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Alabama House of Representatives  
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Grand Bay, AL 36541

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Bon Secour, AL 36511

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Florida Dept. of Natural Resources  
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Tallahassee, FL 32303

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Louisiana Department of  
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Ronald R. Lukens  
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Richard L. Leard

Lucia B. Hourihan  
Eileen M. Benton  
Nancy K. Marcellus  
Cynthia B. Dickens

# SEAMAP ENVIRONMENTAL AND BIOLOGICAL ATLAS OF THE GULF OF MEXICO, 1986

## Edited by

**Nathaniel Sanders, Jr.**

*National Oceanic and Atmospheric Administration  
National Marine Fisheries Service  
Pascagoula, Mississippi*

**Tom Van Devender**

*Gulf States Marine Fisheries Commission  
Ocean Springs, Mississippi*

**Perry A. Thompson**

*National Oceanic and Atmospheric Administration  
National Marine Fisheries Service  
Pascagoula, Mississippi*

## Manuscript Design and Layout

**Eileen M. Benton**

*Gulf States Marine Fisheries Commission  
Ocean Springs, Mississippi*

**Lucia B. Hourihan**

*Gulf States Marine Fisheries Commission  
Ocean Springs, Mississippi*

## GULF STATES MARINE FISHERIES COMMISSION

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*SEAMAP Coordinator  
Gulf States Marine Fisheries Commission  
Ocean Springs, Mississippi*

## SEAMAP DATA COORDINATING WORK GROUP

**Mr. Kenneth Savastano**

*National Space Technology Laboratories  
National Marine Fisheries Service  
NSTL Station, Mississippi*

**Mr. Philip Bowman**

*Louisiana Department of Wildlife  
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Baton Rouge, Louisiana*

**Dr. Warren Stuntz**

*National Oceanic and Atmospheric  
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National Marine Fisheries Service  
Pascagoula, Mississippi*

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*Gulf Coast Research Laboratory  
Biloxi, Mississippi*

**Mr. Walter Tatum**

*Alabama Department of Conservation  
and Natural Resources  
Gulf Shores, Alabama*

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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. A major SEAMAP objective is to provide the 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 (January 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 three assessment activities in 1982 - an April-May plankton survey, a June-July shrimp and bottomfish survey and environmental sampling in conjunction with the two surveys (see Stuntz et al. 1985); four assessment activities in 1983 - an April-May plankton survey, a June-July shrimp and bottomfish survey, a December plankton survey and environmental sampling in conjunction with these three surveys (see Thompson and Bane 1986a); five assessment activities in 1984 - an April-May plankton survey, a June-July shrimp and bottomfish survey, an August plankton survey for mackerel, a December plankton survey and environmental sampling in conjunction with these four surveys (see Thompson and Bane 1986b); and four assessment activities in 1985 - a June-July shrimp/bottomfish survey, a July-August squid/butterfish survey, a fall shrimp/groundfish survey and environmental sampling in conjunction with these three surveys (see Thompson et al. 1985).

In January 1986, 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, 1983, 1984 and 1985. This included the continuation of the squid/butterfish survey started in 1985, the resumption of the April-May offshore plankton survey and a fall plankton survey which was moved from August to September. Overall survey objectives in 1982 to 1985 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 (see Sherman et al. 1983). The basis for the trawl surveys which started with the Texas Closure (see Nichols 1982, 1984 and 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 fifth in a series of SEAMAP environmental and biological atlases presents such data, in a summarized form, collected during 1986 SEAMAP surveys. The area covered in the Gulf of Mexico for all SEAMAP survey activities during 1986 is shown in Figure 1.

## MATERIALS AND METHODS

Methodology for the 1986 SEAMAP surveys is similar to that of the 1982 through 1985 surveys with the exception of the Squid/Butterfish and Fall Shrimp/Groundfish surveys. Sampling was conducted within the U.S. Exclusive Economic Zone (EEZ) and state territorial waters.

Plankton abundance and distribution were assessed by five surveys in the Gulf of Mexico. Offshore plankton/environmental data stations were sampled in April-May (Figure 2). Inshore and offshore plankton were sampled in conjunction with trawl surveys during the May-June Squid/Butterfish Survey (Figure 3), and the June-July Summer Shrimp/Bottomfish Survey (Figure 4). Inshore and offshore plankton/environmental data stations were sampled during the September Plankton Survey (Figure 5). Finally inshore and offshore plankton stations were sampled during the Fall Shrimp/Bottomfish Trawl Survey (Figure 6). In some cases during the trawl surveys plankton stations were independent of trawl stations.

Vessels that participated in only collecting plankton/environmental data during the April-May offshore plankton survey included the NOAA Ship OREGON II (April 22-May 22) and the Florida vessel HERNAN CORTEZ II (May 4-6).

The vessel that participated in the May-June Squid/Butterfish Trawl Survey and collected plankton/environmental data was the GCRL vessel TOMMY MUNRO (May 13-30). The NOAA Ship CHAPMAN participated in the survey (May 6-June 3) but did not collect plankton for SEAMAP.

Vessels that participated in the June-July Shrimp/Bottomfish Trawl Survey and concurrently sampled plankton/environmental data included the Louisiana vessel PELICAN (May 5-8 and June 16-19); GCRL vessel TOMMY MUNRO (June 10-12 and July 15-18) an Alabama vessel (June 10-17); NOAA Ship OREGON II (June 10-July 18) and Louisiana small inshore vessels (June 11-19). The TPWD vessels ARANSAS BAY, MATAGORDA BAY, LAGUNA MADRE and GALVESTON BAY (June 22-25) took no plankton samples in conjunction with their summer survey.

Vessels that participated in only collecting plankton/environmental data during the September plankton survey included the NOAA Ship OREGON II (September 4-14); Florida vessel HERNAN CORTEZ II (September 6-13); GCRL vessel TOMMY MUNRO (September 8-10); NOAA Ship CHAPMAN (September 13-22) and an Alabama vessel (September 18-22).

Finally vessels that participated in the October-December Shrimp/Groundfish Trawl Survey and concurrently sampled plankton/environmental data included the NOAA Ship OREGON II (October 23-November 23); Louisiana vessel PELICAN (October 27-30 and December 1-4); an Alabama vessel (October 28); GCRL vessel TOMMY MUNRO (October 29-31) and Louisiana inshore vessels (November 5-6). The TPWD vessels ARANSAS BAY, MATAGORDA BAY, LAGUNA MADRE and GALVESTON BAY (November 17-20) did not sample plankton in conjunction with their fall survey.

All station locations and dates of sampling by vessel and by survey are listed in Table 1.

### 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 to this were: the Squid/Butterfish Survey and LDWF vessels, which collected samples at the end of a trawl station; the September Plankton Survey (Figure 5) which sampled intensely around a major pass off Alabama and Texas; and the summer and fall trawl surveys which sampled plankton stations opportunistically due to time constraints of trawling (Figures 4 and 6).

Ichthyoplankton samples were collected during the Squid/Butterfish Survey by the TOMMY MUNRO. The CHAPMAN did collect neuston samples for NMFS Panama City Laboratory, but these were not considered SEAMAP samples.

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, an oblique bongo tow and surface neuston tow were made. In deep water (more than 95 m) a standard oblique bongo 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. In shallow water (less than 95 m), tows were modified to extend tow times to a minimum of 10 minutes in clear water, or 5 minutes in turbid water, in order to filter enough water for quantitative purposes. This was accomplished by reducing wire payout and retrieval rates, although during each tow, payout and retrieval rates were held constant so that the water column was sampled uniformly. For all bongo tows, a 45°-wire angle was maintained. 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 24-hr period, the bongo and neuston samples were transferred to 95% ethyl alcohol for final preservation, and subsequently shipped to the NMFS Miami Laboratory. At that facility, the samples were curated and the sampling data computerized. The right bongo sample and the neuston sample from each station were transshipped to the Polish Sorting Center (PSC) in Szczecin, Poland, for sorting and identification. All ichthyoplankton components (eggs and larvae) were removed from each sample and the fish larvae identified to the lowest feasible taxon (families in most cases).

All sorted ichthyoplankton specimens 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 1986 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 in Miami 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 were sent to the SEAMAP Invertebrate Plankton Archiving Center, managed in conjunction with GCRL, for storage and use by researchers.

## Environmental Surveys

Environmental data stations for the Squid/Butterfish Survey are shown in Figure 7, Summer Shrimp/Bottomfish Survey in Figure 8, and Fall Shrimp/Groundfish Survey in Figure 9. Environmental sampling locations are summarized in Figures 7, 8, and 9 by 10-minute squares. During the Squid/Butterfish Survey a hydrocast was made at the beginning of each station. Environmental data was also collected in conjunction with each plankton station for the April-May and September plankton surveys.

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

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.

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

Wave height: Estimated visually in meters.

Cloud cover: Estimated visually in percent cloud cover.

Barometric pressure: Recorded in millibars.

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.

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<sub>3</sub> 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). Approximately 10 percent 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.

## 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

### **Squid/Butterfish Survey**

The May-June Squid/Butterfish sampling was conducted from the Florida shelf south of Panama City, Florida to the south Texas shelf northeast of Brownsville, Texas (Figure 10). A random sampling design was used to select stations within seven depth strata (20-39, 40-59, 60-79, 80-99, 100-119, 120-139, 140-170 fathoms) for five subareas. Additional stations within strata and subareas were selected using optimal allocation schemes based on catch information from prior squid/butterfish cruises.

Both the CHAPMAN and TOMMY MUNRO used a 80-ft net. The 80-ft net was a two-seam fish trawl. The net was spread with a pair of 3m<sup>2</sup> china steel "V" doors towed from the stern of each vessel. Warp length was generally 3:1 except at the shallowest stations where a 4:1 ratio was used. Towing speed was 3 knots.

Trawl tows were made during daylight hours (0600 to 2000 hrs) along the selected depth contours for each station. Normal tow time was 30 minutes in duration.

On both the CHAPMAN and the TOMMY MUNRO species of fish and invertebrates were identified, enumerated, weighed and measured.

### **Summer Shrimp/Bottomfish Survey**

Shrimp and bottomfish sampling was carried out between June and July from Perdido, Florida to Brownsville, Texas (Figure 11). Trawl stations are summarized in Figure 11 by 10-minute squares. Trawl stations made with a standard 40-ft SEAMAP net covered NMFS shrimp statistical zones 10 through 21 (Figure 12), to a depth of 50 fm.

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 20-21. Sample sites encompassed a 1 fm depth strata between 5 and 30 fm and a 5-fm depth strata between 30 and 50 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 30 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 30 minutes. All offshore stations were sampled at night using a 40-ft shrimp trawl (Gutherz et al. 1985). The Texas and Louisiana vessels did not cover a complete depth stratum on several stations, but did make one maximum 30-minute tow for that particular stratum.

The LDWF used small vessels (less than 30 ft) to sample seven study areas in NMFS statistical zones 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 1-fm increment at depths from 1-5 fm. Tows were made perpendicularly to shore.

All Penaeus spp. shrimp were separated from the trawl catch at each station. Total count and weight by species were recorded for pooled trawls within 1-fm strata. A sample of up to 200 shrimp of each species from every trawl tow 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 selected species other than commercial shrimp were also recorded.

### **Fall Shrimp/Groundfish Survey**

The Fall Shrimp/Groundfish sampling was conducted between October and December from off Apalachicola Bay, Florida to Brownsville, Texas (Figure 13). Trawl stations are summarized in Figure 13 by 10-minute squares.

During the fall survey trawl stations were made with the standard 40-ft SEAMAP net and covered NMFS shrimp statistical zones 9 through 21 (Figure 12).

All tows with the 40-ft net were 15 minutes in duration paralleled to the depth strata out to 100 fm. Sample sites were randomly selected to include an equal number of day and night stations.

Catch rates on all the vessels sampling were treated in the same manner as the Squid/Butterfish and Summer Shrimp/Bottomfish surveys.

## **RESULTS**

### **Plankton Surveys**

Identified ichthyoplankton samples taken during 1986 surveys were returned from the PSC to the SEAMAP Archiving Center in February 1990. The data will be verified and incorporated into the SEAMAP data system.

Plankton stations for the April-May offshore plankton survey in conjunction with environmental stations are shown in Figure 2, for May-June Squid/Butterfish Figure 3, for June-July Shrimp/Bottomfish in Figure 4, September plankton survey stations in conjunction with environmental stations in Figure 5 and October-December Fall Shrimp/Groundfish in Figure 6.

### **Environmental Surveys**

As detailed previously, environmental data are collected in conjunction with plankton (Figures 2 and 5) and trawl surveys (Figures 3, 4 and 6). A complete listing of selected environmental parameters for all SEAMAP surveys is shown in Table 1. In Table 1 under statistical zone, the 99 codes are stations located outside the shrimp statistical zones.

During the Summer Shrimp/Bottomfish Survey, as in the 1985 survey, an extensive (more than 2,000 sq. mi.) area of hypoxia was found offshore Louisiana from Southwest Pass westward to Calcasieu Pass between 5 and 15 fm. Bottom oxygen levels of less than 2 parts per million were measured throughout this area.

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 April (Figure 14), May (Figure 15), June (Figure 16), July (Figure 17), August (Figure 18), September (Figure 19), October (Figure 20) and November (Figure 21).

## Squid/Butterfish Survey

The Squid/Butterfish Survey consisted predominately of biological trawl data (Figure 10), and environmental and plankton data. A species composition listing from the trawls is presented in Table 2, ranked in order of abundance within the categories of finfish, crustaceans and other invertebrates. The biological catch data is based on the 80-ft trawls used by the CHAPMAN and TOMMY MUNRO. As with the 1985 Atlas, catch data were divided into four geographical areas: Area 1 - 84°00'W-87°14'W (Table 3); Area 2 - 87°15'W-89°14'W (Table 4); Area 3 - 89°15'W-92°14'W (Table 5) and Area 4 - 92°15'W-97°00'W (Table 6). Tables 3-6 present the biological data from Table 2 of the eight most abundant finfish, six most abundant invertebrates and squid combined by depth stratum for each geographic area.

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

$$SEM = \frac{\sigma}{\sqrt{n}}$$

where  $\sigma$  is the population standard deviation  
and n is the number of samples.

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

## Summer Shrimp/Bottomfish Survey

The June-July Shrimp/Bottomfish Survey consisted primarily of biological trawl data (Figure 11), 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 the 16-ft trawls is presented in Table 8, 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, four most abundant non-Penaeus invertebrates and squid species, taken from Table 7 and 8, are displayed in plots of number/hour and lb/hour in Figures 22-59. Data for the biological plots were computed from both the 40-ft trawl data, 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 at least some of the species were taken are shown. No trawl stations were made by the state of Florida during this survey.

Tables 9a-20a present the biological data, from the 40-ft nets, of the eight most abundant fish, six most abundant invertebrates and squid within each NMFS statistical zone by depth stratum. Tables 9b-20b list the total catch and environmental data from the 40-ft nets within each NMFS statistical zone and depth stratum.

Tables 21a-26a 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. Tables 21b-26b present the total catch and environmental data from the 16-ft nets within the NMFS statistical zones listed above.

Catch rates for the survey were computed with the same equations used to compute the Squid/Butterfish Survey catch rates.

## Fall Shrimp/Groundfish Survey

The October-December Fall Shrimp/Groundfish Survey consisted of biological trawl data (Figure 13) and concomitant environmental and plankton data. A species composition listing from the 40-ft trawls is presented in Table 27, 20-ft trawls in Table 28 and 16-ft trawls in Table 29. The species list for Tables 27 to 29 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, four most abundant non-Penaeus invertebrates and squid species, taken from Tables 27 to 29 are displayed in plots of number/hour and lb/hour in Figures 60 to 97. Data for the biological plots were computed from the 40-ft trawl data, 20-ft trawl data, 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 at least some of the species were taken are shown. No trawl stations were made by the Florida vessel.

Tables 30a-43a present the biological data, from the 40-ft nets, of the eight most abundant fish, six most abundant invertebrates and squid species within each NMFS statistical zone (8 through 21), by depth stratum. Tables 30b-43b list the total catch and environmental data from the 40-ft nets by NMFS statistical zone (8 through 21) and depth interval.

Tables 44a-48a 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 each NMFS shrimp statistical zones 17 through 21. Tables 44b-48b present the total catch data for the TPWD 20-ft net and combined environmental data taken by the Texas vessels within each NMFS statistical zones listed above.

Tables 49a-53a 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 12, 13, 14, 16 and 17, respectively, inside 5 fm. Tables 49b-53b present the total catch and environmental data from the 16-ft nets for those NMFS statistical zones inside 5 fm listed above.

The catch data were calculated using the same equation that was used to compute catch rates for the Squid/Butterfish and Summer Shrimp/Bottomfish surveys.

### **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, in cooperation with NASA, installed a data communications terminal aboard the NOAA Ship OREGON II. The terminal was designed to operate through the ATS-3 satellite system located in geostationary orbit over the Pacific Ocean. This enabled personnel aboard the vessel to transmit daily catch rates and environmental data to the NMFS computer system through computer hardware, located at the NMFS Mississippi Laboratories in Bay St. Louis.

Summarized data were distributed weekly to over 100 individuals during the May-June Squid/Butterfish Survey and to over 300 individuals during the June-July Shrimp/Bottomfish Survey. The summarized data went to management agencies and industry members as computer plots and data listings. 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 intent to continue with SEAMAP long-term baseline data was disrupted by the loss of the April-May Gulf-wide plankton survey. In 1986 the SEAMAP Subcommittee renewed its commitment to urge continued support for the April-May baseline data for collection of plankton data. Also in 1986, the SEAMAP Subcommittee reinstated the September plankton survey for king mackerel and red drum eggs and larvae as a SEAMAP survey activity. 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.

Similar analyses and investigations are being undertaken with Summer Shrimp/Bottomfish Survey data and in the future with the Fall Shrimp/Groundfish Survey which will be an annual SEAMAP Survey activity. 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. There are, in addition, 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 surveys an area of very low dissolved bottom oxygen was found off Louisiana in the summers of 1982, 1985 and 1986. 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 to 1984 and in 1986 SEAMAP ichthyoplankton data were used to estimate spawning stock sizes of bluefin tuna in the Gulf of Mexico (McGowan and Richards 1986). 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.

SEAMAP data collected during the Summer 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 (Louisiana State University, 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 purpose of the closure is to increase the yield of shrimp and eliminate waste caused by discarding of undersized brown shrimp.

NMFS was charged with evaluating the effects of the Texas Closure and several reports were submitted to the Gulf Council in December 1986. These reports were subsequently summarized by Klima (1987), who reported on size and abundance of commercial shrimp collected by SEAMAP in 1986 describing the impact of the combined Texas territorial sea and EEZ closures on brown shrimp yields. After review of these data and other information, the Gulf Council voted to continue the Texas Closure in 1987.

## 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. Selected environmental parameters measured during 1986 SEAMAP surveys in the Gulf of Mexico, by individual vessel and survey.

NMFS APRIL-MAY OFFSHORE PLANKTON SURVEY																			
OREGON II																			
STA#	DATE		POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)		TEMPERATURE,C			SALINITY,PPT			CL, SUR	DISSOLVED OXYGEN			GEAR
	MM/DD/YY	TIME	LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX	SUR	SUR	MID	MAX	
43947	4/22/86	1731	2929.7	8800.5	11	46			22.0			35.2		0.449				PN	
43948	4/22/86	2111	2900.0	8759.9	11	1464	100	200	21.4	20.2	16.9	36.3	36.2	36.6	0.040	8.0	7.7	5.0	PN
43949	4/23/86	0245	2829.5	8800.2	99	2195			22.0			36.5							PN
43950	4/23/86	0620	2800.0	8800.0	99	2469	100	200	22.1	20.4	15.2	36.3	36.7	36.3	0.075	7.1	6.0	5.7	PN
43951	4/23/86	1100	2800.0	8830.0	99	2013			22.8			36.4			0.061				PN
43952	4/23/86	1449	2800.2	8900.4	99	1280	100	200	22.7	20.1	15.3	36.5	36.4	36.2	0.037	7.3	5.8	4.7	PN
43953	4/23/86	1829	2800.2	8930.0	99	1280			23.0			36.4			0.064				PN
43954	4/23/86	2135	2800.0	9000.0	14	549	100	200	22.4	20.5	15.5	36.5	36.3	36.2	0.053	7.3	7.1	4.6	PN
43955	4/24/86	0136	2800.0	9030.2	14	304			22.0			36.6			0.069				PN
43956	4/24/86	0453	2800.0	9100.0	15	148	75	148	22.4	20.0	16.3	36.3	36.4	36.3	0.048	9.3	6.1	5.6	PN
43957	4/24/86	0855	2800.0	9129.7	15	152			22.0			35.8			0.107				PN
43958	4/24/86	1228	2800.1	9200.0	16	117	58	117	22.8	21.2	17.2	36.0	36.3	36.5	0.066	7.4	7.1	4.5	PN
43959	4/24/86	1649	2800.1	9230.0	16	106			23.0			35.7			0.056				PN
43960	4/24/86	2010	2800.0	9300.0	17	106	53	106	22.4	22.3	18.6	35.8	36.3	36.5	0.030	7.6	7.7	4.9	PN
43961	4/25/86	0243	2729.9	9330.0	99	540			24.0			36.4			0.053				PN
43962	4/25/86	0748	2700.0	9400.0	99	915	100	200	23.6	20.1	14.0	36.6	36.7	36.0	0.048	7.3	6.2	4.9	PN
43963	4/25/86	1259	2630.2	9400.1	99	1573			24.0			36.3			0.050				PN
43964	4/25/86	1715	2600.2	9400.0	99	2377	100	200	23.6	19.5	11.8	36.1	36.7	35.6	0.095	7.8	5.4	4.5	PN
43965	4/25/86	2222	2600.0	9330.2	99	2288			23.6			36.2			0.067				PN
43966	4/26/86	0156	2600.2	9300.0	99	2012	100	200	24.0	20.6	14.7	36.4	36.9	36.1	0.049	7.4	5.6	4.6	PN
43967	4/26/86	0628	2630.0	9300.0	99	1829			24.0			36.4			0.069				PN
43968	4/26/86	0953	2700.0	9300.0	99	1244	100	200	24.0	20.2	14.8	36.5	36.2	36.3	0.037	6.5	6.5	4.5	PN
43969	4/26/86	1434	2700.1	9330.0	99	1408			25.0			36.6			0.089				PN
43970	4/26/86	1750	2700.0	9200.0	99	1463	100	200	24.3	22.6	17.6	36.5	36.5	36.6	0.045	6.2	6.4	4.9	PN
43971	4/26/86	2227	2630.0	9200.0	99	1876			24.5			36.6			0.044				PN
43972	4/27/86	0341	2600.0	9200.0	99	2195	100	200	24.5	22.4	17.6	36.5	36.4	36.5	0.081	8.9	8.4	5.6	PN
43973	4/27/86	0802	2600.1	9130.1	99	2196			24.5			36.6			0.071				PN
43974	4/27/86	1120	2600.0	9100.0	99	2743	100	200	24.1	22.5	18.4	36.5	36.5	36.5	0.043	6.8	6.7	6.3	PN

Table 1 (cont'd.)

NMFS APRIL-MAY OFFSHORE PLANKTON SURVEY  
OREGON II

STA#	DATE MM/DD/YY	TIME	POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)		TEMPERATURE,C			SALINITY,PPT			CL, SUR	DISSOLVED OXYGEN			GEAR
			LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX		SUR	MID	MAX	
43975	4/27/86	1608	2630.0	9100.0	99	2100			25.0			36.5			0.063				PN
43976	4/27/86	1955	2700.0	9100.0	99	1739	100	200	23.8	22.1	16.3	36.5	36.6	36.3	0.045	7.6	7.7	5.1	PN
43977	4/27/86	2352	2700.0	9030.2	99	1647			23.0			36.6			0.050				PN
43978	4/28/86	0316	2700.2	9000.0	99	2268	100	200	23.3	21.2	15.5	36.4	36.6	36.3	0.053	7.3	5.7		PN
43979	4/28/86	0746	2630.0	9000.0	99	2834			24.0			36.6							PN
43980	4/28/86	1124	2600.0	9000.0	99	2907	100	200	23.7	22.0	13.8	36.7	36.4	36.0	0.050	7.6	7.4	4.8	PN
43981	4/28/86	1533	2600.0	8930.0	99	3292			24.5			36.5			0.064				PN
43982	4/28/86	1901	2600.0	8900.0	99	3109	100	200	24.1	19.8	15.0	36.5	36.7	36.3	0.055	7.3	5.2	4.6	PN
43983	4/28/86	2317	2629.8	8900.0	99	2873			23.5			36.4			0.068				PN
43984	4/29/86	0247	2700.1	8900.0	99	2268	100	200	23.4	20.5	16.1	36.4	36.3	36.5	0.053	7.6	7.1	4.8	PN
43985	4/29/86	0658	2700.0	8830.0	99	2408			23.0			36.3			0.043				PN
43986	4/29/86	1030	2700.0	8800.0	99	2745	100	200	22.9	20.7	16.1	36.6	36.5	36.6	0.053	7.4	7.4	5.5	PN
43987	4/29/86	1446	2630.0	8800.1	99	2701			25.0			36.7							PN
43988	4/29/86	1842	2600.0	8800.0	99	2963	100	200	24.2	17.4	14.1	36.6	36.6	36.1	0.071	7.2	5.6	5.2	PN
43989	4/29/86	2248	2600.0	8730.2	99	3148			24.5			36.4			0.040				PN
43990	4/30/86	0202	2600.2	8659.9	99	3182	100	200	25.5	18.8	14.2	36.5	36.7	36.3	0.045	7.0	5.5	5.0	PN
43991	4/30/86	0634	2630.0	8700.0	99	2717			26.0			36.3			0.071				PN
43992	4/30/86	1020	2700.0	8700.0	99	3020	100	200	22.9	20.1	15.4	36.5	36.6	36.3	0.045	6.7	5.2	4.8	PN
43993	4/30/86	1448	2730.0	8700.1	99	3072			25.5			36.7			0.080				PN
43994	4/30/86	1815	2800.0	8700.0	99	2926	100	200	23.6	20.2	16.1	35.4	36.3	36.4	0.087	6.7	6.4	4.8	PN
43995	4/30/86	2229	2830.1	8700.0	99	864			23.7			35.8			0.125				PN
43996	5/ 1/86	0200	2900.0	8659.9	99	695	100	200	22.4	19.9	15.4	35.8	36.4	36.1	0.089	6.8	6.4	6.2	PN
43997	5/ 1/86	0610	2900.0	8630.0	99	410			23.0			35.8			0.118				PN
43998	5/ 1/86	0929	2900.0	8600.0	8	238	100	200	22.6	20.4		35.6	36.3	36.0	0.145	7.0	6.8	5.0	PN
43999	5/ 1/86	1403	2830.0	8600.0	99	320			25.5			36.5			0.101				PN
44000	5/ 1/86	1741	2800.0	8600.0	99	986	100	200	24.9	19.6	14.9	36.4	36.3	36.0	0.055	6.9	6.3	5.1	PN
44001	5/ 1/86	2217	2730.3	8600.0	99	3221			24.5			36.5			0.052				PN
44002	5/ 2/86	0206	2700.0	8600.0	99	3237	100	200	25.0	17.7	13.8	36.4	36.4	35.9	0.053	6.2	4.3	4.3	PN



Table 1 (cont'd.)

NMFS APRIL-MAY OFFSHORE PLANKTON SURVEY  
OREGON II

STA#	DATE MM/DD/YY	TIME	POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)		TEMPERATURE,C			SALINITY,PPT			CL, SUR	DISSOLVED OXYGEN			GEAR
			LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX		SUR	MID	MAX	
44003	5/ 2/86	0626	2630.0	8600.0	99	3210			22.0			36.5		0.054				PN	
44004	5/ 2/86	1021	2600.2	8559.9	99	3203	100	200	27.2	20.3	16.4	36.2	36.4	36.2	0.077	6.1	5.6	4.1	PN
44005	5/ 2/86	1540	2530.0	8600.0	99	3219			28.5			36.6		0.112				PN	
44006	5/ 2/86	1934	2500.0	8600.0	99	3294	100	200	27.3	25.5	23.3	36.2	36.2	36.8		6.5	6.4	5.1	PN
44007	5/ 2/86	2322	2500.0	8530.2	99	3303			26.5			36.1		0.045				PN	
44008	5/ 3/86	0226	2500.0	8500.1	99	3347	100	200	26.9	25.3	22.5	36.2	36.1	36.8	0.059	6.4	6.4	5.0	PN
44009	5/ 3/86	0623	2430.0	8500.0	99	3397			23.0			36.1		0.051				PN	
44010	5/ 3/86	1002	2430.0	8430.0	99	3440	100	200	27.1	25.8	21.6	36.2	36.3	36.8	0.045	6.2	6.3	5.0	PN
44011	5/ 4/86	1646	2830.0	8530.0	8	251			24.0			36.3		0.053				PN	
44012	5/ 5/86	0222	2930.0	8630.7	9	210			23.0			35.9		0.118				PN	
44013	5/ 5/86	0712	3000.0	8700.0	10	74			23.0			35.7		0.125				PN	
44016	5/ 6/86	0654	2800.0	8830.0	99	2012			24.0			36.7		0.080				PN	
44017	5/ 6/86	1014	2800.0	8800.0	99	2562	100	200	24.0	20.4	16.8		36.2	36.1	0.054	8.1	7.6	5.1	PN
44018	5/ 6/86	1443	2821.4	8801.1	99	2213			25.0			36.7		0.098				PN	
44019	5/ 6/86	1603	2830.0	8800.7	99	2213			25.5			36.7		0.039				PN	
44020	5/ 6/86	1933	2900.0	8800.0	11	1464	100	200	23.3	18.3	14.6	35.7	36.3	36.0	0.134	7.6	4.9	4.5	PN
44021	5/ 6/86	2325	2929.8	8800.0	11	46			24.0			34.9		0.193				PN	
44022	5/ 9/86	0856	2800.1	8900.0	99	1336	100	200	24.7	20.2	16.4	36.6	36.3	36.6	0.116				PN
44023	5/ 9/86	1333	2800.1	8929.9	99	1024			27.0			36.7		0.116				PN	
44024	5/ 9/86	1647	2800.0	9000.0	14	563	100	200	25.4	20.2	15.6	36.5	36.2	36.6	0.230				PN
44025	5/ 9/86	2052	2800.0	9029.8	14	293			25.0			36.7		0.112				PN	
44026	5/10/86	0004	2759.9	9059.9	15	153	71	153	24.2	21.5	18.0	36.3	36.4	36.4	0.037				PN
44027	5/10/86	0421	2800.0	9130.7	15	176			25.0			36.2		0.069				PN	
44028	5/10/86	0732	2800.0	9200.0	16	126	69	125	24.4	20.3	18.1	36.1	36.5	36.4	0.112				PN
44029	5/10/86	1127	2800.0	9229.8	16	102			24.5			35.4		0.087				PN	
44030	5/10/86	1447	2800.1	9259.9	17	100	50	100	24.7	23.6	19.2	36.3	36.5	36.5	0.081				PN
44031	5/10/86	2027	2730.4	9330.0	99	531			24.0			36.1		0.142				PN	
44032	5/11/86	0147	2700.2	9400.1	99	200	100	200	25.0	21.9	15.4	36.4	36.4	36.2	0.125				PN

Table 1 (cont'd.)

NMFS APRIL-MAY OFFSHORE PLANKTON SURVEY  
OREGON II

STA#	DATE MM/DD/YY	TIME	POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)			TEMPERATURE,C			SALINITY,PPT			CL, SUR	DISSOLVED OXYGEN			GEAR
			LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX	SUR		MID	MAX		
44033	5/11/86	0644	2630.0	9400.0	99	1555				25.0			36.3			0.089				PN
44034	5/11/86	1028	2600.0	9400.0	99	3294	100	200		25.1	18.9	13.7	36.2	36.6	35.9	0.249				PN
44035	5/11/86	1443	2600.0	9330.3	99	2377				26.0			36.5			0.249				PN
44036	5/11/86	1818	2600.0	9300.0	99	2195	100	200		26.2	19.1	13.3	36.0	37.0	35.8	0.125				PN
44037	5/11/86	2308	2629.8	9300.0	99	1556							36.5			0.088				PN
44038	5/12/86	0237	2659.9	9300.0	99	1280	100	200		25.7	22.5		36.5	36.7		0.056				PN
44039	5/12/86	0644	2700.0	9230.0	99	1573							36.8			0.112				PN
44040	5/12/86	1036	2700.0	9200.0	99	1830	100	200		25.7	22.8	17.8	36.6	36.5	36.8	0.191				PN
44041	5/12/86	1441	2630.0	9200.0	99	1828				29.0			36.9			0.143				PN
44042	5/12/86	1635	2600.0	9200.0	99	2195	100	200		26.4	23.2	17.8	36.8	36.6	36.6	0.075	7.0	7.0	3.9	PN
44043	5/12/86	2240	2600.0	9130.2	99	2196				25.5			36.6			0.098				PN
44044	5/13/86	0200	2600.0	9100.0	99	2717	100	200		26.3	22.4	17.5	36.6	36.4	36.6	0.168				PN
44045	5/13/86	0627	2630.0	9100.0	99	2103							36.8			0.231				PN
44046	5/13/86	1000	2700.0	9100.0	99	1647	100	200		25.2	20.6	15.1	36.2	36.3	36.3	0.106	6.4	5.6	4.2	PN
44047	5/13/86	1332	2659.9	9030.1	99	1518				28.0			36.8			0.486				PN
44048	5/13/86	1652	2659.9	9000.0	99	2202	100	200		27.2	20.1	14.6	36.3	36.5	36.1	3.800	6.4	4.5	4.1	PN
44049	5/13/86	2105	2630.2	9000.0	99	2837							36.4			1.059				PN
44050	5/14/86	0045	2600.0	8959.9	99	2908	100	200		25.5	19.6	14.5	36.4	36.7	36.5	0.081	6.1	4.0	3.7	PN
44051	5/14/86	0457	2630.0	8930.0	99	3365				26.0			36.8			0.056				PN
44052	5/14/86	0822	2600.0	8900.0	99	3110	100	200		25.4	19.4	14.1	36.6	36.7	36.1	0.056	6.1	3.9	3.8	PN
44053	5/14/86	1241	2629.9	8900.0	99	2853				27.0			36.8			0.106				PN
44054	5/14/86	1619	2700.0	8900.0	99	2202	100	200		26.1	19.8	15.3	36.6	36.5	36.4	0.027	6.1	4.9	4.1	PN
44055	5/14/86	2037	2700.0	8830.2	99	2432				26.0			36.8			0.075				PN
44056	5/15/86	0024	2700.0	8800.1	99	2743	100	200		24.7	20.6	16.2	36.6	36.4	36.4	0.052	6.2	6.6	3.8	PN
44057	5/15/86	0504	2630.0	8800.0	99	2633				25.4			36.7			0.049				PN
44058	5/15/86	0906	2600.0	8800.0	99	3020	100	200		25.6	19.9	15.2	36.6	36.6	36.1	0.084	6.2	4.2	3.8	PN
44059	5/15/86	1327	2600.0	8729.9	99	3145				28.0			36.7			0.069				PN
44060	5/15/86	1654	2600.0	8700.0	99	3145	100	200		27.6	25.7	18.7	36.4	36.6	36.7	0.037	5.7	5.1	4.4	PN

Table 1 (cont'd.)

NMFS APRIL-MAY OFFSHORE PLANKTON SURVEY  
OREGON II

STA#	DATE MM/DD/YY	TIME	POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)			TEMPERATURE,C			SALINITY,PPT			CL, SUR	DISSOLVED OXYGEN			GEAR
			LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX	SUR		MID	MAX		
44061	5/15/86	2140	2629.6	8700.0	99	3020				25.0			36.7		0.094				PN	
44062	5/16/86	0133	2700.0	8700.0	99	3018	100	200		24.5	20.5	15.8	36.5	36.3	36.3	0.045	6.0	5.6	3.7	PN
44063	5/16/86	0553	2730.0	8700.0	99	3072				24.5			36.7		0.046				PN	
44064	5/16/86	0921	2800.0	8700.0	99	2910	100	200		23.7	20.3	16.6	35.9	36.3	36.4	0.056	6.0	5.9	3.8	PN
44065	5/16/86	1356	2830.0	8700.0	99	869							36.6		0.050				PN	
44066	5/16/86	1737	2900.0	8700.0	99	732	100	200		23.7	19.9	15.6	36.1	36.3	36.3	0.069	6.0	4.8	3.6	PN
44067	5/18/86	0225	2900.1	8630.1	99	384							36.6		0.037				PN	
44068	5/18/86	0547	2900.0	8600.0	8	249	100	200		23.9	19.8	16.2	36.0	36.4	36.3	0.081	6.5	5.1	4.2	PN
44069	5/18/86	1003	2830.2	8600.0	99	377				25.0			36.1		0.099				PN	
44070	5/18/86	1350	2800.0	8559.9	99	1006	100	200		25.4	19.6	15.0	36.6	36.6	36.1	0.056	6.0	4.2	4.2	PN
44071	5/18/86	1848	2730.0	8600.0	99	3292				27.0			36.5		0.043				PN	
44072	5/18/86	2235	2700.0	8600.0	99	3221	100	200		25.7	17.5	13.9	36.6	36.5	36.0	0.043	5.5	3.4	2.7	PN
44073	5/19/86	0257	2630.1	8600.0	99	2519							36.7		0.075				PN	
44074	5/19/86	0627	2600.0	8600.0	99	3200	100	200		27.4	25.2	19.1	36.4	36.9	36.8	0.037	5.9	5.3	3.5	PN
44075	5/19/86	1038	2530.3	8600.0	99	3239				28.0			36.5		0.037				PN	
44076	5/19/86	1427	2500.0	8559.9	99	3292	100	200		27.8	25.8	23.0	36.4	36.4	37.0	0.065	6.3	6.4	4.9	PN
44077	5/19/86	1807	2500.0	8530.0	99	3292				28.0			36.7		0.047				PN	
44078	5/19/86	2101	2500.0	8500.0	99	3349	100	200		27.2	26.1	21.9	36.3	36.3	36.9		6.4	6.3	5.0	PN
44079	5/20/86	0048	2429.9	8459.9	99	3383				27.5			36.6		0.053				PN	
44080	5/20/86	0353	2429.9	8430.1	99	3420	100	200		27.2	26.1	21.4	36.3	36.5	36.9	0.053				PN
44081	5/20/86	0750	2430.0	8400.0	2	1830				27.9			36.6		0.045				PN	
44082	5/20/86	1208	2500.0	8400.1	3	125	62	123		26.9	21.5	18.9	36.5	36.7	36.6	0.048	6.5			PN
44083	5/20/86	1629	2530.0	8400.0	3	134				27.8			36.8		0.056				PN	
44084	5/20/86	1950	2600.0	8400.0	4	139	69	139		25.8	20.3	17.5	36.5	36.4	36.5	0.110				PN
44085	5/20/86	2342	2600.0	8429.9	99	218				25.5			36.7		0.104				PN	
44086	5/21/86	0307	2600.0	8459.8	99	3292	100	200		25.7	18.7	14.0	36.6	36.6	36.3	0.062				PN
44087	5/21/86	0731	2630.0	8500.0	99	1847				26.1			36.7		0.094				PN	
44088	5/21/86	1100	2700.0	8500.0	5	869	100	200		25.7	17.4	13.7	36.6	36.6	36.0	0.094				PN

Table 1 (cont'd.)

NMFS APRIL-MAY OFFSHORE PLANKTON SURVEY  
OREGON II

STA#	DATE		POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS		TEMPERATURE,C			SALINITY,PPT			CL, SUR	DISSOLVED OXYGEN			GEAR
	MM/DD/YY	TIME	LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX	SUR	SUR	MID	MAX	
44089	5/21/86	1507	2730.0	8500.0	5	421			27.5			36.5			0.112				PN
44090	5/21/86	1849	2800.0	8500.0	6	252	100 200		25.0	19.5	16.2	35.8	35.6	36.4	0.087				PN
44091	5/22/86	0025	2830.0	8530.0	8	198			24.5			36.7			0.069				PN
44092	5/22/86	0943	2930.0	8630.0	9	144			24.5			36.5			0.062				PN
44093	5/22/86	1422	2959.9	8700.0	10	70			25.5			35.9			0.160				PN

Table 1 (cont'd.)

FLORIDA APRIL-MAY OFFSHORE PLANKTON SURVEY  
HERNAN CORTEZ II

STA#	DATE		POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)		TEMPERATURE,C			SALINITY,PPT			CL, SUR	DISSOLVED OXYGEN			GEAR
	MM/DD/YY	TIME	LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX		SUR	MID	MAX	
00001	5/ 4/86	0700	2400.0	8400.0	2	2542	100	200	26.7	22.3	16.6	36.2	36.5	36.1	0.106	6.6	6.4	5.1	PN
00002	5/ 4/86	1555	2430.0	8400.0	2	1240	100	200	27.0	22.4	15.6	36.4	36.6	36.2	0.408	6.4	5.8	4.8	PN
00003	5/ 4/86	2039	2500.0	8400.0	3	126	63	123	26.0	22.1	17.8	36.6	36.4	36.4	0.274	6.3	7.0	4.9	PN
00004	5/ 5/86	0229	2530.0	8400.0	3	158	79	153	26.3	20.9	16.5	36.3	37.4	36.2	0.098	6.4	6.3	4.8	PN
00005	5/ 5/86	0645	2600.0	8400.0	4	130	65	120	24.4	21.7	17.6	37.1	37.2	36.5	0.143	6.9	7.1	5.4	PN
00006	5/ 5/86	1038	2600.0	8430.0	99	249	100	200	25.5	21.0	15.9	36.6	36.7	36.1	0.125	6.2	5.0	4.8	PN
00007	5/ 5/86	1540	2600.0	8500.0	99	3271	100	200	27.3	23.1	18.5	36.4	36.4	36.8	0.146	5.9	6.2	4.4	PN
00008	5/ 5/86	2108	2630.0	8500.0	99	3234	100	200	24.4	17.7	13.5	36.7	36.6	35.5	0.167	7.0	4.8	4.6	PN
00009	5/ 6/86	0120	2700.0	8500.0	5	810	100	200	24.4	18.0	12.8	37.0	36.4	35.6	0.097	6.8	4.8	4.3	PN
00010	5/ 6/86	0557	2730.0	8500.0	5	405	100	200	23.7	20.3	17.4	36.3	36.3	36.4	0.123	7.2	6.8	5.2	PN
00011	5/ 6/86	1008	2800.0	8500.0	6	265	100	200	23.3	19.4	16.3	36.2	36.2	36.3		6.8	5.6	4.2	PN

Table 1 (cont'd.)

LOUISIANA SEASONAL DAY/NIGHT TRAWL SURVEY  
PELICAN

STA#	DATE MM/DD/YY	TIME	POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)		TEMPERATURE,C			SALINITY,PPT			CL, SUR	DISSOLVED OXYGEN			GEAR
			LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX		SUR	MID	MAX	
35001	5/ 5/86	1615	2858.9	9009.8	14	15	15	25.0	22.1	22.6	34.6	17.516	13.0	5.8	ST/PN				
35002	5/ 5/86	1744	2906.8	9005.5	14	9	9	24.4	23.9	21.1	21.8	18.342	2.5	2.6	ST/PN				
35003	5/ 5/86	1925	2854.4	9034.0	14	13	13	24.2	20.6	22.1	35.0	14.319	11.8	0.2	ST/PN				
35004	5/ 5/86	2109	2901.2	9011.2	14	11	11	24.2	20.6	21.7	35.0	16.072	11.7	0.3	ST/PN				
35005	5/ 5/86	2237	2858.9	9009.8	14	15	15	23.9	20.5	23.3	35.3	29.520	11.8	0.7	ST/PN				
35006	5/ 6/86	0013	2855.1	9008.5	14	24	24	23.8	20.7	25.2	35.6		11.8	3.0	ST/PN				
35007	5/ 6/86	0305	2906.8	9005.8	14	9	9	24.3	23.3	21.5	24.2	16.283	10.1	7.3	ST/PN				
35008	5/ 6/86	0509	2905.2	8958.2	13	18	18	24.0	20.6	21.9	35.4	14.176	9.6	0.3	ST/PN				
35009	5/ 6/86	0703	2905.2	8958.2	13	18	18	24.1	20.7	21.7	35.4	16.482	9.5	0.7	ST/PN				
35010	5/ 6/86	1011	2905.3	8949.2	13	26	26	24.2	21.2	22.1	35.7	15.408	10.2	4.3	ST/PN				
35011	5/ 6/86	1210	2906.8	8941.8	13	20	20	24.7	21.3	21.7	35.4	8.996	9.6	3.1	ST/PN				
35012	5/ 6/86	1749	2855.1	9008.5	14	24	24	24.8	20.8	22.3	35.5	18.994	12.3	2.2	ST/PN				
35013	5/ 6/86	2256	2905.3	8949.2	13	26	26	24.1	21.1	23.5	35.7	19.583	10.0	4.5	ST/PN				
35014	5/ 7/86	0347	2909.8	8932.2	13	7	7	25.0	21.6	21.8	31.7	6.472	8.9	0.9	ST/PN				
35015	5/ 7/86	0503	2834.2	9045.5	14	22	22	24.1	23.2	35.5	35.5	0.169	7.0	7.3	ST/PN				
35016	5/ 7/86	0615	2910.9	8934.0	13	7	7	24.8	21.7	21.7	31.7	7.135	8.6	1.1	ST/PN				
35017	5/ 7/86	1320	2854.4	9034.0	14	11	11	25.0	22.1	23.3	33.5	23.309	11.9	2.8	ST/PN				
35018	5/ 7/86	2015	2834.2	9045.5	14	22	22	23.8	22.2	35.5	35.7	0.180	3.5	7.4	ST/PN				
35019	5/ 7/86	2307	2848.8	9049.2	14	16	16	25.3	22.6	26.3	35.3	11.497	11.0	4.6	ST/PN				
35020	5/ 8/86	0055	2906.8	8941.8	13	20	20	24.1	21.3	23.0	35.5	16.828	9.7	3.2	ST/PN				
35021	5/ 8/86	0215	2854.4	9034.0	14	13	13	24.4	21.1	28.2	34.9	18.199	10.3	0.0	ST/PN				
35022	5/ 8/86	0452	2903.6	9033.7	14	5	5	24.7	24.7	23.6	23.6	14.150	9.2	9.4	ST/PN				
35023	5/ 8/86	0806	2848.8	9049.2	14	16	16	24.7	22.9	27.7	35.3	13.144	9.8	5.9	ST/PN				
35024	5/ 8/86	1233	2903.6	9033.7	14	5	5	25.3	25.3	25.5	23.6	11.936	10.2	9.9	ST/PN				

Table 1 (cont'd.)

NMFS MAY-JUNE SQUID AND BUTTERFISH SURVEY  
CHAPMAN

STA#	DATE MM/DD/YY	TIME	POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)			TEMPERATURE,C			SALINITY,PPT			CL, SUR	DISSOLVED OXYGEN			GEAR
			LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX	SUR		MID	MAX		
00001	5/ 6/86	1539	2941.5	8801.5	11	37	18	37	23.6	22.9	22.2	34.4	34.5	34.6	0.320	7.1		5.1	HO	
00002	5/ 6/86	1806	2937.5	8800.1	11	38	19	38							0.226	7.1	7.4	5.5	HO	
00003	5/ 7/86	0711	2955.9	8704.3	10	74	37	74	22.0	19.6	19.0	35.3	36.2	36.4	0.245	7.0	7.0	4.9	HO	
00004	5/ 7/86	0850	2954.3	8707.7	10	112	56	112	22.6	20.0	18.8	35.7	36.3	36.3	0.107	7.1			HO	
00005	5/ 7/86	1106	2949.8	8712.2	10	74	37	74	22.7	20.7	19.1	35.8	36.3	36.4	0.327				HO	
00006	5/ 7/86	1343	2942.1	8716.4	10	173	86	173	22.0	18.6	16.6	35.6	36.3	36.3					HO	
00007	5/ 7/86	1619	2940.3	8709.0	10	250	125	250	22.2	17.8	14.2	35.2	36.4	35.9	0.187	6.8	4.4	4.5	HO	
00008	5/ 8/86	0713	2921.3	8734.9	99	248	124	248	22.8	18.4	14.3	35.3	36.4	36.0	0.125	6.8	5.0	4.4	HO	
00009	5/ 8/86	0905	2917.7	8741.4	99	355	177	355	23.0	17.0	11.6	35.8	36.4	35.5	0.128	7.0	4.6	5.0	HO	
00010	5/ 8/86	1045	2919.3	8745.4	99	163	82	163	23.4	20.1	17.1	36.1	36.4	36.4	0.053	6.9	6.4	4.3	HO	
00011	5/ 8/86	1327	2916.8	8802.5	11	166	85	166	23.5	20.2	16.7	36.4	36.3	36.3	0.096	6.8	7.2	5.1	HO	
00012	5/ 8/86	1521	2917.6	8803.6	11	142	71	142	23.4	20.5	18.0	36.3	36.2	36.5	0.089	6.9	7.2	4.6	HO	
00013	5/ 8/86	1839	2917.7	8811.6	11	96	45	96							0.131	7.0	7.2	6.3	HO	
00014	5/ 9/86	0729	2920.3	8826.9	11	61	30	61	23.3	21.6	20.3	35.9	36.4	36.3	0.067	7.2	7.4	6.8	HO	
00015	5/ 9/86	1328	2900.4	8840.0	11	280	140	280	23.4	17.5	12.6	36.5	36.5	35.7	0.110	7.3	5.1	5.2	HO	
00016	5/ 9/86	1544	2900.0	8846.3	11	230	115	230	23.2	18.5	15.0	36.3	36.5	36.1	0.178	7.1	5.1	5.1	HO	
00017	5/ 9/86	1823	2904.3	8851.1	11	162	81	162	21.9	19.5	17.0	36.1	36.4		0.717	7.2	4.7	4.6	HO	
00018	5/10/86	0803	2827.1	9027.0	14	44	22	44	23.4	22.8	20.4	36.0	36.0	36.2	0.080	6.7	7.0	5.5	HO	
00019	5/10/86	1002	2825.0	9018.9	14	49	25	49	23.3	23.4	20.2	35.8	35.9	36.2	0.080	6.9	7.1	4.5	HO	
00020	5/10/86	1127	2822.1	9018.0	14	55	27	55	23.3	21.9	20.0	36.2	36.1	36.3	0.027	6.9	7.5	4.6	HO	
00021	5/10/86	1343	2821.1	9008.3	14	77	38	77	23.6	21.9	19.7	36.2	36.4	36.4	0.109	7.1	7.4	5.0	HO	
00022	5/10/86	1630	2811.0	9009.6	14										0.093				HO	
00023	5/10/86	1837	2805.6	9015.0	14	263	130	262	24.4	19.6	15.0	29.6	29.8	36.2	0.146	7.1	6.4	6.2	HO	
00024	5/11/86	0750	2807.0	9018.9	14	220	110	220	24.2	19.9	15.6	36.5	36.4	36.2	0.112	7.2	6.9	4.8	HO	
00025	5/11/86	0922	2807.6	9018.8	14	220	110	220	24.3	19.4	15.6	36.6	36.5	36.2	0.075	6.8	5.8	4.7	HO	
00026	5/11/86	1110	2809.4	9019.0	14	164	82	164	24.1	20.2	16.5	36.3	36.2	36.3	0.078	6.8	6.7	7.4	HO	
00027	5/11/86	1321	2810.2	9022.4	14	110	55	110	24.2	21.0	19.0	36.3	36.1	36.3		6.9	7.5	5.1	HO	
00028	5/11/86	1756	2800.4	9038.0	14	216	105	210	24.4	18.3	14.4	36.4	36.2	35.9		7.2	6.1	4.5	HO	

Table 1 (cont'd.)

NMFS MAY-JUNE SQUID AND BUTTERFISH SURVEY  
CHAPMAN

STA#	DATE MM/DD/YY	TIME	POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)			TEMPERATURE,C			SALINITY,PPT			CL, SUR	DISSOLVED OXYGEN			GEAR
			LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX	SUR		MID	MAX		
00029	5/12/86	1457	2809.3	9033.5	14	95	47	95	24.6	21.5	19.3	36.3	36.2	36.2	0.075	6.8	7.3	5.5	HO	
00030	5/12/86	1650	2807.0	9035.7	14	114	57	114	24.9	20.4	18.9	36.3			0.091	6.5			HO	
00031	5/12/86	1821	2805.3	9035.3	14	126	63	126	24.2	20.6	18.2	36.4	36.2	36.3		6.6	7.0	4.6	HO	
00032	5/13/86	0739	2806.1	9050.7	14	124	62	124	24.8	20.8	18.7	36.0	36.1	36.3	0.112	7.3	7.6	5.5	HO	
00033	5/13/86	0940	2808.2	9056.7	14	98	49	98	24.7	21.0	19.3	36.0	36.1	36.2	0.159	6.9	7.4	5.4	HO	
00034	5/13/86	1108	2811.0	9050.3	14	80	40	80	24.9	21.5	20.0	35.9		36.2	0.114	6.6	7.3	6.0	HO	
00035	5/13/86	1316	2820.6	9051.8	14	48	24	48	24.8	21.9	20.4				0.122	7.0	7.5	6.5	HO	
00036	5/13/86	1504	2817.0	9102.7	15	66	33	66	25.2	22.2	20.3	35.9	35.8	36.1		7.0	7.5	6.6	HO	
00037	5/13/86	1729	2811.1	9114.6	15	85	42	85	25.5	21.5	19.5	35.9	36.1	36.3	0.249	6.7	7.2	5.6	HO	
00038	5/14/86	0700	2802.5	9058.6	14	128	64	128	24.9	21.6	18.7	36.3	36.2	36.6	0.105	6.9	7.2	5.0	HO	
00039	5/14/86	0926	2755.7	9104.4	99	245	122	245	24.4	18.1	14.9	35.9	36.3	36.0	0.107	6.7	5.4	4.6	HO	
00040	5/14/86	1114	2756.8	9105.6	99	198	99	198	25.3	19.2	15.4	36.1	36.3	36.3	0.134	6.5	6.2	4.6	HO	
00041	5/14/86	1255	2758.1	9104.7	99	170	85	170	25.4	20.5	18.1				0.096	6.8	7.2	5.3	HO	
00042	5/14/86	1442	2801.1	9107.5	15	121	62	121	25.6	20.8	18.0	36.0	36.2	36.3		7.3	7.3	5.4	HO	
00043	5/14/86	1721	2756.0	9111.7	99	203	101	202	25.4	19.9	15.8	36.0	36.7	36.1	0.267	7.3	6.4	5.2	HO	
00044	5/14/86	1851	2756.5	9116.3	99	255	127	255	25.3	18.3	13.7	36.1	36.4	35.8		7.1	5.0	4.6	HO	
00045	5/15/86	0726	2759.7	9122.6	15	162	81	162	24.8	20.8	17.2	36.2	36.2	36.3	0.150	7.1	7.3	4.7	HO	
00046	5/15/86	1119	2753.0	9146.0	99	200	100	200	24.2	18.9	15.5	36.0	36.3	36.1	0.347	7.0	5.2	4.5	HO	
00047	5/15/86	1336	2801.9	9138.2	15	110	55	108	25.2	21.8	19.4	35.8	36.3	36.3	0.053	6.8	7.6	5.6	HO	
00048	5/15/86	1550	2806.5	9133.4	15	104	52	102	25.1	21.8	19.4	36.0	36.3	36.2	0.080	7.2	7.6	5.8	HO	
00049	5/15/86	1914	2822.8	9145.8	15	62	31	62	25.0	22.2	20.3	35.7	35.7	36.0	0.224	6.6	7.3	6.6	HO	
00050	5/16/86	0816	2752.7	9204.8	99	236	118	236	24.5	18.8	14.6	35.6	36.3	36.2	0.104	7.3	6.0	5.1	HO	
00051	5/16/86	1127	2800.0	9210.9	16	105	52	105	24.5	22.7	18.9	35.7	36.3	36.3	0.128	6.8	7.1	5.1	HO	
00052	5/16/86	1542	2757.3	9216.2	99	168	84	166	25.0	19.1	16.9	35.7	36.2	36.3	0.377	6.9	5.8	4.6	HO	
00053	5/16/86	1856	2752.4	9224.1	99	190	95	188	25.2	18.7	16.2	36.3	36.0	36.2	0.338	7.1	6.1	5.4	HO	
00054	5/17/86	0658	2825.6	9233.3	16	55	28	55	24.8	23.2	19.9	35.6	35.6	35.8	0.530	6.5	6.7	6.4	HO	
00055	5/21/86	0710	2825.9	9325.3	17	50	24	48	24.1	23.8	20.8	34.9	35.1	35.8	0.199	6.4	6.6	6.4	HO	
00056	5/21/86	1146	2817.9	9250.8	16	58	29	58	24.6	22.1	20.0	35.3	35.9		0.080	6.7	7.0	6.5	HO	



Table 1 (cont'd.)

NMFS MAY-JUNE SQUID AND BUTTERFISH SURVEY  
CHAPMAN

STA#	DATE MM/DD/YY	TIME	POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)			TEMPERATURE,C			SALINITY,PPT			CL, SUR	DISSOLVED OXYGEN			GEAR
			LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX	SUR		MID	MAX		
00057	5/21/86	1434	2805.0	9301.0	17	89	44	89	24.7	21.5	19.6	35.2	36.0	36.3	0.135	6.6	7.0	5.5	HO	
00058	5/21/86	1648	2808.3	9310.2	17	76	38	76	24.9	23.0	23.6	35.2	35.8	35.9	0.092	6.4	6.9	5.2	HO	
00059	5/22/86	0646	2816.9	9510.5	19	41	20	40	24.1	23.4	21.5	33.6	33.5	36.0	0.361	6.5	6.6	5.5	HO	
00060	5/22/86	0948	2804.1	9520.9	19	52	26	52	24.9	23.7	21.7	34.9	34.9	36.2		6.6	6.4	5.6	HO	
00061	5/22/86	1538	2801.6	9607.5	19	38	19	38	24.8	24.8	21.8	31.9	33.4	36.5	0.338	6.8	6.8	6.0	HO	
00062	5/23/86	0706	2652.8	9701.5	21	38	19	38	25.1	25.1	21.6	32.0	31.8	36.1	0.212	6.6	6.5	5.0	HO	
00063	5/23/86	1416	2701.5	9643.1	20	78	39	78	25.5	23.9	21.0	30.4	36.3	36.3	0.732	6.1	6.1	5.3	HO	
00064	5/23/86	1853	2726.7	9624.0	99	95	47	95	26.1	23.0	21.0	31.4	36.3	36.3	0.276	6.6	7.1	3.9	HO	
00065	5/24/86	0711	2718.5	9614.9	99	188	94	188	25.7	20.6	16.0	34.9	36.3	36.1	0.208	6.2	6.0	4.7	HO	
00066	5/24/86	0926	2724.5	9604.5	99	244	122	244	25.9	19.0	14.4	34.7	36.4	36.0	0.156	6.4	5.4	4.6	HO	
00067	5/24/86	1312	2731.8	9558.9	20	184	92	184	26.0	21.7	16.2	34.7	36.3	36.1	0.145	6.6	6.6	5.0	HO	
00068	5/27/86	0657	2800.2	9222.0	16	126	63	126	25.4	22.0	17.9	35.9	36.1	36.2	0.100	6.2	6.4	5.0	HO	
00069	5/27/86	0833	2759.6	9214.6	16	129	64	129	26.3	22.0	18.0	36.0	36.3	36.3		6.4	6.6	4.8	HO	
00070	5/27/86	1505	2803.6	9140.3	15	108	54	108	26.6	21.5	19.6	35.8	36.2	36.2	0.125	6.3	6.5	5.6	HO	
00071	5/28/86	1403	2853.8	8858.9	99	186	93	186	25.4	19.5	15.7	18.4	36.1	36.0	12.740	7.2	5.8	5.2	HO	
00072	5/28/86	1728	2858.8	8855.2	99	109	54	109	26.5	20.5	19.6	18.6	36.1	36.2	27.910	9.5	6.1	5.4	HO	
00073	5/29/86	0655	2931.1	8827.7	11	51	25	51	27.0	23.7	20.5	28.1	35.3	35.9	1.059	6.9	6.7	5.3	HO	
00074	5/29/86	0959	2913.3	8823.3	11	148	74	148	26.1	20.0	17.3	30.5	36.3	36.2	0.564	6.5	6.5	5.2	HO	
00075	5/29/86	1333	2912.1	8808.7	11	306	153	306	26.1	17.3	11.1	35.8	36.3	35.4	0.105	6.4	4.9	4.7	HO	
00076	5/29/86	1544	2917.9	8804.2	11	128	64	128	26.1	20.8	18.6	35.8	36.4	36.2	0.141	6.3	6.7	5.4	HO	
00077	5/29/86	1743	2926.6	8806.0	11	50	25	50	26.0	23.3	20.9	35.1	35.4	35.7	0.178	6.3	6.3	5.8	HO	
00078	5/30/86	0647	2927.9	8748.8	99	65	32	65	25.0	22.0	20.2	35.0	35.6	36.0	0.229	6.5	6.6	5.5	HO	
00079	5/30/86	0905	2929.2	8747.7	99	58	29	58	25.2	22.6	20.4	35.1	35.5	35.9	0.174	6.4	6.7	5.2	HO	
00080	5/30/86	1205	2924.2	8740.4	99	84	42	84	25.2	21.2	20.1	35.1	35.5	36.0	0.132	6.5	6.5	5.6	HO	
00081	5/30/86	1435	2916.7	8749.3	99	274	137	274	26.9	18.0	11.9	35.9	36.3	35.7	0.224	7.3	5.3	4.8	HO	
00082	5/30/86	1802	2922.7	8733.5	99	188	94	188	26.4	19.4	14.9	35.4	36.2	36.1	0.140	6.4	6.0	5.1	HO	
00083	5/31/86	0653	2948.1	8635.9	9	120	60	120	25.5	20.1	18.5	35.3	36.4	36.2	0.150	6.4	6.2	4.2	HO	
00084	5/31/86	0816	2938.9	8634.5	9	162	81	162	25.4	18.9	17.3	35.4	36.1	36.3	0.196	6.5	5.4	4.7	HO	

Table 1 (cont'd.)

NMFS MAY-JUNE SQUID AND BUTTERFISH SURVEY  
CHAPMAN

STA#	DATE		POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS			TEMPERATURE,C			SALINITY,PPT			CL, SUR	DISSOLVED OXYGEN			GEAR
	MM/DD/YY	TIME	LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX	SUR		MID	MAX		
00085	5/31/86	1040	2934.7	8648.4	9	254	127	254	25.5	17.9	11.9	35.4	36.3	35.8	0.125	6.5	5.2	4.7	HO	
00086	6/ 1/86	1331	3006.8	8645.6	9	53	27	53	27.1	23.0	20.6	34.3	35.1	35.9	0.332	6.4	6.8	6.3	HO	
00087	6/ 1/86	1647	2955.6	8630.6	9	78	39	78	26.1	21.7	19.8	35.5	35.8	36.1	0.107	6.3	7.0	6.0	HO	
00088	6/ 1/86	1920	2947.2	8621.0	9	85	43	85	27.2	20.3	19.8	35.6	35.8	36.0	0.157	6.3	6.3	5.5	HO	
00089	6/ 2/86	0630	2919.3	8602.4	99	128	64	128	26.1	19.8	18.2	35.7	36.1	36.2	0.344	6.4	6.5	4.6	HO	
00090	6/ 2/86	0823	2917.2	8608.9	99	198	99	198	26.4	18.5	14.5	35.5	36.2	35.9	0.125	6.5	5.1	4.5	HO	
00091	6/ 2/86	1022	2913.4	8616.6	99	272	136	272	26.5	17.0	11.7	35.6	36.3	35.5	0.139	6.5	5.1	4.7	HO	
00092	6/ 2/86	1211	2920.5	8621.0	99	241	120	241	26.8	17.0	12.0	35.5	36.3	35.5	0.100	6.4	4.8	4.6	HO	
00093	6/ 2/86	1350	2919.7	8626.8	99	292	146	292	26.9	16.0	11.5	35.6	36.2	34.9	0.075	6.4	4.3	4.3	HO	
00094	6/ 2/86	1608	2932.4	8632.2	9	204	102	204	27.0	19.0	14.8	35.7	36.1	36.1	0.094	6.2	4.7	4.7	HO	
00095	6/ 3/86	0630	2932.7	8721.0	10	163	81	163	26.9	20.0	17.9	35.1	36.1	36.3	0.157	6.8	7.2	5.0	HO	
00096	6/ 3/86	0807	2930.3	8722.9	10	165	82	165	26.4	20.0	16.5	35.1	36.3	36.3	0.160	6.4	6.2	4.9	HO	

Table 1 (cont'd.)

MISSISSIPPI MAY SQUID AND BUTTERFISH SURVEY  
TOMMY MUNRO

STA#	DATE		POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)			TEMPERATURE,C			SALINITY,PPT			CL, SUR	DISSOLVED OXYGEN			GEAR
	MM/DD/YY	TIME	LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX	SUR		MID	MAX		
17001	5/13/86	0640	2951.9	8719.0	10	53	26	53	22.0	22.0	20.2	33.0	36.0	36.0	0.224	7.8	8.1	7.8	HO	
17004	5/14/86	0730	2944.1	8713.0	10	183	92	183	23.2	19.2	18.5	36.0		36.0		5.2	4.0	5.1	HO	
17006	5/20/86	0730	2914.0	8845.7	11	65	33	65	24.5	22.0	21.0	31.0	36.0	36.0		7.2	6.6	5.4	HO	
17010	5/20/86	2125	2903.9	8837.5	11	253	100	200	24.0	19.8	17.5	36.0	37.0	37.0		6.6	6.6	5.5	PN	
17012	5/21/86	0541	2902.2	8838.6	11	270	100	200	24.8	21.8	21.0	36.0	36.0	36.0		6.8	7.1	6.8	PN	
17017	5/21/86	2257	2912.7	8817.7	11	150	75	150	24.0	21.2	21.0	36.0	36.0	36.0		6.7	7.0	6.6	PN	
17019	5/22/86	0714	2908.3	8828.0	11	241	120	200	24.0	20.5	19.6	36.0	37.0	37.0		7.0	6.6	6.2	HO	
17023	5/22/86	1852	2913.0	8811.4	11	186	93	186	24.2	20.0	18.7	36.0	37.0	37.0		6.4	5.7	5.0	HO	
17027	5/23/86	1159	2915.7	8749.2	99	289	150	200	24.2	19.1	18.3	36.0	37.0	38.0		6.8	5.4	5.4	HO	
17030	5/23/86	1816	2921.5	8757.5	99	87	43	87	24.9	21.1	20.8	36.0	36.0	38.0	0.102	6.5	5.6	5.8	HO	
17033	5/24/86	0610	2932.2	8757.0	10	41	20	40	23.2	21.5	23.1	36.0	36.0	36.0		7.0	6.7	6.8	HO	
17501	5/28/86	0600	2854.4	8902.0	13	76	35	70	25.8	21.5	20.1	16.0	35.5	37.1		12.2	8.8	8.9	HO	
17505	5/28/86	1935	2833.1	8921.9	13	235	100	189	26.3	20.0	16.3	36.3	36.5	37.6		9.4	7.4	5.2	PN	
17506	5/29/86	0000	2834.2	8935.3	13	202													PN	
17507	5/29/86	0637	2840.9	9004.8	14	57		50				34.5		36.0					PN	
17514	5/30/86	0630	2833.9	8940.2	13	189		189				35.5		36.5					PN	

Table 1 (cont'd.)

NMFS JUNE-JULY SHRIMP AND BOTTOMFISH SURVEY  
OREGON II

STA#	DATE MM/DD/YY	TIME	POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)		TEMPERATURE,C			SALINITY,PPT			CL, SUR	DISSOLVED OXYGEN			GEAR
			LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX		SUR	MID	MAX	
44094	6/10/86	1907	2959.8	8830.1	11	22	11	22	30.1	27.5	24.5	26.6	34.5	35.1	1.510	6.9	6.5	5.9	PN
44095	6/10/86	2200	2957.8	8836.7	11	20	10	20	29.4	27.3	23.9	30.3	33.5	35.2	0.439	6.6	6.5	5.1	ST
44096	6/11/86	0100	3010.5	8821.2	11	11	5	11	28.9	27.5	25.7	27.9	32.8	34.6	2.414	6.4	4.5	4.1	ST
44097	6/11/86	0339	3007.8	8804.2	11	16	8	16	27.8	26.5	25.1	30.0	34.6	35.0	2.990	6.3	5.3	4.5	ST
44098	6/11/86	0502	3000.1	8758.4	10	26	13	26	28.5	26.8	23.3	33.3	35.7	35.8	0.200	6.3	6.4	6.2	ST
44099	6/11/86	2040	2958.9	8809.9	11	28	14	27	30.1	26.0	22.5	29.9	35.2	35.9	0.963	7.3	6.8	5.7	ST
44100	6/11/86	2143	2959.0	8811.1	11	28	14	27	29.5	26.3	22.5	27.8	35.1	35.7	1.381	7.2	6.7	5.6	ST
44101	6/11/86	2228	2957.6	8808.9	11	29	15	28	29.9	26.0	22.5	28.0	35.0	35.8	1.022	7.2	6.7	5.6	ST
44102	6/12/86	0059	2945.4	8801.1	11	36	18	36	28.6	26.9	22.6	33.1	35.1	35.8	0.031	6.6	6.8	6.6	ST
44103	6/12/86	0459	3004.6	8739.1	10	26	13	26	28.1	26.7	23.6	34.0	35.1	35.5	0.214	6.7	6.8	6.5	ST
44104	6/12/86	0651	3000.0	8729.7	10	26	13	26	28.6	26.5	24.0	33.6	35.6	35.5	0.112	6.9	7.2	7.0	PN
44105	6/12/86	2034	2954.4	8730.2	10	35	17	35	28.9	24.4	23.5	33.7	35.4	35.7	0.125	6.4	6.6	6.4	ST
44106	6/12/86	2239	2841.5	8730.0	10	48	24	48	28.1	24.3	21.1	35.0	35.7	36.3	0.067	7.1	6.9	5.9	ST
44107	6/13/86	0028	2941.2	8735.4	10	37	18	37	28.1	25.0	24.1	34.7	35.9	36.0		6.5	6.9	7.0	ST
44108	6/13/86	0342	2928.2	8747.1	10	63	31	63	28.3	23.7	20.4	34.0	36.2	36.3		6.6	7.1	5.5	ST
44109	6/13/86	0652	2930.0	8728.9	10	71	35	71	28.2	23.1	20.6	35.2	36.4	36.4	0.100	6.6	6.9	5.5	PN
44110	6/13/86	1149	2929.8	8800.0	11	45	22	45	29.2	25.4	22.1	30.8	36.0	36.3	0.100	6.6	6.7	6.4	PN
44111	6/13/86	2016	2920.8	8750.7	10	84	42	83	29.7	22.5	20.1	32.6	36.9	36.6	0.177	7.6	8.2	6.7	ST
44112	6/13/86	2251	2931.7	8759.5	11	43	21	42	29.3	26.2	22.2	31.6	35.4	36.5	0.134	6.7	6.9	6.6	ST
44113	6/14/86	0235	2922.6	8823.7	11	57	28	57	29.4	23.4	20.9	24.6	36.7	36.3	11.183	7.1	6.9	5.3	ST
44116	6/14/86	2021	2925.9	8847.0	11	23	11	22	29.1	22.9	20.4	31.5	36.4	36.7	0.178	8.0	5.9	5.8	ST
44117	6/14/86	2243	2910.0	8849.3	11	73	36	72	27.7	20.9	18.6	27.6	36.4	36.7	18.628	10.0	6.0	4.6	ST
44119	6/15/86	0145	2905.7	8858.4	11	31	15	31	26.2	22.2	20.8	4.4	36.6	36.5	4.268	10.5	5.0	4.7	ST
44120	6/15/86	0320	2902.1	8904.3	13	8	4	8	27.4	28.4	24.4	14.7	21.2	31.0	6.687	11.0	6.4	5.0	ST
44121	6/15/86	0943	2900.0	8930.0	13	15	7	15	29.4	29.3	24.3	14.1	34.7	35.8	4.310	9.9	3.4	2.3	PN
44122	6/15/86	1330	2900.0	9000.0	14	22	11	22	32.0	27.8	26.1	17.4	36.1	37.3	5.674	8.1	6.3	4.3	PN
44123	6/15/86	2030	2905.0	8937.9	13	15	7	15	31.3	27.6	24.7	18.4	28.7	35.5	7.336	10.1	2.8	2.5	ST
44124	6/16/86	0219	2844.8	9021.1	14	21	10	21	29.8	28.4	24.8	26.7	33.2	36.6	0.869	7.5	6.8	3.5	ST

Table 1 (cont'd.)

NMFS JUNE-JULY SHRIMP AND BOTTOMFISH SURVEY  
OREGON II

STA#	DATE MM/DD/YY	TIME	POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)			TEMPERATURE,C			SALINITY,PPT			CL, SUR	DISSOLVED OXYGEN			GEAR
			LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX	SUR		MID	MAX		
44125	6/16/86	0509	2832.5	9031.7	14	34	17	34	29.5	26.5	22.4	30.0	36.4	36.5	0.530	6.8	6.5	4.8	ST	
44126	6/16/86	0630	2830.0	9029.8	14	36	18	36	29.2	26.2	22.2	30.2	36.2	36.6	0.505	6.8	6.7	4.2	PN	
44127	6/16/86	1117	2900.0	9030.1	14	8	4	8	29.4	29.3	28.4	26.6	27.7	32.3	3.102	6.5	7.4	1.5	PN	
44128	6/16/86	1536	2848.4	9100.4	15	8	4	8	30.5	29.3	28.7	32.0	32.5	33.2	0.579	7.3	7.4	7.5	PN	
44129	6/16/86	2023	2845.8	9103.3	15	10	5	10	29.5	28.8	28.5	33.0	33.3	34.5	0.533	7.1	7.1	7.4	ST	
44130	6/16/86	2118	2842.0	9103.2	15	11	6	11	29.7	28.6	28.5	33.0	35.1	35.1	0.381	7.0	6.9	6.9	ST	
44131	6/16/86	2244	2835.2	9103.1	15	22	11	21	30.1	28.4	23.7	33.8	35.3	36.7	0.156	6.8	6.5	3.0	ST	
44132	6/17/86	0043	2840.2	9115.2	15	19	10	19	29.4	28.4	27.1	34.5	35.6	36.1	0.047	6.8	6.7	5.9	ST	
44133	6/17/86	0247	2830.9	9113.2	15	36	18	36	28.7	27.4	22.0	35.6	36.1	36.3		6.7	7.0	6.9	ST	
44134	6/17/86	0456	2830.2	9100.0	15	33	16	33	29.4	27.7	22.1	33.3	35.5	36.5	0.308	6.9	6.3	5.5	PN	
44135	6/17/86	2022	2822.7	9042.9	14	45	22	45	28.9	27.7	22.3	34.8	35.8	36.8	0.249	6.8	6.7	6.2	ST	
44136	6/17/86	2204	2827.0	9050.6	14	35	17	35	29.3	28.0	22.3	35.1	35.6	36.8	0.110	7.0	6.9	3.7	ST	
44137	6/18/86	0004	2818.6	9054.8	14	55	27	53	29.0	26.6	21.6	35.4	35.9	36.4	0.098	7.1	7.4	6.6	ST	
44139	6/18/86	0444	2815.7	9125.2	15	85	42	85	28.4	22.9	20.6	35.2	36.7	36.3	0.080	7.0	7.7	7.7	ST	
44141	6/18/86	1013	2830.1	9130.0	15	47	23	47	28.8	27.6	21.8	35.4	35.9	36.2	0.107	6.9	7.3	6.9	PN	
44142	6/18/86	1430	2900.0	9130.0	15	11	5	11	31.0	29.4	28.6	30.4	32.7	34.3	3.078	7.5	7.3	4.3	PN	
44143	6/18/86	1754	2900.2	9200.4	16	19	9	19	29.4	29.3	26.5	30.3	32.6	36.0	2.529	8.0	6.8	3.5	PN	
44144	6/18/86	2044	2857.8	9152.5	15	20	10	20	30.8	28.0	26.9	26.7	35.1	35.6	2.513	8.7	7.3	5.9	ST	
44145	6/18/86	2316	2846.2	9145.8	15	27	13	26	29.9	27.8	26.7	33.8	35.8	35.9	0.241	7.4	7.4	7.6	ST	
44146	6/19/86	0032	2843.8	9142.5	15	28	14	28	29.4	27.9	24.1	34.9	35.8	36.5	0.047	7.3	7.2	7.1	ST	
44147	6/19/86	0145	2841.5	9141.3	15	30	15	30	28.8	28.1	23.8	35.2	35.7	36.2	0.067	7.3	7.3	7.6	ST	
44148	6/19/86	0342	2837.7	9132.9	15	32	16	32	28.7	28.3	23.3	35.5	35.6	36.2		7.3	7.4	7.2	ST	
44151	6/19/86	0651	2827.6	9141.1	15	57	28	57	28.4	25.9	21.4	35.0	36.1	36.3		7.4	7.8	7.5	ST	
44152	6/19/86	1013	2830.0	9200.0	16	50	25	50	28.7	27.0	21.4	35.5	35.7	36.8	0.069	7.2	7.7	6.9	PN	
44153	6/19/86	2026	2815.5	9155.7	15	67	33	67	28.9	24.2	20.9	35.1	36.7	36.2	0.056	7.0	7.8	6.7	ST	
44155	6/19/86	2323	2807.0	9152.0	15	87	43	87	28.5	23.8	19.6	35.2	36.5	36.6	0.062	7.6	8.2	6.0	ST	
44158	6/20/86	0706	2807.6	9234.2	16	95	47	95	28.7	23.7	19.5	33.7	36.8	37.2		7.5	9.0	6.5	ST	
44159	6/20/86	0900	2800.0	9230.0	16	107	53	107	28.7	23.4	20.2	33.8	36.7	36.5	0.162	7.6	8.1	6.3	PN	

Table 1 (cont'd.)

NMFS JUNE-JULY SHRIMP AND BOTTOMFISH SURVEY  
OREGON II

STA#	DATE MM/DD/YY	TIME	POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)			TEMPERATURE,C			SALINITY,PPT			CL, SUR	DISSOLVED OXYGEN			GEAR
			LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX	SUR		MID	MAX		
44160	6/20/86	1330	2829.8	9230.0	16	51	25	51	30.0	25.5	20.8	35.4	36.1	36.5	0.054	7.3	8.0	7.2	PN	
44161	6/20/86	2035	2835.2	9233.7	16	37	19	37	28.6	26.5	22.6	35.1	35.6	36.3	0.066	7.8	8.1	8.6	ST	
44162	6/20/86	2138	2836.6	9230.3	16	38	19	37	28.9	26.2	23.7	35.2	35.7	36.0	0.066	7.8	8.3	8.6	ST	
44163	6/21/86	0104	2854.2	9220.4	16	29	14	29	29.6	28.6	25.7	32.1	35.2	35.9	0.200	7.6	7.5	7.7	ST	
44164	6/21/86	0236	2855.8	9217.6	16	25	12	25	29.4	29.2	27.2	32.7	34.1	36.0	0.223	7.3	7.2	7.7	ST	
44166	6/21/86	0500	2905.1	9223.7	16	16	8	16	30.0	28.2	26.1	24.5	31.3	35.3	1.982	8.8	6.2	4.3	ST	
44167	6/21/86	0704	2859.7	9228.4	16	23	11	23	29.7	28.5	26.3	24.7	34.9	36.4	1.346	7.8	7.4	6.6	PN	
44168	6/21/86	1137	2930.0	9230.1	16	9	4	9	30.1	29.9	29.4	15.9	18.0	25.5	7.869	11.4	6.4	0.9	PN	
44169	6/21/86	1450	2929.9	9300.0	17	12	6	12	30.9	28.5	27.0	20.0	27.6	32.9		8.2	3.8	0.7	PN	
44170	6/21/86	2053	2938.3	9307.1	17	9	4	9	30.7	30.1	27.2	22.9	24.1	30.1	2.305	7.7	6.2	0.6	ST	
44174	6/22/86	0234	2920.3	9321.6	17	15	7	15	30.0	29.7	27.6	23.2	27.1	32.3	0.952	8.2	7.1	1.0	ST	
44176	6/22/86	0744	2900.1	9300.0	17	23	11	23	30.3	29.0	26.7	29.3	35.0	35.1	0.629	6.7	6.3	4.1	PN	
44177	6/22/86	1140	2830.0	9300.0	17	44	22	44	29.0	26.4	22.2	35.1	35.6	36.4	0.045	6.6	6.9	6.8	PN	
44178	6/22/86	2037	2843.9	9251.8	16	30	15	30	30.4	27.4	23.9	32.0	35.1	35.6	0.249	6.6	6.7	6.7	ST	
44179	6/22/86	2134	2847.9	9253.3	16	26	13	25	29.8	28.5	25.4	32.7	35.3	36.2	0.615	6.5	6.3	6.7	ST	
44180	6/23/86	0024	2904.6	9311.9	17	21	11	21	31.0	29.3	25.8	27.2	32.0	35.4	0.474	6.7	6.4	2.7	ST	
44182	6/23/86	0434	2839.3	9324.5	17	32	16	32	29.1	27.5	24.0	32.9	35.0	36.4	0.129	6.5	7.3	6.8	ST	
44183	6/23/86	0627	2830.0	9330.0	17	42	21	42	29.3	26.2	21.8	34.1	35.8	37.0	0.073	6.4	6.7	6.1	PN	
44184	6/23/86	1040	2800.0	9330.0	17	93	46	93	29.1	24.4	21.9	32.4	36.6	36.7		6.9	7.2	6.2	PN	
44185	6/23/86	2041	2808.1	9324.1	17	75	37	74	29.6	23.7	21.2	32.4	36.3	36.6	0.125	6.4	6.5	5.5	ST	
44186	6/23/86	2320	2814.9	9334.3	17	62	31	61	29.6	24.4	21.2	32.0	36.1	36.9	0.134	6.4	6.5	5.1	ST	
44188	6/24/86	0117	2820.4	9334.3	17	55	27	55	29.6	25.7	21.3	33.4	35.8	36.4		6.4	6.8	5.1	ST	
44192	6/24/86	0529	2827.3	9341.4	17	46	23	46	30.0	25.9	21.2	32.1	35.8	36.2		6.3	6.3	4.9	ST	
44194	6/24/86	0655	2830.0	9340.0	17	37	18	37	29.8	26.5	22.5	31.7	34.9	35.9	0.038	6.3	6.5	5.6	ST	
44195	6/24/86	1021	2829.9	9400.0	18	39	19	39	29.6	25.1	21.9	30.5	34.0	35.6	0.124	6.6	5.7	5.2	PN	
44196	6/24/86	1416	2900.0	9400.0	18	18	9	18	30.1	29.8	26.0	28.0	28.9	34.3	0.439	6.5	6.7	3.2	PN	
44197	6/24/86	1828	2859.5	9329.7	17	21	10	21	30.4	28.7	25.9	29.2	31.5	35.2	0.854	6.1	6.5	2.8	PN	
44198	6/24/86	2036	2903.5	9339.8	17	19	9	18	30.9	29.5	25.7	26.2	30.3	35.0	1.079	7.3	5.7	1.4	ST	

Table 1 (cont'd.)

NMFS JUNE-JULY SHRIMP AND BOTTOMFISH SURVEY  
OREGON II

STA#	DATE MM/DD/YY	TIME	POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS		TEMPERATURE,C			SALINITY,PPT			CL, SUR	DISSOLVED OXYGEN			GEAR
			LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX		SUR	MID	MAX	
44199	6/24/86	2317	2919.0	9353.1	17	12	6	11	30.5	29.6	27.5	26.5	28.5	31.7	0.935	7.0	6.5	2.5	ST
44203	6/27/86	1340	2900.1	9430.1	18	16	8	16	29.1	28.8	27.5	28.7	28.8	31.4	0.556	6.9	6.6	1.6	PN
44204	6/27/86	1719	2900.0	9459.8	19	15	7	15	29.8	28.7	28.4	25.8	29.2	29.8	2.913	7.1	6.0	4.4	PN
44205	6/27/86	2038	2907.6	9445.2	18	18	9	18	29.9	28.9	28.9	25.2	27.2	29.0	3.510	7.3	5.5	4.6	ST
44206	6/27/86	2348	2846.8	9457.1	18	21	11	20	29.0	28.6	27.5	31.1	31.3	32.0	0.265	6.5	5.9	4.4	ST
44207	6/28/86	0418	2852.7	9415.3	18	20	10	20	29.1	29.1	26.4	30.8	30.8	34.2	0.256	6.4	6.2	3.8	ST
44208	6/28/86	0550	2847.6	9423.4	18	24	12	24	28.9	28.9	26.2	31.1	31.3	34.5	0.297	6.3	6.2	5.2	ST
44209	6/28/86	0930	2830.0	9430.0	18	35	17	35	29.2	26.4	22.5	29.6	33.7	35.1	0.223	6.3	4.3	3.4	PN
44210	6/28/86	2016	2841.4	9417.8	18	29	14	29	29.8	27.8	25.4	29.6	33.4	34.8	0.285	6.6	6.4	5.7	ST
44211	6/29/86	0130	2757.5	9412.2	99	82	41	82	29.5	23.3	20.0	32.2	36.2	36.7		6.6	6.2		ST
44212	6/29/86	0526	2802.0	9446.0	18	71	35	70	29.3	25.2	21.9	32.5	36.3	36.6	0.200	6.6	7.2		ST
44213	6/29/86	0820	2800.0	9430.0	18	68	34	68	29.1	25.1	22.2	33.1	37.2	36.5	0.200	6.6	6.9	5.8	PN
44214	6/29/86	1237	2759.9	9459.8	19	79	38	79	29.3	25.0	21.4	31.6	36.9	36.4		6.8	7.0	5.7	PN
44215	6/29/86	2025	2805.0	9454.3	18	56	29	56	29.8	26.6	22.6	31.6	36.4	36.5	0.083	6.5	7.1	5.8	ST
44216	6/29/86	2157	2803.4	9453.3	18	64	32	64	29.3	27.2	22.2	30.9	36.8	36.7	0.112	7.2	7.1		ST
44217	6/30/86	0152	2800.7	9527.5	19	53	26	52	29.1	26.8	22.4	32.8	35.4	36.5	0.134	6.4	6.6	5.9	ST
44218	6/30/86	0243	2801.9	9529.0	19														ST
44219	6/30/86	0335	2803.4	9530.1	19														ST
44220	6/30/86	0528	2815.2	9534.5	19	34	17	34	29.2	29.5	23.7	31.3	31.7	35.6		6.1	6.0	4.4	ST
44221	6/30/86	0827	2800.0	9530.0	19	53	26	53	29.1	26.6	22.3	31.8	35.9	36.6	0.093	5.9	6.1	6.2	PN
44222	6/30/86	1227	2759.9	9559.9	19	43	21	43	29.0	28.8	22.6	34.4	35.4	36.7		5.8	5.8	6.1	PN
44223	6/30/86	2026	2809.2	9548.3	19	37	19	37	29.2	26.6	23.0	32.3	34.3	36.0	0.137	5.7	5.7	4.0	ST
44225	6/30/86	2229	2804.6	9553.5	19	41	19	41	29.2	28.6	23.2	33.5	36.4	36.4		5.5	5.5	5.6	ST
44227	7/ 1/86	0143	2804.1	9607.9	19	35	17	34	29.5	27.5	23.0	32.0	34.6	36.7	0.067	6.4	6.3	6.1	ST
44228	7/ 1/86	0214	2805.5	9608.7	19	29	14	28	29.3	28.9	23.1	31.8	32.2	36.2	0.067	6.0	6.0	5.6	ST
44229	7/ 1/86	0349	2811.7	9610.1	19	23	11	22	29.3	29.3	25.9	31.9	31.9	34.5	0.229	6.9	7.0	6.4	ST
44230	7/ 1/86	0523	2828.8	9611.8	19	23	11	22	28.9	28.9	26.9	32.7	32.7	33.8	0.316	6.7	6.8	6.6	ST
44231	7/ 1/86	0723	2830.0	9600.0	19	12	6	12	29.0	29.0	29.0	32.5	32.5	32.5	0.888	6.1	6.3	5.9	PN

Table 1 (cont'd.)

NMFS JUNE-JULY SHRIMP AND BOTTOMFISH SURVEY  
OREGON II

STA#	DATE MM/DD/YY	TIME	POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)			TEMPERATURE,C			SALINITY,PPT			CL, SUR	DISSOLVED OXYGEN			GEAR
			LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX	SUR		MID	MAX		
44232	7/ 1/86	1146	2830.0	9530.0	19	24	12	24	29.3	29.2	25.3	32.0	32.1	35.8	0.145	6.4	6.4	4.5	PN	
44233	7/ 1/86	2023	2837.8	9543.5	19	13	7	13	29.6	29.6	29.4	32.0	32.0	32.2	0.650	6.4	6.5	6.3	ST	
44234	7/ 1/86	2223	2835.1	9555.2	19	10	5	10	29.2	29.2	28.9	32.2	32.2	32.5	2.679	6.8	6.4	5.7	ST	
44235	7/ 2/86	0401	2803.1	9623.3	19	26	13	26	28.7	28.8	28.0	33.8	33.9	34.9	0.125	6.4	6.4	6.4	ST	
44236	7/ 2/86	0629	2753.5	9643.3	20	23	11	22	28.7	28.7	28.5	35.3	35.4	36.0	0.122	6.2	6.2	6.2	ST	
44237	7/ 2/86	0838	2800.0	9630.0	19	24	12	24	28.9	28.9	28.2	35.0	35.0	35.3	0.245	6.2	6.2	6.3	PN	
44238	7/ 2/86	2020	2750.5	9659.7	20	13	6	13	29.3	29.3	28.5	35.5	35.5	36.0	1.552	6.1	6.1	5.7	ST	
44239	7/ 3/86	0044	2732.3	9713.2	20	8	4	8	28.9	28.9	28.9	36.2	36.2	36.2	2.264	6.0	6.0	6.0	ST	
44240	7/ 3/86	0156	2730.0	9709.8	20	16	8	16	27.9	27.9	26.7	36.2	36.2	36.3	0.303	6.5	6.5	6.4	ST	
44241	7/ 3/86	0303	2726.8	9710.1	20	18	9	18	27.3	27.3	26.2	36.2	36.2	36.4	0.327	6.3	6.3	6.3	ST	
44242	7/ 3/86	0430	2723.2	9714.0	20	15	7	14	27.8	27.7	26.2	36.3	36.3	36.4	0.276	6.3	6.2	6.2	ST	
44243	7/ 3/86	0631	2730.0	9700.0	20	26	13	26	28.2	28.2	24.7	36.2	36.2	36.7	0.134	6.2	6.4	6.6	PN	
44244	7/ 3/86	1039	2730.0	9629.9	20	71	35	71	22.4	27.1	28.8	36.5	36.5	36.1	0.134	6.1	6.7	6.0	PN	
44245	7/ 3/86	2031	2730.0	9630.4	20	78	38	78	29.2	28.2	22.1	36.0	36.4	36.5		6.0	6.3	5.8	ST	
44246	7/ 3/86	2321	2734.3	9652.2	20	33	16	33	28.5	28.4	24.0	36.1	36.2	37.6		6.1	6.0	6.5	ST	
44247	7/ 4/86	0203	2722.3	9644.4	20	53	26	52	28.5	27.9	22.6	36.3	36.5	36.4		6.4	6.6	6.6	ST	
44249	7/ 4/86	0502	2711.9	9642.3	20	71	35	70	28.6	27.9	22.3	36.2	36.6	36.6		6.7	7.0	6.8	ST	
44251	7/ 4/86	0934	2700.0	9700.0	20	39	19	39	28.4	28.4	22.6	36.6	36.6	37.0		6.7	6.7	7.0	PN	
44252	7/ 4/86	1306	2700.0	9629.9	20	131	65	131	28.5	23.0	18.0	36.5	36.5	36.7		6.7	6.8	4.5	PN	
44253	7/ 4/86	2023	2704.0	9637.5	20	93	47	93	28.5	24.2	20.4	36.3	36.5	36.6	0.089	6.8	7.5	5.3	ST	
44254	7/ 4/86	2304	2717.0	9653.3	20	45	22	45	28.4	28.3	23.0	36.6	36.6	36.5		6.7	7.0	7.2	ST	
44255	7/ 5/86	0045	2715.5	9659.6	20	35	17	34	28.0	27.3	23.2	36.6	36.9	36.5	0.053	7.1	7.5	7.4	ST	
44256	7/ 5/86	0252	2708.3	9707.0	20	28	14	28	26.2	25.8	22.7	36.5	36.5	36.6	0.114	6.9	7.1	7.1	ST	
44257	7/ 5/86	0546	2655.7	9703.4	21	33	16	33	27.8	27.0	22.6	36.6	36.8	36.7		7.1	7.4	7.4	ST	
44258	7/ 5/86	1032	2630.0	9700.0	21	32	16	32	26.7	25.2	24.6	36.6	37.4	36.5	0.134	7.1	8.0	7.9	PN	
44259	7/ 5/86	1419	2629.9	9630.0	21	82	41	82	28.8	27.5	21.1	36.5	36.6	36.6		6.9	7.3	5.9	PN	
44260	7/ 5/86	2024	2631.2	9641.6	21	55	27	55	28.4	28.2	22.4	36.4	36.5	36.8		6.9	7.0	5.8	ST	
44261	7/ 5/86	2252	2624.8	9700.2	21	30	15	30	26.4	25.9	24.5	36.5	36.8	36.6	0.067	7.1	7.3	7.2	ST	



Table 1 (cont'd.)

NMFS JUNE-JULY SHRIMP AND BOTTOMFISH SURVEY  
OREGON II

STA#	DATE MM/DD/YY	TIME	POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)			TEMPERATURE,C			SALINITY,PPT			CL, SUR	DISSOLVED OXYGEN			GEAR
			LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX	SUR		MID	MAX		
44262	7/ 5/86	2342	2626.7	9703.7	21	22	11	22	25.8	25.8	24.4	36.5	36.5	36.5		7.0	7.0	6.9	ST	
44263	7/ 6/86	0225	2612.5	9655.1	21	32	16	32	25.8	25.0	24.3	36.6	36.8	36.5	0.134	6.4	6.6	6.6	ST	
44264	7/ 6/86	0432	2601.5	9700.2	21	24	12	24	25.2	24.6	24.1	36.5	36.6	36.5	0.245	6.5	6.6	6.6	ST	
44265	7/ 6/86	0508	2600.0	9700.0	21	25	12	25	25.5	24.2	24.0	36.5	36.6	36.5	0.134	6.4	6.5	6.6	PN	
44289	7/15/86	2026	2905.2	8852.0	11	82	41	82	32.3	19.7	18.1	13.3	36.7	36.5	75.468	7.0	5.9	5.1	ST	
44290	7/15/86	2231	2915.2	8856.4	11	33	16	33	29.4	23.1	22.7	25.0	36.5	36.3	26.259	13.0	2.5	2.6	ST	
44291	7/16/86	0002	2921.2	8853.2	11	24	12	24	29.9	24.0	23.1	29.1	37.5	36.6	4.526	10.7	4.8	4.3	ST	
44292	7/16/86	0059	2919.8	8851.9	11	34	17	34	29.6	23.0	21.5	29.4	36.5	36.5	3.157	11.2	6.0	5.2	ST	
44293	7/16/86	0314	2911.6	8839.6	11	72	36	72	30.2	22.8	19.8	30.4	36.8	36.4	2.212	7.0	6.9	5.1	ST	
44295	7/16/86	0531	2917.0	8833.5	11	72	36	72	30.0	22.8	20.1	30.6	36.5	36.5	1.301	8.4	9.8	6.3	ST	
44296	7/16/86	1958	2926.3	8756.7	10	68	34	68	30.3	21.9	18.1	30.0	36.3	36.6	0.712	7.8	4.7	3.8	ST	
44297	7/16/86	2109	2930.4	8757.5	10	46	23	46	30.5	23.0	20.5	28.7	36.5	36.5	0.781	8.2	5.2	4.3	ST	
44298	7/16/86	2352	2947.1	8749.1	10	37	19	37	30.5	28.1	23.8	32.1	36.2	36.1	0.202	6.5	6.9	5.6	ST	
44299	7/17/86	0203	2953.8	8735.8	10	32	16	32	30.5	29.9	24.4	31.0	34.2	36.3	0.156	6.7	6.8	6.4	ST	
44301	7/17/86	0404	2959.3	8743.4	10	27	13	27	30.6	29.6	25.0	30.3	34.8	36.0	0.343	6.7	6.8	6.5	ST	
44302	7/17/86	0511	3000.2	8749.7	10	18	9	18	30.5	30.3	26.1	29.3	33.0	35.9	0.369	6.8	6.6	6.7	ST	
44303	7/17/86	0604	3000.9	8746.2	10	25	12	25	30.5	28.5	24.4	30.2	35.3	35.8	0.327	6.8	6.8	5.6	ST	
44304	7/17/86	2005	3010.0	8804.6	11	8	4	8	29.8	28.1	25.3	29.2	32.9	35.6	2.513	6.7	5.2	3.6	ST	
44305	7/17/86	2246	3002.3	8822.4	11	20	10	20	30.5	30.1	26.1	31.0	32.3	36.9	0.445	6.6	6.6	6.0	ST	
44306	7/18/86	0000	3003.9	8828.1	11	19	9	19	30.2	30.0	26.1	30.9	32.2	36.7	0.445	6.7	6.8	5.8	ST	
44307	7/18/86	0151	3004.2	8837.8	11	16	8	16	30.4	30.2	25.9	30.0	32.1	37.2	0.888	7.2	6.9	5.2	ST	

Table 1 (cont'd.)

MISSISSIPPI JUNE SHRIMP AND BOTTOMFISH SURVEY  
TOMMY MUNRO

STA#	DATE MM/DD/YY	TIME	POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS			TEMPERATURE,C			SALINITY,PPT			CL, SUR	DISSOLVED OXYGEN			GEAR
			LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX	SUR		MID	MAX		
17001	6/10/86	2010	2937.1	8855.4	11	7	3	7	29.2	28.0	26.9	30.5	31.0	31.8	2.196	5.7	5.6	4.8	ST	
17002	6/10/86	2255	2923.2	8903.6	12	9	4	9	27.7	26.7	25.1	30.9	31.3	32.4	9.664	5.8	5.8	5.4	ST	
17004	6/11/86	0237	2905.5	8858.6	11	36	18	36	27.3	22.8	21.8	28.7	33.4	34.0	3.962	6.0	5.6	6.2	ST	
17005	6/11/86	0352	2902.9	8859.3	11	47	23	42	27.5	21.8	21.5	21.9	34.2	34.4	3.514	6.0	5.8	6.0	ST	
17006	6/11/86	2026	2911.7	8838.7	11	73	36	70	28.0	22.5	20.6	27.0	35.3	35.8	16.111	6.0	5.9	5.1	ST	
17008	6/11/86	2320	2917.1	8832.3	11	68	34	64	28.1	22.9	20.6	27.0	30.0	30.4	10.395	6.0	5.7	4.9	ST	
17009	6/12/86	0241	2920.4	8851.0	11	34	17	31	27.0	21.3	20.0	28.5	30.7	31.2	23.904	5.5	5.1	4.8	ST	
17010	6/12/86	0415	2927.7	8848.1	11	15	7	13	27.2	24.1	23.3	28.9	30.3	30.6	10.709	5.3	4.8	4.7	ST	
17011	6/12/86	0528	2926.5	8844.3	11	28	14	26	27.3	22.7	20.8	29.0	30.6	31.1	13.233	5.4	5.0	4.3	ST	
17012	6/12/86	2003	2932.0	8840.1	11	17	8	16	30.0	25.4	22.5	30.0	31.6	32.5	4.205				ST	
17013	6/12/86	2122	2937.2	8834.3	11	26	13	25	30.0	25.5	21.9	28.3	31.2	32.3	1.333				ST	
17014	6/12/86	2246	2942.4	8830.2	11	31	16	29	30.5	25.2	21.8	28.2	30.9	32.2	1.925				ST	
17015	6/11/86	0720	2901.2	8859.1	11	64	32	63	28.5	25.3	22.6	20.5	26.0	28.0	26.166	7.0	6.0	4.2	PN	
17016	6/11/86	1120	2900.0	8845.0	11	237	100	200	29.3	22.5	22.3	26.0	36.0	36.0	8.411	7.1	5.4	5.5	PN	
17017	6/11/86	1403	2900.0	8830.0	11	615	100	200	30.0	20.5	18.0	31.0		36.5	1.731	6.5	5.3	5.4	PN	
17018	6/12/86	0851	2930.1	8829.6	11	43	20	41	28.8	25.1	22.9	31.0	32.1	33.2	22.284	8.5	5.2	4.5	PN	
17019	6/12/86	1128	2914.9	8829.9	11	82	40	80	29.0	24.0	21.9	20.5	27.1	28.4	25.792	9.6	7.4	7.5	PN	
17020	6/12/86	1446	2929.1	8844.5	11	16	7	14	30.0	23.8	22.4	32.0	33.5	34.0	3.292	8.3			PN	

Table 1 (cont'd.)

ALABAMA JUNE-JULY SHRIMP AND BOTTOMFISH SURVEY  
ALABAMA INSHORE VESSELS

STA#	DATE MM/DD/YY	TIME	POSITION LAT LONG		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)			TEMPERATURE,C			SALINITY,PPT			CL, SUR	DISSOLVED OXYGEN			GEAR
							MID	MAX		SUR	MID	MAX	SUR	MID	MAX		SUR	MID	MAX	
23001	6/10/86	1943	3014.0	8742.5	10	6	3	6	28.0	25.5	25.5	30.0	32.0	32.0		6.6	6.0	6.0	ST	
23002	6/10/86	2223	3002.5	8756.0	10	15	7	15	27.5	25.5	26.0	30.0	31.0	32.0		4.0	3.0	4.6	ST	
23003	6/11/86	0359	3000.0	8804.3	11	18	9	18	27.5			26.0				5.2			ST	
23004	6/11/86	0311	2958.0	8803.3	11	15	7	15	28.0	26.5	24.5	26.0	30.0	30.0		6.2	4.2	6.2	ST	
23005	6/11/86	0517	2959.7	8810.4	11	19	10	19	28.0			26.0				6.2			ST	
23006	6/11/86	0130	2953.8	8758.5	10	19	9	19	27.5	25.0	24.5	30.0	32.0	32.0		5.8	6.0	2.6	ST	
23007	6/10/86	2339	3000.0	8800.0	11	20	10	20	27.5	26.5	25.5	30.0	31.0	31.0		5.2	3.6	4.2	PN	
23008	7/16/86	2031	3011.6	8732.4	10	18	9	18	24.5	23.5	22.0	32.0	34.0	34.0	0.817	8.2	6.8	4.8	ST	
23009	7/16/86	2250	3013.0	8748.4	10	6	3	6	23.0	22.5	22.0	32.0	33.0	33.0	1.234	6.6	6.2	4.8	ST	
23010	7/16/86	2346	3012.3	8753.2	10	11	6	11	21.5	23.5	23.5	29.0	32.0	32.0	0.427	7.0	6.0	2.8	ST	
23011	7/17/86	0222	3005.8	8809.4	11	20	10	20	27.0	24.5	22.5	28.0	30.0	30.0	0.481	6.4	3.0	8.4	ST	
23012	7/17/86	0323	3008.8	8806.4	11	13	7	13	26.0	23.5	23.0	28.0	30.0	30.0	0.328	5.4	5.2	5.8	ST	
23013	7/17/86	0414	3009.1	8803.5	11	7	4	7	24.5	26.0	26.0	25.0	26.0	26.0	1.159	5.6	7.0	7.0	ST	

Table 1 (cont'd.)

