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SEAMAP ENVIRONMENTAL AND BIOLOGICAL ATLAS OF THE GULF OF MEXICO, 1983

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DEDICATION

This document is dedicated with gratitude and friendship to Dr. Walter R. Nelson, who served as the National Marine Fisheries Service representative to the SEAMAP Program from its inception in 1981 to 1986, when he transferred from the NMFS Mississippi Laboratories as Division Chief, Resource Surveys, to become Director of the NMFS Miami Laboratory. The remarkable and unique success of SEAMAP is in large part attributable to Dr. Nelson's patience, perseverance and unrelenting commitment to cooperative State-Federal fishery research and management. We wish him well.

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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, 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 Conservation (MDWC), represented by the Gulf Coast Research Laboratory (GCRL); Louisiana Department of Wildlife and Fisheries (LDWF); and Texas Parks and Wildlife Department (TPWD)], and one from NMFS Southeast Fisheries Center. The Subcommittee organized and successfully coordinated three assessment activities in 1982: an April-May plankton cruise; a June-July shrimp and bottomfish survey; and environmental sampling, in conjunction with the two surveys (see 1982 SEAMAP Atlas).

In March 1983, the SEAMAP Subcommittee identified 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. Thus, overall survey objectives, as in 1982, were to assess the distribution and abundance of ichthyoplankton and trawl-caught organisms, and document environmental factors that might affect their distribution and abundance. The basis for the plankton work was primarily assessment of tuna eggs and larvae in the open Gulf of Mexico (see Sherman et al. 1983), while the Texas shrimp closure formed the basis for trawl-caught shrimp and bottomfish surveys (see Nichols 1982, 1984).

As previously stated, a major purpose of SEAMAP is to provide resource survey data to State and Federal management agencies and universities participating in SEAMAP activities. This second in a series of SEAMAP biological and environmental atlases presents such data, in a summarized form, collected during 1983 SEAMAP surveys. The total Gulf of Mexico area covered during 1983 is shown in Figure 1.

MATERIALS AND METHODS

Methodology for the 1983 SEAMAP surveys is similar to that of the 1982 surveys. Sampling was conducted within the U.S. Fishery Conservation Zone (FCZ) and state territorial waters, except for comparative plankton tows made between the National Oceanic and Atmospheric Administration (NOAA) Ship OREGON II, operated by NMFS, and the Mexican research vessel ONJUKU. The Mexican government surveyed its own territorial waters.

Plankton abundance and distribution were assessed by three surveys in the Gulf of Mexico. Offshore plankton/environmental data stations only were sampled in April-May (Figure 2), with inshore and offshore plankton sampled in June-July (Figure 3) in conjunction with the SEAMAP Shrimp/Bottomfish Survey. In some cases during the Shrimp/Bottomfish Survey, plankton stations were independent of trawl stations. A combined survey of offshore and inshore plankton/environmental stations was made in November-December (Figure 4). Environmental data stations for June-July are shown in Figure 5; Shrimp/Bottomfish Survey stations are summarized in Figure 6. Both surveys are summarized by 10-minute squares, except for Florida.

Vessels that participated in SEAMAP plankton surveys were the NOAA Ship OREGON II (April 21-May 24, and December 6-22); FDNR vessel HERNAN CORTEZ (June 26-July 14); Instituto Nacional de Pesca (PESCA) vessel ONJUKU, (May 22); and small, inshore vessels of the LDWF (October 17-November 17). Vessels participating in the Shrimp/Bottomfish Survey and also sampling plankton included the NOAA Ship OREGON II (June 1-July 17); GCRL vessel TOMMY MUNRO (June 8-10); Florida Institute of Oceanography vessel SUNCOASTER, chartered to NMFS (June 15-July 5); TPWD vessel WESTERN GULF (June 21-July 11); small vessels from the ADCNR (seven days between June 9 and July 2); and vessels of the LDWF (June 13-July 5), which collected samples within state territorial waters.

Plankton Surveys

Plankton samples were taken at stations arranged in a systematic grid across the Gulf of Mexico for each plankton survey (Figures 2-4). Such a grid was chosen because of the large survey area. Stations were set at minimum intervals of 30 miles (1/2 degree), with the exception of those by state vessels, which collected plankton samples at each trawl station.

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 time-depth recorder was periodically attached to the cable above the bongos to record the depth and path of

tow. 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 plankton station, an oblique bongo tow and surface neuston tow were made. In deep water (more than 95 m), a standard (Smith and Richardson 1977) oblique bongo tow was made, i.e., to 200 m, or to 5 m off the bottom at depths less than 200 m, with a payout speed of 30 m/min, 1-min 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 min in clear water, or 5 min 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 min at a vessel speed of 1.5 knots. The Alabama and Louisiana vessels made plankton tows with small, 1/2-m 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 70% 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. One bongo sample and the neuston sample from each station were transshipped to the Polish Sorting Center (PSC) in Sczcecin, Poland, for sorting and identification. All ichthyoplankton components (eggs and larvae) were removed from each sample and the fish larvae identified to major groups (families in most cases).

All sorted and unsorted ichthyoplankton specimens were returned to the NMFS Miami Laboratory, where selected groups were identified to species, verified, and the data computerized. Other groups were provided to specialists for identification and analysis. Plankton volumes were determined according to procedures in Smith and Richardson (1977). The second 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. Subsequently, the sorted ichthyoplankton samples were transferred to the SEAMAP Archiving Center, managed in conjunction with the FDNR, for long-term storage under museum-like conditions. More than 128,000 specimens, in 7,000 lots of 1983-collected specimens, are available for loan to researchers throughout the country. The backup, unsorted plankton samples, containing zooplankton and phytoplankton, remained in Miami for one year before being sent to the SEAMAP Invertebrate Plankton Archiving Center, managed in conjunction with GCRL, for storage and use by researchers.

Environmental Surveys

Environmental data were collected at each station sampled during both plankton surveys and the Shrimp/Bottomfish Survey (Figures 2, 4, and 5). 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 50-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, a maximum depth of 200 m was recorded:

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 Plessy salinometer. Conductivity probes and refractometers were used on some vessels.
Chlorophyll: Chlorophyll samples were collected and frozen for later laboratory analysis. Subsequently, the values were found to be in error except for samples analyzed from Louisiana waters, and were deleted from the 1983 SEAMAP data base; Louisiana's chlorophyll data remain. The general procedure for shipboard collection of chlorophyll was to collect 3 l of sea water. The water sample, to which 1 ml 1% (W/V) suspension of $MgCO_3$ was added, was filtered through GF/C filters, and the filters were subsequently wrapped in opaque material and frozen.

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).

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

During the 1983 SEAMAP cruises, images of the Gulf of Mexico were taken by the Coastal Zone Color Scanner (CZCS) on the Nimbus-7 satellite to determine chlorophyll concentrations. The CZCS is a scanning radiometer with five visible and near-infrared bands (433, 520, 550, 670, and 750 nanometers) and one thermal infrared band (10.5 to 12.5 micrometers). It has an active scan width of about 1600 km and a nominal nadir ground resolution of 825 m.

Digital tapes were acquired from the National Aeronautics and Space Administration (NASA) and processed to derive chlorophyll maps on the Fisheries Image Processing System (FIPS) at the NMFS Mississippi Laboratories facility in Slidell, Louisiana. Processing steps consisted of the following:

1) Atmospheric corrections for Rayleigh and aerosol scattering were made by the techniques of Gordon et al. (1983) and Smith and Wilson (1981).
2) Chlorophyll concentrations were calculated by the bio-optical algorithm of Clark (1981).
3) Images were geographically referenced by a two-dimensional polynomial least squares regression.
4) Images were than resampled to a rectangular, latitude-longitude grid with ground resolution elements of .66 x .66 km.

The derived chlorophyll maps for each image date were plotted for the eastern Gulf (82° to 89° 59' W. Long.) and western Gulf (90° to 98° W. Long.), from 25° to 30.5° N. Lat. For plotting purposes, the chlorophyll concentrations were divided into eight representative broad-scale ranges. Because the thermal sensor was unstable and not accurately calibrated, chlorophyll plots are available for only two dates; absolute sea-surface temperature charts could not be produced from the CZCS data for the same reason. Instead, 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).

Relative sea-surface temperature charts, as well as larger scale derived chlorophyll charts for specific areas, can be made available to SEAMAP participants, investigators, and cooperators (see Discussion section).

Shrimp/Bottomfish Survey

Shrimp and bottomfish sampling was carried out from Apalachicola, Florida to Brownsville, Texas (Figure 6). Trawl stations made with 40-ft nets covered NMFS shrimp statistical zones 7 through 21, except for Zone 12, (Figure 7), 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 (Gulf States Marine Fisheries Commission 1984). Briefly, the strategy was as follows: sampling sites were chosen randomly in three areas (east of the Mississippi River, west of the Mississippi River to the Louisiana-Texas border, and off Texas) stratified by depth and statistical area (two areas per stratum). In depths of 5-25 fm, stations consisted of 1-fm strata; out to 30 fm, stations covered 2.5-fm strata; and to 50 fm, stations consisted of 5-fm strata. 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 min; 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 min and a maximum tow of 30 min. All of these stations were sampled at night using a 40-ft shrimp trawl (Gutherz et al. 1985).

The LDWF used small vessels (less than 30 ft) to sample seven study areas in NMFS statistical zones 12, 13, 14, 16, and 17, with 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. Five 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. Alabama vessels using 16-ft trawls in daylight hours sampled passes leading from Mobile Bay to the Gulf of Mexico.

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, except onboard Texas and Alabama vessels, where weights were not recorded. The taking of weights and individual measurements on species other than commercial shrimp was also requested.

RESULTS

Plankton Surveys

Identified ichthyoplankton samples were returned from the PSC to the NMFS Miami Laboratory in July 1984. The data were verified and incorporated into the SEAMAP

data system. Distribution plots, by key families, are presented in the separate 1983 SEAMAP Ichthyoplankton Atlas (Kelley et al. 1986).

Mexican waters were sampled by PESCA in May-June 1983. Ten comparative tows were made by the Mexican research vessel ONJUKU and the NOAA Ship OREGON II at 26° N. Lat. and 87° W. Long. on May 22, 1983. Samples collected by Mexico were processed similarly to U.S. methods, and were returned to PESCA after sorting in Poland. Thus, the entire Gulf of Mexico was sampled for plankton in April-May.

Plankton stations for April-May are shown in Figure 2, for June-July in Figure 3, and for November-December in Figure 4.

Environmental Surveys

As detailed previously, environmental data are collected in conjunction with plankton and shrimp/bottomfish surveys. Plots of surface and bottom temperatures (Figures 8 and 9), salinities (Figures 10 and 11), and dissolved oxygen (Figures 12 and 13) for April-May, taken from shipboard sensors, are included here, as are satellite surface temperature data (Figures 14-17) and satellite chlorophyll data (Figure 18). Although chlorophyll samples were collected and analyzed during the surveys, the values were subsequently determined inaccurate and beyond correction, and have been deleted from the 1983 SEAMAP data base.

Environmental data for the June-July Shrimp/Bottomfish Survey shown in Figure 5 were collected at both trawl and plankton stations. Environmental data plots of surface and bottom temperatures (Figures 19 and 20), salinities (Figures 21 and 22), and dissolved oxygen (Figures 23 and 24) for June-July, taken from shipboard sensors, are included here. As with the spring plankton survey, chlorophyll values were inaccurate and are thus not included except for Louisiana's data, which were determined valid. June-July satellite images of surface temperatures are shown in Figures 25-27; satellite chlorophyll data are shown in Figures 28 and 29.

The environmental data from the December plankton survey were taken with shipboard sensors only. Surface and bottom temperatures are shown in Figures 30 and 31; salinities are shown in Figures 32 and 33; surface and dissolved oxygen values are shown in Figures 34 and 35.

Shrimp/Bottomfish Survey

The June-July Shrimp/Bottomfish Survey consisted primarily of biological trawl data (Figure 6), and concomitant environmental and plankton data. A species composition listing from the trawls is presented in Table 1, ranked in order of abundance, within the categories of finfish, crustaceans, and other invertebrates. Biological distributions of the 10 most abundant finfish plus red snapper, 8 most abundant invertebrates, and common squid, taken from Table 1, are displayed in

contour plots of number/hour and lb/hour in Figures 36-75. Data for the biological plots were computed from both the 40-ft trawl data and 16-ft trawl data, standardized to 40-ft trawls using relative headrope length. In the plots of lb/hour, a zero value indicates less than 0.5 lb/hr taken; only stations where at least some of the species were taken are shown. Tables 2-5 show environmental data collected off western Florida during the survey; no trawl stations were made by the state of Florida.

Tables 6a-19a present the biological data, from the 40-ft nets, of the eight most abundant fish, six most abundant invertebrates, and squid combined for all NMFS statistical zones, by depth stratum. Tables 6b-19b 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 6c-19c list the total catch and environmental data from the 40-ft nets by NMFS statistical zone, by depth stratum. Although biological catch data for statistical zone 7 are shown in Tables 6a-6b, these data are not shown in the catch plots (Figures 36-75) because of the very limited sampling in that zone.

Table 20 presents the biological data from the 16-ft nets of the eight most abundant fish, six most abundant invertebrates, and squid combined for all NMFS statistical zones, inside 5 fm. Tables 21-26 present the biological data from the 16-ft nets of the eight most abundant fish, six most abundant invertebrates, and squid within each NMFS statistical zone, inside 5 fm. Table 27 presents the total catch and environmental data from the 16-ft nets, by NMFS statistical zone, inside 5 fm.

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

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

where α is the population standard deviation and n is the number of the sample.

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

Quick-Time Data Management

The SEAMAP Subcommittee agreed it was imperative to the success of the SEAMAP Program to distribute data on a quick-time basis to the fishing industry and others interested in SEAMAP. To distribute quick-time, or 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 a PDP 11/34 computer, located at the NMFS Mississippi Laboratories in Bay St. Louis. This system was operated in conjunction with another system used on

three vessels; the R/V TOMMY MUNRO, R/V WESTERN GULF, and R/V SUNCOASTER transmitted data through the ARGOS satellite.

Summarized data were distributed weekly to management agencies and the industry as computer plots and data listings. These plots showed stations 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. For example, the ichthyoplankton samples are used by researchers studying taxonomy, age and growth, bioenergetics, and other life history aspects, as well as spawning biomass and recruitment. In addition, information on species' relative distributions within the Gulf of Mexico can be analyzed with respect to concomitant environmental data to assess population abundance as a function of environmental change. In the same way, CZCS satellite data can be related to species distribution and changing conditions in the Gulf.

Similar analyses and investigations are being undertaken with Shrimp/Bottomfish Survey data. In addition, however, this data set is 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 quick-time data transmissions, an area of very low dissolved bottom oxygen was found off Louisiana in 1982, and again in 1985. The presence of this phenomenon and some of the related conditions and biological effects were summarized by Stuntz et al. (1982), 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.

SEAMAP data collected during the 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 FCZ 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 Council in December 1983, subsequently summarized by Mathews (1984), reporting size and abundance of commercial shrimp collected by SEAMAP in 1983, and Nichols (1984), describing the impact of the combined Texas territorial sea and FCZ closures on brown shrimp yields. After review of these data and other information, the Council voted to continue the Texas Closure in 1984.

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 in the spring by SEAMAP will preclude entry of a Japanese longline fishery for tunas, which also have high billfish bycatches.

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-serve, 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.

Correction: Total weight caught is shown in pounds, not kg.

Table 1. SEAMAP Shrimp and Bottomfish Survey species composition list, 424 trawl stations. Species with a total weight of less than .05 lb (22.7 g) 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
Finfishes						
Micropogonias	undulatus	Atlantic croaker	47,187	2,711.2	157	37.0
Stenotomus	caprinus	longspine porgy	38,752	877.0	223	52.6
Anchoa	mitchilli	bay anchovy	21,621	89.4	83	19.6
Polydactylus	octonemus	Atlantic threadfin	8,249	229.8	129	30.4
Prionotus	rubio	blackfin searobin	5,624	115.8	156	36.8
Trachurus	lathami	rough scad	3,703	151.9	98	23.1
Cynoscion	arenarius	sand seatrout	3,698	486.8	152	35.8
Centropristis	philadelphica	rock sea bass	3,644	230.8	214	50.5
Serranus	atrobranchus	blackear bass	3,470	76.4	86	20.3
Syacium	gunteri	shoal flounder	3,464	133.5	87	20.5
Diplectrum	bivittatum	dwarf sand perch	3,252	202.3	120	28.3
Lepophidium	graellsi	blackedge cusk-eel	2,370	183.3	129	30.4
Chloroscombrus	chrysurus	Atlantic bumper	2,282	426.7	76	17.9
Sphoeroides	parvus	least puffer	2,012	35.5	151	35.6
Leiostomus	xanthurus	spot	1,783	218.3	96	22.6
Anchoa	hepsetus	striped anchovy	1,746	44.4	76	17.9
Halieutichthys	aculeatus	pancake batfish	1,716	29.8	105	24.8
Peprilus	burti	gulf butterfish	1,671	136.3	81	19.1
Etropus	crossotus	fringed flounder	1,669	77.1	153	36.1
Decapterus	punctatus	rough scad	1,531	86.8	33	7.8
Prionotus	roseus	bluespotted searobin	1,438	39.2	46	10.8
Prionotus	paralatus	Mexican searobin	1,399	47.6	66	15.6
Symphurus	plagiusa	blackcheek tonguefish	1,391	66.2	120	28.3
Stellifer	lanceolatus	star drum	1,317	26.6	34	8.0
Prionotus	tribulus	bighead searobin	1,277	36.5	92	21.7
Trichiurus	lepturus	Atlantic cutlassfish	1,226	72.8	101	23.8
Synodus	foetens	inshore lizardfish	1,186	213.3	184	43.4
Syacium	spp.	lefteye flounders	1,104	39.1	37	8.7

Table 1. SEAMAP species composition (cont'd.)

Genus Species	Common name	Total number caught	Total weight caught (kg)	Number of tows where caught	% Frequency of occurrence
Syacium papillosum	dusky flounder	1,071	93.1	73	17.2
Anchoa spp.	anchovies	958	13.9	1	0.2
Bollmannia communis	ragged goby	886	15.9	53	12.5
Prionotus salmonicolor	blackwing searobin	870	245.6	71	16.7
Urophycis floridana	southern hake	835	76.6	80	18.9
Prionotus stearnsi	shortwing searobin	823	17.8	75	17.7
Cynoscion nothus	silver seatrout	816	91.3	57	13.4
Saurida brasiliensis	largescale lizardfish	797	22.4	102	24.1
Porichthys plectrodon	Atlantic midshipman	785	38.4	120	28.3
Arius felis	hardhead catfish	779	232.2	62	14.6
Upeneus parvus	dwarf goatfish	736	35.2	59	13.9
Pristipomoides aqilonaris	wenchman	673	71.3	73	17.2
Lagodon rhomboides	pinfish	671	52.8	58	13.7
Larimus fasciatus	banded drum	609	43.5	35	8.3
Antennarius radiosus	singlespot frogfish	530	12.3	43	10.1
Etrumeus teres	round herring	520	9.9	33	7.8
Anchoa nasuta	longnose anchovy	490	6.9	11	2.6
Prionotus scitulus	leopard searobin	475	23.6	32	7.5
Menticirrhus americanus	southern kingfish	411	54.4	44	10.4
Peprilus paru	harvestfish	385	20.9	25	5.9
Gunterichthys longipenis	gold brotula	367	18.3	12	2.8
Nezumia bairdi	marlin-spike	357	17.5	5	1.2
Citharichthys spilopterus	bay whiff	323	17.4	53	12.5
Scorpaena calcarata	smoothhead scorpionfish	304	16.1	52	12.3
Lutjanus campechanus	red snapper	297	71.1	54	12.7
Orthopristis chrysoptera	pigfish	292	34.2	32	7.5
Engyophrys senta	spiny flounder	286	4.9	43	10.1
Harengula jaguana	scaled sardine	282	29.5	38	9.0
Cyclopsetta chittendeni	Mexican flounder	264	45.5	60	14.2
Synodus poeyi	offshore lizardfish	260	6.5	55	13.0
Bellator militaris	horned searobin	249	10.2	26	6.1
Sphyraena guachancho	guaguanche	238	24.9	2	0.5
Ophidion holbrooki	bank cusk-eel	234	50.6	40	9.4

Table 1. SEAMAP species composition (cont'd.)

Genus Species	Common name	Total number caught	Total weight caught (kg)	Number of tows where caught	% Frequency of occurrence
Hoplunnis macrurus	freckled pike-conger	229	7.4	41	9.7
Haemulon aurolineatum	tomtate	170	32.5	10	2.4
Ophidion welshi	crested cusk-eel	165	12.4	35	8.3
Steindachneria argentea	luminous hake	150	1.3	1	0.2
Diplectrum formosum	sand perch	143	23.8	25	5.9
Lepophidium jeannae	mottled cusk-eel	126	12.1	13	3.1
Urophycis cirrata	gulf hake	111	7.6	23	5.4
Monacanthus hispidus	planehead filefish	108	6.9	39	9.2
Lagocephalus laevigatus	smooth puffer	108	10.9	23	5.4
Ogcocephalus spp.	batfishes	106	8.1	29	6.8
Neomerinthe hemingwayi	spinycheek scorpionfish	106	21.2	17	4.0
Trachinocephalus myops	snakefish	104	20.3	24	5.7
Prionotus martis	barred searobin	102	4.9	5	1.2
Brevoortia patronus	gulf menhaden	94	10.6	18	4.2
Cynoscion spp.	seatrouts	94	1.2	2	0.5
Eucinostomus gula	silver jenny	88	7.6	14	3.3
Urophycis regia	spotted hake	82	9.1	17	4.0
Brotula barbata	bearded brotula	80	11.4	29	6.8
Gymnachirus texae	fringed sole	78	6.7	24	5.7
Dorosoma petenense	threadfin shad	73	22.5	4	0.9
Synodus intermedius	sand diver	71	14.5	11	2.6
Rhomboplites aurorubens	vermilion snapper	69	22.1	11	2.6
Symphurus spp.	tonguefishes	60	2.7	7	1.7
Hoplunnis spp.	pike-congers	58	1.3	3	0.7
Ancylopsetta dilecta	three-eye flounder	57	4.9	24	5.7
Ophidion grayi	blotched cusk-eel	57	13.0	16	3.8
Trichopsetta ventralis	sash flounder	56	3.5	12	2.8
Haemulon plumieri	white grunt	54	14.4	3	0.7
Gymnothorax nigromarginatus	blackedge moray	53	35.7	13	3.1
Priacanthus arenatus	bigeye	53	14.0	20	4.7
Sardinella aurita	Spanish sardine	50	9.6	12	2.8
Lepophidium spp.	cusk-eels	49	4.5	6	1.4
Bregmaceros atlanticus	antenna codlet	48	3.3	24	5.7

Table 1. SEAMAP species composition (cont'd.)

Genus Species	Common name	Total number caught	Total weight caught (kg)	Number of tows where caught	% Frequency of occurrence
Paralichthys lethostigma	southern flounder	45	5.4	15	3.5
Centropristis ocyurus	bank sea bass	44	7.5	6	1.4
Citharichthys spp.	whiffs	42	2.8	7	1.7
Selene setapinnis	Atlantic moonfish	42	6.7	20	4.7
Kathetostoma albigutta	lancer stargazer	38	6.0	18	4.2
Scomberomorus maculatus	Spanish mackerel	37	26.3	11	2.6
Ophichthus gomesi	shrimp eel	36	6.1	12	2.8
Scomber japonicus	chub mackerel	36	2.6	4	0.9
Lutjanus synagris	lane snapper	33	13.0	7	1.7
Balistes capriscus	gray triggerfish	32	12.0	8	1.9
Equetus umbrosus	cubbyu	32	6.2	12	2.8
Serraniculus pumilio	pygmy sea bass	32	0.6	10	2.4
Pagrus sedecim	red porgy	31	10.9	4	0.9
Prionotus carolinus	northern searobin	30	0.8	3	0.7
Sphoeroides spengleri	bandtail puffer	29	3.9	11	2.6
Lepophidium brevibarbe	short-bearded cusk-eel	29	1.8	1	0.2
Rhizoprionodon terraenovae	Atlantic sharpnose shark	27	51.5	11	2.6
Dasyatis sabina	Atlantic stingray	27	24.5	4	0.9
Opisthonema oglinum	Atlantic thread herring	27	4.9	6	1.4
Achirus lineatus	lined sole	26	0.4	6	1.4
Scorpaena brasiliensis	barbfish	25	3.6	5	1.2
Ancylopsetta quadrocellata	ocellated flounder	24	6.8	12	2.8
Sphoeroides dorsalis	marbled puffer	23	1.8	10	2.4
Caulolatilus cyanops	blackline tilefish	22	1.7	10	2.4
Conodon nobilis	barred grunt	22	7.7	2	0.5
Citharichthys macrops	spotted whiff	22	1.7	11	2.6
Congrina flava	yellow conger	21	4.0	12	2.8
Phaeoptyx conklini	freckled cardinalfish	21	1.1	2	0.5
Menidia beryllina	inland silverside	20	0.3	1	0.2
Apogonidae	cardinalfishes	19	1.0	1	0.2
Caulolatilus intermedius	anchor tilefish	19	2.3	6	1.4
Gobionellus hastatus	sharptail goby	17	0.0	8	1.9
Ogcocephalus radiatus	polka-dot batfish	16	0.0	4	0.9

Table 1. SEAMAP species composition (cont'd.)

Genus Species	Common name	Total number caught	Total weight caught (kg)	Number of tows where caught	% Frequency of occurrence
Raja eglanteria	clearnose skate	16	18.0	12	2.8
Ogcocephalus nasutus	shortnose batfish	16	0.1	4	0.9
Prionotus ophryas	bandtail searobin	16	1.5	12	2.8
Archosargus probatocephalus	sheepshead	15	29.5	4	0.9
Serranus phoebe	tattler	15	1.5	4	0.9
Dorosoma cepedianum	gizzard shad	14	0.6	3	0.7
Microspathodon chrysurus	yellowtail damselfish	14	0.6	3	0.7
Trinectes maculatus	hogchoker	13	0.2	9	2.1
Symphurus diomedianus	spottedfin tonguefish	13	0.9	10	2.4
Mullus auratus	red goatfish	13	2.2	4	0.9
Raja texana	roundel skate	12	12.6	9	2.1
Nettastomidae	duckbill eels	12	0.4	4	0.9
Umbrina coroides	sand drum	12	1.0	1	0.2
Menticirrhus littoralis	gulf kingfish	11	0.0	2	0.5
Gymnothorax spp.	morays	11	3.7	9	2.1
Cyclopsetta fimbriata	spotfin flounder	9	3.2	5	1.2
Chilomycterus schoepfi	striped burrfish	8	3.0	6	1.4
Selar crumenophthalmus	bigeye scad	8	0.8	2	0.5
Acanthostracion quadricornis	scrawled cowfish	8	4.3	8	1.9
Bairdiella chrysoura	silver perch	8	0.6	7	1.7
Apogon pseudomaculatus	twospot cardinalfish	8	0.2	3	0.7
Otophidium omostigmum	polka-dot cusk-eel	8	0.6	5	1.2
Narcine brasiliensis	lesser electric ray	7	5.4	6	1.4
Hildebrandia flava	yellow conger	7	0.0	2	0.5
Gymnothorax ocellatus	ocellated moray	7	1.4	5	1.2
Chaetodipterus faber	Atlantic spadefish	7	0.0	6	1.4
Aluterus heudeloti	dotterel filefish	7	2.1	6	1.4
Etropus spp.	lefteye flounders	6	0.1	2	0.5
Gymnachirus melas	naked sole	6	0.8	6	1.4
Equetus acuminatus	high-hat	6	0.6	2	0.5
Ogcocephalidae	batfishes	6	0.2	5	1.2
Pagrus pagrus	red porgy	6	3.1	2	0.5

Table 1. SEAMAP species composition (cont'd.)

Genus	Species	Common name	Total number caught	Total weight caught (kg)	Number of tows where caught	% Frequency of occurrence
Pomatomus	saltatrix	bluefish	5	3.5	3	0.7
Symphurus	civitatus	offshore tonguefish	5	0.2	3	0.7
Chaetodon	ocellatus	spotfin butterflyfish	4	0.6	2	0.5
Caranx	hippos	crevalle jack	4	0.0	4	0.9
Rhinoptera	bonasus	cownose ray	4	11.1	4	0.9
Eucinostomus	argenteus	spotfin mojarra	4	0.3	2	0.5
Bregmaceros	spp.	codlets	4	0.2	2	0.5
Paralichthys	albigutta	gulf flounder	4	7.2	3	0.7
Hemanthias	vivanus	red barbier	4	0.1	1	0.2
Calamus	bajonado	jolthead porgy	3	5.4	2	0.5
Astroscopus	y-graecum	southern stargazer	3	0.2	3	0.7
Scorpaena	dispar	hunchback scorpionfish	3	0.5	1	0.2
Syngnathus	louisianae	chain pipefish	3	0.0	3	0.7
Chaetodon	sedentarius	reef butterflyfish	3	0.2	1	0.2
Hoplunnis	tenuis	spotted pike-conger	3	0.0	1	0.2
Gobiesox	strumosus	skilletfish	3	0.0	1	0.2
Hypsoblennius	hentzi	feather blenny	2	0.0	1	0.2
Apogon	aurolineatus	bridle cardinalfish	2	0.1	2	0.5
Dactylopterus	volitans	flying gurnard	2	0.1	2	0.5
Exocoetidae		flyingfishes	2	0.1	1	0.2
Equetus	lanceolatus	jackknife-fish	2	0.9	2	0.5
Anchoviella	spp.	anchovies	2	0.1	1	0.2
Gastropsetta	frontalis	shrimp flounder	2	0.5	2	0.5
Epinephelus	flavolimbatus	yellowedge grouper	2	0.7	2	0.5
Canthigaster	rostrata	sharpnose puffer	2	0.1	1	0.2
Caranx	bartholomaei	yellow jack	2	0.0	1	0.2
Aluterus	schoepfi	orange filefish	2	3.0	2	0.5
Hirundichthys	rondeleti	blackwing flyingfish	2	0.1	2	0.5
Aluterus	scriptus	scrawled filefish	2	0.0	1	0.2
Prionotus	spp.	searobins	2	0.0	2	0.5
Paralichthys	squamilentus	broad flounder	2	0.2	2	0.5
Dasyatis	sayi	bluntnose stingray	2	1.0	1	0.2
Menticirrhus	saxatilis	northern kingfish	2	0.0	1	0.2

Table 1. SEAMAP species composition (cont'd.)

Genus Species	Common name	Total number caught	Total weight caught (kg)	Number of tows where caught	% Frequency of occurrence
Bothidae	lefteye flounders	1	0.0	1	0.2
Microgobius thalassinus	green goby	1	0.0	1	0.2
Gobionellus oceanicus	highfin goby	1	0.1	1	0.2
Sphyrna lewini	scalloped hammerhead	1	0.8	1	0.2
Equetus punctatus	spotted drum	1	0.1	1	0.2
Syngnathus floridae	dusky pipefish	1	0.1	1	0.2
Chaetodon aya	bank butterflyfish	1	0.1	1	0.2
Ophichthus spp.	snake eels	1	2.0	1	0.2
Echeneis naucrates	sharksucker	1	1.3	1	0.2
Sphyraena borealis	northern sennet	1	0.0	1	0.2
Sphyrna spp.	hammerhead sharks	1	5.6	1	0.2
Myrophis punctatus	speckled worm eel	1	0.1	1	0.2
Lutjanus griseus	gray snapper	1	1.0	1	0.2
Paraconger caudilimbatus	margintail conger	1	0.0	1	0.2
Dormitator maculatus	fat sleeper	1	0.0	1	0.2
Harengula jaguana	scaled sardine	1	0.1	1	0.2
Rypticus maculatus	whitespotted soapfish	1	0.1	1	0.2
Syngnathus spp.	pipefishes	1	0.0	1	0.2
Lonchopisthus lindneri	swordtail jawfish	1	0.0	1	0.2
Anchoa lyolepis	dusky anchovy	1	0.0	1	0.2
Seriola zonata	banded rudderfish	1	0.1	1	0.2
Ophichthus ocellatus	palespotted eel	1	0.3	1	0.2
Carapus bermudensis	pearlfish	1	0.1	1	0.2
Myctophum affine	lanternfish	1	0.1	1	0.2
Pristigenys alta	short bigeye	1	0.1	1	0.2
Echiophis spp.	worm eels	1	1.0	1	0.2
Sphyrna tiburo	bonnethead	1	1.5	1	0.2
Bagre marinus	gafftopsail catfish	1	0.3	1	0.2
Calamus leucosteus	whitebone porgy	1	0.5	1	0.2
Ogcocephalus parvus	roughback batfish	1	0.1	1	0.2
Pontinus longispinis	longspine scorpionfish	1	0.0	1	0.2
Parexocoetus brachypterus	sailfin flyingfish	1	0.1	1	0.2
Caranx fusus	blue runner	1	1.0	1	0.2

Table 1. SEAMAP species composition (cont'd.)

Genus Species	Common name	Total number caught	Total weight caught (kg)	Number of tows where caught	% Frequency of occurrence
Phrynelox scaber	splitlure frogfish	1	0.0	1	0.2
Neobythites gillii	brotula or bythitid	1	0.0	1	0.2
Sphoeroides spp.	puffers	1	0.0	1	0.2
Calamus nodosus	knobbed porgy	1	0.5	1	0.2
Anchoviella perfasciata	flat anchovy	1	0.1	1	0.2
Holacanthus bermudensis	blue angelfish	1	0.8	1	0.2
Bothus spp.	flounders	1	0.0	1	0.2
Apogon maculatus	flamefish	1	0.0	1	0.2
Sphoeroides nephelus	southern puffer	1	0.0	1	0.2
Aulostomus maculatus	trumpetfish	1	0.8	1	0.2
Bothus robinsi	twospot flounder	1	0.1	1	0.2
Crustaceans					
Trachypenaeus spp.	roughneck shrimps	123,373	1,365.9	219	51.7
Penaeus aztecus	brown shrimp	25,301	796.9	292	68.9
Callinectes similis	lesser blue crab	16,046	576.3	180	42.5
Sicyonia dorsalis	rock shrimp	13,887	95.7	101	23.8
Sicyonia brevirostris	rock shrimp	6,967	138.5	150	35.4
Squilla spp.	mantis shrimps	5,370	140.2	160	37.7
Penaeus duorarum	pink shrimp	4,478	189.3	116	27.4
Squilla empusa	mantis shrimp	3,210	97.4	42	9.9
Portunus spinicarpus	swimming crab	2,770	35.1	70	16.5
Portunus gibbesii	swimming crab	2,684	57.2	130	30.7
Callinectes sapidus	blue crab	2,011	92.7	103	24.3
Solenocera vioscai	rareback shrimp	1,262	15.0	10	2.4
Portunidae	swimming crabs	1,228	11.2	7	1.7
Penaeus setiferus	white shrimp	948	80.9	111	26.2
Squilla chydaea	mantis shrimp	931	15.9	29	6.8
Solenocera spp.	penaeoid shrimps	597	7.1	48	11.3
Xiphopenaeus spp. ??	seabobs	483	6.7	2	0.5
Portunus spinimanus	swimming crab	338	18.7	49	11.6
Sicyonia stimpsoni	rock shrimp	227	1.5	15	3.5

Table 1. SEAMAP species composition (cont'd.)

Genus Species	Common name	Total number caught	Total weight caught (kg)	Number of tows where caught	% Frequency of occurrence
Parapenaeus spp.	deepwater rose shrimps	190	2.0	13	3.1
Squilla aneglecta	mantis shrimp	157	0.0	10	2.4
Hepatus epheliticus	calico crab	138	6.9	23	5.4
Xiphopenaeus kroyeri	seabob	126	2.6	11	2.6
Arenaeus cribrarius	speckled crab	121	4.6	10	2.4
Calappa sulcata	box crab	102	45.7	37	8.7
Ovalipes floridanus	oval lady crab	94	0.9	9	2.1
Xanthidae	mud crabs	90	2.2	11	2.6
Ovalipes spp.	lady crabs	69	1.0	14	3.3
Ovalipes guadulpensis	lady crab	52	2.0	24	5.7
Pagurus longicarpus	hermit crab	24	0.0	2	0.5
Anasimus latus	spidercrab	21	0.3	7	1.7
Libinia dubia	spidercrab	11	6.3	7	1.7
Scyllarides nodifer	ridged slipper lobster	11	5.5	6	1.4
Paguridae	hermit crabs	10	1.1	8	1.9
Hepatus spp.	box crabs	9	0.3	4	0.9
Parthenope serrata	spider crab	9	0.0	3	0.7
Metapenaeopsis goodei	penaeid shrimp	9	0.3	3	0.7
Ovalipes ocellatus	calico crab	8	0.7	3	0.7
Dromidia antillensis	lesser sponge crab	8	0.3	3	0.7
Calappa flammea	box crab	7	2.7	6	1.4
Persephona spp.	box crabs	7	0.5	2	0.5
Porcellanidae	porcelain crabs	7	0.1	1	0.2
Scyllarides spp.	Spanish lobsters	7	0.1	5	1.2
Persephona aquilonaris	box crab	7	0.0	2	0.5
Podochela sidneyi	spider crab	5	0.1	2	0.5
Portunus sayi	gulf weed crab	5	0.0	1	0.2
Persephona crinita	box crab	5	0.0	3	0.7
Stenorynchus seticornis	spider crab	5	0.0	2	0.5
Macrobrachium ohione	river shrimp	4	0.0	3	0.7
Calappa spp.	box crabs	4	0.5	3	0.7
Libinia emarginata	spider crab	3	3.9	2	0.5
Metoporhaphis calcarata	spider crab	3	0.1	3	0.7

Table 1. SEAMAP species composition (cont'd.)

Genus Species	Common name	Total number caught	Total weight caught (kg)	Number of tows where caught	% Frequency of occurrence
Scyllaridae	Spanish lobsters	2	1.2	1	0.2
Menippe mercenaria	top shells	2	0.1	2	0.5
Scyllarus spp.	slipper lobsters	2	0.2	2	0.5
Libinia spp.	spider crab	2	1.1	2	0.5
Caridea	shrimps	1	0.0	1	0.2
Cirripedia	barnacles	1	0.0	1	0.2
Leiolambrus nitidus	pentagon crab	1	0.1	1	0.2
Stenorhynchus spp.	arrow crabs	1	0.1	1	0.2
Alpheidae	snapping shrimps	1	0.1	1	0.2
Albunea paretii	sandmole crab	1	0.0	1	0.2
Sicyonia spp.	rock shrimps	1	0.0	1	0.2
Calappa angusta	box crab	1	0.0	1	0.2
Persephone punctata	box crab	1	0.1	1	0.2
Callianassa latispina	burrowing shrimp	1	0.0	1	0.2
Petrochirus diogenes	hermit crab	1	0.5	1	0.2
Others					
Loligo pealei	common squid	3,610	196.0	179	42.2
Scyphozoa	jellyfish	2,495	343.9	16	3.8
Lolliguncula brevis	western Atlantic brief squid	2,372	80.0	105	24.8
Actinia spp.	sea-anemones	2,030	0.0	9	2.1
Amusium papyraceum	paper scallop	659	4.7	15	3.5
Aequipecten spp.	scallops	469	5.5	7	1.7
Renilla mulleri	sea pansy	371	0.0	8	1.9
Loligo spp.	longfin squids	324	17.1	10	2.4
Madreporaria	true (stony) corals	124	17.4	3	0.7
Aurelia spp.	jellyfishes	122	15.7	25	5.9
Porifera	sponges	121	180.4	9	2.1
Asteroidea	starfishes	114	4.1	21	5.0
Luidia clathrata	sea star	107	10.7	12	2.8
Stomolophus meleagris	jellyfish	94	0.0	4	0.9
Spatangidae	heart urchins	57	0.0	5	1.2

Table 1. SEAMAP species composition (cont'd.)

Genus Species	Common name	Total number caught	Total weight caught (kg)	Number of tows where caught	% Frequency of occurrence
Scleracis	stony coral	50	19.5	1	0.2
Doryteuthis plei	striped squid	39	1.1	3	0.7
Tagelus spp.	razor clams	31	0.3	1	0.2
Astropecten antilliensis	sea star	27	0.0	8	1.9
Scutellidae	sand dollars	26	7.6	7	1.7
Holothurioidea	sea cucumbers	20	6.6	3	0.7
Luidia spp.	sea stars	15	0.4	5	1.2
Mellita quinquiesperforata	five-slotted sand dollar	14	0.0	5	1.2
Anadara ovalis	blood ark	9	0.0	1	0.2
Ophiuroidea	brittle-stars and basket-stars	7	0.2	7	1.7
Aplysia spp.	sea hares	7	0.2	5	1.2
Gastropoda	snails	6	2.8	1	0.2
Phalium granulatum	scotch bonnet	5	0.0	1	0.2
Clypeaster spp.	sea biscuits	4	2.0	1	0.2
Pectinidae	scallops	4	0.0	2	0.5
Polinices duplicatus	sharkeye	4	0.2	2	0.5
Neogastropoda	welks	3	0.1	2	0.5
Octopus spp.	octopuses	3	3.6	3	0.7
Polychaeta	annelids	3	0.1	3	0.7
Rossia spp.	bobtail squids	2	0.0	1	0.2
Fasciolaria lilium	banded tulip	2	0.0	1	0.2
Echinoidea	sea urchins and sand dollars	2	0.3	2	0.5
Lyropecten nodosus	lion's paw	2	0.3	2	0.5
Solemyacidae	awning clams	2	0.1	1	0.2
Fasciolaria spp.	tulips	1	0.1	1	0.2
Busycon contrarium	lightning whelk	1	0.2	1	0.2
Fasciolara tulipa	true tulip	1	0.2	1	0.2
Pecten spp.	scallops	1	0.1	1	0.2
Anthozoa	sea anemones and corals	1	0.1	1	0.2
Octopus vulgaris	common octopus	1	0.3	1	0.2

Table 2
Statistical Zone 3

Summary of the mean environmental data (X), the standard error of the mean (SEM) and the number of samples (n) taken during the June-July 1983 SEAMAP Shrimp and Bottomfish Survey by depth stratum. Temperature in °C, salinity in ppt, and oxygen in ppm.

	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm		
Environmental Category	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Surface temperature				28.2	0.00	1	28.1	0.20	3	28.0	0.0	2	28.2	0.05	2	28.5	0.40	2
Midwater temperature							28.0	0.93	3	26.1	1.70	2	24.8	0.53	2	21.5	0.06	2
Bottom temperature							24.7	0.45	3	22.3	0.50	2	21.4	0.11	2	18.0	0.11	2
Surface salinity				36.1	0.00	1	36.4	0.17	3	36.3	0.00	1	36.3	0.00	1	36.6	0.36	1
Midwater salinity				36.1	0.00	1	36.2	0.09	3	36.3	0.11	2	36.2	0.05	2	36.2	0.07	2
Bottom salinity				36.1	0.00	1	36.3	0.05	2	36.3	0.00	1	36.3	0.01	2	36.3	0.00	1
Surface oxygen				5.7	0.00	1	5.5	0.00	3	5.6	0.50	2	5.6	0.00	2	5.6	0.05	2
Midwater oxygen				5.9	0.00	1	5.6	0.27	3	5.9	0.25	2	6.0	0.50	2	5.7	0.10	2
Bottom oxygen				6.1	0.00	1	6.3	0.58	3	5.9	0.05	2	5.6	0.50	2	3.8	0.20	2

Table 3
Statistical Zone 4

Summary of the mean environmental data (X), the standard error of the mean (SEM) and the number of samples (n) taken during the June-July 1983 SEAMAP Shrimp and Bottomfish Survey by depth stratum. Temperature in °C, salinity in ppt, and oxygen in ppm.

	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm		
Environmental Category	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Surface temperature				29.9	0.00	1	28.7	0.30	2	27.4	0.27	3	27.9	0.00	1	27.7	0.65	2
Midwater temperature				30.6	0.00	1	29.1	0.43	2	24.8	1.14	3	26.1	0.00	1	20.7	0.48	2
Bottom temperature				29.6	0.00	1	24.9	1.16	2	21.3	0.48	3	21.3	0.00	1	18.1	0.53	2
Surface salinity				34.8	0.00	1	35.9	0.15	2	35.9	0.00	1	36.2	0.00	1	36.4	0.00	1
Midwater salinity				35.1	0.00	1	35.8	0.13	2	36.3	0.05	2				36.2	0.00	1
Bottom Salinity				35.7	0.00	1	36.1	0.10	2				36.3	0.00	1	36.4	0.01	2
Surface oxygen				5.5	0.00	1	5.5	0.05	2	5.4	0.00	1	5.6	0.00	1	5.4	0.00	1
Midwater oxygen				5.5	0.00	1	5.4	0.05	2	5.3	0.00	1	5.6	0.00	1	5.8	0.00	1
Bottom oxygen				5.9	0.00	1	6.6	0.05	2	5.9	0.00	1	5.7	0.00	1	3.7	0.00	1

Table 4
Statistical Zone 5

Summary of the mean environmental data (X), the standard error of the mean (SEM) and the number of samples (n) taken during the June-July 1983 SEAMAP Shrimp and Bottomfish Survey by depth stratum. Temperature in °C, salinity in ppt, and oxygen in ppm. No samples were taken below 11 fm.

	11-20 fm			21-30 fm			31-40 fm			Over 40 fm		
Environmental Category	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Surface temperature	29.7	0.00	1	27.2	0.00	3	27.5	0.00	1	27.6	0.23	3
Midwater temperature	29.2	0.00	1	26.1	0.95	3	21.6	0.00	1	21.9	1.16	3
Bottom temperature	27.5	0.00	1	20.8	0.21	3	20.0	0.00	1	18.3	0.70	3
Surface salinity	35.5	0.00	1	36.4	0.00	1				36.1	0.00	1
Midwater salinity										36.3	0.00	1
Bottom salinity	35.5	0.00	1							36.3	0.00	1
Surface oxygen												
Midwater oxygen												
Bottom oxygen												

Table 5
Statistical Zone 6

Summary of the mean environmental data (X), the standard error of the mean (SEM) and the number of samples (n) taken during the June-July 1983 SEAMAP Shrimp and Bottomfish Survey by depth stratum. Temperature in °C, salinity in ppt, and oxygen in ppm. No samples were taken below 6 fm.

