u>	4.0	4.00	0.1	0.09	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Anchoa															
<u>mitchilli</u>	1956.0	1956.00	1.4	1.36	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Anchoa															
<u>nasuta</u>	24.0	24.00	0.0	0.00	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Etropus															
<u>crossotus</u>	6.0	3.46	0.1	0.09	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Synodus															
<u>foetens</u>	4.0	4.00	0.2	0.18	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Menticirrhus															
<u>americanus</u>	4.0	4.00	0.0	0.00	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Prionotus															
<u>longispinosus</u>	2.0	2.00	0.0	0.00	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Diplectrum															
<u>bivittatum</u>	2.0	2.00	0.0	0.00	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Peprilus															
<u>burti</u>	2.0	2.00	0.0	0.00	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0

Table 29b  
 Statistical Zone 12  
 16-ft trawls

Summary of the mean total catch and environmental data (X), the standard error of the mean (SEM) and the number of samples taken (n) during the 1989 June-July Shrimp and Bottomfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m<sup>3</sup>, and oxygen in ppm. No trawl samples were taken in depths greater than 5 fm.

Environmental category	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm		
	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	2.7	2.73	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total finfish kg	1.8	1.82	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total crustacean kg	0.0	0.00	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total others kg	0.0	0.00	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface temperature	29.1	0.10	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater temperature	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom temperature	27.7	0.46	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface salinity	25.5	1.65	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater salinity	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom salinity	31.5	0.91	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface chlorophyll	9.8	5.07	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface oxygen	8.9	0.45	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater oxygen	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom oxygen	8.0	0.46	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0



Table 30a  
 Statistical Zone 13  
 16-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 13 during the 1989 June-July Shrimp and Bottomfish Survey by depth stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken. No trawl samples were taken in depths greater than 5 fm.

SPECIES	0- 5 FM					6-10 FM					11-20 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Callinectes															
<i>similis</i>	42.0	18.00	0.1	0.09	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Penaeus															
<i>aztecus</i>	42.0	9.17	0.5	0.09	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Callinectes															
<i>sapidus</i>	26.0	14.00	4.6	2.76	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Xiphopenaeus															
<i>kroyeri</i>	6.0	6.00	0.0	0.00	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Penaeus															
<i>setiferus</i>	2.0	2.00	0.0	0.00	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Anchoa															
<i>mitchilli</i>	916.0	440.05	1.1	0.55	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Anchoa															
<i>hepsetus</i>	72.0	57.03	0.0	0.00	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Micropogonias															
<i>undulatus</i>	68.0	65.02	2.4	2.23	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Chloroscombrus															
<i>chrysurus</i>	36.0	33.05	0.1	0.09	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Arius															
<i>felis</i>	22.0	22.00	4.7	4.73	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Leiostomus															
<i>xanthurus</i>	16.0	10.00	0.5	0.33	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Trichiurus															
<i>lepturus</i>	10.0	10.00	0.5	0.45	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Polydactylus															
<i>octonemus</i>	8.0	8.00	0.3	0.27	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Squid															
	2.0	2.00	0.1	0.09	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0

Table 30b  
 Statistical Zone 13  
 16-ft trawls

Summary of the mean total catch and environmental data (X), the standard error of the mean (SEM) and the number of samples taken (n) during the 1989 June-July Shrimp and Bottomfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m<sup>3</sup>, and oxygen in ppm. No trawl samples were taken in depths greater than 5 fm.

Environmental category	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm		
	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	15.5	2.41	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total finfish kg	10.9	4.17	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total crustacean kg	5.5	3.15	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total others kg	0.0	0.00	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface temperature	32.3	0.23	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater temperature	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom temperature	30.3	0.24	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface salinity	7.3	0.72	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater salinity	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom salinity	15.5	6.12	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface chlorophyll	25.8	3.04	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface oxygen	13.4	2.02	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater oxygen	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom oxygen	10.1	1.10	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0

Table 31a  
 Statistical Zone 14  
 16-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 14 during the 1989 June-July Shrimp and Bottomfish Survey by depth stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken. No trawl samples were taken in depths greater than 5 fm.

SPECIES	0- 5 FM					6-10 FM					11-20 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Callinectes															
<u>sapidus</u>	11.0	9.85	1.0	0.85	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Penaeus															
<u>aztecus</u>	11.0	7.00	0.0	0.05	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Portunus															
<u>gibbesii</u>	1.0	1.00	0.0	0.00	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Anchoa															
<u>mitchilli</u>	3001.0	2508.42	2.3	1.62	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Chloroscombrus															
<u>chrysurus</u>	1028.0	1012.43	2.6	2.64	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Anchoa															
<u>hepsetus</u>	64.0	45.58	0.1	0.09	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Peprilus															
<u>alepidotus</u>	8.0	6.87	0.0	0.05	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Polydactylus															
<u>octonemus</u>	5.0	3.92	0.1	0.06	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Micropogonias															
<u>undulatus</u>	4.0	4.00	0.1	0.09	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Sphoeroides															
<u>parvus</u>	3.0	3.00	0.0	0.00	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Symphurus															
<u>plagiusa</u>	2.0	1.26	0.0	0.00	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Squid															
<u>Squid</u>	8.0	8.00	0.0	0.00	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0

Table 31b  
 Statistical Zone 14  
 16-ft trawls

Summary of the mean total catch and environmental data (X), the standard error of the mean (SEM) and the number of samples taken (n) during the 1989 June-July Shrimp and Bottomfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m<sup>3</sup>, and oxygen in ppm. No trawl samples were taken in depths greater than 5 fm.

Environmental category	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm		
	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	6.8	4.33	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total finfish kg	5.5	4.45	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total crustacean kg	0.9	0.91	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total others kg	0.0	0.00	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface temperature	31.1	0.32	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater temperature	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom temperature	29.9	0.94	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface salinity	16.6	1.78	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater salinity	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom salinity	21.7	3.23	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface chlorophyll	4.7	1.49	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface oxygen	8.1	0.47	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater oxygen	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom oxygen	6.3	1.18	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0

Table 32a  
 Statistical Zone 16  
 16-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 16 during the 1989 June-July Shrimp and Bottomfish Survey by depth stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken. No trawl samples were taken in depths greater than 5 fm.

SPECIES	0- 5 FM					6-10 FM					11-20 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
<i>Penaeus</i>															
<i>aztecus</i>	174.0	165.08	0.5	0.33	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Palaemon</i>															
<i>spp.</i>	68.0	68.00	0.0	0.00	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Callinectes</i>															
<i>sapidus</i>	30.6	26.75	1.0	1.00	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Penaeus</i>															
<i>setiferus</i>	22.0	22.00	0.1	0.09	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Macrobrachium</i>															
<i>ohione</i>	4.0	4.00	0.0	0.00	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Libinia</i>															
<i>spp.</i>	2.0	2.00	0.0	0.00	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Anchoa</i>															
<i>mitchilli</i>	981.6	820.35	1.3	1.11	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Cynoscion</i>															
<i>arenarius</i>	210.0	183.66	0.5	0.33	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Stellifer</i>															
<i>lanceolatus</i>	132.0	98.22	0.4	0.36	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Micropogonias</i>															
<i>undulatus</i>	72.1	12.38	1.8	0.19	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Peprilus</i>															
<i>alepidotus</i>	29.1	18.46	0.1	0.13	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Polydactylus</i>															
<i>octonemus</i>	24.0	24.00	0.3	0.27	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Bairdiella</i>															
<i>chrysoura</i>	18.0	18.00	0.8	0.82	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Anchoa</i>															
<i>hepsetus</i>	13.1	11.48	0.0	0.00	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Squid</i>	4.0	4.00	0.0	0.00	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0

Table 32b  
 Statistical Zone 16  
 16-ft trawls

Summary of the mean total catch and environmental data (X), the standard error of the mean (SEM) and the number of samples taken (n) during the 1989 June-July Shrimp and Bottomfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m<sup>3</sup>, and oxygen in ppm. No trawl samples were taken in depths greater than 5 fm.

Environmental category	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm		
	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	9.2	3.18	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total finfish kg	7.4	2.31	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total crustacean kg	1.8	1.82	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total others kg	0.0	0.00	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface temperature	30.5	0.70	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater temperature	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom temperature	29.7	0.40	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface salinity	14.4	6.49	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater salinity	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom salinity	17.9	7.95	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface chlorophyll	4.7	2.22	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface oxygen	8.6	0.97	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater oxygen	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom oxygen	5.7	1.88	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0

Table 33a  
 Statistical Zone 17  
 16-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 17 during the 1989 June-July Shrimp and Bottomfish Survey by depth stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken. No trawl samples were taken in depths greater than 5 fm.

SPECIES	0- 5 FM					6-10 FM					11-20 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
<i>Penaeus setiferus</i>	32.0	32.00	0.0	0.00	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Penaeus aztecus</i>	16.0	10.00	0.0	0.00	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Callinectes sapidus</i>	14.0	14.00	1.7	1.73	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Xiphopenaeus kroyeri</i>	2.0	2.00	0.0	0.00	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Anchoa mitchilli</i>	2060.0	1206.63	0.8	0.69	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Brevoortia patronus</i>	554.0	551.00	1.5	1.45	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Cynoscion arenarius</i>	274.0	268.00	1.0	1.00	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Bagre marinus</i>	110.0	110.00	0.9	0.91	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Chaetodipterus faber</i>	28.0	28.00	0.2	0.18	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Sphoeroides parvus</i>	24.0	13.86	0.0	0.00	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Arius felis</i>	24.0	24.00	0.8	0.82	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Peprilus alepidotus</i>	18.0	10.39	0.1	0.09	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0

Table 33b  
 Statistical Zone 17  
 16-ft trawls

Summary of the mean total catch and environmental data (X), the standard error of the mean (SEM) and the number of samples taken (n) during the 1989 June-July Shrimp and Bottomfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m<sup>3</sup>, and oxygen in ppm. No trawl samples were taken in depths greater than 5 fm.

Environmental category	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm		
	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	7.3	7.27	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total finfish kg	5.5	5.45	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total crustacean kg	1.8	1.82	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total others kg	0.0	0.00	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface temperature	29.5	0.15	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater temperature	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom temperature	29.6	0.45	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface salinity	8.8	2.43	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater salinity	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom salinity	15.6	1.75	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface chlorophyll	3.9	1.27	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface oxygen	7.3	0.13	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater oxygen	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom oxygen	6.8	0.31	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0



Table 34. 1989 October-December Shrimp and Groundfish Survey species composition list, 296 trawl stations, for those vessels that used a 40-ft trawl. Species with a total weight of less than 0.0277 kg (0.05 lbs) are indicated on table as 0.0 kg.

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OF OCCURRENCE
<u>Finfishes</u>					
<i>Stenotomus caprinus</i>	longspine porgy	24813	881.9	177	59.8
<i>Microgogonias undulatus</i>	Atlantic croaker	15223	906.0	190	64.2
<i>Chloroscombrus chrysurus</i>	Atlantic bumper	9227	223.9	124	41.9
<i>Peprilus burti</i>	gulf butterfly	8374	573.5	122	41.2
<i>Arius felis</i>	hardhead catfish	6589	874.6	81	27.4
<i>Leiostomus xanthurus</i>	spot	6343	714.2	128	43.2
<i>Serranus atrobranchus</i>	blackear bass	5820	75.2	102	34.5
<i>Cynoscion</i> spp.	seatrouts	5228	15.8	47	15.9
<i>Syacium gunteri</i>	shoal flounder	4985	104.0	81	27.4
<i>Anchoa hepsetus</i>	striped anchovy	4329	69.1	51	17.2
<i>Prionotus longispinosus</i>	bigeye searobin	4303	151.7	166	56.1
<i>Trachurus lathami</i>	rough scad	4148	141.7	87	29.4
<i>Diplectrum bivittatum</i>	dwarf sand perch	3897	61.4	151	51.0
<i>Synodus foetens</i>	inshore lizardfish	3873	425.2	213	72.0
<i>Cynoscion nothus</i>	silver seatrout	3657	183.5	96	32.4
<i>Mullus auratus</i>	red goatfish	3530	159.4	27	9.1
<i>Lutjanus campechanus</i>	red snapper	3401	95.4	175	59.1
<i>Prionotus stearnsi</i>	shortwing searobin	3227	32.8	50	16.9
<i>Sphoeroides parvus</i>	least puffer	3203	21.2	104	35.1
<i>Cynoscion arenarius</i>	sand seatrout	3127	301.0	142	48.0
<i>Centropristis philadelphica</i>	rock sea bass	2736	133.5	174	58.8
<i>Lagodon rhomboides</i>	pinfish	2531	163.5	114	38.5
<i>Syacium</i> spp.	lefteye flounders	2472	26.0	30	10.1
<i>Upeneus parvus</i>	dwarf goatfish	2315	71.5	105	35.5
<i>Pristipomoides aquilonaris</i>	wenchman	2233	97.0	77	26.0
<i>Anchoa mitchilli</i>	bay anchovy	1943	3.7	22	7.4
<i>Etropus crossotus</i>	fringed flounder	1815	33.4	104	35.1
<i>Trichiurus lepturus</i>	Atlantic cutlassfish	1587	93.4	69	23.3
<i>Prionotus paralatus</i>	Mexican searobin	1419	40.3	57	19.3
<i>Lepophidium brevibarbe</i>	blackedge cusk-eel	1250	49.5	63	21.3
<i>Stellifer lanceolatus</i>	star drum	1085	14.5	15	5.1
<i>Saurida brasiliensis</i>	largescale lizardfish	1083	14.1	97	32.8
<i>Syacium papillosum</i>	dusky flounder	1041	45.8	59	19.9
<i>Prionotus rubio</i>	blackwing searobin	1023	27.0	57	19.3
<i>Scorpaena calcarata</i>	smoothhead scorpionfish	899	11.0	57	19.3

Table 34. SEAMAP Species Composition (cont'd.)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER	TOTAL WEIGHT	NUMBER OF	% FREQUENCY OF OCCURRENCE
		CAUGHT	CAUGHT (KG)	TOWS WHERE CAUGHT	
Harengula jaguana	scaled sardine	839	32.3	60	20.3
Halieutichthys aculeatus	pancake batfish	837	8.7	77	26.0
Bellator militaris	horned searobin	822	7.5	35	11.8
Peprilus alepidotus	harvestfish	757	12.4	58	19.6
Chaetodipterus faber	Atlantic spadefish	726	36.8	65	22.0
Steindachneria argentea	luminous hake	702	7.2	6	2.0
Citharichthys spilopterus	bay whiff	621	11.7	71	24.0
Trichopsetta ventralis	sash flounder	575	14.7	48	16.2
Eucinostomus gula	silver jenny	546	11.5	73	24.7
Porichthys plectrodon	Atlantic midshipman	529	14.1	81	27.4
Brevoortia patronus	gulf menhaden	470	56.1	36	12.2
Cyclopsetta chittendeni	Mexican flounder	449	23.0	76	25.7
Symphurus plagiusa	blackcheek tonguefish	409	8.6	56	18.9
Eucinostomus argenteus	spotfin mojarra	406	6.6	25	8.4
Orthopristis chrysoptera	pigfish	365	24.1	52	17.6
Balistes capriscus	gray triggerfish	340	28.3	86	29.1
Lutjanus synagris	lane snapper	337	23.5	73	24.7
Pontinus longispinis	longspine scorpionfish	316	7.6	7	2.4
Menticirrhus americanus	southern kingfish	268	20.5	31	10.5
Lagocephalus laevigatus	smooth puffer	212	17.8	58	19.6
Monacanthus hispidus	planehead filefish	206	3.9	34	11.5
Polydactylus octonemus	Atlantic threadfin	195	9.5	29	9.8
Synodus poeyi	offshore lizardfish	188	2.2	31	10.5
Opisthonema oglinum	Atlantic thread herring	176	10.6	27	9.1
Bollmannia communis	ragged goby	171	1.0	20	6.8
Prionotus roseus	bluespotted searobin	169	4.5	8	2.7
Selene setapinnis	Atlantic moonfish	151	4.2	35	11.8
Selar crumenophthalmus	bigeye scad	151	14.0	16	5.4
Symphurus civitatus	offshore tonguefish	148	2.2	7	2.4
Larimus fasciatus	banded drum	147	2.7	17	5.7
Centropristis ocyura	bank sea bass	142	10.6	15	5.1
Trachinocephalus myops	snakefish	133	7.4	3	1.0
Sphyraena guachancho	guaguanche	127	12.3	29	9.8
Prionotus tribulus	bighead searobin	120	7.9	26	8.8
Engyophrys senta	spiny flounder	119	0.5	18	6.1
Scomber japonicus	chub mackerel	111	11.4	12	4.1
Hildebrandia flava	yellow conger	104	10.2	18	6.1
Symphurus diomedianus	spottedfin tonguefish	99	1.4	4	1.4
Paralichthys lethostigma	southern flounder	94	30.7	45	15.2

Table 34. SEAMAP Species Composition (cont'd.)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OF OCCURRENCE
<i>Sphoeroides dorsalis</i>	marbled puffer	93	3.3	16	5.4
<i>Gymnachirus texae</i>	fringed sole	86	3.1	29	9.8
<i>Ophidion welshi</i>	crested cusk-eel	86	4.3	23	7.8
<i>Caulolatilus intermedius</i>	anchor tilefish	86	14.2	19	6.4
<i>Hoplunnis macrurus</i>	freckled pike-conger	84	2.1	21	7.1
<i>Prionotus ophryas</i>	bandtail searobin	80	2.4	17	5.7
<i>Pagrus pagrus</i>	red porgy	77	39.6	6	2.0
<i>Anchoviella perfaciata</i>	flat anchovy	77	0.1	3	1.0
<i>Haemulon aurolineatum</i>	tomtate	75	5.9	9	3.0
<i>Ogcocephalus</i> spp.	batfishes	74	5.3	17	5.7
<i>Urophycis floridana</i>	southern hake	71	8.2	13	4.4
<i>Caranx crysos</i>	blue runner	69	5.7	23	7.8
<i>Lepophidium</i> spp.	cusk-eels	66	2.6	11	3.7
<i>Kathetostoma albigutta</i>	lancer stargazer	63	3.7	16	5.4
<i>Lepophidium jeannae</i>	mottled cusk-eel	60	3.2	5	1.7
<i>Gymnothorax nigromarginatus</i>	blackedge moray	60	6.0	11	3.7
<i>Anchoa lyolepis</i>	dusky anchovy	59	0.4	3	1.0
<i>Etrumeus teres</i>	round herring	59	2.6	18	6.1
<i>Ancylopsetta dilecta</i>	three-eye flounder	59	4.4	16	5.4
<i>Bathyanthias mexicanus</i>	yellowtail bass	59	1.0	3	1.0
<i>Rhomboplites aurorubens</i>	vermilion snapper	56	3.3	11	3.7
<i>Anchoa</i> spp.	anchovies	55	0.1	6	2.0
<i>Rhizoprionodon terraenovae</i>	Atlantic sharpnose shark	55	61.5	21	7.1
<i>Priacanthus arenatus</i>	bigeye	54	7.3	9	3.0
<i>Diplectrum formosum</i>	sand perch	50	5.9	8	2.7
<i>Ancylopsetta quadrocellata</i>	ocellated flounder	49	9.5	19	6.4
<i>Scomberomorus maculatus</i>	Spanish mackerel	49	4.6	22	7.4
<i>Equetus</i> spp.	drums	48	2.6	8	2.7
<i>Anchoa nasuta</i>	longnose anchovy	48	0.2	3	1.0
<i>Brotula barbata</i>	bearded brotula	47	14.4	16	5.4
<i>Selene vomer</i>	lookdown	46	4.6	13	4.4
<i>Centropristis striata</i>	black sea bass	46	1.5	2	0.7
<i>Decapterus punctatus</i>	round scad	45	2.3	10	3.4
Engraulidae	anchovies	43	0.0	3	1.0
<i>Hoplunnis</i> spp.	pike-congers	43	0.7	9	3.0
<i>Narcine brasiliensis</i>	lesser electric ray	42	10.1	7	2.4
<i>Raja texana</i>	roundel skate	41	20.2	19	6.4
<i>Monacanthus setifer</i>	pygmy filefish	41	1.8	3	1.0
<i>Ogcocephalus nasutus</i>	shortnose batfish	36	0.3	8	2.7

Table 34. SEAMAP Species Composition (cont'd.)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OF OCCURRENCE
<i>Sardinella aurita</i>	Spanish sardine	36	0.9	8	2.7
<i>Equetus acuminatus</i>	high-hat	34	4.8	6	2.0
<i>Bagre marinus</i>	gafftopsail catfish	32	5.7	5	1.7
<i>Equetus umbrosus</i>	cubbyu	29	1.5	6	2.0
<i>Ophidion holbrooki</i>	bank cusk-eel	27	2.0	3	1.0
<i>Peristedion gracile</i>	slender searobin	26	0.7	6	2.0
<i>Citharichthys macrops</i>	spotted whiff	23	0.7	5	1.7
<i>Prionotus scitulus</i>	leopard searobin	22	0.8	6	2.0
<i>Prionotus</i> spp.	searobins	22	0.1	2	0.7
<i>Antennarius radiosus</i>	singlespot frogfish	17	0.2	5	1.7
<i>Aluterus schoepfi</i>	orange filefish	17	1.2	9	3.0
<i>Gymnothorax saxicola</i>	honeycomb moray	16	2.3	1	0.3
<i>Serranus phoebe</i>	tattler	16	1.0	2	0.7
<i>Etropus microstomus</i>	smallmouth flounder	14	0.1	2	0.7
<i>Urophycis cirrata</i>	gulf hake	14	1.3	3	1.0
<i>Scomberomorus cavalla</i>	king mackerel	13	1.6	6	2.0
<i>Scorpaena dispar</i>	hunchback scorpionfish	12	1.7	2	0.7
<i>Mustelus canis</i>	smooth dogfish	11	24.0	8	2.7
<i>Citharichthys cornutus</i>	horned whiff	10	0.1	2	0.7
<i>Cyclopsetta fimbriata</i>	spotfin flounder	10	0.0	1	0.3
<i>Hemicarax amblyrhynchus</i>	bluntnose jack	10	0.3	5	1.7
<i>Scorpaena brasiliensis</i>	barbfish	9	0.0	4	1.4
<i>Decodon puellaris</i>	red hogfish	9	0.2	2	0.7
<i>Hemipteronotus novacula</i>	pearly razorfish	9	0.5	1	0.3
<i>Dasyatis sabina</i>	Atlantic stringray	9	4.0	3	1.0
<i>Hoplunnis diomedianus</i>	blacktail pike-conger	9	0.1	2	0.7
<i>Lactophrys quadricornis</i>	scrawled cowfish	8	0.4	4	1.4
<i>Oligoplites saurus</i>	leatherjack	8	0.2	5	1.7
<i>Pristigenys alta</i>	short bigeye	8	0.4	3	1.0
<i>Caranx hippos</i>	crevalle jack	8	0.6	4	1.4
<i>Rachycentron canadum</i>	cobia	8	4.4	7	2.4
<i>Echeneis naucrates</i>	sharksucker	8	3.3	4	1.4
<i>Gobionellus hastatus</i>	sharptail goby	7	0.2	2	0.7
<i>Ogcocephalus radiatus</i>	polka-dot batfish	7	3.0	2	0.7
<i>Gymnothorax ocellatus</i>	ocellated moray	7	1.5	1	0.3
<i>Dibranchius atlanticus</i>	Atlantic batfish	6	0.0	2	0.7
<i>Neomerinthe hemingwayi</i>	spinycheek scorpionfish	6	5.2	4	1.4
<i>Trachinotus carolinus</i>	Florida pompano	5	1.2	2	0.7
<i>Pogonias cromis</i>	black drum	4	42.5	3	1.0

Table 34. SEAMAP Species Composition (cont'd.)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OF OCCURRENCE
<i>Pomatomus saltatrix</i>	bluefish	4	2.6	2	0.7
<i>Synagrops bellus</i>	blackmouth bass	4	0.1	1	0.3
<i>Paralichthys albigutta</i>	gulf flounder	4	1.2	4	1.4
<i>Astroscoptes y-graecum</i>	southern stargazer	4	0.7	2	0.7
<i>Chaetodon sedentarius</i>	reef butterflyfish	4	0.2	1	0.3
<i>Trinectes maculatus</i>	hogchoker	4	0.3	3	1.0
<i>Achirus lineatus</i>	lined sole	3	0.0	2	0.7
<i>Chilomycterus schoepfi</i>	striped burrfish	3	0.4	3	1.0
<i>Raja olseni</i>	spreadfin skate	3	0.3	1	0.3
<i>Sphyrna tiburo</i>	bonnethead	3	1.0	3	1.0
<i>Squatina dumeril</i>	Atlantic angel shark	3	1.2	1	0.3
<i>Bembrops gobioides</i>	goby flathead	3	0.5	1	0.3
<i>Ophidion grayi</i>	blotched cusk-eel	3	0.1	2	0.7
<i>Paralichthys</i> spp.	flounders	3	0.6	1	0.3
<i>Etropus</i> spp.	lefteye flounders	3	0.0	1	0.3
<i>Serraniculus pumilio</i>	pygmy sea bass	3	0.1	1	0.3
<i>Bregmaceros atlanticus</i>	antenna codlet	3	0.0	2	0.7
<i>Physiculus fulvus</i>	metallic codling	3	0.3	1	0.3
<i>Menticirrhus littoralis</i>	gulf kingfish	3	0.5	2	0.7
<i>Equetus punctatus</i>	spotted drum	3	0.1	1	0.3
<i>Sciaenops ocellatus</i>	red drum	2	16.9	2	0.7
<i>Serranus subligarius</i>	belted sandfish	2	0.0	1	0.3
<i>Rypticus maculatus</i>	whitespotted soapfish	2	0.1	1	0.3
<i>Alectis ciliaris</i>	African pompano	2	0.1	1	0.3
<i>Neobythites gillii</i>	cusk-eel	2	0.1	1	0.3
<i>Mustelus norrisi</i>	Florida smoothhound	2	10.7	2	0.7
<i>Rhinoptera bonasus</i>	cownose ray	2	23.7	2	0.7
<i>Myliobatis fremin</i>	bullnose ray	2	5.1	2	0.7
Exocoetidae	flyingfishes	2	0.2	1	0.3
<i>Ophichthus gomesi</i>	shrimp eel	2	0.1	2	0.7
<i>Opsanus beta</i>	gulf toadfish	2	0.2	1	0.3
<i>Ogcocephalus declivirostris</i>	slantbrow batfish	1	0.1	1	0.3
Tetraodontidae	puffers	1	0.0	1	0.3
<i>Ophichthus rex</i>	king snake eel	1	27.3	1	0.3
<i>Hemiramphus brasiliensis</i>	ballyhoo	1	0.0	1	0.3
<i>Synodus intermedius</i>	sand diver	1	0.1	1	0.3
<i>Alosa chrysochloris</i>	skipjack herring	1	0.1	1	0.3
<i>Dasyatis say</i>	bluntnose stingray	1	1.2	1	0.3
<i>Sphyrna lewini</i>	scalloped hammerhead	1	1.3	1	0.3

Table 34. SEAMAP Species Composition (cont'd.)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER	TOTAL WEIGHT	NUMBER OF	% FREQUENCY OF OCCURRENCE
		CAUGHT	CAUGHT (KG)	TOWS WHERE CAUGHT	
<i>Umbrina coroides</i>	sand drum	1	0.2	1	0.3
<i>Bothus</i> spp.	left-eye flounders	1	0.0	1	0.3
<i>Rypticus saponaceus</i>	greater soapfish	1	0.0	1	0.3
<i>Mycteroperca microlepis</i>	gag	1	0.4	1	0.3
<i>Epinephelus flavolimbatus</i>	yellowedge grouper	1	0.2	1	0.3
<i>Fistularia petimba</i>	red cornetfish	1	0.2	1	0.3
<i>Mugil cephalus</i>	striped mullet	1	0.0	1	0.3
<i>Syngnathus louisianae</i>	chain pipefish	1	0.1	1	0.3
<u>Crustaceans</u>					
<i>Trachypenaeus similis</i>	roughback shrimp	12921	42.6	65	22.0
<i>Penaeus aztecus</i>	brown shrimp	10511	246.4	239	80.7
<i>Callinectes similis</i>	lesser blue crab	8989	161.7	197	66.6
<i>Portunus spinicarpus</i>	longspine swimming crab	5560	37.0	50	16.9
<i>Sicyonia dorsalis</i>	lesser rock shrimp	5436	14.5	73	24.7
<i>Sicyonia brevirostris</i>	brown rock shrimp	5408	80.6	72	24.3
<i>Penaeus setiferus</i>	white shrimp	3270	58.3	90	30.4
<i>Portunus gibbesii</i>	iridescent swimming crab	3266	23.7	140	47.3
<i>Squilla empusa</i>	mantis shrimp	3163	28.9	112	37.8
<i>Trachypenaeus constrictus</i>	roughneck shrimp	2814	5.9	31	10.5
<i>Trachypenaeus</i> spp.	roughneck shrimps	1878	5.0	39	13.2
<i>Squilla chydæa</i>	mantis shrimp	961	6.9	34	11.5
<i>Solenocera</i> spp.	humpback shrimps	779	5.4	30	10.1
<i>Callinectes sapidus</i>	blue crab	543	14.3	24	8.1
<i>Parapenaeus</i> spp.	penaeid shrimps	524	0.9	5	1.7
<i>Penaeus duorarum</i>	pink shrimp	507	12.5	50	16.9
<i>Portunus spinimanus</i>	blotched swimming crab	222	3.5	35	11.8
<i>Libinia emarginata</i>	portly spider crab	211	41.7	18	6.1
<i>Calappa sulcata</i>	yellow box crab	116	21.2	34	11.5
<i>Anasimus latus</i>	stilt spider crab	65	1.0	11	3.7
<i>Solenocera vioscai</i>	humpback shrimp	62	0.1	4	1.4
<i>Squilla</i> spp.	mantis shrimps	62	0.8	10	3.4
<i>Stenorhynchus seticornis</i>	yellowline arrow crab	39	0.3	8	2.7
<i>Xiphopenaeus kroyeri</i>	seabob	37	0.2	2	0.7
<i>Hepatus epheliticus</i>	calico crab	33	5.2	7	2.4
<i>Scyllarus</i> spp.	slipper lobsters	27	0.1	3	1.0
<i>Ovalipes floridanus</i>	Florida lady crab	20	0.2	2	0.7
<i>Scyllarides nodifer</i>	ridged slipper lobster	17	0.7	2	0.7

Table 34. SEAMAP Species Composition (cont'd.)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER	TOTAL WEIGHT	NUMBER OF	% FREQUENCY OF OCCURRENCE
		CAUGHT	CAUGHT (KG)	TOWS WHERE CAUGHT	
Raninoides louisianensis	gulf frog crab	14	0.2	7	2.4
Persephona crinita	pink purse crab	13	0.0	1	0.3
Persephona spp.	purse crabs	12	0.0	1	0.3
Emerita benedicti	Benedict sand crab	11	0.0	2	0.7
Leiolambrus nitidus	white elbow crab	7	0.0	2	0.7
Persephona mediterranea	mottled purse crab	6	0.0	4	1.4
Arenaeus cribrarius	speckled swimming crab	6	0.3	3	1.0
Pilumnus sayi	spineback hairy crab	4	0.0	1	0.3
Ovalipes stephensoni	coarsehand lady crab	4	0.3	3	1.0
Collodes leptocheles	spider crab	4	0.0	1	0.3
Porcellana sayana	spotted porcelain crab	4	0.0	1	0.3
Ranilia muricata	muricate frog crab	3	0.0	1	0.3
Parthenope granulata	bladetooth elbow crab	3	0.0	1	0.3
Menippe mercenaria	Florida stone crab	3	0.0	1	0.3
Panopeus spp.	mud crabs	3	0.0	1	0.3
Sicyonia burkenroadi	spiny rock shrimp	3	0.0	2	0.7
Squilla deceptrix	mantis shrimp	3	0.0	1	0.3
Caridea	caridean shrimps	2	0.0	1	0.3
Xanthidae	mud crabs	2	0.0	1	0.3
Libinia dubia	longnose spider crab	2	0.1	1	0.3
Sicyonia spp.	rock shrimps	1	0.0	1	0.3
Myropsis quinquespinosa	fivespine purse crab	1	0.0	1	0.3
Speocarcinus lobatus	gulf squareback crab	1	0.0	1	0.3
Hepatus spp.	box crabs	1	0.1	1	0.3
Calappa flammea	flame box crab	1	0.4	1	0.3
Mithrax acuticornis	sharphorn clinging crab	1	0.1	1	0.3
Nibilia antilocapra	shorthorn spiny crab	1	0.0	1	0.3
Podochela spp.	spider crabs	1	0.0	1	0.3
<u>Others</u>					
Loligo pealeii	longfin squid	8033	80.3	189	63.9
Lolliguncula brevis	Atlantic brief squid	3259	31.1	76	25.7
Asteroidea	starfishes	2019	9.2	33	11.1
Amusium papyraceum	paper scallop	997	11.4	26	8.8
Myopsida	squids	884	17.7	15	5.1
Aurelia spp.	jellyfishes	670	42.4	33	11.1
Loligo spp.	squids	245	2.1	1	0.3

Table 34. SEAMAP Species Composition (cont'd.)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER	TOTAL WEIGHT	NUMBER OF	% FREQUENCY
		CAUGHT	CAUGHT (KG)	TOWS WHERE CAUGHT	OF OCCURRENCE
<i>Loligo pleii</i>	arrow squid	56	1.4	6	2.0
<i>Argopecten gibbus</i>	calico scallop	42	0.1	1	0.3
<i>Chrysaora quinquecirrha</i>	sea nettle	22	0.7	3	1.0
<i>Renilla mulleri</i>	short-stemmed sea pansy	13	0.1	3	1.0
Scutellidae	sand dollars	10	1.4	4	1.4
<i>Clypeaster</i> spp.	cake urchins	7	1.2	2	0.7
<i>Renilla</i> spp.	sea pansies	7	0.0	2	0.7
<i>Semirossia tenera</i>	lesser shining bobtail	6	0.1	1	0.3
Pelecypoda	bivalve mollusks	3	0.0	1	0.3
Semaeostomae	jellyfishes	3	0.3	2	0.7
Tunicata	tunicates	2	0.1	1	0.3
<i>Busycon</i> spp.	whelks	2	0.1	1	0.3
Ctenophora	comb jellies	2	0.1	1	0.3
<i>Luidia alternata</i>	banded luidia	1	0.0	1	0.3
<i>Pinna</i> spp.	penshell	1	0.8	1	0.3
<i>Octopus</i> spp.	octopuses	1	1.0	1	0.3



Table 35. 1989 October-December Shrimp and Groundfish Survey species composition list, 80 trawl stations, for those vessels that used a 20-ft trawl. Species with a total weight of less than 0.0277 kg (0.05 lbs) are indicated on table as 0.0 kg.

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER	TOTAL WEIGHT	NUMBER OF	% FREQUENCY
		CAUGHT	CAUGHT (KG)	TOWS WHERE CAUGHT	
<u>Finfishes</u>					
<i>Chloroscombrus chrysurus</i>	Atlantic bumper	661	3.6	13	16.3
<i>Cynoscion nothus</i>	silver seatrout	471	2.5	43	53.8
<i>Stellifer lanceolatus</i>	star drum	463	6.3	36	45.0
<i>Cynoscion arenarius</i>	sand seatrout	424	9.5	41	51.3
<i>Syacium gunteri</i>	shoal flounder	284	4.3	30	37.5
<i>Arius felis</i>	hardhead catfish	198	4.3	18	22.5
<i>Peprilus alepidotus</i>	harvestfish	143	1.4	26	32.5
<i>Symphurus plagiusa</i>	blackcheek tonguefish	140	2.4	41	51.3
<i>Chaetodipterus faber</i>	Atlantic spadefish	69	0.2	27	33.8
<i>Etropus crossotus</i>	fringed flounder	68	0.8	26	32.5
<i>Peprilus burti</i>	gulf butterfish	64	0.1	28	35.0
<i>Menticirrhus americanus</i>	southern kingfish	59	3.3	16	20.0
<i>Anchoa mitchilli</i>	bay anchovy	53	0.0	17	21.3
<i>Lutjanus campechanus</i>	red snapper	51	0.7	17	21.3
<i>Selene setapinnis</i>	Atlantic moonfish	50	0.3	14	17.5
<i>Prionotus tribulus</i>	bighead searobin	36	0.3	17	21.3
<i>Orthopristis chrysoptera</i>	pigfish	32	1.7	21	26.3
<i>Citharichthys spilopterus</i>	bay whiff	27	0.5	13	16.3
<i>Sphoeroides parvus</i>	least puffer	24	0.0	17	21.3
<i>Prionotus rubio</i>	blackwing searobin	22	0.2	7	8.8
<i>Polydactylus octonemus</i>	Atlantic threadfin	22	0.8	4	5.0
<i>Micropogonias undulatus</i>	Atlantic croaker	16	0.8	12	15.0
<i>Synodus foetens</i>	inshore lizardfish	14	0.6	10	12.5
<i>Lagodon rhomboides</i>	pinfish	11	0.4	9	11.3
<i>Eucinostomus gula</i>	silver jenny	11	0.1	4	5.0
<i>Prionotus longispinosus</i>	bigeye searobin	11	0.3	8	10.0
<i>Larimus fasciatus</i>	banded drum	10	0.0	8	10.0
<i>Hemicaranx amblyrhynchus</i>	bluntnose jack	9	0.1	5	6.3
<i>Selene vomer</i>	lookdown	8	0.0	6	7.5
<i>Leiostomus xanthurus</i>	spot	8	0.6	3	3.7
<i>Menticirrhus littoralis</i>	gulf kingfish	8	0.2	7	8.8
<i>Halieutichthys aculeatus</i>	pancake batfish	7	0.0	5	6.3
<i>Bagre marinus</i>	gafftopsail catfish	6	0.4	3	3.7
<i>Centropristis philadelphica</i>	rock sea bass	6	0.2	6	7.5
<i>Trachinotus carolinus</i>	Florida pompano	5	0.3	1	1.3

Table 35. SEAMAP Species Composition (cont'd.)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER	TOTAL WEIGHT	NUMBER OF	% FREQUENCY OF OCCURRENCE
		CAUGHT	CAUGHT (KG)	TOWS WHERE CAUGHT	
<i>Trichiurus lepturus</i>	Atlantic cutlassfish	5	0.1	5	6.3
<i>Ophidion welschi</i>	crested cusk-eel	5	0.2	5	6.3
<i>Porichthys plectrodon</i>	Atlantic midshipman	5	0.2	3	3.7
<i>Harengula jaguana</i>	scaled sardine	5	0.0	4	5.0
<i>Brevoortia patronus</i>	gulf menhaden	4	0.3	3	3.7
<i>Balistes capriscus</i>	gray triggerfish	4	0.1	3	3.7
<i>Scomberomorus maculatus</i>	Spanish mackerel	4	0.1	3	3.7
<i>Urophycis floridana</i>	southern hake	4	0.1	2	2.5
<i>Eucinostomus argenteus</i>	spotfin mojarra	3	0.0	3	3.7
<i>Lutjanus synagris</i>	lane snapper	3	0.1	3	3.7
<i>Ancylosetta quadrocellata</i>	ocellated flounder	3	0.4	3	3.7
<i>Achirus lineatus</i>	lined sole	3	0.0	2	2.5
<i>Gymnachirus texae</i>	fringed sole	2	0.0	2	2.5
<i>Cyclopsetta chittendeni</i>	Mexican flounder	2	0.0	2	2.5
<i>Monacanthus hispidus</i>	planehead filefish	2	0.0	2	2.5
<i>Lactophrys quadricornis</i>	scrawled cowfish	2	0.0	2	2.5
<i>Hippocampus erectus</i>	lined seahorse	2	0.0	2	2.5
<i>Bairdiella chrysoura</i>	silver perch	2	0.1	2	2.5
<i>Anchoa hepsetus</i>	striped anchovy	2	0.0	1	1.3
<i>Saurida brasiliensis</i>	largescale lizardfish	2	0.0	2	2.5
<i>Dasyatis sabina</i>	Atlantic stringray	2	0.9	2	2.5
<i>Narcine brasiliensis</i>	lesser electric ray	1	0.2	1	1.3
<i>Sardinella aurita</i>	Spanish sardine	1	0.0	1	1.3
<i>Scomberomorus cavalla</i>	king mackerel	1	0.0	1	1.3
Carangidae	jacks	1	0.0	1	1.3
<i>Caranx hippos</i>	crevalle jack	1	0.0	1	1.3
<i>Lagocephalus laevigatus</i>	smooth puffer	1	0.0	1	1.3
<i>Ogcocephalus pantostictus</i>	spotted batfish	1	0.0	1	1.3
<i>Scorpaena calcarata</i>	smoothhead scorpionfish	1	0.0	1	1.3
<i>Symphurus urospilus</i>	spottail tonguefish	1	0.0	1	1.3
<i>Paralichthys albigutta</i>	gulf flounder	1	0.2	1	1.3
<u>Crustaceans</u>					
<i>Penaeus setiferus</i>	white shrimp	831	7.0	52	65.0
<i>Trachypenaeus similis</i>	roughback shrimp	415	0.7	28	35.0
<i>Callinectes similis</i>	lesser blue crab	381	1.9	39	48.7
<i>Squilla empusa</i>	mantis shrimp	372	3.2	49	61.3
<i>Trachypenaeus</i> spp.	roughneck shrimps	369	1.4	12	15.0

Table 35. SEAMAP Species Composition (cont'd.)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OF OCCURRENCE
<i>Portunus gibbesii</i>	iridescent swimming crab	253	0.9	53	66.3
<i>Penaeus aztecus</i>	brown shrimp	114	0.8	36	45.0
<i>Penaeus duorarum</i>	pink shrimp	90	1.1	21	26.3
<i>Xiphopenaeus kroyeri</i>	seabob	84	0.3	12	15.0
<i>Trachypenaeus constrictus</i>	roughneck shrimp	80	0.2	9	11.3
<i>Sicyonia dorsalis</i>	lesser rock shrimp	57	0.0	22	27.5
<i>Portunus spinimanus</i>	blotched swimming crab	28	0.2	12	15.0
<i>Callinectes sapidus</i>	blue crab	24	0.2	6	7.5
<i>Pagurus pollicaris</i>	flatclaw hermit crab	14	0.1	9	11.3
<i>Sicyonia brevirostris</i>	brown rock shrimp	10	0.0	6	7.5
<i>Persephona crinita</i>	pink purse crab	9	0.0	7	8.8
<i>Metoporphaphis calcarata</i>	false arrow crab	7	0.0	5	6.3
<i>Persephona mediterranea</i>	mottled purse crab	6	0.0	5	6.3
<i>Libinia dubia</i>	longnose spider crab	5	0.1	3	3.7
<i>Albunea paretii</i>	beach mole crab	5	0.0	1	1.3
<i>Hepatus epheliticus</i>	calico crab	5	0.0	5	6.3
<i>Calappa sulcata</i>	yellow box crab	5	0.0	4	5.0
<i>Portunus sayi</i>	sargassum swimming crab	3	0.0	1	1.3
<i>Parthenope serrata</i>	sawtooth elbow crab	3	0.0	2	2.5
<i>Libinia emarginata</i>	portly spider crab	3	0.0	3	3.7
<i>Dyspanopeus texana</i>	gulf grassflat crab	3	0.0	2	2.5
<i>Arenaeus cribrarius</i>	speckled swimming crab	2	0.0	2	2.5
<i>Specocarcinus lobatus</i>	gulf squareback crab	2	0.0	2	2.5
<i>Dromidia antillensis</i>	hairy sponge crab	2	0.0	2	2.5
<i>Squilla neglecta</i>	mantis shrimp	2	0.0	2	2.5
<i>Porcellana sayana</i>	spotted porcelain crab	1	0.0	1	1.3
<i>Calappa flammea</i>	flame box crab	1	0.0	1	1.3
Xanthidae	mud crabs	1	0.0	1	1.3
<i>Petrochirus diogenes</i>	giant hermit crab	1	0.0	1	1.3
<u>Others</u>					
<i>Lolliguncula brevis</i>	Atlantic brief squid	782	5.7	61	76.3
<i>Renilla mulleri</i>	short-stemmed sea pansy	669	0.7	28	35.0
<i>Luidia clathrata</i>	sea star	311	2.5	25	31.3
<i>Brissopsis alta</i>	heart urchin	169	0.5	5	6.3
<i>Aurelia aurita</i>	moon jellyfish	82	1.3	8	10.0
<i>Dactylometra quinquecirrha</i>	compass jellyfish	82	1.6	23	28.8
Asteroidea	starfishes	53	0.1	13	16.3

Table 35. SEAMAP Species Composition (cont'd.)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER	TOTAL WEIGHT	NUMBER OF	% FREQUENCY
		CAUGHT	CAUGHT (KG)	TOWS WHERE CAUGHT	OF OCCURRENCE
<i>Loligo pealeii</i>	longfin squid	35	0.7	15	18.8
<i>Cantharus cancellarius</i>	cancellate cantharus	34	0.1	6	7.5
Actinidae	sea anemones	20	0.0	9	11.3
<i>Luidia alternata</i>	banded luidia	13	0.0	8	10.0
<i>Astropecten duplicatus</i>	spiny beaded sea star	9	0.0	1	1.3
<i>Stomolophus meleagris</i>	many-mouthed sea jelly	8	1.8	4	5.0
<i>Argopecten irradians</i>	bay scallop	8	0.0	3	3.7
<i>Neverita duplicata</i>	shark eye	7	0.1	6	7.5
<i>Busycon perversum</i>	perverse whelk	5	0.2	3	3.7
<i>Murex fulvescens</i>	giant eastern murex	5	0.6	4	5.0
Gorgonidae	gorgonians	5	0.0	4	5.0
Ascidacea	sea squirts	5	0.0	1	1.3
Ophiuroidea	brittlestars	3	0.0	2	2.5
<i>Thais haemastoma</i>	rocksnail	3	0.0	2	2.5
<i>Argopecten gibbus</i>	calico scallop	2	0.0	2	2.5
<i>Busycotypus spiratus</i>	pearwhelk	2	0.2	2	2.5
<i>Fasciolaria liliium</i>	banded tulip	1	0.0	1	1.3
Aplysiidae	seahare	1	0.0	1	1.3
<i>Oliva sayana</i>	lettered olive	1	0.0	1	1.3
<i>Anadara ovalis</i>	blood ark	1	0.0	1	1.3
<i>Laevicardium mortoni</i>	Morton eggcockle	1	0.0	1	1.3
<i>Astropecten antillensis</i>	beaded sea star	1	0.0	1	1.3
<i>Beroe ovata</i>	comb jelly	1	0.0	1	1.3
Holothuroidea	sea cucumbers	1	0.0	1	1.3
<i>Architectonica nobilis</i>	common sundial	1	0.0	1	1.3

Table 36. 1989 October-December Shrimp and Groundfish Survey species composition list, 23 trawl stations, for those vessels that used a 16-ft trawl. Species with a total weight of less than 0.0277 kg (0.05 lbs) are indicated on table as 0.0 kg.

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OF OCCURRENCE
<u>Finfishes</u>					
Anchoa mitchilli	bay anchovy	1838	2.4	11	47.8
Chloroscombrus chrysurus	Atlantic bumper	226	0.9	6	26.1
Cynoscion arenarius	sand seatrout	187	1.1	10	43.5
Menticirrhus americanus	southern kingfish	135	0.6	9	39.1
Symphurus plagiusa	blackcheek tonguefish	92	1.2	11	47.8
Arius felis	hardhead catfish	76	3.9	8	34.8
Cynoscion nothus	silver seatrout	54	0.2	4	17.4
Sphoeroides parvus	least puffer	39	0.4	8	34.8
Etropus crossotus	fringed flounder	37	0.5	8	34.8
Larimus fasciatus	banded drum	28	0.1	9	39.1
Peprilus burti	gulf butterflyfish	26	0.0	5	21.7
Anchoa hepsetus	striped anchovy	20	0.2	3	13.0
Citharichthys macrops	spotted whiff	18	0.2	3	13.0
Prionotus longispinosus	bigeye searobin	18	0.4	1	4.3
Prionotus tribulus	bighead searobin	15	0.0	5	21.7
Chaetodipterus faber	Atlantic spadefish	13	0.0	4	17.4
Stellifer lanceolatus	star drum	12	0.1	3	13.0
Synodus foetens	inshore lizardfish	10	0.6	4	17.4
Cynoscion spp.	seatrouts	9	0.0	1	4.3
Centropristis philadelphia	rock sea bass	6	0.2	1	4.3
Lutjanus campechanus	red snapper	6	0.1	2	8.7
Micropogonias undulatus	Atlantic croaker	5	0.1	2	8.7
Pogonias cromis	black drum	4	0.0	1	4.3
Citharichthys spilopterus	bay whiff	3	0.0	2	8.7
Eucinostomus argenteus	spotfin mojarra	3	0.1	2	8.7
Selene setapinnis	Atlantic moonfish	3	0.0	3	13.0
Diplectrum bivittatum	dwarf sand perch	3	0.1	1	4.3
Lutjanus synagris	lane snapper	2	0.1	2	8.7
Brevoortia patronus	gulf menhaden	2	0.0	2	8.7
Prionotus scitulus	leopard searobin	2	0.2	2	8.7
Monacanthus hispidus	planehead filefish	2	0.0	2	8.7
Achirus lineatus	lined sole	2	0.0	2	8.7
Porichthys plectrodon	Atlantic midshipman	2	0.0	2	8.7
Chilomycterus schoepfi	striped burrfish	2	0.2	2	8.7
Trichiurus lepturus	Atlantic cutlassfish	2	0.0	2	8.7

Table 36. SEAMAP Species Composition (cont'd.)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OF OCCURRENCE
<i>Scomberomorus maculatus</i>	Spanish mackerel	1	0.0	1	4.3
<i>Peprilus alepidotus</i>	harvestfish	1	0.0	1	4.3
<i>Archosargus probatocephalus</i>	sheepshead	1	0.2	1	4.3
<i>Ophidion welsbi</i>	crested cusk-eel	1	0.1	1	4.3
<i>Bairdiella chrysoura</i>	silver perch	1	0.0	1	4.3
<i>Prionotus</i> spp.	searobins	1	0.0	1	4.3
<i>Cyclopsetta chittendeni</i>	Mexican flounder	1	0.1	1	4.3
<i>Dasyatis sabina</i>	Atlantic stringray	1	0.6	1	4.3
<i>Eucinostomus gula</i>	silver jenny	1	0.0	1	4.3
<i>Selene vomer</i>	lookdown	1	0.0	1	4.3
<i>Syngnathus louisianae</i>	chain pipefish	1	0.0	1	4.3
<i>Ophichthus gomesi</i>	shrimp eel	1	0.0	1	4.3
<i>Saurida brasiliensis</i>	largescale lizardfish	1	0.0	1	4.3
<u>Crustaceans</u>					
<i>Trachypenaeus similis</i>	roughback shrimp	800	0.9	9	39.1
<i>Trachypenaeus constrictus</i>	roughneck shrimp	285	0.4	7	30.4
<i>Penaeus setiferus</i>	white shrimp	191	1.4	10	43.5
<i>Penaeus aztecus</i>	brown shrimp	111	0.9	9	39.1
<i>Callinectes similis</i>	lesser blue crab	96	0.8	7	30.4
<i>Palaemonetes vulgaris</i>	marsh grass shrimp	78	0.0	1	4.3
<i>Callinectes sapidus</i>	blue crab	46	0.4	4	17.4
<i>Squilla empusa</i>	mantis shrimp	40	0.4	6	26.1
<i>Xiphopenaeus kroyeri</i>	seabob	38	0.1	4	17.4
<i>Portunus gibbesii</i>	iridescent swimming crab	35	0.3	10	43.5
<i>Sicyonia dorsalis</i>	lesser rock shrimp	33	0.1	8	34.8
<i>Acetes americanus</i>	sergestid shrimp	16	0.0	3	13.0
<i>Portunus sayi</i>	sargassum swimming crab	14	0.0	1	4.3
<i>Hepatus epheliticus</i>	calico crab	8	0.5	1	4.3
Xanthidae	mud crabs	5	0.0	1	4.3
<i>Sicyonia brevirostris</i>	brown rock shrimp	3	0.1	1	4.3
<i>Arenaeus cribrarius</i>	speckled swimming crab	2	0.4	2	8.7
<i>Libinia dubia</i>	longnose spider crab	2	0.2	1	4.3
<i>Alpheus</i> spp.	snapping shrimps	1	0.0	1	4.3
<i>Calappa sulcata</i>	yellow box crab	1	0.5	1	4.3

Table 36. SEAMAP Species Composition (cont'd.)

<u>GENUS/SPECIES</u>	<u>COMMON NAME</u>	<u>TOTAL NUMBER CAUGHT</u>	<u>TOTAL WEIGHT CAUGHT (KG)</u>	<u>NUMBER OF TOWS WHERE CAUGHT</u>	<u>% FREQUENCY OF OCCURRENCE</u>
<u>Others</u>					
Lolliguncula brevis	Atlantic brief squid	459	2.3	18	78.3
Loliginidae	squids	6	0.0	1	4.3
Americardia media	Atlantic strawberry-cockle	1	0.5	1	4.3
Busycon contrarium	lightning whelk	1	0.7	1	4.3

Table 37a  
 Statistical Zone 11  
 40-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 11 during the 1989 October-December Shrimp and Groundfish Survey by depth stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken.

SPECIES	0- 5 FM					6-10 FM					11-20 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
<i>Trachypenaeus</i>															
<i>similis</i>	42.0	42.00	0.1	0.11	5	172.1	158.72	0.6	0.45	10	670.8	593.95	2.2	1.91	17
<i>Sicyonia</i>															
<i>dorsalis</i>	9.6	7.00	0.1	0.11	5	95.2	73.07	0.2	0.15	10	303.6	278.89	0.6	0.62	17
<i>Portunus</i>															
<i>spinicarpus</i>	0.0	0.00	0.0	0.00	5	15.4	15.39	0.2	0.15	10	7.4	3.04	0.0	0.02	17
<i>Sicyonia</i>															
<i>brevirostris</i>	1.2	1.20	0.1	0.05	5	0.6	0.60	0.0	0.03	10	51.5	42.42	0.7	0.58	17
<i>Callinectes</i>															
<i>similis</i>	128.0	77.09	1.9	1.60	5	102.7	42.62	2.6	1.09	10	145.4	41.70	3.7	1.08	17
<i>Penaeus</i>															
<i>aztecus</i>	30.2	19.01	0.5	0.48	5	66.3	32.51	1.1	0.51	10	78.1	33.69	1.4	0.47	17
<i>Chloroscombrus</i>															
<i>chrysurus</i>	930.8	848.55	3.1	2.52	5	325.4	191.17	2.3	1.10	10	727.3	602.63	5.1	3.35	17
<i>Stenotomus</i>															
<i>caprinus</i>	0.0	0.00	0.0	0.00	5	24.0	20.10	0.6	0.43	10	98.9	31.84	2.4	0.72	17
<i>Mullus</i>															
<i>auratus</i>	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	10	0.0	0.00	0.0	0.00	17
<i>Syacium</i>															
<i>spp.</i>	0.0	0.00	0.0	0.00	5	5.5	4.68	0.2	0.24	10	301.3	104.01	3.3	0.92	17
<i>Anchoa</i>															
<i>hepsetus</i>	603.6	285.08	9.7	4.33	5	339.3	145.04	2.3	1.24	10	178.1	160.37	3.3	2.97	17
<i>Diplectrum</i>															
<i>bivittatum</i>	4.8	3.50	0.2	0.11	5	73.6	40.00	0.9	0.35	10	265.6	55.08	3.9	0.76	17
<i>Sphoeroides</i>															
<i>parvus</i>	11.6	5.49	0.2	0.10	5	109.2	56.61	0.7	0.29	10	125.0	60.19	0.9	0.38	17
<i>Micropogonias</i>															
<i>undulatus</i>	120.8	91.52	6.2	4.14	5	53.0	38.16	3.0	1.86	10	156.5	110.18	8.9	6.19	17
<i>Squid</i>	172.6	92.71	1.4	0.58	5	370.0	177.11	2.5	1.27	10	55.0	22.65	0.7	0.32	17



Table 37a (cont'd.)  
 Statistical Zone 11  
 40-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 11 during the 1989 October-December Shrimp and Groundfish Survey by depth stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken.

SPECIES	21-30 FM					31-40 FM					>40 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Trachypenaeus															
<i>similis</i>	56.0	56.00	0.0	0.05	6	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	3
Sicyonia															
<i>dorsalis</i>	57.2	54.58	0.0	0.05	6	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	3
Portunus															
<i>spinicarpus</i>	177.3	95.16	1.5	0.79	6	559.9	245.67	3.7	1.84	5	20.7	6.03	0.2	0.05	3
Sicyonia															
<i>brevirostris</i>	115.5	57.42	2.2	1.00	6	220.4	119.74	3.0	1.53	5	0.0	0.00	0.0	0.00	3
Callinectes															
<i>similis</i>	299.8	276.34	2.9	2.43	6	40.8	40.80	0.3	0.30	5	0.8	0.77	0.0	0.00	3
Penaeus															
<i>aztecus</i>	136.8	69.06	2.1	0.90	6	20.7	10.65	1.0	0.51	5	33.0	15.03	1.0	0.85	3
Chloroscombrus															
<i>chrysurus</i>	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	3
Stenotomus															
<i>caprinus</i>	198.5	186.16	5.9	5.18	6	940.8	530.16	25.7	13.54	5	115.7	36.71	6.9	2.56	3
Mullus															
<i>auratus</i>	80.8	80.83	3.6	3.61	6	1474.6	1421.93	65.3	62.70	5	17.3	15.40	1.1	0.97	3
Syacium															
<i>spp.</i>	3.0	3.00	0.0	0.05	6	0.0	0.00	0.0	0.00	5	2.1	2.13	0.1	0.14	3
Anchoa															
<i>hepsetus</i>	11.2	11.18	0.2	0.24	6	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	3
Diplectrum															
<i>bivittatum</i>	18.6	17.47	0.5	0.47	6	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	3
Sphoeroides															
<i>parvus</i>	0.6	0.59	0.0	0.00	6	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	3
Micropogonias															
<i>undulatus</i>	16.3	8.71	1.3	0.65	6	3.2	3.20	0.2	0.18	5	1.3	1.28	0.1	0.14	3
Squid															
	10.8	7.42	0.3	0.26	6	10.8	7.47	0.3	0.16	5	39.8	29.83	1.4	0.10	3

Table 37b  
 Statistical Zone 11  
 40-ft trawls

Summary of the mean total catch and environmental data (X), the standard error of the mean (SEM) and the number of samples taken (n) during the 1989 October-December Shrimp and Groundfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m<sup>3</sup>, and oxygen in ppm.

Environmental category	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm		
	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	63.4	4.65	5	62.6	27.02	10	88.2	18.17	17	62.2	16.09	6	180.2	74.45	5	66.2	2.13	3
Total finfish kg	57.9	5.83	5	52.8	26.03	10	76.3	17.50	17	50.3	16.64	6	171.2	74.25	5	63.3	1.26	3
Total crustacean kg	4.5	3.04	5	6.7	2.31	10	11.0	3.23	17	11.7	2.79	6	8.6	3.27	5	1.3	0.85	3
Total others kg	1.4	0.57	5	2.4	1.30	10	1.0	0.36	17	0.2	0.21	6	0.4	0.23	5	1.9	0.29	3
Surface temperature	18.5	0.52	4	20.5	0.40	13	20.2	0.26	18	22.1	0.33	8	23.3	0.13	4	23.2	0.02	4
Midwater temperature	18.0	0.71	4	20.4	0.33	13	20.6	0.25	18	22.7	0.16	8	23.7	0.28	4	23.6	0.19	4
Bottom temperature	18.1	0.97	4	21.0	0.36	13	20.9	0.29	18	21.1	0.53	8	20.7	0.99	4	19.6	0.96	4
Surface salinity	30.8	0.61	4	31.1	0.51	13	33.1	0.66	18	34.2	0.61	8	35.7	0.17	4	35.8	0.19	4
Midwater salinity	30.9	0.32	4	31.1	0.57	13	34.1	0.19	18	35.2	0.23	8	36.1	0.12	4	36.3	0.08	4
Bottom salinity	30.9	0.31	4	31.6	0.54	13	35.0	0.25	18	36.7	0.11	8	36.6	0.19	4	36.7	0.05	4
Surface chlorophyll	1.9	0.21	3	1.3	0.37	5	0.8	0.13	16	1.0	0.14	6	0.8	0.33	2	1.1	0.00	1
Midwater chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom chlorophyll	0.0	0.00	0	0.8	0.00	1	0.6	0.21	2	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface oxygen	6.5	0.31	4	7.0	0.27	13	7.1	0.17	18	7.2	0.18	8	7.0	0.02	4	7.7	0.53	4
Midwater oxygen	6.9	0.03	3	6.6	0.30	10	6.9	0.14	17	6.9	0.19	8	6.8	0.10	4	7.6	0.54	3
Bottom oxygen	6.9	0.09	4	6.0	0.35	13	6.3	0.21	18	5.5	0.23	8	5.1	0.25	4	6.0	0.30	4

Table 38a  
 Statistical Zone 12  
 40-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 12 during the 1989 October-December Shrimp and Groundfish Survey by depth stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken. No trawl samples were taken in depths greater than 5 fm.