LOUISIANA JUNE SHRIMP AND BOTTOMFISH SURVEY  
LOUISIANA INSHORE VESSELS

STA#	DATE MM/DD/YY	TIME	POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)		TEMPERATURE,C			SALINITY,PPT			CL, SUR	DISSOLVED OXYGEN			GEAR
			LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX		SUR	MID	MAX	
35025	6/11/86	0830	3003.2	8851.7	11	2	2	29.4	29.1	23.1	25.4	3.675	6.5	5.5	ST				
35026	6/11/86	0840	2924.8	8904.3	12	9	9	26.8	24.2	29.2	34.7	5.178	7.8	8.5	ST				
35027	6/11/86	0925	3003.3	8851.4	11	5	5	29.6	29.3	23.3	23.8	2.334	6.6	6.6	ST				
35028	6/11/86	0925	2926.9	8909.6	12	5	5	27.0	25.5	27.4	32.5	11.610	6.7	5.6	ST				
35029	6/11/86	0944	2927.4	8912.2	12	2	2	28.0	28.2	23.0	25.3	11.736	8.4	7.6	ST				
35030	6/11/86	1025	3003.7	8850.8	11	9	9	29.4	27.1	22.8	30.2	2.901	6.7	3.1	ST				
35031	6/16/86	0947	2856.2	9058.0	14	9	9	30.5	30.3	28.0	31.4	2.766	7.3	3.8	ST				
35032	6/16/86	1033	2901.0	9058.9	14	5	5	30.0	30.6	28.4	29.6	2.301	6.8	6.1	ST				
35033	6/16/86	1113	2909.5	9058.3	14	2	2	31.1	29.8	22.8	22.8	16.251	6.1	5.6	ST				
35034	6/17/86	1107	2900.5	9035.7	14	9	9	30.3	30.1	28.1	28.1	2.362	7.3	7.1	ST				
35035	6/17/86	1200	2902.0	9035.7	14	5	5	31.0	30.8	26.8	28.1	8.938	8.0	5.7	ST				
35036	6/17/86	1246	2904.5	9035.7	14	2	2	30.4	30.1	26.3	26.3	8.221	6.1	6.4	ST				
35037	6/17/86	1440	2909.5	9209.5	16	9	9	29.7	29.9	27.3	28.4	4.648	6.2	4.2	ST				
35038	6/17/86	1600	2919.3	9206.8	16	5	5	29.7	29.9	27.3	28.4	3.224	6.7	6.5	ST				
35039	6/17/86	1735	2934.0	9201.8	16	2	2	30.0	30.0	6.7	6.7	9.174	5.8	6.0	ST				
35040	6/18/86	1230	2916.3	8956.0	13	2	2	31.8	30.9	14.8	17.0	30.198	10.6	9.6	ST				
35041	6/18/86	1318	2915.1	8954.2	13	5	5	31.8	30.0	10.2	24.1	36.151	13.7	5.3	ST				
35042	6/18/86	1425	2913.9	8952.7	13	9	9	32.7	31.4	9.4	31.2	35.558	15.2	0.0	ST				
35043	6/19/86	0835	2940.0	9322.0	17	9	9	29.7	29.0	22.6	21.3	4.332	8.1	2.0	ST				
35044	6/19/86	0912	2944.0	9322.0	17	5	5	29.9	29.6	20.0	22.6	14.686	7.7	5.6	ST				
35045	6/19/86	1012	2945.0	9322.0	17	2	2	30.3	30.1	21.0	22.8	19.541	7.0	4.0	ST				

Table 1 (cont'd.)

LOUISIANA JUNE SHRIMP AND BOTTOMFISH SURVEY  
PELICAN

STA#	DATE MM/DD/YY	TIME	POSITION LAT LONG		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)			TEMPERATURE,C			SALINITY,PPT			CL, SUR	DISSOLVED OXYGEN			GEAR
							MID	MAX		SUR	MID	MAX	SUR	MID	MAX		SUR	MID	MAX	
35046	6/16/86	1720	2912.4	8956.3	13	9	4	7	31.0	29.1	27.4	20.7	25.4	29.5	12.957	7.8	4.5	0.6	ST/PN	
35047	6/16/86	1926	2908.4	8947.3	13	20	10	19	30.9	27.1	23.5	14.9	34.0	35.6	12.733	8.3	4.3	0.4	ST/PN	
35048	6/16/86	2126	2908.3	8947.3	13	20	8	18	30.8	27.1	23.6	15.2	32.9	35.5	14.885	8.5	2.3	0.3	ST/PN	
35049	6/16/86	2322	2912.2	8956.6	13	9	4	8	30.5	30.0	27.6	18.4	22.3	29.4	19.187	8.2	6.6	1.0	ST/PN	
35050	6/17/86	0322	2901.8	9020.2	14	9	5	8	30.0	30.0	27.5	26.9	26.9	31.5	3.364	7.2	7.1	1.7	ST/PN	
35051	6/17/86	0452	2858.2	9023.0	14	13	7	12	29.3	27.3	25.0	29.6	31.9	35.1	2.051	6.1	2.9	0.3	ST/PN	
35052	6/17/86	0708	2902.5	9020.2	14	5	4	5	29.9	30.0	30.1	26.9	26.9	27.1	5.842	7.2	6.5	6.7	ST/PN	
35053	6/17/86	0826	2858.5	9023.0	14	13	7	12	29.4	28.6	25.8	28.2	30.8	35.1	3.865	6.7	4.8	1.5	ST/PN	
35054	6/17/86	1012	2856.0	9018.5	14	16	8	16	29.3	28.9	24.9	28.2	30.1	35.2	1.576	6.2	6.5	0.1	ST/PN	
35055	6/17/86	1253	2854.7	9029.8	14	15	7	13	30.5	29.6	25.2	26.8	28.9	34.9	3.511	7.3	6.8	0.2	ST/PN	
35056	6/17/86	2212	2855.4	9018.7	14	16	8	16	29.1	26.7	24.7	29.5	34.6	35.3	1.999	6.6	2.8	0.2	ST/PN	
35057	6/18/86	0023	2855.3	9029.4	14	15	6	15	29.7	28.7	25.0	27.1	29.3	35.1	5.643	7.7	5.5	0.2	ST/PN	
35058	6/18/86	0350	2852.2	9045.7	14	11	5	10	29.3	29.0	28.6	27.4	31.1	32.4	1.836	6.3	8.3	4.6	ST/PN	
35059	6/18/86	0557	2853.7	9052.9	14	7	4	6	29.7	29.6	29.5	27.9	28.0	29.4	2.087	5.9	5.6	6.2	ST/PN	
35060	6/18/86	0717	2853.0	9052.8	14	7	3	5	29.9	29.9	29.5	28.1	28.1	29.1	3.513	6.1	5.6	6.4	ST/PN	
35061	6/18/86	0900	2852.3	9045.8	14	11	5	9	29.8	29.4	29.4	27.0	28.8	29.1	3.052	6.3	6.0	6.2	ST/PN	
35062	6/18/86	1150	2839.0	9038.5	14	18	9	18	29.6	28.0	25.7	30.3	34.8	35.5	2.167	6.2	5.5	2.1	ST/PN	
35063	6/18/86	1432	2832.5	9048.2	14	26	13	25	29.6	28.0	24.1	33.3	35.5	35.9	0.443	5.8	6.4	4.3	ST/PN	
35064	6/18/86	1624	2833.4	9047.6	14	24	11	21	30.1	28.1	24.5	33.4	35.6	35.7	0.490	5.6	6.1	3.0	ST/PN	
35065	6/18/86	1901	2835.0	9057.0	14	22	11	21	30.0	28.0	24.4	33.9	35.4	35.6	0.439	5.6	6.1	3.2	ST/PN	
35066	6/18/86	2118	2834.5	9057.4	14	22	11	22	29.7	28.1	24.0	33.9	35.4	35.6	0.339	5.6	6.1	2.6	ST/PN	
35067	6/18/86	2329	2833.7	9048.5	14	24	11	22	29.4	28.0	25.2	34.3	35.4	35.6	0.285	6.0	6.1	3.6	ST/PN	
35068	6/19/86	0035	2832.3	9048.1	14	26	12	26	29.5	27.8	24.2	33.9	35.4	35.7	0.345	5.2	6.1	3.0	ST/PN	
35069	6/19/86	0358	2839.3	9038.6	14	18	10	18	30.3	28.6	25.9	27.5	34.9	35.5	2.661	6.5	6.0	2.6	ST/PN	

Table 1 (cont'd.)

TEXAS JUNE SHRIMP AND BOTTOMFISH SURVEY  
ARANSAS BAY

STA#	DATE		POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)			TEMPERATURE,C			SALINITY,PPT			CL, SUR	DISSOLVED OXYGEN			GEAR
	MM/DD/YY	TIME	LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX	SUR		MID	MAX		
31001	6/23/86	2100	2740.1	9706.7	20	15	7	15	29.7	29.7	29.2	30.0	30.0	30.0	1.121	7.9	8.0	8.4	ST	
31002	6/23/86	2222	2738.5	9700.1	20	22	11	22	28.2	28.2	25.5	36.0	36.0	36.0	0.136	7.7	7.9	8.7	ST	
31003	6/24/86	0001	2745.1	9701.1	20	16	8	16	30.0	29.5	29.5	33.0	33.0	33.0	0.240	7.6	7.7	8.2	ST	
31004	6/24/86	0057	2747.0	9702.9	20	13	6	13	30.0	29.5	29.5		33.2	33.3	0.652	5.0	8.0	7.0	ST	
31005	6/24/86	0225	2748.1	9657.2	20	18	9	18	29.5	29.5	29.0	29.0	33.3	33.3	0.214	8.0	5.0	3.0	ST	
31006	6/24/86	0346	2753.3	9700.6	20	9	4	9	30.5	30.5	30.0		32.5	32.5	1.175	8.0	8.0	8.0	ST	
31007	6/24/86	0553	2756.2	9647.2	20	20	10	18	29.0	29.0	28.0	34.0	34.5	35.4		7.0	5.0	8.0	ST	
31008	6/24/86	2101	2758.2	9655.1	20	11	5	11	29.9	29.7	29.3	32.0	32.1	32.1	0.331	7.0	7.0	7.0	ST	

Table 1 (cont'd.)

TEXAS JUNE SHRIMP AND BOTTOMFISH SURVEY  
MATAGORDA BAY

STA#	DATE		POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS		TEMPERATURE,C			SALINITY,PPT			CL, SUR	DISSOLVED OXYGEN			GEAR
	MM/DD/YY	TIME	LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX		SUR	MID	MAX	
32001	6/23/86	2129	2820.4	9623.2	19	5	3	5	29.6	29.8	29.5	30.0	30.0	30.0	0.888	7.6	8.4	7.9	ST
32002	6/23/86	2248	2814.8	9623.4	19	18	9	18	28.8	28.5	25.7	33.5	34.0	35.5	0.395	7.4	7.0	6.9	ST
32003	6/24/86	0032	2815.8	9619.1	19	20	10	20	28.5	28.6	25.7	33.5	34.0	33.5	0.191	7.8	7.7	7.3	ST
32004	6/24/86	0145	2813.2	9620.1	19	22	11	22	28.3	28.5	25.3	33.5	34.0	36.0	0.075	7.7	7.8	7.6	ST
32005	6/24/86	0507	2823.6	9608.5	19	18	9	18	28.0	28.5	25.8	33.5	34.4	35.5	0.093	7.6	7.6	6.4	ST
32006	6/24/86	0602	2823.3	9612.4	19	16	8	16	28.6	28.8	28.8	33.5	33.5	33.5	0.263	7.6	7.7	7.5	ST
32007	6/24/86	2100	2828.3	9612.2	19	8	4	8	29.7	30.0	29.6	25.0	25.0	30.0	2.318	8.1	8.5	8.0	ST
32008	6/24/86	2120	2827.2	9614.0	19	9	4	9	29.5	29.6	29.1	25.0	31.0	33.5	2.056	8.0	7.8	7.8	ST

Table 1 (cont'd.)

TEXAS JUNE SHRIMP AND BOTTOMFISH SURVEY  
LAGUNA MADRE

STA#	DATE		POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS			TEMPERATURE,C			SALINITY,PPT			CL, SUR	DISSOLVED OXYGEN			GEAR
	MM/DD/YY	TIME	LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX	SUR		MID	MAX		
33001	6/22/86	2050	2616.2	9711.0	21	9	5	9	31.0	30.8	30.5	36.4	36.4	36.4	0.587	8.3	8.3	8.3	ST	
33002	6/22/86	2220	2623.1	9711.2	21	16	8	16	30.0	29.5	27.8	36.4	36.3	35.2	0.160	8.2	8.2	8.2	ST	
33003	6/22/86	2350	2623.1	9704.9	21	20	10	20	30.1	30.6	27.9	36.4	36.3	36.4		8.2	8.2	8.3	ST	
33004	6/23/86	0105	2622.3	9702.2	21	26	13	26	31.5	31.5	28.6	36.4	36.4	36.4		8.1	8.1	8.2	ST	
33005	6/23/86	0228	2618.9	9705.3	21	18	9	18	31.1	31.0	29.3	36.4	36.4	36.4		8.2	8.2	8.2	ST	
33006	6/23/86	0415	2612.3	9702.2	21	22	11	22	31.3	32.7	29.6	36.5	36.4	36.4		8.1	8.1	8.2	ST	
33007	6/23/86	0558	2603.3	9702.0	21	24	13	24	31.8	32.4	30.0	36.4	36.0	35.9		8.1	8.1	8.2	ST	
33008	6/23/86	2100	2604.3	9707.5	21	13	6	13	28.0	27.0	26.0	36.2	36.6	36.4	0.160	8.2	8.2	8.1	ST	



Table 1 (cont'd.)

TEXAS JUNE SHRIMP AND BOTTOMFISH SURVEY  
GALVESTON BAY

STA#	DATE		POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)			TEMPERATURE,C			SALINITY,PPT			CL, SUR	DISSOLVED OXYGEN			GEAR
	MM/DD/YY	TIME	LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX	SUR		MID	MAX		
34001	6/23/86	2058	2923.0	9444.3	18	2	1	2	31.1	31.2	31.2	20.0	17.8	17.8	8.523	9.9	7.7	6.1	ST	
34003	6/24/86	0015	2916.3	9440.6	18	9	4	8	30.1	30.0	29.0	24.0	24.0	27.0	3.103	9.2	7.9	6.0	ST	
34004	6/24/86	0221	2914.9	9447.8	18	7	3	6	30.1	30.1	29.3	24.0	25.0	28.0	2.467	9.0	8.5	7.0	ST	
34005	6/24/86	0400	2913.1	9446.3	18	9	4	8	29.5	29.5	29.3	26.3	27.7	30.2	1.271	9.0	9.0	8.5	ST	
34006	6/24/86	2107	2911.7	9442.9	18	15	7	14	31.3	30.5	29.9	33.3	30.7	31.6	1.981	9.1	8.0	7.6	ST	
34007	6/24/86	2218	2908.3	9445.6	18	16	7	15	29.8	29.4	27.5	27.5	29.0	33.2	0.267	7.8	7.8	3.6	ST	
34008	6/24/86	2349	2910.1	9447.2	18	14	6	13	29.9	29.7	27.0	26.5	29.7	31.6	1.303	8.5	8.1	2.2	ST	
34009	6/25/86	0052	2909.5	9451.5	18	13	6	12	29.9	29.8	28.3				1.944	8.1	8.0	6.1	ST	

Table 1 (cont'd.)

MISSISSIPPI JULY SHRIMP AND BOTTOMFISH SURVEY  
TOMMY MUNRO

STA#	DATE MM/DD/YY	TIME	POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS		TEMPERATURE,C			SALINITY,PPT			CL, SUR	DISSOLVED OXYGEN			GEAR
			LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX		SUR	MID	MAX	
17015	7/15/86	2146	2949.0	8821.7	11	34	17	32	30.0	28.1	24.5	31.5	35.5	37.5	0.490	6.4	5.5	5.8	ST
17017	7/16/86	0124	2933.6	8831.7	11	44	22	43	29.5	25.0	23.0	28.0	35.5	36.5	0.542	6.5	6.2	5.5	ST
17019	7/16/86	0515	2914.6	8830.3	11	82	41	81	29.9	23.3	21.9	31.0	36.0	37.5	0.788	6.1	6.4	5.6	ST
17020	7/16/86	2011	2922.4	8816.1	11	55	27	54	31.2	24.7	22.9	27.5	36.0	37.0	5.181	8.9	6.4	5.8	ST
17021	7/16/86	2212	2923.2	8805.2	11	64	31	63	30.4	24.5	21.1	27.5	36.5	38.0	1.090	6.8	6.4	4.9	ST
17022	7/16/86	2356	2923.1	8752.5	99	75	37	74	30.5	22.9	21.2	27.5	37.0	38.0	1.610	7.0	6.0	5.3	ST
17023	7/17/86	0159	2929.0	8755.7	99	47	23	46	29.0	23.4	21.0	28.0	36.0	37.5	0.895	7.3	5.6	5.2	ST
17024	7/17/86	2022	2956.1	8806.1	11	28	13	27	30.6	28.6	23.9	30.5	35.0	37.5	0.424	6.3	6.0	4.3	ST
17025	7/17/86	2135	2954.5	8807.9	11	31	15	30	30.8	28.5	23.8	28.5	35.5	37.5	1.383	6.4	5.8	4.0	ST
17026	7/17/86	2344	3000.5	8819.0	11	25	12	24	30.1	28.1	25.7	32.0	35.5	37.5	0.355	6.2	5.9	5.1	ST
17027	7/18/86	0109	2959.6	8827.2	11	26	12	25	30.0	27.3	24.1	30.5	36.0	37.5	0.679	6.5	5.6	4.0	ST
17028	7/18/86	0237	3001.9	8829.5	11	21	10	20	30.0	28.0	25.8	30.5	35.5	37.0	0.829	6.6	5.9	5.2	ST

Table 1 (cont'd.)

NMFS SEPTEMBER PLANKTON SURVEY																			
OREGON II																			
STA#	DATE MM/DD/YY	TIME	POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)		TEMPERATURE,C			SALINITY,PPT			CL, SUR	DISSOLVED OXYGEN			GEAR
			LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX		SUR	MID	MAX	
44328	9/ 4/86	0250	2854.8	8930.0	13	36	18	36	29.6	28.7	25.9	23.8	33.8	36.2	13.737	10.2	5.4	3.6	PN
44329	9/ 4/86	0435	2845.0	8930.0	13	95	47	95	29.5	24.5	17.8	31.6	36.2	36.9	0.897	6.9	5.9	5.5	PN
44330	9/ 4/86	0628	2835.0	8930.0	13	188	94	188	29.8	19.0	13.3	32.0	36.6	35.9	0.209	5.8	4.3	4.0	PN
44331	9/ 4/86	1115	2855.0	8900.0	13	105	50	100	30.1	22.6	15.8	28.6	36.4	36.1	23.587	8.6	3.8	3.3	PN
44332	9/ 4/86	1341	2859.9	8900.0	13	68	34	68	31.0	26.7	21.1	30.4	35.8	37.5	29.390	8.3	2.6	3.4	PN
44333	9/ 4/86	1514	2906.2	8859.7	13	9	4	8	30.6	29.0	28.6	19.5	32.0	33.5	11.625	9.2	6.1	4.7	PN
44334	9/ 4/86	1845	2910.0	8830.0	11	181	90	181	29.7	19.0	14.2	30.8	36.7	36.0	0.277	5.9	4.4	4.0	PN
44335	9/ 4/86	2330	2915.0	8800.0	11	258	100	200	29.7	17.4	13.2	30.1	36.6	35.8	0.271	6.1	4.3	3.9	PN
44336	9/ 5/86	0400	2925.0	8730.0	99	191	95	191	29.1	17.9	13.5	33.3	36.5	35.9	0.148	6.3	4.4	4.0	PN
44337	9/ 5/86	0840	2955.0	8730.0	10	32	15	30	28.4	28.5	28.3	34.0	34.7	34.9	0.242	5.9	5.8	5.4	PN
44338	9/ 5/86	1206	3014.0	8730.0	10	11	5	11	28.7	28.5	28.4	32.8	34.0	34.4	0.361	5.8	6.0	5.9	PN
44339	9/ 5/86	1548	3018.9	8700.3	10	18	9	18	29.1	28.8	28.5	34.1	34.5	34.8	0.660	5.9	5.8	5.7	PN
44340	9/ 5/86	1720	3010.0	8700.0	10	25	13	25	28.7	28.3	28.3	34.4	34.6	34.8	0.355	5.9	5.7	6.0	PN
44341	9/ 5/86	2025	2950.0	8700.0	10	184	91	183	28.7	17.3	13.6	32.7	37.1	35.9	0.147	6.1	4.1	3.6	PN
44342	9/ 6/86	0201	2929.9	8630.2	9	212	106	200	29.1	18.2	13.4	33.6	36.5	35.8	0.117	3.7	3.1	2.6	PN
44343	9/ 6/86	0610	3000.0	8630.0	9	55	28	55	28.7	25.2	21.9	33.6	37.0	37.0	0.212	3.9	3.6	3.3	PN
44344	9/ 6/86	0926	3021.0	8630.0	9	20	9	18	28.5	28.6	28.5	31.4	34.7	34.7	0.978	5.9	5.3	5.0	PN
44345	9/ 6/86	1339	3010.0	8600.0	9	23	11	23	28.9	28.8	28.6	34.6	34.5	34.6	0.386	5.7	5.6	5.5	PN
44346	9/ 6/86	1720	2945.0	8600.0	9	42	21	42	29.4	29.0	24.4	34.6	34.7	36.4	0.284	6.7	5.8	5.0	PN
44347	9/ 6/86	2156	2915.0	8600.0	99	168	87	164	29.5	19.8	14.5	34.4	37.9	36.0	0.093	5.5	3.7	3.4	PN
44348	9/ 7/86	0350	2939.8	8529.9	8	23	11	23	29.1	29.2	28.9	33.3	33.8	34.5	0.262	5.8	5.8	4.7	PN
44349	9/ 7/86	0743	2910.0	8530.0	8	65	32	65	28.9	26.4	21.7	35.0	36.4	36.9	0.188	5.9	6.6	4.4	PN
44350	9/ 7/86	1242	2838.1	8529.9	8	176	88	176	29.4	18.2	13.3	33.3	36.9	35.9	0.134	6.3	4.0	4.0	PN
44351	9/ 7/86	1623	2830.0	8500.0	8	100	49	100	29.8	23.4	18.1	34.1	36.7	36.5	0.130	5.6	5.5	3.7	PN
44352	9/ 7/86	2039	2800.0	8500.0	6	252	100	201	29.7	19.2	13.8	33.5	36.4	36.0	0.108	5.6	3.8	3.7	PN
44353	9/ 8/86	0109	2800.1	8430.1	6	75	37	75	29.6	24.3	19.4	34.8	38.0	37.1	0.037	5.7	6.1	3.6	PN
44354	9/ 8/86	0610	2830.0	8430.0	6	48	27	48	29.6	29.6	26.4	35.6	35.8	36.2	0.057	6.5	6.6	6.8	PN
44355	9/ 8/86	1130	2800.0	8400.0	6	44	21	42	29.8	29.6	25.7	35.8	35.8	36.5	0.134	5.4	5.7	5.6	PN

Table 1 (cont'd.)

NMFS SEPTEMBER PLANKTON SURVEY																			
OREGON II																			
STA#	DATE	TIME	POSITION		STAT	DEPTH	SAMPLE		TEMPERATURE,C			SALINITY,PPT			CL, SUR	DISSOLVED			GEAR
			LAT	LONG			ZONE	DEPTH	MID	MAX	SUR	MID	MAX	SUR		MID	MAX	SUR	
44356	9/ 8/86	1550	2730.0	8400.0	5	59	30	59	30.3	28.9	21.4	35.9	36.6	36.8	0.070	5.6	6.0	5.3	PN
44357	9/ 8/86	1930	2730.0	8430.0	5	130	65	130	30.1	20.1	15.2	34.2	37.0	36.4	0.038	5.6	4.6	4.0	PN
44358	9/ 8/86	0040	2700.0	8430.0	5	176	87	176	30.0	20.4	14.1	34.0	36.9	36.2	0.098	5.8	4.5	3.7	PN
44359	9/ 9/86	0426	2700.0	8400.0	5	82	41	82	30.1	25.2	18.8	34.3	36.6	36.5	0.114	5.9	6.5	4.2	PN
44360	9/ 9/86	0837	2700.0	8330.0	5	50	25	50	29.8	29.8	24.1	36.0	36.4	37.7	0.063	5.7	5.8	5.4	PN
44361	9/ 9/86	1327	2630.2	8330.0	4	57	28	57	29.7	29.6	23.3	35.6	36.4	37.2	0.080	5.5	5.6	5.1	PN
44362	9/ 9/86	1717	2630.0	8400.0	4	122	61	122	30.1	21.7	16.4	33.3	37.1	36.9	0.102	5.1	5.6	2.8	PN
44363	9/ 9/86	2115	2630.0	8430.0	99	198	98	196	29.7	20.0	13.6	33.2	37.0	36.1	0.098	5.6	3.8	3.0	PN
44364	9/10/86	0216	2630.2	8430.0	99	210	100	200	29.7	20.9	14.3	32.5	37.0	36.1	0.125	5.7	4.4	3.6	PN
44365	9/10/86	0615	2600.0	8400.0	4	135	67	135	29.8	21.2	15.8	33.9	36.7	37.2	0.033	5.5	5.3	3.6	PN
44366	9/10/86	1036	2600.0	8330.0	4	62	31	62	29.5	29.7	19.7	36.1	36.6	38.0	0.064	5.5	5.5	3.9	PN
44367	9/10/86	1508	2600.0	8300.0	4	42	21	42	29.8	29.7	27.8	36.7	36.6	37.5	0.098	6.5	5.3	4.7	PN
44368	9/10/86	1920	2530.0	8300.0	3	51	25	51	29.9	29.1	25.2	35.5	36.1	36.6	0.078	6.0	6.4	6.1	PN
44369	9/10/86	2320	2530.0	8330.0	3	68	34	68	29.7	26.6	20.0	35.0	36.3	36.6	0.064	5.4	6.1	3.7	PN
44370	9/11/86	0340	2530.0	8400.1	3	134	67	134	29.6	22.0	16.4	33.2	36.5	36.4	0.110	5.5	4.7	3.1	PN
44371	9/11/86	0727	2530.0	8430.0	99	424	100	200	29.6	21.7	16.7	36.0	36.5	36.3	0.060	5.1	4.9	4.1	PN
44372	9/11/86	1230	2500.1	8430.1	99	1830	100	200	29.4	22.3	17.2	36.1	37.4	36.4	0.075	5.1	4.8	3.2	PN
44373	9/11/86	1715	2500.0	8400.0	3	124	62	124	29.9	22.2	16.8	34.6	36.7	36.6	0.057	4.9	5.3	3.0	PN
44374	9/11/86	2126	2500.0	8330.0	3	68	32	64	29.9	25.7	21.0	34.6	36.6	36.6	0.039	5.5	6.4	5.2	PN
44375	9/12/86	0155	2500.1	8300.0	3	51	25	51	29.8	29.2	25.1	34.8	33.9	36.7	0.027	5.6	5.9	5.0	PN
44376	9/12/86	0556	2430.0	8300.0	2	30	15	30	29.8	30.0	28.7	34.8	35.0	36.5	0.090	5.7	5.6	5.8	PN
44377	9/12/86	0932	2430.0	8330.0	2	288	100	200	29.7	19.1	14.1	34.7	36.5	35.9	0.063	5.5	3.8	3.9	PN
44378	9/12/86	1606	2400.0	8300.0	2	950	100	200	29.5	23.6	17.5	36.5	36.6	36.4	0.050	5.8	6.2	4.5	PN
44379	9/12/86	1925	2400.0	8230.0	2	798	100	200	29.5	25.5	18.5	36.3	36.8	36.7		5.6	5.8	4.8	PN
44380	9/13/86	0015	2429.7	8230.1	2	17	8	17	30.0	30.0	30.0	34.6	34.8	34.8	0.178	5.7	5.5	5.6	PN
44382	9/14/86	2100	2400.0	8200.0	2	984	100	200	29.7	25.5	18.3	36.3	36.8	36.6		5.4	5.1	4.5	PN

Table 1 (cont'd.)

FLORIDA SEPTEMBER PLANKTON SURVEY																				
HERNAN CORTEZ II																				
STA#	DATE		POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)			TEMPERATURE,C			SALINITY,PPT			CL, SUR	DISSOLVED OXYGEN			GEAR
	MM/DD/YY	TIME	LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX	SUR		MID	MAX		
00012	9/ 6/86	1948	2946.0	8355.0	7	7	3	6	29.0	29.2	28.8	30.9	30.9	32.1	1.793	6.0	6.0	5.2	PN	
00013	9/ 7/86	0250	2930.0	8430.0	7	22	10	17	28.9	29.1	28.8	34.5	34.5	35.0	0.700	5.7	5.9	5.1	PN	
00014	9/ 7/86	0738	2930.0	8500.0	8	8	3	5	28.4	28.7	29.0	32.9	32.7	33.6	1.080	5.5	4.7	4.6	PN	
00015	9/ 7/86	1233	2900.0	8500.0	8	40	18	35	33.0	29.1	26.0	34.6	35.6	36.0	0.164	7.3	7.9	7.2	PN	
00016	9/ 7/86	1705	2900.0	8430.0	7	30	13	27	30.5	29.2	27.3	35.3	35.3	35.8	0.187	5.9	6.0	5.8	PN	
00017	9/ 7/86	2138	2900.0	8400.0	7	27	13	21	29.1	29.3	29.3	35.6	35.5	35.4	0.184	5.6	5.8	5.8	PN	
00018	9/ 8/86	0219	2930.0	8400.0	7	18	10	16	29.2	29.3	29.2	33.9	33.9	34.6	0.848	5.8	5.6	5.4	PN	
00019	9/ 8/86	0628	2930.1	8335.5	7	8	3	5	28.7	28.9	29.0	30.8	30.9	32.6	0.745	5.6	5.8	5.8	PN	
00020	9/ 8/86	1125	2900.1	8330.0	7	15	7	13	29.3	29.4	29.4	31.4	33.4	34.6	0.389	5.2	5.3	5.3	PN	
00021	9/ 8/86	1742	2855.4	8300.0	6	9	3	6	29.9	29.2	29.8	31.5	31.8	32.0	0.980	5.4	5.7	5.7	PN	
00022	9/ 9/86	0051	2830.0	8300.0	6	9	3	5	29.3	29.5	25.1	34.6	35.2	34.7	1.831	4.7	4.8	4.8	PN	
00023	9/ 9/86	0519	2830.0	8330.0	6	24	11	19	29.3	29.5	29.5	35.5	35.8	35.5	0.443	5.3	5.5	5.8	PN	
00024	9/ 9/86	0957	2830.0	8400.0	6	36	15	30	29.3	29.3	28.6	35.6	35.6	35.8	0.275	5.5	5.8	5.4	PN	
00025	9/ 9/86	1700	2800.0	8330.0	6	31	12	24	29.5	29.6	29.6	35.9	35.9	36.4	0.491	5.0	5.4	5.4	PN	
00026	9/ 9/86	2130	2800.0	8300.0	6	14	4	9	29.5	29.8	29.8	35.8	35.7	35.7	1.128	4.8	5.4	5.4	PN	
00027	9/10/86	0239	2730.0	8300.0	5	19	7	15	29.5	29.8	29.9	35.7	35.7	35.6	0.838	5.0	5.8	5.8	PN	
00028	9/10/86	1410	2730.0	8330.0	5	41	16	34	28.9	29.2	27.3	36.4	36.2	36.2	0.349	5.1	5.8	5.5	PN	
00029	9/10/86	1949	2700.0	8300.0	5	34	15	30	29.5	29.6	29.6	35.0	36.4	36.5	0.707	4.6	4.8	4.7	PN	
00030	9/11/86	0020	2700.0	8230.0	5	12	4	9	29.6	29.8	29.8	34.8	34.8	34.8	1.252	4.6	4.4	5.0	PN	
00031	9/11/86	0517	2630.0	8230.0	4	20	9	17	29.9	30.0	31.5	36.2	36.5	36.4	1.352	5.3	5.5	4.8	PN	
00032	9/11/86	0922	2630.0	8300.0	4	37	16	31	29.6	29.6	29.5	36.5	36.6	36.4	0.278	5.8	5.9	5.9	PN	
00033	9/11/86	1608	2600.0	8230.0	4	30	13	25	33.0	30.0	29.9	36.5	36.4	36.4	0.557	5.8	5.9	5.9	PN	
00034	9/11/86	2036	2600.0	8200.0	4	12	4	8	32.2	33.1	33.2	36.2	36.4	36.2	0.812	5.0	5.4	5.4	PN	
00035	9/12/86	0227	2530.0	8230.0	3	34	14	29	29.5	29.7	29.8	36.1	35.9	36.8	0.199	4.9	5.6	4.8	PN	
00036	9/12/86	0641	2530.0	8200.0	3	20	8	16	29.7	29.9	29.9	36.2	36.3	36.3	0.848	5.6	5.6	5.6	PN	
00037	9/12/86	1120	2530.0	8130.0	3	8	2	3	30.4	30.3	30.2	35.5	36.1	36.1	1.646	4.4	4.5	4.6	PN	
00038	9/12/86	1615	2500.0	8130.0	3	10	3	7	30.7	30.1	30.0	36.6	36.8	37.4	0.881	4.6	5.2	5.3	PN	
00039	9/12/86	2107	2500.0	8200.0	3	21	9	17	29.7	29.7	30.2	35.7	35.9	38.1	0.389	5.7	5.8	5.7	PN	
00040	9/13/86	0130	2500.0	8230.0	3	34	15	29	29.1	29.6	29.9	35.6	35.6	36.4	0.103	6.0	6.3	6.5	PN	

Table 1 (cont'd.)

MISSISSIPPI SEPTEMBER PLANKTON SURVEY  
TOMMY MUNRO

STA#	DATE		POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)		TEMPERATURE,C			SALINITY,PPT			CL, SUR	DISSOLVED OXYGEN			GEAR
	MM/DD/YY	TIME	LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX		SUR	MID	MAX	
00001	9/ 8/86	2052	3010.0	8841.0	11	10	5	9	27.3	27.0	26.8	34.0	35.0	34.0		8.3	8.4	7.5	PN
00003	9/ 9/86	0506	2946.7	8840.8	11	18	10	17	28.4	28.4	28.2	33.4	33.8	34.0		7.6	7.8	6.2	PN
00004	9/ 9/86	0929	2934.8	8841.2	11	17	7	16	27.2	27.3	27.3	33.0	34.0	35.0		8.3	9.4	8.5	PN
00005	9/ 9/86	1242	2932.9	8856.5	11	10	5	9	27.8	27.7	27.6	34.0	35.0	35.0		9.2	9.2	9.2	PN
00008	9/ 9/86	2335	2934.4	8820.6	11	38	19	37	27.8	26.1	24.5	35.0	36.0	36.0		9.0	6.5	5.9	PN
00010	9/10/86	0532	2958.2	8820.6	11	28	14	27	26.9	26.5	26.4	34.0	34.0	35.0		6.4	6.5	5.7	PN
00012	9/10/86	1207	3010.1	8800.7	11	7	3	7	27.5	27.5	27.5	34.0	34.0	34.0		9.6	9.7	9.7	PN
00014	9/10/86	1644	2947.0	8801.3	11	34	17	33	27.9	26.3	26.0	34.0	34.0	36.0		9.0	9.5	9.8	PN
00019	9/10/86	2354	2946.7	8740.7	10	34	17	33	26.8	27.2	25.8	34.0	35.0	36.0		9.6	9.5	7.9	PN

Table 1 (cont'd.)

NMFS SEPTEMBER PLANKTON SURVEY CHAPMAN																			
STA#	DATE MM/DD/YY	TIME	POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)		TEMPERATURE,C			SALINITY,PPT			CL, SUR	DISSOLVED OXYGEN			GEAR
			LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX		SUR	MID	MAX	
00001	9/13/86	1030	2830.0	8929.4	13	498	106	147	29.2	22.6	15.1	36.2	36.4	36.1	0.114	6.0	6.2	4.8	PN
00002	9/13/86	1446	2859.9	8930.0	13	11	5	11	29.4	29.6	28.6	20.4	28.2	34.4	24.546	8.2	5.8	4.3	PN
00003	9/13/86	1745	2915.0	8944.9	13	8	4	8	29.5	29.3	29.3	26.3	26.3	31.2	3.536	6.5	6.7	4.0	PN
00004	9/13/86	2129	2901.1	9000.5	14	20	10	20	29.4	29.4	27.5	29.3	31.3	34.8	0.571	6.2			PN
00005	9/14/86	0027	2845.0	9000.2	14	42	21	42	30.0	27.9	25.1	29.4	35.5	36.2	0.831	6.2	5.8	5.2	PN
00006	9/14/86	0326	2830.3	9000.0	14	88	44	88	28.8	24.0	19.6	27.5	36.3	36.3	1.022	5.9	5.5	4.3	PN
00007	9/14/86	0826	2859.4	9029.2	14	9	4	8	29.0	29.0	29.4	30.6	30.4	30.6	0.478				PN
00008	9/14/86	1224	2829.9	9030.1	14	35	17	35	29.6	29.4	26.2	30.6	34.9	36.1	0.324				PN
00009	9/14/86	1622	2805.4	9029.8	14	137	68	137	30.5	23.9	17.2	36.5	36.5	36.3	0.085				PN
00010	9/14/86	2021	2815.1	9100.1	15	68	34	68	29.2	27.2	21.6	36.4	36.6	36.3	0.067				PN
00011	9/14/86	2353	2840.7	9059.7	15	13	6	13	29.3	29.4	28.8	31.7	31.4	34.2	0.353				PN
00012	9/15/86	0410	2900.0	9130.1	15	9	4	9	29.4	29.3	29.3	32.1	31.9	32.1	1.994				PN
00013	9/15/86	0815	2829.9	9130.0	15	48	22	44	29.0	29.3	23.0	34.2	36.2	36.0	0.240				PN
00014	9/15/86	1215	2759.9	9130.1	15	162	81	162	29.3	21.4	15.7	34.2	36.3	36.1	0.123				PN
00015	9/15/86	1613	2800.3	9159.8	16	115	57	115	29.8	25.0	17.6	36.8	36.5	36.6	0.116				PN
00016	9/15/86	2021	2830.0	9200.0	16	47	24	47	29.2	26.6	23.5	33.9	36.1	36.1	0.197				PN
00017	9/16/86	0020	2900.4	9159.9	16	16	8	16	29.4	29.4	29.4	32.4	32.4	33.1	0.221				PN
00018	9/16/86	0556	2928.7	9230.1	16	7	4	7	32.0	32.0	32.0	25.7	26.8	30.1	7.327	6.6	5.3	4.2	PN
00019	9/16/86	0936	2901.0	9230.0	16	22	11	22	29.2	29.1	29.5	33.2	33.2	34.9	0.249				PN
00020	9/16/86	1327	2829.7	9229.8	16	48	24	48	29.5	29.0	23.5	33.3	35.9	36.1	0.182				PN
00021	9/16/86	1726	2800.2	9230.0	16	102	51	102	30.0	25.1	20.0	35.8	36.6	36.4	0.098	5.8	6.7	4.0	PN
00022	9/16/86	2054	2800.1	9300.0	17	103	51	103	29.2	24.2	18.7	36.7	36.6	36.5	0.062				PN
00023	9/17/86	0110	2830.8	9300.5	17	41	20	41	29.3	28.9	23.6	35.7	36.2	36.2	0.135				PN
00024	9/17/86	0444	2900.0	9300.0	17	21	10	21	29.5	29.2	29.3	35.1	35.0	35.6	0.122				PN
00025	9/17/86	0835	2930.0	9300.0	17	11	5	11	29.5	29.2	29.1	29.2	30.5	32.5	1.732				PN
00026	9/17/86	1217	2930.0	9329.9	17	8	4	8	29.9	29.3	29.2	29.9	29.7	30.0	2.720				PN
00027	9/17/86	1607	2900.8	9330.0	17	21	10	21	30.5	29.0	29.0	33.9	33.9	34.1	0.389				PN
00028	9/17/86	2004	2830.1	9330.0	17	40	20	40	29.4	29.0	26.5	36.1	36.2	36.3	0.089				PN

Table 1 (cont'd.)

NMFS SEPTEMBER PLANKTON SURVEY CHAPMAN																			
STA#	DATE		POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)		TEMPERATURE,C			SALINITY,PPT			CL, SUR	DISSOLVED OXYGEN			GEAR
	MM/DD/YY	TIME	LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX		SUR	MID	MAX	
00029	9/18/86	0001	2800.0	9330.0	17	86	43	86	29.6	23.4	20.1	36.3	36.4	36.4	0.047				PN
00030	9/18/86	0347	2759.9	9359.9	18	77	38	77	29.5	24.6	20.5	36.3	36.5	36.6	0.069				PN
00031	9/18/86	0743	2830.0	9400.0	18	40	20	39	28.8	28.9	24.8	36.2	36.2	36.6	0.113				PN
00032	9/18/86	1136	2900.0	9400.0	18	16	8	16	29.9	29.2	29.2	34.5	34.4	34.5	0.178				PN
00033	9/18/86	1508	2930.1	9400.0	18	10	5	10	32.7	29.8	29.3	30.6	30.5	31.0	1.869				PN
00034	9/18/86	1831	2925.8	9429.9	18	7	3	7	30.0	29.6	29.5	29.9	29.8	29.7	2.772				PN
00035	9/18/86	2233	2900.3	9430.2	18	15	7	15	29.3	29.3	29.3	34.8	34.7	34.7	0.673				PN
00036	9/19/86	0230	2830.0	9430.0	18	35	17	35	30.0	29.1	28.7	35.9	35.8	36.2	0.107				PN
00037	9/19/86	0637	2800.0	9430.0	18	66	33	66	28.8	25.2	22.0	36.5	36.6	36.5	0.106				PN
00038	9/19/86	1020	2800.2	9459.8	19	77	38	76	28.7	25.4	21.3	36.4	36.7	36.5	0.128				PN
00039	9/19/86	1400	2830.1	9459.8	19	31	15	31	29.4	29.1	29.0	35.6	35.6	36.1	0.221				PN
00040	9/19/86	1748	2859.9	9500.0	19	13	6	13	29.1	28.7	28.6	31.3	31.1	34.0	1.246				PN
00041	9/19/86	2132	2845.2	9530.3	19	8	4	8	29.1	29.1	29.1	33.0	32.9	32.9	1.433				PN
00042	9/20/86	0114	2814.2	9530.6	19	35	17	35	29.4	29.0	28.9	35.7		36.2	0.498				PN
00043	9/20/86	0532	2745.1	9530.1	20	102	51	102	29.5	27.4	21.5	36.6	36.7	36.4	0.104				PN
00044	9/20/86	1021	2730.4	9600.0	20	200	100	200	28.5	17.5	13.6	36.3	36.4	36.5	0.114				PN
00045	9/20/86	1442	2800.1	9600.0	19	41	20	41	29.4	28.7	28.7	36.3	36.3	36.3	0.249				PN
00046	9/20/86	1832	2830.0	9600.0	19	12	6	12	29.4	29.0	29.0	34.8	34.7	34.8	1.173				PN
00047	9/20/86	2034	2827.8	9611.8	19	8	3	7	28.9	28.9	29.0	34.4	34.2	34.6	1.931				PN
00048	9/20/86	2135	2824.9	9612.1	19	11						35.2							PN
00049	9/20/86	2235	2825.9	9615.5	19	7						33.1							PN
00050	9/20/86	2331	2823.5	9615.7	19	11			28.5			35.3							PN
00051	9/21/86	0024	2821.8	9617.0	19	12	6	12	29.3	28.9	28.9	35.0	35.1	35.1	1.474				PN
00052	9/21/86	0129	2820.7	9619.1	19	11			29.1			35.2							PN
00053	9/21/86	0226	2820.4	9621.0	19	8	4	8	29.3	28.9	29.1	33.8	34.0	33.9	2.554				PN
00054	9/21/86	0336	2817.6	9621.9	19	12			29.0			35.4							PN
00055	9/21/86	0434	2816.9	9626.0	19	7			29.0			34.5							PN
00056	9/21/86	0526	2814.1	9626.3	19	13	6	13	29.0	28.9	28.9	35.6	35.5	35.4	1.693				PN



Table 1 (cont'd.)

NMFS SEPTEMBER PLANKTON SURVEY																			
CHAPMAN																			
STA#	DATE		POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS		TEMPERATURE,C			SALINITY,PPT			CL, SUR	DISSOLVED OXYGEN			GEAR
	MM/DD/YY	TIME	LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX		SUR	MID	MAX	
00057	9/21/86	0731	2800.0	9630.0	19	23	11	23	28.9	28.9	28.9	36.1	36.1	36.1	0.914				PN
00058	9/21/86	1122	2729.9	9630.0	20	69	34	67	28.5	25.0	21.8	36.4	36.1	36.4	0.114				PN
00059	9/21/86	1440	2730.1	9700.2	20	24	12	24	29.7	28.9	29.0	36.4	36.3	36.4	4.860				PN
00060	9/21/86	1848	2700.0	9645.0	20	70	35	70	29.3	25.0	21.3	36.3	36.3	36.4	0.093				PN
00061	9/21/86	2226	2700.1	9714.9	20	21	10	21	28.7	28.6	28.5	36.4	36.6	36.4	0.696				PN
00062	9/22/86	0221	2629.8	9700.0	21	31	15	31	28.9	28.6	28.6	36.5	36.4	36.4	0.436				PN
00063	9/22/86	0558	2630.1	9630.0	21	82	41	82	29.0	24.9	22.2	36.5	36.3	36.4	0.113				PN
00064	9/22/86	0958	2601.5	9629.9	21	58	29	58	28.7	28.5	23.6	36.5	36.4	36.4	0.114				PN
00065	9/22/86	1320	2600.0	9700.2	21	25	12	25	29.7	28.8	28.7	36.5	36.3	36.4	0.174				PN

Table 1 (cont'd.)

ALABAMA SEPTEMBER PLANKTON SURVEY  
ALABAMA INSHORE VESSELS

STA#	DATE		POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)		TEMPERATURE,C			SALINITY,PPT			CL, SUR	DISSOLVED OXYGEN			GEAR
	MM/DD/YY	TIME	LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX		SUR	MID	MAX	
00011	9/22/86	1700	3010.3	8809.2	11	15	7	15	25.5	25.0	25.0	32.0	32.0	31.0		5.0	4.8	4.2	PN
00012	9/22/86	1739	3009.7	8806.4	11	15	8	15	25.0	25.0	24.5	31.0	32.0	32.0		7.4	7.4	5.4	PN
00013	9/22/86	1903	3008.9	8801.9	11	15	8	15	25.0	25.0	25.0	32.0	33.0	33.0		3.8	3.8	7.0	PN
00014	9/22/86	1934	3009.5	8759.4	10	15	8	15	24.5	25.0	25.0	32.0	33.0	33.0		7.2	6.4	5.0	PN
00021	9/22/86	1610	3014.2	8807.7	11	5	3	5	25.0		25.0	31.0		30.0		6.4		5.0	PN
00022	9/22/86	1532	3013.4	8804.8	11	5	3	5	25.5		25.0	26.0		29.0		7.8		7.0	PN
00023	9/22/86	2038	3012.1	8759.7	11	5	3	5	25.0		25.0	32.0		32.0		5.2		4.8	PN
00024	9/22/86	2008	3012.4	8758.0	10	5	3	5	24.5		25.0	31.0		31.0		3.6		3.6	PN
00031	9/22/86	1815	3008.7	8803.7	11	14	7	14	25.0	25.0	25.0	32.0	31.0	32.0		4.0	6.4	4.0	PN
00032	9/18/86	2138	3012.8	8802.3	11	14	7	14	26.5	26.5	27.0	30.0	31.0	31.0		6.2	6.0	1.8	PN
00033	9/18/86	1857	3015.0	8802.3	11	14	7	14	27.5	27.5	27.5	30.0	30.0	30.0		6.0	6.4	3.6	PN
00034	9/18/86	1938	3019.0	8801.0	11	14	7	14	27.0	27.0	27.0	26.0	26.0	28.0		5.8	5.0	5.4	PN
00041	9/18/86	1748	3017.3	8807.0	11	4	2	4	27.5		27.5	26.0		26.0		6.4		3.4	PN
00042	9/18/86	1820	3016.7	8804.6	11	4	2	4	27.5		27.5	28.0		28.0		6.2		6.0	PN
00043	9/18/86	2104	3014.7	8800.3	11	4	2	4	27.0		27.5	30.0		30.0		4.8		3.8	PN
00044	9/18/86	2037	3015.8	8758.4	10	4	2	4	27.0		27.5	26.0		29.0		5.4		4.8	PN

Table 1 (cont'd.)

NMFS OCTOBER-NOVEMBER GROUND FISH SURVEY  
OREGON II

STA#	DATE MM/DD/YY	TIME	POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)		TEMPERATURE,C			SALINITY,PPT			CL, SUR	DISSOLVED OXYGEN			GEAR
			LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX		SUR	MID	MAX	
44560	10/23/86	1123	2901.0	8547.1	8	175	87	175	26.9	21.5	17.7	35.9	36.4	36.0	0.112	6.4	5.5	4.2	ST
44561	10/23/86	1312	2855.2	8541.1	8	171	85	171	26.7	22.1		36.4	36.4	36.4	0.106	6.8	6.4	4.9	ST
44562	10/23/86	1430	2852.3	8541.0	8	178	89	178	26.8	22.4	17.7	36.2	36.8	36.5	0.122	6.4	5.4	4.7	ST
44563	10/23/86	1539	2851.2	8539.0	8	171	85	171	26.8	22.3	17.9	36.2	36.9	36.5	0.302	6.1	5.7	4.4	ST
44564	10/23/86	1837	2847.0	8519.0	8	116	58	116	26.5	24.9	20.7	35.8	36.9	36.8	0.070	6.2	6.3	4.6	ST
44565	10/23/86	2007	2842.1	8521.2	8	146	73	146	26.8	24.5	20.0	36.3	36.7	36.8	0.067	5.9	5.6	4.3	ST
44566	10/23/86	2159	2832.0	8526.0	8	179	89	179	26.8	19.1	18.4	36.3	36.8	36.6	0.089	6.2	5.3	4.3	ST/PN
44567	10/24/86	0118	2822.8	8513.6	99	170	85	170	27.1	25.6	19.8	36.3	37.0	36.7	0.093	6.1	5.5	4.6	ST
44568	10/24/86	0300	2827.8	8510.8	99	154	77	154	26.9	25.9	20.0	36.3	37.0	36.8	0.064	5.7	5.7	4.6	ST
44569	10/24/86	0438	2824.0	8501.0	99	110	55	110	26.7	23.8	21.8	36.3	36.5	36.5	0.168	6.1	6.1	4.8	ST/PN
44570	10/24/86	0654	2829.5	8503.8	8	118	59	118	26.7	26.3	21.8	36.2	36.4	36.9	0.093	6.3	6.0	4.9	ST/PN
44571	10/24/86	0907	2836.2	8507.0	8	116	58	116	26.3	25.2	21.7	36.1	36.5	36.9	0.137	6.0	5.9	4.6	ST
44573	10/24/86	1408	2847.3	8501.8	8	57	28	57	26.5	26.4	22.4	35.9	35.9	36.9	0.089	6.1	6.1	5.2	ST
44574	10/24/86	1633	2859.0	8500.8	8	42	21	42	24.3	24.2	20.3	35.2	35.3	36.5	0.380	6.5	6.0	4.3	ST/PN
44575	10/24/86	1800	2905.0	8506.0	8	34	17	34	24.0	23.3	21.6	35.1	35.7	36.4	0.411	6.6	5.4	4.9	ST
44576	10/24/86	2129	2907.0	8525.1	8	46	23	46	25.9	26.0	20.8	35.7	35.8	36.5	0.393	6.1	6.1	4.3	ST/PN
44577	10/24/86	2255	2916.0	8527.0	8	44	22	44	25.1	25.1	20.8	35.2	35.2	36.3	0.206	6.2	6.3	4.1	ST
44578	10/25/86	0116	2924.0	8526.9	8	30	15	30	23.7	23.7	22.9	34.7	35.2	35.4	0.405	6.7	6.3	5.6	ST
44579	10/25/86	0312	2930.1	8515.8	8	20	10	20	24.3	24.3	24.3	34.9	34.9	34.9	1.153	6.4	6.2	6.2	ST
44580	10/25/86	0525	2927.8	8505.0	8	13	6	13	24.4	24.4	24.4	34.9	34.9	34.9	1.827	6.5	6.3	6.2	ST/PN
44581	10/25/86	0725	2934.8	8516.0	8	10	5	10	22.9	22.9	22.9	32.3	33.2	33.3	7.040	6.5	6.5	6.2	ST
44583	10/25/86	2131	2928.0	8527.9	8	24	12	24	23.9	23.9	24.0	34.8	34.7	34.9	0.735	6.5	6.9	6.9	ST/PN
44584	10/25/86	2337	2934.1	8534.1	8	22	11	22	23.7	23.8	23.8	34.9	34.9	34.9	1.302	6.8	6.7	6.7	ST
44585	10/26/86	0128	2928.1	8540.1	8	28	14	28	23.7	23.8	23.8	34.9	34.9	35.0	0.555	6.6	6.3	6.3	ST
44586	10/26/86	0130	2927.8	8544.3	8	35	17	35	23.8	23.8	23.4	34.9	35.0	35.3	0.598	6.5	6.1	5.9	ST
44587	10/26/86	0249	2929.0	8552.2	8	40	20	40	25.6	25.7	23.7	35.7	35.7	35.6	0.218	6.3	6.1	5.5	ST
44588	10/26/86	0358	2923.5	8548.8	8	45	22	45	24.4	24.5	22.5	35.0	35.1	35.8	0.417	6.5	6.3	5.0	ST
44589	10/26/86	0506	2922.0	8546.1	8	46	23	46	25.2	25.3	22.0	35.4	35.4	35.9	0.280	6.2	6.0	4.9	ST/PN

Table 1 (cont'd.)

NMFS OCTOBER-NOVEMBER GROUND FISH SURVEY  
OREGON II

STA#	DATE MM/DD/YY	TIME	POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)		TEMPERATURE, C			SALINITY, PPT			CL, SUR	DISSOLVED OXYGEN			GEAR
			LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX		SUR	MID	MAX	
44590	10/26/86	0610	2919.0	8549.1	8	58	29	58	25.4	26.1	21.7	35.4	35.9	36.0	0.218	6.1	6.0	4.7	ST
44591	10/26/86	0711	2917.8	8551.1	8	68	34	68	25.9	25.9	21.5	36.0	35.8	36.8	0.150	6.2	6.0	4.5	ST
44592	10/26/86	1029	2909.0	8556.0	8	181	90	180	25.1	22.2	18.2	35.0	36.5	36.5	0.085	5.9	5.5	4.0	ST/PN
44593	10/26/86	1210	2918.0	8556.3	8	107	54	107	26.2	24.7	21.5	35.8	36.3	36.4	0.118	6.4	6.1	5.1	ST
44594	10/26/86	1414	2926.9	8505.9	8	86	43	86	26.7	26.4	22.6	36.0	36.1	36.5	0.112	6.1	6.0	5.4	ST/PN
44595	10/26/86	1614	2933.3	8610.0	9	88	44	88	26.4	26.4	22.3	36.1	36.2	36.4	0.115	6.5	6.5	5.5	ST
44596	10/26/86	1921	2932.0	8627.8	9	179	89	175	26.4	22.3	18.1	36.1	36.6	36.5	0.123	6.4	6.1	4.1	ST/PN
44597	10/26/86	2126	2945.0	8632.0	9	124	62	124	26.3	24.4	19.5	36.1	36.8	36.5	0.131	6.1	6.0	4.1	ST
44598	10/26/86	2327	2951.0	8621.0	9	74	37	74	25.6	25.6	22.2	35.9	35.9	36.5	0.137	6.2	6.3	5.2	ST
44599	10/27/86	0137	2951.5	8616.0	9	66	33	66	26.0	26.1	23.3	36.0	36.1	36.3	0.143	6.3	6.2	5.4	ST
44600	10/27/86	0531	3003.6	8547.8	8	22	11	22	23.2	23.8	23.9	33.9	34.5	34.6	0.555	6.6	6.2	6.2	ST/PN
44601	10/27/86	0802	3014.0	8608.0	9	25	12	25	23.0	23.1	23.3	34.2	34.4	34.7	0.474	6.3	6.3	6.2	ST
44602	10/27/86	0902	3017.0	8612.1	9	22	11	22	23.1	23.1	23.2	34.3	34.7	34.7					ST
44603	10/27/86	1019	3009.8	8612.1	9	31	15	31	24.1	24.0	23.8	35.0	35.0	35.0	0.374	6.3	6.3	5.9	ST
44604	10/27/86	1138	3008.8	8617.0	9	33	16	33	23.5	23.4	23.3	34.7	34.8	34.8	0.268	6.3	6.3	6.3	ST
44605	10/27/86	1349	3018.5	8621.7	9	23	12	23	24.1	23.9	23.9	35.0	35.0	35.0	0.424	6.7	6.7	6.6	ST
44606	10/27/86	1520	3009.7	8623.2	9	36	18	36	24.4	24.2	24.5	34.8	35.0	35.1	0.330	6.7	6.6	6.4	ST
44607	10/27/86	1711	3003.4	8625.6	9	46	23	46	23.4	25.6	24.1	35.5	35.9	36.6	0.123	6.5	6.5	5.5	ST/PN
44608	10/27/86	1932	2952.1	8636.4	9	108	54	108	26.4	26.4	20.4	35.4	36.2	36.8	0.137	6.7	6.5	4.9	ST
44609	10/27/86	2046	2952.0	8640.1	9	119	59	118	26.4	24.5	19.6	35.8	37.3	37.0	0.137	6.4	6.2	4.3	ST
44610	10/27/86	2212	2958.0	8641.2	9	99	50	99	26.3	26.3	20.5	36.0	36.2	36.5	0.162	6.3	6.4	4.4	ST
44611	10/27/86	2314	2959.0	8644.1	9	107	53	107	26.3	26.3	20.1	36.2	36.3	36.5	0.162	6.3	6.3	4.3	ST
44612	10/28/86	0115	2947.0	8648.0	9	166	83	166	26.4	22.9	18.0	36.2	37.0	36.5	0.109	6.5	5.8	4.2	ST
44613	10/28/86	0317	2953.8	8659.9	10	168	84	168	24.9	22.2	18.4	35.6	36.4	36.6	0.330	6.4	5.4	3.6	ST
44614	10/28/86	0504	2954.9	8703.8	10	138	69	138	24.9	22.3	19.1	35.6	36.7	36.5	0.268	6.2	5.3	3.6	ST/PN
44615	10/28/86	0703	3005.0	8654.3	9	92	46	92	25.2	24.7	20.3	35.7	36.0	36.6	0.224	6.9	6.1	4.7	ST
44616	10/28/86	0850	3006.2	8707.2	10	25	12	24	24.3	24.3	24.5	35.2	35.3	36.3	0.586	6.6	6.7	6.6	ST
44617	10/28/86	0950	3008.0	8709.0	10	29	15	29	23.9	24.0	24.4	34.8	35.1	35.3	0.343	6.8	6.8	6.7	ST

Table 1 (cont'd.)

NMFS OCTOBER-NOVEMBER GROUND FISH SURVEY  
OREGON II

STA#	DATE MM/DD/YY	TIME	POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)			TEMPERATURE, C			SALINITY, PPT			CL, SUR	DISSOLVED OXYGEN			GEAR
			LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX	SUR		MID	MAX		
44618	10/28/86	1119	3013.0	8717.1	10	20	10	20	23.9	23.9	24.4	34.2	34.5	34.6	0.517	6.8	6.7	6.3	ST	
44619	10/28/86	1310	3002.2	8723.3	10	29	15	29	24.8	24.7	24.7	35.5	35.3	35.2	0.343	6.7	6.7	6.7	ST	
44620	10/28/86	1458	2952.2	8720.0	10	47	23	47	25.2	25.2	26.1	35.5	35.5	35.9	0.255	6.2	6.1	5.9	ST	
44621	10/28/86	1601	2951.0	8718.2	10	65	32	65	25.5	25.4	22.8	35.5	35.7	36.5	0.287	6.3	6.0	5.0	ST	
44622	10/28/86	1707	2952.1	8712.3	10	75	37	75	25.0	24.8	22.2	35.5	35.6	36.7	0.252	6.0	6.0	4.9	ST	
44623	10/28/86	1820	2948.7	8711.2	10	114	57	114	24.8	24.4	19.9	35.6	35.9	36.5	0.355	6.0	5.7	4.0	ST	
44624	10/28/86	1947	2946.1	8722.0	10	73	36	73	25.2	25.2	22.1	35.5	35.7	36.7	0.336	5.7	5.9	4.9	ST	
44627	10/29/86	0009	2942.1	8732.9	10	39	19	39	25.6	26.7	25.9	35.3	35.8	35.9	0.231	5.8	5.8	5.6	ST/PN	
44628	10/29/86	0222	2934.4	8747.0	10	42	21	42	25.9	25.9	26.1	35.5	35.9	36.1	0.431	6.4	6.3	6.0	ST	
44629	10/29/86	0332	2935.0	8749.4	10	41	21	41	25.8	25.8	26.3	35.1	35.9	36.2	0.224	6.4	6.3	6.1	ST	
44630	10/29/86	0521	2943.2	8744.0	10	38	19	38	25.2	25.2	26.3	35.4	35.4	36.1	0.187	7.0	6.2	5.9	ST/PN	
44631	10/29/86	0743	2959.1	8732.0	10	28	14	28	24.5	24.5	24.5	35.0	35.0	35.1	0.349	6.0	6.4	6.2	ST	
44632	10/29/86	0846	3000.2	8729.0	10	25	14	25	24.4	24.5	24.5	35.8	35.0	35.0	0.233	6.3	6.4	6.4	ST/PN	
44633	10/29/86	1016	3001.0	8740.2	10	28	14	28	24.3	24.3	24.3	34.8	34.8	34.8	0.592	6.0	6.1	6.2	ST	
44634	10/29/86	1304	2946.0	8757.0	10	36	18	36	24.8	24.7	25.2	35.0	35.0	35.5	0.312	6.3	6.2	3.7	ST/PN	
44635	10/29/86	1356	2943.9	8759.3	10	36	18	36	24.8	24.7	25.3	35.0	35.0	35.9	0.231	6.6	6.4	4.5	ST	
44638	10/29/86	1838	2926.8	8801.7	11	52	26	52	25.9	25.9	25.8	36.0	36.0	36.3	0.187	6.3	6.5	6.1	ST/PN	
44639	10/29/86	1957	2928.0	8806.1	11	47	23	47	25.7	25.8	26.0	35.9	35.9	36.3	0.131	6.0	6.0	5.9	ST	
44640	10/29/86	2155	2923.0	8814.3	11	57	28	57	25.9	26.0	26.0	36.2	36.3	36.4	0.087	6.2	6.2	6.0	ST	
44641	10/30/86	0002	2914.8	8811.6	11	109	54	109	26.2	26.2	20.7	36.1	36.3	36.7	0.064	6.2	6.1	4.3	ST/PN	
44642	10/30/86	0306	2912.0	8822.3	11	185	92	185	26.1	22.1	17.1	36.2	36.8	36.4	0.660	6.3	5.5	4.6	ST	
44643	10/30/86	0523	2922.0	8820.3	11	56	28	56	25.6	25.9	25.6	36.1	36.3	36.6	0.125	6.0	5.9	5.9	ST/PN	
44644	10/30/86	0729	2930.2	8829.9	11	49	24	49	25.3	25.5	25.8	35.6	35.9	36.1	0.126	5.9	5.9	5.2	ST	
44645	10/30/86	0930	2942.1	8827.0	11	38	19	38	24.9	25.0	25.6	34.9	35.0	35.9	0.355	6.2	6.3	6.1	ST	
44646	10/30/86	1100	2941.0	8818.0	11	37	18	37	25.1	25.1	25.1	35.0	35.1	35.6	0.910	6.2	6.4	3.5	ST	
44647	10/30/86	1321	2941.0	8808.3	11	37	19	37	24.9	25.0	24.9	35.2	35.3	36.6	0.193	6.4	6.4	4.7	ST	
44648	10/30/86	1444	2946.0	8810.1	11	38	19	38	25.1	25.1	25.4	34.8	35.0	35.7	0.473	6.6	6.6	3.8	ST	
44649	10/30/86	1735	3003.0	8815.8	11	19	9	19	24.3	24.5	24.6	34.5	34.4	34.6	0.617	6.8	6.8	6.5	ST	

Table 1 (cont'd.)

NMFS OCTOBER-NOVEMBER GROUND FISH SURVEY  
OREGON II

STA#	DATE MM/DD/YY	TIME	POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)		TEMPERATURE,C			SALINITY,PPT			CL, SUR	DISSOLVED OXYGEN			GEAR
			LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX		SUR	MID	MAX	
44650	10/30/86	1952	3003.0	8828.0	11	18	9	18	24.0	24.0	24.2	34.3	34.4	34.5	0.816	6.6	6.6	6.6	ST/PN
44651	10/30/86	2324	2952.0	8842.0	11	18	9	18	23.5	23.5	23.1	33.9	33.9	33.9	1.766	6.5	6.5	6.5	ST
44652	11/ 4/86	2006	2937.1	8940.0	12	16	7	14	24.3	24.3	24.5	35.0	35.0	35.2	0.881	6.3	6.3	6.2	ST
44653	11/ 4/86	2152	2927.0	8838.0	11	46	23	46	24.7	24.8	25.0	35.4	35.4	36.0	0.200	6.4			ST
44654	11/ 4/86	2307	2928.2	8845.0	11	21	10	21	24.3	24.6	24.6	32.8	35.4	35.4	0.765	6.5	6.3	6.3	ST
44655	11/ 5/86	0147	2932.6	8858.7	11	9	5	9	23.2	23.2	23.0	33.3	33.3	33.8	0.299	6.1	6.3	6.2	ST/PN
44656	11/ 5/86	0412	2915.3	8859.7	13	19	10	19	20.2	25.1	25.2	11.5	35.5	35.8	1.729	6.8	5.9	5.8	ST
44657	11/ 5/86	0630	2915.2	8847.7	11	64	31	64	22.4	25.2	22.6	24.1	35.8	36.5	0.976	6.9	6.3	4.5	ST
44658	11/ 5/86	0815	2910.0	8839.0	11	80	40	80	25.5	25.7	21.0	36.2	36.4		0.205	6.1	6.1		ST
44659	11/ 5/86	0916	2908.0	8840.0	11	92	46	92	25.7	25.7	20.9	36.3	36.4	36.7	0.131	6.2	6.1	4.4	ST
44660	11/ 5/86	1112	2907.0	8840.0	11	105	52	105	25.7	25.8	20.9	36.3	36.4	36.8	0.243	6.1	6.1	4.2	ST/PN
44661	11/ 5/86	1258	2902.2	8848.8	11	160	81	162	23.9	23.2	18.3	21.3	36.6	36.7	0.543	7.1	5.1	3.6	ST
44662	11/ 5/86	1502	2900.5	8900.0	13	70	35	70	23.2	25.8	22.7	18.3	36.3	36.7	0.623	7.3	6.1	4.4	ST/PN
44663	11/ 5/86	2034	2905.0	8937.7	13	18	9	18	22.7	25.7	26.9	23.5	32.2	35.4	6.770	9.2	4.8	3.8	ST
44664	11/ 5/86	2152	2902.0	8944.0	13	36	18	36	22.7	26.6	25.9	23.1	35.2	36.1	35.184	8.2	5.1	4.5	ST
44665	11/ 5/86	2358	2855.9	8932.4	13	52	26	52	23.2	25.8	24.6	23.5	35.5	36.4	25.621	8.0		4.5	ST/PN
44666	11/ 6/86	0140	2847.8	8930.6	13	80	40	80	22.4	25.8	21.9	17.5	35.9	36.8	2.579	8.0		4.8	ST
44667	11/ 6/86	0411	2837.7	8927.2	13	142	71	142	22.8	23.1	18.4	27.0	36.6	36.9	1.951	8.0	6.1	4.6	ST
44668	11/ 6/86	0557	2834.7	8927.7	13	205	98	194	23.4	21.6	16.8	28.4	36.6	36.3	1.942	6.0	4.3	3.6	ST/PN
44669	11/ 6/86	1011	2818.0	9008.2	14	91	45	91	24.5	25.7	21.4	31.1	36.2	36.8	3.925	6.3	5.9	4.5	ST
44670	11/ 6/86	1204	2810.2	9019.0	14	153	76	153	24.6	21.6	18.1	33.4	36.5	36.7	2.893	6.4	4.6	3.8	ST
44671	11/ 6/86	1324	2813.2	9022.1	14	100	49	98	24.6	23.9	21.3	32.7	36.9	36.7	2.318	6.5	5.2	4.4	ST
44672	11/ 6/86	1442	2810.1	9026.0	14	106	53	105	24.7	24.4	20.4	33.8	36.7	37.0	0.322	6.1	5.7	4.2	ST
44673	11/ 6/86	1627	2808.7	9026.8	14	120	60	120	24.8	24.1	19.5	34.1	37.1	36.7	0.178	6.2	5.5	3.8	ST/PN
44674	11/ 6/86	1813	2808.0	9040.0	14	118	57	107	25.0	23.3	20.8	34.5	37.2	36.5	0.199	6.1	5.4	4.3	ST
44675	11/ 6/86	2002	2814.0	9047.1	14	75	39	75	24.8	25.8	23.6	34.3	36.2	36.3	0.561	6.4	5.9	4.7	ST
44676	11/ 6/86	2130	2821.1	9052.1	14	51	25	51	24.6	25.8	24.8	33.9	35.7	36.8	0.294	6.4	6.0	4.6	ST
44677	11/ 6/86	2254	2824.0	9047.0	14	42	21	42	24.6	26.2	25.9	33.4	35.3	36.5	0.716	6.4	5.8	4.0	ST

Table 1 (cont'd.)

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OREGON II

STA#	DATE MM/DD/YY	TIME	POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)			TEMPERATURE, C			SALINITY, PPT			CL, SUR	DISSOLVED OXYGEN			GEAR
			LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX	SUR		MID	MAX		
44678	11/ 6/86	2347	2823.0	9044.0	14	46	23	46	25.2	26.0	25.1	34.3	35.4	36.4	1.012	6.4	5.4	4.8	ST	
44679	11/ 7/86	0049	2827.1	9041.8	14	40	20	40	24.8	26.2	25.4	33.6	35.2	36.3	1.028	6.6	6.0	4.9	ST	
44680	11/ 7/86	0310	2837.2	9030.2	14	25	12	25	24.4	25.4	25.9	31.6	33.8	36.0	1.921	6.1	5.6	5.1	ST/PN	
44681	11/ 7/86	0453	2842.0	9017.1	14	30	15	30	24.6	25.4	25.8	32.9	34.8	35.8	1.713	6.4	5.8	5.1	ST	
44682	11/ 7/86	0831	2848.5	9049.3	14	17	8	17	22.9	23.3	25.0	27.6	28.9	32.3	1.853	6.7	5.9	4.5	ST/PN	
44683	11/ 7/86	0914	2848.0	9050.0	14	17	8	17	23.2	23.0	25.0	27.6	27.7	32.6	2.476	7.0	5.7	4.1	ST	
44684	11/ 7/86	1102	2836.0	9054.0	14	20	10	20	23.6	24.9	26.1	28.2	33.5	35.3	4.688	7.9	5.9	5.3	ST	
44685	11/ 7/86	1226	2830.8	9050.9	14	31	16	31	24.6	25.4	26.4	32.6	34.0	35.9	0.732	7.6	6.1	4.6	ST/PN	
44686	11/ 7/86	1447	2820.1	9101.9	15	58	28	57	26.0	25.5	25.1	35.3	36.1	36.5	0.151	6.5	7.0	5.8	ST	
44687	11/ 7/86	1641	2825.0	9111.9	15	48	26	47	25.7	25.8	25.7	35.2	35.7	36.2	0.159	5.9	5.7	5.5	ST	
44688	11/ 7/86	1906	2812.1	9121.8	15	87	42	87	25.5	26.1	21.3	34.8	36.3	36.9	0.174	6.3	5.9	4.6	ST	
44689	11/ 7/86	2033	2806.1	9118.0	15	114	57	114	26.1	26.1	20.0	35.9	36.5	36.6	0.100	6.3	5.8	3.9	ST	
44690	11/ 7/86	2304	2802.8	9126.7	15	120	60	120	26.0	24.1	19.7	35.9	36.4	36.6	0.104	5.9	5.3	3.8	ST/PN	
44691	11/ 8/86	0130	2811.6	9140.5	15	82	41	82	25.5	25.5	22.0	36.4	36.4	36.6	0.119	6.1	6.1	4.8	ST	
44692	11/ 8/86	0252	2807.2	9140.8	15	93	46	92	26.0	25.8	21.5	36.4	36.4	36.5	0.085	6.0	5.9	4.5	ST	
44693	11/ 8/86	0421	2802.1	9142.9	15	107	54	107	26.3	26.0	20.1	36.3	36.4	36.6	0.063	6.1	6.2	4.2	ST	
44694	11/ 8/86	0544	2803.0	9150.0	15	102	57	102	26.4	25.9	20.2	36.4	36.8	36.7	0.100	6.2	6.1	4.1	ST	
44695	11/ 8/86	0743	2802.0	9158.2	15	106	53	106	26.0	26.0	19.9	36.4	36.4	36.6	0.109	6.3	6.2	6.3	ST/PN	
44696	11/ 8/86	0851	2804.1	9203.1	16	103	51	103	25.7	25.7	20.0	36.6	36.5	36.7	0.243	6.1	6.1	4.0	ST	
44697	11/ 8/86	1027	2759.1	9210.0	99	120	59	119	25.7	25.6	19.1	36.5	36.5	36.5	0.193	6.2	5.8	4.0	ST	
44698	11/ 8/86	1247	2810.9	9221.2	16	74	36	73	25.8	25.6	22.0	35.5	36.5	37.0	0.104	6.3	6.2	4.7	ST/PN	
44699	11/ 8/86	1506	2828.1	9219.0	16	55	28	55	25.7	25.4	25.3	36.3	36.3	36.3	0.274	6.1	6.2	6.2	ST	
44700	11/ 8/86	1608	2828.1	9215.0	16	56	28	56	25.7	25.4	25.4	36.3	36.4	36.4	0.436	6.1	6.2	5.9	ST	
44701	11/ 8/86	1649	2827.1	9212.8	16	55	27	55	25.7	25.4	25.4	36.4	36.4	36.4	0.132	6.2	6.3	6.1	ST	
44702	11/ 8/86	1808	2827.0	9212.3	16	55	27	55	25.7	25.4	25.4	36.4	36.4	36.4		6.2	6.3	6.1	ST	
44703	11/ 8/86	2021	2837.0	9208.1	16	40	21	40	25.3	25.2	25.3	35.8	35.6	36.2	0.274	6.3	5.4	5.4	ST/PN	
44704	11/ 8/86	2322	2819.0	9153.6	15	66	33	66	25.5	25.4	23.2	36.3	36.3	36.5	0.174	6.1	6.1	4.2	ST	
44705	11/ 9/86	0159	2831.0	9137.6	15	50	25	49	25.4	25.5	25.5	35.8	35.9	36.3	0.310	6.4	6.4	6.2	ST	

Table 1 (cont'd.)

NMFS OCTOBER-NOVEMBER GROUND FISH SURVEY  
OREGON II

STA#	DATE		POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)		TEMPERATURE, C			SALINITY, PPT			CL, SUR	DISSOLVED OXYGEN			GEAR
	MM/DD/YY	TIME	LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX		SUR	MID	MAX	
44706	11/ 9/86	0643	2852.1	9119.0	15	12	6	12	23.6	23.6	23.6	28.7	28.9	29.0	0.753	6.4	6.0	4.9	ST/PN
44707	11/ 9/86	0901	2849.1	9140.3	15	23	12	23	24.3	24.4	25.4	31.1	32.3	36.3	0.570	6.6	6.5	5.6	ST
44708	11/ 9/86	1006	2845.0	9141.2	15	27	14	27	24.8	25.3	25.4	32.5	35.1	35.8	0.854	6.4	5.5	4.7	ST
44709	11/ 9/86	1218	2857.0	9151.3	15	20	10	20	24.4	23.9	25.0	30.1	30.9	35.2	1.464	6.9	6.4	4.2	ST/PN
44710	11/ 9/86	1451	2903.0	9211.0	16	20	10	19	25.8	23.6	24.7	23.0	30.0	34.3	1.114	8.4	6.6	4.4	ST
44711	11/ 9/86	1620	2857.1	9219.1	16	23	13	23	25.3	24.6	25.3	35.7	34.1	35.9	0.935	6.0		4.5	ST
44712	11/ 9/86	1909	2916.2	9226.0	16	9	5	9	23.0	22.7	23.3	22.3	26.7	28.6	4.268	7.0	5.6	4.6	ST
44713	11/ 9/86	2055	2910.0	9238.1	16	20	10	20	23.2	23.8	24.6	25.3	30.4	33.4	4.813	7.7	6.4	4.5	ST
44714	11/ 9/86	2159	2914.0	9243.2	16	18	9	18	22.5	23.3	24.5	25.2	28.4	33.1	1.807	7.3	5.9	4.4	ST
44715	11/ 9/86	2253	2914.0	9248.0	16	19	9	19	23.1	23.6	24.4	27.3	31.2	33.1	3.411	6.9	5.2	4.1	ST
44716	11/ 9/86	2353	2910.0	9251.1	16	20	10	20	23.6	23.8	24.4	30.6	31.6	33.2	1.034	6.2	6.2	4.7	ST
44717	11/10/86	0102	2906.2	9249.5	16	23	11	23	24.0	24.0	25.0	32.0	32.1	34.2	1.022	6.3	6.4	4.4	ST
44718	11/10/86	0213	2902.2	9248.5	16	25	12	25	24.2	24.2	25.2	32.6	32.8	34.3	0.550	6.7		4.6	ST
44719	11/10/86	0428	2855.1	9235.2	16	27	14	27	24.2	24.6	25.1	33.2	34.2	35.7	0.947	6.3	6.6	6.1	ST
44720	11/10/86	0539	2856.0	9232.7	16	27	14	27	24.2	24.7	25.0	33.0	34.1	35.6	0.986	6.3	5.7	5.9	ST/PN
44721	11/10/86	0645	2854.0	9231.0	16	29	15	29	24.9	25.1	25.1	34.9	34.9	35.6	0.701	6.8	7.0	6.0	ST
44722	11/10/86	0905	2838.1	9231.1	16	36	18	36	25.3	25.3	25.2	36.2	36.0	36.1	0.188	6.1	6.1	5.6	ST
44723	11/10/86	1033	2833.0	9236.8	16	45	23	45	25.4	25.4	25.4	36.2	36.2	36.4	0.267	6.0	5.9	4.4	ST/PN
44724	11/10/86	1125	2833.1	9238.0	16	43	22	43	25.4	25.4	25.4	36.1	36.1	36.3	0.312	6.0	5.8	5.6	ST
44725	11/10/86	1312	2827.0	9237.8	16	51	26	51	25.5	25.5	25.3	36.4	36.4	36.4	0.724	6.2	6.2	6.1	ST
44726	11/10/86	1501	2816.1	9241.2	16	61	31	61	25.7	25.6	24.5	36.4	36.4	36.5	0.077	6.1	6.0	4.9	ST
44727	11/10/86	1617	2816.0	9249.9	16	58	28	58	25.6	25.5	25.1	36.4	36.4	36.5	0.130	6.5	6.3	6.2	ST
44728	11/10/86	1927	2837.1	9244.0	16	38	18	37	25.2	25.2	24.9	36.2	36.0	35.9	0.267	0.0	6.4	6.3	ST
44729	11/10/86	2046	2839.1	9249.0	16	34	17	34	25.0		24.9	35.9	36.0	35.8	0.509	6.1	6.1	5.5	ST
44730	11/10/86	2308	2850.0	9303.1	17	26	13	26	24.9		24.9	35.4	35.2	35.7	1.080	6.3	6.1	5.8	ST/PN
44731	11/11/86	0019	2846.0	9308.9	17	26	13	26	24.5	24.5	24.5	34.6	34.5	35.0	0.694	6.5	6.5	6.3	ST
44732	11/11/86	0131	2842.3	9303.1	17	30	15	30	24.7	24.7	24.9	35.6	35.6	36.1	0.659	6.3	6.2	5.8	ST
44733	11/11/86	0338	2831.0	9257.1	16	44	22	44	25.7	25.2	25.3	36.1	36.3	36.2	0.393	6.3	6.2	6.0	ST/PN



Table 1 (cont'd.)

NMFS OCTOBER-NOVEMBER GROUND FISH SURVEY  
OREGON II

STA#	DATE MM/DD/YY	TIME	POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)			TEMPERATURE,C			SALINITY,PPT			CL, SUR	DISSOLVED OXYGEN			GEAR
			LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX	SUR		MID	MAX		
44734	11/11/86	0543	2822.1	9305.0	17	52	27	51	25.3	25.4	25.2	36.4	36.2	36.3	0.132	6.3	6.3	6.0	ST	
44735	11/11/86	0652	2825.1	9310.1	17	50	24	49	25.1	25.4	25.3	35.4	36.3	36.3	0.137	6.4	6.3	6.3	ST	
44736	11/11/86	0835	2822.1	9320.2	17	35	17	35	24.5	25.3	25.3	35.5	36.4	36.2	0.374	6.1	5.8	5.5	ST	
44737	11/11/86	1115	2809.0	9307.0	17	73	36	73				36.2	36.4	36.4	0.107	6.1	5.8	5.6	ST/PN	
44738	11/11/86	1313	2802.0	9317.7	17	95	47	95	25.6	26.1	20.2	36.5	36.7	36.6	0.138	6.1	6.0	4.7	ST	
44739	11/11/86	1455	2806.9	9321.0	17	73	31	73	24.7	25.4	21.5	36.1		36.4	0.181	6.4		5.4	ST	
44740	11/11/86	1605	2806.3	9327.8	17	75	25	75	25.6	25.7	21.8	36.3			0.349	6.1			ST	
44741	11/11/86	1914	2813.0	9353.8	17	66	33	66	25.5	25.6	22.4	36.2			0.274	6.4			ST	
44742	11/11/86	2010	2815.1	9349.0	17	60	30	60	25.3	25.7	23.0				0.256	0.0			ST	
44743	11/11/86	2237	2831.0	9339.1	17	40	20	40	24.3	25.0	25.0	36.3			0.442	0.0			ST	
44744	11/11/86	2359	2833.1	9351.0	17	37	18	37	24.5	25.0	25.1				0.228	0.0			ST	
44745	11/12/86	0157	2846.0	9350.1	17	24	12	24	24.0	24.4	24.4				0.231	0.0			ST	
44746	11/14/86	1627	2930.8	9409.0	18	13	6	13	19.6	20.0	20.8	25.1	26.7	28.0	2.819	8.6	8.0	6.8	ST/PN	
44747	11/14/86	1815	2925.8	9400.2	18	13	6	13	19.7	19.8	20.1	31.7	31.6	31.6	1.371	7.2	7.3	7.1	ST	
44748	11/14/86	2010	2925.0	9345.0	17	14	7	14	19.7	20.5	20.8	29.8	29.6	30.6	1.480	7.9	7.7	7.7	ST	
44749	11/14/86	2123	2928.1	9340.2	17	11	5	10	19.5	20.2	20.3	29.0	28.7	29.0	1.417	8.3	8.2	7.9	ST	
44750	11/14/86	2202	2927.0	9339.1	17	12	6	12	20.2	20.0	20.0	29.1	28.9	29.2	1.230	7.8	7.8	7.8	ST	
44751	11/14/86	2239	2926.0	9338.0	17	11	5	10	19.5	20.3	20.3	29.3	29.0	29.4	0.997	7.9	7.8	7.8	ST	
44752	11/14/86	2343	2923.6	9334.4	17	13	5	11	19.1	20.8	21.2	30.1	30.7	29.9	1.417	7.9	7.7	7.6	ST	
44753	11/15/86	0139	2934.2	9328.8	17	13	5	11	19.3	19.8	19.9	26.9	26.8	27.8	0.885	7.6	7.1	7.0	ST/PN	
44754	11/15/86	0310	2930.1	9319.0	17	13	7	13	19.8	20.6	20.6	28.9	29.2	29.4	0.548	7.5	7.1	7.0	ST	
44755	11/15/86	0536	2937.0	9305.0	17	11	5	11	19.8	19.8	19.9	26.4	26.1	26.1		8.2	7.1	7.0	ST/PN	
44756	11/15/86	0850	2909.0	9312.0	17	19	9	18	21.4	22.3	22.3	32.9	32.7	32.8	0.383	7.0	6.8	6.7	ST	
44757	11/15/86	0930	2910.0	9314.0	17	18	8	17	21.4	22.1	22.1		32.7	32.7	0.514	7.0	6.8	6.2	ST	
44758	11/15/86	1040	2912.0	9316.1	17	18	8	17	26.0	21.7	22.1	32.5	32.5	32.7	0.916	7.2	7.1	6.8	ST	
44759	11/15/86	1121	2913.0	9318.1	17	14	7	14	21.3	21.7	22.0	32.0	32.1	32.4	0.551	7.1	6.9	6.6	ST	
44760	11/15/86	1220	2917.1	9317.3	17	16	8	17	21.0	21.4	21.4	31.1	31.0	31.1	0.872	7.2	7.1	7.0	ST	
44761	11/15/86	1314	2920.1	9319.2	17	16	8	16	21.0	21.2	21.2	30.3	30.5	30.8	0.846	7.3	7.0	6.8	ST	

Table 1 (cont'd.)

NMFS OCTOBER-NOVEMBER GROUND FISH SURVEY  
OREGON II

STA#	DATE MM/DD/YY	TIME	POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)			TEMPERATURE,C			SALINITY,PPT			CL, SUR	DISSOLVED OXYGEN			GEAR
			LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX	SUR		MID	MAX		
44762	11/15/86	1406	2917.9	9321.2	17	16	8	16	21.7	21.4	21.4	31.1	31.0	31.1	0.794	7.1	7.0	6.8	ST	
44763	11/15/86	1533	2913.0	9330.1	17	17	8	16	21.0	21.6	21.5	32.0	32.1	32.2	0.505	7.2	7.1	7.0	ST	
44764	11/15/86	1636	2916.8	9336.1	17	15	7	15	21.2	21.3	21.4	32.3	32.2	32.2	1.217	7.1	7.1	7.2	ST	
44765	11/15/86	1827	2903.1	9340.2	17	18	9	18	22.2	22.3	22.2	33.0	33.1	33.2		7.7	7.1	7.0	ST	
44766	11/15/86	1938	2903.9	9334.0	17	20	10	20	21.7	22.2	22.1	32.6	32.6	32.8	0.434	0.0	7.1	6.8	ST/PN	
44767	11/15/86	2146	2852.1	9321.1	17	22	11	21	22.0	22.9	23.1	34.9	34.9	35.1	0.667	7.0	6.8	6.8	ST	
44768	11/16/86	0154	2903.0	9401.3	18	20	10	19	21.6	22.3	22.2	34.5	34.5	34.5	1.131	7.1	7.2	7.0	ST	
44769	11/16/86	0329	2903.6	9412.9	18	20	9	19	21.7	21.8	22.0	33.7	33.7	33.7	1.115	7.1	7.0	6.9	ST	
44770	11/16/86	0512	2858.9	9403.2	18	20	10	20	22.4	22.4	22.4	34.6	34.5	34.6	0.916	7.1	7.1	7.1	ST/PN	
44771	11/16/86	0652	2851.0	9405.0	18	24	12	24	22.7	22.7	23.8	34.8	34.9	35.0	0.958	6.9	6.9	6.7	ST	
44772	11/16/86	0752	2846.0	9403.2	18	26	12	25	22.5	23.0	23.1	35.0	35.2	35.5	0.856	6.8	6.7	6.1	ST	
44773	11/16/86	0947	2840.0	9419.1	18	31	15	30	22.7	23.4	23.2	35.7	35.6	35.6	0.601	6.8	6.8	6.6	ST	
44774	11/16/86	1200	2845.1	9439.2	18	24	11	23	22.4	22.5	22.6	35.3	35.2	35.3	0.617	6.8	6.8	6.6	ST	
44775	11/16/86	1249	2845.2	9443.2	18	22	12	21	22.6	22.2	22.3	35.1	35.1	35.2	1.226	6.7	6.7	6.6	ST	
44776	11/16/86	1435	2857.4	9437.8	18	18	9	18	22.4	21.7	21.8	34.4	34.4	34.3	0.585	6.9	6.8	6.7	ST	
44777	11/16/86	1524	2859.5	9434.1	18	18	9	18	22.2	21.7	21.6	34.1	34.1	34.0	1.392	7.0	7.1	6.7	ST	
44778	11/16/86	1707	2906.0	9445.3	18	18	9	18	20.0	20.9	20.8	24.9	30.4	33.2	1.859	8.0	7.7	7.1	ST	
44779	11/16/86	1801	2907.0	9446.2	18	18	9	18	20.3	20.8	20.9	25.1	26.9	33.4		7.9	8.0	7.4	ST	
44780	11/16/86	2018	2855.0	9458.0	18	21	10	20	20.8	21.8	21.8	30.3	33.3	34.0	1.104	7.2	7.1	6.7	ST/PN	
44781	11/16/86	2128	2848.9	9501.0	19	18	8	17	21.5	21.8	21.8	34.2	34.7	34.6	0.836	7.3	7.2	7.1	ST	
44782	11/16/86	2332	2947.0	9519.3	19	18	10	18	20.2	20.3	20.6	28.6	32.1		0.757	7.4	7.5	7.6	ST	
44783	11/17/86	0223	2832.0	9506.0	19	31	15	30	22.5	22.6	22.6	35.3	35.3	35.3	0.617	7.0	7.0	6.7	ST/PN	
44784	11/17/86	0421	2822.1	9518.1	19	33	16	33	23.2	23.8	23.9	35.9	35.8	36.0	0.495	6.9	6.9	6.7	ST	
44785	11/17/86	0616	2824.1	9531.2	19	30	15	30	22.1	22.5	23.5	34.6	34.6	35.5	0.461	7.1	7.0	6.6	ST/PN	
44786	11/17/86	0738	2815.0	9531.0	19	37	18	37	22.8	23.6	23.8	35.8	35.8	36.1	0.542	6.9	6.9	6.8	ST	
44787	11/17/86	0928	2817.0	9515.8	19	37	18	36	23.5	24.2	24.0	36.1	36.0	36.1	0.417	6.9	6.8	6.8	ST	
44788	11/17/86	1044	2814.0	9510.0	19	44	22	43	24.8	24.0	24.1	36.0	36.2	36.1		7.0	6.9	6.8	ST	
44789	11/17/86	1207	2817.3	9512.0	19	40	20	39	24.1	24.1	24.2	35.9	36.1	36.0	0.455	7.1	7.1	6.7	ST	

Table 1 (cont'd.)

NMFS OCTOBER-NOVEMBER GROUND FISH SURVEY  
OREGON II

STA#	DATE MM/DD/YY	TIME	POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)		TEMPERATURE,C			SALINITY,PPT			CL, SUR	DISSOLVED OXYGEN			GEAR
			LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX		SUR	MID	MAX	
44790	11/17/86	1257	2820.1	9510.3	19	35	17	34	23.6	23.8	24.1	36.2	36.0	36.1	0.405	7.1	7.1	6.8	ST
44791	11/17/86	1353	2822.0	9507.0	19	35	17	34	23.3	23.9	23.8	35.8	35.8	36.0	0.760	7.2	7.1	6.8	ST
44792	11/17/86	1438	2823.2	9505.2	19	35	17	34	23.2	23.5	23.6	35.2	35.8	36.3	0.698	7.2	7.2	6.8	ST
44793	11/17/86	1628	2822.0	9450.0	18	40	20	40	24.0	24.2	24.2	36.2	36.1	36.1	0.405	6.7	6.7	6.5	ST
44794	11/17/86	1736	2824.8	9443.3	18	40	20	40	23.9	23.9	24.0	36.4	36.3	36.2	0.361	6.5	6.4	6.1	ST
44795	11/17/86	1853	2819.0	9444.1	18	44	22	44	24.3	24.4	24.3	36.6	36.4	36.5	0.330	6.1	6.0	5.9	ST
44796	11/17/86	2028	2826.0	9433.9	18	40	20	39	26.1	24.7	24.4	36.4	36.4	36.5	0.374	7.4	7.4	7.2	ST
44797	11/17/86	2156	2830.0	9428.1	18	36	18	35	25.2	24.6	24.7	36.4			0.575	7.2	7.2	7.0	ST/PN
44798	11/17/86	2340	2824.1	9431.0	18	40	20	39	24.2	24.1	23.9	36.5	36.5	36.6	0.249	7.0	7.0	6.8	ST
44799	11/18/86	0132	2815.0	9421.2	18	48	22	46	24.6	24.8	24.6	36.7	36.5	36.3	0.274	6.9	6.9	6.7	ST
44800	11/18/86	0407	2804.0	9405.0	18	70	35	70	24.7	24.7	22.7	36.7	36.6	36.7		5.5	5.4	4.9	ST/PN
44801	11/18/86	0951	2758.0	9446.4	99	86	43	85	25.4	25.4	22.1	36.8	36.7	36.8	0.125	6.1	6.1	5.8	ST/PN
44802	11/18/86	1126	2806.1	9448.0	18	53	26	52	25.1	25.1	25.0		36.7	36.6	0.168	6.7	6.7	6.5	ST
44803	11/18/86	1301	2806.1	9459.1	18	56	28	55	25.1	24.6	24.5	36.6	36.6	36.6	0.199	6.9	6.8	6.5	ST
44804	11/18/86	1418	2806.0	9503.3	19	65	32	64	25.0	24.5	25.2	36.6	36.6	36.5	0.212	6.9	6.8	6.6	ST/PN
44805	11/18/86	1540	2810.1	9507.0	19	49	23	48	25.0	24.7	24.8	36.6	36.6	36.6	0.246	7.0	6.9	6.7	ST
44806	11/18/86	1736	2801.1	9518.0	19	59	29	59	25.1	25.1	24.4	36.7	36.7	36.5	0.137	6.7	6.7	6.5	ST
44807	11/18/86	1900	2802.0	9526.1	19	53	26	53	25.3	25.1	24.5	36.8	36.6	36.7	0.100	6.6	6.7	6.6	ST/PN
44808	11/18/86	2030	2806.1	9533.9	19	44	23	43	25.0	24.9	24.5	36.7	36.7	36.8	0.299	6.8	6.7	6.5	ST
44809	11/18/86	2127	2804.0	9533.0	19	48	23	47	25.1	25.1	24.4	36.7	36.9	36.6	0.187	6.9	6.9	6.7	ST
44810	11/18/86	2235	2803.0	9535.0	19	48	23	47	25.0	25.0	24.7				0.249	6.9	6.9	6.6	ST
44811	11/19/86	0050	2750.0	9542.9	20	62	29	61	25.3	23.0	23.3				1.240	6.9	6.9	6.7	ST
44812	11/19/86	0149	2749.1	9547.1	20	59	27	58	25.1	24.8	24.2	36.4	36.7	36.4	0.193	6.8	6.8	6.6	ST
44813	11/19/86	0405	2738.2	9551.2	20	156	76	155	25.4	22.2	17.6	36.6	36.4	36.3	0.162	6.8	6.5	4.5	ST/PN
44814	11/19/86	0705	2728.9	9616.0	99	110	55	110	24.9	25.0	20.6	36.5	36.5	36.4	0.085	6.6	6.5	5.2	ST
44815	11/19/86	0830	2736.0	9611.0	20	99	49	98	27.8	24.8	21.0	36.4	36.4	36.5	0.212	6.8	7.0	5.7	ST
44816	11/19/86	0940	2737.1	9616.2	20	84	43	83	25.1	24.7	22.0	36.4	36.5	36.5	0.118	6.8	6.8	6.5	ST
44817	11/19/86	1048	2739.1	9620.0	20	71	35	70	25.2	24.6	24.6	36.5	36.3	36.4	0.168	6.9	6.9	6.8	ST

Table 1 (cont'd.)

NMFS OCTOBER-NOVEMBER GROUND FISH SURVEY  
OREGON II

STA#	DATE MM/DD/YY	TIME	POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)		TEMPERATURE, C			SALINITY, PPT			CL, SUR	DISSOLVED OXYGEN			GEAR
			LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX		SUR	MID	MAX	
44818	11/19/86	1237	2747.2	9623.5	20	51	25	50	23.7	24.1	24.3	35.2	36.2	36.5	0.766	7.6	7.1	6.9	ST
44819	11/19/86	1418	2750.9	9615.4	20	52	25	51	24.2	23.9	24.4	34.7	36.2	36.4	0.275	7.6	7.0	6.7	ST/PN
44820	11/19/86	1704	2810.2	9607.2	19	27	13	27	23.9	22.8	22.7	33.3	35.5	35.3	0.349	7.5	7.3	6.9	ST
44821	11/19/86	1925	2823.7	9601.1	19	20	10	20	22.2	20.8	21.9	26.1	31.3	33.9	1.589	8.8	8.7	7.2	ST/PN
44822	11/19/86	2156	2808.0	9611.0	19	28	13	27	22.6	23.3	23.1	28.3	35.5		0.826	9.0	7.8	7.4	ST
44823	11/20/86	0007	2804.2	9624.3	19	27	13	26	22.7	22.2	23.6	29.5	34.6	35.7	0.692	8.5	7.6	7.0	ST/PN
44824	11/20/86	0252	2757.8	9645.2	20	19	7	18	21.6	20.4	22.0	27.2	31.2	34.2	3.813	8.8	7.4	7.0	ST
44825	11/20/86	0408	2755.9	9651.9	20	15	8	15	21.9	20.5	21.2	28.9	29.5	33.0	1.374	8.5	8.3	8.0	ST
44826	11/20/86	0630	2750.7	9635.1	20	33	16	33	22.9	22.7	23.5	32.8	35.0	35.7	0.545	7.7	7.4	6.9	ST
44827	11/20/86	0903	2737.0	9628.4	20	59	26	58	23.7	24.4	24.5	35.8	36.5		0.468	7.4	7.2	7.0	ST/PN
44828	11/20/86	1009	2738.0	9634.1	20	51	25	50	23.5	24.1	24.5	33.5	36.2	36.4	1.022	7.7	7.2	6.8	ST
44829	11/20/86	1215	2734.0	9648.1	20	37	18	36	23.7	23.3	24.2	29.1	35.5	36.1	0.860	8.5	7.3	6.9	ST
44830	11/20/86	1411	2734.0	9657.1	20	27	13	26	22.3	20.9	22.8	29.9	32.9	35.5	2.065	8.4	7.4	7.2	ST/PN
44831	11/20/86	1704	2722.9	9641.0	20	60	30	60	23.8	24.8	24.7		35.8	36.5	0.197	7.3	7.3	7.1	ST
44832	11/20/86	1820	2719.0	9640.0	20	68	34	68	24.6	25.1	23.1	36.5	36.6	36.7		7.1	7.1	6.8	ST
44833	11/20/86	2017	2709.9	9641.1	20	75	37	74	24.4	24.6	21.9	36.6	36.7			7.4	7.5	6.5	ST
44834	11/20/86	2138	2712.9	9636.0	20	84	42	83	24.8	24.9	21.7	36.3	36.5	36.5	0.146	7.6	7.4	6.4	ST
44835	11/20/86	2339	2716.8	9626.2	99	106	53	105	25.3	24.9	20.2	36.7	36.6	36.6	0.100	7.2	7.3	5.1	ST
44836	11/21/86	0050	2713.9	9621.1	99	116	56	115	24.9	24.9	19.3	36.7	36.7	36.8	0.093	7.2	7.1	5.2	ST
44837	11/21/86	0240	2711.9	9619.9	99	176	86	175	24.7	20.5	16.0	36.8	36.7	36.5	0.109	7.0	6.4	5.3	ST
44838	11/21/86	0336	2710.0	9621.0	99	179	89	178	24.7	20.3	15.7	36.7	36.7	36.2	0.103	7.1	6.3	5.0	ST
44839	11/21/86	0633	2654.9	9626.9	99	183	91	183	24.7	20.5	15.6	36.3	36.4	36.4		7.2	6.5	5.2	ST/PN
44840	11/21/86	0933	2651.0	9648.0	21	62	31	61	24.6	24.8	24.8	36.6	36.5	36.3	0.218	6.6	6.5	6.3	ST
44841	11/21/86	1020	2652.0	9649.0	21	60	27	59	24.6	24.8	24.7	36.3	36.8	36.4	0.268	6.2	6.2	5.9	ST
44842	11/21/86	1240	2701.9	9656.9	20	46	23	45	24.4	24.6	24.7	36.4	36.4	36.4	0.517	6.5	6.4	6.1	ST/PN
44843	11/21/86	1524	2713.7	9711.0	20	25	12	24	22.3	21.5	22.0	32.8	17.8	34.5	0.829	7.0	7.1	6.1	ST
44844	11/21/86	1732	2701.8	9707.2	20	31	15	31	23.2	23.2	23.4	35.3	35.2	35.7	0.557	7.2	7.4	6.7	ST
44845	11/21/86	1847	2658.0	9710.0	21	29	15	29	23.3	23.1	23.5	34.8	34.7	35.6	0.423	7.6	7.7	7.3	ST

Table 1 (cont'd.)