	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm		
Environmental Category	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Surface temperature				28.7	0.00	1	27.8	0.00	1	27.0	0.00	1	26.8	0.00	1			
Midwater temperature							26.6	0.00	1	20.6	0.00	1	21.6	0.00	1			
Bottom temperature				28.3	0.00	1	22.0	0.00	1	20.2	0.00	1	19.6	0.00	1			
Surface salinity				34.8	0.00	1							35.0	0.00	1			
Midwater salinity													36.1	0.00	1			
Bottom salinity							35.8	0.00	1				36.3	0.00	1			
Surface oxygen																		
Midwater oxygen																		
Bottom oxygen																		

Table 6a
Statistical Zone 7
40-ft trawls

Summary of dominant organisms, combined for all zones, taken in shrimp statistical zone 7 during the June-July 1983 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 weight in kg per hour, the SEM of weight and the number (n) of samples taken. No samples were taken except in the 6-10-fm stratum.

	6-10 fm				
Species	Num	SEM	Wt	SEM	n
Trachypenaeus spp.	1300.0	0.00	3.0	0.00	1
Penaeus aztecus	618.0	0.00	4.8	0.00	1
Callinectes similis	196.0	0.00	0.8	0.00	1
Sicyonia dorsalis	0.0	0.00	0.0	0.00	1
Sicyonia brevirostris	0.0	0.00	0.0	0.00	1
Squilla spp.	200.0	0.00	1.5	0.00	1
Micropogonias undulatus	16.0	0.00	0.5	0.00	1
Stenotomus caprinus	160.0	0.00	0.0	0.00	1
Anchoa mitchilli	330.0	0.00	0.9	0.00	1
Polydactylus octonemus	0.0	0.00	0.0	0.00	1
Prionotus rubio	1600.0	0.00	4.4	0.00	1
Trachurus lathami	0.0	0.00	0.0	0.00	1
Cynoscion arenarius	20.0	0.00	1.8	0.00	1
Centropristis philadelphica	70.0	0.00	0.5	0.00	1
Squid	80.0	0.00	0.7	0.00	1

Table 6b
Statistical Zone 7
40-ft trawls

Summary of dominant organisms taken within statistical zone 7 during the June-July 1983 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 weight in kg per hour, the SEM of weight and the number (n) of samples taken. No samples were taken except in the 6-10-fm stratum.

	6-10 fm				
Species	Num	SEM	Wt	SEM	n
Trachypenaeus spp.	1300.0	0.00	3.0	0.00	1
Penaeus aztecus	618.0	0.00	4.8	0.00	1
Penaeus duorarum	516.0	0.00	5.2	0.00	1
Squilla spp.	200.0	0.00	1.5	0.00	1
Callinectes similis	196.0	0.00	0.8	0.00	1
Penaeus setiferus	36.0	0.00	1.5	0.00	1
Prionotus rubio	1600.0	0.00	4.4	0.00	1
Anchoa mitchilli	330.0	0.00	0.9	0.00	1
Prionotus tribulus	300.0	0.00	3.3	0.00	1
Stenotomus caprinus	160.0	0.00	0.0	0.00	1
Centropristis philadelphica	70.0	0.00	0.5	0.00	1
Sphoeroides parvus	48.0	0.00	0.4	0.00	1
Anchoa hepsetus	24.0	0.00	0.3	0.00	1
Cynoscion arenarius	20.0	0.00	1.8	0.00	1
Squid	80.0	0.00	0.7	0.00	1

Table 6c
Statistical Zone 7
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 1983 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 except in the 6-10-fm stratum.

	6-10 fm		
Environmental Category	X	SEM	n
Total catch kg	30.0	0.00	1
Total finfish kg	11.8	0.00	1
Total crustacean kg	17.3	0.00	1
Total others kg	0.9	0.00	1
Surface temperature	26.0	0.00	1
Midwater temperature	25.8	0.00	1
Bottom temperature	22.0	0.00	1
Surface salinity	12.0	0.00	1
Midwater salinity	14.0	0.00	1
Bottom salinity	32.0	0.00	1
Surface oxygen	8.1	0.00	1
Midwater oxygen	7.9	0.00	1
Bottom oxygen	3.3	0.00	1

Table 7a
Statistical Zone 8
40-ft trawls

Summary of dominant organisms, combined for all zones, taken in shrimp statistical zone 8 during the June-July 1983 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 weight in kg per hour, the SEM of weight and the number (n) of samples taken. No samples were taken below 6 fm.

	6-10 fm					11-20 fm				
Species	Num	SEM	Wt	SEM	n	Num	SEM	Wt	SEM	n
Trachypenaeus spp.	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	1	0.0	0.00	0.0	0.00	1
Callinectes similis	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
Sicyonia dorsalis	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
Sicyonia brevirostris	150.0	0.00	2.7	0.00	1	115.7	0.00	0.8	0.00	1
Squilla spp.	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
Micropogonias undulatus	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
Stenotomus caprinus	42.0	0.00	0.3	0.00	1	0.0	0.00	0.0	0.00	1
Anchoa mitchilli	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
Polydactylus octonemus	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
Prionotus rubio	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
Trachurus lathami	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
Cynoscion arenarius	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
Centropristis philadelphica	0.0	0.00	0.0	0.00	1	98.6	0.00	5.8	0.00	1
Squid	174.0	0.00	3.3	0.00	1	34.3	0.00	0.4	0.00	1

Table 7a (cont'd.)
Statistical Zone 8
40-ft trawls

Summary of dominant organisms, combined for all zones, taken in shrimp statistical zone 8 during the June-July 1983 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 weight in kg per hour, the SEM of weight and the number (n) of samples taken. No samples were taken below 6 fm.

	21-30 fm					31-40 fm					Over 40 fm				
Species	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	2						0.0	0.00	0.0	0.00	1
Penaeus aztecus	0.0	0.00	0.0	0.00	2						0.0	0.00	0.0	0.00	1
Callinectes similis	0.0	0.00	0.0	0.00	2						0.0	0.00	0.0	0.00	1
Sicyonia dorsalis	0.0	0.00	0.0	0.00	2						0.0	0.00	0.0	0.00	1
Sicyonia brevirostris	37.1	28.91	0.7	0.62	2						92.0	0.00	1.8	0.00	1
Squilla spp.	0.0	0.00	0.0	0.00	2						0.0	0.00	0.0	0.00	1
Micropogonias undulatus	0.0	0.00	0.0	0.00	2						0.0	0.00	0.0	0.00	1
Stenotomus caprinus	0.0	0.00	0.0	0.00	2						0.0	0.00	0.0	0.00	1
Anchoa mitchilli	0.0	0.00	0.0	0.00	2						0.0	0.00	0.0	0.00	1
Polydactylus octonemus	0.0	0.00	0.0	0.00	2						0.0	0.00	0.0	0.00	1
Prionotus rubio	0.0	0.00	0.0	0.00	2						0.0	0.00	0.0	0.00	1
Trachurus lathami	0.0	0.00	0.0	0.00	2						0.0	0.00	0.0	0.00	1
Cynoscion arenarius	0.0	0.00	0.0	0.00	2						0.0	0.00	0.0	0.00	1
Centropristis philadelphica	123.0	93.00	4.2	2.60	2						108.0	0.00	5.8	0.00	1
Squid	0.0	0.00	0.0	0.00	2						0.0	0.00	0.0	0.00	1

Table 7b
Statistical Zone 8
40-ft trawls

Summary of dominant organisms taken within statistical zone 8 during the June-July 1983 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 weight in kg per hour, the SEM of weight and the number (n) of samples taken. No samples were taken below 6 fm.

	6-10 fm					11-20 fm				
Species	Num	SEM	Wt	SEM	n	Num	SEM	Wt	SEM	n
Sicyonia brevirostris	150.0	0.00	2.7	0.00	1	115.7	0.00	0.8	0.00	1
Portunus spinicarpus	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
Solenocera spp.	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
Penaeus duorarum	30.0	0.00	0.5	0.00	1	4.3	0.00	0.2	0.00	1
Porcellanidae	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
Metapenaeopsis goodei	0.0	0.00	0.0	0.00	1	8.6	0.00	0.2	0.00	1
Centropristis philadelphica	0.0	0.00	0.0	0.00	1	98.6	0.00	5.8	0.00	1
Prionotus scitulus	486.0	0.00	4.9	0.00	1	4.3	0.00	0.4	0.00	1
Haemulon aurolineatum	0.0	0.00	0.0	0.00	1	321.4	0.00	27.3	0.00	1
Neomerinthe hemingwayi	12.0	0.00	0.3	0.00	1	25.7	0.00	4.9	0.00	1
Syacium papillosum	12.0	0.00	0.3	0.00	1	17.1	0.00	0.4	0.00	1
Etropus crossotus	90.0	0.00	0.8	0.00	1	8.6	0.00	0.2	0.00	1
Ophidion holbrooki	6.0	0.00	0.5	0.00	1	60.0	0.00	6.8	0.00	1
Urophycis regia	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
Squid	174.0	0.00	3.3	0.00	1	34.3	0.00	0.4	0.00	1

Table 7b (cont'd.)
Statistical Zone 8
40-ft trawls

Summary of dominant organisms taken within statistical zone 8 during the June-July 1983 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 weight in kg per hour, the SEM of weight and the number (n) of samples taken. No samples were taken below 6 fm.

	21-30 fm					31-40 fm					Over 40 fm				
Species	Num	SEM	Wt	SEM	n	Num	SEM	Wt	SEM	n	Num	SEM	Wt	SEM	n
Sicyonia brevirostris	37.1	28.91	0.7	0.62	2						92.0	0.00	1.8	0.00	1
Portunus spinicarpus	12.0	12.00	0.3	0.27	2						200.0	0.00	2.4	0.00	1
Solenocera spp.	19.1	19.09	0.1	0.06	2						12.0	0.00	0.2	0.00	1
Penaeus duorarum	4.4	1.64	0.4	0.15	2						0.0	0.00	0.0	0.00	1
Porcellanidae	21.0	21.00	0.1	0.14	2						0.0	0.00	0.0	0.00	1
Metapenaeopsis goodei	12.0	12.00	0.1	0.14	2						0.0	0.00	0.0	0.00	1
Centropristis philadelphica	123.0	93.00	4.2	2.60	2						108.0	0.00	5.8	0.00	1
Prionotus scitulus	5.5	5.45	0.1	0.12	2						4.0	0.00	0.2	0.00	1
Haemulon aurolineatum	0.0	0.00	0.0	0.00	2						0.0	0.00	0.0	0.00	1
Neomerinthe hemingwayi	94.9	43.09	8.4	4.96	2						0.0	0.00	0.0	0.00	1
Syacium papillosum	34.9	13.09	2.1	0.62	2						76.0	0.00	5.5	0.00	1
Etropus crossotus	9.5	9.55	0.1	0.12	2						32.0	0.00	0.4	0.00	1
Ophidion holbrooki	51.0	51.00	6.1	6.14	2						0.0	0.00	0.0	0.00	1
Urophycis regia	26.7	8.73	1.6	0.33	2						36.0	0.00	1.8	0.00	1
Squid	0.0	0.00	0.0	0.00	2						0.0	0.00	0.0	0.00	1

Table 7c
Statistical Zone 8
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 1983 SEAMAP Shrimp and Bottomfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, and oxygen in ppm.

	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm		
Environmental Category	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg				27.3	0.00	1	60.4	0.00	1	305.5	291.82	2				29.1	0.00	1
Total finfish kg				21.8	0.00	1	56.5	0.00	1	52.6	40.17	2				23.6	0.00	1
Total crustacean kg				5.5	0.00	1	1.9	0.00	1	6.1	4.83	2				5.5	0.00	1
Total others kg				2.7	0.00	1	1.9	0.00	1	246.8	246.82	2				0.0	0.00	1
Surface temperature				25.9	0.00	1	26.2	0.14	2	26.0	0.01	2				26.1	0.00	1
Midwater temperature				25.9	0.00	1	24.8	0.41	2	24.3	0.21	2				21.9	0.00	1
Bottom temperature				22.0	0.00	1	20.7	0.26	2	20.5	0.32	2				19.4	0.00	1
Surface salinity				32.7	0.00	1	32.8	0.55	2	34.6	0.12	2				34.9	0.00	1
Midwater salinity				32.8	0.00	1	33.9	0.15	2	35.9	0.09	2				36.7	0.00	1
Bottom salinity				35.9	0.00	1	35.8	0.09	2	36.4	0.03	2				36.3	0.00	1
Surface oxygen				5.4	0.00	1	5.0	0.00	2	5.1	0.15	2				4.9	0.00	1
Midwater oxygen				5.8	0.00	1	5.2	0.10	2	5.1	0.00	2				5.0	0.00	1
Bottom oxygen				5.5	0.00	1	5.2	0.05	2	5.2	0.05	2				4.5	0.00	1

Table 8a
Statistical Zone 9
40-ft trawls

Summary of dominant organisms, combined for all zones, taken in shrimp statistical zone 9 during the June-July 1983 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 weight in kg per hour, the SEM of weight and the number (n) of samples taken.

	0-5 fm					6-10 fm					11-20 fm				
Species	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	15.0	9.00	0.3	0.00	2	0.0	0.00	0.0	0.00	9
Penaeus aztecus	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	9
Callinectes similis	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	9
Sicyonia dorsalis	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	9
Sicyonia brevirostris	42.0	0.00	0.5	0.00	1	345.0	231.00	3.8	1.64	2	29.6	6.38	0.5	0.06	9
Squilla spp.	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	2	0.4	0.39	0.0	0.02	9
Micropogonias undulatus	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	9
Stenotomus caprinus	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	2	2.3	1.42	0.0	0.03	9
Anchoa mitchilli	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	9
Polydactylus octonemus	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	9
Prionotus rubio	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	9
Trachurus lathami	852.0	0.00	8.2	0.00	1	3.0	3.00	0.1	0.14	2	3.4	2.33	0.1	0.10	9
Cynoscion arenarius	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	9
Centropristis philadelphica	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	2	44.1	15.09	3.0	0.91	9
Squid	600.0	0.00	12.3	0.00	1	150.0	18.00	1.8	0.41	2	64.8	38.87	0.8	0.38	9

Table 8a (cont'd.)
Statistical Zone 9
40-ft trawls

Summary of dominant organisms, combined for all zones, taken in shrimp statistical zone 9 during the June-July 1983 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 weight in kg per hour, the SEM of weight and the number (n) of samples taken.

	21-30 fm					31-40 fm					Over 40 fm				
Species	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	5	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	5	0.0	0.00	0.0	0.00	1	48.0	0.00	4.1	0.00	1
Callinectes similis	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
Sicyonia dorsalis	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
Sicyonia brevirostris	26.0	9.88	0.6	0.26	5	4.0	0.00	0.2	0.00	1	78.0	0.00	2.2	0.00	1
Squilla spp.	1.4	1.41	0.0	0.00	5	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
Micropogonias undulatus	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
Stenotomus caprinus	151.1	151.06	5.8	5.84	5	680.0	0.00	29.1	0.00	1	0.0	0.00	0.0	0.00	1
Anchoa mitchilli	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
Polydactylus octonemus	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
Prionotus rubio	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
Trachurus lathami	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
Cynoscion arenarius	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
Centropristis philadelphica	46.4	11.29	3.1	0.78	5	68.0	0.00	5.5	0.00	1	240.0	0.00	15.0	0.00	1
Squid	129.2	61.21	2.1	0.97	5	0.0	0.00	0.0	0.00	1	24.0	0.00	2.7	0.00	1

Table 8b
Statistical Zone 9
40-ft trawls

Summary of dominant organisms taken within statistical zone 9 during the June-July 1983 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 weight in kg per hour, the SEM of weight and the number (n) of samples taken.

	0-5 fm					6-10 fm					11-20 fm				
Species	Num	SEM	Wt	SEM	n	Num	SEM	Wt	SEM	n	Num	SEM	Wt	SEM	n
Sicyonia brevirostris	42.0	0.00	0.5	0.00	1	345.0	231.00	3.8	1.64	2	29.6	6.38	0.5	0.06	9
Portunus spinicarpus	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	9
Solenocera spp.	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	2	6.6	3.91	0.0	0.03	9
Penaeus duorarum	6.0	0.00	0.3	0.00	1	18.0	12.00	0.5	0.27	2	1.3	1.33	0.0	0.03	9
Penaeus aztecus	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	9
Scyllarides nodifer	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	2	1.1	0.79	0.2	0.15	9
Stenotomus caprinus	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	2	2.3	1.42	0.0	0.03	9
Centropristis philadelphica	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	2	44.1	15.09	3.0	0.91	9
Trachurus lathami	852.0	0.00	8.2	0.00	1	3.0	3.00	0.1	0.14	2	3.4	2.33	0.1	0.10	9
Prionotos scitulus	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	2	4.1	2.03	0.2	0.08	9
Syacium papillosum	6.0	0.00	0.3	0.00	1	9.0	9.00	0.3	0.27	2	11.5	6.92	0.6	0.30	9
Lagodon rhomboides	12.0	0.00	0.8	0.00	1	0.0	0.00	0.0	0.00	2	65.2	64.61	4.5	4.39	9
Etrumeus teres	96.0	0.00	2.7	0.00	1	237.0	231.00	1.2	0.95	2	0.0	0.00	0.0	0.00	9
Prionotus martis	12.0	0.00	0.3	0.00	1	201.0	15.00	2.7	0.00	2	15.3	15.33	0.5	0.55	9
Squid	600.0	0.00	12.3	0.00	1	150.0	18.00	1.8	0.41	2	64.8	38.87	0.8	0.38	9

Table 8b (cont'd.)
Statistical Zone 9
40-ft trawls

Summary of dominant organisms taken within statistical zone 9 during the June-July 1983 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 weight in kg per hour, the SEM of weight and the number (n) of samples taken.

	21-30 fm					31-40 fm					Over 40 fm				
Species	Num	SEM	Wt	SEM	n	Num	SEM	Wt	SEM	n	Num	SEM	Wt	SEM	n
Sicyonia brevirostris	26.0	9.88	0.6	0.26	5	4.0	0.00	0.2	0.00	1	78.0	0.00	2.2	0.00	1
Portunus spinicarpus	1.9	1.23	0.0	0.00	5	48.0	0.00	0.9	0.00	1	126.0	0.00	2.7	0.00	1
Solenocera spp.	1.4	1.41	0.0	0.00	5	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
Penaeus duorarum	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
Penaeus aztecus	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	1	48.0	0.00	4.1	0.00	1
Scyllarides nodifer	0.7	0.71	0.2	0.16	5	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
Stenotomus caprinus	151.1	151.06	5.8	5.84	5	680.0	0.00	29.1	0.00	1	0.0	0.00	0.0	0.00	1
Centropristis philadelphica	46.4	11.29	3.1	0.78	5	68.0	0.00	5.5	0.00	1	240.0	0.00	15.0	0.00	1
Trachurus lathami	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
Prionotos scitulus	122.3	41.83	6.0	1.96	5	0.0	0.00	0.0	0.00	1	6.0	0.00	0.3	0.00	1
Syacium papillosum	99.3	40.68	8.9	3.64	5	0.0	0.00	0.00	0.00	1	0.0	0.00	0.0	0.00	1
Lagodon rhomboides	2.1	2.12	0.2	0.16	5	16.0	0.00	1.5	0.00	1	0.0	0.00	0.0	0.00	1
Etrumeus teres	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
Prionotus martis	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
Squid	129.2	61.21	2.1	0.97	5	0.0	0.00	0.0	0.00	1	24.0	0.00	2.7	0.00	1

Table 8c
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 June-July 1983 SEAMAP Shrimp and Bottomfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, and oxygen in ppm.

	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm		
Environmental Category	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	40.9	0.00	1	49.1	19.09	2	35.2	11.45	9	53.4	10.76	5	58.2	0.00	1	90.0	0.00	1
Total finfish kg	24.5	0.00	1	40.9	13.36	2	25.6	9.18	9	48.7	9.98	5	56.4	0.00	1	68.2	0.00	1
Total crustacean kg	2.7	0.00	1	5.5	2.73	2	2.4	0.42	9	2.6	0.25	5	1.8	0.00	1	10.9	0.00	1
Total others kg	13.6	0.00	1	2.7	0.00	2	7.8	4.83	9	3.5	1.11	5	1.8	0.00	1	13.6	0.00	1
Surface temperature	24.2	0.00	1	25.2	0.12	2	26.0	0.12	9	26.0	0.08	5	26.6	0.50	4	26.7	0.09	3
Midwater temperature	22.3	0.00	1	23.2	0.76	2	24.7	0.32	9	23.0	0.45	5	22.5	0.31	4	19.7	1.13	3
Bottom temperature	21.1	0.00	1	21.8	0.58	2	21.4	0.55	9	20.3	0.31	5	20.0	0.10	4	16.5	1.36	3
Surface salinity	31.1	0.00	1	31.2	1.26	2	30.8	0.61	9	30.5	0.96	5	32.8	0.32	4	31.6	2.43	3
Midwater salinity	34.8	0.00	1	34.2	0.45	2	33.8	0.37	9	35.4	0.42	5	36.0	0.35	4	36.4	0.03	3
Bottom salinity	35.4	0.00	1	35.2	0.17	2	35.7	0.35	9	36.2	0.02	5	36.4	0.07	4	36.3	0.10	3
Surface oxygen	9.5	0.00	1	9.2	0.00	2	8.0	0.65	9	8.3	0.84	5	6.2	1.08	4	5.1	0.15	3
Midwater oxygen	9.2	0.00	1	9.4	0.15	2	8.0	0.59	9	8.3	0.78	5	6.3	1.03	4	4.7	0.30	3
Bottom oxygen	9.2	0.00	1	9.2	0.10	2	8.1	0.59	9	8.2	0.80	5	5.9	0.93	4	3.7	0.48	3

Table 9a
Statistical Zone 10
40-ft trawls

Summary of dominant organisms, combined for all zones, taken in shrimp statistical zone 10 during the June-July 1983 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 weight in kg per hour, the SEM of weight and the number (n) of samples taken. No samples were taken beyond 40 fm.

	0-5 fm					6-10 fm					11-20 fm				
Species	Num	SEM	Wt	SEM	n	Num	SEM	Wt	SEM	n	Num	SEM	Wt	SEM	n
Trachypenaeus spp.	14.0	14.00	0.1	0.09	3	2.0	2.00	0.1	0.09	3	0.0	0.00	0.0	0.00	5
Penaeus aztecus	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	5
Callinectes similis	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	3	0.4	0.39	0.1	0.05	5
Sicyonia dorsalis	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	5
Sicyonia brevirostris	34.0	34.00	0.5	0.45	3	104.0	72.03	1.9	1.50	3	91.4	67.68	1.4	0.91	5
Squilla spp.	1.3	1.33	0.0	0.03	3	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	5
Micropogonias undulatus	1.3	1.33	0.1	0.09	3	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	5
Stenotomus caprinus	67.5	33.99	2.2	1.96	3	6.0	3.46	0.2	0.09	3	61.6	60.06	3.1	3.09	5
Anchoa mitchilli	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	5
Polydactylus octonemus	17.3	17.33	0.5	0.45	3	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	5
Prionotus rubio	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	5
Trachurus lathami	2.0	2.00	0.1	0.09	3	2.0	2.00	0.0	0.00	3	0.4	0.40	0.0	0.00	5
Cynoscion arenarius	0.7	0.67	0.1	0.12	3	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	5
Centropristis philadelphica	12.3	7.17	0.6	0.49	3	18.0	18.00	0.9	0.91	3	20.2	14.16	1.2	0.94	5
Squid	38.0	23.83	0.9	0.26	3	196.0	169.43	2.5	2.18	3	197.0	55.50	2.7	0.65	5

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

Summary of dominant organisms, combined for all zones, taken in shrimp statistical zone 10 during the June-July 1983 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 weight in kg per hour, the SEM of weight and the number (n) of samples taken. No samples were taken beyond 40 fm.

	21-30 fm					31-40 fm				
Species	Num	SEM	Wt	SEM	n	Num	SEM	Wt	SEM	n
Trachypenaeus spp.	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	3
Penaeus aztecus	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	3
Callinectes similis	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	3
Sicyonia dorsalis	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	3
Sicyonia brevirostris	8.5	4.74	0.3	0.22	6	0.0	0.00	0.0	0.00	3
Squilla spp.	0.3	0.32	0.0	0.01	6	0.0	0.00	0.0	0.00	3
Micropogonias undulatus	2.6	2.58	0.2	0.22	6	0.0	0.00	0.0	0.00	3
Stenotomus caprinus	488.3	268.13	24.3	13.50	6	93.3	93.33	4.2	4.24	3
Anchoa mitchilli	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	3
Polydactylus octonemus	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	3
Prionotus rubio	0.0	0.00	0.0	0.00	6	1.3	1.33	0.1	0.06	3
Trachurus lathami	46.0	46.00	1.1	1.14	6	2.7	2.67	0.1	0.12	3
Cynoscion arenarius	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	3
Centropristis philadelphica	6.8	4.26	0.6	0.43	6	14.6	12.75	1.0	0.88	3
Squid	49.3	22.85	1.7	0.66	6	32.6	31.69	0.5	0.47	3

Table 9b
Statistical Zone 10
40-ft trawls

Summary of dominant organisms taken within statistical zone 10 during the June-July 1983 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 weight in kg per hour, the SEM of weight and the number (n) of samples taken. No samples were taken beyond 40 fm.

	0-5 fm					6-10 fm					11-20 fm				
Species	Num	SEM	Wt	SEM	n	Num	SEM	Wt	SEM	n	Num	SEM	Wt	SEM	n
Sicyonia brevirostris	34.0	34.00	0.5	0.45	3	104.0	72.03	1.9	1.50	3	91.4	67.68	1.4	0.91	5
Penaeus duorarum	65.3	60.40	1.0	0.88	3	38.0	20.88	1.2	0.81	3	8.0	8.00	0.2	0.22	5
Penaeus setiferus	14.0	14.00	0.8	0.85	3	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	5
Solenocera spp.	5.5	5.52	0.3	0.25	3	0.0	0.00	0.0	0.00	3	0.4	0.40	0.0	0.00	5
Trachypenaeus spp.	14.0	14.00	0.1	0.09	3	2.0	2.00	0.1	0.09	3	0.0	0.00	0.0	0.00	5
Portunus spinicarpus	0.7	0.67	0.0	0.03	3	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	5
Stenotomus caprinus	67.5	33.99	2.2	1.96	3	6.0	3.46	0.2	0.09	3	61.9	60.06	3.1	3.09	5
Prionotus salmonicolor	4.0	1.16	0.3	0.06	3	10.0	10.00	0.2	0.18	3	8.9	6.51	0.5	0.39	5
Syacium papillosum	34.8	20.47	2.3	1.71	3	0.0	0.00	0.0	0.00	3	16.0	13.26	1.0	0.76	5
Trachurus lathami	2.0	2.00	0.1	0.09	3	2.0	2.00	0.0	0.00	3	0.4	0.40	0.0	0.00	5
Prionotus scitulus	92.0	83.16	1.0	0.87	3	68.0	32.92	1.5	0.92	3	18.0	12.00	0.4	0.32	5
Centropristis philadelphica	12.3	7.17	0.6	0.49	3	18.0	18.00	0.9	0.91	3	20.2	14.16	1.2	0.94	5
Ophidion holbrooki	0.0	0.00	0.0	0.00	3	4.0	4.00	0.7	0.73	3	5.4	2.68	0.5	0.25	5
Lagodon rhomboides	0.0	0.00	0.0	0.00	3	10.0	10.00	0.5	0.45	3	2.8	2.82	0.2	0.16	5
Squid	38.0	23.83	0.9	0.26	3	196.0	169.43	2.5	2.18	3	197.0	55.50	2.7	0.65	5

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

Summary of dominant organisms taken within statistical zone 10 during the June-July 1983 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 weight in kg per hour, the SEM of weight and the number (n) of samples taken. No samples were taken beyond 40 fm.

	21-30 fm					31-40 fm				
Species	Num	SEM	Wt	SEM	n	Num	SEM	Wt	SEM	n
Sicyonia brevirostris	8.5	4.74	0.3	0.22	6	0.0	0.00	0.0	0.00	3
Penaeus duorarum	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	3
Penaeus setiferus	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	3
Solenocera spp.	0.0	0.00	0.0	0.00	6	1.3	1.33	0.0	0.00	3
Trachypenaeus spp.	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	3
Portunus spinicarpus	1.6	1.61	0.0	0.03	6	0.0	0.00	0.0	0.00	3
Stenotomus caprinus	488.3	268.13	24.3	13.50	6	93.3	93.33	4.2	4.24	3
Prionotus salmonicolor	77.1	60.13	6.3	5.04	6	1.9	1.87	0.1	0.11	3
Syacium papillosum	27.9	10.97	2.0	0.68	6	5.7	2.85	0.3	0.15	3
Trachurus lathami	46.0	46.00	1.1	1.14	6	2.7	2.67	0.1	0.12	3
Prionotus scitulus	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	3
Centropristis philadelphica	6.8	4.26	0.6	0.43	6	14.6	12.75	1.0	0.88	3
Ophidion holbrooki	25.7	9.79	2.6	0.98	6	0.0	0.00	0.0	0.00	3
Lagodon rhomboides	19.5	9.58	1.1	0.51	6	2.7	2.67	0.2	0.24	3
Squid	49.3	22.85	1.7	0.66	6	32.6	31.69	0.5	0.47	3

Table 9c
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 1983 SEAMAP Shrimp and Bottomfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, and oxygen in ppm.

	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm*		
Environmental Category	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	39.4	7.09	3	26.4	15.77	3	14.0	3.93	5	58.5	15.92	6	10.8	9.15	3			
Total finfish kg	32.0	8.17	3	19.1	12.50	3	10.2	4.14	5	50.7	15.02	6	9.9	8.67	3			
Total crustacean kg	4.0	1.07	3	4.5	1.82	3	1.4	0.52	5	1.0	0.37	6	0.0	0.00	3			
Total others kg	3.3	2.42	3	4.5	1.82	3	2.4	0.70	5	6.6	4.18	6	0.9	0.53	3			
Surface temperature	24.3	0.00	4	26.8	1.11	3	26.4	0.31	4	27.1	0.43	5	27.0	0.55	3	27.5	0.00	2
Midwater temperature	23.1	0.00	1	26.2	0.92	3	24.0	0.84	4	24.0	0.40	5	23.1	0.48	3	23.3	0.30	2
Bottom temperature	22.5	0.00	1	22.9	1.09	3	21.5	0.58	4	21.3	0.55	5	20.2	0.54	3	20.5	0.50	2
Surface salinity	26.3	0.00	1	24.8	5.42	3	29.2	0.82	4	29.2	0.86	5	28.4	0.83	3	29.8	0.25	2
Midwater salinity	33.8	0.00	1	28.7	3.37	3	33.9	0.38	4	34.8	0.35	5	35.7	0.42	3	37.0	0.00	2
Bottom salinity	34.4	0.00	1	34.3	0.68	3	35.2	0.18	4	35.7	0.29	5	36.1	0.06	3	36.5	1.50	2
Surface oxygen	6.4	0.00	1	6.6	0.20	3	6.4	0.36	4	6.8	0.37	5	7.8	0.62	3	7.1	0.50	2
Midwater oxygen	5.7	0.00	1	6.1	0.18	3	6.6	0.37	4	6.4	0.34	5	7.6	0.33	3	7.4	0.10	2
Bottom oxygen	5.9	0.00	1	5.7	0.06	3	6.5	0.42	4	6.6	0.39	5	7.7	0.43	3	7.3	0.15	2

*Plankton and environmental stations only.

Table 10a
Statistical Zone 11
40-ft trawls

Summary of dominant organisms, combined for all zones, taken in shrimp statistical zone 11 during the June-July 1983 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 weight in kg per hour, the SEM of weight and the number (n) of samples taken. No samples were taken beyond 30 fm.

	0-5 fm					6-10 fm					11-20 fm				
Species	Num	SEM	Wt	SEM	n	Num	SEM	Wt	SEM	n	Num	SEM	Wt	SEM	n
Trachypenaeus spp.	1281.2	0.00	2.4	0.00	1	222.4	84.77	0.8	0.32	13	1802.8	425.38	8.6	1.93	36
Penaeus aztecus	42.4	0.00	0.5	0.00	1	254.4	104.58	2.4	0.80	13	26.4	5.37	0.4	0.07	36
Callinectes similis	511.8	0.00	1.8	0.00	1	39.7	27.62	0.3	0.23	13	62.0	48.62	0.7	0.30	36
Sicyonia dorsalis	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	13	67.0	27.80	0.1	0.05	36
Sicyonia brevirostris	0.0	0.00	0.0	0.00	1	10.3	10.31	0.1	0.07	13	126.6	35.49	1.0	0.28	36
Squilla spp.	176.5	0.00	1.6	0.00	1	61.5	35.88	0.4	0.16	13	101.2	20.95	1.3	0.28	36
Micropogonias undulatus	165.9	0.00	4.5	0.00	1	29.2	17.46	0.9	0.45	13	3.3	1.06	0.3	0.12	36
Stenotomus caprinus	0.0	0.00	0.0	0.00	1	84.6	47.26	0.6	0.31	13	144.1	47.25	1.1	0.49	36
Anchoa mitchilli	38.8	0.00	0.0	0.00	1	17.8	11.51	0.1	0.03	13	2.4	1.88	0.0	0.02	36
Polydactylus octonemus	0.0	0.00	0.0	0.00	1	2.5	2.30	0.1	0.07	13	0.0	0.00	0.0	0.00	36
Prionotus rubio	0.0	0.00	0.0	0.00	1	161.5	160.99	0.5	0.46	13	23.6	4.85	0.2	0.07	36
Trachurus lathami	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	13	3.3	1.07	0.0	0.02	36
Cynoscion arenarius	77.6	0.00	4.2	0.00	1	18.6	5.80	3.0	1.21	13	8.3	2.97	1.5	0.58	36
Centropristis philadelphica	151.8	0.00	0.5	0.00	1	109.8	56.08	0.5	0.23	13	14.8	3.85	0.2	0.05	36
Squid	285.9	0.00	1.0	0.00	1	30.1	12.24	0.2	0.07	13	56.7	15.98	1.3	0.37	36

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

Summary of dominant organisms, combined for all zones, taken in shrimp statistical zone 11 during the June-July 1983 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 weight in kg per hour, the SEM of weight and the number (n) of samples taken. No samples were taken beyond 30 fm.

	21-30 fm				
Species	Num	SEM	Wt	SEM	n
Trachypenaeus spp.	496.0	217.96	2.6	1.27	5
Penaeus aztecus	93.1	76.21	1.3	0.81	5
Callinectes similis	18.0	18.00	0.2	0.23	5
Sicyonia dorsalis	53.0	53.00	0.1	0.09	5
Sicyonia brevirostris	33.2	28.80	0.5	0.42	5
Squilla spp.	103.6	59.16	1.4	0.80	5
Micropogonias undulatus	31.6	30.52	5.3	5.22	5
Stenotomus caprinus	427.8	256.84	14.6	8.26	5
Anchoa mitchilli	0.0	0.00	0.0	0.00	5
Polydactylus octonemus	0.0	0.00	0.0	0.00	5
Prionotus rubio	25.7	19.11	0.4	0.24	5
Trachurus lathami	268.8	268.80	6.1	6.11	5
Cynoscion arenarius	54.8	50.57	3.4	2.73	5
Centropristis philadelphica	26.5	4.68	1.8	0.51	5
Squid	49.3	28.24	0.4	0.22	5

Table 10b
Statistical Zone 11
40-ft trawls

Summary of dominant organisms taken within statistical zone 11 during the June-July 1983 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 weight in kg per hour, the SEM of weight and the number (n) of samples taken. No samples were taken beyond 30 fm.

	0-5 fm					6-10 fm					11-20 fm				
Species	Num	SEM	Wt	SEM	n	Num	SEM	Wt	SEM	n	Num	SEM	Wt	SEM	n
Trachypenaeus spp.	1281.0	0.00	2.4	0.00	1	222.4	84.77	0.8	0.32	13	1802.8	425.38	8.6	1.93	36
Sicyonia brevirostris	0.0	0.00	0.0	0.00	1	10.3	10.31	0.1	0.07	13	126.6	35.49	1.0	0.28	36
Penaeus duorarum	10.6	0.00	0.0	0.00	1	118.0	37.69	1.7	0.48	13	78.8	11.85	1.6	0.26	36
Squilla spp.	176.5	0.00	1.6	0.00	1	61.5	35.88	0.4	0.16	13	101.2	20.95	1.3	0.28	36
Penaeus aztecus	42.4	0.00	0.5	0.00	1	254.4	104.58	2.4	0.80	13	26.4	5.37	0.4	0.07	36
Portunidae	0.0	0.00	0.0	0.00	1	112.8	100.94	0.4	0.29	13	12.0	12.00	0.1	0.07	36
Stenotomus caprinus	0.0	0.00	0.0	0.00	1	84.6	47.26	0.6	0.31	13	144.1	47.25	1.1	0.49	36
Halieutichthys aculeatus	0.0	0.00	0.0	0.00	1	0.6	0.47	0.0	0.04	13	82.5	22.71	0.6	0.13	36
Prionotus tribulus	105.9	0.00	1.3	0.00	1	150.8	59.68	1.3	0.47	13	12.1	3.69	0.2	0.04	36
Centropristis philadelphica	151.8	0.00	0.5	0.00	1	109.8	56.08	0.5	0.23	13	14.8	3.85	0.2	0.05	36
Etropus crossotus	3.5	0.00	0.2	0.00	1	23.6	10.00	0.4	0.18	13	37.8	9.15	0.4	0.09	36
Sphoeroides parvus	14.1	0.00	0.2	0.00	1	27.5	15.11	0.2	0.10	13	30.1	8.39	0.3	0.07	36
Trachurus lathami	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	13	3.3	1.07	0.0	0.02	36
Diplectrum bivittatum	0.0	0.00	0.0	0.00	1	2.9	2.92	0.1	0.07	13	35.3	5.56	1.1	0.18	36
Squid	285.9	0.00	1.0	0.00	1	30.1	12.24	0.2	0.07	13	56.7	15.98	1.3	0.37	36

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

Summary of dominant organisms taken within statistical zone 11 during the June-July 1983 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 weight in kg per hour, the SEM of weight and the number (n) of samples taken. No samples were taken beyond 30 fm.

	21-30 fm				
Species	Num	SEM	Wt	SEM	n
Trachypenaeus spp.	496.0	217.96	2.6	1.27	5
Sicyonia brevirostris	33.2	28.80	0.5	0.42	5
Penaeus duorarum	2.6	1.66	0.1	0.08	5
Squilla spp.	103.6	59.16	1.4	0.80	5
Penaeus aztecus	93.1	76.21	1.3	0.81	5
Portunidae	139.0	119.87	0.8	0.71	5
Stenotomus caprinus	427.8	256.84	14.6	8.26	5
Halieutichthys aculeatus	1.4	1.38	0.0	0.02	5
Prionotus tribulus	0.5	0.48	0.1	0.11	5
Centropristis philadelphica	26.5	4.68	1.8	0.51	5
Etropus crossotus	0.8	0.80	0.0	0.04	5
Sphoeroides parvus	26.4	22.51	0.3	0.17	5
Trachurus lathami	268.8	268.80	6.1	6.11	5
Diplectrum bivittatum	0.8	0.80	0.0	0.00	5
Squid	49.3	28.24	0.4	0.22	5

Table 10c
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 1983 SEAMAP Shrimp and Bottomfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, and oxygen in ppm.

	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm*		
Environmental Category	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	25.7	0.00	1	20.8	3.88	13	28.0	3.56	36	52.7	17.70	5			
Total finfish kg	16.0	0.00	1	12.5	2.77	13	11.6	1.32	36	43.5	15.33	5			
Total crustacean kg	8.0	0.00	1	8.0	1.65	13	14.9	2.47	36	8.2	3.09	5			
Total others kg	1.6	0.00	1	1.1	0.28	13	1.6	0.36	36	1.9	0.22	5			
Surface temperature	25.6	0.58	2	27.6	0.59	10	27.1	0.30	34	26.7	0.73	6	28.1	1.88	2
Midwater temperature	25.9	0.61	2	26.3	0.70	10	24.1	0.49	34	23.2	0.81	6	23.6	0.61	2
Bottom temperature	22.9	0.04	2	22.6	0.71	10	21.3	0.39	33	20.4	0.47	6	19.8	0.75	2
Surface salinity	13.6	7.57	2	17.5	1.62	10	18.9	0.64	34	23.4	1.35	6	18.4	5.41	2
Midwater salinity	17.4	6.45	2	23.5	2.21	10	32.0	0.53	34	35.3	0.68	6	36.1	0.05	2
Bottom salinity	31.7	0.32	2	34.0	0.64	10	35.3	0.18	34	35.9	0.30	6	36.9	0.02	2
Surface oxygen	9.3	0.90	2	8.3	0.50	10	8.1	0.31	34	9.6	0.73	6	13.0	2.75	2
Midwater oxygen	8.5	0.10	2	7.0	0.41	10	6.2	0.17	34	8.1	0.38	6	8.3	1.05	2
Bottom oxygen	4.4	1.45	2	3.8	0.23	10	4.9	0.19	32	7.0	0.47	6	6.1	1.10	2

*Plankton and environmental stations only.

Table 11a
Statistical Zone 13
40-ft trawls

Summary of dominant organisms, combined for all zones, taken in shrimp statistical zone 13 during the June-July 1983 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 weight in kg per hour, the SEM of weight and the number (n) of samples taken.

	0-5 fm					6-10 fm					11-20 fm				
Species	Num	SEM	Wt	SEM	n	Num	SEM	Wt	SEM	n	Num	SEM	Wt	SEM	n
Trachypenaeus spp.	0.0	0.00	0.0	0.0	1	170.4	170.36	0.6	0.63	2	289.8	143.16	1.7	0.93	4
Penaeus aztecus	0.0	0.00	0.0	0.0	1	4.3	4.29	0.1	0.10	2	23.7	7.28	0.4	0.10	4
Callinectes similis	0.0	0.00	0.0	0.0	1	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	4
Sicyonia dorsalis	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	4
Sicyonia brevirostris	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	4
Squilla spp.	0.0	0.00	0.0	0.00	1	7.5	7.50	0.1	0.10	2	183.7	67.63	1.4	0.50	4
Micropogonias undulatus	64.0	0.00	10.9	0.00	1	636.0	636.00	31.9	31.95	2	0.0	0.00	0.0	0.00	4
Stenotomus caprinus	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	2	114.2	113.64	1.4	1.40	4
Anchoa mitchilli	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	4
Polydactylus octonemus	0.0	0.00	0.0	0.00	1	1.7	1.71	0.1	0.08	2	5.2	5.17	0.2	0.24	4
Prionotus rubio	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	4
Trachurus lathami	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	4
Cynoscion arenarius	42.0	0.00	2.4	0.00	1	9.6	9.64	1.6	1.61	2	272.0	177.31	7.9	3.60	4
Centropristis philadelphica	0.0	0.00	0.0	0.00	1	2.1	2.14	0.1	0.10	2	140.1	139.50	1.9	1.87	4
Squid	0.0	0.00	0.0	0.00	1	6.0	6.00	0.1	0.12	2	7.5	7.50	0.5	0.45	4

Table 11a (cont'd.)
Statistical Zone 13
40-ft trawls

Summary of dominant organisms, combined for all zones, taken in shrimp statistical zone 13 during the June-July 1983 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 weight in kg per hour, the SEM of weight and the number (n) of samples taken.

	21-30 fm					31-40 fm					Over 40 fm				
Species	Num	SEM	Wt	SEM	n	Num	SEM	Wt	SEM	n	Num	SEM	Wt	SEM	n
Trachypenaeus spp.	718.9	344.63	2.8	1.26	4	117.4	117.35	0.7	0.72	2	120.0	0.00	0.7	0.00	1
Penaeus aztecus	8.7	3.70	0.2	0.06	4	0.9	0.88	0.0	0.04	2	14.5	0.00	0.6	0.00	1
Callinectes similis	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	1
Sicyonia dorsalis	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	1
Sicyonia brevirostris	33.8	33.75	0.3	0.28	4	62.6	62.65	0.2	0.20	2	0.0	0.00	0.0	0.00	1
Squilla spp.	150.0	56.96	1.5	0.99	4	39.6	9.64	0.4	0.17	2	6.2	0.00	0.1	0.00	1
Micropogonias undulatus	109.7	109.69	9.3	9.31	4	438.9	225.38	24.8	14.15	2	2104.1	0.00	106.1	0.00	1
Stenotomus caprinus	16.7	15.70	0.2	0.19	4	2.6	2.65	0.1	0.12	2	103.4	0.00	0.9	0.00	1
Anchoa mitchilli	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	1
Polydactylus octonemus	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	1
Prionotus rubio	0.5	0.47	0.0	0.02	4	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1
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	1
Cynoscion arenarius	10.3	6.00	0.9	0.64	4	10.7	10.71	0.5	0.49	2	0.0	0.00	0.0	0.00	1
Centropristis philadelphica	38.8	16.20	4.7	1.87	4	0.0	0.00	0.0	0.00	2	20.7	0.00	1.9	0.00	1
Squid	0.0	0.00	0.0	0.00	4	21.4	21.43	0.7	0.68	2	0.0	0.00	0.0	0.00	1

Table 11b
Statistical Zone 13
40-ft trawls

Summary of dominant organisms taken within statistical zone 13 during the June-July 1983 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 weight in kg per hour, the SEM of weight and the number (n) of samples taken.

	0-5 fm					6-10 fm					11-20 fm				
Species	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	170.4	170.36	0.6	0.63	2	289.8	143.16	1.7	0.93	4
Squilla spp.	0.0	0.00	0.0	0.00	1	7.5	7.50	0.1	0.10	2	183.7	67.63	1.4	0.50	4
Callinectes sapidus	0.0	0.00	0.0	0.00	1	12.9	12.86	0.2	0.24	2	66.1	49.29	1.3	0.87	4
Sicyonia brevirostris	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	4
Portunus spinicarpus	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	4
Penaeus aztecus	0.0	0.00	0.0	0.00	1	4.3	4.29	0.1	0.10	2	23.7	7.28	0.4	0.10	4
Micropogonias undulatus	64.0	0.00	10.9	0.00	1	636.0	636.00	31.9	31.95	2	0.0	0.00	0.0	0.00	4
Lepophidium graellsi	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	2	118.7	92.47	5.2	4.60	4
Cynoscion arenarius	42.0	0.00	2.4	0.00	1	9.6	9.64	1.6	1.61	2	272.0	177.31	7.9	3.60	4
Trichiurus lepturus	224.0	0.00	6.6	0.00	1	301.1	301.07	7.5	7.55	2	64.6	25.59	2.3	1.08	4
Prionotus roseus	0.0	0.00	0.0	0.00	1	25.1	22.93	0.8	0.65	2	222.2	120.29	2.5	0.78	4
Antennarius radiosus	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	2	23.0	20.55	0.4	0.30	4
Bollmannia communis	0.0	0.00	0.0	0.00	1	6.2	4.50	0.1	0.01	2	45.7	40.41	0.4	0.30	4
Centropristis philadelphica	0.0	0.00	0.0	0.00	1	2.1	2.14	0.1	0.10	2	140.1	139.50	1.9	1.87	4
Squid	0.0	0.00	0.0	0.00	1	6.0	6.00	0.1	0.12	2	7.5	7.50	0.5	0.45	4

Table 11b (cont'd.)
Statistical Zone 13
40-ft trawls

Summary of dominant organisms taken within statistical zone 13 during the June-July 1983 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 weight in kg per hour, the SEM of weight and the number (n) of samples taken.