SPECIES	0- 5 FM					6-10 FM					11-20 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Callinectes															
<u>similis</u>	252.0	0.00	2.5	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Trachypenaeus															
<u>constrictus</u>	156.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Penaeus															
<u>aztecus</u>	102.0	0.00	1.4	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Penaeus															
<u>setiferus</u>	54.0	0.00	1.6	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Trachypenaeus															
<u>similis</u>	24.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Portunus															
<u>gibbesii</u>	18.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Arius															
<u>felis</u>	576.0	0.00	30.5	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Menticirrhus															
<u>americanus</u>	234.0	0.00	13.9	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Anchoa															
<u>hepsetus</u>	144.0	0.00	2.2	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Etropus															
<u>crossotus</u>	120.0	0.00	1.9	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Narcine															
<u>brasiliensis</u>	114.0	0.00	18.0	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Halieutichthys															
<u>aculeatus</u>	72.0	0.00	0.5	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Diplectrum															
<u>bivittatum</u>	60.0	0.00	0.5	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Cynoscion															
<u>arenarius</u>	48.0	0.00	3.0	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0

Table 38b  
 Statistical Zone 12  
 40-ft trawls

Summary of the mean total catch and environmental data (X), the standard error of the mean (SEM) and the number of samples taken (n) during the 1989 October-December Shrimp and Groundfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m<sup>3</sup>, and oxygen in ppm. No trawl samples were taken in depths greater than 5 fm.

Environmental category	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm		
	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	100.9	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total finfish kg	95.5	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total crustacean kg	5.5	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total others kg	0.0	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface temperature	17.7	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater temperature	17.6	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom temperature	17.7	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface salinity	32.0	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater salinity	32.0	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom salinity	32.0	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface chlorophyll	1.8	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface oxygen	6.9	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater oxygen	6.7	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom oxygen	6.8	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0

Table 39a  
 Statistical Zone 13  
 40-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 13 during the 1989 October-December Shrimp and Groundfish Survey by depth stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken.

SPECIES	0- 5 FM					6-10 FM					11-20 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Callinectes															
<i>similis</i>	86.7	29.03	0.3	0.18	3	0.0	0.00	0.0	0.00	0	431.3	239.92	5.6	2.41	10
Trachypenaeus															
<i>similis</i>	4.0	4.00	0.0	0.00	3	0.0	0.00	0.0	0.00	0	606.7	394.88	2.9	2.08	10
Penaeus															
<i>aztecus</i>	218.2	137.93	1.9	1.15	3	0.0	0.00	0.0	0.00	0	178.1	46.79	2.3	0.46	10
Portunus															
<i>spinicarpus</i>	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	10
Portunus															
<i>gibbesii</i>	21.8	17.91	0.0	0.04	3	0.0	0.00	0.0	0.00	0	179.7	73.90	1.0	0.38	10
Squilla															
<i>spp.</i>	6.4	6.36	0.1	0.08	3	0.0	0.00	0.0	0.00	0	127.6	55.92	1.3	0.58	10
Leiostomus															
<i>xanthurus</i>	42.8	22.52	4.2	2.10	3	0.0	0.00	0.0	0.00	0	161.9	80.57	22.3	10.64	10
Micropogonias															
<i>undulatus</i>	273.4	269.31	24.9	24.62	3	0.0	0.00	0.0	0.00	0	371.7	244.22	29.3	19.62	10
Syacium															
<i>gunteri</i>	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	0	396.5	374.96	8.5	7.80	10
Serranus															
<i>atrobranchus</i>	2.7	2.73	0.0	0.00	3	0.0	0.00	0.0	0.00	0	103.6	88.52	1.4	1.09	10
Steindachneria															
<i>argentea</i>	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	10
Peprilus															
<i>burti</i>	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	0	14.2	9.85	0.9	0.68	10
Chloroscombrus															
<i>chrysurus</i>	392.5	338.15	14.1	13.16	3	0.0	0.00	0.0	0.00	0	9.3	8.97	0.4	0.38	10
Anchoa															
<i>hepsetus</i>	265.4	198.72	3.0	2.15	3	0.0	0.00	0.0	0.00	0	33.6	32.94	0.3	0.27	10
Squid															
	33.2	19.41	0.3	0.15	3	0.0	0.00	0.0	0.00	0	71.6	32.61	0.6	0.23	10

Table 39a (cont'd.)  
 Statistical Zone 13  
 40-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 13 during the 1989 October-December Shrimp and Groundfish Survey by depth stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken.

SPECIES	21-30 FM					31-40 FM					>40 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Callinectes															
<i>similis</i>	219.9	206.03	4.8	4.28	3	77.1	65.05	1.2	1.10	2	13.6	13.64	0.0	0.00	2
Trachypenaeus															
<i>similis</i>	0.0	0.00	0.0	0.00	3	3.2	3.16	0.0	0.00	2	0.0	0.00	0.0	0.00	2
Penaeus															
<i>aztecus</i>	215.2	67.28	3.6	1.07	3	17.3	4.68	0.4	0.15	2	3.0	3.00	0.3	0.27	2
Portunus															
<i>spinicarpus</i>	22.4	22.40	0.3	0.25	3	18.9	18.95	0.4	0.36	2	2072.2	584.18	15.2	3.17	2
Portunus															
<i>gibbesii</i>	4.4	2.23	0.0	0.00	3	0.0	0.00	0.0	0.00	2	65.5	65.45	0.4	0.37	2
Squilla															
<i>spp.</i>	106.3	72.49	1.2	0.66	3	66.3	66.32	1.7	1.65	2	32.7	32.73	0.0	0.00	2
Leiostomus															
<i>xanthurus</i>	111.6	98.32	13.5	10.07	3	1203.2	1203.16	144.5	144.47	2	0.0	0.00	0.0	0.00	2
Micropogonias															
<i>undulatus</i>	3.3	3.33	0.3	0.30	3	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	2
Syacium															
<i>gunteri</i>	2.4	2.40	0.3	0.25	3	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	2
Serranus															
<i>atrobranchus</i>	38.1	21.78	0.6	0.45	3	129.8	81.79	2.2	1.71	2	948.8	234.82	20.2	7.35	2
Steindachneria															
<i>argentea</i>	74.4	74.40	0.5	0.51	3	0.0	0.00	0.0	0.00	2	1684.4	991.64	18.6	8.16	2
Peprilus															
<i>burti</i>	98.6	98.62	8.4	8.35	3	221.0	221.00	17.2	17.23	2	15.0	15.00	1.0	0.95	2
Chloroscombrus															
<i>chrysurus</i>	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	2
Anchoa															
<i>hepsetus</i>	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	2
Squid															
	0.0	0.00	0.0	0.00	3	114.0	114.00	3.2	3.23	2	35.5	24.55	1.3	0.20	2

Table 39b  
 Statistical Zone 13  
 40-ft trawls

Summary of the mean total catch and environmental data (X), the standard error of the mean (SEM) and the number of samples taken (n) during the 1989 October-December Shrimp and Groundfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m<sup>3</sup>, and oxygen in ppm.

Environmental category	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm		
	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	83.5	44.87	3	0.0	0.00	0	121.0	50.75	10	63.8	8.57	3	201.2	130.33	2	144.7	16.49	2
Total finfish kg	77.5	43.60	3	0.0	0.00	0	97.1	47.10	10	52.3	5.96	3	192.3	127.78	2	125.3	13.51	2
Total crustacean kg	4.1	1.07	3	0.0	0.00	0	16.6	5.26	10	11.8	4.29	3	5.7	5.74	2	18.0	4.34	2
Total others kg	1.8	1.82	3	0.0	0.00	0	0.4	0.29	10	0.0	0.00	3	3.2	3.18	2	1.2	1.24	2
Surface temperature	24.5	1.27	3	0.0	0.00	0	23.6	0.78	11	22.3	0.23	3	23.4	0.61	3	23.8	0.65	2
Midwater temperature	24.7	1.30	3	0.0	0.00	0	24.1	0.70	9	24.1	0.41	3	24.1	0.23	3	24.0	0.46	2
Bottom temperature	25.4	0.79	3	0.0	0.00	0	25.0	0.69	10	20.9	0.36	3	19.7	0.18	3	19.3	0.20	2
Surface salinity	27.9	0.56	3	0.0	0.00	0	29.9	0.95	11	32.0	0.70	3	34.3	1.28	3	34.6	1.68	2
Midwater salinity	28.4	0.54	3	0.0	0.00	0	32.6	0.45	9	35.9	0.49	3	36.2	0.43	3	36.6	0.03	2
Bottom salinity	31.1	1.34	3	0.0	0.00	0	35.1	0.55	10	37.0	0.13	3	36.8	0.02	3	36.8	0.02	2
Surface chlorophyll	7.5	2.60	3	0.0	0.00	0	6.1	1.14	11	4.2	3.11	2	1.6	1.03	3	1.8	1.25	2
Midwater chlorophyll	6.3	0.88	2	0.0	0.00	0	2.0	0.88	4	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom chlorophyll	4.4	0.62	3	0.0	0.00	0	0.9	0.20	10	1.0	0.00	1	0.0	0.00	0	0.1	0.00	1
Surface oxygen	7.2	0.69	3	0.0	0.00	0	7.9	0.24	11	7.4	0.19	3	6.8	0.38	3	7.5	0.25	2
Midwater oxygen	6.8	0.77	3	0.0	0.00	0	6.4	0.40	10	6.5	0.13	3	6.4	0.31	3	6.6	0.40	2
Bottom oxygen	4.7	0.57	3	0.0	0.00	0	4.8	0.34	11	4.1	0.55	3	4.5	0.25	3	4.7	0.15	2

Table 40a  
 Statistical Zone 14  
 40-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 14 during the 1989 October-December Shrimp and Groundfish Survey by depth stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken.

SPECIES	0- 5 FM					6-10 FM					11-20 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Callinectes															
<u>similis</u>	0.0	0.00	0.0	0.00	1	120.1	43.60	1.2	0.32	12	288.7	81.06	5.6	1.18	32
Trachypenaeus															
<u>similis</u>	0.0	0.00	0.0	0.00	1	401.2	201.33	0.9	0.49	12	145.9	57.17	0.6	0.17	32
Squilla															
<u>spp.</u>	0.0	0.00	0.0	0.00	1	244.0	166.45	1.7	1.17	12	34.9	16.89	0.3	0.18	32
Penaeus															
<u>aztecus</u>	60.0	0.00	0.5	0.00	1	46.7	10.82	0.5	0.16	12	113.5	27.74	2.3	0.60	32
Sicyonia															
<u>dorsalis</u>	0.0	0.00	0.0	0.00	1	33.9	19.62	0.1	0.05	12	137.0	63.72	0.3	0.14	32
Penaeus															
<u>setiferus</u>	583.6	0.00	7.2	0.00	1	166.8	108.79	1.3	0.43	12	16.1	5.01	0.5	0.15	32
Micropogonias															
<u>undulatus</u>	21.8	0.00	2.2	0.00	1	357.7	161.59	20.8	8.90	12	436.6	145.09	23.7	7.99	32
Stenotomus															
<u>caprinus</u>	0.0	0.00	0.0	0.00	1	0.3	0.32	0.0	0.01	12	289.3	102.63	6.8	2.60	32
Syacium															
<u>gunteri</u>	0.0	0.00	0.0	0.00	1	36.7	20.41	0.5	0.24	12	294.6	54.46	5.9	1.05	32
Arius															
<u>felis</u>	709.1	0.00	87.0	0.00	1	584.9	226.41	88.8	37.51	12	12.1	6.81	2.7	1.46	32
Leiostomus															
<u>xanthurus</u>	0.0	0.00	0.0	0.00	1	14.5	7.99	1.2	0.91	12	125.9	75.35	13.9	8.41	32
Prionotus															
<u>longispinosus</u>	32.7	0.00	0.2	0.00	1	28.8	15.39	1.0	0.46	12	143.2	29.68	5.0	1.08	32
Cynoscion															
<u>nothus</u>	103.6	0.00	7.9	0.00	1	183.9	132.77	6.0	5.20	12	73.3	24.98	5.8	2.28	32
Serranus															
<u>atrobranchus</u>	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	12	4.4	1.58	0.0	0.02	32
Squid															
<u></u>	0.0	0.00	0.0	0.00	1	137.2	63.95	0.9	0.34	12	200.9	39.91	1.9	0.41	32



Table 40a (cont'd.)  
 Statistical Zone 14  
 40-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 14 during the 1989 October-December Shrimp and Groundfish Survey by depth stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken.

SPECIES	21-30 FM					31-40 FM					>40 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
<i>Callinectes</i>															
<i>similis</i>	144.0	0.00	3.0	0.00	1	24.0	0.00	2.2	0.00	1	0.0	0.00	0.0	0.00	3
<i>Trachypenaeus</i>															
<i>similis</i>	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	3
<i>Squilla</i>															
<i>spp.</i>	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1	3.8	3.81	0.0	0.04	3
<i>Penaeus</i>															
<i>aztecus</i>	0.0	0.00	0.0	0.00	1	48.0	0.00	1.1	0.00	1	2.2	1.76	0.1	0.08	3
<i>Sicyonia</i>															
<i>dorsalis</i>	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	3
<i>Penaeus</i>															
<i>setiferus</i>	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	3
<i>Micropogonias</i>															
<i>undulatus</i>	6.0	0.00	1.1	0.00	1	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	3
<i>Stenotomus</i>															
<i>caprinus</i>	246.0	0.00	5.5	0.00	1	84.0	0.00	2.2	0.00	1	391.0	121.78	19.9	7.72	3
<i>Syacium</i>															
<i>gunteri</i>	6.0	0.00	0.5	0.00	1	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	3
<i>Arius</i>															
<i>felis</i>	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	3
<i>Leiostomus</i>															
<i>xanthurus</i>	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	3
<i>Prionotus</i>															
<i>longispinosus</i>	18.0	0.00	1.1	0.00	1	12.0	0.00	2.2	0.00	1	45.9	25.66	2.9	1.23	3
<i>Cynoscion</i>															
<i>nothus</i>	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	3
<i>Serranus</i>															
<i>atrobranchus</i>	222.0	0.00	3.0	0.00	1	378.0	0.00	6.3	0.00	1	832.1	261.12	13.1	3.60	3
<i>Squid</i>	0.0	0.00	0.0	0.00	1	714.0	0.00	2.2	0.00	1	60.4	46.05	2.7	2.45	3

Table 40b  
 Statistical Zone 14  
 40-ft trawls

Summary of the mean total catch and environmental data (X), the standard error of the mean (SEM) and the number of samples taken (n) during the 1989 October-December Shrimp and Groundfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m<sup>3</sup>, and oxygen in ppm.

Environmental category	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm		
	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	116.5	0.00	1	158.5	42.93	12	120.1	17.90	32	38.2	0.00	1	51.8	0.00	1	136.4	22.53	3
Total finfish kg	109.1	0.00	1	148.6	42.36	12	103.3	18.24	32	32.7	0.00	1	40.9	0.00	1	131.6	20.57	3
Total crustacean kg	9.9	0.00	1	8.2	1.91	12	14.9	3.05	32	5.5	0.00	1	5.5	0.00	1	1.9	1.66	3
Total others kg	0.0	0.00	1	1.8	0.97	12	1.9	0.42	32	0.0	0.00	1	2.7	0.00	1	2.9	2.72	3
Surface temperature	22.9	0.14	4	23.0	1.35	9	22.0	0.72	31	24.2	0.13	2	24.3	0.11	2	24.5	0.12	2
Midwater temperature	22.9	0.16	4	23.1	1.38	9	22.3	0.75	31	24.2	0.01	2	24.3	0.08	2	24.5	0.04	2
Bottom temperature	23.1	0.13	4	23.7	1.26	9	23.8	0.49	31	24.0	0.18	2	22.9	1.55	2	18.7	0.99	2
Surface salinity	30.4	0.70	4	31.7	0.57	9	33.4	0.44	31	36.3	0.07	2	36.6	0.03	2	36.7	0.05	2
Midwater salinity	30.3	0.75	4	32.8	0.40	9	34.7	0.18	31	36.4	0.02	2	36.6	0.03	2	36.5	0.14	2
Bottom salinity	32.3	0.37	4	34.2	0.35	9	35.8	0.11	31	36.6	0.04	2	36.8	0.16	2	36.8	0.07	2
Surface chlorophyll	2.9	0.76	3	2.1	0.56	9	1.5	0.37	30	0.2	0.01	2	0.2	0.03	2	0.2	0.05	2
Midwater chlorophyll	0.0	0.00	0	2.3	1.07	7	0.7	0.05	21	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom chlorophyll	2.1	0.37	3	1.7	0.30	9	0.8	0.12	29	0.7	0.00	1	0.0	0.00	0	0.0	0.00	0
Surface oxygen	7.3	0.32	4	7.8	0.20	9	7.7	0.26	31	7.0	0.10	2	7.4	0.60	2	7.4	0.40	2
Midwater oxygen	7.1	0.39	4	6.7	0.34	9	6.8	0.23	31	7.0	0.05	2	6.9	0.05	2	7.1	0.10	2
Bottom oxygen	6.3	0.39	4	6.3	0.32	9	5.8	0.20	31	6.1	0.20	2	5.6	1.00	2	5.0	0.10	2

Table 41a  
 Statistical Zone 15  
 40-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 15 during the 1989 October-December Shrimp and Groundfish Survey by depth stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken. No trawl samples were taken in depths less than 5 fm.

SPECIES	0- 5 FM					6-10 FM					11-20 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Callinectes															
<u>similis</u>	0.0	0.00	0.0	0.00	0	172.8	114.00	1.7	0.86	14	121.8	46.66	3.1	1.28	12
Penaeus															
<u>aztecus</u>	0.0	0.00	0.0	0.00	0	47.1	18.95	0.6	0.27	14	105.8	30.68	2.4	0.68	12
Trachypenaeus															
<u>similis</u>	0.0	0.00	0.0	0.00	0	50.9	26.25	0.1	0.07	14	46.7	28.22	0.2	0.11	12
Squilla															
<u>spp.</u>	0.0	0.00	0.0	0.00	0	15.0	6.86	0.1	0.05	14	9.9	3.52	0.1	0.04	12
Sicyonia															
<u>dorsalis</u>	0.0	0.00	0.0	0.00	0	15.7	13.91	0.0	0.02	14	14.8	5.97	0.1	0.03	12
Portunus															
<u>gibbesii</u>	0.0	0.00	0.0	0.00	0	18.8	7.26	0.1	0.05	14	13.1	3.75	0.1	0.03	12
Stenotomus															
<u>caprinus</u>	0.0	0.00	0.0	0.00	0	8.9	2.87	0.2	0.07	14	247.0	118.62	5.2	2.36	12
Micropogonias															
<u>undulatus</u>	0.0	0.00	0.0	0.00	0	62.0	35.75	3.3	2.02	14	140.5	44.72	8.8	2.30	12
Cynoscion															
<u>nothus</u>	0.0	0.00	0.0	0.00	0	131.8	56.62	2.4	2.04	14	58.0	31.81	3.3	1.35	12
Peprilus															
<u>burti</u>	0.0	0.00	0.0	0.00	0	39.0	24.32	2.3	1.35	14	139.0	62.62	8.9	3.93	12
Prionotus															
<u>longispinosus</u>	0.0	0.00	0.0	0.00	0	102.5	70.29	2.1	1.19	14	50.5	13.88	1.9	0.53	12
Syacium															
<u>gunteri</u>	0.0	0.00	0.0	0.00	0	31.1	17.32	0.4	0.20	14	179.6	61.44	4.2	1.52	12
Cynoscion															
<u>spp.</u>	0.0	0.00	0.0	0.00	0	144.1	116.87	0.3	0.26	14	64.8	63.57	0.2	0.17	12
Anchoa															
<u>hepsetus</u>	0.0	0.00	0.0	0.00	0	83.9	74.30	1.9	1.71	14	0.0	0.00	0.0	0.00	12
Squid															
	0.0	0.00	0.0	0.00	0	236.2	80.49	1.3	0.34	14	206.5	65.26	1.2	0.33	12

Table 41a (cont'd.)  
 Statistical Zone 15  
 40-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 15 during the 1989 October-December Shrimp and Groundfish Survey by depth stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken. No trawl samples were taken in depths less than 5 fm.

SPECIES	21-30 FM					31-40 FM					>40 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
<i>Callinectes</i>															
<i>similis</i>	14.7	11.66	0.5	0.50	2	1.0	1.00	0.0	0.02	3	1.1	0.00	0.0	0.00	1
<i>Penaeus</i>															
<i>aztecus</i>	135.7	26.26	4.4	1.33	2	65.0	38.62	2.7	1.11	3	6.3	0.00	0.4	0.00	1
<i>Trachypenaeus</i>															
<i>similis</i>	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	1
<i>Squilla</i>															
<i>spp.</i>	28.0	8.00	0.5	0.06	2	6.7	6.67	0.1	0.09	3	2.1	0.00	0.0	0.00	1
<i>Sicyonia</i>															
<i>dorsalis</i>	10.5	10.53	0.1	0.12	2	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	1
<i>Portunus</i>															
<i>gibbesii</i>	1.1	1.05	0.0	0.00	2	1.0	1.00	0.0	0.00	3	4.2	0.00	0.0	0.00	1
<i>Stenotomus</i>															
<i>caprinus</i>	264.8	52.18	7.3	1.82	2	218.0	71.09	10.6	3.21	3	168.4	0.00	8.1	0.00	1
<i>Micropogonias</i>															
<i>undulatus</i>	8.3	2.26	0.5	0.25	2	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	1
<i>Cynoscion</i>															
<i>nothus</i>	44.2	44.21	3.9	3.90	2	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	1
<i>Peprilus</i>															
<i>burti</i>	10.5	10.53	0.6	0.65	2	40.7	23.10	3.0	1.65	3	76.8	0.00	6.0	0.00	1
<i>Prionotus</i>															
<i>longispinosus</i>	38.6	15.42	1.8	0.49	2	12.4	5.11	0.8	0.46	3	0.0	0.00	0.0	0.00	1
<i>Syacium</i>															
<i>gunteri</i>	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	1
<i>Cynoscion</i>															
<i>spp.</i>	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	3	12.6	0.00	0.1	0.00	1
<i>Anchoa</i>															
<i>hepsetus</i>	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	1
<i>Squid</i>	1.1	1.05	0.1	0.12	2	52.2	28.95	1.2	1.06	3	105.3	0.00	1.1	0.00	1

Table 41b  
 Statistical Zone 15  
 40-ft trawls

Summary of the mean total catch and environmental data (X), the standard error of the mean (SEM) and the number of samples taken (n) during the 1989 October-December Shrimp and Groundfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m<sup>3</sup>, and oxygen in ppm. No trawl samples were taken in depths less than 5 fm.

Environmental category	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm		
	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	0.0	0.00	0	36.5	12.16	14	65.4	7.62	12	45.3	10.25	2	49.4	13.58	3	30.1	0.00	1
Total finfish kg	0.0	0.00	0	32.1	12.27	14	57.6	7.69	12	39.2	10.56	2	43.8	11.86	3	28.2	0.00	1
Total crustacean kg	0.0	0.00	0	3.6	1.38	14	6.5	1.70	12	6.0	0.78	2	3.7	1.87	3	0.5	0.00	1
Total others kg	0.0	0.00	0	1.3	0.36	14	1.1	0.35	12	0.0	0.00	2	2.3	1.38	3	1.4	0.00	1
Surface temperature	22.6	0.00	1	23.8	0.44	13	24.2	0.38	12	24.0	0.03	2	24.2	0.00	1	24.5	0.06	2
Midwater temperature	22.6	0.00	1	23.9	0.44	13	24.6	0.41	12	24.1	0.07	2	24.2	0.00	1	24.5	0.05	2
Bottom temperature	22.6	0.00	1	24.1	0.45	13	24.7	0.38	12	22.9	1.06	2	22.7	0.00	1	19.1	0.04	2
Surface salinity	31.7	0.00	1	31.5	0.40	13	34.8	0.22	12	36.3	0.05	2	36.5	0.00	1	36.6	0.14	2
Midwater salinity	32.1	0.00	1	32.4	0.25	13	35.3	0.21	12	36.5	0.04	2	36.5	0.00	1	36.6	0.18	2
Bottom salinity	32.1	0.00	1	32.8	0.23	13	35.9	0.14	12	36.7	0.08	2	36.7	0.00	1	36.5	0.35	2
Surface chlorophyll	1.0	0.00	1	1.5	0.29	8	0.3	0.06	8	0.3	0.00	1	0.2	0.00	1	0.1	0.00	1
Midwater chlorophyll	0.0	0.00	0	2.6	0.44	4	0.4	0.14	2	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom chlorophyll	1.0	0.00	1	2.1	0.53	9	0.8	0.12	8	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface oxygen	6.7	0.00	1	7.1	0.09	13	6.9	0.27	12	6.7	0.10	2	6.6	0.00	1	6.6	0.10	2
Midwater oxygen	6.6	0.00	1	6.8	0.12	13	6.5	0.06	12	6.5	0.05	2	6.5	0.00	1	6.0	1.60	2
Bottom oxygen	6.7	0.00	1	5.9	0.38	13	5.7	0.07	12	4.7	1.05	2	4.4	0.00	1	6.5	0.00	2

Table 42a  
 Statistical Zone 16  
 40-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 16 during the 1989 October-December Shrimp and Groundfish Survey by depth stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken.

SPECIES	0- 5 FM					6-10 FM					11-20 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
<i>Penaeus aztecus</i>	7.5	0.00	0.0	0.00	1	35.0	31.24	0.5	0.40	4	99.5	38.52	2.2	0.86	10
<i>Squilla spp.</i>	712.5	0.00	4.8	0.00	1	199.2	168.82	1.2	0.93	4	2.9	1.13	0.0	0.01	10
<i>Penaeus setiferus</i>	150.0	0.00	2.0	0.00	1	72.2	16.30	2.3	0.50	4	0.1	0.12	0.0	0.00	10
<i>Trachypenaeus constrictus</i>	960.0	0.00	0.8	0.00	1	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	10
<i>Sicyonia brevirostris</i>	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	4	36.7	35.93	0.5	0.53	10
<i>Callinectes similis</i>	160.0	0.00	0.2	0.00	1	17.4	9.04	0.1	0.08	4	5.3	2.70	0.1	0.07	10
<i>Stenotomus caprinus</i>	0.0	0.00	0.0	0.00	1	2.5	2.50	0.1	0.08	4	394.9	165.40	10.8	3.53	10
<i>Peprilus burti</i>	12.5	0.00	0.0	0.00	1	80.0	53.74	4.0	2.65	4	120.3	57.36	6.8	2.99	10
<i>Serranus atrobranchus</i>	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	4	2.5	2.15	0.0	0.03	10
<i>Prionotus stearnsi</i>	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	4	0.4	0.40	0.0	0.00	10
<i>Micropogonias undulatus</i>	0.0	0.00	0.0	0.00	1	3.0	2.14	0.2	0.11	4	104.0	35.51	5.6	1.81	10
<i>Anchoa hepsetus</i>	0.0	0.00	0.0	0.00	1	334.2	317.85	6.2	5.69	4	0.5	0.54	0.0	0.01	10
<i>Anchoa mitchilli</i>	750.0	0.00	0.8	0.00	1	98.2	76.37	0.2	0.12	4	0.3	0.32	0.0	0.00	10
<i>Cynoscion spp.</i>	500.0	0.00	2.0	0.00	1	98.1	95.40	0.3	0.26	4	0.0	0.00	0.0	0.00	10
<i>Squid</i>	0.0	0.00	0.0	0.00	1	105.9	41.00	1.2	0.40	4	93.5	41.69	0.5	0.19	10

Table 42a (cont'd.)  
 Statistical Zone 16  
 40-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 16 during the 1989 October-December Shrimp and Groundfish Survey by depth stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken.

SPECIES	21-30 FM					31-40 FM					>40 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Penaeus															
<u>aztecus</u>	8.0	8.00	0.4	0.38	4	108.3	11.91	4.2	0.29	4	7.4	3.11	0.4	0.22	3
Squilla															
<u>spp.</u>	6.8	6.75	0.0	0.03	4	14.2	5.90	0.1	0.05	4	0.0	0.00	0.0	0.00	3
Penaeus															
<u>setiferus</u>	37.0	37.00	1.2	1.20	4	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	3
Trachypenaeus															
<u>constrictus</u>	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	3
Sicyonia															
<u>brevirostris</u>	17.0	17.00	0.3	0.25	4	54.6	18.18	0.7	0.17	4	0.0	0.00	0.0	0.00	3
Callinectes															
<u>similis</u>	5.5	3.33	0.1	0.06	4	19.0	6.05	0.6	0.24	4	0.0	0.00	0.0	0.00	3
Stenotomus															
<u>caprinus</u>	286.5	93.08	12.3	5.13	4	292.7	31.92	12.2	1.35	4	230.8	37.43	11.3	1.53	3
Peprilus															
<u>burti</u>	150.8	130.48	9.3	7.23	4	0.0	0.00	0.0	0.00	4	250.7	174.14	16.8	11.40	3
Serranus															
<u>atrobranchus</u>	55.8	49.31	0.6	0.58	4	261.7	46.55	2.0	0.20	4	1.3	1.30	0.0	0.00	3
Prionotus															
<u>stearnsi</u>	0.8	0.75	0.0	0.02	4	272.5	110.41	2.5	0.95	4	3.3	2.34	0.1	0.11	3
Micropogonias															
<u>undulatus</u>	12.8	7.36	1.2	0.51	4	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	3
Anchoa															
<u>hepsetus</u>	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	3
Anchoa															
<u>mitchilli</u>	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	3
Cynoscion															
<u>spp.</u>	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	3
Squid															
	8.0	8.00	0.0	0.02	4	5.5	5.50	0.1	0.06	4	54.7	27.57	1.4	0.59	3

Table 42b  
 Statistical Zone 16  
 40-ft trawls

Summary of the mean total catch and environmental data (X), the standard error of the mean (SEM) and the number of samples taken (n) during the 1989 October-December Shrimp and Groundfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m<sup>3</sup>, and oxygen in ppm.

Environmental category	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm		
	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	19.3	0.00	1	35.6	9.25	4	50.2	6.99	10	44.4	10.08	4	35.1	1.64	4	44.9	15.49	3
Total finfish kg	10.2	0.00	1	22.0	8.85	4	45.9	6.54	10	41.6	8.92	4	28.7	1.58	4	43.0	15.86	3
Total crustacean kg	8.0	0.00	1	4.4	1.08	4	3.3	1.09	10	2.7	1.52	4	5.9	0.42	4	0.6	0.34	3
Total others kg	1.1	0.00	1	9.2	6.08	4	1.1	0.70	10	0.0	0.00	4	0.5	0.28	4	1.6	0.59	3
Surface temperature	21.1	0.00	1	21.9	0.20	5	23.3	0.16	9	24.4	0.05	3	24.3	0.00	1	25.3	0.19	3
Midwater temperature	21.2	0.00	1	23.4	1.40	5	23.4	0.15	9	24.3	0.07	3	24.4	0.00	1	24.9	0.30	3
Bottom temperature	21.7	0.00	1	22.5	0.27	5	23.9	0.16	9	24.2	0.20	3	20.6	0.00	1	18.2	0.32	3
Surface salinity	26.6	0.00	1	30.7	1.21	5	34.5	0.29	9	36.6	0.06	3	36.6	0.00	1	36.6	0.03	3
Midwater salinity	28.0	0.00	1	31.3	0.93	5	34.8	0.34	9	36.6	0.03	3	36.7	0.00	1	36.6	0.06	3
Bottom salinity	31.8	0.00	1	32.9	0.61	5	35.7	0.30	9	36.7	0.04	3	36.8	0.00	1	37.1	0.36	3
Surface chlorophyll	3.3	0.00	1	1.0	0.23	4	0.3	0.04	9	0.2	0.01	3	0.1	0.00	1	0.1	0.01	3
Midwater chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom chlorophyll	3.6	0.00	1	1.5	0.20	4	0.5	0.04	9	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface oxygen	8.3	0.00	1	6.8	0.25	5	6.8	0.12	9	6.7	0.15	3	6.8	0.00	1	6.6	0.15	3
Midwater oxygen	8.1	0.00	1	6.7	0.24	5	6.6	0.12	9	6.7	0.15	3	6.8	0.00	1	6.6	0.22	3
Bottom oxygen	7.3	0.00	1	5.8	0.38	5	6.0	0.16	9	6.2	0.46	3	4.5	0.00	1	4.6	0.06	3



Table 44a  
 Statistical Zone 18  
 40-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 18 during the 1989 October-December Shrimp and Groundfish Survey by depth stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken. No trawl samples were taken in depths greater than 40 fm.

SPECIES	0- 5 FM					6-10 FM					11-20 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Sicyonia															
<i>brevirostris</i>	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	2	6.6	5.75	0.1	0.09	8
Penaeus															
<i>aztecus</i>	442.1	0.00	2.6	0.00	1	37.8	12.57	0.3	0.03	2	14.4	9.43	0.4	0.27	8
Penaeus															
<i>setiferus</i>	0.0	0.00	0.0	0.00	1	262.2	72.57	5.1	0.07	2	0.0	0.00	0.0	0.00	8
Sicyonia															
<i>dorsalis</i>	0.0	0.00	0.0	0.00	1	1.6	1.58	0.0	0.00	2	0.0	0.00	0.0	0.00	8
Squilla															
<i>spp.</i>	47.4	0.00	0.6	0.00	1	45.3	45.26	0.3	0.33	2	0.9	0.58	0.0	0.01	8
Trachypenaeus															
<i>constrictus</i>	6.3	0.00	0.0	0.00	1	62.6	62.63	0.0	0.05	2	0.0	0.00	0.0	0.00	8
Stenotomus															
<i>caprinus</i>	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	2	197.5	121.33	7.8	5.46	8
Chloroscombrus															
<i>chrysurus</i>	6.3	0.00	0.1	0.00	1	0.0	0.00	0.0	0.00	2	262.1	137.10	10.0	5.69	8
Cynoscion															
<i>spp.</i>	116.8	0.00	0.1	0.00	1	1028.4	51.58	3.2	1.86	2	2.3	2.34	0.0	0.02	8
Peprilus															
<i>burti</i>	22.1	0.00	0.6	0.00	1	15.6	15.60	0.5	0.49	2	105.7	92.77	7.7	6.66	8
Lutjanus															
<i>campechanus</i>	6.3	0.00	0.1	0.00	1	0.0	0.00	0.0	0.00	2	52.7	20.85	2.2	1.49	8
Anchoa															
<i>hepsetus</i>	101.1	0.00	1.0	0.00	1	403.2	403.20	7.0	6.98	2	0.0	0.00	0.0	0.00	8
Synodus															
<i>foetens</i>	0.0	0.00	0.0	0.00	1	25.2	25.20	0.4	0.38	2	22.9	5.39	2.4	0.67	8
Prionotus															
<i>paralatus</i>	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	8
Squid	416.8	0.00	3.2	0.00	1	315.1	272.95	3.0	2.03	2	114.9	33.05	0.4	0.12	8

Table 43b  
 Statistical Zone 17  
 40-ft trawls

Summary of the mean total catch and environmental data (X), the standard error of the mean (SEM) and the number of samples taken (n) during the 1989 October-December Shrimp and Groundfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m<sup>3</sup>, and oxygen in ppm.

Environmental category	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm		
	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	56.5	0.00	1	49.5	27.60	6	64.2	22.29	8	63.4	8.04	5	32.1	0.00	1	55.6	0.00	1
Total finfish kg	42.9	0.00	1	41.6	27.98	6	59.5	21.72	8	54.5	9.06	5	31.1	0.00	1	47.5	0.00	1
Total crustacean kg	8.8	0.00	1	4.1	1.34	6	3.4	1.40	8	9.0	3.48	5	0.0	0.00	1	7.1	0.00	1
Total others kg	5.8	0.00	1	3.9	1.23	6	0.9	0.59	8	0.0	0.00	5	0.5	0.00	1	1.1	0.00	1
Surface temperature	21.0	0.19	3	21.9	0.25	6	23.6	0.19	10	24.4	0.26	4	0.0	0.00	0	24.5	0.01	2
Midwater temperature	20.9	0.35	3	21.9	0.27	6	23.5	0.17	10	24.3	0.22	4	0.0	0.00	0	24.7	0.21	2
Bottom temperature	20.7	0.32	3	22.0	0.23	6	23.6	0.16	10	23.6	0.59	4	0.0	0.00	0	18.4	0.11	2
Surface salinity	29.4	1.37	3	33.0	0.63	6	35.3	0.28	10	36.3	0.15	4	0.0	0.00	0	36.2	0.23	2
Midwater salinity	29.7	1.18	3	33.1	0.64	6	35.6	0.25	10	36.4	0.14	4	0.0	0.00	0	36.4	0.22	2
Bottom salinity	29.9	1.12	3	33.2	0.58	6	35.7	0.24	10	36.6	0.16	4	0.0	0.00	0	36.6	0.24	2
Surface chlorophyll	1.2	0.14	2	0.9	0.24	6	0.3	0.08	7	0.2	0.02	4	0.0	0.00	0	0.2	0.08	2
Midwater chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom chlorophyll	1.2	0.17	3	1.1	0.23	5	0.4	0.07	7	0.4	0.08	3	0.0	0.00	0	0.0	0.00	0
Surface oxygen	7.7	0.23	3	7.1	0.08	6	6.7	0.05	10	6.5	0.05	4	0.0	0.00	0	6.6	0.00	2
Midwater oxygen	7.7	0.27	3	7.0	0.10	6	6.6	0.02	10	6.5	0.06	4	0.0	0.00	0	6.6	0.05	2
Bottom oxygen	7.4	0.28	3	6.9	0.11	6	6.5	0.05	10	6.0	0.40	4	0.0	0.00	0	5.3	0.45	2

Table 44a (cont'd.)  
 Statistical Zone 18  
 40-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 18 during the 1989 October-December Shrimp and Groundfish Survey by depth stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken. No trawl samples were taken in depths greater than 40 fm.

SPECIES	21-30 FM					31-40 FM					>40 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Sicyonia															
<i>brevirostris</i>	176.7	61.08	2.4	0.84	8	3.6	1.87	0.1	0.06	2	0.0	0.00	0.0	0.00	0
Penaeus															
<i>aztecus</i>	72.7	20.73	3.1	0.89	8	0.9	0.86	0.0	0.00	2	0.0	0.00	0.0	0.00	0
Penaeus															
<i>setiferus</i>	0.0	0.00	0.0	0.00	8	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	0
Sicyonia															
<i>dorsalis</i>	30.7	30.66	0.4	0.44	8	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	0
Squilla															
<i>spp.</i>	3.7	3.03	0.1	0.04	8	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	0
Trachypenaeus															
<i>constrictus</i>	0.2	0.22	0.0	0.00	8	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	0
Stenotomus															
<i>caprinus</i>	334.3	76.74	18.0	3.72	8	372.4	91.25	18.5	5.66	2	0.0	0.00	0.0	0.00	0
Chloroscombrus															
<i>chrysurus</i>	49.4	41.71	2.7	2.36	8	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	0
Cynoscion															
<i>spp.</i>	0.0	0.00	0.0	0.00	8	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	0
Peprilus															
<i>burti</i>	60.6	40.03	4.8	3.15	8	15.4	11.92	1.4	1.22	2	0.0	0.00	0.0	0.00	0
Lutjanus															
<i>campechanus</i>	32.7	9.48	1.0	0.26	8	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	0
Anchoa															
<i>hepsetus</i>	0.0	0.00	0.0	0.00	8	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	0
Synodus															
<i>foetens</i>	25.6	8.12	3.8	1.40	8	82.6	34.64	14.6	7.01	2	0.0	0.00	0.0	0.00	0
Prionotus															
<i>paralatus</i>	58.4	23.78	1.0	0.46	8	65.5	65.45	2.3	2.29	2	0.0	0.00	0.0	0.00	0
Squid															
<i>spp.</i>	3.5	1.92	0.2	0.10	8	19.8	12.94	2.6	1.94	2	0.0	0.00	0.0	0.00	0

Table 44b  
 Statistical Zone 18  
 40-ft trawls

Summary of the mean total catch and environmental data (X), the standard error of the mean (SEM) and the number of samples taken (n) during the 1989 October-December Shrimp and Groundfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m<sup>3</sup>, and oxygen in ppm. No trawl samples were taken in depths greater than 40 fm.

Environmental category	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm		
	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	58.9	0.00	1	28.9	13.62	2	37.1	17.06	8	51.5	9.37	8	52.5	24.40	2	0.0	0.00	0
Total finfish kg	53.1	0.00	1	19.1	11.44	2	35.9	17.31	8	44.9	10.24	8	48.0	21.46	2	0.0	0.00	0
Total crustacean kg	2.9	0.00	1	6.1	0.62	2	0.5	0.37	8	6.4	1.38	8	0.0	0.00	2	0.0	0.00	0
Total others kg	2.9	0.00	1	4.0	2.56	2	0.6	0.21	8	0.2	0.16	8	4.5	2.94	2	0.0	0.00	0
Surface temperature	21.7	0.00	1	22.2	0.46	5	23.7	0.18	8	24.7	0.12	5	26.1	0.00	1	24.9	0.00	1
Midwater temperature	21.7	0.00	1	22.2	0.45	5	23.9	0.15	8	24.8	0.12	5	25.9	0.00	1	25.0	0.00	1
Bottom temperature	21.7	0.00	1	22.5	0.43	5	24.0	0.15	8	24.0	0.91	5	19.5	0.00	1	19.5	0.00	1
Surface salinity	34.9	0.00	1	29.9	1.66	5	34.1	0.48	8	35.7	0.17	5	36.3	0.00	1	36.2	0.00	1
Midwater salinity	24.9	0.00	1	29.8	1.64	5	34.4	0.42	8	35.8	0.06	5	36.4	0.00	1	36.2	0.00	1
Bottom salinity	26.1	0.00	1	30.4	1.45	5	34.5	0.40	8	36.1	0.19	5	36.4	0.00	1	36.4	0.00	1
Surface chlorophyll	0.9	0.00	1	0.9	0.17	4	0.5	0.08	8	0.2	0.09	5	0.1	0.00	1	0.2	0.00	1
Midwater chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface oxygen	7.2	0.00	1	7.4	0.12	5	7.1	0.13	8	6.7	0.09	5	5.9	0.00	1	7.4	0.00	1
Midwater oxygen	7.2	0.00	1	7.2	0.05	5	6.9	0.12	8	6.7	0.14	5	5.8	0.00	1	6.3	0.00	1
Bottom oxygen	6.9	0.00	1	7.2	0.17	5	6.8	0.12	8	6.2	0.22	5	4.0	0.00	1	4.7	0.00	1

Table 45a  
 Statistical Zone 19  
 40-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 19 during the 1989 October-December Shrimp and Groundfish Survey by depth stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken.

SPECIES	0- 5 FM					6-10 FM					11-20 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
<i>Penaeus aztecus</i>	48.0	0.00	0.3	0.00	1	21.0	11.36	0.2	0.08	7	132.0	41.92	3.0	0.99	11
<i>Penaeus setiferus</i>	162.0	0.00	3.5	0.00	1	142.6	65.48	2.5	0.82	7	8.0	7.23	0.2	0.15	11
<i>Callinectes similis</i>	0.0	0.00	0.0	0.00	1	0.7	0.49	0.0	0.02	7	37.7	23.49	0.7	0.52	11
<i>Trachypenaeus spp.</i>	6.0	0.00	0.0	0.00	1	65.6	31.17	0.1	0.05	7	16.1	15.40	0.0	0.03	11
<i>Portunus spinicarpus</i>	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	7	2.5	2.17	0.0	0.00	11
<i>Squilla spp.</i>	0.0	0.00	0.0	0.00	1	14.4	7.33	0.1	0.06	7	12.3	4.64	0.1	0.04	11
<i>Micropogonias undulatus</i>	12.0	0.00	1.1	0.00	1	13.5	9.79	1.2	0.81	7	171.4	108.85	10.0	5.83	11
<i>Peprilus burti</i>	0.0	0.00	0.0	0.00	1	10.8	10.07	0.8	0.70	7	30.7	22.15	2.0	1.44	11
<i>Chloroscombrus chrysurus</i>	144.0	0.00	0.5	0.00	1	62.6	44.29	1.1	0.81	7	94.2	46.62	2.9	1.49	11
<i>Cynoscion spp.</i>	168.0	0.00	0.3	0.00	1	288.1	91.05	1.5	0.68	7	55.3	54.47	0.0	0.04	11
<i>Stenotomus caprinus</i>	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	7	10.8	6.21	0.3	0.14	11
<i>Lagodon rhomboides</i>	24.0	0.00	0.5	0.00	1	2.5	1.34	0.2	0.09	7	14.6	8.24	0.8	0.38	11
<i>Diplectrum bivittatum</i>	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	7	98.6	42.59	1.3	0.52	11
<i>Leiostomus xanthurus</i>	42.0	0.00	3.0	0.00	1	7.2	5.55	0.8	0.62	7	62.4	40.90	5.5	3.63	11
<i>Squid</i>	264.0	0.00	1.6	0.00	1	135.8	39.39	0.9	0.33	7	42.8	20.32	0.5	0.13	11

Table 45a (cont'd.)  
 Statistical Zone 19  
 40-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 19 during the 1989 October-December Shrimp and Groundfish Survey by depth stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken.

SPECIES	21-30 FM					31-40 FM					>40 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Penaeus aztecus	28.3	27.00	1.1	1.12	4	122.3	0.00	5.1	0.00	1	1.2	0.00	0.1	0.00	1
Penaeus setiferus	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
Callinectes similis	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
Trachypenaeus spp.	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
Portunus spinicarpus	0.0	0.00	0.0	0.00	4	272.3	0.00	1.8	0.00	1	0.0	0.00	0.0	0.00	1
Squilla spp.	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
Micropogonias undulatus	44.9	42.92	3.9	3.83	4	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
Peprilus burti	180.3	103.72	13.4	7.87	4	0.0	0.00	0.0	0.00	1	238.8	0.00	16.4	0.00	1
Chloroscombrus chrysurus	64.0	29.03	3.7	1.68	4	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
Cynoscion spp.	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
Stenotomus caprinus	128.1	70.93	5.6	3.50	4	470.8	0.00	18.8	0.00	1	122.3	0.00	6.4	0.00	1
Lagodon rhomboides	143.2	84.42	11.0	6.30	4	6.9	0.00	0.6	0.00	1	5.8	0.00	0.6	0.00	1
Diplectrum bivittatum	11.3	11.25	0.1	0.12	4	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
Leiostomus xanthurus	23.9	15.75	3.0	1.94	4	6.9	0.00	0.6	0.00	1	0.0	0.00	0.0	0.00	1
Squid	30.8	30.75	0.1	0.07	4	6.9	0.00	0.6	0.00	1	76.2	0.00	5.8	0.00	1

Table 45b  
 Statistical Zone 19  
 40-ft trawls

Summary of the mean total catch and environmental data (X), the standard error of the mean (SEM) and the number of samples taken (n) during the 1989 October-December Shrimp and Groundfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m<sup>3</sup>, and oxygen in ppm.

Environmental category	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm		
	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	49.1	0.00	1	23.6	3.71	7	35.9	9.31	11	49.9	12.83	4	46.2	0.00	1	61.9	0.00	1
Total finfish kg	35.5	0.00	1	17.8	3.99	7	30.2	9.43	11	48.4	12.70	4	36.7	0.00	1	54.5	0.00	1
Total crustacean kg	5.5	0.00	1	2.9	0.69	7	4.2	1.11	11	1.5	1.46	4	8.4	0.00	1	0.0	0.00	1
Total others kg	8.2	0.00	1	2.6	0.54	7	1.6	0.82	11	0.0	0.00	4	1.0	0.00	1	6.8	0.00	1
Surface temperature	0.0	0.00	0	23.3	0.17	11	23.6	0.11	12	25.0	0.00	1	24.9	0.11	2	25.1	0.12	2
Midwater temperature	0.0	0.00	0	23.3	0.17	11	24.3	0.17	12	25.0	0.00	1	25.1	0.02	2	25.0	0.05	2
Bottom temperature	0.0	0.00	0	23.5	0.17	11	24.8	0.17	12	24.1	0.00	1	20.2	1.06	2	18.8	0.11	2
Surface salinity	0.0	0.00	0	29.9	0.32	11	31.8	0.43	12	35.4	0.00	1	35.6	0.50	2	36.0	0.21	2
Midwater salinity	0.0	0.00	0	29.9	0.32	11	33.1	0.39	12	35.5	0.00	1	35.9	0.21	2	36.2	0.04	2
Bottom salinity	0.0	0.00	0	30.5	0.36	11	34.6	0.27	12	36.2	0.00	1	36.3	0.09	2	36.4	0.00	2
Surface chlorophyll	0.0	0.00	0	0.7	0.08	10	0.2	0.03	12	0.1	0.00	1	0.1	0.01	2	0.1	0.04	2
Midwater chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface oxygen	0.0	0.00	0	7.2	0.07	11	6.8	0.05	12	6.4	0.00	1	7.1	0.30	2	6.5	0.00	2
Midwater oxygen	0.0	0.00	0	7.3	0.13	11	6.6	0.10	12	6.4	0.00	1	7.2	0.30	2	6.6	0.05	2
Bottom oxygen	0.0	0.00	0	7.0	0.18	11	6.1	0.14	12	5.4	0.00	1	5.7	1.15	2	5.4	1.20	2

Table 46a  
 Statistical Zone 20  
 40-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 20 during the 1989 October-December Shrimp and Groundfish Survey by depth stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken.

SPECIES	0- 5 FM					6-10 FM					11-20 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Penaeus <u>aztecus</u>	6.0	0.00	0.3	0.00	1	10.7	7.33	0.1	0.08	2	143.2	44.75	2.9	0.82	11
Trachypenaeus <u>constrictus</u>	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	2	38.5	34.70	0.1	0.08	11
Trachypenaeus <u>similis</u>	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	2	23.3	23.29	0.0	0.04	11
Portunus <u>gibbesii</u>	0.0	0.00	0.0	0.00	1	1.7	1.67	0.0	0.00	2	20.0	8.54	0.1	0.03	11
Penaeus <u>setiferus</u>	72.0	0.00	1.1	0.00	1	3.0	3.00	0.0	0.00	2	17.5	6.40	0.7	0.28	11
Solenocera <u>spp.</u>	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	11
Trachurus <u>lathami</u>	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	2	2.5	1.68	0.1	0.04	11
Stenotomus <u>caprinus</u>	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	2	0.9	0.86	0.0	0.00	11
Prionotus <u>stearnsi</u>	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	11
Peprilus <u>burti</u>	6.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	2	51.9	30.56	2.3	1.34	11
Chloroscombrus <u>chrysurus</u>	24.0	0.00	0.0	0.00	1	6.0	6.00	0.0	0.00	2	120.1	60.53	4.1	2.27	11
Upeneus <u>parvus</u>	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	2	16.0	12.61	0.4	0.28	11
Serranus <u>atrobranchus</u>	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	2	0.5	0.45	0.0	0.02	11
Lagodon <u>rhomboides</u>	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	2	8.8	6.32	0.4	0.26	11
Squid	480.0	0.00	3.3	0.00	1	150.0	120.00	1.7	1.35	2	24.8	9.47	0.3	0.09	11



Table 46a (cont'd.)  
 Statistical Zone 20  
 40-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 20 during the 1989 October-December Shrimp and Groundfish Survey by depth stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken.

SPECIES	21-30 FM					31-40 FM					>40 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
<i>Penaeus aztecus</i>	19.4	14.24	0.6	0.54	4	34.9	12.63	1.5	0.59	5	0.0	0.00	0.0	0.00	4
<i>Trachypenaeus constrictus</i>	0.0	0.00	0.0	0.00	4	0.2	0.22	0.0	0.01	5	0.0	0.00	0.0	0.00	4
<i>Trachypenaeus similis</i>	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	4
<i>Portunus gibbesii</i>	0.0	0.00	0.0	0.00	4	1.9	0.78	0.0	0.01	5	0.0	0.00	0.0	0.00	4
<i>Penaeus setiferus</i>	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	4
<i>Solenocera spp.</i>	5.3	5.34	0.0	0.05	4	15.9	7.95	0.1	0.06	5	1.1	1.07	0.0	0.00	4
<i>Trachurus lathami</i>	334.9	255.10	8.8	6.83	4	169.4	111.96	4.6	3.10	5	91.3	51.17	1.9	1.08	4
<i>Stenotomus caprinus</i>	93.7	64.34	2.4	1.54	4	139.0	34.94	5.4	1.80	5	98.1	14.75	4.8	0.71	4
<i>Prionotus stearnsi</i>	9.4	9.41	0.0	0.03	4	138.4	66.24	1.3	0.55	5	5.4	3.24	0.0	0.04	4
<i>Peprilus burti</i>	103.1	65.88	6.8	4.59	4	27.3	24.84	1.7	1.48	5	29.6	16.14	2.1	1.06	4
<i>Chloroscombrus chrysurus</i>	61.7	42.58	2.0	1.41	4	1.9	1.89	0.1	0.06	5	0.0	0.00	0.0	0.00	4
<i>Upeneus parvus</i>	13.8	9.91	0.3	0.18	4	112.3	70.05	3.9	3.26	5	34.6	15.47	0.8	0.21	4
<i>Serranus atrobranchus</i>	32.3	28.26	0.3	0.27	4	59.7	25.90	0.6	0.24	5	59.3	30.30	1.7	1.10	4
<i>Lagodon rhomboides</i>	83.2	36.27	6.2	2.89	4	8.2	5.99	0.7	0.42	5	0.0	0.00	0.0	0.00	4
<i>Squid</i>	7.5	3.00	0.3	0.15	4	68.7	55.38	0.5	0.24	5	107.3	54.03	4.6	2.34	4

Table 46b  
 Statistical Zone 20  
 40-ft trawls

Summary of the mean total catch and environmental data (X), the standard error of the mean (SEM) and the number of samples taken (n) during the 1989 October-December Shrimp and Groundfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m<sup>3</sup>, and oxygen in ppm.

Environmental category	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm		
	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	30.0	0.00	1	15.5	6.36	2	25.5	3.36	11	36.6	12.40	4	30.7	5.29	5	35.4	12.98	4
Total finfish kg	24.5	0.00	1	11.2	5.15	2	20.7	3.29	11	35.4	12.35	4	28.1	5.91	5	29.4	12.53	4
Total crustacean kg	2.7	0.00	1	0.0	0.00	2	4.1	1.18	11	1.0	0.76	4	1.9	0.68	5	0.4	0.37	4
Total others kg	5.5	0.00	1	4.2	1.21	2	0.7	0.36	11	0.2	0.23	4	0.6	0.28	5	5.6	2.18	4
Surface temperature	0.0	0.00	0	25.3	0.37	3	24.3	0.06	11	24.2	0.23	5	24.4	0.31	5	25.5	0.30	3
Midwater temperature	0.0	0.00	0	25.3	0.37	3	25.1	0.19	11	26.2	0.30	5	26.1	0.18	5	24.3	1.53	3
Bottom temperature	0.0	0.00	0	26.0	0.18	3	26.3	0.09	11	25.0	0.55	5	20.0	0.58	5	17.7	0.20	3
Surface salinity	0.0	0.00	0	34.3	0.57	3	31.7	0.19	10	32.0	0.80	5	33.4	0.87	5	35.8	0.09	3
Midwater salinity	0.0	0.00	0	34.3	0.51	3	32.1	0.31	10	36.0	0.14	5	36.1	0.15	3	36.3	0.16	3
Bottom salinity	0.0	0.00	0	35.2	0.13	3	36.0	0.11	10	36.4	0.09	5	36.4	0.07	2	36.2	0.07	3
Surface chlorophyll	0.0	0.00	0	1.2	0.19	3	0.3	0.06	10	0.2	0.05	4	0.2	0.02	4	0.2	0.03	3
Midwater chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface oxygen	0.0	0.00	0	6.7	0.03	3	6.9	0.08	10	7.1	0.19	5	7.0	0.28	5	6.5	0.25	3
Midwater oxygen	0.0	0.00	0	7.0	0.13	3	7.0	0.15	10	6.7	0.14	5	7.0	0.29	5	6.5	0.32	3
Bottom oxygen	0.0	0.00	0	6.3	0.09	3	6.1	0.15	10	6.2	0.17	5	6.4	0.35	5	4.3	0.12	3

Table 47a  
 Statistical Zone 21  
 40-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 21 during the 1989 October-December Shrimp and Groundfish Survey by depth stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken.

SPECIES	0- 5 FM					6-10 FM					11-20 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Penaeus aztecus	0.0	0.00	0.0	0.00	1	12.7	4.89	0.2	0.09	8	81.9	49.07	1.7	1.02	7
Penaeus duorarum	0.0	0.00	0.0	0.00	1	59.2	34.02	1.3	0.73	8	29.6	25.81	0.6	0.59	7
Sicyonia brevirostris	0.0	0.00	0.0	0.00	1	7.6	5.00	0.1	0.04	8	6.8	4.73	0.1	0.05	7
Callinectes similis	0.0	0.00	0.0	0.00	1	1.0	0.71	0.1	0.04	8	6.4	3.28	0.1	0.06	7
Portunus spinimanus	0.0	0.00	0.0	0.00	1	1.5	1.00	0.0	0.03	8	6.8	3.22	0.2	0.06	7
Portunus gibbesii	0.0	0.00	0.0	0.00	1	22.8	9.65	0.2	0.10	8	30.2	25.66	0.1	0.08	7
Stenotomus caprinus	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	8	1.7	1.71	0.1	0.05	7
Chloroscombrus chrysurus	12.0	0.00	0.0	0.00	1	5.2	2.84	0.2	0.10	8	224.2	85.77	7.1	2.58	7
Micropogonias undulatus	0.0	0.00	0.0	0.00	1	3.9	1.89	0.4	0.24	8	90.1	51.65	4.6	1.84	7
Serranus atrobranchus	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	8	1.1	1.14	0.0	0.03	7
Leiostomus xanthurus	0.0	0.00	0.0	0.00	1	3.0	1.48	0.2	0.08	8	51.7	23.09	5.4	2.50	7
Lagodon rhomboides	0.0	0.00	0.0	0.00	1	18.2	14.66	0.6	0.50	8	21.3	6.54	0.8	0.27	7
Peprilus burti	6.0	0.00	0.5	0.00	1	12.8	12.75	0.5	0.51	8	0.8	0.78	0.1	0.07	7
Upeneus parvus	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	8	1.5	0.97	0.1	0.04	7
Squid	42.0	0.00	0.8	0.00	1	82.8	18.42	0.6	0.13	8	45.8	16.32	0.3	0.08	7

Table 47a (cont'd.)  
 Statistical Zone 21  
 40-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 21 during the 1989 October-December Shrimp and Groundfish Survey by depth stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken.

SPECIES	21-30 FM					31-40 FM					>40 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
<i>Penaeus aztecus</i>	90.8	30.11	3.3	1.13	6	4.1	0.00	0.1	0.00	1	16.5	10.92	0.9	0.49	3
<i>Penaeus duorarum</i>	4.0	2.61	0.1	0.08	6	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	3
<i>Sicyonia brevirostris</i>	20.6	17.79	0.3	0.26	6	0.0	0.00	0.0	0.00	1	17.2	17.22	0.3	0.28	3
<i>Callinectes similis</i>	21.7	8.88	0.7	0.34	6	0.0	0.00	0.0	0.00	1	1.5	0.97	0.1	0.05	3
<i>Portunus spinimanus</i>	1.8	1.23	0.0	0.02	6	0.0	0.00	0.0	0.00	1	50.6	50.56	0.3	0.28	3
<i>Portunus gibbesii</i>	0.6	0.61	0.0	0.01	6	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	3
<i>Stenotomus caprinus</i>	179.3	60.37	4.6	1.53	6	149.0	0.00	8.9	0.00	1	15.8	7.27	0.5	0.28	3
<i>Chloroscombrus chrysurus</i>	20.0	15.80	0.7	0.42	6	0.0	0.00	0.0	0.00	1	0.8	0.82	0.0	0.02	3
<i>Micropogonias undulatus</i>	42.7	13.21	4.9	1.57	6	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	3
<i>Serranus atrobranchus</i>	16.6	10.73	0.1	0.11	6	0.0	0.00	0.0	0.00	1	67.2	35.99	1.2	0.64	3
<i>Leiostomus xanthurus</i>	15.6	6.59	2.3	1.09	6	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	3
<i>Lagodon rhomboides</i>	20.3	8.43	1.2	0.55	6	0.0	0.00	0.0	0.00	1	0.6	0.56	0.0	0.03	3
<i>Peprilus burti</i>	16.9	16.02	1.5	1.40	6	0.0	0.00	0.0	0.00	1	5.7	5.71	0.2	0.20	3
<i>Upeneus parvus</i>	3.4	3.12	0.0	0.04	6	24.8	0.00	0.8	0.00	1	49.6	27.91	2.1	1.34	3
<i>Squid</i>	1.3	0.79	0.1	0.04	6	74.5	0.00	1.1	0.00	1	51.5	23.89	2.2	0.79	3

Table 47b  
 Statistical Zone 21  
 40-ft trawls

Summary of the mean total catch and environmental data (X), the standard error of the mean (SEM) and the number of samples taken (n) during the 1989 October-December Shrimp and Groundfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m<sup>3</sup>, and oxygen in ppm.