NMFS OCTOBER-NOVEMBER GROUND FISH SURVEY  
OREGON II

STA#	DATE		POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS			TEMPERATURE,C			SALINITY,PPT			CL, SUR	DISSOLVED OXYGEN			GEAR
	MM/DD/YY	TIME	LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX	SUR		MID	MAX		
44846	11/21/86	2008	2653.8	9715.0	21	24	12	23	20.6	21.8	21.7	30.4	32.3	33.9		8.3	8.2	7.6	ST	
44847	11/21/86	2057	2655.0	9718.0	21	18	8	17	20.9	20.6	21.1	29.9	29.9	31.7	1.663	8.5	9.0	7.8	ST	
44848	11/21/86	2202	2652.0	9718.0	21	18	8	17	20.7	20.5	21.1	29.8	29.9	31.7	1.645	9.0	8.9	8.9	ST	
44849	11/22/86	0028	2647.9	9702.0	21	40	20	39	22.8	23.6	24.3	34.8	36.0	36.2	0.417	6.9			ST	
44850	11/22/86	0222	2634.7	9703.0	21	33	16	32	22.5	22.1	23.7	31.4	35.8	36.1	0.660	7.0	6.2	5.5	ST	
44851	11/22/86	0338	2635.0	9658.9	21	36	18	35	23.2	23.2	24.3	32.6	35.9	36.4	0.305	6.6	6.0	5.6	ST/PN	
44852	11/22/86	0428	2634.8	9658.1	21	37	18	37	22.9	23.6	24.3	32.8		36.4	0.327	7.2	6.7	6.4	ST	
44853	11/22/86	0557	2640.9	9652.0	21	48	24	48	24.0	24.7	24.5	36.1	36.6	36.6	0.200	6.7	6.7	6.3	ST	
44854	11/22/86	0655	2639.0	9647.1	21	37	18	37	24.4	24.8	24.7	36.6	36.7	36.5	0.137	6.8	6.7	6.5	ST	
44855	11/22/86	1004	2621.9	9633.9	21	54	27	53	25.2	25.1	24.8	36.8	36.7	36.7	0.128	6.6	6.5	6.4	ST/PN	
44856	11/22/86	1155	2621.1	9643.1	21	42	21	41	24.1	24.5	24.8	35.1	36.6	36.6	0.294	6.9	6.8	6.4	ST	
44857	11/22/86	1459	2615.0	9705.1	21	20	10	19	21.9	21.0	21.0	29.9	29.7	31.4	0.486	7.6	7.9	7.2	ST	
44858	11/22/86	1821	2606.0	9642.1	21	44	22	44	24.3	24.7	24.7	36.1	36.5	36.4	0.138	7.0	6.8	6.6	ST	
44859	11/22/86	1954	2601.2	9635.4	21	55	27	54	24.9	25.0	24.8	36.7	36.8	36.6	0.080	6.5	6.3	6.1	ST	
44860	11/22/86	2112	2601.0	9634.0	21	57	27	56	25.1	25.2	25.0	36.7	36.6	36.6	0.150	6.6	6.7	6.5	ST/PN	
44861	11/22/86	2322	2614.9	9628.9	21	62	30	61	25.7	25.1	23.1	36.8	36.8	36.7	0.567	6.6	6.6	6.4	ST	
44862	11/23/86	0122	2620.0	9619.0	21	125	62	124	25.3	21.4	18.0	36.7	36.6	36.7	0.343	6.6	6.2	4.5	ST	
44863	11/23/86	0311	2628.1	9625.3	21	88	44	87	25.0	24.7	21.1	36.6	36.7	36.7	0.125	6.6	6.5	5.2	ST	
44864	11/23/86	0502	2632.9	9634.9	21	74	37	74	24.8	24.5	23.5	36.3	36.3	36.5	0.060	6.8	6.8	6.6	ST	
44865	11/23/86	0658	2638.0	9625.0	21	146	73	146	25.0	21.4	17.0					6.7	6.7	6.1	ST	

Table 1 (cont'd.)

LOUISIANA OCTOBER GROUND FISH SURVEY  
PELICAN

STA#	DATE MM/DD/YY	TIME	POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)			TEMPERATURE,C			SALINITY,PPT			CL, SUR	DISSOLVED OXYGEN			GEAR
			LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX	SUR		MID	MAX		
35070	10/27/86	1644	2835.0	9040.2	14	20	9	19	23.4	25.3	26.0	28.3	34.1	34.9	14.177	10.1	6.8	6.1	ST/PN	
35071	10/27/86	1925	2835.0	9040.2	14	20	10	20	22.1	25.4	26.0	28.6	34.4	35.0	10.128	10.3	5.6	5.2	ST/PN	
35072	10/27/86	2157	2836.5	9048.0	14	18	9	18	23.5	25.1	25.7	30.7	34.0	34.7	6.255	8.6	6.2	5.8	ST/PN	
35073	10/28/86	0049	2835.1	9057.0	14	22	12	23	23.8	25.3	26.1	33.0	34.5	35.1	2.727	7.8	5.8	5.7	ST/PN	
35074	10/28/86	0419	2851.3	9052.7	14	11	4	10	22.9	22.9	25.8	29.5	29.5	33.7	9.193	8.3	7.6	4.1	ST/PN	
35075	10/28/86	0700	2851.3	9052.7	14	11	5	10	22.9	23.0	25.8	29.6	29.7	33.9	8.389	7.8	7.5	4.4	ST/PN	
35076	10/28/86	1002	2834.9	9057.5	14	22	11	22	22.8	25.7	26.0	31.3	34.8	35.1	5.559	8.4	6.4	5.6	ST/PN	
35077	10/28/86	1218	2836.5	9047.5	14	18	8	17	22.7	24.8	25.8	29.3	33.5	34.8	4.729	10.2	7.8	6.8	ST/PN	
35078	10/28/86	1938	2911.6	9000.2	14	5	4	6	22.8	22.8	24.0	24.7	24.9	27.6	24.322	10.9	11.0	8.8	ST/PN	
35079	10/28/86	2218	2911.0	8941.7	13	13	7	13	22.2	24.9	27.1	19.2	30.0	34.9	18.873	10.5	6.5	3.4	ST/PN	
35080	10/28/86	2350	2910.2	8939.3	13	15	6	13	21.3	24.5	27.0	16.0	28.8	35.0	13.622	9.6	6.8	3.3	ST/PN	
35081	10/29/86	0238	2904.3	8940.2	13	20	10	20	22.7	25.9	27.1	23.9	33.0	35.8	8.952	8.6	5.3	3.4	ST/PN	
35082	10/29/86	0659	2904.5	8939.8	13	24	10	19	21.8	26.1	27.1	22.6	33.4	35.9	8.455	8.6	5.6	3.8	ST/PN	
35083	10/29/86	0854	2910.2	8939.7	13	15	7	13	21.5	24.9	27.0	21.9	28.7	35.1	20.418	10.1	6.5	3.8	ST/PN	
35084	10/29/86	1015	2910.9	8941.5	13	13	7	13	22.2	22.4	26.9	24.3	24.5	34.8	27.798	10.9	9.4	4.3	ST/PN	
35085	10/29/86	1337	2911.8	8959.8	14	5	3	6	22.5	22.5	24.1	24.9	24.9	28.3	24.742	10.9	11.0	5.9	ST/PN	
35086	10/29/86	1710	2853.6	9008.5	14	26	13	26	23.4	27.7	27.0	26.8	35.4	36.1	24.321	10.1	5.0	2.4	ST/PN	
35087	10/29/86	1954	2853.6	9008.5	14	26	13	26	23.5	27.4	27.0	27.3	34.5	36.1	13.642	10.1	3.6	2.0	ST/PN	
35088	10/29/86	2222	2901.7	9020.0	14	9	4	9	22.4	22.5	23.0	25.1	25.1	27.2	20.637	11.1	10.6	7.9	ST/PN	
35089	10/30/86	0044	2854.4	9026.6	14	16	9	16	22.7	23.7	26.0	26.7	28.7	33.6	18.925	10.6	7.8	4.1	ST/PN	
35090	10/30/86	0416	2859.6	9044.2	14	9	3	8	22.7	22.7	22.6	29.2	29.2	29.2	7.099	7.6	7.1	6.9	ST/PN	
35091	10/30/86	0659	2859.6	9044.4	14	7	2	7	22.3	22.4	22.4	29.0	29.0	29.0	13.835	8.1	7.3	7.6	ST/PN	
35092	10/30/86	1008	2854.5	9027.1	14	16	9	16	22.1	23.5	25.9	26.7	28.7	33.8	12.542	10.8	8.6	4.3	ST/PN	
35093	10/30/86	1228	2901.8	9020.4	14	9	4	8	22.5	22.5	23.1	25.1	25.1	26.8	21.414	10.9	10.9	8.7	ST/PN	

Table 1 (cont'd.)

ALABAMA OCTOBER GROUND FISH SURVEY  
ALABAMA INSHORE VESSELS

STA#	DATE		POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS		TEMPERATURE,C			SALINITY,PPT			CL, SUR	DISSOLVED OXYGEN			GEAR
	MM/DD/YY	TIME	LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX		SUR	MID	MAX	
42061	10/28/86	0826	3013.0	8800.0	11	9	5	9	19.0	20.0	20.0	30.0	30.0	31.0		7.0	7.2	6.0	ST
47428	10/28/86	1130	3010.0	8739.0	10	11	5	11	20.0	20.0	21.0	31.0	31.0	32.0		7.2	7.2	6.6	ST
45035	10/28/86	1328	3006.0	8754.0	10	15	7	15	21.0	21.0	22.0	31.0	31.0	31.0		7.2	7.2	6.8	ST
44438	10/28/86	1418	3005.0	8757.0	10	17	9	17	21.0	20.5	21.5	30.0	30.0	32.0		7.2	7.0	6.6	ST
44439	10/28/86	1530	3005.0	8758.0	10	17	9	17	20.5	20.5	22.0	30.0	30.0	32.0		7.2	7.4	6.4	ST
40733	10/28/86	1740	2959.0	8812.0	11	26	13	26	20.5	20.5	21.0	31.0	31.0	32.0		7.0	6.6	6.4	ST

Table 1 (cont'd.)

MISSISSIPPI OCTOBER GROUND FISH SURVEY  
TOMMY MUNRO

STA#	DATE		POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)		TEMPERATURE, C			SALINITY, PPT			CL, SUR	DISSOLVED OXYGEN			GEAR
	MM/DD/YY	TIME	LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX		SUR	MID	MAX	
17001	10/29/86	1606	2938.4	8849.1	11	13	7	13	24.0	24.1	24.1	31.1	31.3	31.8	2.056	6.5			ST
17002	10/29/86	1725	2936.9	8845.3	11	15	7	14	22.0	22.0	24.0	34.2	34.5	34.5	2.607	6.7	6.6	6.4	ST
17003	10/29/86	1845	2935.4	8840.5	11	16	8	16	24.0	24.0	24.0	34.0	34.0	35.0	1.420	6.2	6.2	6.0	ST
17004	10/29/86	2005	2934.0	8848.2	11	16	8	16	24.0	24.0	24.0	34.0	34.0	34.0	2.121	6.5	6.6	6.4	ST
17005	10/29/86	2150	2932.5	8852.3	99	12	6	12	24.0	23.5	23.5	34.0	34.0	34.0	2.785	6.7	6.7	6.7	ST
17006	10/29/86	2320	2931.8	8858.3	11	9	4	9	23.0	23.0	23.0	33.0	33.0	32.0	1.551	7.9	7.4	7.1	ST
17007	10/30/86	0045	2928.1	8855.4	11	13	6	12	22.0	22.0	21.9	34.0	34.0	34.0	1.626	8.3	8.3	8.3	ST
17008	10/30/86	0150	2925.9	8857.7	11	13	6	12	22.0	22.0	22.0	33.0	33.0	33.0	1.252	8.8	8.7	8.1	ST
17009	10/30/86	0310	2922.2	8855.8	11	19	9	18	22.0	22.2	22.0	33.0	32.0	33.0	1.526	8.7	9.0	8.4	ST
17010	10/30/86	0835	2958.0	8844.1	11	15	7	15	23.0	23.0	23.0	34.0	34.0	34.0	1.271	6.6	7.0	7.0	ST
17011	10/30/86	1000	3000.9	8842.2	11	17	8	17	24.0	23.5	23.0	34.0	34.5	34.5	1.486	6.1	5.8	5.9	ST
17012	10/30/86	1120	3003.0	8837.9	11	19	10	19	25.0	24.5	24.0	34.5	35.0	35.0	1.084	6.5	6.3	6.3	ST
17013	10/30/86	1255	3005.9	8829.3	11	15	7	14	22.2	22.2	22.2	33.0	33.0	33.0	0.926	8.7	8.6	8.6	ST
17014	10/30/86	1405	3009.6	8829.2	11	12	6	11	21.5	22.0	22.8	33.0	34.0	34.0	0.645	8.5	8.4	8.4	ST
17015	10/30/86	1610	3007.7	8841.1	11	14	7	13	22.0	22.0	22.0	33.0	33.0	33.0	0.765	7.5	7.5	7.3	ST
17016	10/31/86	0640	3000.9	8858.2	11	7	4	7	20.1	20.0	20.0	32.0	32.0	32.0	1.617	8.8	8.8	8.2	ST
17017	10/31/86	0730	3003.0	8858.1	11	9	5	9	20.0	20.0	20.0	32.0	32.0	32.0	1.931	8.6	8.8	8.8	ST
17018	10/31/86	0820	3004.0	8859.1	11	7	4	7	20.8	20.1	20.1	32.0	32.0	32.0	1.703	8.4	8.4	8.3	ST



Table 1 (cont'd.)

LOUISIANA NOVEMBER GROUND FISH SURVEY  
LOUISIANA INSHORE VESSELS

STA#	DATE		POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)		TEMPERATURE,C			SALINITY,PPT			CL, SUR	DISSOLVED OXYGEN			GEAR
	MM/DD/YY	TIME	LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX		SUR	MID	MAX	
35094	11/ 5/86	0937	2916.3	8956.0	13	2	2	22.3	22.5	23.6	23.8	17.025	8.2	8.0	ST/PN				
35095	11/ 5/86	1024	2915.1	8954.2	13	5	5	22.6	22.7	23.8	24.2	13.379	7.8	6.1	ST/PN				
35096	11/ 5/86	1104	2913.9	8952.7	13	9	9	22.8	22.4	23.7	23.8	11.301	7.6	6.1	ST/PN				
35097	11/ 6/86	0716	2909.5	9209.5	16	9	9	21.1	22.3	18.8	19.7	4.187	7.5	6.2	ST/PN				
35098	11/ 6/86	0825	2919.3	9206.8	16	5	5	21.8	21.6	24.7	25.0	4.874	6.4	6.0	ST/PN				
35099	11/ 6/86	0847	2940.0	9322.0	17	9	9	21.5	21.8	23.6	27.7	5.199	7.5	5.8	ST/PN				
35100	11/ 6/86	0905	2924.8	8904.3	12	9	9	22.3	22.8	28.8	31.3	5.291			ST/PN				
35101	11/ 6/86	0926	2944.0	9322.0	17	5	5	21.0	21.9	24.7	27.9	4.698	6.6	5.9	ST/PN				
35102	11/ 6/86	0938	2926.9	8909.6	12	5	5	21.8	22.0	26.5	27.7		7.5	7.4	ST/PN				
35103	11/ 6/86	1002	2945.0	9322.0	17	2	2	22.4	22.1	26.6	25.7	8.568	5.4	4.5	ST/PN				
35104	11/ 6/86	1003	2934.0	9201.8	16	2	2	21.6	21.5	8.0	8.4	9.150	7.7	7.8	ST/PN				
35105	11/ 6/86	1020	2927.4	8912.2	12	2	2	22.4	22.3	28.6	28.5	5.297	7.2	7.1	ST/PN				
35106	11/ 6/86	1050	2900.5	9035.7	14	9	9	23.0	24.0	26.3	28.4	6.365	7.1	6.5	ST/PN				
35107	11/ 6/86	1145	2902.0	9035.7	14	5	5	22.1	21.5	24.9	25.5	8.434	7.8	7.9	ST/PN				
35108	11/ 6/86	1215	2904.5	9035.7	14	2	2	22.3	22.3	25.7	25.8	9.959	3.9	4.3	ST/PN				

Table 1 (cont'd.)

TEXAS NOVEMBER GROUND FISH SURVEY																			
ARANSAS BAY																			
STA#	DATE	TIME	POSITION		STAT	DEPTH	SAMPLE		TEMPERATURE,C			SALINITY,PPT			CL, SUR	DISSOLVED			GEAR
			LAT	LONG			ZONE	DEPTH	(M)	MID	MAX	SUR	MID	MAX		SUR	MID	MAX	
31001	11/17/86	0925	2604.5	9704.5	21	20	20	20.5	20.6	30.0	30.0				8.9	8.7	ST		
31002	11/17/86	1003	2606.2	9702.4	21	24	24	20.7	21.1	31.0	31.0				8.6	8.4	ST		
31003	11/17/86	1050	2609.5	9702.5	21	22	22	20.7	21.5	30.0	32.0				8.6	8.5	ST		
31004	11/17/86	1123	2608.5	9701.7	21	25	25	21.1	21.7	30.0	32.0				8.4	8.4	ST		
31005	11/17/86	1155	2608.4	9700.5	21	26	26	21.2	21.5	29.0	29.0				8.8	8.5	ST		
31006	11/17/86	1239	2605.4	9700.5	21	26	26	21.9	21.5	29.0	30.0				8.6	8.5	ST		
31007	11/17/86	1347	2600.6	9707.6	21	12	12	21.2	20.6	29.0	30.0				8.5	8.8	ST		
31008	11/17/86	1420	2559.6	9708.7	21	5	5	21.0	20.9	30.0	30.0				8.7	8.7	ST		

Table 1 (cont'd.)

TEXAS NOVEMBER GROUND FISH SURVEY MATAGORDA BAY																			
STA#	DATE MM/DD/YY	TIME	POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)		TEMPERATURE, C			SALINITY, PPT			CL, SUR	DISSOLVED OXYGEN			GEAR
			LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX		SUR	MID	MAX	
32001	11/17/86	0946	2825.5	9617.4	19	9	9	18.2	18.8	27.0	27.7	27.0	27.7	27.0	27.7	8.7	9.0	ST	
32002	11/17/86	1019	2827.6	9614.3	19	8	8	18.3	18.8	27.0	27.6	27.0	27.6	27.0	27.6	8.6	8.4	ST	
32003	11/17/86	1107	2830.6	9609.5	19	7	7	18.6	19.0	27.0	27.4	27.0	27.4	27.0	27.4	8.2	7.2	ST	
32004	11/17/86	1138	2828.6	9608.5	19	11	11	18.8	19.4	26.9	28.5	26.9	28.5	26.9	28.5	7.4	7.9	ST	
32005	11/17/86	1205	2828.5	9607.4	19	13	13	18.9	19.8	26.9	29.3	26.9	29.3	26.9	29.3	7.6	7.4	ST	
32006	11/17/86	1239	2826.4	9604.4	19	17	17	19.1	20.4	26.5	32.0	26.5	32.0	26.5	32.0	8.2	7.6	ST	
32007	11/17/86	1325	2822.5	9607.4	19	19	19	20.1	20.7	28.5	33.0	28.5	33.0	28.5	33.0	8.6	7.4	ST	
32008	11/17/86	1400	2825.5	9608.5	19	16	16	20.0	21.0	27.0	33.1	27.0	33.1	27.0	33.1	8.1	7.0	ST	

Table 1 (cont'd.)

TEXAS NOVEMBER GROUND FISH SURVEY  
LAGUNA MADRE

STA#	DATE		POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)		TEMPERATURE, C			SALINITY, PPT			CL, SUR	DISSOLVED OXYGEN			GEAR
	MM/DD/YY	TIME	LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX		SUR	MID	MAX	
33001	11/17/86	0821	2747.2	9656.6	20	20	20	19.4	21.2	30.0	34.0				8.5	8.1	ST		
33002	11/17/86	0854	2745.4	9655.4	20	22	22	19.5	21.2	31.0	35.0				8.4	8.4	ST		
33003	11/17/86	0932	2744.5	9658.6	20	20	20	19.5	21.2	30.0	35.0				8.3	9.6	ST		
33004	11/17/86	1003	2744.5	9700.6	20	18	18	19.7	21.0	30.0	34.0				8.5	8.3	ST		
33005	11/17/86	1036	2744.5	9702.5	20	14	14	18.2	20.9	30.0	34.0				9.1	8.6	ST		
33006	11/17/86	1141	2735.5	9701.5	20	23	23	19.9	21.7	31.0	35.0				8.3	8.1	ST		
33007	11/17/86	1224	2736.6	9704.6	20	20	20	20.2	20.8	30.0	32.0				8.3	8.1	ST		
33008	11/17/86	1312	2740.6	9707.5	20	12	12	19.4	19.3	30.0	31.0				9.1	8.4	ST		

Table 1 (cont'd.)

TEXAS NOVEMBER GROUND FISH SURVEY  
GALVESTON BAY

STA#	DATE		POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M)		TEMPERATURE, C			SALINITY, PPT			CL, SUR	DISSOLVED OXYGEN			GEAR
	MM/DD/YY	TIME	LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX		SUR	MID	MAX	
34001	11/18/86	1120	2935.6	9343.9	17	11	11	19.6	19.7	24.0	29.0	10.3	8.7	ST					
34002	11/18/86	1209	2936.4	9340.7	17	11	11	19.9	19.7	24.0	29.0	10.3	8.7	ST					
34003	11/18/86	1247	2937.1	9337.8	17	11	11	20.4	19.8	27.0	27.0	11.6	10.0	ST					
34004	11/18/86	1340	2942.2	9335.6	17	7	7	19.3	19.8	25.0	27.0	8.0	11.6	ST					
34005	11/18/86	1439	2942.6	9336.1	17	7	7	19.4	19.2	26.0	27.0	9.2	8.2	ST					
34006	11/18/86	1505	2943.2	9336.4	17	7	7	19.4	19.3	26.0	28.0	9.4	8.8	ST					
34007	11/18/86	1610	2942.8	9345.1	17	5	5	19.6	19.0	27.0	28.0	9.4	9.1	ST					
34008	11/18/86	1655	2939.9	9349.2	17	7	7	19.3	19.1	27.0	29.0	9.3	8.8	ST					
34009	11/20/86	0923	2918.3	9441.4	18	9	8	20.1	19.1	26.0	29.0	9.3	8.0	ST					
34010	11/20/86	0957	2917.4	9443.5	18	7	6	20.0	19.3	26.0	30.0	8.5	7.6	ST					
34011	11/20/86	1046	2915.6	9449.1	18	5	4	20.6	19.4	27.0	27.0	8.4	6.8	ST					
34012	11/20/86	1128	2911.3	9445.4	18	14	13	20.4	19.8	24.0	32.0	8.9	6.3	ST					
34013	11/20/86	1157	2910.5	9445.4	18	15	14	20.0	19.7	25.0	32.0	8.8	7.5	ST					
34014	11/20/86	1224	2909.4	9445.6	18	16	15	19.8	19.8	25.0	30.0	8.5	7.5	ST					
34015	11/20/86	1258	2908.6	9443.5	18	17	16	20.4	20.0	24.0	33.0	8.7	8.0	ST					
34016	11/20/86	1401	2915.5	9439.7	18	13	12	20.1	19.7	26.0	32.0	8.5	7.1	ST					

Table 1 (cont'd.)

LOUISIANA DECEMBER GROUND FISH SURVEY  
PELICAN

STA#	DATE MM/DD/YY	TIME	POSITION		STAT ZONE	DEPTH (M)	SAMPLE DEPTHS		TEMPERATURE,C			SALINITY,PPT			CL, SUR	DISSOLVED OXYGEN			GEAR
			LAT	LONG			MID	MAX	SUR	MID	MAX	SUR	MID	MAX		SUR	MID	MAX	
35109	12/ 1/86	1419	2854.8	9029.6	14	16	7	14	20.3	22.3	22.3	27.8	32.1	32.2	1.255	7.7	6.0	6.3	ST/PN
35110	12/ 1/86	1632	2854.9	9024.5	14	18	9	18	20.2	22.1	22.9	27.8	32.4	34.0	1.643	7.5	6.0	6.0	ST/PN
35111	12/ 1/86	1827	2854.8	9024.8	14	18	9	17	20.1	22.3	22.9	27.9	32.4	33.9	1.165	7.4	5.8	5.4	ST/PN
35112	12/ 1/86	2038	2855.2	9030.0	14	18	10	15	20.1	22.3	23.3	27.9	32.4	32.4	1.591	7.5	5.3	5.8	ST/PN
35113	12/ 1/86	2326	2849.7	9040.5	14	20	8	18	20.0	21.7	22.0	28.4	30.4	31.8	1.694	7.2	6.2	5.9	ST/PN
35114	12/ 2/86	0301	2851.3	9054.2	14	15	6	13	18.0	18.3	21.4	26.0	26.4	29.7	3.405	8.2	8.1	6.2	ST/PN
35115	12/ 2/86	0544	2900.0	9053.3	14	9	3	5	16.6	16.8	18.0	25.7	26.1	30.0	0.926	8.0	7.3	6.6	ST/PN
35116	12/ 2/86	0732	2900.2	9053.6	14	5	3	5	16.6	16.7	17.4	26.1	26.2	27.1	6.203	8.3	7.6	7.1	ST/PN
35117	12/ 2/86	1346	2909.9	9002.5	14	9	3	6	22.0	22.0	22.0	32.3	32.3	32.3	2.013	6.5	6.2	6.1	ST/PN
35118	12/ 2/86	1536	2910.5	8955.0	13	16	8	12	21.9	22.3	22.8	32.4	32.5	33.5	1.923	6.7	6.5	5.8	ST/PN
35119	12/ 2/86	1714	2914.9	8949.5	13	13	6	11	20.3	22.5	23.3	30.1	32.7	34.0	4.998	7.0	6.1	4.9	ST/PN
35120	12/ 2/86	1917	2914.6	8949.5	13	11	5	10	21.9	22.1	22.9	32.6	32.6	33.5	1.793	6.0	5.6	5.3	ST/PN
35121	12/ 2/86	2123	2910.6	8955.0	13	15	6	13	22.0	22.1	23.4	32.8	32.9	34.3	1.871	6.4	5.7	4.4	ST/PN
35122	12/ 2/86	2343	2909.9	9002.5	14	7	3	7	21.3	21.3	21.3	32.4	32.4	32.4	2.155	5.9	5.7	5.3	ST/PN
35123	12/ 3/86	0237	2855.3	9009.3	14	26	13	24	21.0	21.2	23.9	32.4	32.6	35.4	1.255	7.3	6.7	5.1	ST/PN
35124	12/ 3/86	0548	2850.7	9014.0	14	26	12	23	20.5	20.6	23.7	32.0	32.2	35.3	1.931	7.3	6.8	5.4	ST/PN
35125	12/ 3/86	0900	2850.7	9014.0	14	26	13	25	20.5	20.6	24.0	32.2	32.2	35.6	1.557	7.2	6.7	5.4	ST/PN
35126	12/ 3/86	1115	2855.1	9009.4	14	26	10	22	20.2	20.2	23.7	31.7	31.7	35.2	2.567	7.6	6.9	5.4	ST/PN
35127	12/ 3/86	1524	2835.7	9032.6	14	29	12	25	21.2	22.0	24.4	32.4	32.9	35.4	2.399	8.4	6.2	4.9	ST/PN
35128	12/ 3/86	1911	2835.6	9032.5	14	27	12	26	21.3	22.1	24.5	32.6	33.1	35.5	1.819	7.1	6.5	4.5	ST/PN
35129	12/ 3/86	2213	2838.9	9026.1	14	22	10	20	21.5	21.5	23.9	33.2	33.2	35.0	1.457	7.2	6.7	5.5	ST/PN
35130	12/ 4/86	0719	2839.1	9026.1	14	26	12	18	21.6	21.9	23.9	33.4	33.5	35.0	1.987	7.1	6.9	5.9	ST/PN
35131	12/ 4/86	1013	2849.3	9040.7	14	18	8	17	19.8	19.8	22.8	30.4	30.4	33.3	2.583	7.6	7.0	5.2	ST/PN
35132	12/ 4/86	1229	2850.9	9054.4	14	13	7	9	19.5	19.6	19.6	30.8	30.9	30.9	3.151	7.1	7.0	6.8	ST/PN

Table 2. SEAMAP Squid/Butterfish Trawl Survey species composition list, 124 trawl stations. Species with a total weight of less than 0.0227 kg (0.05 lb) 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	OF OCCURRENCE
<u>Finfishes</u>					
<i>Peprilus burti</i>	gulf butterfish	74565	3499.0	67	53.6
<i>Stenotomus caprinus</i>	longspine porgy	43535	2101.4	70	56.0
<i>Steindachneria argentea</i>	luminous hake	14737	329.0	34	27.2
<i>Trachurus lathami</i>	rough scad	14300	983.4	78	62.4
<i>Micropogonias undulatus</i>	Atlantic croaker	7787	742.5	25	20.0
<i>Pristipomoides aquilonaris</i>	wenchman	6372	773.0	82	65.6
<i>Ariomma bondi</i>	silver-rag	6180	415.2	28	22.4
<i>Scomber japonicus</i>	chub mackerel	5427	325.8	27	21.6
<i>Trichiurus lepturus</i>	Atlantic cutlassfish	5041	699.6	53	42.4
<i>Leiostomus xanthurus</i>	spot	4304	370.9	9	7.2
<i>Macrorhamphosus scolopax</i>	longspine snipefish	3384	21.3	21	16.8
<i>Upeneus parvus</i>	dwarf goatfish	3096	130.5	39	31.2
<i>Prionotus stearnsi</i>	shortwing searobin	3095	63.9	55	44.0
<i>Pontinus longispinis</i>	longspine scorpionfish	2455	139.3	51	40.8
<i>Saurida brasiliensis</i>	largescale lizardfish	2277	33.7	30	24.0
<i>Etrumeus teres</i>	round herring	1897	49.0	23	18.4
<i>Polymixia lowei</i>	beardfish	1866	52.9	16	12.8
<i>Urophycis cirrata</i>	gulf hake	1583	102.1	53	42.4
<i>Neomerinthe hemingwayi</i>	spinycheek scorpionfish	1427	102.1	22	17.6
<i>Bembrops anatirostris</i>	duckbill flathead	1337	71.6	57	45.6
<i>Synagrops spinosus</i>	temperate bass	1335	25.0	28	22.4
<i>Epigonus pandionis</i>	cardinalfish	1301	10.5	8	6.4
<i>Coelorinchus caribbaeus</i>	blackfin grenadier	1279	27.6	16	12.8
<i>Mullus auratus</i>	red goatfish	1232	79.1	8	6.4
<i>Serranus atrobranchus</i>	blackear bass	1060	27.0	33	26.4
<i>Lagodon rhomboides</i>	pinfish	934	96.5	26	20.8

Table 2. 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>Urophycis floridana</i>	southern hake	932	119.4	74	59.2
<i>Trichopsetta ventralis</i>	sash flounder	834	28.6	41	32.8
<i>Cynoscion arenarius</i>	sand seatrout	740	165.6	24	19.2
<i>Peristedion</i> spp.	searobins	502	9.7	8	6.4
<i>Synodus foetens</i>	inshore lizardfish	498	85.5	32	25.6
<i>Ogcocephalus</i> spp.	batfishes	484	15.7	21	16.8
<i>Harengula jaguana</i>	scaled sardine	450	35.5	7	5.6
<i>Peristedion gracile</i>	slender searobin	434	9.5	17	13.6
<i>Prionotus paralatus</i>	Mexican searobin	428	25.4	36	28.8
<i>Pagrus pagrus</i>	red porgy	403	59.4	8	6.5
<i>Saurida normani</i>	shortjaw lizardfish	332	32.5	10	8.0
<i>Caulolatilus intermedius</i>	anchor tilefish	330	58.0	36	28.8
<i>Prionotus rubio</i>	blackfin searobin	327	18.1	23	18.4
<i>Epinnula orientalis</i>	sackfish	325	22.4	8	6.4
<i>Centropristis philadelphica</i>	rock sea bass	260	43.1	22	17.6
<i>Porichthys plectrodon</i>	Atlantic midshipman	255	6.3	29	23.2
<i>Kathetostoma albigutta</i>	lancer stargazer	235	13.1	22	17.6
<i>Halieutichthys aculeatus</i>	pancake batfish	208	3.4	14	11.2
<i>Syacium papillosum</i>	dusky flounder	182	11.7	8	6.4
<i>Argentina striata</i>	striated argentine	179	7.1	15	12.0
<i>Ancylosetta dilecta</i>	three-eye flounder	162	16.2	23	18.4
<i>Rhomboplites aurorubens</i>	vermilion snapper	140	42.3	3	2.4
<i>Poecilopsetta beani</i>	offshore flounder	133	3.4	14	11.2
<i>Paralichthys squamilentus</i>	broad flounder	130	80.8	30	24.0
<i>Epinnula americana</i>	snake mackerel	125	9.3	9	7.2
<i>Stellifer lanceolatus</i>	star drum	119	3.2	1	0.8



Table 2. 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>Synagrops bellus</i>	blackmouth bass	115	3.9	6	4.8
<i>Parasudis truculenta</i>	longnose greeneye	111	2.4	6	4.8
<i>Pikea mexicana</i>	yellowtail bass	107	3.8	15	12.0
<i>Prionotus roseus</i>	bluespotted searobin	102	4.4	7	5.6
<i>Synagrops</i> spp.	temperate basses	101	1.3	9	7.2
<i>Selar crumenophthalmus</i>	bigeye scad	92	16.9	13	10.4
<i>Decodon puellaris</i>	red hogfish	89	4.8	9	7.2
<i>Squatina dumerili</i>	Atlantic angel shark	89	363.5	25	20.0
<i>Zenopsis conchifera</i>	buckler dory	84	14.9	13	10.4
<i>Rhizoprionodon terraenovae</i>	Atlantic sharpnose shark	83	114.9	13	10.4
<i>Antigonia capros</i>	deepbody boarfish	77	4.2	7	5.6
<i>Sphyræna guachancho</i>	guaguanche	72	11.5	9	7.2
<i>Diplectrum bivittatum</i>	dwarf sand perch	69	2.1	4	3.2
<i>Hemanthias vivanus</i>	red barbier	69	9.2	16	12.8
<i>Raja olseni</i>	spreadfin skate	68	44.0	30	24.0
<i>Cyclopsetta chittendeni</i>	Mexican flounder	64	9.2	8	6.4
<i>Anchoa hepsetus</i>	striped anchovy	61	2.3	3	2.4
<i>Urophycis regia</i>	spotted hake	60	5.5	4	3.2
<i>Antennarius radiosus</i>	singlespot frogfish	53	2.4	10	8.0
<i>Haemulon aurolineatum</i>	tomtate	52	3.6	1	0.8
<i>Brotula barbata</i>	bearded brotula	51	46.2	12	9.6
<i>Priacanthus arenatus</i>	bigeye	51	13.5	8	6.4
<i>Selene setapinnis</i>	Atlantic moonfish	51	6.5	7	5.6
<i>Prionotus alatus</i>	spiny searobin	48	1.5	3	2.4
<i>Citharichthys cornutus</i>	horned whiff	48	1.0	5	4.0
<i>Decapterus punctatus</i>	round scad	47	5.3	3	2.4

Table 2. 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>Epigonus</i> spp.	cardinalfishes	46	0.5	3	2.4
<i>Hildebrandia flava</i>	yellow conger	46	11.5	10	8.0
<i>Squalus cubensis</i>	Cuban dogfish	45	18.4	10	8.0
<i>Centropristis ocyurus</i>	bank sea bass	45	2.2	2	1.6
<i>Synodus poeyi</i>	offshore lizardfish	44	0.7	6	4.8
<i>Anchoviella</i> spp.	anchovies	41	1.1	3	2.4
<i>Scorpaena brasiliensis</i>	barbfish	40	3.2	5	4.0
<i>Monolene</i> spp.	lefteye flounders	39	1.3	5	4.0
<i>Gnathagnus egregius</i>	freckled stargazer	39	3.4	8	6.4
<i>Raja texana</i>	roundel skate	39	14.5	14	11.2
<i>Zenopsis ocellatus</i>	dory	38	2.0	7	5.6
<i>Coelorinchus</i> spp.	grenadiers	37	0.9	3	2.4
<i>Priacanthus cruentatus</i>	glasseye snapper	37	11.5	2	1.6
<i>Evoxymetopon</i> sp.	cutlassfishes	37	2.7	5	4.0
<i>Syacium gunteri</i>	shoal flounder	36	1.1	4	3.2
<i>Zalieutes mcgintyi</i>	tricorn batfish	36	1.0	4	3.2
<i>Paralichthys lethostigma</i>	southern flounder	35	16.4	10	8.0
<i>Lagocephalus laevigatus</i>	smooth puffer	35	4.9	7	5.6
<i>Ancylopsetta quadrocellata</i>	ocellated flounder	32	5.8	2	1.6
<i>Parahollardia lineata</i>	jambeau	31	1.4	2	1.6
<i>Monolene sessilicauda</i>	deepwater flounder	30	0.5	4	3.2
<i>Equetus</i> spp.	drums	30	9.5	2	1.6
<i>Syacium</i> spp.	lefteye flounders	29	1.2	5	4.0
<i>Chlorophthalmus agassizi</i>	shortnose greeneye	28	0.7	3	2.4
<i>Gymnothorax</i> spp.	moray eels	27	3.1	2	1.6

Table 2. 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>Symphurus</i> spp.	tonguefishes	27	0.2	1	0.8
<i>Lutjanus campechanus</i>	red snapper	25	39.1	12	9.6
<i>Equetus umbrosus</i>	cubbyu	22	9.4	6	4.8
<i>Etropus crossotus</i>	fringed flounder	22	0.5	1	0.8
<i>Raja lentiginosa</i>	freckled skate	21	4.3	10	8.0
<i>Sphoeroides</i> spp.	puffers	20	1.0	3	2.4
<i>Sphoeroides pachygaster</i>	blunthead puffer	20	3.8	4	3.2
<i>Raja eglanteria</i>	clearnose skate	19	13.5	8	6.4
<i>Argentina</i> spp.	argentinians	18	0.4	3	2.4
<i>Lepophidium</i> spp.	cusks-eels	18	3.0	3	2.4
<i>Merluccius albidus</i>	offshore hake	17	4.4	5	4.0
<i>Fistularia tabacaria</i>	bluespotted cornetfish	16	9.6	6	4.8
<i>Mustelus canis</i>	smooth dogfish	15	61.6	12	9.6
<i>Paralichthys albigutta</i>	gulf flounder	15	0.6	2	1.6
<i>Epinnula</i> spp.	snake mackerel	14	1.5	2	1.6
<i>Physiculus fulvus</i>	morid codlet	13	0.5	5	4.0
<i>Myliobatis goodei</i>	southern eagle ray	12	6.4	1	0.8
<i>Balistes capriscus</i>	gray triggerfish	12	25.9	4	3.2
<i>Rypticus maculatus</i>	whitespotted soapfish	12	0.3	2	1.6
<i>Seriola dumerili</i>	greater amberjack	11	61.6	5	4.0
<i>Sphoeroides parvus</i>	least puffer	11	0.4	4	3.2
<i>Zenopsis</i> spp.	dories	10	0.2	2	1.6
<i>Mustelus norrisi</i>	Florida smoothhound	9	34.9	5	4.0
<i>Symphurus plagiosa</i>	blackcheek tonguefish	9	0.5	3	2.4
<i>Engyophrys senta</i>	spiny flounder	9	0.0	2	1.6
<i>Hemanthias</i> spp.	sea basses	9	0.2	1	0.8

Table 2. 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	8	2.3	2	1.6
<i>Scorpaena plumieri</i>	spotted scorpionfish	8	7.0	2	1.6
<i>Scyliorhinus retifer</i>	chain dogfish	8	1.4	1	0.8
Myctophidae	lantern fishes	7	0.0	2	1.6
<i>Diplectrum formosum</i>	sand perch	7	0.9	1	0.8
<i>Prionotus</i> spp.	searobins	7	0.3	2	1.6
<i>Setarches guentheri</i>	scorpionfish	7	0.0	2	1.6
<i>Benthodesmus</i> spp.	cutlassfishes	7	0.4	2	1.6
<i>Neobythites gilli</i>	cusck-eel	7	0.3	2	1.6
<i>Calamus nodosus</i>	knobbed porgy	6	3.5	3	2.4
<i>Cynoscion nothus</i>	silver seatrout	6	0.9	2	1.6
<i>Hemanthias leptus</i>	longtail bass	6	0.4	2	1.6
<i>Bregmaceros atlanticus</i>	antenna codlet	6	0.0	1	0.8
<i>Maurolucus muelleri</i>	bristlemouth	6	0.0	1	0.8
<i>Myliobatis fremin</i>	bullnose ray	6	29.1	4	3.2
<i>Lophius gastrophysus</i>	blackfin goosfish	6	1.6	3	2.4
<i>Lophiodes</i> spp.	goosefishes	5	2.0	1	0.8
<i>Raja garmani</i>	rosette skate	5	1.2	1	0.8
<i>Carcharhinus falciformis</i>	silky shark	5	76.1	3	2.4
<i>Malacanthus plumieri</i>	sand tilefish	5	3.7	1	0.8
<i>Scorpaena calcarata</i>	smoothhead scorpionfish	5	0.2	2	1.6
<i>Gymnachirus texae</i>	fringed sole	5	0.3	3	2.4
<i>Lophius</i> spp.	goosefishes	4	0.1	2	1.6
<i>Bellator militaris</i>	horned searobin	4	0.2	1	0.8
<i>Scorpaena agassizi</i>	longfin scorpionfish	4	0.4	1	0.8
<i>Chloroscombrus chrysurus</i>	Atlantic bumper	4	0.2	1	0.8

Table 2. SEAMAP Species Composition (cont'd.)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OF OCCURRENCE
Carangidae	jacks	4	0.1	1	0.8
Lutjanus synagris	lane snapper	4	1.9	3	2.4
Lepophidium jeannae	mottled cusk-eel	4	0.4	1	0.8
Raja spp.	skates	4	0.8	1	0.8
Trachinocephalus myops	snakefish	4	0.2	2	1.6
Ophichthus rex	giant snake eel	4	49.5	4	3.2
Xenolepidichthys dalgleishi	spotted tinseltail	3	0.1	1	0.8
Epinephelus flavolimbatus	yellowedge grouper	3	30.7	3	2.4
Xenodermichthys	slickheads	3	0.1	1	0.8
Synodus intermedius	sand diver	3	0.7	1	0.8
Dasyatis centroura	rougetail stingray	3	156.8	3	2.4
Selene vomer	lookdown	3	0.8	1	0.8
Rypticus saponaceus	greater soapfish	3	0.1	2	1.6
Ariomma spp.	driftfish	3	0.0	2	1.6
Monacanthus setifer	pygmy filefish	3	0.0	1	0.8
Monacanthus hispidus	planehead filefish	2	0.1	2	1.6
Monacanthus spp.	filefish	2	0.1	1	0.8
Citharichthys spilopterus	bay whiff	2	0.1	2	1.6
Psenes pellucidus	driftfish	2	1.2	2	1.6
Gobiidae	gobies	2	0.0	1	0.8
Echeneis naucrates	sharksucker	2	0.6	1	0.8
Lopholatilus chamaeleonticeps	tilefish	2	0.6	2	1.6
Hemipteronotus novacula	pearly razorfish	2	0.1	1	0.8
Lutjanus griseus	grey snapper	2	4.0	1	0.8
Chauliodus spp.	viperfishes	2	0.0	1	0.8
Mycteroperca microlepis	gag	2	2.5	1	0.8

Table 2. 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>Ophichthus ocellatus</i>	palespotted eel	2	0.6	1	0.8
<i>Paraconger caudilimbatus</i>	margintail conger	2	0.2	1	0.8
Congridae	conger eel	1	0.1	1	0.8
<i>Gymnothorax ocellatus</i>	ocellated moray	1	0.5	1	0.8
<i>Echiophis</i> spp.	snake eels	1	0.4	1	0.8
<i>Epinephelus niveatus</i>	snowy grouper	1	0.0	1	0.8
<i>Coelorhynchus occa</i>	grenadiers	1	0.1	1	0.8
<i>Dasyatis sayi</i>	bluntnose stingray	1	7.7	1	0.8
<i>Dasyatis americana</i>	southern stingray	1	36.4	1	0.8
<i>Sphyrna lewini</i>	scalloped hammerhead	1	25.0	1	0.8
<i>Carcharhinus obscurus</i>	dusky shark	1	81.8	1	0.8
<i>Calamus leucosteus</i>	whitebone porgy	1	1.4	1	0.8
<i>Microspathodon chrysurus</i>	yellowtail damselfish	1	0.0	1	0.8
<i>Decapterus tabl</i>	redtail scad	1	0.0	1	0.8
<i>Trachinotus carolinus</i>	Florida pompano	1	0.6	1	0.8
<i>Trachinotus falcatus</i>	permit	1	1.1	1	0.8
<i>Pseudopriacanthus altus</i>	short bigeye	1	0.2	1	0.8
<i>Scomberomorus maculatus</i>	Spanish mackerel	1	0.3	1	0.8
<i>Sarda sarda</i>	Atlantic bonito	1	0.1	1	0.8
<i>Prionotus salmonicolor</i>	blackwing searobin	1	0.2	1	0.8
<i>Setarches</i> sp.	scorpionfish	1	0.0	1	0.8
<i>Aluterus</i> spp.	filefish	1	0.1	1	0.8
<u>Crustceans</u>					
<i>Penaeopsis megalops</i>	penaeid shrimp	3970	24.2	15	12.0
<i>Parapenaeus</i> spp.	penaeid shrimp	3367	14.5	20	16.0

Table 2. SEAMAP Species Composition (cont'd.)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OF OCCURRENCE
Solenocera	humpback shrimp	955	7.3	10	8.0
Portunus spinicarpus	longspine swimming crab	904	8.6	12	9.6
Penaeus setiferus	white shrimp	466	2.5	4	3.2
Caridea	caridean shrimps	234	0.5	4	3.2
Trachypenaeus spp.	roughneck shrimps	229	1.2	5	4.0
Portunidae	swimming crabs	154	1.5	3	2.4
Squilla spp.	mantis shrimps	137	2.6	17	13.6
Portunus spinimanus	blotched swimming crab	110	0.7	3	2.4
Majidae	spider crabs	94	1.5	7	5.6
Sicyonia spp.	rock shrimps	93	0.6	4	3.2
Callinectes spp.	swimming crab	65	0.9	1	0.8
Penaeus aztecus	brown shrimp	63	3.5	10	8.0
Plesionika spp.	pandalid shrimps	51	0.4	2	1.6
Anasimus latus	stilt spider crab	40	1.3	6	4.8
Callinectes similis	lesser blue crab	21	0.4	2	1.6
Myropsis quinquespina	fivespine purse crab	19	0.3	4	3.2
Paguridae	right-handed hermit crabs	15	1.3	6	4.8
Xiphopenaeus kroyeri	seabob	15	0.2	1	0.8
Pleotieus robustus	royal red shrimp	11	0.2	1	0.8
Squilla brasiliensis	mantis shrimp	10	0.9	2	1.6
Acanthocarpus alexandri	gladiator box crab	8	0.3	3	2.4
Raninoides louisianensis	gulf frog crab	6	0.1	4	3.2
Xanthidae	mud crabs	6	0.2	4	3.2
Calappa sulcata	yellow box crab	5	1.8	2	1.6
Stenocionops spinosissimus	tenspine spider crab	5	3.3	1	0.8
Porcellana spp.	procelain crabs	4	0.0	1	0.8

Table 2. SEAMAP Species Composition (cont'd.)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OF OCCURRENCE
Calappidae	box crabs	4	1.5	2	1.6
Scyllaridae	slipper lobsters	4	0.7	2	1.6
Podochela sidneyi	shortfinger neck crab	4	0.0	1	0.8
Pyromaia cuspidata	dartnose pear crab	4	0.2	1	0.8
Stenocionops spinimanus	prickly spider crab	3	1.6	2	1.6
Rochinia tanneri	thorned spider crab	3	0.1	2	1.6
Neolithodes agassizii	lithode crab	3	0.5	2	1.6
Munida spp.	squat lobsters	3	0.1	2	1.6
Scyllarides nodifer	ridged slipper lobster	3	1.8	1	0.8
Portunus gibbesii	iridescent swimming crab	3	0.1	1	0.8
Nanoplax xanthiformis	rough squareback crab	3	0.1	1	0.8
Sicyonia dorsalis	lesser rock shrimp	3	0.0	1	0.8
Decapoda	decapod	3	0.1	2	1.6
Cyclopidae	copepods	2	0.0	1	0.8
Sicyonia brevirostris	brown rock shrimp	2	0.1	1	0.8
Raninidae	frog crabs	2	0.1	1	0.8
Parthenope serrata	elbow crab	2	0.0	1	0.8
Palicus alternatus	labile stilt crab	2	0.1	1	0.8
Calappa angusta	nodose box crab	1	0.0	1	0.8
Portunus sayi	sargassum swimming crab	1	0.0	1	0.8
Stenorhynchus seticornis	yellowline arrow crab	1	0.0	1	0.8
Stenopodidae	coral shrimp	1	0.0	1	0.8
Libinia emarginata	portly spider crab	1	0.3	1	0.8
Majidae	spider crabs	1	0.0	1	0.8



Table 2. SEAMAP Species Composition (cont'd.)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OF OCCURRENCE
<u>Others</u>					
Myopsida	squids	15846	157.6	47	37.6
Loligo pealeii	longfin squid	15769	310.9	73	58.4
Spatangidae	heart urchins	14904	1127.7	16	12.8
Loligo pleii	arrow squid	8068	234.6	57	45.6
Illex coindeti	shortfin squid	194	10.3	19	15.2
Ophiuroidea	brittlestars	180	0.8	4	3.2
Scyphozoa	jellyfishes	120	4.8	3	2.4
Amusium papyraceum	paper scallop	116	2.2	10	8.0
Pyrosomida	ascidians	97	6.2	8	6.4
Asteroidea	starfishes	87	7.6	18	14.4
Lolliguncula brevis	Atlantic brief squid	57	0.7	1	0.8
Aequipecten glyptus	red-ribbed scallop	45	1.0	4	3.2
Aurelia spp.	jellyfishes	44	4.4	6	4.8
Holothuroidea	sea cucumbers	41	2.7	6	4.8
Actiniaria	sea anemones	14	2.3	7	5.6
Cidaris spp.	sea urchins	13	0.6	1	0.8
Murex spp.	murexes	13	0.3	2	1.6
Porifera	sponges	11	4.1	1	0.8
Anadara spp.	ark shells	7	0.1	1	0.8
Abralia spp.	squids	5	0.1	3	2.4
Ctenophora	comb jellies	4	0.2	1	0.8
Astropecten spp.	sea stars	3	0.1	1	0.8
Dorididae	doris	3	0.1	1	0.8
Tugurium caribaeum	Caribbean carrier shell	2	0.5	1	0.8
Clypeaster spp.	cake urchins	2	0.1	2	1.6
Actinauge longicornis	sea anemones	2	0.2	1	0.8
Octopoda	octopuses	1	0.1	1	0.8

Table 2. SEAMAP Species Composition (cont'd.)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OF OCCURRENCE
Rossia spp.	bobtail squids	1	0.0	1	0.8
Polychaeta	bristleworms	1	0.0	1	0.8
Nemertea	ribbon worms	1	0.1	1	0.8
Scutellidae	sand dollars	1	0.0	1	0.8
Mediaster	starfish	1	0.1	1	0.8
Luidia	sea stars	1	0.0	1	0.8
Gorgonidae	gorgons	1	7.7	1	0.8

Table 3

Summary of dominant organisms taken between 84°00.0'W and 87°14.0'W during the May-June 1986 SEAMAP Squid and Butterfish Survey. 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	20-49 FM					50-79 FM					80-109 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Parapenaeus															
spp.	1.6	1.60	0.1	0.07	5	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	2
Trachypenaeus															
spp.	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	5	22.0	22.00	0.0	0.05	2
Portunus															
spincarpus	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	5	14.0	14.00	0.4	0.36	2
Anasimus															
latus	0.0	0.00	0.0	0.00	5	0.8	0.80	0.0	0.02	5	5.0	5.00	0.1	0.14	2
Penaeopsis															
megalops	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	2
Squilla															
spp.	0.0	0.00	0.0	0.00	5	2.0	2.00	0.1	0.05	5	0.0	0.00	0.0	0.00	2
Peprilus															
burti	6159.2	6009.82	184.1	177.17	5	2771.6	1151.25	162.8	95.11	5	3226.0	3226.00	234.1	234.09	2
Stenotomus															
caprinus	2386.8	1146.73	129.6	57.37	5	4318.8	1341.38	201.4	66.49	5	27.0	27.00	2.0	1.95	2
Trachurus															
lathami	517.5	443.04	32.0	28.18	5	618.4	277.25	38.1	13.22	5	800.0	746.00	51.7	46.82	2
Arionna															
bondi	0.0	0.00	0.0	0.00	5	260.4	260.40	9.5	9.51	5	754.0	276.00	60.6	22.59	2
Prionotus															
stearnsi	7.2	7.20	0.2	0.20	5	250.0	160.26	6.1	3.63	5	852.0	852.00	19.2	19.23	2
Mullus															
auratus	393.6	296.12	26.0	20.16	5	79.6	64.09	4.7	3.30	5	0.0	0.00	0.0	0.00	2
Macrorhamphosus															
scolopax	0.0	0.00	0.0	0.00	5	9.2	9.20	0.4	0.42	5	475.0	447.00	3.5	2.91	2
Pontinus															
longispinis	0.0	0.00	0.0	0.00	5	31.2	22.24	1.4	1.04	5	358.0	304.00	20.1	17.36	2
Squid	177.5	37.85	7.4	1.90	5	1069.2	428.08	34.8	16.37	5	954.0	358.00	28.1	12.77	2

Table 3 (cont'd.)

Summary of dominant organisms taken between 84°00.0'W and 87°14.0'W during the May-June 1986 SEAMAP Squid and Butterfish Survey. 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	110-149 FM					150-199 FM					200-269 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Parapenaeus															
spp.	15.0	15.00	0.1	0.14	4	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	0
Trachypenaeus															
spp.	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	0
Portunus															
spincarpus	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	0
Anasimus															
latus	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	0
Penaeopsis															
megalops	0.0	0.00	0.0	0.00	4	5.0	5.00	0.0	0.05	2	0.0	0.00	0.0	0.00	0
Squilla															
spp.	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	0
Peprilus															
burti	314.0	292.31	33.2	32.08	4	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	0
Stenotomus															
caprinus	4.0	2.83	0.2	0.13	4	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	0
Trachurus															
lathami	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	0
Ariomma															
bondi	815.0	770.75	32.7	29.55	4	36.0	12.00	3.3	1.45	2	0.0	0.00	0.0	0.00	0
Prionotus															
stearnsi	23.5	13.02	0.4	0.20	4	6.0	4.00	0.1	0.05	2	0.0	0.00	0.0	0.00	0
Mullus															
auratus	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	0
Macrorhamphosus															
scolopax	100.0	55.57	0.4	0.13	4	3.0	3.00	0.0	0.05	2	0.0	0.00	0.0	0.00	0
Pontinus															
longispinis	57.5	22.90	5.3	2.91	4	118.0	76.00	10.6	6.23	2	0.0	0.00	0.0	0.00	0
Squid	566.0	66.10	17.2	1.25	4	401.0	371.00	6.4	4.14	2	0.0	0.00	0.0	0.00	0

Table 4

Summary of dominant organisms taken between 87°15.0'W and 89°14.0'W during the May-June 1986 SEAMAP Squid and Butterfish Survey. 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	20-49 FM					50-79 FM					80-109 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Penaeopsis															
<i>megalops</i>	0.0	0.00	0.0	0.00	14	112.3	112.33	0.3	0.30	6	0.0	0.00	0.0	0.00	14
Parapenaeus															
<i>spp.</i>	0.0	0.00	0.0	0.00	14	318.2	218.03	1.3	0.80	6	434.1	328.98	1.6	1.25	14
Solenocera															
<i>spp.</i>	0.0	0.00	0.0	0.00	14	129.8	127.05	0.9	0.87	6	102.1	49.25	0.9	0.37	14
Portunus															
<i>spinicarpus</i>	24.3	18.41	0.1	0.11	14	200.7	142.57	2.1	1.54	6	16.3	16.29	0.1	0.08	14
Caridea															
<i>spp.</i>	0.0	0.00	0.0	0.00	14	0.0	0.00	0.0	0.00	6	41.8	41.79	0.1	0.08	14
Trachypenaeus															
<i>spp.</i>	0.0	0.00	0.0	0.00	14	0.0	0.00	0.0	0.00	6	26.9	26.86	0.1	0.14	14
Stenotomus															
<i>caprinus</i>	2572.6	1550.86	106.7	62.71	14	31.3	19.31	1.9	1.32	6	292.4	246.88	30.2	26.98	14
Steindachneria															
<i>argentea</i>	11.6	11.57	0.4	0.35	14	999.0	491.48	9.8	4.11	6	272.2	126.80	2.9	1.21	14
Peprilus															
<i>burti</i>	836.4	678.79	33.2	24.35	14	690.5	395.72	66.7	41.55	6	159.9	119.63	21.8	17.31	14
Micropogonias															
<i>undulatus</i>	28.3	27.83	2.0	1.93	14	41.7	37.07	3.4	2.90	6	1347.5	1327.62	146.2	144.69	14
Leiostomus															
<i>xanthurus</i>	1.6	1.57	0.2	0.18	14	4.3	4.33	0.7	0.65	6	1348.9	1348.93	86.0	85.97	14
Ariomma															
<i>bondi</i>	0.0	0.00	0.0	0.00	14	0.0	0.00	0.0	0.00	6	108.0	107.08	10.7	10.68	14
Trichiurus															
<i>lepturus</i>	25.3	20.99	1.7	1.47	14	22.7	13.66	1.8	1.02	6	241.9	235.42	37.1	36.32	14
Neomerinthe															
<i>hemingwayi</i>	0.0	0.00	0.0	0.00	14	80.0	51.14	7.0	3.93	6	115.9	75.89	8.0	3.29	14
Squid															
	400.3	110.62	8.5	2.01	14	1620.5	941.29	18.3	8.47	6	588.5	322.42	7.9	2.84	14

Table 4 (cont'd.)

Summary of dominant organisms taken between 87°15.0'W and 89°14.0'W during the May-June 1986 SEAMAP Squid and Butterfish Survey. 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	110-149 FM					150-199 FM					200-269 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Penaeopsis															
<i>megalops</i>	486.8	381.31	3.3	2.72	8	599.2	351.54	3.7	2.56	5	0.0	0.00	0.0	0.00	0
Parapenaeus															
<i>spp.</i>	28.3	26.58	0.2	0.15	8	100.8	79.02	0.5	0.39	5	0.0	0.00	0.0	0.00	0
Solenocera															
<i>spp.</i>	45.5	37.67	0.2	0.15	8	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	0
Portunus															
<i>spinicarpus</i>	2.5	2.50	0.0	0.02	8	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	0
Caridea															
<i>spp.</i>	1.5	1.50	0.0	0.01	8	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	0
Trachypenaeus															
<i>spp.</i>	0.0	0.00	0.0	0.00	8	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	0
Stenotomus															
<i>caprinus</i>	0.0	0.00	0.0	0.00	8	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	0
Steindachneria															
<i>argentea</i>	895.3	480.42	29.2	15.76	8	1249.6	875.00	31.1	19.78	5	0.0	0.00	0.0	0.00	0
Peprilus															
<i>burti</i>	17.8	17.75	2.6	2.64	8	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	0
Micropogonias															
<i>undulatus</i>	0.0	0.00	0.0	0.00	8	0.4	0.40	0.1	0.11	5	0.0	0.00	0.0	0.00	0
Leiostomus															
<i>xanthurus</i>	0.0	0.00	0.0	0.00	8	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	0
Arionma															
<i>bondi</i>	381.0	248.89	31.8	20.22	8	36.4	35.41	6.1	5.94	5	0.0	0.00	0.0	0.00	0
Trichiurus															
<i>lepturus</i>	11.0	5.17	1.2	0.65	8	7.2	7.20	0.9	0.93	5	0.0	0.00	0.0	0.00	0
Neomerinthe															
<i>hemingwayi</i>	90.3	50.56	4.8	2.64	8	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	0
Squid															
	349.0	127.63	9.5	3.71	8	50.8	41.79	1.1	0.88	5	0.0	0.00	0.0	0.00	0

Table 5

Summary of dominant organisms taken between 89°15.0'W and 92°14.0'W during the May-June 1986 SEAMAP Squid and Butterfish Survey. 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	20-49 FM					50-79 FM					80-109 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Penaeus															
setiferus	59.0	53.41	0.3	0.29	14	7.1	7.07	0.0	0.04	15	0.0	0.00	0.0	0.00	7
Penaeopsis															
megalops	21.3	21.29	0.1	0.05	14	0.4	0.40	0.0	0.01	15	7.4	5.10	0.1	0.03	7
Portunidae	22.0	14.30	0.2	0.12	14	0.0	0.00	0.0	0.00	15	0.0	0.00	0.0	0.00	7
Parapenaeus															
spp.	20.7	13.68	0.2	0.17	14	0.0	0.00	0.0	0.00	15	0.0	0.00	0.0	0.00	7
Squilla															
spp.	10.3	7.63	0.1	0.08	14	2.7	2.26	0.1	0.04	15	1.4	0.95	0.1	0.04	7
Sicyonia															
spp.	8.7	7.44	0.0	0.03	14	0.0	0.00	0.0	0.00	15	0.0	0.00	0.0	0.00	7
Peprilus															
burti	1549.4	690.84	67.2	39.01	14	562.4	209.92	53.9	19.10	15	34.6	34.57	3.6	3.57	7
Trachurus															
lathami	67.9	20.52	2.2	0.77	14	613.1	215.38	46.5	17.91	15	384.0	176.62	41.9	22.86	7
Stenotomus															
caprinus	175.0	63.09	9.2	3.39	14	461.0	82.98	28.4	5.24	15	190.6	135.05	14.6	10.82	7
Scomber															
japonicus	118.4	54.22	6.2	2.80	14	75.2	50.62	5.2	3.82	15	397.7	397.05	14.5	14.44	7
Micropogonias															
undulatus	19.4	11.83	1.7	0.93	14	456.4	248.99	37.9	21.75	15	0.0	0.00	0.0	0.00	7
Pristipomoides															
aquilonaris	47.4	15.03	2.3	1.01	14	268.9	75.14	36.7	7.86	15	259.7	83.05	36.4	12.83	7
Trichiurus															
lepturus	76.1	40.48	9.5	5.67	14	301.0	181.82	43.3	25.74	15	54.6	41.26	7.4	4.41	7
Steindachneria															
argentea	40.9	40.55	0.3	0.27	14	4.9	4.93	0.1	0.06	15	70.9	62.03	1.2	1.06	7
Squid	1143.4	354.72	15.6	4.39	14	367.3	160.82	4.1	1.61	15	921.7	410.94	11.9	4.63	7

Table 5 (cont'd.)

Summary of dominant organisms taken between 89°15.0'W and 92°14.0'W during the May-June 1986 SEAMAP Squid and Butterfish Survey. 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	110-149 FM					150-199 FM					200-269 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Penaeus															
setiferus	0.0	0.00	0.0	0.00	9	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Penaeopsis															
megalops	1.6	1.14	0.0	0.02	9	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Portunidae	0.0	0.00	0.0	0.00	9	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Parapenaeus															
spp.	0.9	0.68	0.0	0.00	9	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Squilla															
spp.	1.3	0.92	0.1	0.04	9	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Sicyonia															
spp.	0.4	0.37	0.0	0.02	9	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Peprilus															
burti	485.1	459.12	42.0	39.61	9	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Trachurus															
lathami	194.3	89.39	18.8	8.14	9	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Stenotomus															
caprinus	3.3	2.26	0.2	0.10	9	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Scomber															
japonicus	341.8	341.28	15.6	15.51	9	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	9	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Pristipomoides															
aquilonaris	22.2	12.19	3.5	1.79	9	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Trichiurus															
lepturus	7.0	4.84	0.7	0.50	9	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Steindachneria															
argentea	437.9	281.43	11.4	7.88	9	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Squid	697.3	241.29	11.5	3.54	9	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0



Table 6

Summary of dominant organisms taken between 92°15.0'W and 97°00.0'W during the May-June 1986 SEAMAP Squid and Butterfish Survey. 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	20-49 FM					50-79 FM					80-109 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Portunus															
spinimanus	16.5	16.50	0.1	0.09	8	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	3
Callinectes															
similis	4.8	4.75	0.1	0.09	8	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	3
Calappa															
sulcata	1.0	1.00	0.3	0.33	8	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	3
Parapenaeus															
spp.	1.0	1.00	0.0	0.00	8	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	3
Penaeus															
aztecus	0.5	0.33	0.0	0.01	8	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	3
Trachypenaeus															
spp.	0.3	0.25	0.0	0.00	8	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	3
Peprilus															
burti	2860.9	1969.44	81.5	48.12	8	1842.0	450.00	135.8	72.55	2	858.3	858.33	75.9	75.95	3
Stenotomus															
caprinus	608.8	272.56	27.2	13.18	8	470.0	190.00	21.3	8.73	2	13.3	13.33	0.9	0.87	3
Trachurus															
lathami	254.6	104.29	8.0	4.60	8	1061.0	331.00	40.0	8.32	2	119.8	109.02	6.3	5.68	3
Steindachneria															
argentea	0.0	0.00	0.0	0.00	8	0.0	0.00	0.0	0.00	2	1041.4	1041.38	23.7	23.67	3
Pristipomoides															
aquilonaris	82.8	30.96	4.5	2.46	8	573.0	285.00	57.2	36.05	2	493.3	472.15	52.3	48.87	3
Upeneus															
parvus	88.3	29.20	2.4	0.93	8	116.0	36.00	3.6	0.23	2	24.1	24.14	0.6	0.60	3
Ariomma															
bondi	0.0	0.00	0.0	0.00	8	0.0	0.00	0.0	0.00	2	223.8	205.66	14.2	13.48	3
Etrumeus															
teres	100.1	74.90	0.8	0.50	8	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	3
Squid	360.6	113.52	13.5	7.75	8	691.0	523.00	8.2	1.41	2	1017.4	409.17	21.5	12.10	3

Table 6 (cont'd.)

Summary of dominant organisms taken between 92°15.0'W and 97°00.0'W during the May-June 1986 SEAMAP Squid and Butterfish Survey. 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	110-149 FM					150-199 FM					200-269 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Portunus															
spinimanus	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
Callinectes															
similis	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
Calappa															
sulcata	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
Parapenaeus															
spp.	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
Penaeus															
aztecus	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
Trachypenaeus															
spp.	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
Peprilus															
burti	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
Stenotomus															
caprinus	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
Trachurus															
lathami	254.0	0.00	14.9	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Steindachneria															
argentea	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
Pristipomoides															
aquilonaris	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
Upeneus															
parvus	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
Arionma															
bondi	422.0	0.00	17.7	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Etrumeus															
teres	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
Squid	1928.0	0.00	31.4	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0

Table 7. SEAMAP Summer Shrimp and Bottomfish Survey species composition list, 259 trawl stations, for those vessels that used a 40-ft trawl. Species with a total weight of less than 0.0227 kg (0.05 lb) 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	75011	1031.5	173	65.5
Micropogonias undulatus	Atlantic croaker	45488	1129.8	100	37.9
Peprilus burti	gulf butterfish	12978	302.6	110	41.7
Centropristis philadelphica	rock sea bass	10314	138.5	165	62.5
Prionotus rubio	blackfin searobin	9015	97.1	145	54.9
Serranus atrobranchus	blackear bass	7846	68.0	86	32.6
Cynoscion nothus	silver seatrout	5807	189.1	57	21.6
Leiostomus xanthurus	spot	5386	186.9	58	22.0
Polydactylus octonemus	Atlantic threadfin	3416	57.5	43	16.3
Etropus crossotus	fringed flounder	2866	38.5	87	33.0
Anchoa hepsetus	striped anchovy	2389	26.3	54	20.5
Porichthys plectrodon	Atlantic midshipman	2365	33.9	128	49.4
Diplectrum bivittatum	dwarf sand perch	2340	43.5	84	31.8
Prionotus stearnsi	shortwing searobin	2242	18.7	76	28.8
Chloroscombrus chrysurus	Atlantic bumper	2040	112.0	59	22.3
Saurida brasiliensis	largescale lizardfish	2007	13.3	85	32.2
Anchoa mitchilli	bay anchovy	1873	6.6	28	10.6
Trachurus lathami	rough scad	1711	32.5	63	23.9
Sphoeroides parvus	least puffer	1529	8.7	110	41.7
Synodus foetens	inshore lizardfish	1518	126.5	134	50.8
Prionotus paralatus	Mexican searobin	1393	16.4	63	23.9
Prionotus salmonicolor	blackwing searobin	1140	20.5	27	10.2
Upeneus parvus	dwarf goatfish	1120	18.5	78	29.5
Lagodon rhomboides	pinfish	1103	52.1	70	26.5

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	1007	19.2	32	12.1
<i>Cynoscion arenarius</i>	sand seatrout	940	62.7	78	29.5
<i>Haliutichthys aculeatus</i>	pancake batfish	918	8.8	54	20.5
<i>Pristipomoides aquilonaris</i>	wenchman	892	34.9	60	22.7
<i>Trichiurus lepturus</i>	Atlantic cutlassfish	872	47.7	46	17.4
<i>Lepophidium graellsii</i>	blackedge cusk-eel	870	22.1	83	31.4
<i>Larimus fasciatus</i>	banded drum	868	19.5	23	8.7
<i>Arius felis</i>	hardhead catfish	801	102.0	40	15.2
<i>Syacium</i> spp.	lefteye flounders	774	17.6	59	22.3
<i>Citharichthys spilopterus</i>	bay whiff	749	10.3	54	20.5
<i>Syacium gunteri</i>	shoal flounder	732	20.7	36	13.6
<i>Symphurus plagiusa</i>	blackcheek tonguefish	719	13.2	70	26.5
<i>Bollmannia communis</i>	ragged goby	599	3.9	41	15.5
<i>Syacium papillosum</i>	dusky flounder	589	29.9	40	15.2
<i>Peprilus alepidotus</i>	harvestfish	587	13.2	15	5.7
<i>Monacanthus hispidus</i>	planehead filefish	579	10.5	89	33.7
<i>Prionotus scitulus</i>	leopard searobin	567	9.4	26	9.8
<i>Urophycis floridana</i>	southern hake	547	23.2	40	15.2
<i>Scomber japonicus</i>	chub mackerel	393	19.2	7	2.7
<i>Anchoa nasuta</i>	longnose anchovy	331	1.5	15	5.7
<i>Trichopsetta ventralis</i>	sash flounder	318	5.8	27	10.2
<i>Prionotus tribulus</i>	bighead searobin	310	7.4	41	15.5
<i>Brotula barbata</i>	bearded brotula	301	16.5	51	19.3
<i>Mullus auratus</i>	red goatfish	289	17.8	17	6.4
<i>Bellator militaris</i>	horned searobin	268	2.4	31	11.7
<i>Stellifer lanceolatus</i>	star drum	253	5.1	10	3.8

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>Synodus poeyi</i>	offshore lizardfish	245	2.3	30	11.4
<i>Steindachneria argentea</i>	luminous hake	243	1.2	7	2.7
<i>Etropus</i> spp.	lefteye flounders	234	1.1	2	0.8
<i>Scorpaena calcarata</i>	smoothhead scorpionfish	213	4.9	31	11.7
<i>Harengula jaguana</i>	scaled sardine	209	7.1	31	11.7
<i>Citharichthys macrops</i>	spotted whiff	207	2.2	23	8.7
<i>Conodon nobilis</i>	barred grunt	189	2.8	6	2.3
<i>Hoplunnis macrurus</i>	freckled pike-conger	189	2.8	36	13.6
<i>Ophidion welshi</i>	crested cusk-eel	183	9.2	35	13.3
<i>Hildebrandia flava</i>	yellow conger	166	10.5	33	12.5
<i>Menticirrhus americanus</i>	southern kingfish	157	15.2	14	5.3
<i>Etrumeus teres</i>	round herring	153	1.4	20	7.6
<i>Ophidion grayi</i>	blotched cusk-eel	145	3.4	14	5.3
<i>Urophycis cirrata</i>	gulf hake	138	5.0	13	4.9
<i>Brevoortia patronus</i>	gulf menhaden	137	9.4	11	4.2
<i>Cynoscion</i> spp.	seatrouts	137	1.0	5	1.9
<i>Selene setapinnis</i>	Atlantic moonfish	135	5.1	27	10.2
<i>Lagocephalus laevigatus</i>	smooth puffer	131	6.8	29	11.0
<i>Citharichthys cornutus</i>	horned whiff	131	7.5	8	3.0
<i>Gymnachirus texae</i>	fringed sole	122	2.2	18	6.8
<i>Ogcocephalus</i> spp.	batfishes	103	1.0	20	7.6
<i>Cyclopsetta chittendeni</i>	Mexican flounder	101	11.2	25	9.5
<i>Opisthonema oglinum</i>	Atlantic thread herring	100	10.6	15	5.7
<i>Anchoviella</i> spp.	anchovies	98	0.5	2	0.8
<i>Trachinocephalus myops</i>	snakefish	95	5.1	19	7.2

Table 7. 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>
Prionotus spp.	searobins	79	0.3	2	0.8
Antennarius radiosus	singlespot frogfish	77	1.0	23	8.7
Orthopristis chrysoptera	pigfish	75	5.0	16	6.1
Bairdiella chrysoura	silver perch	72	2.4	8	3.0
Scomberomorus maculatus	Spanish mackerel	71	2.1	5	1.9
Neobythites gilli	cusk-eel	67	0.4	4	1.5
Lutjanus campechanus	red snapper	67	8.8	25	9.5
Diplectrum formosum	sand perch	64	2.0	10	3.8
Caulolatilus intermedius	anchor tilefish	61	2.8	18	6.8
Centropristis ocyurus	bank sea bass	58	2.0	8	3.0
Ancylosetta dilecta	three-eye flounder	57	2.0	21	8.0
Kathetostoma albigutta	lancer stargazer	56	3.0	16	6.1
Gobionellus hastatus	sharptail goby	55	0.2	1	0.4
Ancylosetta quadrocellata	ocellated flounder	49	2.5	18	6.8
Prionotus ophryas	bandtail searobin	41	1.2	16	6.1
Balistes capriscus	gray triggerfish	39	1.2	11	4.2
Dorosoma petenense	threadfin shad	36	0.9	4	1.5
Paralichthys lethostigma	southern flounder	33	6.7	14	5.3
Rhizoprionodon terraenovae	Atlantic sharpnose shark	31	36.2	11	4.2
Bregmaceros atlanticus	antenna codlet	31	0.1	9	3.4
Mugil cephalus	striped mullet	25	2.4	2	0.8
Eucinostomus gula	silver jenny	25	0.7	6	2.3
Equetus umbrosus	cubbyu	25	0.8	5	1.9
Lutjanus synagris	lane snapper	24	1.6	9	3.4
Pontinus longispinis	longspine scorpionfish	23	0.2	3	1.1
Ophidion holbrooki	bank cusk-eel	23	1.4	7	2.7

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>Caulolatilus</i> spp.	tilefishes	23	0.8	7	2.7
<i>Priacanthus arenatus</i>	bigeye	20	0.6	8	3.0
<i>Gymnothorax nigromarginatus</i>	blackedge moray	19	1.6	8	3.0
<i>Myrophis punctatus</i>	speckled worm eel	15	1.0	2	0.8
<i>Decapterus punctatus</i>	round scad	15	1.1	6	2.3
<i>Lepophidium jeannae</i>	mottled cusk-eel	15	0.8	6	2.3
<i>Engyophrys senta</i>	spiny flounder	14	0.1	6	2.3
<i>Urophycis regia</i>	spotted hake	14	1.1	3	1.1
<i>Raja texana</i>	roundel skate	14	5.4	13	4.9
<i>Serraniculus pumilio</i>	pygmy sea bass	13	0.1	6	2.3
<i>Selar crumenophthalmus</i>	bigeye scad	13	0.5	4	1.5
<i>Selene vomer</i>	lookdown	12	1.0	5	1.9
<i>Caulolatilus chrysops</i>	goldface tilefish	12	0.4	2	0.8
<i>Gymnothorax</i> spp.	moray eels	11	1.4	3	1.1
<i>Astroscopus y-graecum</i>	southern stargazer	11	0.4	4	1.5
<i>Scorpaena brasiliensis</i>	barbfish	8	1.0	3	1.1
<i>Syacium micrurum</i>	channel flounder	8	0.5	2	0.8
<i>Aluterus schoepfi</i>	orange filefish	8	9.3	4	1.5
<i>Hippocampus</i> spp.	seahorses	8	0.2	4	1.5
<i>Pikea mexicana</i>	yellowtail bass	8	0.1	2	0.8
<i>Sphyræna guachancho</i>	guaguanche	7	2.2	2	0.8
<i>Hoplunnis</i> spp.	pike-congers	7	0.1	1	0.4
<i>Peristedion gracile</i>	slender searobin	7	0.2	3	1.1
Sparidae	porgies	7	0.1	1	0.4
Callionymidae	dragonets	6	0.3	2	0.8
<i>Aluterus scriptus</i>	scrawled filefish	6	0.0	2	0.8

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>Ophichthus ocellatus</i>	palespotted eel	6	0.8	4	1.5
<i>Gymnothorax ocellatus</i>	ocellated moray	5	0.6	4	1.5
<i>Rhinoptera bonasus</i>	cownose ray	5	52.0	3	1.1
<i>Symphurus diomedianus</i>	spottedfin tonguefish	5	0.2	3	1.1
<i>Equetus</i> spp.	drums	5	0.5	1	0.4
<i>Pagrus pagrus</i>	red porgy	5	0.3	2	0.8
<i>Seriola dumerili</i>	greater amberjack	4	0.7	3	1.1
<i>Gunterichthys longipenis</i>	gold brotula	4	0.1	1	0.4
<i>Lepophidium</i> spp.	cusks-eels	4	0.2	2	0.8
<i>Chilomycterus schoepfi</i>	striped burrfish	4	0.0	2	0.8
<i>Neomerinthe hemingwayi</i>	spinycheek scorpionfish	4	0.4	2	0.8
<i>Gymnothorax saxicola</i>	ocellated moray	4	0.2	1	0.4
<i>Synodus intermedius</i>	sand diver	4	0.6	3	1.1
<i>Rypticus maculatus</i>	whitespotted soapfish	4	0.1	1	0.4
<i>Caranx hippos</i>	crevalle jack	4	0.1	2	0.8
<i>Caranx crysos</i>	blue runner	3	0.2	2	0.8
<i>Hippocampus erectus</i>	lined seahorse	3	0.0	3	1.1
<i>Hemanthias vivanus</i>	red barbier	3	0.1	1	0.4
<i>Hoplunnis diomedianus</i>	blacktail pike-conger	3	0.0	1	0.4
<i>Hildebrandia</i> spp.	conger eels	3	0.0	2	0.8
<i>Mustelus canis</i>	smooth dogfish	3	3.8	4	1.5
<i>Aluterus heudeloti</i>	dotterel filefish	3	0.1	1	0.4
<i>Archosargus probatocephalus</i>	sheepshead	3	2.5	1	0.4
<i>Cynoscion nebulosus</i>	spotted seatrout	3	0.8	1	0.4
<i>Seriola rivoliana</i>	almaco jack	2	0.3	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>Gobiosoma bosci</i>	naked goby	2	0.0	1	0.4
<i>Achirus lineatus</i>	lined sole	2	0.0	1	0.4
<i>Lactophrys quadricornis</i>	scrawled cowfish	2	0.5	1	0.4
<i>Paralichthys albigutta</i>	gulf flounder	2	0.4	1	0.4
<i>Bothus ocellatus</i>	peacock flounder	2	0.0	1	0.4
<i>Raja eglanteria</i>	clearnose skate	2	0.6	2	0.8
<i>Jenkinsia lamprotaenia</i>	dwarf herring	2	0.0	1	0.4
<i>Ophichthus gomesi</i>	shrimp eel	2	0.2	1	0.4
<i>Serranus phoebe</i>	tattler	2	0.0	2	0.8
<i>Serranus</i> spp.	sea bass	2	0.0	2	0.8
<i>Sphyraena borealis</i>	northern semnet	2	0.5	1	0.4
<i>Pomatomus saltatrix</i>	bluefish	2	0.5	2	0.8
<i>Apogon aurolineatus</i>	bridle cardinalfish	2	0.0	1	0.4
<i>Apogon pseudomaculatus</i>	twospot cardinalfish	2	0.0	1	0.4
<i>Remora remora</i>	remora	1	0.8	1	0.4
Carangidae	jacks	1	0.0	1	0.4
<i>Caranx latus</i>	horse eye jack	1	0.1	1	0.4
<i>Syngnathus</i> spp.	pipefish	1	0.0	1	0.4
<i>Syngnathus louisianae</i>	chain pipefish	1	0.0	1	0.4
<i>Uroconger syringinus</i>	threadtail conger	1	0.1	1	0.4
<i>Physiculus fulvus</i>	morid codlet	1	0.0	1	0.4
<i>Cypselurus</i> spp.	flying fish	1	0.0	1	0.4
<i>Saurida caribbaea</i>	smallscale lizardfish	1	0.0	1	0.4
<i>Gymnura micrura</i>	smooth butterfly ray	1	2.8	1	0.4
<i>Sphyrna tiburo</i>	bonnethead	1	1.0	1	0.4
<i>Squatina dumerili</i>	Atlantic angel shark	1	0.6	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>Paralichthys squamilentus</i>	broad flounder	1	0.0	1	0.4
<i>Prionotus alatus</i>	spiny searobin	1	0.0	1	0.4
<i>Citharichthys arctifrons</i>	gulf stream flounder	1	0.0	1	0.4
<i>Sphoeroides dorsalis</i>	marbled puffer	1	0.0	1	0.4
<i>Opsanus pardus</i>	leopard toadfish	1	0.0	1	0.4
<i>Opsanus</i> spp.	toadfishes	1	0.0	1	0.4
<i>Histrio histrio</i>	sargassumfish	1	0.0	1	0.4
<i>Ogcocephalus radiatus</i>	polka-dot batfish	1	0.5	1	0.4
<i>Otophidium omostigma</i>	polka-dot cusk-eel	1	0.0	1	0.4
<i>Mulloidichthys martinicus</i>	yellow goatfish	1	0.1	1	0.4
<i>Chaetodipterus faber</i>	Atlantic spadefish	1	0.0	1	0.4
<i>Lonchopisthus</i> spp.	jawfish	1	0.0	1	0.4
<i>Decodon puellaris</i>	red hogfish	1	0.0	1	0.4
<i>Oligoplites saurus</i>	leatherjacket	1	0.0	1	0.4
<i>Haemulon aurolineatum</i>	tomtate	1	0.0	1	0.4
<i>Calamus campechanus</i>	campeche porgy	1	0.0	1	0.4
<i>Menticirrhus littoralis</i>	gulf kingfish	1	0.0	1	0.4
<u>Crustaceans</u>					
<i>Trachypenaeus</i> spp.	roughneck shrimps	28597	108.0	136	51.5
<i>Callinectes similis</i>	lesser blue crab	19145	261.8	173	65.5
<i>Portunus spinicarpus</i>	longspine swimming crab	18354	98.1	81	30.7
<i>Penaeus aztecus</i>	brown shrimp	14898	218.0	181	68.6
<i>Sicyonia brevirostris</i>	brown rock shrimp	7343	88.5	113	42.8
<i>Sicyonia dorsalis</i>	lesser rock shrimp	6539	17.3	91	34.5

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>Squilla</i> spp.	mantis shrimps	4322	45.1	118	44.7
<i>Trachypenaeus similis</i>	roughneck shrimp	4126	19.0	6	2.3
<i>Solenocera</i> spp.	humpback shrimps	2709	9.5	61	23.1
<i>Parapenaeus</i> spp.	penaeid shrimps	2143	6.1	19	7.2
<i>Portunus gibbesii</i>	iridescent swimming crab	1638	10.1	84	31.8
<i>Squilla empusa</i>	mantis shrimp	977	11.0	44	16.7
<i>Callinectes sapidus</i>	blue crab	940	53.0	60	22.7
<i>Penaeus duorarum</i>	pink shrimp	836	22.9	79	29.9
<i>Penaeus setiferus</i>	white shrimp	586	23.4	42	15.9
<i>Portunus spinimanus</i>	blotched swimming crab	533	8.5	38	14.4
Caridea	caridean shrimps	148	0.0	1	0.4
<i>Ovalipes stephensoni</i>	coarsehand lady crab	134	0.8	5	1.9
<i>Squilla chydrea</i>	mantis shrimp	121	0.6	12	4.5
<i>Xiphopenaeus</i> spp.	seabobs	112	0.7	3	1.1
<i>Anasimus latus</i>	stilt spider crab	93	0.7	16	6.1
<i>Calappa sulcata</i>	yellow box crab	76	14.1	18	6.8
<i>Hepatus epheliticus</i>	calico box crab	66	4.1	11	4.2
<i>Raninoides louisianensis</i>	gulf frog crab	47	0.4	4	1.5
<i>Ovalipes</i> spp.	lady crabs	34	0.9	11	4.2
<i>Sicyonia stimpsoni</i>	eyespot rock shrimp	29	0.0	12	4.5
<i>Sicyonia</i> spp.	rock shrimps	19	0.1	2	0.8
Xanthidae	mud crabs	18	0.3	7	2.7
<i>Libinia emarginata</i>	portly spider crab	13	2.3	8	3.0
<i>Arenaeus cribrarius</i>	speckled swimming crab	12	0.7	6	2.3
<i>Speocarcinus lobatus</i>	gulf squareback crab	9	0.0	4	1.5
Parthenope	elbow crabs	8	0.0	4	1.5

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
Scyllarus spp.	slipper lobsters	8	0.0	3	1.1
Scyllarides nodifer	ridged slipper lobster	8	2.3	4	1.5
Libinia dubia	longnose spider crab	7	0.7	4	1.5
Ovalipes floridanus	Florida lady crab	6	0.3	2	0.8
Anomalocera	spider crab	5	0.0	1	0.4
Myropsis sp.	purse crab	4	0.0	2	0.8
Podochela sidneyi	shortfinger neck crab	4	0.0	3	1.1
Stenorhynchus seticornis	yellowline arrow crab	3	0.0	3	1.1
Portunus sayi	sargassum swimming crab	3	0.1	2	0.8
Xiphopenaeus kroyeri	seabob	2	0.0	1	0.4
Nibilia antilocapra	shorthorn spider crab	2	0.0	1	0.4
Hepatus spp.	box crab	2	0.0	2	0.8
Porcellana sayana	spotted porcelain crab	2	0.0	2	0.8
Stenocionops spinosissimus	tenspine spider crab	2	0.0	1	0.4
Parthenope serrata	sawtooth elbow crab	2	0.0	2	0.8
Stenocionops spp.	spider crabs	1	0.0	1	0.4
Scyllaridae	Spanish lobsters	1	0.0	1	0.4
Emerita benedicti	benedict sand crab	1	0.0	1	0.4
Persephona mediterranea	mottled purse crab	1	0.0	1	0.4
Persephona spp.	purse crab	1	0.0	1	0.4
Alpheus spp.	snapping shrimp	1	0.0	1	0.4
Paguridae	right-handed hermit crabs	1	0.0	1	0.4
Libinia spp.	spider crab	1	0.1	1	0.4
Persephona crinita	pink purse crab	1	0.0	1	0.4
Panopeus turgidus	ridgeback mud crab	1	0.0	1	0.4
Squilla neglecta	mantis shrimp	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
<u>Others</u>					
Loligo pealeii	longfin squid	7137	100.6	146	55.3
Loligo pleii	arrow squid	3190	58.3	26	10.0
Argopecten gibbus	Atlantic calico scallop	1879	4.2	4	1.5
Lolliguncula brevis	Atlantic brief squid	1766	20.2	68	25.8
Myopsida	squids	477	3.5	6	2.3
Amusium papyraceum	paper scallop	293	2.5	20	7.6
Asteroidea	starfishes	159	1.1	27	10.2
Aurelia spp.	jellyfishes	123	3.7	10	3.8
Renilla mulleri	short-stemmed sea pansy	67	0.2	9	3.4
Renilla spp.	sea pansies	56	0.1	1	0.4
Rangianella	wedge shell	50	0.1	3	1.1
Sargassaceae	sargassum	40	43.1	15	5.7
Dactylometra quinquecirrha	compass jellyfish	33	0.0	6	2.3
Astropecten	sea stars	30	0.2	5	1.9
Tellina spp.	tellin shells	19	0.1	1	0.4
Scutellidae	sand dollars	16	1.7	5	1.9
Pecten spp.	scallops	14	0.1	2	0.8
Anadara spp.	ark shells	11	0.1	3	1.1
Glycymeris spp.	bittersweet	8	0.0	2	0.8
Fusinus spp.	spindle shells	6	0.2	2	0.8
Scyphozoa	jellyfishes	4	0.4	3	1.1
Octopus	octopuses	3	0.4	2	0.8
Octopus vulgaris	common octopus	3	0.9	3	1.1

Table 7. 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>
Mellita quinquiesperforata	five-slotted sand dollar	3	0.0	1	0.4
Ophiuroidea	brittlestars	3	0.0	1	0.4
Luidia clathrata	sea star	2	0.0	1	0.4
Porifera	sponges	2	1.4	2	0.8
Aurelia aurita	moon jellyfish	2	0.0	1	0.4
Actinia sp.	anemones	2	0.0	2	0.8
Conus spp.	cone shells	2	0.0	1	0.4
Sepiolidae	bobtail squid	2	0.0	1	0.4
Mercenaria mercenaria	northern quahog	1	0.3	1	0.4
Laevicardium laevigatum	common egg cockle	1	0.0	1	0.4
Tonna galea	giant tun	1	0.2	1	0.4
Polinices spp.	moonsnail	1	0.0	1	0.4
Polychaeta	bristleworms	1	0.0	1	0.4
Holothuroidea	sea cucumbers	1	0.0	1	0.4

Table 8. SEAMAP Summer Shrimp and Bottomfish Survey species composition list, 21 trawl stations, for those vessels that used a 16-ft trawl. Species with a total weight of less than 0.0227 kg (0.05 lb) are indicated on table as 0.0 kg.

<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>Finfishes</u>					
Anchoa mitchilli	bay anchovy	1189	0.8	7	33.3
Symphurus plagiusa	blackcheek tonguefish	153	1.4	6	28.6
Stellifer lanceolatus	star drum	125	0.6	4	19.0
Micropogonias undulatus	Atlantic croaker	111	0.9	7	33.3
Cynoscion arenarius	sand seatrout	66	0.4	3	14.3
Leiostomus xanthurus	spot	36	0.4	4	19.0
Arius felis	hardhead catfish	13	1.5	6	28.6
Anchoa hepsetus	striped anchovy	12	0.1	3	14.3
Lutjanus synagris	lane snapper	11	0.0	1	4.8
Chloroscombrus chrysurus	Atlantic bumper	8	0.0	4	19.0
Lagodon rhomboides	pinfish	6	0.0	2	9.5
Etropus crossotus	fringed flounder	6	0.0	1	4.8
Selene setapinnis	Atlantic moonfish	6	0.3	1	4.8
Selene vomer	lookdown	4	0.0	1	4.8
Chaetodipterus faber	Atlantic spadefish	4	0.0	1	4.8
Prionotus rubio	blackfin searobin	4	0.1	2	9.5
Citharichthys spilopterus	bay whiff	4	0.0	3	14.3
Monacanthus hispidus	planehead filefish	4	0.0	2	9.5
Menidia beryllina	tidewater silverside	4	0.0	1	4.8
Menticirrhus americanus	southern kingfish	3	0.0	3	14.3
Myrophis punctatus	speckled worm eel	2	0.0	1	4.8
Paralichthys lethostigma	southern flounder	2	0.0	1	4.8
Sphoeroides parvus	least puffer	2	0.0	2	9.5
Polydactylus octonemus	Atlantic threadfin	2	0.0	2	9.5

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>Trinectes maculatus</i>	hogchoker	2	0.0	2	9.5
<i>Trichiurus lepturus</i>	Atlantic cutlassfish	2	0.1	1	4.8
<i>Bairdiella chrysoura</i>	silver perch	1	0.0	1	4.8
<i>Peprilus burti</i>	gulf butterfish	1	0.0	1	4.8
<i>Sphoeroides nephelus</i>	southern puffer	1	0.0	1	4.8
<i>Achirus lineatus</i>	lined sole	1	0.0	1	4.8
<i>Dorosoma petenense</i>	threadfin shad	1	0.0	1	4.8
<i>Anchoa nasuta</i>	longnose anchovy	1	0.0	1	4.8
<i>Brevoortia patronus</i>	gulf menhaden	1	0.0	1	4.8
<u>Crustaceans</u>					
<i>Penaeus aztecus</i>	brown shrimp	144	0.8	8	38.1
<i>Callinectes sapidus</i>	blue crab	87	9.9	9	42.9
<i>Xiphopenaeus kroyeri</i>	seabob	72	0.3	2	9.5
<i>Callinectes similis</i>	lesser blue crab	29	0.5	7	33.3
<i>Libinia</i> spp.	spider crab	3	0.0	2	9.5
<i>Sicyonia dorsalis</i>	lesser rock shrimp	2	0.0	1	4.8
<i>Penaeus setiferus</i>	white shrimp	2	0.1	2	9.5
<i>Hepatus epheliticus</i>	calico box crab	2	0.0	1	4.8
<i>Portunus gibbesii</i>	iridescent swimming crab	1	0.0	1	4.8
<i>Ovalipes floridanus</i>	Florida lady crab	1	0.0	1	4.8
<i>Trachypenaeus constrictus</i>	roughneck shrimp	1	0.0	1	4.8
<i>Libinia dubia</i>	longnose spider crab	1	0.0	1	4.8
<i>Palaemon</i> spp.	grass shrimp	1	0.0	1	4.8



Table 8. 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	69	0.3	4	19.0
Mulinia lateralis	dwarf surfclam	21	0.0	1	4.8
Loligo pealeii	longfin squid	7	0.0	1	4.8
Tunicata	tunicates	4	0.0	1	4.8
Asteroidea	starfishes	2	0.0	1	4.8
Asterias	starfish	1	0.0	1	4.8

Table 9a  
 Statistical Zone 10  
 40-ft trawls

Summary of dominant organisms taken in shrimp statistical zone 10 during the June-July 1986 SEAMAP 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 above 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
<i>Sicyonia</i>															
<i>brevirostris</i>	102.0	99.02	2.0	1.87	3	678.6	219.16	10.2	3.25	4	157.6	63.73	2.7	1.21	9
<i>Portunus</i>															
<i>spinicarpus</i>	0.0	0.00	0.0	0.00	3	168.2	112.99	0.5	0.23	4	53.4	40.91	0.2	0.10	9
<i>Callinectes</i>															
<i>similis</i>	212.0	106.51	6.5	4.13	3	0.0	0.00	0.0	0.00	4	9.3	9.33	0.1	0.08	9
<i>Solenocera</i>															
<i>spp.</i>	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	4	22.0	9.59	0.0	0.02	9
<i>Penaeus</i>															
<i>duorarum</i>	6.0	3.46	0.5	0.24	3	15.6	6.75	0.6	0.29	4	4.7	2.99	0.2	0.14	9
<i>Trachypenaeus</i>															
<i>spp.</i>	0.0	0.00	0.0	0.00	3	12.0	12.00	0.1	0.07	4	1.3	1.33	0.0	0.00	9
<i>Stenotomus</i>															
<i>caprinus</i>	2562.0	1333.07	22.3	11.69	3	3014.9	1626.64	29.0	15.94	4	519.8	286.63	4.4	2.24	9
<i>Etropus</i>															
<i>crossotus</i>	274.0	274.00	3.6	3.64	3	735.0	582.24	9.9	7.66	4	27.1	11.51	0.3	0.09	9
<i>Prionotus</i>															
<i>scitulus</i>	204.0	198.03	1.9	1.77	3	238.5	143.34	6.1	3.82	4	33.2	16.07	0.8	0.36	9
<i>Prionotus</i>															
<i>salmonicolor</i>	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	4	13.5	9.51	1.0	0.83	9
<i>Trachurus</i>															
<i>lathami</i>	0.0	0.00	0.0	0.00	3	25.3	14.63	0.2	0.15	4	70.6	70.18	1.3	1.31	9
<i>Syacium</i>															
<i>papillosum</i>	16.0	16.00	0.2	0.18	3	73.5	41.45	2.7	2.55	4	20.3	13.28	2.0	1.55	9
<i>Urophycis</i>															
<i>floridanus</i>	290.0	290.00	4.0	4.00	3	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	9
<i>Citharichthys</i>															
<i>spilopterus</i>	218.0	203.18	2.7	2.59	3	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	9
<i>Squid</i>	614.0	590.16	11.2	11.18	3	516.8	298.57	7.4	6.00	4	888.5	400.23	11.7	5.41	9

Table 9a (cont'd.)  
 Statistical Zone 10  
 40-ft trawls

Summary of dominant organisms taken in shrimp statistical zone 10 during the June-July 1986 SEAMAP 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 above 30 fm.

SPECIES	21-30 FM					31-40 FM					Over 40 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Sicyonia															
<i>brevirostris</i>	149.2	86.19	3.2	2.54	2	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Portunus															
<i>spinicarpus</i>	294.0	276.00	2.1	1.86	2	0.0	0.00	0.0	0.00	0	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	0	0.0	0.00	0.0	0.00	0
Solenocera															
<i>spp.</i>	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Penaeus															
<i>duorum</i>	0.0	0.00	0.0	0.00	2	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	2	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Stenotomus															
<i>caprinus</i>	420.0	420.00	20.5	20.45	2	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Etropus															
<i>crossotus</i>	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Prionotus															
<i>scitulus</i>	3.0	3.00	0.1	0.14	2	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Prionotus															
<i>salmonicolor</i>	254.3	189.69	16.0	12.81	2	0.0	0.00	0.0	0.00	0	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	0	0.0	0.00	0.0	0.00	0
Syacium															
<i>papillosum</i>	75.9	62.08	10.7	8.93	2	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Urophycis															
<i>floridanus</i>	6.0	6.00	0.3	0.27	2	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Citharichthys															
<i>spilopterus</i>	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Squid															
	76.6	37.38	0.8	0.37	2	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0

Table 9b  
 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 June-July 1986 SEAMAP Shrimp and Bottomfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, and oxygen in ppm. No trawl samples were taken above 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	66.4	14.97	3	90.6	34.88	4	33.6	5.55	9	81.0	7.60	2	0.0	0.00	0	0.0	0.00	0
Total finfish kg	44.5	18.25	3	69.4	36.69	4	17.4	3.23	9	73.2	11.33	2	0.0	0.00	0	0.0	0.00	0
Total crustacean kg	10.9	6.86	3	11.4	3.55	4	3.9	1.09	9	5.9	4.56	2	0.0	0.00	0	0.0	0.00	0
Total others kg	12.7	10.00	3	9.7	5.32	4	13.1	5.27	9	1.9	0.84	2	0.0	0.00	0	0.0	0.00	0
Surface temperature	25.5	2.50	2	26.0	1.94	4	29.1	0.43	8	29.3	0.69	4	28.2	0.00	1	0.0	0.00	0
Midwater temperature	24.0	1.50	2	25.7	1.60	4	27.2	0.71	8	25.1	1.08	4	23.1	0.00	1	0.0	0.00	0
Bottom temperature	23.8	1.75	2	24.4	1.00	4	24.1	0.21	8	22.3	0.92	4	20.6	0.00	1	0.0	0.00	0
Surface salinity	31.0	1.00	2	30.1	0.67	4	32.0	0.63	8	32.6	1.47	4	35.2	0.00	1	0.0	0.00	0
Midwater salinity	32.5	0.50	2	32.5	0.64	4	34.8	0.43	8	36.1	0.18	4	36.4	0.00	1	0.0	0.00	0
Bottom salinity	32.5	0.50	2	33.5	0.93	4	35.3	0.48	8	36.2	0.12	4	36.4	0.00	1	0.0	0.00	0
Surface chlorophyll	1.2	0.00	1	0.5	0.14	3	0.2	0.03	7	0.4	0.22	3	0.1	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	6.6	0.00	2	6.5	0.89	4	6.5	0.13	8	7.1	0.40	4	6.6	0.00	1	0.0	0.00	0
Midwater oxygen	6.1	0.10	2	5.6	0.88	4	6.7	0.13	8	6.5	0.42	4	6.9	0.00	1	0.0	0.00	0
Bottom oxygen	5.4	0.60	2	4.7	0.80	4	5.9	0.49	8	5.7	0.56	4	5.5	0.00	1	0.0	0.00	0

\*Plankton and environmental stations only.