	21-30 fm					31-40 fm					Over 40 fm				
Species	Num	SEM	Wt	SEM	n	Num	SEM	Wt	SEM	n	Num	SEM	Wt	SEM	n
Trachypenaeus spp.	718.9	344.63	2.8	1.26	4	117.4	117.35	0.7	0.72	2	120.0	0.00	0.7	0.00	1
Squilla spp.	150.0	56.96	1.5	0.99	4	39.6	9.64	0.4	0.17	2	6.2	0.00	0.1	0.00	1
Callinectes sapidus	21.8	11.21	1.0	0.51	4	7.1	3.59	0.0	0.04	2	2.1	0.00	0.1	0.00	1
Sicyonia brevirostris	33.8	33.75	0.3	0.28	4	62.6	62.65	0.2	0.20	2	0.0	0.00	0.0	0.00	1
Portunus spinicarpus	11.3	10.12	0.4	0.33	4	88.8	82.37	0.5	0.48	2	20.7	0.00	0.5	0.00	1
Penaeus aztecus	8.7	3.70	0.2	0.06	4	0.9	0.88	0.0	0.04	2	14.5	0.00	0.6	0.00	1
Micropogonias undulatus	109.7	109.69	9.3	9.31	4	438.9	225.38	24.8	14.15	2	2104.1	0.00	106.1	0.00	1
Lepophidium graellsi	187.9	111.72	11.1	6.99	4	12.5	8.95	0.6	0.41	2	0.0	0.00	0.0	0.00	1
Cynoscion arenarius	10.3	6.00	0.9	0.64	4	10.7	10.71	0.5	0.49	2	0.0	0.00	0.0	0.00	1
Trichiurus lepturus	13.4	7.39	0.5	0.25	4	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1
Prionotus roseus	29.9	18.33	0.3	0.20	4	10.7	10.71	0.5	0.49	2	20.7	0.00	0.9	0.00	1
Antennarius radiosus	140.8	74.24	1.1	0.63	4	64.2	42.98	0.6	0.41	2	20.7	0.00	0.9	0.00	1
Bollmannia communis	131.4	55.95	1.1	0.34	4	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1
Centropristis philadelphica	38.8	16.20	4.7	1.87	4	0.0	0.00	0.0	0.00	2	20.7	0.00	1.9	0.00	1
Squid	0.0	0.00	0.0	0.00	4	21.4	21.43	0.7	0.68	2	0.0	0.00	0.0	0.00	1

Table 11c
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 June-July 1983 SEAMAP Shrimp and Bottomfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, and oxygen in ppm.

	0-5 fm*			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm		
Environmental Category	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	80.0	0.00	1	50.4	26.01	2	41.7	8.55	4	50.5	19.58	4	34.1	15.61	2	120.4	0.00	1
Total finfish kg	80.0	0.00	1	48.1	26.69	2	35.6	8.42	4	44.1	20.32	4	31.5	16.24	2	118.5	0.00	1
Total crustacean kg	0.0	0.00	1	1.9	1.07	2	5.7	1.43	4	6.2	2.09	4	2.1	1.12	2	1.9	0.00	1
Total others kg	0.0	0.00	1	0.4	0.39	2	0.5	0.45	4	0.2	0.21	4	0.5	0.49	2	0.0	0.00	1
Surface temperature				28.7	0.90	2	27.9	0.20	4	27.3	0.15	5	28.8	0.00	1	27.2	0.05	2
Midwater temperature				27.0	1.75	2	26.4	0.38	4	25.3	0.45	5	23.6	0.00	1	20.4	0.25	2
Bottom temperature				26.0	0.65	2	22.5	1.04	4	20.4	0.57	5	20.0	0.00	1	18.7	0.10	2
Surface salinity				10.3	0.75	2	10.3	0.48	4	11.5	0.48	5	12.0	0.00	1	19.9	7.90	2
Midwater salinity				18.8	7.75	2	23.4	4.32	4	32.3	0.66	5	35.0	0.00	1	35.5	0.50	2
Bottom salinity				24.0	8.00	2	34.1	0.43	4	36.0	0.05	5	35.0	0.00	1	36.1	0.10	2
Surface oxygen				7.4	1.35	2	7.7	0.66	4	7.6	0.58	5	6.8	0.00	1	7.5	0.40	2
Midwater oxygen				6.2	0.95	2	6.0	0.09	4	6.1	0.23	5	5.4	0.00	1	6.9	0.25	2
Bottom oxygen				4.9	0.15	2	5.9	0.17	4	5.8	0.19	5	5.0	0.00	1	5.9	1.25	2

*No environmental data available.

Table 12a
Statistical Zone 14
40-ft trawls

Summary of dominant organisms, combined for all zones, taken in shrimp statistical zone 14 during the June-July 1983 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 weight in kg per hour, the SEM of weight and the number (n) of samples taken.

	0-5 fm					6-10 fm					11-20 fm				
Species	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	23.6	10.37	0.1	0.03	15	1483.1	767.89	7.1	3.48	13
Penaeus aztecus	180.0	0.00	1.5	0.00	1	56.6	11.81	0.8	0.14	15	16.4	7.95	0.4	0.14	13
Callinectes similis	0.0	0.00	0.0	0.00	1	27.7	11.42	0.3	0.10	15	20.1	10.54	1.0	0.76	13
Sicyonia dorsalis	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	15	0.0	0.00	0.0	0.00	13
Sicyonia brevirostris	0.0	0.00	0.0	0.00	1	1.1	1.05	0.0	0.01	15	10.8	7.59	0.1	0.06	13
Squilla spp.	0.0	0.00	0.0	0.00	1	7.2	3.37	0.1	0.02	15	127.8	51.84	1.6	0.78	13
Micropogonias undulatus	0.0	0.00	0.0	0.00	1	1332.5	360.98	35.2	8.86	15	1.4	0.94	0.0	0.03	13
Stenotomus caprinus	0.0	0.00	0.0	0.00	1	70.4	36.25	0.4	0.19	15	1692.0	846.17	9.1	2.79	13
Anchoa mitchilli	0.0	0.00	0.0	0.00	1	15.3	14.75	0.0	0.04	15	1.4	1.36	0.0	0.00	13
Polydactylus octonemus	240.0	0.00	6.4	0.00	1	63.6	17.08	1.3	0.36	15	0.0	0.00	0.0	0.00	13
Prionotus rubio	0.0	0.00	0.0	0.00	1	251.9	118.37	2.9	1.20	15	49.9	39.95	0.4	0.28	13
Trachurus lathami	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	15	7.1	5.75	0.2	0.17	13
Cynoscion arenarius	220.0	0.00	10.0	0.00	1	27.2	6.95	3.0	0.83	15	5.0	2.94	0.3	0.28	13
Centropristis philadelphica	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	15	21.0	7.32	0.6	0.29	13
Squid	0.0	0.00	0.0	0.00	1	27.1	7.64	1.1	0.39	15	47.4	27.38	1.2	0.66	13

Table 12a (cont'd.)
Statistical Zone 14
40-ft trawls

Summary of dominant organisms, combined for all zones, taken in shrimp statistical zone 14 during the June-July 1983 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 weight in kg per hour, the SEM of weight and the number (n) of samples taken.

	21-30 fm					31-40 fm					Over 40 fm				
Species	Num	SEM	Wt	SEM	n	Num	SEM	Wt	SEM	n	Num	SEM	Wt	SEM	n
Trachypenaeus spp.	217.3	69.89	1.1	0.34	6	510.9	510.91	1.8	1.82	2	0.0	0.00	0.0	0.00	1
Penaeus aztecus	12.5	7.33	0.5	0.27	6	6.8	3.18	0.5	0.37	2	0.0	0.00	0.0	0.00	1
Callinectes similis	3.1	3.10	0.2	0.19	6	18.2	18.18	0.2	0.21	2	20.0	0.00	0.2	0.00	1
Sicyonia dorsalis	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1
Sicyonia brevirostris	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1
Squilla spp.	21.3	9.37	0.5	0.23	6	7.4	5.36	0.1	0.00	2	0.0	0.00	0.0	0.00	1
Micropogonias undulatus	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1
Stenotomus caprinus	347.5	182.58	3.0	1.50	6	126.0	126.00	1.5	1.45	2	254.0	0.00	1.9	0.00	1
Anchoa mitchilli	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1
Polydactylus octonemus	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1
Prionotus rubio	0.9	0.91	0.0	0.02	6	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1
Trachurus lathami	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1
Cynoscion arenarius	1.6	0.92	0.3	0.12	6	9.1	9.09	0.4	0.41	2	0.0	0.00	0.0	0.00	1
Centropristis philadelphica	24.6	6.84	0.5	0.21	6	9.1	9.09	0.4	0.41	2	0.0	0.00	0.0	0.00	1
Squid	8.8	5.91	0.5	0.31	6	33.6	33.64	2.9	2.93	2	0.0	0.00	0.0	0.00	1

Table 12b
Statistical Zone 14
40-ft trawls

Summary of dominant organisms taken within statistical zone 14 during the June-July 1983 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 weight in kg per hour, the SEM of weight and the number (n) of samples taken.

	0-5 fm					6-10 fm					11-20 fm				
Species	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	23.6	10.37	0.1	0.03	15	1483.1	767.89	7.1	3.48	13
Squilla spp.	0.0	0.00	0.0	0.00	1	7.2	3.37	0.1	0.02	15	127.8	51.84	1.6	0.78	13
Penaeus aztecus	180.0	0.00	1.5	0.00	1	56.6	11.81	0.8	0.14	15	16.4	7.95	0.4	0.14	13
Penaeus setiferus	44.0	0.00	1.2	0.00	1	63.2	14.27	2.7	0.61	15	2.7	0.95	0.2	0.05	13
Callinectes similis	0.0	0.00	0.0	0.00	1	27.7	11.42	0.3	0.10	15	20.1	10.54	1.0	0.76	13
Callinectes sapidus	24.0	0.00	0.9	0.00	1	3.6	1.92	0.1	0.04	15	11.2	4.05	0.3	0.13	13
Stenotomus caprinus	0.0	0.00	0.0	0.00	1	70.4	36.25	0.4	0.19	15	1692.0	846.17	9.1	2.79	13
Micropogonias undulatus	0.0	0.00	0.0	0.00	1	1332.5	360.98	35.2	8.86	15	1.4	0.94	0.0	0.03	13
Prionotus rubio	0.0	0.00	0.0	0.00	1	251.9	118.37	2.9	1.20	15	49.9	39.95	0.4	0.28	13
Decapterus punctatus	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	15	5.6	2.13	0.4	0.16	13
Leiostomus xanthurus	400.0	0.00	9.1	0.00	1	135.4	62.43	7.2	3.07	15	0.5	0.54	0.0	0.05	13
Prionotus roseus	40.0	0.00	0.2	0.00	1	85.4	85.40	0.7	0.69	15	13.3	5.00	0.2	0.09	13
Chloroscombrus chrysurus	0.0	0.00	0.0	0.00	1	93.9	64.83	4.2	2.78	15	9.5	7.51	0.6	0.43	13
Polydactylus octonemus	240.0	0.00	6.4	0.00	1	63.6	17.08	1.3	0.36	15	0.0	0.00	0.0	0.00	13
Squid	0.0	0.00	0.0	0.00	1	27.1	7.64	1.1	0.39	15	47.4	27.38	1.2	0.66	13

Table 12b (cont'd.)
Statistical Zone 14
40-ft trawls

Summary of dominant organisms taken within statistical zone 14 during the June-July 1983 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 weight in kg per hour, the SEM of weight and the number (n) of samples taken.

	21-30 fm					31-40 fm					Over 40 fm				
Species	Num	SEM	Wt	SEM	n	Num	SEM	Wt	SEM	n	Num	SEM	Wt	SEM	n
Trachypenaeus spp.	217.3	69.89	1.1	0.34	6	510.9	510.91	1.8	1.82	2	0.0	0.00	0.0	0.00	1
Squilla spp.	21.3	9.37	0.5	0.23	6	7.4	5.36	0.1	0.00	2	0.0	0.00	0.0	0.00	1
Penaeus aztecus	12.5	7.33	0.5	0.27	6	6.8	3.18	0.5	0.37	2	0.0	0.00	0.0	0.00	1
Penaeus setiferus	0.3	0.32	0.0	0.01	6	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1
Callinectes similis	3.1	3.10	0.2	0.19	6	18.2	18.18	0.2	0.21	2	20.0	0.00	0.2	0.00	1
Callinectes sapidus	4.7	2.09	0.1	0.05	6	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1
Stenotomus caprinus	347.5	182.58	3.0	1.50	6	126.0	126.00	1.5	1.45	2	254.0	0.00	1.9	0.00	1
Micropogonias undulatus	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1
Prionotus rubio	0.9	0.91	0.0	0.02	6	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1
Decapterus punctatus	87.8	36.77	4.4	1.24	6	890.0	890.00	16.8	16.78	2	0.0	0.00	0.0	0.00	1
Leiostomus xanthurus	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1
Prionotus roseus	36.6	21.88	0.6	0.30	6	2.0	2.00	0.0	0.05	2	248.0	0.00	0.6	0.00	1
Chloroscombrus chrysurus	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1
Polydactylus octonemus	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1
Squid	8.8	5.91	0.5	0.31	6	33.6	33.64	2.9	2.93	2	0.0	0.00	0.0	0.00	1

Table 12c
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 1983 SEAMAP Shrimp and Bottomfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, and oxygen in ppm.

	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm		
Environmental Category	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	39.1	0.00	1	68.1	13.10	15	29.5	7.29	13	21.0	2.21	6	27.1	20.79	2	5.5	0.00	1
Total finfish kg	35.5	0.00	1	62.9	12.64	15	17.1	4.62	13	17.6	1.87	6	21.7	16.28	2	4.5	0.00	1
Total crustacean kg	3.6	0.00	1	4.1	0.65	15	7.5	2.77	13	2.7	0.62	6	2.5	1.61	2	0.9	0.00	1
Total others kg	0.0	0.00	1	1.4	0.36	15	1.2	0.65	13	0.7	0.27	6	2.9	2.89	2	0.0	0.00	1
Surface temperature	29.0	0.00	1	27.9	0.23	11	27.3	0.22	12	26.8	0.12	6	27.2	0.17	3	26.6	0.00	1
Midwater temperature	28.0	0.00	1	26.5	0.18	11	26.1	0.18	12	25.0	0.99	6	23.0	1.04	3	22.5	0.00	1
Bottom temperature	28.2	0.00	1	25.9	0.18	11	23.2	0.61	12	20.8	0.29	6	19.5	0.26	3	19.3	0.00	1
Surface salinity	23.9	0.00	1	18.3	1.34	11	25.6	2.87	12	35.2	0.38	6	35.7	0.33	3	36.0	0.00	1
Midwater salinity	23.7	0.00	1	22.8	0.51	11	32.2	1.51	12	34.4	1.29	6	35.7	0.33	3	36.0	0.00	1
Bottom salinity	25.3	0.00	1	27.1	1.04	11	35.1	0.49	12	35.9	0.08	6	36.0	0.00	3	36.0	0.00	1
Surface oxygen	7.2	0.00	1	8.6	0.41	6	7.7	0.45	12	6.9	0.35	6	6.8	0.45	3	7.2	0.00	1
Midwater oxygen	7.1	0.00	1	7.4	0.55	5	7.1	0.32	12	7.1	0.30	6	7.4	0.35	3	7.7	0.00	1
Bottom oxygen	6.1	0.00	1	6.4	0.69	9	5.8	0.43	12	6.6	0.31	6	5.5	0.88	3	6.7	0.00	1

Table 13a
Statistical Zone 15
40-ft trawls

Summary of dominant organisms, combined for all zones, taken in shrimp statistical zone 15 during the June-July 1983 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 weight in kg per hour, the SEM of weight and the number (n) of samples taken. No samples were taken beyond 20 fm.

	0-5 fm					6-10 fm					11-20 fm				
Species	Num	SEM	Wt	SEM	n	Num	SEM	Wt	SEM	n	Num	SEM	Wt	SEM	n
Trachypenaeus spp.	15.0	0.00	0.0	0.00	1	48.2	21.01	0.4	0.21	5	801.9	220.02	4.6	1.48	10
Penaeus aztecus	135.0	0.00	2.0	0.00	1	16.5	11.19	0.4	0.25	5	53.1	12.25	1.4	0.29	10
Callinectes similis	0.0	0.00	0.0	0.00	1	26.4	25.90	0.9	0.81	5	7.1	2.58	0.1	0.03	10
Sicyonia dorsalis	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	5	7.2	3.21	0.1	0.04	10
Sicyonia brevirostris	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	5	3.5	3.18	0.1	0.05	10
Squilla spp.	0.0	0.00	0.0	0.00	1	122.7	121.83	1.0	1.00	5	45.6	9.82	0.5	0.14	10
Micropogonias undulatus	55235.0	0.00	1216.1	0.00	1	7964.9	5275.90	217.8	139.53	5	42.6	40.99	1.1	0.97	10
Stenotomus caprinus	0.0	0.00	0.0	0.00	1	3.1	2.10	0.0	0.00	5	1634.9	402.04	7.6	1.91	10
Anchoa mitchilli	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	5	4.6	3.79	0.0	0.02	10
Polydactylus octonemus	105.0	0.00	1.6	0.00	1	125.9	60.67	2.0	0.75	5	103.6	63.87	1.3	0.76	10
Prionotus rubio	90.0	0.00	1.4	0.00	1	28.7	25.34	0.9	0.80	5	10.9	3.78	0.2	0.07	10
Trachurus lathami	0.0	0.00	0.0	0.00	1	56.3	56.25	1.3	1.30	5	2.0	2.00	0.1	0.07	10
Cynoscion arenarius	35.0	0.00	1.8	0.00	1	35.7	34.83	5.2	4.90	5	5.2	2.39	0.7	0.21	10
Centropristis philadelphica	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	5	64.1	15.57	1.0	0.31	10
Squid	0.0	0.00	0.0	0.00	1	39.8	24.68	1.0	0.59	5	36.4	11.22	1.0	0.22	10

Table 13b
Statistical Zone 15
40-ft trawls

Summary of dominant organisms taken within statistical zone 15 during the June-July 1983 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 weight in kg per hour, the SEM of weight and the number (n) of samples taken. No samples were taken beyond 20 fm.

	0-5 fm					6-10 fm					11-20 fm				
Species	Num	SEM	Wt	SEM	n	Num	SEM	Wt	SEM	n	Num	SEM	Wt	SEM	n
Trachypenaeus spp.	15.0	0.00	0.0	0.00	1	48.2	21.01	0.4	0.21	5	801.9	220.02	4.6	1.48	10
Squilla spp.	0.1	0.00	0.0	0.00	1	122.7	121.83	1.0	1.00	5	45.6	9.82	0.5	0.14	10
Penaeus aztecus	135.0	0.00	2.0	0.00	1	16.5	11.19	0.4	0.25	5	53.1	12.25	1.4	0.29	10
Callinectes similis	0.0	0.00	0.0	0.00	1	26.4	25.90	0.9	0.81	5	7.1	2.58	0.1	0.03	10
Penaeus setiferus	70.0	0.00	2.7	0.00	1	17.3	8.34	1.0	0.43	5	3.8	1.96	0.2	0.11	10
Sicyonia dorsalis	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	5	7.2	3.21	0.1	0.04	10
Micropogonias undulatus	55235.0	0.00	1216.1	0.00	1	7964.9	5275.90	217.8	139.53	5	42.6	40.99	1.1	0.97	10
Stenotomus caprinus	0.0	0.00	0.0	0.00	1	3.1	2.10	0.0	0.00	5	1634.9	402.04	7.6	1.91	10
Peprilus burti	15.0	0.00	1.1	0.00	1	922.1	909.50	32.2	31.12	5	3.7	2.02	0.1	0.06	10
Polydactylus octonemus	105.0	0.00	1.6	0.00	1	125.9	60.67	2.0	0.75	5	103.6	63.87	1.3	0.76	10
Centropristis philadelphica	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	5	64.1	15.57	1.0	0.31	10
Chloroscombrus chrysurus	55.0	0.00	1.1	0.00	1	44.7	19.48	2.6	1.07	5	16.0	10.65	0.6	0.40	10
Leiostomus xanthurus	15.0	0.00	1.6	0.00	1	84.5	53.00	11.8	8.73	5	0.0	0.00	0.0	0.00	10
Synodus foetens	0.0	0.00	0.0	0.00	1	4.4	2.58	0.2	0.09	5	28.7	6.54	1.9	0.47	10
Squid	0.0	0.00	0.0	0.00	1	39.8	24.68	1.0	0.59	5	36.4	11.22	1.0	0.22	10

Table 13c
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 June-July 1983 SEAMAP Shrimp and Bottomfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, and oxygen in ppm.

	0-5 fm			6-10 fm			11-20 fm			21-30 fm*			31-40 fm			Over 40 fm*		
Environmental Category	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	1234.1	0.00	1	290.7	165.46	5	27.0	2.26	10									
Total finfish kg	1229.5	0.00	1	285.9	164.13	5	18.5	2.97	10									
Total crustacean kg	4.5	0.00	1	4.0	2.41	5	7.3	1.71	10									
Total others kg	0.0	0.00	1	1.3	0.64	5	1.5	0.28	10									
Surface temperature	28.7	0.72	6	27.2	0.27	5	27.0	0.14	10	27.0	0.46	2				26.8	0.00	1
Midwater temperature	28.3	0.55	6	27.0	0.13	5	26.5	0.14	10	25.8	0.81	2				25.0	0.00	1
Bottom temperature	28.1	0.47	6	27.0	0.09	5	25.0	0.50	10	22.2	0.98	2				20.9	0.00	1
Surface salinity	23.8	1.69	6	28.7	1.92	5	34.5	0.32	10	35.8	0.02	2				35.6	0.00	1
Midwater salinity	24.0	1.55	6	29.9	1.55	5	35.2	0.27	10	36.0	0.16	2				36.1	0.00	1
Bottom salinity	26.5	0.88	6	31.4	1.44	5	35.9	0.22	10	36.2	0.03	2				36.4	0.00	1
Surface oxygen	8.3	0.37	6	8.7	0.23	5	9.1	0.30	9	9.4	1.15	2				9.1	0.00	1
Midwater oxygen	7.7	0.61	6	8.7	0.30	5	8.8	0.26	9	7.8	0.00	1				9.1	0.00	1
Bottom oxygen	6.7	0.73	6	7.9	0.24	5	8.2	0.26	9	4.3	0.00	1				4.6	0.00	1

*Plankton and environmental stations only.

Table 14a
Statistical Zone 16
40-ft trawls

Summary of dominant organisms, combined for all zones, taken in shrimp statistical zone 16 during the June-July 1983 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 weight in kg per hour, the SEM of weight and the number (n) of samples taken.

	0-5 fm					6-10 fm					11-20 fm				
Species	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	78.0	57.80	0.5	0.25	5	687.0	332.96	3.3	1.52	10
Penaeus aztecus	46.2	0.00	0.8	0.00	1	41.6	22.56	0.8	0.31	5	50.0	13.35	1.3	0.30	10
Callinectes similis	0.0	0.00	0.0	0.00	1	31.9	26.85	0.3	0.27	5	17.1	6.15	0.3	0.09	10
Sicyonia dorsalis	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	5	12.7	5.57	0.0	0.02	10
Sicyonia brevirostris	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	5	16.2	6.29	0.2	0.07	10
Squilla spp.	0.0	0.00	0.0	0.00	1	26.1	10.98	0.3	0.13	5	52.2	18.08	0.6	0.20	10
Micropogonias undulatus	4518.5	0.00	190.5	0.00	1	2671.5	1981.10	74.5	57.25	5	0.0	0.00	0.0	0.00	10
Stenotomus caprinus	0.0	0.00	0.0	0.00	1	336.4	326.50	2.4	2.20	5	1106.8	371.03	6.8	2.20	10
Anchoa mitchilli	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	10
Polydactylus octonemus	161.5	0.00	2.3	0.00	1	138.0	66.75	2.1	0.94	5	31.5	19.12	0.8	0.46	10
Prionotus rubio	0.0	0.00	0.0	0.00	1	53.6	49.66	0.8	0.75	5	4.7	2.00	0.2	0.07	10
Trachurus lathami	0.0	0.00	0.0	0.00	1	1.9	1.89	0.1	0.06	5	41.4	18.20	0.7	0.22	10
Cynoscion arenarius	101.5	0.00	10.9	0.00	1	21.1	14.58	2.0	1.21	5	4.2	3.39	0.5	0.39	10
Centropristis philadelphica	0.0	0.00	0.0	0.00	1	2.4	1.45	0.0	0.05	5	27.9	9.97	0.9	0.31	10
Squid	78.5	0.00	2.3	0.00	1	12.6	5.71	0.3	0.17	5	17.2	8.90	0.6	0.42	10

Table 14a (cont'd.)
Statistical Zone 16
40-ft trawls

Summary of dominant organisms, combined for all zones, taken in shrimp statistical zone 16 during the June-July 1983 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 weight in kg per hour, the SEM of weight and the number (n) of samples taken.

	21-30 fm					31-40 fm					Over 40 fm				
Species	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	2	0.0	0.00	0.0	0.00	1
Penaeus aztecus						38.4	10.70	3.0	0.93	2	5.5	0.00	0.5	0.00	1
Callinectes similis						0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1
Sicyonia dorsalis						0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1
Sicyonia brevirostris						2.7	2.73	0.0	0.00	2	0.0	0.00	0.0	0.00	1
Squilla spp.						0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1
Micropogonias undulatus						0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1
Stenotomus caprinus						580.9	79.09	30.4	3.15	2	480.0	0.00	21.1	0.00	1
Anchoa mitchilli						0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1
Polydactylus octonemus						0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1
Prionotus rubio						5.0	0.42	0.6	0.39	2	5.5	0.00	0.5	0.00	1
Trachurus lathami						0.0	0.00	0.0	0.00	2	16.4	0.00	0.2	0.00	1
Cynoscion arenarius						4.6	4.62	1.3	1.26	2	0.0	0.00	0.0	0.00	1
Centropristis philadelphica						58.3	20.14	4.6	2.12	2	76.4	0.00	5.7	0.00	1
Squid						0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1

Table 14b
Statistical Zone 16
40-ft trawls

Summary of dominant organisms taken within statistical zone 16 during the June-July 1983 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 weight in kg per hour, the SEM of weight and the number (n) of samples taken.

	0-5 fm					6-10 fm					11-20 fm				
Species	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	78.0	57.80	0.5	0.25	5	687.0	332.96	3.3	1.52	10
Penaeus aztecus	46.2	0.00	0.8	0.00	1	41.6	22.56	0.8	0.31	5	50.0	13.35	1.3	0.30	10
Squilla spp.	0.0	0.00	0.0	0.00	1	26.1	10.98	0.3	0.13	5	52.2	18.08	0.6	0.20	10
Callinectes similis	0.0	0.00	0.0	0.00	1	31.9	26.85	0.3	0.27	5	17.1	6.15	0.3	0.09	10
Sicyonia brevirostris	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	5	16.2	6.29	0.2	0.07	10
Sicyonia dorsalis	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	5	12.7	5.57	0.0	0.02	10
Stenotomus caprinus	0.0	0.00	0.0	0.00	1	336.4	326.50	2.4	2.20	5	1106.8	371.03	6.8	2.20	10
Micropogonias undulatus	4518.5	0.00	190.5	0.00	1	2671.5	1981.10	74.5	57.25	5	0.0	0.00	0.0	0.00	10
Polydactylus octonemus	161.5	0.00	2.3	0.00	1	138.0	66.75	2.1	0.94	5	31.5	19.12	0.8	0.46	10
Diplectrum bivittatum	0.0	0.00	0.0	0.00	1	2.5	2.53	0.1	0.09	5	50.0	14.83	1.6	0.45	10
Centropristis philadelphica	0.0	0.00	0.0	0.00	1	2.4	1.45	0.0	0.05	5	27.9	9.97	0.9	0.31	10
Upeneus parvus	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	5	14.6	13.42	0.2	0.17	10
Trachurus lathami	0.0	0.00	0.0	0.00	1	1.9	1.89	0.1	0.06	5	41.4	18.20	0.7	0.22	10
Pristipomoides aquilonaris	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	5	11.8	9.76	0.3	0.25	10
Squid	78.5	0.00	2.3	0.00	1	12.6	5.71	0.3	0.17	5	17.2	8.90	0.6	0.42	10

Table 14b (cont'd.)
Statistical Zone 16
40-ft trawls

Summary of dominant organisms taken within statistical zone 16 during the June-July 1983 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 weight in kg per hour, the SEM of weight and the number (n) of samples taken.

	21-30 fm					31-40 fm					Over 40 fm				
Species	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	2	0.0	0.00	0.0	0.00	1
Penaeus aztecus						38.4	10.70	3.0	0.93	2	5.5	0.00	0.5	0.00	1
Squilla spp.						0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1
Callinectes similis						0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1
Sicyonia brevirostris						2.7	2.73	0.0	0.00	2	0.0	0.00	0.0	0.00	1
Sicyonia dorsalis						0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1
Stenotomus caprinus						580.9	79.09	30.4	3.15	2	480.0	0.00	21.1	0.00	1
Micropogonias undulatus						0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1
Polydactylus octonemus						0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1
Diplectrum bivittatum						0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1
Centropristis philadelphica						58.3	20.14	4.6	2.12	2	76.4	0.00	5.7	0.00	1
Upeneus parvus						39.2	20.77	2.0	0.96	2	103.6	0.00	3.7	0.00	1
Trachurus lathami						0.0	0.00	0.0	0.00	2	16.4	0.00	0.2	0.00	1
Pristipomoides aquilonaris						92.9	54.76	7.3	4.28	2	49.1	0.00	3.2	0.00	1
Squid						0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1

Table 14c
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 1983 SEAMAP Shrimp and Bottomfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, and oxygen in ppm.

	0-5 fm			6-10 fm			11-20 fm			21-30 fm*			31-40 fm			Over 40 fm		
Environmental Category	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	245.5	0.00	1	89.2	58.87	5	27.2	5.85	10				71.7	12.21	2	62.0	0.00	1
Total finfish kg	241.3	0.00	1	86.8	57.96	5	20.7	4.21	10				68.2	13.64	2	57.0	0.00	1
Total crustacean kg	2.1	0.00	1	3.2	0.70	5	5.8	2.02	10				3.5	1.43	2	0.0	0.00	1
Total others kg	2.1	0.00	1	1.2	0.51	5	1.5	0.52	10				1.0	1.05	2	0.0	0.00	1
Surface temperature	28.5*	0.26	5	27.9	0.18	7	27.1	0.08	11	27.7	0.45	3	28.2	0.00	1	27.5	0.17	4
Midwater temperature	28.3	0.22	5	27.8	0.17	7	26.8	0.11	11	23.9	1.76	3	24.6	0.00	1	22.9	0.41	4
Bottom temperature	27.8	0.29	5	26.5	0.30	7	24.3	0.32	11	21.6	0.58	3	19.9	0.00	1	19.3	0.30	4
Surface salinity	16.4	2.70	4	23.8	2.28	7	34.2	0.62	11	36.1	0.03	3	35.8	0.00	1	36.0	0.05	4
Midwater salinity	18.6	2.35	4	26.8	2.03	7	34.7	0.48	11	34.1	1.81	3	35.0	0.00	1	36.2	0.07	4
Bottom salinity	22.2	2.10	4	32.0	1.12	7	35.7	0.11	11	33.9	2.22	3	36.4	0.00	1	36.4	0.04	4
Surface oxygen	7.0	0.52	5	8.1	0.29	7	6.9	0.14	11	7.6	0.70	3	7.0	0.00	1	7.2	0.79	4
Midwater oxygen	7.0	0.47	5	6.8	0.56	7	6.7	0.09	11	8.0	0.76	3	6.7	0.00	1	7.0	0.06	3
Bottom oxygen	5.7	0.71	5	4.6	0.83	7	4.9	0.52	11	7.0	0.50	3	5.3	0.00	1	5.1	0.24	3

*Plankton and environmental stations only.

Table 15a
Statistical Zone 17
40-ft trawls

Summary of dominant organisms, combined for all zones, taken in shrimp statistical zone 17 during the June-July 1983 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 weight in kg per hour, the SEM of weight and the number (n) of samples taken.

	0-5 fm					6-10 fm					11-20 fm				
Species	Num	SEM	Wt	SEM	n	Num	SEM	Wt	SEM	n	Num	SEM	Wt	SEM	n
Trachypenaeus spp.	15.0	0.00	0.2	0.00	1	25.6	17.23	0.1	0.08	5	159.2	105.75	1.2	0.74	10
Penaeus aztecus	303.8	0.00	2.0	0.00	1	49.9	45.23	0.8	0.67	5	39.3	18.07	1.2	0.54	10
Callinectes similis	120.0	0.00	0.5	0.00	1	50.6	20.10	0.4	0.18	5	13.8	7.21	0.6	0.38	10
Sicyonia dorsalis	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	5	32.8	22.58	0.1	0.11	10
Sicyonia brevirostris	0.0	0.00	0.0	0.00	1	0.8	0.75	0.0	0.00	5	71.6	25.30	1.0	0.35	10
Squilla spp.	0.0	0.00	0.0	0.00	1	123.8	62.53	1.3	0.67	5	38.5	26.28	0.6	0.39	10
Micropogonias undulatus	9742.5	0.00	141.8	0.00	1	618.6	605.65	16.9	16.56	5	0.3	0.32	0.0	0.03	10
Stenotomus caprinus	0.0	0.00	0.0	0.00	1	36.3	31.55	0.4	0.33	5	167.2	65.30	1.2	0.42	10
Anchoa mitchilli	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	10
Polydactylus octonemus	165.0	0.00	2.0	0.00	1	14.7	8.25	0.4	0.24	5	0.3	0.32	0.0	0.01	10
Prionotus rubio	0.0	0.00	0.0	0.00	1	20.1	8.26	0.2	0.08	5	26.2	23.80	0.4	0.27	10
Trachurus lathami	0.0	0.00	0.0	0.00	1	11.2	8.94	0.3	0.29	5	125.8	62.75	2.0	1.01	10
Cynoscion arenarius	0.0	0.00	0.0	0.00	1	1.0	1.00	0.1	0.09	5	0.6	0.63	0.1	0.07	10
Centropristis philadelphica	0.0	0.00	0.0	0.00	1	10.2	10.15	0.1	0.13	5	5.0	2.21	0.3	0.21	10
Squid	15.0	0.00	0.5	0.00	1	0.8	0.75	0.0	0.03	5	64.5	23.48	2.1	1.00	10

Table 15a (cont'd.)
Statistical Zone 17
40-ft trawls

Summary of dominant organisms, combined for all zones, taken in shrimp statistical zone 17 during the June-July 1983 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 weight in kg per hour, the SEM of weight and the number (n) of samples taken.

	21-30 fm					31-40 fm					Over 40 fm				
Species	Num	SEM	Wt	SEM	n	Num	SEM	Wt	SEM	n	Num	SEM	Wt	SEM	n
Trachypenaeus spp.	40.6	30.65	0.3	0.20	7	9.5	2.47	0.0	0.00	2	0.0	0.00	0.0	0.00	1
Penaeus aztecus	30.1	9.49	1.5	0.55	7	38.5	14.47	2.8	0.84	2	0.0	0.00	0.0	0.00	1
Callinectes similis	2.3	2.34	0.1	0.11	7	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1
Sicyonia dorsalis	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	1
Sicyonia brevirostris	70.0	20.99	1.2	0.37	7	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1
Squilla spp.	0.8	0.78	0.0	0.00	7	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1
Micropogonias undulatus	3.3	2.25	0.3	0.17	7	1.8	1.76	0.4	0.40	2	0.0	0.00	0.0	0.00	1
Stenotomus cap-inus	162.5	48.27	4.9	2.25	7	298.9	13.06	15.5	0.29	2	22.5	0.00	1.2	0.00	1
Anchoa mitchilli	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	1
Polydactylus octonemus	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	1
Prionotus rubio	9.6	5.46	0.6	0.36	7	21.3	10.71	1.6	0.78	2	0.0	0.00	0.0	0.00	1
Trachurus lathami	15.0	6.27	0.3	0.14	7	5.5	1.53	0.3	0.07	2	18.8	0.00	0.7	0.00	1
Cynoscion arenarius	1.6	1.12	0.3	0.24	7	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1
Centropristis philadelphica	28.6	13.16	2.5	1.24	7	61.4	22.59	5.2	2.11	2	0.0	0.00	0.0	0.00	1
Squid	75.4	29.75	1.8	0.75	7	26.1	2.12	1.8	0.54	2	0.0	0.00	0.0	0.00	1

Table 15b
Statistical Zone 17
40-ft trawls

Summary of dominant organisms taken within statistical zone 17 during the June-July 1983 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 weight in kg per hour, the SEM of weight and the number (n) of samples taken.

	0-5 fm					6-10 fm					11-20 fm				
Species	Num	SEM	Wt	SEM	n	Num	SEM	Wt	SEM	n	Num	SEM	Wt	SEM	n
Trachypenaeus spp.	15.0	0.00	0.2	0.00	1	25.6	17.23	0.1	0.08	5	159.2	105.75	1.2	0.74	10
Penaeus aztecus	303.8	0.00	2.0	0.00	1	49.9	45.23	0.8	0.67	5	39.3	18.07	1.2	0.54	10
Sicyonia brevirostris	0.0	0.00	0.0	0.00	1	0.8	0.75	0.0	0.00	5	71.6	25.30	1.0	0.35	10
Squilla spp.	0.0	0.00	0.0	0.00	1	123.8	62.53	1.3	0.67	5	38.5	26.28	0.6	0.39	10
Callinectes similis	120.0	0.00	0.5	0.00	1	50.6	20.10	0.4	0.18	5	13.8	7.21	0.6	0.38	10
Sicyonia dorsalis	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	5	32.8	22.58	0.1	0.11	10
Micropogonias undulatus	9742.5	0.00	141.8	0.00	1	618.6	605.65	16.9	16.56	5	0.3	0.32	0.0	0.03	10
Stenotomus caprinus	0.0	0.00	0.0	0.00	1	36.3	31.55	0.4	0.33	5	167.2	65.30	1.2	0.42	10
Trachurus lathami	0.0	0.00	0.0	0.00	1	11.2	8.94	0.3	0.29	5	125.8	62.75	2.0	1.01	10
Diplectrum bivittatum	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	5	100.9	35.38	2.8	0.93	10
Chloroscombrus chrysurus	30.0	0.00	1.0	0.00	1	94.4	52.61	3.8	1.87	5	29.6	19.42	1.5	1.05	10
Syacium gunteri	0.0	0.00	0.0	0.00	1	3.0	3.00	0.0	0.03	5	65.7	48.49	1.3	0.95	10
Saurida brasiliensis	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	5	17.0	12.16	0.1	0.06	10
Prionotus stearnsi	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	10
Squid	15.0	0.00	0.5	0.00	1	0.8	0.75	0.0	0.03	5	64.5	23.48	2.1	1.00	10

Table 15b (cont'd.)
Statistical Zone 17
40-ft trawls

Summary of dominant organisms taken within statistical zone 17 during the June-July 1983 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 weight in kg per hour, the SEM of weight and the number (n) of samples taken.

	21-30 fm					31-40 fm					Over 40 fm				
Species	Num	SEM	Wt	SEM	n	Num	SEM	Wt	SEM	n	Num	SEM	Wt	SEM	n
Trachypenaeus spp.	40.6	30.65	0.3	0.20	7	9.5	2.47	0.0	0.00	2	0.0	0.00	0.0	0.00	1
Penaeus aztecus	30.1	9.49	1.5	0.55	7	38.5	14.47	2.8	0.84	2	0.0	0.00	0.0	0.00	1
Sicyonia brevirostris	70.0	20.99	1.2	0.37	7	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1
Squilla spp.	0.8	0.78	0.0	0.00	7	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1
Callinectes similis	2.3	2.34	0.1	0.11	7	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1
Sicyonia dorsalis	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	1
Micropogonias undulatus	3.3	2.25	0.3	0.17	7	1.8	1.76	0.4	0.40	2	0.0	0.00	0.0	0.00	1
Stenotomus caprinus	162.5	48.27	4.9	2.25	7	298.9	13.06	15.5	0.29	2	22.5	0.00	1.2	0.00	1
Trachurus lathami	15.0	6.27	0.3	0.14	7	5.5	1.53	0.3	0.07	2	18.8	0.00	0.7	0.00	1
Diplectrum bivittatum	0.5	0.54	0.0	0.02	7	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1
Chloroscombrus chrysurus	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	1
Syacium gunteri	4.0	3.18	0.0	0.05	7	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1
Saurida brasiliensis	85.7	53.02	0.6	0.31	7	5.8	2.24	0.1	0.08	2	0.0	0.00	0.0	0.00	1
Prionotus stearnsi	73.4	32.93	0.5	0.30	7	108.4	83.65	1.9	1.40	2	0.0	0.00	0.0	0.00	1
Squid	75.4	29.75	1.8	0.75	7	26.1	2.12	1.8	0.54	2	0.0	0.00	0.0	0.00	1

Table 15c
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 1983 SEAMAP Shrimp and Bottomfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, and oxygen in ppm.

	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm		
Environmental Category	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	160.2	0.00	1	47.1	26.85	5	28.4	6.28	10	37.1	9.26	7	51.1	12.57	2	13.6	0.00	1
Total finfish kg	156.8	0.00	1	42.7	26.86	5	22.1	4.47	10	28.8	7.66	7	46.8	13.16	2	13.6	0.00	1
Total crustacean kg	3.4	0.00	1	3.6	0.58	5	5.3	1.97	10	5.2	1.71	7	2.5	0.70	2	0.0	0.00	1
Total others kg	1.7	0.00	1	1.6	0.67	5	2.4	0.52	10	4.3	1.21	7	1.7	0.11	2	0.0	0.00	1
Surface temperature	28.5	0.31	3	28.5	0.23	6	27.7	0.10	10	27.6	0.21	9	28.0	0.13	2	28.0	0.18	4
Midwater temperature	28.0	0.17	3	27.6	0.21	6	26.9	0.18	10	25.6	0.40	9	24.5	0.40	2	23.2	0.26	4
Bottom temperature	27.7	0.06	3	26.3	0.46	6	24.4	0.41	10	21.8	0.34	9	20.8	0.17	2	19.9	0.29	4
Surface salinity	15.5	4.08	3	23.9	1.62	6	33.8	0.40	10	35.4	0.11	9	35.5	0.22	2	35.7	0.09	4
Midwater salinity	16.0	4.05	3	29.6	1.38	4	34.9	0.25	10	35.9	0.07	9	35.7	0.33	2	36.2	0.10	4
Bottom salinity	17.3	3.03	3	30.3	1.89	6	35.5	0.18	10	36.3	0.05	9	36.6	0.10	2	36.5	0.03	4
Surface oxygen	7.7	0.27	3	8.4	0.83	4	6.6	0.09	10	6.6	0.04	9	6.6	0.15	2	6.4	0.11	4
Midwater oxygen	7.2	0.27	3	8.3	0.81	4	6.6	0.05	190	6.8	0.04	9	6.9	0.10	2	6.9	0.16	4
Bottom oxygen	6.5	0.32	3	2.7	0.81	4	6.1	0.15	10	6.3	0.18	9	6.4	0.10	2	5.5	0.29	4

Table 16a
Statistical Zone 18
40-ft trawls

Summary of dominant organisms, combined for all zones, taken in shrimp statistical zone 18 during the June-July 1983 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 weight in kg per hour, the SEM of weight and the number (n) of samples taken. No samples were taken below 6 fm and beyond 40 fm.

	6-10 fm					11-20 fm				
Species	Num	SEM	Wt	SEM	n	Num	SEM	Wt	SEM	n
Trachypenaeus spp.	193.6	173.30	0.9	0.83	7	2101.6	811.44	12.8	4.85	9
Penaeus aztecus	132.8	88.08	1.2	0.70	7	359.0	162.63	5.9	2.03	9
Callinectes similis	112.0	52.99	1.0	0.42	7	39.7	22.57	0.8	0.31	9
Sicyonia dorsalis	4.0	3.96	0.0	0.03	7	219.4	89.79	0.8	0.31	9
Sicyonia brevirostris	6.8	4.75	0.0	0.03	7	390.4	139.48	2.9	0.99	9
Squilla spp.	47.8	43.01	0.5	0.44	7	79.5	37.23	1.7	0.74	9
Micropogonias undulatus	3007.7	2304.14	69.2	55.85	7	1.0	0.95	0.0	0.04	9
Stenotomus carrinus	41.0	26.62	0.2	0.14	7	1623.2	462.51	10.1	3.02	9
Anchoa mitchilli	0.0	0.00	0.0	0.00	7	0.0	0.00	0.0	0.00	9
Polydactylus octonemus	25.6	16.52	0.6	0.37	7	0.0	0.00	0.0	0.00	9
Prionotus rubio	13.7	7.09	0.1	0.06	7	21.1	13.55	0.2	0.09	9
Trachurus lathami	10.7	9.91	0.2	0.19	7	16.7	6.13	0.3	0.12	9
Cynoscion arenarius	9.0	6.83	0.6	0.44	7	4.5	3.97	0.5	0.45	9
Centropristis philadelphica	37.4	22.07	0.4	0.24	7	41.2	20.23	1.0	0.35	9
Squid	26.3	16.91	0.3	0.21	7	72.1	23.67	2.0	0.77	9

Table 16a (cont'd.)
Statistical Zone 18
40-ft trawls

Summary of dominant organisms, combined for all zones, taken in shrimp statistical zone 18 during the June-July 1983 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 weight in kg per hour, the SEM of weight and the number (n) of samples taken. No samples were taken below 6 fm and beyond 40 fm.