Environmental category	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm		
	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	27.3	0.00	1	13.9	2.25	8	29.5	5.30	7	33.5	8.52	6	19.7	0.00	1	22.2	4.96	3
Total finfish kg	13.6	0.00	1	8.5	1.76	8	25.4	5.91	7	28.3	9.52	6	17.9	0.00	1	17.5	4.71	3
Total crustacean kg	0.0	0.00	1	2.0	1.00	8	2.9	1.45	7	4.8	1.59	6	0.0	0.00	1	1.9	0.96	3
Total others kg	16.4	0.00	1	3.1	1.26	8	0.0	0.00	7	0.0	0.00	6	0.9	0.00	1	2.8	0.69	3
Surface temperature	23.5	0.00	1	23.9	0.13	9	24.5	0.12	8	24.5	0.14	5	26.2	0.00	1	26.0	0.58	4
Midwater temperature	23.5	0.00	1	23.8	0.12	9	25.2	0.13	8	25.5	0.45	5	26.2	0.00	1	26.5	0.05	4
Bottom temperature	23.5	0.00	1	24.4	0.31	9	26.0	0.22	8	26.0	0.16	5	25.7	0.00	1	22.2	1.89	4
Surface salinity	32.1	0.00	1	31.7	0.08	9	31.9	0.21	7	32.5	0.41	5	36.7	0.00	1	35.5	1.23	4
Midwater salinity	32.1	0.00	1	31.6	0.10	9	32.9	0.39	8	34.8	0.46	5	36.8	0.00	1	36.7	0.08	4
Bottom salinity	32.1	0.00	1	32.4	0.46	9	30.1	4.34	8	36.1	0.37	5	36.8	0.00	1	36.4	0.19	4
Surface chlorophyll	0.7	0.00	1	0.6	0.02	9	0.5	0.01	5	0.4	0.06	5	0.2	0.00	1	0.2	0.08	4
Midwater chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface oxygen	9.4	0.00	1	7.5	0.23	9	7.2	0.20	8	7.2	0.09	5	6.8	0.00	1	6.7	0.13	4
Midwater oxygen	9.4	0.00	1	7.8	0.26	8	7.3	0.29	8	6.9	0.15	5	6.7	0.00	1	6.6	0.05	4
Bottom oxygen	9.2	0.00	1	7.4	0.18	9	6.8	0.20	8	6.4	0.08	5	6.5	0.00	1	5.6	0.41	4

Table 48a  
 Statistical Zone 17  
 20-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 17 during the October-December 1989 SEAMAP Shrimp and Groundfish Survey by depth Stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken. No trawl samples were taken in depths greater than 10 fm.

SPECIES	0- 5 FM					6-10 FM					11-20 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Penaeus															
<u>setiferus</u>	127.8	24.58	0.8	0.15	10	20.0	8.44	0.2	0.08	6	0.0	0.00	0.0	0.00	0
Callinectes															
<u>similis</u>	80.4	29.05	0.3	0.13	10	77.0	16.79	0.3	0.11	6	0.0	0.00	0.0	0.00	0
Portunus															
<u>gibbesii</u>	49.2	11.09	0.1	0.05	10	43.0	13.18	0.1	0.06	6	0.0	0.00	0.0	0.00	0
Squilla															
<u>spp.</u>	33.6	12.17	0.2	0.09	10	64.0	31.66	0.5	0.24	6	0.0	0.00	0.0	0.00	0
Trachypenaeus															
<u>similis</u>	23.4	10.93	0.0	0.03	10	52.0	11.14	0.1	0.06	6	0.0	0.00	0.0	0.00	0
Xiphopenaeus															
<u>kroyeri</u>	46.8	19.69	0.2	0.07	10	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	0
Cynoscion															
<u>nothus</u>	23.4	8.07	0.0	0.03	10	162.0	52.12	0.6	0.18	6	0.0	0.00	0.0	0.00	0
Stellifer															
<u>lanceolatus</u>	39.0	25.43	0.5	0.40	10	10.0	6.51	0.1	0.09	6	0.0	0.00	0.0	0.00	0
Cynoscion															
<u>arenarius</u>	27.0	16.28	1.3	0.86	10	21.0	9.89	0.6	0.26	6	0.0	0.00	0.0	0.00	0
Symphurus															
<u>plagiusa</u>	14.4	1.83	0.2	0.04	10	22.0	8.29	0.3	0.13	6	0.0	0.00	0.0	0.00	0
Chaetodipterus															
<u>faber</u>	16.8	7.09	0.0	0.03	10	17.0	2.86	0.0	0.00	6	0.0	0.00	0.0	0.00	0
Arius															
<u>felis</u>	18.0	12.23	0.1	0.11	10	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	0
Peprilus															
<u>burti</u>	5.4	2.09	0.0	0.00	10	14.0	8.44	0.0	0.05	6	0.0	0.00	0.0	0.00	0
Prionotus															
<u>tribulus</u>	10.8	3.20	0.0	0.03	10	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	0
Squid															
	31.2	9.41	0.2	0.05	10	148.0	25.06	1.2	0.33	6	0.0	0.00	0.0	0.00	0

Table 48b  
 Statistical Zone 17  
 20-ft trawls

Summary of the mean total catch and environmental data (X), the standard error of the mean (SEM) and the number of samples taken (n) during the 1989 October-December Shrimp and Groundfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m<sup>3</sup>, and oxygen in ppm. No trawl samples were taken in depths greater than 10 fm.

Environmental category	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm		
	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	5.2	1.38	10	5.0	0.45	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total finfish kg	2.2	1.40	10	3.2	0.45	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total crustacean kg	1.6	0.60	10	0.9	0.57	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total others kg	0.0	0.00	10	0.9	0.57	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface temperature	16.3	0.50	10	16.2	0.73	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater temperature	16.1	0.44	10	16.0	0.46	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom temperature	16.0	0.52	10	16.2	0.45	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface salinity	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater salinity	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom salinity	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface oxygen	8.0	0.07	10	7.7	0.09	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater oxygen	7.6	0.06	10	7.2	0.12	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom oxygen	6.0	0.28	10	6.3	0.22	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0

Table 49a  
 Statistical Zone 18  
 20-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 18 during the October-December 1989 SEAMAP Shrimp and Groundfish Survey by depth Stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken. No trawl samples were taken in depths greater than 10 fm.

SPECIES	0- 5 FM					6-10 FM					11-20 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
<i>Penaeus setiferus</i>	87.6	35.40	0.7	0.26	10	117.0	33.36	0.8	0.20	6	0.0	0.00	0.0	0.00	0
<i>Trachypenaeus similis</i>	47.4	47.40	0.0	0.03	10	91.0	56.99	0.1	0.06	6	0.0	0.00	0.0	0.00	0
<i>Squilla spp.</i>	16.2	8.44	0.2	0.12	10	69.0	33.68	0.4	0.26	6	0.0	0.00	0.0	0.00	0
<i>Callinectes similis</i>	27.6	17.87	0.1	0.11	10	38.0	20.82	0.1	0.06	6	0.0	0.00	0.0	0.00	0
<i>Portunus gibbesii</i>	3.0	1.34	0.0	0.00	10	25.0	8.11	0.1	0.06	6	0.0	0.00	0.0	0.00	0
<i>Callinectes sapidus</i>	0.0	0.00	0.0	0.00	10	15.0	9.52	0.1	0.06	6	0.0	0.00	0.0	0.00	0
<i>Cynoscion arenarius</i>	24.0	17.04	1.0	0.65	10	245.0	102.12	1.1	0.33	6	0.0	0.00	0.0	0.00	0
<i>Cynoscion nothus</i>	28.8	22.37	0.1	0.08	10	6.0	4.10	0.0	0.05	6	0.0	0.00	0.0	0.00	0
<i>Stellifer lanceolatus</i>	19.8	9.12	0.1	0.09	10	12.0	3.79	0.2	0.09	6	0.0	0.00	0.0	0.00	0
<i>Anchoa mitchilli</i>	24.6	8.92	0.0	0.00	10	1.0	1.00	0.0	0.00	6	0.0	0.00	0.0	0.00	0
<i>Arius felis</i>	17.4	8.32	0.3	0.15	10	1.0	1.00	0.1	0.14	6	0.0	0.00	0.0	0.00	0
<i>Symphurus plagiusa</i>	3.6	1.60	0.1	0.04	10	19.0	7.66	0.4	0.17	6	0.0	0.00	0.0	0.00	0
<i>Peprilus alepidotus</i>	7.2	3.32	0.1	0.04	10	8.0	2.00	0.1	0.06	6	0.0	0.00	0.0	0.00	0
<i>Peprilus burti</i>	6.6	2.27	0.0	0.00	10	6.0	2.19	0.0	0.00	6	0.0	0.00	0.0	0.00	0
<i>Squid</i>	79.8	26.71	0.7	0.22	10	73.0	15.91	0.5	0.19	6	0.0	0.00	0.0	0.00	0



Table 49b  
 Statistical Zone 18  
 20-ft trawls

Summary of the mean total catch and environmental data (X), the standard error of the mean (SEM) and the number of samples taken (n) during the 1989 October-December Shrimp and Groundfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m<sup>3</sup>, and oxygen in ppm. No trawl samples were taken in depths greater than 10 fm.

Environmental category	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm		
	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	4.6	1.82	10	5.0	0.84	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total finfish kg	1.9	0.82	10	2.7	0.70	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total crustacean kg	0.5	0.36	10	1.4	0.61	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total others kg	2.2	1.06	10	0.0	0.00	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface temperature	20.3	0.35	10	19.3	0.40	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater temperature	20.2	0.40	10	19.3	0.33	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom temperature	20.2	0.46	10	19.6	0.48	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface salinity	25.8	0.30	10	27.0	0.31	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater salinity	26.3	0.42	10	26.4	1.46	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom salinity	27.3	0.58	10	30.0	0.55	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface oxygen	7.5	0.04	10	7.4	0.06	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater oxygen	7.3	0.16	10	7.3	0.03	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom oxygen	6.9	0.27	10	7.2	0.36	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0

Table 50a  
 Statistical Zone 19  
 20-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 19 during the October-December 1989 SEAMAP Shrimp and Groundfish Survey by depth Stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken. No trawl samples were taken in depths greater than 20 fm.

SPECIES	0- 5 FM					6-10 FM					11-20 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Trachypenaeus spp.	12.0	9.17	0.0	0.00	3	109.5	74.14	0.6	0.57	8	260.4	101.46	0.6	0.28	5
Penaeus setiferus	144.0	88.79	0.8	0.57	3	65.3	32.12	0.7	0.30	8	103.2	72.85	1.3	0.76	5
Squilla spp.	12.0	6.93	0.3	0.16	3	40.5	33.75	0.3	0.34	8	78.0	41.09	0.7	0.37	5
Callinectes similis	6.0	3.46	0.1	0.09	3	14.3	13.41	0.1	0.07	8	62.4	24.56	0.4	0.18	5
Sicyonia dorsalis	2.0	2.00	0.0	0.00	3	6.0	2.27	0.0	0.00	8	38.4	17.76	0.0	0.00	5
Penaeus aztecus	26.0	13.11	0.1	0.09	3	2.3	1.58	0.0	0.00	8	15.6	3.06	0.2	0.07	5
Chloroscombrus chrysurus	688.0	676.04	3.7	3.73	3	110.3	64.23	0.7	0.42	8	0.0	0.00	0.0	0.00	5
Stellifer lanceolatus	38.0	22.54	0.6	0.33	3	90.8	65.31	1.2	0.83	8	146.4	97.65	2.2	1.41	5
Syacium gunteri	0.0	0.00	0.0	0.00	3	27.8	14.82	0.2	0.14	8	176.4	32.95	2.5	0.53	5
Cynoscion nothus	40.0	31.43	0.1	0.09	3	48.8	25.54	0.4	0.30	8	73.2	26.04	0.9	0.43	5
Arius felis	68.0	8.00	1.5	0.18	3	33.0	33.00	1.1	1.13	8	0.0	0.00	0.0	0.00	5
Cynoscion arenarius	0.0	0.00	0.0	0.00	3	20.3	7.85	0.4	0.24	8	36.0	7.82	2.4	0.53	5
Symphurus plagiusa	12.0	6.93	0.2	0.09	3	19.5	16.19	0.3	0.27	8	24.0	9.30	0.4	0.14	5
Selene setapinnis	20.0	20.00	0.2	0.18	3	12.0	6.71	0.1	0.07	8	0.0	0.00	0.0	0.00	5
Squid	8.0	2.00	0.1	0.09	3	182.3	62.07	1.4	0.41	8	39.6	15.37	0.4	0.31	5

Table 50b  
 Statistical Zone 19  
 20-ft trawls

Summary of the mean total catch and environmental data (X), the standard error of the mean (SEM) and the number of samples taken (n) during the 1989 October-December Shrimp and Groundfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m<sup>3</sup>, and oxygen in ppm. No trawl samples were taken in depths greater than 20 fm.

Environmental category	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm		
	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	10.9	3.15	3	10.2	2.86	8	16.4	1.93	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total finfish kg	9.1	3.64	3	5.8	2.15	8	10.4	1.34	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total crustacean kg	1.8	0.91	3	2.0	1.34	8	3.3	1.34	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total others kg	0.0	0.00	3	1.7	0.72	8	1.1	0.67	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface temperature	20.2	0.68	3	20.5	0.38	9	20.7	0.53	4	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater temperature	19.9	0.78	3	20.6	0.29	9	21.1	0.31	4	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom temperature	20.0	0.77	3	20.6	0.31	9	21.4	0.29	4	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface salinity	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater salinity	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom salinity	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface oxygen	8.1	0.12	3	7.6	0.06	9	7.5	0.10	4	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater oxygen	7.2	0.24	3	7.2	0.11	9	7.1	0.11	4	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom oxygen	7.0	0.37	3	6.9	0.09	9	6.7	0.13	4	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0

Table 51a  
 Statistical Zone 20  
 20-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 20 during the October-December 1989 SEAMAP Shrimp and Groundfish Survey by depth Stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken. No trawl samples were taken in depths less than 5 fm or greater than 20 fm.

SPECIES	0- 5 FM					6-10 FM					11-20 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Trachypenaeus similis	0.0	0.00	0.0	0.00	0	64.4	25.55	0.2	0.08	11	39.6	39.60	0.1	0.11	5
Penaeus setiferus	0.0	0.00	0.0	0.00	0	38.7	12.41	0.4	0.12	11	6.0	4.65	0.2	0.16	5
Trachypenaeus constrictus	0.0	0.00	0.0	0.00	0	32.7	14.46	0.1	0.04	11	0.0	0.00	0.0	0.00	5
Portunus gibbesii	0.0	0.00	0.0	0.00	0	16.4	6.92	0.0	0.02	11	19.2	7.91	0.1	0.07	5
Penaeus aztecus	0.0	0.00	0.0	0.00	0	10.9	4.98	0.0	0.03	11	26.4	14.65	0.3	0.20	5
Penaeus duorarum	0.0	0.00	0.0	0.00	0	13.6	5.19	0.1	0.08	11	8.4	7.00	0.1	0.05	5
Chloroscombrus chrysurus	0.0	0.00	0.0	0.00	0	73.6	37.85	0.3	0.15	11	24.0	24.00	0.1	0.11	5
Peprilus alepidotus	0.0	0.00	0.0	0.00	0	53.5	42.08	0.5	0.35	11	9.6	9.60	0.1	0.05	5
Stellifer lanceolatus	0.0	0.00	0.0	0.00	0	43.6	24.66	0.6	0.36	11	1.2	1.20	0.0	0.00	5
Cynoscion nothus	0.0	0.00	0.0	0.00	0	32.7	10.21	0.1	0.06	11	12.0	10.56	0.2	0.16	5
Arius felis	0.0	0.00	0.0	0.00	0	32.7	25.75	0.6	0.43	11	0.0	0.00	0.0	0.00	5
Syacium gunteri	0.0	0.00	0.0	0.00	0	6.0	3.71	0.0	0.03	11	32.4	14.77	1.0	0.53	5
Menticirrhus americanus	0.0	0.00	0.0	0.00	0	18.0	4.99	1.0	0.29	11	0.0	0.00	0.0	0.00	5
Polydactylus octonemus	0.0	0.00	0.0	0.00	0	2.7	2.20	0.1	0.05	11	18.0	18.00	0.7	0.65	5
Squid	0.0	0.00	0.0	0.00	0	44.2	14.16	0.3	0.08	11	18.0	7.82	0.2	0.07	5

Table 51b  
 Statistical Zone 20  
 20-ft trawls

Summary of the mean total catch and environmental data (X), the standard error of the mean (SEM) and the number of samples taken (n) during the 1989 October-December Shrimp and Groundfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m<sup>3</sup>, and oxygen in ppm. No trawl samples were taken in depths less than 5 fm or greater than 20 fm.

Environmental category	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm		
	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	0.0	0.00	0	8.9	1.48	11	5.5	2.44	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total finfish kg	0.0	0.00	0	6.0	1.15	11	3.3	2.00	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total crustacean kg	0.0	0.00	0	1.2	0.43	11	0.5	0.55	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total others kg	0.0	0.00	0	1.5	0.57	11	1.1	0.67	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface temperature	0.0	0.00	0	20.4	0.83	12	22.2	0.48	4	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater temperature	0.0	0.00	0	21.1	0.42	12	22.2	0.48	4	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom temperature	0.0	0.00	0	21.3	0.40	12	22.4	0.56	4	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface salinity	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater salinity	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom salinity	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface oxygen	0.0	0.00	0	7.2	0.13	12	6.9	0.25	4	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater oxygen	0.0	0.00	0	7.1	0.11	12	6.7	0.17	4	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom oxygen	0.0	0.00	0	7.0	0.16	12	6.5	0.24	4	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0

Table 52a  
 Statistical Zone 21  
 20-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 21 during the October-December 1989 SEAMAP Shrimp and Groundfish Survey by depth Stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken. No trawl samples were taken in depths greater than 20 fm.

SPECIES	0- 5 FM					6-10 FM					11-20 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Penaeus duorarum	0.0	0.00	0.0	0.00	1	33.0	11.67	0.4	0.14	6	6.8	4.73	0.1	0.07	8
Penaeus aztecus	0.0	0.00	0.0	0.00	1	28.0	13.48	0.2	0.11	6	3.8	1.10	0.0	0.03	8
Portunus spinimanus	0.0	0.00	0.0	0.00	1	14.0	7.38	0.1	0.06	6	9.8	2.76	0.1	0.10	8
Portunus gibbesii	0.0	0.00	0.0	0.00	1	20.0	8.85	0.1	0.09	6	5.3	2.10	0.0	0.03	8
Trachypenaeus constrictus	0.0	0.00	0.0	0.00	1	11.0	8.82	0.0	0.05	6	6.8	5.94	0.0	0.03	8
Penaeus setiferus	0.0	0.00	0.0	0.00	1	13.0	5.67	0.2	0.09	6	0.8	0.75	0.0	0.00	8
Syacium gunteri	0.0	0.00	0.0	0.00	1	6.0	3.79	0.0	0.05	6	37.5	17.78	0.6	0.31	8
Lutjanus campechanus	0.0	0.00	0.0	0.00	1	21.0	8.87	0.2	0.09	6	12.0	5.67	0.2	0.07	8
Etropus crossotus	0.0	0.00	0.0	0.00	1	12.0	6.39	0.0	0.05	6	2.3	1.10	0.0	0.03	8
Sphoeroides parvus	0.0	0.00	0.0	0.00	1	5.0	3.92	0.0	0.05	6	3.8	1.94	0.0	0.00	8
Eucinostomus gula	0.0	0.00	0.0	0.00	1	10.0	5.06	0.1	0.06	6	0.0	0.00	0.0	0.00	8
Prionotus rubio	0.0	0.00	0.0	0.00	1	9.0	5.74	0.1	0.09	6	0.0	0.00	0.0	0.00	8
Prionotus tribulus	0.0	0.00	0.0	0.00	1	2.0	2.00	0.0	0.05	6	4.5	2.47	0.1	0.04	8
Centropristis philadelphica	0.0	0.00	0.0	0.00	1	2.0	1.26	0.0	0.00	6	0.8	0.75	0.0	0.03	8
Squid	0.0	0.00	0.0	0.00	1	26.0	8.85	0.2	0.09	6	6.8	5.13	0.0	0.00	8

Table 52b  
 Statistical Zone 21  
 20-ft trawls

Summary of the mean total catch and environmental data (X), the standard error of the mean (SEM) and the number of samples taken (n) during the 1989 October-December Shrimp and Groundfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m<sup>3</sup>, and oxygen in ppm. No trawl samples were taken in depths greater than 20 fm.

Environmental category	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm		
	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	0.0	0.00	1	3.2	0.84	6	3.1	0.96	8	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total finfish kg	0.0	0.00	1	0.9	0.57	6	1.4	0.52	8	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total crustacean kg	0.0	0.00	1	1.8	0.57	6	0.0	0.00	8	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total others kg	0.0	0.00	1	0.5	0.45	6	0.7	0.45	8	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface temperature	24.3	0.00	1	22.9	0.39	6	23.0	0.44	8	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater temperature	24.3	0.00	1	22.5	0.50	6	22.9	0.45	8	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom temperature	24.2	0.00	1	22.5	0.50	6	23.0	0.47	8	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface salinity	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater salinity	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom salinity	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface oxygen	7.2	0.00	1	6.3	0.31	5	6.4	0.24	8	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater oxygen	7.3	0.00	1	6.4	0.30	5	6.4	0.26	8	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom oxygen	7.3	0.00	1	6.3	0.34	5	6.4	0.24	8	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0

Table 53a  
 Statistical Zone 22  
 20-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 22 during the October-December 1989 SEAMAP Shrimp and Groundfish Survey by depth Stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken. No trawl samples were taken in depths less than 10 fm or greater than 20 fm.

SPECIES	0- 5 FM					6-10 FM					11-20 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Callinectes															
<u>similis</u>	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	6.0	0.00	0.3	0.00	1
Syacium															
<u>gunteri</u>	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	36.0	0.00	0.5	0.00	1
Lutjanus															
<u>campechanus</u>	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	24.0	0.00	0.3	0.00	1
Haliutichthys															
<u>aculeatus</u>	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	12.0	0.00	0.0	0.00	1
Prionotus															
<u>tribulus</u>	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	6.0	0.00	0.0	0.00	1
Sphoeroides															
<u>parvus</u>	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	6.0	0.00	0.0	0.00	1
Ogcocephalus															
<u>pantostictus</u>	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	6.0	0.00	0.0	0.00	1
Centropristis															
<u>philadelphica</u>	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	6.0	0.00	0.3	0.00	1



Table 53b  
 Statistical Zone 22  
 20-ft trawls

Summary of the mean total catch and environmental data (X), the standard error of the mean (SEM) and the number of samples taken (n) during the 1989 October-December Shrimp and Groundfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m<sup>3</sup>, and oxygen in ppm. No trawl samples were taken in depths less than 10 fm or greater than 20 fm.

Environmental category	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm		
	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	0.0	0.00	0	0.0	0.00	0	2.7	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total finfish kg	0.0	0.00	0	0.0	0.00	0	0.0	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total crustacean kg	0.0	0.00	0	0.0	0.00	0	0.0	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total others kg	0.0	0.00	0	0.0	0.00	0	2.7	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface temperature	0.0	0.00	0	0.0	0.00	0	24.0	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater temperature	0.0	0.00	0	0.0	0.00	0	24.0	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom temperature	0.0	0.00	0	0.0	0.00	0	24.0	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface salinity	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater salinity	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom salinity	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface oxygen	0.0	0.00	0	0.0	0.00	0	7.0	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater oxygen	0.0	0.00	0	0.0	0.00	0	7.0	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom oxygen	0.0	0.00	0	0.0	0.00	0	7.1	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0

Table 54a  
 Statistical Zone 11  
 16-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 11 during the October-December 1989 SEAMAP Shrimp and Groundfish Survey by depth Stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken. No trawl samples were taken in depths greater than 5 fm.

SPECIES	0- 5 FM					6-10 FM					11-20 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Callinectes															
<i>similis</i>	48.0	44.50	0.7	0.73	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Penaeus															
<i>aztecus</i>	25.0	19.62	0.5	0.37	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Squilla															
<i>spp.</i>	16.0	16.00	0.2	0.23	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Sicyonia															
<i>dorsalis</i>	14.0	14.00	0.1	0.09	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Trachypenaeus															
<i>constrictus</i>	11.0	11.00	0.2	0.18	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Portunus															
<i>gibbesii</i>	9.0	6.15	0.2	0.13	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Chloroscombrus															
<i>chrysurus</i>	143.0	129.14	0.8	0.58	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Arius															
<i>felis</i>	57.0	54.64	3.3	3.05	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Symphurus															
<i>plagiusa</i>	39.0	36.65	0.9	0.76	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Spherooides															
<i>parvus</i>	24.0	13.51	0.3	0.14	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Prionotus															
<i>longispinosus</i>	18.0	18.00	0.4	0.36	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Citharichthys															
<i>macrops</i>	18.0	14.53	0.2	0.09	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Anchoa															
<i>hepsetus</i>	12.0	12.00	0.1	0.09	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Synodus															
<i>foetens</i>	9.0	5.74	0.6	0.35	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Squid															
	15.0	8.16	0.3	0.17	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0

Table 54b  
 Statistical Zone 11  
 16-ft trawls

Summary of the mean total catch and environmental data (X), the standard error of the mean (SEM) and the number of samples taken (n) during the 1989 October-December Shrimp and Groundfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m<sup>3</sup>, and oxygen in ppm. No trawl samples were taken in depths greater than 5 fm.

Environmental category	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm		
	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	14.1	8.43	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total finfish kg	8.6	4.75	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total crustacean kg	4.5	4.02	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total others kg	1.4	1.36	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface temperature	20.8	0.25	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater temperature	20.5	0.29	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom temperature	21.0	0.32	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface salinity	28.7	0.44	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater salinity	29.7	0.33	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom salinity	29.9	0.57	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface chlorophyll	1.0	0.15	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface oxygen	7.7	0.66	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater oxygen	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom oxygen	7.3	0.55	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0

Table 55a  
 Statistical Zone 12  
 16-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 12 during the October-December 1989 SEAMAP Shrimp and Groundfish Survey by depth Stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken. No trawl samples were taken in depths greater than 5 fm.

SPECIES	0- 5 FM					6-10 FM					11-20 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Trachypenaeus															
<u>constrictus</u>	28.0	28.00	0.0	0.00	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Callinectes															
<u>similis</u>	8.0	8.00	0.0	0.00	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Chloroscombrus															
<u>chrysurus</u>	46.0	46.00	0.2	0.18	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Symphurus															
<u>plagiusa</u>	22.0	22.00	0.1	0.09	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Arius															
<u>felis</u>	18.0	18.00	0.4	0.36	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Menticirrhus															
<u>americanus</u>	16.0	16.00	0.2	0.18	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Cynoscion															
<u>arenarius</u>	12.0	12.00	0.2	0.18	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Anchoa															
<u>mitchilli</u>	10.0	10.00	0.0	0.00	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Pogonias															
<u>cromis</u>	8.0	8.00	0.1	0.09	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Prionotus															
<u>tribulus</u>	4.0	4.00	0.0	0.00	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Squid															
	26.0	15.62	0.1	0.09	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0

Table 55b  
 Statistical Zone 12  
 16-ft trawls

Summary of the mean total catch and environmental data (X), the standard error of the mean (SEM) and the number of samples taken (n) during the 1989 October-December Shrimp and Groundfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m<sup>3</sup>, and oxygen in ppm. No trawl samples were taken in depths greater than 5 fm.

Environmental category	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm		
	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	0.9	0.91	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total finfish kg	0.9	0.91	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total crustacean kg	0.0	0.00	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total others kg	0.0	0.00	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface temperature	18.2	0.32	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater temperature	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom temperature	17.2	0.28	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface salinity	24.9	0.85	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater salinity	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom salinity	28.4	1.52	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface oxygen	9.3	0.18	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater oxygen	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom oxygen	8.6	0.03	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0

Table 56a  
 Statistical Zone 13  
 16-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 13 during the October-December 1989 SEAMAP Shrimp and Groundfish Survey by depth Stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken. No trawl samples were taken in depths greater than 5 fm.

SPECIES	0- 5 FM					6-10 FM					11-20 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Trachypenaeus similis	50.0	26.46	0.0	0.00	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Penaeus setiferus	110.0	49.52	0.8	0.31	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Callinectes similis	52.0	26.00	0.1	0.09	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Penaeus aztecus	12.0	6.00	0.2	0.09	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Portunus gibbesii	6.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Sicyonia dorsalis	4.0	2.00	0.0	0.00	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Menticirrhus americanus	186.0	168.32	0.5	0.45	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Chloroscombrus chrysurus	118.0	115.01	0.1	0.09	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Cynoscion nothus	54.0	42.00	0.2	0.18	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Larimus fasciatus	24.0	18.33	0.0	0.00	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Sphoeroides parvus	10.0	7.21	0.1	0.09	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Peprilus burti	10.0	7.21	0.0	0.00	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Arius felis	10.0	5.29	0.1	0.09	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Anchoa mitchilli	6.0	6.00	0.0	0.00	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Squid	66.0	27.06	0.1	0.09	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0

Table 56b  
 Statistical Zone 13  
 16-ft trawls

Summary of the mean total catch and environmental data (X), the standard error of the mean (SEM) and the number of samples taken (n) during the 1989 October-December Shrimp and Groundfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m<sup>3</sup>, and oxygen in ppm. No trawl samples were taken in depths greater than 5 fm.

Environmental category	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm		
	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	3.6	2.41	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total finfish kg	1.8	1.82	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total crustacean kg	0.9	0.91	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total others kg	0.0	0.00	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface temperature	22.3	0.12	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater temperature	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom temperature	22.0	0.09	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface salinity	25.3	0.19	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater salinity	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom salinity	26.8	0.45	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface chlorophyll	5.0	0.37	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface oxygen	7.9	0.12	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater oxygen	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom oxygen	7.5	0.09	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0

Table 57a  
 Statistical Zone 14  
 16-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 14 during the October-December 1989 SEAMAP Shrimp and Groundfish Survey by depth Stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken. No trawl samples were taken in depths greater than 5 fm.

SPECIES	0- 5 FM					6-10 FM					11-20 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Trachypenaeus															
<u>constrictus</u>	253.2	131.29	0.2	0.16	5	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Trachypenaeus															
<u>similis</u>	58.8	58.80	0.1	0.05	5	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Penaeus															
<u>setiferus</u>	22.8	17.43	0.2	0.16	5	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Portunus															
<u>sayi</u>	16.8	16.80	0.0	0.00	5	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Sicyonia															
<u>dorsalis</u>	15.6	7.73	0.0	0.00	5	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Callinectes															
<u>similis</u>	14.4	14.40	0.0	0.00	5	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Anchoa															
<u>mitchilli</u>	122.4	103.79	0.2	0.22	5	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Cynoscion															
<u>arenarius</u>	50.4	40.72	0.2	0.11	5	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Cynoscion															
<u>nothus</u>	32.4	32.40	0.1	0.11	5	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Menticirrhus															
<u>americanus</u>	24.0	21.13	0.1	0.05	5	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Symphurus															
<u>plagiusa</u>	20.4	8.18	0.2	0.11	5	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Etropus															
<u>crossotus</u>	16.8	5.82	0.3	0.15	5	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Sphoeroides															
<u>parvus</u>	10.8	9.37	0.1	0.05	5	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Cynoscion															
<u>spp.</u>	10.8	10.80	0.0	0.00	5	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Squid															
	86.4	34.45	0.3	0.15	5	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0



Table 57b  
 Statistical Zone 14  
 16-ft trawls

Summary of the mean total catch and environmental data (X), the standard error of the mean (SEM) and the number of samples taken (n) during the 1989 October-December Shrimp and Groundfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m<sup>3</sup>, and oxygen in ppm. No trawl samples were taken in depths greater than 5 fm.

Environmental category	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm		
	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	12.0	10.65	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total finfish kg	1.1	0.67	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total crustacean kg	0.0	0.00	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total others kg	0.0	0.00	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface temperature	23.1	0.13	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater temperature	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom temperature	22.8	0.22	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface salinity	30.0	0.44	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater salinity	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom salinity	29.3	0.97	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface chlorophyll	2.3	0.65	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface oxygen	8.1	0.15	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater oxygen	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom oxygen	8.1	0.28	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0

Table 58a  
 Statistical Zone 16  
 16-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 16 during the October-December 1989 SEAMAP Shrimp and Groundfish Survey by depth Stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken. No trawl samples were taken in depths greater than 5 fm.

SPECIES	0- 5 FM					6-10 FM					11-20 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
<i>Palaemonetes</i>															
<i>vulgaris</i>	156.0	156.00	0.1	0.09	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Penaeus</i>															
<i>setiferus</i>	146.0	146.00	0.7	0.73	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Penaeus</i>															
<i>aztecus</i>	128.0	128.00	0.3	0.27	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Callinectes</i>															
<i>sapidus</i>	50.0	50.00	0.5	0.45	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Xanthidae															
	10.0	10.00	0.0	0.00	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Trachypenaeus</i>															
<i>similis</i>	6.0	3.46	0.0	0.00	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Anchoa</i>															
<i>mitchilli</i>	3294.0	1998.03	4.0	2.21	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Cynoscion</i>															
<i>arenarius</i>	62.0	29.87	0.2	0.18	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Peprilus</i>															
<i>burti</i>	40.0	24.33	0.0	0.00	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Anchoa</i>															
<i>hepsetus</i>	16.0	13.11	0.2	0.18	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Lutjanus</i>															
<i>campechanus</i>	10.0	10.00	0.1	0.09	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Micropogonias</i>															
<i>undulatus</i>	10.0	7.21	0.2	0.18	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Chaetodipterus</i>															
<i>faber</i>	10.0	10.00	0.1	0.09	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Prionotus</i>															
<i>tribulus</i>	8.0	8.00	0.0	0.00	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Squid</i>	506.0	455.95	2.6	2.24	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0

Table 58b  
 Statistical Zone 16  
 16-ft trawls

Summary of the mean total catch and environmental data (X), the standard error of the mean (SEM) and the number of samples taken (n) during the 1989 October-December Shrimp and Groundfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m<sup>3</sup>, and oxygen in ppm. No trawl samples were taken in depths greater than 5 fm.

Environmental category	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm		
	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	9.1	3.64	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total finfish kg	4.5	2.41	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total crustacean kg	1.8	1.82	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total others kg	2.7	2.73	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface temperature	22.5	0.12	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater temperature	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom temperature	22.2	0.29	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface salinity	22.3	5.98	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater salinity	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom salinity	22.3	5.98	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface chlorophyll	5.0	2.06	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface oxygen	8.8	0.55	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater oxygen	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom oxygen	8.7	0.60	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0

Table 59a  
 Statistical Zone 17  
 16-ft trawls

Summary of dominate organisms taken in shrimp statistical zone 17 during the October-December 1989 SEAMAP Shrimp and Groundfish Survey by depth Stratum. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight in kg per hour, the SEM of weight and the number (n) of samples taken. No trawl samples were taken in depths greater than 5 fm.

SPECIES	0- 5 FM					6-10 FM					11-20 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Trachypenaeus															
<i>similis</i>	1444.0	1302.23	1.6	1.50	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Penaeus															
<i>setiferus</i>	86.0	44.54	0.6	0.24	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Xiphopenaeus															
<i>kroyeri</i>	60.0	54.11	0.2	0.18	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Callinectes															
<i>sapidus</i>	42.0	6.00	0.4	0.24	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Squilla															
<i>spp.</i>	38.0	35.04	0.2	0.18	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Portunus															
<i>gibbesii</i>	32.0	16.37	0.2	0.09	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Cynoscion															
<i>arenarius</i>	198.0	156.04	1.5	1.41	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Anchoa															
<i>mitchilli</i>	152.0	77.25	0.3	0.16	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Symphurus															
<i>plagiusa</i>	48.0	27.50	0.3	0.16	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Etropus															
<i>crossotus</i>	30.0	27.06	0.2	0.09	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Menticirrhus															
<i>americanus</i>	26.0	10.00	0.2	0.09	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Stellifer															
<i>lanceolatus</i>	24.0	12.49	0.2	0.09	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Chaetodipterus															
<i>faber</i>	16.0	10.00	0.0	0.00	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Prionotus															
<i>tribulus</i>	14.0	11.14	0.0	0.00	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Squid															
	158.0	83.23	0.7	0.48	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0

Table 59b  
 Statistical Zone 17  
 16-ft trawls

Summary of the mean total catch and environmental data ( $\bar{X}$ ), the standard error of the mean (SEM) and the number of samples taken (n) during the 1989 October-December Shrimp and Groundfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in  $\text{mg/m}^3$ , and oxygen in ppm. No trawl samples were taken in depths greater than 5 fm.

Environmental category	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm		
	$\bar{X}$	SEM	n	$\bar{X}$	SEM	n	$\bar{X}$	SEM	n	$\bar{X}$	SEM	n	$\bar{X}$	SEM	n	$\bar{X}$	SEM	n
Total catch kg	7.3	4.55	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total finfish kg	2.7	2.73	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total crustacean kg	3.6	0.91	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total others kg	0.9	0.91	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface temperature	18.1	0.33	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater temperature	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom temperature	18.4	0.52	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface salinity	27.2	0.63	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater salinity	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom salinity	27.3	0.73	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface chlorophyll	4.6	1.97	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface oxygen	8.2	0.26	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater oxygen	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom oxygen	7.4	0.57	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0

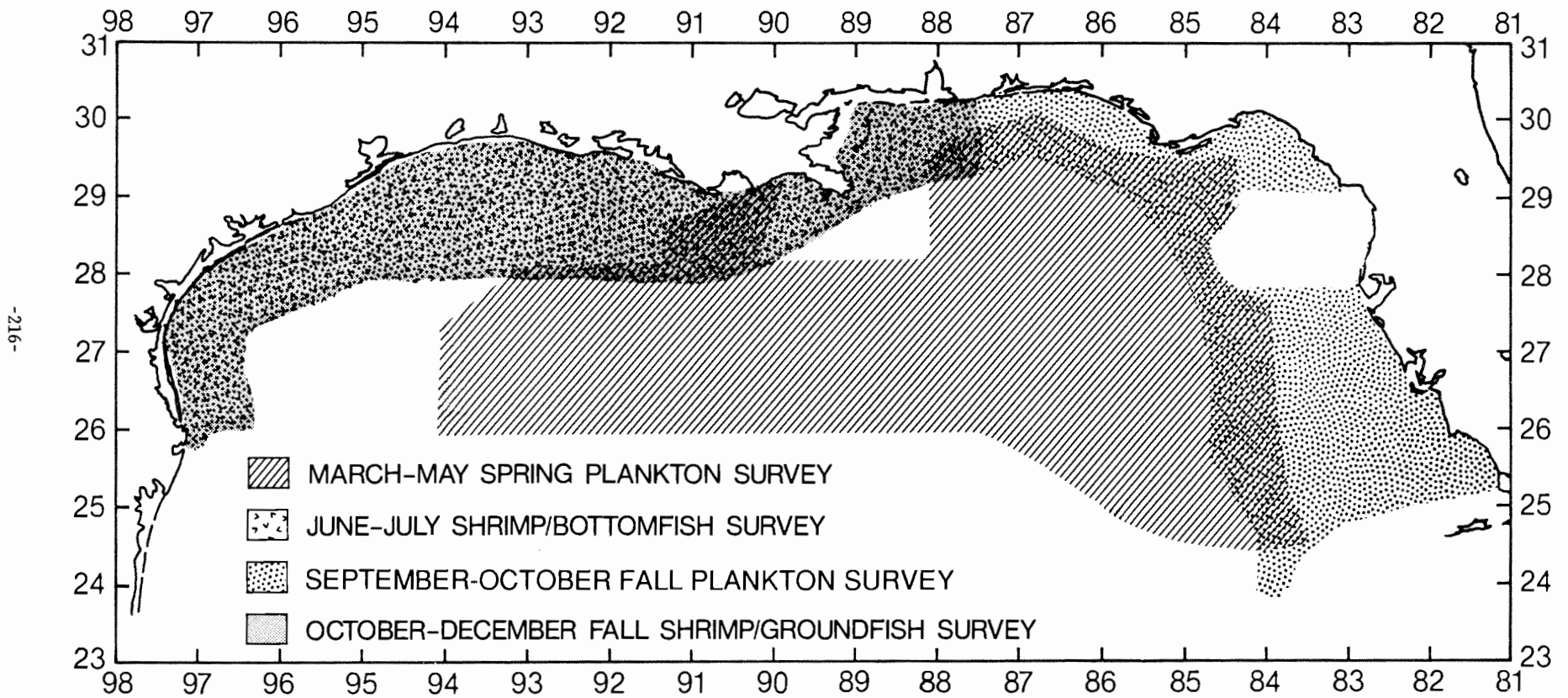


Figure 1. 1989 SEAMAP Surveys, Gulf of Mexico.

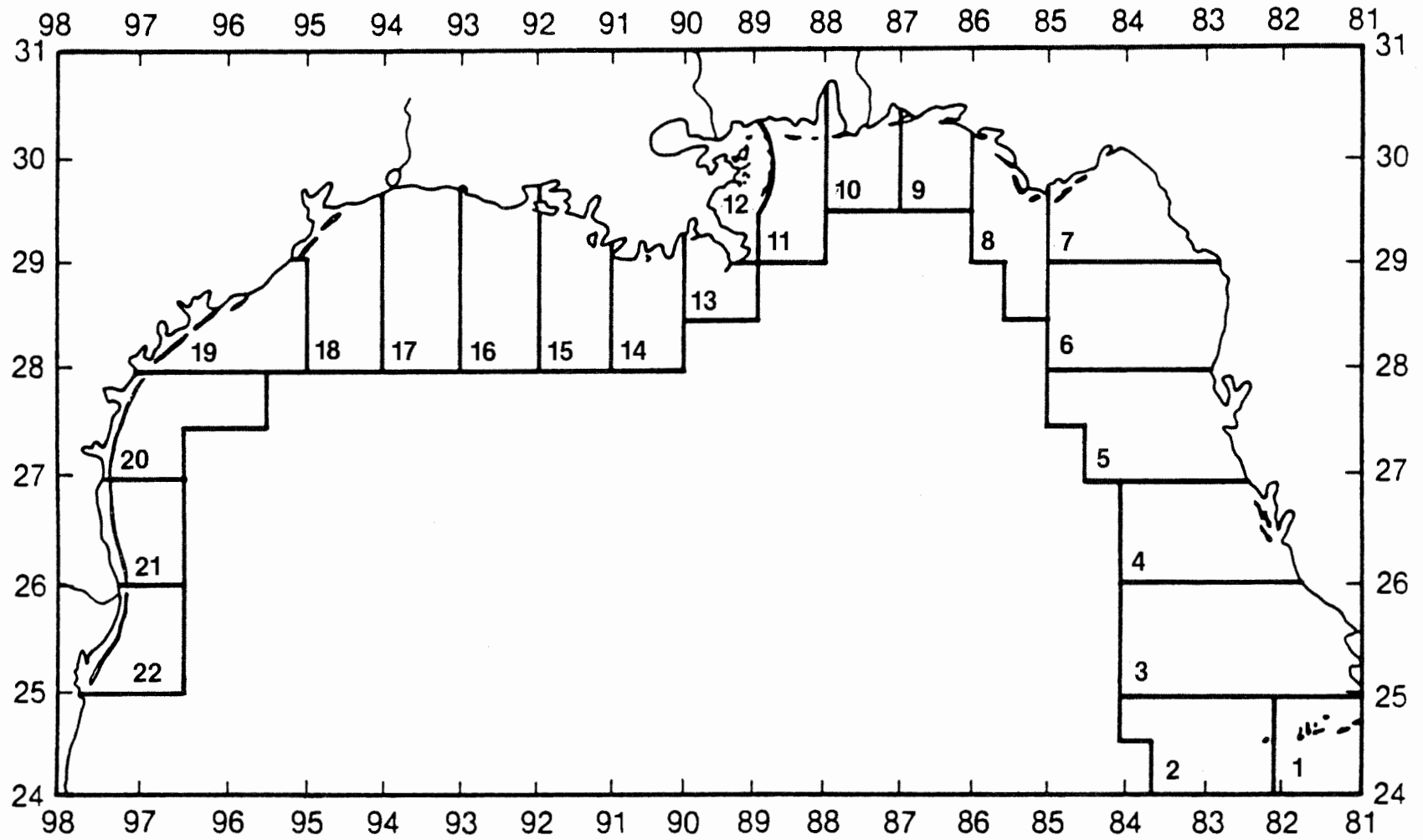


Figure 2. Statistical zones for shrimp in the Gulf of Mexico.

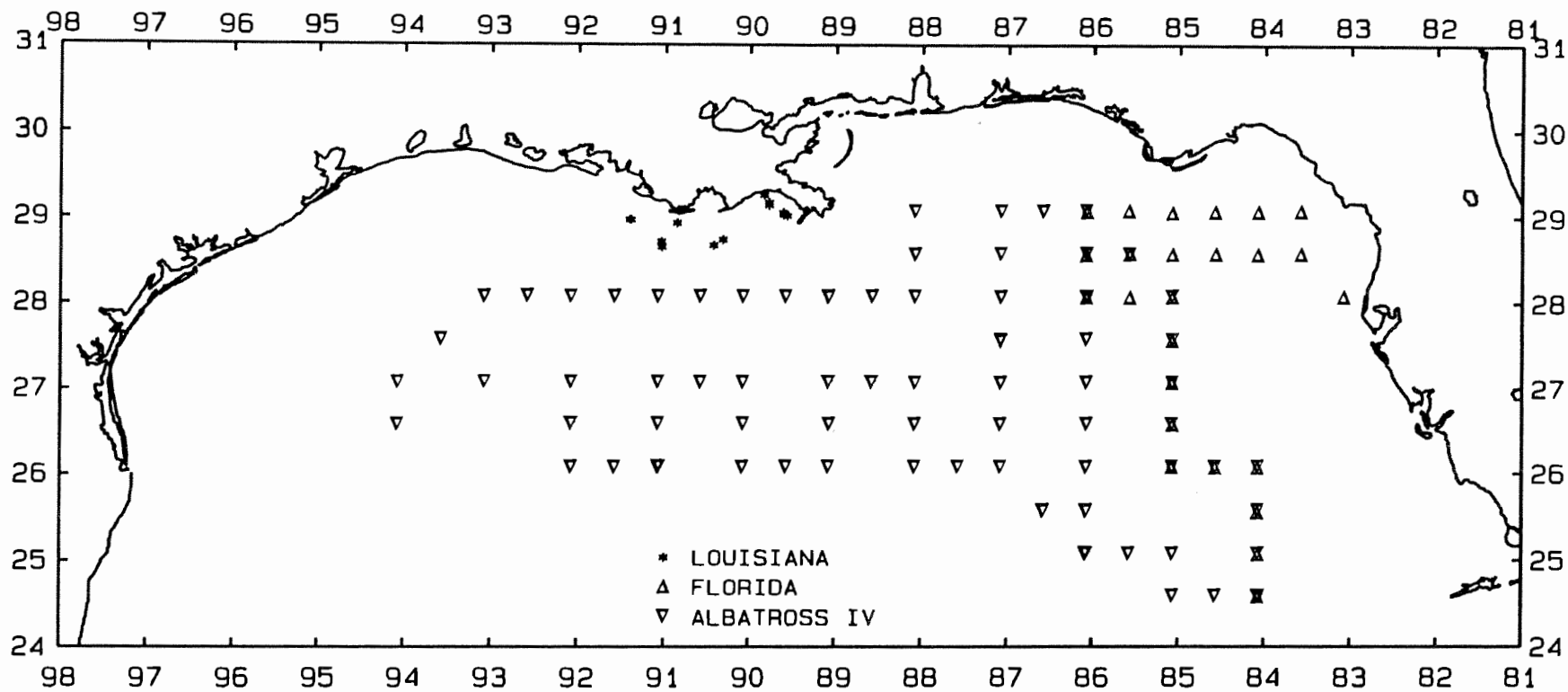


Figure 3. Locations of plankton and environmental stations during 1989 March-May plankton survey.



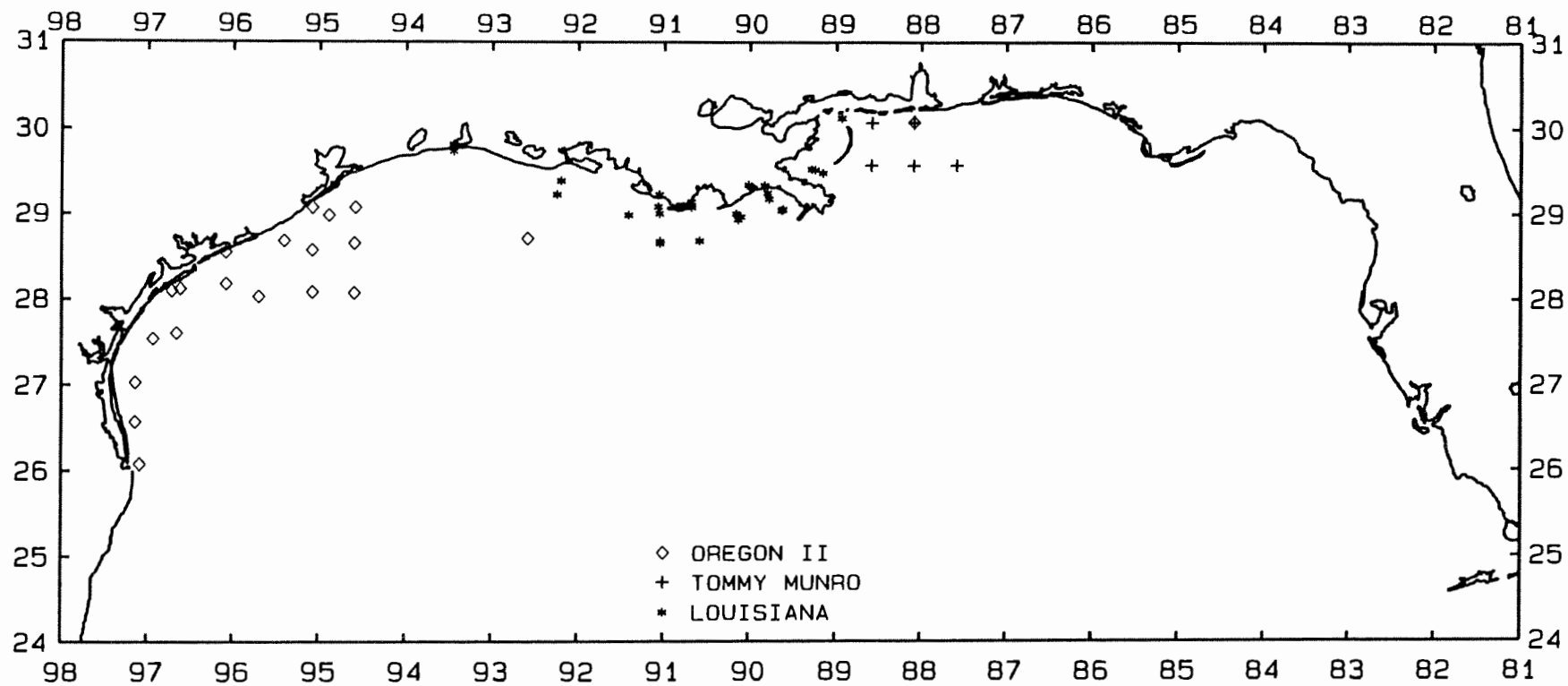


Figure 4. Locations of plankton stations during 1989 June-July Shrimp/Bottomfish Survey.

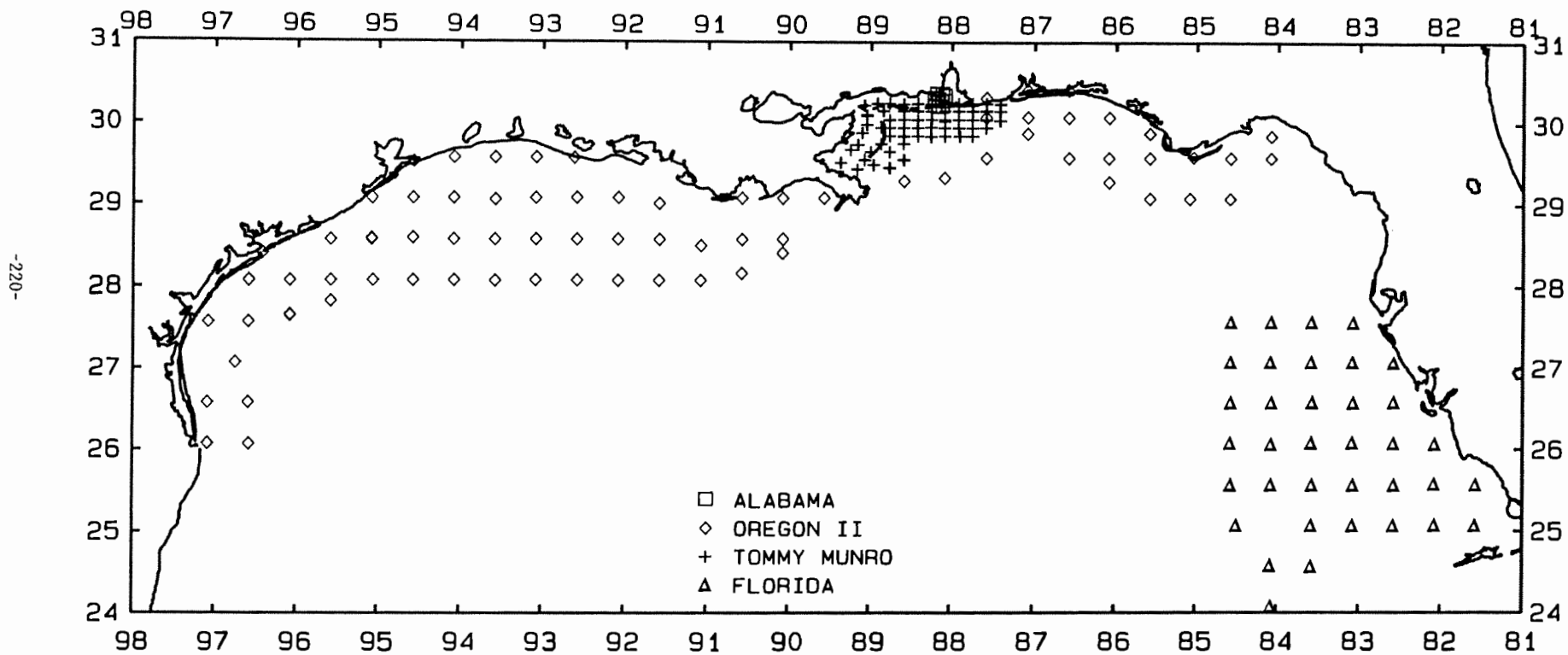


Figure 5. Locations of plankton and environmental stations during 1989 September-October Plankton Survey.

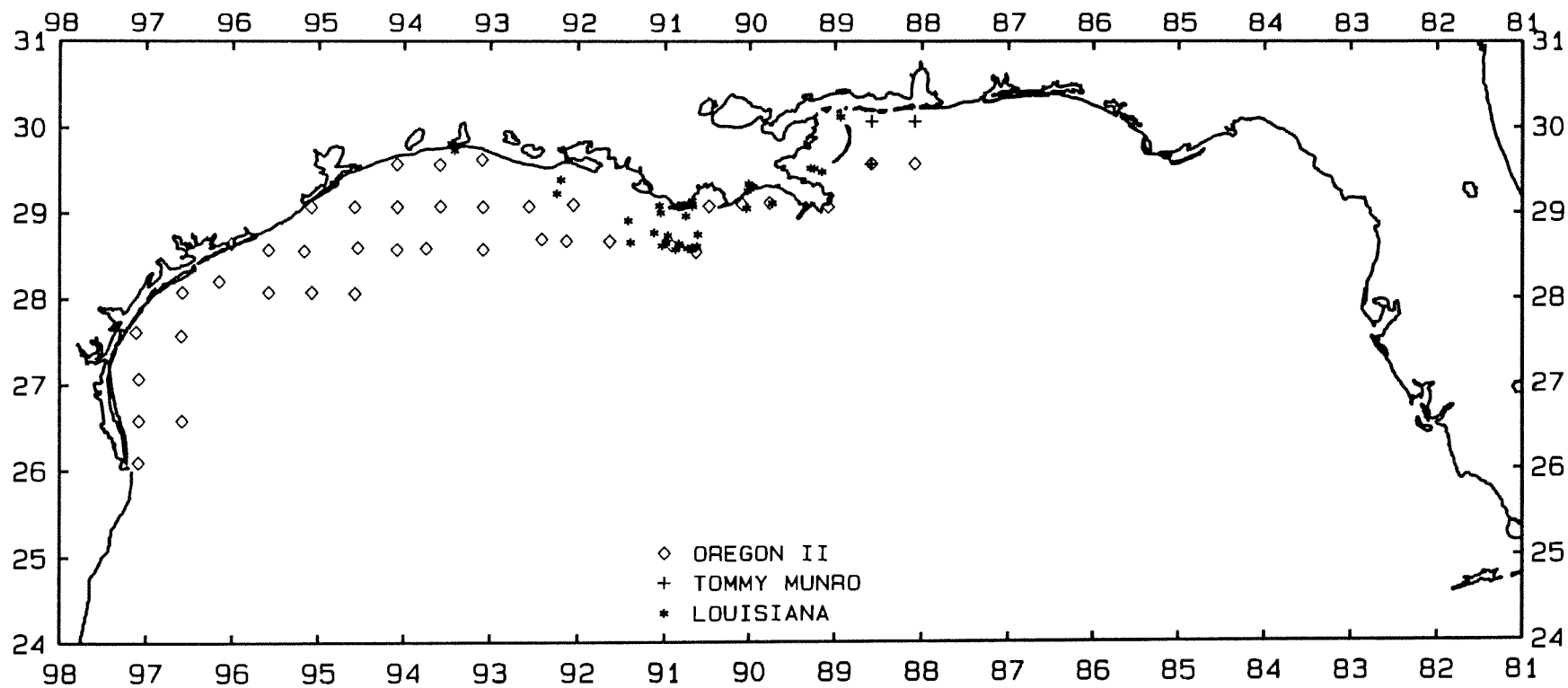


Figure 6. Locations of plankton stations during 1989 October-December Shrimp/Groundfish Survey.

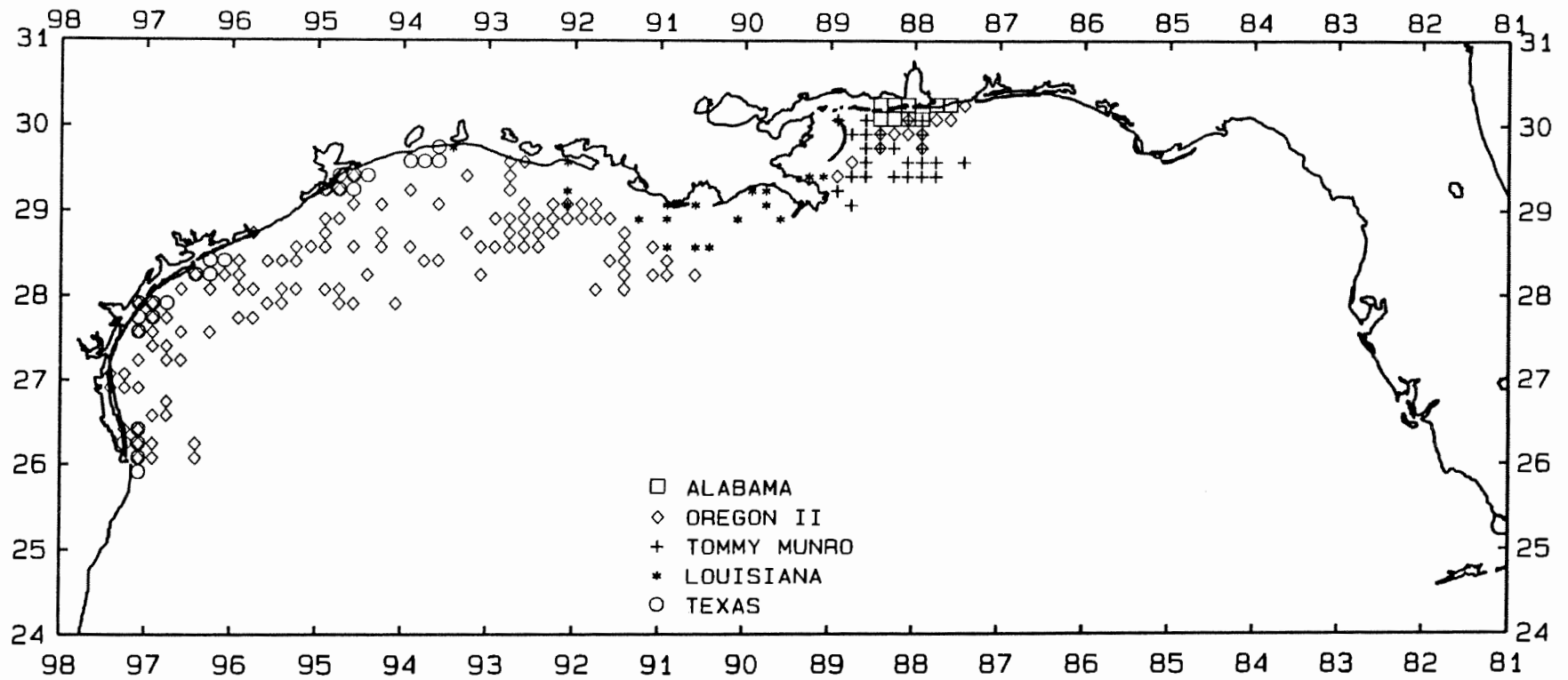


Figure 7. Locations of 1989 June-July Shrimp/Bottomfish environmental stations, summarized by 10-minute squares.