Table 10a  
 Statistical Zone 11  
 40-ft trawls

Summary of dominant organisms taken in shrimp statistical zone 11 during the June-July 1986 SRAMAP 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
Portunus															
<i>spinipectus</i>	0.0	0.00	0.0	0.00	2	53.4	39.44	0.2	0.08	10	106.8	36.39	0.4	0.14	25
Callinectes															
<i>similis</i>	87.0	87.00	1.0	0.95	2	554.2	315.02	10.0	6.04	10	398.2	161.09	4.7	1.44	25
Trachypena															
<i>spp.</i>	87.0	87.00	0.0	0.00	2	736.3	317.03	3.0	1.34	10	748.8	281.00	3.1	1.39	25
Sicyonia															
<i>brevirostris</i>	0.0	0.00	0.0	0.00	2	215.3	128.40	2.4	1.41	10	257.3	92.88	2.7	1.05	25
Sicyonia															
<i>dorsalis</i>	0.0	0.00	0.0	0.00	2	123.5	96.46	0.2	0.14	10	214.9	67.44	0.5	0.14	25
Solenocera															
<i>spp.</i>	0.0	0.00	0.0	0.00	2	0.2	0.23	0.0	0.00	10	97.5	47.28	0.3	0.20	25
Stenotomus															
<i>caprinus</i>	1136.2	1112.21	10.3	10.26	2	1255.3	474.36	10.7	4.42	10	2713.3	587.74	19.1	3.56	25
Centropristis															
<i>philadelphica</i>	0.0	0.00	0.0	0.00	2	171.5	80.70	1.2	0.41	10	263.9	46.73	2.9	0.58	25
Serranus															
<i>atrobranchus</i>	0.0	0.00	0.0	0.00	2	12.0	12.00	0.1	0.05	10	192.6	81.79	1.3	0.59	25
Prionotus															
<i>rubio</i>	12.0	12.00	0.0	0.00	2	236.7	135.19	1.5	0.79	10	159.5	76.65	1.8	0.92	25
Diplectrum															
<i>bivittatum</i>	36.3	36.32	0.2	0.22	2	90.2	33.45	1.9	0.81	10	199.2	78.11	3.2	0.91	25
Micropogonias															
<i>undulatus</i>	1.6	1.58	0.1	0.14	2	1.5	1.20	0.1	0.07	10	1.9	1.04	0.1	0.07	25
Etropus															
<i>crossotus</i>	0.0	0.00	0.0	0.00	2	182.3	92.98	2.4	1.10	10	75.3	39.92	0.6	0.28	25
Prionotus															
<i>roseus</i>	0.0	0.00	0.0	0.00	2	16.4	14.29	0.1	0.06	10	25.0	13.50	0.3	0.15	25
Squid															
	244.7	244.74	2.4	2.37	2	133.4	58.30	2.0	0.76	10	240.4	99.31	3.1	1.02	25

Table 10a (cont'd.)  
 Statistical Zone 11  
 40-ft trawls

Summary of dominant organisms taken in shrimp statistical zone 11 during the June-July 1986 SEAMAP 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					Over 40 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Portunus															
<i>spini</i> carpus	1446.7	706.22	5.5	2.56	6	1723.5	698.70	9.3	5.20	8	5337.0	1426.89	31.2	12.96	5
Callinectes															
<i>similis</i>	1903.9	1176.72	28.1	18.15	6	5.8	3.81	0.1	0.04	8	20.0	14.71	0.5	0.42	5
Trachypenaues															
<i>spp.</i>	366.1	220.38	2.0	1.19	6	24.8	15.02	0.1	0.06	8	2.4	2.40	0.0	0.00	5
Sicyonia															
<i>brevirostris</i>	745.8	345.95	9.0	4.21	6	332.7	126.76	4.0	1.70	8	112.0	91.66	2.0	1.65	5
Sicyonia															
<i>dorsalis</i>	447.7	257.85	1.4	0.86	6	246.3	242.55	0.4	0.35	8	42.2	31.83	0.1	0.05	5
Solenocera															
<i>spp.</i>	589.4	268.45	1.8	0.97	6	93.0	38.10	0.5	0.17	8	325.0	240.53	1.8	1.36	5
Stenotomus															
<i>caprinus</i>	958.9	717.20	46.7	34.41	6	975.8	466.71	39.5	15.68	8	424.0	315.72	19.1	14.34	5
Centropristis															
<i>philadelphica</i>	316.8	111.55	4.8	1.98	6	182.7	122.50	4.5	1.20	8	30.7	10.67	3.3	1.22	5
Serranus															
<i>atrobranchus</i>	590.1	316.87	5.9	3.31	6	81.4	19.34	1.3	0.30	8	99.4	40.70	1.9	0.90	5
Prionotus															
<i>rubio</i>	28.3	15.41	0.7	0.34	6	32.9	15.30	1.4	0.71	8	26.8	20.63	1.4	0.96	5
Diplectrum															
<i>bivittatum</i>	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	8	0.0	0.00	0.0	0.00	5
Micropogonias															
<i>undulatus</i>	38.8	35.65	2.5	2.37	6	231.0	121.22	16.3	8.27	8	149.6	101.57	11.6	7.99	5
Etropus															
<i>crossotus</i>	40.9	21.23	0.6	0.28	6	0.0	0.00	0.0	0.00	8	1.2	1.20	0.1	0.05	5
Prionotus															
<i>roseus</i>	226.0	139.71	4.5	2.57	6	63.5	58.72	2.1	1.85	8	16.8	16.80	1.0	1.04	5
Squid															
	51.1	39.88	0.8	0.38	6	29.0	23.58	0.4	0.30	8	0.0	0.00	0.0	0.00	5

Table 10b  
 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 June-July 1986 SEAMAP Shrimp and Bottomfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, 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	29.0	12.63	2	61.2	9.43	10	67.2	7.61	25	155.0	51.85	6	111.1	16.15	8	122.5	49.86	5
Total finfish kg	20.7	15.22	2	38.0	4.65	10	44.9	5.91	25	98.1	46.62	6	91.9	14.99	8	84.0	40.50	5
Total crustacean kg	6.2	4.74	2	21.0	8.34	10	18.2	3.02	25	55.6	21.09	6	18.6	5.57	8	38.5	14.40	5
Total others kg	2.2	2.15	2	2.5	0.75	10	4.0	0.89	25	1.3	0.49	6	0.7	0.33	8	0.2	0.23	5
Surface temperature	27.8	1.68	3	28.4	0.50	9	29.2	0.26	27	28.9	0.35	5	29.7	0.41	7	29.4	0.58	7
Midwater temperature	27.4	0.68	3	25.9	0.79	8	25.9	0.49	26	24.7	0.75	5	23.8	0.39	7	21.9	0.60	7
Bottom temperature	26.1	0.47	3	24.0	0.50	8	23.1	0.35	26	22.3	0.27	5	21.1	0.45	7	20.2	0.72	7
Surface salinity	28.2	1.66	3	28.8	0.66	9	28.4	0.99	27	28.7	1.81	5	26.9	1.32	7	25.2	2.40	7
Midwater salinity	30.0	2.07	3	31.9	0.61	8	34.1	0.44	26	34.6	0.69	5	34.1	1.63	7	34.6	1.51	6
Bottom salinity	31.1	2.79	3	33.0	0.94	8	35.2	0.47	26	35.4	0.67	5	34.7	1.45	7	35.3	1.18	7
Surface chlorophyll	2.0	0.41	3	3.5	1.30	7	3.7	1.39	25	5.3	4.29	5	8.2	3.38	7	21.0	9.71	7
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	0.35	3	6.3	0.37	8	7.3	0.39	25	6.9	0.43	5	7.3	0.38	7	7.5	0.62	7
Midwater oxygen	5.9	0.55	3	5.2	0.39	6	5.6	0.24	24	6.2	0.31	5	6.9	0.52	7	6.0	0.27	7
Bottom oxygen	5.1	1.00	3	5.1	0.33	6	5.2	0.23	24	5.8	0.38	5	5.2	0.26	7	5.5	0.35	7

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 June-July 1986 SEAMAP Shrimp and Bottomfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, and oxygen in ppm. No trawl samples taken above 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	20.8	10.68	8	42.8	14.26	17	85.5	14.84	13	60.2	12.89	2	34.4	0.00	1	0.0	0.00	0
Total finfish kg	19.6	10.29	8	37.5	12.26	17	58.1	13.68	13	44.9	5.78	2	27.3	0.00	1	0.0	0.00	0
Total crustacean kg	0.5	0.29	8	4.4	3.61	17	20.5	4.36	13	11.9	4.64	2	7.2	0.00	1	0.0	0.00	0
Total others kg	0.8	0.31	8	0.9	0.64	17	7.1	2.75	13	3.4	2.47	2	1.4	0.00	1	0.0	0.00	0
Surface temperature	27.5	0.91	9	27.4	0.62	18	28.3	0.70	15	28.9	0.00	1	29.0	0.00	1	0.0	0.00	0
Midwater temperature	29.8	0.13	5	28.5	0.29	10	27.7	0.21	11	27.7	0.00	1	26.6	0.00	1	0.0	0.00	0
Bottom temperature	26.9	0.87	9	24.0	0.62	18	23.4	0.41	15	22.3	0.00	1	21.6	0.00	1	0.0	0.00	0
Surface salinity	25.3	0.88	9	26.5	0.64	18	30.7	1.41	15	34.8	0.00	1	35.4	0.00	1	0.0	0.00	0
Midwater salinity	27.5	0.26	5	31.5	0.77	10	35.5	0.25	11	35.8	0.00	1	35.9	0.00	1	0.0	0.00	0
Bottom salinity	27.0	1.27	9	34.6	0.37	18	36.0	0.15	15	36.8	0.00	1	36.4	0.00	1	0.0	0.00	0
Surface chlorophyll	8.7	2.14	9	9.6	2.04	18	2.1	1.35	14	0.2	0.00	1	0.1	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	9.4	2.03	9	4.5	1.05	18	2.0	0.32	12	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface oxygen	7.2	0.81	9	8.7	0.61	18	7.0	0.60	15	6.8	0.00	1	7.1	0.00	1	0.0	0.00	0
Midwater oxygen	6.4	0.37	5	5.5	0.53	10	6.4	0.09	11	6.7	0.00	1	7.4	0.00	1	0.0	0.00	0
Bottom oxygen	5.7	1.05	9	2.1	0.54	18	4.0	0.39	15	6.2	0.00	1	6.6	0.00	1	0.0	0.00	0



Table 14a  
 Statistical Zone 15  
 40-ft trawls

Summary of dominant organisms taken in shrimp statistical zone 15 during the June-July 1986 SEAMAP 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															
spp.	0.0	0.00	0.0	0.00	1	422.3	393.65	2.2	2.05	2	2542.8	972.91	8.4	2.00	7
Penaeus															
aztecus	0.0	0.00	0.0	0.00	1	33.3	17.67	0.5	0.22	2	420.6	186.26	5.8	2.22	7
Sicyonia															
dorsalis	0.0	0.00	0.0	0.00	1	3.9	3.91	0.0	0.00	2	45.8	33.94	0.2	0.08	7
Callinectes															
similis	0.0	0.00	0.0	0.00	1	287.5	261.46	5.0	4.59	2	317.1	84.23	4.1	1.12	7
Portunus															
spincarpus	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	7
Squilla															
spp.	4.3	0.00	0.2	0.00	1	34.3	31.70	0.2	0.20	2	122.0	22.57	1.1	0.20	7
Stenotomus															
caprinus	4.3	0.00	0.2	0.00	1	2954.8	2952.20	25.4	25.36	2	3467.7	1515.79	19.3	6.15	7
Centropristis															
philadelphica	4.3	0.00	0.0	0.00	1	36.9	29.09	0.5	0.35	2	789.7	338.78	7.4	3.12	7
Serranus															
atrobranchus	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	2	417.1	417.14	1.3	1.30	7
Micropogonias															
undulatus	0.0	0.00	0.0	0.00	1	1281.0	1281.00	48.5	48.55	2	10.4	8.34	0.5	0.43	7
Prionotus															
rubio	0.0	0.00	0.0	0.00	1	162.0	162.00	2.1	2.11	2	296.3	81.43	4.9	1.01	7
Saurida															
brasiliensis	4.3	0.00	0.2	0.00	1	24.0	24.00	0.4	0.41	2	17.9	11.38	0.2	0.11	7
Porichthys															
plectrodon	0.0	0.00	0.0	0.00	1	51.0	51.00	1.3	1.30	2	55.2	15.29	0.6	0.13	7
Peprilus															
burti	0.0	0.00	0.0	0.00	1	119.4	111.59	5.4	5.07	2	13.4	8.47	0.5	0.28	7
Squid	445.7	0.00	7.2	0.00	1	67.8	67.83	1.0	1.01	2	4.0	3.38	0.1	0.04	7

Table 15a  
 Statistical Zone 16  
 40-ft trawls

Summary of dominant organisms taken in shrimp statistical zone 16 during the June-July 1986 SEAMAP 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 below 11 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.	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	248.6	144.91	1.1	0.62	8
Penaeus															
aztecus	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	109.9	36.67	2.0	0.65	8
Squilla															
spp.	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	82.5	61.54	0.9	0.73	8
Parapenaeus															
spp.	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	55.3	55.25	0.7	0.68	8
Callinectes															
similis	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	53.6	21.66	0.8	0.41	8
Sicyonia															
brevirostris	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	25.5	13.04	0.3	0.13	8
Stenotomus															
caprinus	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	754.2	282.78	10.8	3.64	8
Micropogonias															
undulatus	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	714.1	408.13	25.9	14.79	8
Peprilus															
burti	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	11.8	7.71	0.3	0.24	8
Prionotus															
rubio	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	191.0	123.44	1.8	1.41	8
Centropristis															
philadelphica	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	136.4	73.42	1.5	0.68	8
Prionotus															
stearnsi	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	8
Leiostomus															
xanthurus	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	54.5	30.96	5.3	3.13	8
Diplectrum															
bivittatum	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	38.9	16.05	1.3	0.57	8
Squid	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	65.2	31.99	0.5	0.18	8

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

Summary of dominant organisms taken in shrimp statistical zone 16 during the June-July 1986 SEAMAP 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 below 11 fm.

SPECIES	21-30 FM					31-40 FM					Over 40 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Trachypenaeus															
spp.	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
Penaeus															
aztecus	0.0	0.00	0.0	0.00	0	32.0	0.00	1.9	0.00	1	22.5	0.00	1.4	0.00	1
Squilla															
spp.	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	1	7.5	0.00	0.2	0.00	1
Parapenaeus															
spp.	0.0	0.00	0.0	0.00	0	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	0	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
Sicyonia															
brevirostris	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
Stenotomus															
caprinus	0.0	0.00	0.0	0.00	0	712.0	0.00	32.2	0.00	1	157.5	0.00	7.7	0.00	1
Micropogonias															
undulatus	0.0	0.00	0.0	0.00	0	8.0	0.00	0.9	0.00	1	0.0	0.00	0.0	0.00	1
Peprilus															
burti	0.0	0.00	0.0	0.00	0	792.0	0.00	39.5	0.00	1	1713.8	0.00	85.9	0.00	1
Prionotus															
rubio	0.0	0.00	0.0	0.00	0	40.0	0.00	2.9	0.00	1	0.0	0.00	0.0	0.00	1
Centropristis															
philadelphica	0.0	0.00	0.0	0.00	0	8.0	0.00	0.5	0.00	1	7.5	0.00	1.5	0.00	1
Prionotus															
stearnsi	0.0	0.00	0.0	0.00	0	154.0	0.00	0.9	0.00	1	978.8	0.00	9.4	0.00	1
Leiostomus															
xanthurus	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
Diplectrum															
bivittatum	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
Squid	0.0	0.00	0.0	0.00	0	226.0	0.00	1.8	0.00	1	1050.0	0.00	8.5	0.00	1

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 June-July 1986 SEAMAP Shrimp and Bottomfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, and oxygen in ppm. No samples were taken below 11 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	69.8	24.26	8	0.0	0.00	0	124.5	0.00	1	136.4	0.00	1
Total finfish kg	0.0	0.00	0	0.0	0.00	0	55.6	20.45	8	0.0	0.00	0	114.5	0.00	1	115.9	0.00	1
Total crustacean kg	0.0	0.00	0	0.0	0.00	0	7.0	2.37	8	0.0	0.00	0	4.5	0.00	1	1.7	0.00	1
Total others kg	0.0	0.00	0	0.0	0.00	0	8.2	3.49	8	0.0	0.00	0	5.5	0.00	1	18.8	0.00	1
Surface temperature	30.1	0.00	1	30.0	0.00	1	29.7	0.15	6	29.0	0.31	4	0.0	0.00	0	28.7	0.00	2
Midwater temperature	29.9	0.00	1	28.2	0.00	1	28.6	0.28	6	26.3	0.31	4	0.0	0.00	0	23.6	0.18	2
Bottom temperature	29.4	0.00	1	26.1	0.00	1	25.8	0.46	6	22.1	0.65	4	0.0	0.00	0	19.8	0.33	2
Surface salinity	15.9	0.00	1	24.5	0.00	1	30.7	1.26	6	35.3	0.08	4	0.0	0.00	0	33.7	0.02	2
Midwater salinity	18.0	0.00	1	31.3	0.00	1	34.5	0.42	6	35.8	0.10	4	0.0	0.00	0	36.7	0.03	2
Bottom salinity	25.5	0.00	1	35.3	0.00	1	36.0	0.11	6	36.4	0.16	4	0.0	0.00	0	36.8	0.38	2
Surface chlorophyll	7.9	0.00	1	2.0	0.00	1	0.9	0.38	6	0.1	0.00	4	0.0	0.00	0	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	2.4	0.00	1	1.1	0.00	1	0.7	0.17	6	0.5	0.00	1	0.0	0.00	0	0.0	0.00	0
Surface oxygen	11.4	0.00	1	8.8	0.00	1	7.3	0.26	6	7.5	0.16	4	0.0	0.00	0	7.6	0.05	2
Midwater oxygen	6.4	0.00	1	6.2	0.00	1	7.0	0.19	6	8.0	0.13	4	0.0	0.00	0	8.6	0.45	2
Bottom oxygen	0.9	0.00	1	4.3	0.00	1	6.5	0.63	6	7.8	0.45	4	0.0	0.00	0	6.4	0.10	2

\*Plankton and environmental stations only.

Table 16a  
 Statistical Zone 17  
 40-ft trawls

Summary of dominant organisms taken in shrimp statistical zone 17 during the June-July 1986 SEAMAP 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 above 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
Callinectes															
<i>similis</i>	2.0	2.00	0.0	0.05	2	24.3	16.90	0.2	0.15	7	231.6	125.95	2.8	1.52	4
Penaeus															
<i>aztecus</i>	0.0	0.00	0.0	0.00	2	0.3	0.29	0.0	0.01	7	63.9	29.80	1.0	0.35	4
Trachypenaeus															
<i>spp.</i>	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	7	113.0	75.28	0.5	0.35	4
Portunus															
<i>spinicarpus</i>	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	7	0.0	0.00	0.0	0.00	4
Sicyonia															
<i>brevirostris</i>	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	7	22.5	21.32	0.3	0.21	4
Callinectes															
<i>sapidus</i>	0.0	0.00	0.0	0.00	2	9.7	7.24	0.2	0.15	7	73.2	51.58	2.1	1.26	4
Stenotomus															
<i>caprinus</i>	0.0	0.00	0.0	0.00	2	0.3	0.29	0.0	0.01	7	1454.7	851.98	13.5	7.91	4
Peprilus															
<i>burti</i>	0.0	0.00	0.0	0.00	2	9.1	7.09	0.2	0.19	7	307.5	209.16	7.2	4.92	4
Porichthys															
<i>plectrodon</i>	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	7	4.1	2.57	0.2	0.11	4
Serranus															
<i>atrobranchus</i>	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	7	0.6	0.60	0.0	0.00	4
Prionotus															
<i>stearnsi</i>	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	7	0.0	0.00	0.0	0.00	4
Trachurus															
<i>lathami</i>	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	7	0.0	0.00	0.0	0.00	4
Synodus															
<i>foetens</i>	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	7	7.5	3.48	0.5	0.38	4
Centropristis															
<i>philadelphica</i>	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	7	10.4	7.55	0.2	0.15	4
Squid															
	0.0	0.00	0.0	0.00	2	0.3	0.29	0.0	0.01	7	42.5	22.54	0.6	0.28	4

Table 16a (cont'd.)  
 Statistical Zone 17  
 40-ft trawls

Summary of dominant organisms taken in shrimp statistical zone 17 during the June-July 1986 SEAMAP 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 above 40 fm.

SPECIES	21-30 FM					31-40 FM					Over 40 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Callinectes															
<i>similis</i>	2.2	0.89	0.0	0.02	7	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	0
Penaeus															
<i>aztecus</i>	39.7	11.34	1.6	0.47	7	55.2	4.83	2.4	0.12	3	0.0	0.00	0.0	0.00	0
Trachypenaeus															
<i>spp.</i>	27.4	10.52	0.1	0.02	7	3.3	1.76	0.1	0.03	3	0.0	0.00	0.0	0.00	0
Portunus															
<i>spinicarpus</i>	2.3	1.56	0.0	0.01	7	147.6	67.20	0.9	0.33	3	0.0	0.00	0.0	0.00	0
Sicyonia															
<i>brevirostris</i>	33.1	12.72	0.4	0.15	7	34.3	11.03	0.4	0.11	3	0.0	0.00	0.0	0.00	0
Callinectes															
<i>sapidus</i>	0.0	0.00	0.0	0.00	7	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	0
Stenotomus															
<i>caprinus</i>	228.8	40.28	9.3	1.22	7	414.0	20.88	21.1	0.74	3	0.0	0.00	0.0	0.00	0
Peprilus															
<i>burti</i>	29.6	15.15	1.7	0.88	7	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	0
Porichthys															
<i>plectrodon</i>	97.6	32.45	0.9	0.31	7	147.1	62.04	1.5	0.69	3	0.0	0.00	0.0	0.00	0
Serranus															
<i>atrobranchus</i>	99.6	32.06	1.2	0.39	7	63.6	11.86	0.9	0.33	3	0.0	0.00	0.0	0.00	0
Prionotus															
<i>stearnsi</i>	69.7	37.20	0.5	0.29	7	51.6	25.19	0.4	0.13	3	0.0	0.00	0.0	0.00	0
Trachurus															
<i>lathamii</i>	90.6	55.92	2.2	1.34	7	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	0
Synodus															
<i>foetens</i>	37.9	7.24	3.0	0.49	7	52.1	11.81	6.1	0.95	3	0.0	0.00	0.0	0.00	0
Centropristis															
<i>philadelphica</i>	31.6	10.84	1.2	0.37	7	43.1	5.20	1.9	0.52	3	0.0	0.00	0.0	0.00	0
Squid															
	53.3	30.42	0.8	0.37	7	9.0	8.97	0.0	0.00	3	0.0	0.00	0.0	0.00	0

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 June-July 1986 SEAMAP Shrimp and Bottomfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, and oxygen in ppm. No trawl samples were taken above 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	2.7	0.00	2	5.3	1.48	7	35.1	15.60	4	26.3	1.99	7	59.1	3.98	3	0.0	0.00	0
Total finfish kg	2.3	0.45	2	4.2	1.19	7	27.0	12.40	4	23.1	1.65	7	55.1	3.74	3	0.0	0.00	0
Total crustacean kg	0.9	0.00	2	0.9	0.34	7	7.7	3.08	4	2.6	0.59	7	4.0	0.28	3	0.0	0.00	0
Total others kg	0.5	0.45	2	0.9	0.40	7	1.4	0.21	4	1.1	0.33	7	0.6	0.31	3	0.0	0.00	0
Surface temperature	30.7	0.00	1	30.4	0.26	3	30.3	0.34	5	29.5	0.23	4	29.6	0.02	2	29.3	0.25	2
Midwater temperature	30.1	0.00	1	29.3	0.40	3	28.8	0.35	5	26.3	0.14	4	25.0	0.64	2	24.1	0.33	2
Bottom temperature	27.2	0.00	1	27.4	0.20	3	25.6	0.44	5	21.9	0.28	4	21.2	0.00	2	21.5	0.33	2
Surface salinity	22.9	0.00	1	23.3	1.88	3	29.0	1.14	5	33.3	0.81	4	32.7	0.68	2	32.4	0.02	2
Midwater salinity	24.1	0.00	1	27.7	0.40	3	32.8	0.96	5	35.5	0.22	4	36.0	0.18	2	36.5	0.16	2
Bottom salinity	30.1	0.00	1	32.3	0.35	3	35.4	0.25	5	36.4	0.24	4	36.6	0.29	2	36.6	0.03	2
Surface chlorophyll	2.3	0.00	1	0.9	0.01	2	0.6	0.16	5	0.1	0.01	3	0.1	0.00	1	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	4.3	0.00	1	5.5	3.54	2	1.0	0.22	5	0.0	0.00	0	0.7	0.00	1	0.0	0.00	0
Surface oxygen	7.7	0.00	1	7.8	0.40	3	6.7	0.19	5	6.4	0.07	4	6.4	0.00	2	6.7	0.25	2
Midwater oxygen	6.2	0.00	1	5.8	1.01	3	6.4	0.26	5	6.6	0.13	4	6.7	0.15	2	6.9	0.35	2
Bottom oxygen	0.6	0.00	1	1.4	0.56	3	3.6	0.92	5	5.9	0.40	4	5.1	0.00	2	5.8	0.35	2

\*Plankton and environmental stations only.

Table 17a  
 Statistical Zone 18  
 40-ft trawls

Summary of dominant organisms taken in shrimp statistical zone 18 during the June-July 1986 SEAMAP 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 above 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
Penaeus															
<i>aztecus</i>	139.3	48.83	1.0	0.32	5	33.8	16.35	0.4	0.16	5	115.0	8.20	1.7	0.08	4
Callinectes															
<i>similis</i>	18.8	7.90	0.2	0.12	5	118.8	76.46	0.8	0.59	5	72.2	64.38	1.0	0.81	4
Penaeus															
<i>setiferus</i>	64.0	53.13	2.2	1.82	5	40.2	22.74	1.5	0.87	5	0.0	0.00	0.0	0.00	4
Callinectes															
<i>sapidus</i>	6.6	4.63	0.7	0.44	5	0.0	0.00	0.0	0.00	5	86.0	86.00	1.5	1.50	4
Trachypenaeus															
<i>spp.</i>	0.0	0.00	0.0	0.00	5	8.7	8.67	0.1	0.09	5	50.8	41.94	0.1	0.11	4
Penaeus															
<i>duorarum</i>	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	5	43.0	39.02	1.1	0.97	4
Micropogonias															
<i>undulatus</i>	2540.4	2207.80	64.4	57.51	5	2480.2	1984.70	57.0	46.23	5	7.5	7.50	0.1	0.11	4
Cynoscion															
<i>nothus</i>	555.1	497.85	18.5	16.76	5	343.0	230.52	12.7	8.95	5	11.3	11.25	0.6	0.57	4
Leiostomus															
<i>xanthurus</i>	546.6	389.28	7.6	3.40	5	110.3	84.94	7.4	5.83	5	1.0	1.00	0.0	0.05	4
Polydactylus															
<i>octonemus</i>	497.1	435.93	10.8	9.71	5	150.4	103.43	3.4	2.45	5	26.3	26.25	0.6	0.57	4
Peprilus															
<i>burti</i>	69.5	67.84	1.8	1.79	5	498.6	473.80	15.0	14.51	5	34.3	19.83	0.7	0.45	4
Stenotomus															
<i>caprinus</i>	0.0	0.00	0.0	0.00	5	13.0	12.96	0.1	0.09	5	967.9	406.83	9.7	3.62	4
Arius															
<i>felis</i>	73.5	69.19	1.4	1.40	5	33.3	33.33	2.5	2.52	5	0.0	0.00	0.0	0.00	4
Cynoscion															
<i>arenarius</i>	90.1	79.17	4.3	3.70	5	11.4	7.07	0.9	0.51	5	1.3	1.25	0.0	0.00	4
Squid															
	15.9	4.61	0.3	0.15	5	8.4	6.46	0.3	0.24	5	190.6	111.93	7.1	5.81	4



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

Summary of dominant organisms taken in shrimp statistical zone 18 during the June-July 1986 SEAMAP 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 above 40 fm.

SPECIES	21-30 FM					31-40 FM					Over 40 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Penaeus															
aztecus	114.5	0.00	2.5	0.00	1	144.0	0.00	5.3	0.00	1	0.0	0.00	0.0	0.00	0
Callinectes															
similis	0.0	0.00	0.0	0.00	1	52.0	0.00	0.5	0.00	1	0.0	0.00	0.0	0.00	0
Penaeus															
setiferus	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	0
Callinectes															
sapidus	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	0
Trachypenaeus															
spp.	0.0	0.00	0.0	0.00	1	4.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0
Penaeus															
duorarum	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	0
Micropogonias															
undulatus	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	0
Cynoscion															
nothus	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	0
Leiostomus															
xanthurus	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	0
Polydactylus															
octonemus	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	0
Peprilus															
burti	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	0
Stenotomus															
caprinus	632.7	0.00	33.5	0.00	1	140.0	0.00	7.3	0.00	1	0.0	0.00	0.0	0.00	0
Arius															
felis	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	0
Cynoscion															
arenarius	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	0
Squid	441.8	0.00	2.5	0.00	1	8.0	0.00	0.2	0.00	1	0.0	0.00	0.0	0.00	0

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 June-July 1986 SEAMAP Shrimp and Bottomfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, and oxygen in ppm. No trawl samples were taken above 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	120.9	94.42	5	107.1	59.95	5	37.8	7.94	4	69.4	0.00	1	47.3	0.00	1	0.0	0.00	0
Total finfish kg	116.9	92.02	5	103.4	58.19	5	23.9	4.52	4	64.5	0.00	1	38.2	0.00	1	0.0	0.00	0
Total crustacean kg	4.2	2.42	5	3.3	1.61	5	6.4	2.31	4	5.0	0.00	1	7.3	0.00	1	0.0	0.00	0
Total others kg	0.8	0.21	5	1.0	0.63	5	8.2	5.30	4	2.5	0.00	1	1.8	0.00	1	0.0	0.00	0
Surface temperature	30.2	0.33	4	30.0	0.25	7	29.2	0.17	5	29.6	0.00	1	29.4	0.14	4	0.0	0.00	0
Midwater temperature	30.2	0.35	4	29.6	0.23	7	28.1	0.49	5	25.1	0.00	1	26.0	0.53	4	0.0	0.00	0
Bottom temperature	29.7	0.50	4	27.9	0.48	7	25.6	0.84	5	21.9	0.00	1	22.2	0.15	4	0.0	0.00	0
Surface salinity	23.6	1.30	4	28.2	1.13	6	30.4	0.35	5	30.5	0.00	1	32.0	0.50	4	0.0	0.00	0
Midwater salinity	23.6	2.09	4	29.0	0.46	6	32.1	0.60	5	34.0	0.00	1	36.7	0.21	4	0.0	0.00	0
Bottom salinity	25.8	2.74	4	31.9	0.74	6	34.1	0.56	5	35.6	0.00	1	36.6	0.04	4	0.0	0.00	0
Surface chlorophyll	3.8	1.61	4	1.4	0.44	7	0.3	0.01	5	0.1	0.00	1	0.1	0.03	4	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	1.6	0.15	2	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface oxygen	9.3	0.21	4	7.7	0.34	7	6.4	0.06	5	6.6	0.00	1	6.7	0.16	4	0.0	0.00	0
Midwater oxygen	8.3	0.30	4	7.2	0.38	7	5.8	0.38	5	5.7	0.00	1	7.1	0.06	4	0.0	0.00	0
Bottom oxygen	6.9	0.58	4	4.1	0.81	7	4.5	0.43	5	5.2	0.00	1	5.8	0.00	2	0.0	0.00	0

Table 18a  
 Statistical Zone 19  
 40-ft trawls

Summary of dominant organisms taken in shrimp statistical zone 19 during the June-July 1986 SEAMAP 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 above 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
Callinectes															
sapidus	32.2	28.17	4.9	4.40	4	11.6	4.77	2.1	1.20	5	5.0	2.46	0.8	0.41	8
Trachypenaues															
spp.	10.7	7.10	0.0	0.04	4	481.0	393.68	1.5	1.16	5	654.4	342.72	2.4	1.46	8
Penaeus															
aztecus	13.1	13.13	0.1	0.09	4	292.0	143.23	3.5	1.75	5	481.6	154.24	7.0	2.12	8
Squilla															
spp.	7.5	7.50	0.1	0.13	4	57.7	26.54	0.7	0.34	5	48.9	16.53	0.5	0.24	8
Sicyonia															
dorsalis	0.0	0.00	0.0	0.00	4	7.4	7.38	0.0	0.00	5	95.6	39.07	0.2	0.09	8
Solenocera															
spp.	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	8
Micropogonias															
undulatus	1750.1	935.54	35.7	20.56	4	3835.7	1681.67	136.9	67.37	5	11.7	11.67	0.5	0.48	8
Cynoscion															
nothus	200.7	151.58	7.6	5.68	4	1036.4	905.24	21.3	17.82	5	76.4	75.76	3.1	3.05	8
Stenotomus															
caprinus	0.0	0.00	0.0	0.00	4	199.2	110.61	1.9	1.16	5	315.9	104.67	1.7	0.57	8
Serranus															
atrobranchus	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	5	35.5	21.57	0.1	0.06	8
Polydactylus															
octonemus	240.9	129.44	3.5	1.77	4	324.0	200.01	4.4	2.24	5	0.8	0.83	0.0	0.01	8
Leiostomus															
xanthurus	409.6	342.96	9.0	7.82	4	37.5	37.50	0.9	0.93	5	1.1	0.74	0.1	0.04	8
Peprilus															
alepidotus	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	5	135.8	135.83	3.3	3.28	8
Peprilus															
burti	1.5	1.50	0.0	0.00	4	188.2	101.66	4.3	2.04	5	57.7	34.35	1.3	0.74	8
Squid															
	32.6	21.08	0.6	0.44	4	23.9	15.48	0.4	0.24	5	12.0	7.44	0.2	0.11	8

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

Summary of dominant organisms taken in shrimp statistical zone 19 during the June-July 1986 SEAMAP 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 above 30 fm.

SPECIES	21-30 FM					31-40 FM					Over 40 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
<i>Callinectes</i>															
<i>sapidus</i>	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
<i>Trachypenaeus</i>															
<i>spp.</i>	208.2	57.34	0.9	0.22	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Penaeus</i>															
<i>aztecus</i>	291.6	40.42	5.4	0.77	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Squilla</i>															
<i>spp.</i>	72.8	16.95	1.3	0.34	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Sicyonia</i>															
<i>dorsalis</i>	81.3	38.26	0.3	0.14	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Solenocera</i>															
<i>spp.</i>	56.8	26.74	0.1	0.07	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Micropogonias</i>															
<i>undulatus</i>	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
<i>Cynoscion</i>															
<i>nothus</i>	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
<i>Stenotomus</i>															
<i>caprinus</i>	180.2	64.75	2.9	0.81	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Serranus</i>															
<i>atrobranchus</i>	367.1	77.42	2.6	0.47	6	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	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Leiostomus</i>															
<i>xanthurus</i>	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
<i>Peprilus</i>															
<i>alepidotus</i>	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
<i>Peprilus</i>															
<i>burti</i>	3.4	0.97	0.1	0.03	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Squid</i>	13.6	9.39	0.1	0.08	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 June-July 1986 SEAMAP Shrimp and Bottomfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, and oxygen in ppm. No trawl samples were taken above 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	86.6	43.49	4	214.6	73.19	5	32.9	3.42	8	24.5	1.56	6	0.0	0.00	0	0.0	0.00	0
Total finfish kg	65.2	30.07	4	193.5	70.78	5	17.2	3.50	8	14.9	0.93	6	0.0	0.00	0	0.0	0.00	0
Total crustacean kg	22.0	18.26	4	20.5	6.31	5	15.8	3.82	8	9.6	0.90	6	0.0	0.00	0	0.0	0.00	0
Total others kg	1.5	0.56	4	1.0	0.47	5	1.1	0.29	8	1.3	0.21	6	0.0	0.00	0	0.0	0.00	0
Surface temperature	29.6	0.06	3	29.0	0.23	7	29.0	0.13	10	29.1	0.04	5	0.0	0.00	0	29.3	0.00	1
Midwater temperature	29.8	0.12	3	28.9	0.15	7	28.8	0.18	10	27.5	0.52	5	0.0	0.00	0	25.0	0.00	1
Bottom temperature	29.4	0.15	3	28.0	0.59	7	25.5	0.58	10	22.7	0.17	5	0.0	0.00	0	21.4	0.00	1
Surface salinity	26.7	1.67	3	31.8	1.04	7	32.7	0.36	10	33.0	0.46	5	0.0	0.00	0	31.6	0.00	1
Midwater salinity	28.7	1.86	3	32.5	0.66	7	33.2	0.38	10	35.5	0.34	5	0.0	0.00	0	36.9	0.00	1
Bottom salinity	31.2	1.17	3	33.1	0.76	7	35.2	0.33	10	36.4	0.13	5	0.0	0.00	0	36.4	0.00	1
Surface chlorophyll	1.8	0.44	3	1.1	0.44	7	0.2	0.03	9	0.1	0.01	3	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	0.15	3	7.0	0.22	7	6.7	0.20	10	5.9	0.15	5	0.0	0.00	0	6.8	0.00	1
Midwater oxygen	8.2	0.22	3	6.8	0.25	7	6.7	0.21	10	5.9	0.19	5	0.0	0.00	0	7.0	0.00	1
Bottom oxygen	7.9	0.06	3	6.2	0.37	7	6.1	0.33	10	5.6	0.40	5	0.0	0.00	0	5.7	0.00	1

\*Plankton and environmental stations only.

Table 19a  
 Statistical Zone 20  
 40-ft trawls

Summary of dominant organisms taken in shrimp statistical zone 20 during the June-July 1986 SEAMAP 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
<u>Penaeus</u>															
<u>aztecus</u>	27.6	0.36	0.2	0.03	2	655.0	299.37	6.2	3.16	9	1165.7	479.25	13.2	5.41	6
<u>Callinectes</u>															
<u>sapidus</u>	28.5	20.55	4.7	3.45	2	11.4	8.82	2.0	1.55	9	4.3	2.88	0.6	0.36	6
<u>Trachypenaeus</u>															
<u>spp.</u>	2.0	2.00	0.0	0.00	2	58.4	27.41	0.2	0.10	9	298.1	135.42	0.9	0.42	6
<u>Squilla</u>															
<u>spp.</u>	0.0	0.00	0.0	0.00	2	21.5	14.04	0.3	0.23	9	40.4	20.54	0.2	0.07	6
<u>Penaeus</u>															
<u>duorarum</u>	8.2	8.18	0.2	0.25	2	12.2	8.04	0.3	0.18	9	0.7	0.69	0.0	0.02	6
<u>Penaeus</u>															
<u>setiferus</u>	37.3	17.27	1.7	0.79	2	28.5	14.00	1.3	0.65	9	0.0	0.00	0.0	0.00	6
<u>Micropogonias</u>															
<u>undulatus</u>	1739.6	32.36	25.5	7.27	2	3341.8	1006.94	75.0	26.74	9	1119.6	1119.16	41.9	41.88	6
<u>Peprilus</u>															
<u>burti</u>	0.0	0.00	0.0	0.00	2	15.6	6.81	0.5	0.21	9	44.5	25.40	1.6	0.94	6
<u>Leiostomus</u>															
<u>xanthurus</u>	196.0	104.00	4.9	3.27	2	505.0	189.91	12.3	5.19	9	32.2	29.59	2.8	2.59	6
<u>Cynoscion</u>															
<u>nothus</u>	910.5	861.45	13.3	11.59	2	214.6	96.79	7.0	3.08	9	281.3	224.69	12.4	10.75	6
<u>Polydactylus</u>															
<u>octonemus</u>	437.1	261.09	7.3	5.84	2	193.9	80.24	2.1	0.84	9	64.9	56.21	0.7	0.54	6
<u>Serranus</u>															
<u>atrobranchus</u>	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	9	82.9	50.66	0.4	0.23	6
<u>Prionotus</u>															
<u>stearnsi</u>	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	9	3.1	1.37	0.0	0.00	6
<u>Larimus</u>															
<u>fasciatus</u>	246.5	137.45	3.6	1.86	2	107.1	77.22	2.2	1.55	9	0.0	0.00	0.0	0.00	6
<u>Squid</u>	23.5	12.55	0.4	0.15	2	62.5	25.51	1.1	0.45	9	46.8	22.15	1.1	0.62	6

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

Summary of dominant organisms taken in shrimp statistical zone 20 during the June-July 1986 SEAMAP 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					Over 40 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Penaeus															
aztecus	346.0	214.00	4.5	1.86	2	245.0	53.11	5.0	1.08	3	59.0	59.00	2.0	1.95	2
Callinectes															
sapidus	1.0	1.00	0.1	0.09	2	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	2
Trachypenaeus															
spp.	99.0	63.00	0.2	0.05	2	11.6	7.63	0.1	0.03	3	0.0	0.00	0.0	0.00	2
Squilla															
spp.	27.0	21.00	0.1	0.05	2	3.4	1.82	0.1	0.03	3	0.0	0.00	0.0	0.00	2
Penaeus															
duorarum	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	3	167.1	167.14	3.9	3.90	2
Penaeus															
setiferus	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	2
Micropogonias															
undulatus	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	2
Peprilus															
burti	2.0	0.00	0.1	0.00	2	1146.8	1136.62	26.8	26.30	3	260.1	255.86	15.6	15.36	2
Leiostomus															
xanthurus	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	2
Cynoscion															
nothus	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	2
Polydactylus															
octonemus	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	2
Serranus															
atrobranchus	187.0	1.00	1.8	0.86	2	204.1	75.18	2.9	0.97	3	72.6	34.57	1.1	0.42	2
Prionotus															
stearnsi	72.0	10.00	0.3	0.14	2	313.8	119.55	3.0	1.05	3	65.0	55.00	0.3	0.25	2
Larimus															
fasciatus	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	2
Squid	4.0	4.00	0.0	0.05	2	12.7	10.66	0.6	0.56	3	104.4	31.57	2.7	0.33	2

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 June-July 1986 SEAMAP Shrimp and Bottomfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, 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	103.8	20.17	2	126.3	36.88	9	93.2	51.36	6	11.4	3.18	2	48.9	28.10	3	36.6	15.19	2
Total finfish kg	88.7	10.50	2	107.4	31.71	9	72.3	45.52	6	4.5	0.00	2	42.8	28.30	3	28.1	16.43	2
Total crustacean kg	13.0	9.34	2	17.6	6.71	9	19.9	5.85	6	6.8	3.18	2	5.5	1.37	3	5.7	2.08	2
Total others kg	2.1	0.33	2	1.9	0.23	9	2.0	0.47	6	0.5	0.45	2	1.2	0.30	3	2.8	0.84	2
Surface temperature	29.7	0.79	2	29.0	0.36	9	28.1	0.35	7	28.4	0.04	3	25.5	3.13	2	28.7	0.23	3
Midwater temperature	29.7	0.79	2	28.9	0.32	9	27.9	0.42	7	28.2	0.16	3	27.5	0.39	2	25.1	1.56	3
Bottom temperature	29.5	0.54	2	28.2	0.48	9	25.2	0.85	7	22.7	0.11	3	25.6	3.26	2	20.2	1.19	3
Surface salinity	36.2	0.00	1	33.5	1.05	8	35.8	0.34	7	36.5	0.09	3	36.4	0.17	2	36.3	0.15	3
Midwater salinity	34.3	1.87	2	34.0	0.74	9	36.0	0.29	7	36.5	0.04	3	36.5	0.03	2	36.5	0.02	3
Bottom salinity	34.4	1.86	2	34.1	0.76	9	36.4	0.27	7	36.6	0.19	3	36.3	0.24	2	36.6	0.08	3
Surface chlorophyll	1.7	0.54	2	0.6	0.16	9	0.1	0.02	5	0.0	0.00	0	0.1	0.00	1	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	7.0	1.00	2	6.7	0.33	9	6.7	0.23	7	6.6	0.10	3	6.4	0.30	2	6.5	0.25	3
Midwater oxygen	7.0	1.00	2	6.8	0.34	9	6.6	0.37	7	6.8	0.12	3	6.9	0.15	2	6.9	0.35	3
Bottom oxygen	7.0	1.00	2	6.5	0.53	9	7.2	0.34	7	6.9	0.18	3	6.4	0.40	2	5.2	0.38	3



Table 20a  
 Statistical Zone 21  
 40-ft trawls

Summary of dominant organisms taken in shrimp statistical zone 21 during the June-July 1986 SEAMAP 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 above 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															
<u>aztecus</u>	7.5	0.00	0.2	0.00	1	49.3	22.13	0.5	0.27	3	1358.6	507.49	10.9	3.98	9
Trachypenaeus															
<u>spp.</u>	0.0	0.00	0.0	0.00	1	34.8	21.58	0.1	0.08	3	164.6	102.09	0.7	0.42	9
Callinectes															
<u>sapidus</u>	0.0	0.00	0.0	0.00	1	7.6	7.62	1.1	1.08	3	0.0	0.00	0.0	0.00	9
Penaeus															
<u>duorarum</u>	0.0	0.00	0.0	0.00	1	74.2	19.27	1.6	0.98	3	14.5	11.89	0.3	0.24	9
Penaeus															
<u>setiferus</u>	0.0	0.00	0.0	0.00	1	58.1	58.10	2.3	2.29	3	0.0	0.00	0.0	0.00	9
Squilla															
<u>spp.</u>	0.0	0.00	0.0	0.00	1	3.9	2.50	0.0	0.04	3	35.2	19.98	0.3	0.20	9
Micropogonias															
<u>undulatus</u>	3.8	0.00	0.2	0.00	1	1341.5	1323.56	26.9	26.47	3	0.0	0.00	0.0	0.00	9
Leiostomus															
<u>xanthurus</u>	195.0	0.00	3.6	0.00	1	703.5	450.22	13.4	8.26	3	11.3	10.89	0.2	0.23	9
Stenotomus															
<u>caprinus</u>	0.0	0.00	0.0	0.00	1	157.7	85.47	1.0	0.54	3	147.1	105.09	0.9	0.64	9
Polydactylus															
<u>octonemus</u>	26.3	0.00	0.2	0.00	1	173.1	88.49	2.4	1.32	3	1.2	0.84	0.0	0.01	9
Trachurus															
<u>lathamii</u>	0.0	0.00	0.0	0.00	1	7.3	7.33	0.1	0.06	3	9.2	7.21	0.1	0.08	9
Upeneus															
<u>parvus</u>	18.8	0.00	0.2	0.00	1	28.9	24.70	0.3	0.22	3	9.6	4.98	0.1	0.07	9
Cynoscion															
<u>nothus</u>	120.0	0.00	4.4	0.00	1	94.3	84.48	2.3	1.97	3	0.3	0.27	0.0	0.01	9
Serranus															
<u>atrobranchus</u>	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	3	63.5	45.79	0.2	0.15	9
Squid															
<u>spp.</u>	33.8	0.00	0.5	0.00	1	39.8	10.14	0.7	0.35	3	19.4	5.81	0.4	0.13	9

Table 20a (cont'd.)  
 Statistical Zone 21  
 40-ft trawls

Summary of dominant organisms taken in shrimp statistical zone 21 during the June-July 1986 SEAMAP 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 above 30 fm.

SPECIES	21-30 FM					31-40 FM					Over 40 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
<i>Penaeus</i>															
<i>aztecus</i>	553.0	0.00	8.7	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Trachypenaeus</i>															
<i>spp.</i>	5.2	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
<i>Callinectes</i>															
<i>sapidus</i>	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
<i>Penaeus</i>															
<i>duorarum</i>	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
<i>Penaeus</i>															
<i>setiferus</i>	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
<i>Squilla</i>															
<i>spp.</i>	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
<i>Micropogonias</i>															
<i>undulatus</i>	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
<i>Leiostomus</i>															
<i>xanthurus</i>	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
<i>Stenotomus</i>															
<i>caprinus</i>	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
<i>Polydactylus</i>															
<i>octonemus</i>	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
<i>Trachurus</i>															
<i>lathamii</i>	474.8	0.00	5.3	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Upeneus</i>															
<i>parvus</i>	216.5	0.00	2.7	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Cynoscion</i>															
<i>nothus</i>	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
<i>Serranus</i>															
<i>atrobranchus</i>	41.7	0.00	0.4	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Squid</i>	73.0	0.00	0.9	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0

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 June-July 1986 SEAMAP Shrimp and Bottomfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, and oxygen in ppm. No trawl samples were taken above 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	18.8	0.00	1	62.0	39.97	3	17.3	5.30	9	27.3	0.00	1	0.0	0.00	0	0.0	0.00	0
Total finfish kg	17.0	0.00	1	53.9	36.75	3	4.2	1.39	9	16.6	0.00	1	0.0	0.00	0	0.0	0.00	0
Total crustacean kg	1.7	0.00	1	7.4	4.32	3	13.6	4.41	9	8.3	0.00	1	0.0	0.00	0	0.0	0.00	0
Total others kg	1.7	0.00	1	1.2	0.16	3	2.0	0.21	9	1.2	0.00	1	0.0	0.00	0	0.0	0.00	0
Surface temperature	31.0	0.00	1	29.7	0.91	3	28.0	0.80	11	0.0	0.00	0	28.4	0.00	1	28.8	0.00	1
Midwater temperature	30.8	0.00	1	29.2	1.17	3	27.7	1.01	11	0.0	0.00	0	28.2	0.00	1	27.5	0.00	1
Bottom temperature	30.5	0.00	1	27.7	0.95	3	25.9	0.79	11	0.0	0.00	0	22.4	0.00	1	21.1	0.00	1
Surface salinity	36.4	0.00	1	36.4	0.06	3	36.5	0.02	11	0.0	0.00	0	36.4	0.00	1	36.5	0.00	1
Midwater salinity	36.4	0.00	1	36.5	0.08	3	36.6	0.11	11	0.0	0.00	0	36.5	0.00	1	36.6	0.00	1
Bottom salinity	36.4	0.00	1	36.0	0.38	3	36.4	0.06	11	0.0	0.00	0	36.8	0.00	1	36.6	0.00	1
Surface chlorophyll	0.6	0.00	1	0.2	0.00	2	0.1	0.03	5	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	8.3	0.00	1	8.2	0.00	3	7.3	0.22	11	0.0	0.00	0	6.9	0.00	1	6.9	0.00	1
Midwater oxygen	8.3	0.00	1	8.2	0.00	3	7.4	0.21	11	0.0	0.00	0	7.0	0.00	1	7.3	0.00	1
Bottom oxygen	8.3	0.00	1	8.2	0.03	3	7.5	0.22	11	0.0	0.00	0	5.8	0.00	1	5.9	0.00	1

\*Plankton and environmental stations only.

Table 21a  
 Statistical Zone 11  
 16-ft trawls

Summary of dominant organisms taken within shrimp statistical zone 11 during the June-July 1986 SEAMAP Shrimp and Bottomfish Survey in the 0-5 fm 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 in that zone are given.

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>	38.0	12.17	0.9	0.24	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Sicyonia															
<i>dorsalis</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
Chloroscombrus															
<i>chrysurus</i>	8.0	5.29	0.0	0.00	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Arius															
<i>felis</i>	4.0	4.00	0.4	0.36	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Symphurus															
<i>plagiusa</i>	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
Peprilus															
<i>burti</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
Squid															
	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	0

Table 21b  
 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 June-July 1986 SEAMAP Shrimp and Bottomfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, and oxygen in ppm. No trawl samples were taken above 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	1.8	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	0.0	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 crustacean kg	1.8	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	29.5	0.07	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 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	28.5	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
Surface salinity	23.1	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 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	26.5	1.92	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	3.0	0.39	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	6.6	0.06	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 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	5.1	1.03	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 22a  
 Statistical Zone 12  
 16-ft trawls

Summary of dominant organisms taken in shrimp statistical zone 12 during the June-July 1986 SEAMAP Shrimp and Bottomfish Survey in the 0-5 fm 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 in that zone are given.

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															
sapidus	46.0	46.00	6.6	6.64	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Selene															
setapinnis	12.0	12.00	0.5	0.55	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Arius															
felis	2.0	2.00	0.5	0.55	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Squid	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	0

Table 22b  
 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 June-July 1986 SEAMAP Shrimp and Bottomfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, and oxygen in ppm. No trawl samples were taken above 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	8.2	6.86	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	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	6.4	6.36	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	27.3	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 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	26.0	1.18	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
Surface salinity	26.5	1.84	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	30.8	2.84	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	9.5	2.17	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
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	0.50	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	7.2	0.86	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 23a  
 Statistical Zone 13  
 16-ft trawls

Summary of dominant organisms taken in shrimp statistical zone 13 during the June-July 1986 SEAMAP Shrimp and Bottomfish Survey in the 0-5 fm 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 in that zone are given.

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>	114.0	111.01	0.6	0.64	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>	2.0	2.00	0.4	0.36	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Callinectes</i>															
<i>similis</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>Micropogonias</i>															
<i>undulatus</i>	82.0	76.08	0.5	0.55	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Chloroscombrus</i>															
<i>chrysurus</i>	8.0	5.29	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>	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
<i>Anchoa</i>															
<i>nasuta</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>Symphurus</i>															
<i>plagiusa</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>Sphoeroides</i>															
<i>parvus</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>Squid</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



Table 23b  
 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 June-July 1986 SEAMAP Shrimp and Bottomfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, and oxygen in ppm. No trawl samples were taken above 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	1.8	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	0.9	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	32.1	0.30	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	30.8	0.41	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
Surface salinity	11.5	1.68	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	24.1	4.10	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
Surface chlorophyll	34.0	1.89	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	13.2	1.35	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	5.0	2.78	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 24a  
 Statistical Zone 14  
 16-ft trawls

Summary of dominant organisms taken in shrimp statistical zone 14 during the June-July 1986 SEAMAP Shrimp and Bottomfish Survey in the 0-5 fm 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 in that zone are given.

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	45.0	39.31	0.3	0.27	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Callinectes															
sapidus	15.0	12.66	1.7	1.24	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Callinectes															
similis	1.0	1.00	0.0	0.05	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Libinia															
dubia	1.0	1.00	0.0	0.05	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Trachypenaeus															
constrictus	1.0	1.00	0.0	0.05	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Penaeus															
setiferus	1.0	1.00	0.1	0.09	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Anchoa															
mitchilli	1148.0	1104.16	0.7	0.62	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Micropogonias															
undulatus	54.0	54.00	0.4	0.41	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Leiostomus															
xanthurus	22.0	22.00	0.2	0.23	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Anchoa															
hepsetus	10.0	8.85	0.1	0.06	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Menidia															
beryllina	4.0	4.00	0.0	0.05	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Trichiurus															
lepturus	2.0	2.00	0.1	0.09	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Arius															
felis	2.0	1.26	0.8	0.67	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Prionotus															
rubio	1.0	1.00	0.0	0.05	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Squid	68.0	36.85	0.3	0.16	6	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0

Table 24b  
 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 June-July 1986 SEAMAP Shrimp and Bottomfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, and oxygen in ppm. No trawl samples were taken above 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	5.5	2.11	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	2.7	1.41	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	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	30.5	0.17	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	30.3	0.15	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	26.7	0.85	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	27.7	1.21	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	6.8	2.25	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 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	0.31	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	5.8	0.45	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

Table 25a  
 Statistical Zone 16  
 16-ft trawls

Summary of dominant organisms taken in shrimp statistical zone 16 during the June-July 1986 SEAMAP Shrimp and Bottomfish Survey in the 0-5 fm 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 in that zone are given.

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>Callinectes</i>															
<i>sapidus</i>	64.0	55.24	3.5	1.97	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>	38.0	19.70	0.2	0.18	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Callinectes</i>															
<i>similis</i>	16.0	10.58	0.1	0.09	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>	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>Palaemon</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>Ovalipes</i>															
<i>floridanus</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>	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
<i>Lutjanus</i>															
<i>synagris</i>	22.0	22.00	0.0	0.00	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Paralichthys</i>															
<i>lethostigma</i>	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
<i>Citharichthys</i>															
<i>spilopterus</i>	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
<i>Cynoscion</i>															
<i>arenarius</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>Symphurus</i>															
<i>plagiusa</i>	8.0	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
<i>Arius</i>															
<i>felis</i>	6.0	6.00	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>	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
<i>Squid</i>	14.0	14.00	0.0	0.00	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0

Table 25b  
 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 June-July 1986 SEAMAP Shrimp and Bottomfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, and oxygen in ppm. No trawl samples were taken above 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	5.5	1.57	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
Total finfish kg	1.8	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	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 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	29.8	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	29.9	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
Surface salinity	20.4	6.87	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	21.2	7.23	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
Surface chlorophyll	5.7	1.79	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	6.2	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	5.6	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

Table 26a  
 Statistical Zone 17  
 16-ft trawls

Summary of dominant organisms taken in shrimp statistical zone 17 during the June-July 1986 SEAMAP Shrimp and Bottomfish Survey in the 0-5 fm 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 in that zone are given.

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
Xiphopenaeus															
<u>kroyeri</u>	144.0	86.81	0.5	0.27	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Penaeus															
<u>aztecus</u>	46.0	24.58	0.2	0.09	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Callinectes															
<u>sapidus</u>	32.0	26.23	5.8	5.28	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Penaeus															
<u>setiferus</u>	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
Symphurus															
<u>plagiusa</u>	292.0	177.22	2.5	1.42	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Stellifer															
<u>lanceolatus</u>	242.0	128.51	1.1	0.57	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Cynoscion															
<u>arenarius</u>	124.0	100.96	0.7	0.48	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Anchoa															
<u>mitchilli</u>	52.0	31.24	0.2	0.09	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Micropogonias															
<u>undulatus</u>	28.0	17.44	0.4	0.36	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Leiostomus															
<u>xanthurus</u>	24.0	15.87	0.4	0.24	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Lagodon															
<u>rhomboides</u>	12.0	6.93	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>	10.0	10.00	0.2	0.18	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Squid															
<u></u>	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	0

Table 26b  
 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 June-July 1986 SEAMAP Shrimp and Bottomfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, and oxygen in ppm. No trawl samples were taken above 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	12.7	7.93	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	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	7.3	5.96	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	30.0	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 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	0.32	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
Surface salinity	21.2	0.76	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	22.2	0.47	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	12.9	4.49	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 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	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 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	3.9	1.04	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

Table 27. SEAMAP Fall Groundfish Survey species composition list, 361 trawl stations, for those vessels that used a 40-ft trawl. Species with a total weight of less than 0.0227 kg (0.05 lb) 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>					
Stenotomus caprinus	longspine porgy	23224	748.1	205	55.9
Micropogonias undulatus	Atlantic croaker	19438	1164.8	206	56.1
Chloroscombrus chrysurus	Atlantic bumper	11335	151.1	133	36.2
Arius felis	hardhead catfish	6907	723.6	111	30.2
Peprilus burti	gulf butterfish	4788	278.8	134	36.5
Trachurus lathami	rough scad	4516	126.0	116	31.6
Cynoscion spp.	seatrouts	3689	12.6	33	9.0
Leiostomus xanthurus	spot	3353	362.5	142	38.7
Anchoa hepsetus	striped anchovy	3221	56.1	57	15.5
Prionotus rubio	blackfin searobin	2871	98.5	147	40.1
Lagodon rhomboides	pinfish	2860	200.7	156	42.5
Cynoscion nothus	silver seatrout	2663	116.4	109	29.7
Serranus atrobranchus	blackear bass	2508	40.5	88	24.0
Trichiurus lepturus	Atlantic cutlassfish	1961	64.1	95	25.9
Sphoeroides parvus	least puffer	1856	13.0	97	26.4
Centropristis philadelphica	rock sea bass	1747	68.2	173	47.1
Cynoscion arenarius	sand seatrout	1687	117.3	123	33.5
Etrumeus teres	round herring	1666	18.0	24	6.5
Diplectrum bivittatum	dwarf sand perch	1636	30.5	116	31.6
Pristipomoides aquilonaris	wenchman	1560	92.5	92	25.1
Etropus crossotus	fringed flounder	1333	26.7	85	23.2
Halieutichthys aculeatus	pancake batfish	1153	8.4	85	23.2
Synodus foetens	inshore lizardfish	1146	149.3	221	60.2
Steindachneria argentea	luminous hake	998	6.6	6	1.6



Table 27. 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>Prionotus paralatus</i>	Mexican searobin	957	35.3	66	18.0
<i>Stellifer lanceolatus</i>	star drum	903	19.5	25	6.8
<i>Syacium</i> spp.	lefteye flounders	789	25.5	65	17.7
<i>Rhomboplites aurorubens</i>	vermilion snapper	767	22.5	19	5.2
<i>Porichthys plectrodon</i>	Atlantic midshipman	750	12.6	104	28.8
<i>Anchoa mitchilli</i>	bay anchovy	706	1.0	19	5.2
<i>Lutjanus campechanus</i>	red snapper	699	32.8	108	29.4
<i>Pontinus longispinis</i>	longspine scorpionfish	678	26.1	34	9.3
<i>Upeneus parvus</i>	dwarf goatfish	644	24.5	71	19.3
<i>Prionotus stearnsi</i>	shortwing searobin	633	8.9	65	17.7
<i>Trichopsetta ventralis</i>	sash flounder	545	14.0	45	12.3
<i>Syacium gunteri</i>	shoal flounder	529	10.2	67	18.3
<i>Peristedion gracile</i>	slender searobin	500	9.3	16	4.4
<i>Harengula jaguana</i>	scaled sardine	471	25.6	43	11.7
<i>Citharichthys spilopterus</i>	bay whiff	348	4.5	58	15.8
<i>Chaetodipterus faber</i>	Atlantic spadefish	344	20.2	61	16.6
<i>Larimus fasciatus</i>	banded drum	312	6.9	26	7.1
<i>Syacium papillosum</i>	dusky flounder	312	23.1	33	9.0
<i>Prionotus salmonicolor</i>	blackwing searobin	309	16.4	44	12.0
<i>Eucinostomus gula</i>	silver jenny	304	8.5	44	12.0
<i>Prionotus scitulus</i>	leopard searobin	302	10.0	29	7.9
<i>Anchoa nasuta</i>	longnose anchovy	300	0.6	22	6.0
<i>Diplectrum formosum</i>	sand perch	292	21.7	29	7.9
<i>Menticirrhus americanus</i>	southern kingfish	278	25.0	31	8.4
<i>Lepophidium graellsii</i>	blackedge cusk-eel	271	15.0	52	14.2
<i>Saurida brasiliensis</i>	largescale lizardfish	257	2.2	51	13.9

Table 27. 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>Sphyræna borealis</i>	northern sennet	6	0.7	4	1.1
<i>Urophycis regia</i>	spotted hake	6	0.8	3	0.8
<i>Prionotus martis</i>	barred searobin	6	0.3	1	0.3
<i>Engyophrys senta</i>	spiny flounder	6	0.0	2	0.5
<i>Symphurus diomedianus</i>	spottedfin tonguefish	5	0.0	4	1.1
Ogcocephalidae	batfishes	5	1.5	2	0.5
<i>Calamus nodosus</i>	knobbed porgy	5	1.5	3	0.8
<i>Epinephelus niveatus</i>	snowy grouper	5	0.7	2	0.5
<i>Hemanthias leptus</i>	longtail bass	5	0.2	2	0.5
Gadiformes	codlets	5	0.0	1	0.3
<i>Mustelus canis</i>	smooth dogfish	5	9.4	5	1.4
<i>Raja texana</i>	roundel skate	5	2.0	5	1.4
<i>Paraconger</i> spp.	conger eel	4	0.5	1	0.3
<i>Gymnothorax nigromarginatus</i>	blackedge moray	4	0.5	2	0.5
<i>Hemanthias vivanus</i>	red barbier	4	0.9	2	0.5
<i>Serranus phoebe</i>	tattler	4	0.2	4	1.1
<i>Hemicaranx amblyrhynchus</i>	bluntnose jack	4	0.2	3	0.8
<i>Calamus leucosteus</i>	whitebone porgy	4	0.4	2	0.5
<i>Gunterichthys longipenis</i>	gold brotula	4	0.1	2	0.5
<i>Synchiropus agassizii</i>	dragonet	4	0.2	3	0.8
<i>Monolene</i> spp.	lefteye flounders	4	0.1	2	0.5
<i>Opsanus beta</i>	gulf toadfish	3	0.4	3	0.8
<i>Lactophrys quadricornis</i>	scrawled cowfish	3	1.2	3	0.8
<i>Scomberomorus cavalla</i>	king mackerel	3	0.8	2	0.5
<i>Antigonia capros</i>	deepbody boarfish	3	0.1	2	0.5
<i>Gymnothorax saxicola</i>	ocellated moray	3	0.5	3	0.8

Table 27. 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>Dasyatis americana</i>	southern stingray	2	2.5	2	0.5
<i>Mugil cephalus</i>	striped mullet	2	0.3	1	0.3
<i>Antigonia combatia</i>	shortspine boarfish	2	0.1	2	0.5
<i>Bregmaceros atlanticus</i>	antenna codlet	2	0.0	2	0.5
<i>Selar crumenophthalmus</i>	bigeye scad	2	0.1	2	0.5
<i>Apogon aurolineatus</i>	bridle cardinalfish	2	0.0	1	0.3
<i>Rachycentron canadum</i>	cobia	2	0.3	2	0.5
<i>Echeneis naucrates</i>	sharksucker	2	0.7	2	0.5
<i>Trachinotus carolinus</i>	Florida pompano	2	0.7	1	0.3
<i>Lutjanus griseus</i>	grey snapper	2	0.1	1	0.3
<i>Scorpaena brasiliensis</i>	barbfish	2	0.5	1	0.3
<i>Gobionellus hastatus</i>	sharptail goby	2	0.0	1	0.3
<i>Chromis enchrysurus</i>	yellowtail reeffish	2	0.2	1	0.3
<i>Archosargus probatocephalus</i>	sheepshead	2	1.8	1	0.3
<i>Sphoeroides spengleri</i>	bandtail puffer	2	0.5	1	0.3
<i>Aluterus heudeloti</i>	dotterel filefish	2	0.5	2	0.5
<i>Chilomycterus schoepfi</i>	striped burrfish	2	1.0	2	0.5
<i>Ogcocephalus radiatus</i>	polka-dot batfish	2	0.5	2	0.5
<i>Bothus ocellatus</i>	peacock flounder	2	0.0	1	0.3
<i>Monolene megalepis</i>	deepwater flounder	1	0.1	1	0.3
<i>Bellator spp.</i>	searobin	1	0.0	1	0.3
<i>Dibranchius atlanticus</i>	offshore batfish	1	0.0	1	0.3
Lophiidae	goosefishes	1	0.5	1	0.3
<i>Aluterus monoceros</i>	unicorn filefish	1	0.7	1	0.3
<i>Canthigaster rostrata</i>	sharpnose puffer	1	0.1	1	0.3
<i>Decodon sp.</i>	hogfish	1	0.0	1	0.3

Table 27. SEAMAP Species Composition (cont'd.)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OF OCCURRENCE
Diplodus holbrooki	spottail pinfish	1	0.1	1	0.3
Equetus punctatus	spotted drum	1	0.5	1	0.3
Menticirrhus littoralis	gulf kingfish	1	0.0	1	0.3
Ariomma bondi	silver-rag	1	0.1	1	0.3
Prionotus carolinus	northern searobin	1	0.1	1	0.3
Nomeus gronovii	man-of-war fish	1	0.0	1	0.3
Phaeoptyx conklini	conchfish	1	0.1	1	0.3
Alectis crinitus	African pompano	1	0.0	1	0.3
Physiculus fulvus	morid codlet	1	0.0	1	0.3
Physiculus sp.	morid cod	1	0.0	1	0.3
Urophycis spp.	hakes	1	0.1	1	0.3
Holocentrus ascensionis	spinycheek soldierfish	1	0.0	1	0.3
Macrorhamphosus scolopax	longspine snipefish	1	0.0	1	0.3
Hoplostethus occidentalis	slimehead	1	0.0	1	0.3
Hippocampus spp.	seahorses	1	0.0	1	0.3
Apogon spp.	cardinalfishes	1	0.0	1	0.3
Epinephelus nigritus	warsaw grouper	1	4.5	1	0.3
Dasyatis sabina	Atlantic stingray	1	1.0	1	0.3
Raja lentiginosa	freckled skate	1	0.5	1	0.3
Rhinoptera bonasus	cownose ray	1	2.4	1	0.3
Dasyatis sayi	bluntnose stingray	1	1.4	1	0.3
Carcharhinus acronotus	blacknose shark	1	1.4	1	0.3
Gymnothorax spp.	morays	1	0.1	1	0.3
Myctophidae	lanternfishes	1	0.0	1	0.3
Ophichthus rex	giant snake eel	1	4.5	1	0.3
Ophichthus ocellatus	palespotted eel	1	0.9	1	0.3

Table 27. 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>Dorosoma petenense</i>	threadfin shad	1	0.0	1	0.3
<i>Engraulis eurystole</i>	silver anchovy	1	0.0	1	0.3
<i>Ginglymostoma cirratum</i>	nurse shark	1	0.0	1	0.3
<u>Crustaceans</u>					
<i>Callinectes similis</i>	lesser blue crab	7295	156.9	197	53.7
<i>Penaeus aztecus</i>	brown shrimp	5360	103.8	226	61.6
<i>Trachypenaeus</i> spp.	roughneck shrimps	2871	8.8	109	29.7
<i>Portunus gibbesii</i>	iridescent swimming crab	2724	18.2	140	38.1
<i>Penaeus setiferus</i>	white shrimp	2587	48.5	86	23.4
<i>Portunus spinicarpus</i>	longspine swimming crab	1469	12.0	73	19.9
<i>Sicyonia brevirostris</i>	brown rock shrimp	1246	24.8	69	18.8
<i>Squilla</i> spp.	mantis shrimps	923	11.8	94	25.6
<i>Squilla empusa</i>	mantis shrimp	862	8.4	40	10.9
<i>Trachypenaeus similis</i>	roughneck shrimp	802	1.6	8	2.2
<i>Solenocera</i> spp.	humpback shrimp	514	3.3	61	16.6
<i>Portunus spinimanus</i>	blotched swimming crab	485	10.0	44	12.0
<i>Sicyonia dorsalis</i>	lesser rock shrimp	355	2.9	45	12.3
<i>Penaeus duorarum</i>	pink shrimp	265	6.8	49	13.4
<i>Parapenaeus</i> spp.	penaeid shrimp	220	0.9	10	2.7
<i>Xiphopenaeus kroyeri</i>	seabob	188	1.0	2	0.5
<i>Trachypenaeus constrictus</i>	roughneck shrimp	153	0.1	7	1.9
<i>Anasimus latus</i>	stilt spider crab	82	1.4	19	5.2
<i>Callinectes sapidus</i>	blue crab	74	5.7	15	4.1
<i>Calappa sulcata</i>	yellow box crab	58	13.1	23	6.3
<i>Myropsis quinquespinosa</i>	fivespine purse crab	50	0.5	12	3.3

Table 27. 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>Raninoides louisianensis</i>	gulf frog crab	36	0.6	18	4.9
<i>Acanthocarpus alexandri</i>	gladiator box crab	34	0.5	9	2.5
<i>Parapenaeus politus</i>	deepwater rose shrimp	34	0.1	1	0.3
<i>Scyllarus chacei</i>	chace Spanish lobster	30	0.2	3	0.8
<i>Hepatus epheliticus</i>	calico box crab	18	2.0	10	2.7
<i>Libinia emarginata</i>	portly spider crab	18	3.6	7	1.9
<i>Tetraxanthus rathbunae</i>	inflated mud crab	12	0.1	5	1.4
Paguridae	right-handed hermit crabs	12	0.6	6	1.6
<i>Ethusa microphthalma</i>	broadback sumo crab	11	0.2	6	1.6
<i>Podochela sidneyi</i>	shortfinger neck crab	8	0.0	3	0.8
<i>Ovalipes ocellatus</i>	lady crab	7	0.2	3	0.8
Reptantia	lobster	7	0.0	2	0.5
<i>Stenorhynchus seticornis</i>	yellowline arrow crab	6	0.1	6	1.6
<i>Porcellana sigsbeiana</i>	striped porcelain	6	0.0	2	0.5
Pinnotheridae	pea crabs	5	0.0	1	0.3
Xanthidae	mud crabs	5	0.2	5	1.4
<i>Hexapanopeus</i> spp.	mud crab	4	0.0	2	0.5
Stenopodidae	coral shrimp	4	0.0	1	0.3
<i>Ovalipes floridanus</i>	Florida lady crab	4	0.1	2	0.5
<i>Arenaeus cribrarius</i>	speckled swimming crab	4	0.1	1	0.3
<i>Calappa flammea</i>	flame box crab	4	0.6	3	0.8
Majidae	spider crabs	4	0.1	3	0.8
<i>Munida forceps</i>	squat lobster	4	0.0	4	1.1
<i>Munida</i> spp.	galatheid	4	0.1	2	0.5
<i>Ethusa</i> spp.	sumo crabs	3	0.0	2	0.5
<i>Scyllarus depressus</i>	scaled slipper lobster	3	0.0	2	0.5

Table 27. 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>Scyllarides delfosi</i>	three-spot slipper lobster	3	0.9	2	0.5
<i>Parapandalus longicauda</i>	boreal red shrimp	3	0.0	1	0.3
<i>Squilla brasiliensis</i>	mantis shrimp	3	0.0	1	0.3
<i>Lysmata wurdemanni</i>	peppermint shrimp	2	0.0	1	0.3
<i>Sicyonia burkenroadi</i>	spiny rock shrimp	2	0.0	1	0.3
Caridea	caridean shrimps	2	0.0	1	0.3
<i>Pagurus</i> spp.	hermit crabs	2	0.1	1	0.3
<i>Persephona mediterranea</i>	mottled purse crab	2	0.0	2	0.5
<i>Scyllarides nodifer</i>	ridged slipper lobster	2	0.8	2	0.5
<i>Stenocionops spinosissimus</i>	tenspine spider crab	2	1.7	2	0.5
<i>Speocarcinus lobatus</i>	gulf squareback crab	2	0.0	1	0.3
Parthenopidae	elbow crabs	1	0.0	1	0.3
<i>Frevillea hirsuta</i>	tufted broadface crab	1	0.0	1	0.3
<i>Parthenope</i> spp.	elbow crabs	1	0.0	1	0.3
<i>Leiolambrus nitidus</i>	white elbow crab	1	0.0	1	0.3
<i>Stenocionops spinimanus</i>	prickly spider crab	1	0.0	1	0.3
<i>Pyromaia cuspidata</i>	dartnose pear crab	1	0.0	1	0.3
<i>Scyllarus</i> spp.	slipper lobsters	1	0.0	1	0.3
<i>Ovalipes</i> spp.	lady crabs	1	0.1	1	0.3
<i>Ovalipes stephensoni</i>	coarsehand lady crab	1	0.1	1	0.3
<i>Libinia dubia</i>	longnose spider crab	1	0.2	1	0.3
<i>Eurypanopeus depressus</i>	flatback mud crab	1	0.0	1	0.3
<i>Stenopus</i> spp.	coral shrimp	1	0.0	1	0.3
<i>Plesionika edwardsii</i>	soldier striped shrimp	1	0.0	1	0.3
<i>Plesionika</i> spp.	pandalid shrimps	1	0.0	1	0.3
Pandalidae	pandalid shrimps	1	0.0	1	0.3

Table 27. SEAMAP Species Composition (cont'd.)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OF OCCURRENCE
<u>Others</u>					
<i>Loligo pealeii</i>	longfin squid	2039	53.9	138	37.6
<i>Lolliguncula brevis</i>	Atlantic brief squid	1756	17.8	72	19.6
Asteroidea	starfishes	1217	37.4	46	12.5
<i>Mellita quinquiesperforata</i>	five-slotted sand dollar	955	2.9	7	1.9
<i>Argopecten gibbus</i>	Atlantic calico scallop	536	10.1	10	2.7
Myopsida	squids	474	9.5	39	10.6
<i>Amusium papyraceum</i>	paper scallop	298	4.3	35	9.5
<i>Loligo pleii</i>	arrow squid	295	15.7	38	10.4
Spatangidae	heart urchins	268	7.5	8	2.2
<i>Aurelia</i> spp.	jellyfishes	251	100.5	36	9.8
<i>Moira atropos</i>	heart-urchin	107	4.8	5	1.4
<i>Aequipecten glyptus</i>	red-ribbed scallop	87	1.5	7	1.9
<i>Tellina</i> spp.	tellin shells	50	1.6	1	0.3
<i>Astropecten</i>	sea stars	43	0.0	13	3.5
Porifera	sponges	33	77.7	9	2.5
Anthozoa	anthozoans	29	0.9	6	1.6
<i>Scaphella dubia</i>	dubious volute	24	3.1	3	0.8
Bryozoa	moss animals	19	0.1	5	1.4
<i>Luidia clathrata</i>	sea star	19	0.5	4	1.1
<i>Polinices duplicatus</i>	moonshell	17	0.0	1	0.3
Aphroditidae	tube worms	14	0.4	4	1.1
Ophiuroidea	brittlestars	12	0.0	2	0.5
<i>Murex beauii</i>	beau's murex	12	0.5	2	0.5
<i>Aequipecten</i> spp.	scallops	11	0.1	2	0.5



Table 27. 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>Polystira tellea</i>	delicate giant turret	9	0.2	3	0.8
<i>Anadara baughmani</i>	Baughman ark	9	0.3	6	1.6
<i>Clypeaster</i> spp.	cake urchins	9	1.2	2	0.5
Scutellidae	sand dollars	8	1.3	3	0.8
<i>Atrina serrata</i>	sawtooth penshell	8	2.0	1	0.3
<i>Macoma constricta</i>	constricted macoma	7	0.1	1	0.3
Pectinidae	scallops	6	0.0	1	0.3
<i>Caudina arenata</i>	sea cucumbers	4	0.3	1	0.3
<i>Renilla</i> spp.	sea pansies	4	0.0	3	0.8
Pyrosomida	ascidians	4	1.8	1	0.3
Holothuroidea	sea cucumbers	4	2.4	2	0.5
Ascidiacea	sea squirts	3	0.1	1	0.3
Cubomedusae	sea wasps	3	0.3	3	0.8
<i>Pitar cordatus</i>	Schwengel pitar	3	0.1	2	0.5
Actinidae	anemones	3	0.3	1	0.3
Sipunculidae	unsegmented worms	3	0.1	1	0.3
Polychaeta	bristleworms	3	0.0	1	0.3
<i>Luidia alternata</i>	sea star	2	0.0	1	0.3
<i>Mediaster</i> spp.	starfish	2	0.5	1	0.3
<i>Goniaster tessellatus</i>	starfish	2	0.1	2	0.5
<i>Pitar</i> spp.	pitar shell	2	0.0	2	0.5
<i>Abralia veranyi</i>	Verany's abralia	2	0.0	1	0.3
Madreporaria	corals	2	0.0	1	0.3
Tunicata	tunicates	2	0.0	1	0.3
<i>Polystira albida</i>	white giant-turris	2	0.0	1	0.3
<i>Fusinus couei</i>	Yucatan spindle	2	0.0	2	0.5

Table 27. 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>Sargassum filipendula</i>	sargassum	2	0.4	1	0.3
<i>Ophioderma</i> spp.	brittle star	1	0.0	1	0.3
<i>Fasciolaria</i> spp.	tulip shells	1	0.0	1	0.3
<i>Murex cabritii</i>	Cabrit murex	1	0.0	1	0.3
<i>Murex</i>	murexes	1	0.0	1	0.3
<i>Distorsio clathrata</i>	Atlantic distorsio	1	0.0	1	0.3
<i>Sconsia striata</i>	royal bonnet	1	0.0	1	0.3
<i>Sconsia</i> spp.	bonnet shell	1	0.0	1	0.3
<i>Opisthobranchia</i>	gastropods	1	0.5	1	0.3
Turridae	slit shells	1	0.0	1	0.3
<i>Anadara</i> spp.	ark shells	1	0.0	1	0.3
<i>Conus</i> spp.	cone shells	1	0.0	1	0.3
<i>Nemocardium</i> spp.	cockle	1	0.0	1	0.3
<i>Octopus vulgaris</i>	common octopus	1	0.0	1	0.3
<i>Ommastrephes</i> spp.	squid	1	0.0	1	0.3
Gorgonidae	gorgons	1	0.0	1	0.3

Table 28. SEAMAP Fall Groundfish Trawl Survey species composition list, 40 trawl stations, for those vessels that used a 20-ft trawl. Species with a total weight of less than 0.0227 kg (0.05 lb) 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>					
Cynoscion nothus	silver seatrout	223	1.0	21	52.5
Stellifer lanceolatus	star drum	76	1.0	18	45.0
Symphurus plagiusa	blackcheek tonguefish	60	0.4	14	35.0
Cynoscion arenarius	sand seatrout	23	0.8	13	32.5
Lagodon rhomboides	pinfish	19	0.3	9	22.5
Syacium gunteri	shoal flounder	18	0.2	11	27.5
Selene setapinnis	Atlantic moonfish	10	0.0	4	10.0
Arius felis	hardhead catfish	9	0.5	6	15.0
Micropogonias undulatus	Atlantic croaker	8	0.3	7	17.5
Trichiurus lepturus	Atlantic cutlassfish	8	0.1	5	12.5
Etropus crossotus	fringed flounder	7	0.0	5	12.5
Chaetodipterus faber	Atlantic spadefish	6	0.0	3	7.5
Peprilus burti	gulf butterfish	5	0.1	3	7.5
Anchoa mitchilli	bay anchovy	5	0.1	3	7.5
Chloroscombrus chrysurus	Atlantic bumper	4	0.0	3	7.5
Citharichthys spilopterus	bay whiff	4	0.0	3	7.5
Peprilus alepidotus	harvestfish	3	0.0	2	5.0
Sphoeroides parvus	least puffer	3	0.0	3	7.5
Dorosoma petenense	threadfin shad	3	0.1	1	2.5
Synodus foetens	inshore lizardfish	2	0.2	1	2.5
Anchoa lyolepis	dusky anchovy	2	0.0	1	2.5
Hemicaranx amblyrhynchus	bluntnose jack	2	0.0	2	5.0
Leiostomus xanthurus	spot	2	0.1	1	2.5
Syacium papillosum	dusky flounder	2	0.0	1	2.5
Paralichthys lethostigma	southern flounder	1	1.8	1	2.5
Trinectes maculatus	hogchoker	1	0.0	1	2.5

Table 28. SEAMAP Species Composition (cont'd.)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER	TOTAL WEIGHT	NUMBER OF	% FREQUENCY
		CAUGHT	CAUGHT (KG)	TOWS WHERE CAUGHT	OF OCCURRENCE
Lagocephalus laevigatus	smooth puffer	1	0.0	1	2.5
Prionotus tribulus	bighead searobin	1	0.0	1	2.5
Orthopristis chrysoptera	pigfish	1	0.0	1	2.5
Menticirrhus americanus	southern kingfish	1	0.0	1	2.5
Selene vomer	lookdown	1	0.0	1	2.5
Lutjanus campechanus	red snapper	1	0.0	1	2.5
Brevoortia patronus	gulf menhaden	1	0.0	2	5.0
Sardinella aurita	Spanish sardine	1	0.0	1	2.5
<u>Crustaceans</u>					
Penaeus setiferus	white shrimp	251	1.3	25	62.5
Callinectes similis	lesser blue crab	190	0.5	21	52.5
Squilla empusa	mantis shrimp	98	0.3	16	40.0
Xiphopenaeus kroyeri	seabob	85	0.4	10	25.0
Portunus gibbesii	iridescent swimming crab	74	0.4	26	65.0
Squilla spp.	mantis shrimps	32	0.3	5	12.5
Trachypenaeus spp.	roughneck shrimps	30	0.0	9	22.5
Sicyonia dorsalis	lesser rock shrimp	13	0.0	9	22.5
Pagurus pollicaris	flatclaw hermit crab	12	0.1	6	15.0
Penaeus duorarum	pink shrimp	11	0.0	5	12.5
Penaeus aztecus	brown shrimp	6	0.0	5	12.5
Libinia emarginata	portly spider crab	6	0.0	4	10.0
Hepatus epheliticus	calico box crab	6	0.0	4	10.0
Calappa sulcata	yellow box crab	4	1.2	4	10.0
Portunus spinimanus	blotched swimming crab	3	0.0	3	7.5

Table 28. 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>Metoporphaphis calcarata</i>	false arrow crab	3	0.0	2	5.0
<i>Persephona mediterranea</i>	mottled purse crab	3	0.0	2	5.0
<i>Clibanarius vittatus</i>	thin-striped hermit crab	2	0.0	1	2.5
<i>Callinectes sapidus</i>	blue crab	2	0.0	1	2.5
<i>Stenorhynchus seticornis</i>	yellowline arrow crab	2	0.0	2	5.0
<i>Parthenope serrata</i>	sawtooth elbow crab	2	0.0	2	5.0
<i>Speocarcinus lobatus</i>	mud crab	1	0.0	1	2.5
<i>Arenaeus cribrarius</i>	speckled swimming crab	1	0.0	1	2.5
<i>Libinia dubia</i>	longnose spider crab	1	0.0	1	2.5
<i>Callinassa jamaicensis</i>	estuarine goast shrimp	1	0.0	1	2.5
<i>Alpheus heterochaelis</i>	bigclawed snapping shrimp	1	0.0	1	2.5
<u>Others</u>					
<i>Lolliguncula brevis</i>	Atlantic brief squid	164	1.1	25	62.5
<i>Actinia</i> sp.	anemones	84	0.8	6	15.0
<i>Renilla mulleri</i>	short-stemmed sea pansy	76	0.1	4	10.0
<i>Neverita duplicata</i>	shark eye	26	0.2	4	10.0
<i>Dactylometra quinquecirrha</i>	compass jellyfish	10	0.3	2	5.0
Asteroidea	starfishes	5	0.0	2	5.0
<i>Noetia ponderosa</i>	ponderous ark	5	0.1	3	7.5
<i>Busycon perversum</i>	perverse whelk	3	0.0	1	2.5
<i>Anadara ovalis</i>	blood ark	2	0.0	1	2.5
<i>Mellita quinquesperforata</i>	five-slotted sand dollar	2	0.0	2	5.0
<i>Aurelia aurita</i>	moon jellyfish	1	0.2	1	2.5
<i>Cantharus cancellarius</i>	cancellate cantharus	1	0.0	1	2.5
<i>Thais haemastoma</i>	rock snail	1	0.0	1	2.5

Table 29. SEAMAP Fall Groundfish Trawl Survey species composition list, 15 trawl stations, for those vessels that used a 16-ft trawl. Species with a total weight of less than 0.0227 kg (0.05 lb) 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	2371	4.0	13	86.7
Chloroscombrus chrysurus	Atlantic bumper	853	1.2	8	53.3
Stellifer lanceolatus	star drum	585	1.5	8	53.3
Symphurus plagiusa	blackcheek tonguefish	259	1.4	10	66.7
Cynoscion arenarius	sand seatrout	179	0.9	8	53.3
Larimus fasciatus	banded drum	117	0.1	5	33.3
Arius felis	hardhead catfish	79	1.1	9	60.0
Anchoa hepsetus	striped anchovy	64	0.2	2	13.3
Porichthys plectrodon	Atlantic midshipman	43	0.0	5	33.3
Cynoscion nothus	silver seatrout	33	0.2	3	20.0
Brevoortia patronus	gulf menhaden	20	0.3	5	33.3
Chaetodipterus faber	Atlantic spadefish	16	0.1	5	33.3
Astroscopus y-graecum	southern stargazer	15	0.0	4	26.7
Micropogonias undulatus	Atlantic croaker	14	0.7	3	20.0
Sphoeroides parvus	least puffer	14	0.0	5	33.3
Menticirrhus americanus	southern kingfish	14	0.1	4	26.7
Etropus crossotus	fringed flounder	11	0.1	5	33.3
Trichiurus lepturus	Atlantic cutlassfish	10	0.1	5	33.3
Prionotus tribulus	bighead searobin	7	0.0	2	13.3
Prionotus rubio	blackfin searobin	6	0.0	2	13.3
Ophichthus gomesi	shrimp eel	6	0.1	4	26.7
Citharichthys spilopterus	bay whiff	5	0.0	2	13.3
Peprilus burti	gulf butterfish	3	0.0	3	20.0
Gobiesox strumosus	skilletfish	3	0.0	1	6.7

Table 29. 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>Achirus lineatus</i>	lined sole	2	0.0	1	6.7
<i>Centropristis philadelphica</i>	rock sea bass	2	0.0	1	6.7
<i>Harengula jaguana</i>	scaled sardine	2	0.0	1	6.7
<i>Selene setapinnis</i>	Atlantic moonfish	2	0.0	1	6.7
<i>Selene vomer</i>	lookdown	1	0.0	1	6.7
<i>Eucinostomus argenteus</i>	spotfin mojarra	1	0.0	1	6.7
<i>Leiostomus xanthurus</i>	spot	1	0.0	1	6.7
<i>Dorosoma petenense</i>	threadfin shad	1	0.0	1	6.7
<i>Sphoeroides nephelus</i>	southern puffer	1	0.0	1	6.7
<i>Monacanthus hispidus</i>	planehead filefish	1	0.0	1	6.7
<i>Ophidion holbrooki</i>	bank cusk-eel	1	0.0	1	6.7
<i>Dasyatis sabina</i>	Atlantic stringray	1	0.0	1	6.7
<u>Crustaceans</u>					
<i>Callinectes similis</i>	lesser blue crab	800	1.5	7	46.7
Xanthidae	mud crabs	237	0.6	2	13.3
<i>Trachypenaeus</i> spp.	roughneck shrimps	160	0.2	7	46.7
<i>Penaeus setiferus</i>	white shrimp	134	0.9	9	60.0
<i>Portunus gibbesii</i>	iridescent swimming crab	91	0.4	6	40.0
<i>Sicyonia dorsalis</i>	lesser rock shrimp	44	0.1	4	26.7
<i>Penaeus aztecus</i>	brown shrimp	42	0.3	5	33.3
<i>Callinectes sapidus</i>	blue crab	42	2.0	4	26.7
<i>Squilla empusa</i>	mantis shrimp	25	0.1	3	20.0
<i>Trachypenaeus similis</i>	roughneck shrimp	14	0.0	1	6.7
<i>Squilla</i> spp.	mantis shrimps	12	0.1	3	20.0

Table 29. 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>
Macrobrachium ohione	Ohio shrimp	11	0.0	1	6.7
Xiphopenaeus kroyeri	seabob	9	0.0	3	20.0
Trachypenaeus constrictus	roughneck shrimp	2	0.0	1	6.7
Arenaeus cribrarius	speckled swimming crab	2	0.0	1	6.7
Menippe mercenaria	Florida stone crab	1	0.2	1	6.7
Libinia emarginata	portly spider crab	1	0.0	1	6.7
Hepatus epheliticus	calico box crab	1	0.0	1	6.7
<u>Others</u>					
Lolliguncula brevis	Atlantic brief squid	187	1.1	11	73.3
Loligo pealeii	longfin squid	15	0.1	1	6.7



Table 30a  
 Statistical Zone 8  
 40-ft trawls

Summary of dominant organisms taken in shrimp statistical zone 8 during the October-December 1986 SEAMAP 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 below 6 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	0	0.0	0.00	0.0	0.00	2	72.4	35.60	1.5	0.75	9
Portunus															
<i>gibbesii</i>	0.0	0.00	0.0	0.00	0	116.0	8.00	0.9	0.18	2	14.7	6.18	0.3	0.11	9
Portunus															
<i>spinimanus</i>	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	2	21.3	16.01	0.8	0.49	9
Penaeus															
<i>duorarum</i>	0.0	0.00	0.0	0.00	0	72.0	12.00	1.6	0.18	2	12.9	7.45	0.8	0.54	9
Portunus															
<i>spinicarpus</i>	0.0	0.00	0.0	0.00	0	18.0	18.00	0.5	0.45	2	1.8	1.78	0.0	0.00	9
Solenocera															
spp.	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	9
Stenotomus															
<i>caprinus</i>	0.0	0.00	0.0	0.00	0	924.0	256.00	23.6	9.64	2	1920.4	823.11	57.7	25.27	9
Micropogonias															
<i>undulatus</i>	0.0	0.00	0.0	0.00	0	632.0	428.00	53.0	35.55	2	77.8	58.13	8.0	5.79	9
Leiostomus															
<i>xanthurus</i>	0.0	0.00	0.0	0.00	0	548.0	524.00	63.1	58.73	2	44.0	22.01	5.1	2.48	9
Syacium															
spp.	0.0	0.00	0.0	0.00	0	24.0	24.00	3.4	3.36	2	107.6	47.08	3.7	1.73	9
Prionotus															
<i>scitulus</i>	0.0	0.00	0.0	0.00	0	150.0	118.00	5.1	4.36	2	65.8	34.97	2.2	0.90	9
Diplectrum															
<i>formosum</i>	0.0	0.00	0.0	0.00	0	278.0	138.00	15.2	8.09	2	31.1	13.84	2.3	0.76	9
Anchoa															
<i>hepsetus</i>	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	2	50.7	50.17	0.9	0.90	9
Trachurus															
<i>lathami</i>	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	2	2.7	1.89	0.2	0.17	9
Squid	0.0	0.00	0.0	0.00	0	32.0	32.00	0.3	0.27	2	39.1	18.82	1.1	0.51	9

Table 31b  
 Statistical Zone 9  
 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 October-December 1986 SEAMAP Groundfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, and oxygen in ppm. No trawl samples were taken below 11 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	52.7	14.81	3	181.8	0.00	1	338.2	0.00	1	74.3	38.39	9
Total finfish kg	0.0	0.00	0	0.0	0.00	0	46.1	15.48	3	181.8	0.00	1	321.8	0.00	1	71.3	38.50	9
Total crustacean kg	0.0	0.00	0	0.0	0.00	0	0.6	0.61	3	1.8	0.00	1	16.4	0.00	1	2.2	0.40	9
Total others kg	0.0	0.00	0	0.0	0.00	0	6.1	3.37	3	0.0	0.00	1	0.0	0.00	1	1.4	0.51	9
Surface temperature	0.0	0.00	0	0.0	0.00	0	23.7	0.23	6	23.4	0.00	1	26.0	0.00	1	26.2	0.13	10
Midwater temperature	0.0	0.00	0	0.0	0.00	0	23.6	0.20	6	25.6	0.00	1	26.1	0.00	1	25.0	0.47	10
Bottom temperature	0.0	0.00	0	0.0	0.00	0	23.7	0.21	6	24.1	0.00	1	23.3	0.00	1	20.1	0.45	10
Surface salinity	0.0	0.00	0	0.0	0.00	0	34.6	0.14	6	35.5	0.00	1	36.0	0.00	1	36.0	0.08	10
Midwater salinity	0.0	0.00	0	0.0	0.00	0	34.8	0.10	6	35.9	0.00	1	36.1	0.00	1	36.4	0.14	10
Bottom salinity	0.0	0.00	0	0.0	0.00	0	34.9	0.08	6	36.6	0.00	1	36.3	0.00	1	36.6	0.06	10
Surface chlorophyll	0.0	0.00	0	0.0	0.00	0	0.4	0.04	5	0.1	0.00	1	0.1	0.00	1	0.1	0.01	10
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	6.5	0.10	5	6.5	0.00	1	6.3	0.00	1	6.4	0.07	10
Midwater oxygen	0.0	0.00	0	0.0	0.00	0	6.4	0.09	5	6.5	0.00	1	6.2	0.00	1	6.2	0.07	10
Bottom oxygen	0.0	0.00	0	0.0	0.00	0	6.3	0.12	5	5.5	0.00	1	5.4	0.00	1	4.6	0.15	10

Table 32a  
 Statistical Zone 10  
 40-ft trawls

Summary of dominant organisms taken in shrimp statistical zone 10 during the October-December 1986 SEAMAP 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 below 6 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	0	2.0	2.00	0.0	0.05	4	0.4	0.44	0.0	0.02	9
Trachypenaeus															
<i>spp.</i>	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	9
Portunus															
<i>spinicarpus</i>	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	4	1.3	0.94	0.0	0.03	9
Scyllarus															
<i>chacei</i>	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	9
Solenocera															
<i>spp.</i>	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	9
Callinectes															
<i>similis</i>	0.0	0.00	0.0	0.00	0	12.0	3.65	0.6	0.17	4	0.0	0.00	0.0	0.00	9
Stenotomus															
<i>caprinus</i>	0.0	0.00	0.0	0.00	0	969.0	553.56	23.0	12.62	4	49.3	46.85	1.2	1.06	9
Chloroscombrus															
<i>chrysurus</i>	0.0	0.00	0.0	0.00	0	1193.0	687.03	15.4	8.85	4	0.0	0.00	0.0	0.00	9
Syacium															
<i>papillosum</i>	0.0	0.00	0.0	0.00	0	17.0	7.37	1.3	0.46	4	1.3	0.67	0.1	0.06	9
Prionotus															
<i>paralatus</i>	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	9
Pristipomoides															
<i>aquilonaris</i>	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	9
Prionotus															
<i>salmonicolor</i>	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	4	1.3	0.94	0.1	0.04	9
Synodus															
<i>foetens</i>	0.0	0.00	0.0	0.00	0	41.0	10.75	3.9	0.99	4	10.7	8.72	1.2	0.85	9
Trachinocephalus															
<i>myops</i>	0.0	0.00	0.0	0.00	0	4.0	2.83	0.2	0.13	4	0.4	0.44	0.1	0.06	9
Squid	0.0	0.00	0.0	0.00	0	103.0	49.11	4.5	2.46	4	7.6	3.91	0.4	0.21	9

Table 32a (cont'd.)  
 Statistical Zone 10  
 40-ft trawls

Summary of dominant organisms taken in shrimp statistical zone 10 during the October-December 1986 SEAMAP 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 below 6 fm.