	21-30 fm					31-40 fm				
Species	Num	SEM	Wt	SEM	n	Num	SEM	Wt	SEM	n
Trachypenaeus spp.	530.3	341.85	3.5	2.31	6	0.0	0.00	0.0	0.00	2
Penaeus aztecus	24.5	10.22	1.0	0.41	6	52.0	20.00	2.5	0.73	2
Callinectes similis	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	2
Sicyonia dorsalis	0.7	0.71	0.0	0.03	6	0.0	0.00	0.0	0.00	2
Sicyonia brevirostris	1016.0	388.83	8.7	2.96	6	24.0	24.00	0.1	0.14	2
Squilla spp.	5.4	3.23	0.1	0.04	6	0.0	0.00	0.0	0.00	2
Micropogonias undulatus	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	2
Stenotomus caprinus	104.8	25.81	2.6	1.45	6	577.0	29.00	32.5	1.05	2
Anchoa mitchilli	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	2
Polydactylus octonemus	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	2
Prionotus rubio	9.6	2.70	0.4	0.12	6	2.0	2.00	0.2	0.18	2
Trachurus lathami	0.7	0.71	0.0	0.03	6	118.0	106.00	1.9	1.36	2
Cynoscion arenarius	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	2
Centropristis philadelphica	16.6	5.41	1.5	0.47	6	84.0	24.00	5.9	1.73	2
Squid	22.4	7.68	1.1	0.36	6	30.0	30.00	0.8	0.82	2

Table 16b
Statistical Zone 18
40-ft trawls

Summary of dominant organisms taken within statistical zone 18 during the June-July 1983 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 weight in kg per hour, the SEM of weight and the number (n) of samples taken. No samples were taken below 6 fm and beyond 40 fm.

	6-10 fm					11-20 fm				
Species	Num	SEM	Wt	SEM	n	Num	SEM	Wt	SEM	n
Trachypenaeus spp.	193.6	173.30	0.9	0.83	7	2101.6	811.44	12.8	4.85	9
Sicyonia brevirostris	6.8	4.75	0.0	0.03	7	390.4	139.48	2.9	0.99	9
Portunus spinicarpus	0.0	0.00	0.0	0.00	7	206.1	119.11	0.7	0.43	9
Penaeus aztecus	132.8	88.08	1.2	0.70	7	359.0	162.63	5.9	2.03	9
Sicyonia dorsalis	4.0	3.96	0.0	0.03	7	219.4	89.79	0.8	0.31	9
Xiphopenaeus spp.	206.6	206.57	1.3	1.31	7	0.0	0.00	0.0	0.00	9
Micropogonias undulatus	3007.7	2304.14	69.2	55.85	7	1.0	0.95	0.0	0.04	9
Stenotomus caprinus	41.0	26.62	0.2	0.14	7	1623.2	462.51	10.1	3.02	9
Stellifer lanceolatus	435.1	351.32	3.5	2.72	7	0.0	0.00	0.0	0.00	9
Diplectrum bivittatum	60.9	42.06	1.3	0.89	7	238.2	62.81	6.5	2.04	9
Chloroscombrus chrysurus	462.3	397.66	14.5	13.03	7	1.0	0.95	0.0	0.02	9
Prionotus paralatus	0.0	0.00	0.0	0.00	7	105.7	42.24	0.7	0.22	9
Syacium gunteri	15.0	9.82	0.3	0.23	7	122.5	51.22	1.4	0.50	9
Syacium papillosum	0.0	0.00	0.0	0.00	7	73.4	22.73	1.8	0.58	9
Squid	26.3	16.91	0.3	0.21	7	72.1	23.67	2.0	0.77	9

Table 16b (cont'd.)
Statistical Zone 18
40-ft trawls

Summary of dominant organisms taken within statistical zone 18 during the June-July 1983 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 weight in kg per hour, the SEM of weight and the number (n) of samples taken. No samples were taken below 6 fm and beyond 40 fm.

	21-30 fm					31-40 fm				
Species	Num	SEM	Wt	SEM	n	Num	SEM	Wt	SEM	n
Trachypenaeus spp.	530.3	341.85	3.5	2.31	6	0.0	0.00	0.0	0.00	2
Sicyonia brevirostris	1016.0	388.83	8.7	2.96	6	24.0	24.00	0.1	0.14	2
Portunus spinicarpus	680.8	227.05	3.2	0.97	6	42.0	42.00	0.4	0.41	2
Penaeus aztecus	24.5	10.22	1.0	0.41	6	52.0	20.00	2.5	0.73	2
Sicyonia dorsalis	0.7	0.71	0.0	0.03	6	0.0	0.00	0.0	0.00	2
Xiphopenaeus spp.	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	2
Micropogonias undulatus	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	2
Stenotomus caprinus	104.8	25.81	2.6	1.45	6	577.0	29.00	32.5	1.05	2
Stellifer lanceolatus	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	2
Diplectrum bivittatum	0.5	0.53	0.0	0.00	6	0.0	0.00	0.0	0.00	2
Chloroscombrus chrysurus	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	2
Prionotus paralatus	177.6	70.49	2.0	0.85	6	125.0	73.00	3.5	2.00	2
Syacium gunteri	9.3	9.33	0.3	0.30	6	2.0	2.00	0.0	0.00	2
Syacium papillosum	40.9	28.79	0.6	0.33	6	0.0	0.00	0.0	0.00	2
Squid	22.4	7.68	1.1	0.36	6	30.0	30.00	0.8	0.82	2

Table 16c
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 1983 SEAMAP Shrimp and Bottomfish Survey by depth stratum. Catch values in kg per hour, temperature in °C, salinity in ppt, and oxygen in ppm.

	0-5 fm*			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm*		
Environmental Category	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg				122.3	64.48	7	69.8	9.02	9	41.7	6.47	6	71.8	0.91	2			
Total finfish kg				112.5	63.38	7	36.3	4.95	9	22.1	3.02	6	68.6	0.45	2			
Total crustacean kg				8.0	3.37	7	30.9	6.46	9	17.6	5.34	6	3.6	1.82	2			
Total others kg				2.1	0.67	7	2.7	0.82	9	2.2	0.59	6	0.9	0.91	2			
Surface temperature	28.9	0.00	1	29.3	0.13	11	29.5	0.21	8	28.6	0.33	8	28.0	1.81	3	29.0	0.31	4
Midwater temperature	27.8	0.00	1	28.6	0.18	11	27.7	0.33	8	26.1	0.58	8	23.2	1.31	3	21.9	1.03	4
Bottom temperature	27.8	0.00	1	27.3	0.32	11	25.5	0.60	8	22.4	0.58	8	21.2	0.05	3	18.6	1.29	4
Surface salinity	17.6	0.00	1	20.6	1.92	11	25.5	1.82	8	33.6	1.10	8	34.4	0.94	3	35.1	0.34	4
Midwater salinity	17.5	0.00	1	25.7	1.61	11	32.6	1.04	8	35.5	0.35	8	36.6	0.28	3	36.8	0.24	4
Bottom salinity	17.6	0.00	1	29.4	1.34	11	35.2	0.23	8	36.1	0.09	8	36.8	0.23	3	36.8	0.32	4
Surface oxygen	6.2	0.00	1	8.3	0.43	11	8.0	0.49	7	9.3	0.15	5	8.4	0.90	3	8.7	0.68	4
Midwater oxygen	5.8	0.00	1	6.8	0.79	11	6.9	0.58	7	9.4	0.13	5	8.2	1.10	2	8.9	0.94	3
Bottom oxygen	5.2	0.00	1	4.9	0.91	11	5.3	0.78	7	9.0	0.31	5	8.2	1.60	2	7.7	1.07	4

*Plankton and environmental stations only.

Table 17a
Statistical Zone 19
40-ft trawls

Summary of dominant organisms, combined for all zones, taken in shrimp statistical zone 19 during the June-July 1983 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 weight in kg per hour, the SEM of weight and the number (n) of samples taken. No samples were taken below 6 fm and beyond 40 fm.

	6-10 fm					11-20 fm				
Species	Num	SEM	Wt	SEM	n	Num	SEM	Wt	SEM	n
Trachypenaeus spp.	348.8	229.78	1.4	0.90	5	2172.2	892.97	11.6	4.86	13
Penaeus aztecus	65.8	31.35	0.7	0.31	5	554.0	314.98	7.0	3.23	13
Callinectes similis	73.0	47.52	1.7	1.30	5	260.1	90.16	4.9	2.16	13
Sicyonia dorsalis	0.0	0.00	0.0	0.00	5	702.5	280.79	2.1	0.79	13
Sicyonia brevirostris	0.0	0.00	0.0	0.00	5	44.8	27.51	0.3	0.18	13
Squilla spp.	11.1	10.12	0.3	0.23	5	342.2	164.92	3.8	1.59	13
Micropogonias undulatus	325.4	228.06	12.8	9.85	5	0.5	0.46	0.0	0.02	13
Stenotomus caprinus	19.7	19.71	0.2	0.23	5	793.0	394.88	4.0	2.24	13
Anchoa mitchilli	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	13
Polydactylus octonemus	434.7	282.37	9.4	6.48	5	0.8	0.53	0.0	0.01	13
Prionotus rubio	50.5	37.93	0.9	0.57	5	191.4	146.59	1.2	0.80	13
Trachurus lathami	0.0	0.00	0.0	0.00	5	575.5	561.71	10.3	9.95	13
Cynoscion arenarius	10.3	10.29	0.1	0.08	5	0.0	0.00	0.0	0.00	13
Centropristis philadelphica	0.0	0.00	0.0	0.00	5	66.5	32.33	0.9	0.29	13
Squid	38.0	28.80	1.5	1.08	5	123.7	76.78	7.5	1.17	13

*Texas data on numbers and weights not included.

Table 17a (cont'd.)
Statistical Zone 19
40-ft trawls

Summary of dominant organisms, combined for all zones, taken in shrimp statistical zone 19 during the June-July 1983 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 weight in kg per hour, the SEM of weight and the number (n) of samples taken. No samples were taken below 6 fm and beyond 40 fm.

	21-30 fm					31-40 fm				
Species	Num	SEM	Wt	SEM	n	Num	SEM	Wt	SEM	n
Trachypenaeus spp.	2670.2	1202.51	15.1	6.85	5	0.0	0.00	0.0	0.10	1
Penaeus aztecus	305.0	75.23	6.4	1.56	5	33.8	0.00	2.2	0.00	1
Callinectes similis	188.1	74.51	3.6	1.50	5	0.0	0.00	0.0	0.00	1
Sicyonia dorsalis	615.5	261.70	2.5	1.09	5	7.5	0.00	0.0	0.00	1
Sicyonia brevirostris	422.7	198.13	2.8	1.45	5	3.8	0.00	0.0	0.00	1
Squilla spp.	60.5	21.53	1.1	0.40	5	3.8	0.00	0.2	0.00	1
Micropogonias undulatus	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	1
Stenotomus caprinus	258.2	99.35	2.4	1.46	5	262.5	0.00	11.6	0.00	1
Anchoa mitchilli	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	1
Polydactylus octonemus	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	1
Prionotus rubio	5.7	2.80	0.2	0.11	5	3.8	0.00	0.5	0.00	1
Trachurus lathami	176.8	172.48	2.7	2.55	5	3.8	0.00	0.2	0.00	1
Cynoscion arenarius	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	1
Centropristis philadelphica	65.9	32.01	1.2	0.34	5	30.0	0.00	2.6	0.00	1
Squid	199.0	102.19	4.9	2.30	5	0.0	0.00	0.0	0.00	1

*Texas data on numbers and weights not included.

Table 17b
Statistical Zone 19
40-ft trawls

Summary of dominant organisms taken within statistical zone 19 during the June-July 1983 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 weight in kg per hour, the SEM of weight and the number (n) of samples taken. No samples were taken below 6 fm and beyond 40 fm.

	6-10 fm					11-20 fm				
Species	Num	SEM	Wt	SEM	n	Num	SEM	Wt	SEM	n
Trachypenaeus spp.	348.8	229.78	1.4	0.90	5	2172.2	852.97	11.6	4.86	13
Sicyonia dorsalis	0.0	0.00	0.0	0.00	5	702.5	208.79	2.1	0.79	13
Penaeus aztecus	65.8	31.35	0.7	0.31	5	554.0	314.98	7.0	3.23	13
Callinectes similis	73.0	47.52	1.7	1.30	5	260.1	90.16	4.9	2.16	13
Squilla spp.	11.1	10.12	0.3	0.23	5	342.2	164.92	3.8	1.59	13
Sicyonia brevirostris	0.0	0.00	0.0	0.00	5	44.8	27.51	0.3	0.18	13
Stenotomus caprinus	19.7	19.71	0.2	0.23	5	793.0	394.88	4.0	2.24	13
Trachurus lathami	0.0	0.00	0.0	0.00	5	575.5	561.71	10.3	9.95	13
Micropogonias undulatus	325.4	228.06	12.8	9.85	5	0.5	0.46	0.0	0.02	13
Lepophidium graellsi	0.0	0.00	0.0	0.00	5	189.7	62.45	3.9	1.47	13
Prionotus rubio	50.5	37.93	0.9	0.57	5	191.4	146.59	1.2	0.80	13
Syacium gunteri	0.0	0.00	0.0	0.00	5	9.7	9.65	0.2	0.23	13
Diplectrum bivittatum	119.1	119.14	5.6	5.65	5	138.8	48.06	3.2	1.17	13
Polydactylus octonemus	434.7	282.37	9.4	6.48	5	0.8	0.53	0.0	0.01	13
Squid	38.0	28.80	1.5	1.08	5	123.7	76.78	2.5	1.17	13

*Texas data on numbers and weights not included.

Table 17b (cont'd.)
Statistical Zone 19
40-ft trawls

Summary of dominant organisms taken within statistical zone 19 during the June-July 1983 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 weight in kg per hour, the SEM of weight and the number (n) of samples taken. No samples were taken below 6 fm and beyond 40 fm.

	21-30 fm					31-40 fm				
Species	Num	SEM	Wt	SEM	n	Num	SEM	Wt	SEM	n
Trachypenaeus spp.	2670.2	1202.51	15.1	6.85	5	0.0	0.00	0.0	0.00	1
Sicyonia dorsalis	615.5	261.70	2.5	1.09	5	7.5	0.00	0.0	0.00	1
Penaeus aztecus	305.0	75.23	6.4	1.56	5	33.8	0.00	2.2	0.00	1
Callinectes similis	188.1	74.51	3.6	1.50	5	0.0	0.00	0.0	0.00	1
Squilla spp.	60.5	21.53	1.1	0.40	5	3.8	0.00	0.2	0.00	1
Sicyonia brevirostris	422.7	198.13	2.8	1.45	5	3.8	0.00	0.0	0.00	1
Stenotomus caprinus	258.2	99.35	2.4	1.46	5	262.5	0.00	11.6	0.00	1
Trachurus lathami	176.8	172.48	2.7	2.55	5	3.8	0.00	0.2	0.00	1
Micropogonias undulatus	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	1
Lepophidium graellsi	55.6	31.64	1.1	0.56	5	18.8	0.00	1.4	0.00	1
Prionotus rubio	5.7	2.80	0.2	0.11	5	3.8	0.00	0.5	0.00	1
Syacium gunteri	64.2	35.18	1.0	0.52	5	0.0	0.00	0.0	0.00	1
Diplectrum bivittatum	20.5	17.54	0.5	0.33	5	0.0	0.00	0.0	0.00	1
Polydactylus octonemus	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	1
Squid	199.0	102.19	4.9	2.30	5	0.0	0.00	0.0	0.00	1

*Texas data on numbers and weights not included.

Table 17c
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 1983 SEAMAP Shrimp and Bottomfish Survey by depth stratum.* Catch values in kg per hour, temperature in °C, salinity in ppt, and oxygen in ppm.

	0-5 fm**			6-10 fm			11-20 fm			21-30 fm			31-40 fm***			Over 40 fm**		
Environmental Category	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg				192.3	83.95	5	77.4	17.85	13	64.4	5.00	5	37.5	0.00	1			
Total finfish kg				54.5	27.13	5	38.6	14.36	13	19.4	4.51	5	38.5	0.00	1			
Total crustacean kg				8.3	4.46	5	31.4	8.04	13	33.3	9.69	5	3.4	0.00	1			
Total others kg				129.8	55.17	5	8.0	2.26	13	11.8	7.27	5	0.0	0.00	1			
Surface temperature	29.7	0.00	1	29.6	0.07	11	29.3	0.15	18	28.7	1.47	7				29.1	0.43	2
Midwater temperature	29.7	0.00	1	29.4	0.14	11	28.1	0.37	18	26.5	0.59	7				23.4	1.14	2
Bottom temperature	29.6	0.00	1	28.3	0.37	11	24.8	0.42	18	21.8	0.11	7				20.2	0.04	2
Surface salinity	25.7	0.00	1	24.9	0.37	11	25.8	0.60	18	23.8	1.21	7				30.2	3.76	2
Midwater salinity	25.7	0.00	1	25.1	0.45	11	30.1	0.85	18	34.2	0.61	7				36.0	0.24	2
Bottom salinity	26.3	0.00	1	28.8	0.94	11	34.3	0.38	18	36.2	0.09	7				36.4	0.00	2
Surface oxygen	6.7	0.00	1	6.5	0.15	11	7.3	0.23	17	7.6	0.10	7				6.9	0.00	2
Midwater oxygen	6.8	0.00	1	6.4	0.13	11	6.1	0.36	18	5.6	0.47	7				7.1	0.25	2
Bottom oxygen	6.0	0.00	1	4.3	0.68	11	3.6	0.52	18	5.2	0.33	7				5.7	0.30	2

* Texas data on numbers and weights not included.

** Plankton and environmental data stations only.

***Catch data only available.

Table 18a
Statistical Zone 20
40-ft trawls

Summary of dominant organisms, combined for all zones, taken in shrimp statistical zone 20 during the June-July 1983 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 weight in kg per hour, the SEM of weight and the number (n) of samples taken. No samples were taken below 21 fm.

	21-30 fm					31-40 fm					Over 40 fm				
Species	Num	SEM	Wt	SEM	n	Num	SEM	Wt	SEM	n	Num	SEM	Wt	SEM	n
Trachypenaeus spp.	43.6	0.00	0.2	0.00	1	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1
Penaeus aztecus	174.5	0.00	7.2	0.00	1	6.9	6.92	0.3	0.31	2	22.5	0.00	0.7	0.00	1
Callinectes similis	5.5	0.00	0.2	0.00	1	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1
Sicyonia dorsalis	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
Sicyonia brevirostris	0.0	0.00	0.0	0.00	1	2.3	2.31	0.0	0.00	2	0.0	0.00	0.0	0.00	1
Squilla spp.	10.9	0.00	0.2	0.00	1	0.0	0.00	0.0	0.00	2	22.5	0.00	0.5	0.00	1
Micropogonias undulatus	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
Stenotomus caprinus	87.3	0.00	3.7	0.00	1	39.2	39.23	1.9	1.89	2	56.3	0.00	2.7	0.00	1
Anchoa mitchilli	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
Polydactylus octonemus	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
Prionotus rubio	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
Trachurus lathami	5.5	0.00	0.2	0.00	1	4.6	4.62	0.2	0.21	2	11.3	0.00	0.9	0.00	1
Cynoscion arenarius	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
Centropristis philadelphica	16.4	0.00	0.7	0.00	1	0.0	0.00	0.0	0.00	2	18.8	0.00	1.7	0.00	1
Squid	114.5	0.00	4.5	0.00	1	0.0	0.00	0.0	0.00	2	37.5	0.00	0.9	0.00	1

*Texas data on numbers and weights not included.

Table 18b
Statistical Zone 20
40-ft trawls

Summary of dominant organisms taken within statistical zone 20 during the June-July 1983 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 weight in kg per hour, the SEM of weight and the number (n) of samples taken. No samples were taken below 21 fm.

	21-30 fm					31-40 fm					Over 40 fm				
Species	Num	SEM	Wt	SEM	n	Num	SEM	Wt	SEM	n	Num	SEM	Wt	SEM	n
Portunus spinicarpus	240.0	0.00	3.7	0.00	1	60.0	60.00	0.3	0.31	2	0.0	0.00	0.0	0.00	1
Penaeus aztecus	174.5	0.00	7.2	0.00	1	6.9	6.92	0.3	0.31	2	22.5	0.00	0.7	0.00	1
Trachypenaeus spp.	43.6	0.00	0.2	0.00	1	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1
Squilla spp.	10.9	0.00	0.2	0.00	1	0.0	0.00	0.0	0.00	2	22.5	0.00	0.5	0.00	1
Portunus gibbesii	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	2	18.8	0.00	0.3	0.00	1
Callinectes similis	5.5	0.00	0.2	0.00	1	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1
Serranus atrobranchus	163.6	0.00	2.5	0.00	1	4.6	4.62	0.1	0.10	2	138.8	0.00	2.2	0.00	1
Prionotus paralatus	158.2	0.00	2.5	0.00	1	0.0	0.00	0.0	0.00	2	116.3	0.00	8.0	0.00	1
Upeneus parvus	0.0	0.00	0.0	0.00	1	85.4	85.38	3.1	3.15	2	116.3	0.00	3.9	0.00	1
Stenotomus caprinus	87.3	0.00	3.7	0.00	1	39.2	39.23	1.9	1.89	2	56.3	0.00	2.7	0.00	1
Pristipomoides aquilonaries	60.0	0.00	2.5	0.00	1	9.2	9.23	0.2	0.21	2	71.3	0.00	2.7	0.00	1
Halieutichthys aculcatus	10.9	0.00	0.0	0.00	1	23.1	23.08	0.2	0.21	2	67.5	0.00	0.5	0.00	1
Urophycis floridana	27.3	0.00	3.0	0.00	1	0.0	0.00	0.0	0.00	2	11.3	0.00	1.4	0.00	1
Centropristis philadelphica	16.4	0.00	0.7	0.00	1	0.0	0.00	0.0	0.00	2	18.8	0.00	1.7	0.00	1
Squid	114.5	0.00	4.5	0.00	1	0.0	0.00	0.0	0.00	2	37.5	0.00	0.9	0.00	1

*Texas data on weights and numbers not included.

Table 18c
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 1983 SEAMAP Shrimp and Bottomfish Survey by depth stratum.* Catch values in kg per hour, temperature in °C, salinity in ppt, and oxygen in ppm.

	0-5 fm**			6-10 fm**			11-20 fm**			21-30 fm			31-40 fm			Over 40 fm		
Environmental Category	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg										44.6	0.00	1	11.5	11.54	2	37.5	0.00	1
Total finfish kg										27.3	0.00	1	10.5	10.49	2	32.4	0.00	1
Total crustacean kg										9.9	0.00	1	1.0	1.05	2	1.7	0.00	1
Total others kg										7.4	0.00	1	1.0	1.05	2	1.7	0.00	1
Surface temperature	29.4	0.00	1	29.6	0.21	5	29.1	0.11	10	29.2	0.11	9	29.5	0.28	5	29.4	0.13	7
Midwater temperature	29.4	0.00	1	29.3	0.15	5	28.6	0.14	10	27.3	0.11	9	23.8	0.17	5	22.8	1.32	7
Bottom temperature	29.2	0.00	1	27.8	0.55	5	25.5	0.39	10	23.4	0.47	9	21.4	0.09	5	19.2	1.37	7
Surface salinity	30.6	0.00	1	25.7	1.69	5	29.8	0.57	10	29.4	0.73	9	28.9	1.23	5	30.1	0.35	7
Midwater salinity	30.5	0.00	1	26.7	1.07	5	31.4	0.72	10	33.9	0.44	9	35.9	0.37	5	35.7	0.88	7
Bottom salinity	30.3	0.00	1	31.6	0.50	5	34.5	0.43	10	35.7	0.33	9	36.6	0.18	5	36.4	0.14	7
Surface oxygen	6.2	0.00	1	6.2	0.19	5	6.2	0.08	10	6.5	0.10	9	6.7	0.19	5	6.6	0.10	7
Midwater oxygen	6.3	0.00	1	6.0	0.13	5	6.2	0.13	10	6.0	0.30	9	6.1	0.34	5	6.2	0.30	7
Bottom oxygen	6.3	0.00	1	3.3	0.80	5	4.1	0.43	10	4.7	0.22	9	5.4	0.37	5	4.9	0.34	7

* Texas data on numbers and weights not included.
**Plankton and environmental stations only.

Table 19a
Statistical Zone 21
40-ft trawls

Summary of dominant organisms, combined for all zones, taken in shrimp statistical zone 21 during the June-July 1983 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 weight in kg per hour, the SEM of weight and the number (n) of samples taken. No samples were taken beyond 40 fm.

	0-5 fm					6-10 fm					11-20 fm				
Species	Num	SEM	Wt	SEM	n	Num	SEM	Wt	SEM	n	Num	SEM	Wt	SEM	n
Trachypenaeus spp.	469.1	0.00	1.2	0.00	1	227.1	187.14	2.0	1.77	2	924.7	276.75	6.2	2.10	9
Penaeus aztecus	70.9	0.00	0.7	0.00	1	1669.3	379.29	25.8	7.60	2	2567.2	622.01	34.9	7.21	9
Callinectes similis	27.3	0.00	0.5	0.00	1	71.4	8.57	2.5	0.50	2	217.3	68.41	4.5	1.36	9
Sicyonia dorsalis	0.0	0.00	0.0	0.00	1	37.5	17.50	0.2	0.50	2	161.3	58.71	0.5	0.18	9
Sicyonia brevirostris	0.0	0.00	0.0	0.00	1	30.0	30.00	0.3	0.34	2	38.0	28.30	0.2	0.17	9
Squilla spp.	27.3	0.00	0.5	0.00	1	56.4	26.43	1.3	0.64	2	128.9	31.90	2.0	0.43	9
Micropogonias undulatus	32.7	0.00	1.0	0.00	1	0.0	0.00	0.0	0.00	2	141.6	100.90	5.1	3.36	9
Stenotomus caprinus	16.4	0.00	0.2	0.00	1	425.4	239.64	3.2	1.30	2	1156.4	367.08	7.2	2.47	9
Anchoa mitchilli	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	9
Polydactylus octonemus	218.2	0.00	6.4	0.00	1	21.4	21.43	1.0	0.97	2	134.2	70.06	3.0	1.50	9
Prionotus rubio	283.6	0.00	2.5	0.00	1	23.9	18.93	0.6	0.34	2	82.9	27.03	0.7	0.16	9
Trachurus lathami	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	2	3.3	1.98	0.1	0.07	9
Cynoscion arenarius	70.9	0.00	1.2	0.00	1	0.0	0.00	0.0	0.00	2	6.5	2.70	0.4	0.18	9
Centropristis philadelphica	0.0	0.00	0.0	0.00	1	202.9	57.14	2.5	0.19	2	151.8	45.30	1.8	0.68	9
Squid	0.0	0.00	0.0	0.00	1	75.0	75.00	2.4	2.39	2	96.6	34.09	2.2	0.82	9

*Texas data on numbers and weights not included.

Table 19a (cont'd.)
Statistical Zone 21
40-ft trawls

Summary of dominant organisms, combined for all zones, taken in shrimp statistical zone 21 during the June-July 1983 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 weight in kg per hour, the SEM of weight and the number (n) of samples taken. No samples were taken beyond 40 fm.

	21-30 fm					31-40 fm				
Species	Num	SEM	Wt	SEM	n	Num	SEM	Wt	SEM	n
Trachypenaeus spp.	477.7	147.52	2.8	0.80	4	500.0	0.00	2.7	0.00	1
Penaeus aztecus	884.6	308.97	17.3	6.01	4	72.0	0.00	2.7	0.00	1
Callinectes similis	82.8	32.03	4.0	1.36	4	0.0	0.00	0.0	0.00	1
Sicyonia dorsalis	64.5	27.92	0.2	0.07	4	0.0	0.00	0.0	0.00	1
Sicyonia brevirostris	13.1	9.39	0.2	0.15	4	8.0	0.00	0.2	0.00	1
Squilla spp.	135.0	54.21	2.0	0.83	4	144.0	0.00	1.8	0.00	1
Micropogonias undulatus	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	1
Stenotomus caprinus	13.7	9.87	0.1	0.10	4	0.0	0.00	0.0	0.00	1
Anchoa mitchilli	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	1
Polydactylus octonemus	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	1
Prionotus rubio	3.0	1.95	0.1	0.05	4	8.0	0.00	0.9	0.00	1
Trachurus lathami	69.1	66.96	1.5	1.39	4	0.0	0.00	0.0	0.00	1
Cynoscion arenarius	2.1	2.14	0.0	0.05	4	0.0	0.00	0.0	0.00	1
Centropristis philadelphica	16.8	9.57	0.5	0.38	4	12.0	0.00	0.5	0.00	1
Squid	151.5	57.63	2.2	0.80	4	32.0	0.00	1.1	0.00	1

*Texas data on numbers and weights not included.

Table 19b
Statistical Zone 21
40-ft trawls

Summary of dominant organisms taken within statistical zone 21 during the June-July 1983 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 weight in kg per hour, the SEM of weight and the number (n) of samples taken. No samples were taken beyond 40 fm.

	0-5 fm					6-10 fm					11-20 fm				
Species	Num	SEM	Wt	SEM	n	Num	SEM	Wt	SEM	n	Num	SEM	Wt	SEM	n
Penaeus aztecus	70.9	0.00	0.7	0.00	1	1669.3	379.29	25.8	7.60	2	2567.2	622.01	34.9	7.21	9
Trachypenaeus spp.	469.1	0.00	1.2	0.00	1	227.1	187.14	2.0	1.77	2	924.7	276.75	6.2	2.10	9
Penaeus duorarum	109.1	0.00	3.2	0.00	1	585.0	255.00	11.0	5.10	2	249.2	228.89	3.7	3.41	9
Sicyonia dorsalis	0.0	0.00	0.0	0.00	1	37.5	17.50	0.2	0.05	2	161.3	58.71	0.5	0.18	9
Callinectes similis	27.3	0.00	0.5	0.00	1	71.4	8.57	2.5	0.50	2	217.3	68.41	4.5	1.36	9
Portunus gibbesii	141.8	0.00	0.7	0.00	1	243.6	193.57	1.4	0.94	2	29.3	15.31	0.8	0.34	9
Stenotomus caprinus	16.4	0.00	0.2	0.00	1	425.4	239.64	3.2	1.30	2	1156.4	367.08	7.2	2.47	9
Centropristis philadelphica	0.0	0.00	0.0	0.00	1	202.9	57.14	2.5	0.19	2	151.8	45.30	1.8	0.68	9
Serranus atrobranchus	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	2	50.5	37.85	0.4	0.21	9
Cynoscion arenarius	70.9	0.00	1.2	0.00	1	0.0	0.00	0.0	0.00	2	6.5	2.70	0.4	0.18	9
Sphoeroides parvus	0.0	0.00	0.0	0.00	1	162.9	22.86	0.7	0.23	2	63.9	25.25	0.2	0.13	9
Prionotus rubio	283.6	0.00	2.5	0.00	1	23.9	18.93	0.6	0.34	2	82.9	27.03	0.7	0.16	9
Polydactylus octonemus	218.2	0.00	6.4	0.00	1	21.4	21.43	1.0	0.97	2	134.2	70.06	3.0	1.50	9
Syacium gunteri	0.0	0.00	0.0	0.00	1	0.0	00.0	0.0	0.00	2	59.6	43.31	0.9	0.62	9
Squid	0.0	0.00	0.0	0.00	1	75.0	75.00	2.4	2.39	2	96.6	34.09	2.2	0.82	9

*Texas data on numbers and weights not included.

Table 19b (cont'd.)
Statistical Zone 21
40-ft trawls

Summary of dominant organisms taken within statistical zone 21 during the June-July 1983 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 weight in kg per hour, the SEM of weight and the number (n) of samples taken. No samples were taken beyond 40 fm.

	21-30 fm					31-40 fm				
Species	Num	SEM	Wt	SEM	n	Num	SEM	Wt	SEM	n
Penaeus aztecus	884.6	308.97	17.3	6.01	4	72.0	0.00	2.7	0.00	1
Trachypenaeus spp.	447.7	147.52	2.8	0.80	4	500.0	0.00	2.7	0.00	1
Penaeus duorarum	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	1
Sicyonia dorsalis	64.5	27.92	0.2	0.07	4	0.0	0.00	0.0	0.00	1
Callinectes similis	82.8	32.03	4.0	1.36	4	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	1
Stenotomus caprinus	13.7	9.87	0.1	0.10	4	0.0	0.00	0.0	0.00	1
Centropristis philadelphica	16.8	9.57	0.5	0.38	4	12.0	0.00	0.5	0.00	1
Serranus atrobranchus	80.4	27.86	0.8	0.32	4	308.0	0.00	5.1	0.00	1
Cynoscion arenarius	2.1	2.14	0.0	0.05	4	0.0	0.00	0.0	0.00	1
Sphoeroides parvus	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	1
Prionotus rubio	3.0	1.95	0.1	0.05	4	8.0	0.00	0.9	0.00	1
Polydactylus octonemus	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	1
Syacium gunteri	0.0	0.00	0.0	0.00	4	12.0	0.00	0.5	0.00	1
Squid	151.5	57.63	2.2	0.80	4	32.0	0.00	1.1	0.00	1

*Texas data on numbers and weights not included.

Table 19c
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 1983 SEAMAP Shrimp and Bottomfish Survey by depth stratum.* Catch values in kg per hour, temperature in °C, salinity in ppt, and oxygen in ppm.

	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm**		
Environmental Category	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	81.8	0.00	1	69.3	21.59	2	86.1	18.03	9	42.5	7.21	4	29.1	0.00	1			
Total finfish kg	57.0	0.00	1	22.7	4.55	2	28.1	8.15	9	12.5	3.13	4	16.4	0.00	1			
Total crustacean kg	22.3	0.00	1	44.3	19.32	2	54.6	9.92	9	27.7	9.34	4	10.9	0.00	1			
Total others kg	2.5	0.00	1	2.3	2.27	2	3.1	1.22	9	2.1	0.88	4	1.8	0.00	1			
Surface temperature	28.9	0.00	1	28.9	0.09	5	29.0	0.06	11	28.9	0.13	5	29.3	0.12	3	29.0	0.00	1
Midwater temperature	29.0	0.00	1	28.9	0.11	5	28.6	0.21	11	26.9	0.74	5	23.6	0.38	3	21.3	0.00	1
Bottom temperature	29.0	0.00	1	28.9	0.12	5	27.6	0.35	11	24.0	0.90	5	21.1	0.24	3	20.5	0.00	1
Surface salinity	30.9	0.00	1	30.6	0.17	5	30.4	0.06	11	30.6	0.43	5	31.7	0.67	3	31.3	0.00	1
Midwater salinity	30.9	0.00	1	30.3	0.25	5	31.0	0.20	11	33.3	0.68	5	34.8	1.19	3	36.1	0.00	1
Bottom salinity	30.9	0.00	1	30.8	0.09	5	32.5	0.44	11	35.4	0.40	5	36.2	0.11	3	36.3	0.00	1
Surface oxygen	8.2	0.00	1	6.6	0.29	5	6.7	0.18	11	6.4	0.06	5	6.2	0.30	2	7.0	0.00	1
Midwater oxygen	7.8	0.00	1	6.6	0.25	5	6.5	0.17	11	5.5	0.44	5	6.1	0.00	2	6.0	0.00	1
Bottom oxygen	7.7	0.00	1	6.4	0.23	5	5.9	0.24	11	5.2	0.12	5	5.4	0.00	2	5.4	0.00	1

* Texas data on numbers and weights not included.

**Plankton and environmental stations only.

Table 20
16-ft trawls

Summary of dominant organisms, combined for all zones sampled, shrimp statistical zones 11-17, taken during June-July 1983 SEAMAP Shrimp and Bottomfish Survey in the 0-5 fm depth stratum; no sampling was done in zone 15. The mean number (Num) of organisms per hour, the standard error of the mean (SEM) for numbers, the weight in kg per hour, the SEM of weight and the number (n) of samples taken in that zone are given.

	STATISTICAL ZONE														
	11					12					13				
Species	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	12	0.5	0.50	0.0	0.00	12	0.0	0.00	0.0	0.00	12
Penaeus aztecus	0.5	0.50	0.0	0.00	12	27.5	11.45	0.2	0.11	12	103.0	38.52	0.7	0.28	12
Callinectes similis	1.0	1.00	0.0	0.00	12	64.5	34.18	0.1	0.05	12	161.0	72.20	0.1	0.06	12
Sicyonia dorsalis	0.0	0.00	0.0	0.00	12	0.0	0.00	0.0	0.00	12	0.0	0.00	0.0	0.00	12
Sicyonia brevirostris	0.0	0.00	0.0	0.00	12	0.0	0.00	0.0	0.00	12	0.0	0.00	0.0	0.00	12
Squilla spp.	0.0	0.00	0.0	0.00	12	0.0	0.00	0.0	0.00	12	0.0	0.00	0.0	0.00	12
Micropogonias undulatus	0.5	0.50	0.0	0.02	12	31.5	24.21	1.0	0.74	12	273.5	153.74	4.5	2.08	12
Stenotomus caprinus	0.0	0.00	0.0	0.00	12	0.0	0.00	0.0	0.00	12	0.0	0.00	0.0	0.00	12
Anchoa mitchilli	0.5	0.50	0.0	0.00	12	2415.0	853.08	4.6	1.63	12	341.5	163.50	0.5	0.23	12
Polydactylus octonemus	4.5	4.50	0.1	0.07	12	18.5	8.69	0.3	0.16	12	321.5	150.20	3.5	1.58	12
Prionotus rubio	0.0	0.00	0.0	0.00	12	0.0	0.00	0.0	0.00	12	0.0	0.00	0.0	0.00	12
Trachurus lathami	0.0	0.00	0.0	0.00	12	0.0	0.00	0.0	0.00	12	0.0	0.00	0.0	0.00	12
Cynoscion arenarius	0.0	0.00	0.0	0.00	12	20.0	10.51	0.1	0.05	12	0.5	0.50	0.0	0.00	12
Centropristis philadelphica	0.0	0.00	0.0	0.00	12	0.0	0.00	0.0	0.00	12	0.0	0.00	0.0	0.00	12
Squid	0.5	0.50	0.0	0.00	12	29.5	26.28	0.2	0.20	12	0.0	0.00	0.0	0.00	12

Table 20 (cont'd.)
16-ft trawls

Summary of dominant organisms, combined for all zones sampled, shrimp statistical zones 11-17, taken during June-July 1983 SEAMAP Shrimp and Bottomfish Survey in the 0-5 fm depth stratum; no sampling was done in zone 15. The mean number (Num) of organisms per hour, the standard error of the mean (SEM) for numbers, the weight in kg per hour, the SEM of weight and the number (n) of samples taken in that zone are given.

	STATISTICAL ZONE														
	14					16					17				
Species	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	24	0.0	0.00	0.0	0.00	12	0.0	0.00	0.0	0.00	12
Penaeus aztecus	39.0	12.99	0.3	0.12	24	146.5	54.46	0.3	0.12	12	238.5	45.96	1.1	0.25	12
Callinectes similis	0.5	0.00	0.0	0.00	24	0.0	0.00	0.0	0.00	12	4.5	4.50	0.3	0.30	12
Sicyonia dorsalis	0.0	0.00	0.0	0.00	24	0.0	0.00	0.0	0.00	12	0.0	0.00	0.0	0.00	12
Sicyonia brevirostris	0.0	0.00	0.0	0.00	24	0.0	0.00	0.0	0.00	12	0.0	0.00	0.0	0.00	12
Squilla spp.	0.0	0.00	0.0	0.00	24	0.0	0.00	0.0	0.00	12	0.0	0.00	0.0	0.00	12
Micropogonias undulatus	223.3	57.80	2.8	0.66	24	111.0	34.71	0.9	0.28	12	467.0	71.10	5.7	1.18	12
Stenotomus caprinus	0.0	0.00	0.0	0.00	24	0.0	0.00	0.0	0.00	12	0.0	0.00	0.0	0.00	12
Anchoa mitchilli	540.3	299.46	0.9	0.51	24	220.0	101.44	0.4	0.17	12	172.5	39.53	0.4	0.11	12
Polydactylus octonemus	276.8	85.18	2.5	0.93	24	212.5	140.26	2.1	1.36	12	868.0	391.70	5.9	2.65	12
Prionotus rubio	0.0	0.00	0.0	0.00	24	0.0	0.00	0.0	0.00	12	0.0	0.00	0.0	0.00	12
Trachurus lathami	0.0	0.00	0.0	0.00	24	0.0	0.00	0.0	0.00	12	0.0	0.00	0.0	0.00	12
Cynoscion arenarius	4.0	2.25	0.2	0.14	24	72.5	28.84	0.1	0.07	12	79.0	13.53	0.4	0.11	12
Centropristis philadelphica	0.0	0.00	0.0	0.00	24	0.0	0.00	0.0	0.00	12	0.0	0.00	0.0	0.00	12
Squid	0.8	0.55	0.0	0.00	24	17.5	12.48	0.0	0.00	12	1.5	1.50	0.0	0.00	12

Table 21
Statistical Zone 11
16-ft trawls

Summary of dominant organisms taken within shrimp statistical zone 11 during the June-July 1983 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 weight in kg per hour, the SEM of weight and the number (n) of samples taken.

	0-5 fm				
Species	Num	SEM	Wt	SEM	n
Callinectes sapidus	2.5	1.37	0.5	0.00	12
Callinectes similis	1.0	1.00	0.0	0.00	12
Penaeus aztecus	0.5	0.50	0.0	0.00	12
Libinia spp.	0.5	0.50	0.0	0.00	12
Pagurus longicarpus	0.5	0.50	0.0	0.00	12
Anchoa hepsetus	152.0	139.15	0.1	0.09	12
Polydactylus octonemus	4.5	4.50	0.0	0.00	12
Arius felis	3.5	2.50	0.6	0.35	12
Leiostomus xanthurus	1.5	1.08	0.0	0.00	12
Peprilus paru	1.5	1.08	0.0	0.00	12
Trichiurus lepturus	1.0	0.67	0.0	0.00	12
Anchoa mitchilli	0.5	0.50	0.0	0.00	12
Micropogonias undulatus	0.5	0.50	0.0	0.00	12
Squid	0.5	0.50	0.0	0.00	12

Table 22
Statistical Zone 12
16-ft trawls

Summary of dominant organisms taken within shrimp statistical zone 12 during the June-July 1983 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 weight in kg per hour, the SEM of weight and the number (n) of samples taken.

	0-5 fm				
Species	Num	SEM	Wt	SEM	n
Callinectes similis	64.5	34.18	0.1	0.05	12
Penaeus aztecus	27.5	11.45	0.2	0.11	12
Penaeus setiferus	1.5	1.50	0.1	0.07	12
Callinectes sapidus	0.5	0.50	0.1	0.14	12
Trachypenaeus spp.	0.5	0.50	0.0	0.00	12
Anchoa mitchilli	2415.0	853.08	4.6	1.63	12
Anchoa hepsetus	76.5	72.20	1.1	0.99	12
Menticirrhus americanus	52.0	27.59	0.2	0.13	12
Anchoa nasuta	42.5	31.30	0.0	0.00	12
Micropogonias undulatus	31.5	24.21	1.0	0.74	12
Arius felis	22.0	15.55	1.2	0.73	12
Cynoscion arenarius	20.0	10.51	0.1	0.05	12
Polydactylus octonemus	18.5	8.69	0.3	0.16	12
Squid	29.5	26.28	0.2	0.20	12

Table 23
Statistical Zone 13
16-ft trawls

Summary of dominant organisms taken within shrimp statistical zone 13 during the June-July 1983 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 weight in kg per hour, the SEM of weight and the number (n) of samples taken.

	0-5 fm				
Species	Num	SEM	Wt	SEM	n
Callinectes similis	161.0	72.20	0.1	0.06	12
Penaeus aztecus	103.0	38.52	0.7	0.28	12
Callinectes sapidus	13.5	7.96	0.5	0.41	12
Xiphopenaeus kroyeri	0.5	0.50	0.0	0.00	12
Anchoa mitchilli	341.5	163.50	0.5	0.23	12
Polydactylus octonemus	321.5	150.20	3.5	1.58	12
Micropogonias undulatus	273.5	153.74	4.5	2.08	12
Trichiurus lepturus	59.0	29.09	0.9	0.74	12
Symphurus plagiusa	18.5	8.56	0.1	0.06	12
Leiostomus xanthurus	9.0	2.81	0.2	0.05	12
Brevoortia patronus	7.5	5.02	0.1	0.07	12
Anchoa hepsetus	4.0	2.49	0.0	0.00	12
Squid	0.0	0.00	0.0	0.00	12

Table 24
Statistical Zone 14
16-ft trawls

Summary of dominant organisms taken within shrimp statistical zone 14 during the June-July 1983 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 weight in kg per hour, the SEM of weight and the number (n) of samples taken.

	0-5 fm				
Species	Num	SEM	Wt	SEM	n
Penaeus aztecus	39.0	12.99	0.3	0.12	24
Callinectes sapidus	16.0	6.43	0.8	0.34	24
Penaeus setiferus	1.8	0.85	0.0	0.02	24
Callinectes similis	0.5	0.00	0.0	0.00	24
Xiphopenaeus kroyeri	0.3	0.25	0.0	0.00	24
Anchoa mitchilli	540.3	299.46	0.9	0.51	24
Polydactylus octonemus	276.8	85.18	2.5	0.93	24
Micropogonias undulatus	223.3	57.80	2.8	0.66	24
Leiostomus xanthurus	26.5	11.61	0.3	0.11	24
Anchoa hepsetus	10.3	5.37	0.0	0.00	24
Arius felis	9.3	2.60	0.9	0.40	24
Trichiurus lepturus	4.5	1.41	0.1	0.06	24
Cynoscion arenarius	4.0	2.25	0.2	0.14	24
Squid	0.8	0.55	0.0	0.00	24

Table 25
Statistical Zone 16
16-ft trawls

Summary of dominant organisms taken within shrimp statistical zone 16 during the June-July 1983 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 weight in kg per hour, the SEM of weight and the number (n) of samples taken.

	0-5 fm				
Species	Num	SEM	Wt	SEM	n
Penaeus aztecus	146.5	54.46	0.3	0.12	12
Callinectes sapidus	31.5	11.77	0.8	0.34	12
Xiphopenaeus kroyeri	24.5	16.14	0.2	0.15	12
Penaeus setiferus	11.0	4.66	0.2	0.06	12
Macrobrachium ohione	2.0	1.13	0.0	0.00	12
Anchoa mitchilli	220.0	101.44	0.4	0.17	12
Polydactylus octonemus	212.5	140.26	2.1	1.36	12
Micropogonias undulatus	111.0	34.71	0.9	0.28	12
Cynoscion arenarius	72.5	28.84	0.1	0.07	12
Arius felis	24.0	13.76	1.5	0.70	12
Trichiurus lepturus	15.5	10.61	0.6	0.41	12
Dorosoma cepedianum	7.0	3.83	0.1	0.08	12
Stellifer lanceolatus	3.5	2.02	0.0	0.00	12
Squid	17.5	12.48	0.0	0.00	12

Table 26
Statistical Zone 17
16-ft trawls

Summary of dominant organisms taken within shrimp statistical zone 17 during the June-July 1983 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 weight in kg per hour, the SEM of weight and the number (n) of samples taken.