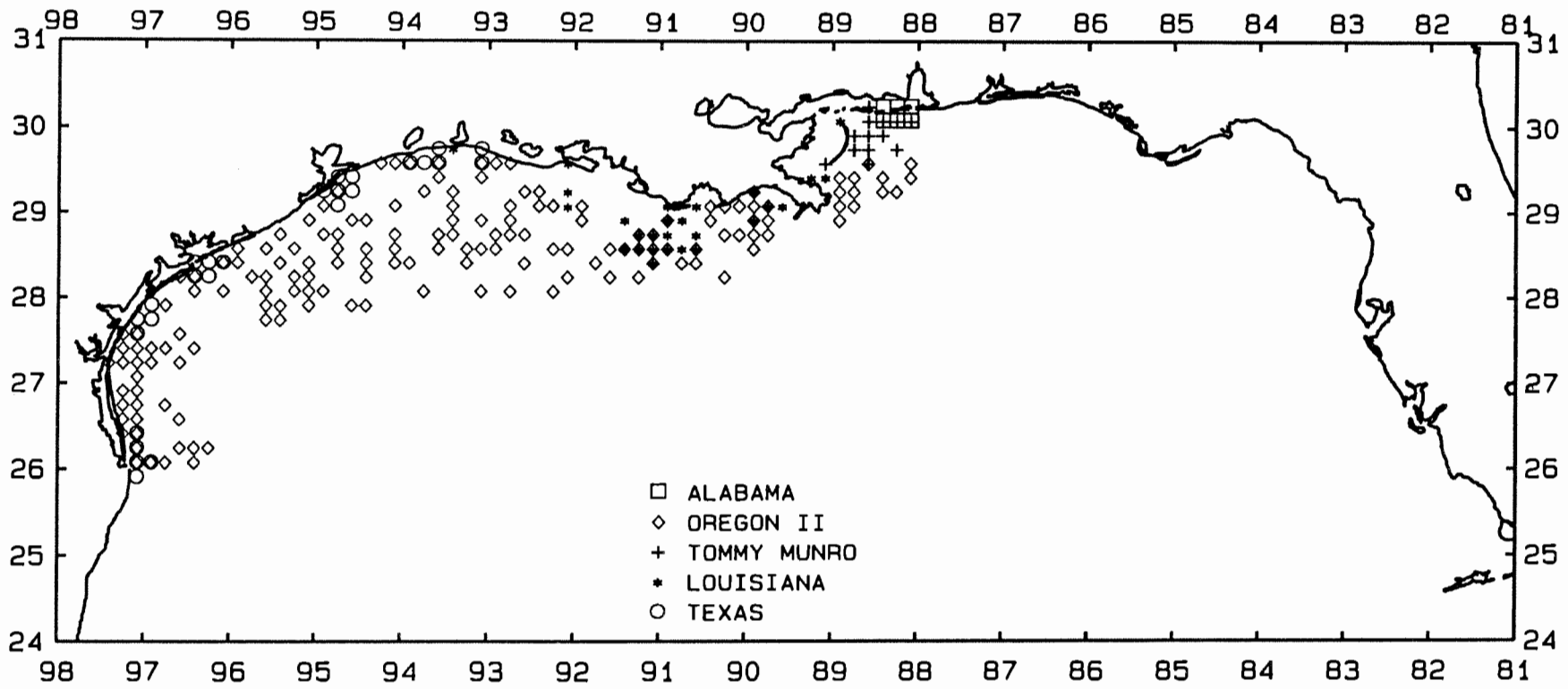


Figure 8. Locations of 1989 October-December Fall Shrimp/Groundfish Survey environmental stations, summarized by 10-minute squares.

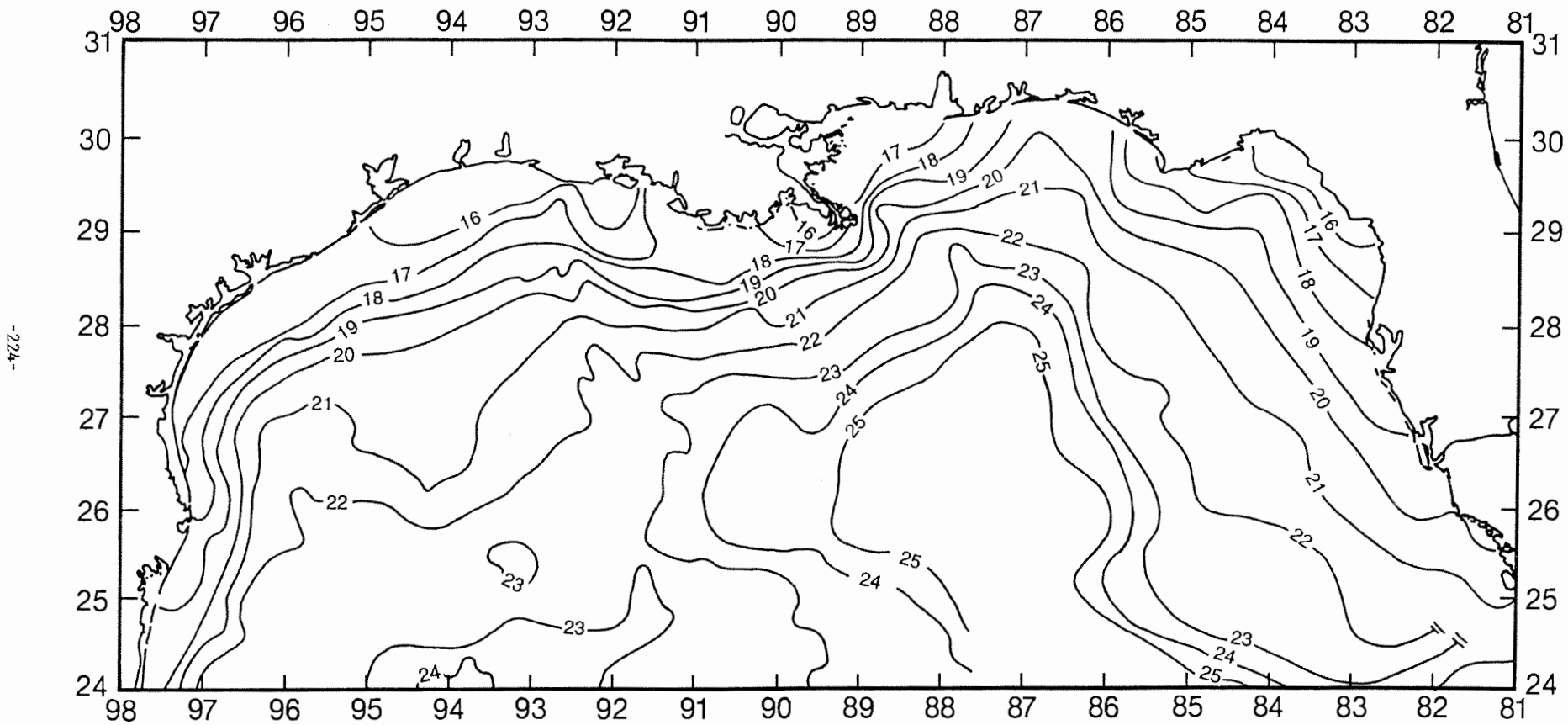


Figure 9. Satellite measurement of surface temperature ( $^{\circ}\text{C}$ ) in the Gulf of Mexico, March 11, 1989 (modified from NWS/NESS Sea Surface Thermal Analysis).

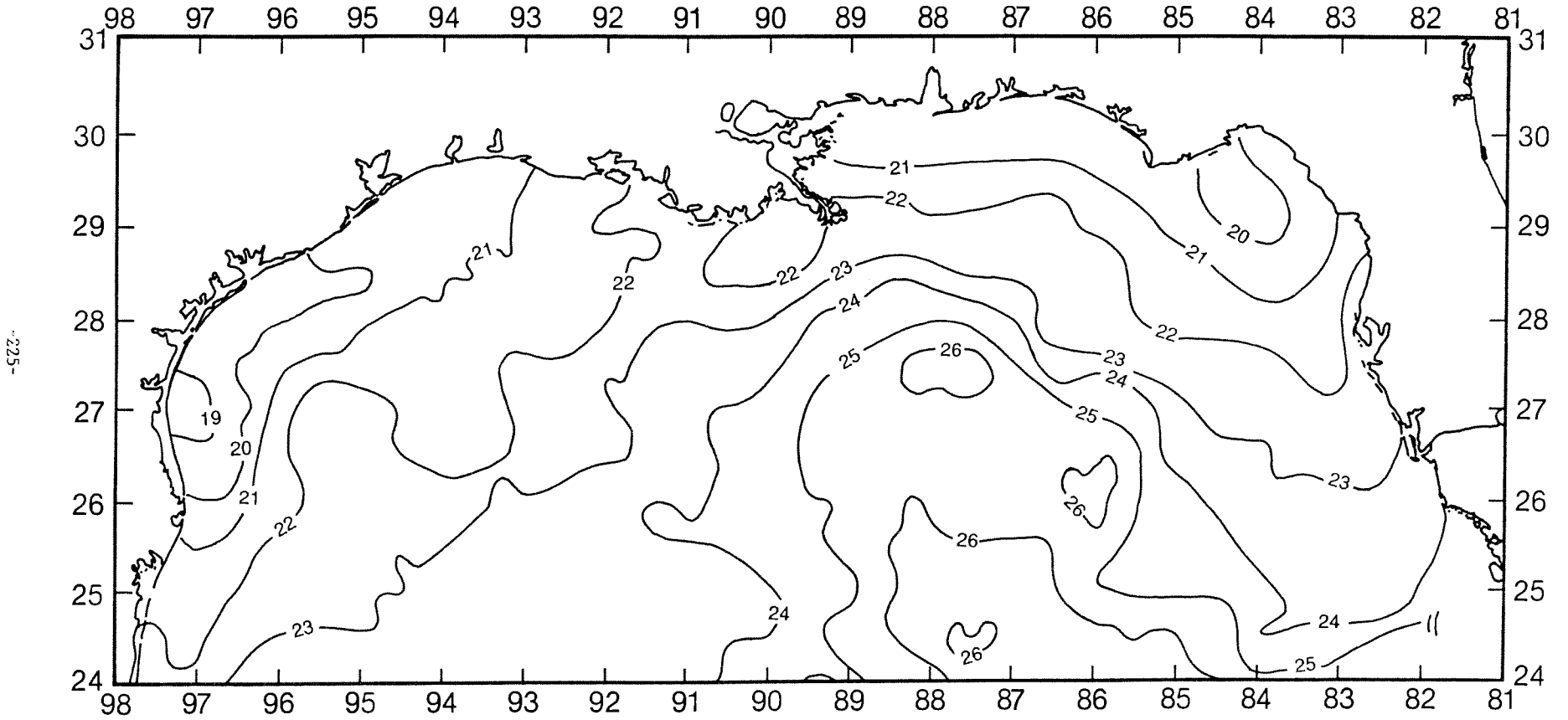


Figure 10. Satellite measurement of surface temperature ( $^{\circ}\text{C}$ ) in the Gulf of Mexico, April 8, 1989 (modified from NWS/NESS Sea Surface Thermal Analysis).

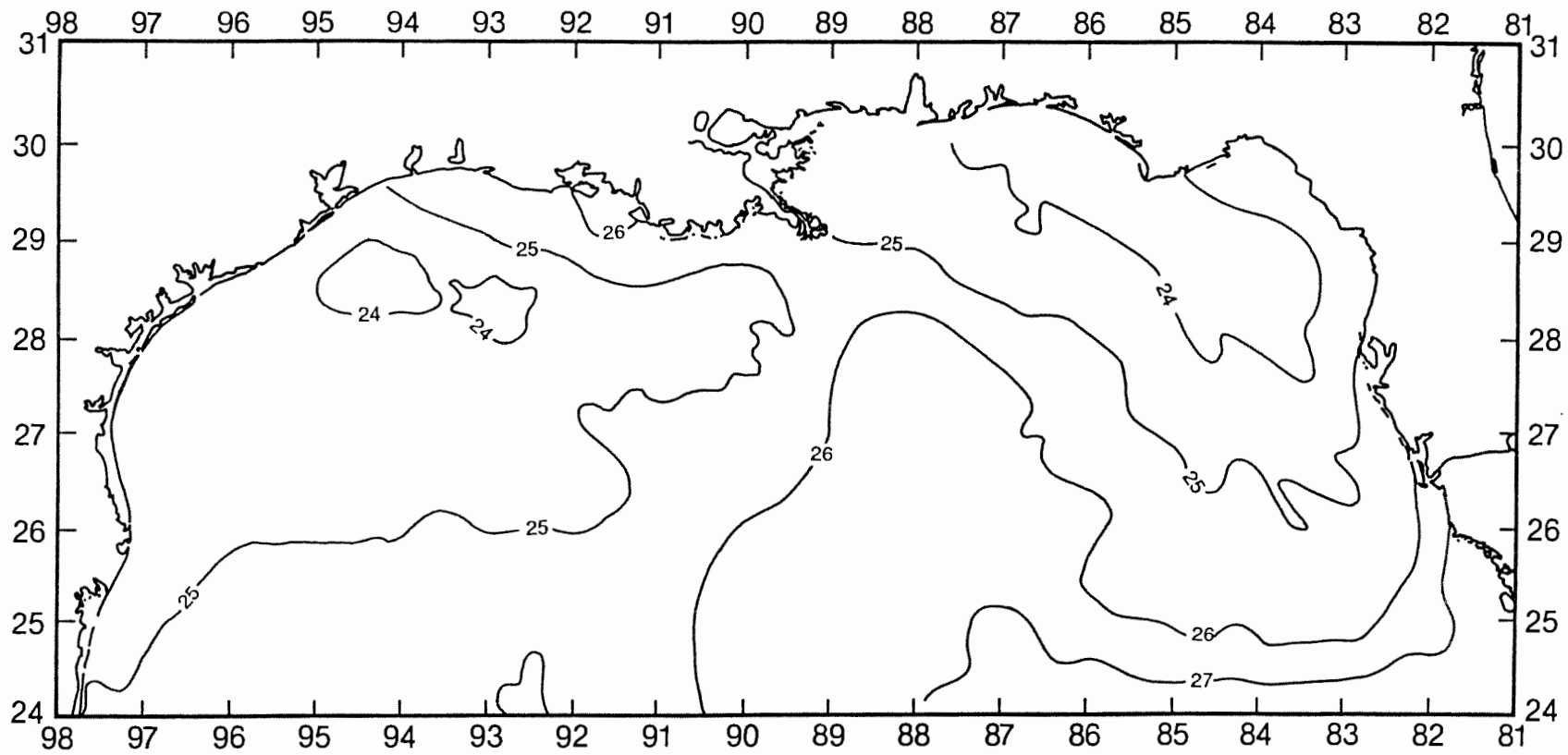


Figure 11. Satellite measurement of surface temperature (°C) in the Gulf of Mexico, May 6, 1989 (modified from NWS/NESS Sea Surface Thermal Analysis).



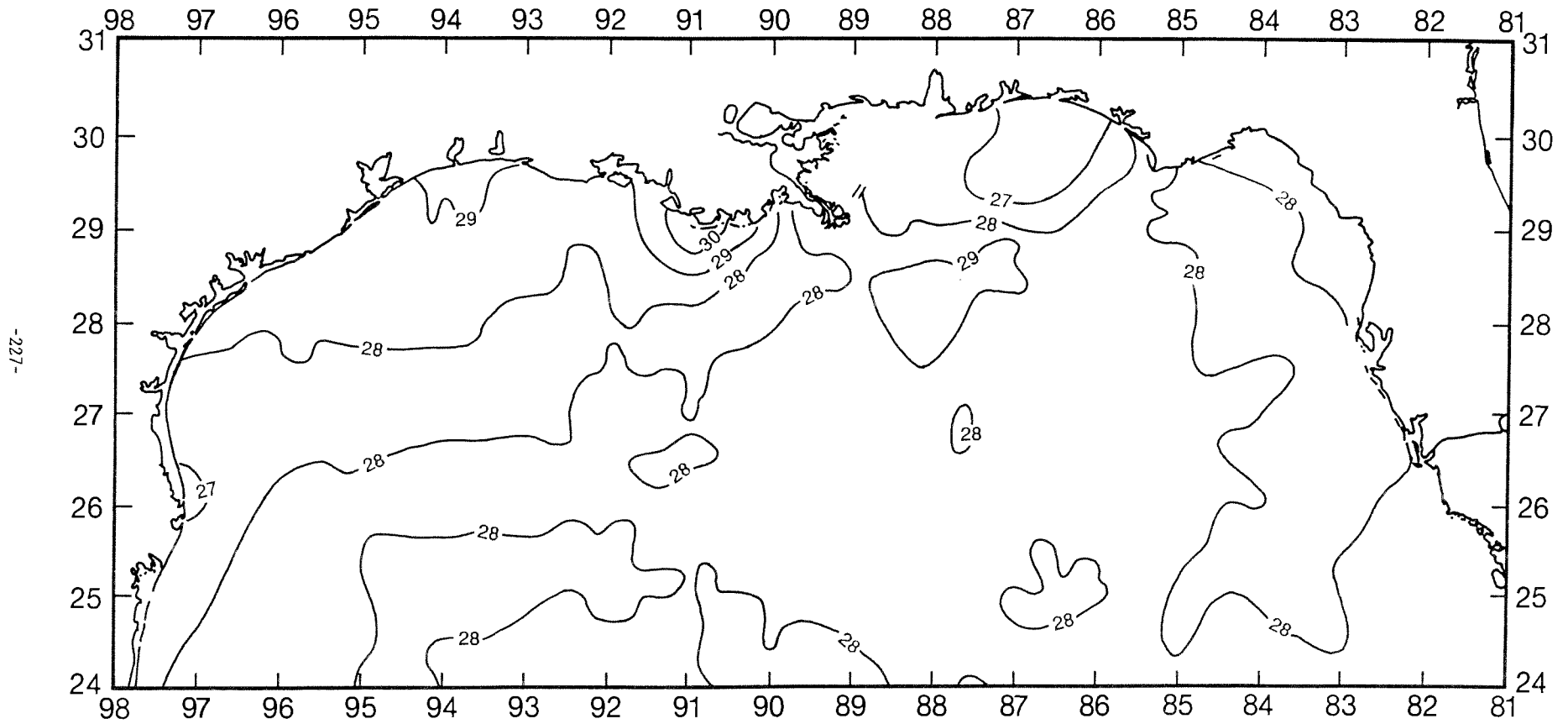
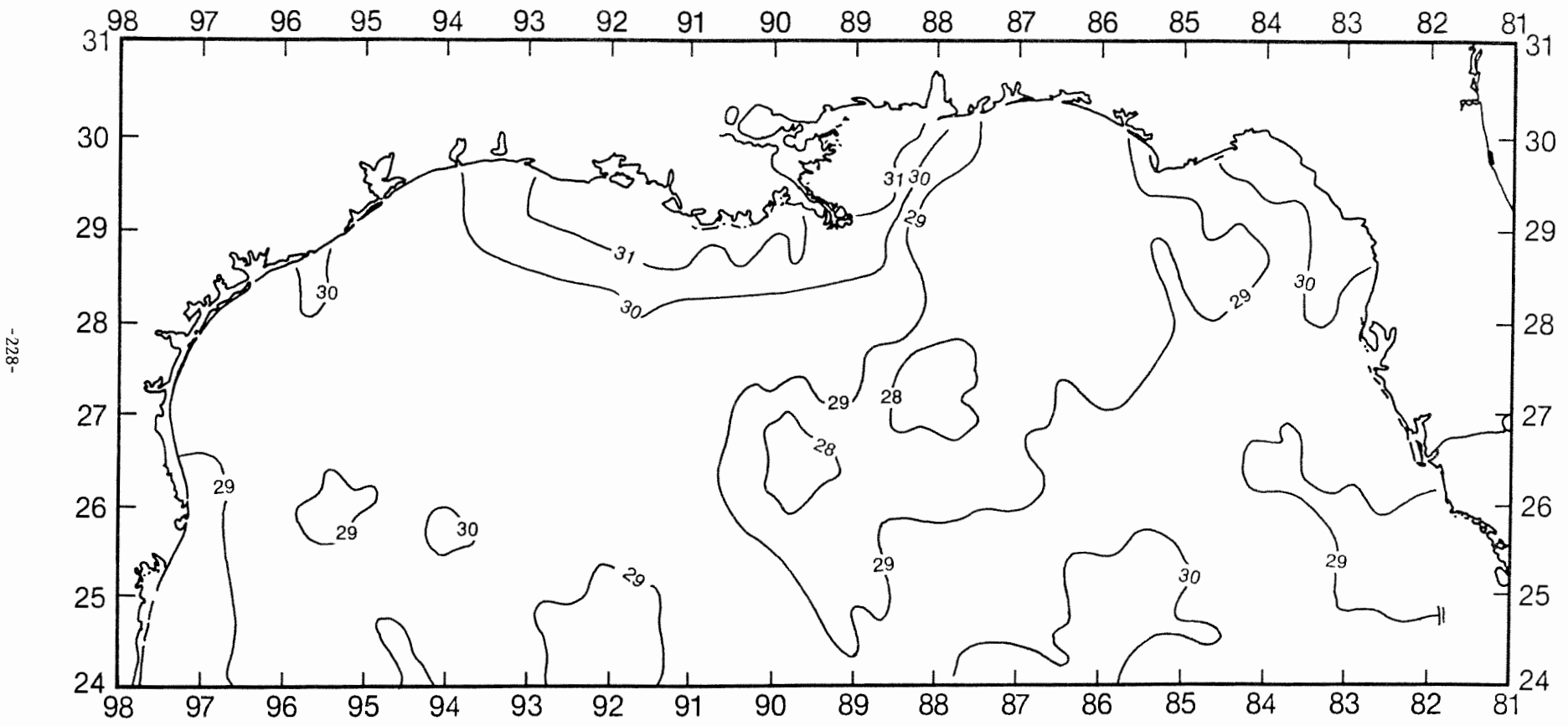


Figure 12. Satellite measurement of surface temperature ( $^{\circ}\text{C}$ ) in the Gulf of Mexico, June 10, 1989 (modified from NWS/NESS Sea Surface Thermal Analysis).



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Figure 13. Satellite measurement of surface temperature (°C) in the Gulf of Mexico, July 8, 1989 (modified from NWS/NESS Sea Surface Thermal Analysis).

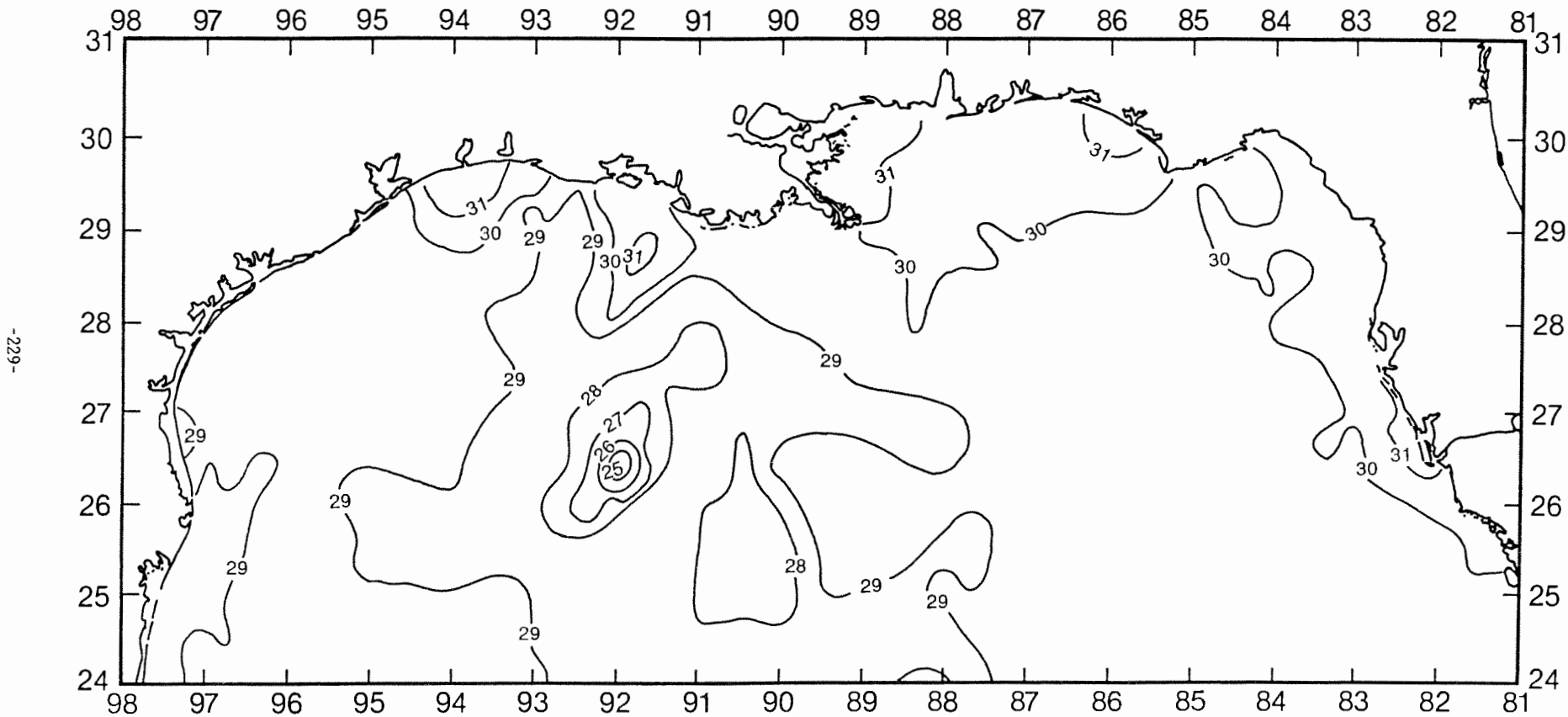


Figure 14. Satellite measurement of surface temperature ( $^{\circ}\text{C}$ ) in the Gulf of Mexico, August 5, 1989 (modified from NWS/NESS Sea Surface Thermal Analysis).

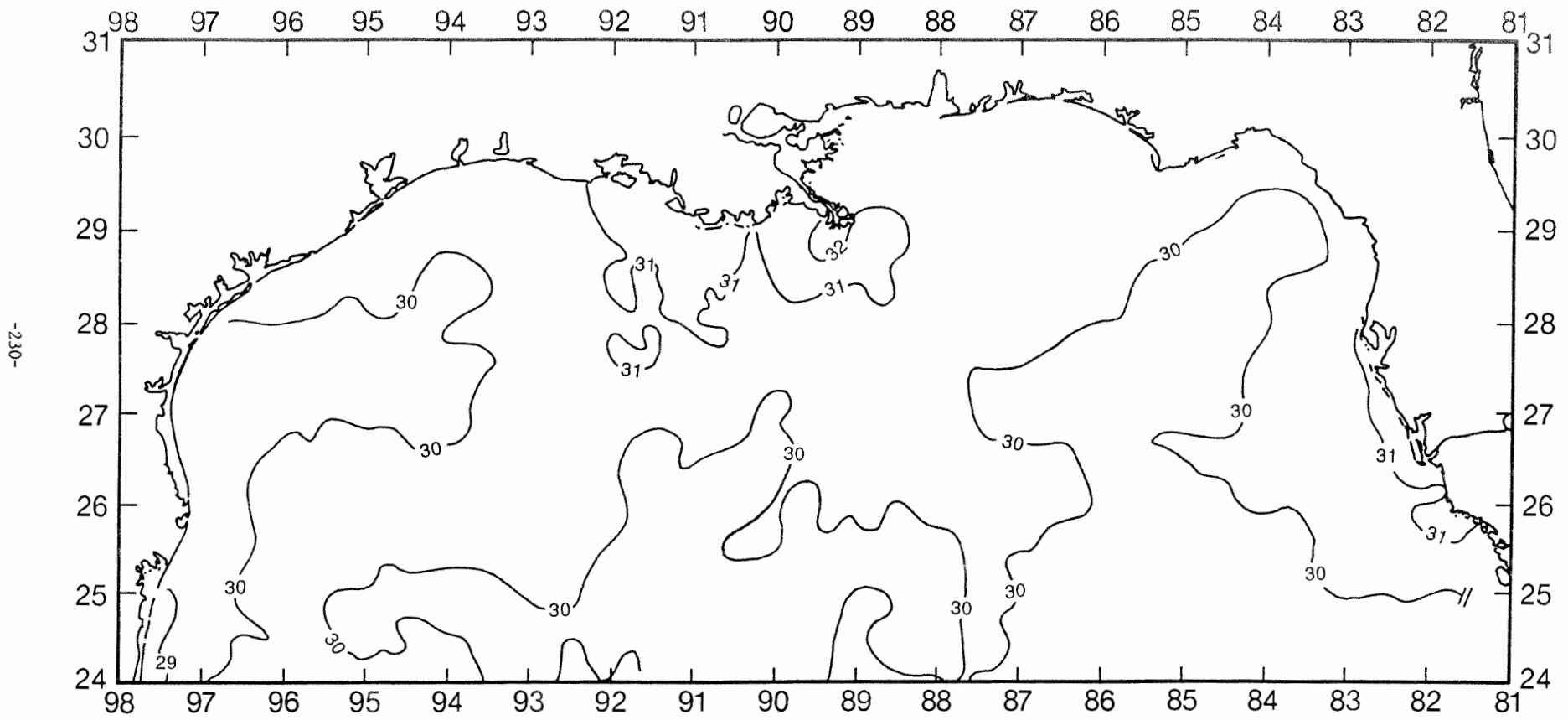


Figure 15. Satellite measurement of surface temperature (°C) in the Gulf of Mexico, September 2, 1989 (modified from NWS/NESS Sea Surface Thermal Analysis).

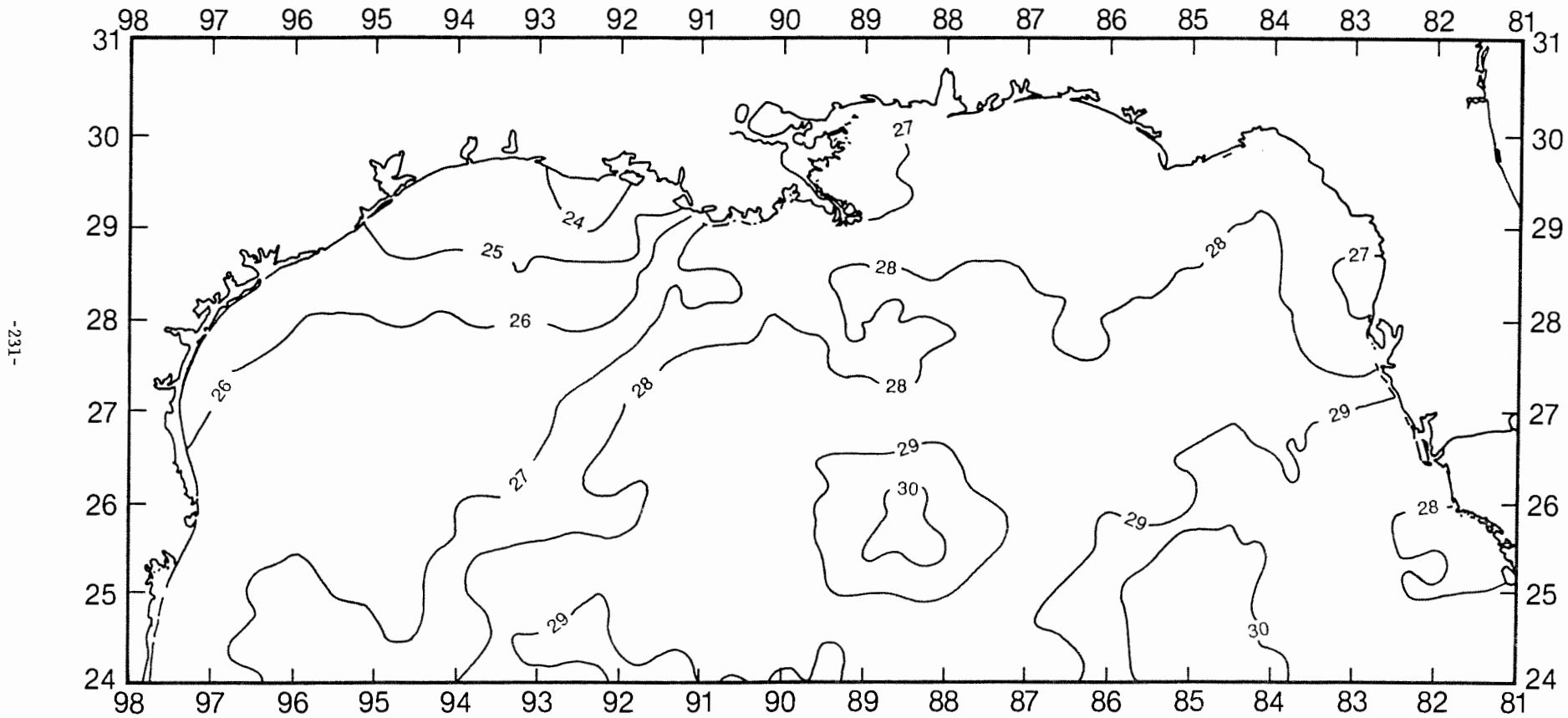


Figure 16. Satellite measurement of surface temperature ( $^{\circ}\text{C}$ ) in the Gulf of Mexico, October 14, 1989 (modified from NWS/NESS Sea Surface Thermal Analysis).

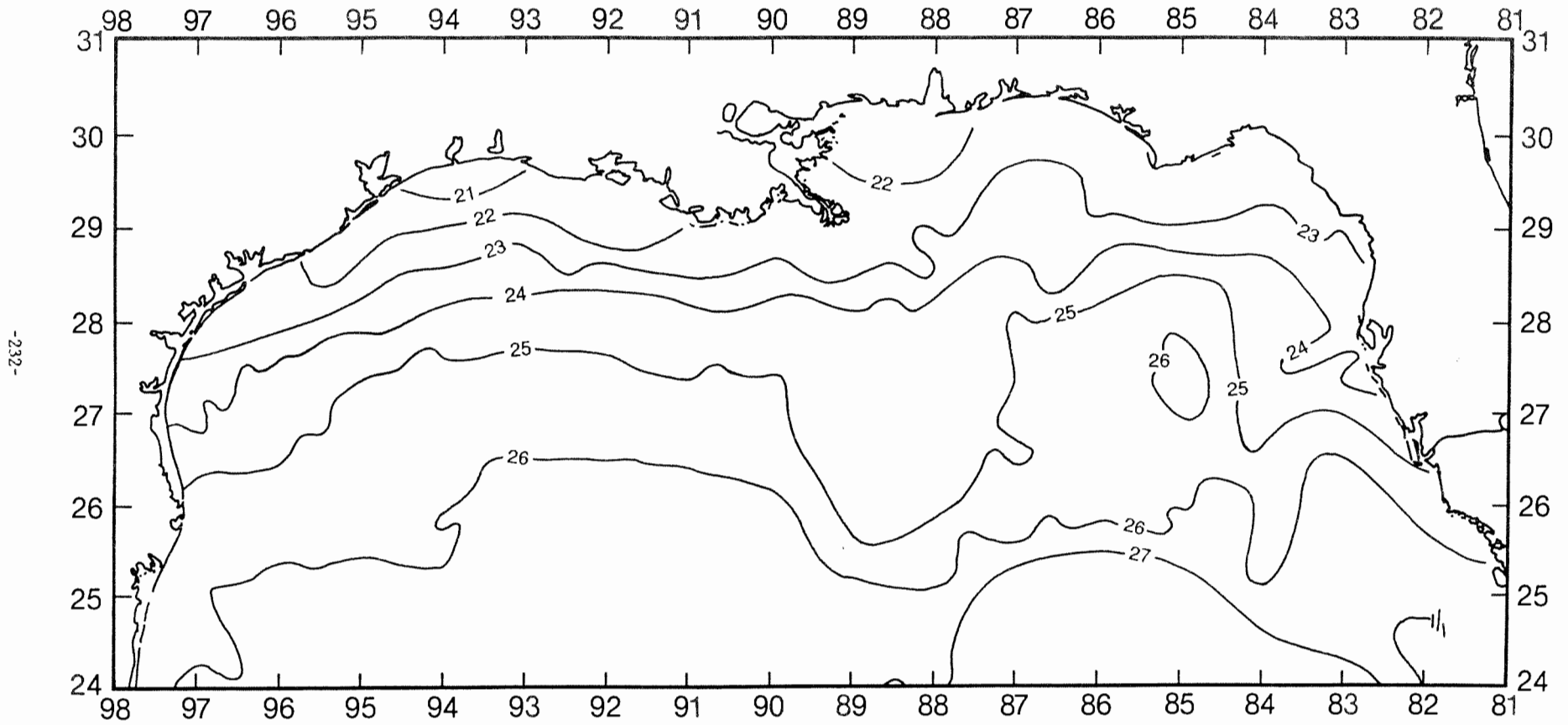


Figure 17. Satellite measurement of surface temperature ( $^{\circ}\text{C}$ ) in the Gulf of Mexico, November 11, 1989 (modified from NWS/NESS Sea Surface Thermal Analysis).

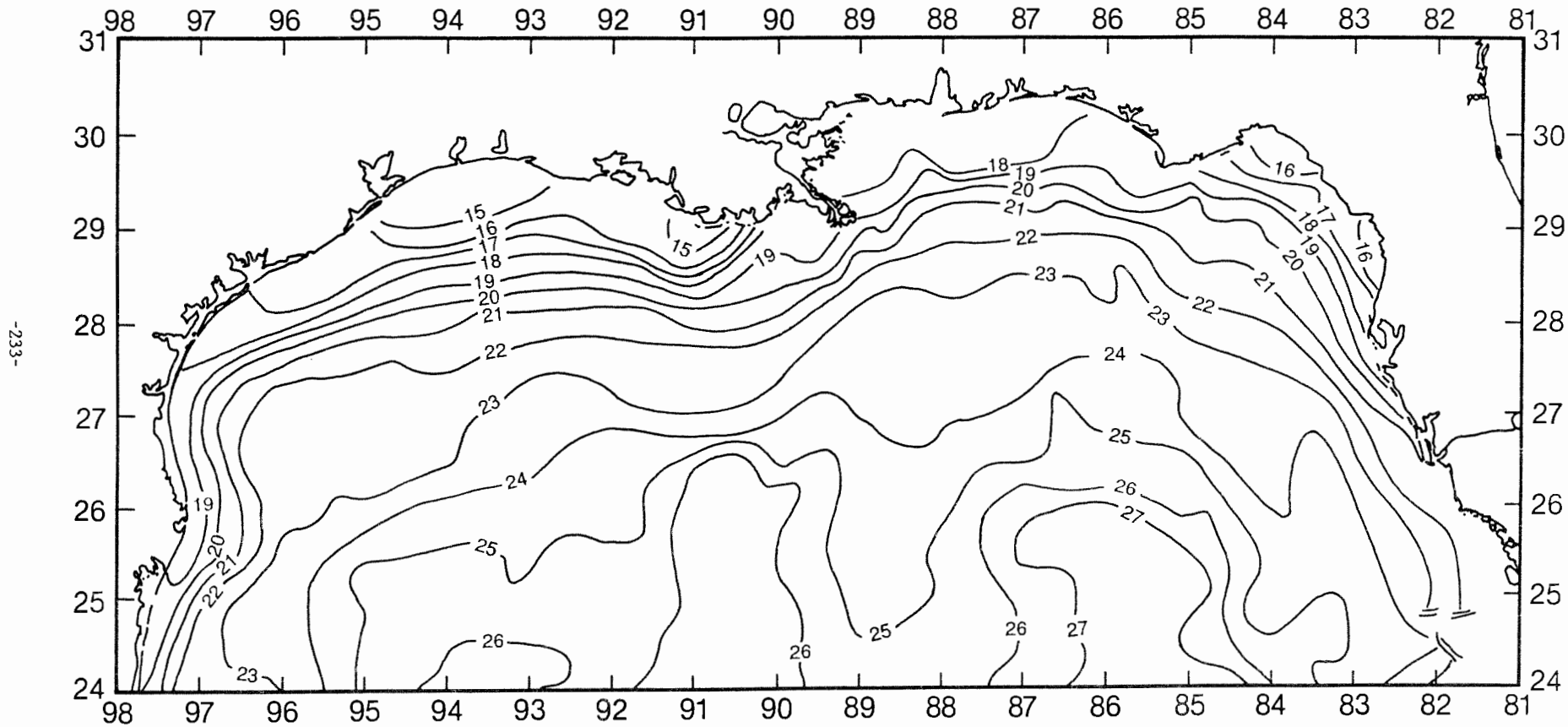


Figure 18. Satellite measurement of surface temperature ( $^{\circ}\text{C}$ ) in the Gulf of Mexico, December 9, 1989 (modified from NWS/NESS Sea Surface Thermal Analysis).

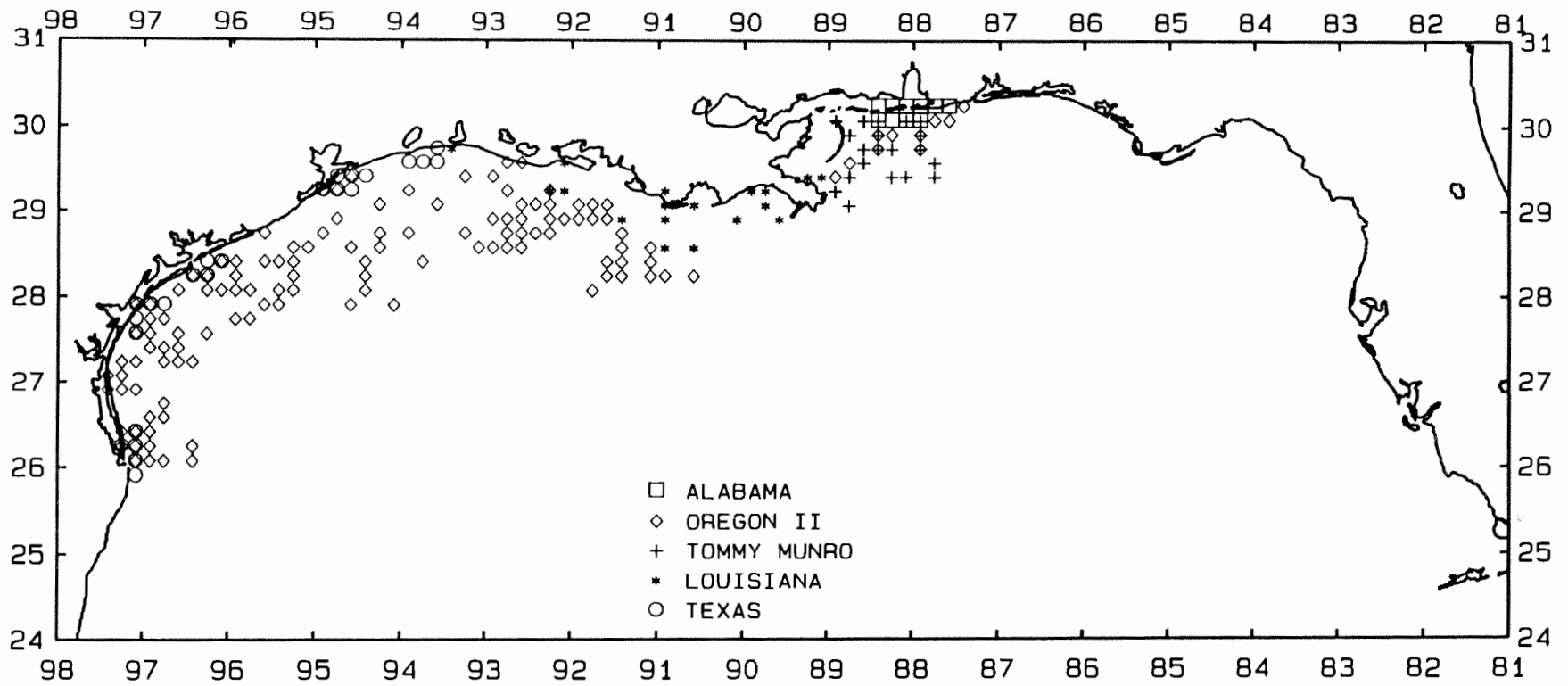


Figure 19. Locations of 1989 June-July Summer Shrimp/Bottomfish trawl stations, summarized by 10-minute squares.



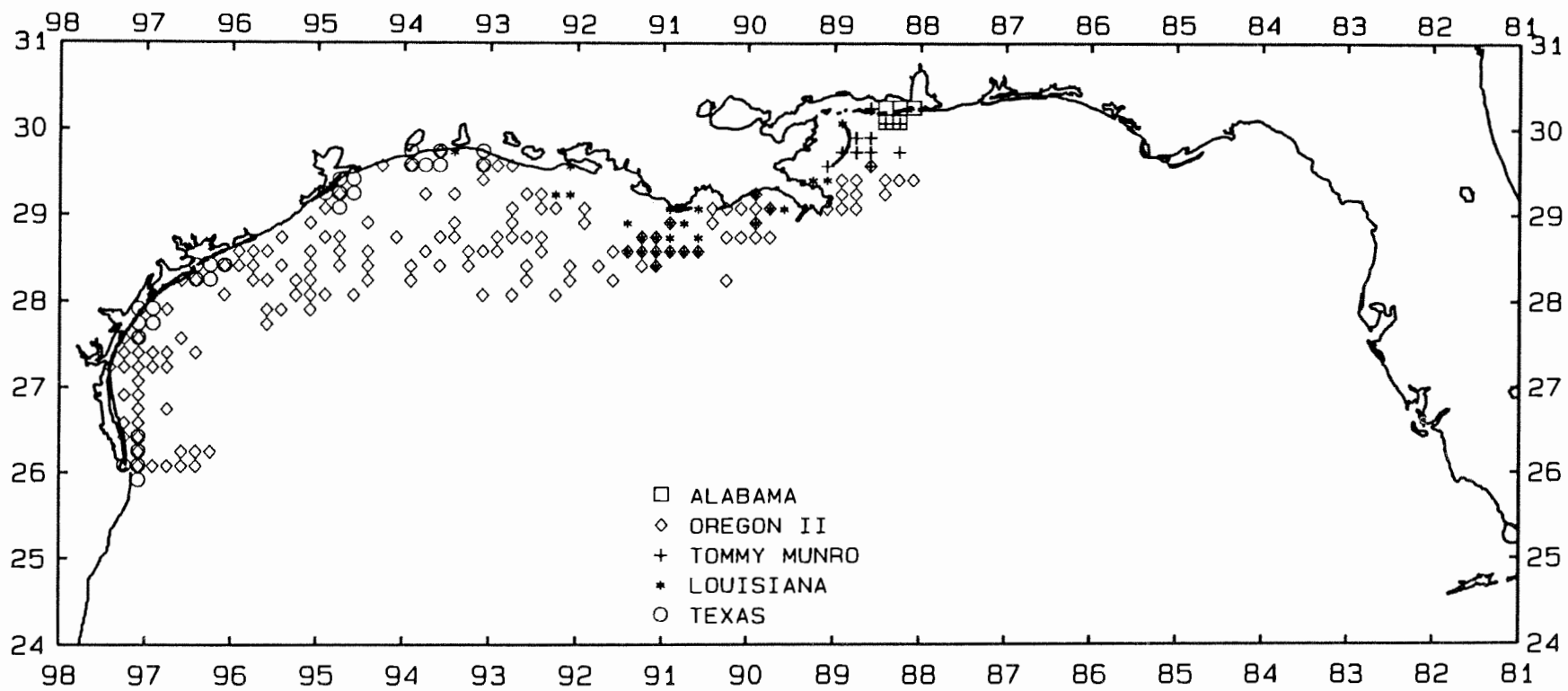


Figure 20. Locations of 1989 October-December Shrimp/Groundfish trawl stations, summarized by 10-minute squares.

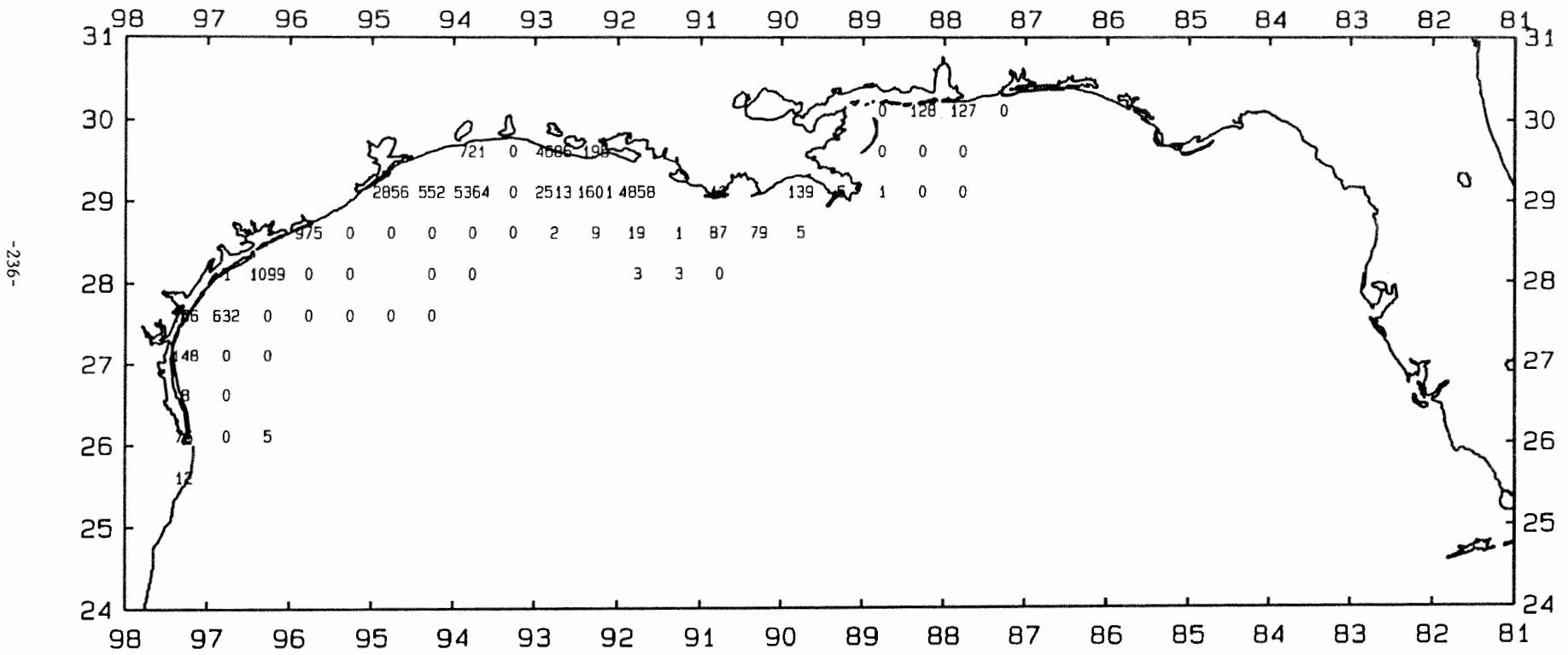


Figure 21. Atlantic croaker, *Micropogonias undulatus*, number/hour for June-July 1989.

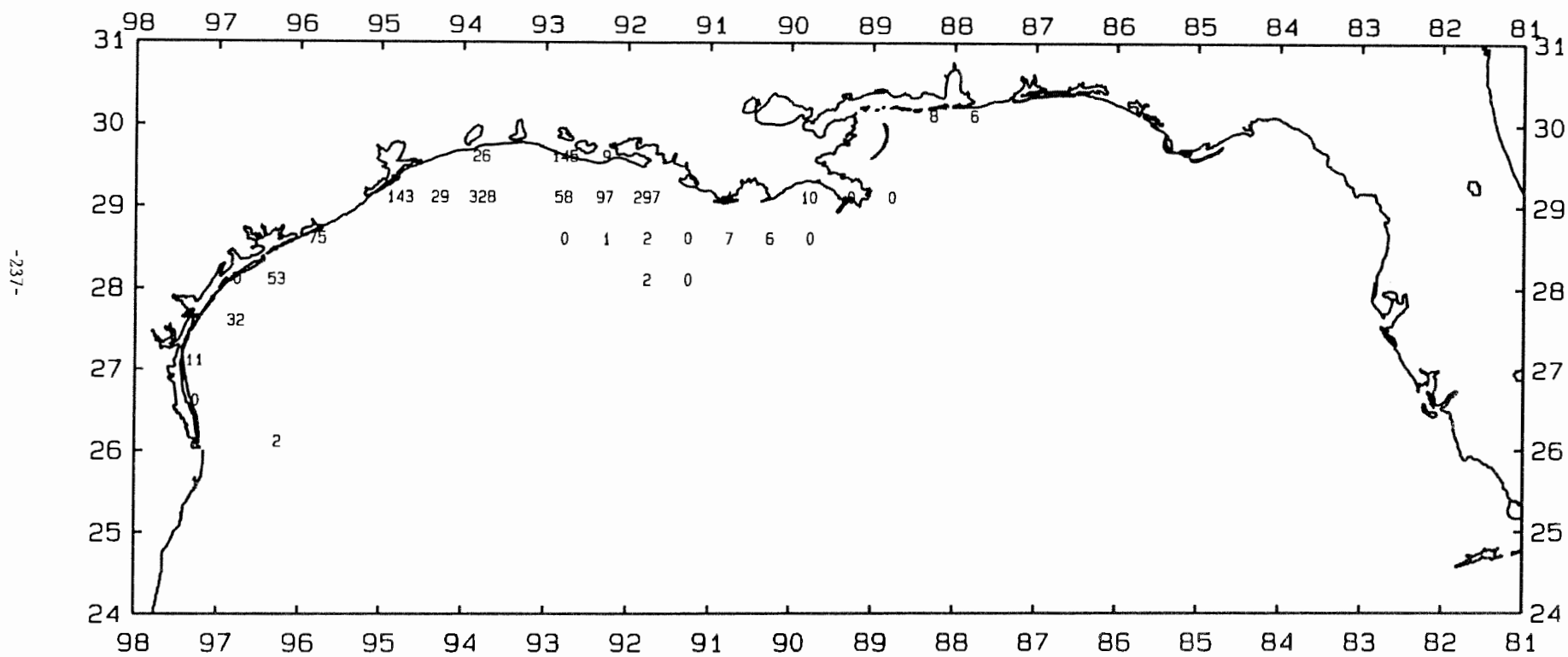


Figure 22. Atlantic croaker, *Micropogonias undulatus*, lb/hour for June-July 1989.

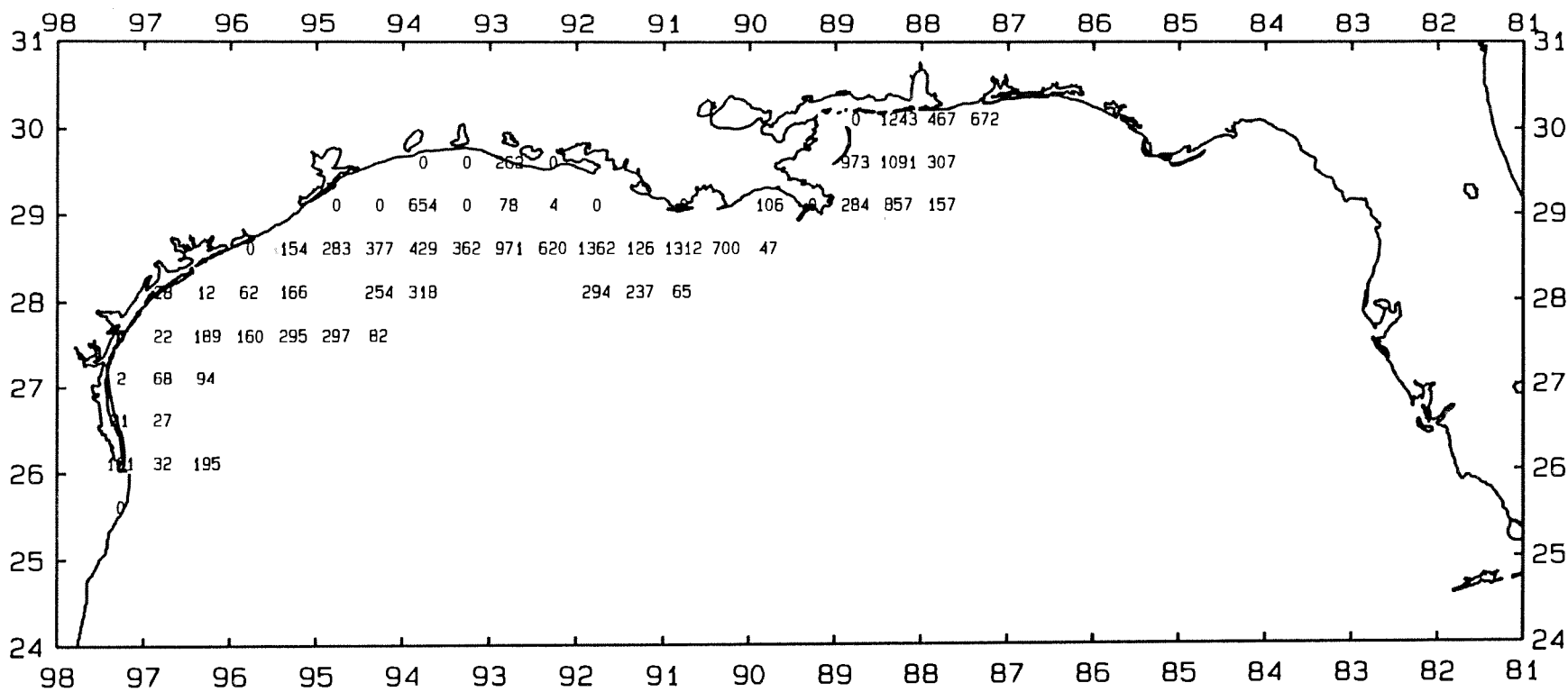


Figure 23. Longspine porgy, *Stenotomus caprinus*, number/hour for June-July 1989.

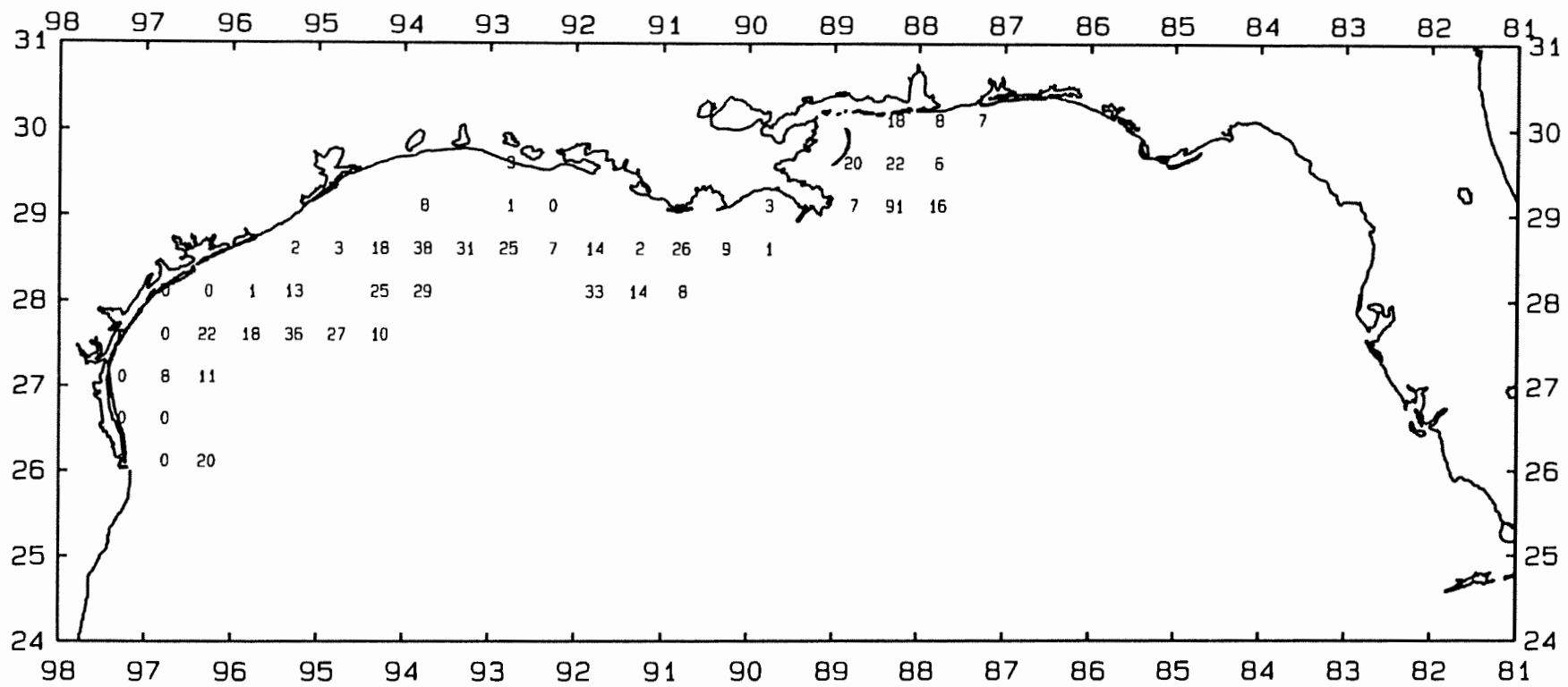


Figure 24. Longspine porgy, *Stenotomus caprinus*, lb/hour for June-July 1989.