SPECIES	21-30 FM					31-40 FM					Over 40 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Sicyonia															
<i>brevirostris</i>	24.5	16.06	0.6	0.44	8	284.0	145.89	5.6	3.07	3	0.0	0.00	0.0	0.00	4
Trachypenaeus															
spp.	0.0	0.00	0.0	0.00	8	0.0	0.00	0.0	0.00	3	75.0	45.00	0.2	0.13	4
Portunus															
<i>spinicarpus</i>	2.5	1.30	0.0	0.03	8	57.3	29.24	0.4	0.18	3	20.0	9.52	0.2	0.14	4
Scyllarus															
<i>chacei</i>	15.0	8.71	0.1	0.05	8	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	4
Solenocera															
spp.	1.5	0.73	0.0	0.00	8	0.0	0.00	0.0	0.00	3	24.0	15.23	0.2	0.17	4
Callinectes															
<i>similis</i>	0.0	0.00	0.0	0.00	8	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	4
Stenotomus															
<i>caprinus</i>	0.0	0.00	0.0	0.00	8	522.7	506.75	12.6	12.06	3	6.0	3.83	0.6	0.53	4
Chloroscombrus															
<i>chrysurus</i>	0.0	0.00	0.0	0.00	8	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	4
Syacium															
<i>papillosum</i>	72.0	33.08	5.8	2.65	8	77.3	53.48	3.8	2.02	3	0.0	0.00	0.0	0.00	4
Prionotus															
<i>paralatus</i>	0.0	0.00	0.0	0.00	8	4.0	4.00	0.1	0.12	3	99.0	84.81	3.1	2.40	4
Pristipomoides															
<i>aquilonaris</i>	1.5	1.50	0.2	0.16	8	14.7	14.67	0.8	0.85	3	83.0	65.41	6.0	4.52	4
Prionotus															
<i>salmonicolor</i>	31.0	16.08	2.3	1.17	8	37.3	37.33	1.7	1.70	3	0.0	0.00	0.0	0.00	4
Synodus															
<i>foetens</i>	3.5	1.92	0.4	0.22	8	13.3	11.39	1.6	1.46	3	0.0	0.00	0.0	0.00	4
Trachinocephalus															
<i>myops</i>	23.5	8.63	2.4	0.84	8	20.0	12.86	1.5	0.95	3	1.0	1.00	0.2	0.23	4
Squid	2.5	1.05	0.2	0.11	8	6.7	3.53	0.4	0.26	3	57.0	22.71	3.1	0.83	4

Table 32b  
 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 October-December 1986 SEAMAP Groundfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, and oxygen in ppm. No trawl samples were taken below 6 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	58.2	20.29	4	10.1	3.42	9	28.4	9.26	8	40.0	26.49	3	44.1	15.79	4
Total finfish kg	0.0	0.00	0	52.3	18.56	4	8.7	3.32	9	20.5	6.85	8	33.3	23.81	3	39.1	16.10	4
Total crustacean kg	0.0	0.00	0	1.8	0.00	4	0.0	0.00	9	1.1	0.48	8	6.1	3.21	3	1.4	0.45	4
Total others kg	0.0	0.00	0	5.0	2.15	4	1.4	0.59	9	6.8	4.00	8	0.6	0.61	3	3.6	1.05	4
Surface temperature	0.0	0.00	0	20.6	0.24	4	24.4	0.11	9	25.5	0.15	5	25.5	0.00	1	24.9	0.06	5
Midwater temperature	0.0	0.00	0	20.5	0.20	4	24.4	0.10	9	25.8	0.27	5	25.4	0.00	1	23.8	0.64	5
Bottom temperature	0.0	0.00	0	21.6	0.24	4	24.6	0.12	9	26.1	0.07	5	22.8	0.00	1	20.3	0.77	5
Surface salinity	0.0	0.00	0	30.5	0.29	4	35.0	0.15	9	35.3	0.07	5	35.5	0.00	1	35.6	0.03	5
Midwater salinity	0.0	0.00	0	30.5	0.29	4	35.0	0.08	9	35.7	0.11	5	35.7	0.00	1	36.1	0.22	5
Bottom salinity	0.0	0.00	0	31.8	0.25	4	35.3	0.18	9	36.0	0.05	5	36.5	0.00	1	36.6	0.04	5
Surface chlorophyll	0.0	0.00	0	0.0	0.00	0	0.4	0.05	9	0.3	0.04	5	0.3	0.00	1	0.3	0.02	5
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	0.00	4	6.5	0.11	9	6.4	0.19	5	6.3	0.00	1	6.1	0.12	5
Midwater oxygen	0.0	0.00	0	7.2	0.08	4	6.5	0.08	9	6.1	0.09	5	6.0	0.00	1	5.7	0.14	5
Bottom oxygen	0.0	0.00	0	6.6	0.08	4	5.9	0.36	9	5.9	0.08	5	5.0	0.00	1	4.2	0.29	5

Table 33a  
 Statistical Zone 11  
 40-ft trawls

Summary of dominant organisms taken in shrimp statistical zone 11 during the October-December 1986 SEAMAP 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>	212.7	141.54	6.4	4.35	6	552.3	266.51	11.6	5.16	15	68.5	35.57	2.6	1.28	8
Sicyonia															
<i>brevirostris</i>	12.7	12.67	0.1	0.06	6	0.0	0.00	0.0	0.00	15	10.5	5.70	0.2	0.07	8
Penaeus															
<i>aztecus</i>	7.3	4.31	0.2	0.14	6	16.3	6.97	0.4	0.19	15	22.5	14.30	0.8	0.51	8
Portunus															
<i>gibbesii</i>	36.0	11.03	0.3	0.09	6	18.4	7.93	0.2	0.10	15	26.0	20.42	0.5	0.33	8
Trachypenaeus															
<i>spp.</i>	10.0	10.00	0.0	0.03	6	39.5	27.75	0.0	0.03	15	2.0	1.31	0.0	0.00	8
Portunus															
<i>spinicarpus</i>	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	15	0.5	0.50	0.0	0.00	8
Chloroscombrus															
<i>chrysurus</i>	2898.0	1421.18	23.4	10.42	6	145.9	50.37	2.8	1.02	15	120.5	62.43	6.7	3.71	8
Stenotomus															
<i>caprinus</i>	0.7	0.67	0.0	0.03	6	206.4	156.09	6.7	5.43	15	1682.5	764.41	39.4	18.82	8
Anchoa															
<i>hepsetus</i>	1168.7	473.49	21.1	8.39	6	112.5	68.84	1.4	0.88	15	0.0	0.00	0.0	0.00	8
Lagodon															
<i>rhomboides</i>	0.0	0.00	0.0	0.00	6	376.5	368.55	27.8	27.17	15	9.0	5.33	0.6	0.33	8
Micropogonias															
<i>undulatus</i>	21.3	14.34	1.7	0.94	6	218.9	79.08	16.8	6.47	15	9.0	4.33	1.0	0.44	8
Steindachneria															
<i>argentea</i>	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	15	0.0	0.00	0.0	0.00	8
Arius															
<i>felis</i>	287.3	188.43	50.8	32.85	6	87.2	31.44	15.2	5.27	15	27.0	20.18	6.4	4.86	8
Diplectrum															
<i>bivittatum</i>	4.0	2.53	0.1	0.06	6	37.3	24.00	0.7	0.33	15	118.5	71.95	2.5	1.49	8
Squid															
	146.7	66.27	2.0	0.71	6	11.7	7.34	0.6	0.36	15	23.5	17.34	3.6	2.73	8

Table 33a (cont'd.)  
 Statistical Zone 11  
 40-ft trawls

Summary of dominant organisms taken in shrimp statistical zone 11 during the October-December 1986 SEAMAP 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					Over 40 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Callinectes															
<i>similis</i>	67.2	63.28	2.2	2.00	5	38.0	38.00	0.5	0.55	2	3.2	3.20	0.0	0.04	5
Sicyonia															
<i>brevirostris</i>	57.6	54.65	1.3	1.26	5	116.0	116.00	2.1	2.09	2	16.0	16.00	0.4	0.36	5
Penaeus															
<i>aztecus</i>	23.2	18.43	0.8	0.71	5	66.0	66.00	1.8	1.82	2	0.0	0.00	0.0	0.00	5
Portunus															
<i>gibbesii</i>	1.6	1.60	0.0	0.04	5	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	5
Trachypenaeus															
<i>spp.</i>	1.6	1.60	0.0	0.00	5	4.0	4.00	0.0	0.00	2	0.0	0.00	0.0	0.00	5
Portunus															
<i>spinicarpus</i>	1.6	1.60	0.0	0.04	5	4.0	4.00	0.1	0.09	2	78.4	32.04	0.7	0.39	5
Chloroscombrus															
<i>chrysurus</i>	37.6	37.60	2.9	2.87	5	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	5
Stenotomus															
<i>caprinus</i>	41.6	27.41	0.8	0.75	5	448.0	448.00	20.1	20.09	2	452.0	229.32	15.0	8.33	5
Anchoa															
<i>hepsetus</i>	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	5
Lagodon															
<i>rhomboides</i>	3.2	1.50	0.3	0.17	5	16.0	16.00	1.5	1.55	2	8.0	6.20	0.7	0.53	5
Micropogonias															
<i>undulatus</i>	133.6	133.60	8.1	8.11	5	80.0	80.00	5.7	5.73	2	0.0	0.00	0.0	0.00	5
Steindachneria															
<i>argentea</i>	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	2	767.2	767.20	4.4	4.40	5
Arius															
<i>felis</i>	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	5
Diplectrum															
<i>bivittatum</i>	9.6	6.76	0.1	0.11	5	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	5
Squid															
	8.0	7.04	0.1	0.11	5	8.0	8.00	0.0	0.00	2	41.6	19.82	1.9	1.26	5

Table 33b  
 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 October-December 1986 SEAMAP Groundfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, 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	127.0	35.94	6	115.2	40.56	15	79.3	22.82	8	41.5	24.83	5	60.9	53.64	2	129.8	38.28	5
Total finfish kg	116.7	32.39	6	99.0	36.16	15	66.1	19.20	8	31.6	20.10	5	56.4	52.73	2	82.2	10.44	5
Total crustacean kg	8.5	4.47	6	14.7	5.20	15	6.1	2.77	8	9.1	5.11	5	4.5	0.91	2	3.3	0.68	5
Total others kg	2.1	0.73	6	1.5	0.78	15	7.0	3.72	8	0.7	0.45	5	0.0	0.00	2	44.4	35.03	5
Surface temperature	21.0	0.70	6	23.0	0.27	14	23.2	0.85	5	25.2	0.15	8	24.7	1.12	3	25.5	0.34	6
Midwater temperature	21.0	0.64	6	23.0	0.24	14	23.2	0.82	5	25.3	0.15	8	25.7	0.24	3	24.8	0.70	6
Bottom temperature	21.0	0.63	6	23.1	0.23	14	23.2	0.73	5	25.4	0.14	8	24.7	1.07	3	19.8	0.68	6
Surface salinity	32.1	0.48	6	33.5	0.23	14	33.2	0.65	5	35.4	0.16	8	32.1	3.99	3	33.7	2.49	6
Midwater salinity	32.0	0.47	6	33.7	0.23	14	33.6	0.87	5	35.5	0.15	8	36.1	0.18	3	36.5	0.08	6
Bottom salinity	32.1	0.37	6	33.8	0.23	14	34.0	0.64	5	36.1	0.12	8	36.5	0.07	3	36.7	0.06	5
Surface chlorophyll	1.4	0.29	5	1.5	0.18	14	1.0	0.20	4	0.3	0.09	8	0.4	0.29	3	0.3	0.10	6
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	7.8	0.43	6	7.2	0.26	14	7.1	0.41	5	6.3	0.08	8	6.4	0.27	3	6.3	0.16	6
Midwater oxygen	7.8	0.41	6	7.2	0.27	13	7.0	0.51	5	6.3	0.10	7	6.1	0.12	3	5.8	0.18	6
Bottom oxygen	7.4	0.48	6	7.1	0.26	13	6.8	0.41	5	5.0	0.41	7	5.5	0.48	3	4.2	0.17	5



Table 34a  
 Statistical Zone 12  
 40-ft trawls

Summary of dominant organisms taken in shrimp statistical zone 12 during the October-December 1986 SEAMAP 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 below 6 fm or above 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
Callinectes															
<i>similis</i>	0.0	0.00	0.0	0.00	0	364.0	0.00	14.5	0.00	1	0.0	0.00	0.0	0.00	0
Portunus															
<i>spinimanus</i>	0.0	0.00	0.0	0.00	0	48.0	0.00	1.8	0.00	1	0.0	0.00	0.0	0.00	0
Squilla															
<i>spp.</i>	0.0	0.00	0.0	0.00	0	16.0	0.00	0.4	0.00	1	0.0	0.00	0.0	0.00	0
Penaeus															
<i>duorarum</i>	0.0	0.00	0.0	0.00	0	8.0	0.00	0.4	0.00	1	0.0	0.00	0.0	0.00	0
Micropogonias															
<i>undulatus</i>	0.0	0.00	0.0	0.00	0	2224.0	0.00	151.6	0.00	1	0.0	0.00	0.0	0.00	0
Arius															
<i>felis</i>	0.0	0.00	0.0	0.00	0	732.0	0.00	148.0	0.00	1	0.0	0.00	0.0	0.00	0
Prionotus															
<i>tribulus</i>	0.0	0.00	0.0	0.00	0	240.0	0.00	23.1	0.00	1	0.0	0.00	0.0	0.00	0
Leiostomus															
<i>xanthurus</i>	0.0	0.00	0.0	0.00	0	128.0	0.00	16.5	0.00	1	0.0	0.00	0.0	0.00	0
Syacium															
<i>spp.</i>	0.0	0.00	0.0	0.00	0	80.0	0.00	1.5	0.00	1	0.0	0.00	0.0	0.00	0
Prionotus															
<i>scitulus</i>	0.0	0.00	0.0	0.00	0	48.0	0.00	1.5	0.00	1	0.0	0.00	0.0	0.00	0
Synodus															
<i>foetens</i>	0.0	0.00	0.0	0.00	0	32.0	0.00	5.8	0.00	1	0.0	0.00	0.0	0.00	0
Chaetodipterus															
<i>faber</i>	0.0	0.00	0.0	0.00	0	16.0	0.00	2.5	0.00	1	0.0	0.00	0.0	0.00	0

Table 34b  
 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 October-December 1986 SEAMAP Groundfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, and oxygen in ppm. No trawl samples were taken below 6 fm or above 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	372.7	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total finfish kg	0.0	0.00	0	356.4	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	16.4	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	24.3	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	24.3	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	24.5	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	35.0	0.00	1	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	35.0	0.00	1	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	35.2	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface chlorophyll	0.0	0.00	0	0.9	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	6.3	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	6.3	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	6.2	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0

Table 35a  
 Statistical Zone 13  
 40-ft trawls

Summary of dominant organisms taken in shrimp statistical zone 13 during the October-December 1986 SEAMAP 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															
similis	126.0	0.00	0.8	0.00	1	231.0	115.96	2.2	1.38	9	47.9	38.35	0.7	0.57	3
Penaeus															
setiferus	176.0	0.00	2.6	0.00	1	336.6	107.91	4.4	1.38	9	18.3	9.39	0.4	0.16	3
Penaeus															
aztecus	12.0	0.00	0.1	0.00	1	237.5	124.24	2.0	1.08	9	174.6	125.48	1.3	0.78	3
Trachypenaeus															
spp.	94.0	0.00	0.2	0.00	1	126.3	50.83	0.3	0.18	9	29.5	15.50	0.1	0.06	3
Squilla															
spp.	0.0	0.00	0.0	0.00	1	117.4	52.92	1.1	0.58	9	80.3	36.77	0.9	0.42	3
Portunus															
spinimanus	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	9	1.3	1.33	0.0	0.00	3
Micropogonias															
undulatus	234.0	0.00	12.9	0.00	1	310.5	130.81	18.9	8.01	9	269.8	147.25	17.0	9.11	3
Arius															
felis	16.0	0.00	0.6	0.00	1	51.3	37.85	4.9	3.69	9	366.0	259.88	39.7	25.29	3
Chloroscombrus															
chrysurus	0.0	0.00	0.0	0.00	1	117.1	39.82	1.9	0.63	9	120.0	120.00	6.9	6.91	3
Cynoscion															
arenarius	138.0	0.00	1.5	0.00	1	59.9	20.79	2.1	0.66	9	29.5	14.06	4.1	0.92	3
Sphoeroides															
parvus	74.0	0.00	0.5	0.00	1	79.9	31.14	0.4	0.17	9	21.5	15.88	0.2	0.10	3
Prionotus															
rubio	4.0	0.00	0.0	0.00	1	49.0	17.95	0.9	0.35	9	122.4	43.06	3.2	1.39	3
Trichiurus															
lepturus	16.0	0.00	0.4	0.00	1	52.7	29.31	1.4	0.68	9	0.0	0.00	0.0	0.00	3
Leiostomus															
xanthurus	4.0	0.00	0.5	0.00	1	43.5	27.24	4.6	3.08	9	59.3	43.48	7.5	5.47	3
Squid	4.0	0.00	0.1	0.00	1	27.1	8.76	0.4	0.20	9	24.0	24.00	0.1	0.12	3

Table 35a (cont'd.)  
 Statistical Zone 13  
 40-ft trawls

Summary of dominant organisms taken in shrimp statistical zone 13 during the October-December 1986 SEAMAP 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					Over 40 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
<i>Callinectes</i>															
<i>similis</i>	1272.0	0.00	33.6	0.00	1	50.0	26.00	1.1	0.91	2	16.0	0.00	0.2	0.00	1
<i>Penaeus</i>															
<i>setiferus</i>	40.0	0.00	0.7	0.00	1	4.0	4.00	0.4	0.36	2	0.0	0.00	0.0	0.00	1
<i>Penaeus</i>															
<i>aztecus</i>	4.0	0.00	0.0	0.00	1	164.0	124.00	4.3	3.55	2	0.0	0.00	0.0	0.00	1
<i>Trachypenaeus</i>															
<i>spp.</i>	76.0	0.00	0.5	0.00	1	140.0	140.00	0.3	0.27	2	4.0	0.00	0.0	0.00	1
<i>Squilla</i>															
<i>spp.</i>	156.0	0.00	2.4	0.00	1	32.0	8.00	0.1	0.09	2	12.0	0.00	0.2	0.00	1
<i>Portunus</i>															
<i>spinimanus</i>	0.0	0.00	0.0	0.00	1	468.0	8.00	5.1	1.27	2	0.0	0.00	0.0	0.00	1
<i>Micropogonias</i>															
<i>undulatus</i>	24.0	0.00	2.5	0.00	1	98.0	46.00	7.5	3.18	2	0.0	0.00	0.0	0.00	1
<i>Arius</i>															
<i>felis</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	1
<i>Chloroscombrus</i>															
<i>chrysurus</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	1
<i>Cynoscion</i>															
<i>arenarius</i>	32.0	0.00	2.7	0.00	1	28.0	16.00	4.1	0.82	2	0.0	0.00	0.0	0.00	1
<i>Sphoeroides</i>															
<i>parvus</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	1
<i>Prionotus</i>															
<i>rubio</i>	40.0	0.00	1.1	0.00	1	130.0	46.00	6.8	2.27	2	4.0	0.00	0.2	0.00	1
<i>Trichiurus</i>															
<i>lepturus</i>	0.0	0.00	0.0	0.00	1	126.0	126.00	9.0	9.00	2	8.0	0.00	0.0	0.00	1
<i>Leiostomus</i>															
<i>xanthurus</i>	128.0	0.00	15.5	0.00	1	86.0	86.00	10.5	10.45	2	0.0	0.00	0.0	0.00	1
<i>Squid</i>	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	2	8.0	0.00	0.0	0.00	1

Table 35b  
 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 October-December 1986 SEAMAP Groundfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, 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	25.5	0.00	1	54.6	13.21	9	99.5	28.71	3	81.8	0.00	1	88.2	4.55	2	52.7	0.00	1
Total finfish kg	21.8	0.00	1	43.1	12.86	9	93.1	27.93	3	41.8	0.00	1	72.7	0.00	2	47.3	0.00	1
Total crustacean kg	3.6	0.00	1	10.8	2.93	9	5.9	2.15	3	38.2	0.00	1	11.8	0.91	2	3.6	0.00	1
Total others kg	0.0	0.00	1	0.6	0.30	9	0.0	0.00	3	1.8	0.00	1	3.6	3.64	2	1.8	0.00	1
Surface temperature	0.0	0.00	0	21.8	0.23	9	21.9	0.58	4	23.2	0.00	1	23.2	0.00	1	22.9	0.29	3
Midwater temperature	0.0	0.00	0	23.5	0.49	9	25.9	0.31	4	25.8	0.00	1	25.8	0.00	1	23.5	1.22	3
Bottom temperature	0.0	0.00	0	25.3	0.69	9	26.3	0.46	4	24.6	0.00	1	22.7	0.00	1	19.0	1.53	3
Surface salinity	0.0	0.00	0	25.9	2.10	9	20.3	2.94	4	23.5	0.00	1	18.3	0.00	1	24.3	3.43	3
Midwater salinity	0.0	0.00	0	30.5	0.94	9	34.3	0.62	4	35.5	0.00	1	36.3	0.00	1	36.4	0.22	3
Bottom salinity	0.0	0.00	0	34.5	0.24	9	35.9	0.08	4	36.4	0.00	1	36.7	0.00	1	36.7	0.17	3
Surface chlorophyll	0.0	0.00	0	10.9	3.21	9	13.6	7.39	4	25.6	0.00	1	0.6	0.00	1	2.2	0.21	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	3.5	0.31	8	0.9	0.04	2	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface oxygen	0.0	0.00	0	8.5	0.65	9	8.1	0.43	4	8.0	0.00	1	7.3	0.00	1	7.3	0.67	3
Midwater oxygen	0.0	0.00	0	6.4	0.42	9	5.5	0.17	4	0.0	0.00	0	6.1	0.00	1	5.2	0.90	2
Bottom oxygen	0.0	0.00	0	4.3	0.29	9	4.4	0.53	4	4.5	0.00	1	4.4	0.00	1	4.3	0.37	3

Table 36a  
 Statistical Zone 14  
 40-ft trawls

Summary of dominant organisms taken in shrimp statistical zone 14 during the October-December 1986 SEAMAP 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>	52.2	25.59	0.2	0.09	10	100.7	24.72	2.0	0.63	16	228.7	49.72	6.4	1.04	18
Portunus															
<i>gibbesii</i>	131.3	84.18	0.4	0.21	10	48.1	19.57	0.3	0.12	16	64.7	21.64	0.6	0.20	18
Penaeus															
<i>aztecus</i>	86.4	32.54	0.5	0.21	10	70.1	39.62	0.5	0.24	16	94.3	30.10	1.2	0.29	18
Penaeus															
<i>setiferus</i>	251.2	66.68	3.1	0.79	10	39.8	12.96	1.1	0.34	16	15.2	9.52	0.5	0.26	18
Portunus															
<i>spinicarpus</i>	0.0	0.00	0.0	0.00	10	0.6	0.63	0.0	0.01	16	0.0	0.00	0.0	0.00	18
Trachypenaeus															
<i>similis</i>	94.1	77.54	0.1	0.11	10	93.7	73.12	0.2	0.16	16	0.0	0.00	0.0	0.00	18
Micropogonias															
<i>undulatus</i>	129.3	69.97	7.8	4.26	10	477.7	234.51	29.2	14.75	16	1065.2	351.35	46.4	14.24	18
Arius															
<i>felis</i>	158.7	73.56	13.6	8.63	10	428.9	240.60	28.9	10.78	16	83.2	32.13	12.5	4.75	18
Stenotomus															
<i>caprinus</i>	0.0	0.00	0.0	0.00	10	76.3	58.02	1.6	1.22	16	182.0	65.81	4.8	1.82	18
Chloroscombrus															
<i>chrysurus</i>	128.9	43.75	1.0	0.38	10	321.4	311.92	2.5	2.16	16	7.8	4.44	0.3	0.18	18
Prionotus															
<i>rubio</i>	14.7	4.00	0.2	0.08	10	76.7	25.87	2.2	0.69	16	170.5	31.04	4.7	0.84	18
Cynoscion															
<i>nothus</i>	146.9	61.93	0.8	0.41	10	47.9	29.65	1.7	1.13	16	34.0	13.02	1.8	0.63	18
Sphoeroides															
<i>parvus</i>	85.6	24.30	0.6	0.18	10	119.3	37.42	0.7	0.23	16	17.6	5.69	0.1	0.03	18
Trichiurus															
<i>lepturus</i>	23.5	13.00	0.3	0.19	10	66.9	24.12	1.6	0.73	16	96.7	59.44	2.5	1.40	18
Squid															
	157.6	58.27	1.5	0.58	10	48.0	17.05	0.7	0.31	16	34.3	17.42	0.2	0.09	18

Table 36a (cont'd.)  
 Statistical Zone 14  
 40-ft trawls

Summary of dominant organisms taken in shrimp statistical zone 14 during the October-December 1986 SEAMAP 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					Over 40 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
<i>Callinectes</i>															
<i>similis</i>	37.0	15.09	1.4	0.79	4	48.0	0.00	1.6	0.00	1	0.0	0.00	0.0	0.00	6
<i>Portunus</i>															
<i>gibbesii</i>	3.0	3.00	0.0	0.00	4	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	6
<i>Penaeus</i>															
<i>aztecus</i>	61.0	15.35	2.0	0.59	4	92.0	0.00	3.6	0.00	1	13.3	5.81	0.8	0.34	6
<i>Penaeus</i>															
<i>setiferus</i>	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	6
<i>Portunus</i>															
<i>spinicarpus</i>	1.0	1.00	0.0	0.00	4	1432.0	0.00	8.7	0.00	1	338.0	220.06	2.7	1.68	6
<i>Trachypenaeus</i>															
<i>similis</i>	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	6
<i>Micropogonias</i>															
<i>undulatus</i>	569.0	227.46	37.5	14.04	4	40.0	0.00	4.2	0.00	1	5.3	5.33	0.6	0.58	6
<i>Arius</i>															
<i>felis</i>	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	6
<i>Stenotomus</i>															
<i>caprinus</i>	712.0	242.32	16.6	5.92	4	412.0	0.00	14.4	0.00	1	102.0	18.38	5.8	1.21	6
<i>Chloroscombrus</i>															
<i>chrysurus</i>	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	1	0.7	0.67	0.0	0.00	6
<i>Prionotus</i>															
<i>rubio</i>	70.0	35.98	3.1	1.51	4	68.0	0.00	4.0	0.00	1	16.0	6.11	1.4	0.46	6
<i>Cynoscion</i>															
<i>nothus</i>	5.0	3.79	0.7	0.57	4	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	6
<i>Sphoeroides</i>															
<i>parvus</i>	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	6
<i>Trichiurus</i>															
<i>lepturus</i>	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	1	14.7	9.04	1.1	0.89	6
<i>Squid</i>	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	1	123.3	57.65	3.1	1.17	6

Table 36b  
 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 October-December 1986 SEAMAP Groundfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, 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	42.9	10.61	10	90.1	25.22	16	104.2	17.39	18	99.1	17.70	4	61.8	0.00	1	94.8	21.35	6
Total finfish kg	36.1	10.48	10	84.4	25.07	16	93.8	17.24	18	94.5	16.21	4	43.6	0.00	1	85.5	20.07	6
Total crustacean kg	5.2	0.95	10	5.2	0.94	16	10.6	1.58	18	4.5	1.57	4	18.2	0.00	1	4.5	1.31	6
Total others kg	1.3	0.56	10	0.7	0.34	16	0.4	0.17	18	0.0	0.00	4	0.0	0.00	1	5.5	0.94	6
Surface temperature	21.2	0.78	10	21.4	0.45	15	22.3	0.36	19	24.8	0.14	4	0.0	0.00	0	24.7	0.07	7
Midwater temperature	21.2	0.75	10	22.4	0.49	15	23.7	0.56	19	26.0	0.11	4	0.0	0.00	0	24.1	0.54	7
Bottom temperature	21.8	0.74	10	24.0	0.52	15	25.1	0.32	19	25.3	0.23	4	0.0	0.00	0	20.7	0.65	7
Surface salinity	27.4	0.96	10	28.4	0.39	15	31.0	0.51	19	33.8	0.18	4	0.0	0.00	0	33.4	0.45	7
Midwater salinity	27.5	0.95	10	30.5	0.58	15	33.5	0.29	19	35.4	0.10	4	0.0	0.00	0	36.7	0.15	7
Bottom salinity	29.0	0.65	10	33.0	0.36	15	35.2	0.21	19	36.5	0.09	4	0.0	0.00	0	36.7	0.09	7
Surface chlorophyll	12.3	3.09	10	5.3	1.31	15	5.1	1.42	19	0.8	0.17	4	0.0	0.00	0	1.5	0.58	7
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	12.3	2.78	10	2.5	0.55	14	1.0	0.06	18	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface oxygen	8.8	0.62	10	8.2	0.34	15	8.0	0.30	19	6.5	0.05	4	0.0	0.00	0	6.3	0.06	7
Midwater oxygen	8.5	0.68	10	6.8	0.27	15	6.1	0.19	19	5.8	0.14	4	0.0	0.00	0	5.5	0.17	7
Bottom oxygen	7.1	0.37	10	5.3	0.26	15	5.0	0.25	19	4.6	0.20	4	0.0	0.00	0	4.2	0.13	7



Table 37a  
 Statistical Zone 15  
 40-ft trawls

Summary of dominant organisms taken in shrimp statistical zone 15 during the October-December 1986 SEAMAP 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 below 6 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	0.0	0.00	0.0	0.00	1	9.3	7.42	0.1	0.06	3
<i>Portunus</i>															
<i>spinicarpus</i>	0.0	0.00	0.0	0.00	0	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	0	20.0	0.00	0.2	0.00	1	5.3	5.33	0.1	0.06	3
<i>Solenocera</i>															
<i>spp.</i>	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	3
<i>Callinectes</i>															
<i>similis</i>	0.0	0.00	0.0	0.00	0	20.0	0.00	0.0	0.00	1	46.7	22.19	1.6	0.85	3
<i>Portunus</i>															
<i>gibbesii</i>	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	1	14.7	14.67	0.1	0.12	3
<i>Micropogonias</i>															
<i>undulatus</i>	0.0	0.00	0.0	0.00	0	740.0	0.00	44.4	0.00	1	1928.0	236.86	111.1	15.09	3
<i>Stenotomus</i>															
<i>caprinus</i>	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	1	160.0	72.59	5.0	2.13	3
<i>Serranus</i>															
<i>atrobranchus</i>	0.0	0.00	0.0	0.00	0	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	0	8.0	0.00	1.1	0.00	1	153.3	31.01	14.5	2.66	3
<i>Cynoscion</i>															
<i>nothus</i>	0.0	0.00	0.0	0.00	0	124.0	0.00	8.5	0.00	1	360.0	155.14	29.3	12.50	3
<i>Chloroscombrus</i>															
<i>chrysurus</i>	0.0	0.00	0.0	0.00	0	1004.0	0.00	26.0	0.00	1	29.3	29.33	2.0	2.00	3
<i>Prionotus</i>															
<i>paralatus</i>	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	3
<i>Prionotus</i>															
<i>rubio</i>	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	1	14.7	14.67	0.7	0.67	3
<i>Squid</i>	0.0	0.00	0.0	0.00	0	164.0	0.00	29.1	0.00	1	10.7	5.81	0.1	0.06	3

Table 37a (cont'd.)  
 Statistical Zone 15  
 40-ft trawls

Summary of dominant organisms taken in shrimp statistical zone 15 during the October-December 1986 SEAMAP 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 below 6 fm.

SPECIES	21-30 FM					31-40 FM					Over 40 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Penaeus															
aztecus	76.0	52.00	2.5	1.64	2	40.0	0.00	2.7	0.00	1	26.5	9.59	1.6	0.57	8
Portunus															
spincarpus	6.0	6.00	0.1	0.09	2	40.0	0.00	0.4	0.00	1	46.0	16.70	0.6	0.27	8
Squilla															
spp.	96.0	96.00	2.0	2.00	2	24.0	0.00	0.2	0.00	1	2.0	1.07	0.0	0.02	8
Solenocera															
spp.	0.0	0.00	0.0	0.00	2	48.0	0.00	0.2	0.00	1	25.5	8.45	0.1	0.03	8
Callinectes															
similis	38.0	26.00	0.6	0.45	2	12.0	0.00	0.4	0.00	1	0.5	0.50	0.0	0.00	8
Portunus															
gibbesii	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	8
Micropogonias															
undulatus	1568.0	1500.00	105.4	100.09	2	12.0	0.00	2.2	0.00	1	0.0	0.00	0.0	0.00	8
Stenotomus															
caprinus	256.0	36.00	6.3	1.18	2	280.0	0.00	13.6	0.00	1	248.0	23.71	12.0	1.02	8
Serranus															
atrobranchus	26.0	26.00	0.5	0.45	2	400.0	0.00	3.6	0.00	1	307.5	41.98	5.0	0.88	8
Leiostomus															
xanthurus	536.0	536.00	52.1	52.09	2	184.0	0.00	23.6	0.00	1	9.0	7.92	1.2	1.03	8
Cynoscion															
nothus	12.0	12.00	1.2	1.18	2	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	8
Chloroscombrus															
chrysurus	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	8
Prionotus															
paralatus	2.0	2.00	0.0	0.00	2	4.0	0.00	0.2	0.00	1	127.5	51.22	3.8	1.49	8
Prionotus															
rubio	44.0	44.00	1.7	1.73	2	60.0	0.00	1.5	0.00	1	65.0	18.92	3.5	0.66	8
Squid	14.0	14.00	0.0	0.00	2	4.0	0.00	0.0	0.00	1	13.0	6.22	1.4	0.65	8

Table 37b  
 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 October-December 1986 SEAMAP Groundfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, and oxygen in ppm. No trawl samples were taken below 6 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	121.8	0.00	1	213.9	9.75	3	184.5	159.09	2	70.9	0.00	1	57.0	5.03	8
Total finfish kg	0.0	0.00	0	92.7	0.00	1	209.1	11.83	3	178.2	154.55	2	67.3	0.00	1	51.6	4.48	8
Total crustacean kg	0.0	0.00	0	1.8	0.00	1	2.4	0.61	3	6.4	4.55	2	3.6	0.00	1	3.2	0.75	8
Total others kg	0.0	0.00	0	29.1	0.00	1	2.4	2.42	3	0.9	0.91	2	0.0	0.00	1	3.0	0.68	8
Surface temperature	0.0	0.00	0	23.6	0.00	1	24.5	0.16	3	25.6	0.14	2	25.7	0.23	2	26.0	0.11	8
Midwater temperature	0.0	0.00	0	23.6	0.00	1	24.5	0.41	3	25.6	0.16	2	25.5	0.08	2	25.7	0.24	8
Bottom temperature	0.0	0.00	0	23.6	0.00	1	25.3	0.13	3	25.6	0.10	2	24.2	0.95	2	20.6	0.31	8
Surface salinity	0.0	0.00	0	28.7	0.00	1	31.2	0.70	3	35.5	0.30	2	35.8	0.48	2	36.1	0.20	8
Midwater salinity	0.0	0.00	0	28.9	0.00	1	32.8	1.26	3	35.8	0.11	2	36.2	0.11	2	36.4	0.06	8
Bottom salinity	0.0	0.00	0	29.0	0.00	1	35.8	0.32	3	36.3	0.03	2	36.5	0.01	2	36.6	0.05	8
Surface chlorophyll	0.0	0.00	0	0.8	0.00	1	1.0	0.26	3	0.2	0.08	2	0.2	0.01	2	0.1	0.01	8
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	2.4	0.00	1	1.2	0.25	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface oxygen	0.0	0.00	0	6.4	0.00	1	6.6	0.15	3	6.2	0.25	2	6.3	0.20	2	6.2	0.05	8
Midwater oxygen	0.0	0.00	0	6.0	0.00	1	6.1	0.32	3	6.0	0.35	2	6.6	0.45	2	5.9	0.11	8
Bottom oxygen	0.0	0.00	0	4.9	0.00	1	4.8	0.41	3	5.8	0.35	2	5.0	0.80	2	4.5	0.28	8

Table 38a  
 Statistical Zone 16  
 40-ft trawls

Summary of dominant organisms taken in shrimp statistical zone 16 during the October-December 1986 SEAMAP 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 below 6 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	37.0	8.70	0.4	0.11	4	154.9	59.77	2.8	1.11	11
<i>Callinectes</i>															
<i>similis</i>	0.0	0.00	0.0	0.00	0	188.0	64.25	1.7	0.56	4	83.6	36.46	2.1	0.93	11
<i>Portunus</i>															
<i>gibbesii</i>	0.0	0.00	0.0	0.00	0	196.0	79.85	1.8	0.73	4	60.4	25.21	0.3	0.13	11
<i>Trachypenaeus</i>															
<i>spp.</i>	0.0	0.00	0.0	0.00	0	42.0	18.00	0.2	0.09	4	34.9	16.17	0.2	0.07	11
<i>Penaeus</i>															
<i>setiferus</i>	0.0	0.00	0.0	0.00	0	64.0	48.25	2.8	1.76	4	5.5	5.45	0.3	0.26	11
<i>Squilla</i>															
<i>spp.</i>	0.0	0.00	0.0	0.00	0	18.0	16.69	0.2	0.18	4	4.0	1.79	0.0	0.04	11
<i>Micropogonias</i>															
<i>undulatus</i>	0.0	0.00	0.0	0.00	0	559.0	310.40	33.8	18.43	4	907.6	177.75	53.5	10.10	11
<i>Stenotomus</i>															
<i>caprinus</i>	0.0	0.00	0.0	0.00	0	17.0	17.00	0.5	0.55	4	301.5	81.95	10.3	3.21	11
<i>Peprilus</i>															
<i>burti</i>	0.0	0.00	0.0	0.00	0	2.0	1.15	0.2	0.10	4	35.6	29.03	2.3	1.84	11
<i>Arius</i>															
<i>felis</i>	0.0	0.00	0.0	0.00	0	203.0	123.84	11.5	7.97	4	133.5	62.35	16.0	10.02	11
<i>Cynoscion</i>															
<i>nothus</i>	0.0	0.00	0.0	0.00	0	150.0	70.13	10.3	4.88	4	76.7	34.45	5.8	2.44	11
<i>Trichiurus</i>															
<i>lepturus</i>	0.0	0.00	0.0	0.00	0	223.0	191.13	5.7	5.61	4	11.6	10.86	0.7	0.63	11
<i>Porichthys</i>															
<i>plectrodon</i>	0.0	0.00	0.0	0.00	0	223.0	209.73	1.7	1.38	4	19.3	12.83	0.3	0.17	11
<i>Prionotus</i>															
<i>rubio</i>	0.0	0.00	0.0	0.00	0	31.0	18.06	1.3	0.76	4	64.7	24.11	2.7	0.90	11
<i>Squid</i>	0.0	0.00	0.0	0.00	0	5.0	5.00	0.2	0.18	4	0.4	0.36	0.0	0.00	11

Table 38a (cont'd.)  
 Statistical Zone 16  
 40-ft trawls

Summary of dominant organisms taken in shrimp statistical zone 16 during the October-December 1986 SEAMAP 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 below 6 fm.

SPECIES	21-30 FM					31-40 FM					Over 40 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Penaeus															
aztecus	106.5	35.18	2.5	1.01	8	53.3	51.35	2.6	2.52	3	4.0	0.00	0.2	0.00	1
Callinectes															
similis	21.0	10.47	0.5	0.37	8	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	1
Portunus															
gibbesii	2.0	2.00	0.0	0.00	8	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	1
Trachypenaeus															
spp.	3.5	2.56	0.0	0.00	8	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	1
Penaeus															
setiferus	0.0	0.00	0.0	0.00	8	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	1
Squilla															
spp.	3.5	2.06	0.1	0.03	8	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	1
Micropogonias															
undulatus	65.5	24.08	6.9	2.50	8	1.3	1.33	0.2	0.18	3	0.0	0.00	0.0	0.00	1
Stenotomus															
caprinus	650.0	156.12	23.0	5.10	8	412.0	127.90	19.2	6.69	3	344.0	0.00	16.4	0.00	1
Peprilus															
burti	190.5	134.18	11.8	7.89	8	961.3	883.88	63.6	58.60	3	96.0	0.00	6.7	0.00	1
Arius															
felis	0.0	0.00	0.0	0.00	8	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	1
Cynoscion															
nothus	8.5	5.21	1.1	0.64	8	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	1
Trichiurus															
lepturus	21.5	15.86	2.5	1.50	8	32.0	16.00	2.9	1.59	3	0.0	0.00	0.0	0.00	1
Porichthys															
plectrodon	3.5	2.06	0.1	0.08	8	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	1
Prionotus															
rubio	28.0	12.69	1.4	0.62	8	2.7	1.33	0.2	0.10	3	64.0	0.00	3.1	0.00	1
Squid															
	12.0	4.41	0.1	0.03	8	20.0	18.04	0.3	0.30	3	32.0	0.00	2.2	0.00	1

Table 38b  
 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 October-December 1986 SEAMAP Groundfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, and oxygen in ppm. No trawl samples were taken below 6 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	86.4	22.59	4	126.8	14.81	11	69.5	12.59	8	121.8	62.20	3	54.5	9.09	2
Total finfish kg	0.0	0.00	0	79.5	25.18	4	120.8	14.41	11	66.1	12.68	8	118.8	63.18	3	49.1	9.09	2
Total crustacean kg	0.0	0.00	0	6.8	2.81	4	6.0	1.18	11	3.9	1.16	8	3.0	2.19	3	0.9	0.91	2
Total others kg	0.0	0.00	0	0.5	0.45	4	0.7	0.37	11	1.1	0.33	8	1.2	0.61	3	5.5	1.82	2
Surface temperature	23.0	0.00	1	22.5	0.00	1	24.4	0.25	12	25.4	0.07	6	25.7	0.02	6	25.7	0.02	3
Midwater temperature	22.7	0.00	1	23.3	0.00	1	24.3	0.18	11	25.3	0.05	6	25.4	0.03	6	25.6	0.04	3
Bottom temperature	23.3	0.00	1	24.5	0.00	1	24.9	0.09	12	25.3	0.08	6	25.2	0.14	6	20.4	0.86	3
Surface salinity	22.3	0.00	1	25.2	0.00	1	31.6	1.25	12	36.1	0.07	6	36.4	0.02	6	36.2	0.33	3
Midwater salinity	26.7	0.00	1	28.4	0.00	1	33.1	0.59	12	36.1	0.11	6	36.4	0.02	6	36.5	0.01	3
Bottom salinity	28.6	0.00	1	33.1	0.00	1	34.8	0.33	12	36.2	0.07	6	36.4	0.02	6	36.8	0.15	3
Surface chlorophyll	4.3	0.00	1	1.8	0.00	1	1.4	0.39	12	0.4	0.07	6	0.2	0.07	5	0.2	0.04	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	2.9	0.00	1	1.6	0.00	1	1.0	0.09	11	0.7	0.00	1	0.0	0.00	0	0.0	0.00	0
Surface oxygen	7.0	0.00	1	7.3	0.00	1	6.7	0.21	12	5.1	1.03	6	6.2	0.06	6	6.2	0.06	3
Midwater oxygen	5.6	0.00	1	5.9	0.00	1	6.2	0.16	10	6.0	0.15	6	6.2	0.05	6	6.0	0.12	3
Bottom oxygen	4.6	0.00	1	4.4	0.00	1	5.0	0.21	12	5.6	0.28	6	5.9	0.20	6	4.2	0.23	3

\*Plankton and environmental stations only.

Table 39a  
 Statistical Zone 17  
 40-ft trawls

Summary of dominant organisms taken in shrimp statistical zone 17 during the October-December 1986 SEAMAP 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	32.0	20.00	0.3	0.09	2	10.7	5.20	0.2	0.08	15	218.0	86.35	3.5	1.30	8
Trachypenaeus															
spp.	192.0	56.00	1.1	0.36	2	95.5	37.53	0.4	0.18	15	2.5	1.30	0.0	0.00	8
Sicyonia															
brevirostris	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	15	32.5	14.27	0.7	0.29	8
Squilla															
spp.	62.0	10.00	0.6	0.09	2	20.3	7.76	0.2	0.09	15	1.5	0.73	0.0	0.03	8
Callinectes															
similis	4.0	4.00	0.0	0.00	2	2.9	1.63	0.1	0.12	15	21.0	4.77	0.8	0.25	8
Portunus															
gibbesii	12.0	0.00	0.1	0.09	2	8.0	3.92	0.0	0.02	15	5.0	2.36	0.0	0.03	8
Stenotomus															
caprinus	0.0	0.00	0.0	0.00	2	13.9	13.87	0.4	0.44	15	175.5	76.05	8.7	3.75	8
Arius															
felis	456.0	144.00	52.4	4.18	2	139.5	59.61	17.5	6.77	15	105.5	54.41	17.4	8.49	8
Peprilus															
burti	334.0	186.00	20.3	11.18	2	83.7	36.19	5.2	2.25	15	4.5	4.50	0.2	0.20	8
Micropogonias															
undulatus	0.0	0.00	0.0	0.00	2	8.3	4.96	0.5	0.29	15	147.0	73.88	12.3	5.65	8
Cynoscion															
spp.	0.0	0.00	0.0	0.00	2	73.9	39.72	0.8	0.44	15	0.0	0.00	0.0	0.00	8
Trachurus															
lathami	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	15	8.0	8.00	0.5	0.48	8
Chloroscombrus															
chrysurus	188.0	76.00	4.7	0.73	2	27.2	12.28	0.7	0.27	15	2.5	1.68	0.0	0.03	8
Lagodon															
rhomboides	0.0	0.00	0.0	0.00	2	37.3	32.80	1.7	1.45	15	9.0	6.88	0.8	0.56	8
Squid	104.0	32.00	1.7	0.27	2	128.5	52.42	1.2	0.47	15	8.0	4.41	0.1	0.06	8

Table 39a (cont'd.)  
 Statistical Zone 17  
 40-ft trawls

Summary of dominant organisms taken in shrimp statistical zone 17 during the October-December 1986 SEAMAP 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					Over 40 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Penaeus															
aztecus	56.0	19.87	3.3	1.13	4	57.6	24.45	2.5	1.07	5	28.0	0.00	1.8	0.00	1
Trachypenaeus															
spp.	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	1
Sicyonia															
brevirostris	126.0	122.03	2.0	1.89	4	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	1
Squilla															
spp.	3.0	1.91	0.1	0.05	4	0.8	0.80	0.0	0.04	5	0.0	0.00	0.0	0.00	1
Callinectes															
similis	9.0	5.26	0.2	0.07	4	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	1
Portunus															
gibbesii	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	1
Stenotomus															
caprinus	610.0	185.43	29.2	10.78	4	279.2	112.89	15.2	7.15	5	60.0	0.00	3.6	0.00	1
Arius															
felis	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	1
Peprilus															
burti	58.0	34.89	3.4	1.99	4	112.8	72.27	6.8	3.62	5	384.0	0.00	19.1	0.00	1
Micropogonias															
undulatus	79.0	32.63	7.7	3.15	4	0.8	0.80	0.1	0.11	5	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	5	0.0	0.00	0.0	0.00	1
Trachurus															
lathamii	13.0	3.42	0.5	0.11	4	177.6	142.43	5.6	4.27	5	44.0	0.00	2.2	0.00	1
Chloroscombrus															
chrysurus	16.0	10.46	1.2	0.78	4	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	1
Lagodon															
rhomboides	31.0	10.63	2.7	0.90	4	4.0	2.19	0.5	0.34	5	0.0	0.00	0.0	0.00	1
Squid															
	11.0	6.40	0.0	0.05	4	3.2	3.20	0.0	0.00	5	84.0	0.00	2.9	0.00	1



Table 39b  
 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 October-December 1986 SEAMAP Groundfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, 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	95.5	8.18	2	42.7	9.98	15	60.9	13.11	8	83.6	28.81	4	52.7	11.84	5	36.4	0.00	1
Total finfish kg	90.9	9.09	2	39.3	9.47	15	54.8	13.59	8	77.3	26.02	4	49.5	10.99	5	30.9	0.00	1
Total crustacean kg	2.7	0.91	2	2.1	0.43	15	5.9	1.23	8	5.9	3.00	4	3.3	0.89	5	1.8	0.00	1
Total others kg	1.8	0.00	2	2.5	0.53	15	1.4	0.30	8	0.9	0.52	4	1.1	0.45	5	3.6	0.00	1
Surface temperature	0.0	0.00	0	20.8	0.40	17	23.5	0.53	8	24.8	0.23	4	25.4	0.12	2	25.3	0.30	3
Midwater temperature	0.0	0.00	0	21.0	0.19	17	23.8	0.47	7	25.2	0.11	4	25.6	0.07	2	25.7	0.22	3
Bottom temperature	0.0	0.00	0	21.1	0.19	17	23.9	0.44	8	25.1	0.06	4	22.7	0.29	2	21.2	0.48	3
Surface salinity	0.0	0.00	0	30.2	0.49	16	34.5	0.47	7	36.0	0.32	3	36.2	0.00	1	36.3	0.06	4
Midwater salinity	0.0	0.00	0	30.4	0.50	17	34.6	0.54	7	36.3	0.05	2	0.0	0.00	0	36.5	0.13	2
Bottom salinity	0.0	0.00	0	30.6	0.47	17	34.8	0.54	7	36.3	0.02	2	0.0	0.00	0	36.4	0.06	3
Surface chlorophyll	0.0	0.00	0	0.9	0.09	15	0.6	0.09	8	0.2	0.07	4	0.3	0.01	2	0.2	0.05	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	0.9	0.11	16	0.5	0.03	4	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface oxygen	0.0	0.00	0	7.5	0.10	17	4.9	1.08	8	3.2	1.83	4	3.2	3.20	2	6.2	0.07	4
Midwater oxygen	0.0	0.00	0	7.3	0.10	17	6.5	0.17	7	6.3	0.00	2	0.0	0.00	0	5.9	0.10	2
Bottom oxygen	0.0	0.00	0	7.1	0.12	17	6.2	0.21	7	6.2	0.15	2	0.0	0.00	0	5.2	0.27	3

Table 40a  
 Statistical Zone 18  
 40-ft trawls

Summary of dominant organisms taken in shrimp statistical zone 18 during the October-December 1986 SEAMAP 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 below 6 fm or above 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
Penaeus															
<u>aztecus</u>	0.0	0.00	0.0	0.00	0	39.3	27.00	0.3	0.23	6	128.0	59.21	2.6	1.14	10
Trachypenaeus															
<u>spp.</u>	0.0	0.00	0.0	0.00	0	52.0	45.90	0.2	0.15	6	51.6	38.54	0.2	0.11	10
Penaeus															
<u>setiferus</u>	0.0	0.00	0.0	0.00	0	82.7	31.59	1.8	0.78	6	6.0	6.00	0.3	0.29	10
Squilla															
<u>spp.</u>	0.0	0.00	0.0	0.00	0	58.7	37.94	0.6	0.41	6	9.6	7.89	0.1	0.07	10
Portunus															
<u>gibbesii</u>	0.0	0.00	0.0	0.00	0	24.7	20.77	0.1	0.06	6	22.8	18.45	0.2	0.11	10
Callinectes															
<u>similis</u>	0.0	0.00	0.0	0.00	0	23.3	18.31	0.2	0.18	6	11.6	8.16	0.1	0.07	10
Stenotomus															
<u>caprinus</u>	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	6	271.2	189.65	9.7	6.45	10
Peprilus															
<u>burti</u>	0.0	0.00	0.0	0.00	0	382.0	364.45	16.8	16.23	6	10.4	6.12	0.7	0.45	10
Cynoscion															
<u>spp.</u>	0.0	0.00	0.0	0.00	0	359.3	150.80	1.9	0.83	6	0.0	0.00	0.0	0.00	10
Micropogonias															
<u>undulatus</u>	0.0	0.00	0.0	0.00	0	4.7	3.92	0.2	0.18	6	26.0	20.26	2.5	1.95	10
Diplectrum															
<u>bivittatum</u>	0.0	0.00	0.0	0.00	0	23.3	14.03	0.3	0.21	6	43.6	13.52	1.1	0.27	10
Anchoa															
<u>nasuta</u>	0.0	0.00	0.0	0.00	0	108.0	80.02	0.2	0.09	6	0.0	0.00	0.0	0.00	10
Cynoscion															
<u>nothus</u>	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	6	62.0	61.56	0.3	0.25	10
Arius															
<u>felis</u>	0.0	0.00	0.0	0.00	0	18.7	17.12	0.8	0.78	6	51.6	49.40	6.5	6.08	10
Squid															
<u>Squid</u>	0.0	0.00	0.0	0.00	0	273.3	47.78	1.4	0.42	6	107.6	34.70	0.8	0.36	10

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

Summary of dominant organisms taken in shrimp statistical zone 18 during the October-December 1986 SEAMAP 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 below 6 fm or above 40 fm.

SPECIES	21-30 FM					31-40 FM					Over 40 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
<i>Penaeus aztecus</i>	113.5	37.06	3.5	1.21	8	216.0	0.00	8.9	0.00	1	0.0	0.00	0.0	0.00	0
<i>Trachypenaeus</i> spp.	5.0	3.98	0.0	0.03	8	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0
<i>Penaeus setiferus</i>	0.0	0.00	0.0	0.00	8	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0
<i>Squilla</i> spp.	0.0	0.00	0.0	0.00	8	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0
<i>Portunus gibbesii</i>	1.0	1.00	0.1	0.07	8	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0
<i>Callinectes similis</i>	7.5	4.37	0.2	0.13	8	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0
<i>Stenotomus caprinus</i>	294.0	83.93	13.1	3.56	8	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0
<i>Peprilus burti</i>	14.5	10.14	1.5	1.03	8	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0
<i>Cynoscion</i> spp.	0.0	0.00	0.0	0.00	8	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0
<i>Micropogonias undulatus</i>	70.0	24.66	6.4	2.18	8	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0
<i>Diplectrum bivittatum</i>	19.0	9.19	0.2	0.11	8	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0
<i>Anchoa nasuta</i>	0.0	0.00	0.0	0.00	8	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0
<i>Cynoscion nothus</i>	1.5	0.73	0.1	0.07	8	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0
<i>Arius felis</i>	0.0	0.00	0.0	0.00	8	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0
Squid	5.0	1.65	0.2	0.18	8	4.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0

Table 40b  
 Statistical Zone 18  
 40-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 October-December 1986 SEAMAP Groundfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, and oxygen in ppm. No trawl samples were taken below 6 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	0.0	0.00	0	36.1	15.77	6	34.2	8.44	10	42.5	9.50	8	67.3	0.00	1	85.5	0.00	1
Total finfish kg	0.0	0.00	0	31.5	15.86	6	29.8	8.56	10	37.3	8.50	8	58.2	0.00	1	81.8	0.00	1
Total crustacean kg	0.0	0.00	0	3.3	1.44	6	4.0	1.08	10	4.5	1.46	8	9.1	0.00	1	3.6	0.00	1
Total others kg	0.0	0.00	0	2.1	0.30	6	1.8	0.27	10	2.0	0.23	8	0.0	0.00	1	1.8	0.00	1
Surface temperature	0.0	0.00	0	20.7	0.51	6	22.5	0.36	10	24.6	0.30	7	24.9	0.22	2	25.4	0.00	1
Midwater temperature	0.0	0.00	0	20.8	0.33	6	22.7	0.27	10	24.4	0.16	7	24.7	0.07	2	25.4	0.00	1
Bottom temperature	0.0	0.00	0	21.0	0.26	6	22.8	0.28	10	24.3	0.14	7	23.6	0.93	2	22.1	0.00	1
Surface salinity	0.0	0.00	0	29.2	1.91	6	34.5	0.52	10	36.5	0.06	6	36.6	0.03	2	36.8	0.00	1
Midwater salinity	0.0	0.00	0	30.7	1.36	6	34.7	0.25	9	36.4	0.07	7	36.6	0.01	2	36.7	0.00	1
Bottom salinity	0.0	0.00	0	32.4	0.97	6	34.8	0.22	9	36.4	0.06	7	36.6	0.07	2	36.8	0.00	1
Surface chlorophyll	0.0	0.00	0	1.6	0.37	5	0.9	0.08	10	0.3	0.03	7	0.2	0.00	1	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	1.7	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface oxygen	0.0	0.00	0	7.6	0.27	6	7.0	0.06	10	6.8	0.15	7	6.2	0.70	2	6.1	0.00	1
Midwater oxygen	0.0	0.00	0	7.5	0.20	6	7.0	0.06	10	6.7	0.17	7	6.1	0.70	2	6.1	0.00	1
Bottom oxygen	0.0	0.00	0	7.0	0.11	6	6.7	0.09	10	6.5	0.16	7	5.7	0.80	2	5.8	0.00	1

Table 41a  
 Statistical Zone 19  
 40-ft trawls

Summary of dominant organisms taken in shrimp statistical zone 19 during the October-December 1986 SEAMAP 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 below 6 fm or above 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
Penaeus															
aztecus	0.0	0.00	0.0	0.00	0	222.0	218.00	3.1	2.91	2	86.3	37.19	1.6	0.61	12
Trachypenaeus															
spp.	0.0	0.00	0.0	0.00	0	374.0	50.00	1.3	0.18	2	53.3	33.44	0.2	0.08	12
Callinectes															
similis	0.0	0.00	0.0	0.00	0	66.0	54.00	1.0	0.82	2	19.7	6.22	0.3	0.11	12
Portunus															
gibbesii	0.0	0.00	0.0	0.00	0	98.0	82.00	0.5	0.36	2	14.3	7.09	0.1	0.06	12
Penaeus															
setiferus	0.0	0.00	0.0	0.00	0	114.0	110.00	2.2	2.00	2	7.0	3.97	0.2	0.14	12
Squilla															
spp.	0.0	0.00	0.0	0.00	0	42.0	14.00	0.4	0.18	2	5.3	2.48	0.1	0.04	12
Chloroscombrus															
chrysurus	0.0	0.00	0.0	0.00	0	106.0	106.00	2.1	2.09	2	561.7	527.98	5.8	5.18	12
Trachurus															
lathami	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	2	99.7	81.09	2.3	1.83	12
Stenotomus															
caprinus	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	2	67.0	29.91	2.9	1.28	12
Lagodon															
rhomboides	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	2	28.0	8.79	1.8	0.68	12
Diplectrum															
bivittatum	0.0	0.00	0.0	0.00	0	120.0	120.00	1.5	1.45	2	88.7	29.12	1.3	0.40	12
Micropogonias															
undulatus	0.0	0.00	0.0	0.00	0	10.0	10.00	0.9	0.91	2	68.7	43.31	4.3	2.40	12
Lutjanus															
campechanus	0.0	0.00	0.0	0.00	0	10.0	10.00	0.1	0.09	2	54.7	14.62	1.4	0.59	12
Etrumeus															
teres	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	2	0.3	0.33	0.0	0.02	12
Squid	0.0	0.00	0.0	0.00	0	192.0	188.00	0.8	0.64	2	21.3	7.14	0.4	0.16	12

Table 41a (cont'd.)

Statistical Zone 19

40-ft trawls

Summary of dominant organisms taken in shrimp statistical zone 19 during the October-December 1986 SEAMAP 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 below 6 fm or above 40 fm.

SPECIES	21-30 FM					31-40 FM					Over 40 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
<i>Penaeus</i>															
<i>aztecus</i>	72.6	25.62	2.8	0.99	7	4.0	4.00	0.1	0.09	2	0.0	0.00	0.0	0.00	0
<i>Trachypenaeus</i>															
<i>spp.</i>	2.9	1.44	0.0	0.00	7	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	0
<i>Callinectes</i>															
<i>similis</i>	26.3	10.25	0.6	0.28	7	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	0
<i>Portunus</i>															
<i>gibbesii</i>	0.0	0.00	0.0	0.00	7	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	0
<i>Penaeus</i>															
<i>setiferus</i>	0.0	0.00	0.0	0.00	7	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	0
<i>Squilla</i>															
<i>spp.</i>	2.9	1.44	0.1	0.03	7	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	0
<i>Chloroscombrus</i>															
<i>chrysurus</i>	12.0	6.41	0.6	0.37	7	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	0
<i>Trachurus</i>															
<i>lathami</i>	156.6	111.41	3.6	2.17	7	1242.0	1202.00	20.6	19.36	2	0.0	0.00	0.0	0.00	0
<i>Stenotomus</i>															
<i>caprinus</i>	180.6	65.67	5.7	2.04	7	124.0	24.00	5.2	1.55	2	0.0	0.00	0.0	0.00	0
<i>Lagodon</i>															
<i>rhomboides</i>	277.1	230.04	15.8	12.48	7	16.0	16.00	1.5	1.45	2	0.0	0.00	0.0	0.00	0
<i>Diplectrum</i>															
<i>bivittatum</i>	0.6	0.57	0.0	0.03	7	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	0
<i>Micropogonias</i>															
<i>undulatus</i>	52.6	23.83	5.0	2.02	7	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	0
<i>Lutjanus</i>															
<i>campechanus</i>	13.7	3.58	0.3	0.05	7	4.0	4.00	1.0	1.00	2	0.0	0.00	0.0	0.00	0
<i>Etrumeus</i>															
<i>teres</i>	16.0	16.00	0.2	0.21	7	326.0	310.00	3.1	2.91	2	0.0	0.00	0.0	0.00	0
<i>Squid</i>	12.0	3.90	0.4	0.21	7	12.0	8.00	0.1	0.09	2	0.0	0.00	0.0	0.00	0

Table 41b  
 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 October-December 1986 SEAMAP Groundfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, and oxygen in ppm. No trawl samples were taken below 6 fm or above 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	0.0	0.00	0	27.3	3.64	2	30.2	7.39	12	46.0	12.92	7	35.5	24.55	2	0.0	0.00	0
Total finfish kg	0.0	0.00	0	17.3	4.55	2	27.0	7.45	12	42.3	12.32	7	35.5	24.55	2	0.0	0.00	0
Total crustacean kg	0.0	0.00	0	9.1	0.00	2	3.3	0.74	12	4.2	0.95	7	1.8	0.00	2	0.0	0.00	0
Total others kg	0.0	0.00	0	1.8	0.00	2	1.5	0.20	12	1.6	0.26	7	1.8	0.00	2	0.0	0.00	0
Surface temperature	0.0	0.00	0	20.8	0.61	2	22.9	0.19	10	24.5	0.29	9	25.0	0.05	2	0.0	0.00	0
Midwater temperature	0.0	0.00	0	21.1	0.73	2	22.9	0.30	10	24.5	0.19	9	24.8	0.28	2	0.0	0.00	0
Bottom temperature	0.0	0.00	0	21.2	0.60	2	23.3	0.22	10	24.3	0.11	9	24.8	0.41	2	0.0	0.00	0
Surface salinity	0.0	0.00	0	31.4	2.81	2	33.0	1.16	10	36.3	0.15	8	36.6	0.07	2	0.0	0.00	0
Midwater salinity	0.0	0.00	0	34.7	0.00	1	35.0	0.44	10	36.4	0.14	8	36.6	0.07	2	0.0	0.00	0
Bottom salinity	0.0	0.00	0	33.4	1.25	2	35.6	0.24	9	36.4	0.11	8	36.5	0.02	2	0.0	0.00	0
Surface chlorophyll	0.0	0.00	0	0.8	0.04	2	0.7	0.11	10	0.3	0.05	8	0.2	0.04	2	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	7.4	0.05	2	7.6	0.26	10	6.9	0.05	9	6.8	0.10	2	0.0	0.00	0
Midwater oxygen	0.0	0.00	0	7.4	0.15	2	7.4	0.17	10	6.9	0.04	9	6.8	0.05	2	0.0	0.00	0
Bottom oxygen	0.0	0.00	0	7.4	0.25	2	6.9	0.08	10	6.7	0.04	9	6.6	0.05	2	0.0	0.00	0

Table 42a  
 Statistical Zone 20  
 40-ft trawls

Summary of dominant organisms taken in shrimp statistical zone 20 during the October-December 1986 SEAMAP 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 below 6 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															
<u>gibbesii</u>	0.0	0.00	0.0	0.00	0	248.0	144.00	1.7	0.82	2	77.6	34.14	0.3	0.15	5
Penaeus															
<u>aztecus</u>	0.0	0.00	0.0	0.00	0	62.0	30.00	0.6	0.09	2	52.0	22.98	0.7	0.28	5
Callinectes															
<u>similis</u>	0.0	0.00	0.0	0.00	0	58.0	26.00	1.1	0.36	2	57.6	50.67	0.4	0.24	5
Squilla															
<u>spp.</u>	0.0	0.00	0.0	0.00	0	204.0	8.00	2.0	0.18	2	14.4	10.85	0.1	0.11	5
Trachypenaeus															
<u>spp.</u>	0.0	0.00	0.0	0.00	0	186.0	58.00	0.5	0.18	2	14.4	13.42	0.0	0.04	5
Penaeus															
<u>setiferus</u>	0.0	0.00	0.0	0.00	0	88.0	12.00	2.3	0.45	2	21.6	11.97	0.9	0.42	5
Trachurus															
<u>lathami</u>	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	2	353.6	184.32	6.8	3.39	5
Etrumeus															
<u>teres</u>	0.0	0.00	0.0	0.00	0	4.0	4.00	0.1	0.09	2	0.8	0.80	0.0	0.04	5
Cynoscion															
<u>spp.</u>	0.0	0.00	0.0	0.00	0	552.0	332.00	4.2	3.82	2	131.2	124.28	0.9	0.86	5
Stenotomus															
<u>caprinus</u>	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	5
Chloroscombrus															
<u>chrysurus</u>	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	2	236.0	139.09	3.6	1.81	5
Serranus															
<u>atrobranchus</u>	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	5
Pristipomoides															
<u>aquilonaris</u>	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	5
Anchoa															
<u>hepsetus</u>	0.0	0.00	0.0	0.00	0	116.0	108.00	0.5	0.18	2	44.8	27.98	0.8	0.47	5
Squid															
<u>spp.</u>	0.0	0.00	0.0	0.00	0	18.0	14.00	0.2	0.18	2	68.8	9.91	0.9	0.60	5



Table 42a (cont'd.)  
 Statistical Zone 20  
 40-ft trawls

Summary of dominant organisms taken in shrimp statistical zone 20 during the October-December 1986 SEAMAP 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 below 6 fm.

SPECIES	21-30 FM					31-40 FM					Over 40 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Portunus															
<i>gibbesii</i>	1.0	1.00	0.0	0.00	4	1.3	1.33	0.0	0.00	6	0.0	0.00	0.0	0.00	5
Penaeus															
<i>aztecus</i>	22.0	5.29	0.6	0.19	4	30.0	6.91	0.9	0.24	6	17.6	11.07	0.8	0.60	5
Callinectes															
<i>similis</i>	37.0	8.39	0.8	0.23	4	10.0	6.26	0.2	0.17	6	8.8	8.80	0.1	0.15	5
Squilla															
<i>spp.</i>	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	5
Trachypenaeus															
<i>spp.</i>	0.0	0.00	0.0	0.00	4	1.3	0.84	0.0	0.00	6	0.0	0.00	0.0	0.00	5
Penaeus															
<i>setiferus</i>	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	5
Trachurus															
<i>lathami</i>	388.0	224.02	6.1	3.54	4	14.0	7.71	0.4	0.24	6	146.4	93.09	2.8	1.74	5
Etrumeus															
<i>teres</i>	40.0	27.08	0.5	0.38	4	64.7	64.67	0.7	0.70	6	536.8	533.81	5.4	5.34	5
Cynoscion															
<i>spp.</i>	0.0	0.00	0.0	0.00	4	2.0	2.00	0.0	0.00	6	0.0	0.00	0.0	0.00	5
Stenotomus															
<i>caprinus</i>	21.0	9.00	0.7	0.40	4	115.3	42.60	4.4	1.76	6	159.2	42.09	6.5	2.35	5
Chloroscombrus															
<i>chrysurus</i>	40.0	36.04	1.6	1.40	4	4.0	1.79	0.1	0.04	6	0.0	0.00	0.0	0.00	5
Serranus															
<i>atrobranchus</i>	125.0	60.74	1.4	0.60	4	32.0	8.88	0.4	0.13	6	75.2	47.87	1.0	0.71	5
Pristipomoides															
<i>aquilonaris</i>	24.0	15.32	0.1	0.09	4	56.0	31.88	1.5	0.91	6	111.2	53.09	4.5	1.46	5
Anchoa															
<i>hepsetus</i>	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	5
Squid															
	32.0	9.93	0.9	0.62	4	27.3	8.35	0.7	0.29	6	21.6	9.00	1.6	1.03	5

Table 42b  
 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 October-December 1986 SEAMAP Groundfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, and oxygen in ppm. No trawl samples were taken below 6 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	21.8	1.82	2	23.6	4.71	5	26.4	5.87	4	27.6	7.41	6	34.8	6.41	6
Total finfish kg	0.0	0.00	0	11.8	2.73	2	19.6	4.96	5	24.5	5.96	4	24.5	7.16	6	31.8	5.61	6
Total crustacean kg	0.0	0.00	0	10.0	0.91	2	2.5	0.73	5	1.8	0.00	4	2.4	0.38	6	1.2	0.61	6
Total others kg	0.0	0.00	0	1.8	0.00	2	2.2	0.36	5	2.3	0.45	4	1.8	0.00	6	3.0	0.61	6
Surface temperature	0.0	0.00	0	21.9	0.00	1	22.4	0.28	5	23.9	0.18	5	24.6	0.29	6	25.4	0.50	6
Midwater temperature	0.0	0.00	0	20.5	0.00	1	21.7	0.52	5	24.0	0.21	5	24.4	0.30	6	24.4	0.44	6
Bottom temperature	0.0	0.00	0	21.2	0.00	1	22.7	0.33	5	24.4	0.09	5	24.1	0.28	6	20.8	0.67	6
Surface salinity	0.0	0.00	0	28.9	0.00	1	31.6	1.38	5	33.8	1.26	5	36.3	0.17	4	36.5	0.05	6
Midwater salinity	0.0	0.00	0	29.5	0.00	1	30.4	3.25	5	36.1	0.16	5	36.4	0.16	5	36.5	0.05	6
Bottom salinity	0.0	0.00	0	33.0	0.00	1	35.1	0.32	5	36.4	0.06	5	36.5	0.08	4	36.4	0.05	5
Surface chlorophyll	0.0	0.00	0	1.4	0.00	1	1.6	0.63	5	0.7	0.13	5	0.5	0.20	5	0.1	0.02	5
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	8.5	0.00	1	7.8	0.34	5	7.6	0.32	5	7.1	0.10	6	7.0	0.16	6
Midwater oxygen	0.0	0.00	0	8.3	0.00	1	7.3	0.06	5	7.0	0.16	5	7.0	0.08	6	7.0	0.18	6
Bottom oxygen	0.0	0.00	0	8.0	0.00	1	6.8	0.19	5	6.7	0.15	5	6.8	0.08	6	5.8	0.34	6

Table 43a  
 Statistical Zone 21  
 40-ft trawls

Summary of dominant organisms taken in shrimp statistical zone 21 during the October-December 1986 SEAMAP 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 below 6 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	22.0	22.00	0.2	0.18	2	85.1	27.49	1.5	0.45	7
Trachypenaeus															
<u>spp.</u>	0.0	0.00	0.0	0.00	0	130.0	58.00	0.3	0.09	2	110.9	46.51	0.4	0.13	7
Portunus															
<u>gibbesii</u>	0.0	0.00	0.0	0.00	0	170.0	10.00	0.5	0.09	2	57.7	23.37	0.3	0.09	7
Callinectes															
<u>similis</u>	0.0	0.00	0.0	0.00	0	22.0	10.00	0.1	0.09	2	48.0	24.05	1.0	0.62	7
Penaeus															
<u>setiferus</u>	0.0	0.00	0.0	0.00	0	14.0	2.00	0.3	0.09	2	37.1	10.46	1.4	0.41	7
Penaeus															
<u>duorarum</u>	0.0	0.00	0.0	0.00	0	114.0	30.00	1.2	0.27	2	4.0	2.14	0.1	0.04	7
Cynoscion															
<u>spp.</u>	0.0	0.00	0.0	0.00	0	3016.0	1144.00	2.8	0.45	2	438.9	204.14	1.0	0.77	7
Pristipomoides															
<u>aquilonaris</u>	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	7
Serranus															
<u>atrobranchus</u>	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	7
Trachurus															
<u>lathami</u>	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	2	1.1	0.74	0.0	0.03	7
Syacium															
<u>spp.</u>	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	2	73.1	60.86	0.7	0.50	7
Stenotomus															
<u>caprinus</u>	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	7
Upeneus															
<u>parvus</u>	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	7
Prionotus															
<u>stearnsi</u>	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	7
Squid															
<u>spp.</u>	0.0	0.00	0.0	0.00	0	98.0	46.00	0.3	0.09	2	40.6	27.15	0.1	0.07	7

Table 43a (cont'd.)  
 Statistical Zone 21  
 40-ft trawls

Summary of dominant organisms taken in shrimp statistical zone 21 during the October-December 1986 SEAMAP 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 below 6 fm.

SPECIES	21-30 FM					31-40 FM					Over 40 FM				
	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
<i>Penaeus</i>															
<i>aztecus</i>	36.0	13.91	1.6	0.60	7	37.0	21.75	1.7	1.01	4	4.0	2.83	0.1	0.09	4
<i>Trachypenaeus</i>															
spp.	0.6	0.57	0.0	0.00	7	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	4
<i>Portunus</i>															
<i>gibbesii</i>	1.7	1.71	0.0	0.00	7	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	4
<i>Callinectes</i>															
<i>similis</i>	14.3	10.65	0.5	0.46	7	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	4
<i>Penaeus</i>															
<i>setiferus</i>	0.0	0.00	0.0	0.00	7	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	4
<i>Penaeus</i>															
<i>duorarum</i>	1.1	1.14	0.0	0.03	7	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	4
<i>Cynoscion</i>															
spp.	1.7	1.71	0.0	0.00	7	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	4
<i>Pristipomoides</i>															
<i>aquilonaris</i>	22.9	14.57	0.1	0.04	7	27.0	15.86	1.4	0.70	4	174.0	58.30	13.4	3.51	4
<i>Serranus</i>															
<i>atrobranchus</i>	20.0	8.37	0.3	0.17	7	52.0	31.75	1.2	0.99	4	114.0	58.48	2.4	1.17	4
<i>Trachurus</i>															
<i>lathami</i>	43.4	38.80	0.9	0.76	7	12.0	8.49	0.1	0.09	4	104.0	74.06	5.0	3.54	4
<i>Syacium</i>															
spp.	1.1	0.74	0.1	0.03	7	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	4
<i>Stenotomus</i>															
<i>caprinus</i>	18.3	8.72	0.5	0.27	7	71.0	47.34	3.4	2.01	4	5.0	3.00	0.2	0.10	4
<i>Upeneus</i>															
<i>parvus</i>	7.4	3.54	0.2	0.12	7	22.0	11.02	0.9	0.50	4	44.0	40.10	0.8	0.65	4
<i>Prionotus</i>															
<i>stearnsi</i>	11.4	3.20	0.1	0.05	7	58.0	47.93	0.7	0.67	4	1.0	1.00	0.0	0.00	4
<i>Squid</i>															
	12.6	5.75	0.1	0.08	7	22.0	14.38	0.1	0.09	4	13.0	5.26	0.7	0.29	4

Table 43b  
 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 October-December 1986 SEAMAP Groundfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, and oxygen in ppm. No trawl samples were taken below 6 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	0.91	2	11.2	2.15	7	18.4	4.17	7	19.5	10.38	4	32.7	5.60	4
Total finfish kg	0.0	0.00	0	4.5	0.91	2	5.5	1.05	7	15.8	4.64	7	16.8	9.28	4	30.9	6.12	4
Total crustacean kg	0.0	0.00	0	2.7	0.91	2	5.2	1.08	7	3.1	0.76	7	2.3	1.36	4	1.8	0.00	4
Total others kg	0.0	0.00	0	1.8	0.00	2	1.8	0.00	7	1.8	0.00	7	1.8	0.00	4	1.8	0.00	4
Surface temperature	0.0	0.00	0	20.8	0.08	2	22.3	0.49	5	24.0	0.33	7	25.0	0.20	5	24.8	0.00	1
Midwater temperature	0.0	0.00	0	20.6	0.07	2	22.2	0.40	5	24.4	0.22	7	25.0	0.08	5	24.5	0.00	1
Bottom temperature	0.0	0.00	0	21.1	0.02	2	22.8	0.64	5	24.6	0.08	7	24.5	0.34	5	23.5	0.00	1
Surface salinity	0.0	0.00	0	29.9	0.05	2	31.8	0.88	5	35.5	0.52	7	36.7	0.09	5	36.3	0.00	1
Midwater salinity	0.0	0.00	0	29.9	0.03	2	33.7	1.18	5	36.5	0.10	6	36.7	0.07	5	36.3	0.00	1
Bottom salinity	0.0	0.00	0	31.7	0.03	2	34.7	0.92	5	36.5	0.06	7	36.5	0.08	5	36.5	0.00	1
Surface chlorophyll	0.0	0.00	0	1.7	0.01	2	0.5	0.07	4	0.2	0.04	7	0.3	0.08	5	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	8.8	0.25	2	7.4	0.29	5	6.9	0.07	7	6.5	0.08	5	6.8	0.00	1
Midwater oxygen	0.0	0.00	0	9.0	0.05	2	7.2	0.46	5	6.7	0.04	6	6.5	0.09	5	6.8	0.00	1
Bottom oxygen	0.0	0.00	0	8.4	0.55	2	6.6	0.45	5	6.4	0.04	6	6.2	0.11	5	6.6	0.00	1

Table 44a  
 Statistical Zone 17  
 20-ft trawls

Summary of dominant organisms taken in shrimp statistical zone 17 during the October-December 1986 SEAMAP 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 above 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															
<i>setiferus</i>	74.4	26.06	0.7	0.25	5	38.0	32.19	0.4	0.18	3	0.0	0.00	0.0	0.00	0
Xiphopenaeus															
<i>kroyeri</i>	34.8	28.99	0.3	0.15	5	38.0	38.00	0.2	0.18	3	0.0	0.00	0.0	0.00	0
Squilla															
<i>spp.</i>	33.6	22.34	0.3	0.15	5	8.0	5.29	0.2	0.09	3	0.0	0.00	0.0	0.00	0
Callinectes															
<i>similis</i>	13.2	6.68	0.2	0.07	5	30.0	9.17	0.3	0.00	3	0.0	0.00	0.0	0.00	0
Portunus															
<i>gibbesii</i>	4.8	3.50	0.1	0.07	5	2.0	2.00	0.1	0.09	3	0.0	0.00	0.0	0.00	0
Callinectes															
<i>sapidus</i>	2.4	2.40	0.1	0.05	5	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	0
Stellifer															
<i>lanceolatus</i>	21.6	8.82	0.3	0.12	5	24.0	24.00	0.1	0.09	3	0.0	0.00	0.0	0.00	0
Symphurus															
<i>plagiusa</i>	12.0	10.56	0.3	0.21	5	4.0	4.00	0.1	0.09	3	0.0	0.00	0.0	0.00	0
Cynoscion															
<i>nothus</i>	3.6	3.60	0.1	0.05	5	10.0	5.29	0.2	0.09	3	0.0	0.00	0.0	0.00	0
Cynoscion															
<i>arenarius</i>	3.6	2.40	0.2	0.11	5	4.0	4.00	0.3	0.27	3	0.0	0.00	0.0	0.00	0
Anchoa															
<i>mitchilli</i>	2.4	2.40	0.1	0.05	5	4.0	4.00	0.1	0.09	3	0.0	0.00	0.0	0.00	0
Arius															
<i>felis</i>	6.0	3.79	0.1	0.07	5	2.0	2.00	0.1	0.09	3	0.0	0.00	0.0	0.00	0
Trichiurus															
<i>lepturus</i>	6.0	2.68	0.2	0.07	5	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	0
Chaetodipterus															
<i>faber</i>	0.0	0.00	0.0	0.00	5	4.0	4.00	0.1	0.09	3	0.0	0.00	0.0	0.00	0
Squid															
	20.4	10.50	0.3	0.13	5	46.0	14.00	0.7	0.24	3	0.0	0.00	0.0	0.00	0

Table 44b  
 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 October-December 1986 SEAMAP Groundfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, and oxygen in ppm. No trawl samples were taken above 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	4.4	0.67	5	7.3	3.28	3	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	0.55	5	5.5	2.73	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total crustacean kg	2.7	0.00	5	2.7	0.00	3	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	0.00	5	2.7	0.00	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface temperature	19.4	0.05	5	20.0	0.23	3	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	19.3	0.14	5	19.7	0.03	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface salinity	26.2	0.37	5	25.0	1.00	3	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	27.8	0.37	5	28.3	0.67	3	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	9.1	0.27	5	10.7	0.43	3	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	9.3	0.59	5	9.1	0.43	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0

Table 45a  
 Statistical Zone 18  
 20-ft trawls

Summary of dominant organisms taken in shrimp statistical zone 18 during the October-December 1986 SEAMAP 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 above 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
Callinectes															
<u>similis</u>	10.0	10.00	0.0	0.00	3	164.4	45.48	0.1	0.05	5	0.0	0.00	0.0	0.00	0
Penaeus															
<u>setiferus</u>	124.0	56.32	0.1	0.09	3	72.0	37.95	0.1	0.05	5	0.0	0.00	0.0	0.00	0
Squilla															
<u>spp.</u>	4.0	4.00	0.0	0.00	3	90.0	25.67	0.1	0.05	5	0.0	0.00	0.0	0.00	0
Portunus															
<u>gibbesii</u>	32.0	32.00	0.0	0.00	3	8.4	5.56	0.0	0.00	5	0.0	0.00	0.0	0.00	0
Pagurus															
<u>pollicaris</u>	2.0	2.00	0.0	0.00	3	10.8	4.80	0.1	0.05	5	0.0	0.00	0.0	0.00	0
Trachypenaeus															
<u>spp.</u>	0.0	0.00	0.0	0.00	3	12.0	5.02	0.0	0.00	5	0.0	0.00	0.0	0.00	0
Cynoscion															
<u>nothus</u>	2.0	2.00	0.0	0.00	3	70.8	19.57	0.0	0.00	5	0.0	0.00	0.0	0.00	0
Symphurus															
<u>plagiusa</u>	16.0	5.29	0.0	0.00	3	40.8	6.95	0.1	0.05	5	0.0	0.00	0.0	0.00	0
Stellifer															
<u>lanceolatus</u>	12.0	3.46	0.0	0.00	3	2.4	1.47	0.0	0.00	5	0.0	0.00	0.0	0.00	0
Selene															
<u>setapinnis</u>	14.0	14.00	0.0	0.00	3	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	0
Etropus															
<u>crossotus</u>	2.0	2.00	0.0	0.00	3	7.2	2.24	0.0	0.00	5	0.0	0.00	0.0	0.00	0
Cynoscion															
<u>arenarius</u>	4.0	4.00	0.0	0.00	3	3.6	2.40	0.0	0.00	5	0.0	0.00	0.0	0.00	0
Trichiurus															
<u>lepturus</u>	2.0	2.00	0.0	0.00	3	2.4	2.40	0.0	0.00	5	0.0	0.00	0.0	0.00	0
Citharichthys															
<u>spilopterus</u>	0.0	0.00	0.0	0.00	3	3.6	2.40	0.0	0.00	5	0.0	0.00	0.0	0.00	0
Squid															
	38.0	26.00	0.1	0.09	3	14.4	6.18	0.0	0.00	5	0.0	0.00	0.0	0.00	0



Table 45b  
 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 October-December 1986 SEAMAP Groundfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, and oxygen in ppm. No trawl samples were taken above 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	2.7	0.00	3	2.7	0.00	5	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	0.00	3	2.7	0.00	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total crustacean kg	2.7	0.00	3	2.7	0.00	5	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	0.00	3	2.2	0.55	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface temperature	20.2	0.19	3	20.1	0.12	5	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	19.3	0.09	3	19.8	0.05	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface salinity	26.3	0.33	3	24.8	0.37	5	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	28.7	0.88	3	31.8	0.49	5	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	8.7	0.28	3	8.7	0.08	5	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	0.35	3	7.3	0.28	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0

Table 46a  
 Statistical Zone 19  
 20-ft trawls

Summary of dominant organisms taken in shrimp statistical zone 19 during the October-December 1986 SEAMAP 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 above 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
Xiphopenaeus															
<i>kroyeri</i>	18.0	18.00	0.0	0.00	3	26.4	19.41	0.1	0.05	5	0.0	0.00	0.0	0.00	0
Penaeus															
<i>setiferus</i>	12.0	6.00	0.1	0.09	3	15.6	9.22	0.1	0.07	5	0.0	0.00	0.0	0.00	0
Portunus															
<i>gibbesii</i>	4.0	2.00	0.0	0.00	3	13.2	3.98	0.0	0.00	5	0.0	0.00	0.0	0.00	0
Callinectes															
<i>similis</i>	2.0	2.00	0.0	0.00	3	8.4	7.00	0.1	0.05	5	0.0	0.00	0.0	0.00	0
Trachypenaeus															
<i>spp.</i>	8.0	8.00	0.0	0.00	3	2.4	2.40	0.0	0.00	5	0.0	0.00	0.0	0.00	0
Squilla															
<i>spp.</i>	4.0	4.00	0.1	0.09	3	3.6	1.47	0.0	0.00	5	0.0	0.00	0.0	0.00	0
Cynoscion															
<i>nothus</i>	2.0	2.00	0.0	0.00	3	34.8	19.01	0.1	0.11	5	0.0	0.00	0.0	0.00	0
Stellifer															
<i>lanceolatus</i>	14.0	8.00	0.3	0.16	3	16.8	9.56	0.4	0.20	5	0.0	0.00	0.0	0.00	0
Cynoscion															
<i>arenarius</i>	6.0	3.46	0.2	0.09	3	2.4	1.47	0.1	0.05	5	0.0	0.00	0.0	0.00	0
Symphurus															
<i>plagiusa</i>	2.0	2.00	0.0	0.00	3	4.8	4.80	0.1	0.11	5	0.0	0.00	0.0	0.00	0
Syacium															
<i>gunteri</i>	0.0	0.00	0.0	0.00	3	3.6	2.40	0.1	0.05	5	0.0	0.00	0.0	0.00	0
Selene															
<i>setapinnis</i>	2.0	2.00	0.0	0.00	3	1.2	1.20	0.0	0.00	5	0.0	0.00	0.0	0.00	0
Lagodon															
<i>rhomboides</i>	0.0	0.00	0.0	0.00	3	2.4	1.47	0.0	0.00	5	0.0	0.00	0.0	0.00	0
Chloroscombrus															
<i>chrysurus</i>	0.0	0.00	0.0	0.00	3	2.4	2.40	0.0	0.00	5	0.0	0.00	0.0	0.00	0
Squid															
	4.0	4.00	0.0	0.00	3	7.2	3.50	0.0	0.00	5	0.0	0.00	0.0	0.00	0

Table 46b  
 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 October-December 1986 SEAMAP Groundfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, and oxygen in ppm. No trawl samples were taken above 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	2.7	0.00	3	2.7	0.00	5	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	0.00	3	2.2	0.55	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total crustacean kg	2.7	0.00	3	2.7	0.00	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total others kg	1.8	0.91	3	2.7	0.00	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface temperature	18.4	0.12	3	19.2	0.27	4	20.1	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	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom temperature	18.9	0.07	3	20.2	0.35	4	20.7	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface salinity	27.0	0.00	3	26.8	0.11	4	28.5	0.00	1	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	27.6	0.09	3	30.7	1.09	4	33.0	0.00	1	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	8.5	0.15	3	7.8	0.19	4	8.6	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	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom oxygen	8.2	0.53	3	7.5	0.19	4	7.4	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0

\*Plankton and environmental stations only.

Table 47a  
 Statistical Zone 20  
 20-ft trawls

Summary of dominant organisms taken in shrimp statistical zone 20 during the October-December 1986 SEAMAP 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 below 6 fm or above 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
Portunus															
<i>gibbesii</i>	0.0	0.00	0.0	0.00	0	22.0	14.00	0.2	0.09	3	12.0	5.02	0.1	0.07	5
Squilla															
<i>spp.</i>	0.0	0.00	0.0	0.00	0	14.0	5.29	0.3	0.00	3	10.8	6.68	0.1	0.11	5
Trachypenaeus															
<i>spp.</i>	0.0	0.00	0.0	0.00	0	16.0	10.58	0.0	0.00	3	7.2	7.20	0.0	0.00	5
Callinectes															
<i>similis</i>	0.0	0.00	0.0	0.00	0	8.0	5.29	0.1	0.09	3	12.0	3.29	0.2	0.11	5
Penaeus															
<i>duorarum</i>	0.0	0.00	0.0	0.00	0	16.0	13.11	0.1	0.09	3	2.4	1.47	0.0	0.00	5
Penaeus															
<i>aztecus</i>	0.0	0.00	0.0	0.00	0	2.0	2.00	0.0	0.00	3	3.6	2.40	0.0	0.00	5
Cynoscion															
<i>nothus</i>	0.0	0.00	0.0	0.00	0	120.0	53.33	0.8	0.31	3	78.0	38.65	0.4	0.14	5
Stellifer															
<i>lanceolatus</i>	0.0	0.00	0.0	0.00	0	32.0	26.23	0.5	0.42	3	1.2	1.20	0.0	0.00	5
Cynoscion															
<i>arenarius</i>	0.0	0.00	0.0	0.00	0	6.0	6.00	0.2	0.18	3	6.0	3.79	0.4	0.24	5
Lagodon															
<i>rhomboides</i>	0.0	0.00	0.0	0.00	0	2.0	2.00	0.0	0.00	3	6.0	2.68	0.2	0.07	5
Micropogonias															
<i>undulatus</i>	0.0	0.00	0.0	0.00	0	2.0	2.00	0.1	0.09	3	4.8	2.24	0.2	0.10	5
Syacium															
<i>gunteri</i>	0.0	0.00	0.0	0.00	0	4.0	4.00	0.1	0.09	3	3.6	1.47	0.0	0.00	5
Peprilus															
<i>alepidotus</i>	0.0	0.00	0.0	0.00	0	4.0	4.00	0.0	0.00	3	0.0	0.00	0.0	0.00	5
Chaetodipterus															
<i>faber</i>	0.0	0.00	0.0	0.00	0	4.0	4.00	0.0	0.00	3	0.0	0.00	0.0	0.00	5
Squid															
	0.0	0.00	0.0	0.00	0	56.0	29.46	0.2	0.09	3	68.4	21.85	0.4	0.14	5

Table 47b  
 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 October-December 1986 SEAMAP Groundfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, and oxygen in ppm. No trawl samples were taken above 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	5.5	0.00	3	4.4	1.09	5	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	3	3.3	0.55	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total crustacean kg	0.0	0.00	0	2.7	0.00	3	2.7	0.00	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total others kg	0.0	0.00	0	2.7	0.00	3	3.3	0.55	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface temperature	0.0	0.00	0	19.1	0.46	3	19.7	0.15	5	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	0.0	0.00	0	20.4	0.55	3	21.2	0.14	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface salinity	0.0	0.00	0	30.0	0.00	3	30.4	0.24	5	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	33.0	1.00	3	34.2	0.58	5	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	8.9	0.20	3	8.4	0.04	5	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	0.0	0.00	0	8.4	0.09	3	8.5	0.29	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0

Table 49a  
 Statistical Zone 12  
 16-ft trawls

Summary of dominant organisms taken in shrimp statistical zone 12 during the October-December 1986 SEAMAP 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 above 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
Anchoa															
<u>mitchilli</u>	2976.0	2976.00	5.5	5.55	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Chloroscombrus															
<u>chrysurus</u>	252.0	252.00	1.0	1.00	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Squid	30.0	30.00	0.2	0.18	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0

Table 49b  
 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 October-December 1986 SEAMAP Groundfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, and oxygen in ppm. No trawl samples were taken above 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	6.4	6.36	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	6.4	6.36	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	22.2	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 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	22.4	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
Surface salinity	28.0	0.74	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	29.2	1.09	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 chlorophyll	5.3	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	0.0	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	4.6	1.24	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 oxygen	7.4	0.15	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	0.0	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	0.15	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 50a  
 Statistical Zone 13  
 16-ft trawls

Summary of dominant organisms taken in shrimp statistical zone 13 during the October-December 1986 SEAMAP 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 above 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>Callinectes</i>															
<i>similis</i>	1498.0	957.84	2.3	1.20	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Trachypenaeus</i>															
<i>spp.</i>	158.0	140.04	0.2	0.18	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>	86.0	44.00	0.6	0.24	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Portunus</i>															
<i>gibbesii</i>	72.0	28.35	0.2	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>aztecus</i>	46.0	34.70	0.4	0.24	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Squilla</i>															
<i>spp.</i>	28.0	19.70	0.1	0.09	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Chloroscombrus</i>															
<i>chrysurus</i>	1378.0	1363.01	1.3	1.27	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>	622.0	142.04	0.7	0.24	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Symphurus</i>															
<i>plagiusa</i>	404.0	273.34	1.5	0.74	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>	80.0	40.15	0.1	0.09	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Cynoscion</i>															
<i>nothus</i>	66.0	29.60	0.4	0.24	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Larimus</i>															
<i>fasciatus</i>	34.0	14.42	0.0	0.00	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Menticirrhus</i>															
<i>americanus</i>	20.0	10.58	0.2	0.09	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Arius</i>															
<i>felis</i>	18.0	15.10	0.1	0.09	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
<i>Squid</i>	18.0	9.17	0.0	0.00	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0



Table 50b  
 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 October-December 1986 SEAMAP Groundfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, and oxygen in ppm. No trawl samples were taken above 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	10.0	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	5.5	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 crustacean kg	3.6	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	22.6	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	22.5	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
Surface salinity	23.7	0.06	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 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	23.9	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
Surface chlorophyll	13.9	1.67	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	13.4	0.75	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 oxygen	7.9	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	6.7	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

Table 51a  
 Statistical Zone 14  
 16-ft trawls

Summary of dominant organisms taken in shrimp statistical zone 14 during the October-December 1986 SEAMAP 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 above 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 spp.	30.0	30.00	0.1	0.09	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	0.2	0.09	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Callinectes similis	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
Penaeus setiferus	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
Penaeus aztecus	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
Anchoa mitchilli	502.0	215.40	0.6	0.18	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Larimus fasciatus	200.0	100.00	0.2	0.09	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Anchoa hepsetus	116.0	116.00	0.3	0.27	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Stellifer lanceolatus	84.0	84.00	0.2	0.18	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Brevoortia patronus	20.0	20.00	0.3	0.27	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Micropogonias undulatus	18.0	18.00	1.1	1.09	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Menticirrhus americanus	6.0	6.00	0.1	0.09	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Cynoscion arenarius	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
Squid	150.0	75.02	0.8	0.31	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0

Table 51b  
 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 October-December 1986 SEAMAP Groundfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, and oxygen in ppm. No trawl samples were taken above 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	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	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 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	0.9	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	22.5	0.27	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 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	22.6	0.74	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	25.6	0.41	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
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	26.6	0.92	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	8.3	1.04	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	6.3	1.20	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 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	6.2	1.05	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 52a  
 Statistical Zone 16  
 16-ft trawls

Summary of dominant organisms taken in shrimp statistical zone 16 during the October-December 1986 SEAMAP 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 above 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>	74.0	74.00	0.4	0.36	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Trachypenaeus															
spp.	88.0	88.00	0.1	0.09	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Sicyonia															
<i>dorsalis</i>	84.0	75.18	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>setiferus</i>	70.0	38.31	0.6	0.40	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Penaeus															
<i>aztecus</i>	36.0	18.33	0.1	0.09	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Libinia															
<i>emarginata</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
Cynoscion															
<i>arenarius</i>	278.0	260.02	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>mitchilli</i>	144.0	86.53	0.2	0.18	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Symphurus															
<i>plagiusa</i>	76.0	70.00	0.9	0.91	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Porichthys															
<i>plectrodon</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	0
Arius															
<i>felis</i>	74.0	31.24	1.2	0.55	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Stellifer															
<i>lanceolatus</i>	60.0	51.26	0.4	0.24	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Chloroscombrus															
<i>chrysurus</i>	58.0	41.33	0.1	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>	28.0	16.37	0.2	0.18	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Squid	110.0	56.32	0.8	0.57	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0

Table 52b  
 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 October-December 1986 SEAMAP Groundfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, and oxygen in ppm. No trawl samples were taken above 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	10.9	1.57	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
Total finfish kg	5.5	1.57	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
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	0.9	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	21.5	0.21	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	21.8	0.25	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	17.2	4.89	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	17.7	4.90	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	6.1	1.55	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 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	0.40	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
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	6.7	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

Table 53a  
 Statistical Zone 17  
 16-ft trawls

Summary of dominant organisms taken in shrimp statistical zone 17 during the October-December 1986 SEAMAP 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 above 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
Xanthidae	474.0	363.33	1.3	0.90	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Penaeus															
setiferus	110.0	75.29	0.5	0.24	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Portunus															
gibbesii	94.0	88.07	0.5	0.55	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Trachypenaeus															
spp.	44.0	41.04	0.1	0.09	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Callinectes															
similis	24.0	15.87	0.4	0.24	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Squilla															
spp.	24.0	3.46	0.3	0.00	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Stellifer															
lanceolatus	946.0	831.47	2.3	2.01	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Anchoa															
mitchilli	498.0	109.38	0.8	0.42	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Cynoscion															
arenarius	76.0	17.78	0.5	0.27	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Arius															
felis	64.0	46.13	0.7	0.33	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Symphurus															
plagiusa	34.0	17.44	0.3	0.27	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Astroscopus															
y-graecum	24.0	15.87	0.0	0.00	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Chloroscombrus															
chrysurus	16.0	16.00	0.0	0.00	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Prionotus															
rubio	12.0	6.93	0.0	0.00	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Squid	96.0	66.36	0.5	0.42	3	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0

Table 53b  
 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 October-December 1986 SEAMAP Groundfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, and oxygen in ppm. No trawl samples were taken above 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	10.0	3.28	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
Total finfish kg	5.5	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	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	0.9	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	21.6	0.41	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
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	21.9	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	25.0	0.88	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
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	27.1	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
Surface chlorophyll	6.2	1.22	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	6.5	0.61	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	5.4	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

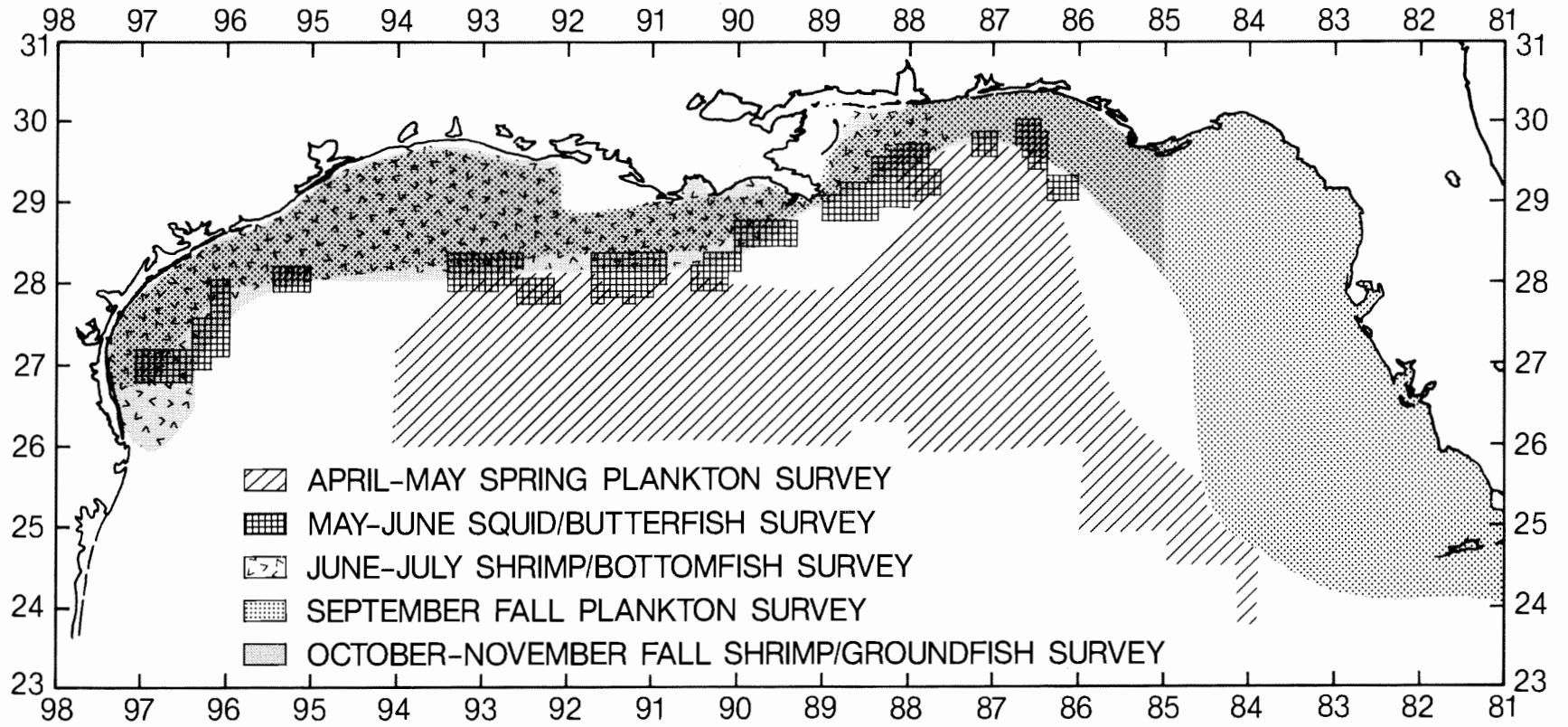


Figure 1. 1986 SEAMAP Surveys, Gulf of Mexico.



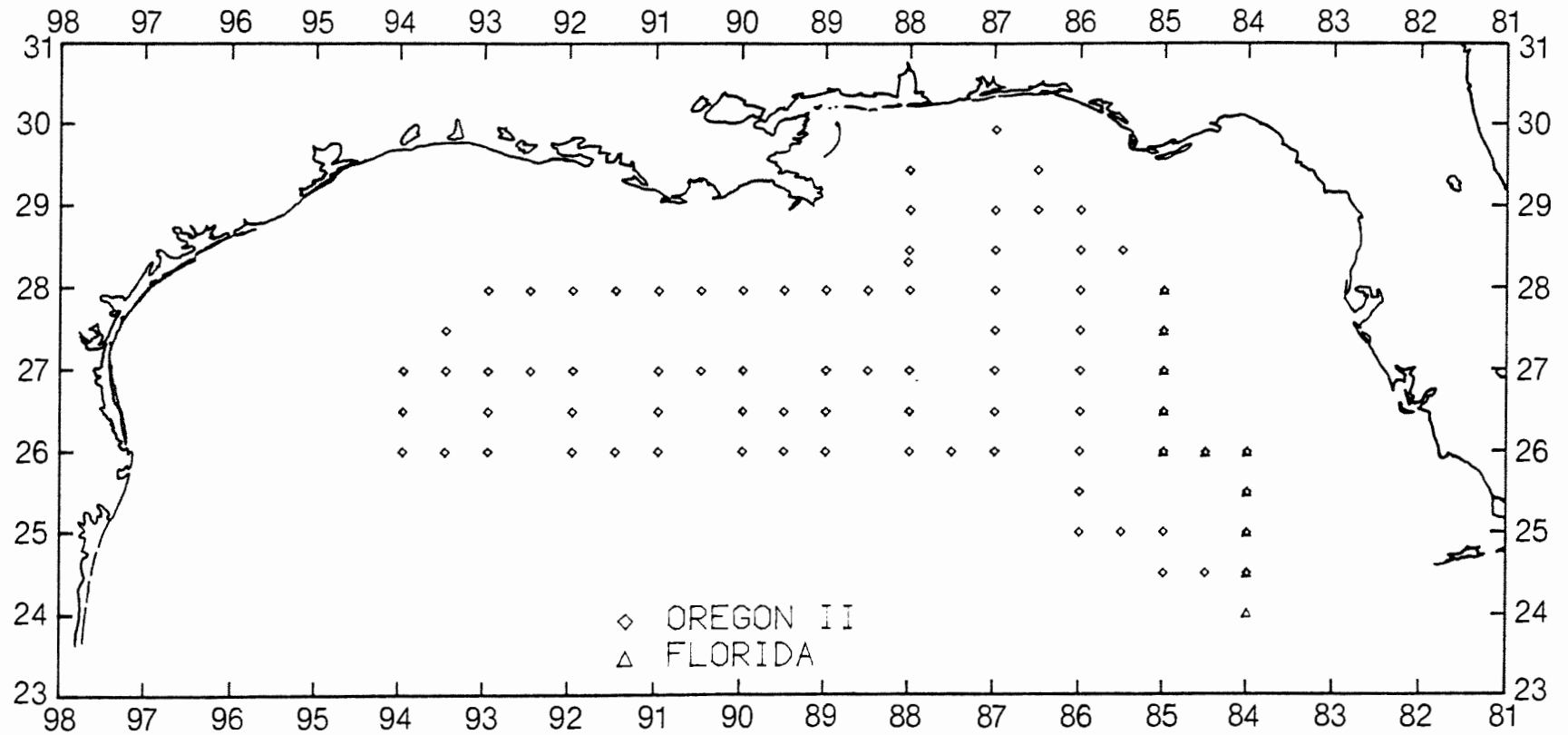


Figure 2. Locations of plankton and environmental stations during SEAMAP offshore plankton survey, April-May 1986.

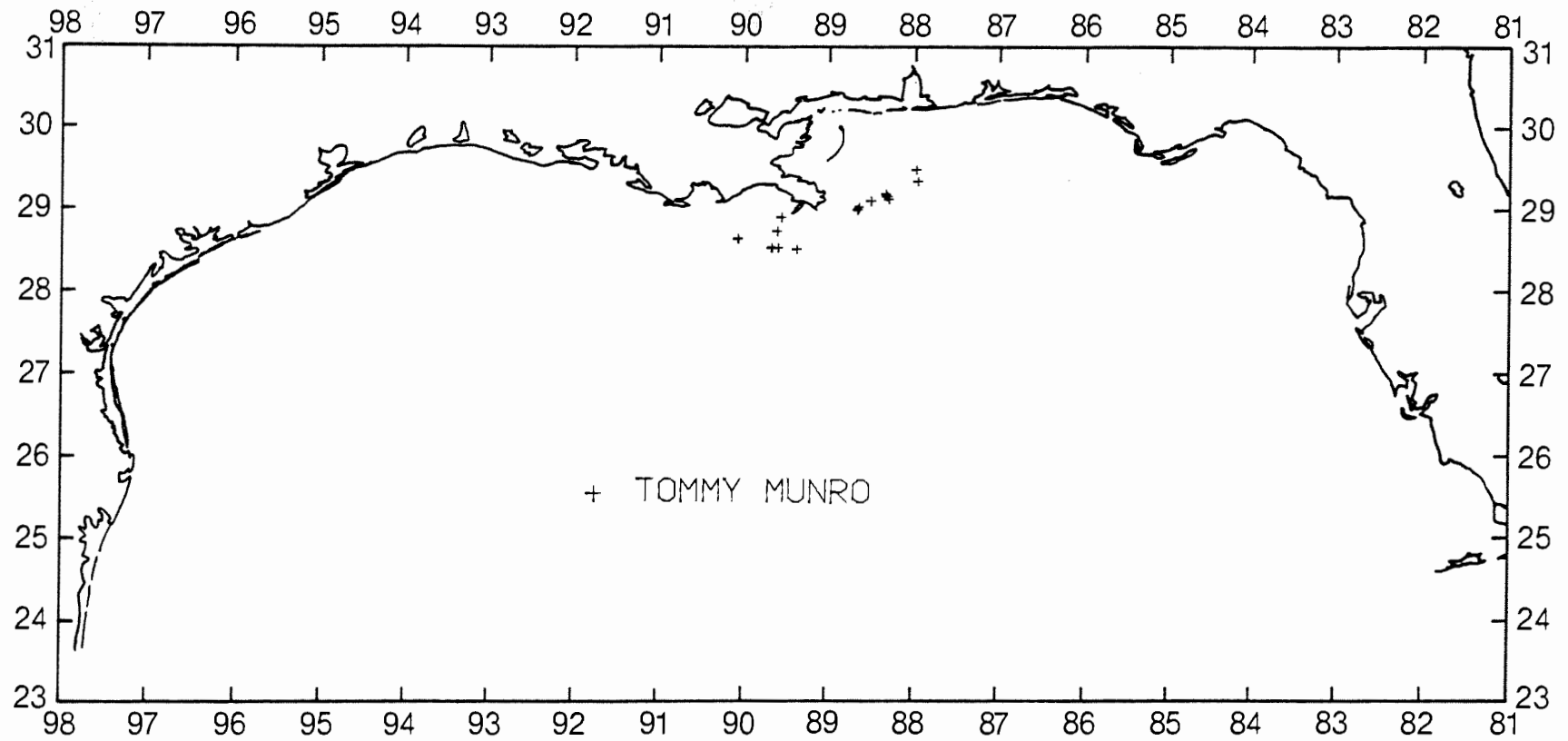


Figure 3. Locations of plankton stations during SEAMAP Squid/Butterfish Survey, May-June 1986.

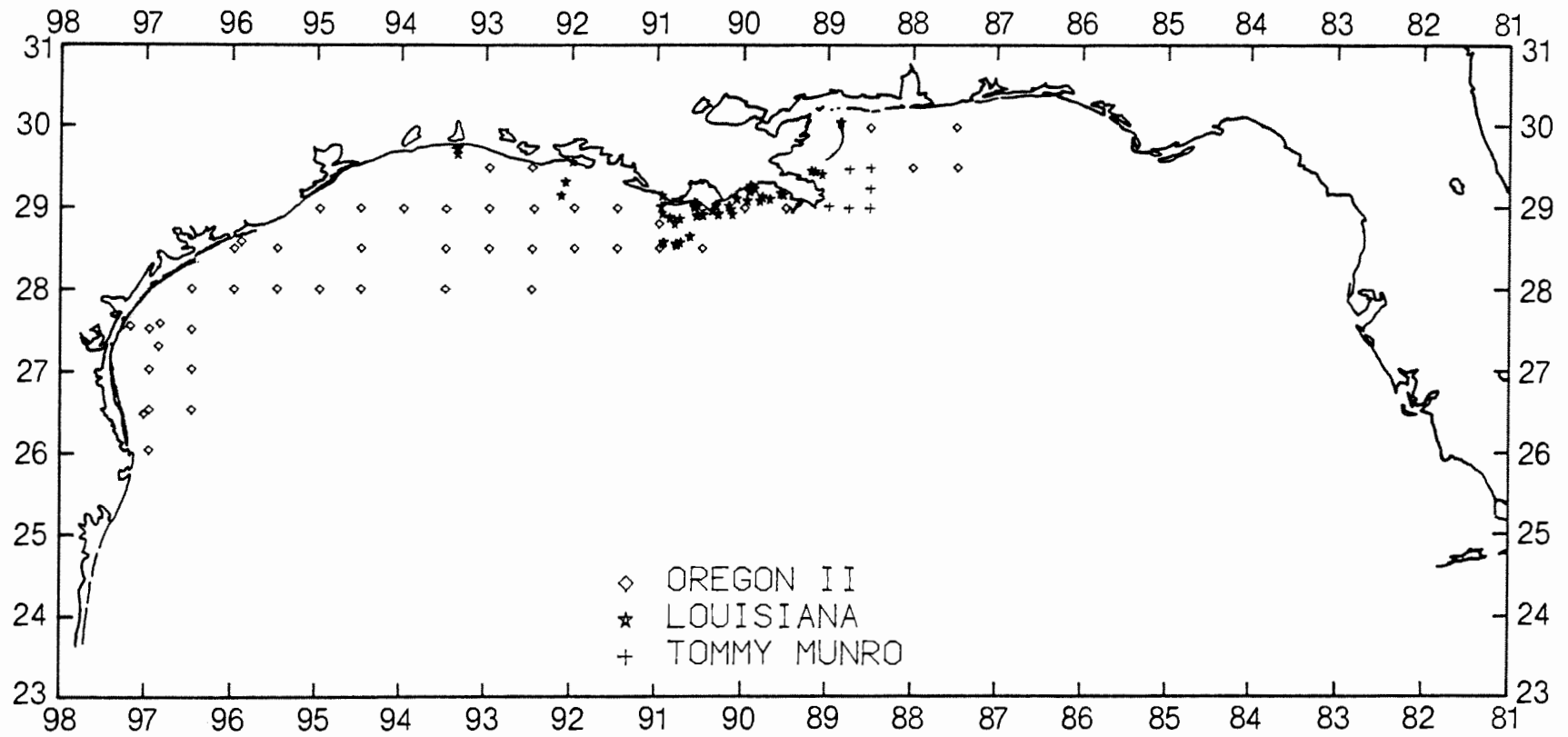


Figure 4. Locations of plankton stations during SEAMAP Summer Shrimp/Bottomfish Survey, June-July 1986.