	0-5 fm				
Species	Num	SEM	Wt	SEM	n
Penaeus aztecus	238.5	45.96	1.1	0.25	12
Callinectes sapidus	132.0	47.87	4.1	0.97	12
Xiphopeneus kroyeri	13.0	7.15	0.1	0.05	12
Penaeus setiferus	10.0	2.59	0.2	0.07	12
Callinetes similis	4.5	4.50	0.3	0.30	12
Polydactylus octonemus	868.0	391.70	5.9	2.65	12
Micropogonias undulatus	467.0	71.10	5.7	1.18	12
Anchoa mitchilli	172.5	39.63	0.4	0.07	12
Cynoscion arenarius	79.0	13.53	0.4	0.11	12
Stellifer lanceolatus	67.5	30.10	0.4	0.15	12
Symphurus plagiusa	27.0	11.07	0.1	0.05	12
Leiostomus xanthurus	18.5	4.76	0.3	0.08	12
Arius felis	8.5	3.09	09.2	0.08	12
Squid	1.5	1.50	0.0	0.00	12

Table 27
16-ft trawls
0-5 fathoms

Summary of the mean total catch (kg/hr) and environmental data (X), the standard error of the mean (SEM) and the number of samples taken (n) during the June-July 1983 SEAMAP Shrimp and Bottomfish Survey. Catch values in kg, temperature in °C, salinity in ppt, and oxygen in ppm. No sampling was done in statistical zone 15.

	STATISTICAL ZONE														
	10*			11			12			13			14		
Environmental Category	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg				3.4	0.59	12	17.0	5.85	12	11.4	4.26	12	9.5	1.76	24
Total finfish kg				3.0	0.71	12	16.4	5.76	12	10.2	3.90	12	8.2	1.57	24
Total crustacean kg				0.9	0.39	12	2.0	0.36	12	3.2	0.45	12	2.2	0.43	24
Total others kg				0.9	0.39	12	1.1	0.41	12	0.0	0.00	12	0.2	0.16	24
Surface temperature	25.4	1.66	4	27.2	0.31	20	28.5	0.46	6	27.9	0.13	6	28.0	0.70	15
Midwater temperature	25.1	1.52	4	25.3	0.52	6							29.2	0.59	3
Bottom temperature	24.6	1.66	4	25.7	0.56	12	27.2	0.60	6	27.6	0.07	6	26.4	0.55	15
Surface salinity	29.0	1.47	4	8.9	1.00	20	6.7	1.87	6	9.3	1.20	6	14.8	0.71	15
Midwater salinity	28.5	1.19	4	21.5	1.89	6							20.1	0.99	3
Bottom salinity	29.0	1.47	4	22.1	1.63	12	15.4	3.10	6	12.2	2.16	6	19.7	1.88	15
Surface oxygen	7.0	0.20	2	7.1	0.27	17	8.5	0.39	6	8.2	0.29	6	8.0	0.33	15
Midwater oxygen	5.8	0.80	2	6.7	0.41	3							2.7	1.89	3
Bottom oxygen	5.4	0.60	2	5.5	0.44	9	5.7	0.99	6	6.8	0.51	6	5.8	0.78	15

*Alabama data on numbers and weights were not collected for statistical zone 10.

Table 27 (cont'd.)
16-ft trawls
0-5 fathoms

Summary of the mean total catch (kg/hr) and environmental data (X), the standard error of the mean (SEM) and the number of samples taken (n) during the June-July 1983 SEAMAP Shrimp and Bottomfish Survey. Catch values in kg, temperature in °C, salinity in ppt, and oxygen in ppm. No sampling was done in statistical zone 15.

	STATISTICAL ZONE					
	16			17		
Environmental Category	X	SEM	n	X	SEM	n
Total catch kg	7.7	2.68	12	19.8	2.45	12
Total finfish kg	6.4	2.18	12	13.9	2.41	12
Total crustacean kg	2.3	0.57	12	5.5	0.75	12
Total others kg	0.5	0.31	12	0.2	0.23	12
Surface temperature	28.5	0.39	6	28.7	0.35	6
Midwater temperature						
Bottom temperature				28.5	0.33	6
Surface salinity	12.3	4.80	6	15.4	3.28	6
Midwater salinity						
Bottom salinity				19.1	2.92	6
Surface oxygen	7.9	0.42	6	8.5	0.60	6
Midwater oxygen						
Bottom oxygen	6.67	0.43	6	6.7	0.51	6

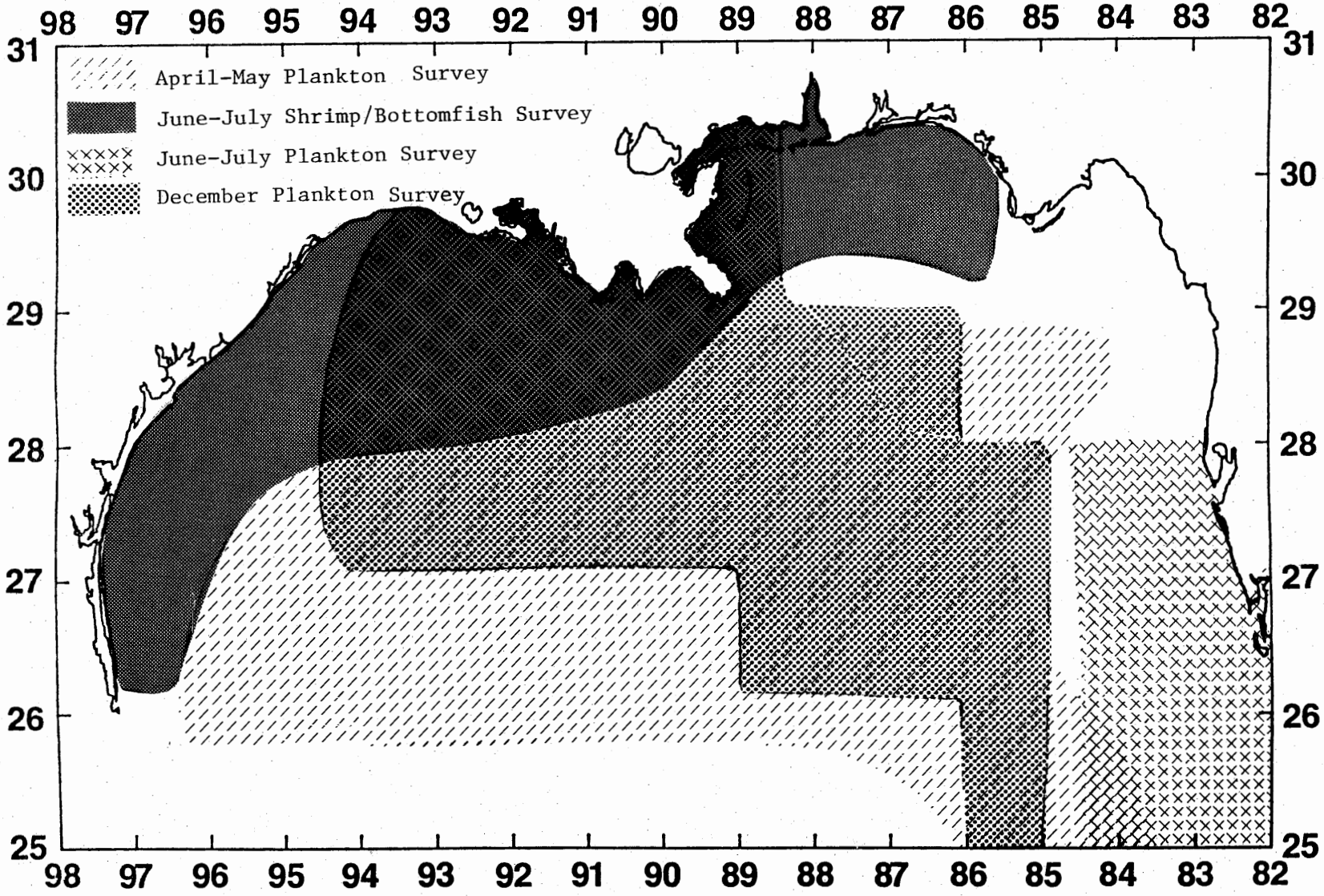


Figure 1. 1983 SEAMAP surveys, Gulf of Mexico.

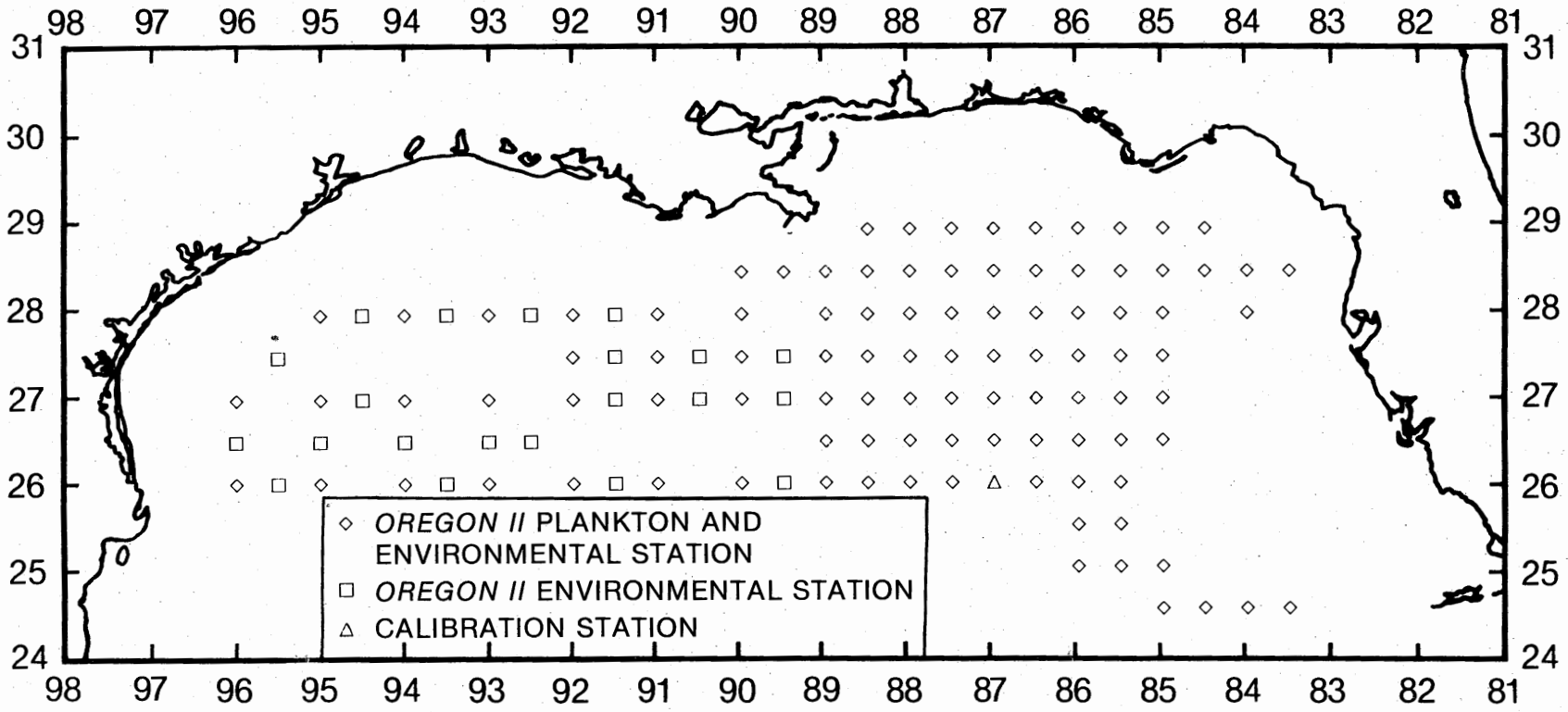


Figure 2. Locations of plankton and environmental stations during SEAMAP Plankton Survey, April-May 1983.

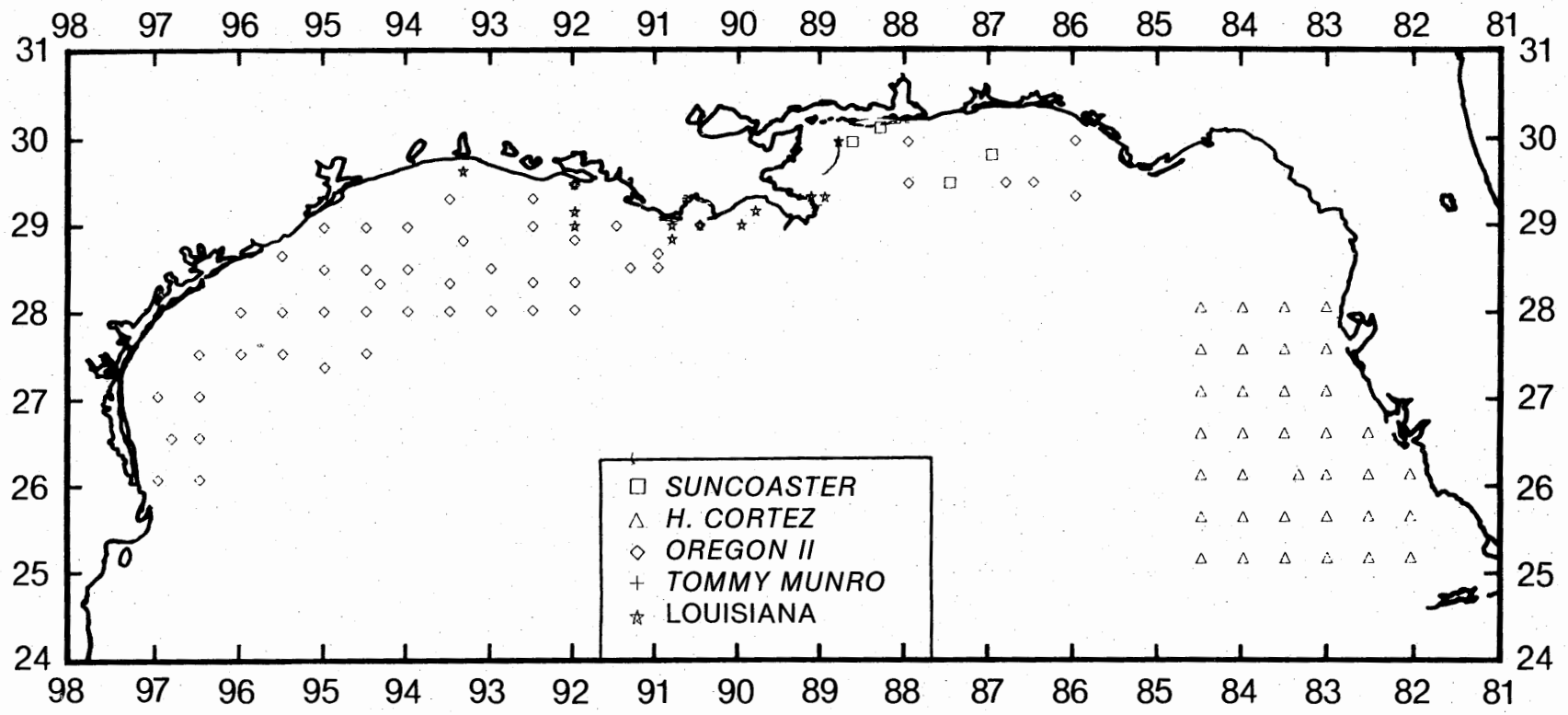


Figure 3. Locations of plankton stations during SEAMAP Shrimp and Bottomfish Survey, June-July 1983.

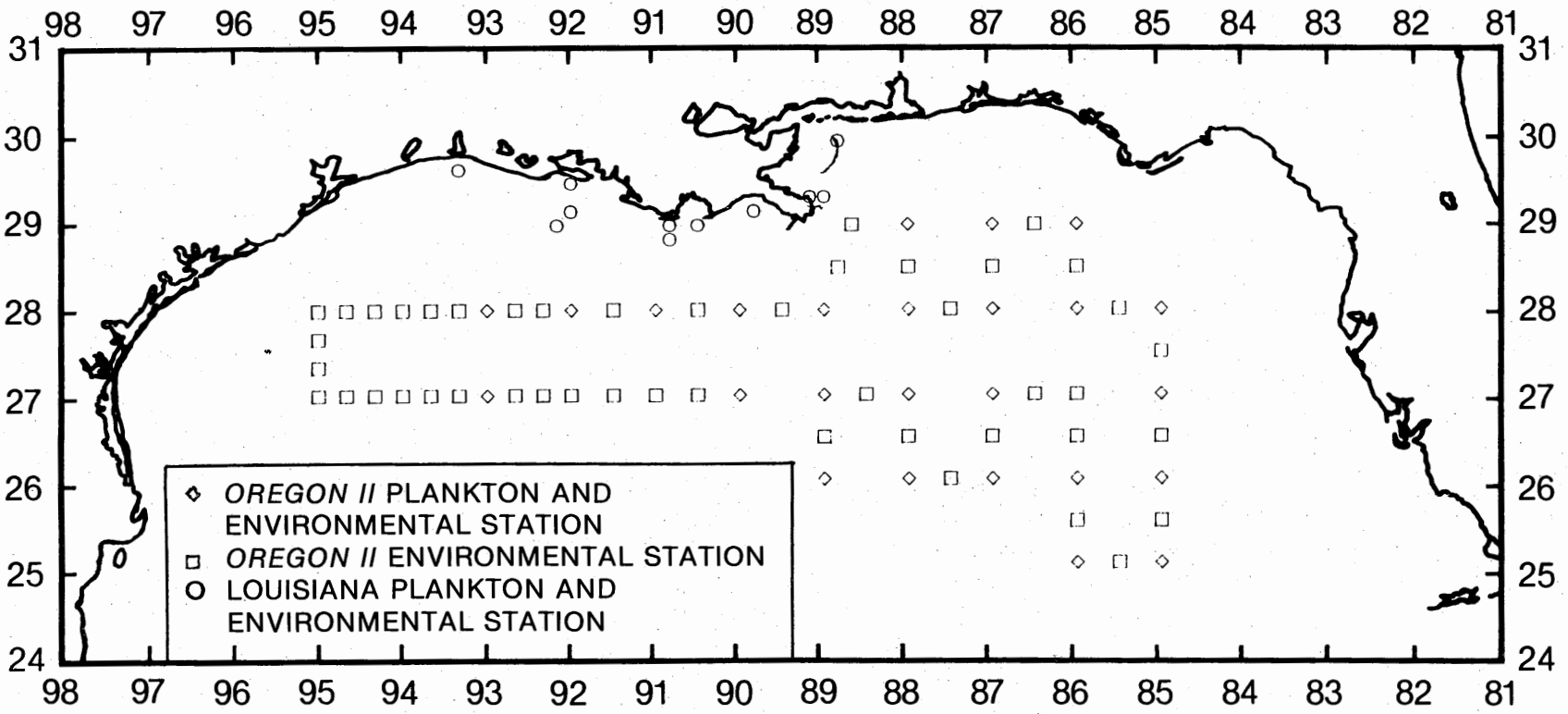


Figure 4. Locations of plankton and environmental stations during SEAMAP Plankton Survey, November-December 1983.

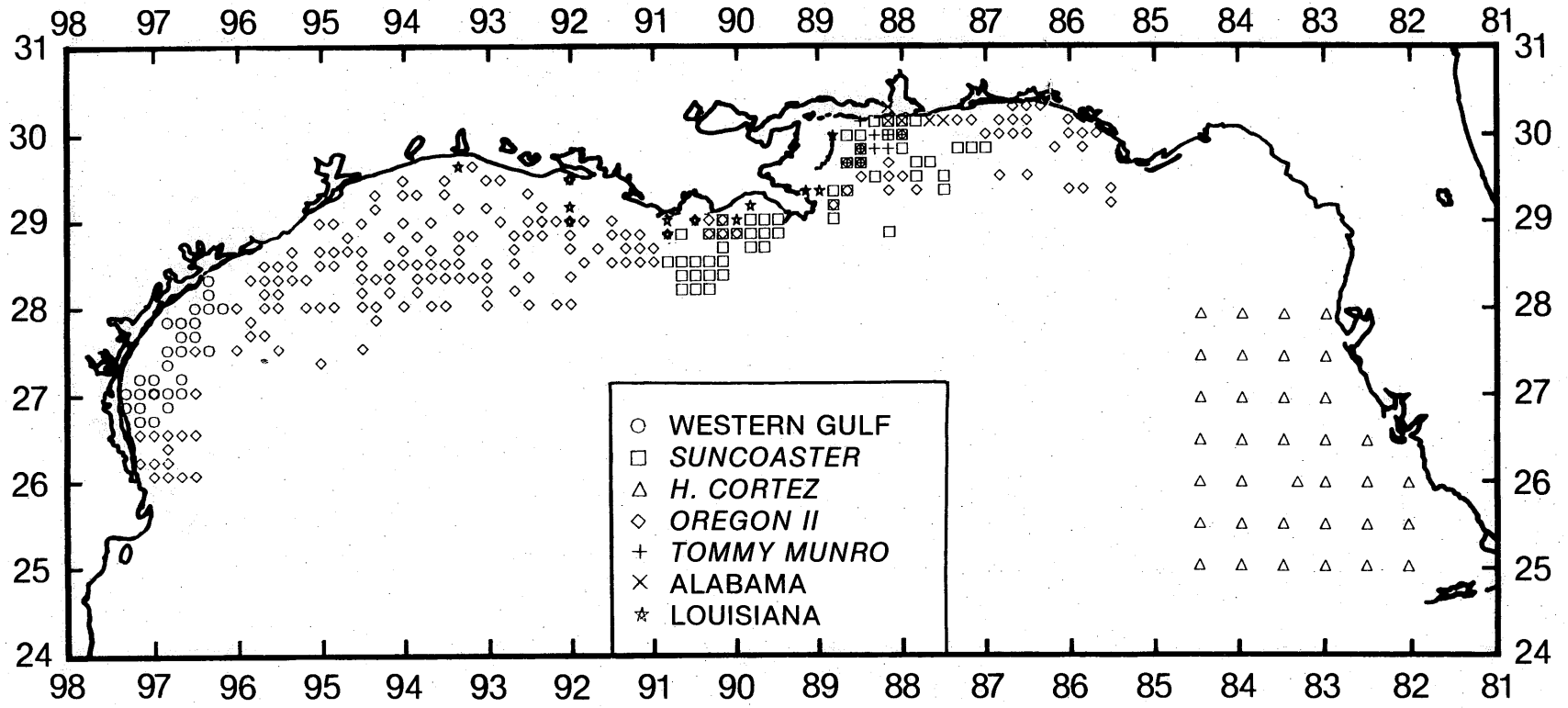


Figure 5. Locations of SEAMAP Shrimp and Bottomfish Survey environmental stations, summarized by 10-minute squares, June-July 1983.

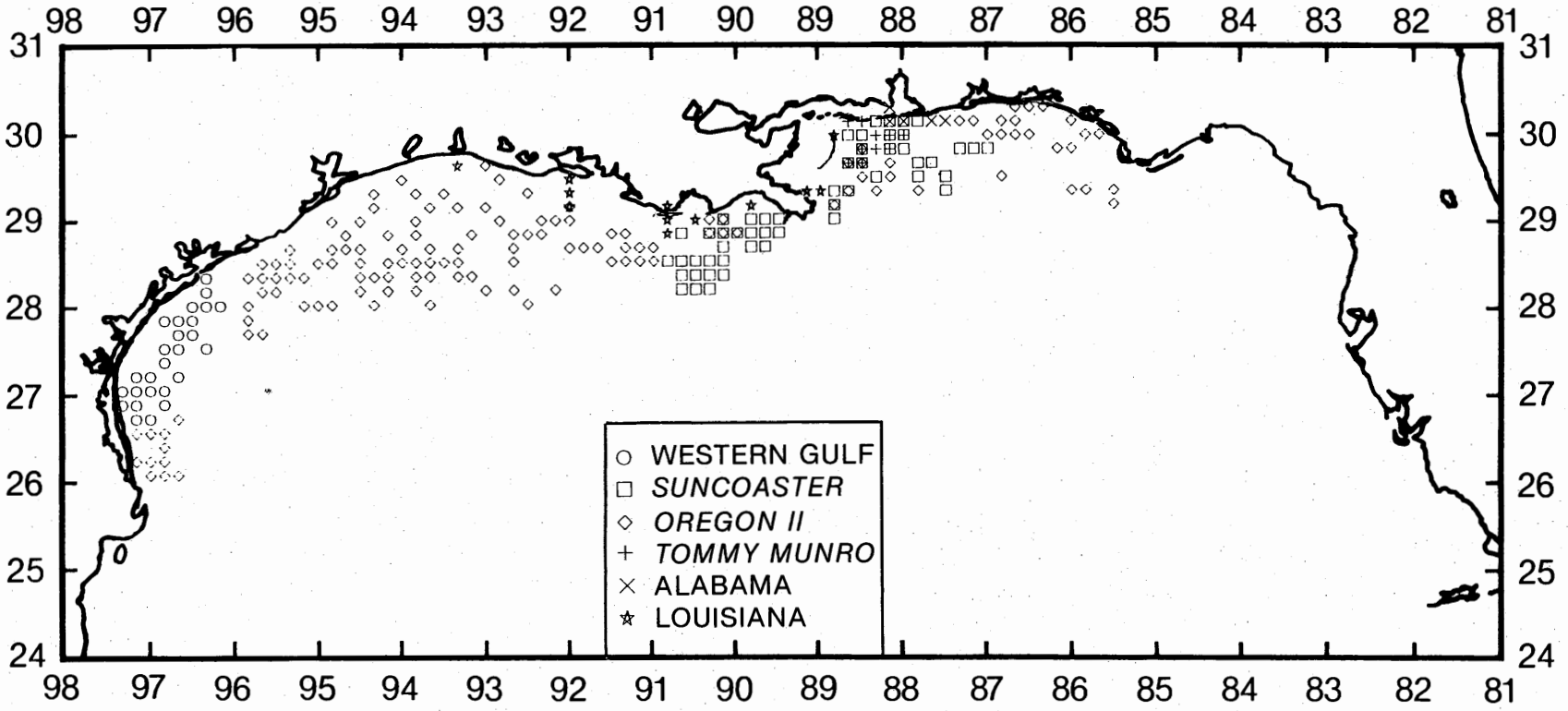


Figure 6. Locations of SEAMAP Shrimp and Bottomfish Survey trawl stations, summarized by 10-minute squares, June-July 1983.

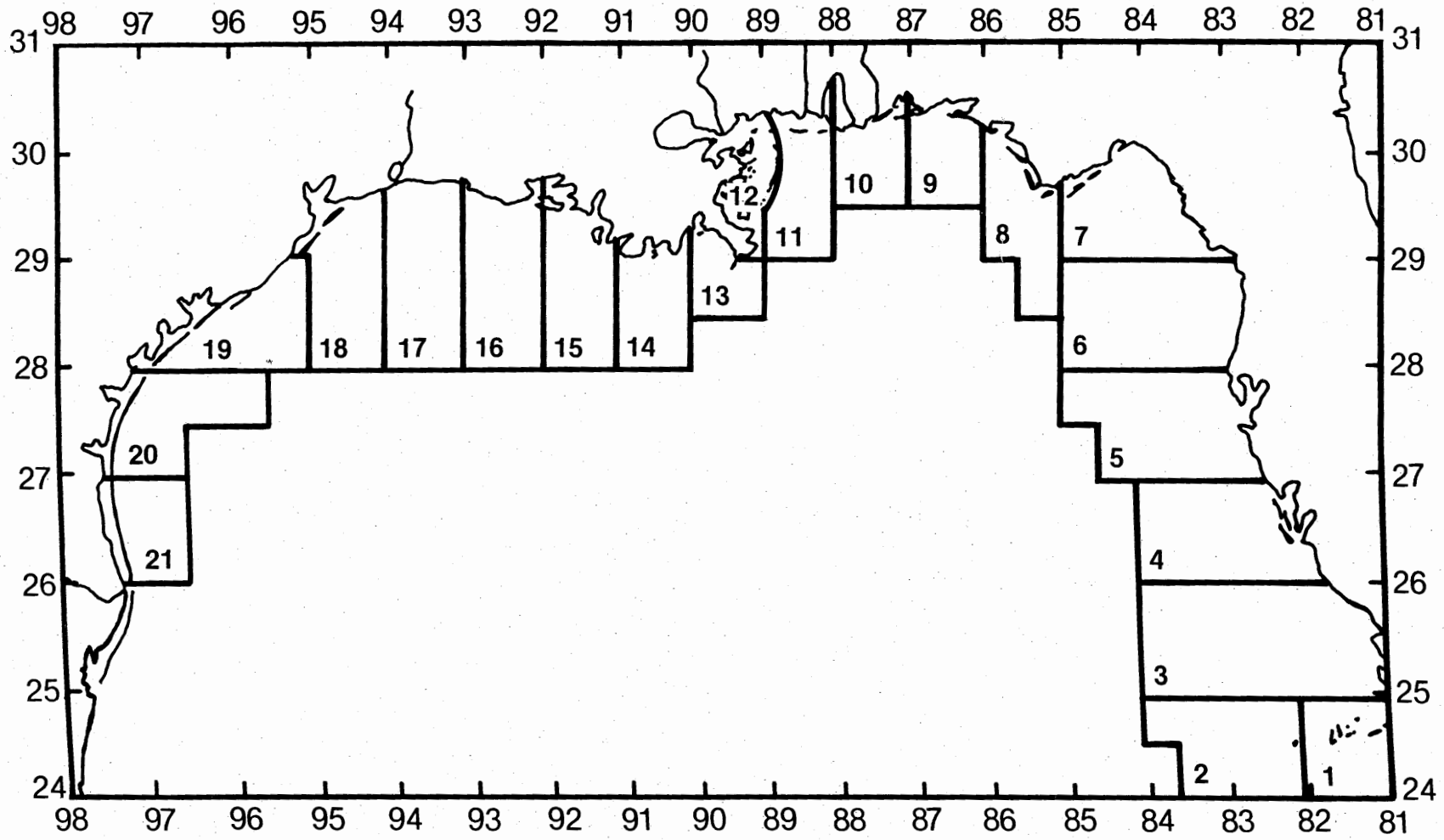


Figure 7. Statistical zones for shrimp in the Gulf of Mexico.

ENVIRONMENTAL DATA PLOTS:

APRIL - MAY PLANKTON SURVEY

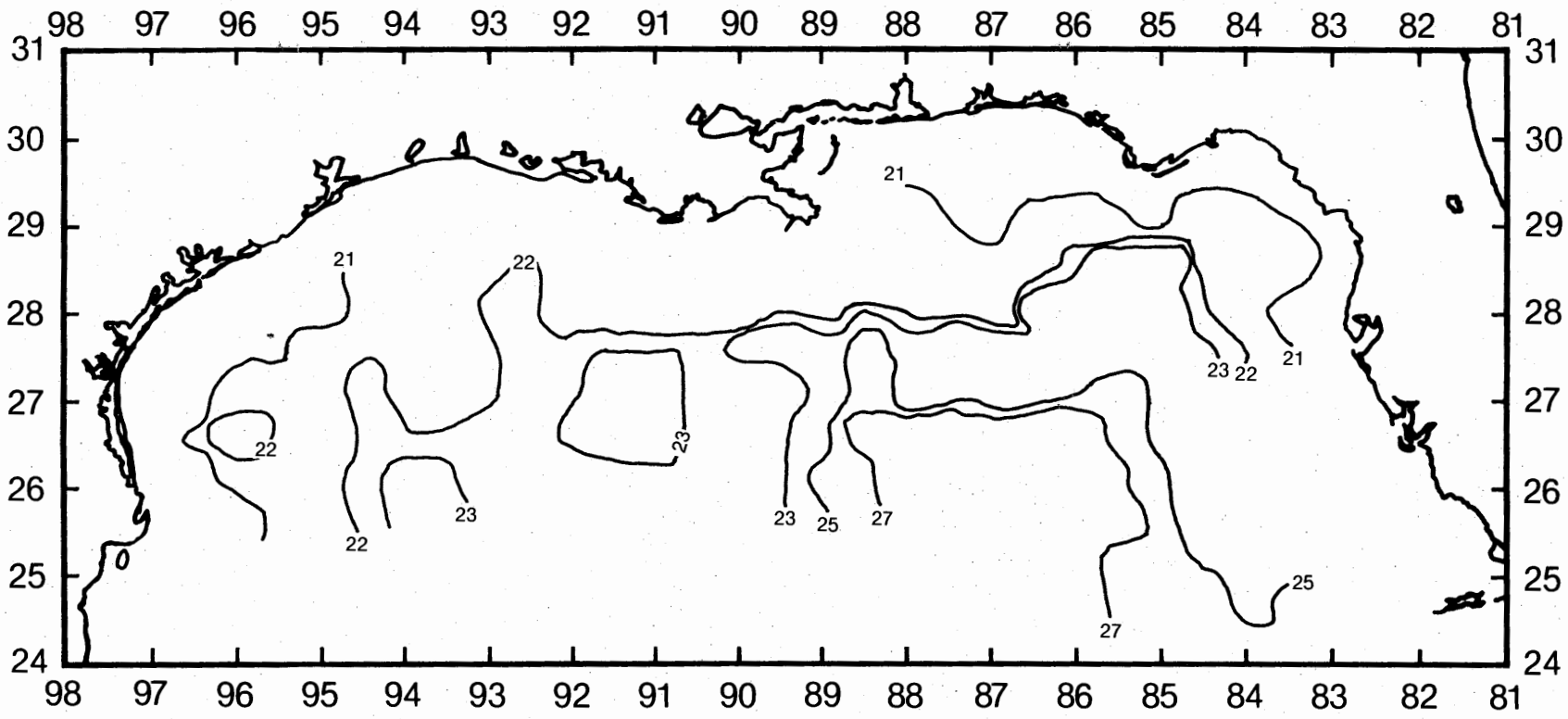


Figure 8. Surface water temperature (°C) during SEAMAP Plankton Survey, April-May 1983.

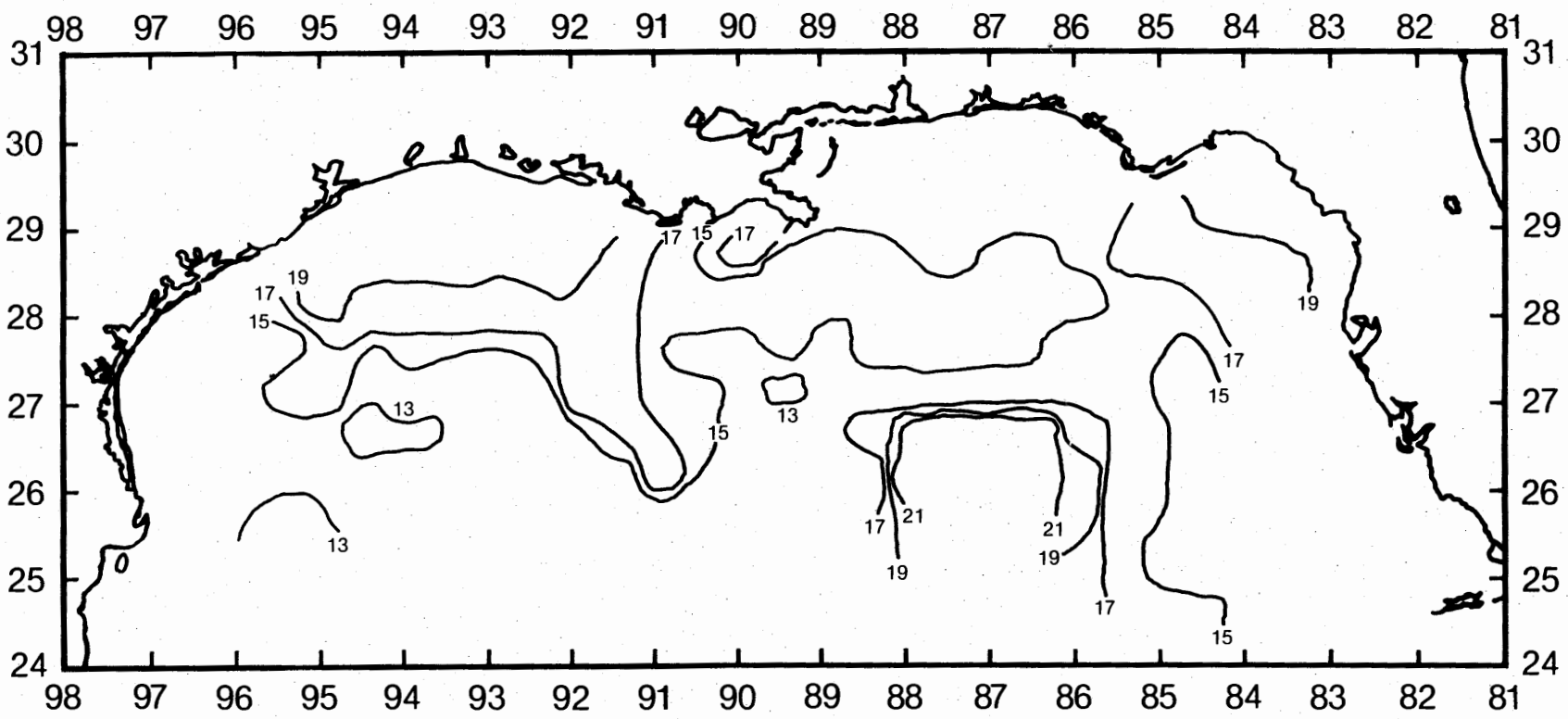


Figure 9. Water temperature (°C) at bottom or 200 m, whichever was shallower, during SEAMAP Plankton Survey, April-May 1983.

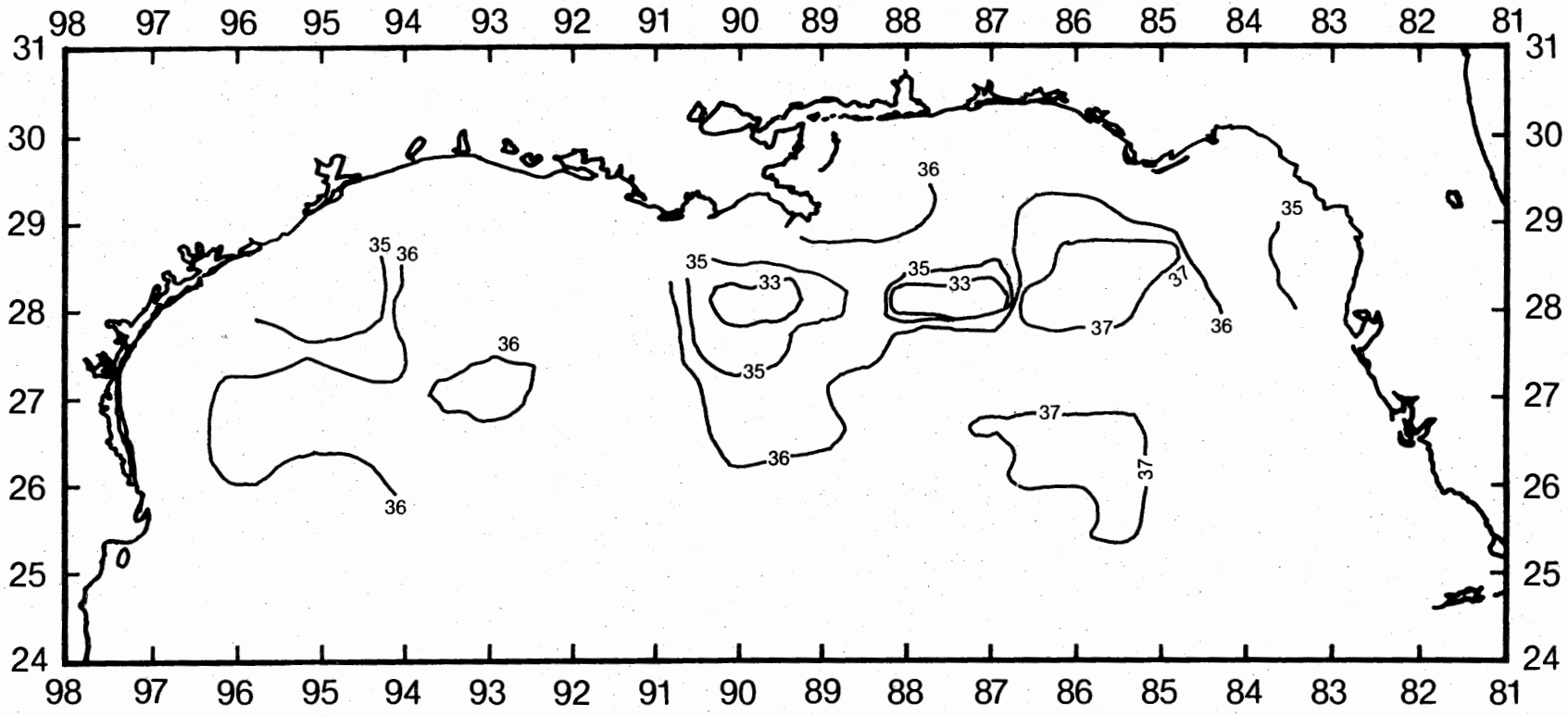


Figure 10. Surface salinity (ppt) during SEAMAP Plankton Survey, April-May 1983.

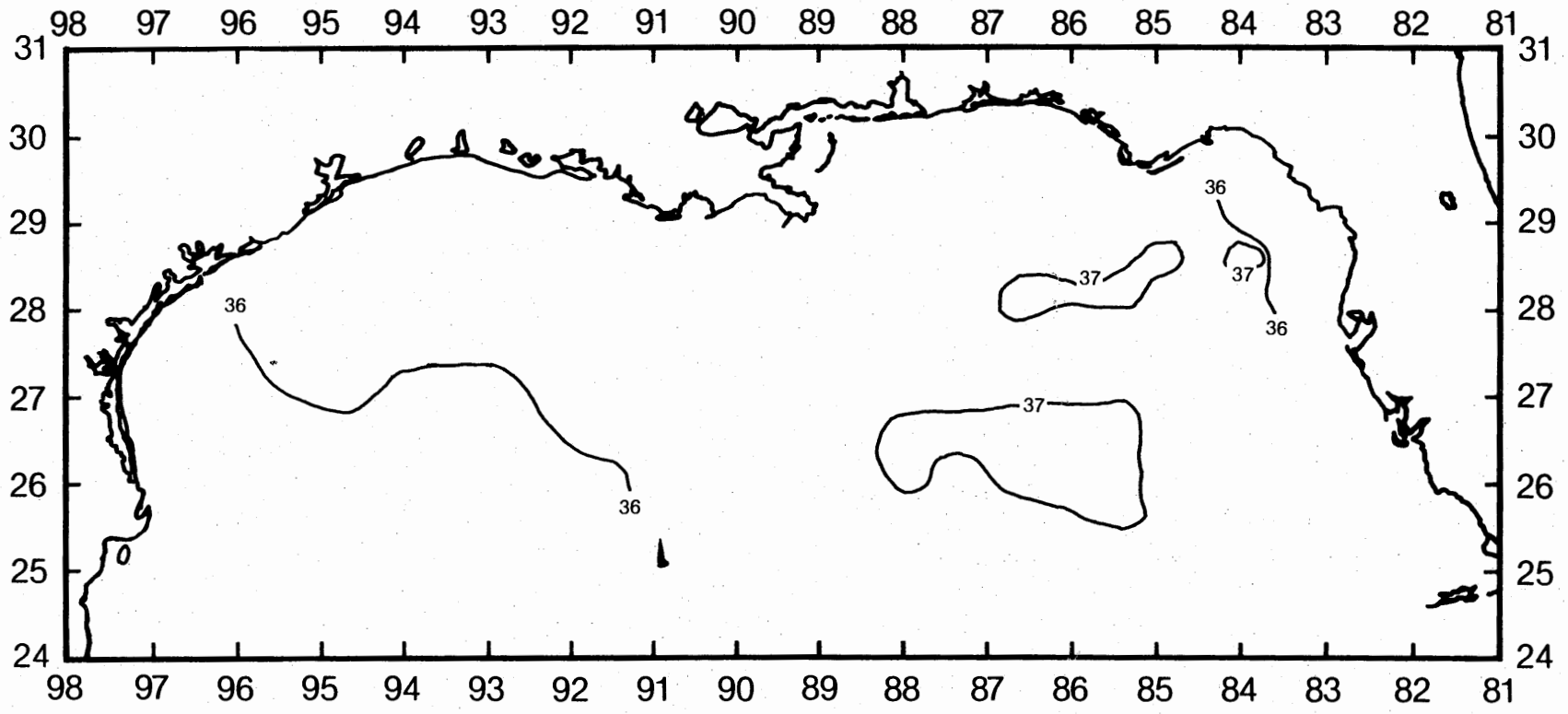


Figure 11. Salinity (ppt) at bottom or 200 m, whichever was shallower, during SEAMAP Plankton Survey, April-May 1983.