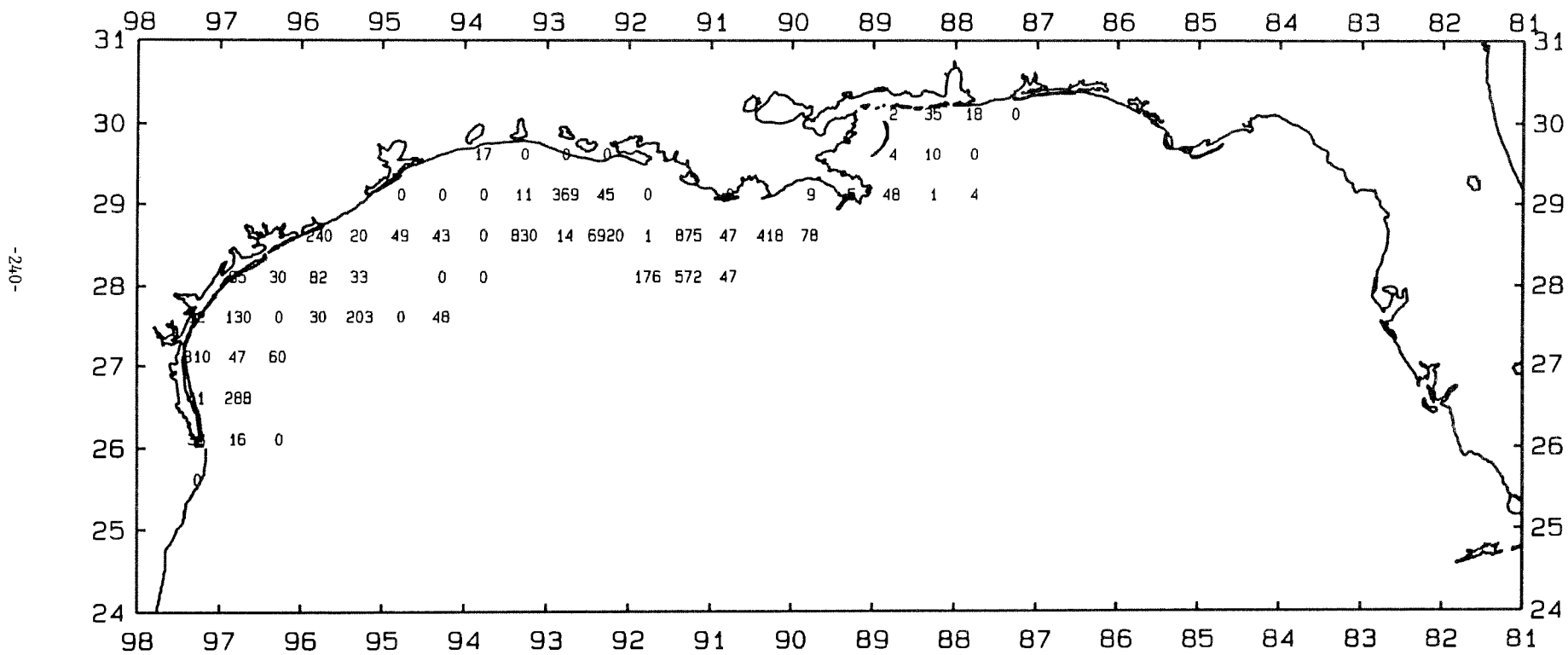


Figure 25. Gulf butterfish, *Peprilus burti*, number/hour for June-July 1989.

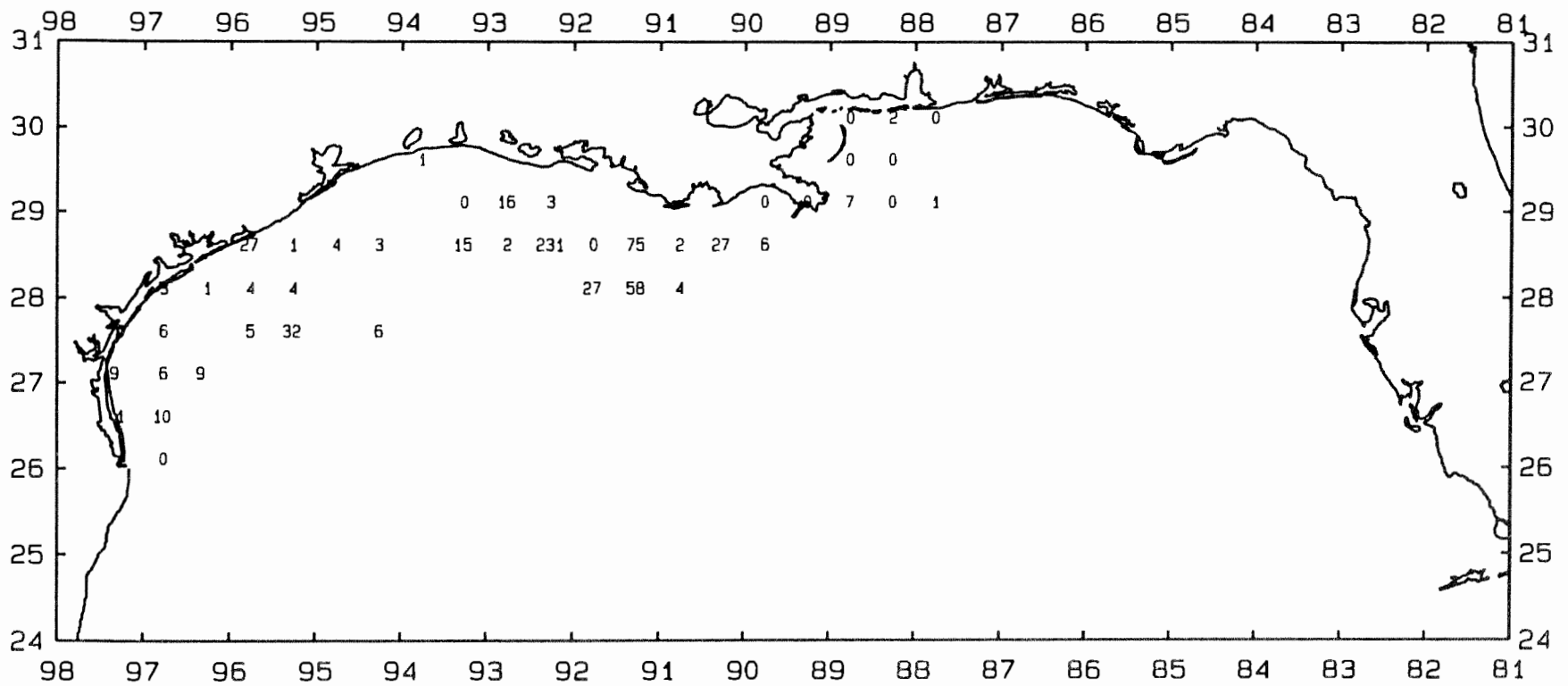


Figure 26. Gulf butterfish, *Peprilus burti*, lb/hour for June-July 1989.

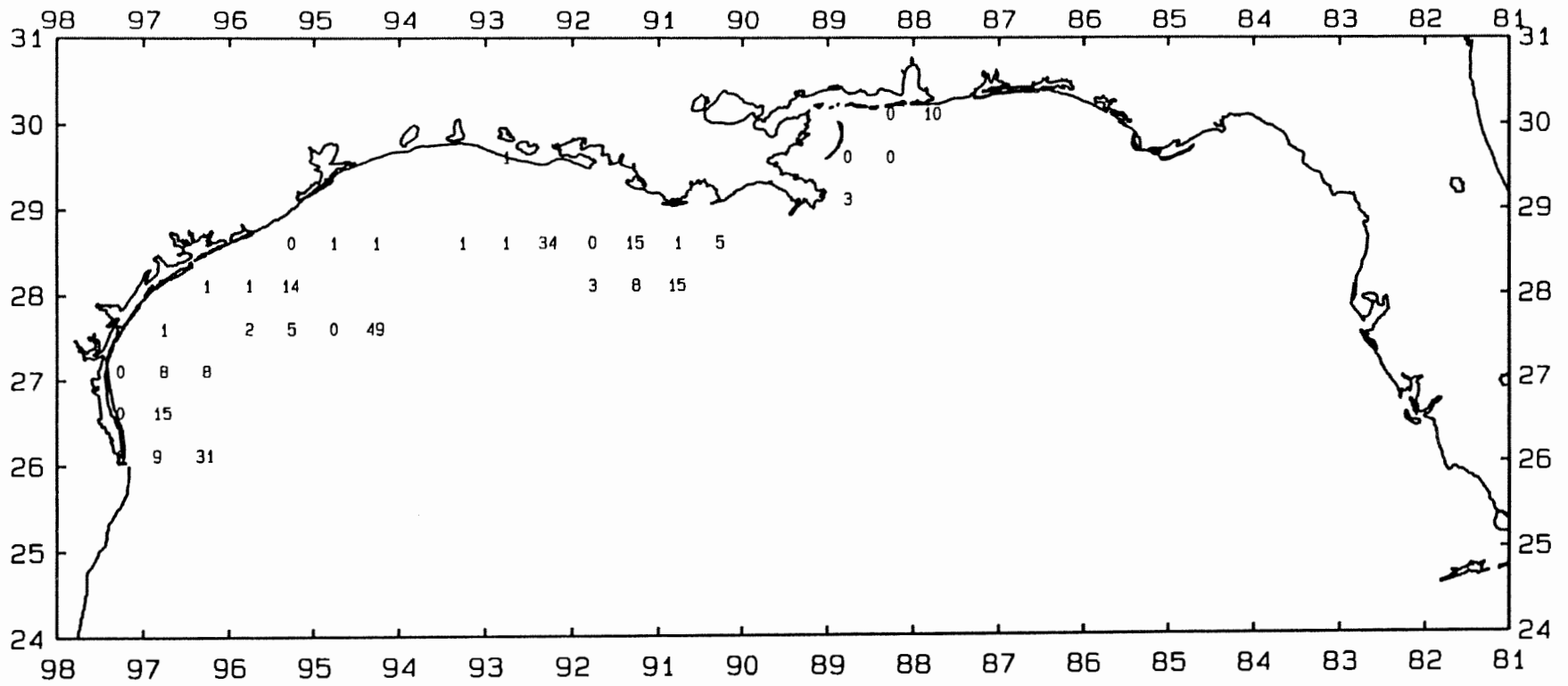


Figure 27. Rough scad, *Trachurus lathami*, number/hour for June-July 1989.



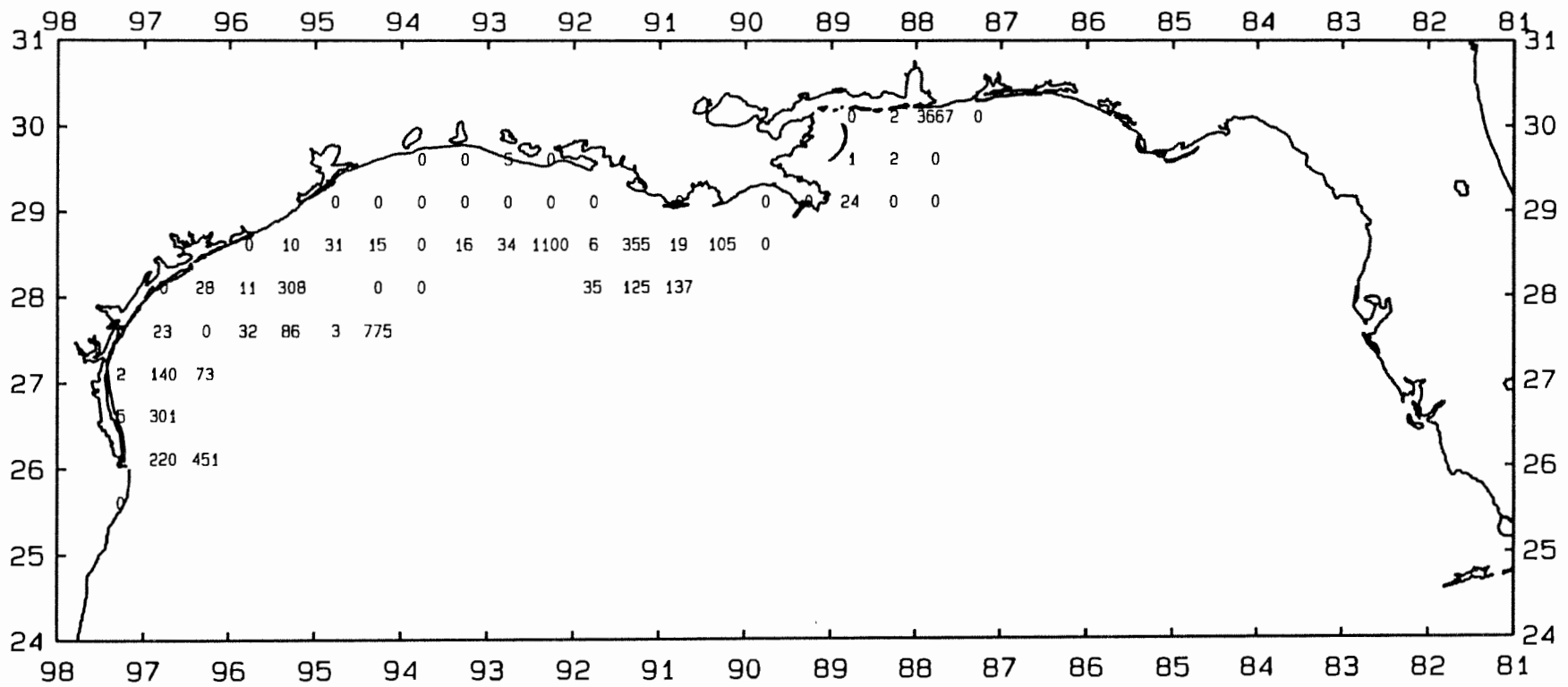


Figure 28. Rough scad, *Trachurus lathami*, lb/hour for June-July 1989.

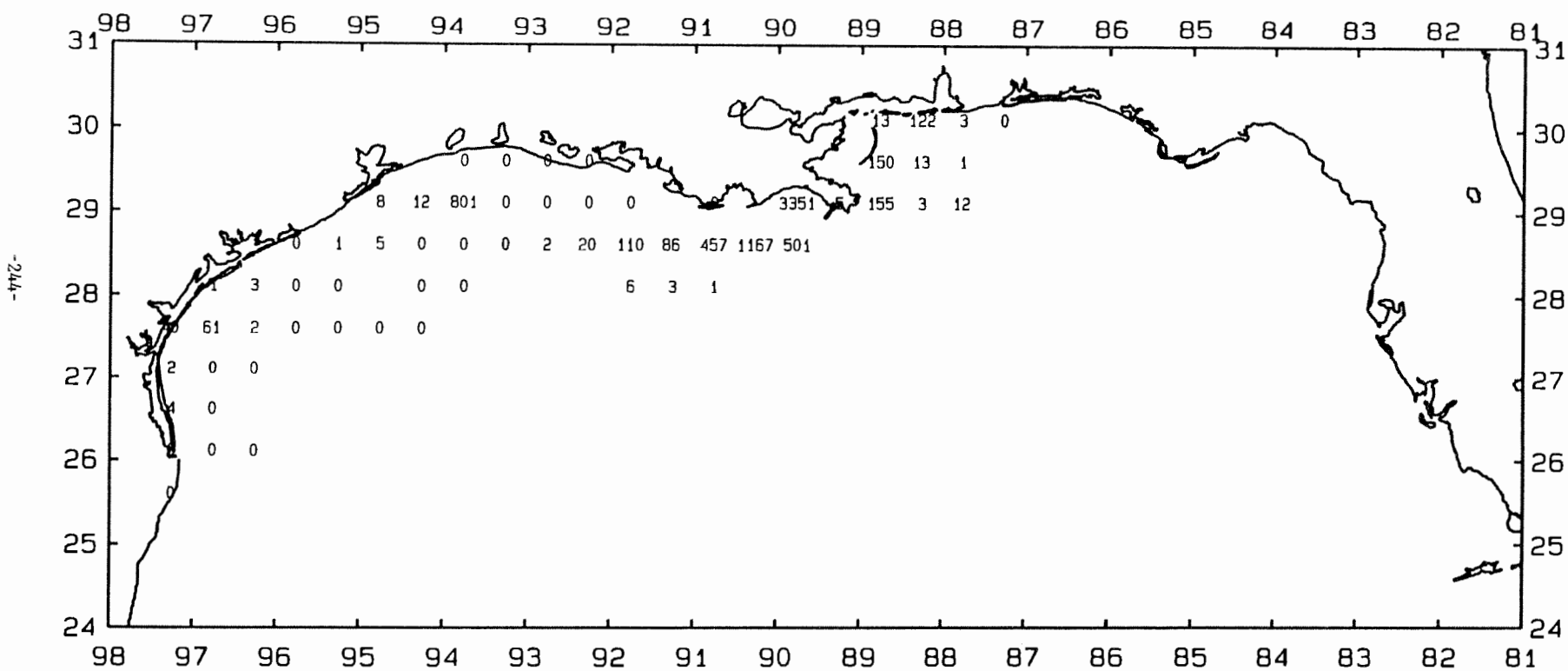


Figure 29. Bigeye searobin, *Prionotus longispinosus*, number/hour for June-July 1989.



Figure 30. Bigeye searobin, *Prionotus longispinosus*, lb/hour for June-July 1989.

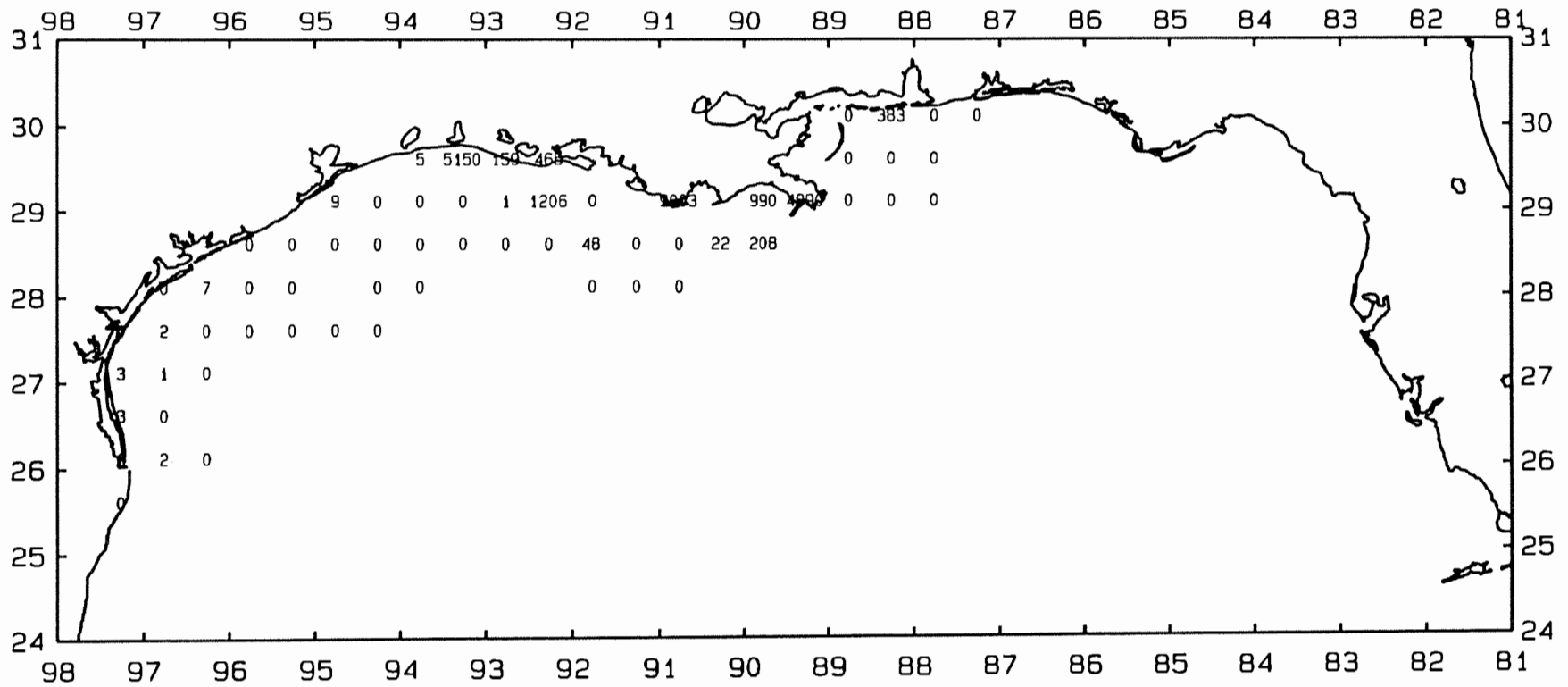


Figure 31. Bay anchovy, *Anchoa mitchilli*, number/hour for June-July 1989.

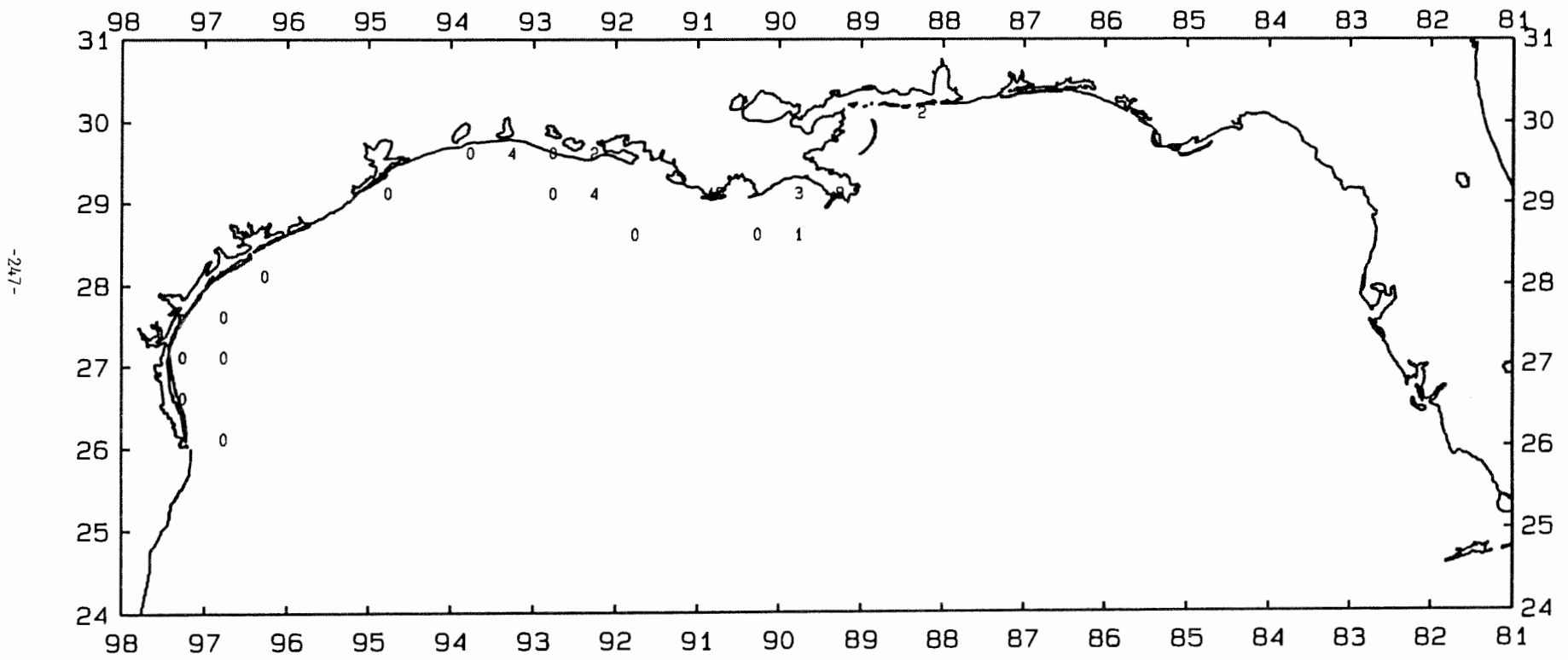


Figure 32. Bay anchovy, *Anchoa mitchilli*, lb/hour for June-July 1989.

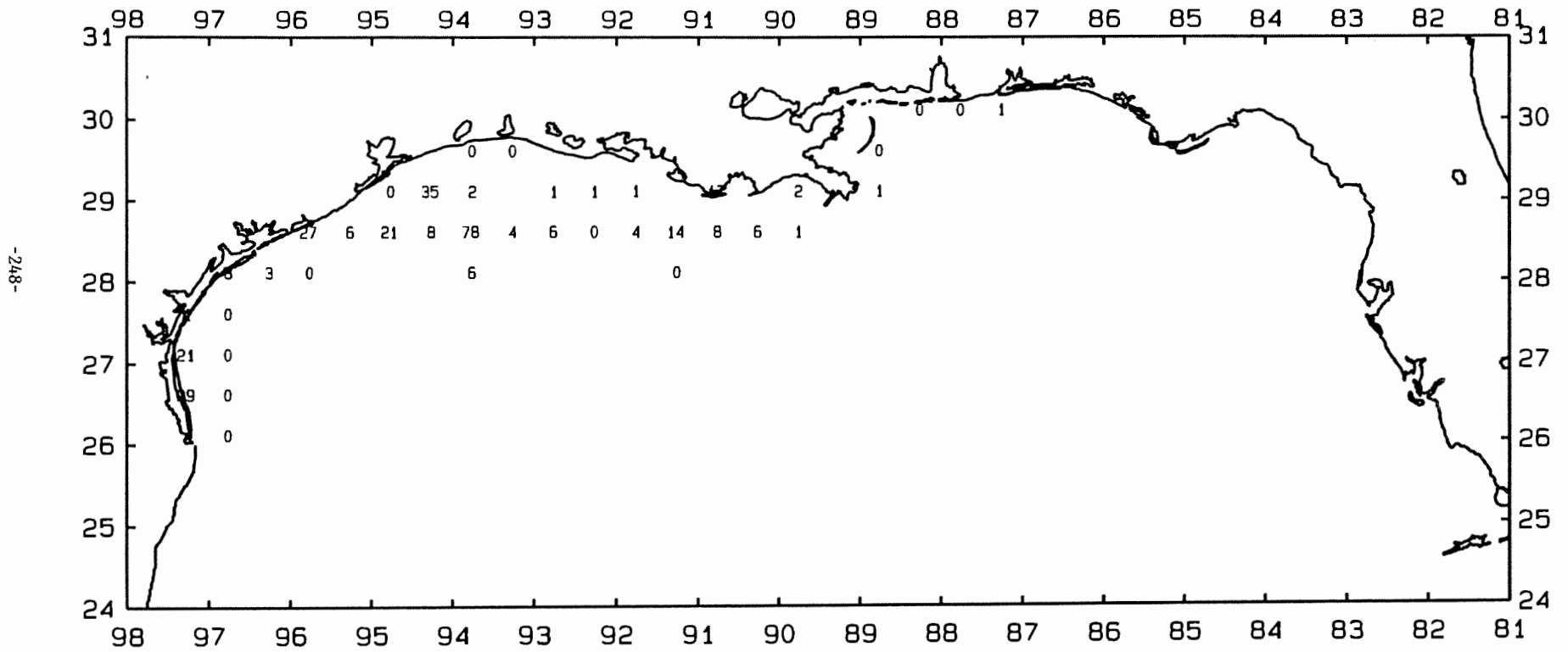


Figure 33. Atlantic bumper, *Chloroscombrus chrysurus*, number/hour for June-July 1989.

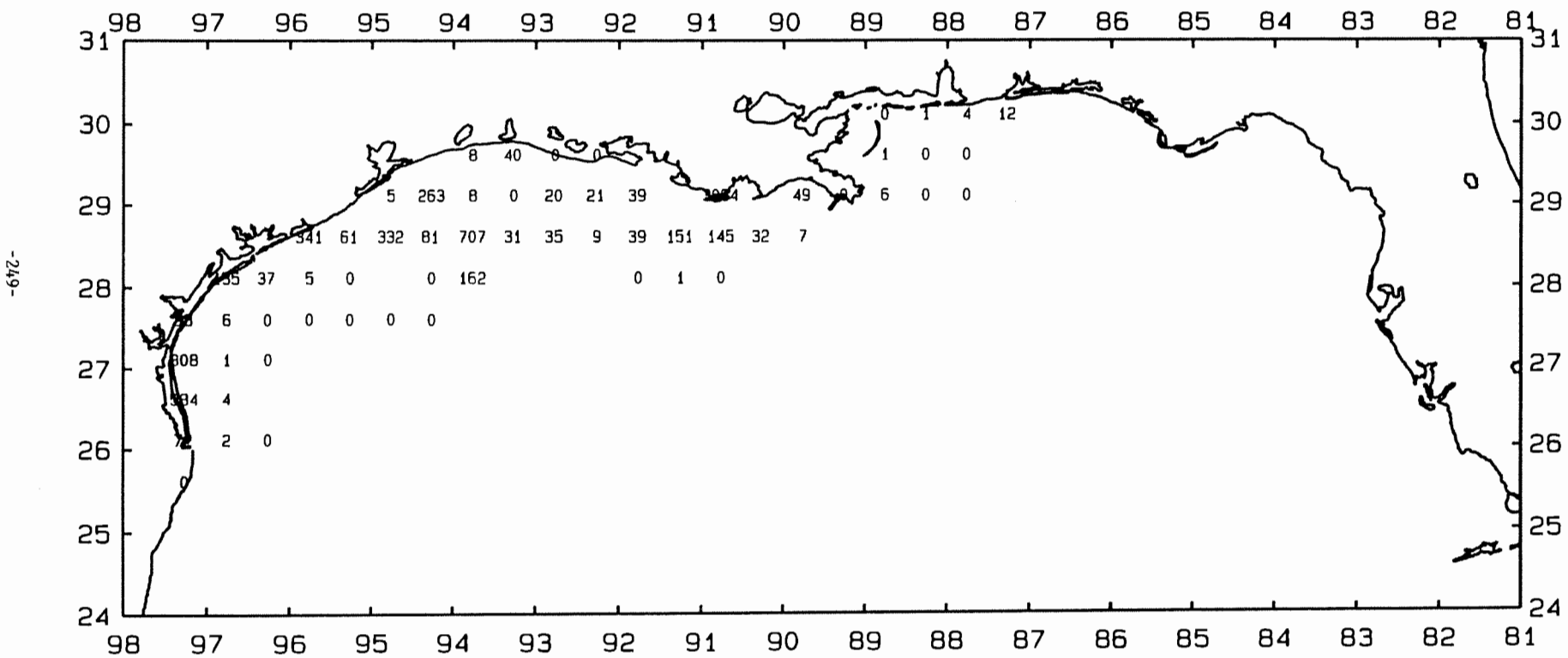


Figure 34. Atlantic bumper, *Chloroscombrus chrysurus*, lb/hour for June-July 1989.

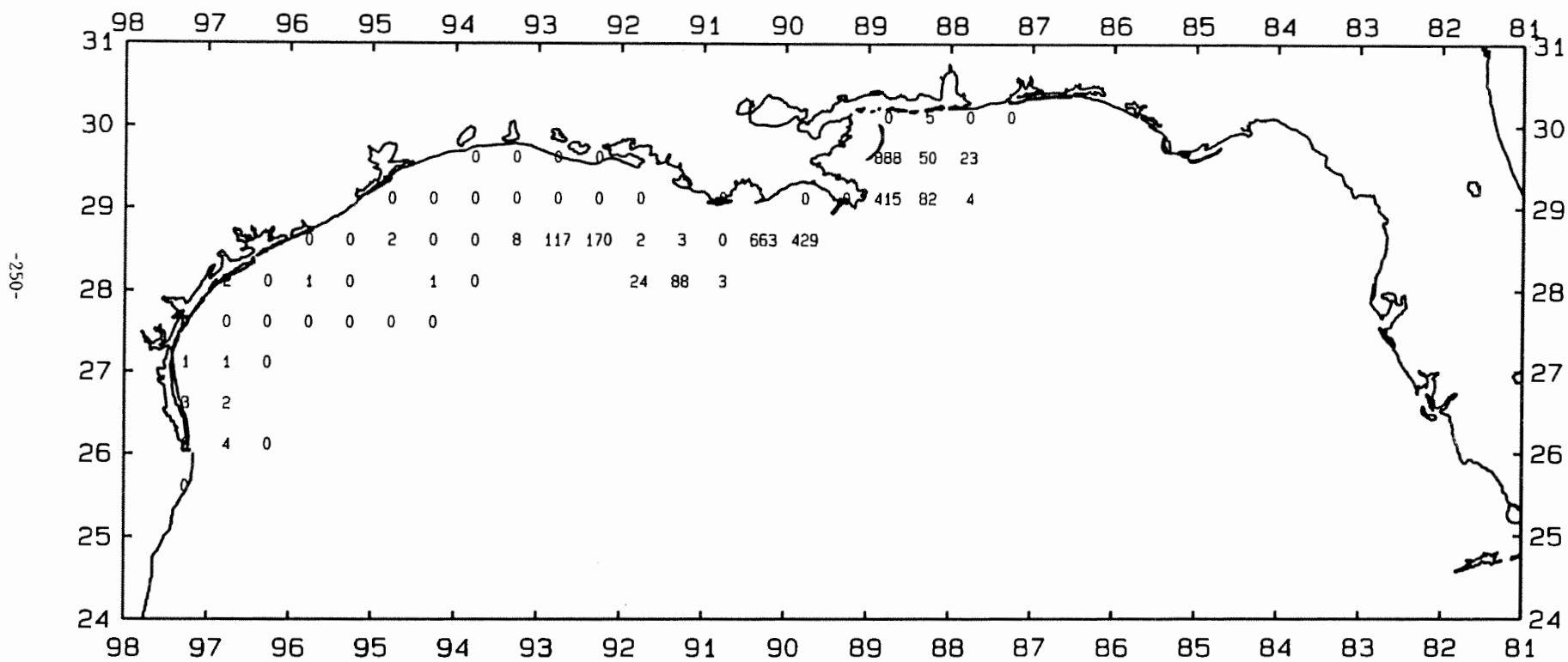


Figure 35. Largescale lizardfish, *Saurida brasiliensis*, number/hour for June-July 1989.



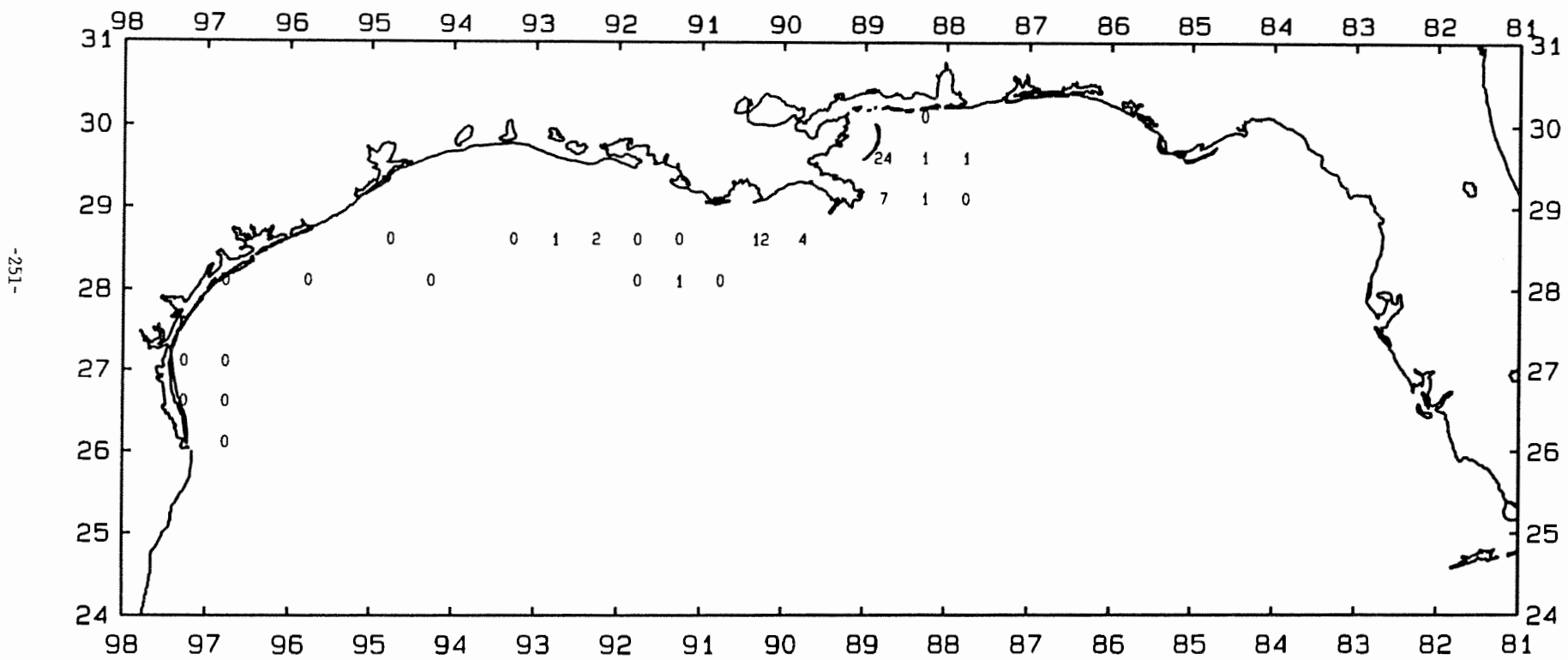


Figure 36. Largescale lizardfish, *Saurida brasiliensis*, lb/hour for June-July 1989.

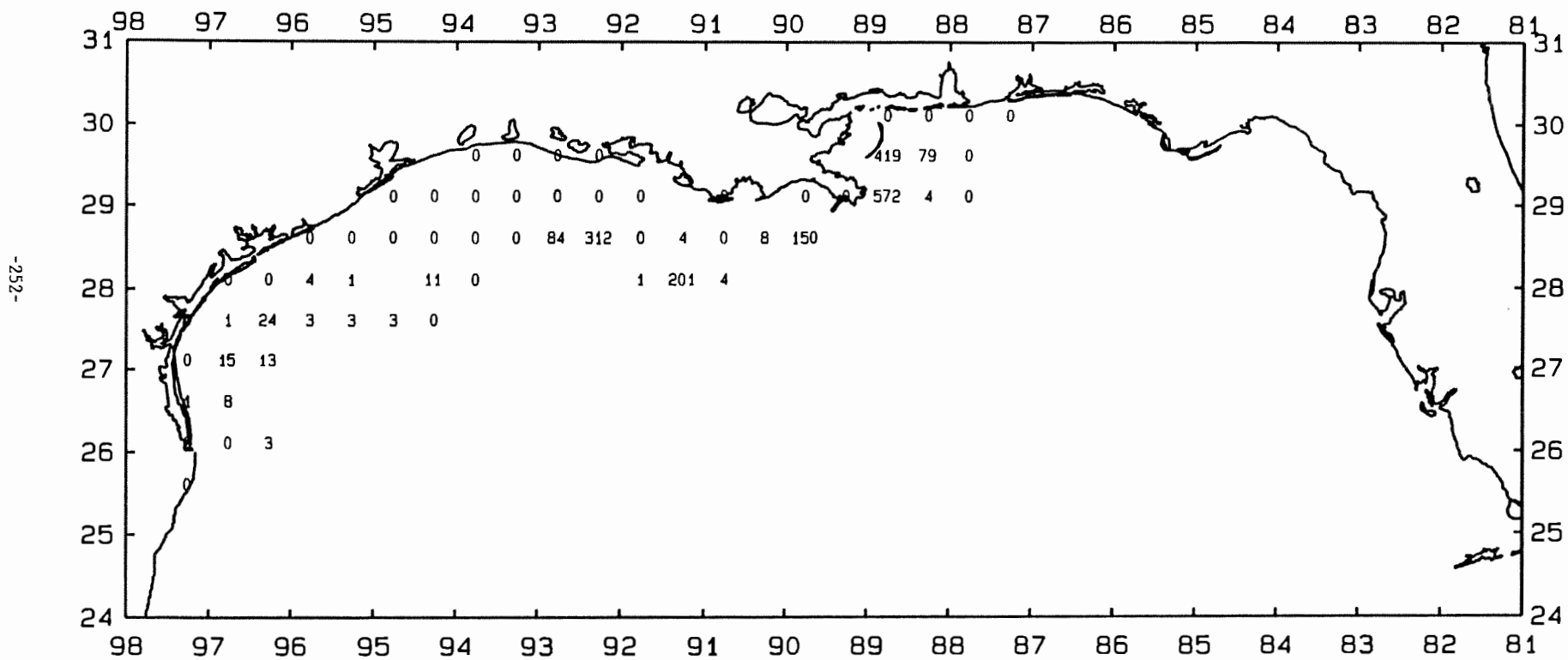


Figure 37. Blackear bass, *Serranus atrobranchus*, number/hour for June-July 1989.

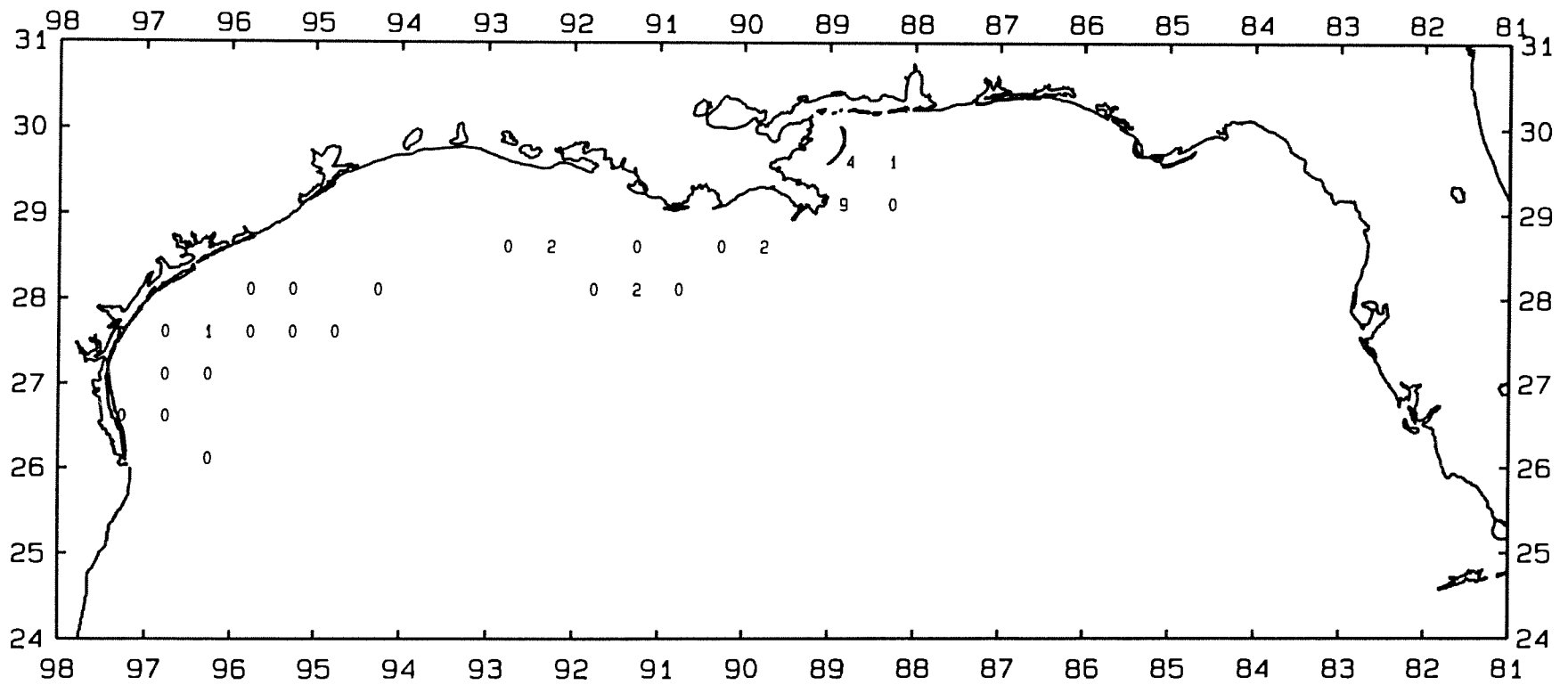


Figure 38. Blackear bass, *Serranus atrobranchus*, lb/hour for June-July 1989.

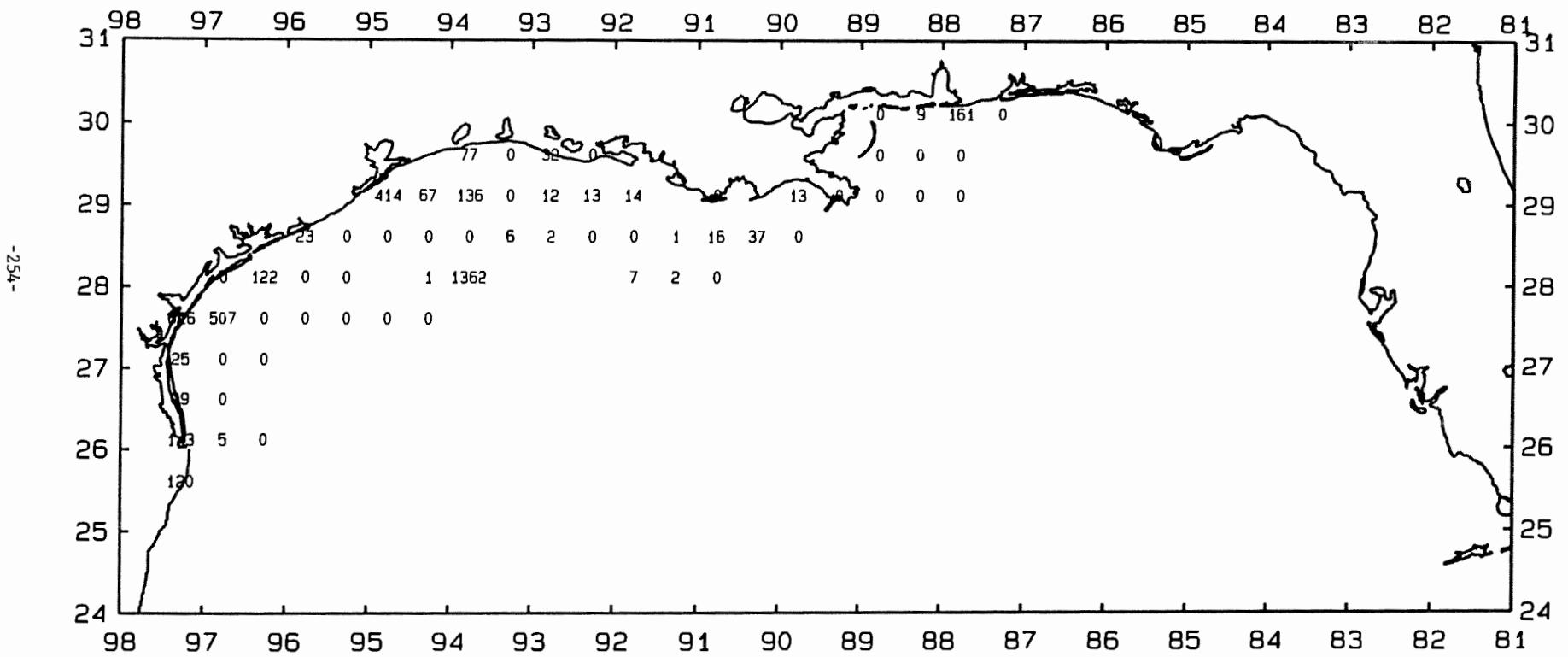


Figure 39. Spot, Leiostranus xanthurus, number/hour for June-July 1989.

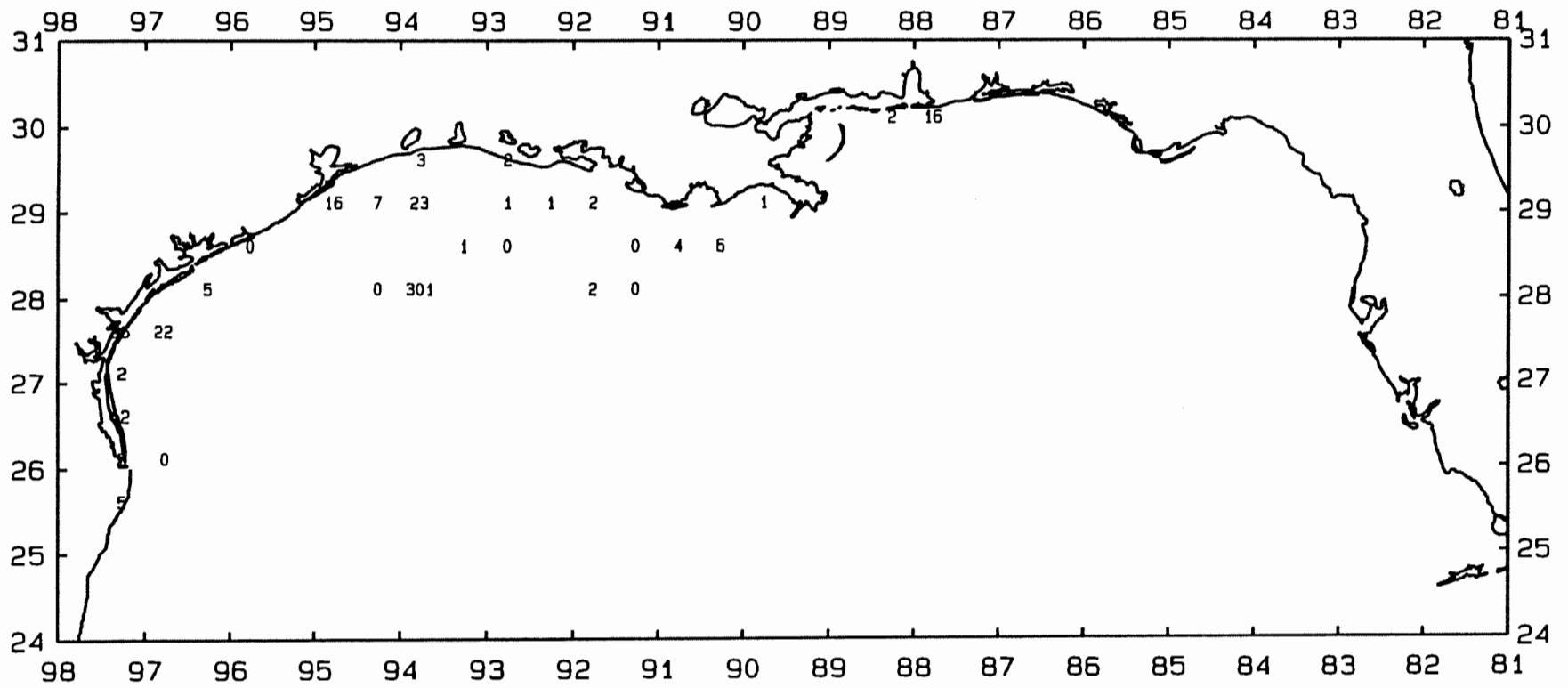


Figure 40. Spot, *Leioostomus xanthurus*, lb/hour for June-July 1989.

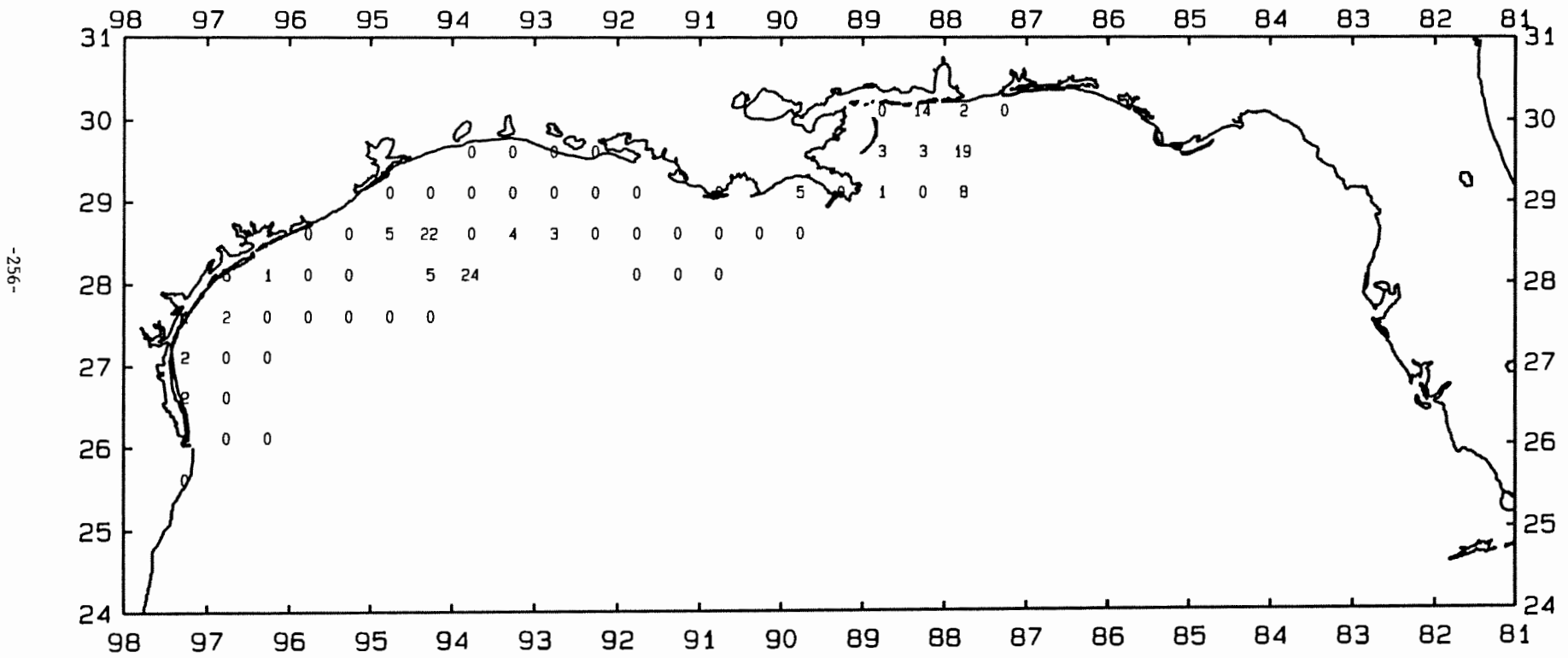


Figure 41. Red snapper, *Lutjanus campechanus*, number/hour for June-July 1989.

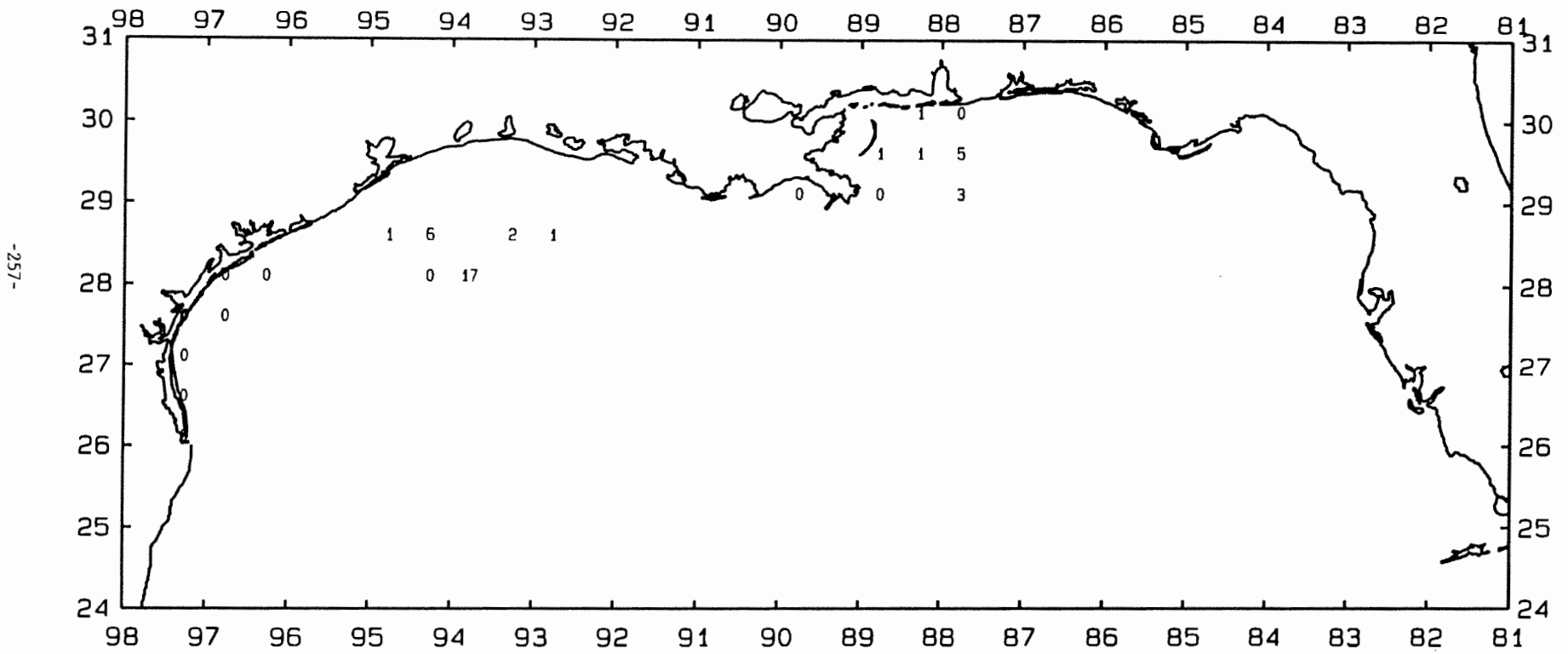


Figure 42. Red snapper, *Lutjanus campechanus*, lb/hour for June-July 1989.

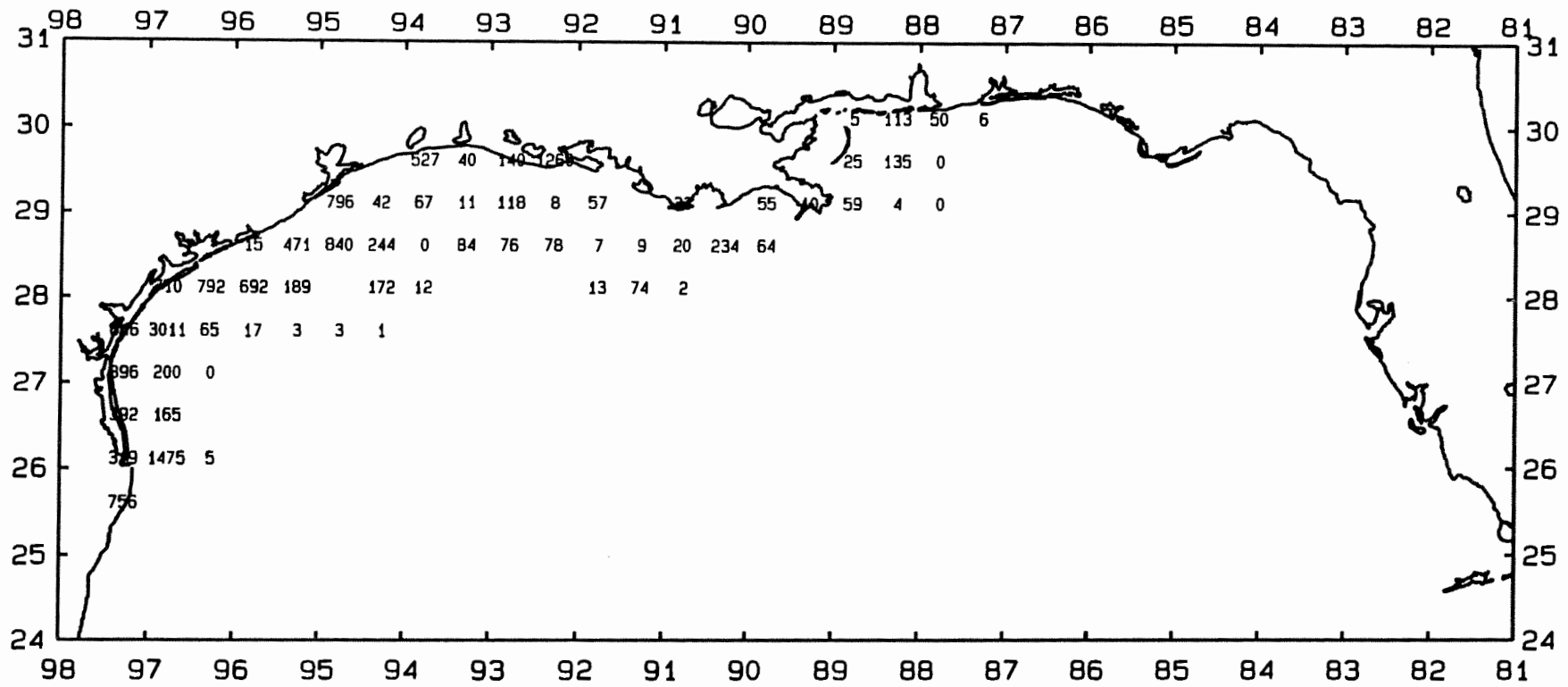


Figure 43. Brown shrimp, *Penaeus aztecus*, number/hour for June-July 1989.



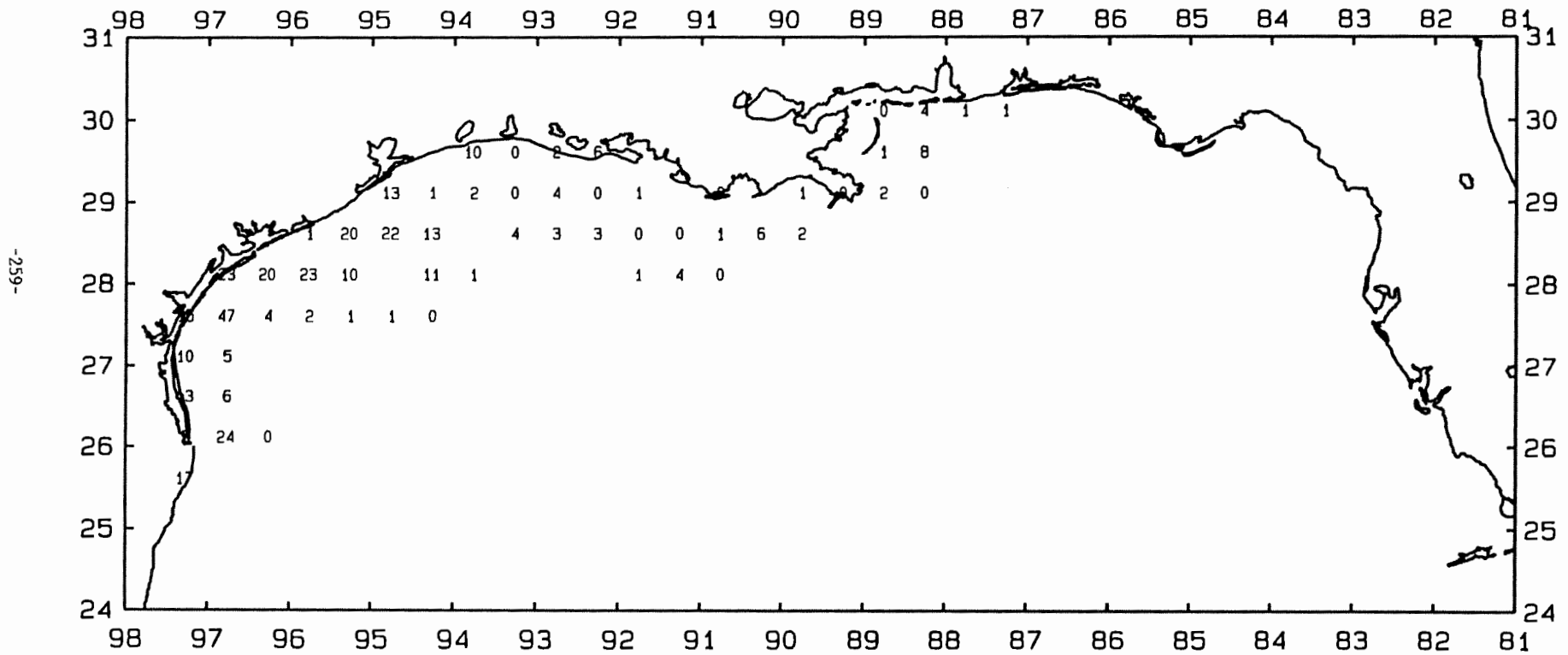


Figure 44. Brown shrimp, *Penaeus aztecus*, lb/hour for June-July 1989.