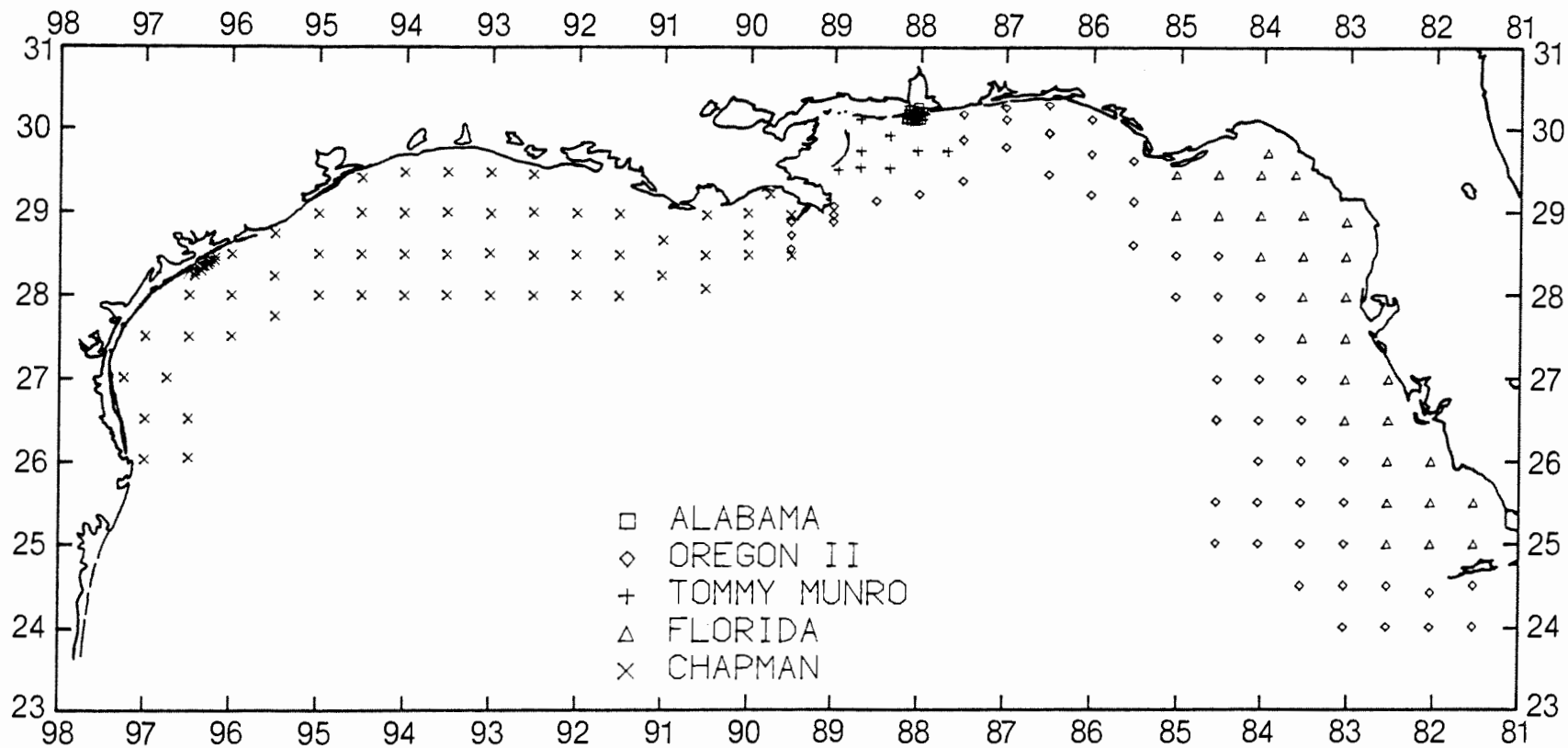


Figure 5. Locations of plankton and environmental stations during SEAMAP September Plankton Survey, September 1986.

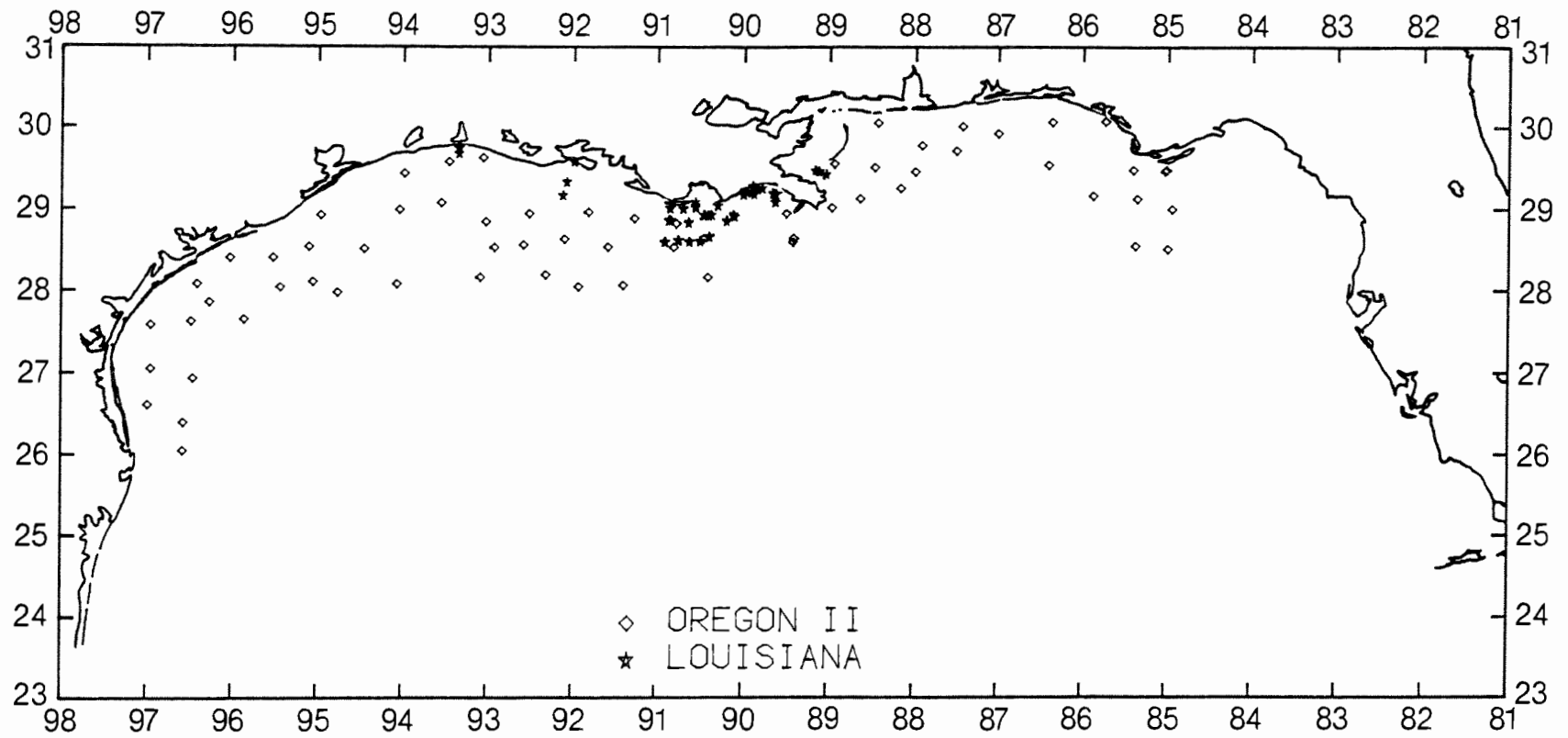


Figure 6. Locations of plankton stations during SEAMAP Fall Shrimp/Groundfish Survey, October-December 1986.

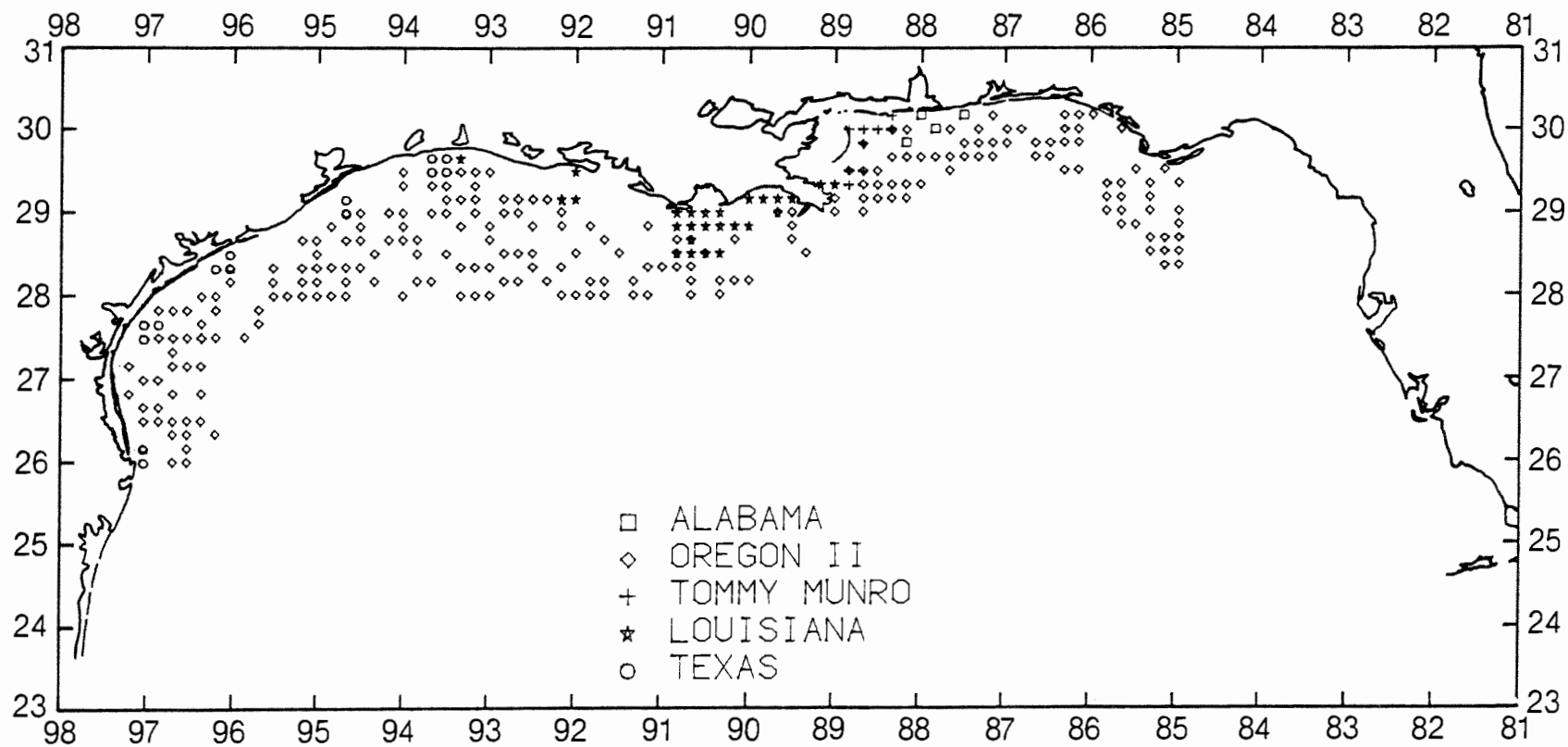


Figure 9. Locations of SEAMAP Fall Shrimp/Groundfish Survey environmental stations, summarized by 10-minute squares, October-December 1986.

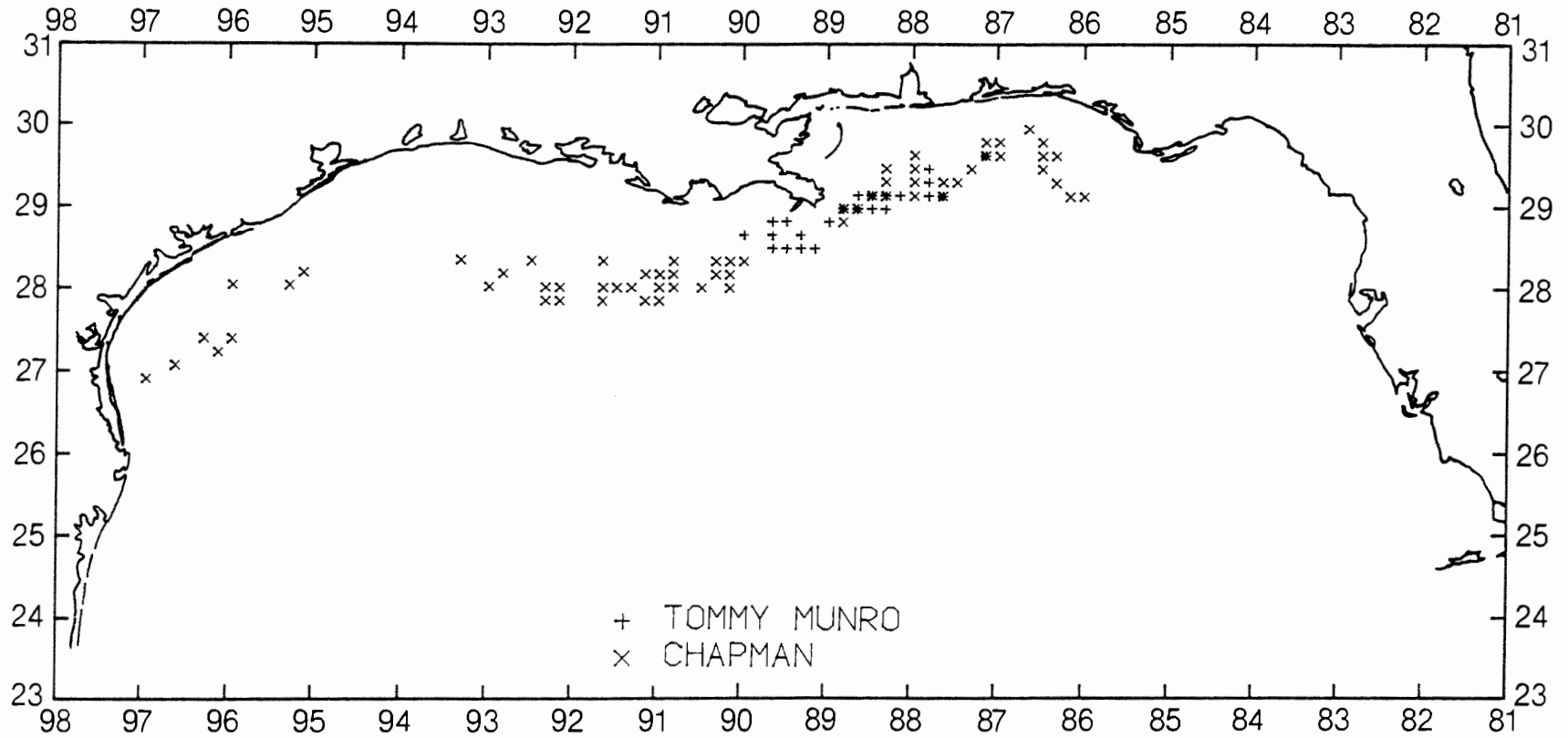


Figure 10. Locations of SEAMAP Squid/Butterfish trawl stations, summarized by 10-minute squares, May-June 1986.

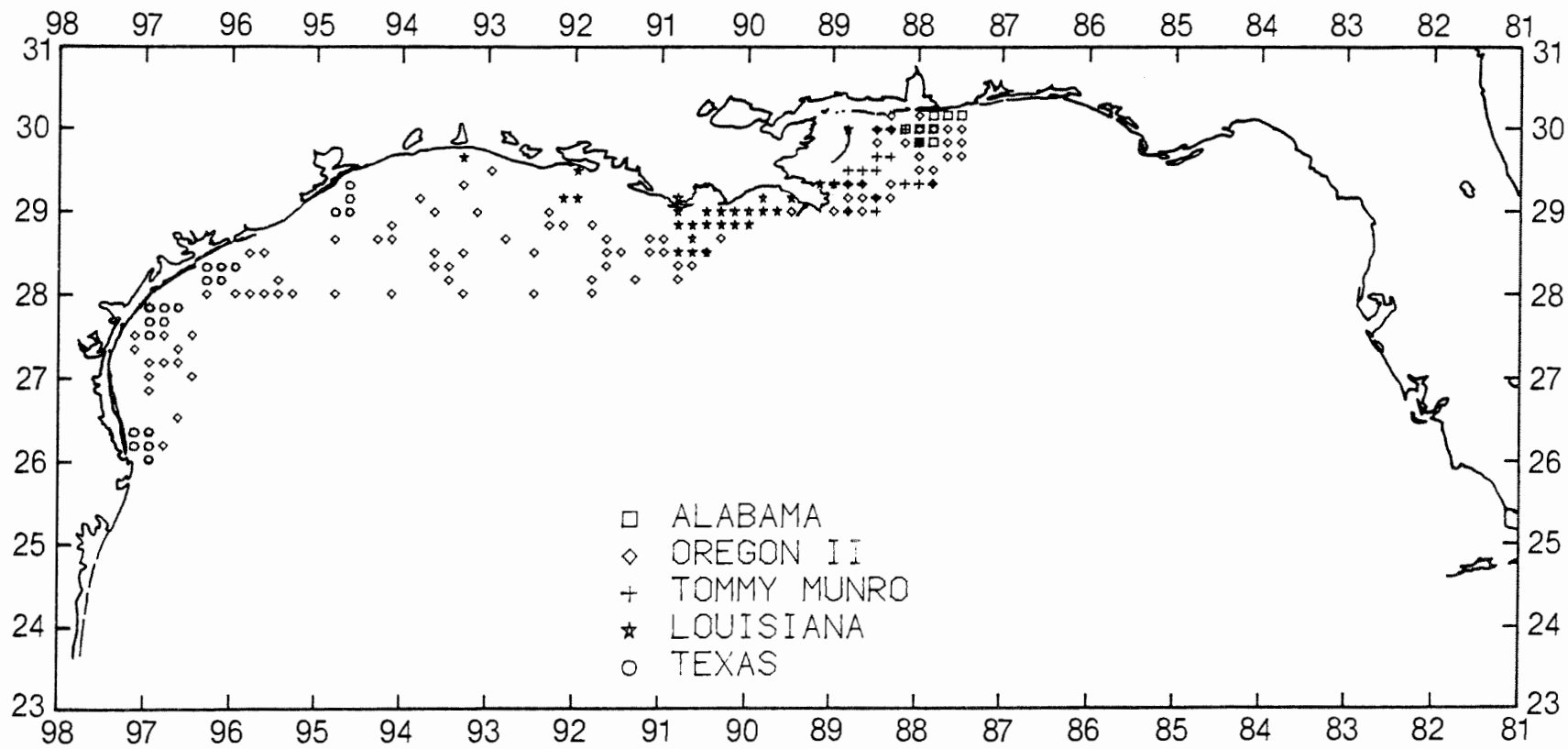


Figure 11. Locations of SEAMAP Summer Shrimp/Bottomfish trawl stations, summarized by 10-minute squares, June-July 1986.



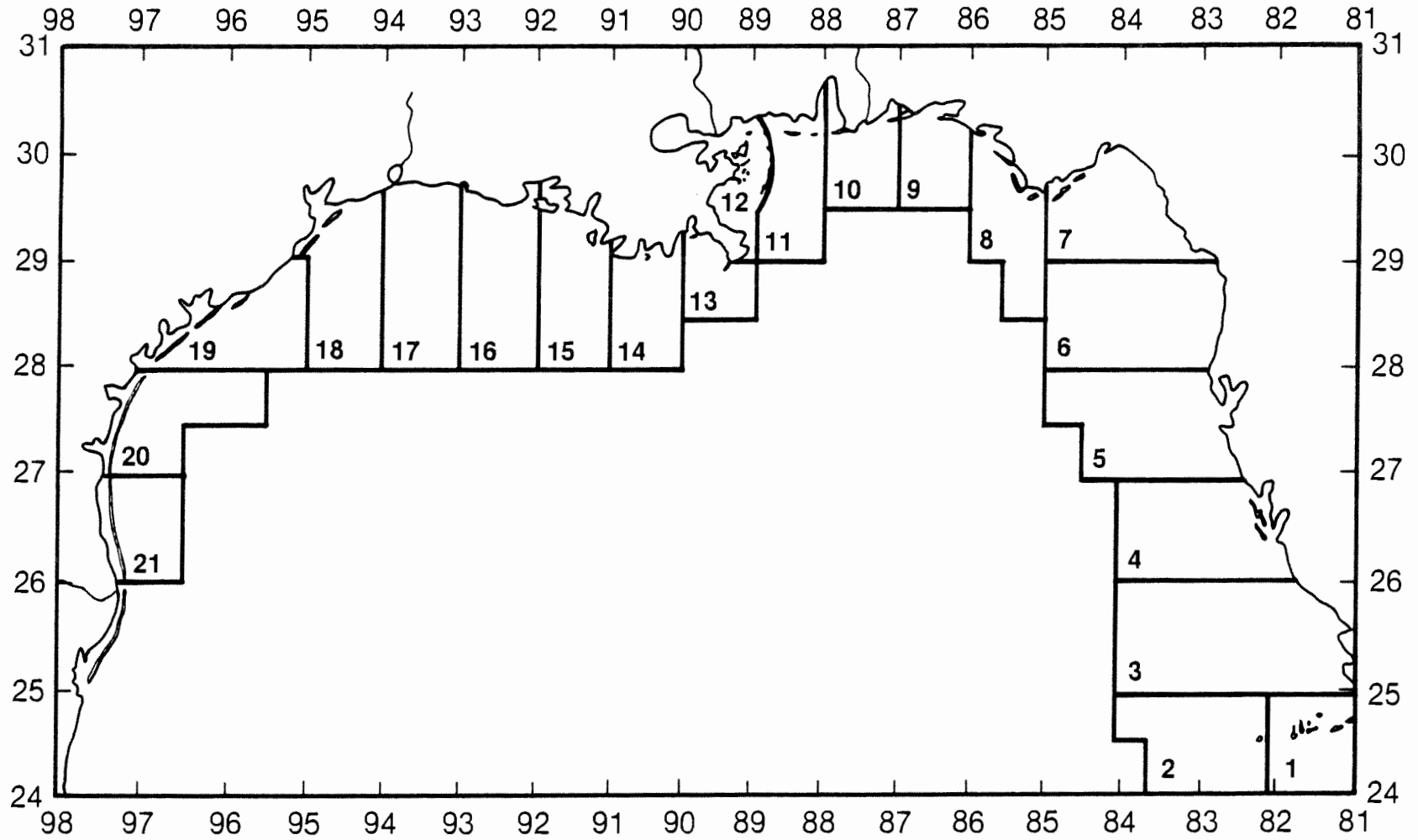


Figure 12. Statistical zones for shrimp in the Gulf of Mexico.

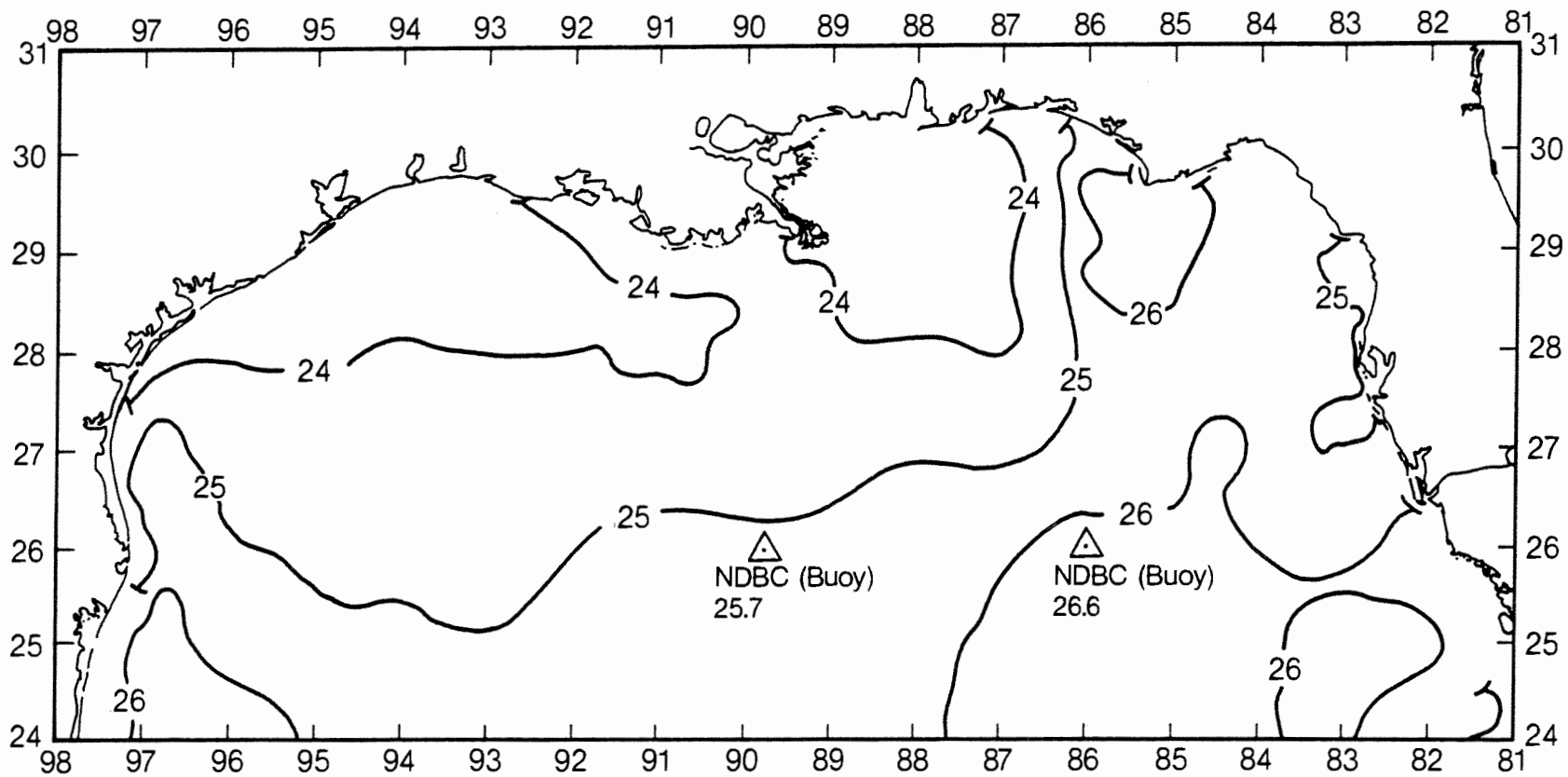


Figure 15. Satellite measurement of surface temperature ( $^{\circ}\text{C}$ ) in the Gulf of Mexico, May 10, 1986 (modified from NWS/NRSS Sea Surface Thermal Analysis).

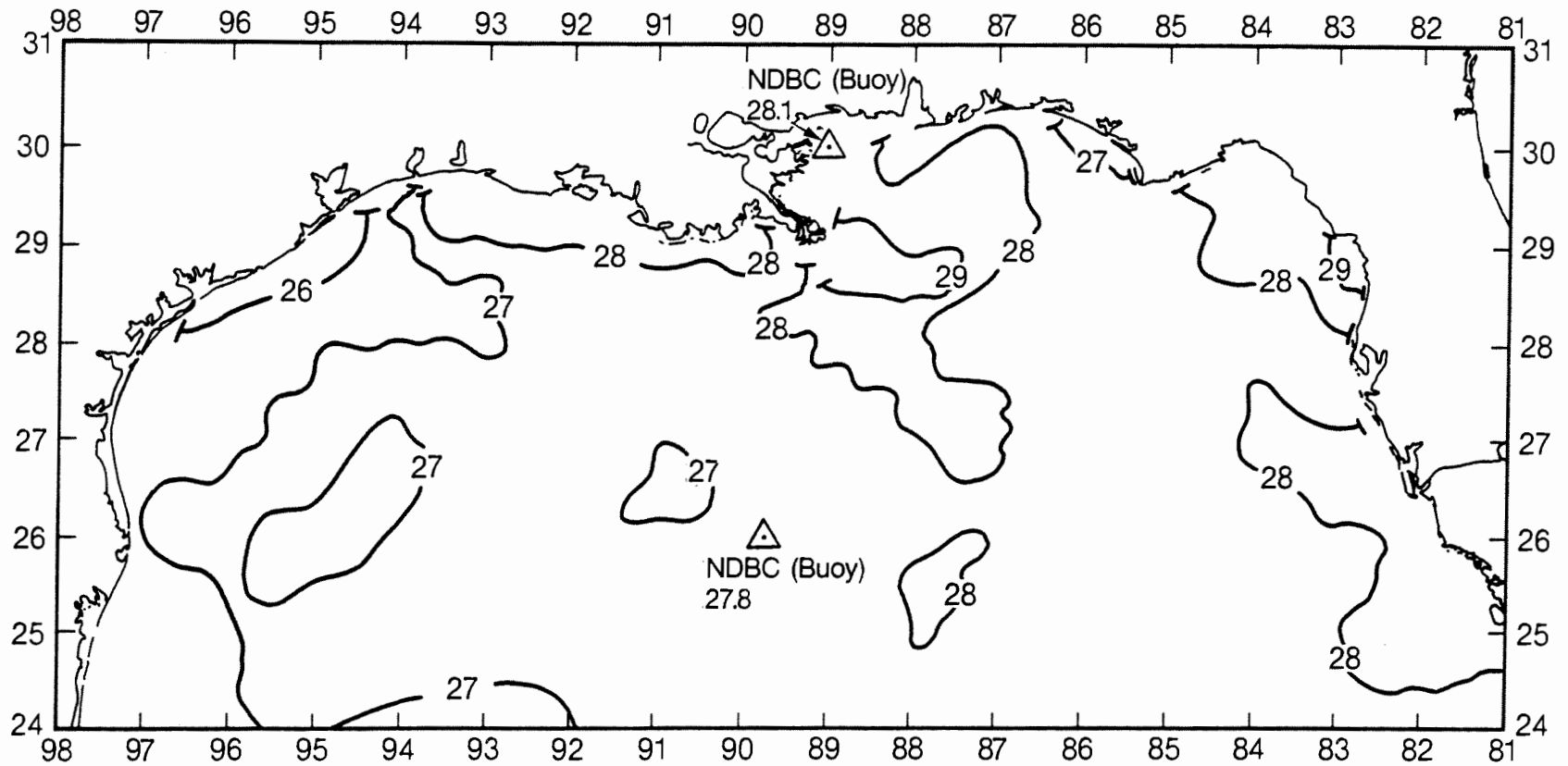


Figure 16. Satellite measurement of surface temperature ( $^{\circ}\text{C}$ ) in the Gulf of Mexico, June 7, 1986 (modified from NWS/NESS Sea Surface Thermal Analysis).

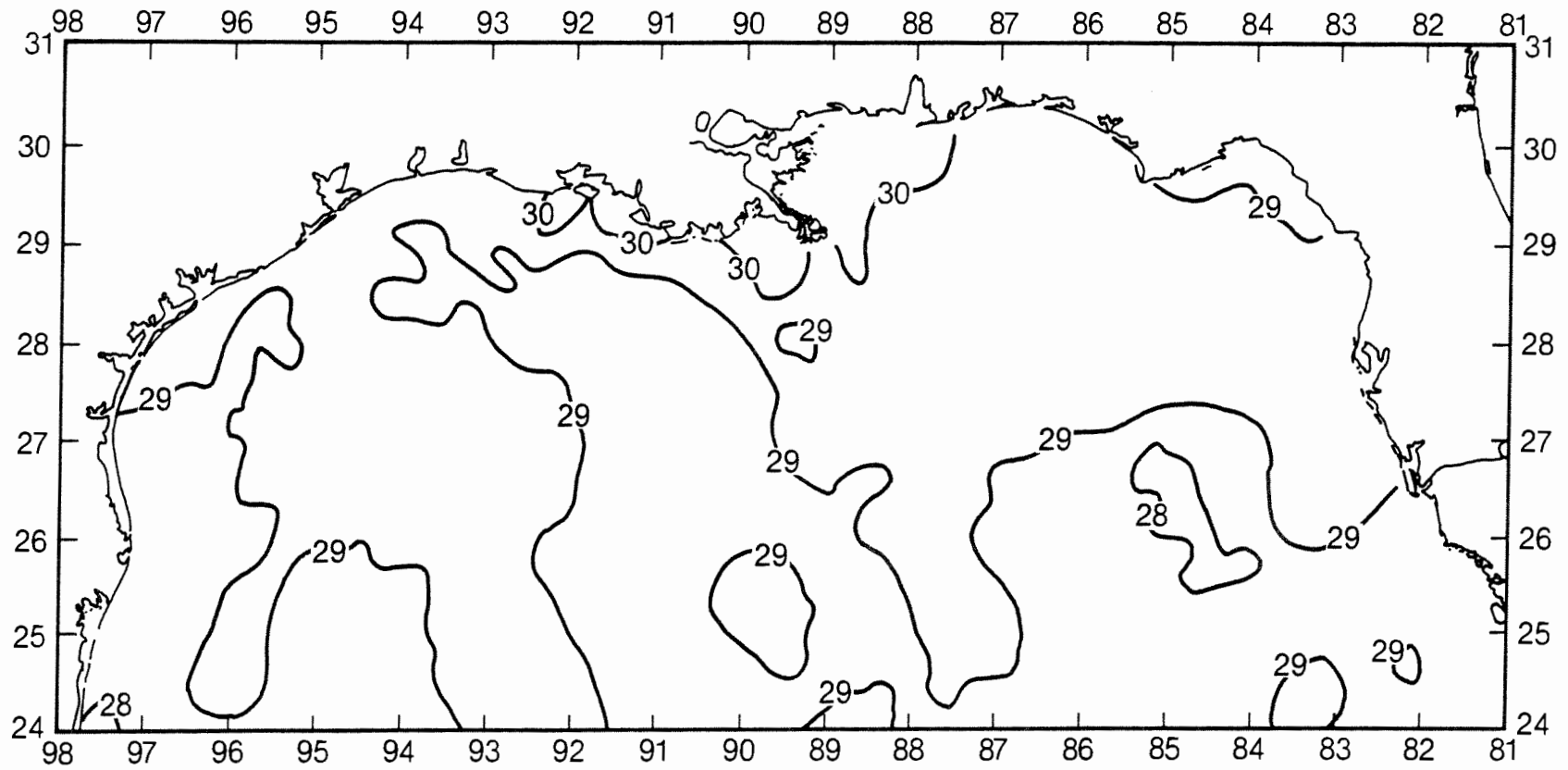


Figure 17. Satellite measurement of surface temperature ( $^{\circ}\text{C}$ ) in the Gulf of Mexico, July 5, 1986 (modified from NWS/NESS Sea Surface Thermal Analysis).

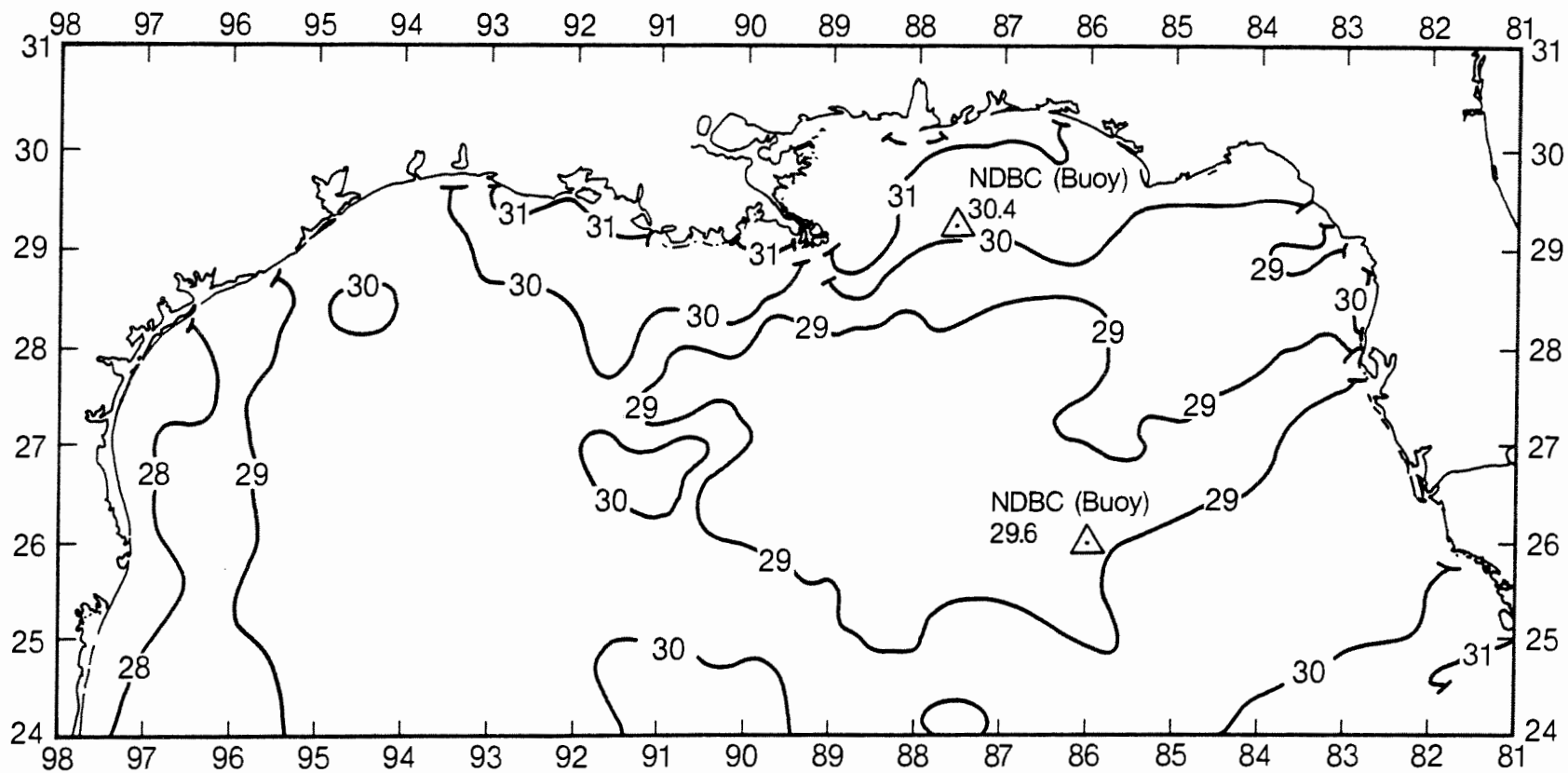


Figure 18. Satellite measurement of surface temperature ( $^{\circ}\text{C}$ ) in the Gulf of Mexico, August 2, 1986 (modified from NWS/NESS Sea Surface Thermal Analysis).

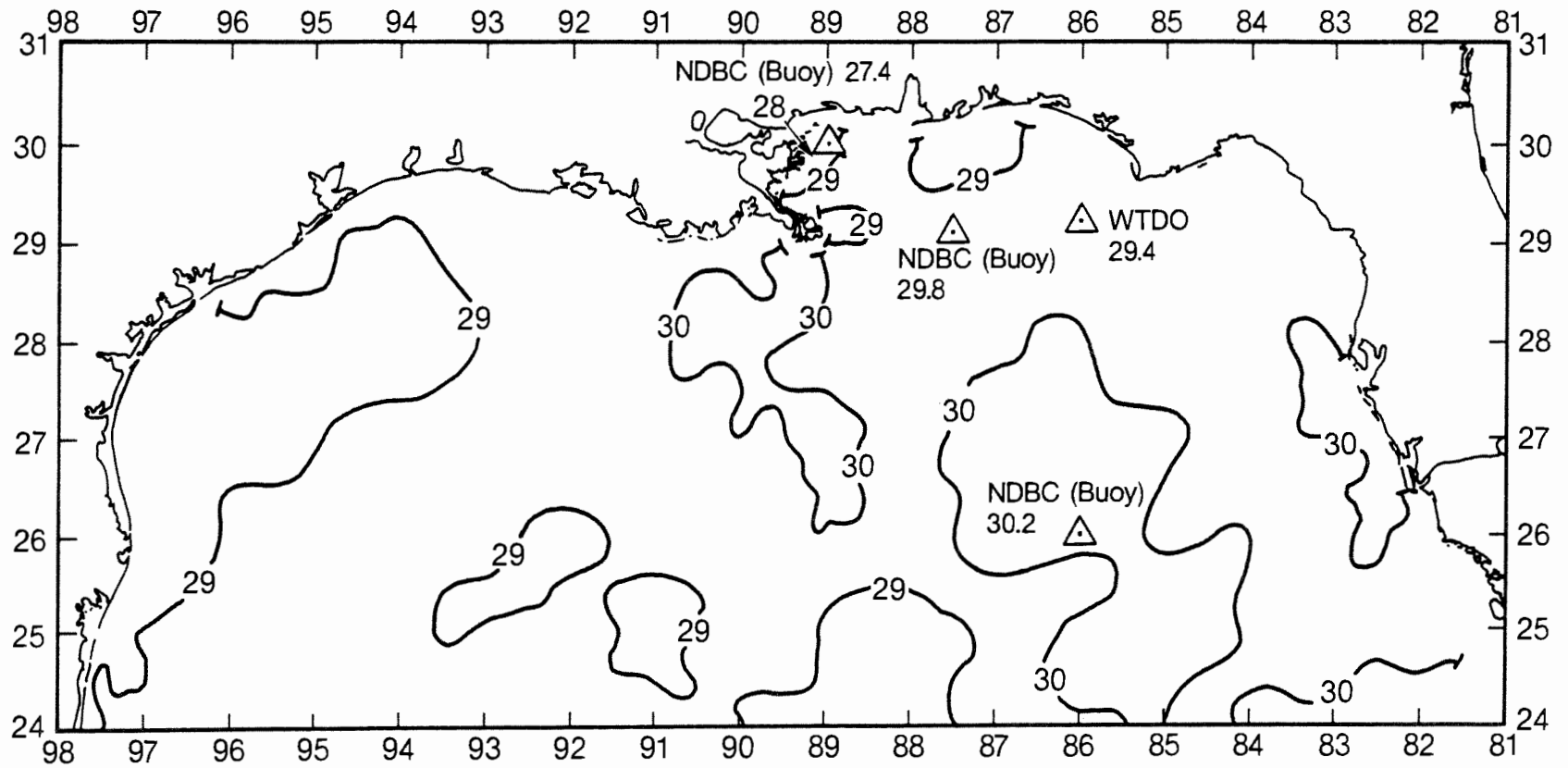


Figure 19. Satellite measurement of surface temperature ( $^{\circ}\text{C}$ ) in the Gulf of Mexico, September 6, 1986 (modified from NWS/NESS Sea Surface Thermal Analysis).

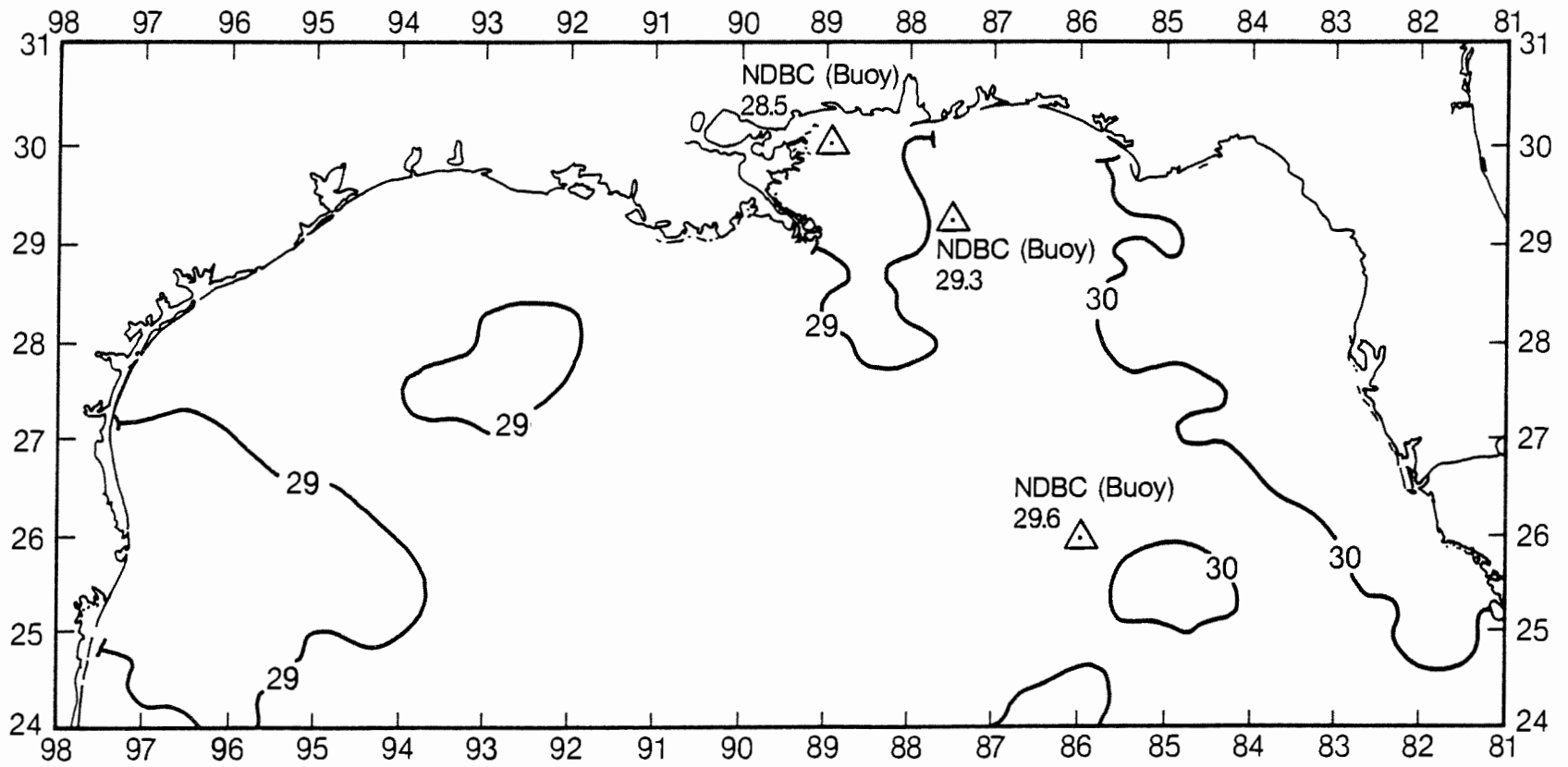


Figure 20. Satellite measurement of surface temperature (°C) in the Gulf of Mexico, October 4, 1986 (modified from NWS/NESS Sea Surface Thermal Analysis).

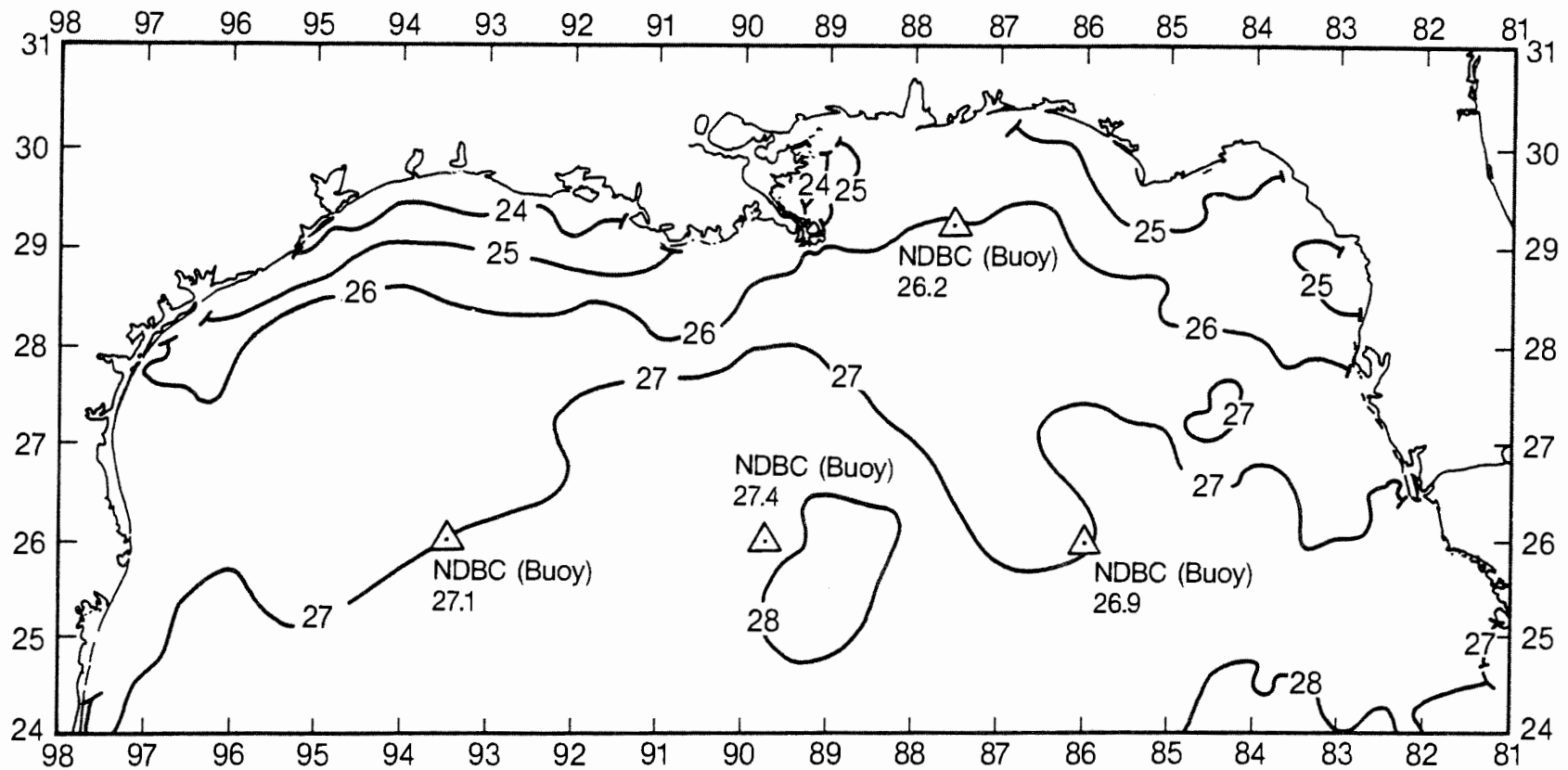


Figure 21. Satellite measurement of surface temperature ( $^{\circ}\text{C}$ ) in the Gulf of Mexico, November 8, 1986 (modified from NWS/NESS Sea Surface Thermal Analysis).



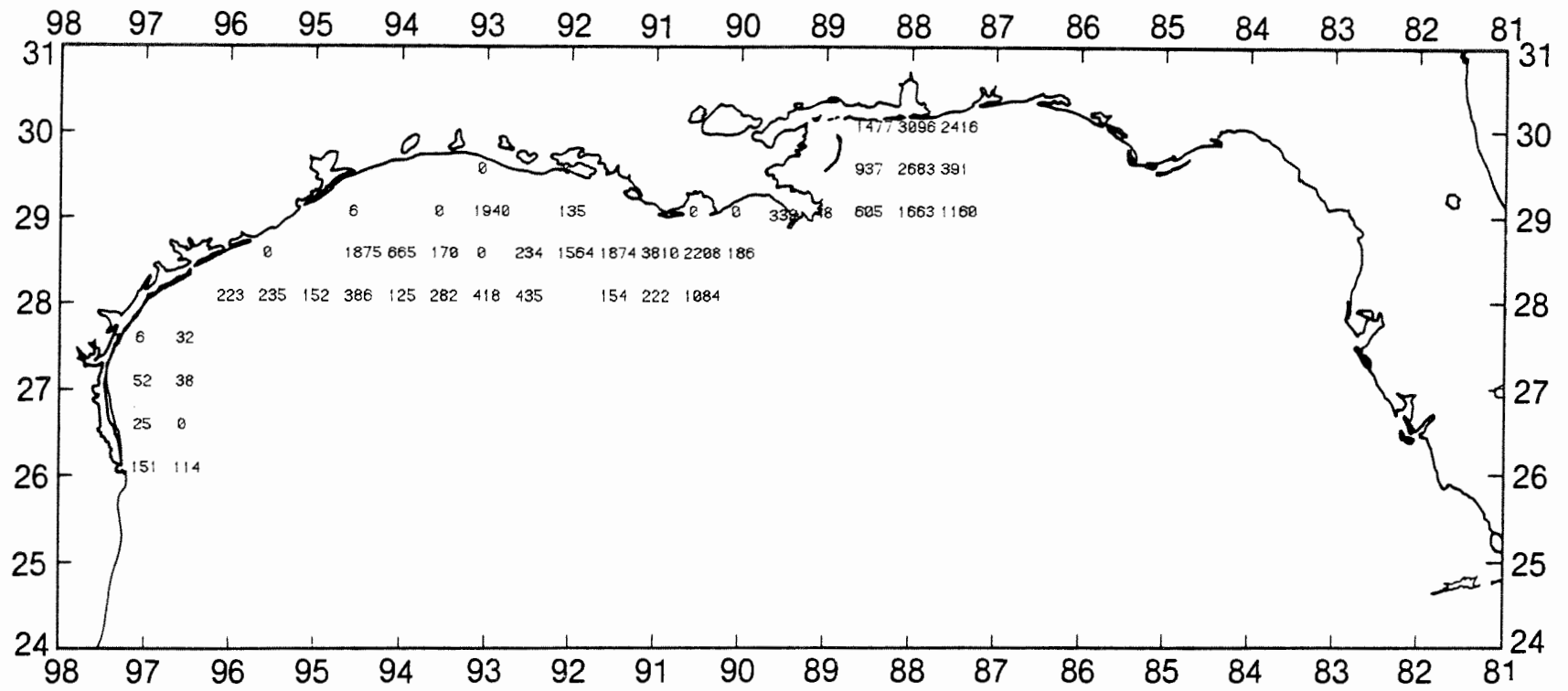


Figure 22. Longspine porgy, *Stenotomus caprinus*, number/hour for June-July 1986.

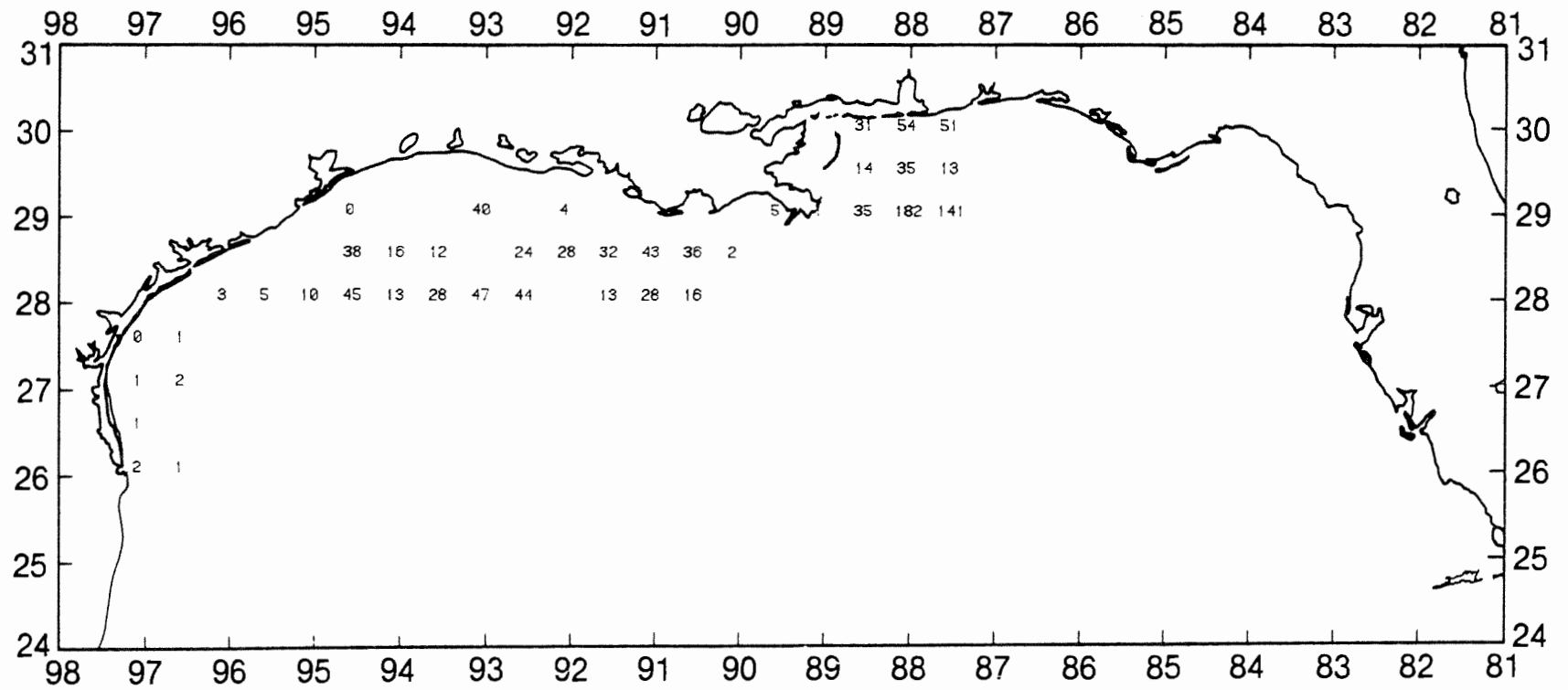


Figure 23. Longspine pogy, *Stenotomus caprinus*, lb/hour for June-July 1986.

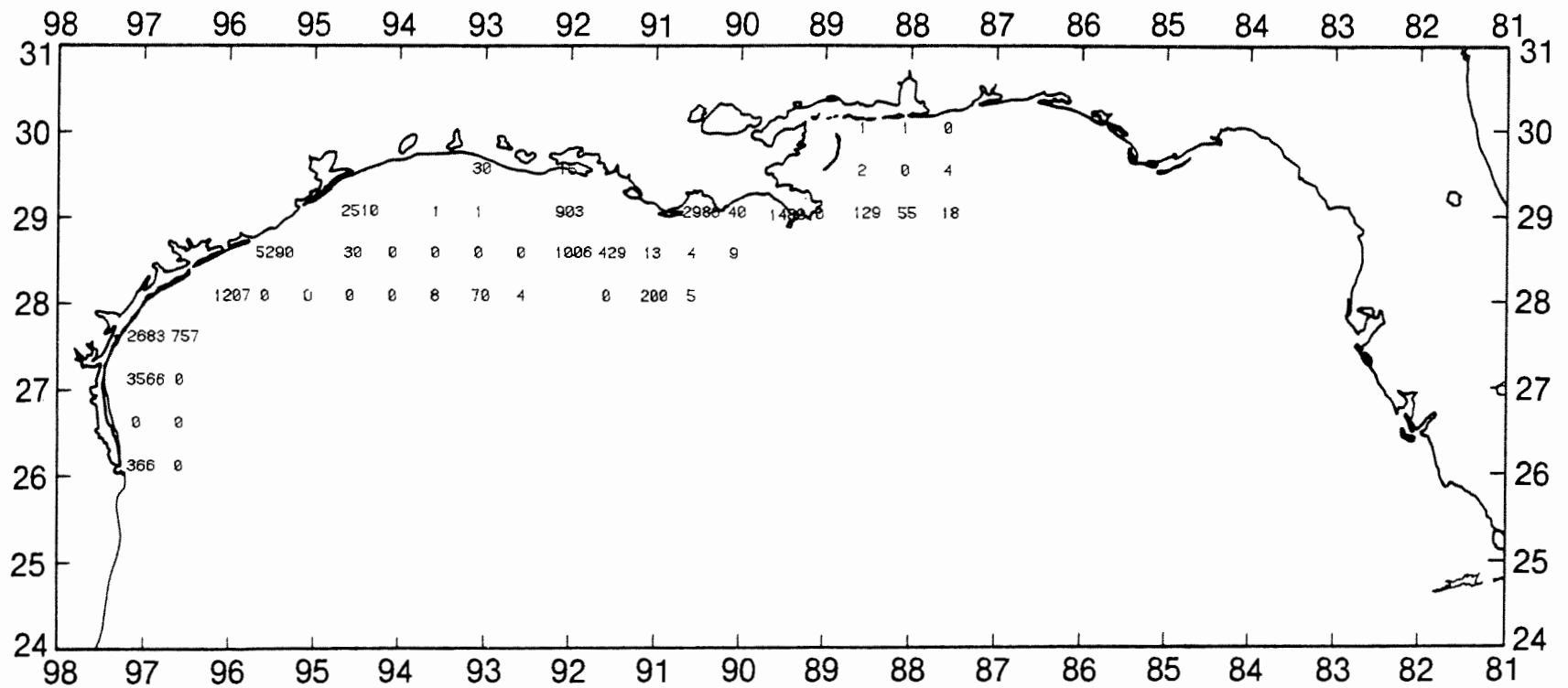


Figure 24. Atlantic croaker, *Micropogonias undulatus*, number/hour for June-July 1986.

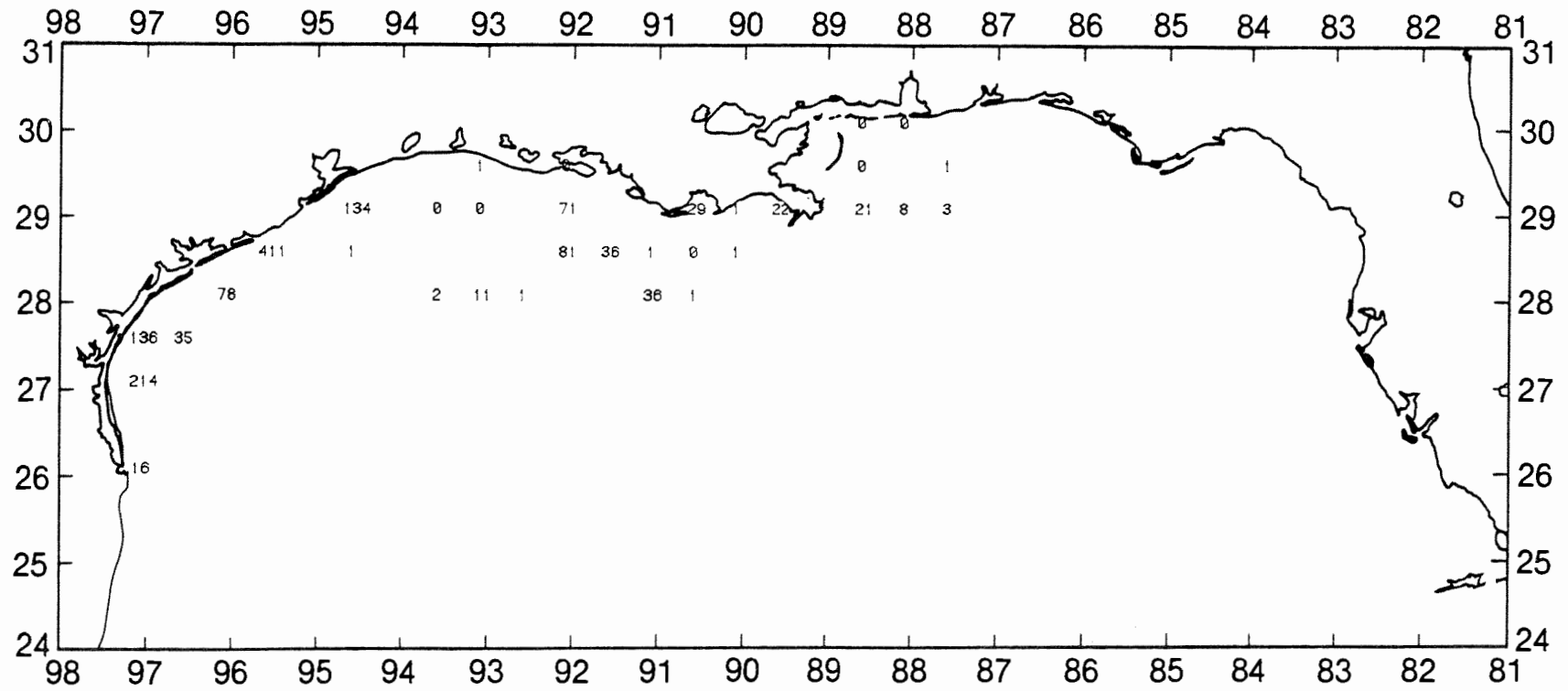


Figure 25. Atlantic croaker, *Micropogonias undulatus*, lb/hour for June-July 1986.

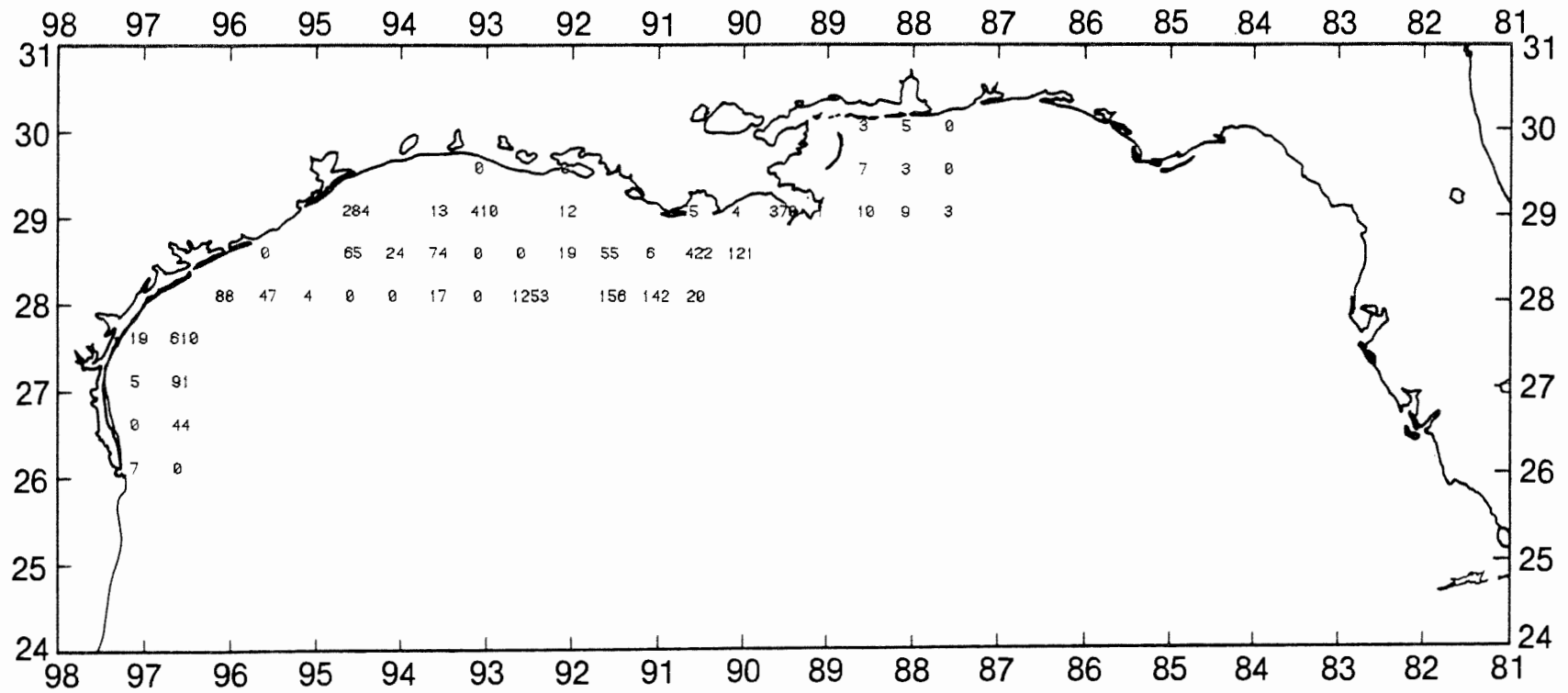


Figure 26. Gulf butterfish, *Peprilus burti*, number/hour for June-July 1986.

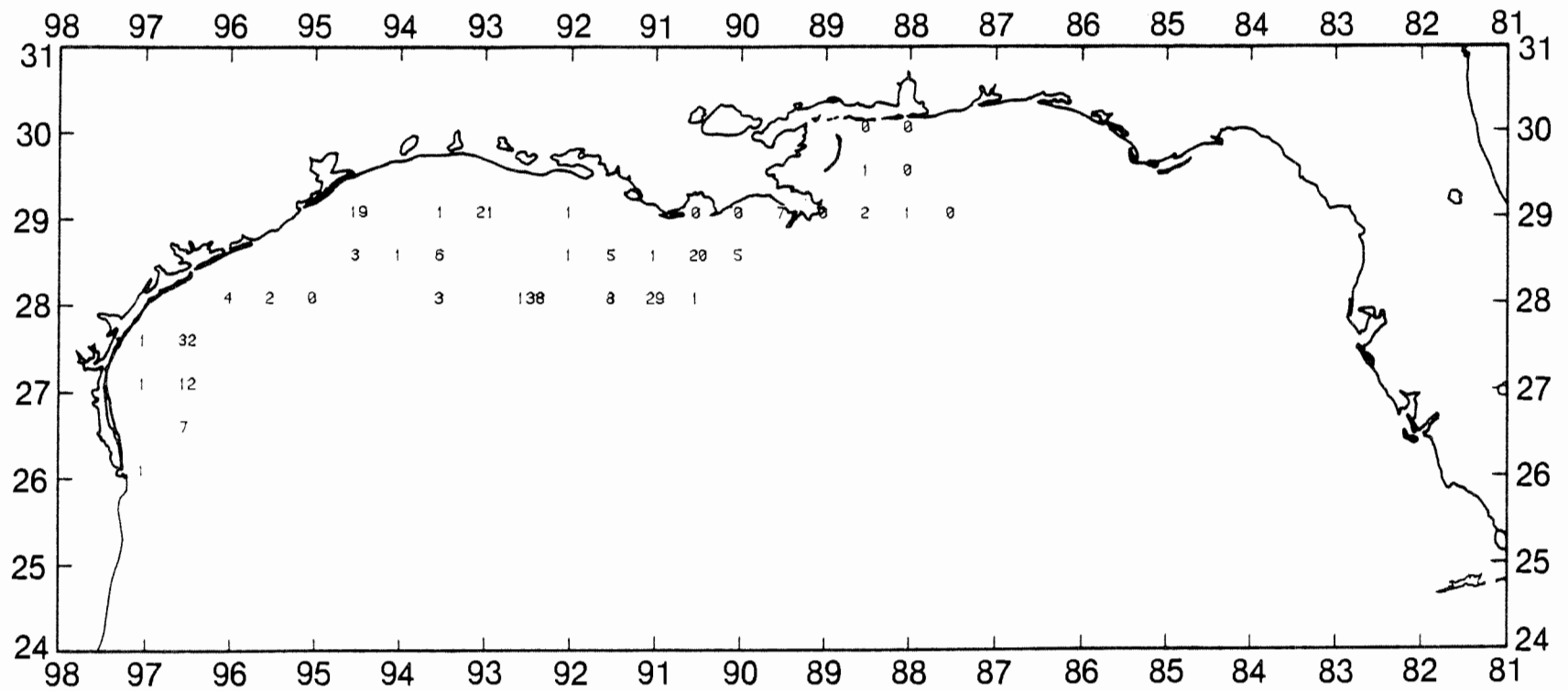


Figure 27. Gulf butterfish, *Peprilus burti*, lb/hour for June-July 1986.

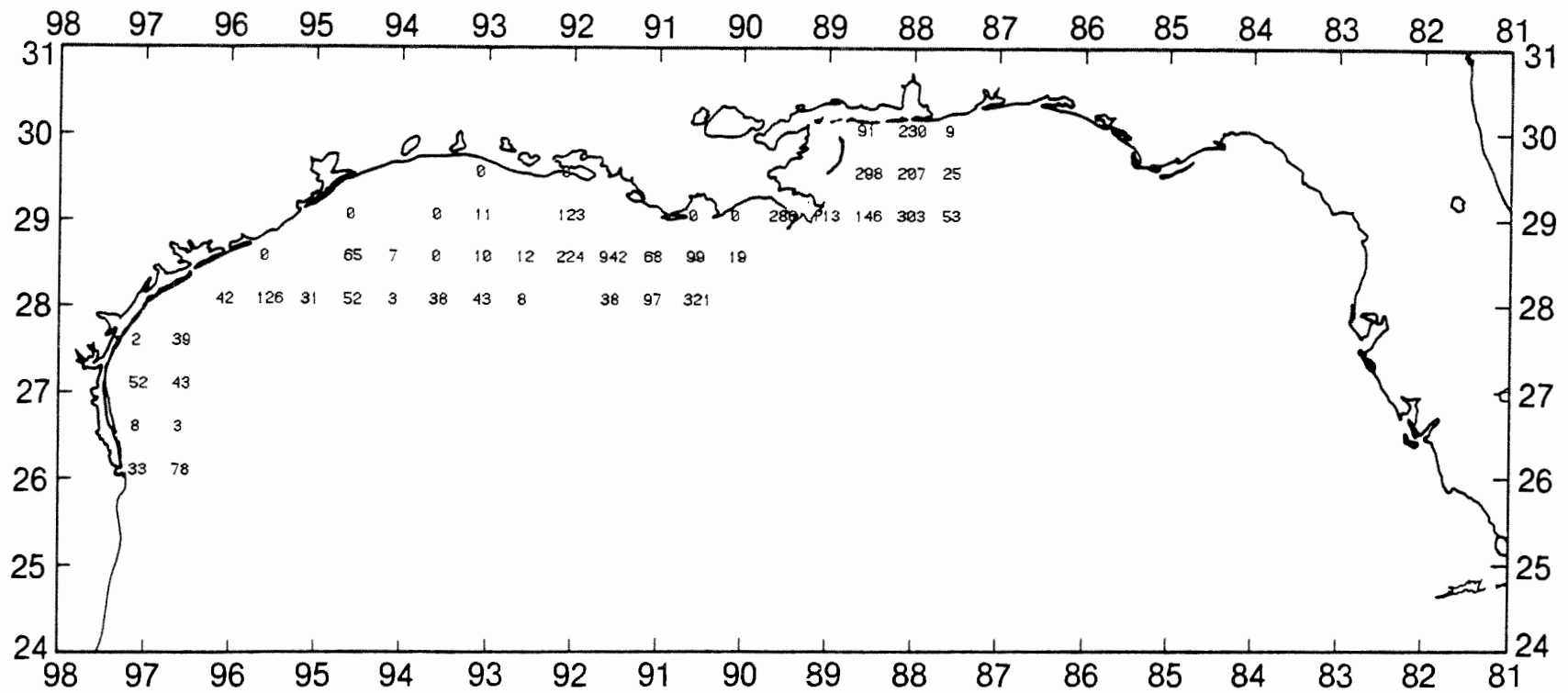


Figure 28. Rock sea bass, *Centropristis philadelphica*, number/hour for June-July 1986.

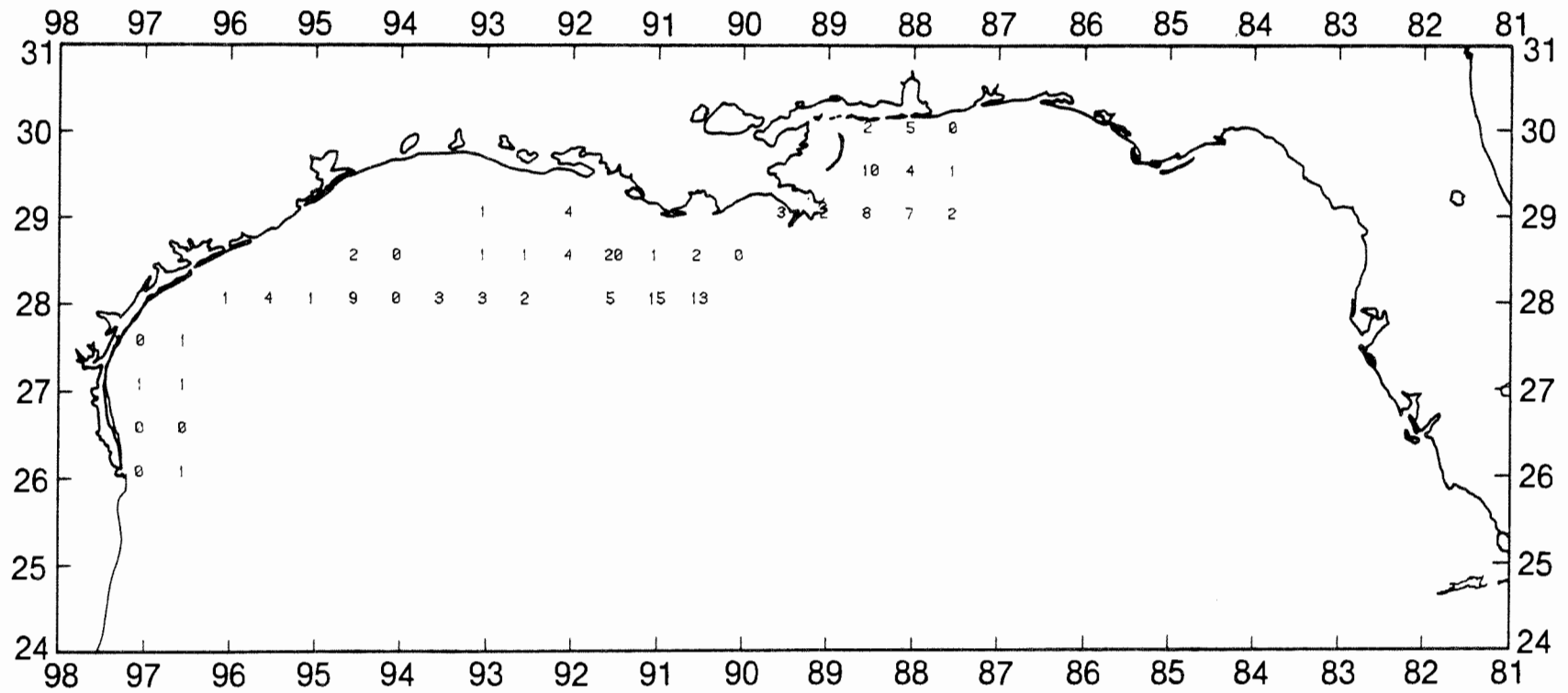


Figure 29. Rock sea bass, Centropristis philadelphica, lb/hour for June-July 1986.



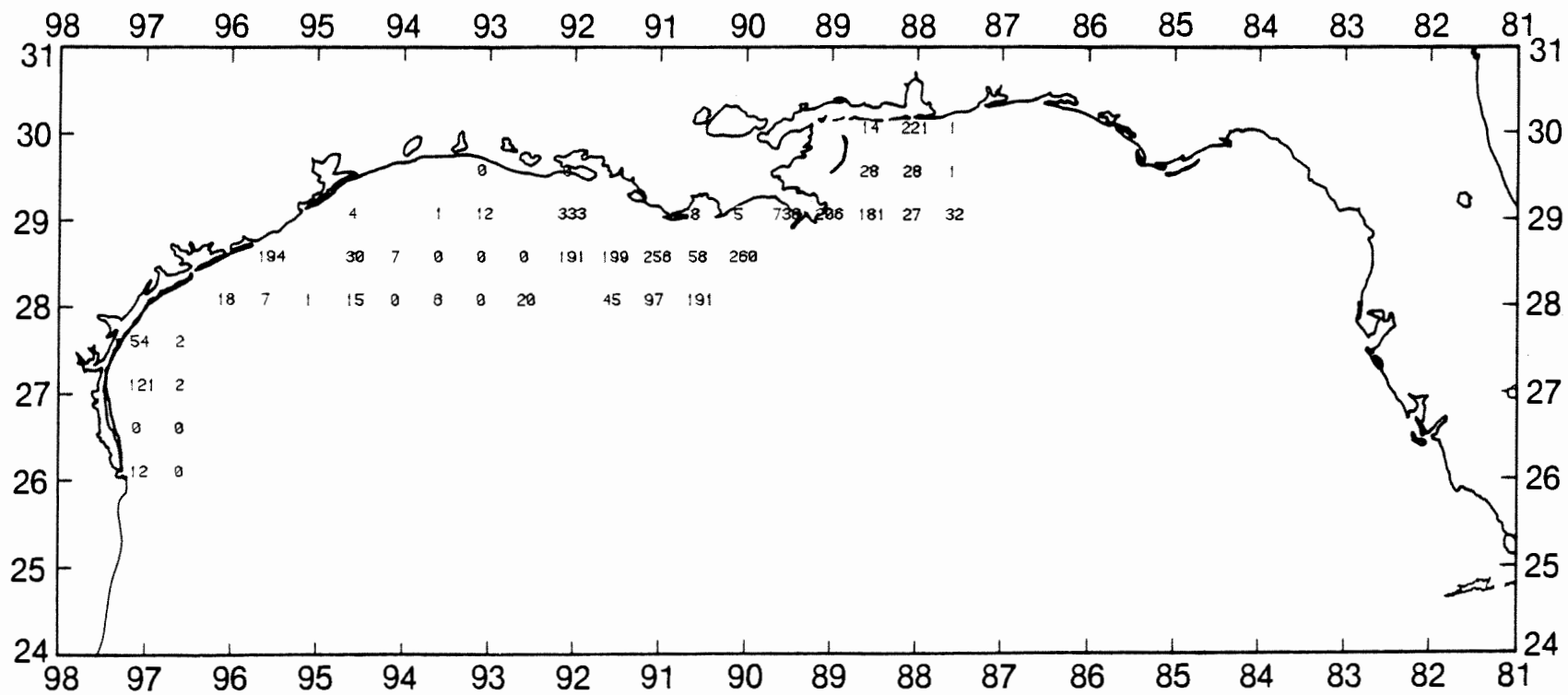


Figure 30. Blackfin searobin, *Prinotus rubio*, number/hour for June-July 1986.

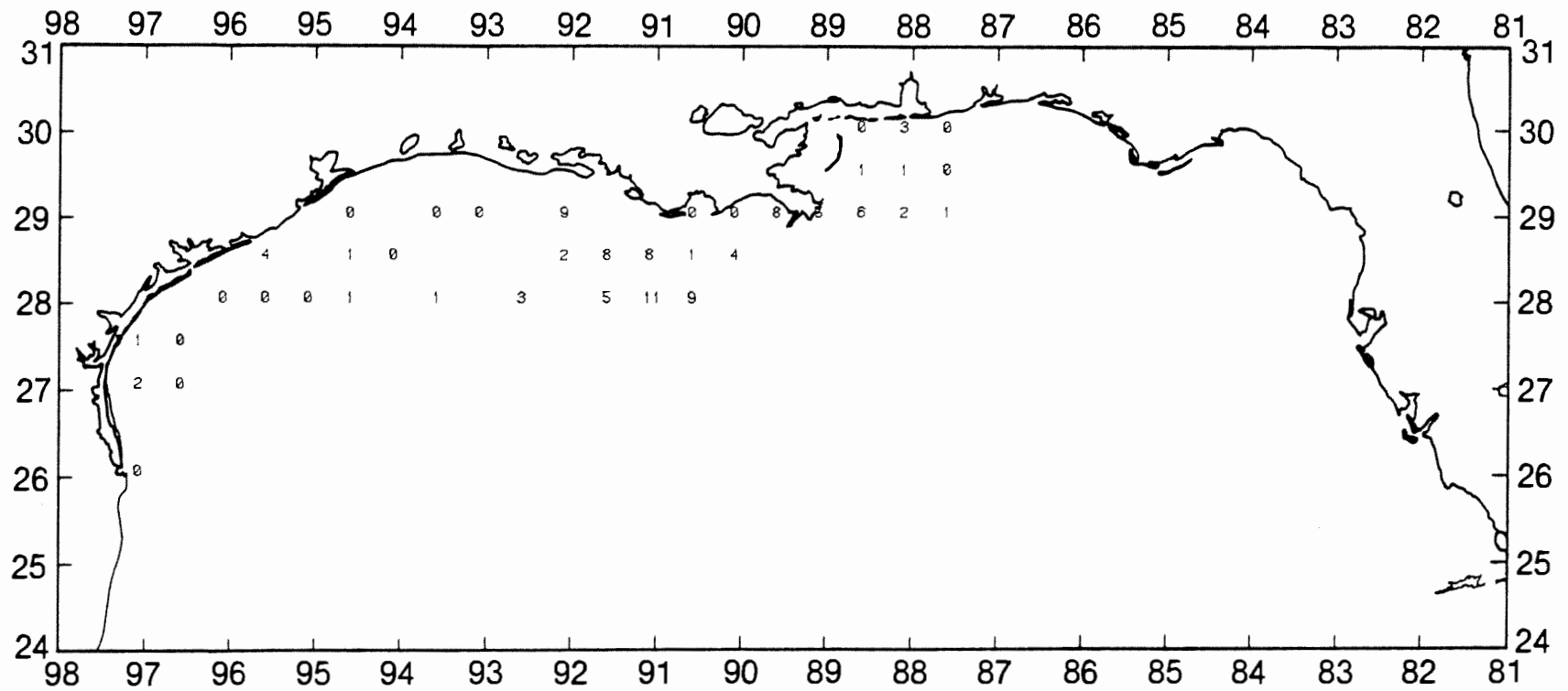


Figure 31. Blackfin searobin, *Prinotus rubio*, lb/hour for June-July 1986.

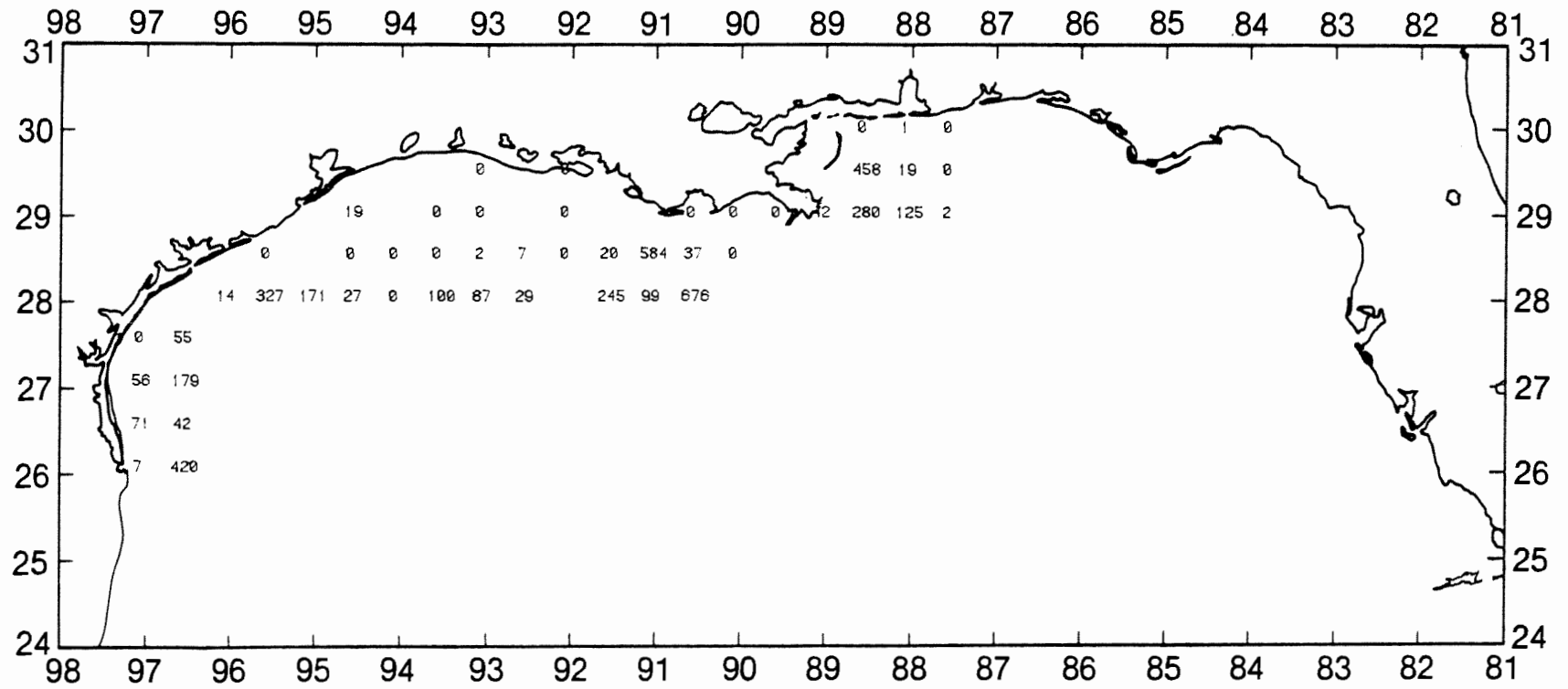


Figure 32. Blackear bass, *Serranus atrobranchus*, number/hour for June-July 1986.

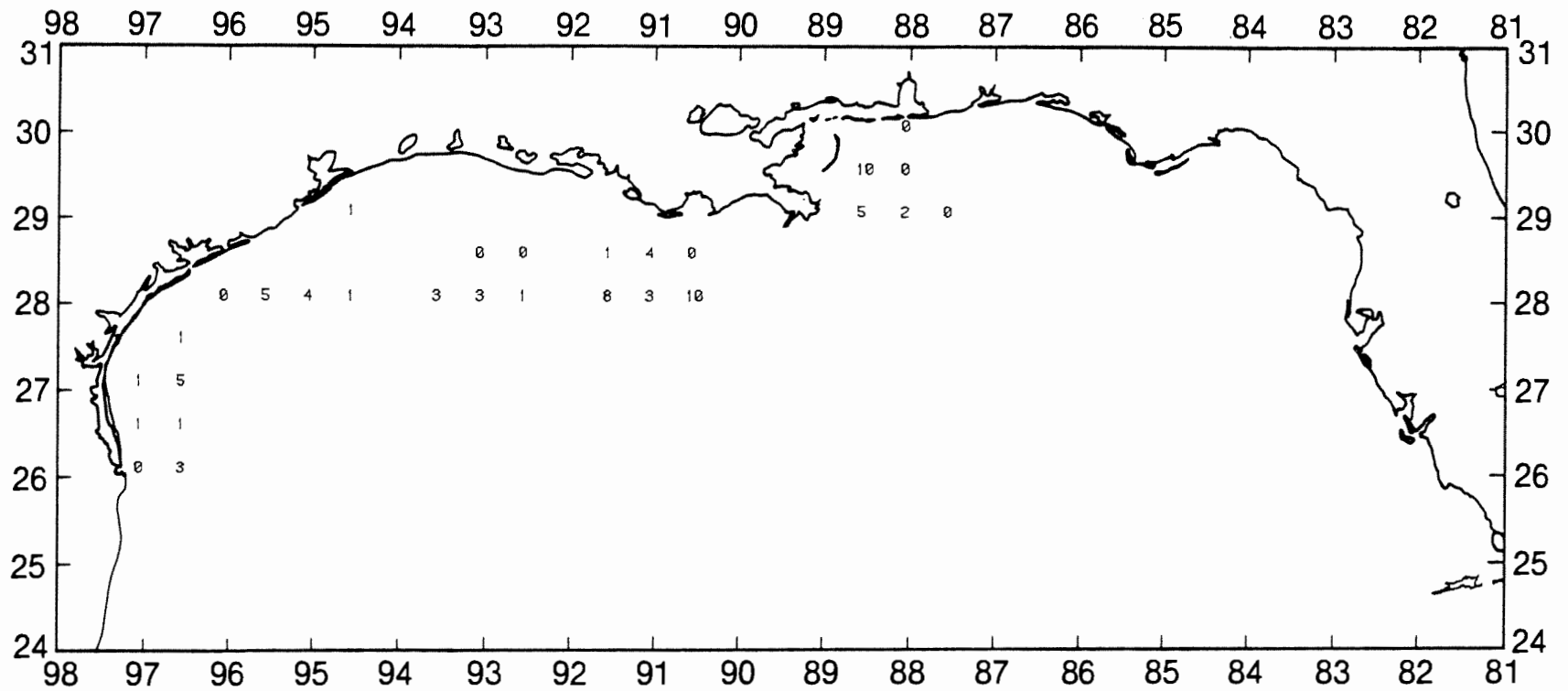


Figure 33. Blackear bass, *Serranus atrobranchus*, lb/hour for June-July 1986.

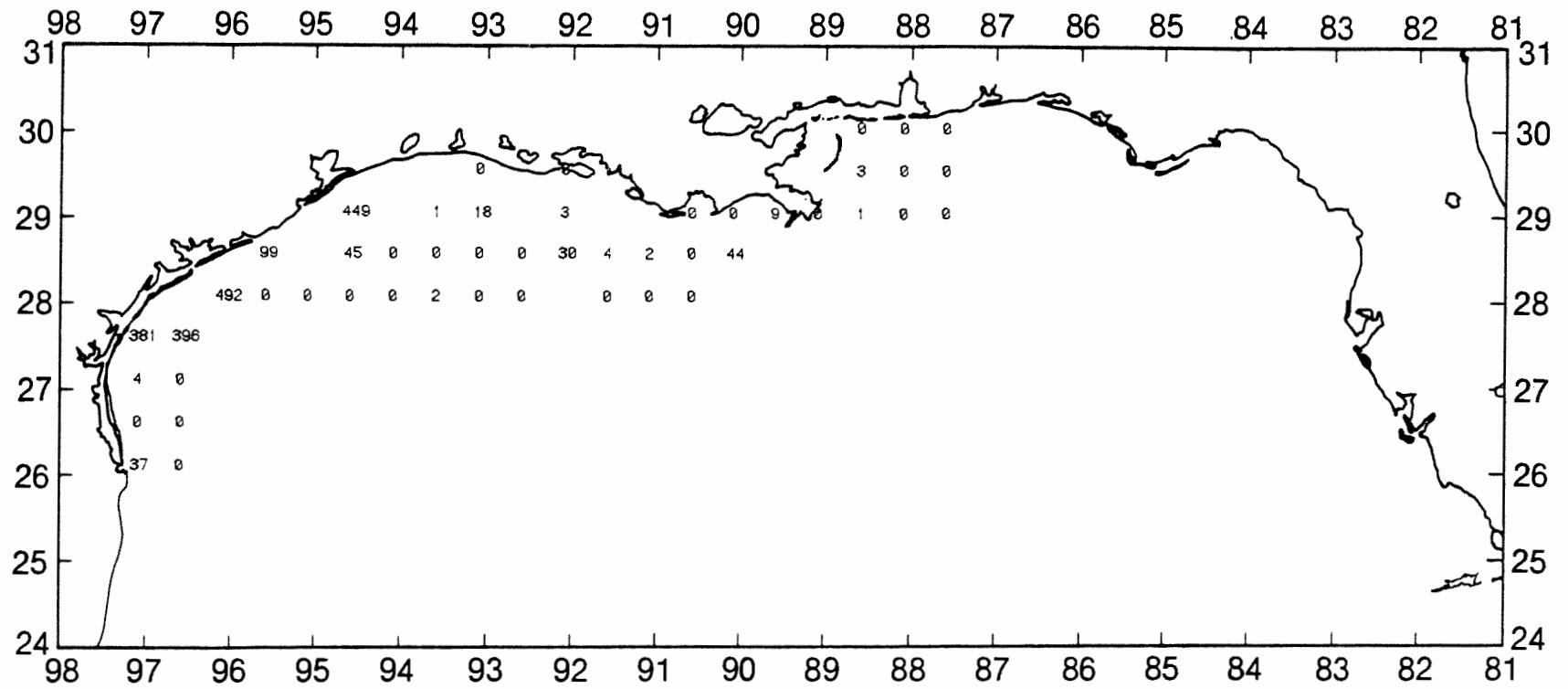


Figure 34. Silver seatrout, *Cynoscion nothus*, number/hour for June-July 1986.

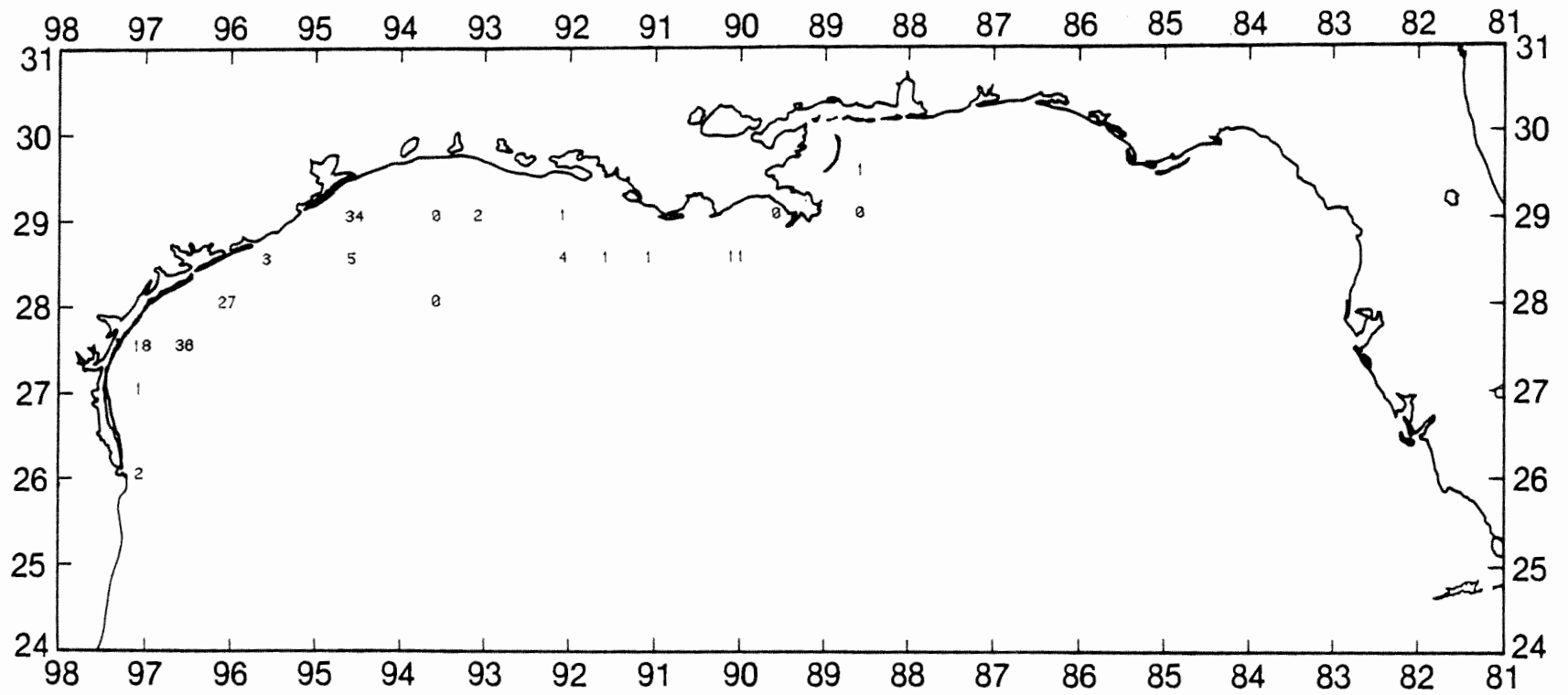


Figure 35. Silver seatrout, *Cynoscion nothus*, lb/hour for June-July 1986.

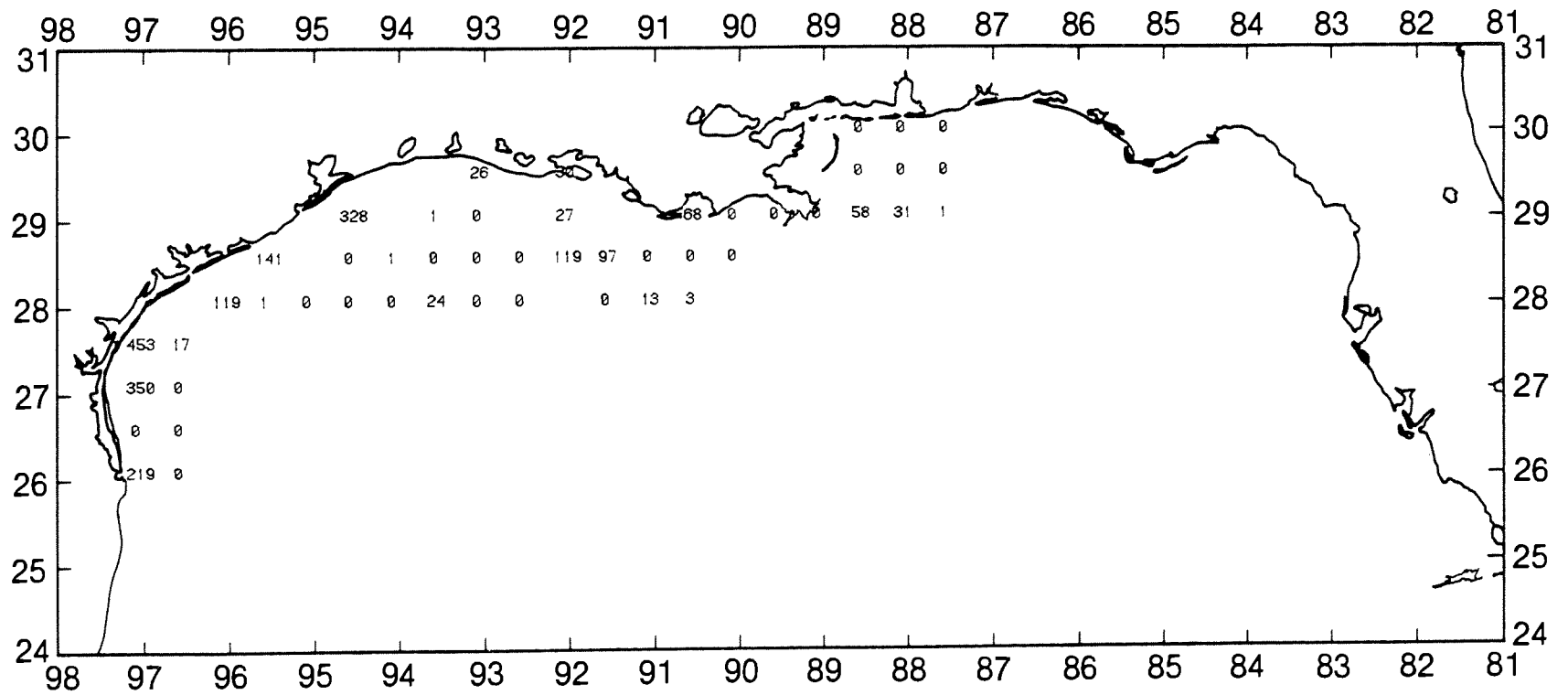


Figure 36. Spot, *Leioostomus xanthurus*, number/hour for June-July 1986.