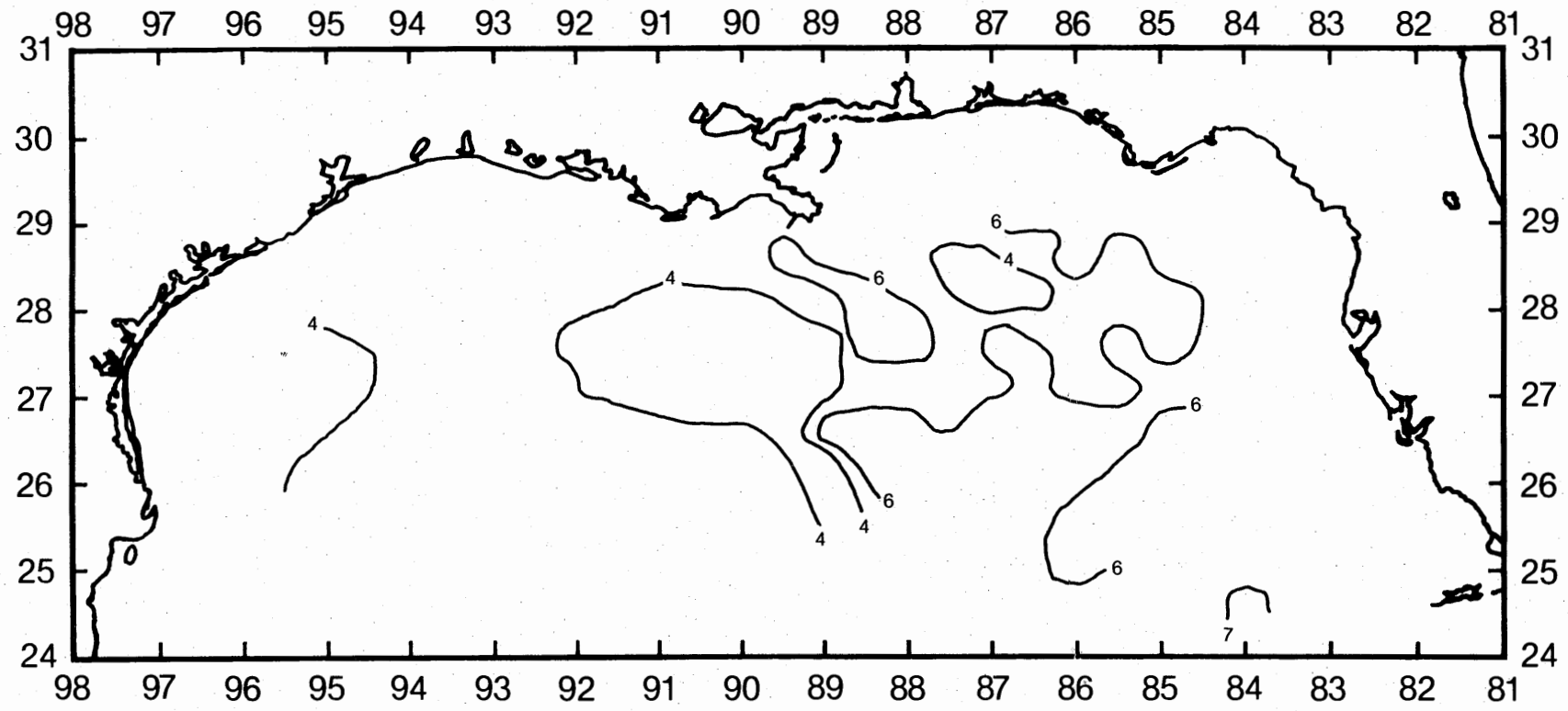


Figure 12. Surface dissolved oxygen (ppm) during SEAMAP Plankton Survey, April-May 1983.

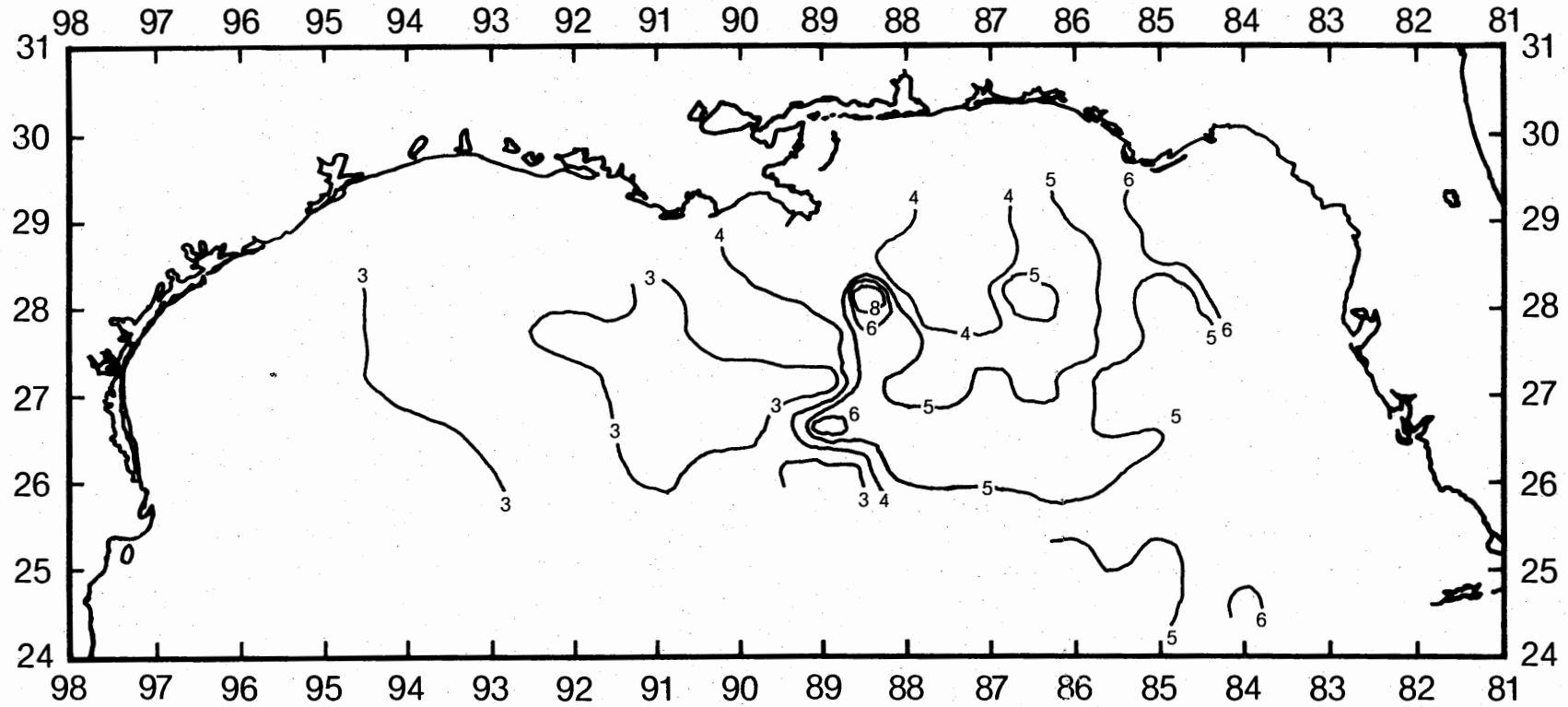


Figure 13. Dissolved oxygen (ppm) at bottom or 200 m, whichever was shallower, during SEAMAP Plankton Survey, April-May 1983.

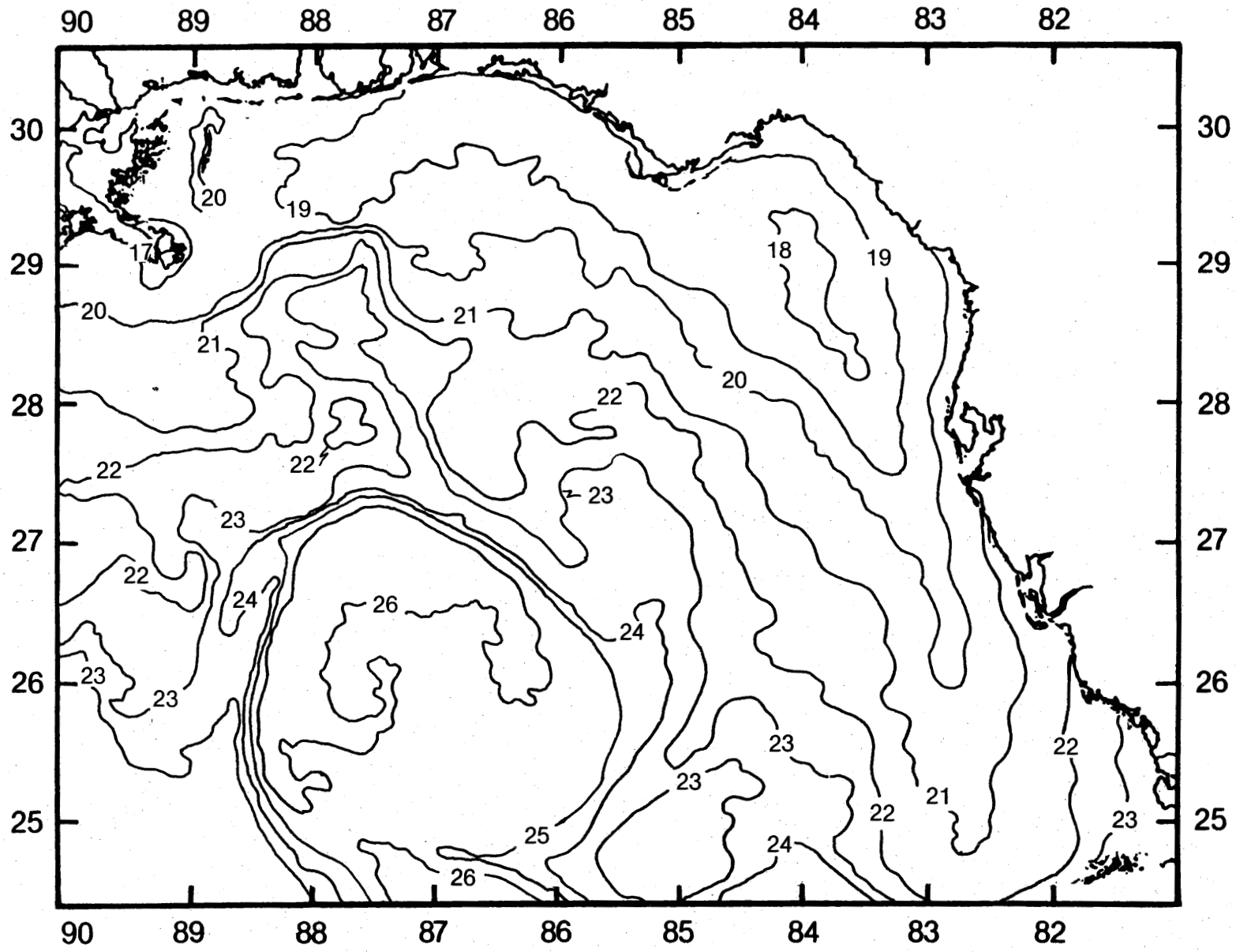


Figure 14. Satellite measurement of surface temperature (°C) in the eastern Gulf of Mexico, April 1983 (modified from

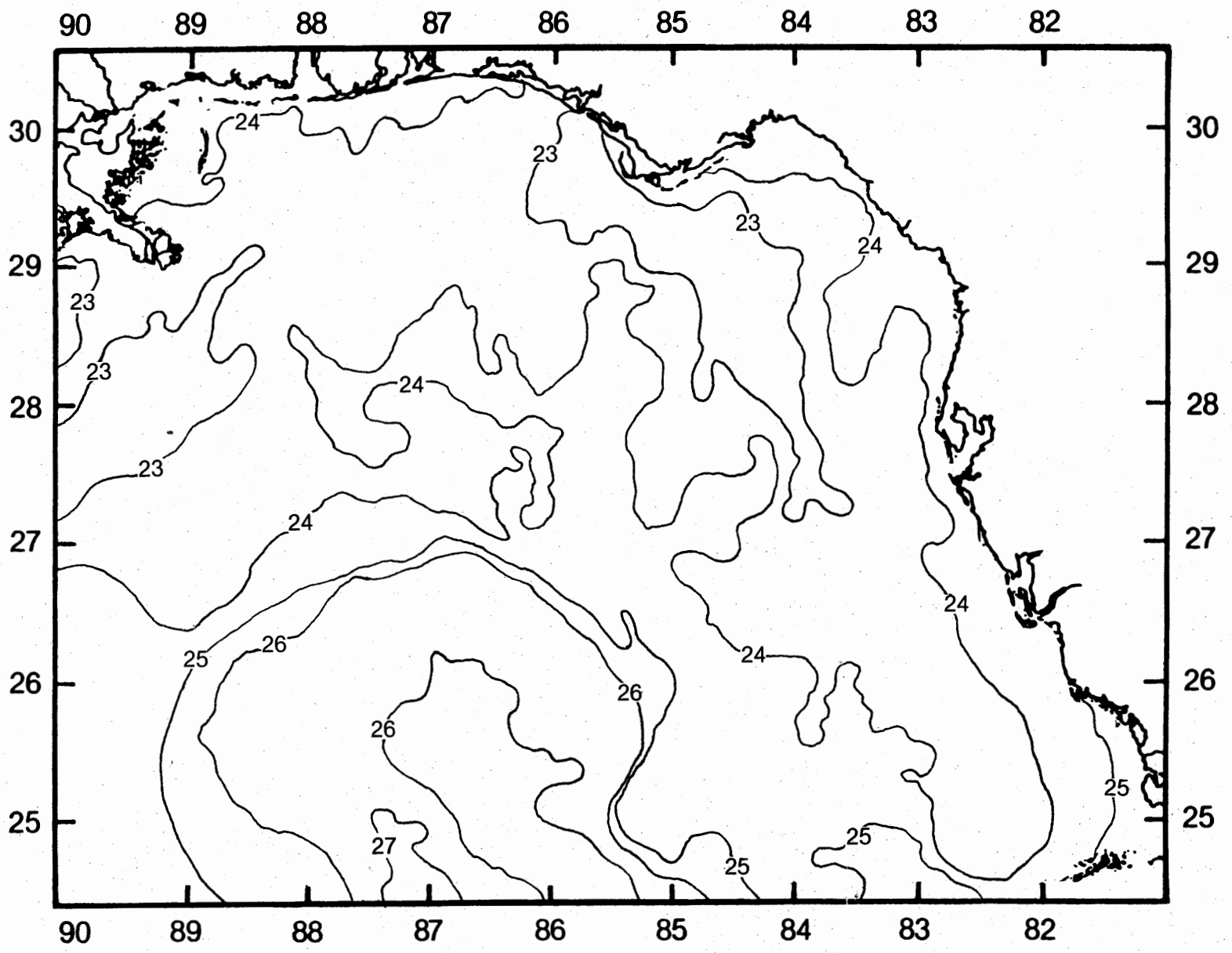


Figure 15. Satellite measurement of surface temperature (°C) in the eastern Gulf of Mexico, May 1983 (modified from NWS/NESDIS Sea Surface Thermal Analysis).

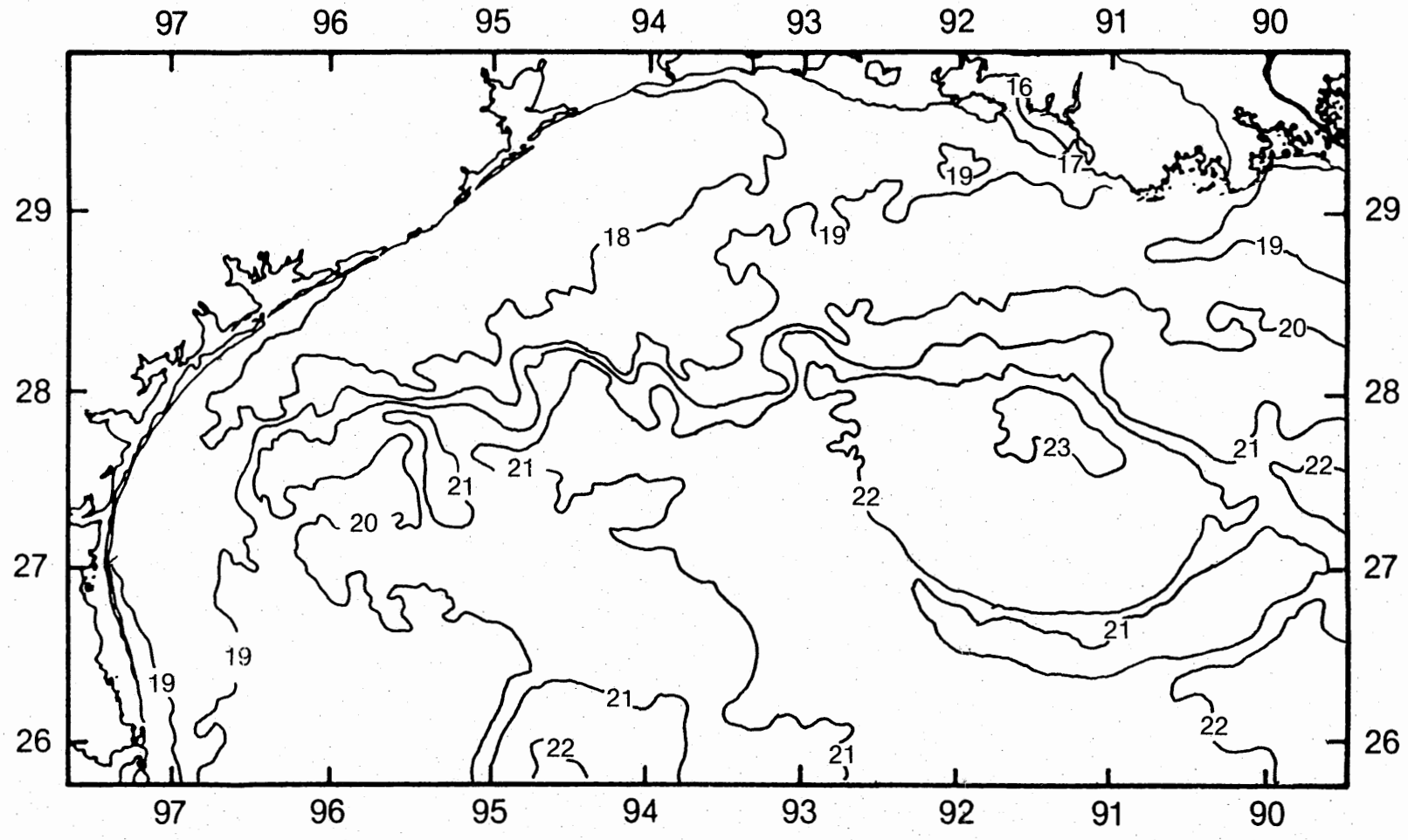


Figure 16. Satellite measurement of surface temperature (°C) in the western Gulf of Mexico, April 1983 (modified from NWS/NESDIS Sea Surface Thermal Analysis).

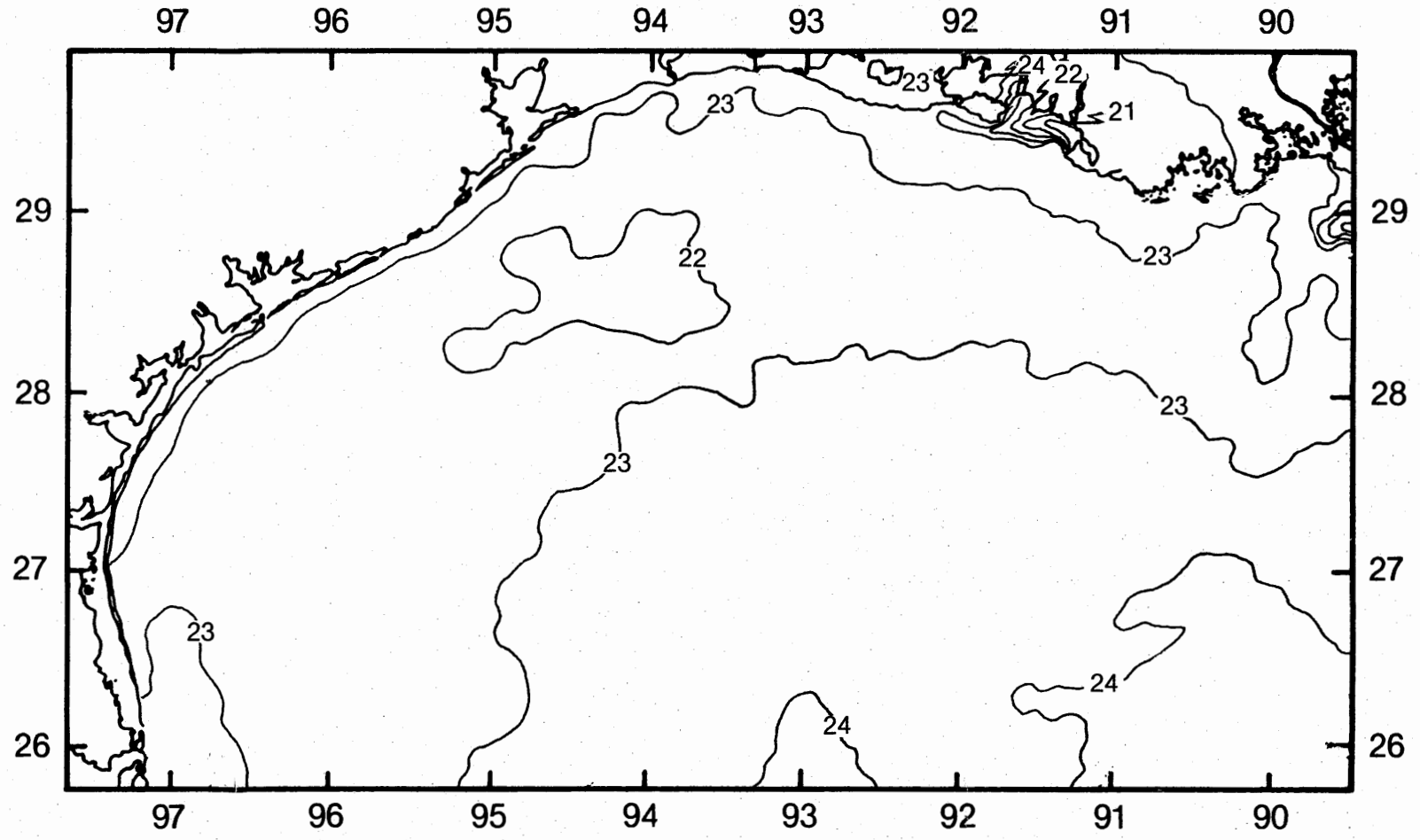
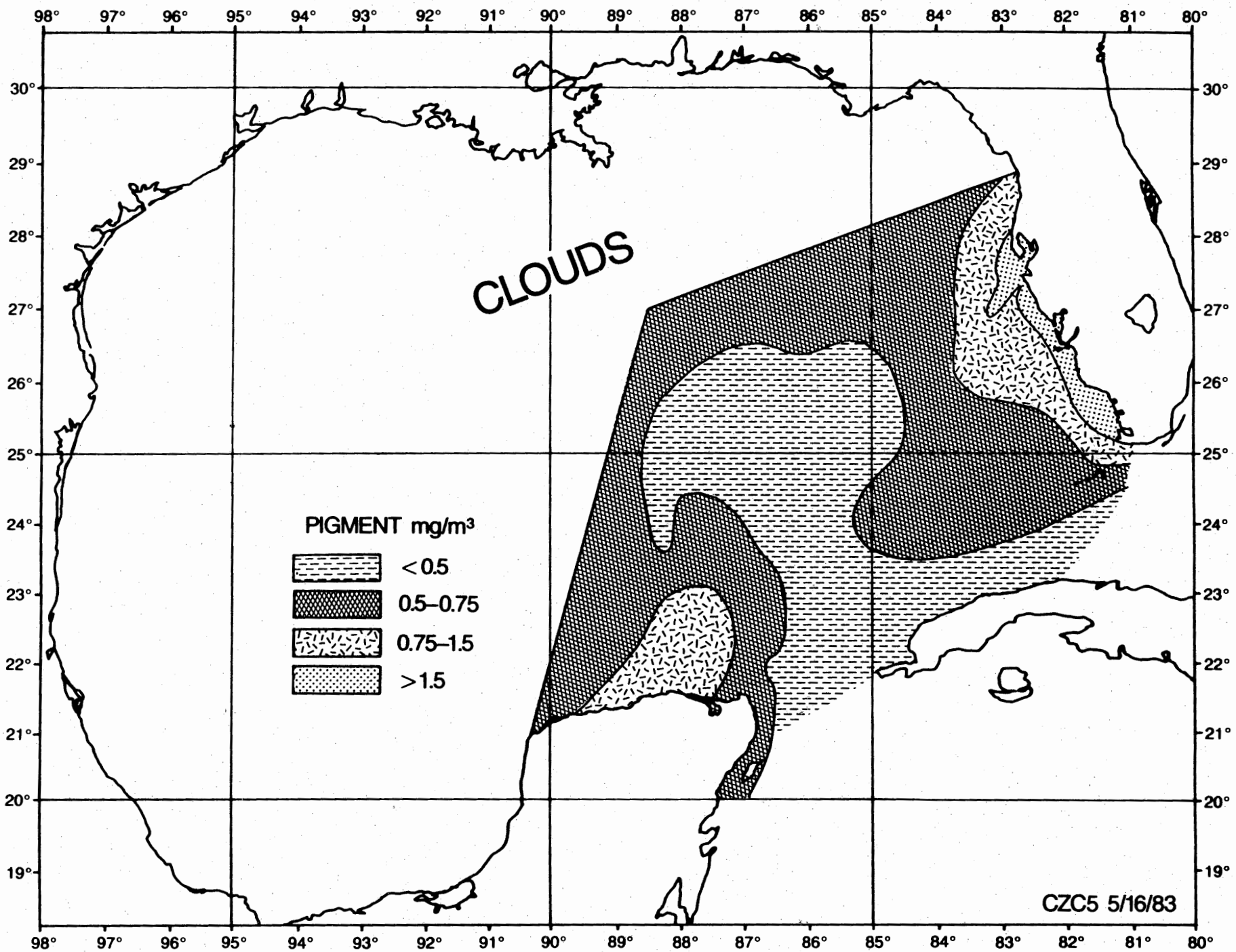


Figure 17. Satellite measurement of surface temperature (°C) in the western Gulf of Mexico, May 1983 (modified from NWS/NESDIS Sea Surface Thermal Analysis).



...contractions for May 16, 1983, eastern Gulf of Mexico.

ENVIRONMENTAL DATA PLOTS:

JUNE-JULY SHRIMP & BOTTOMFISH SURVEY

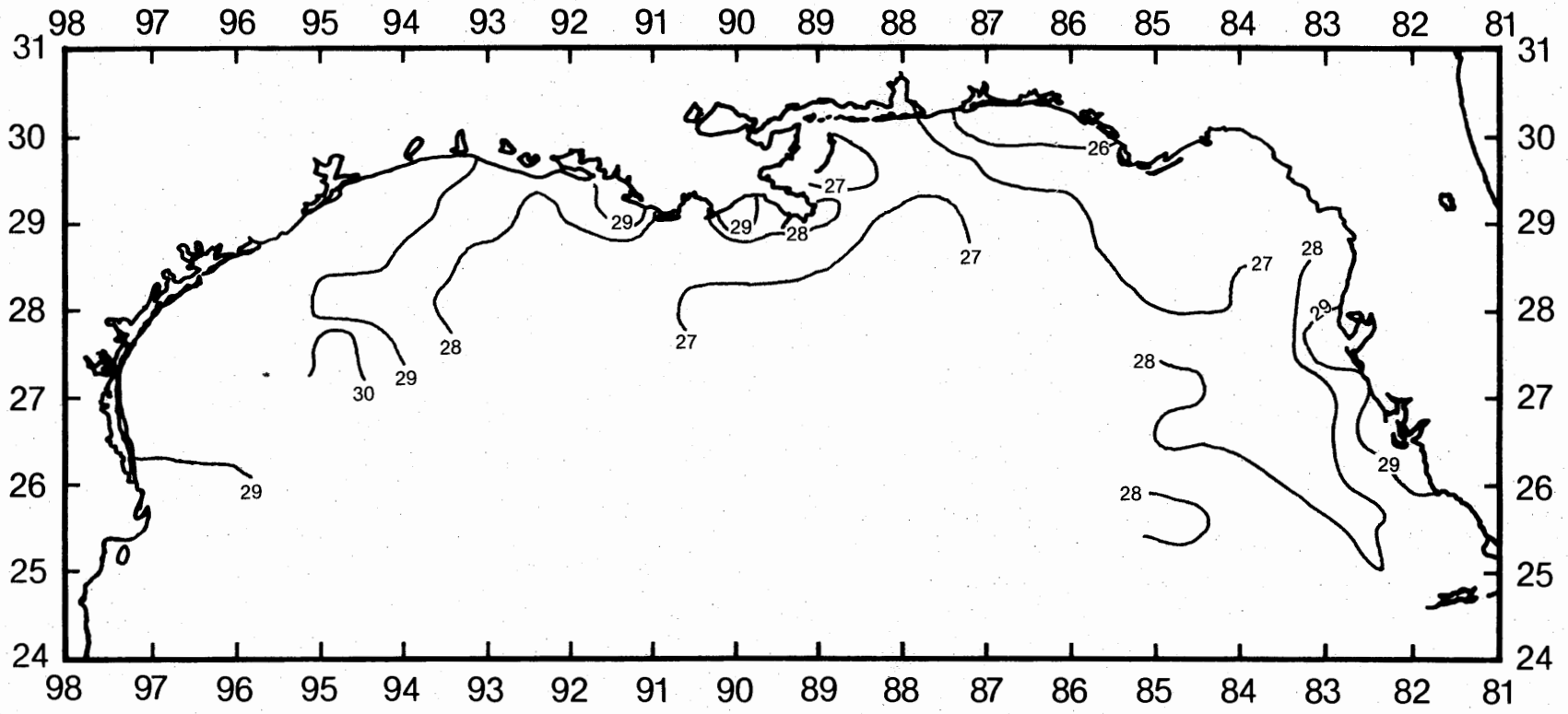


Figure 19. Surface temperature (°C) during SEAMAP Shrimp and Bottomfish Survey, June-July 1983.

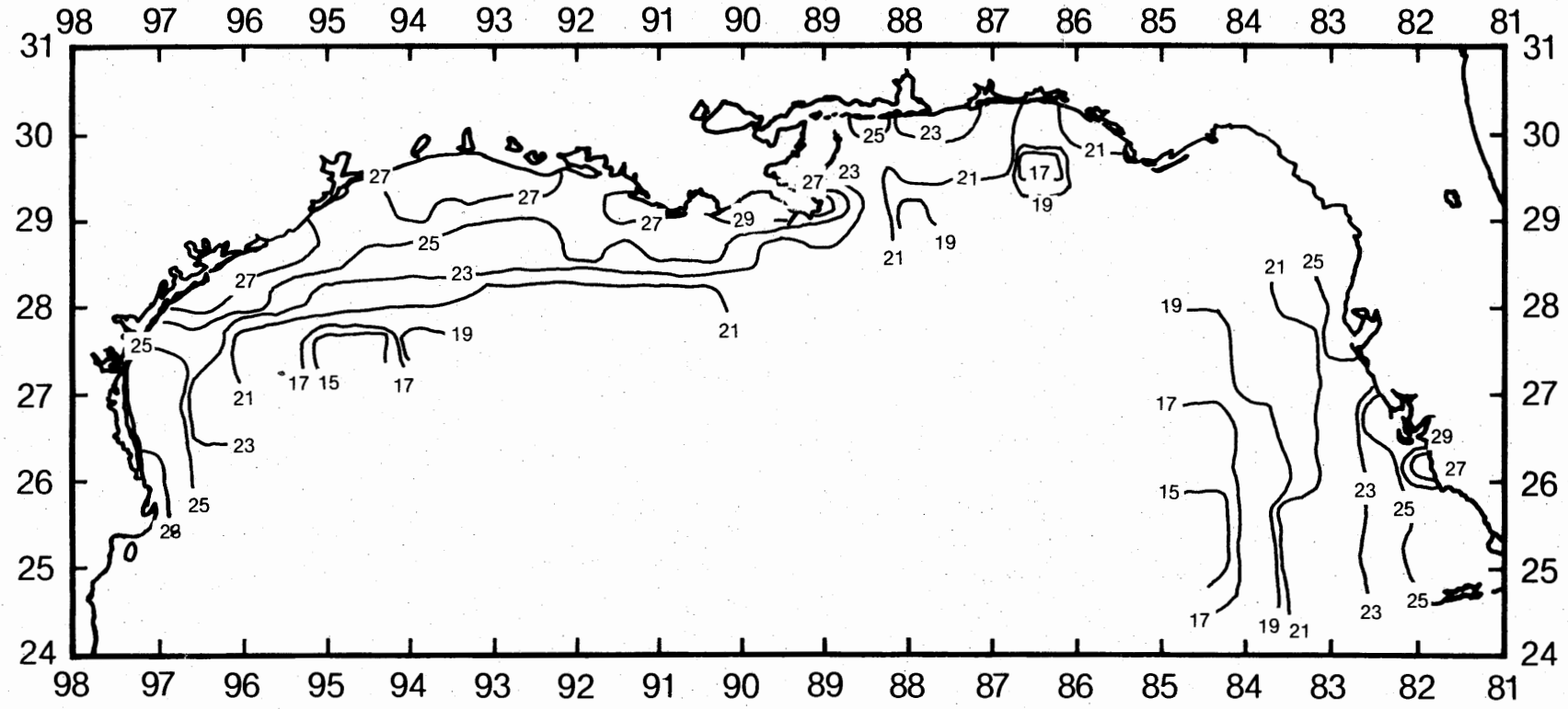


Figure 20. Water temperature (°C) at bottom or 200 m, whichever was shallower, during SEAMAP Shrimp and Bottomfish Survey, June-July 1983.

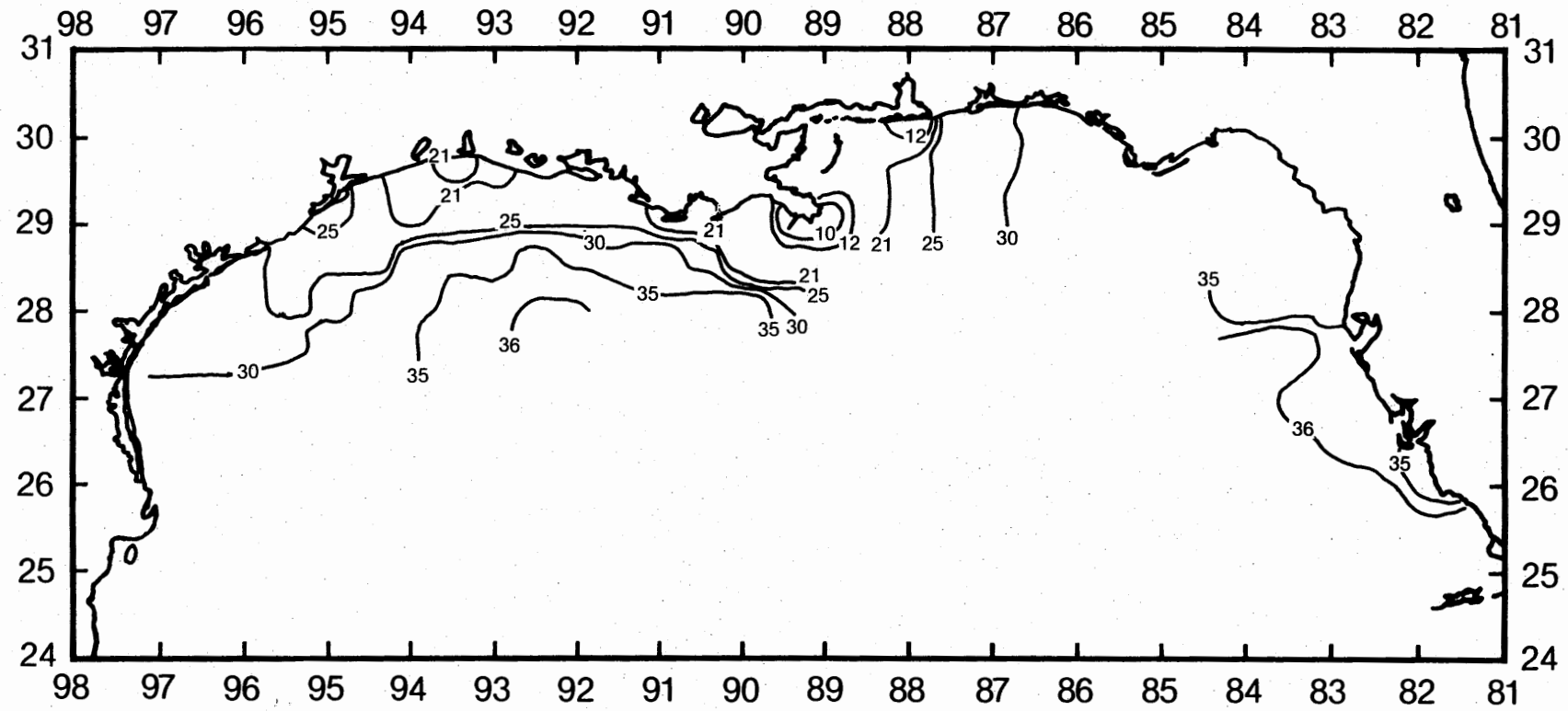


Figure 21. Surface salinity (ppt) during SEAMAP Shrimp and Bottomfish Survey, June-July 1983.

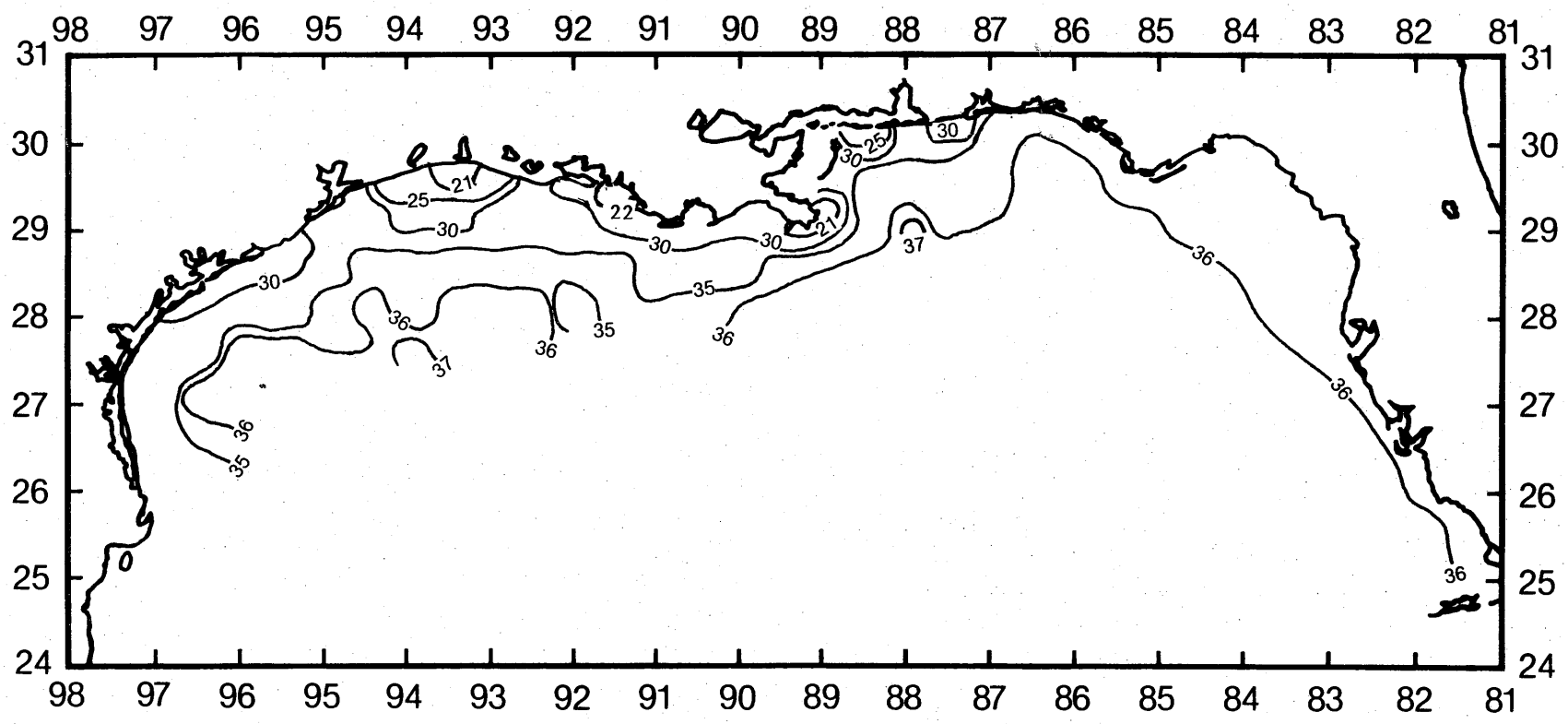


Figure 22. Salinity (ppt) at bottom or 200 m, whichever was shallower, during SEAMAP Shrimp and Bottomfish Survey, June-July 1983.

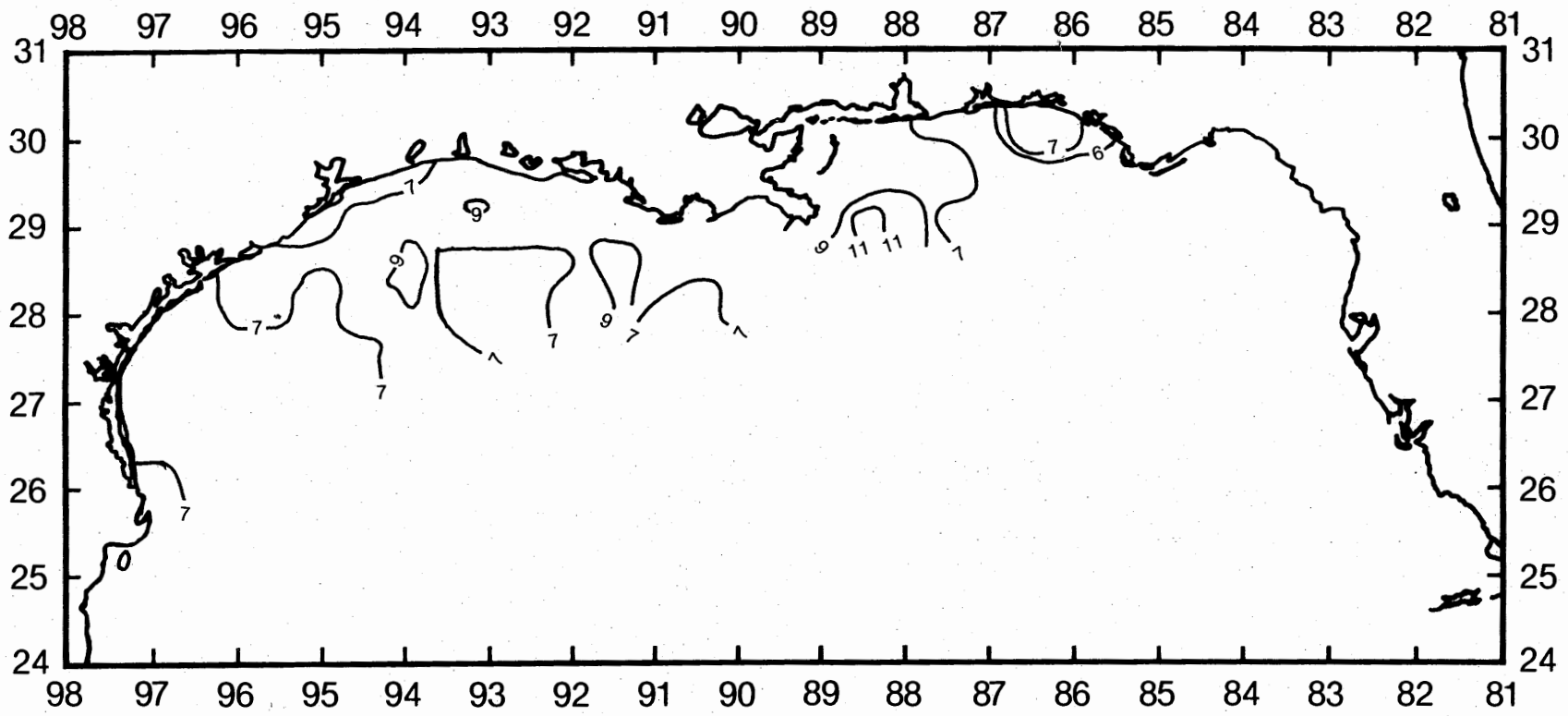


Figure 23. Surface dissolved oxygen (ppm) during SEAMAP Shrimp and Bottomfish Survey, June-July 1983.

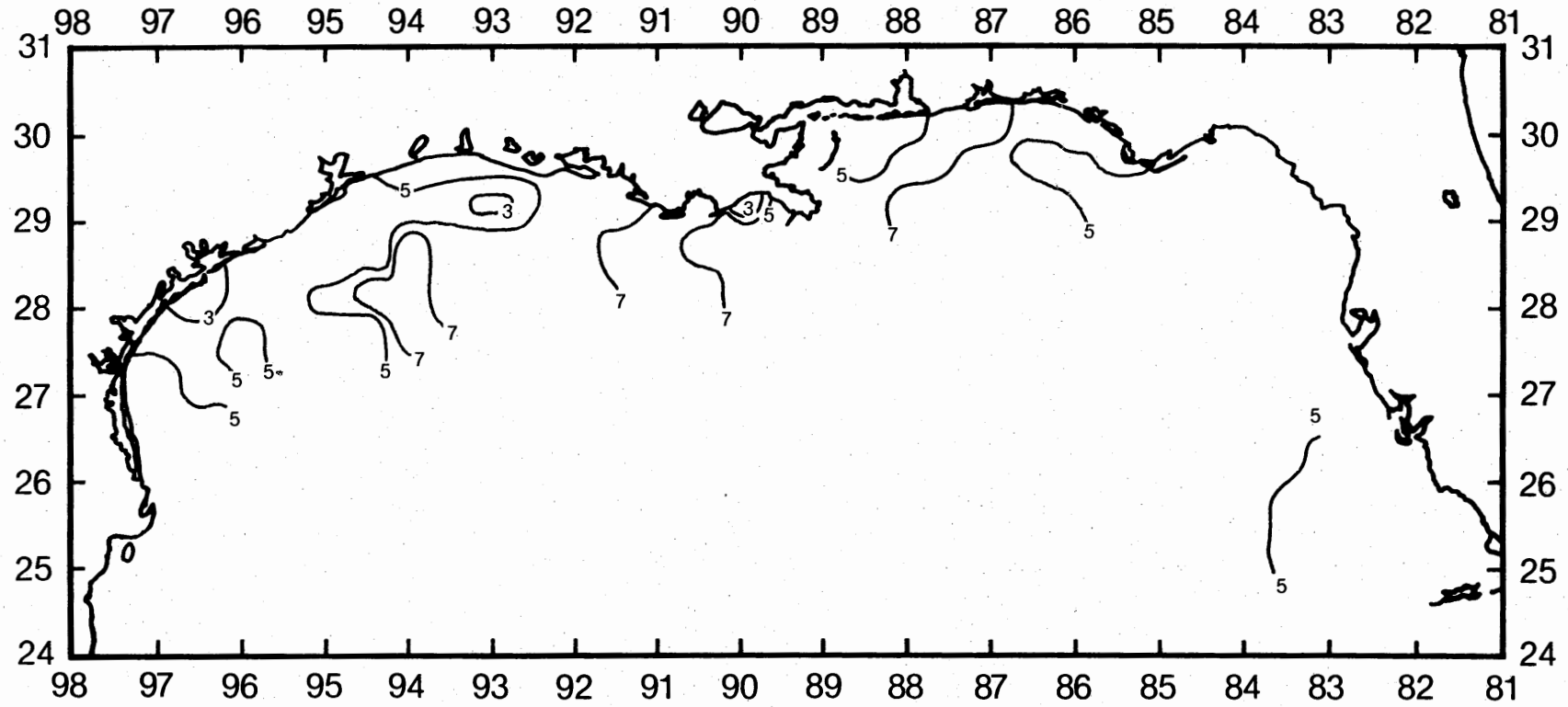


Figure 24. Dissolved oxygen (ppm) at bottom or 200 m, whichever was shallower, during SEAMAP Shrimp and Bottomfish Survey, June-July 1983.