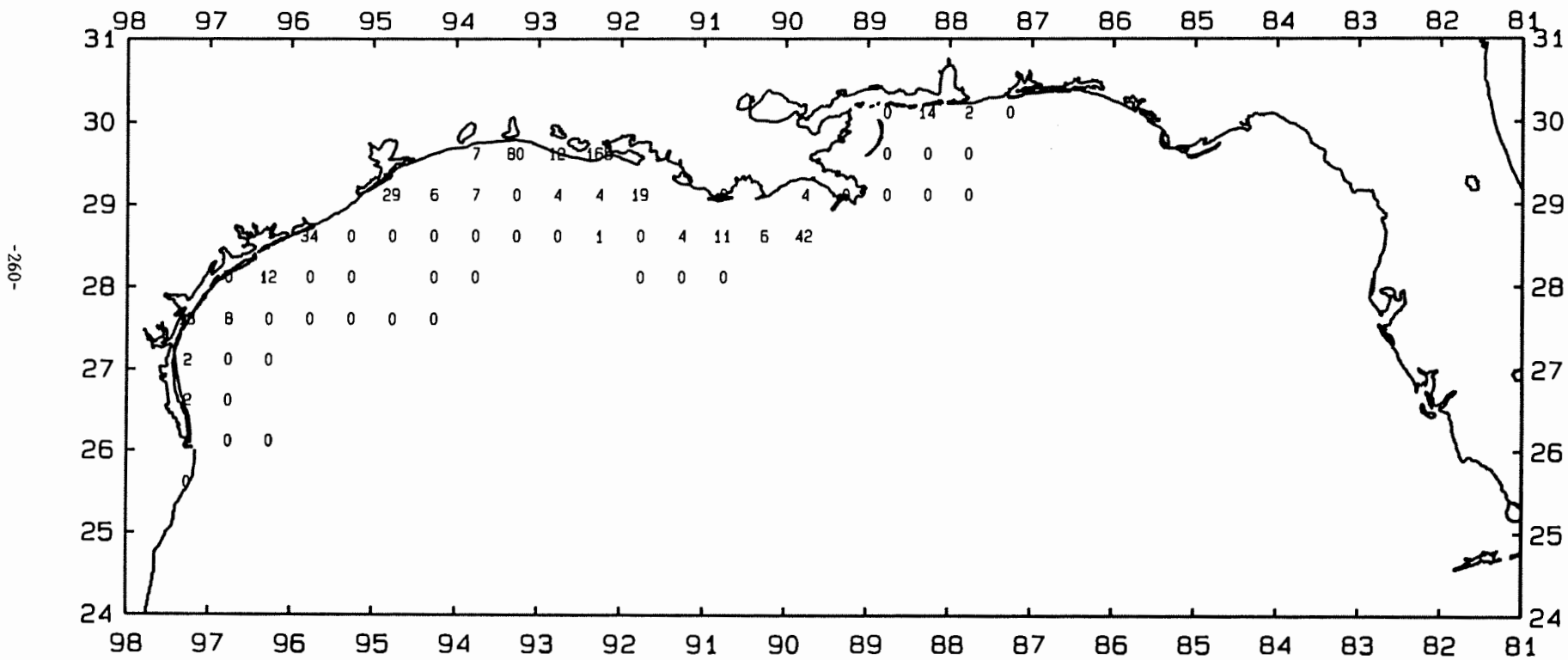


Figure 45. White shrimp, *Penaeus setiferus*, number/hour for June-July 1989.

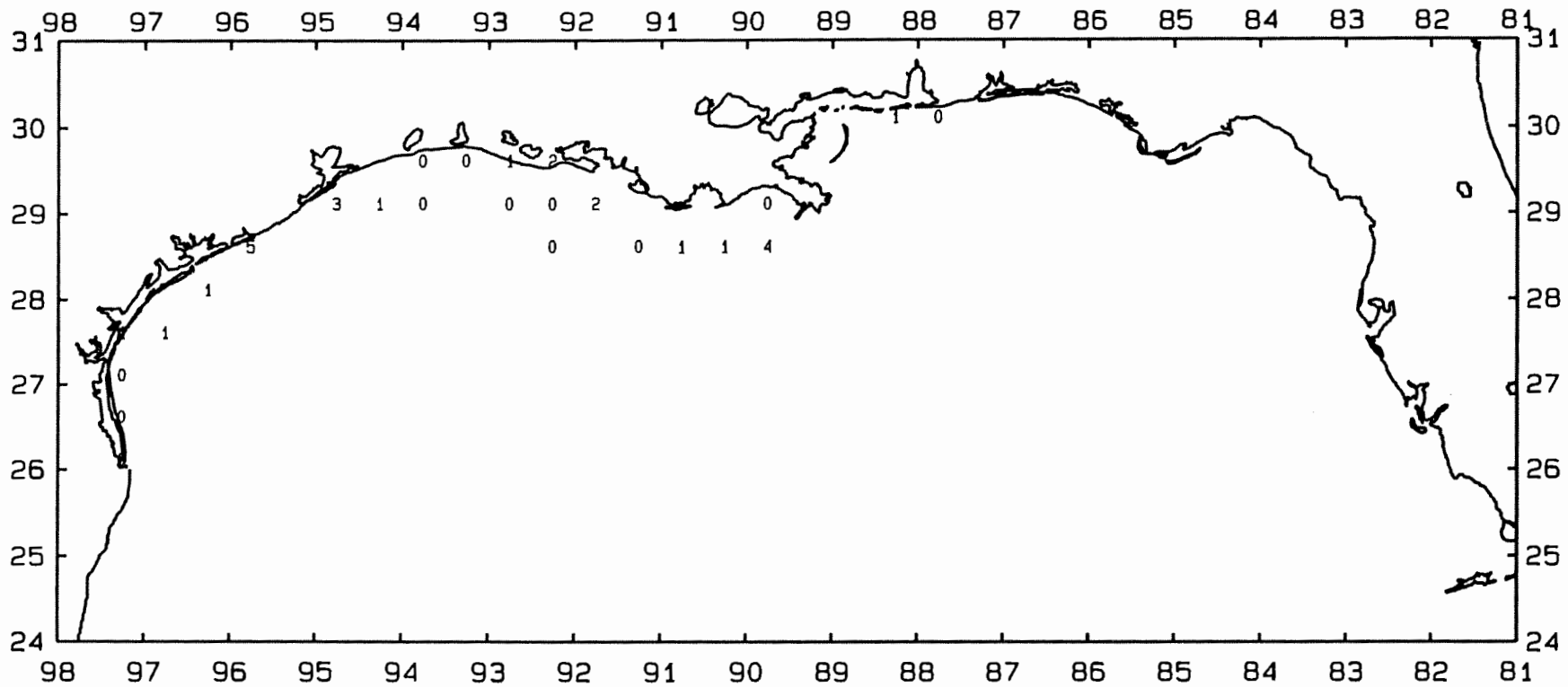


Figure 46. White shrimp, *Penaeus setiferus*, lb/hour for June-July 1989.

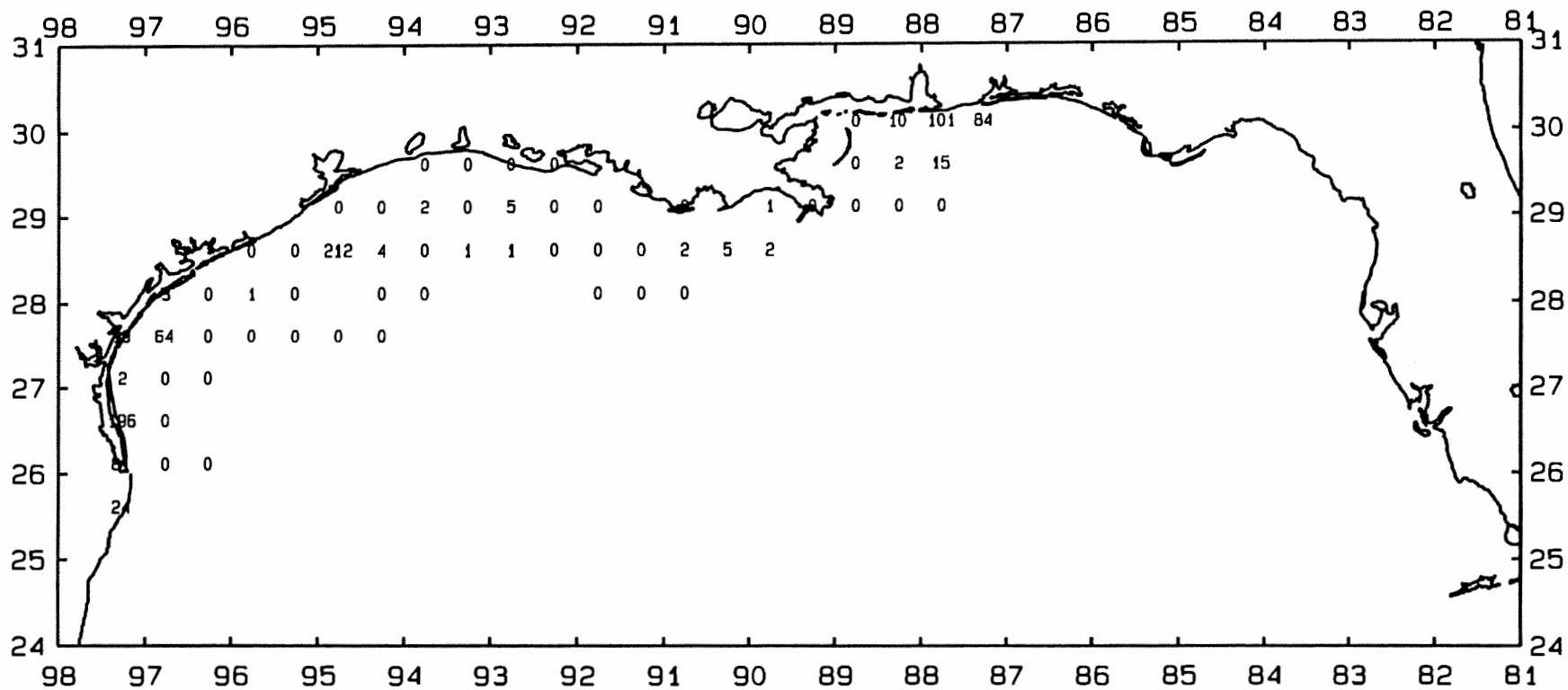


Figure 47. Pink shrimp, *Penaeus duorarum*, number/hour for June-July 1989.

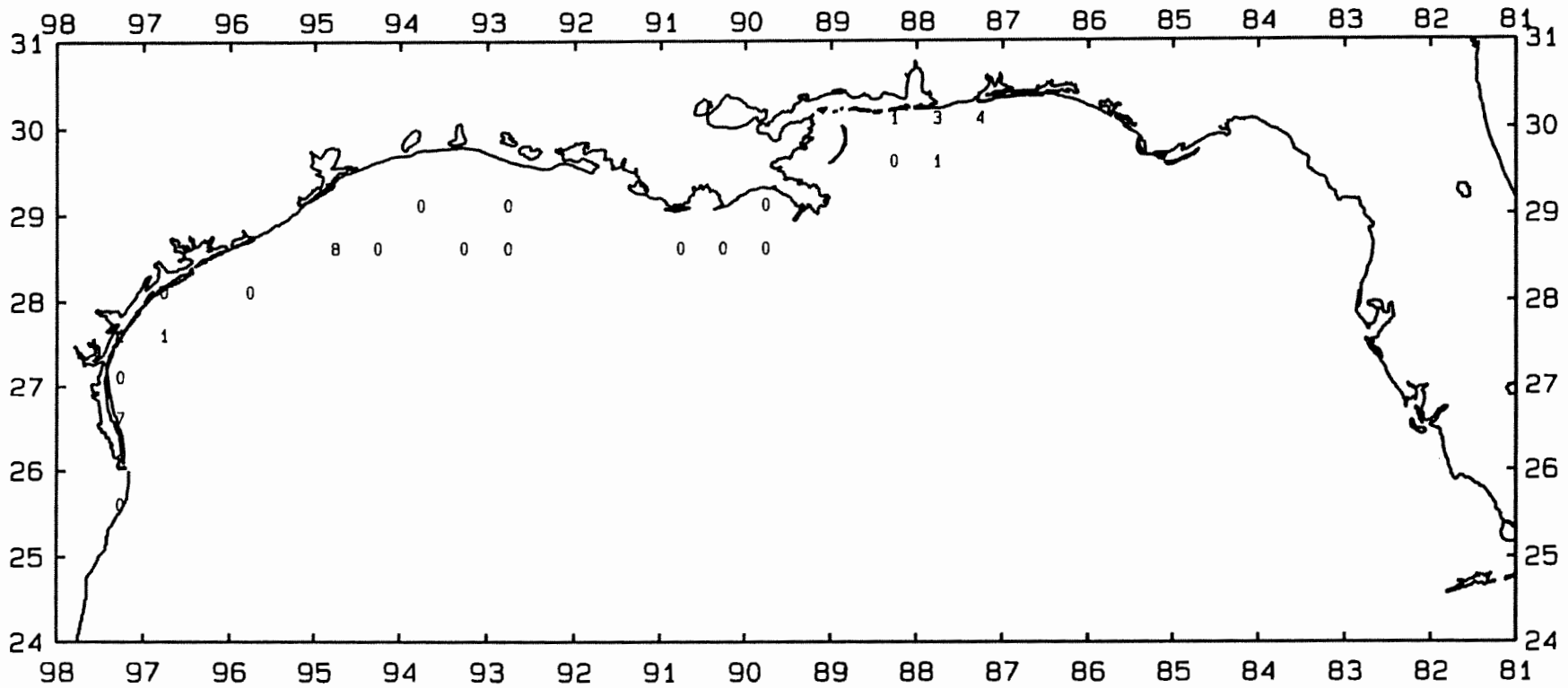


Figure 48. Pink shrimp, *Penaeus duorarum*, lb/hour for June-July 1989.

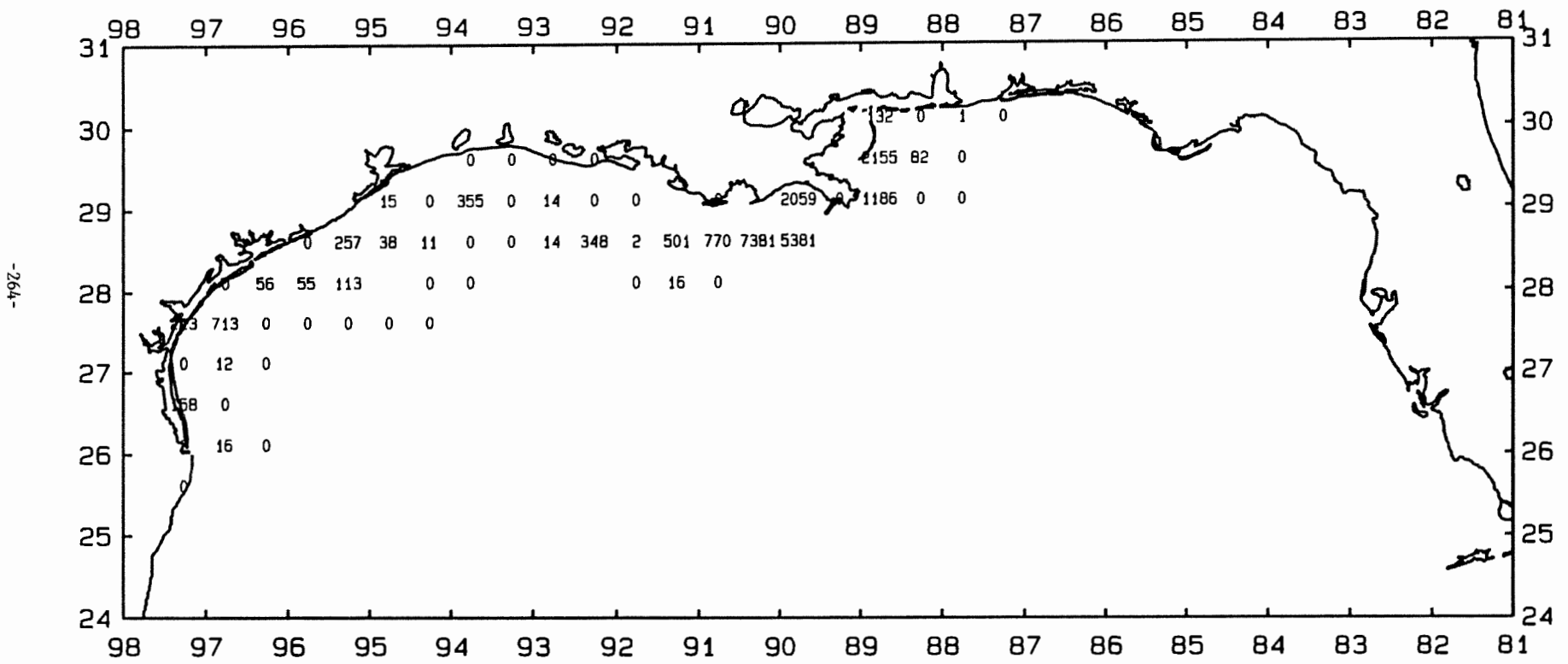


Figure 49. Roughback shrimp, *Trachypenaeus similis*, number/hour for June-July 1989.

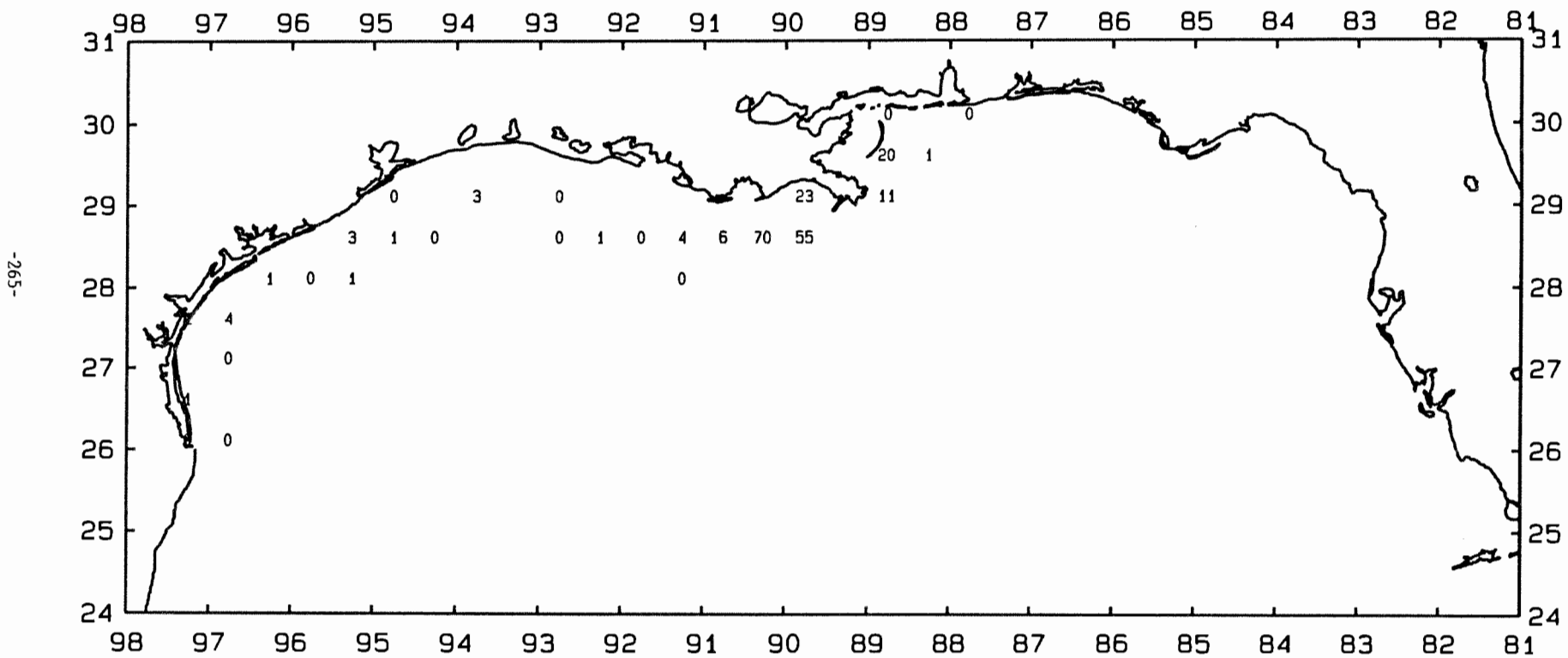


Figure 50. Roughback shrimp, *Trachypenaeus similis*, lb/hour for June-July 1989.

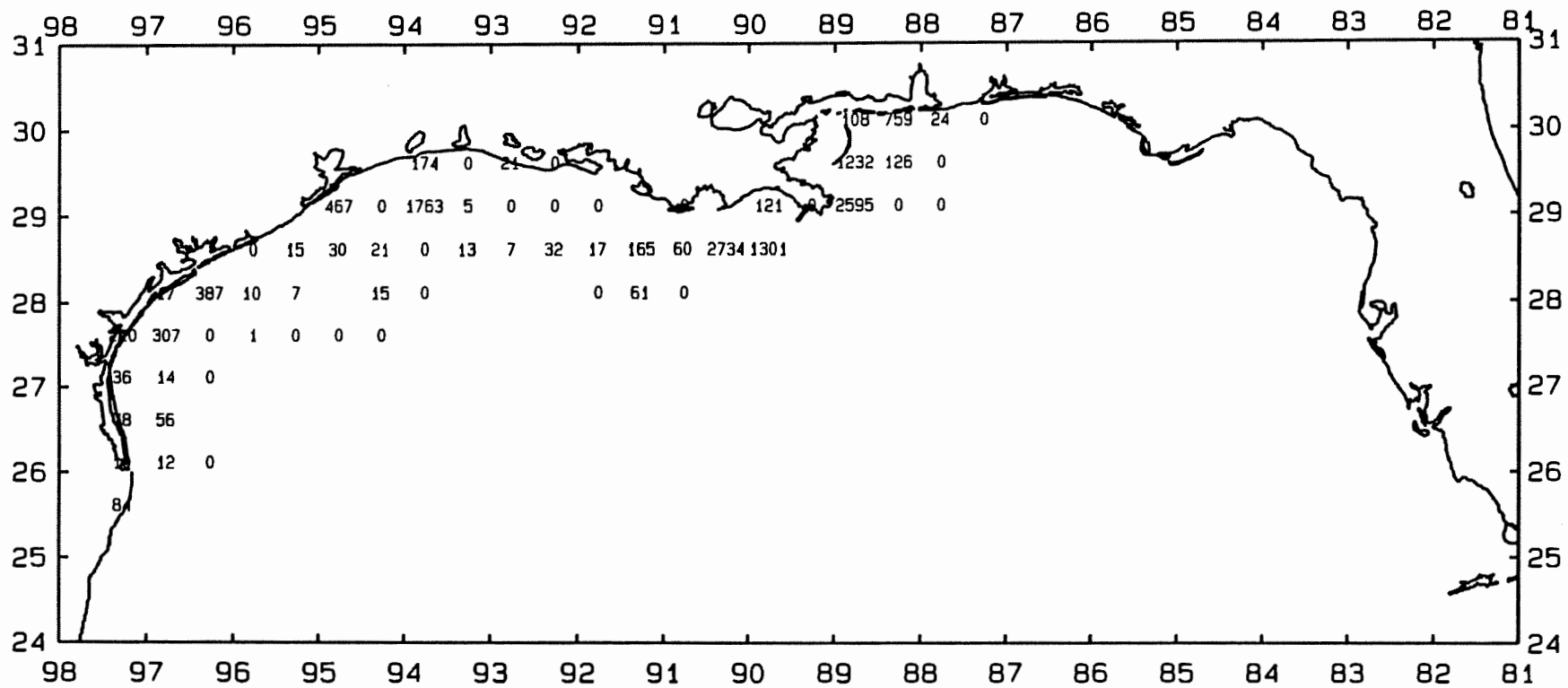


Figure 51. Lesser blue crab, *Callinectes similis*, number/hour for June-July 1989.



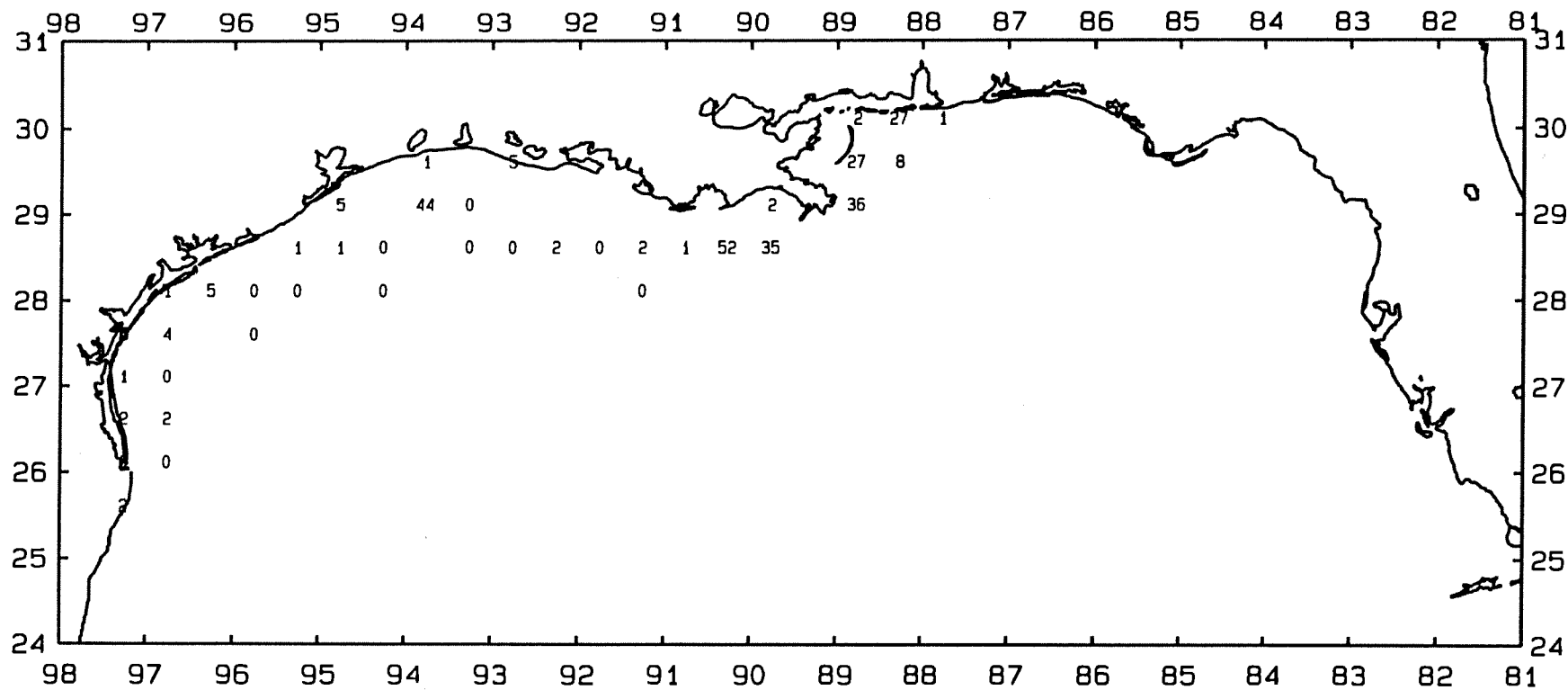


Figure 52. Lesser blue crab, *Callinectes similis*, lb/hour for June-July 1989.

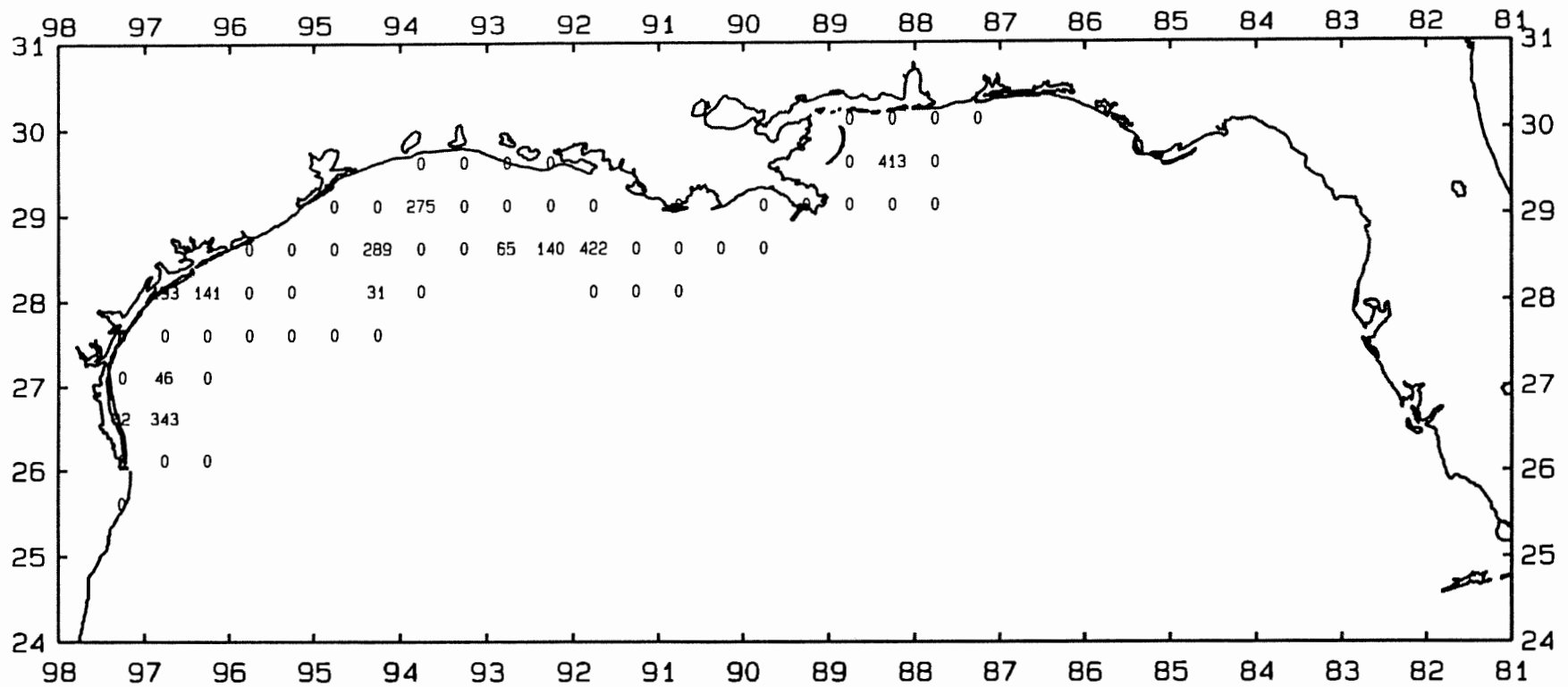


Figure 53. Roughneck shrimp, *Trachypenaeus* spp., number/hour for June-July 1989.

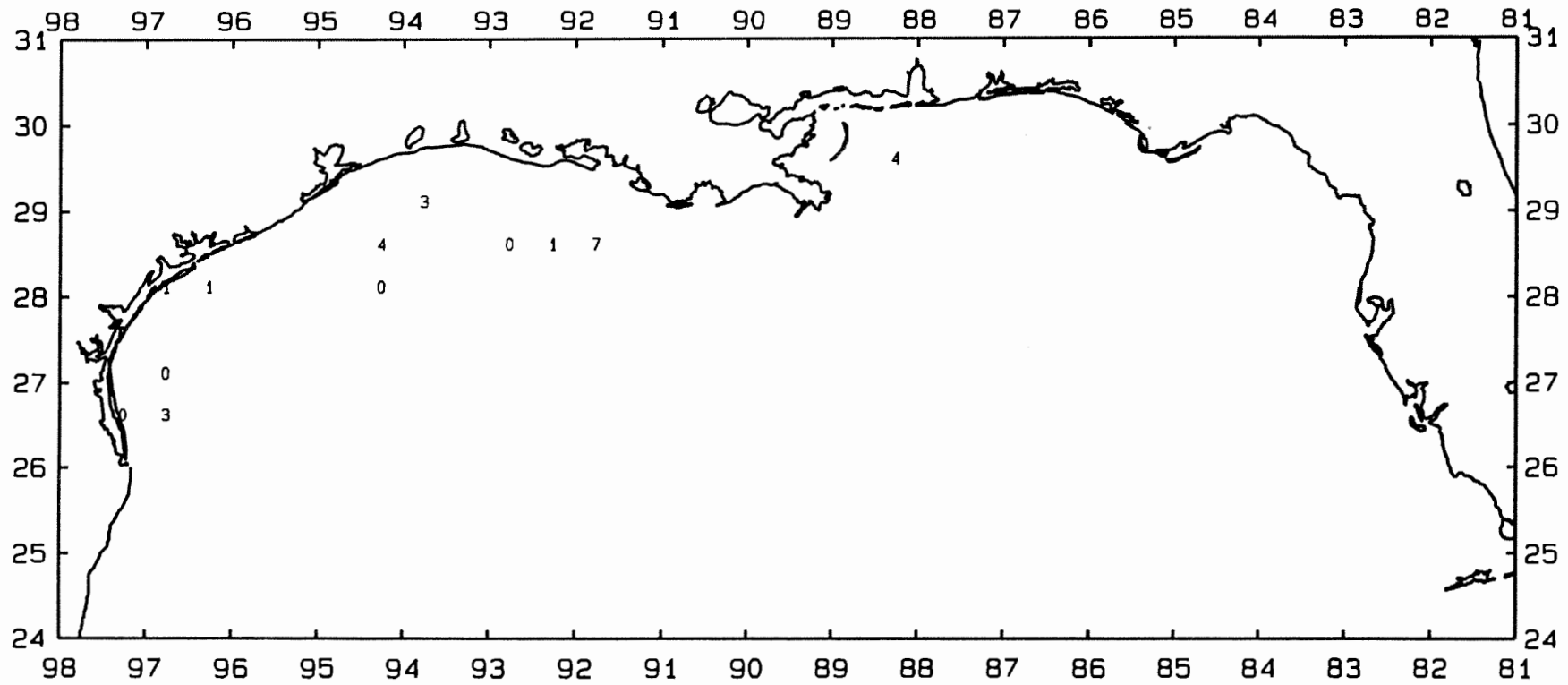


Figure 54. Roughneck shrimp, *Trachypenaeus* spp., lb/hour for June-July 1989.



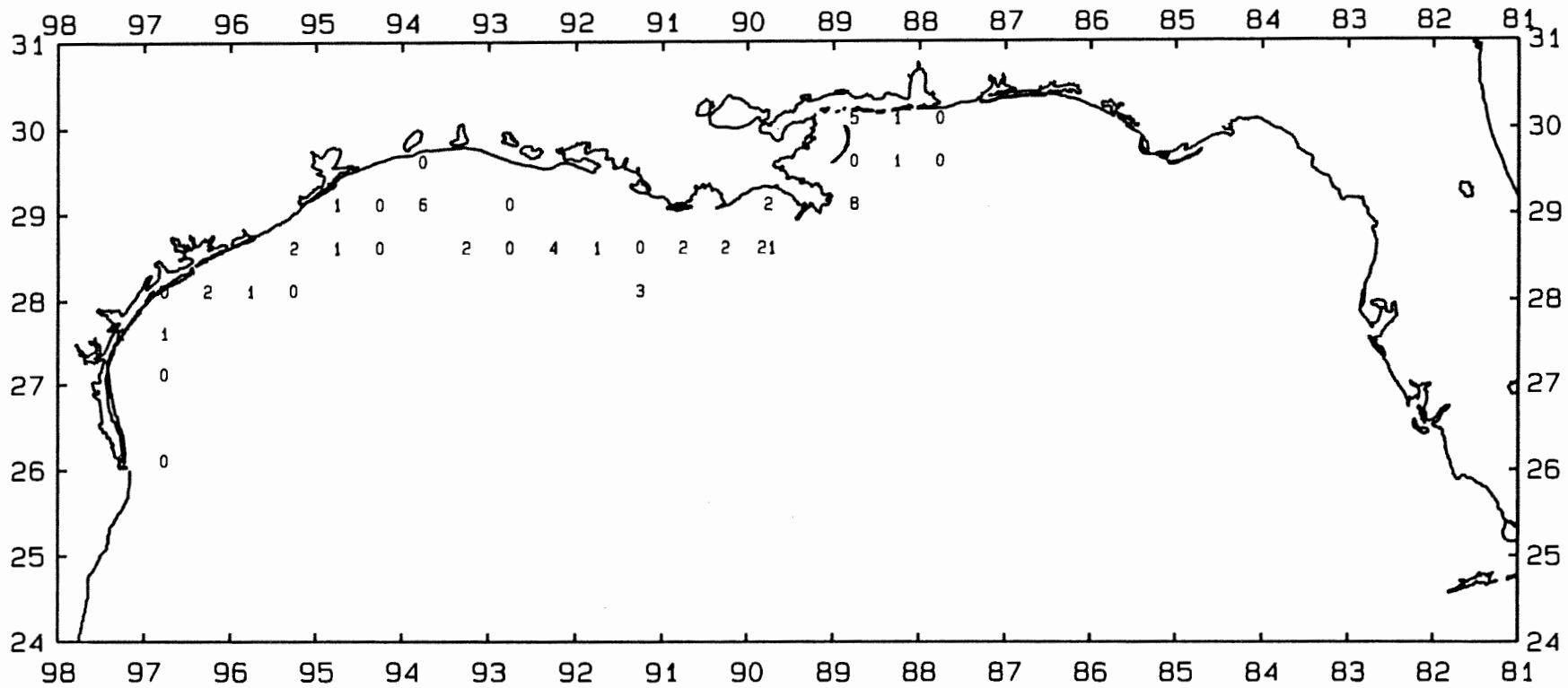


Figure 56. Mantis shrimp, *Squilla empusa*, lb/hour for June-July 1989.

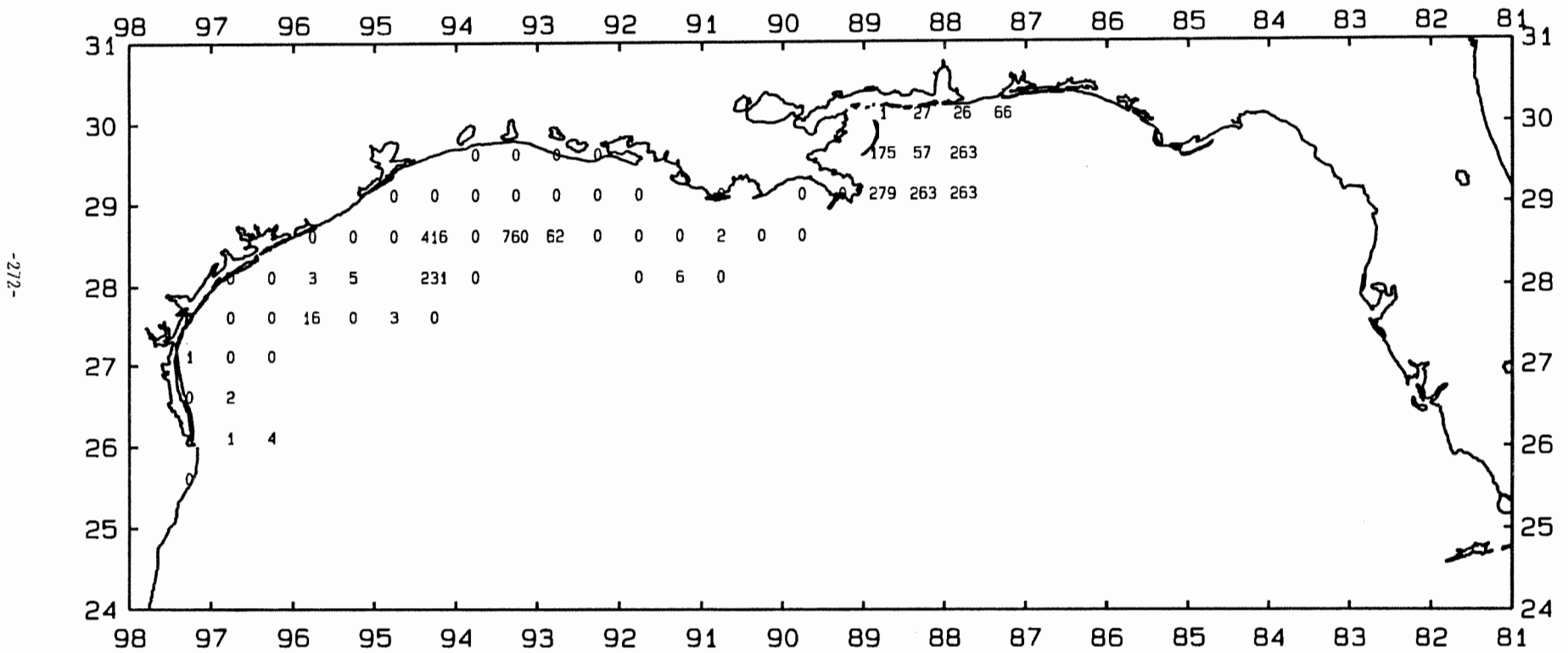


Figure 57. Brown rock shrimp, *Sicyonia brevirostris*, number/hour for June-July 1989.

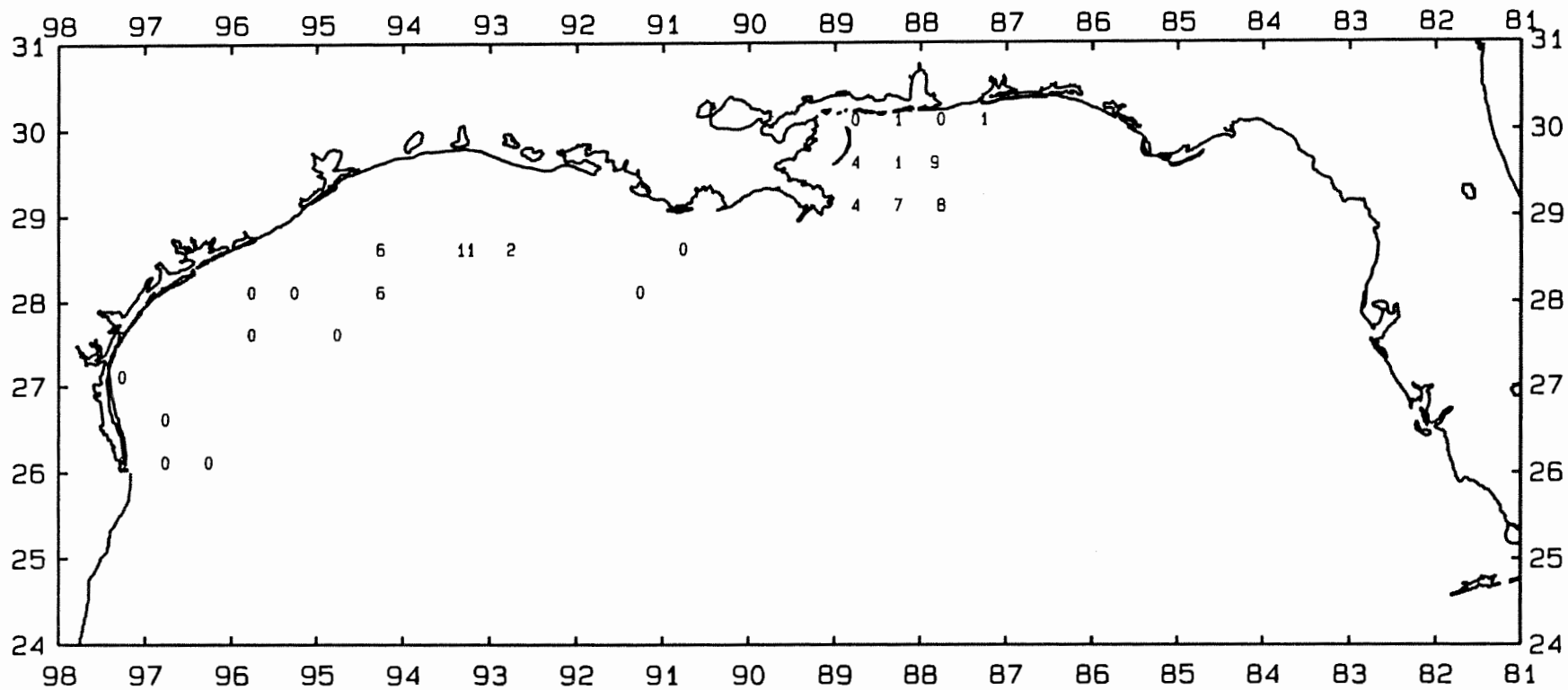


Figure 58. Brown rock shrimp, *Sicyonia brevirostris*, lb/hour for June-July 1989.

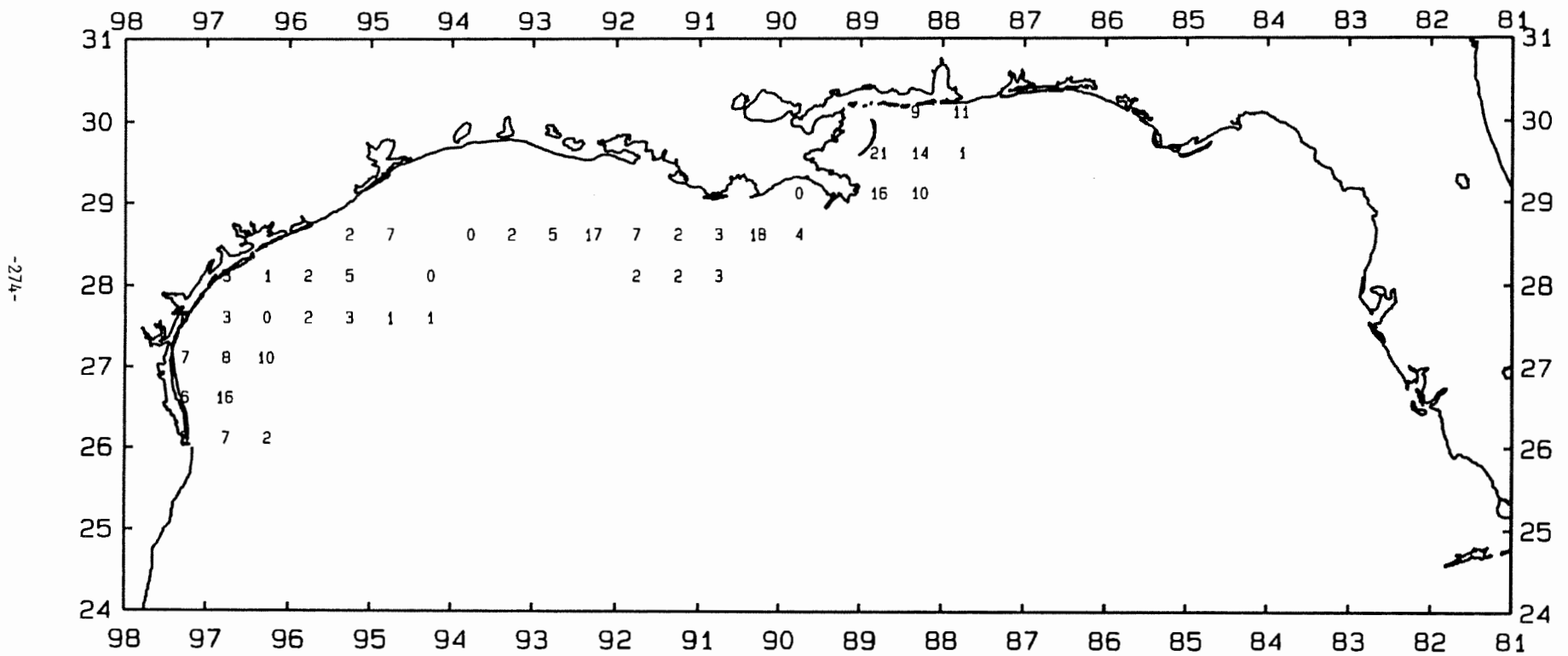


Figure 59. Longfin squid, *Loligo pealeii*, number/hour for June-July 1989.



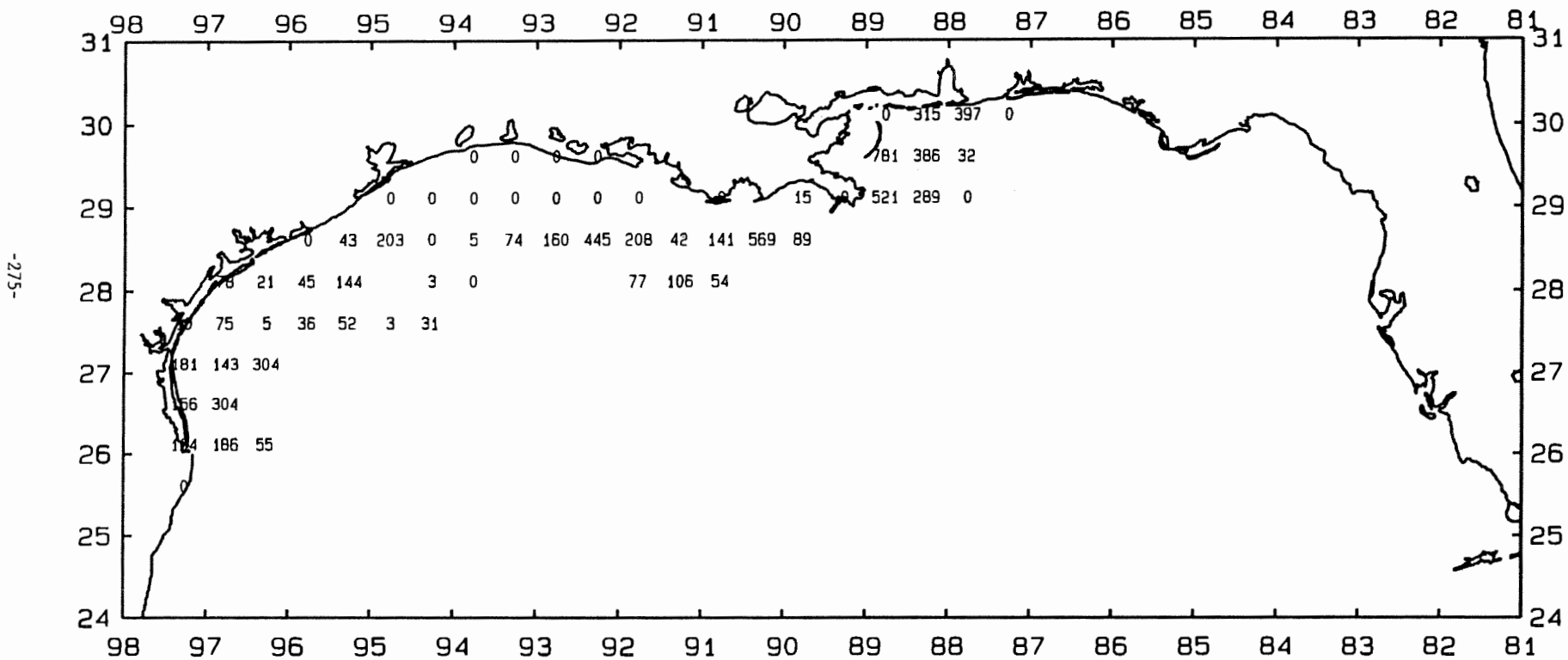


Figure 60. Longfin squid, *Loligo pealeii*, lb/hour for June-July 1989.

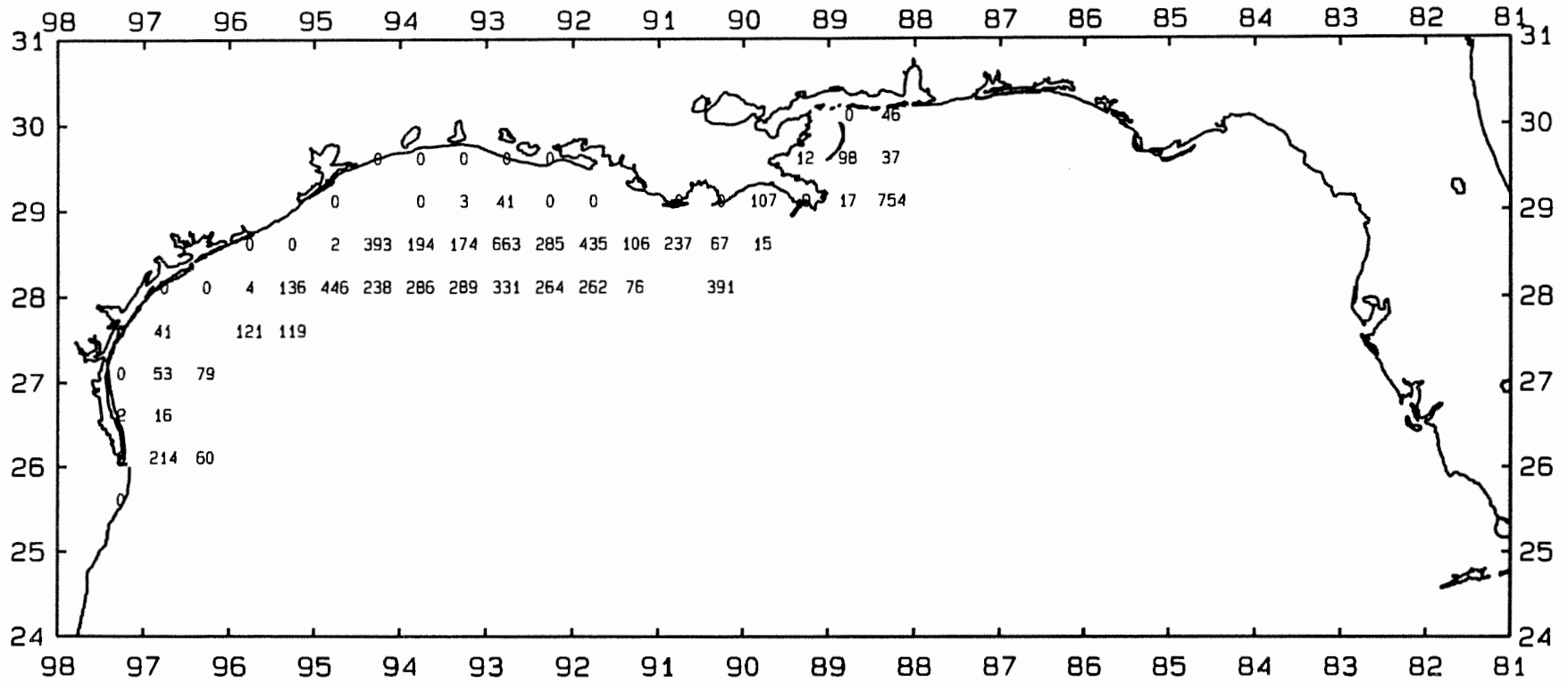


Figure 61. Longspine pogy, *Stenotomus caprinus*, number/hour for October-December 1989.

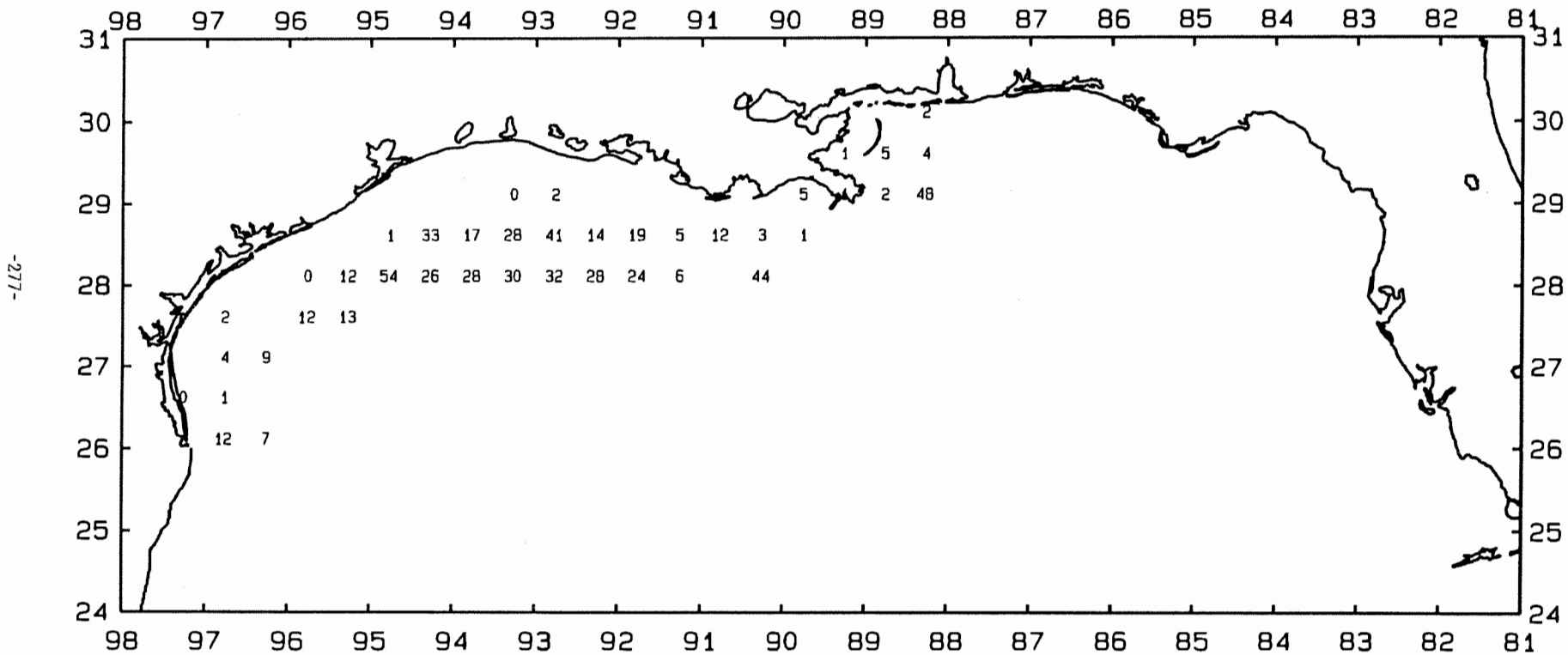


Figure 62. Longspine pogy, *Stenotomus caprinus*, lb/hour for October-December 1989.

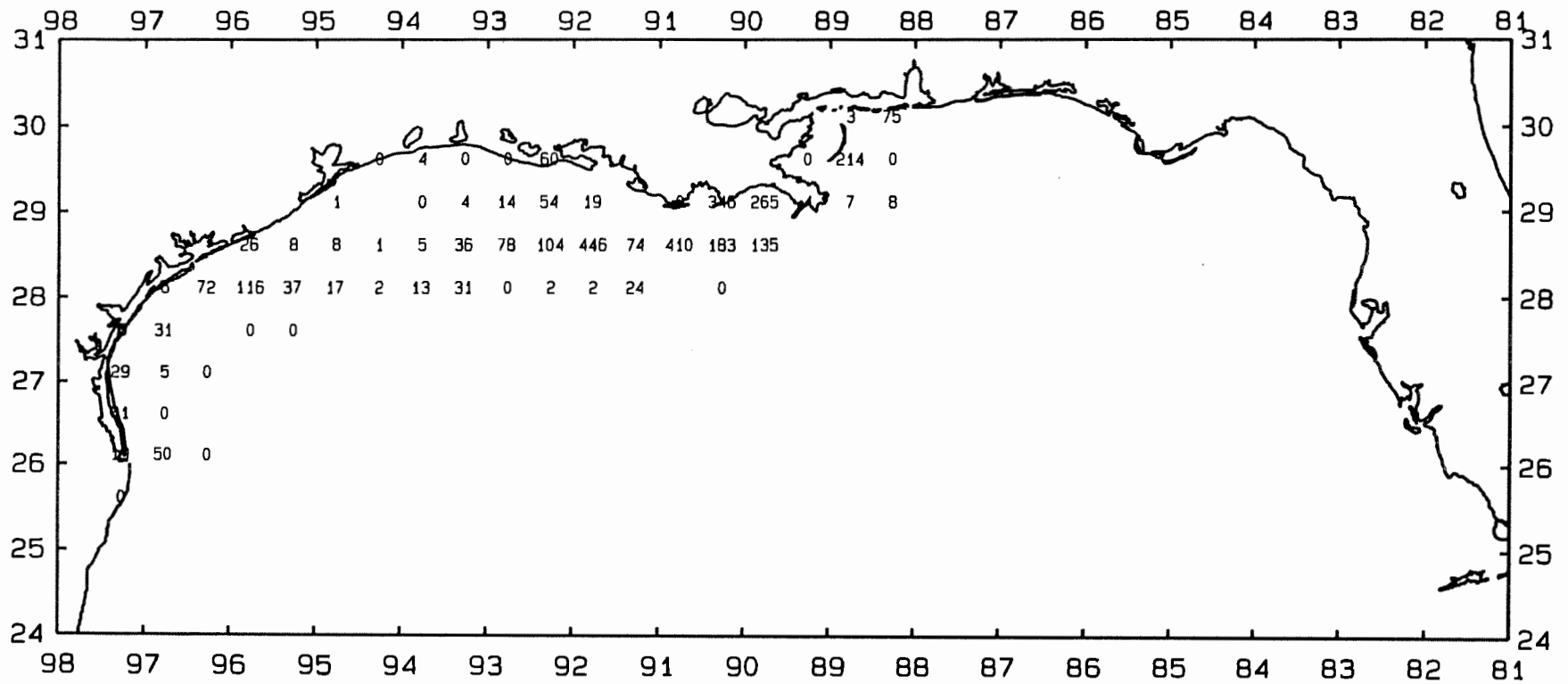


Figure 63. Atlantic croaker, *Micropogonias undulatus*, number/hour for October-December 1989.