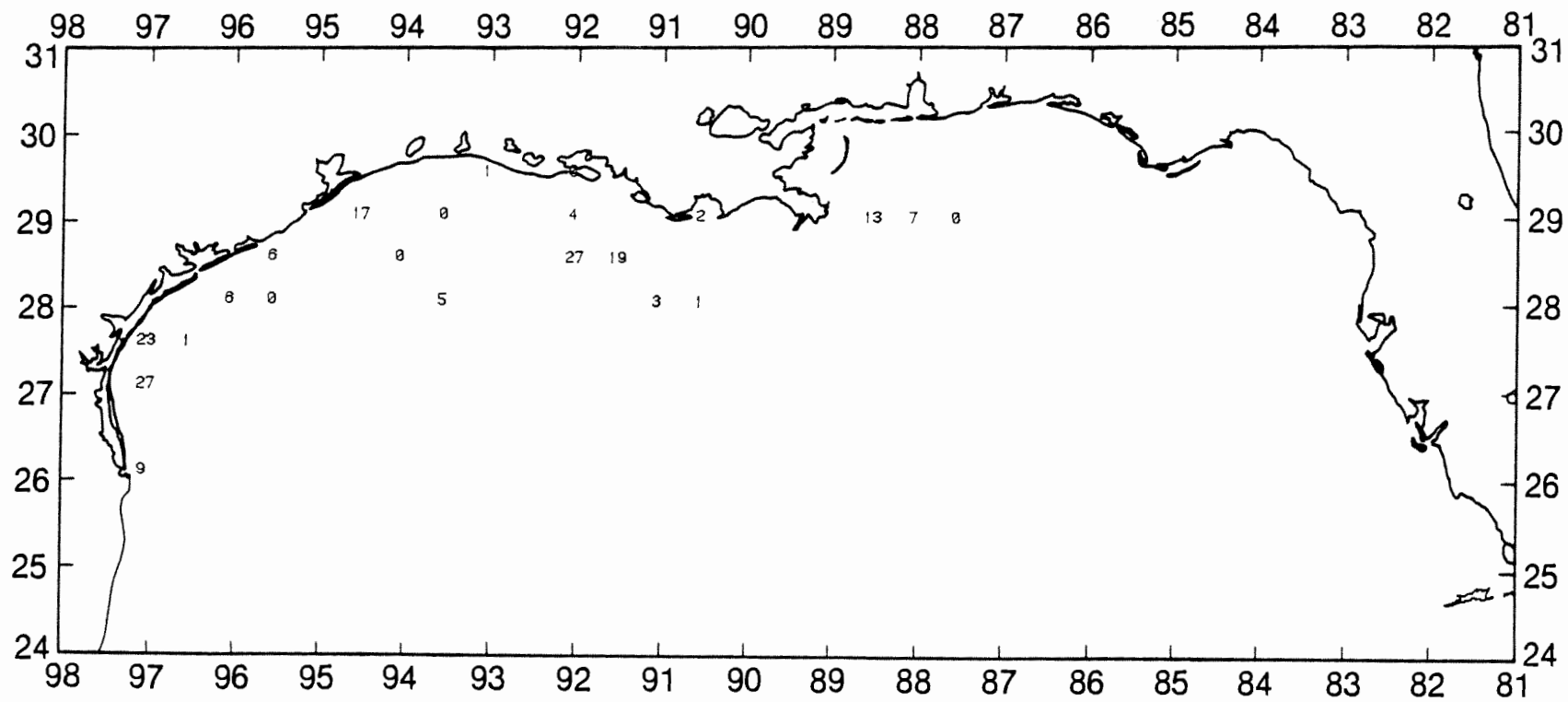


Figure 37. Spot, *Leiostomus xanthurus*, lb/hour for June-July 1986.



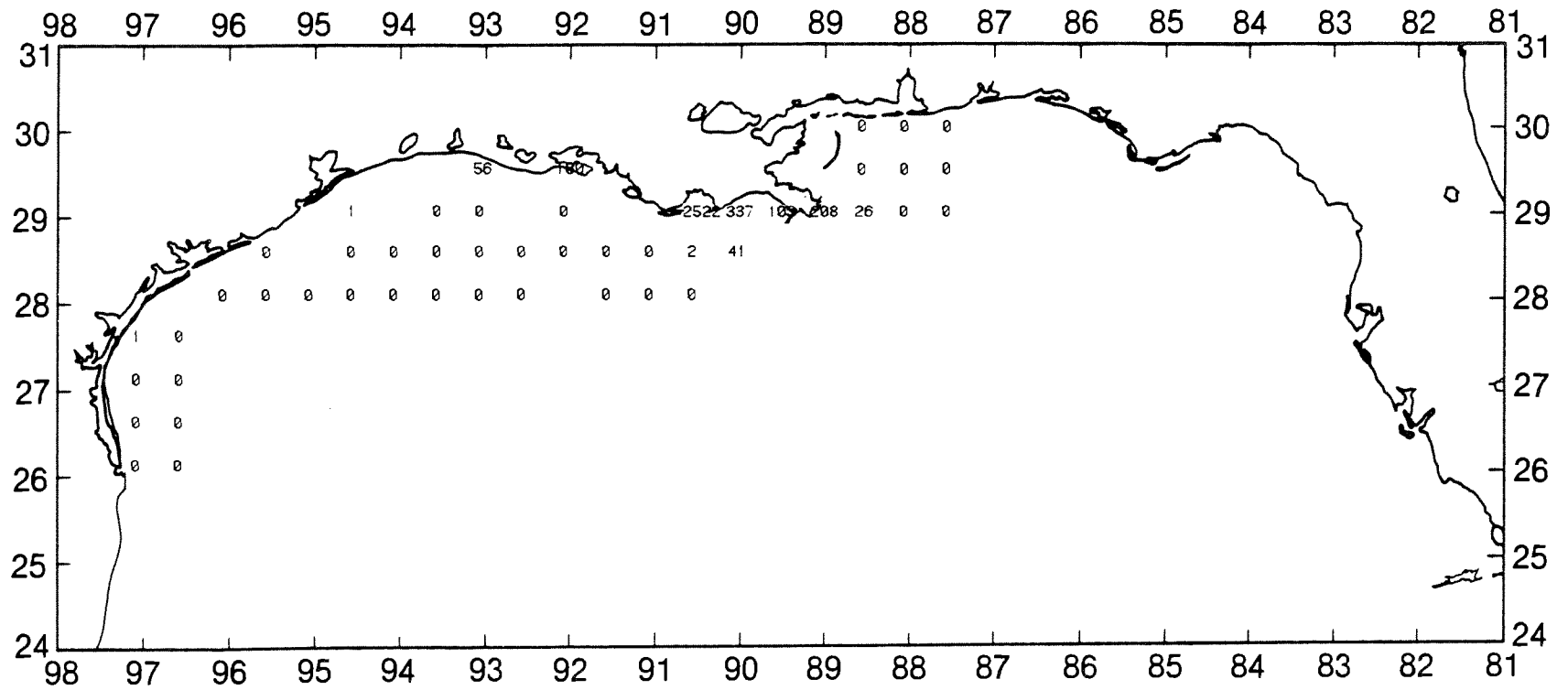


Figure 38. Bay anchovy, *Anchoa mitchilli*, number/hour for June-July 1986.

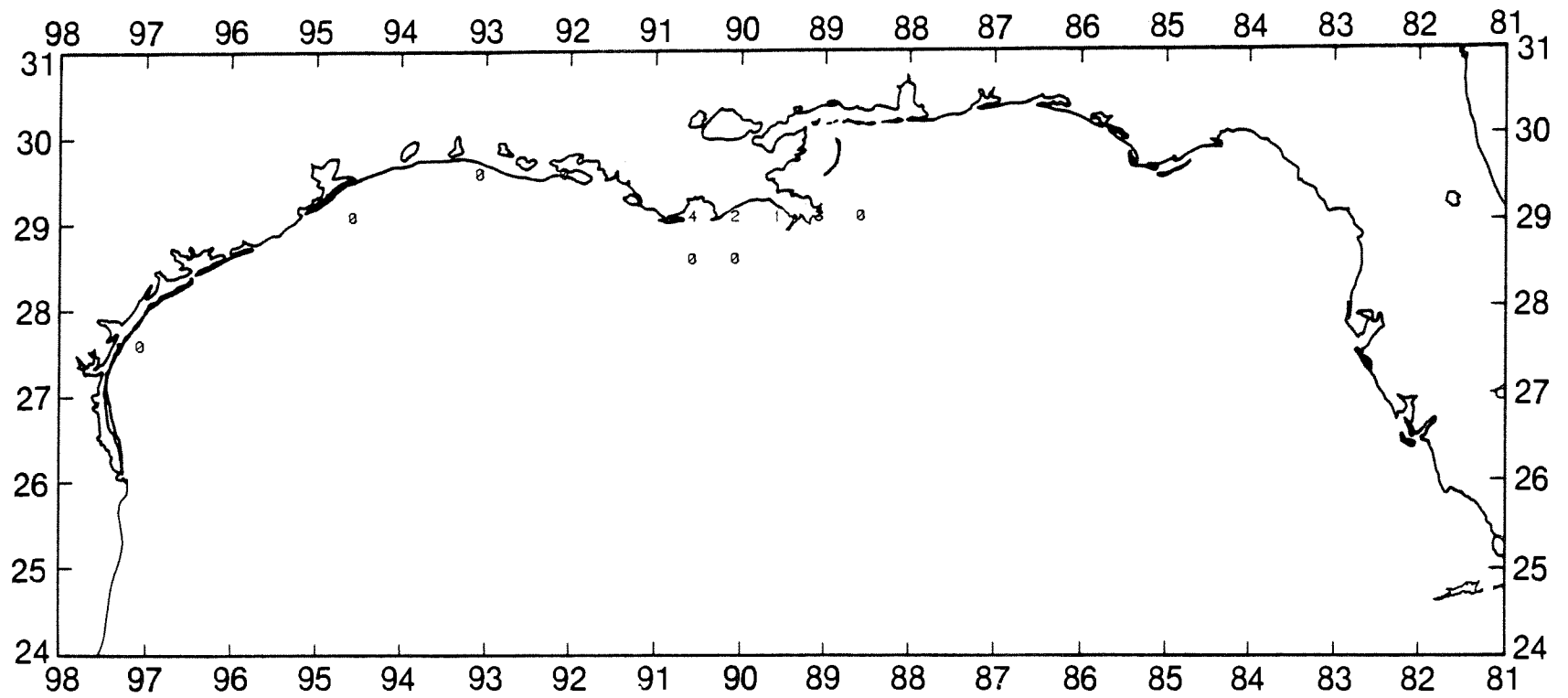


Figure 39. Bay anchovy, *Anchoa mitchilli*, lb/hour for June-July 1986.

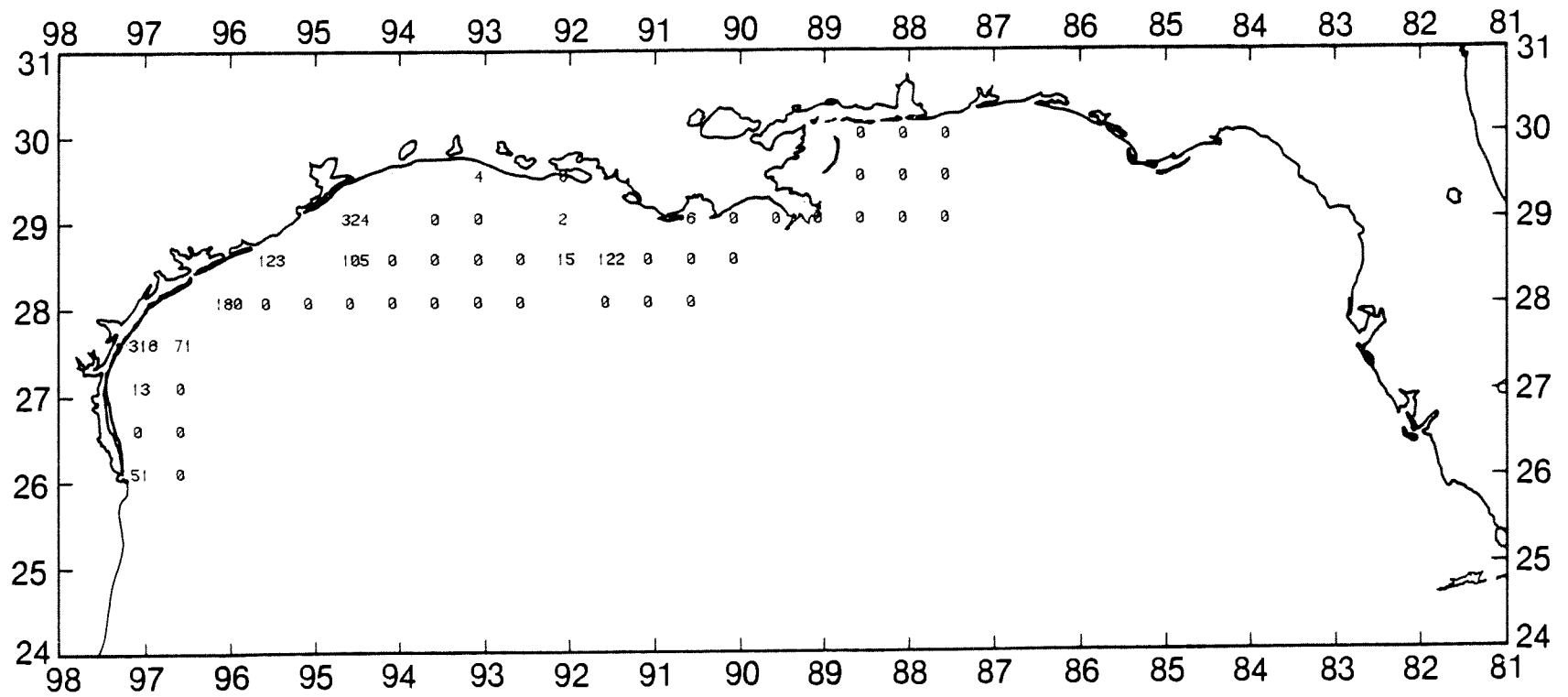


Figure 40. Atlantic threadfin, *Polydactylus octonemus*, number/hour for June-July 1986.

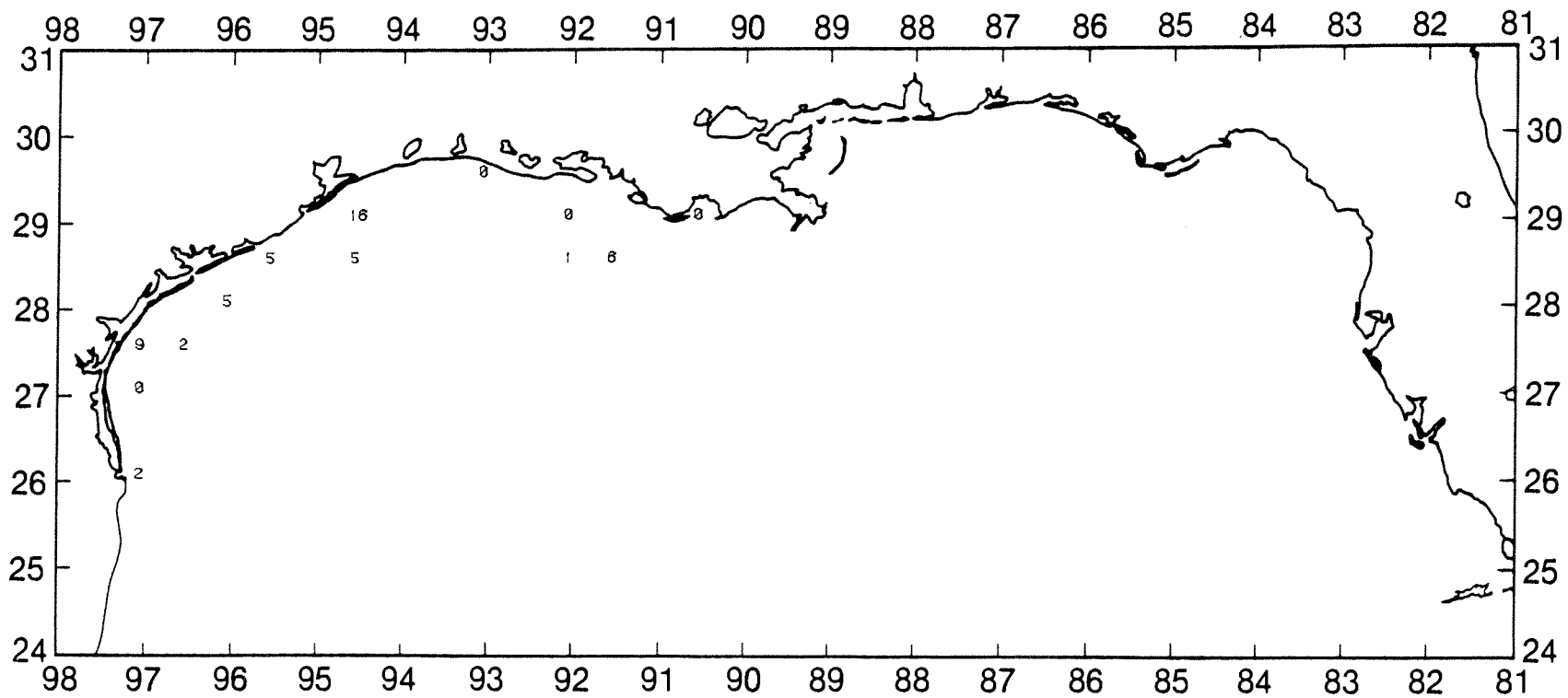


Figure 41. Atlantic threadfin, *Polydactylus octonemus*, lb/hour for June-July 1986.

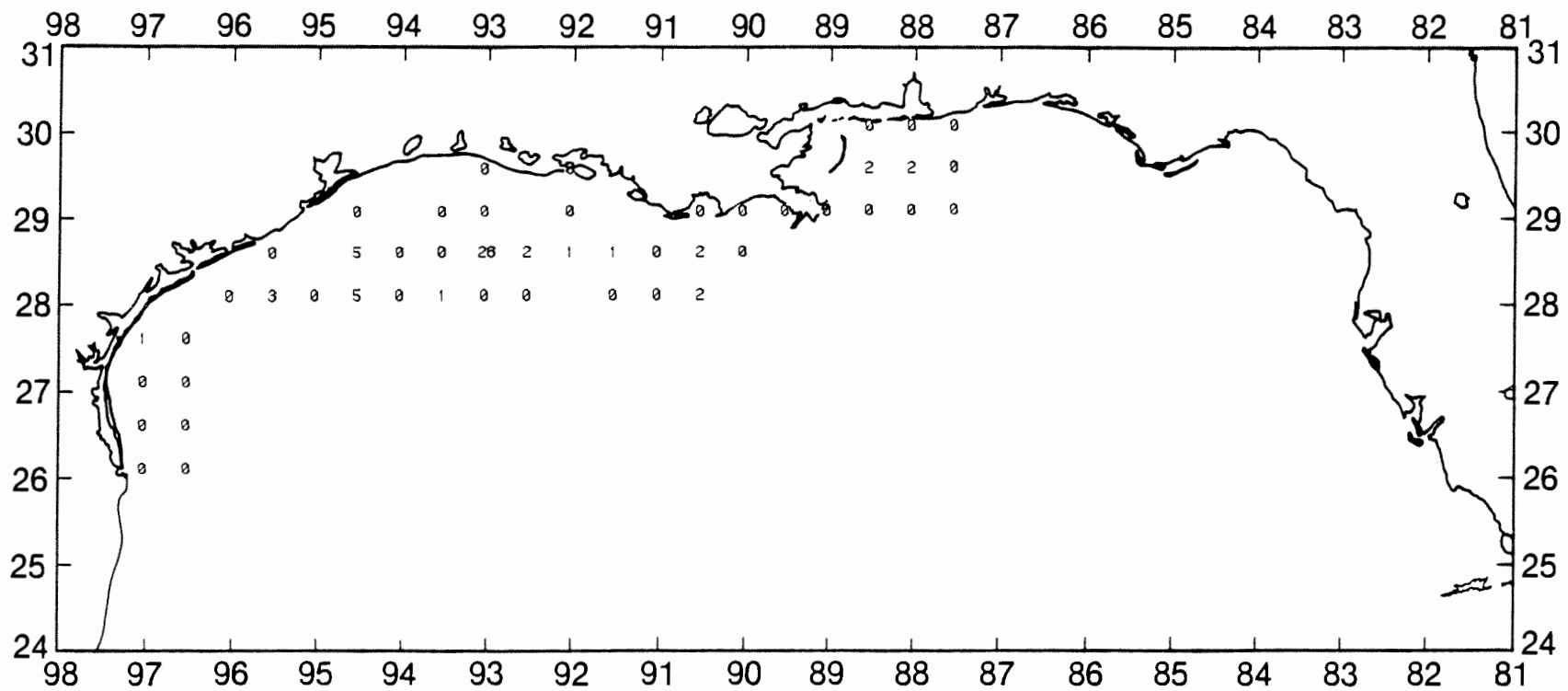


Figure 42. Red snapper, *Lutjanus campechanus*, number/hour for June-July 1986.

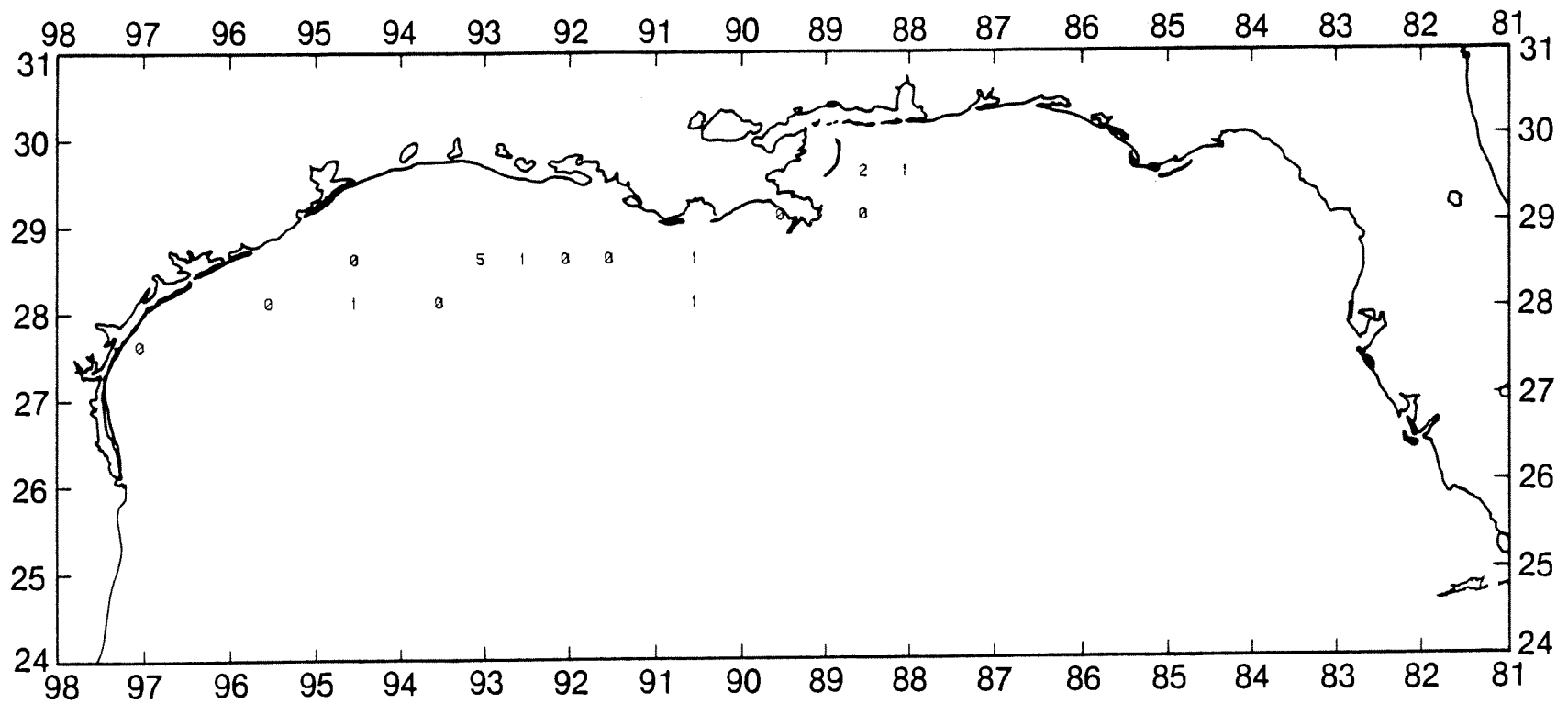


Figure 43. Red snapper, *Lutjanus campechanus*, lb/hour for June-July 1986.

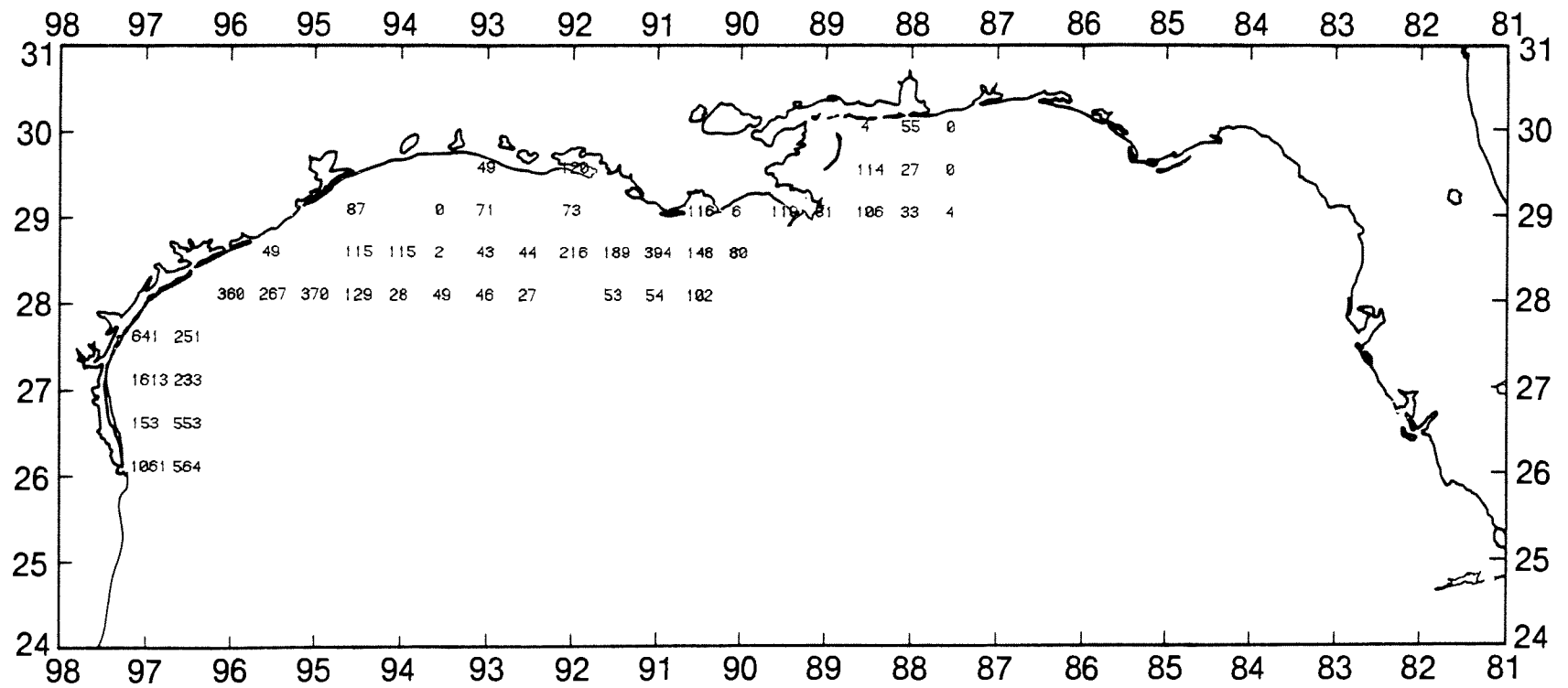


Figure 44. Brown shrimp, *Penaeus aztecus*, number/hour for June-July 1986.

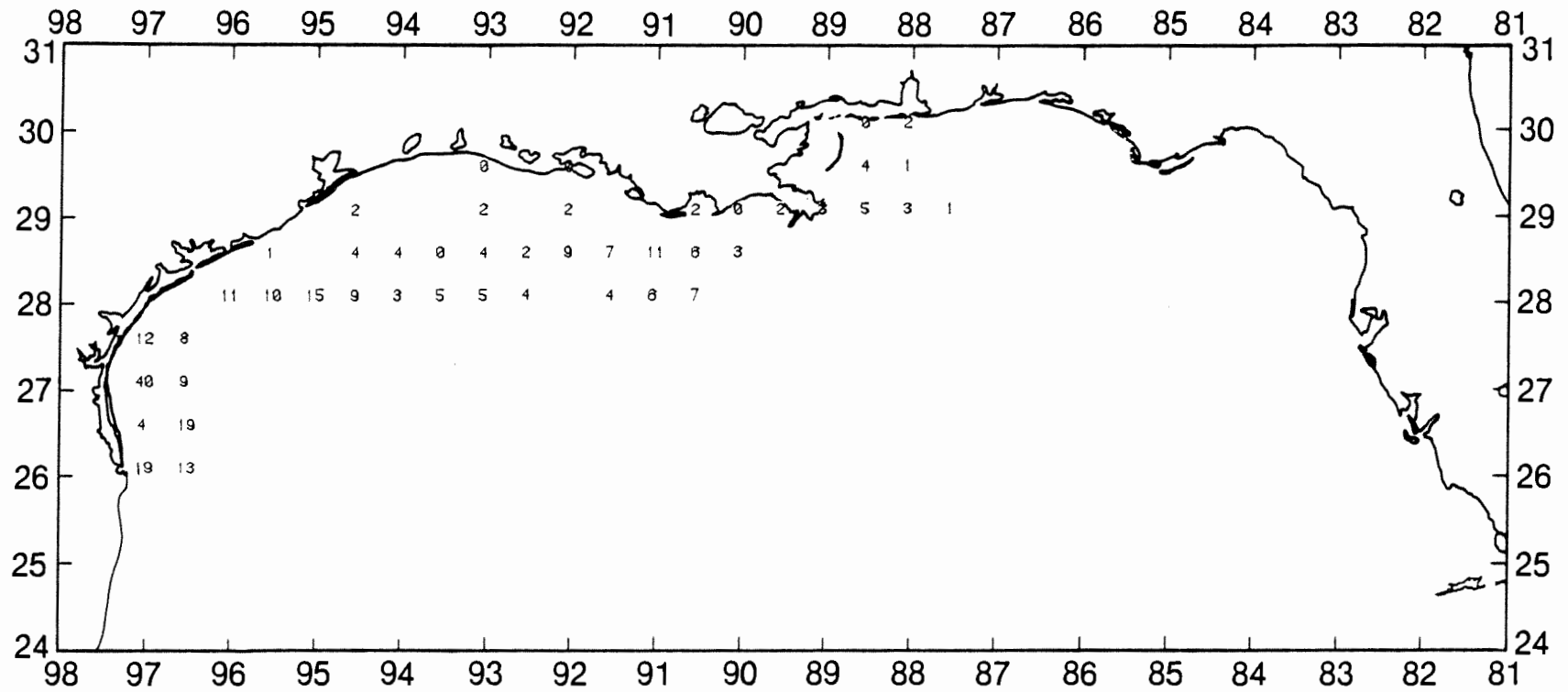


Figure 45. Brown shrimp, *Penaeus aztecus*, lb/hour for June-July 1986.



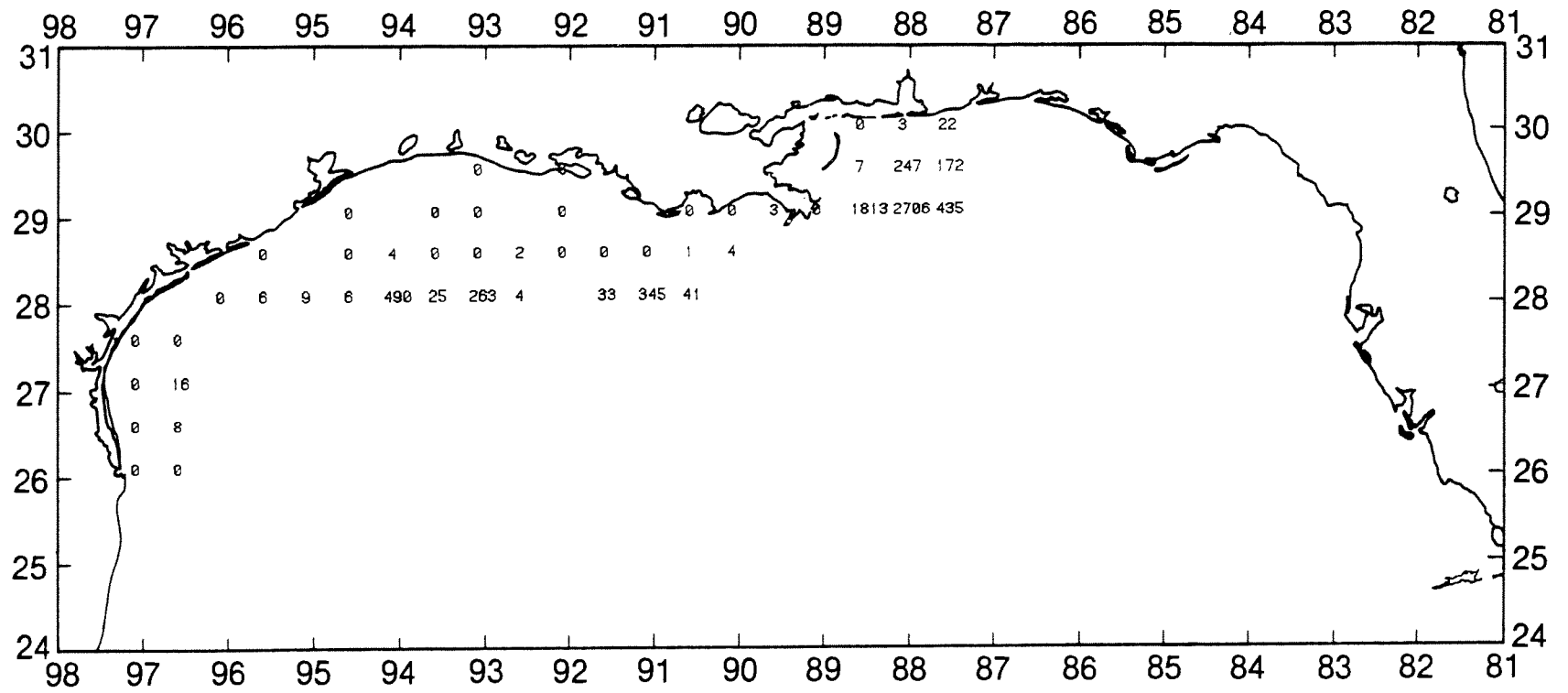


Figure 46. White shrimp, *Penaeus setiferus*, number/hour for June-July 1986.

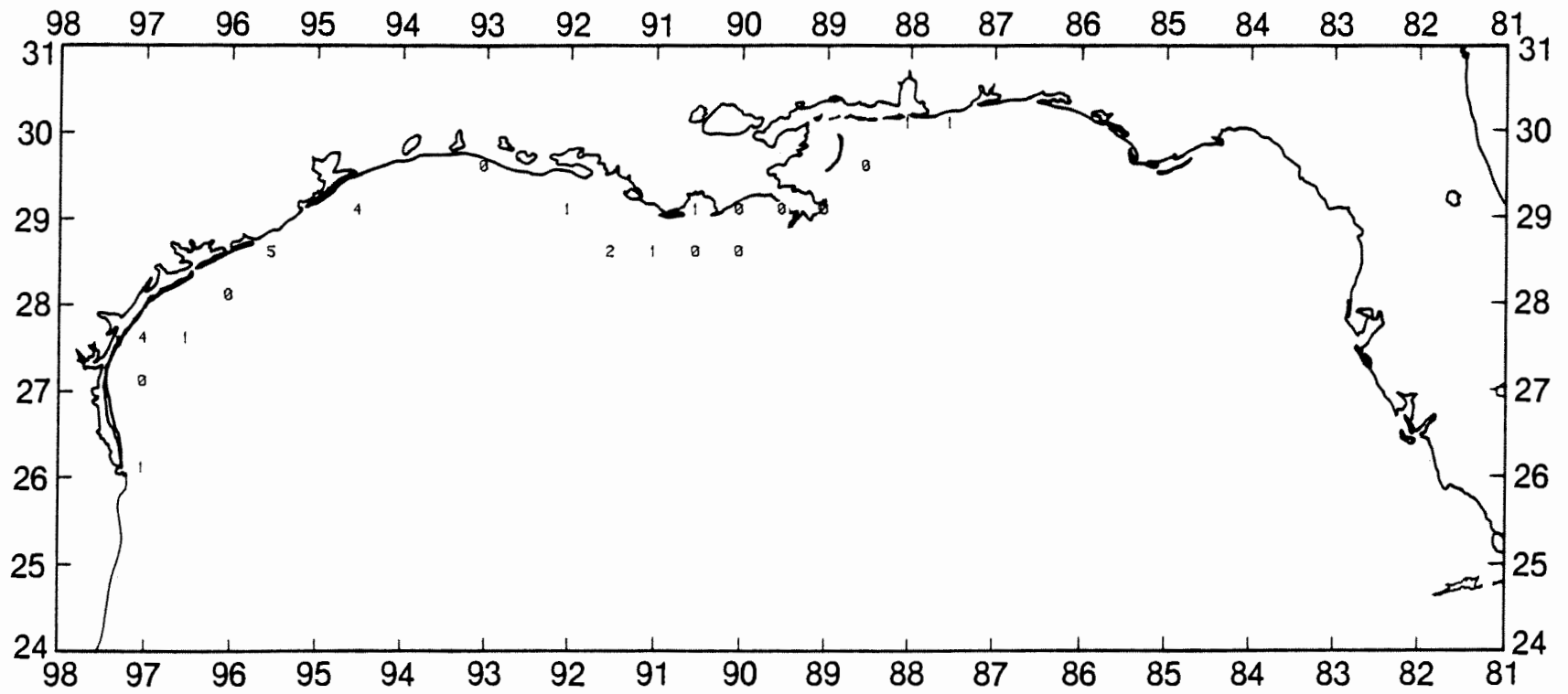


Figure 47. White shrimp, *Penaeus setiferus*, lb/hour for June-July 1986.

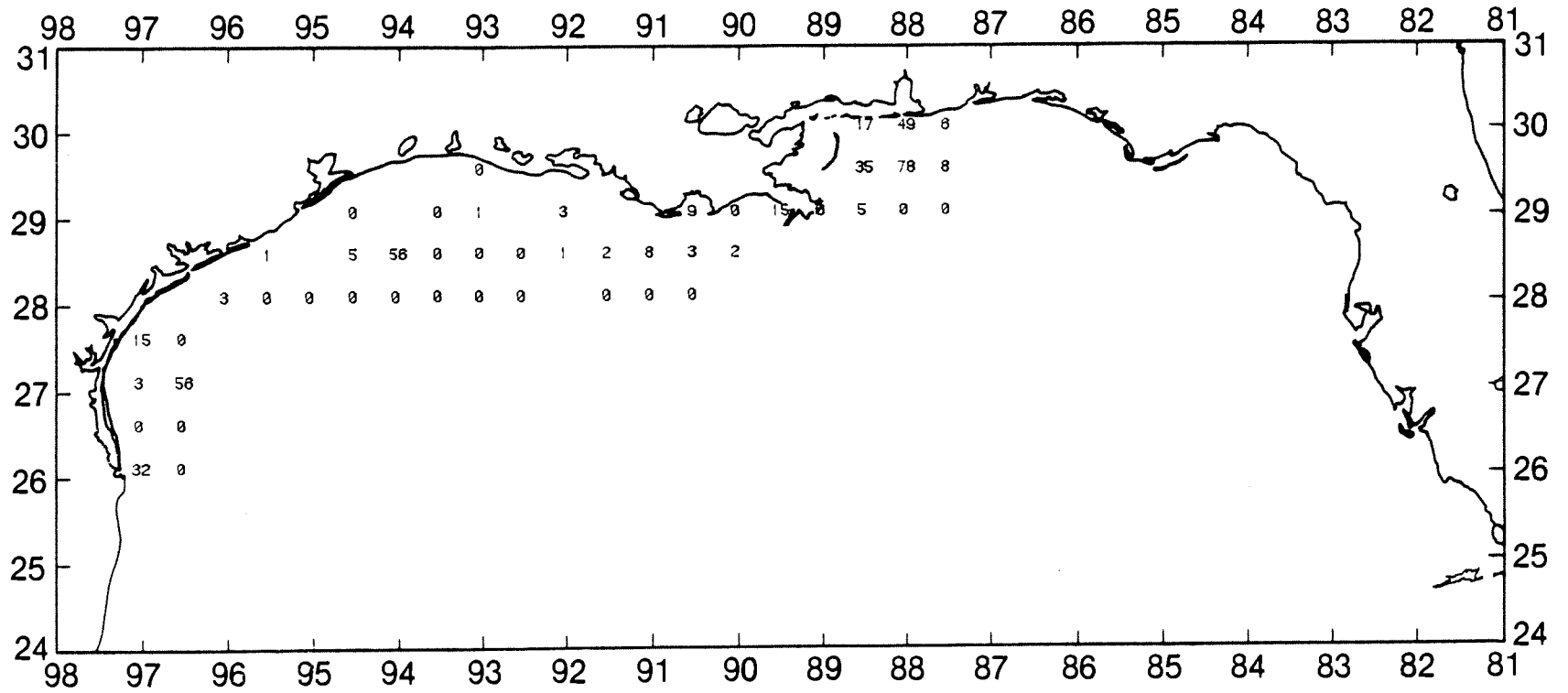


Figure 48. Pink shrimp, *Penaeus duorarum*, number/hour for June-July 1986.

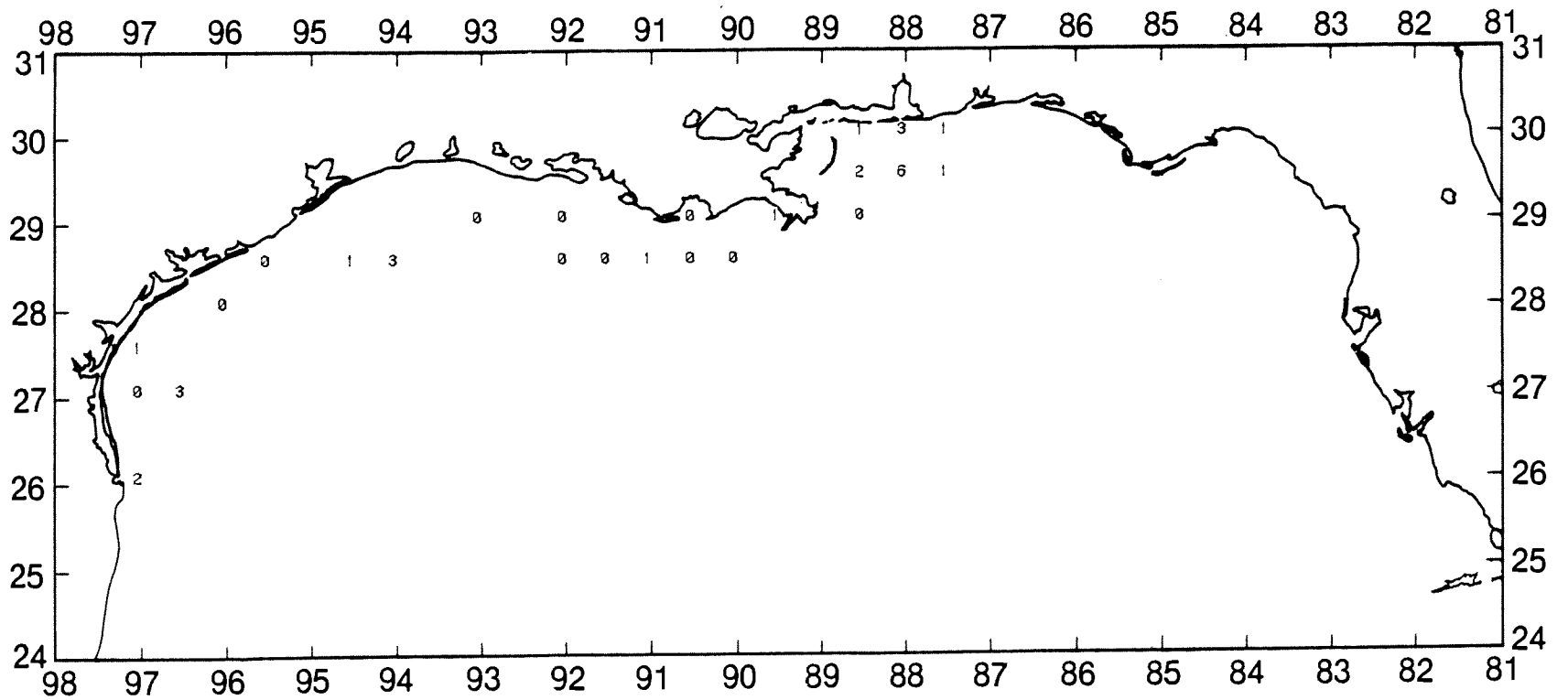


Figure 49. Pink shrimp, *Penaeus duorarum*, lb/hour for June-July 1986.

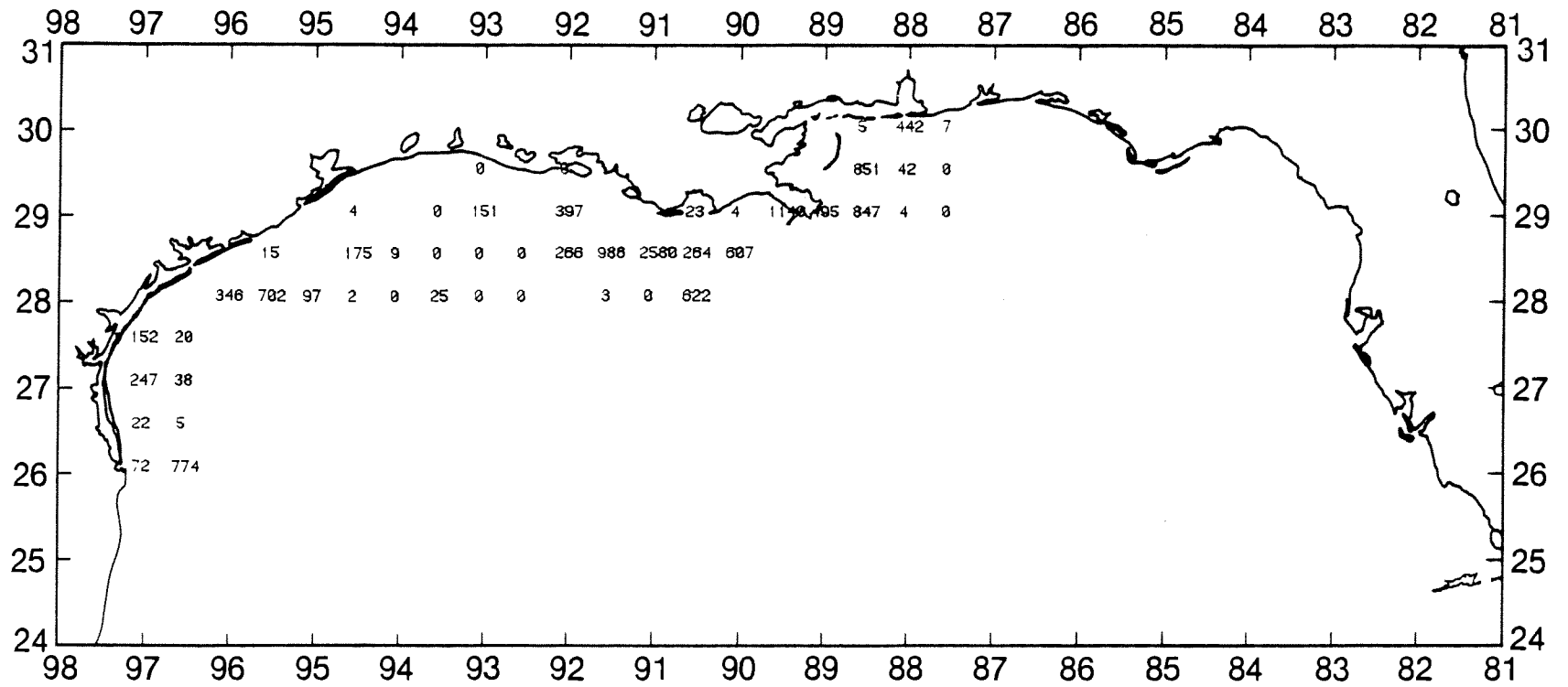


Figure 50. Roughneck shrimp, *Trachypenaeus* spp., number/hour for June-July 1986.

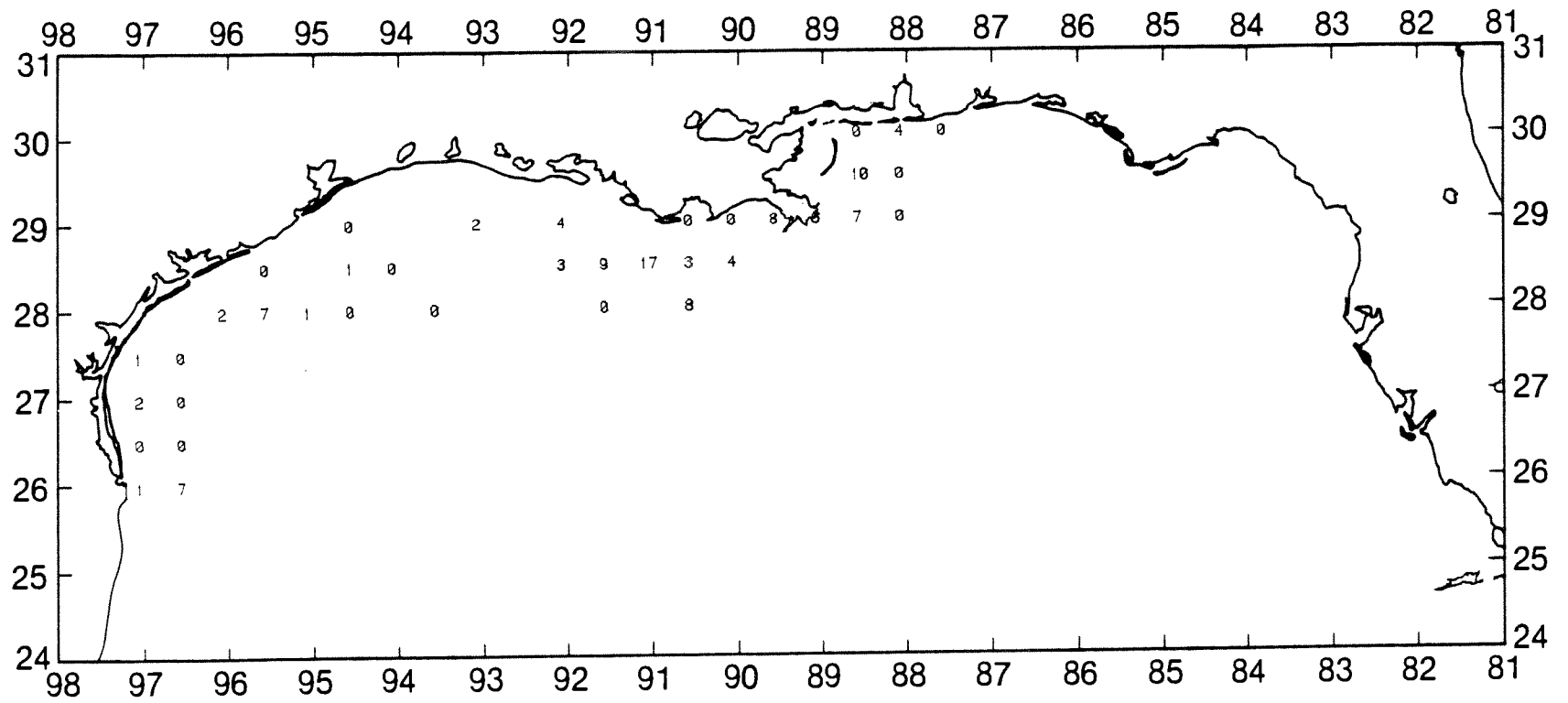


Figure 51. Roughneck shrimp, *Trachypenaeus* spp., lb/hour for June-July 1986.

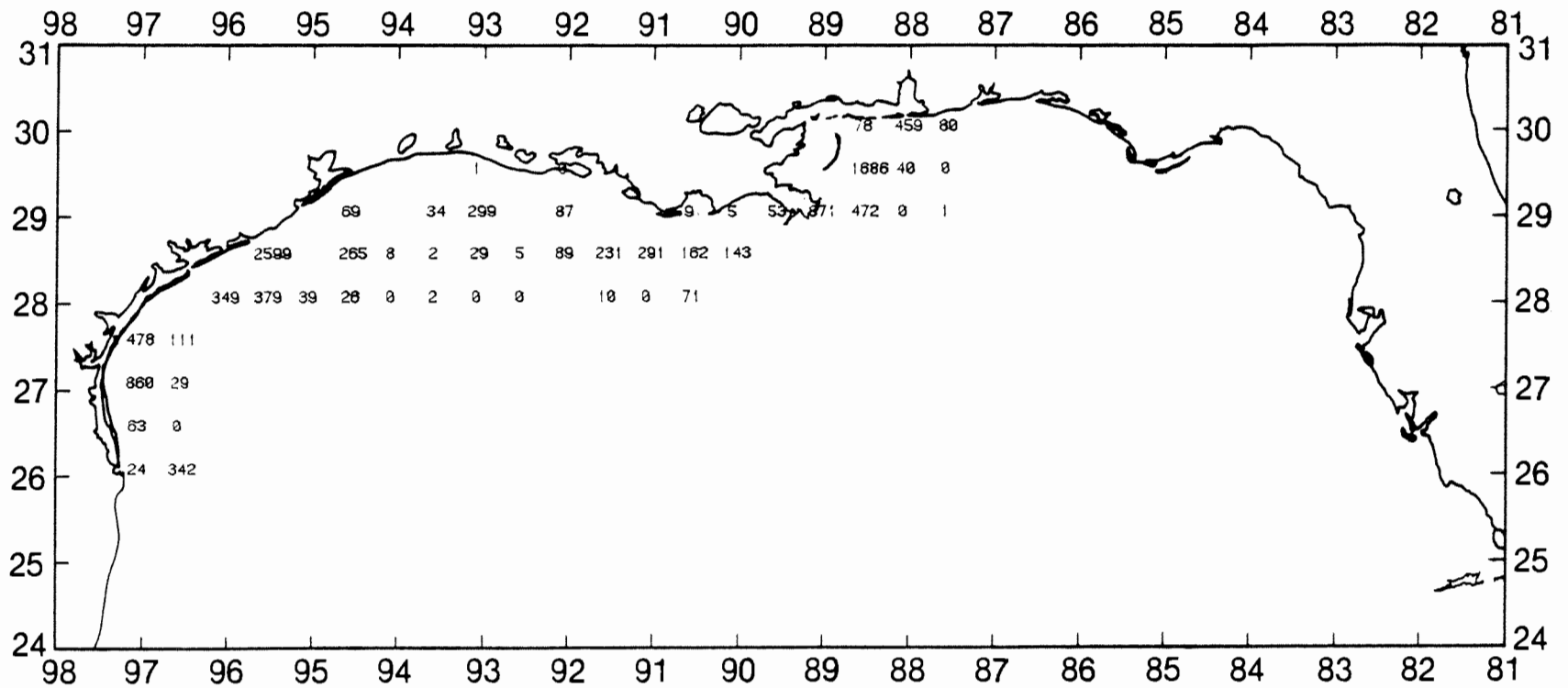


Figure 52. Lesser blue crab, *Callinectes similis*, number/hour for June-July 1986.

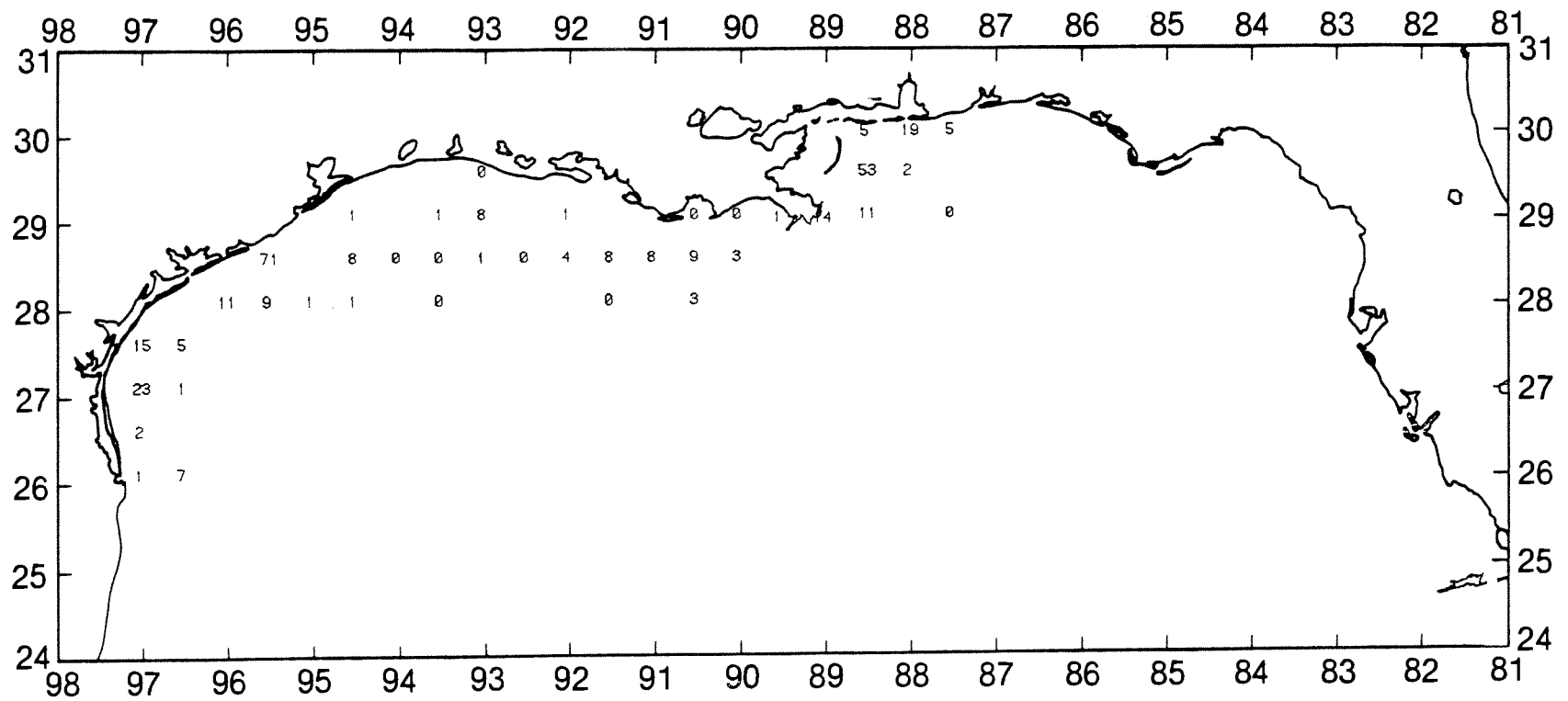


Figure 53. Lesser blue crab, *Callinectes similis*, lb/hour for June-July 1986.



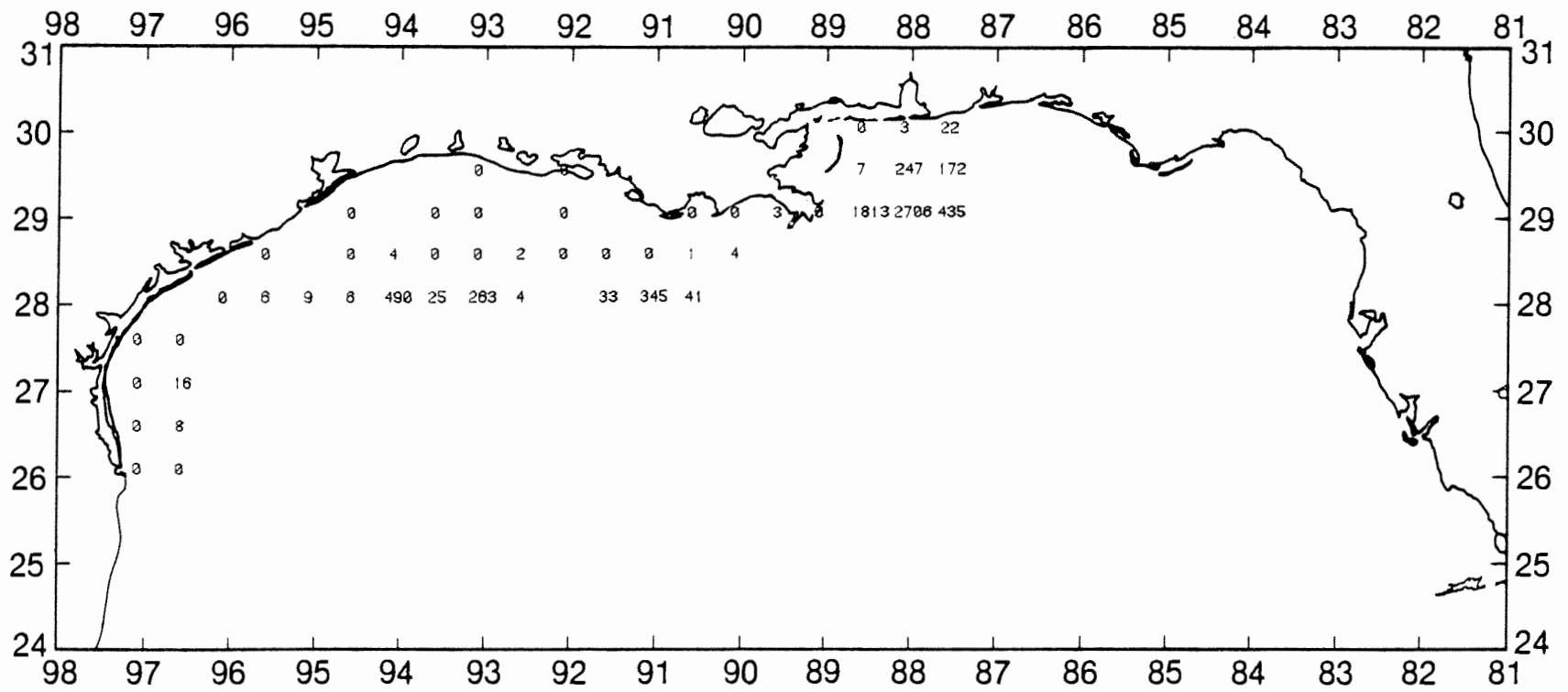


Figure 54. Longspine swimming crab, *Portunus spinicarpus*, number/hour for June-July 1986.

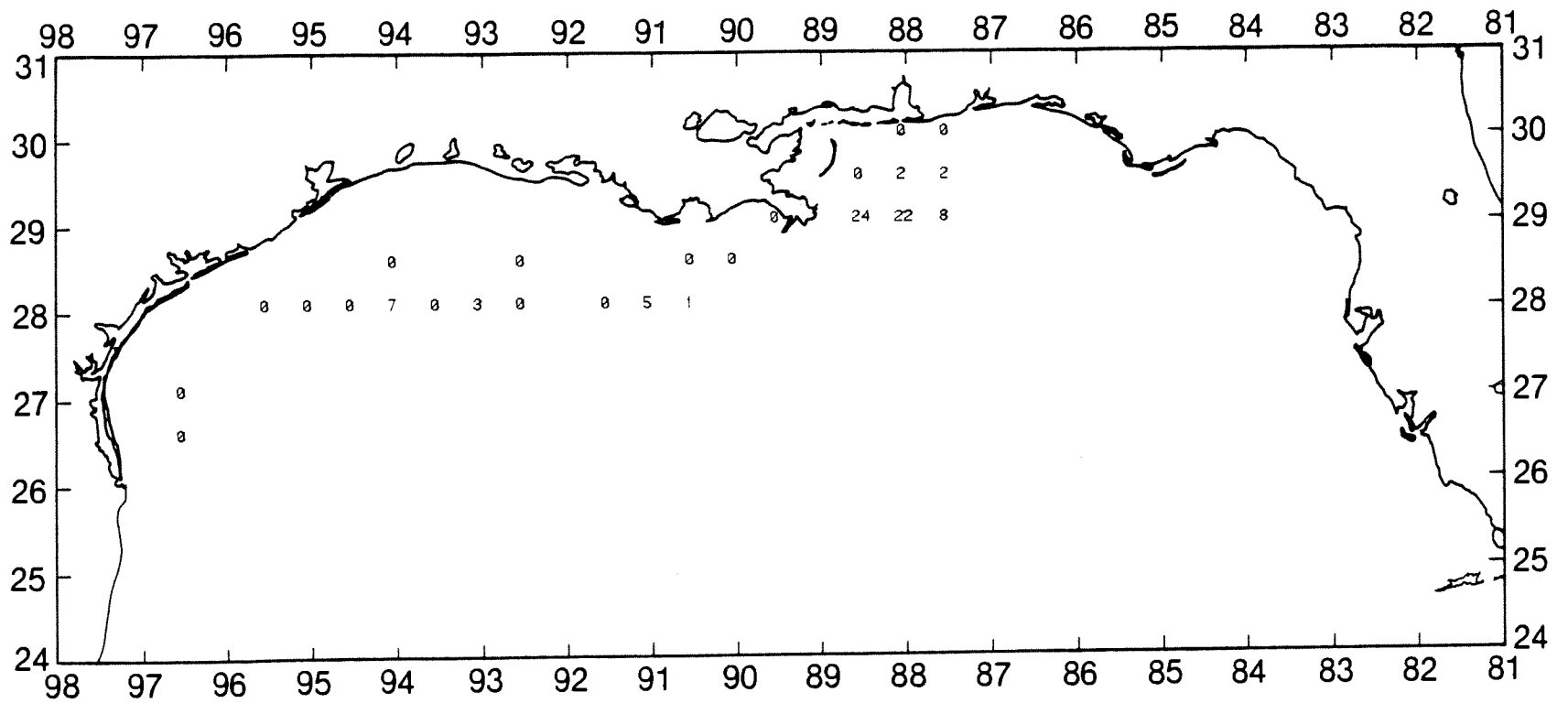
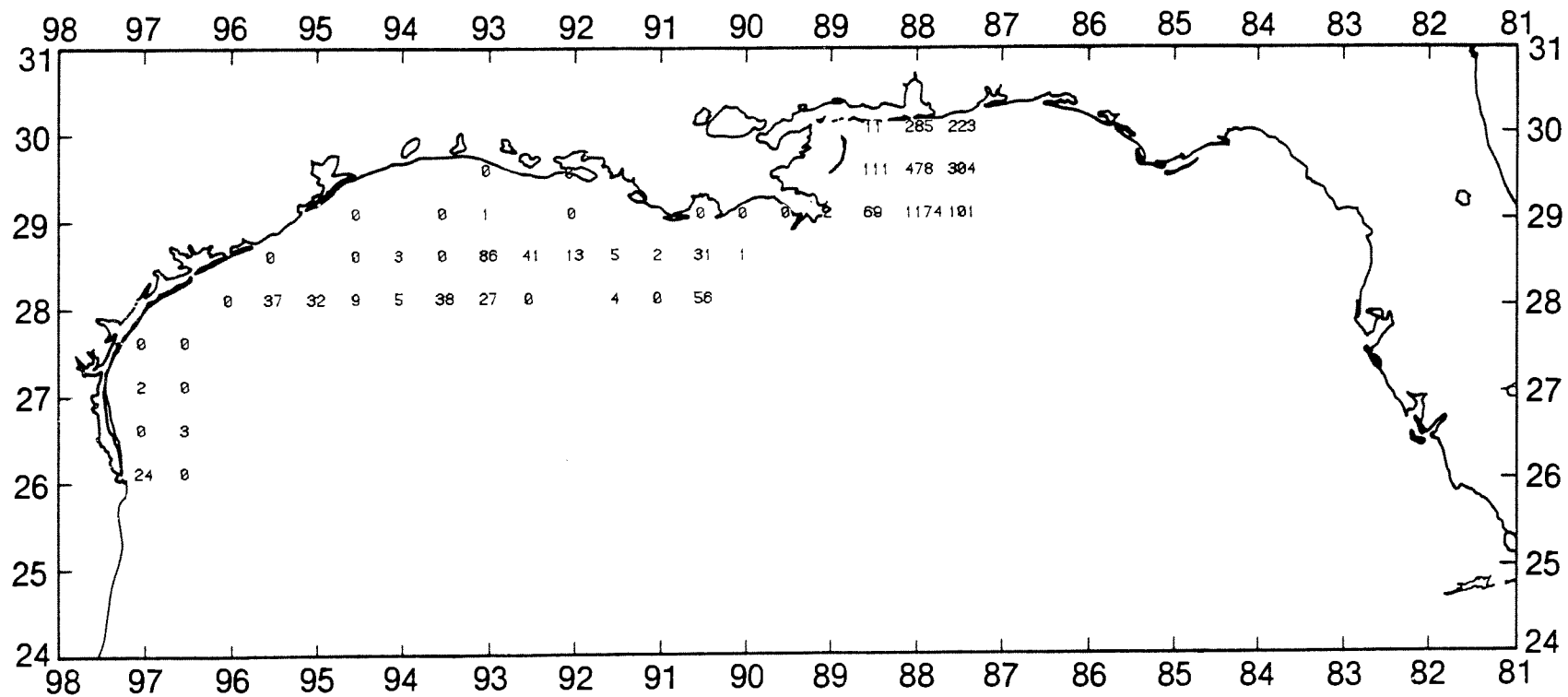


Figure 55. Longspine swimming crab, *Portunus spinicarpus*, lb/hour for June-July 1986.





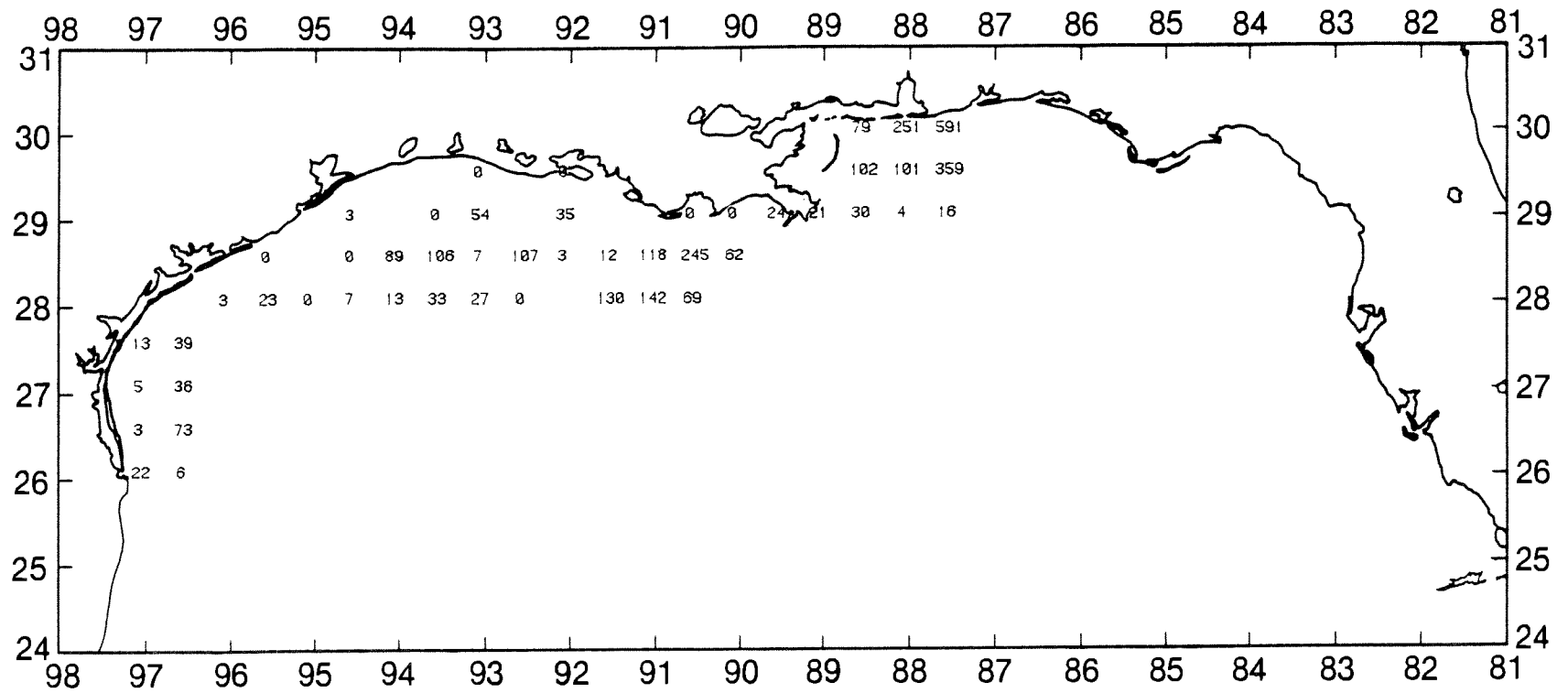


Figure 58. Longfin squid, *Loligo pealeii*, number/hour for June-July 1986.

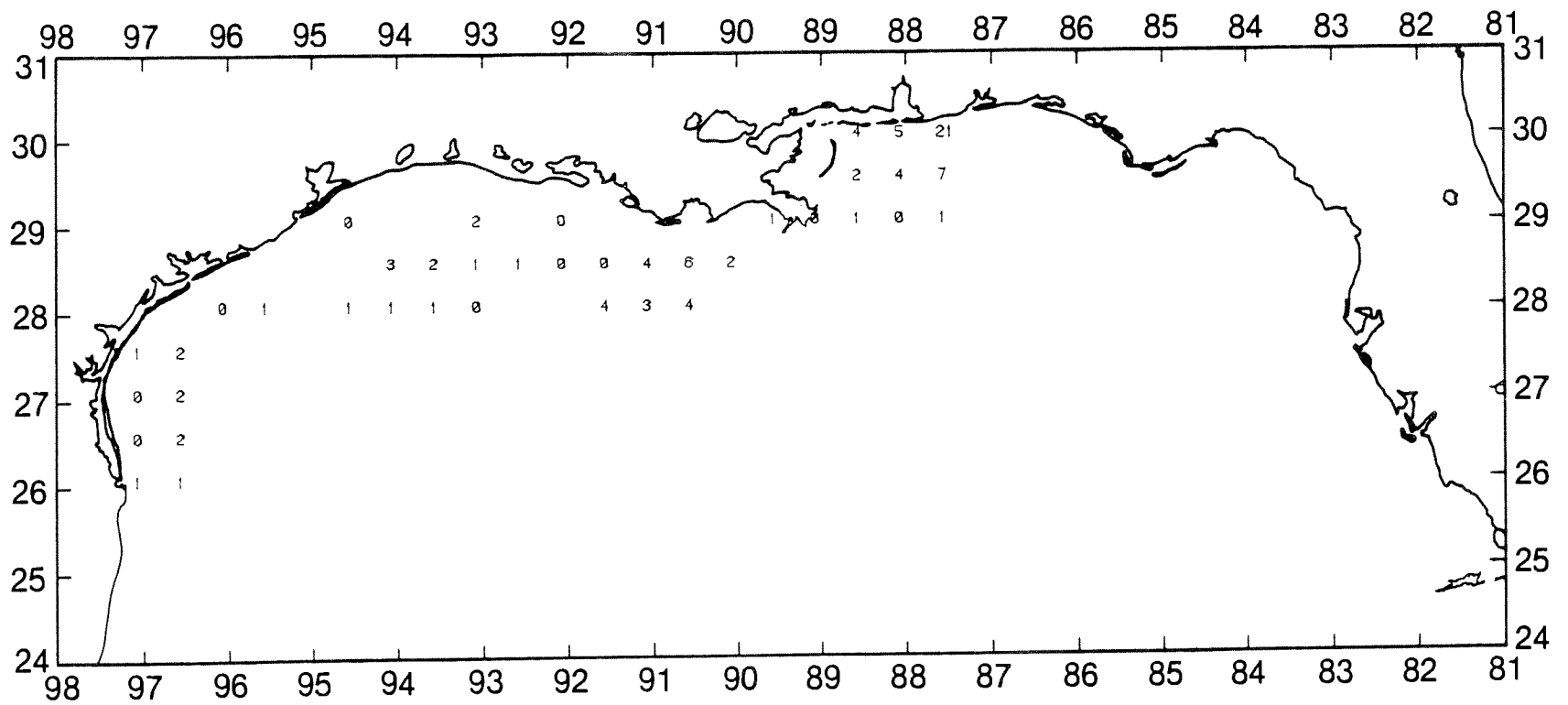


Figure 59. Longfin squid, *Loligo pealeii*, number/hour for June-July 1986.

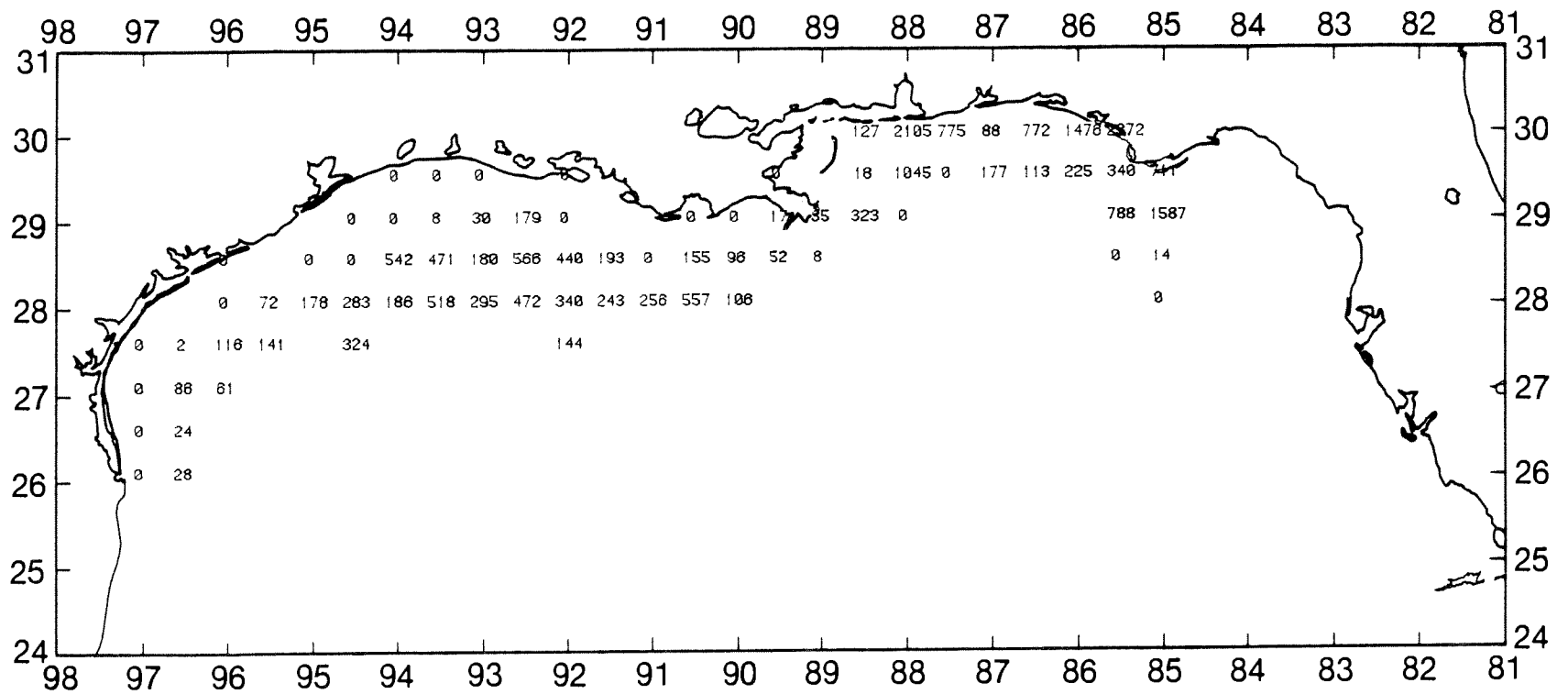


Figure 60. Longspine pogy, *Stenotomus caprinus*, number/hour for October-December 1986.

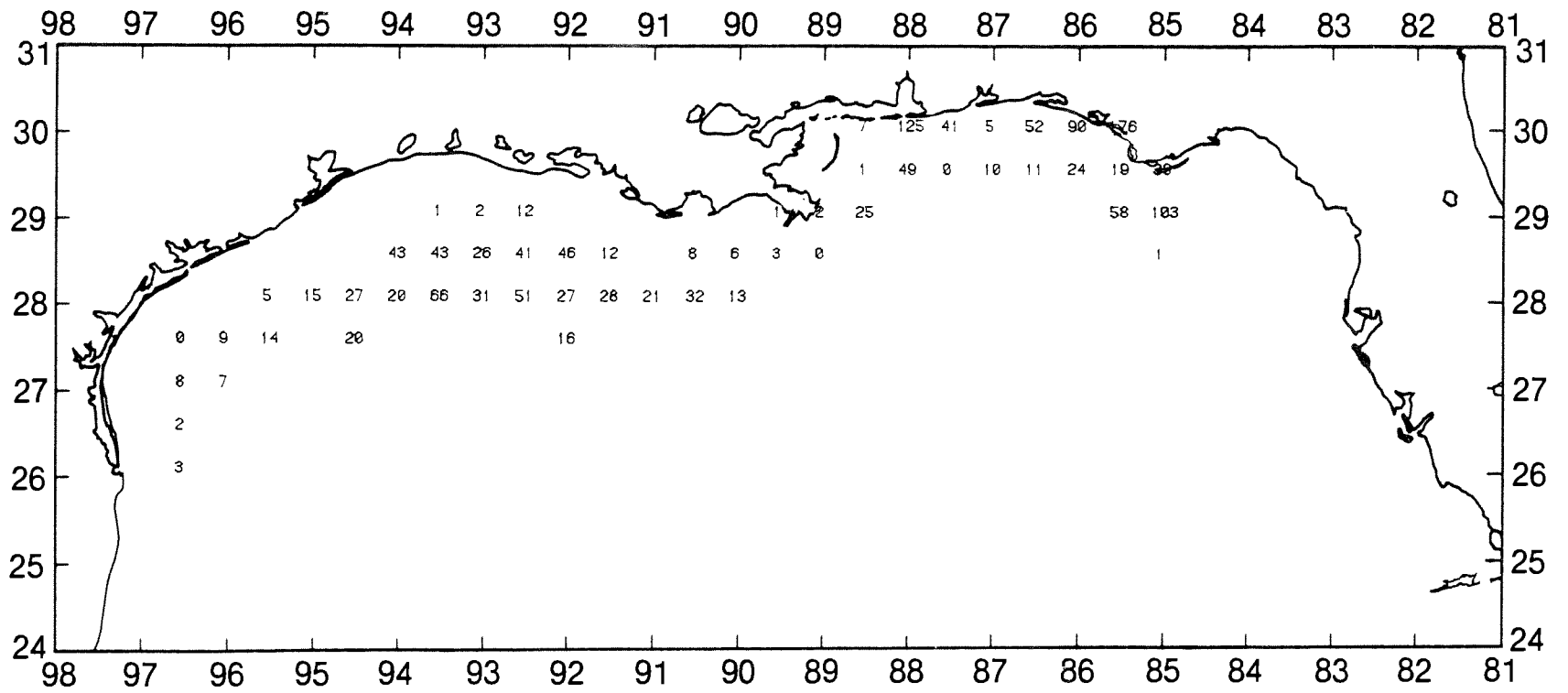


Figure 61. Longspine pogy, *Stenotomus caprinus*, lb/hour for October-December 1986.



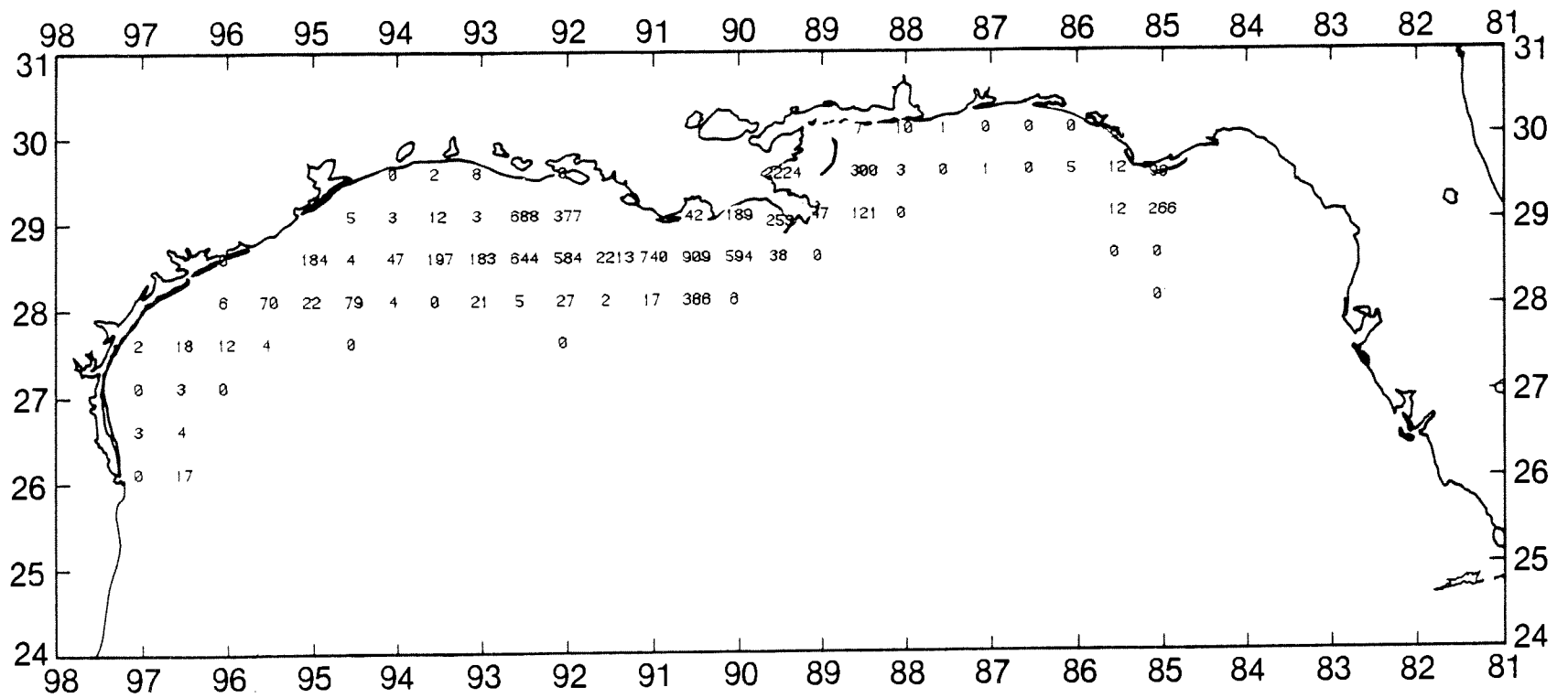


Figure 62. Atlantic croaker, *Micropogonias undulatus*, number/hour for October-December 1986.

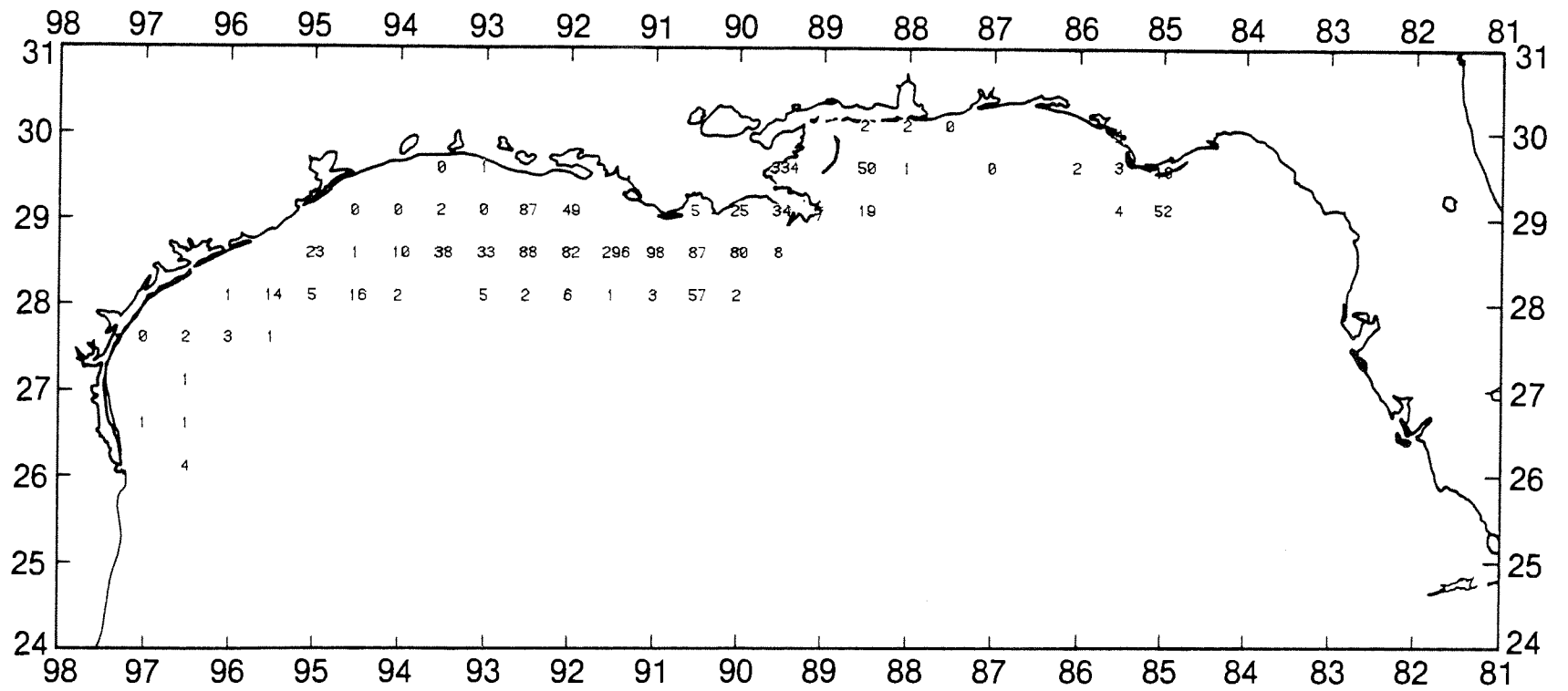


Figure 63. Atlantic croaker, *Microgogonias undulatus*, lb/hour for October-December 1986.

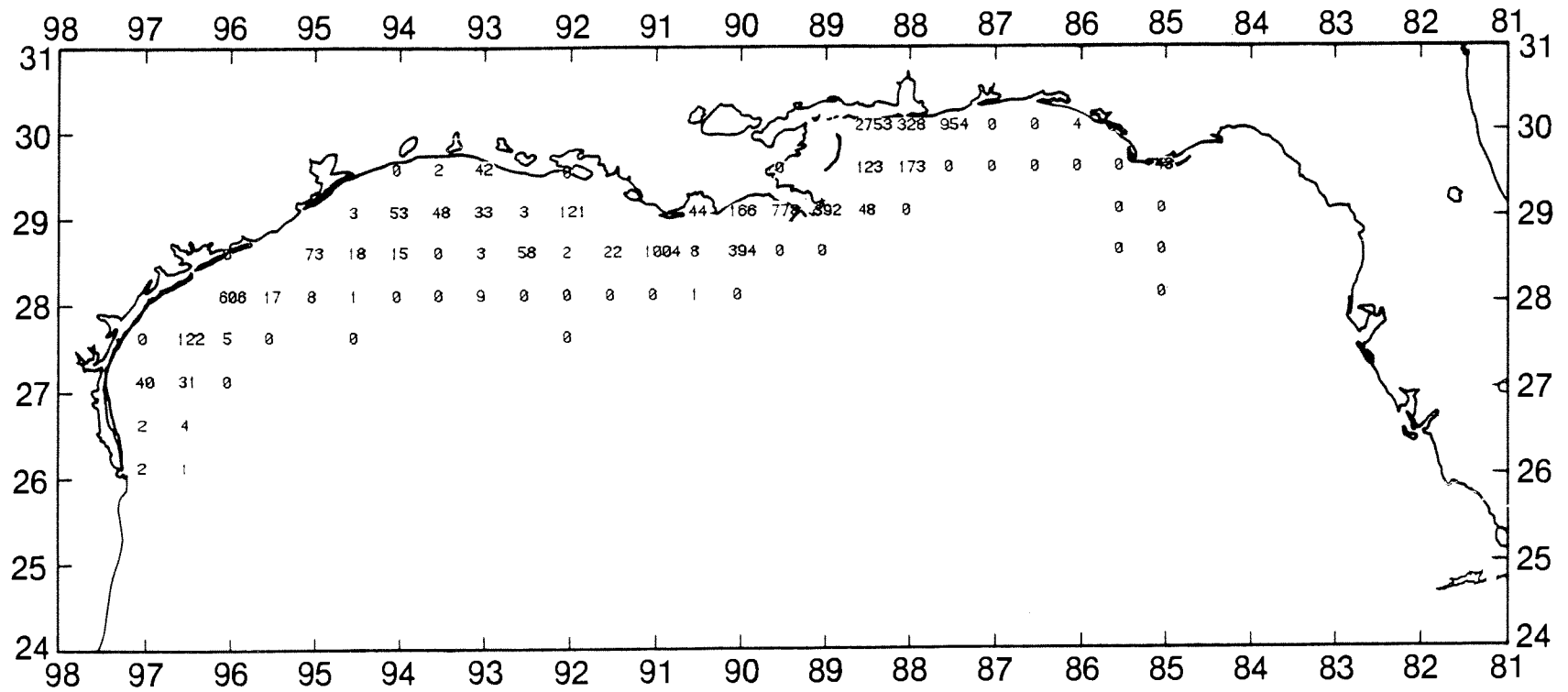


Figure 64. Atlantic bumper, *Chloroscombrus chrysurus*, number/hour for October-December 1986.

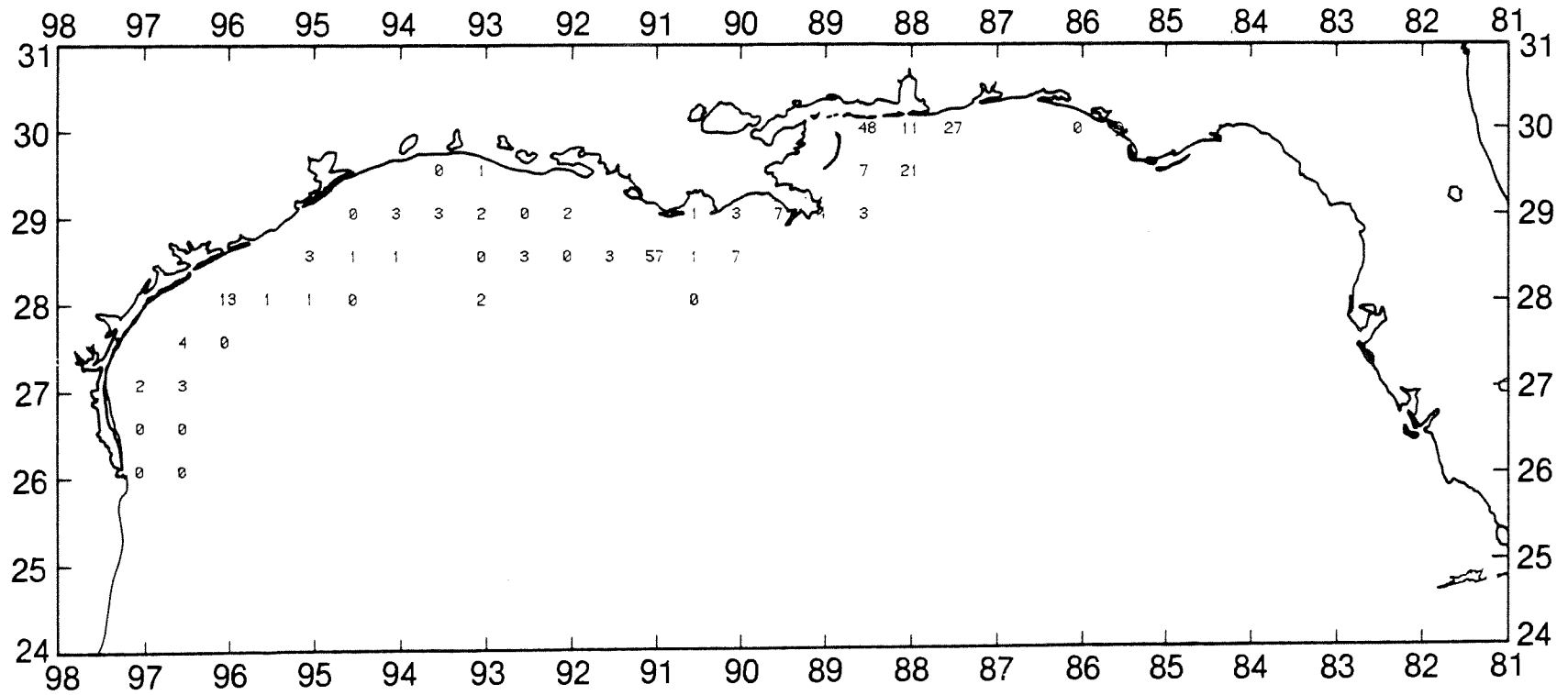


Figure 65. Atlantic bumper, *Chloroscombrus chrysurus*, lb/hour for October-December 1986.

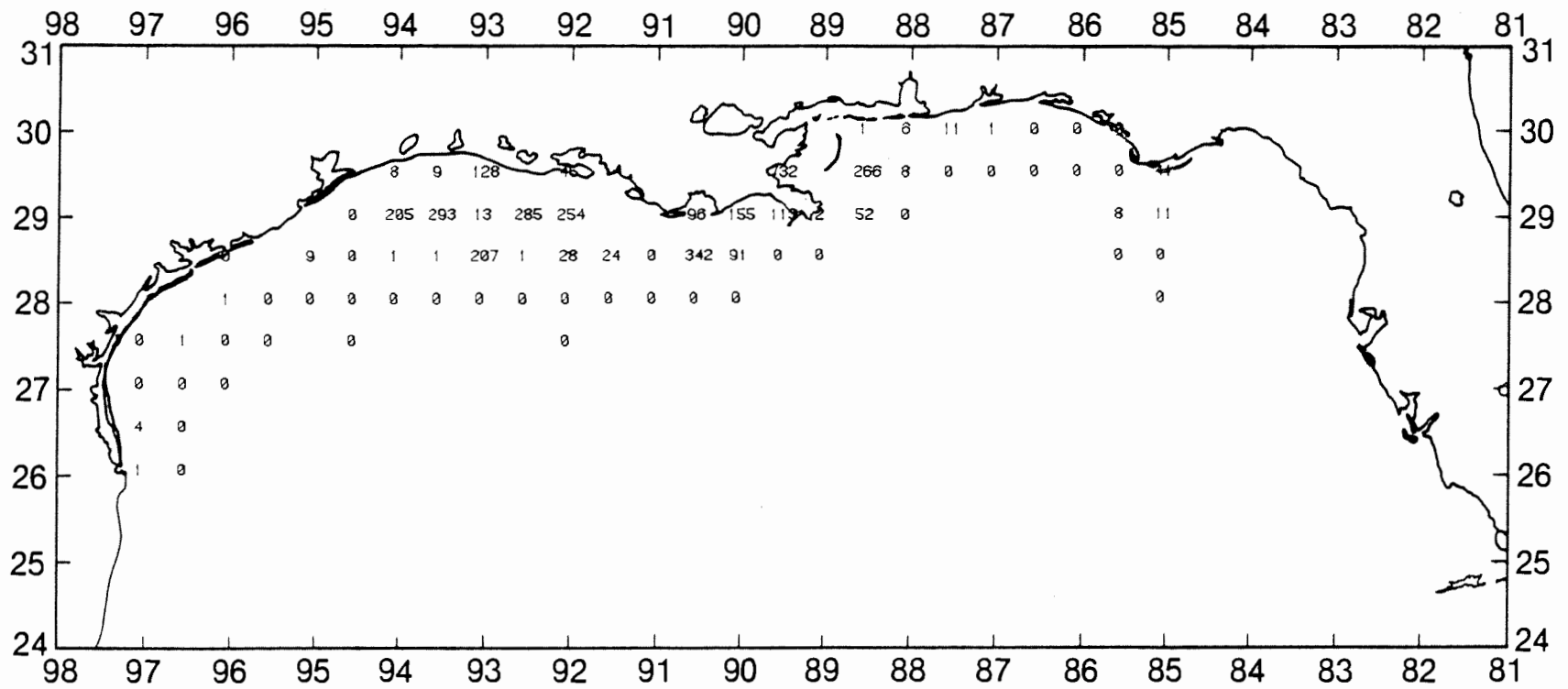


Figure 66. Sea catfish, *Arius felis*, number/hour for October-December 1986.

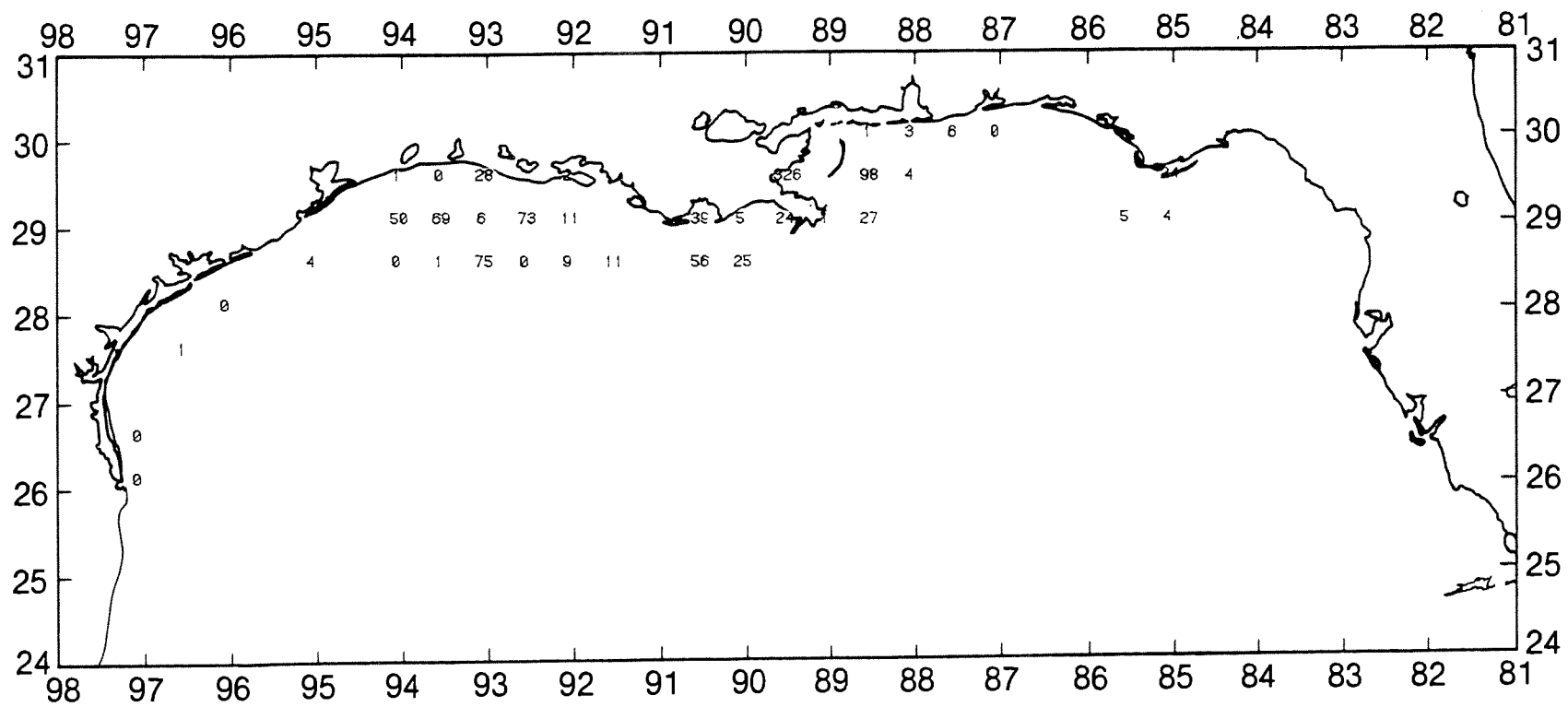


Figure 67. Sea catfish, *Arius felis*, lb/hour for October-December 1986.