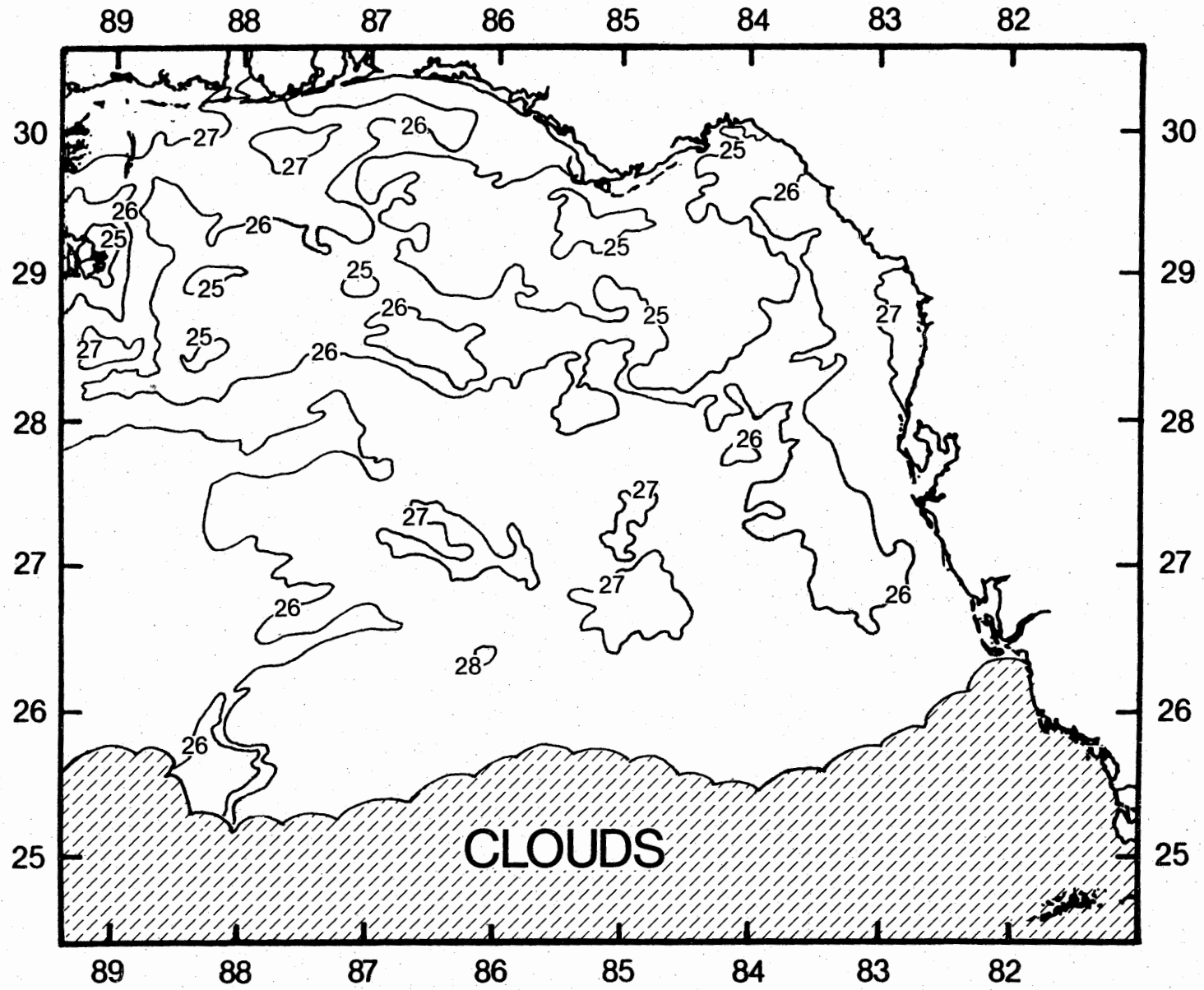


Figure 25. Satellite measurements of surface temperature (°C) in the eastern Gulf of Mexico during SEAMAP Shrimp and [illegible] (modified from NWS/NESDIS Sea Surface Thermal Analysis).

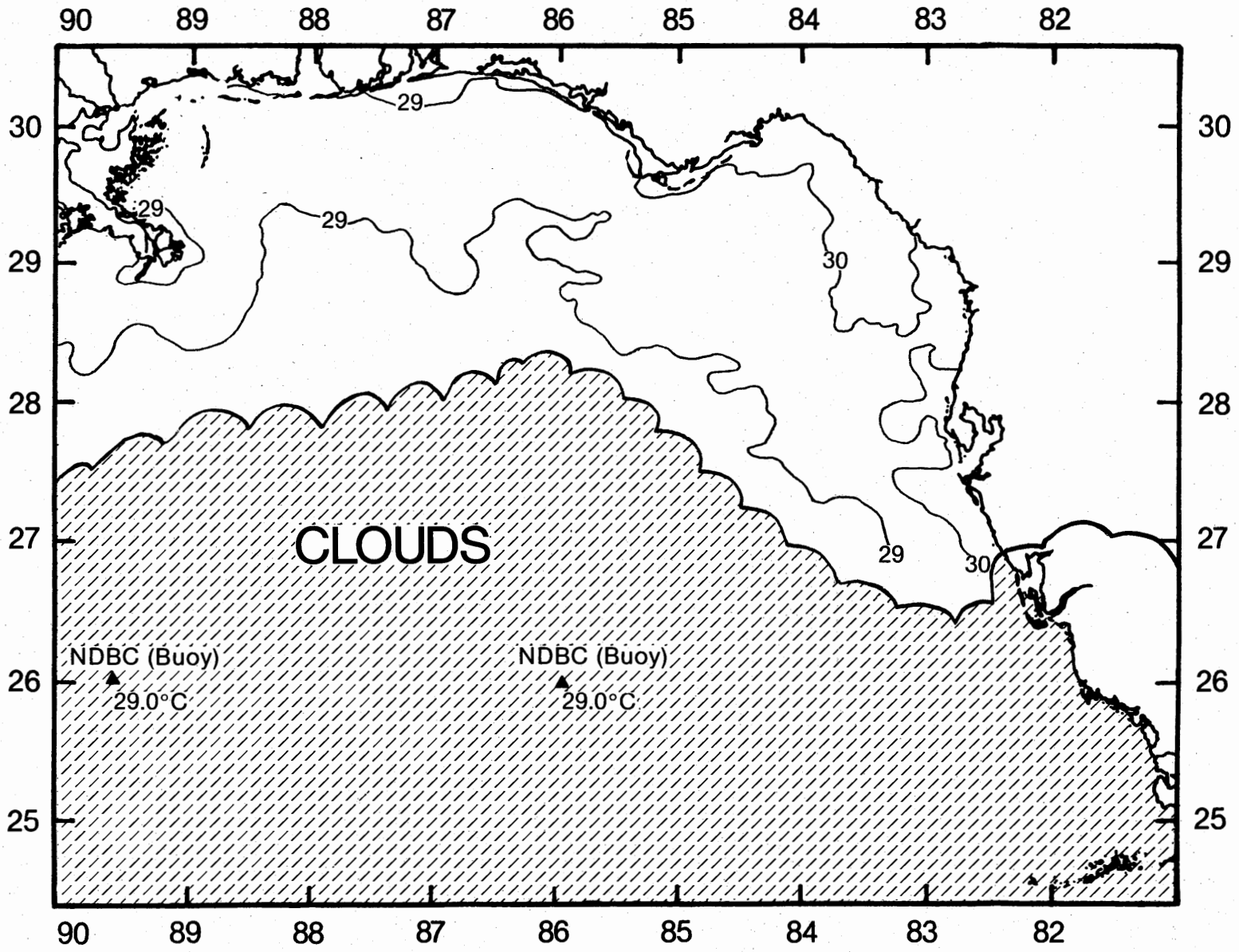


Figure 26. Satellite measurements of surface temperature (°C) in the eastern Gulf of Mexico during SEAMAP Shrimp and Bottomfish Survey, July 1983 (modified from NWS/NESDIS Sea Surface Thermal Analysis).

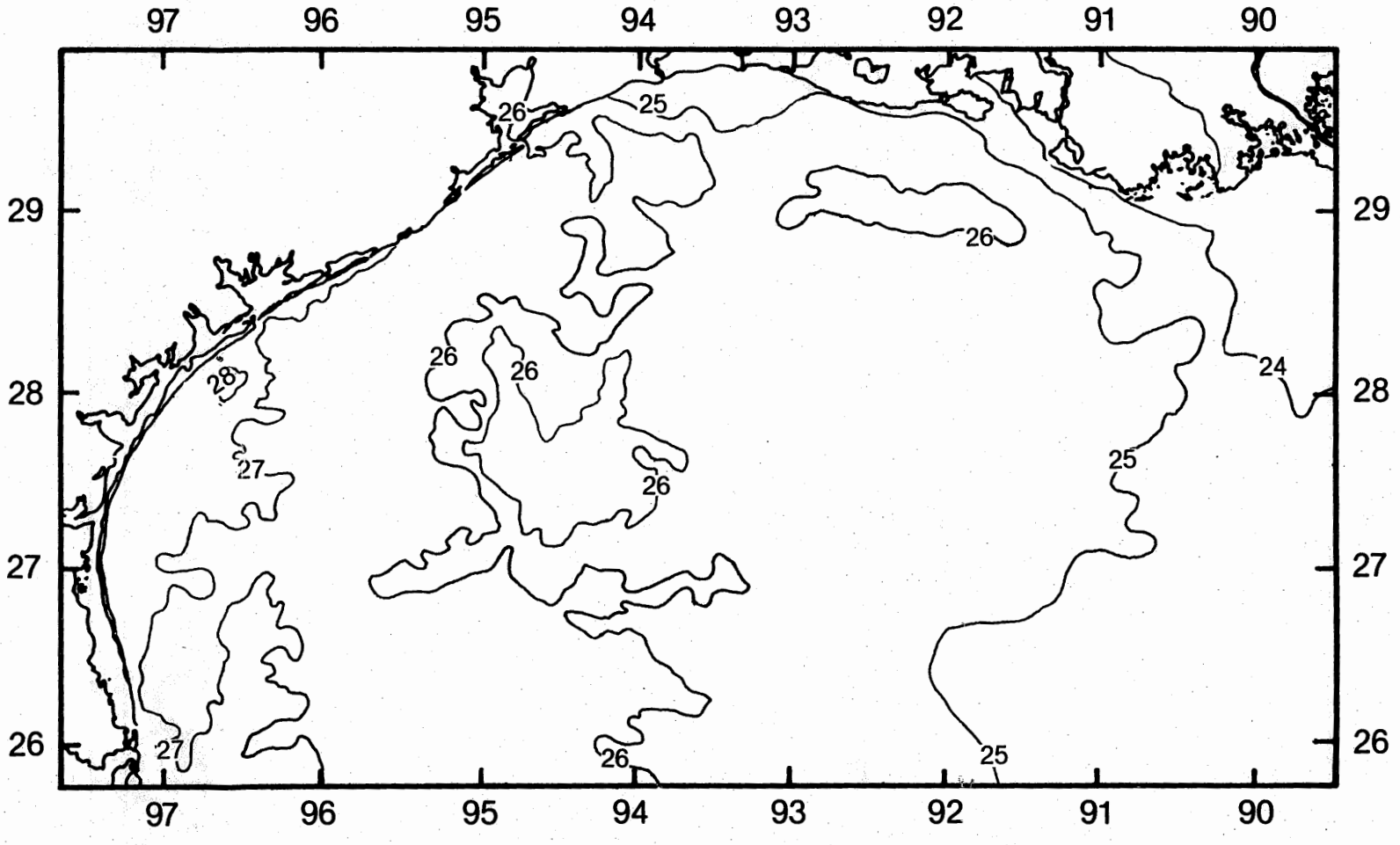


Figure 27. Satellite measurements of surface temperature (°C) in the western Gulf of Mexico during SEAMAP Shrimp and Bottomfish Survey, June 1983 (modified from NWS/NESDIS Sea Surface Thermal Analysis).

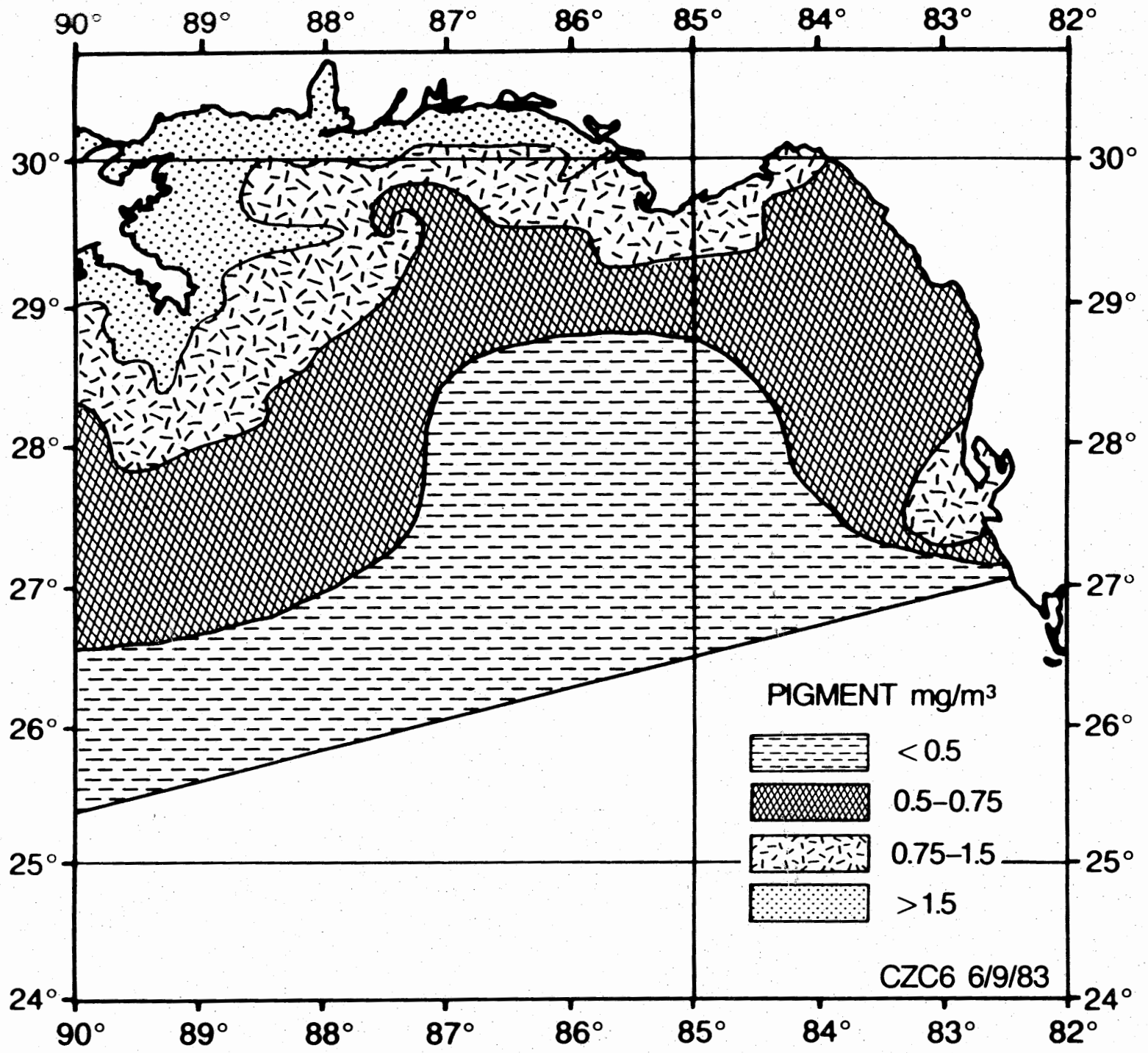
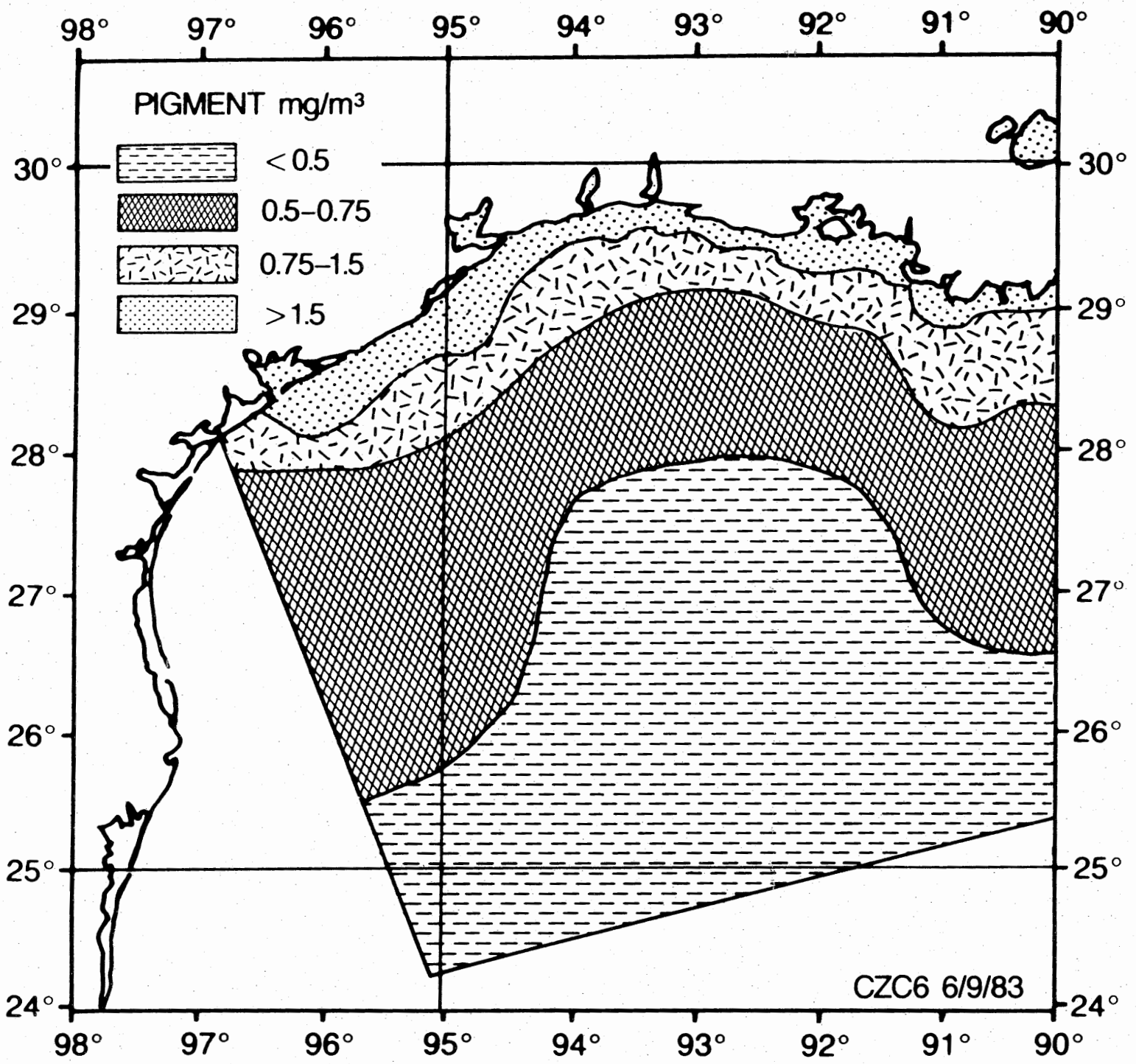


Figure 28. CZCS image of chlorophyll concentrations for June 9, 1983, eastern Gulf of Mexico.



...concentrations for June 9, 1983, western Gulf of Mexico.

ENVIRONMENTAL DATA PLOTS:

DECEMBER PLANKTON SURVEY

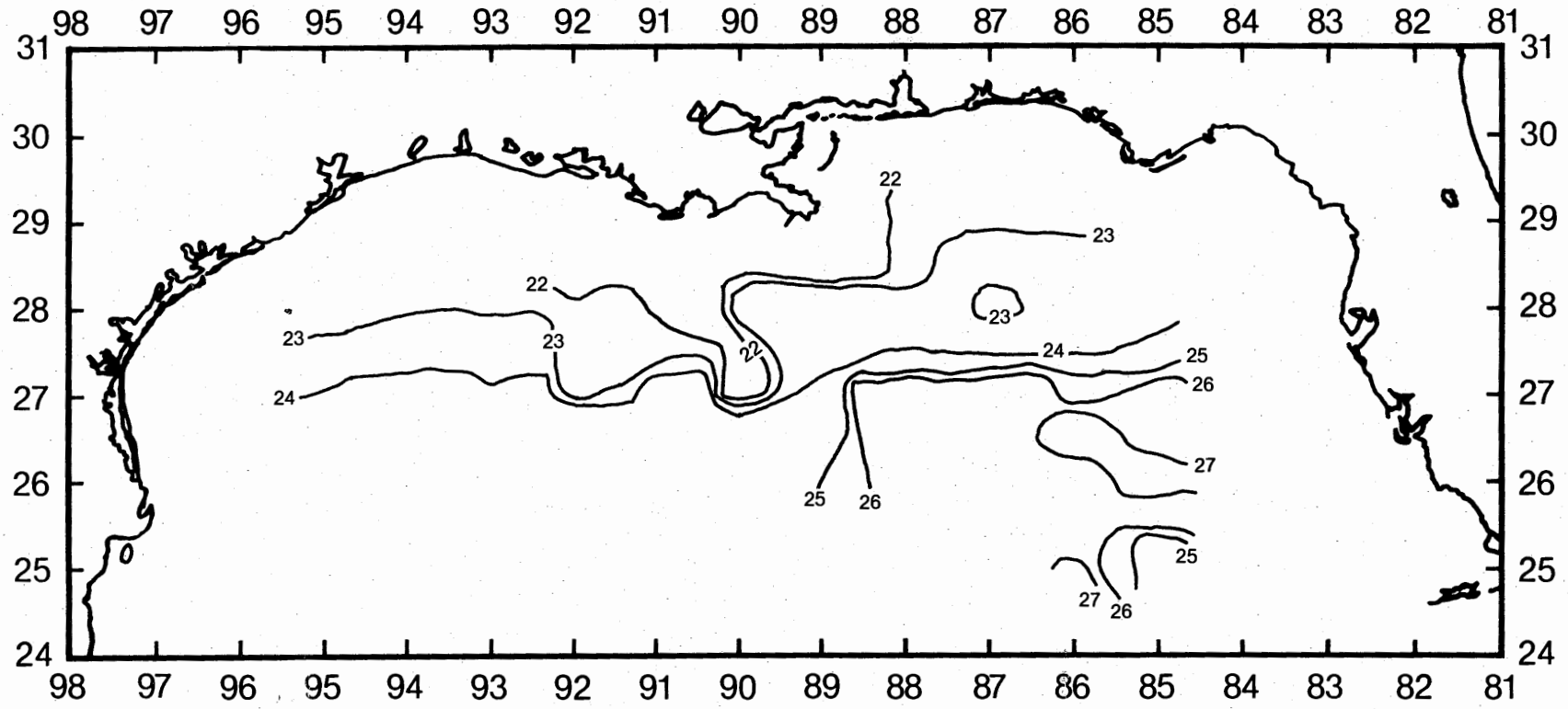


Figure 30. Surface water temperature (°C) during SEAMAP Plankton Survey, December 1983.

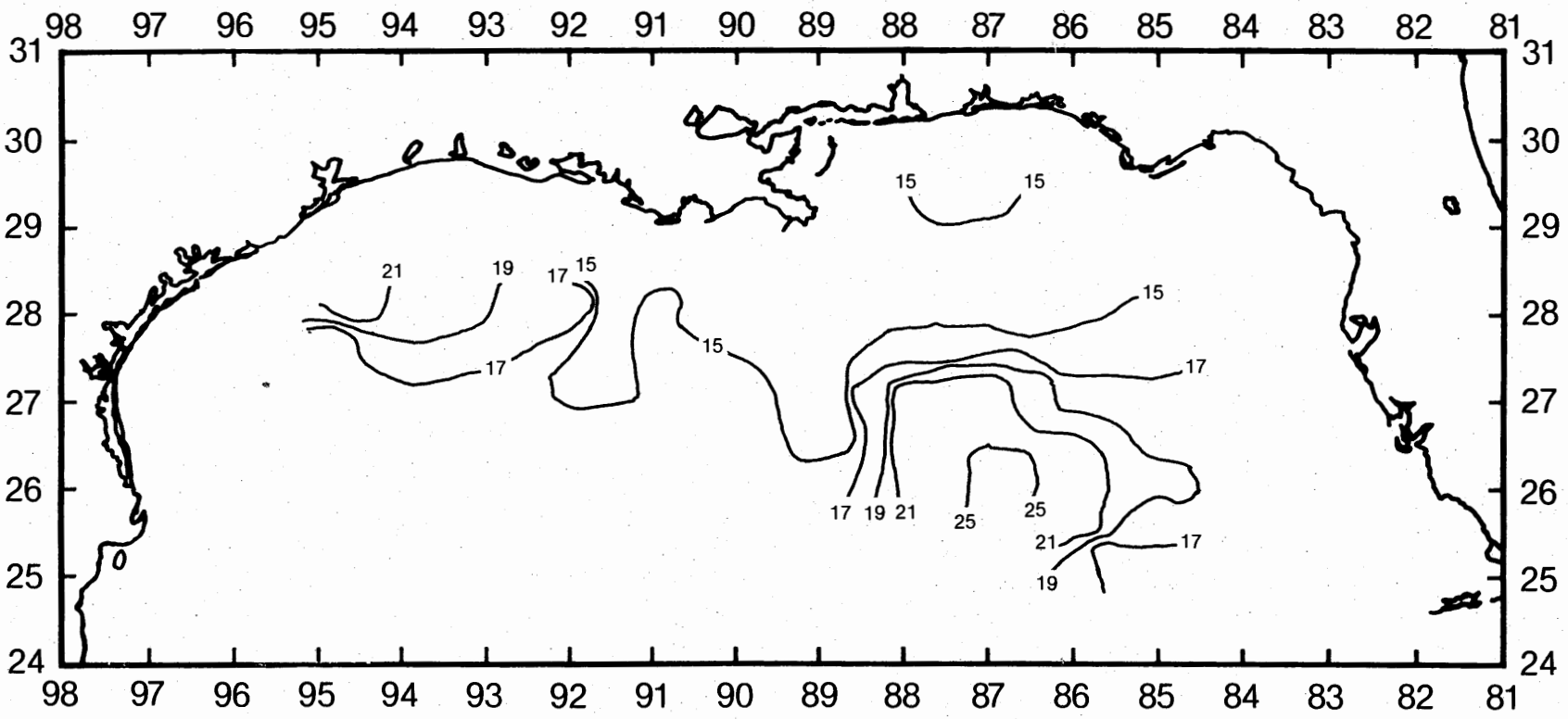


Figure 31. Water temperature (°C) at bottom or 200 m, whichever was shallower, during SEAMAP Plankton Survey, December 1983.

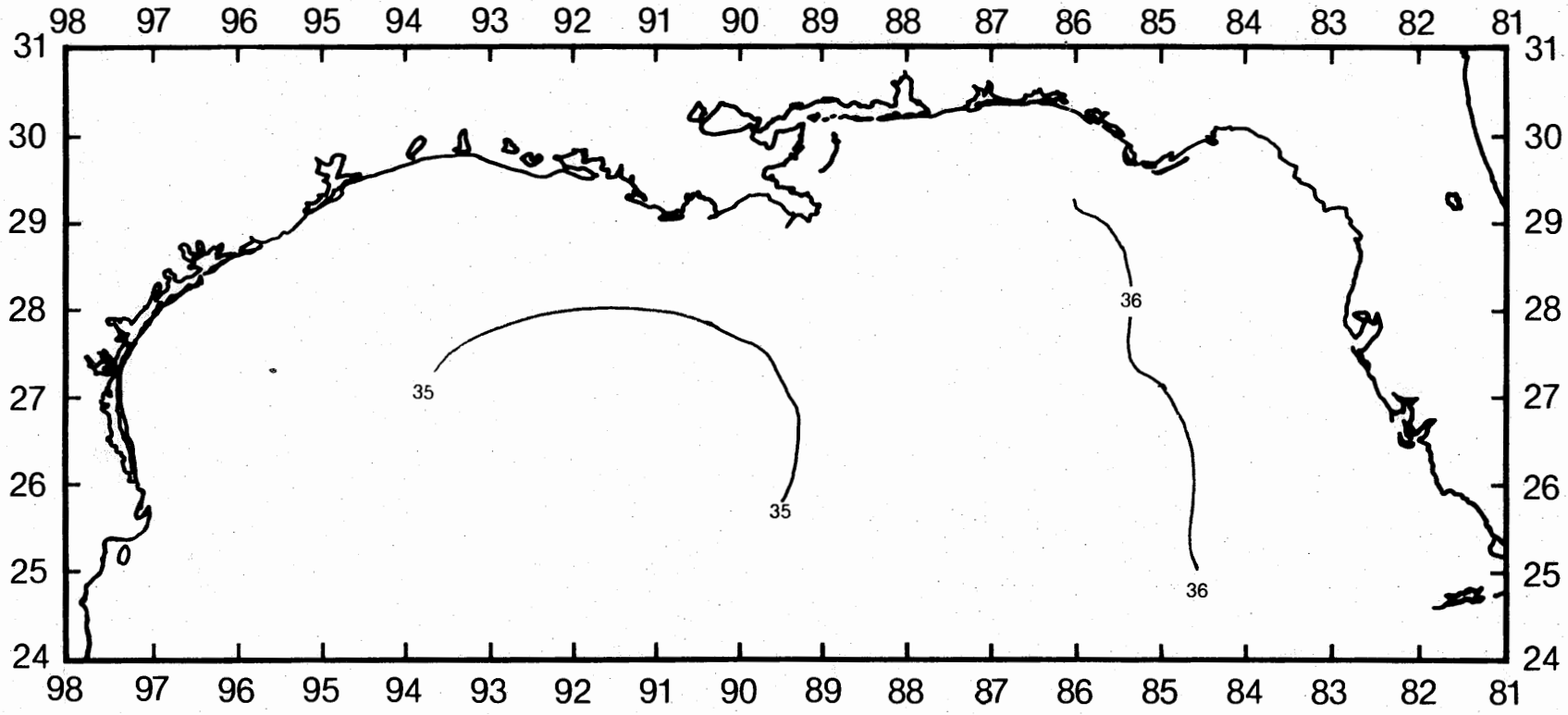


Figure 32. Surface salinity (ppt) during SEAMAP Plankton Survey, December 1983.

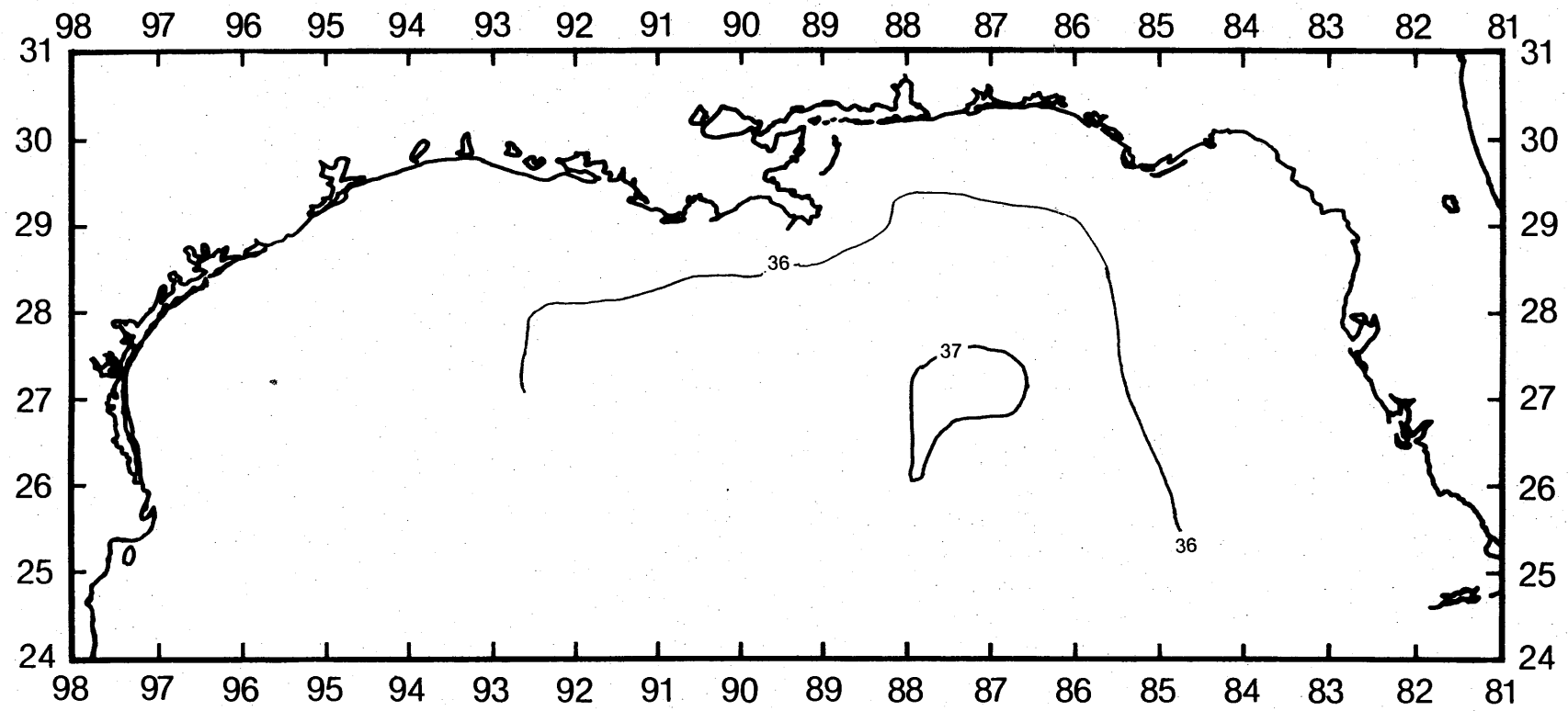


Figure 33. Salinity (ppt) at bottom or 200 m, whichever was shallower, during SEAMAP Plankton Survey, December 1983.

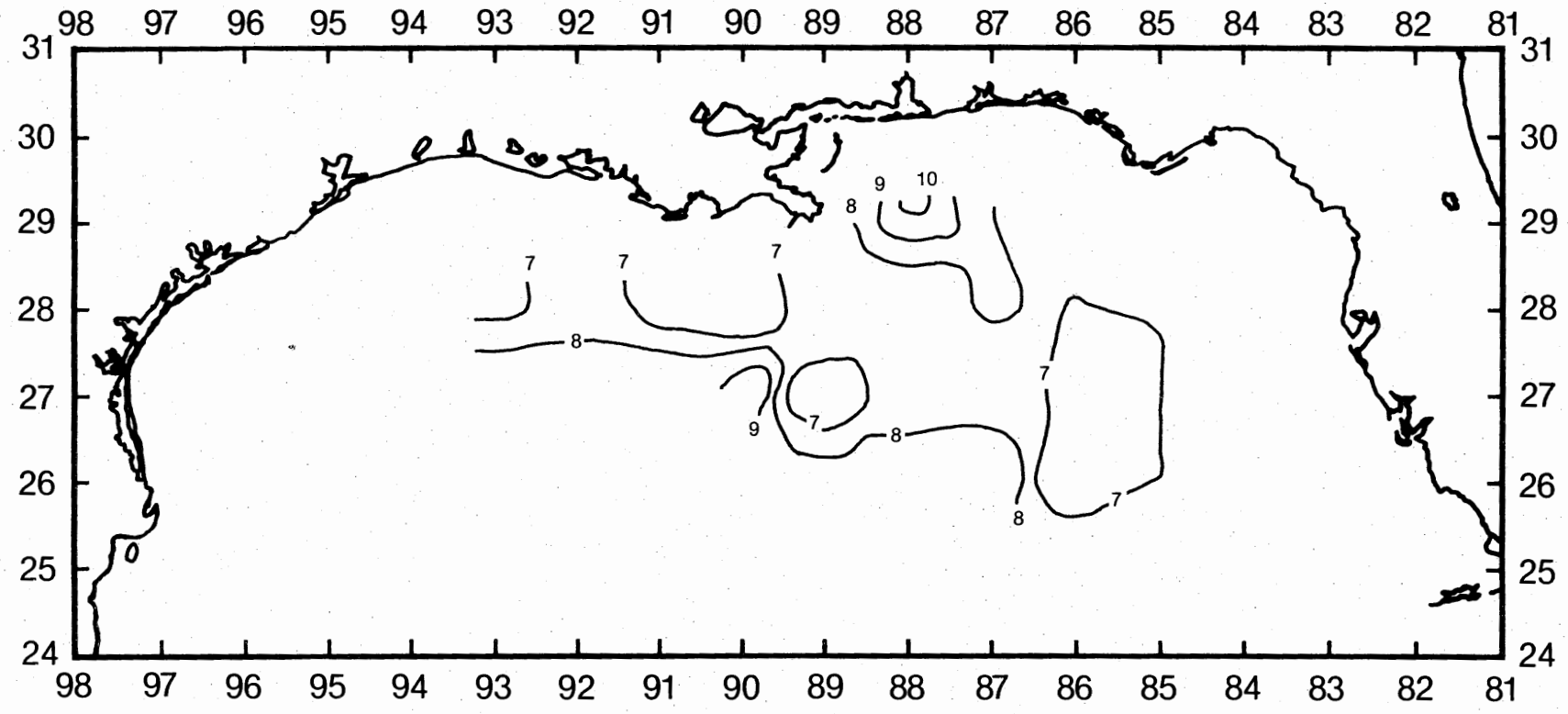


Figure 34. Surface dissolved oxygen (ppm) during SEAMAP Plankton Survey, December 1983.

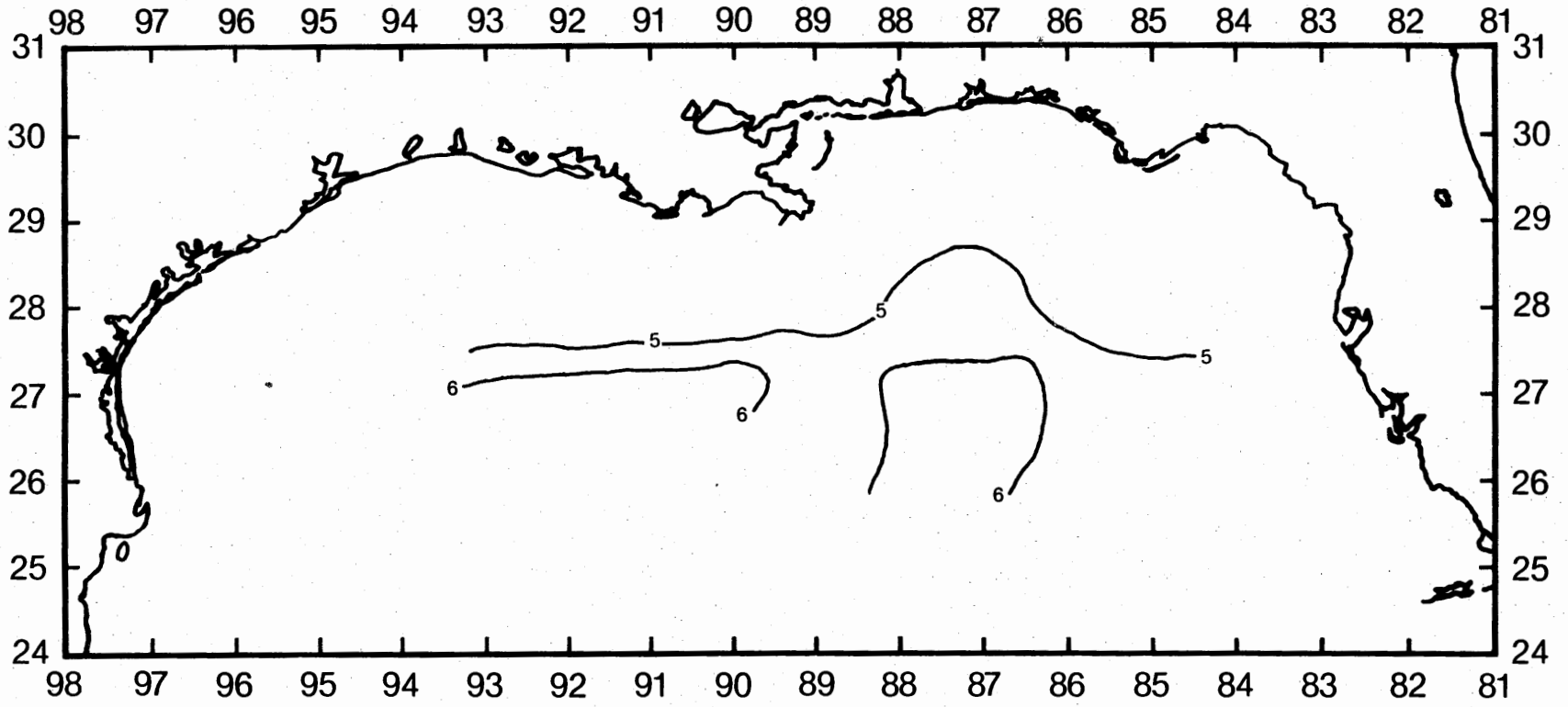


Figure 35. Dissolved oxygen (ppm) at bottom or 200 m, whichever was shallower, during SEAMAP Plankton Survey, December 1983.

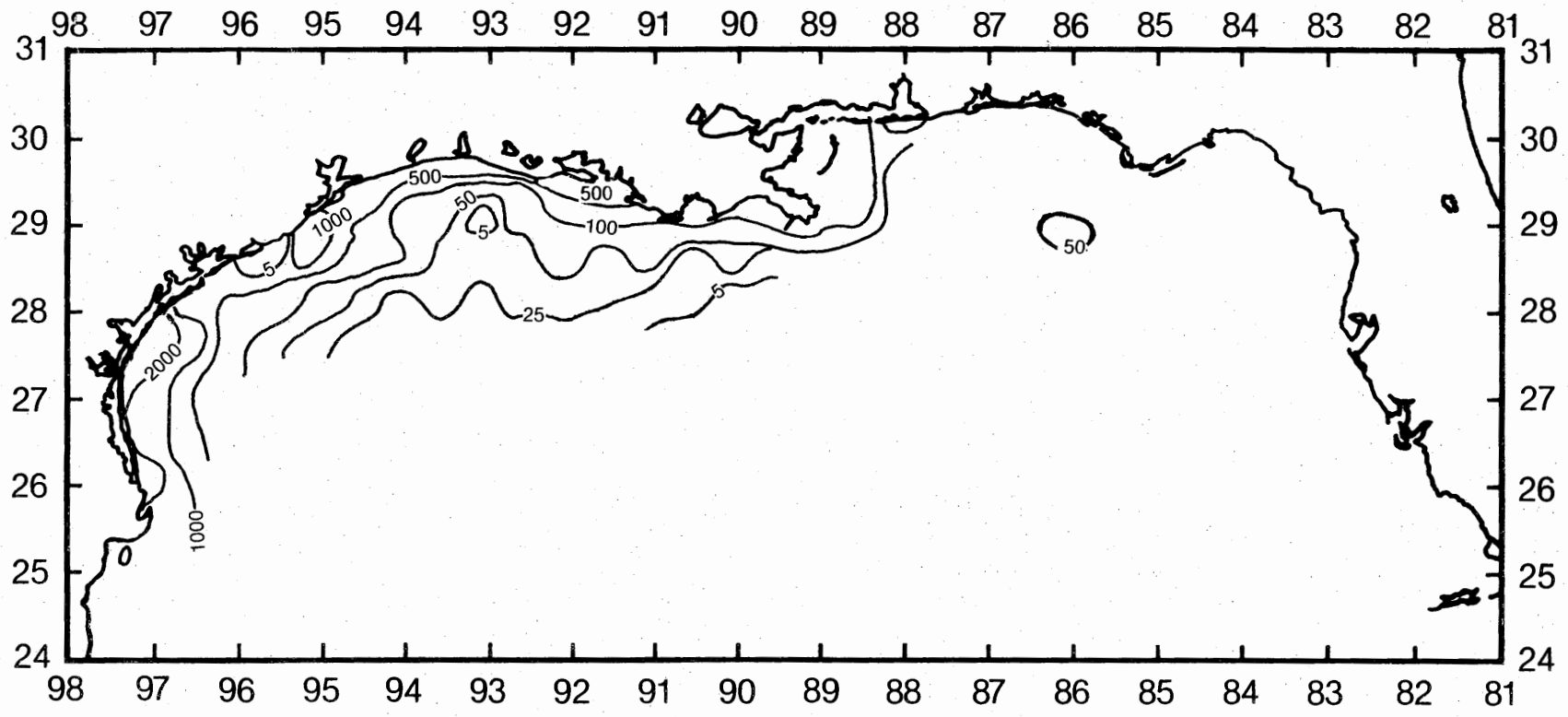


Figure 36. Northern brown shrimp, Penaeus aztecus, number/hour for June-July 1983.