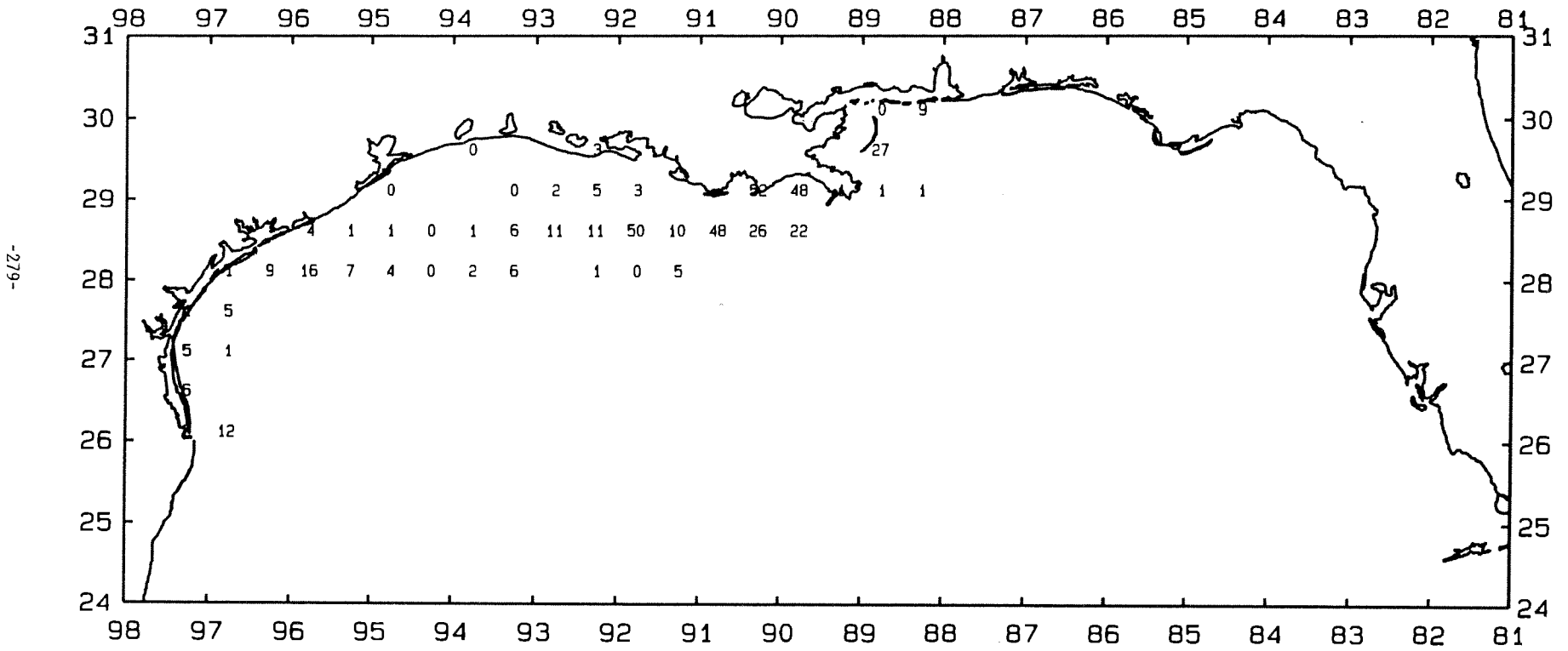


Figure 64. Atlantic croaker, *Micropogonias undulatus*, lb/hour for October-December 1989.

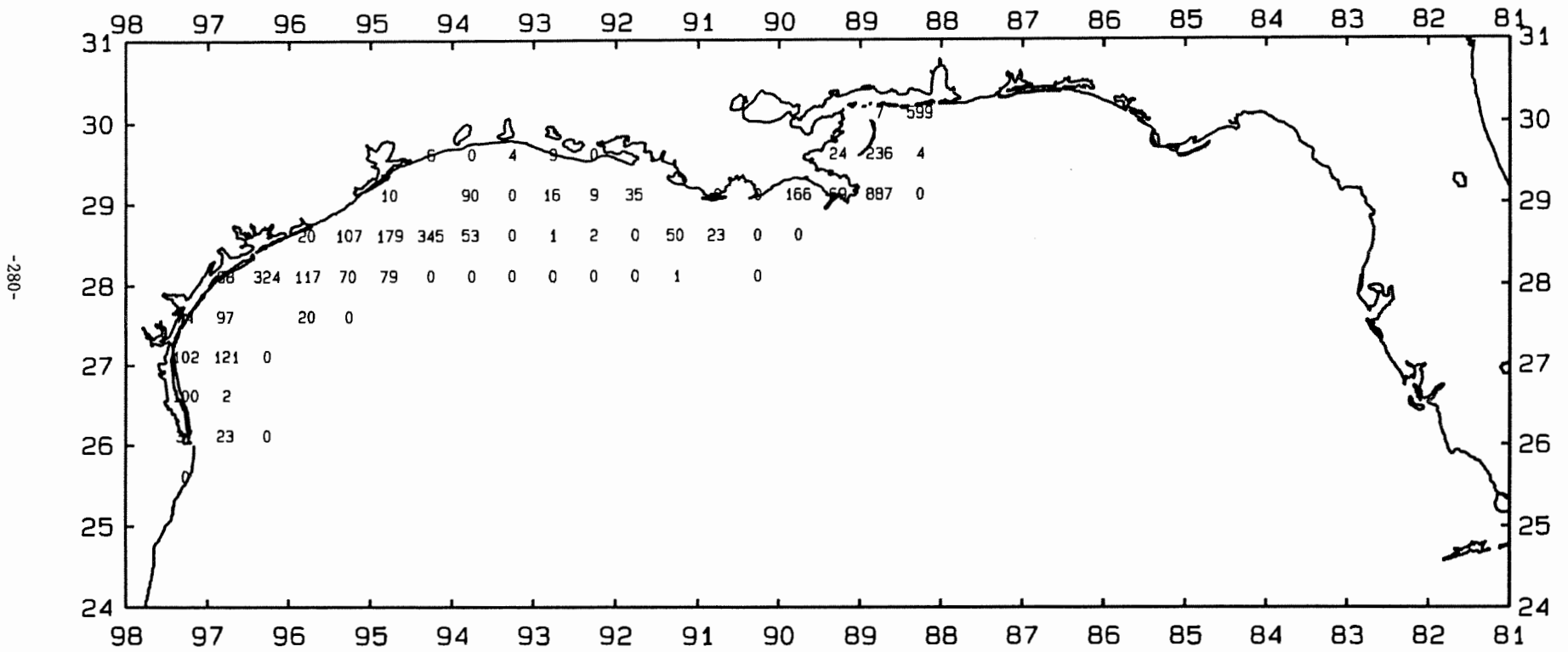


Figure 65. Atlantic bumper, *Chloroscombrus chrysurus*, number/hour for October-December 1989.

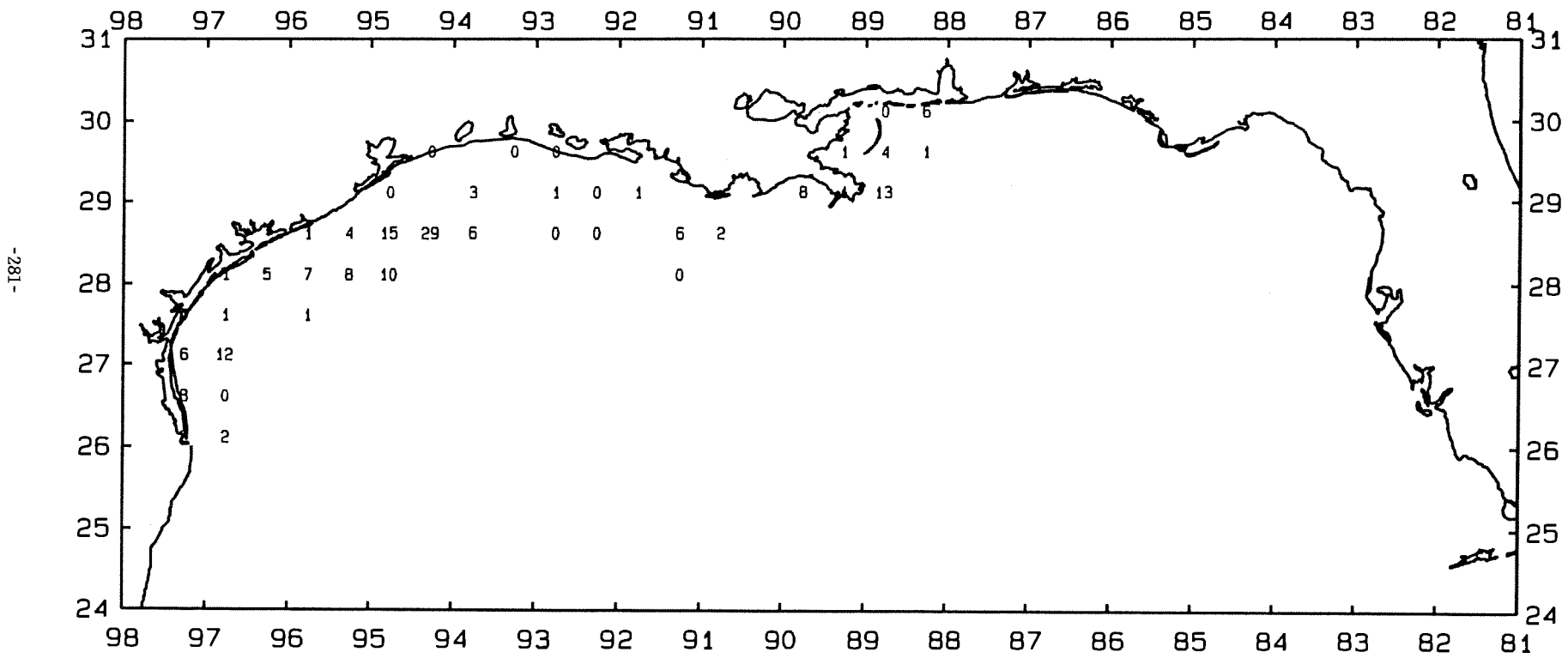


Figure 66. Atlantic bumper, *Chloroscombrus chrysurus*, lb/hour for October-December 1989.

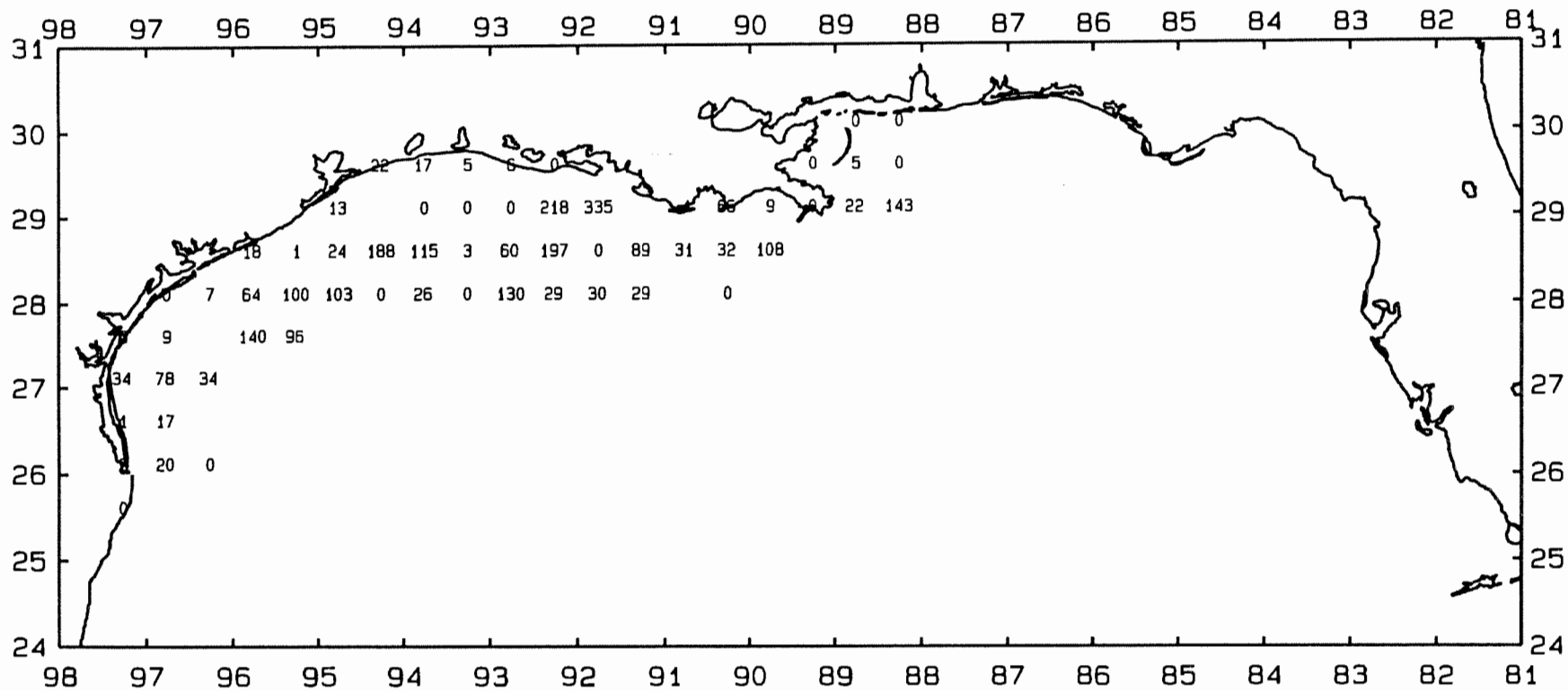


Figure 67. Gulf butterfish, *Peprilus burti*, number/hour for October-December 1989.



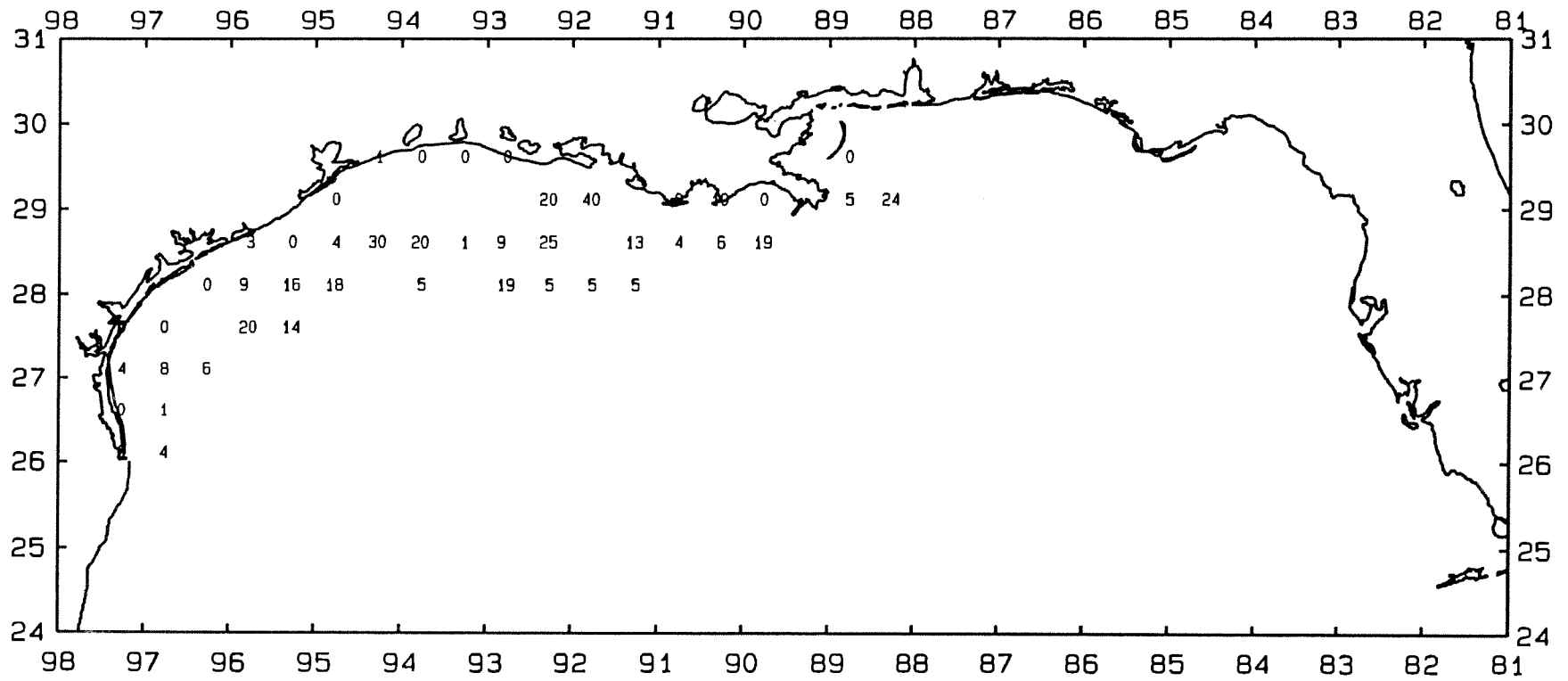


Figure 68. Gulf butterfish, *Peprilus burti*, lb/hour for October-December 1989.

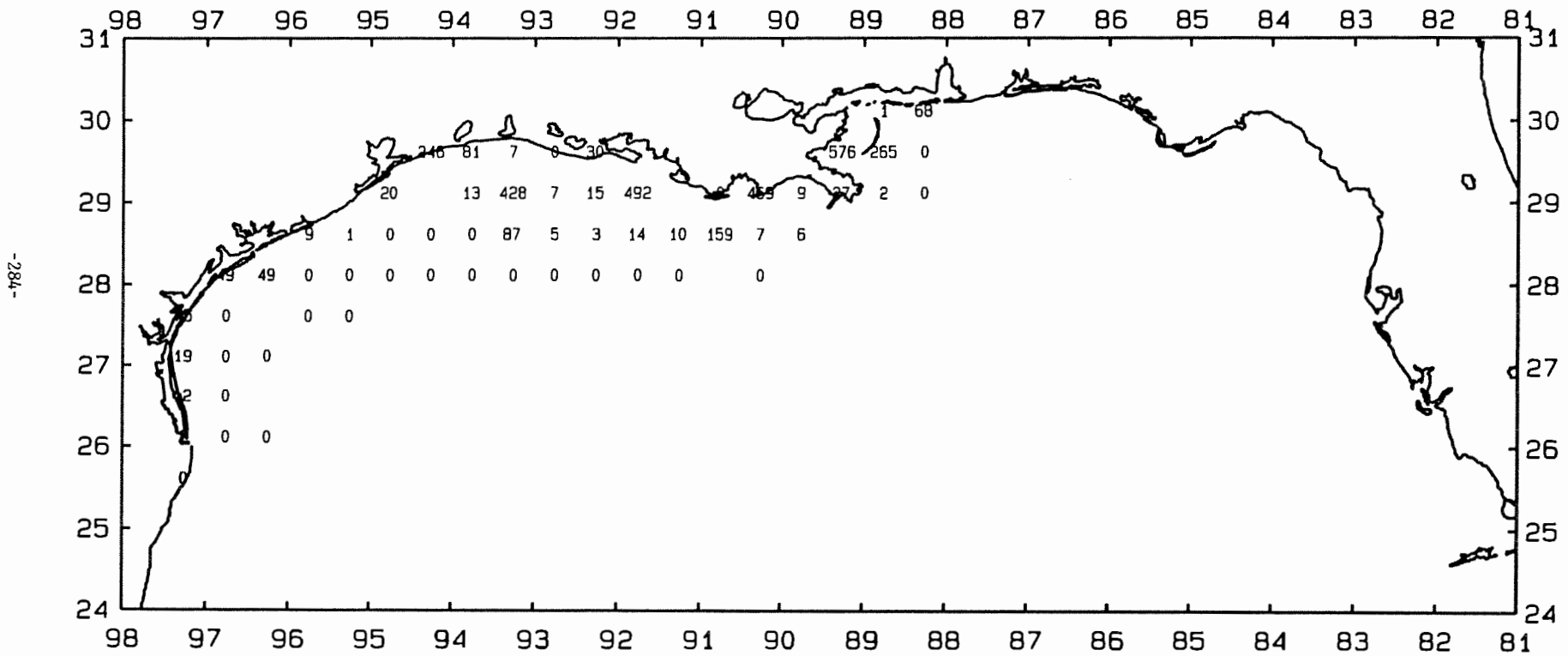


Figure 69. Hardhead catfish, *Arius felis*, number/hour for October-December 1989.

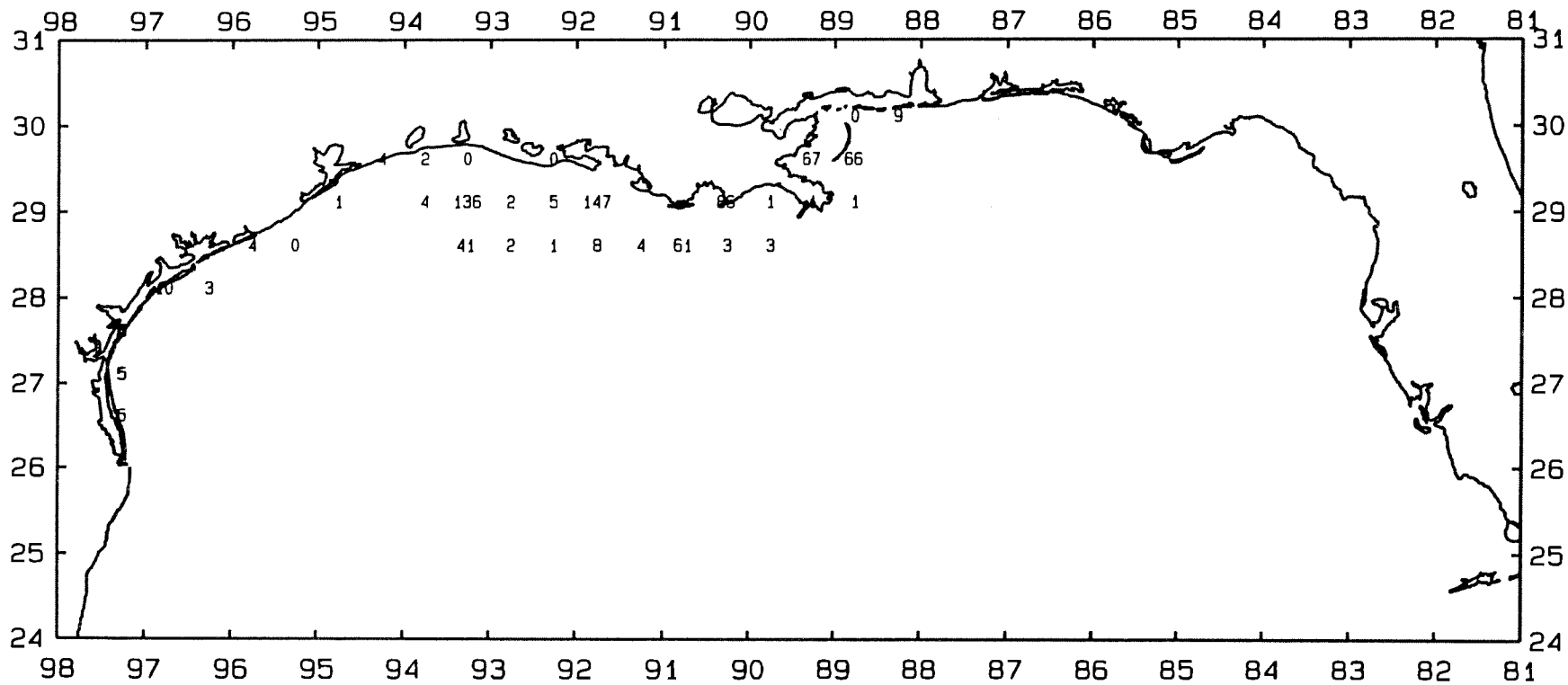


Figure 70. Hardhead catfish, *Arius felis*, lb/hour for October-December 1989.

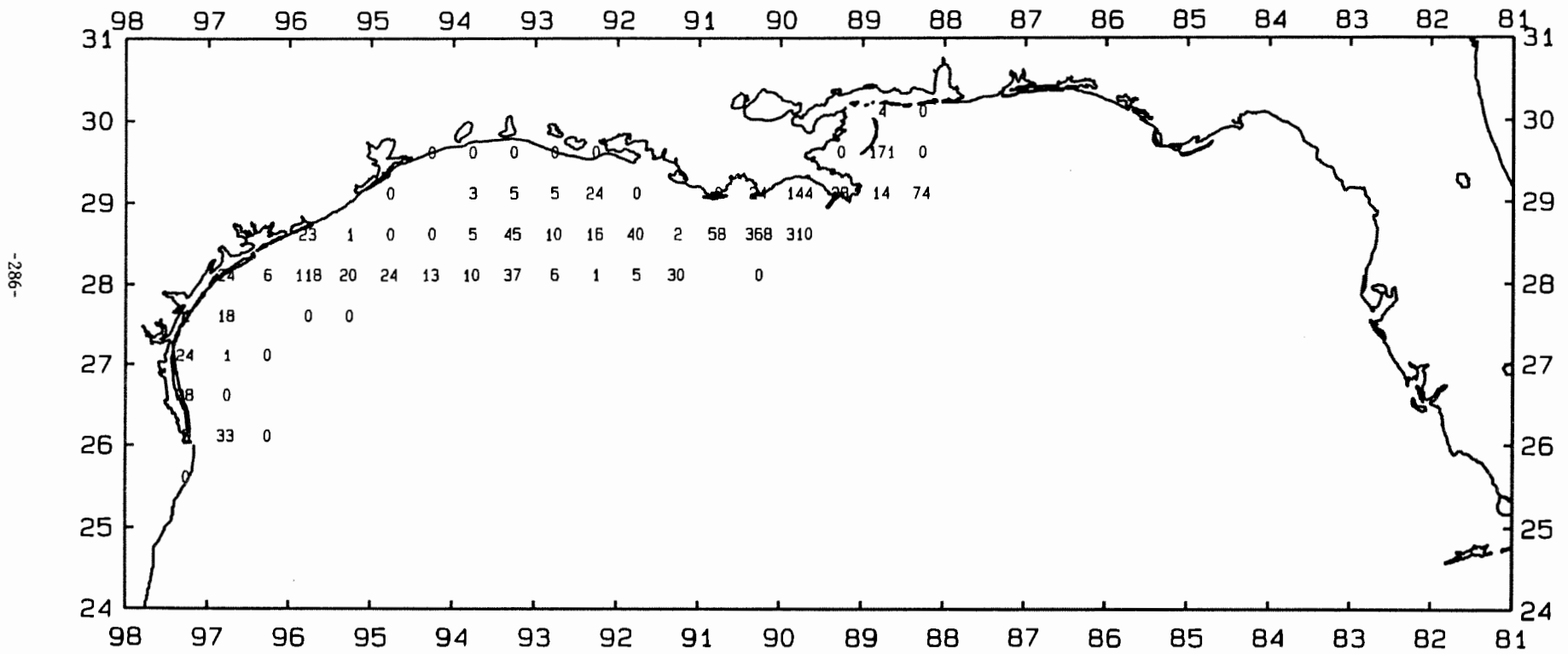


Figure 71. Spot, Leiosotomus xanthurus, number/hour for October-December 1989.

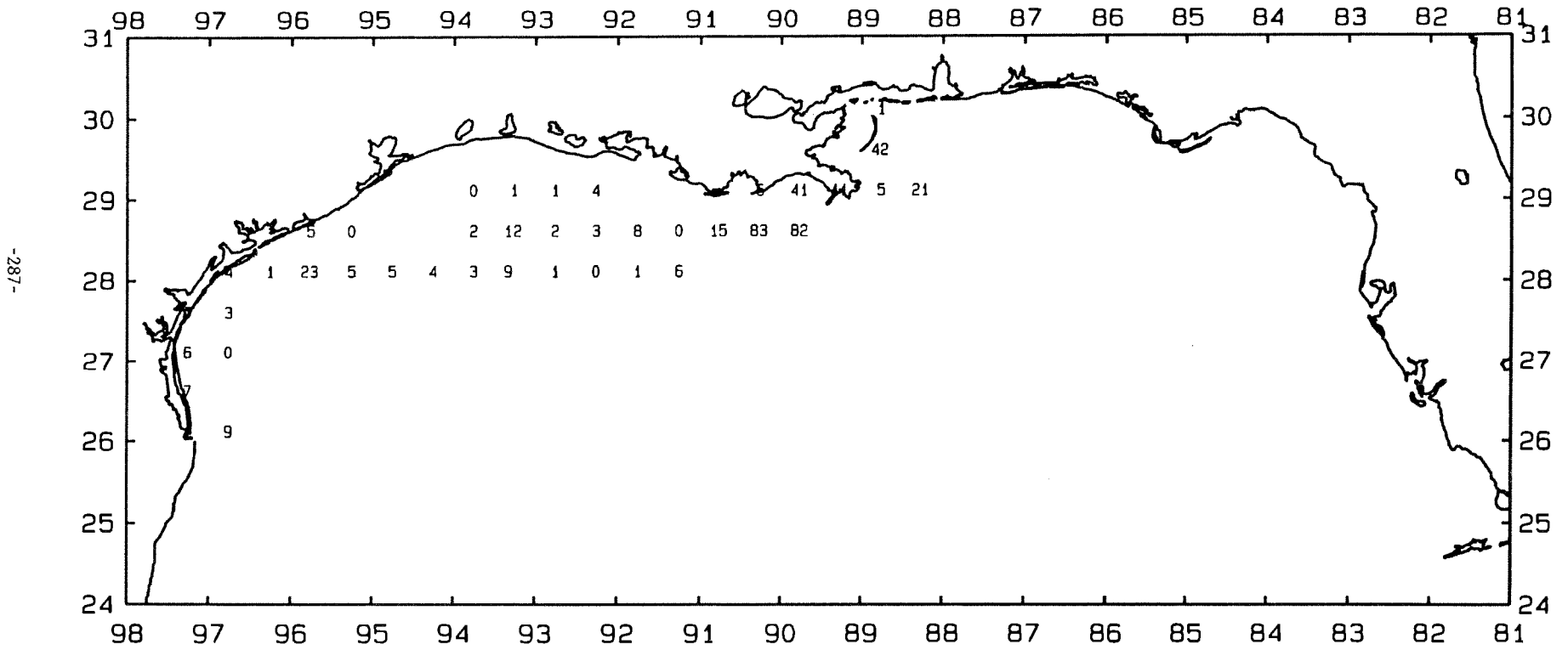


Figure 72. Spot, *Leiostomus xanthurus*, lb/hour for October-December 1989.

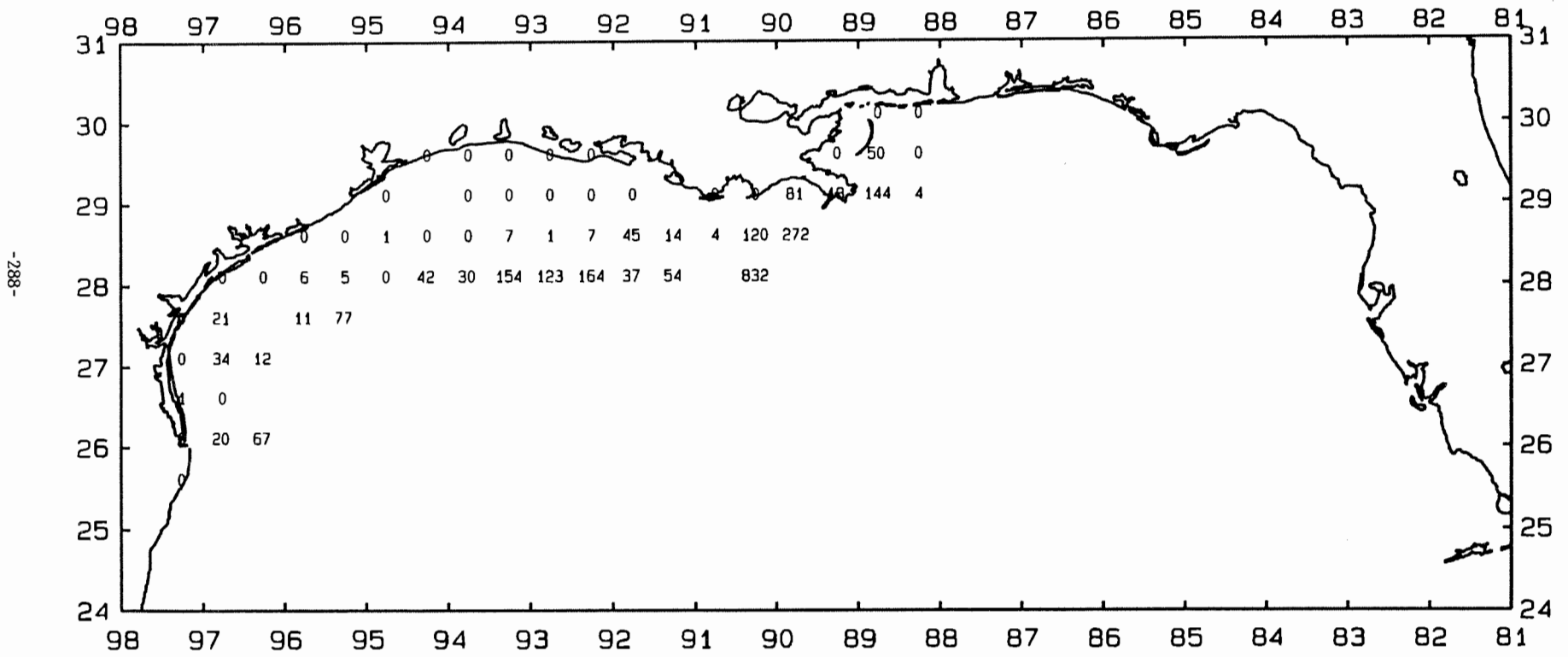


Figure 73. Blackear bass, *Serranus atrobranchus*, number/hour for October-December 1989.

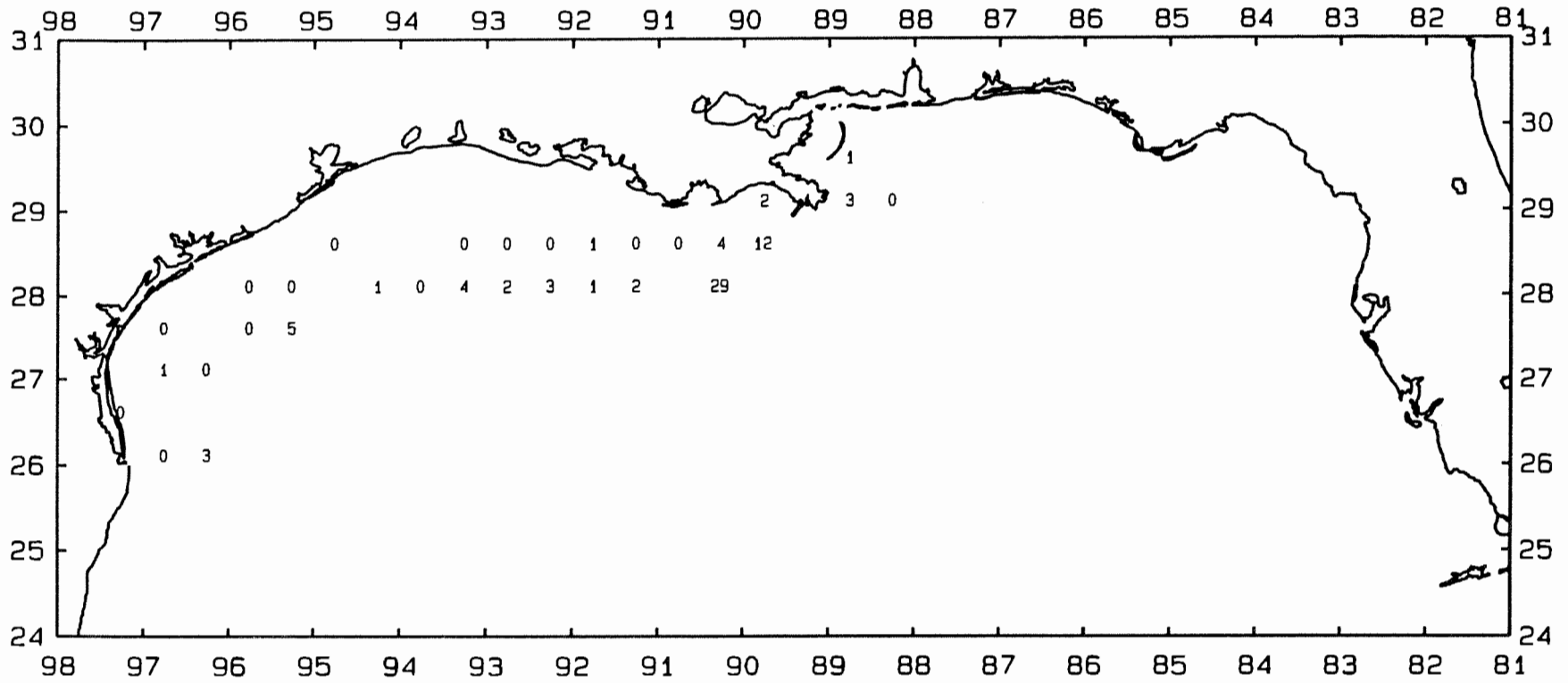


Figure 74. Blackear bass, *Serranus atrobranchus*, lb/hour for October-December 1989.

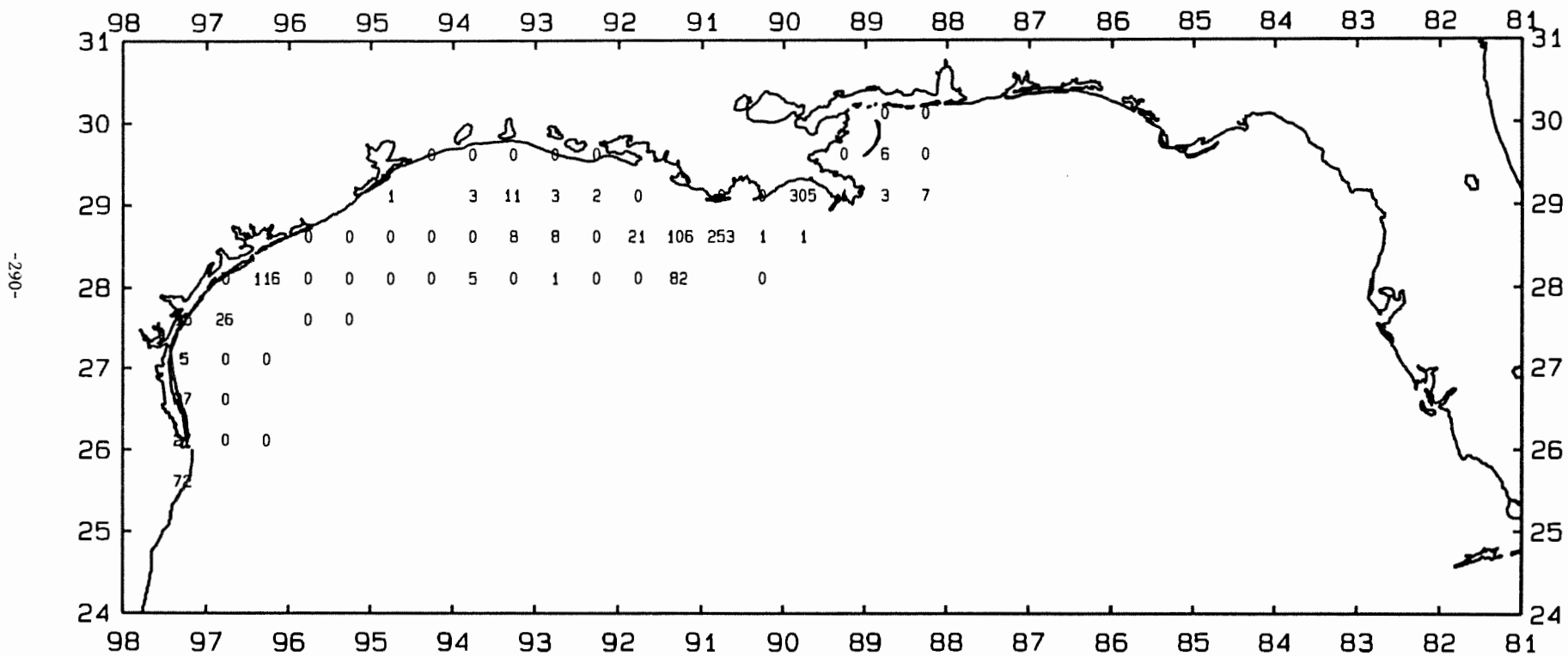


Figure 75. Shoal flounder, *Syacium gunter*, number/hour for October-December 1989.



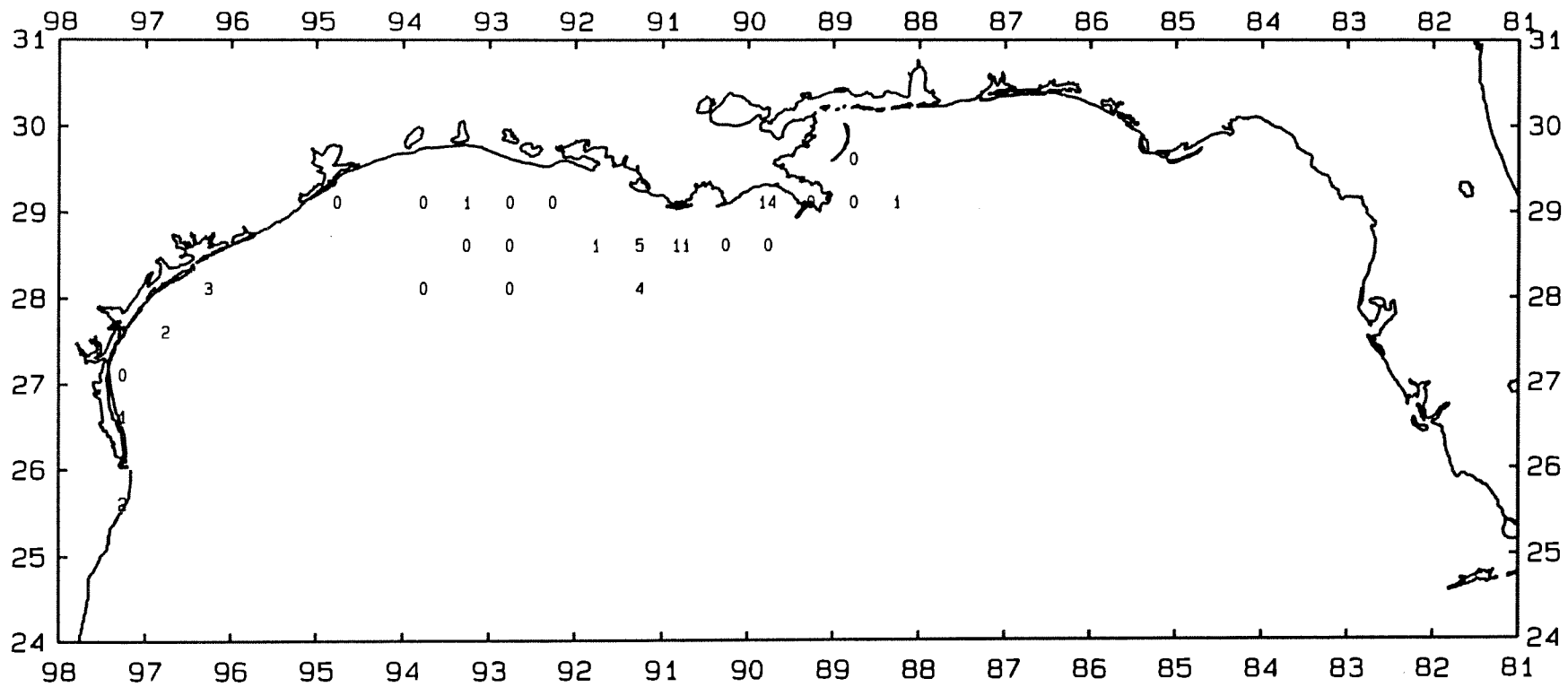


Figure 76. Shoal flounder, *Syacium gunter*, lb/hour for October-December 1989.

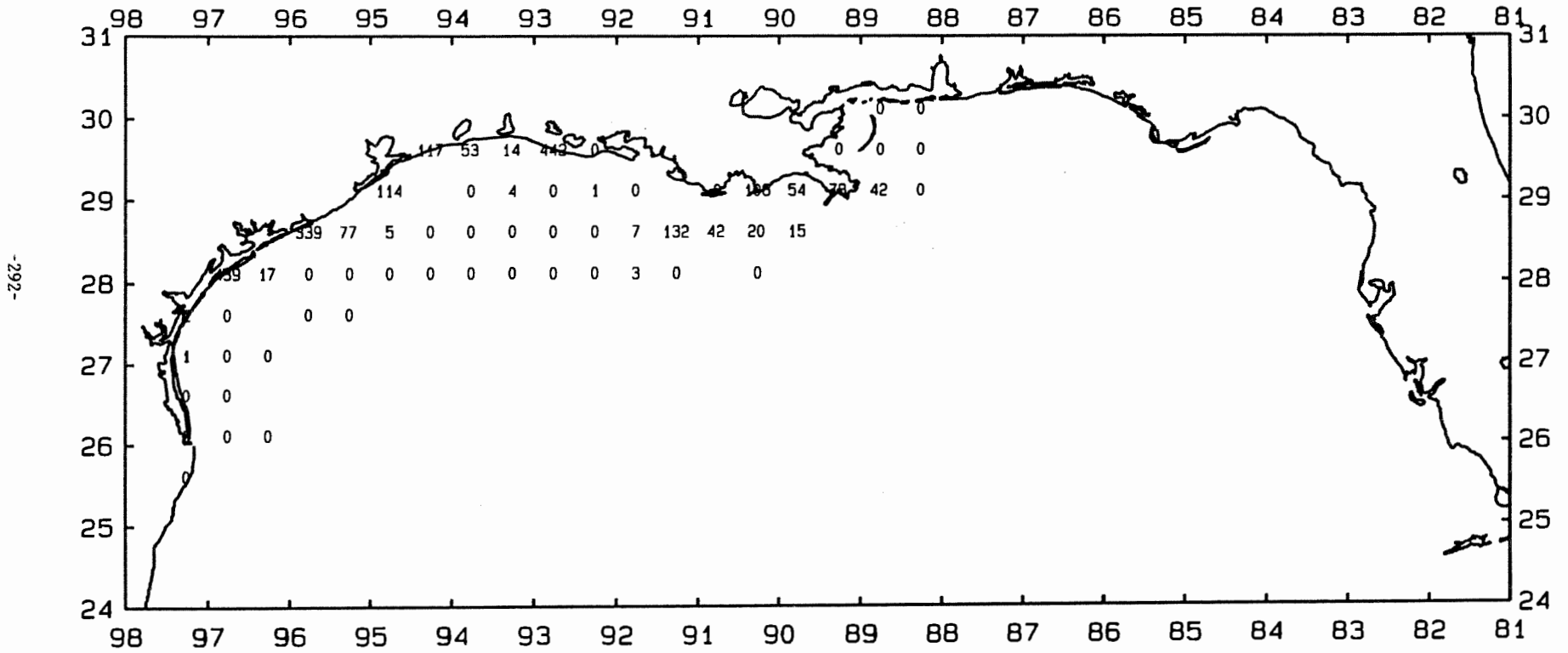


Figure 77. Seatrout, *Cynoscion* spp., number/hour for October-December 1989.

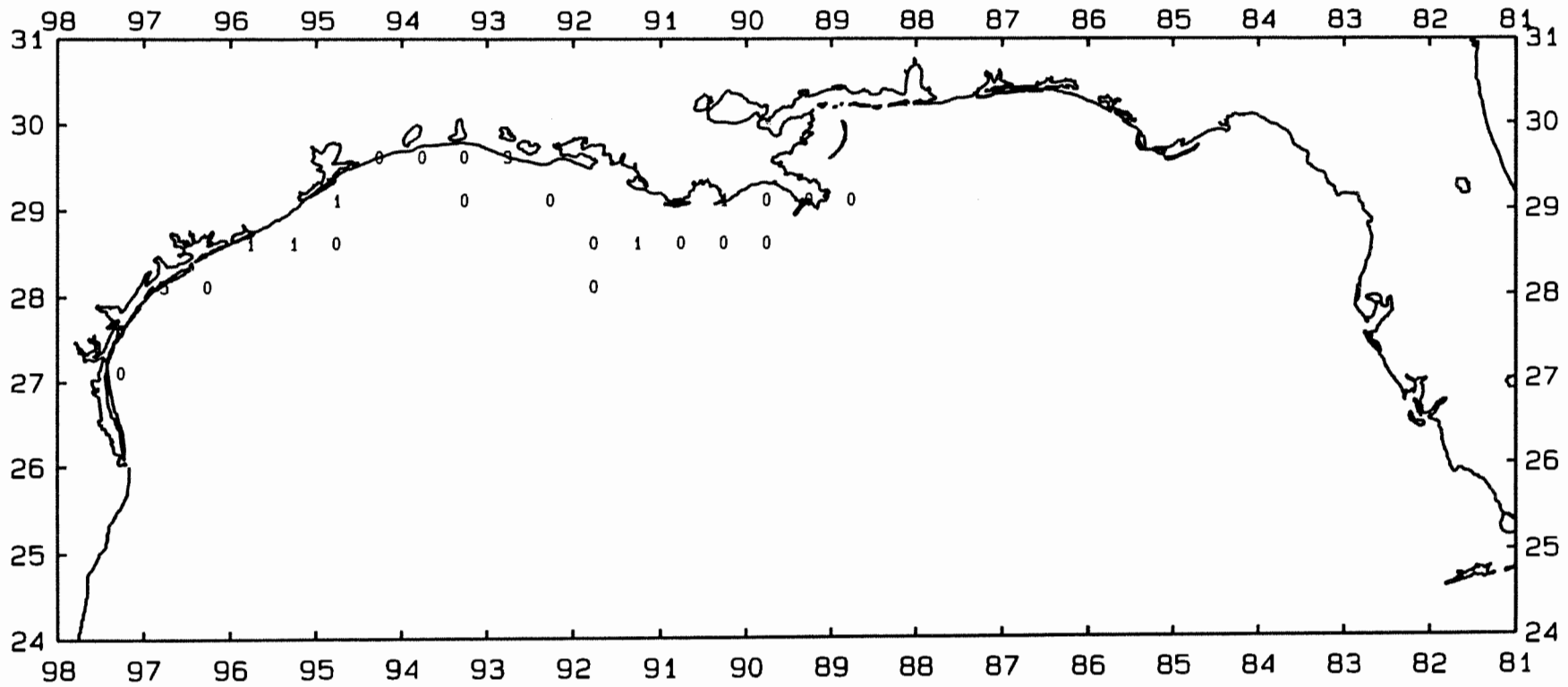


Figure 78. Seatrout, *Cynoscion* spp., lb/hour for October-December 1989.

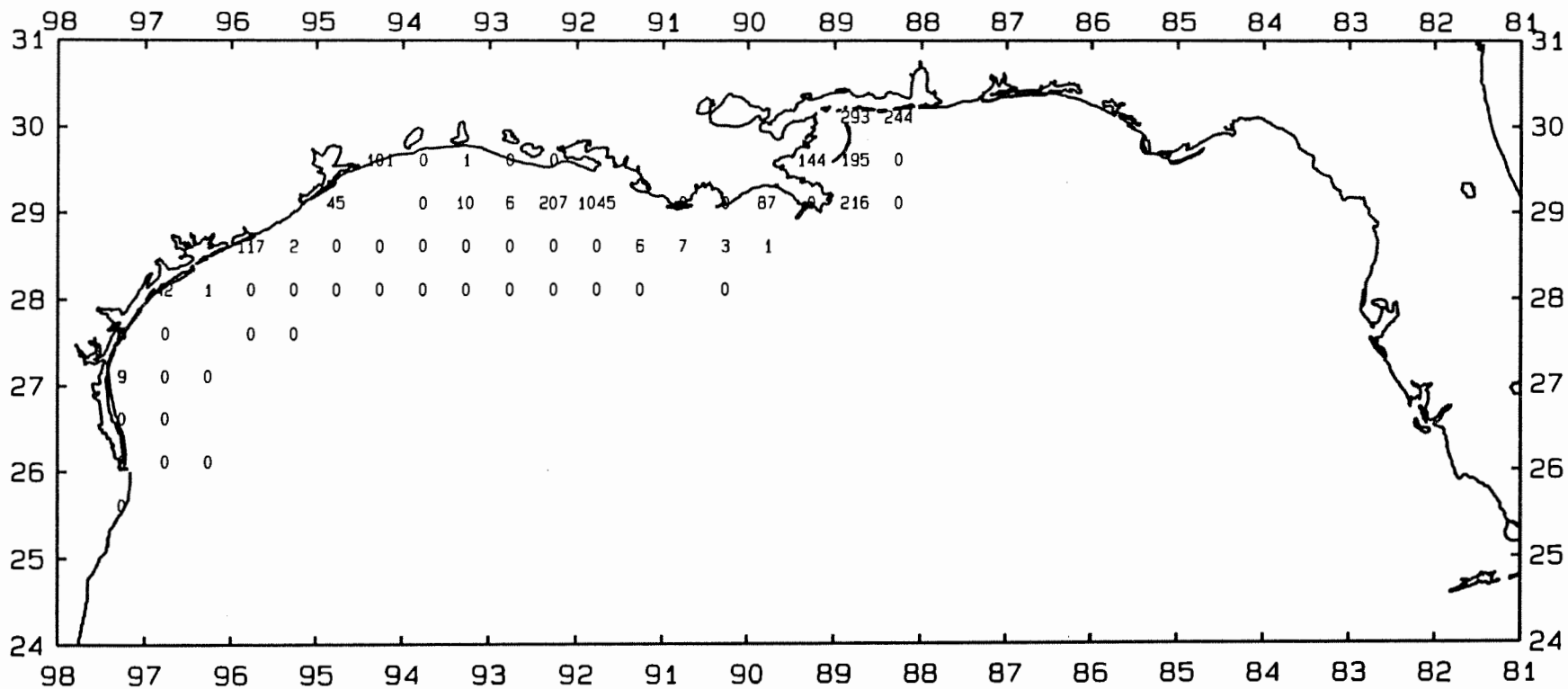


Figure 79. Striped anchovy, *Anchoa hepsetus*, number/hour for October-December 1989.

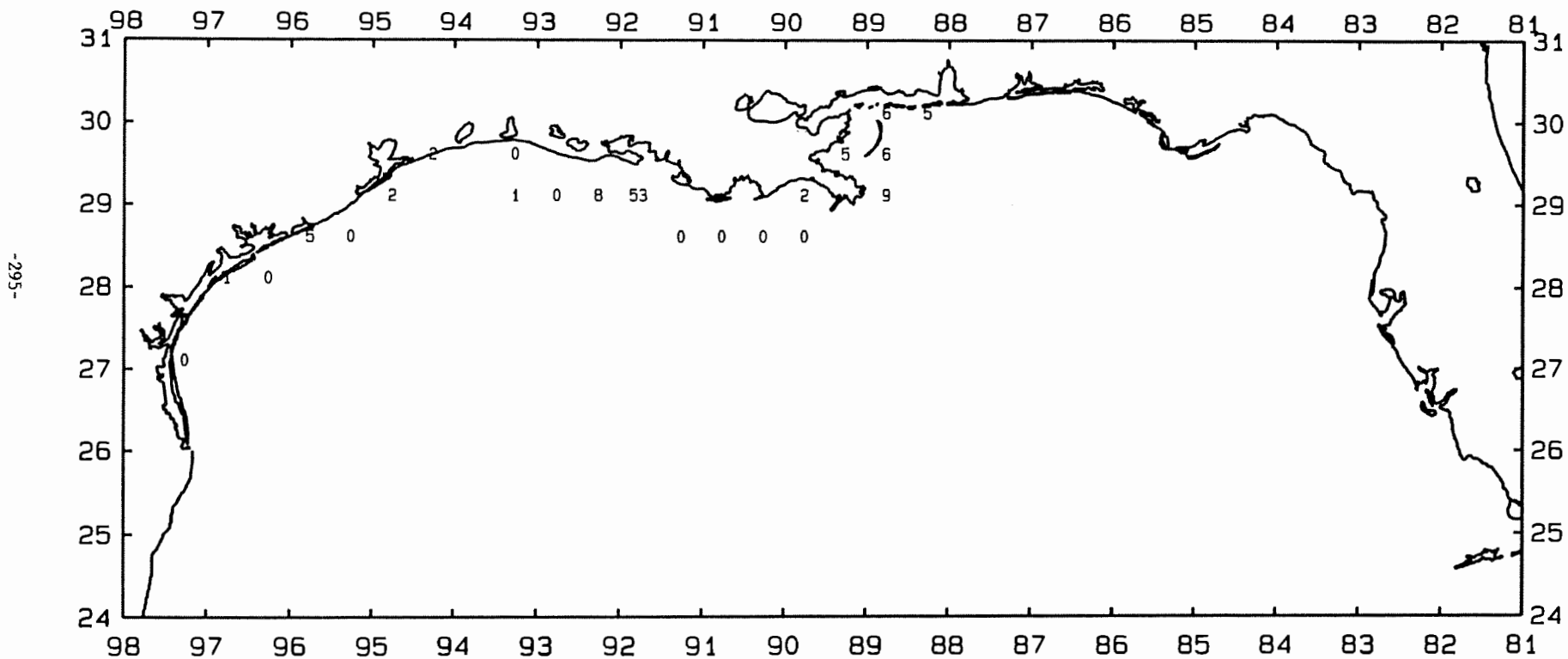


Figure 80. Striped anchovy, *Anchoa hepsetus*, lb/hour for October-December 1989.

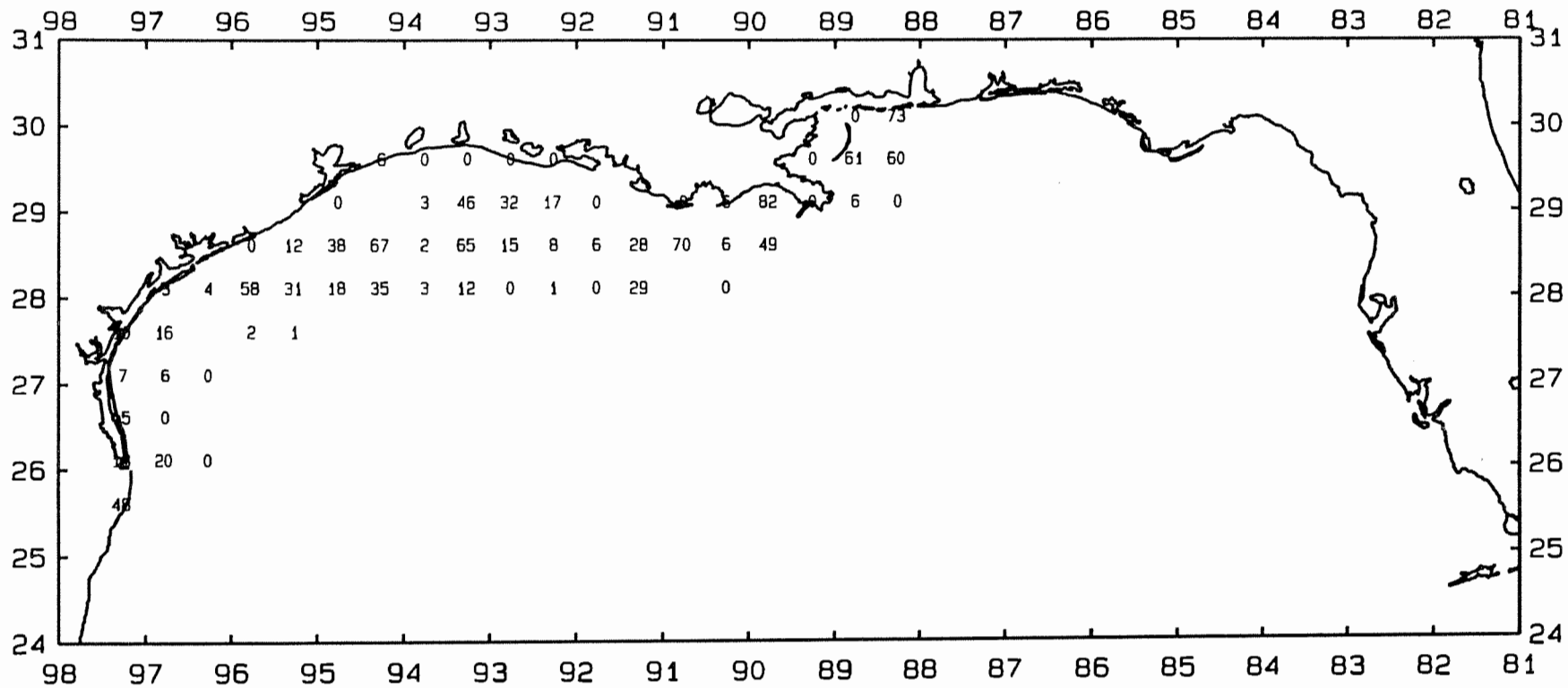


Figure 81. Red snapper, *Lutjanus campechanus*, number/hour for October-December 1989.