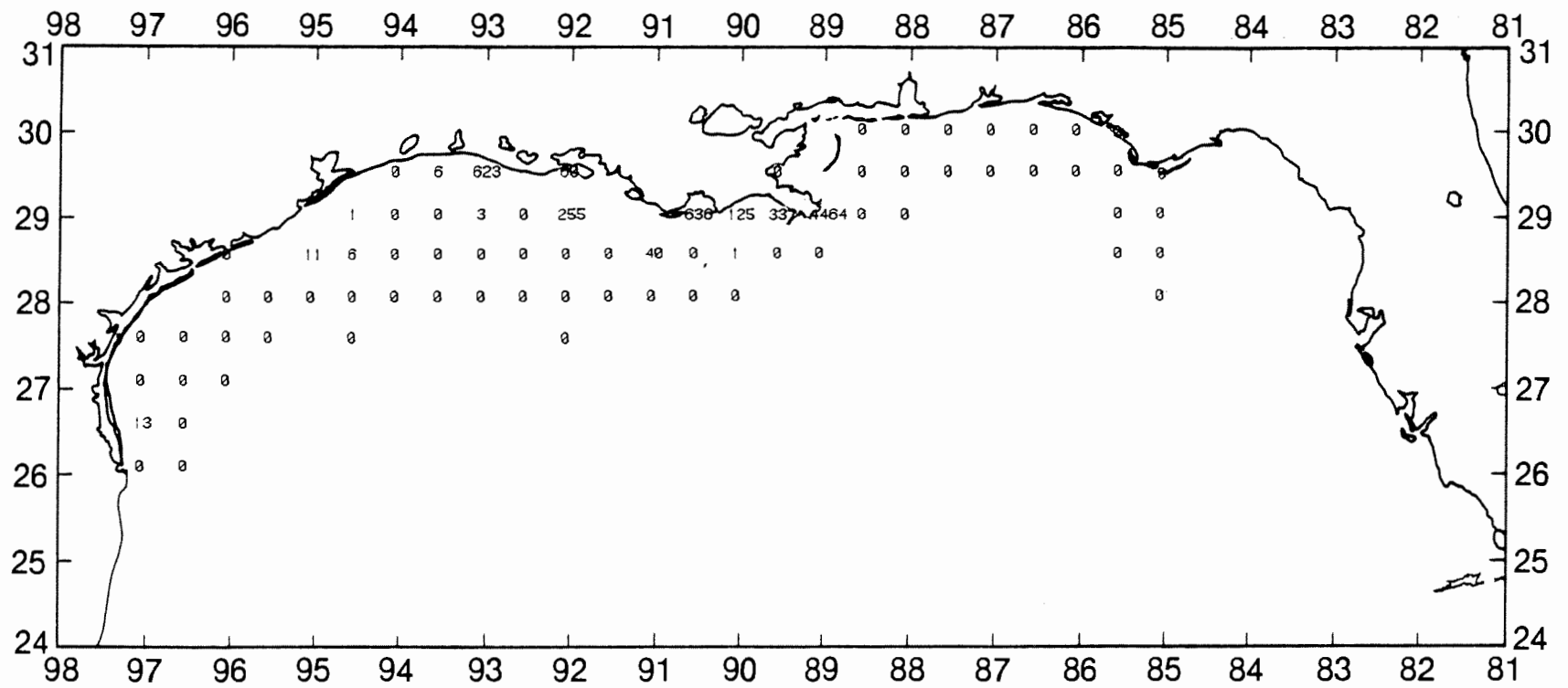


Figure 68. Bay anchovy, *Anchoa mitchilli*, number/hour for October-December 1986.

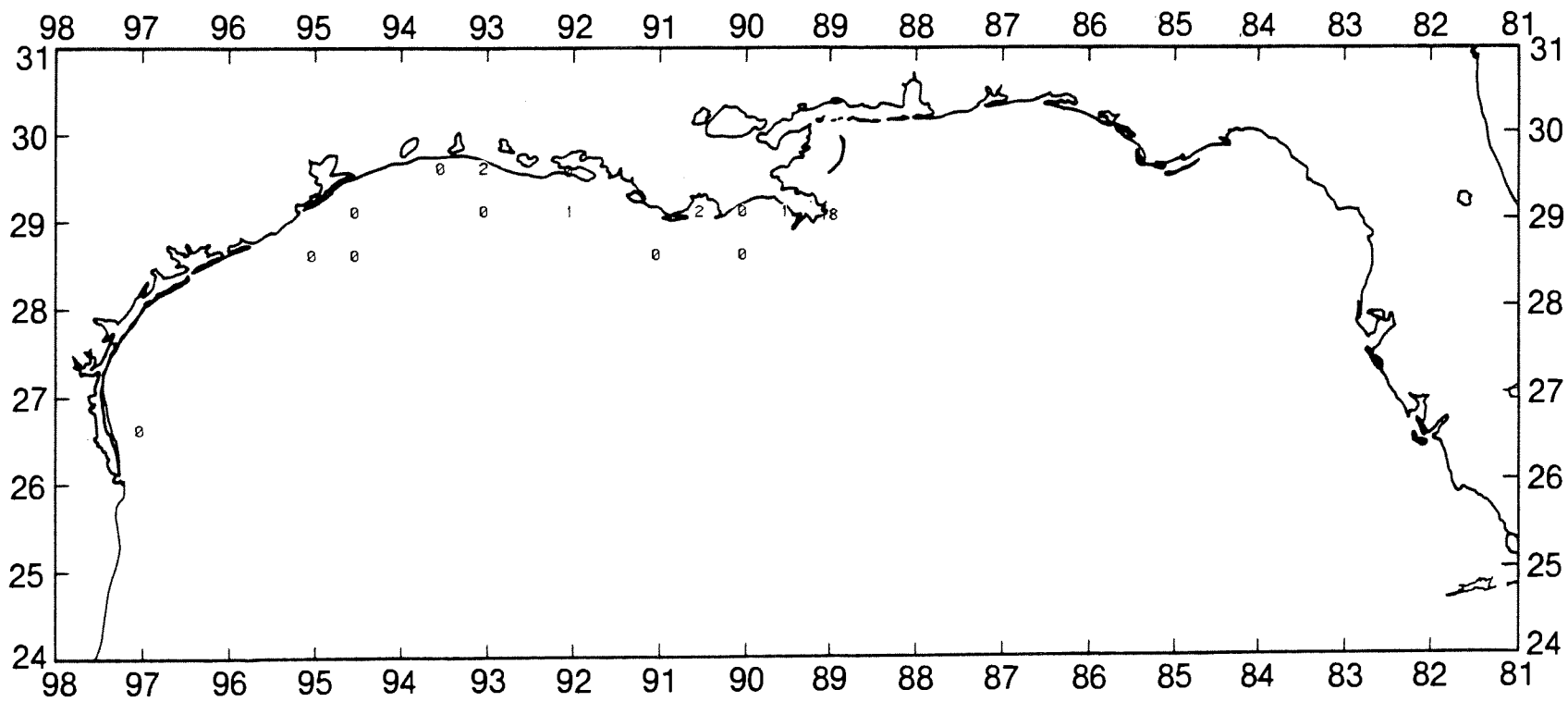


Figure 69. Bay anchovy, *Anchoa mitchilli*, lb/hour for October-December 1986.



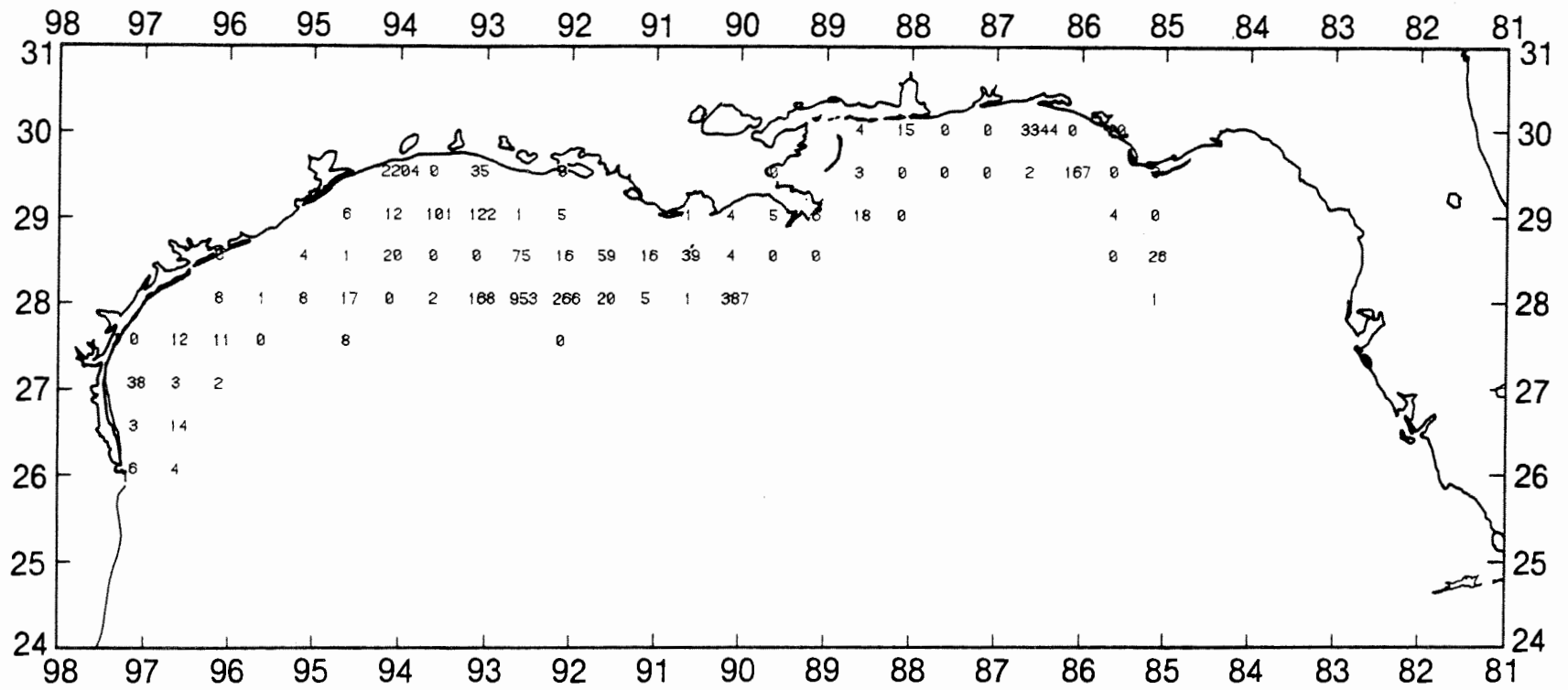


Figure 70. Gulf butterfish, *Peprilus burti*, number/hour for October-December 1986.

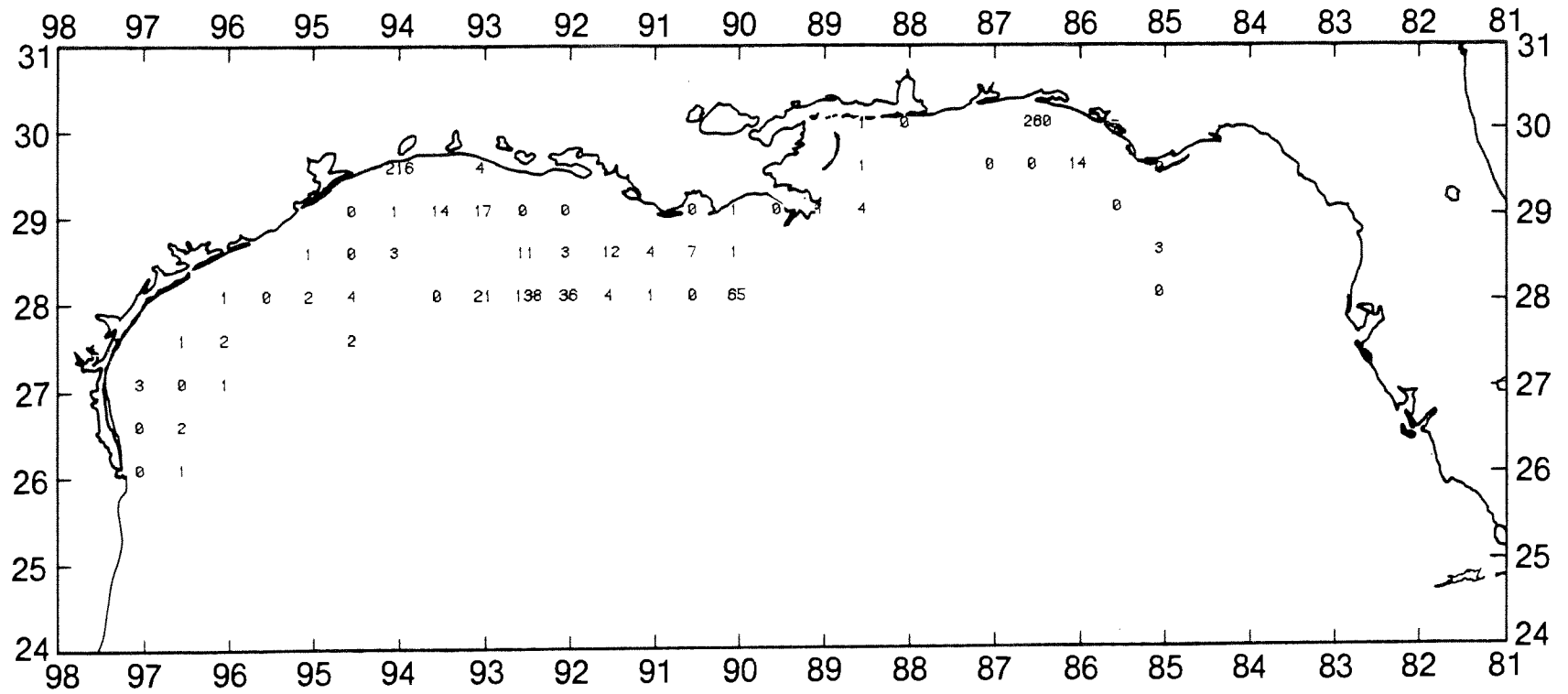


Figure 71. Gulf butterfish, *Peprilus burti*, lb/hour for October-December 1986.

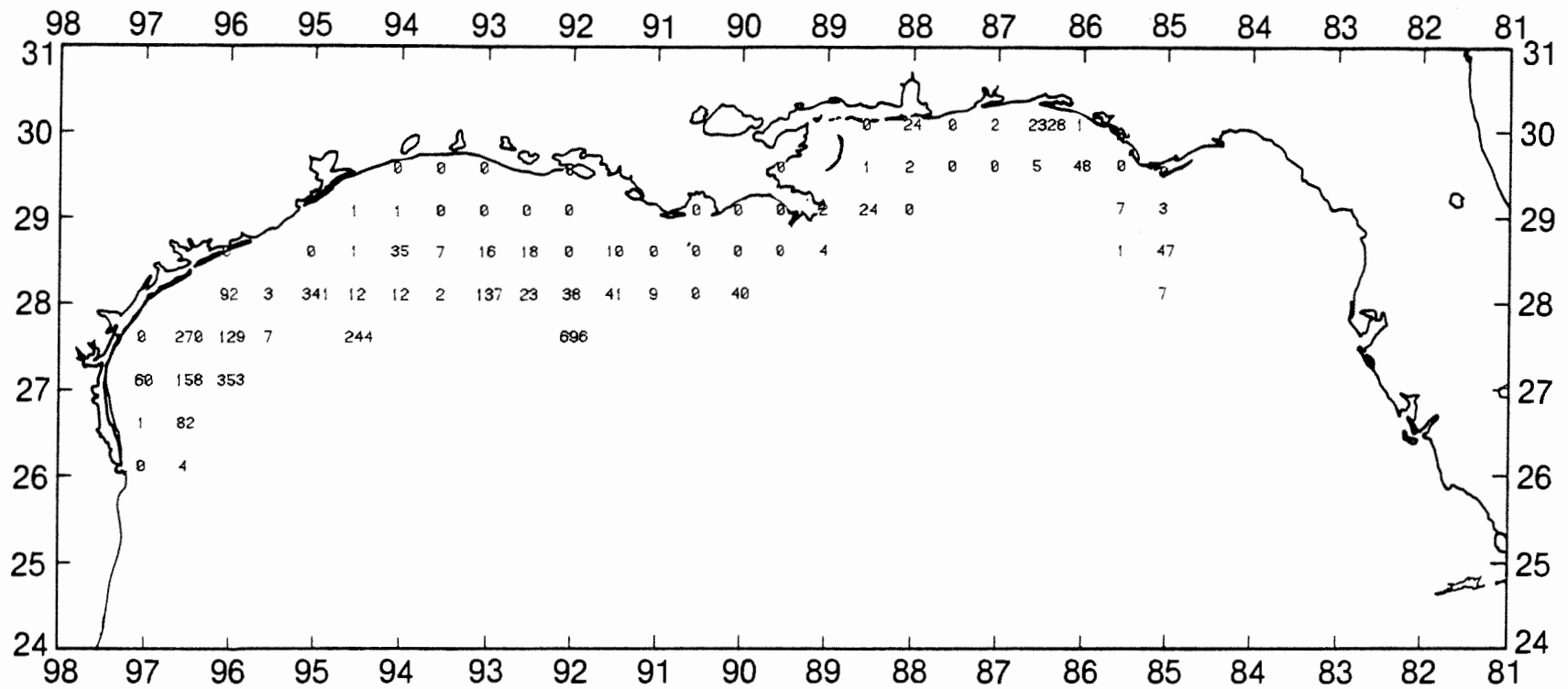


Figure 72. Rough scad, *Trachurus lathami*, number/hour for October-December 1986.

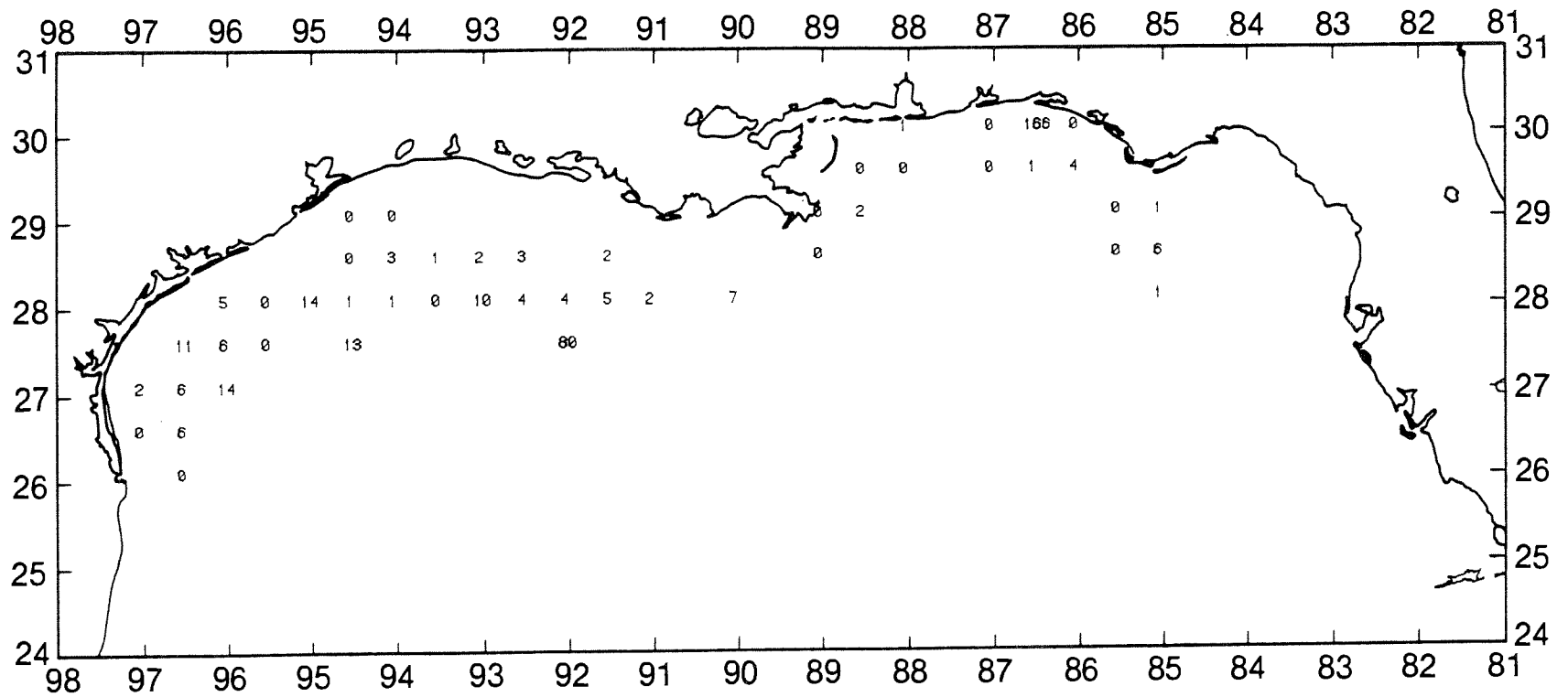


Figure 73. Rough scad, *Trachurus lathami*, lb/hour for October-December 1986.

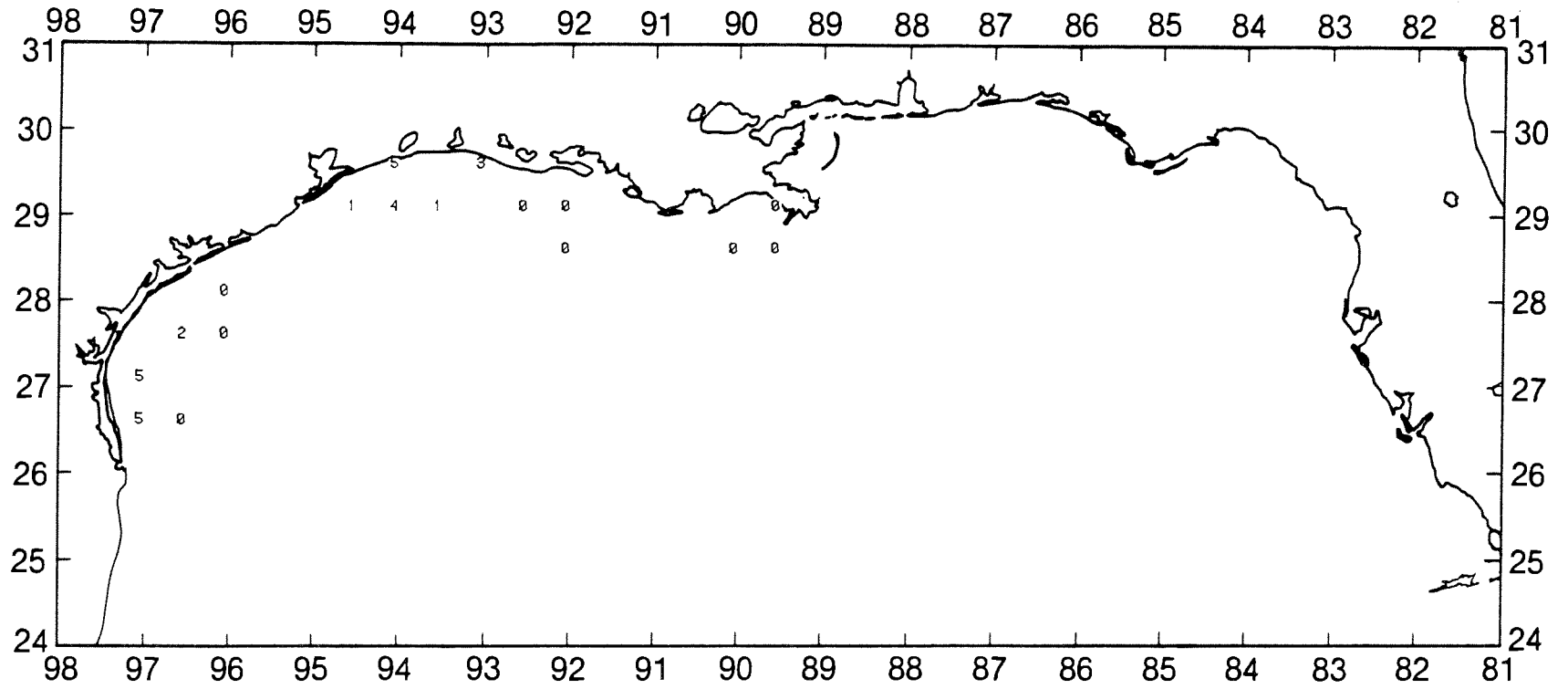


Figure 74. Seatrout, *Cynoscion* spp., number/hour for October-December 1986.

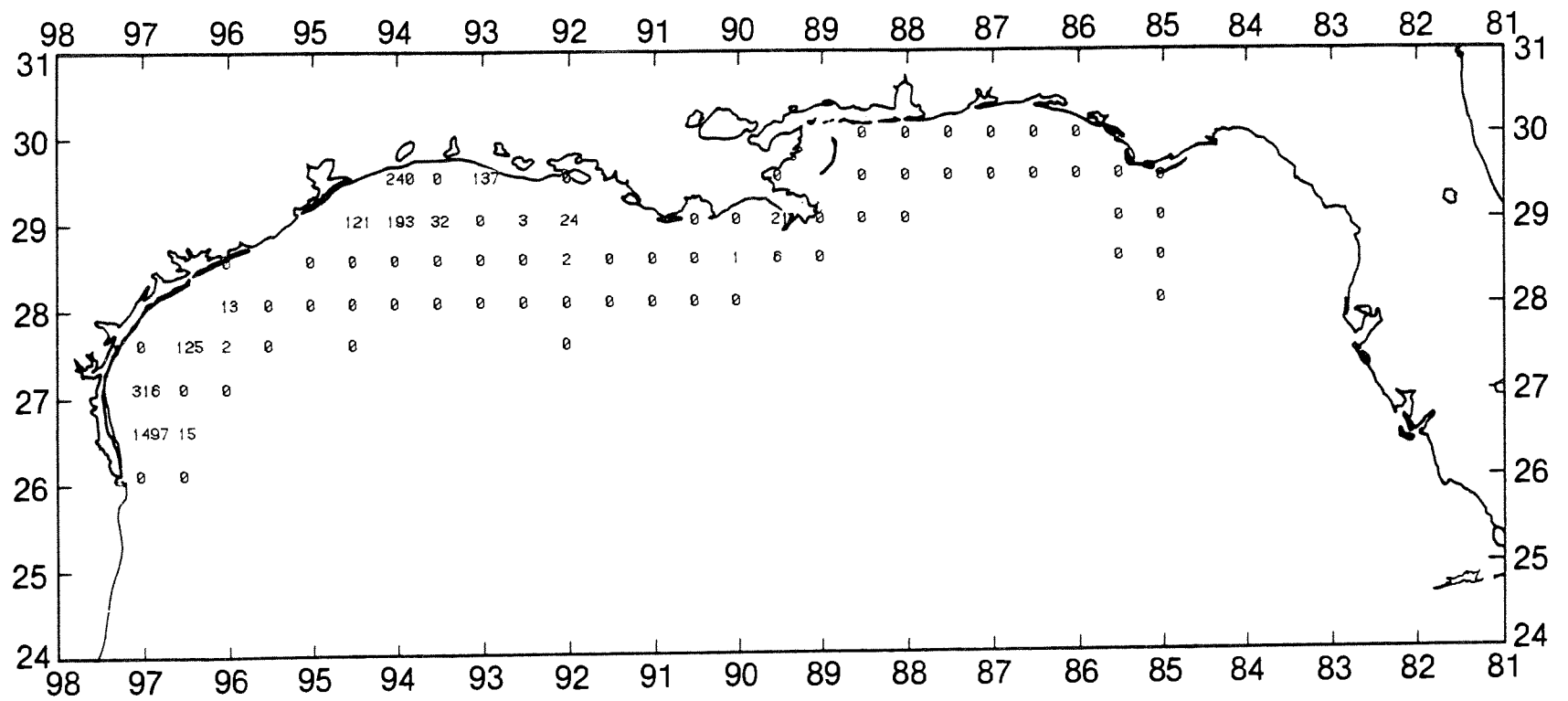


Figure 75. Seatrout, *Cynoscion* spp., lb/hour for October-December 1986.

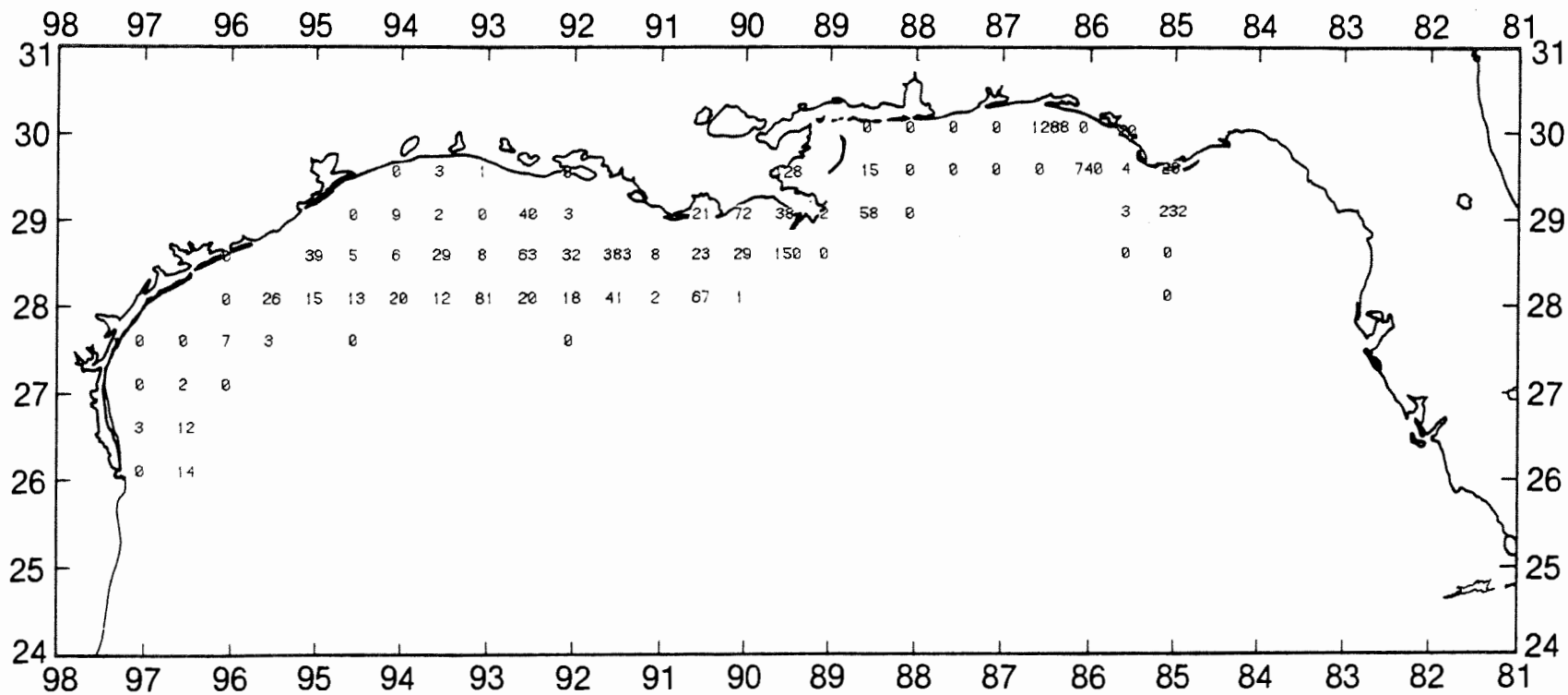


Figure 76. Spot, *Leiestomus xanthurus*, number/hour for October-December 1986.

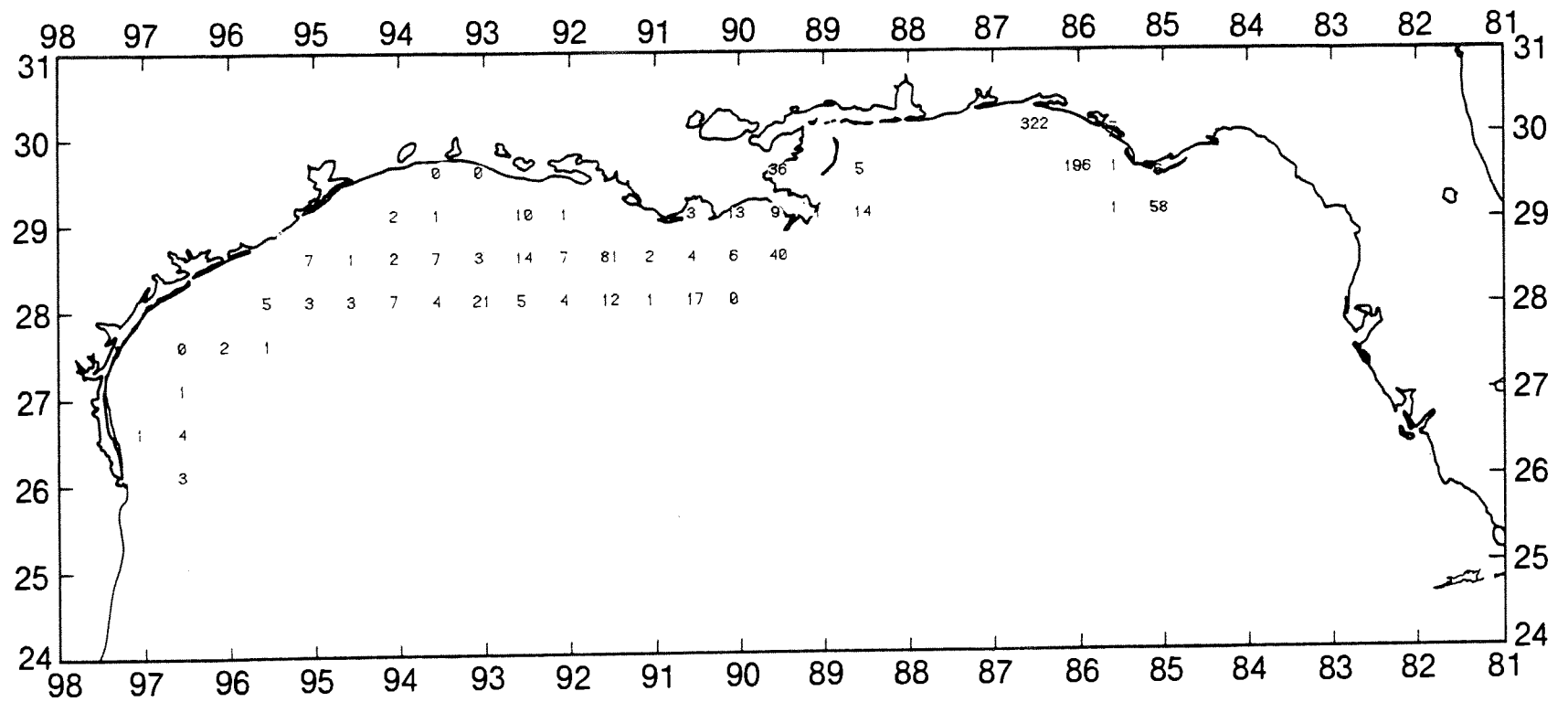


Figure 77. Spot, *Leiostomus xanthurus*, lb/hour for October-December 1986.



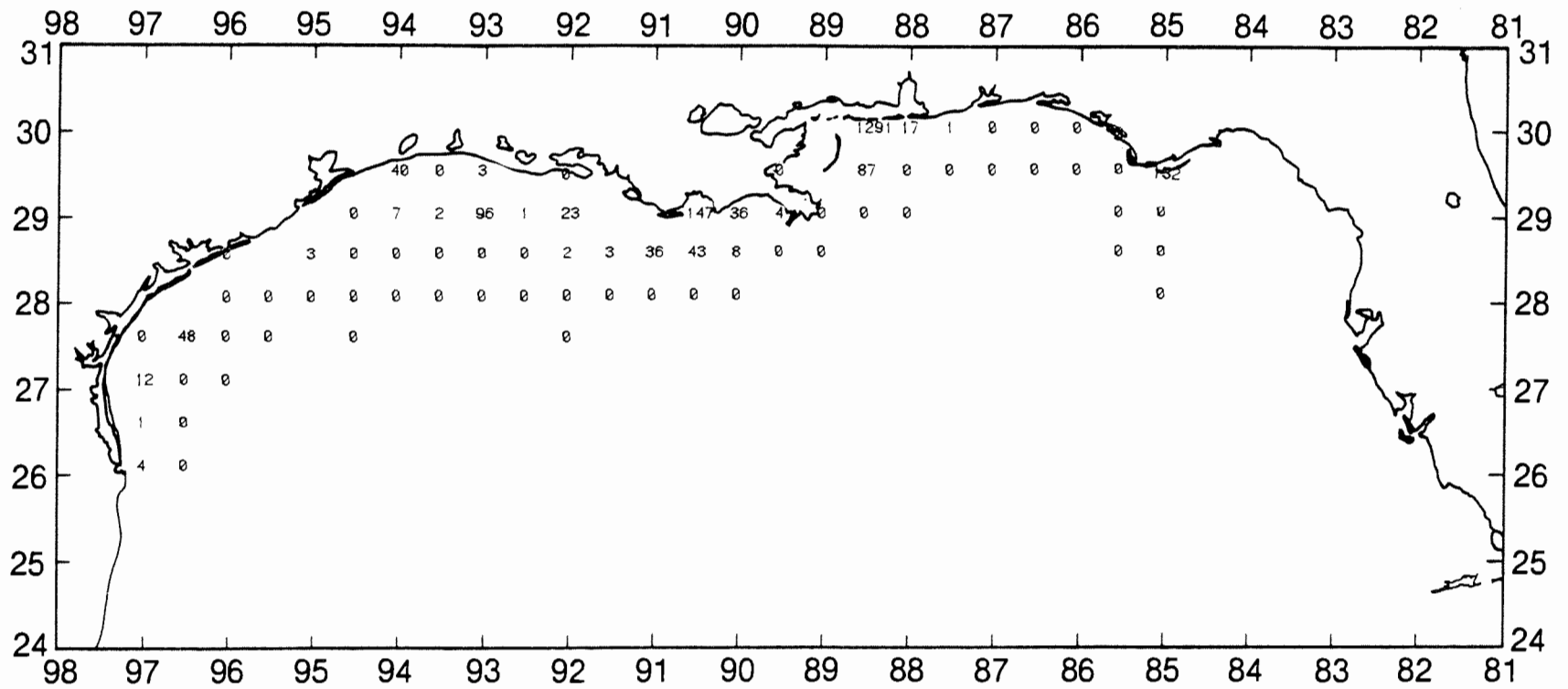


Figure 78. Striped anchovy, *Anchoa hepsetus*, number/hour for October-December 1986.

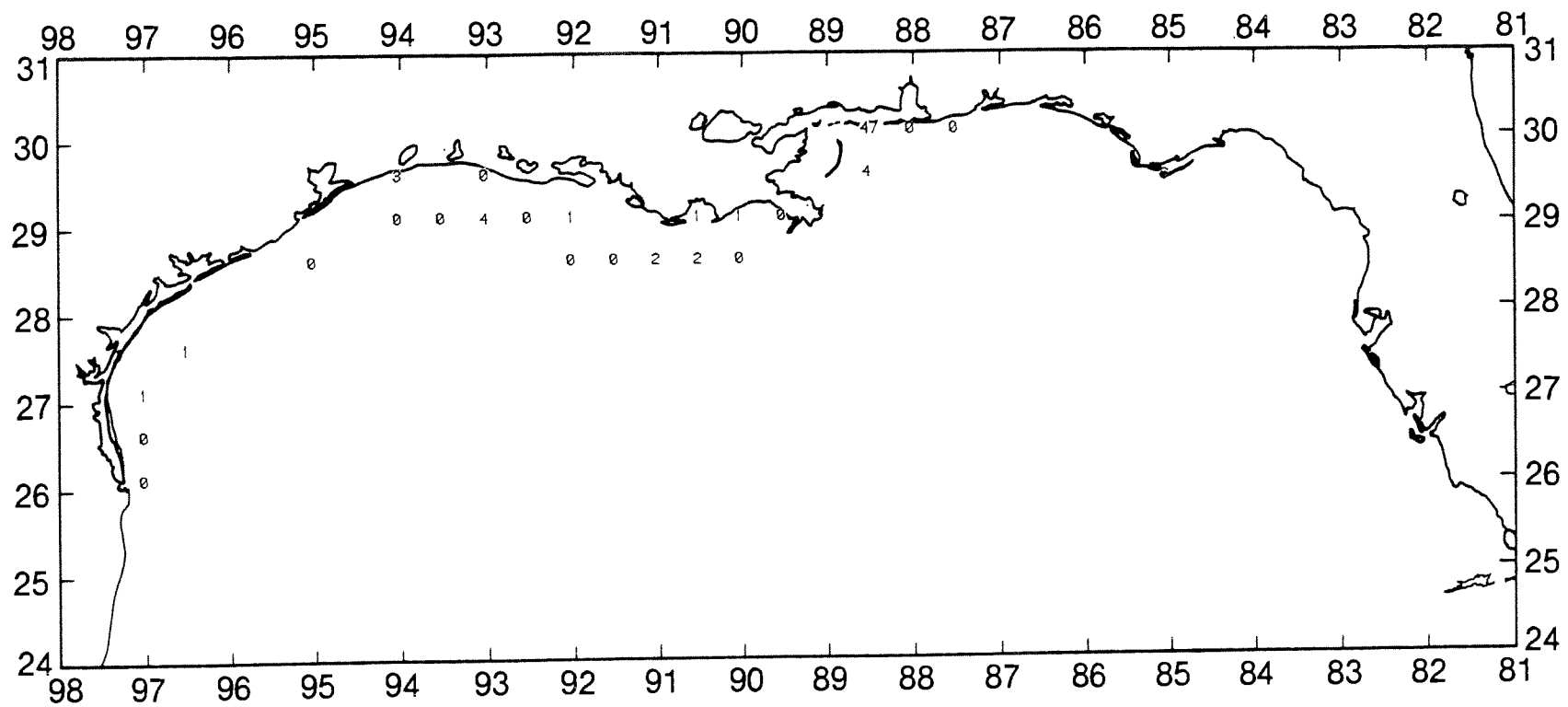


Figure 79. Striped anchovy, *Anchoa hepsetus*, lb/hour for October-December 1986.

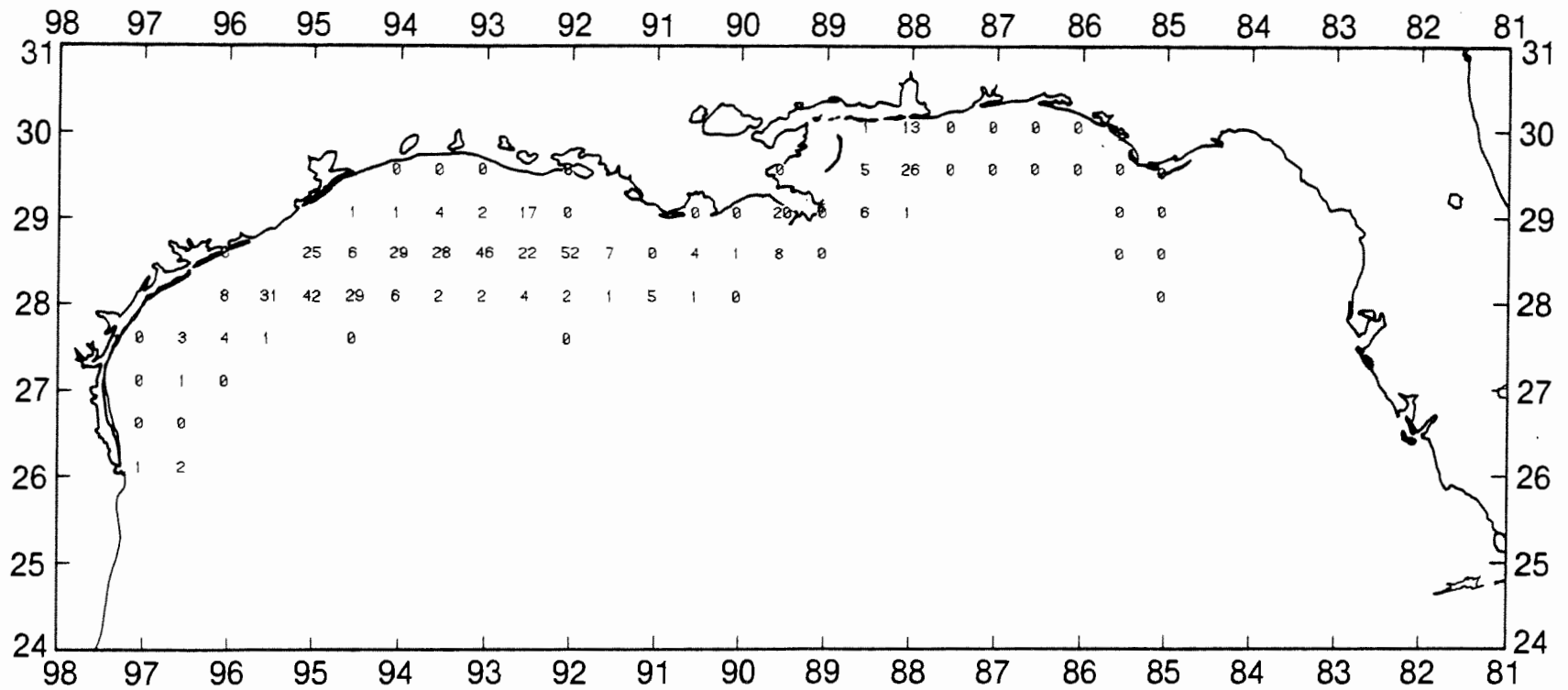


Figure 80. Red snapper, *Lutjanus campechanus*, number/hour for October-December 1986.

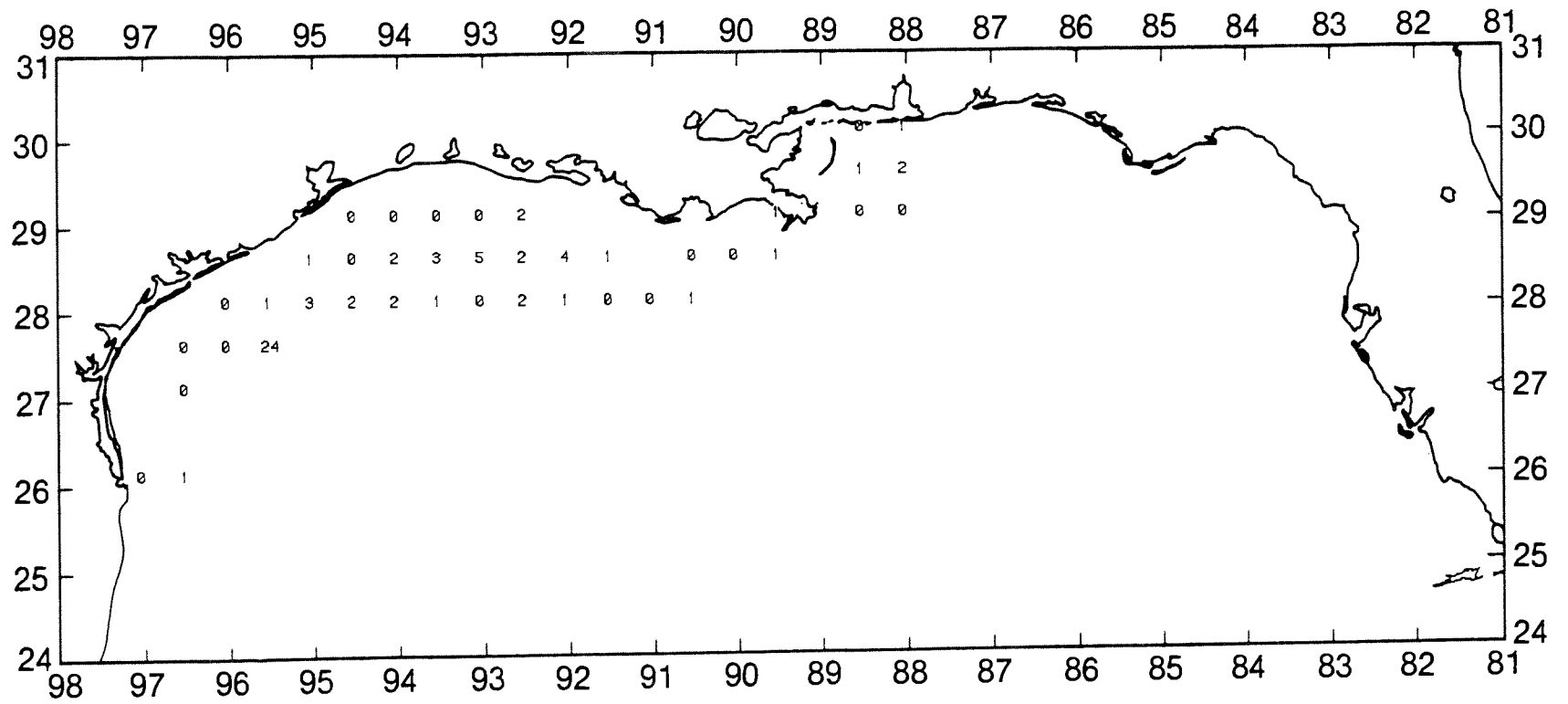


Figure 81. Red snapper, *Lutjanus campechanus*, lb/hour for October-December 1986.

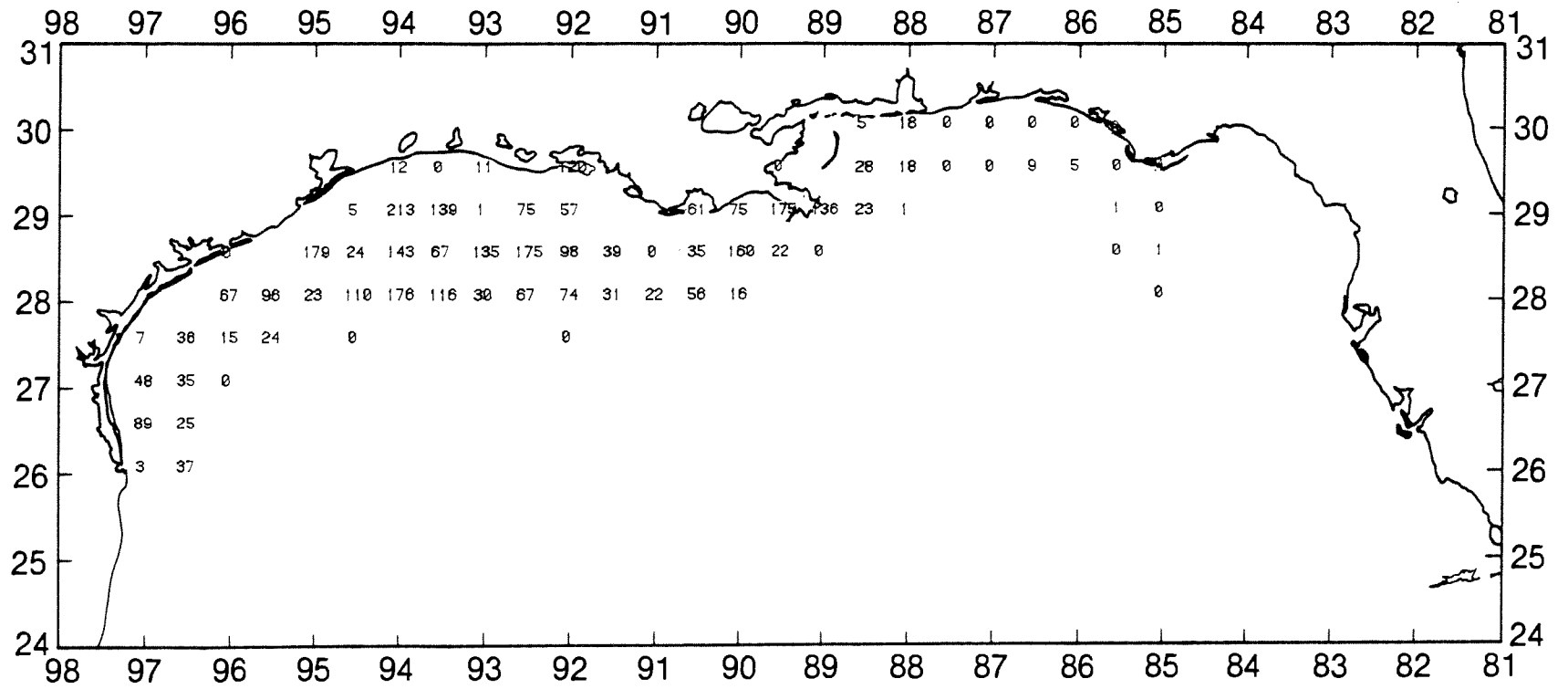


Figure 82. Brown shrimp, *Penaeus aztecus*, number/hour for October-December 1986.

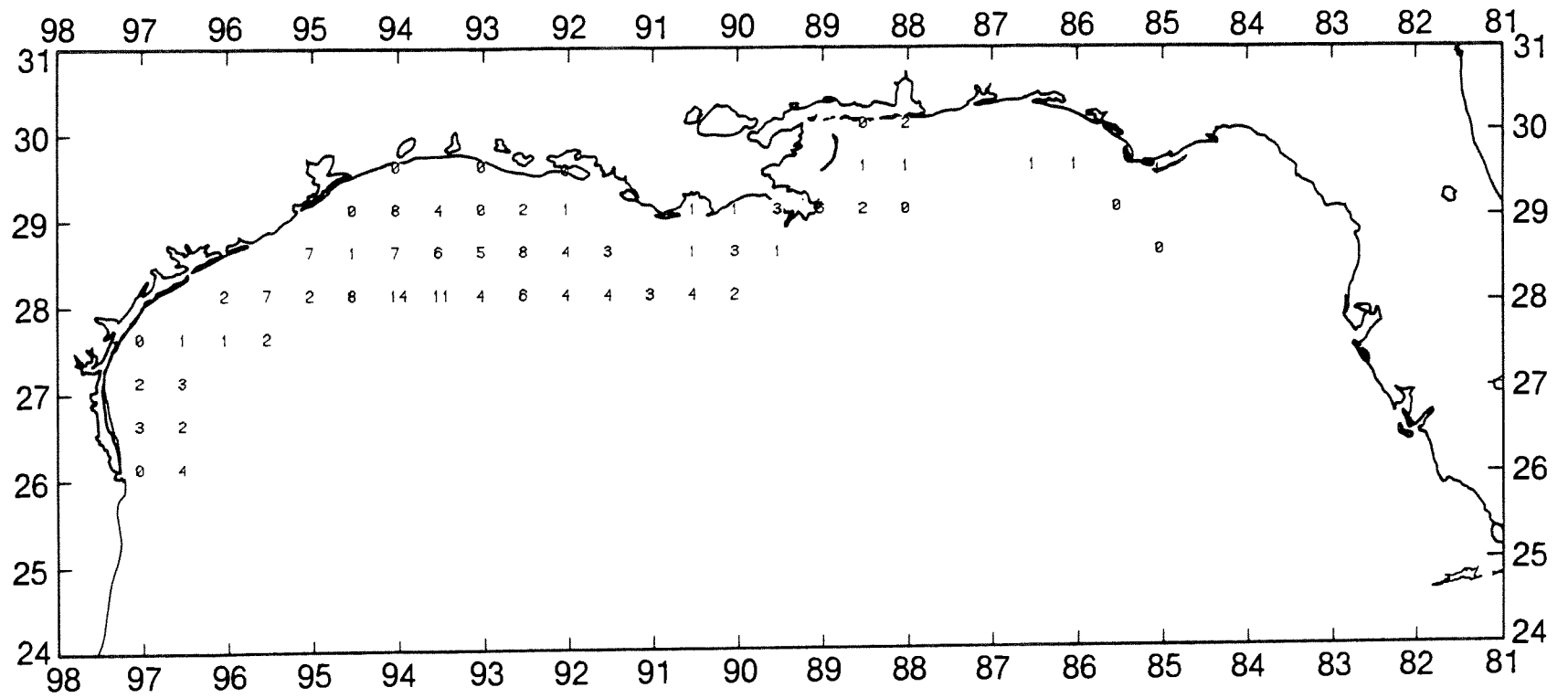


Figure 83. Brown shrimp, *Penaeus aztecus*, lb/hour for October-December 1986.

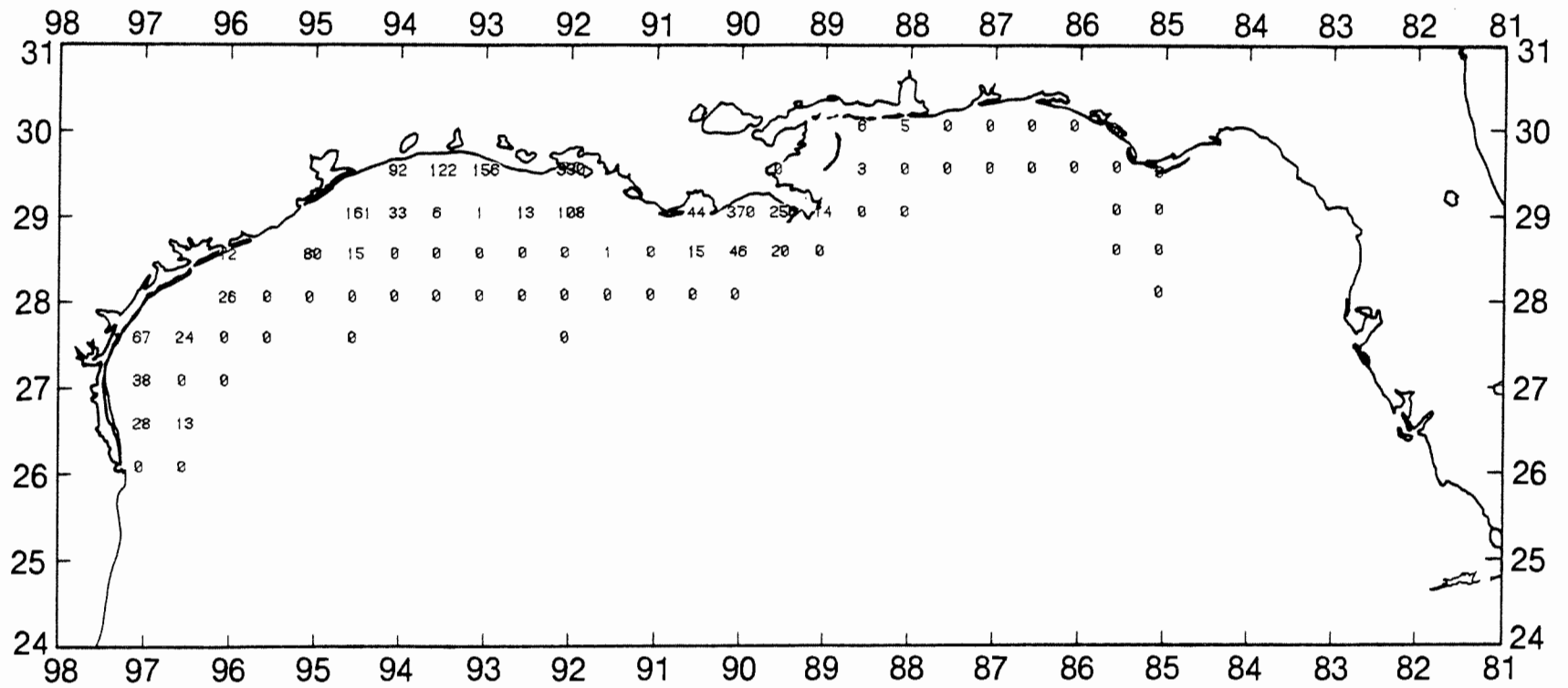


Figure 84. White shrimp, *Penaeus setiferus*, number/hour for October-December 1986.

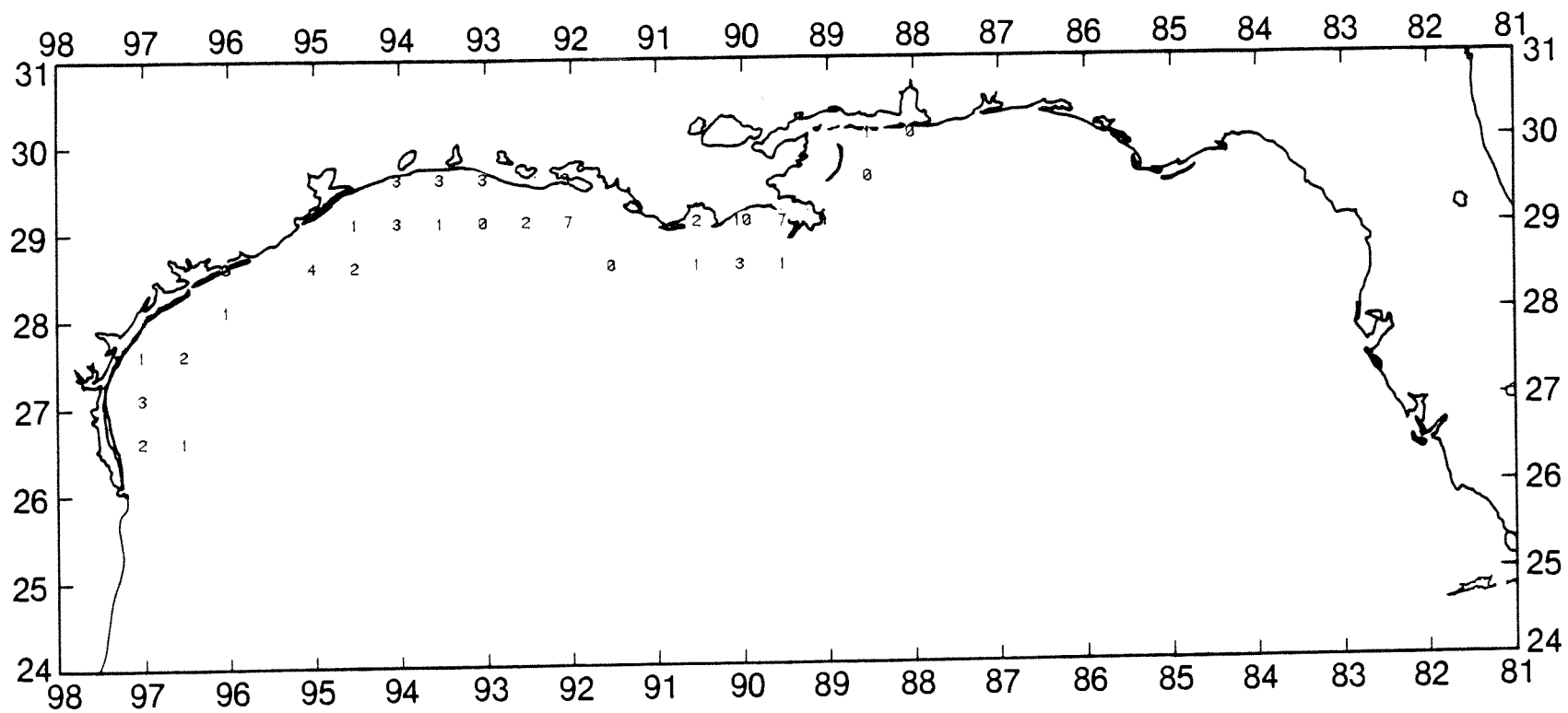


Figure 85. White shrimp, *Penaeus setiferus*, lb/hour for October-December 1986.



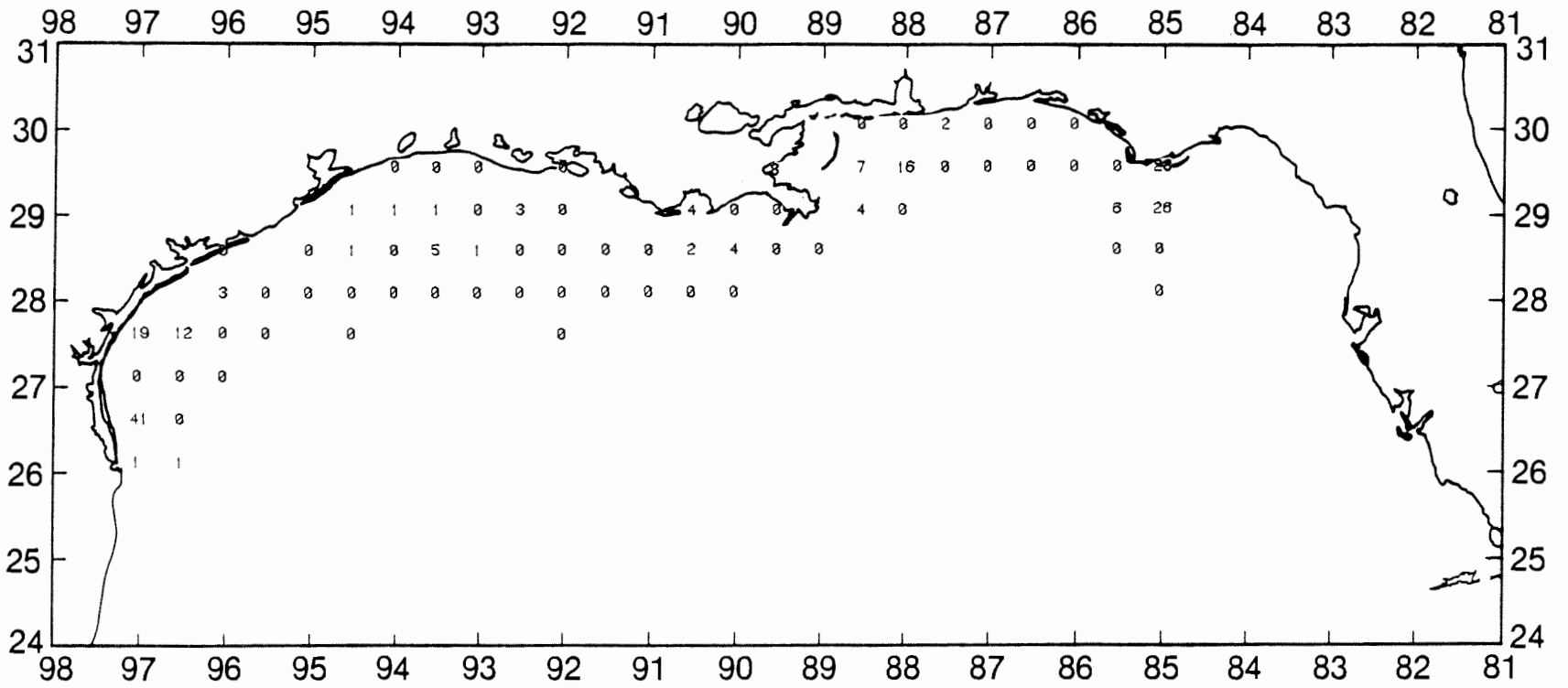


Figure 86. Pink shrimp, *Penaeus duorarum*, number/hour for October-December 1986.

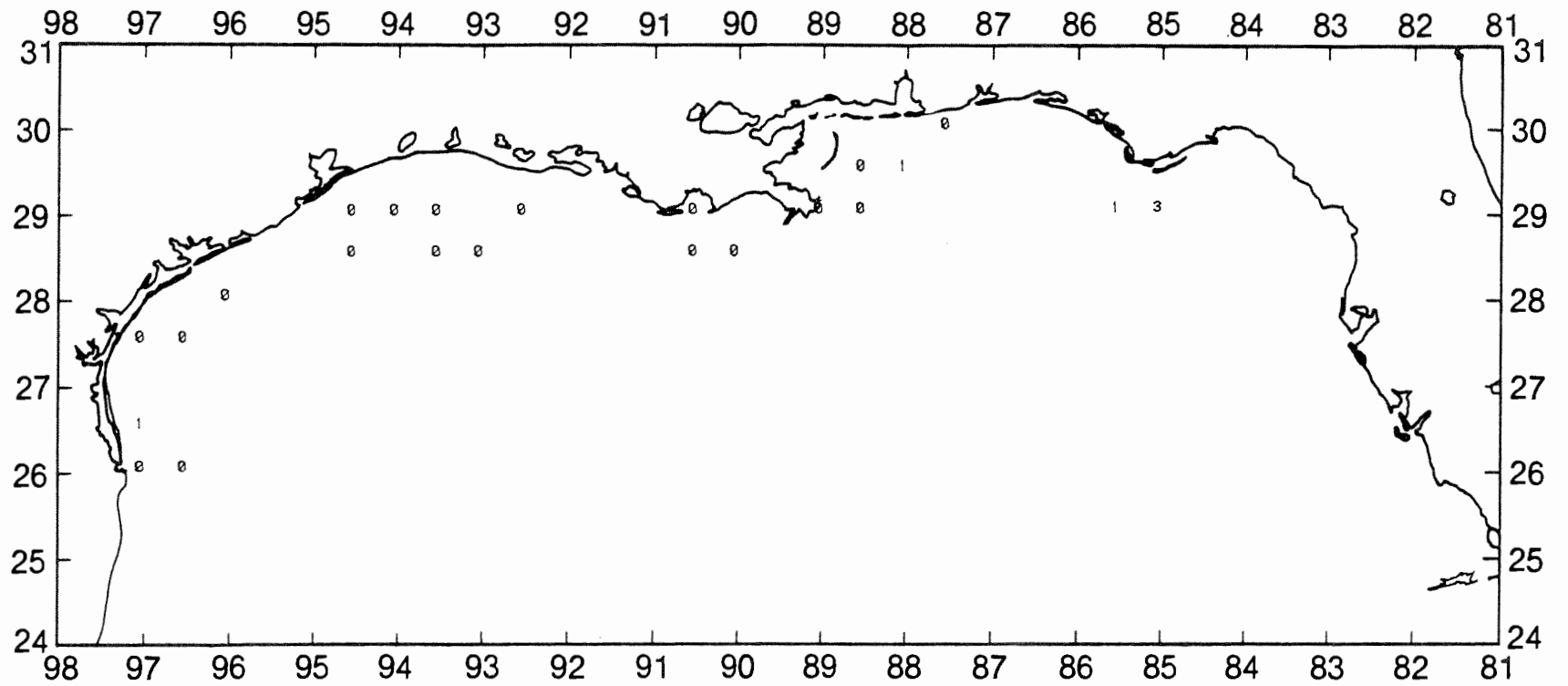


Figure 87. Pink shrimp, *Penaeus duorarum*, lb/hour for October-December 1986.

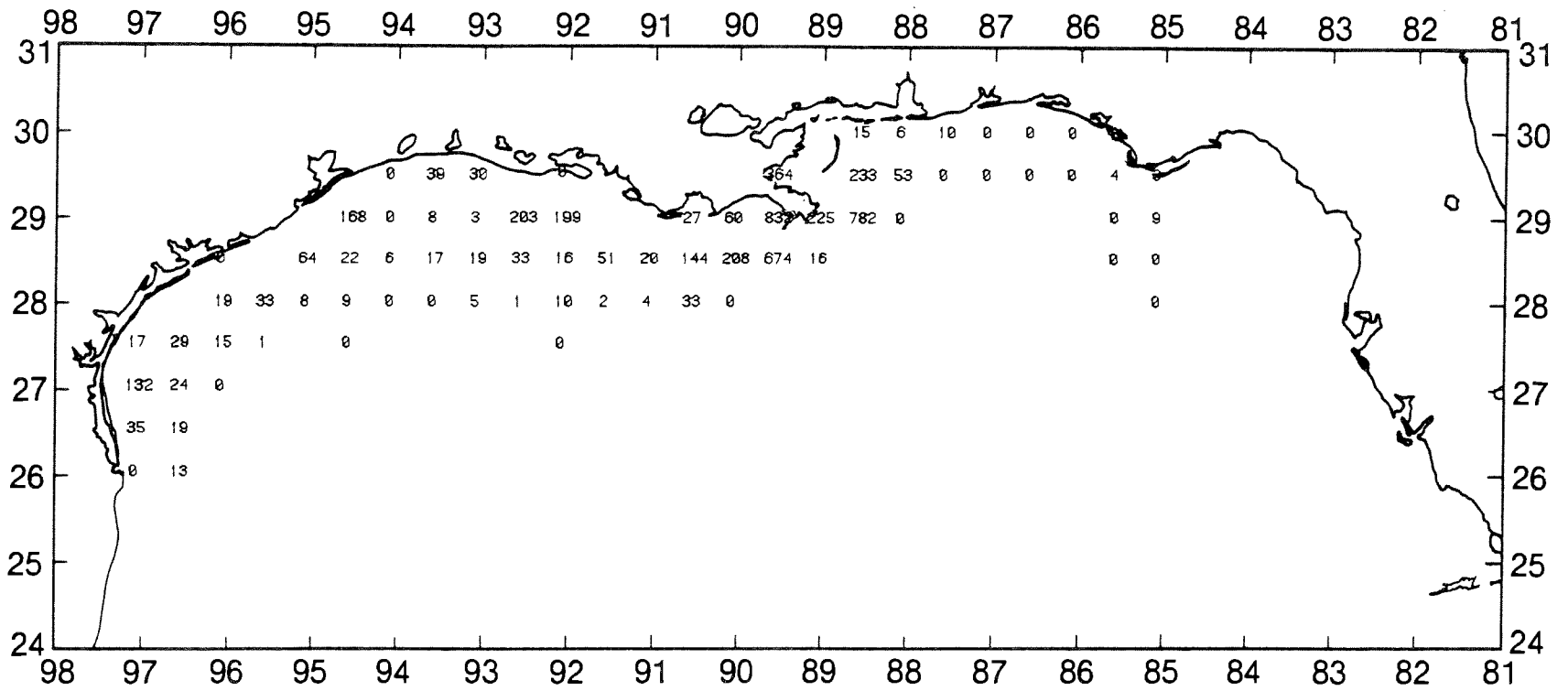


Figure 88. Lesser blue crab, *Callinectes similis*, number/hour for October-December 1986.

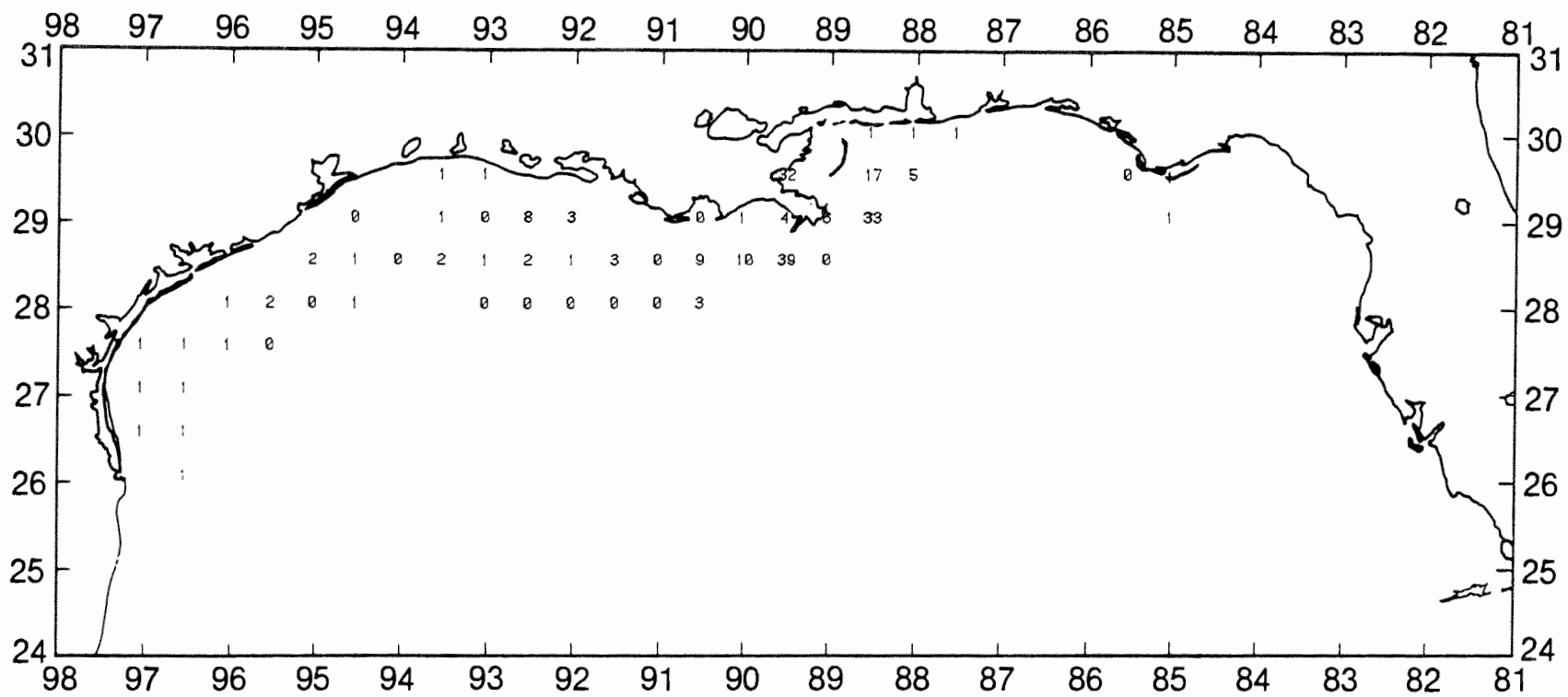


Figure 89. Lesser blue crab, *Callinectes similis*, lb/hour for October-December 1986.

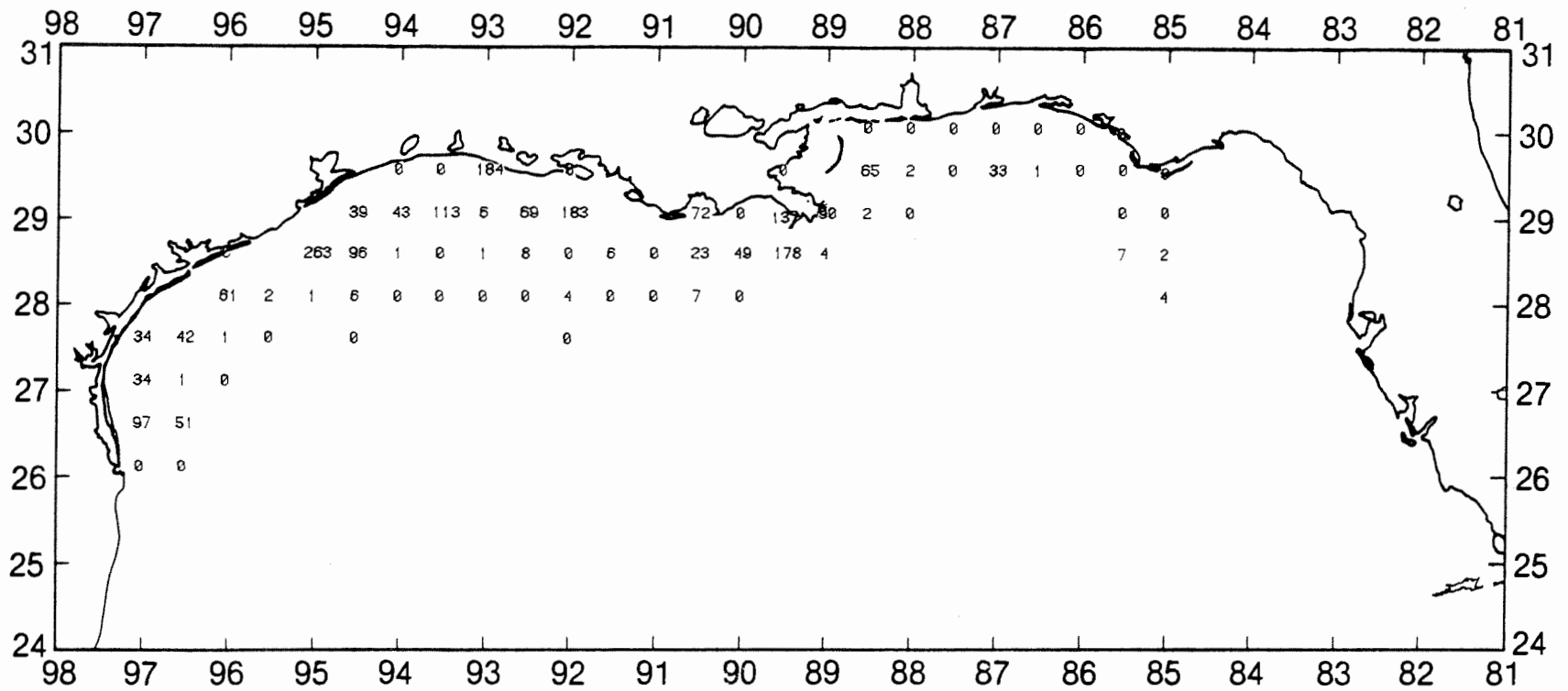


Figure 90. Roughneck shrimp, *Trachypenaeus* spp., number/hour for October-December 1986.

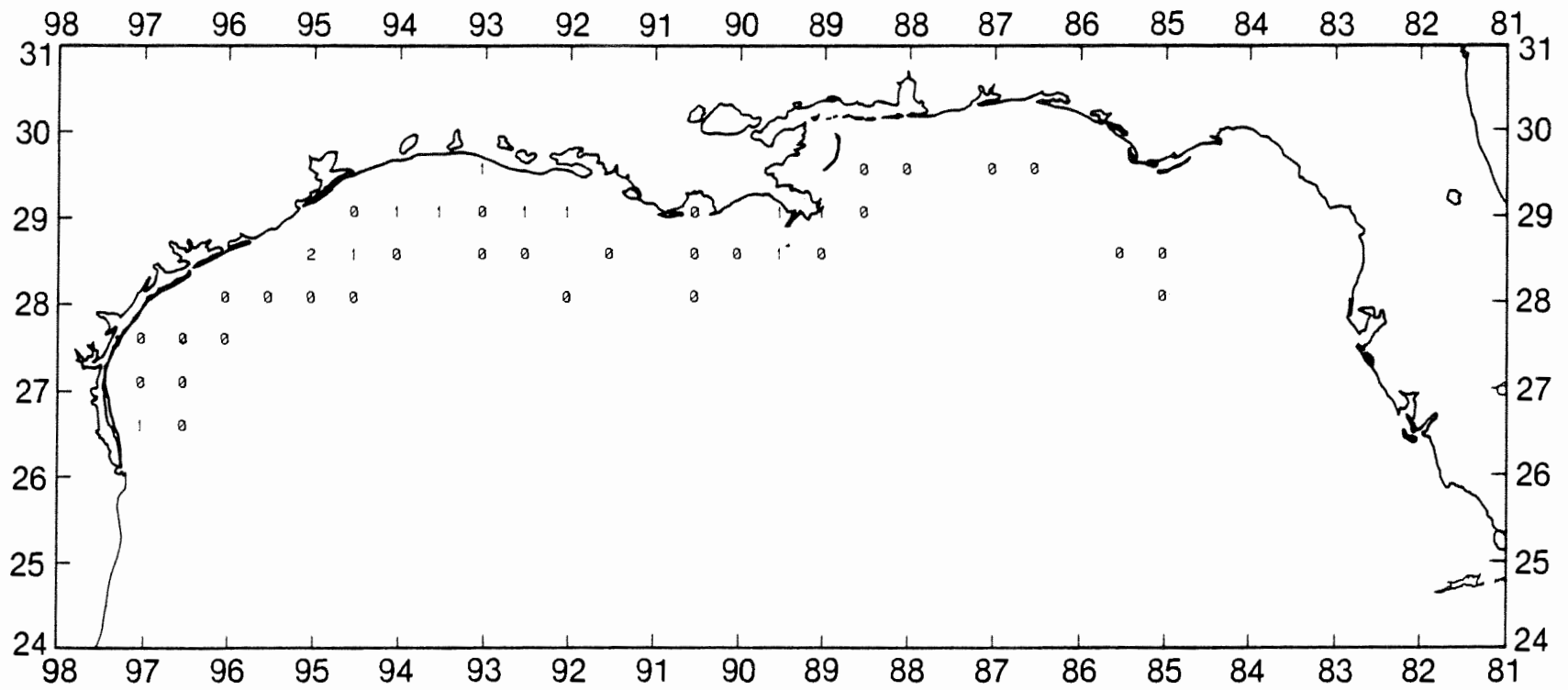


Figure 91. Roughneck shrimp, *Trachypenaeus* spp., lb/hour for October-December 1986.

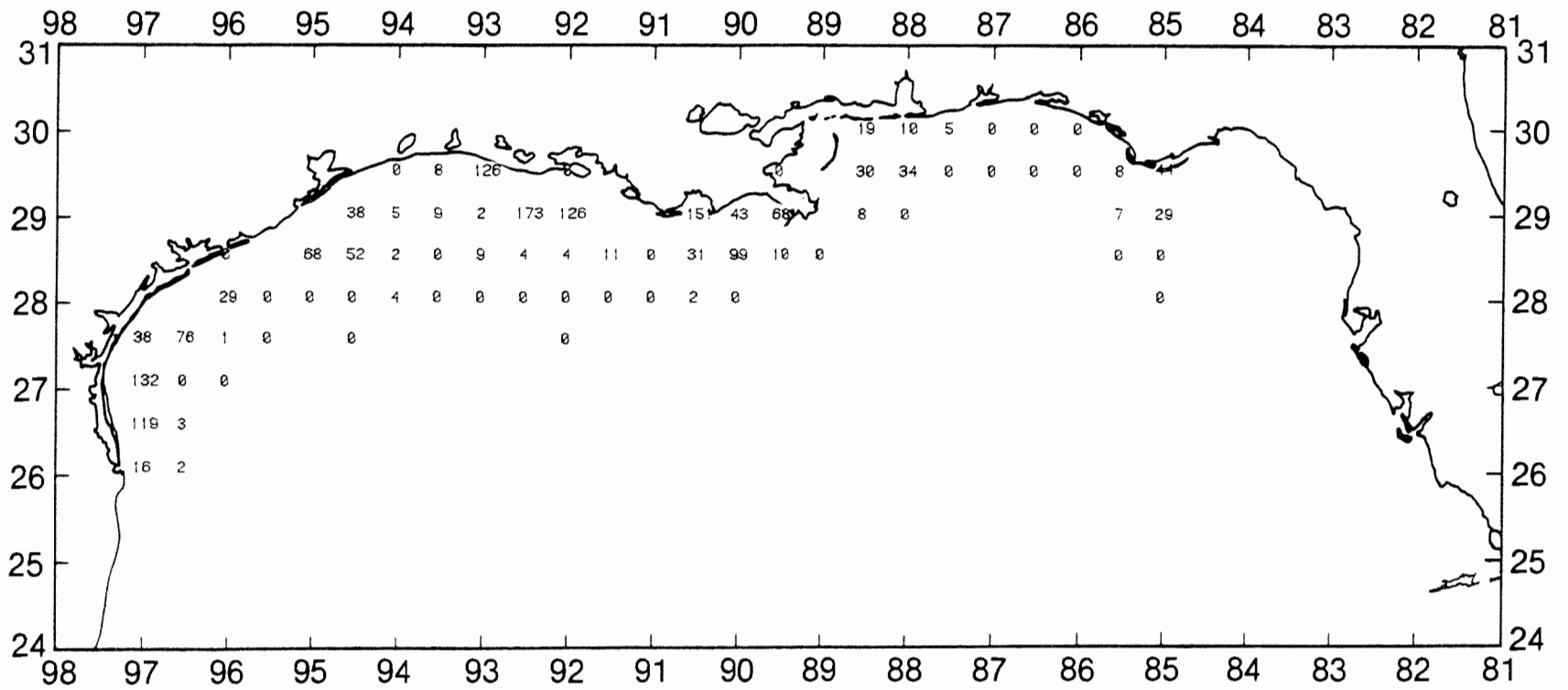


Figure 92. Iridescent swimming crab, *Portunus gibbesii*, number/hour for October-December 1986.

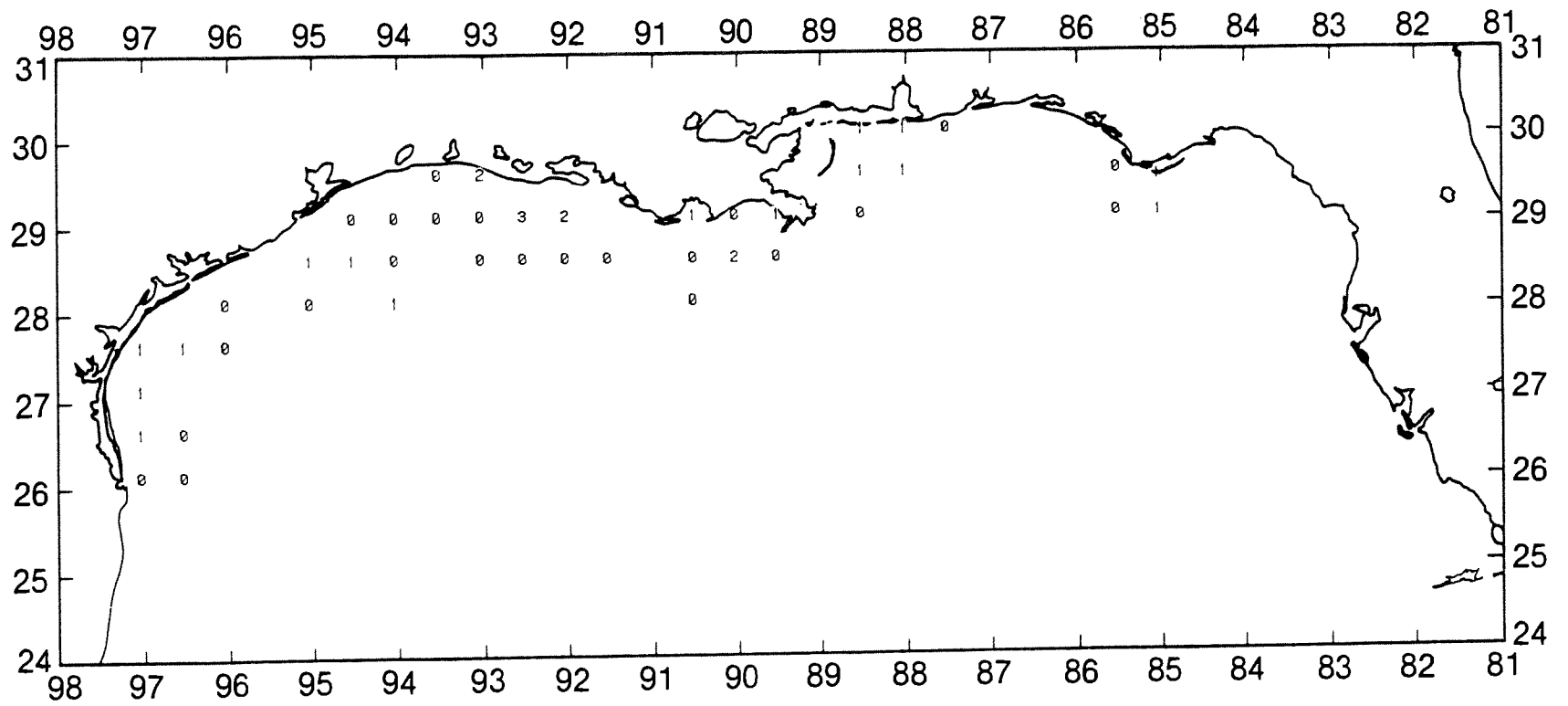


Figure 93. Iridescent swimming crab, *Portunus gibbesii*, lb/hour for October-December 1986.



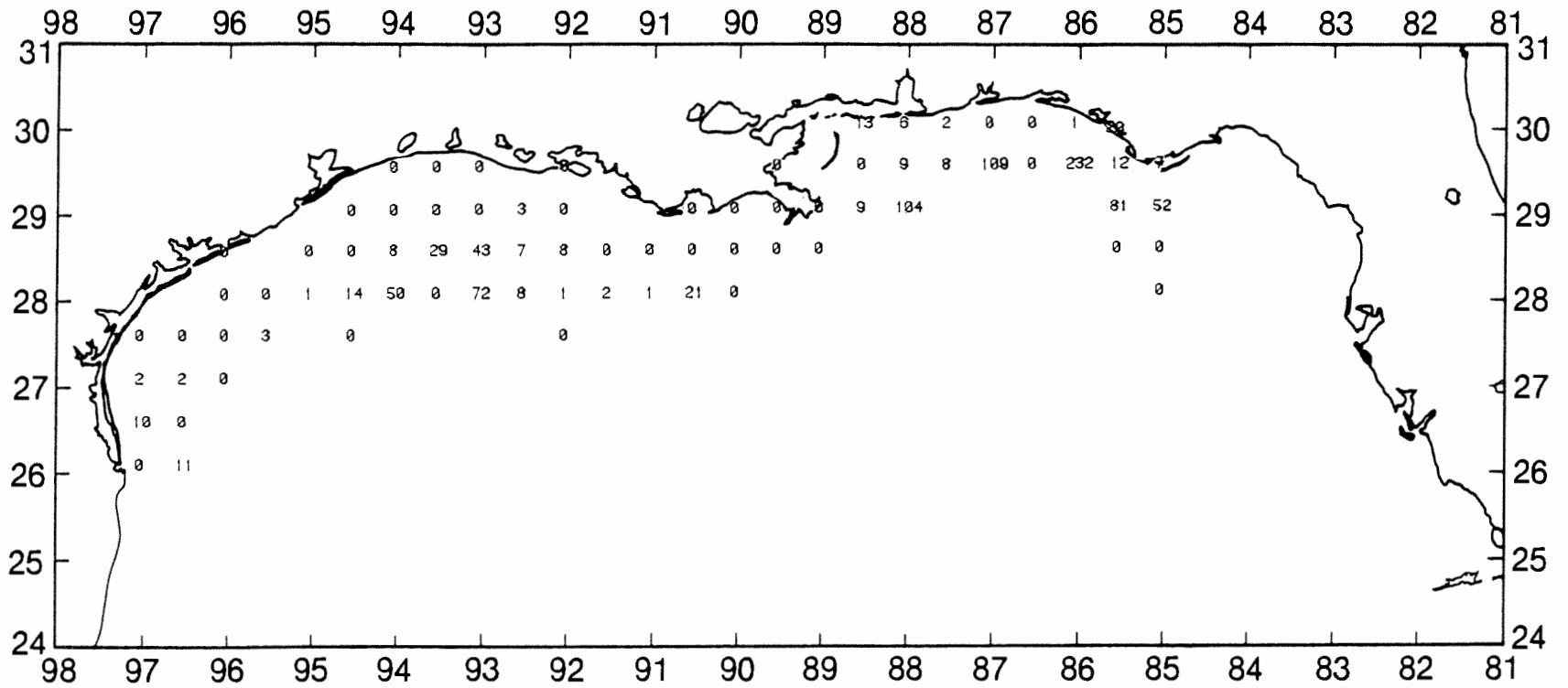


Figure 94. Brown rock shrimp, *Sicyonia brevirostris*, number/hour for October-December 1986.



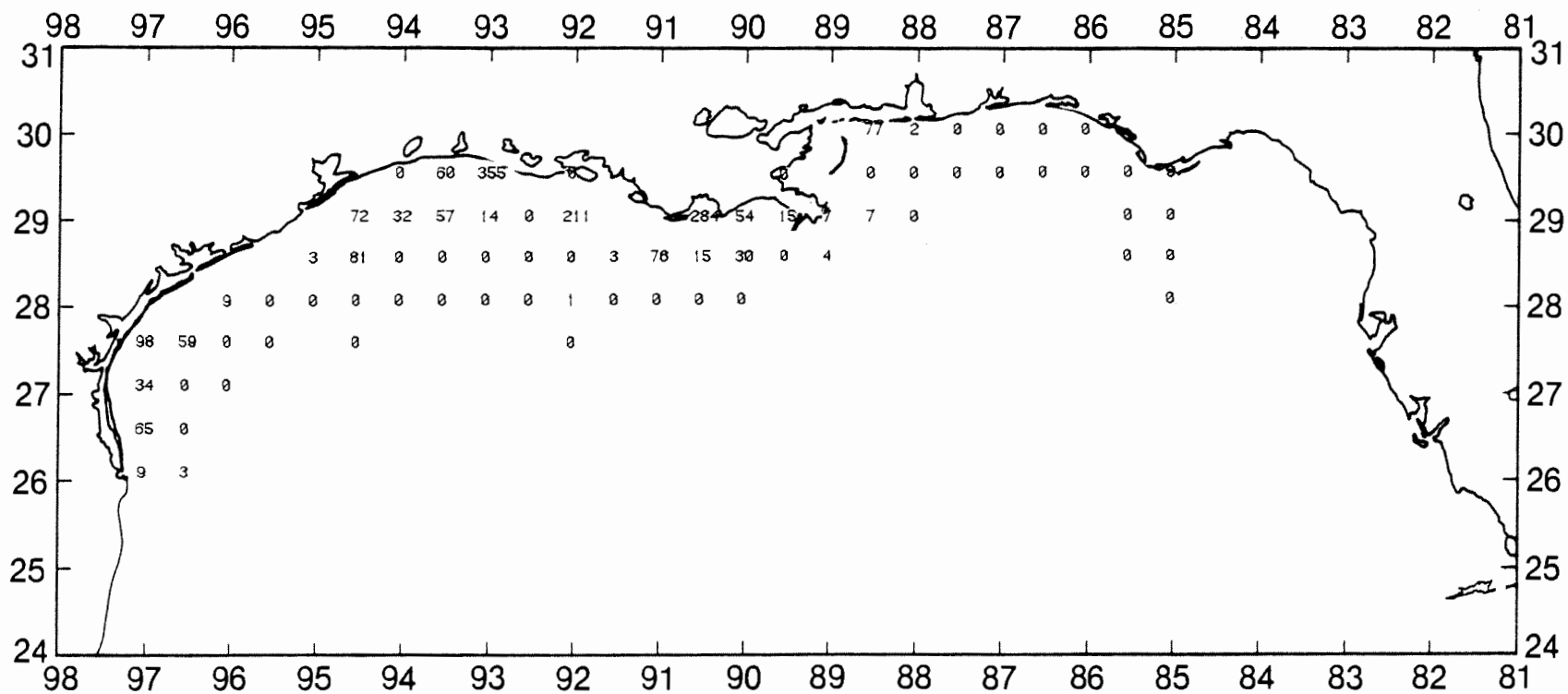


Figure 96. Atlantic brief squid, *Lolliguncula brevis*, number/hour for October-December 1986.

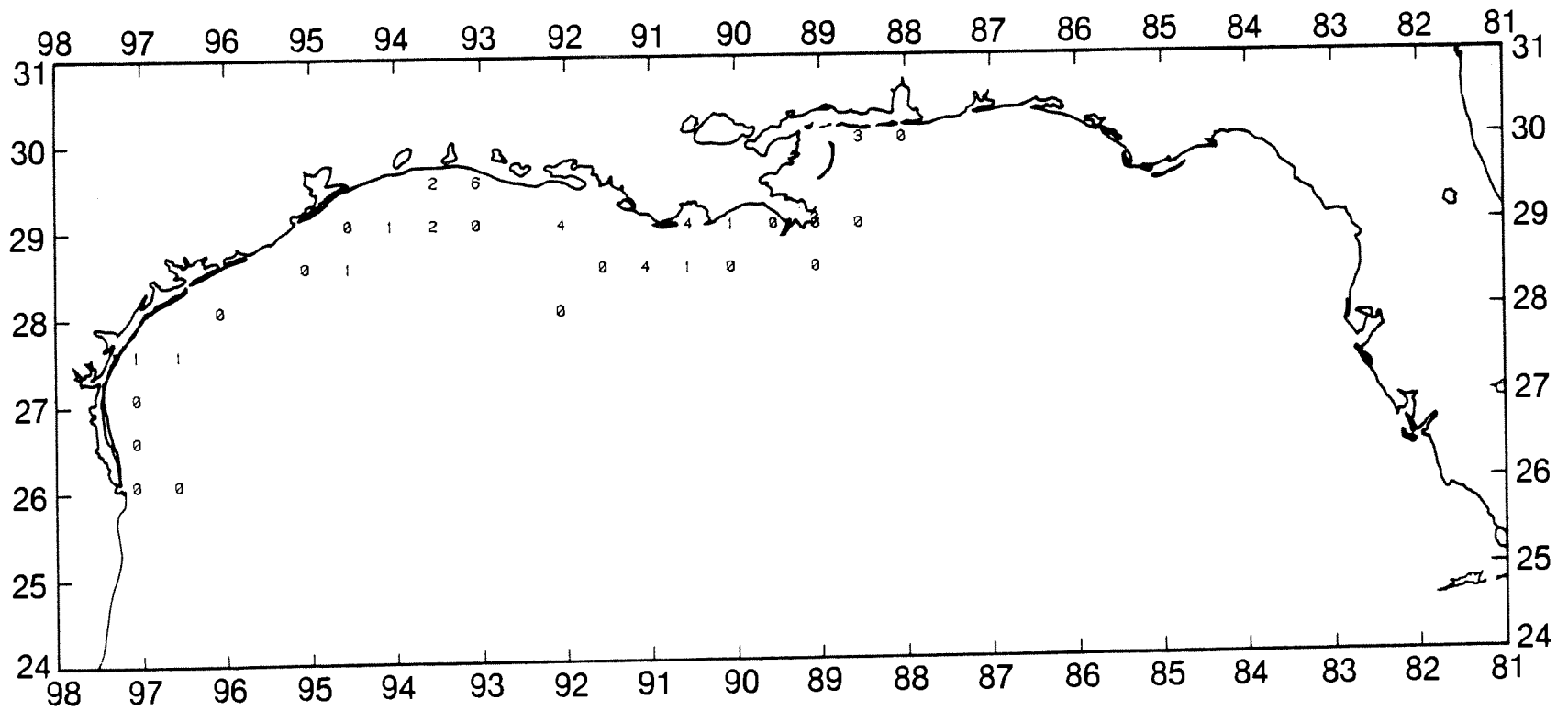


Figure 97. Atlantic brief squid, *Lolliguncula brevis*, lb/hour for October-December 1986.

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