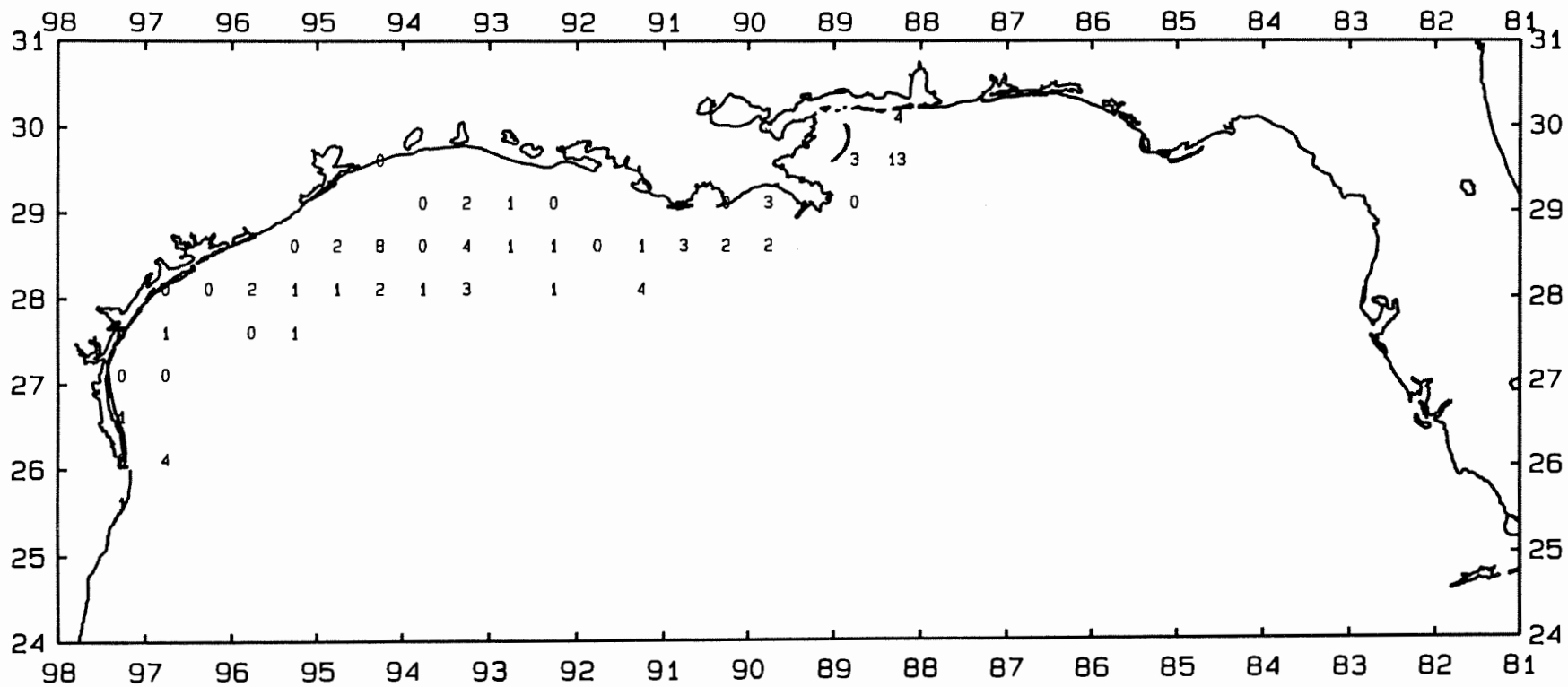


Figure 82. Red snapper, *Lutjanus campechanus*, lb/hour for October-December 1989.

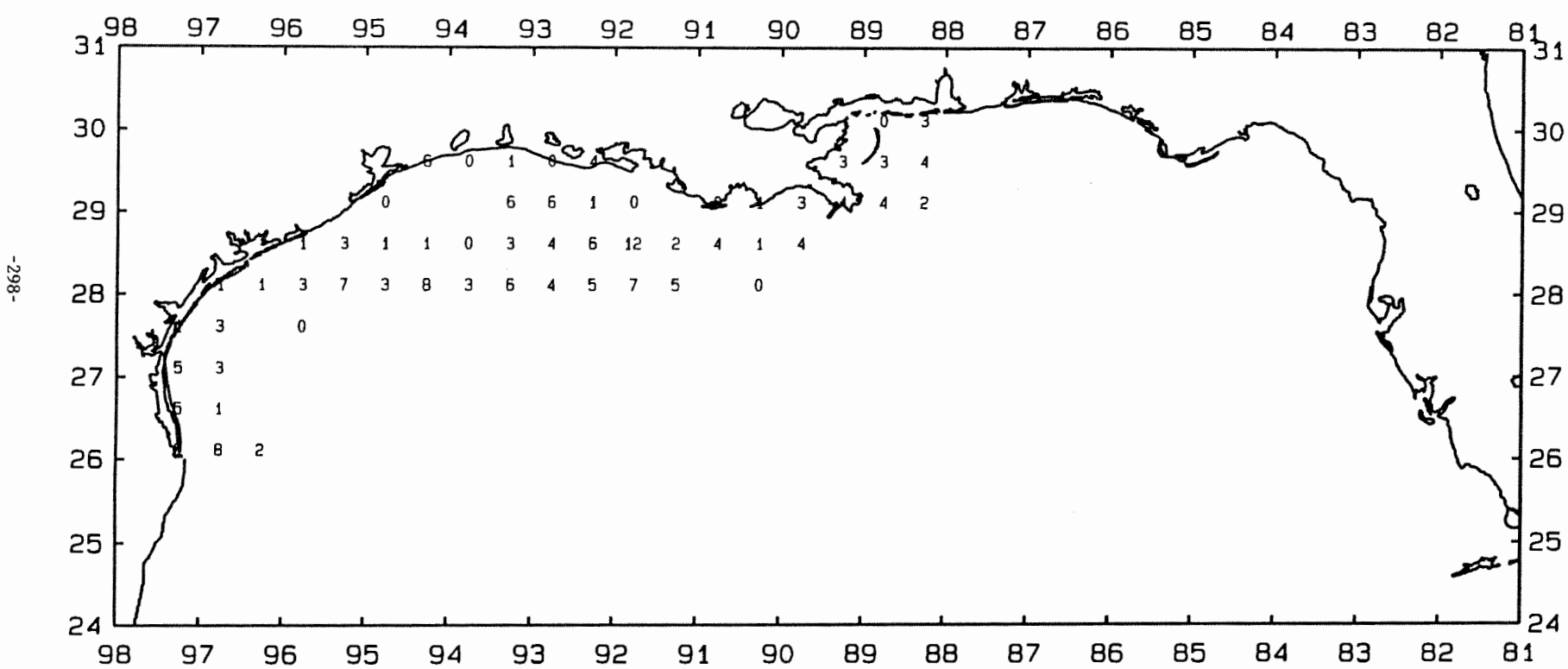


Figure 83. Brown shrimp, *Penaeus aztecus*, number/hour for October-December 1989.



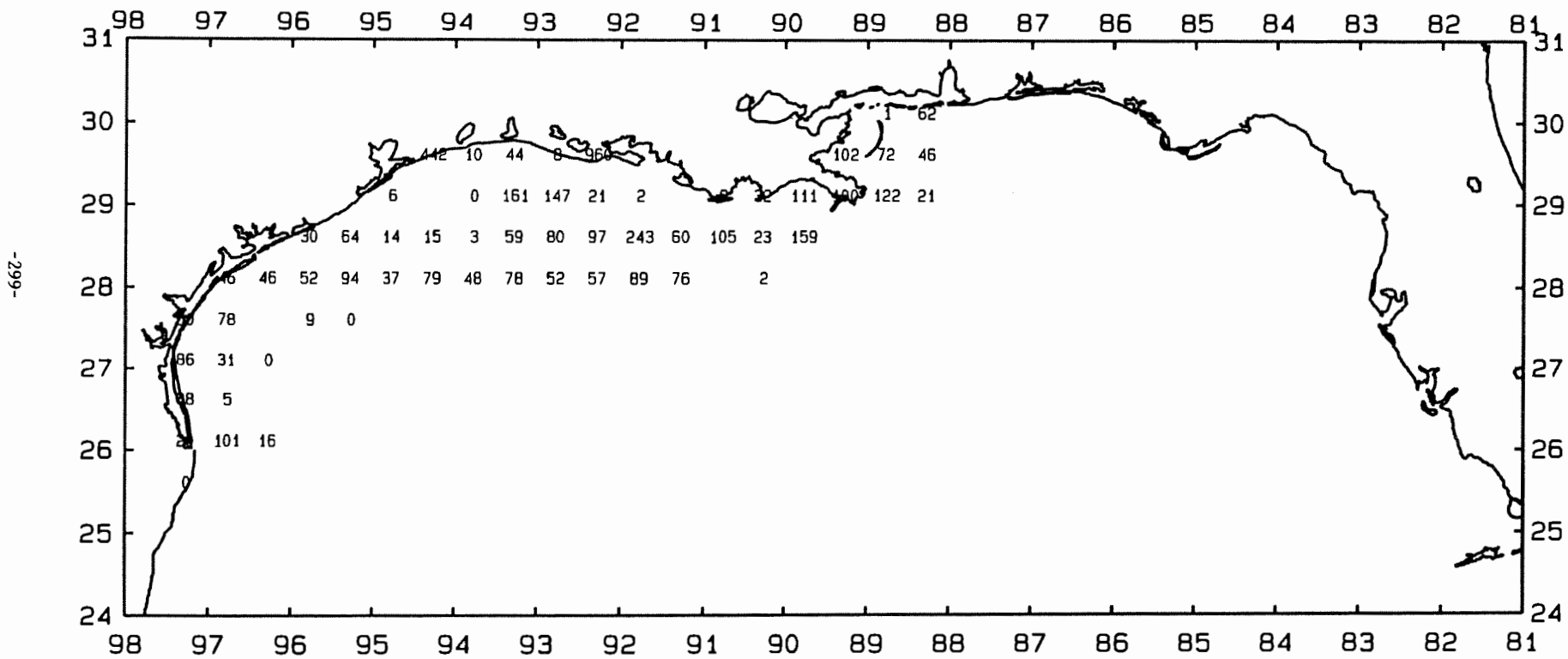


Figure 84. Brown shrimp, *Penaeus aztecus*, lb/hour for October-December 1989.

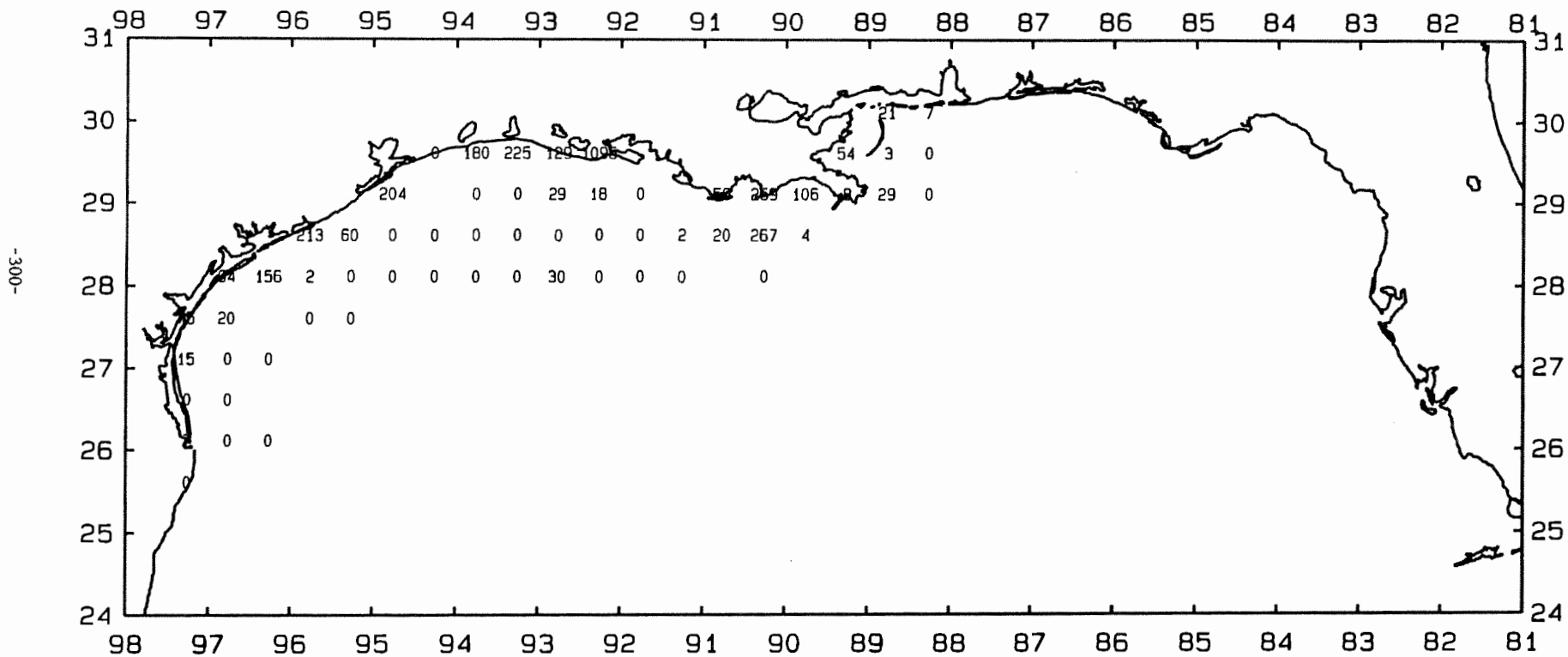


Figure 85. White shrimp, *Penaeus setiferus*, number/hour for October-December 1989.

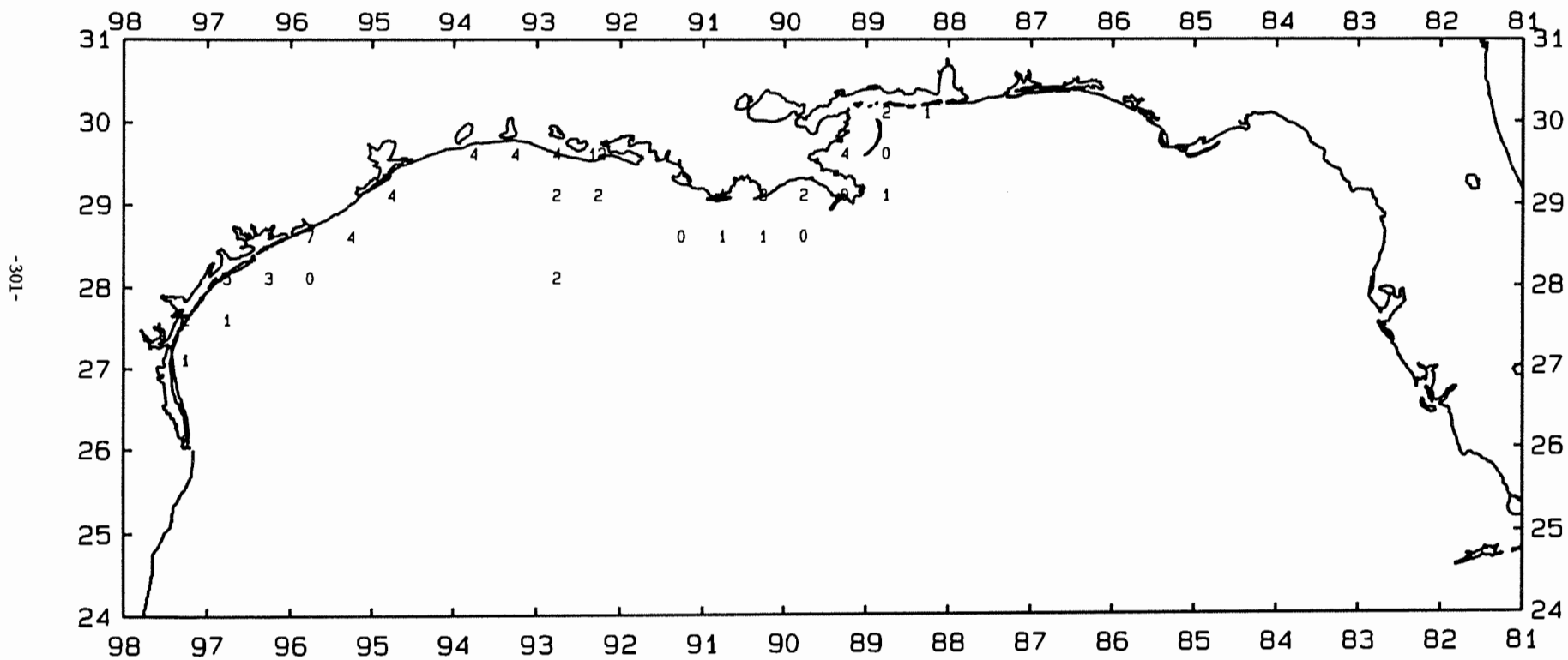


Figure 86. White shrimp, *Penaeus setiferus*, lb/hour for October-December 1989.

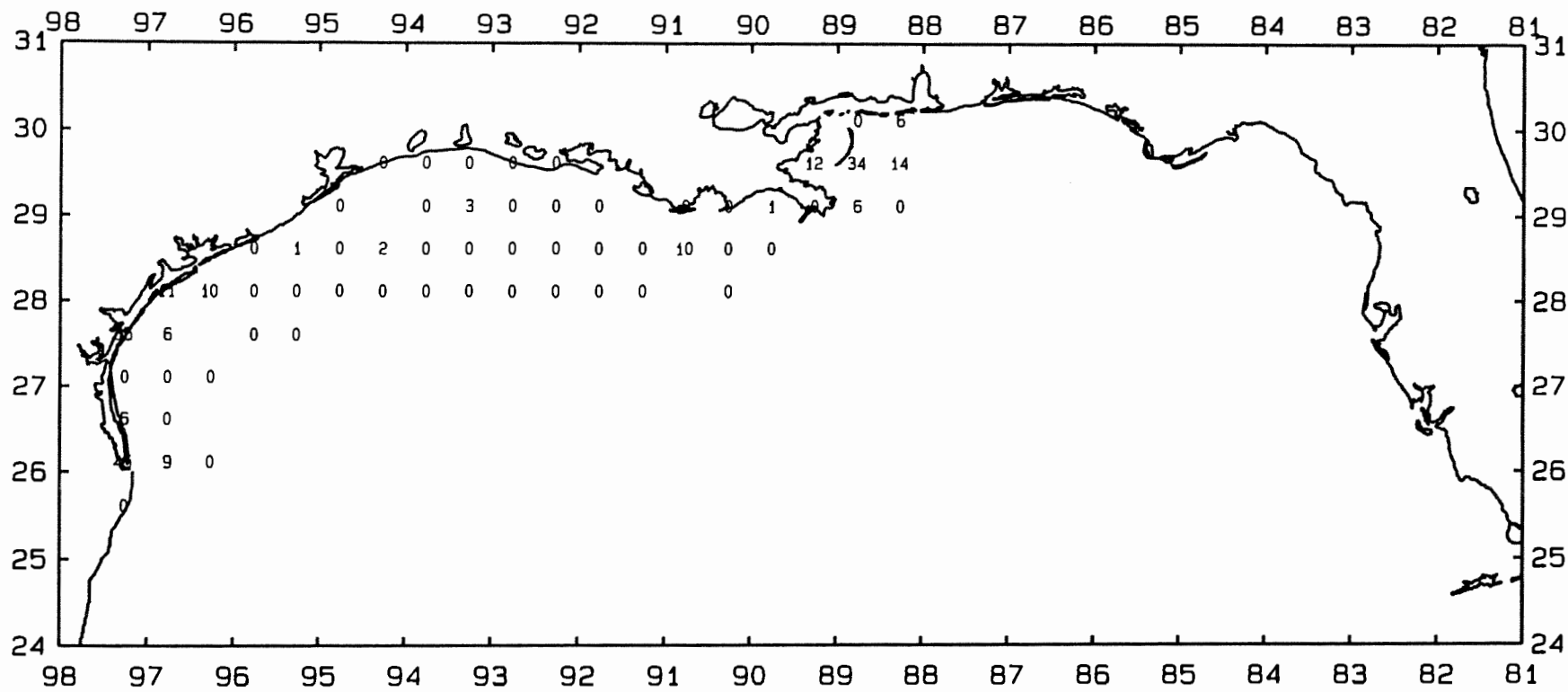


Figure 87. Pink shrimp, *Penaeus duorarum*, number/hour for October-December 1989.

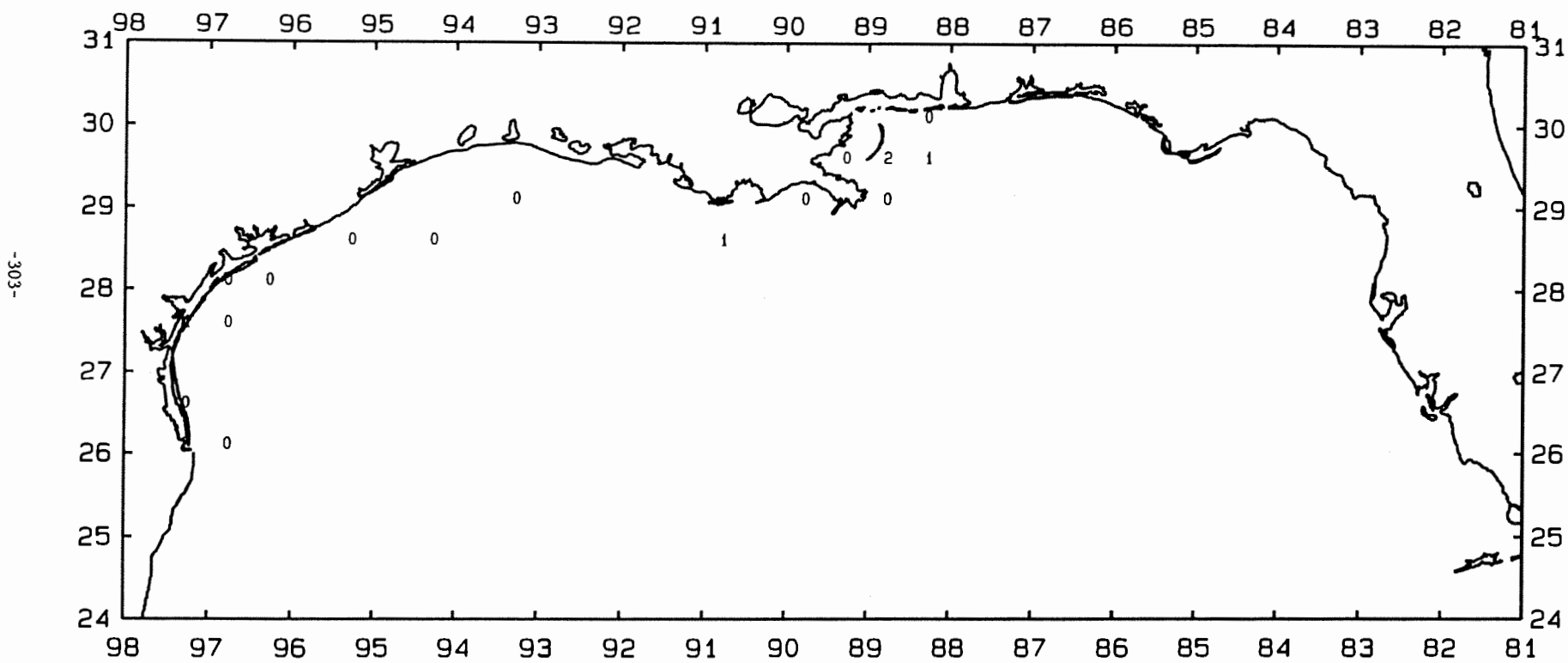


Figure 88. Pink shrimp, *Penaeus duorarum*, lb/hour for October-December 1989.

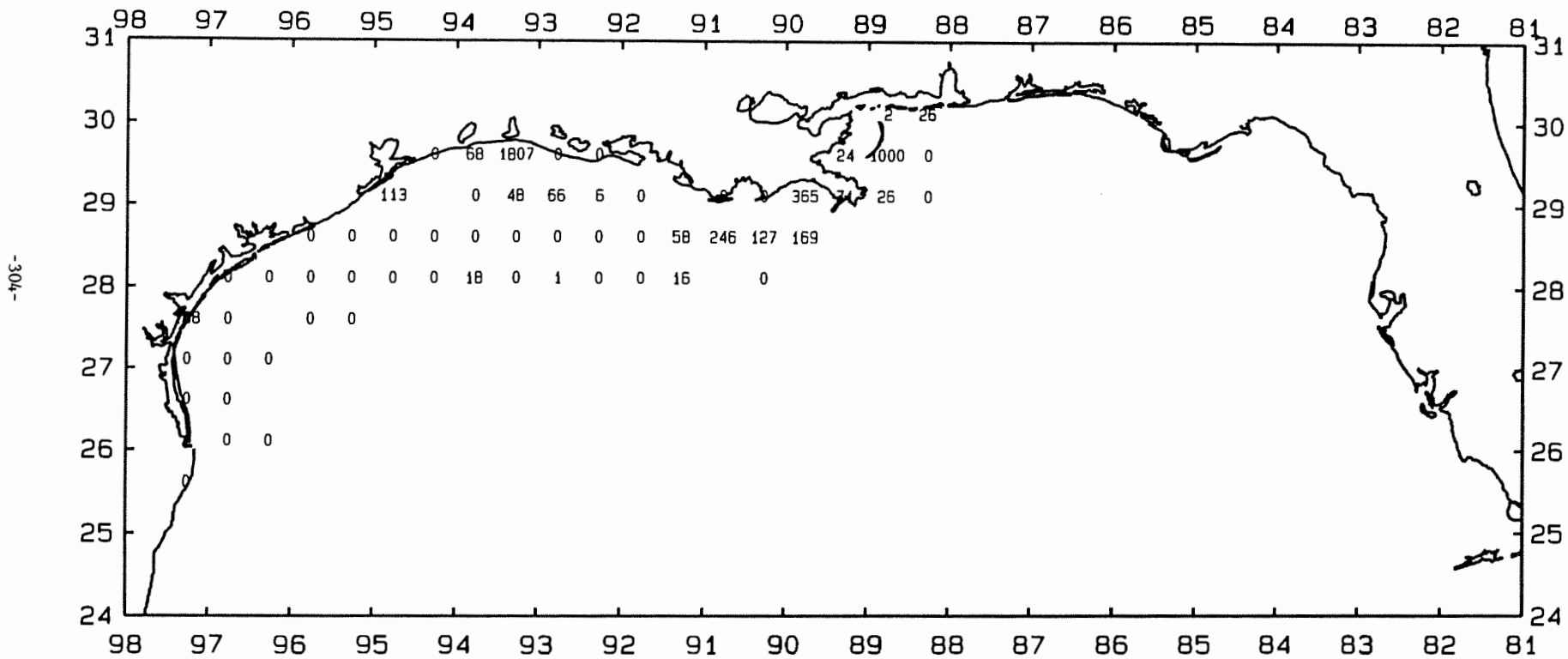


Figure 89. Roughback shrimp, *Trachypenaeus similis*, number/hour for October-December 1989.

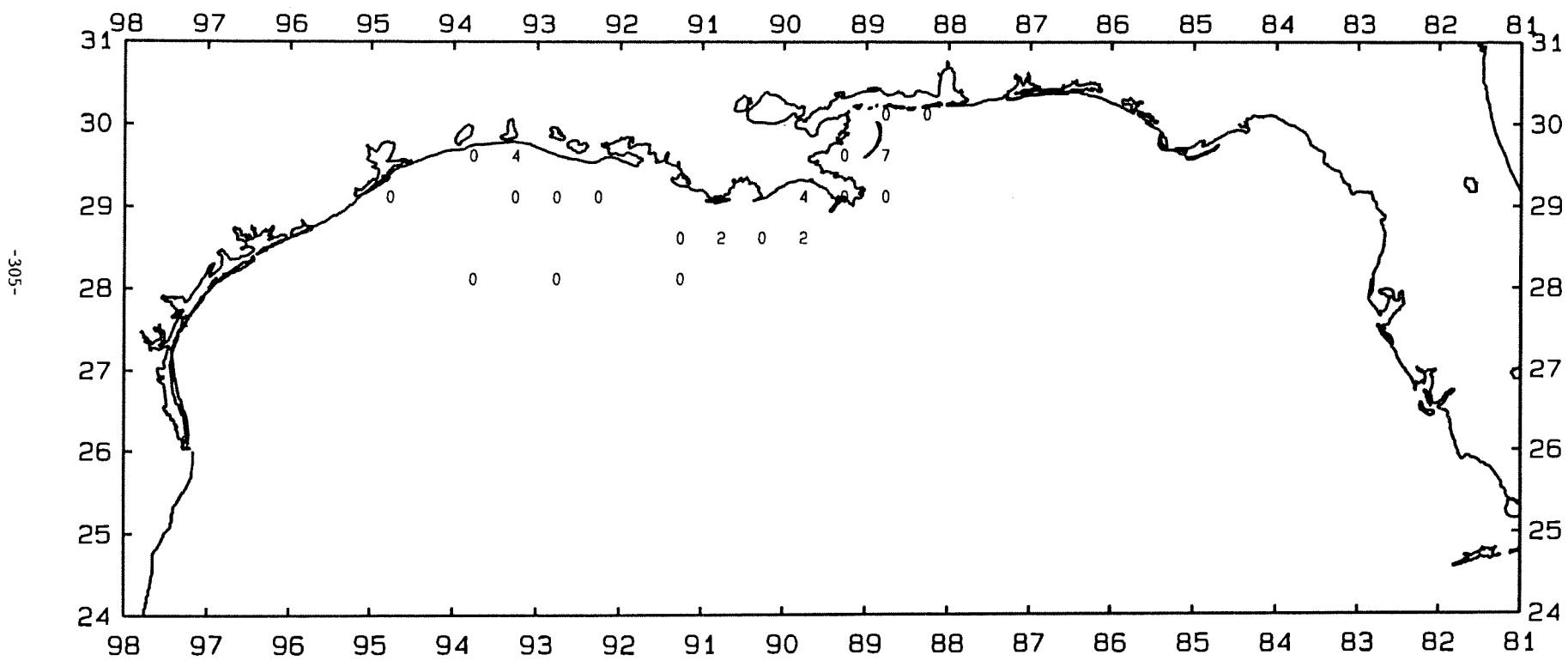


Figure 90. Roughback shrimp, *Trachypenaeus similis*, lb/hour for October-December 1989.

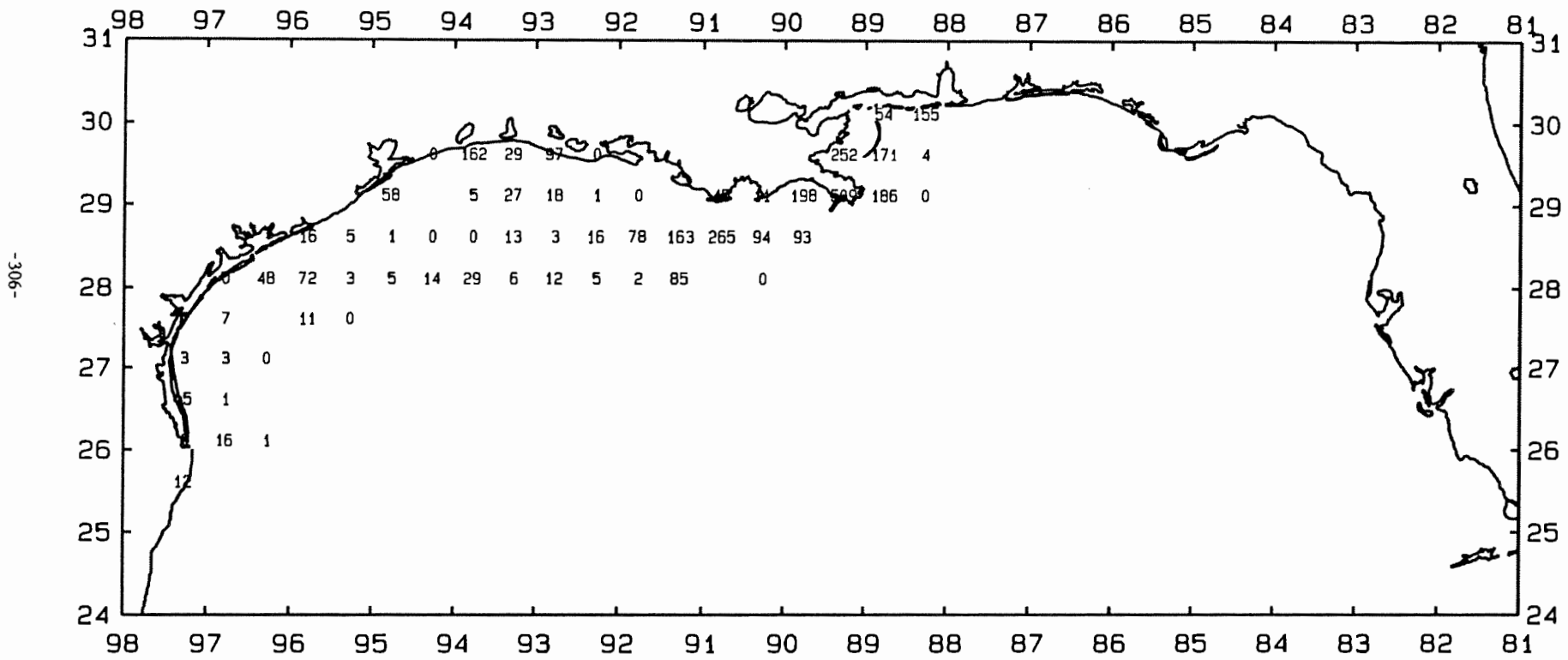


Figure 91. Lesser blue crab, *Callinectes similis*, number/hour for October-December 1989.



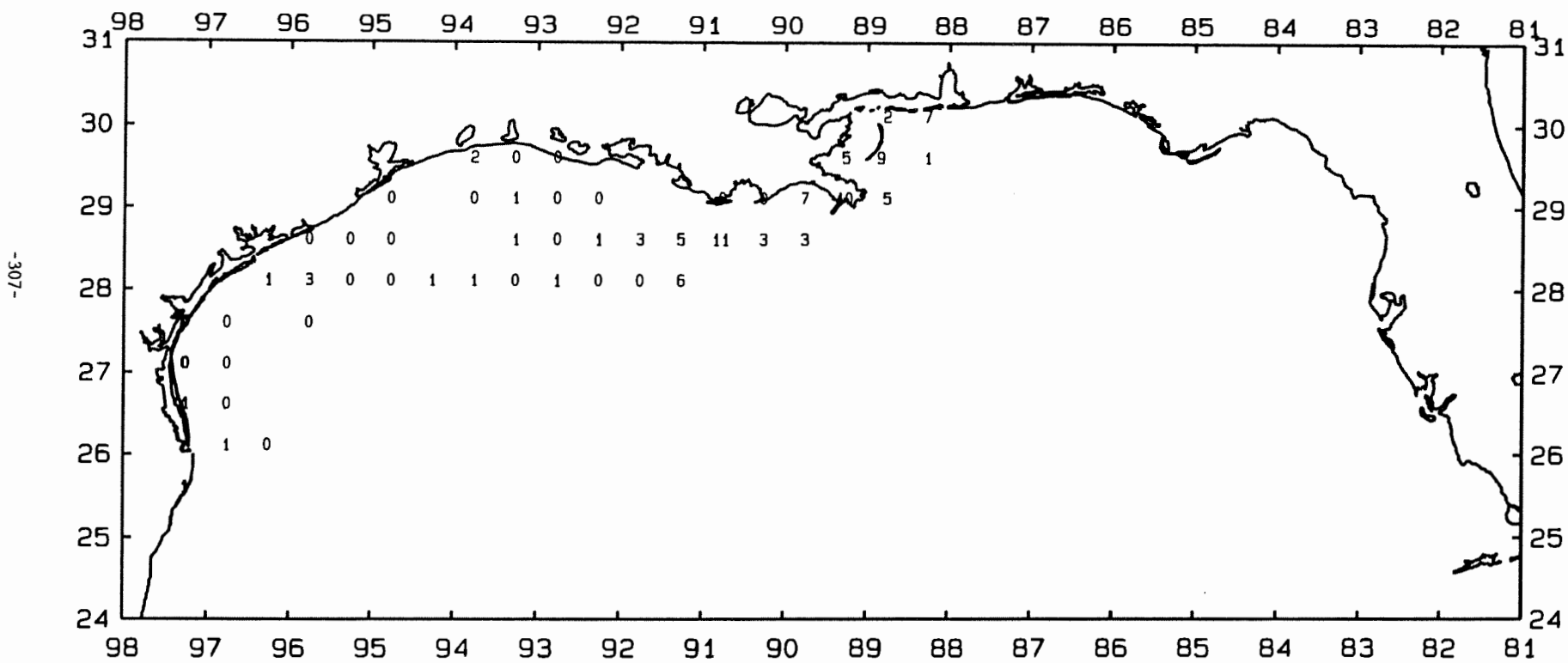


Figure 92. Lesser blue crab, *Callinectes similis*, lb/hour for October-December 1989.

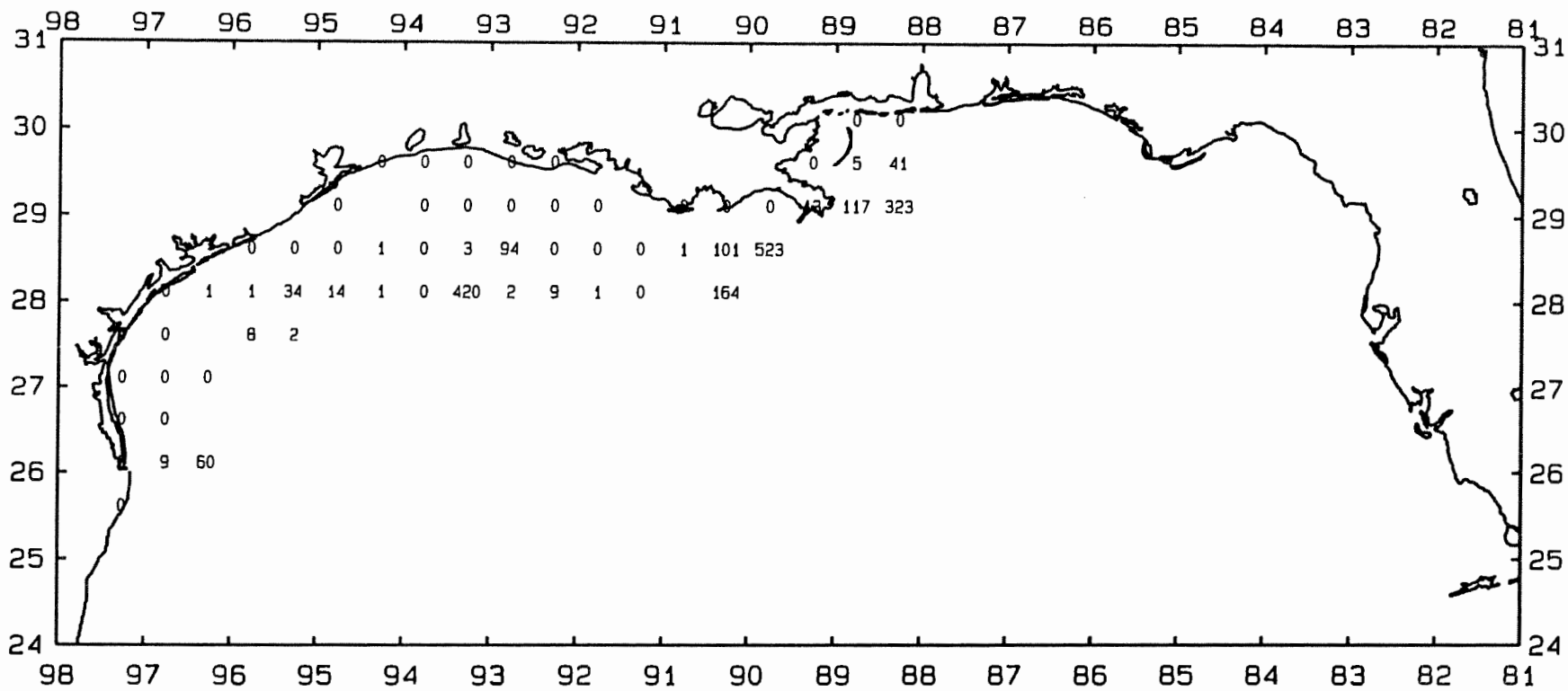


Figure 93. Longspine swimming crab, *Portunus spinicarpus*, number/hour for October-December 1989. . . . . 310

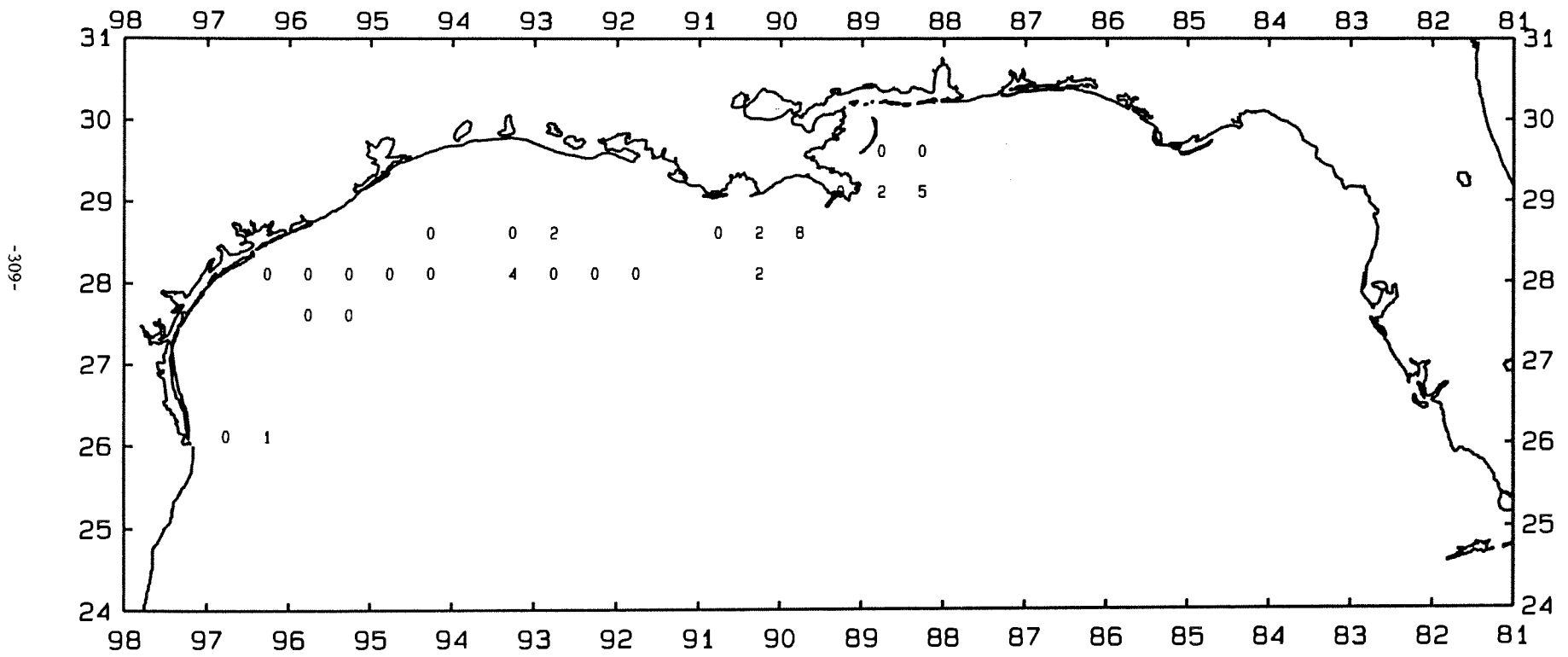


Figure 94. Longspine swimming crab, *Portunus spinicarpus*, lb/hour for October-December 1989.

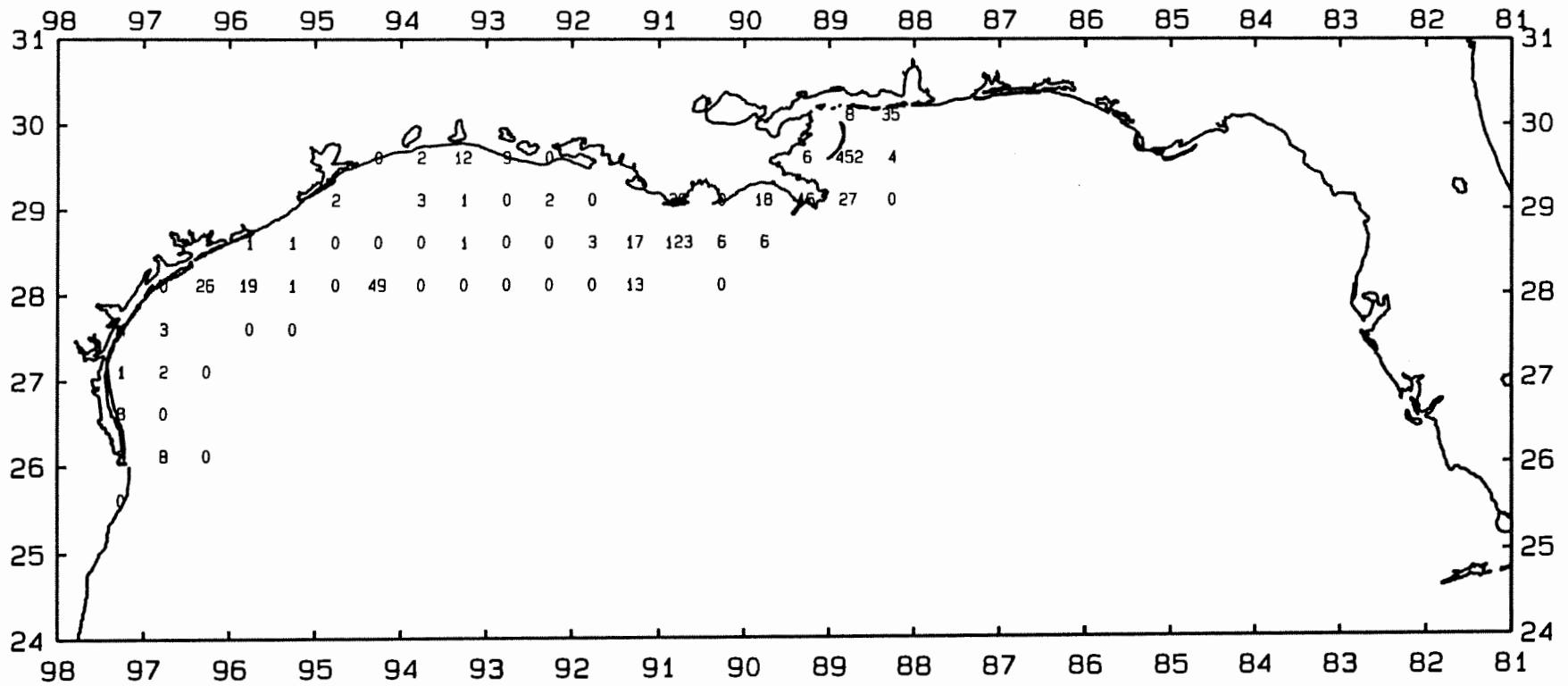


Figure 95. Lesser rock shrimp, *Sicyonia dorsalis*, number/hour for October-December 1989.



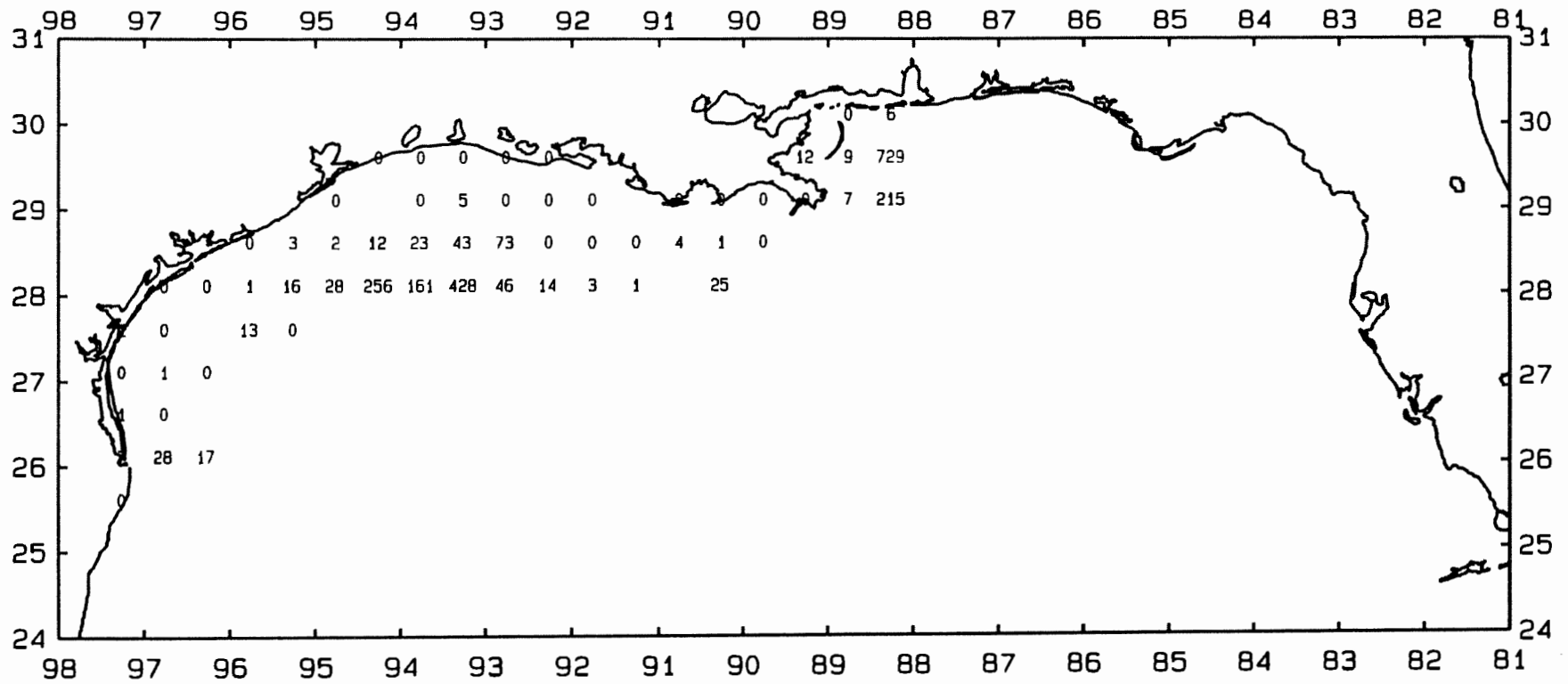


Figure 97. Roughneck shrimp, *Sicyonia brevirostris*, number/hour for October-December 1989.

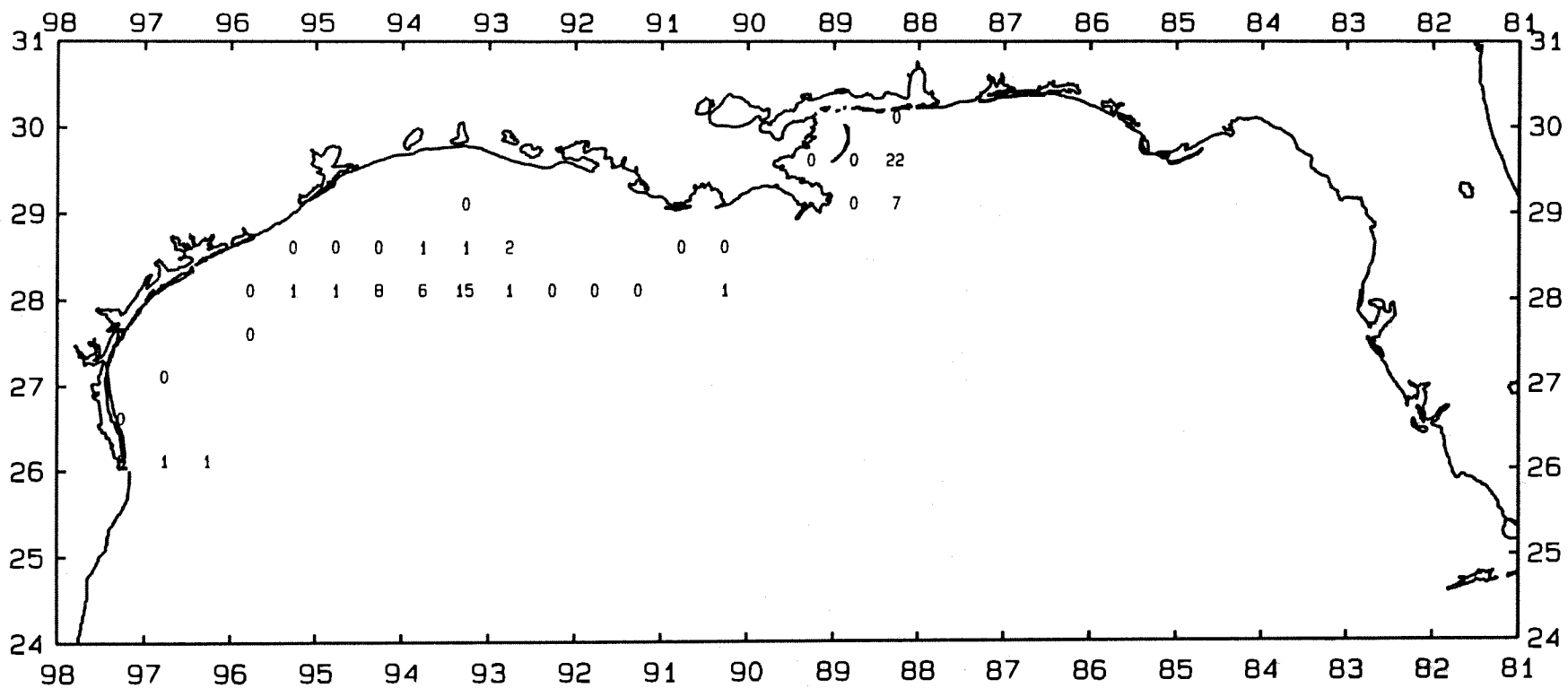


Figure 98. Roughneck shrimp, *Sicyonia brevirostris*, lb/hour for October-December 1989.

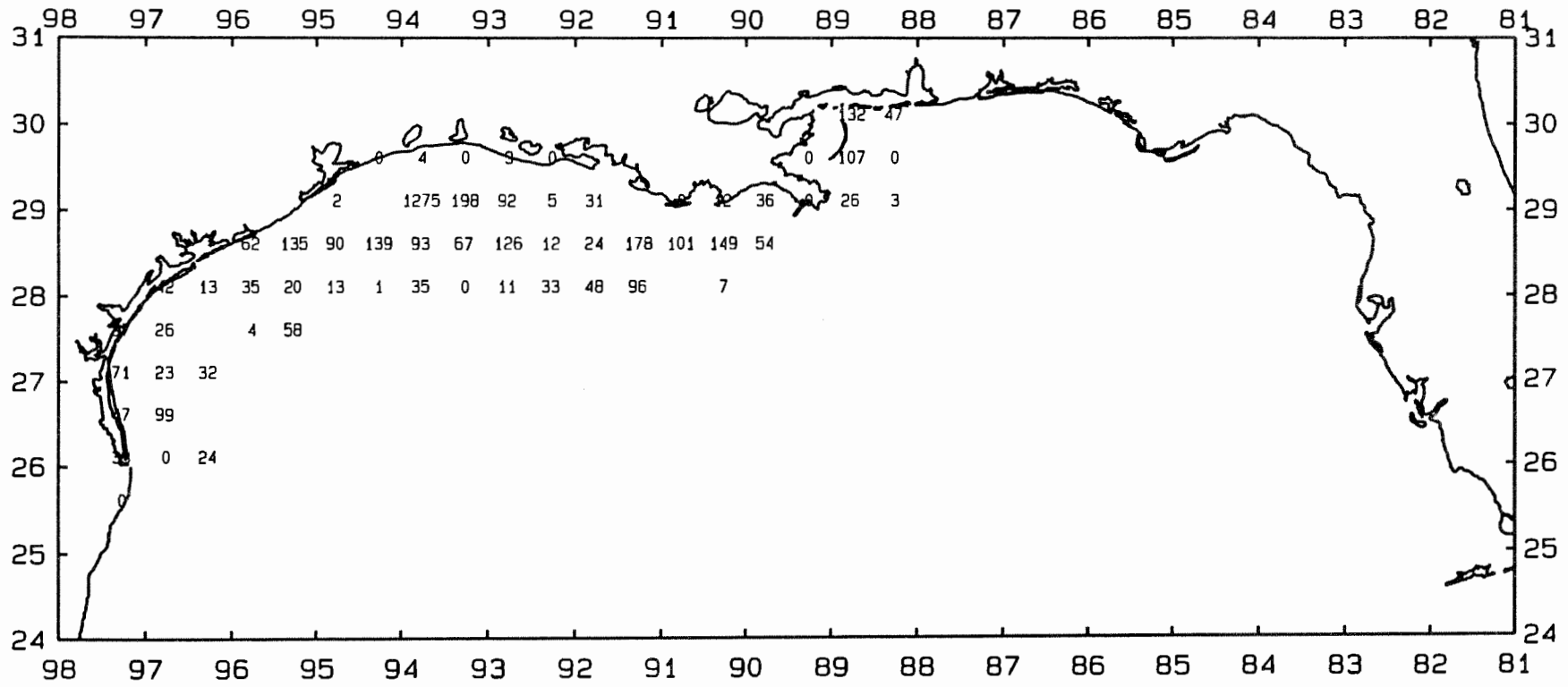


Figure 99. Longfin squid, *Loligo pealeii*, number/hour for October-December 1989.



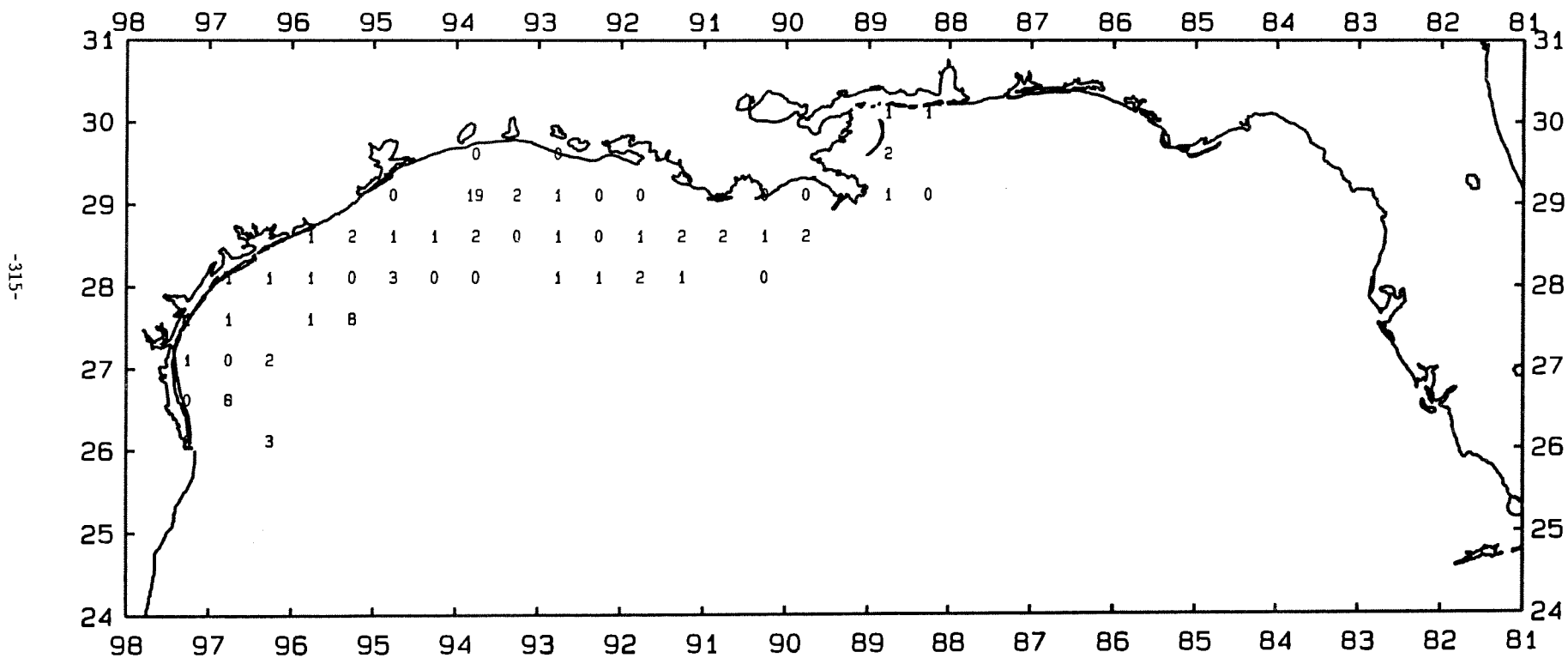


Figure 100. Longfin squid, *Loligo pealeii*, lb/hour for October-December 1989.



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