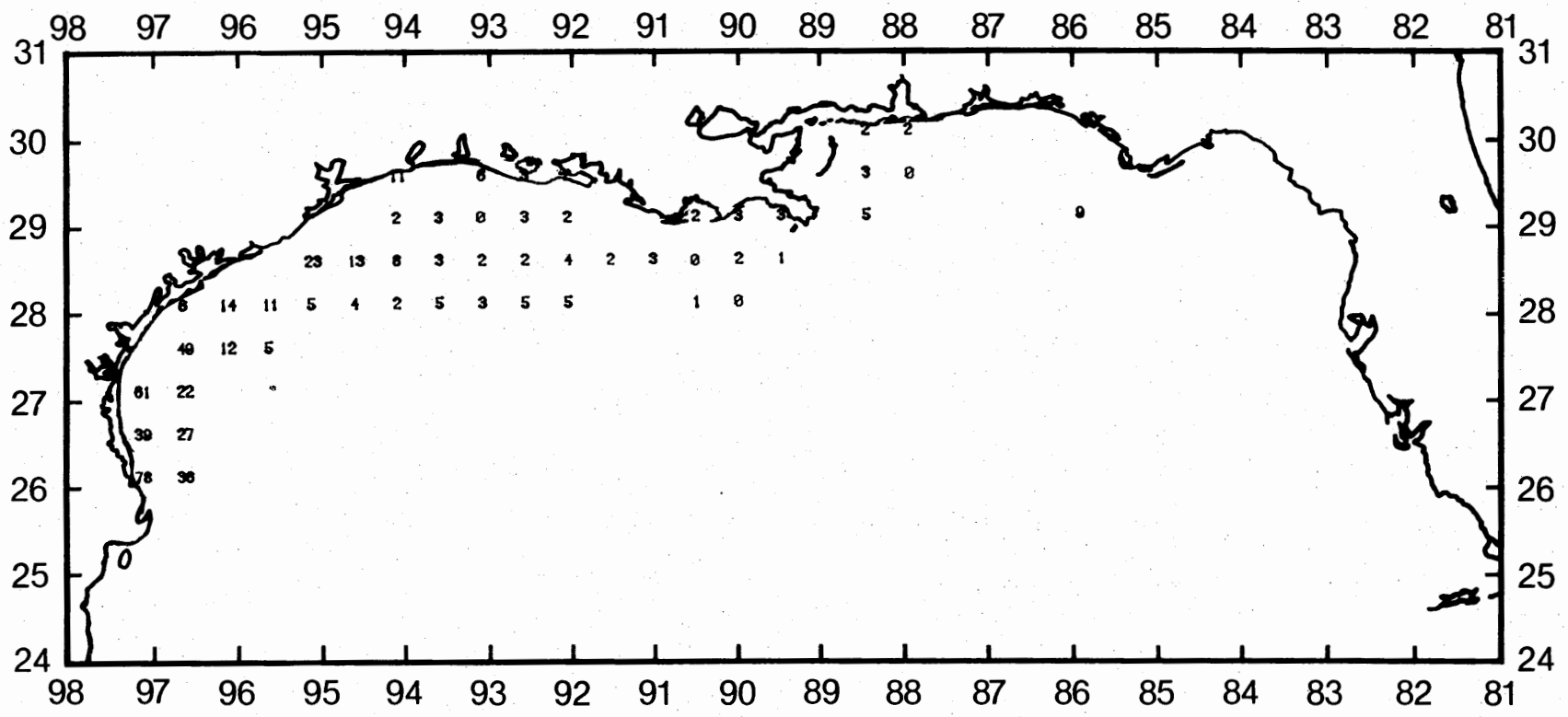


Figure 37. Northern brown shrimp, Penaeus aztecus, lb/hour for June-July 1983.

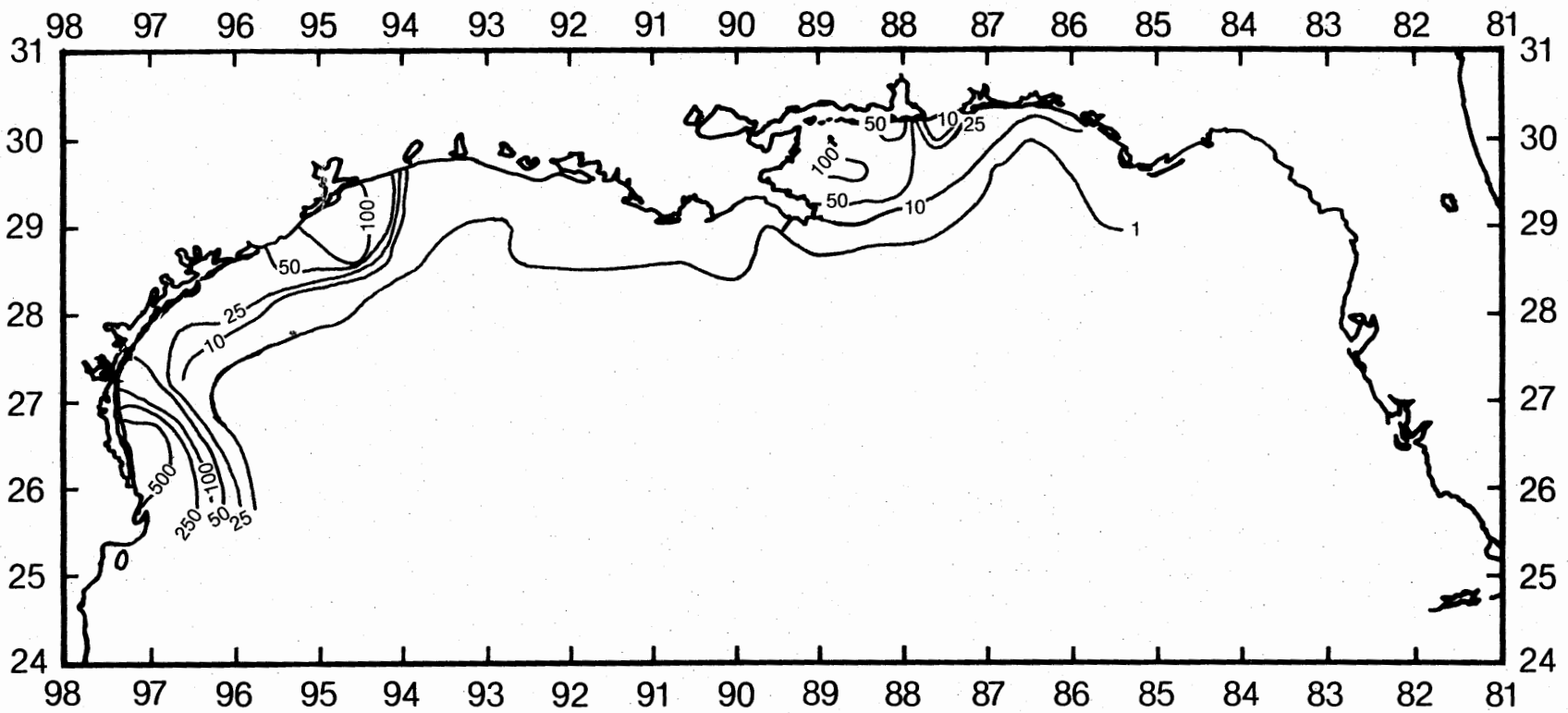


Figure 38. Northern pink shrimp, Penaeus duorarum, number/hour for June-July 1983.

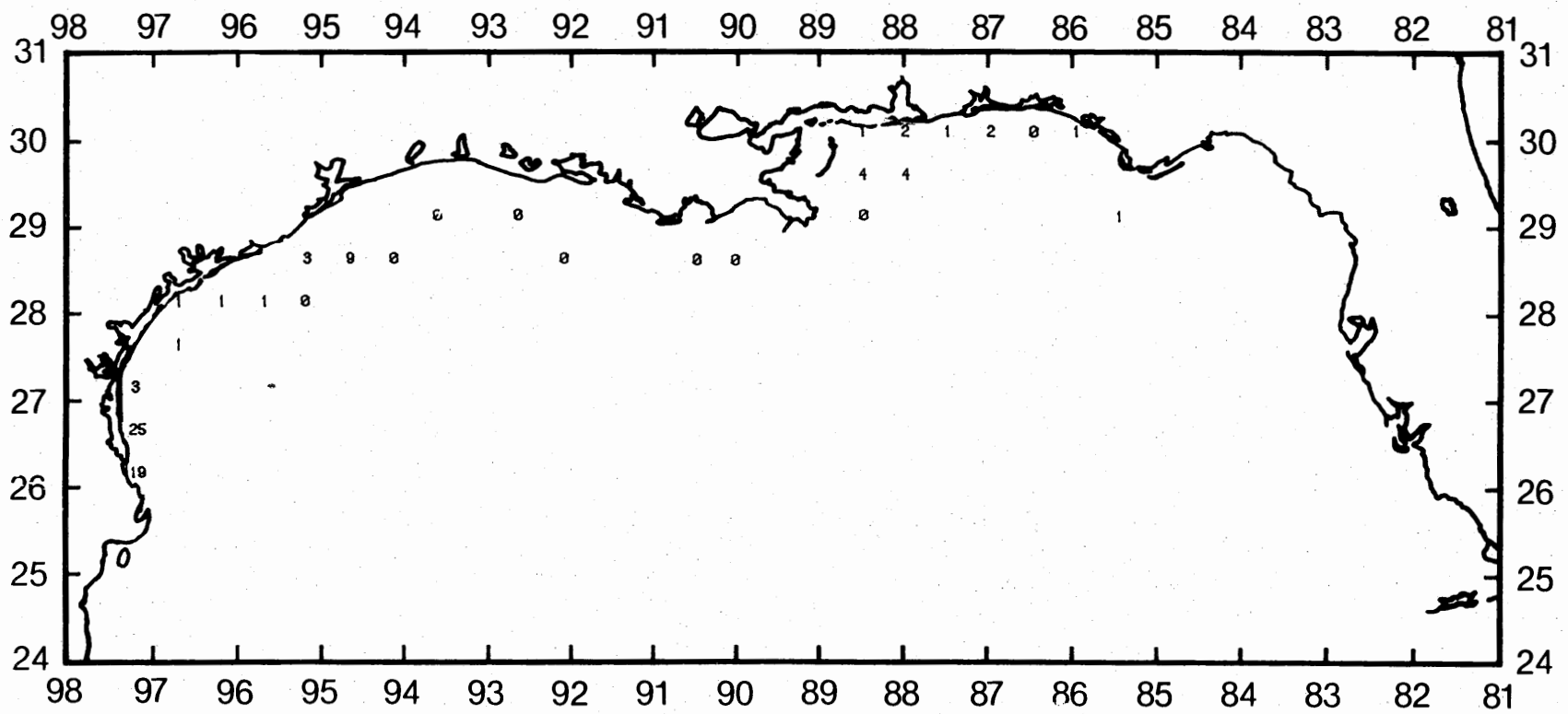


Figure 39. Northern pink shrimp, Penaeus duorarum, lb/hour for June-July 1983. Weights not collected by Alabama and Texas vessels.

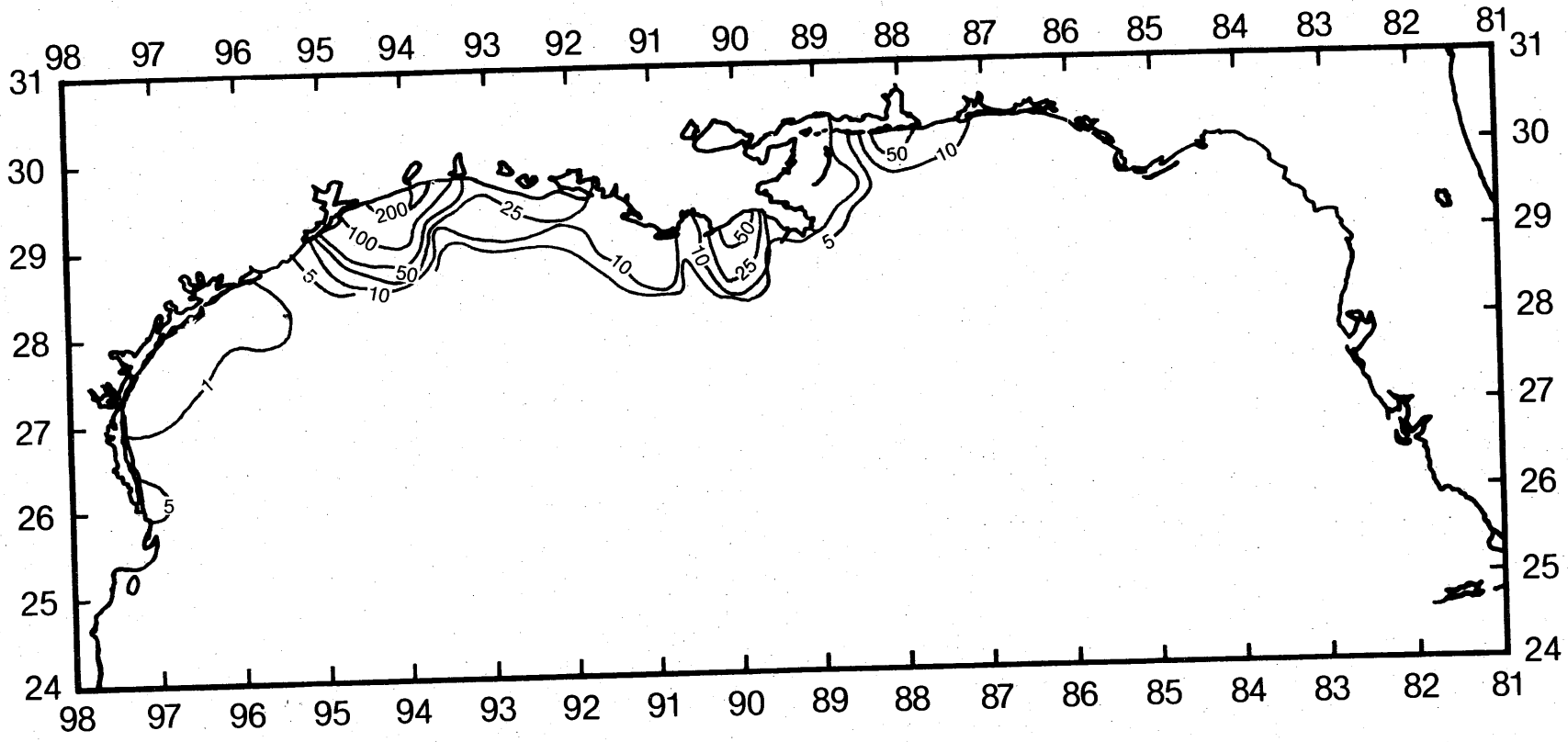


Figure 40. Northern white shrimp, Penaeus setiferus, number/hour for June-July 1983.

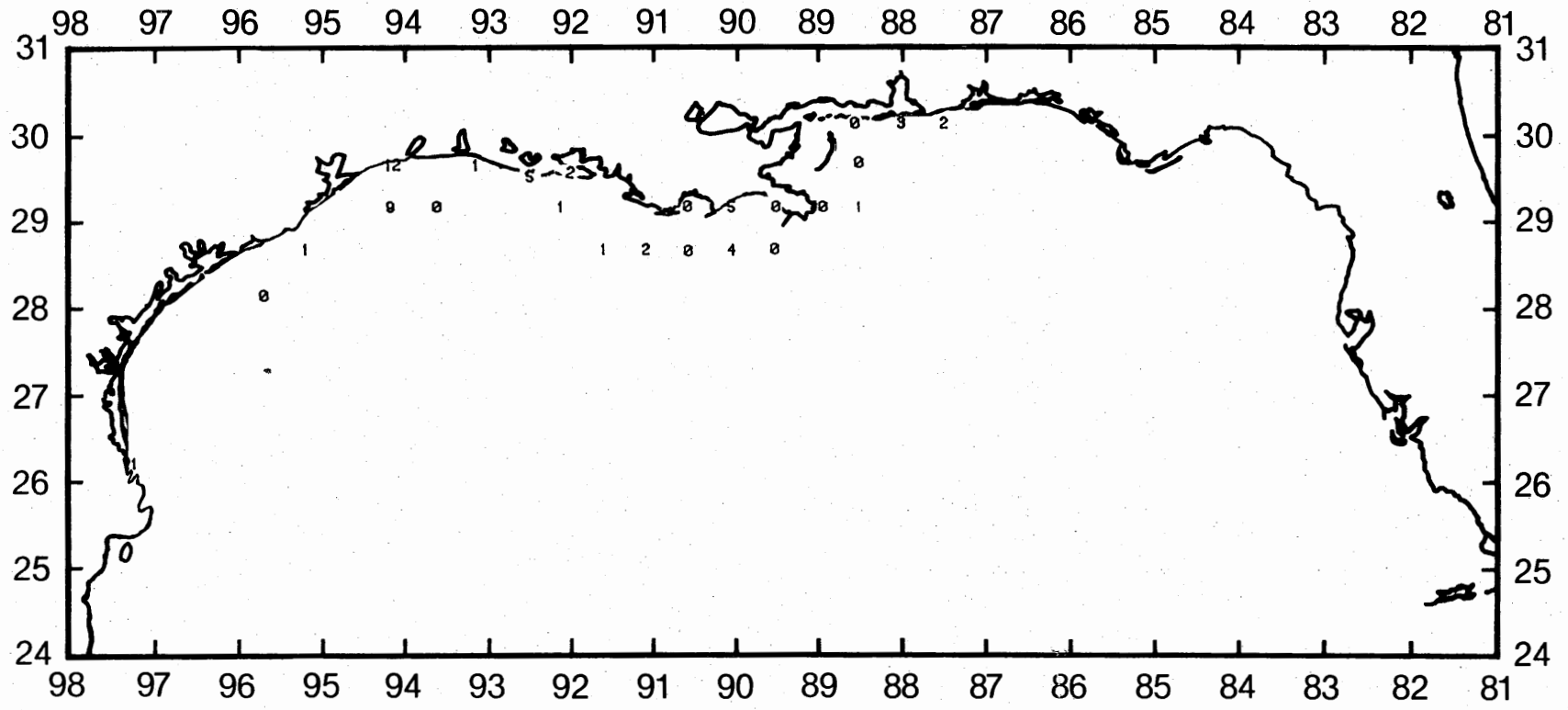


Figure 41. Northern white shrimp, Penaeus setiferus, lb/hour for June-July 1983.

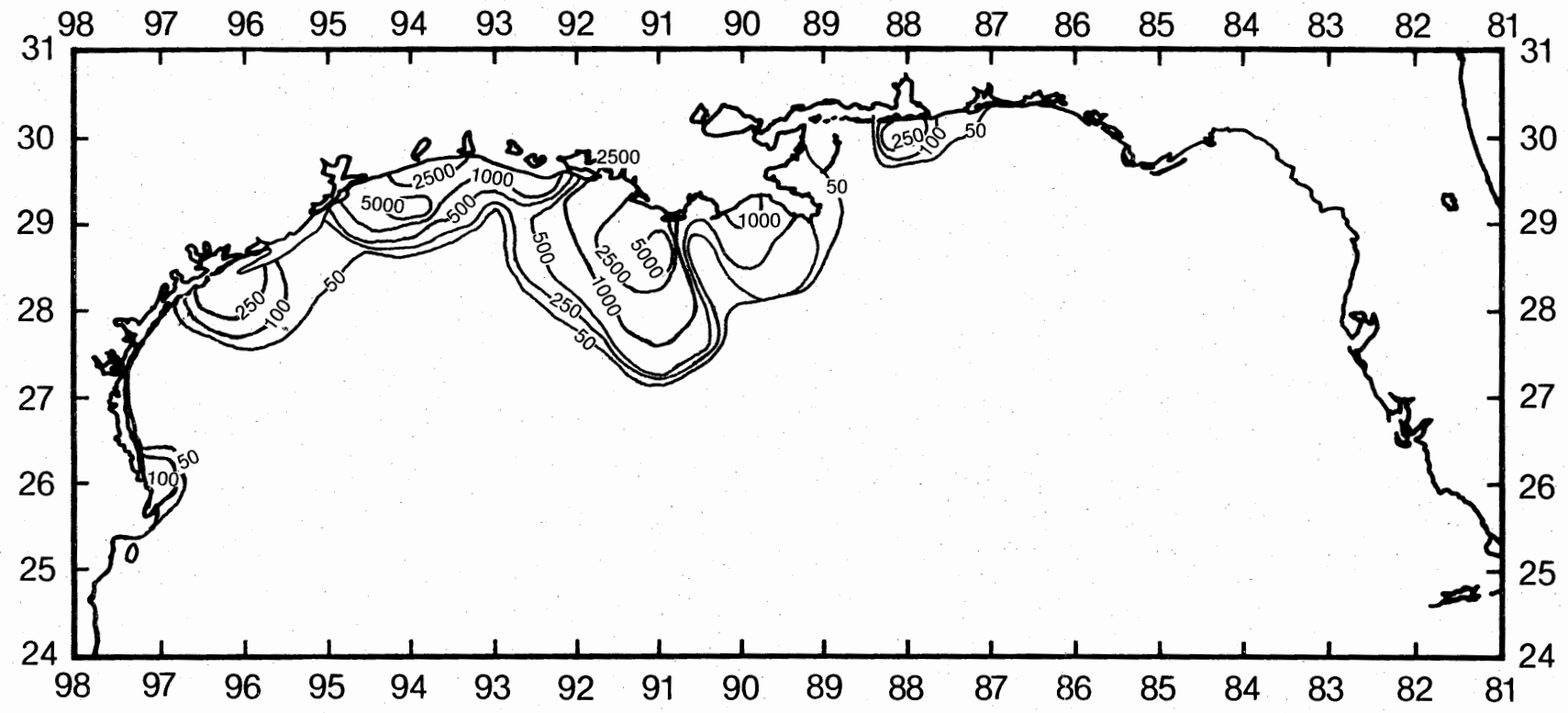


Figure 42. Atlantic croaker, Micropogonias undulatus, number/hour for June-July 1983.

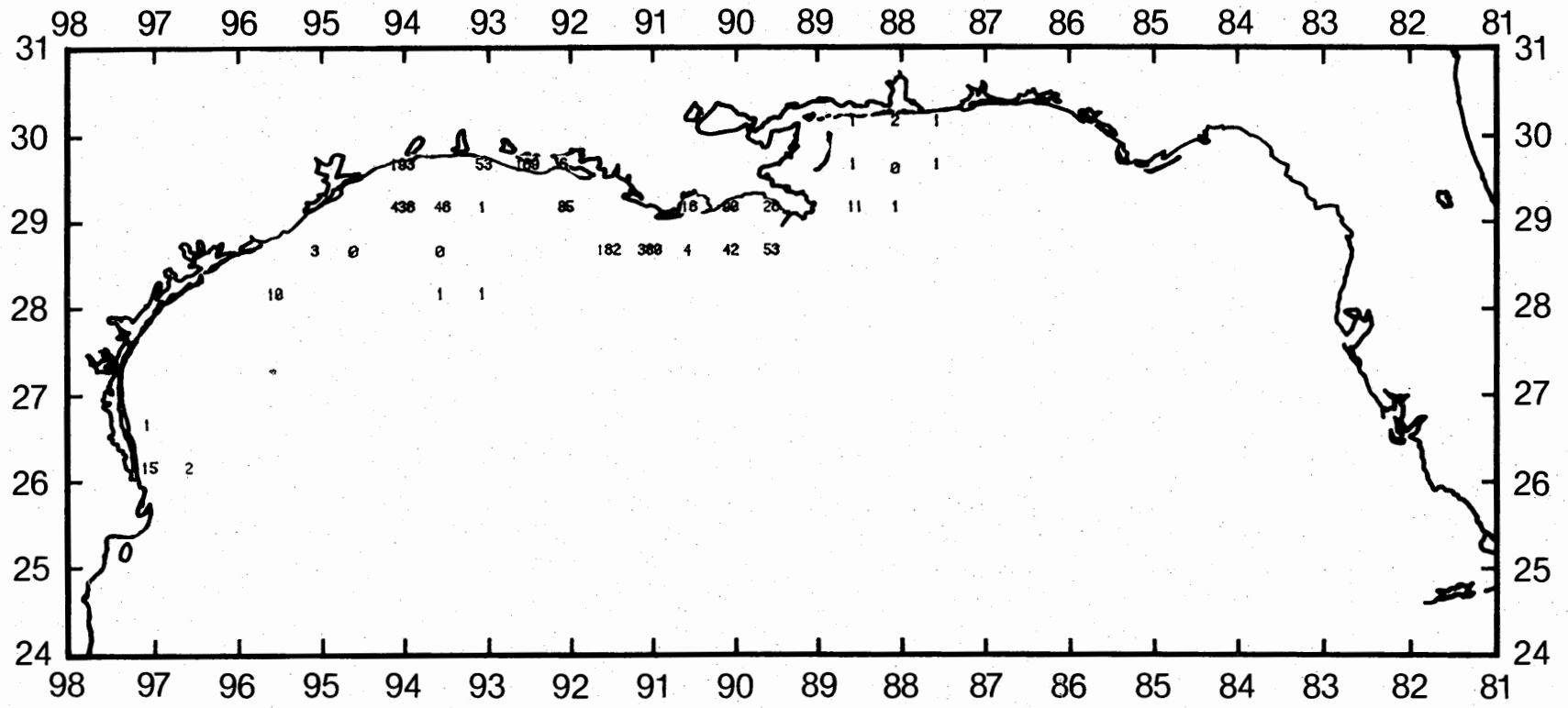


Figure 43. Atlantic croaker, Micropogonias undulatus, lb/hour for June-July 1983. Weights not collected by Alabama and Texas vessels.

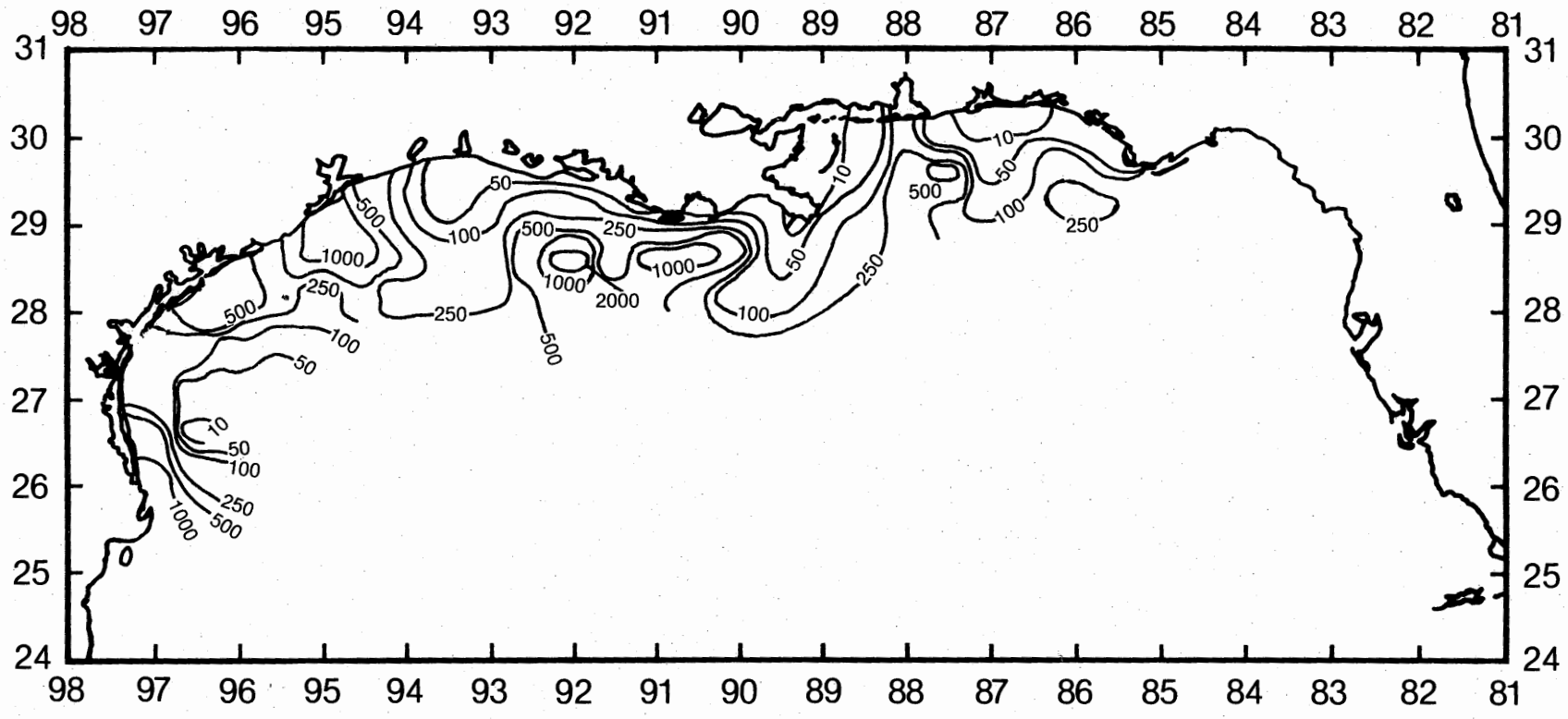


Figure 44. Longspine porgy, Stenotomus caprinus, number/hour for June-July 1983.

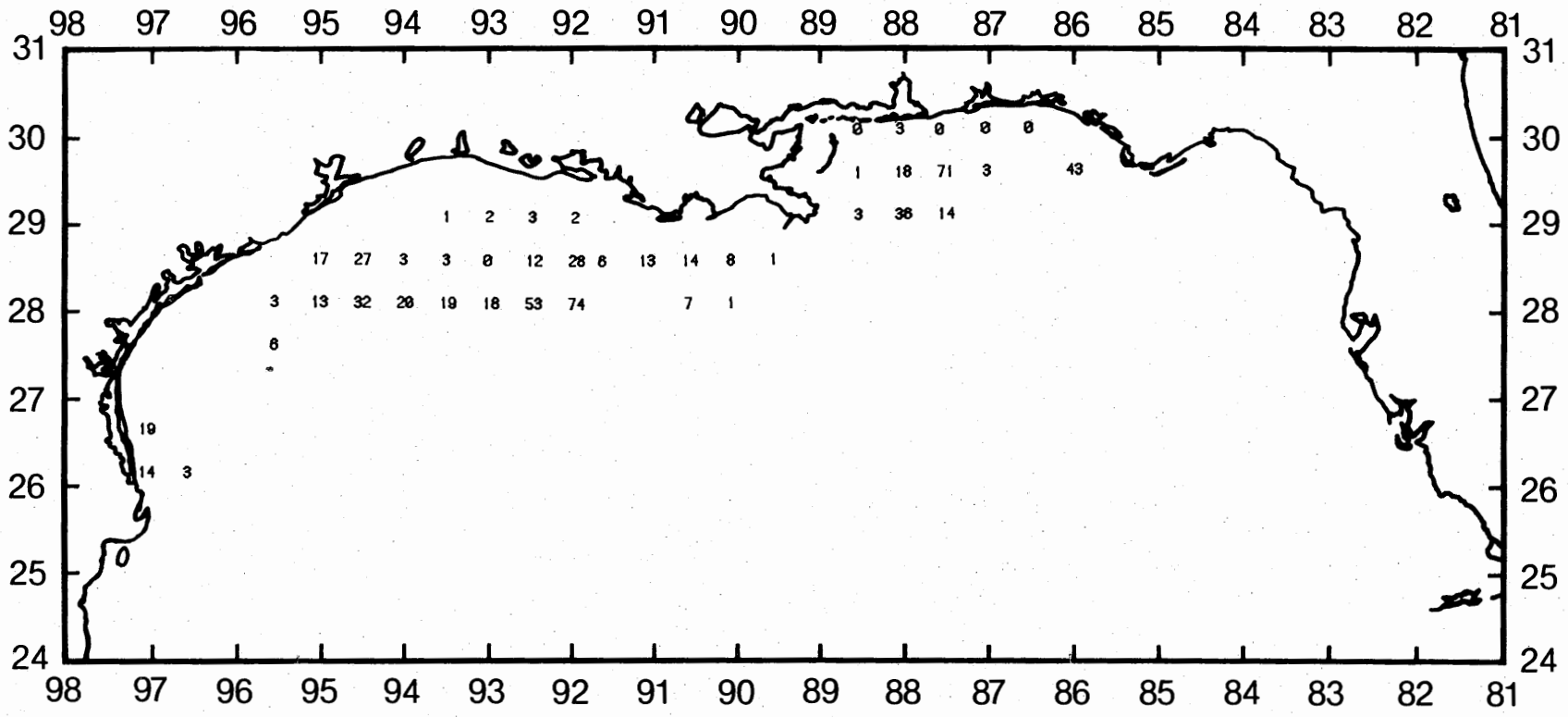


Figure 45. Longspine porgy, Stenotomus caprinus, lb/hour for June-July 1983. Weights not collected by Alabama and Texas vessels.

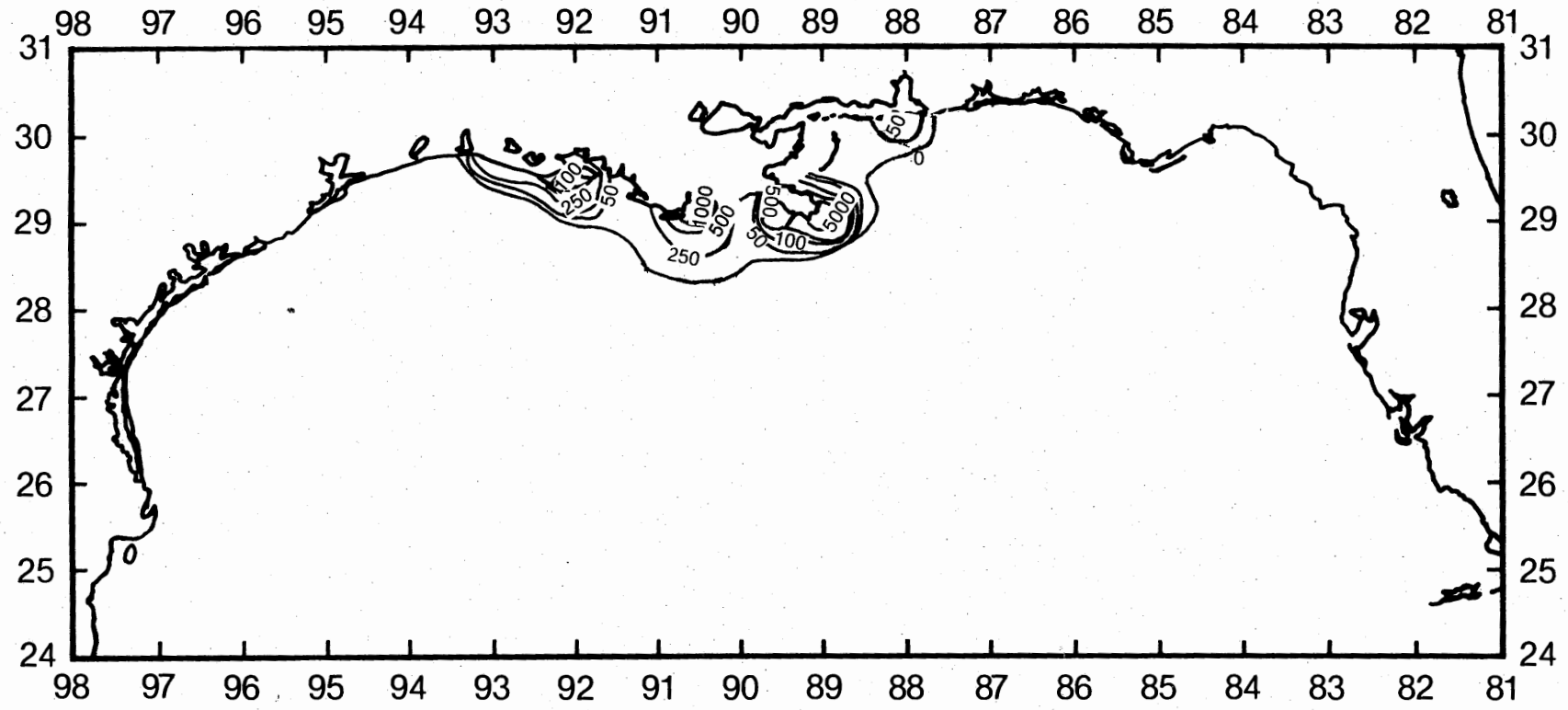


Figure 46. Bay anchovy, Anchoa mitchilli, number/hour for June-July 1983.

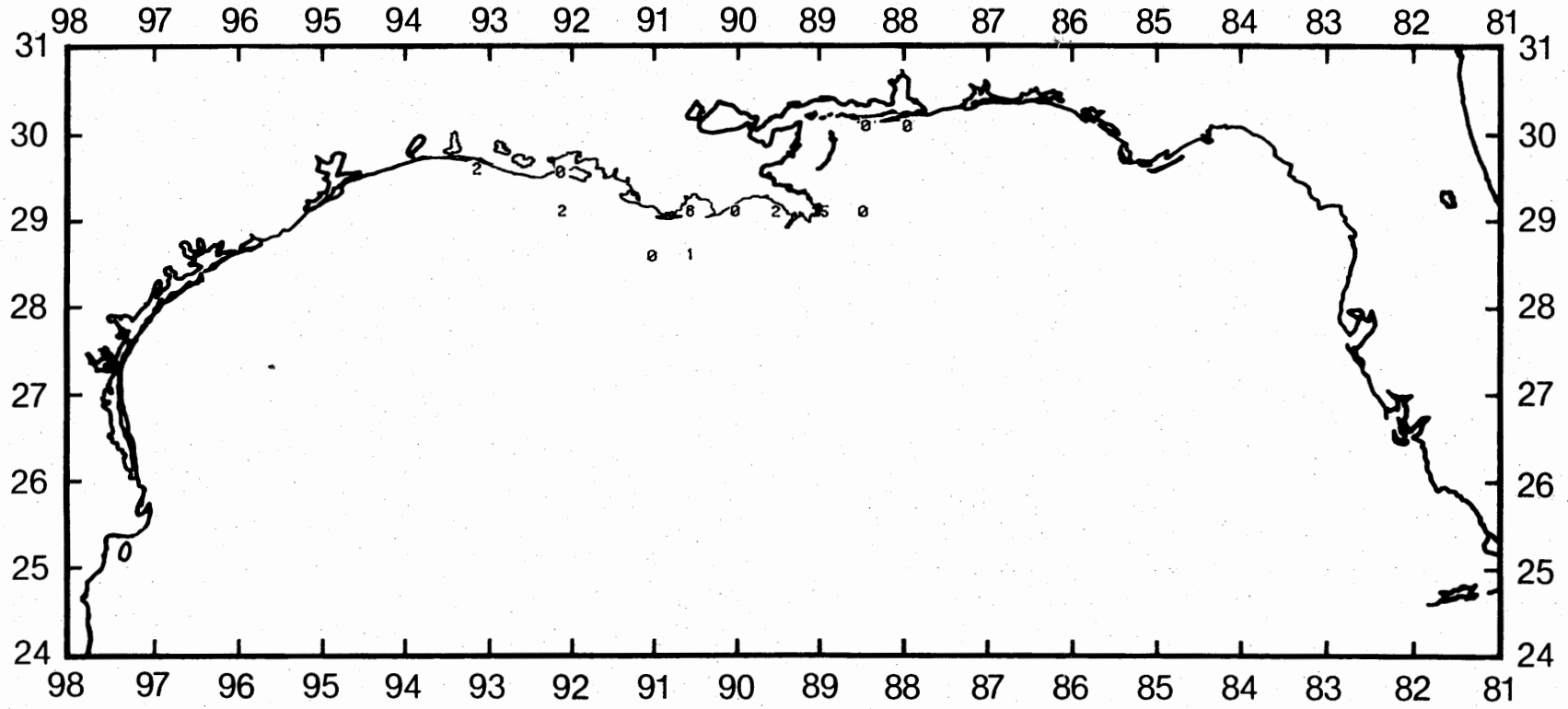


Figure 47. Bay anchovy, Anchoa mitchilli, lb/hour for June-July 1983. Weights not collected by Alabama vessels.

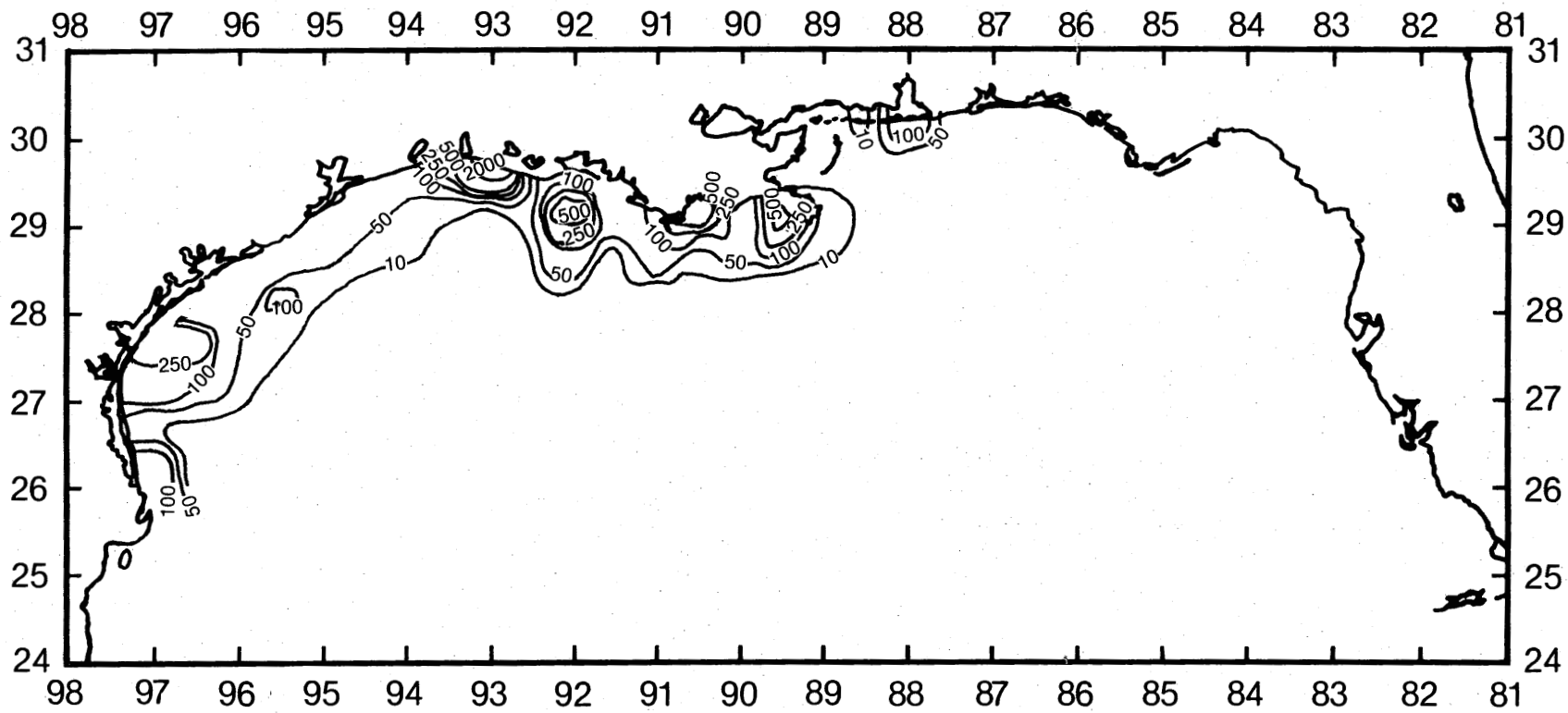


Figure 48. Atlantic threadfin, Polydactylus octonemus, number/hour for June-July 1983.

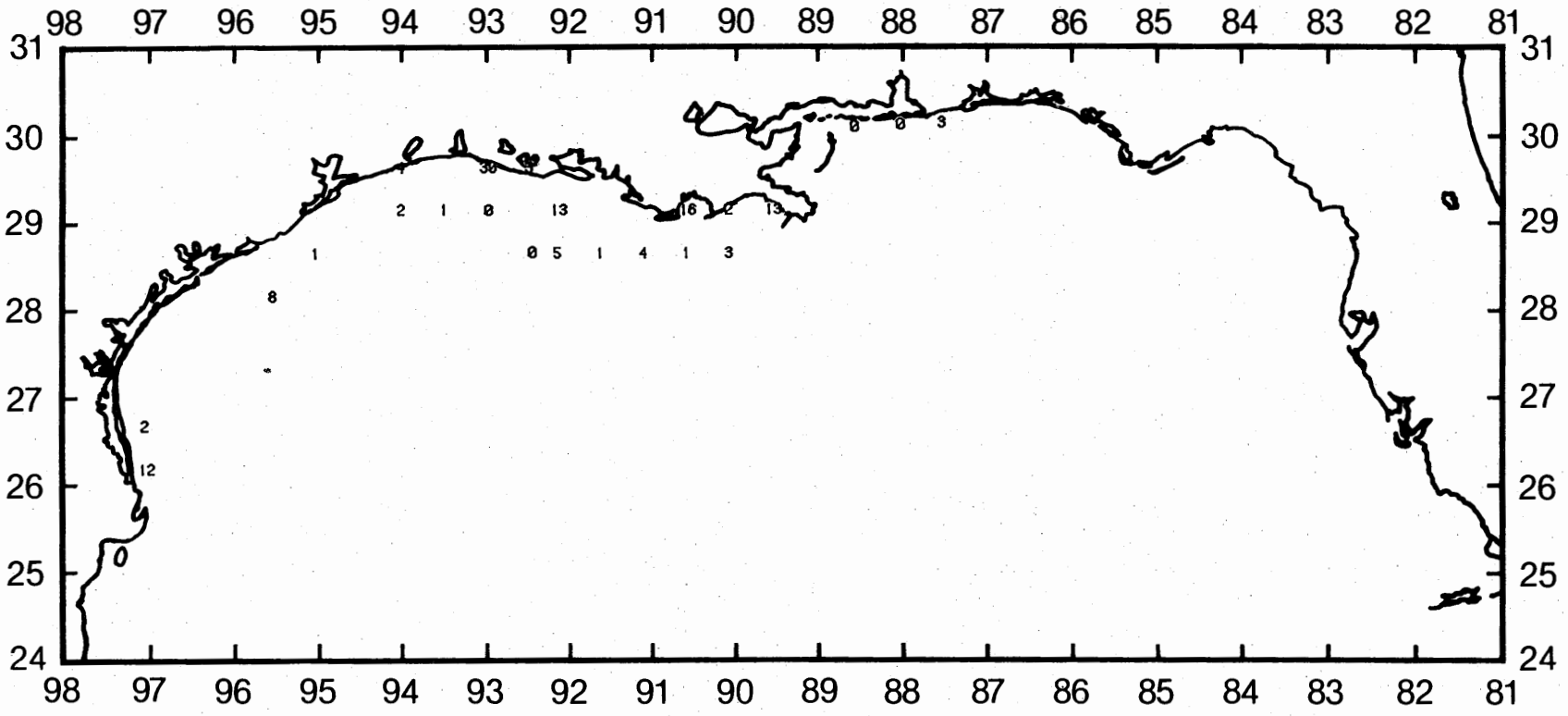


Figure 49. Atlantic threadfin, Polydactylus octonemus, lb/hour for June-July 1983. Weights not collected by Alabama and Texas vessels.

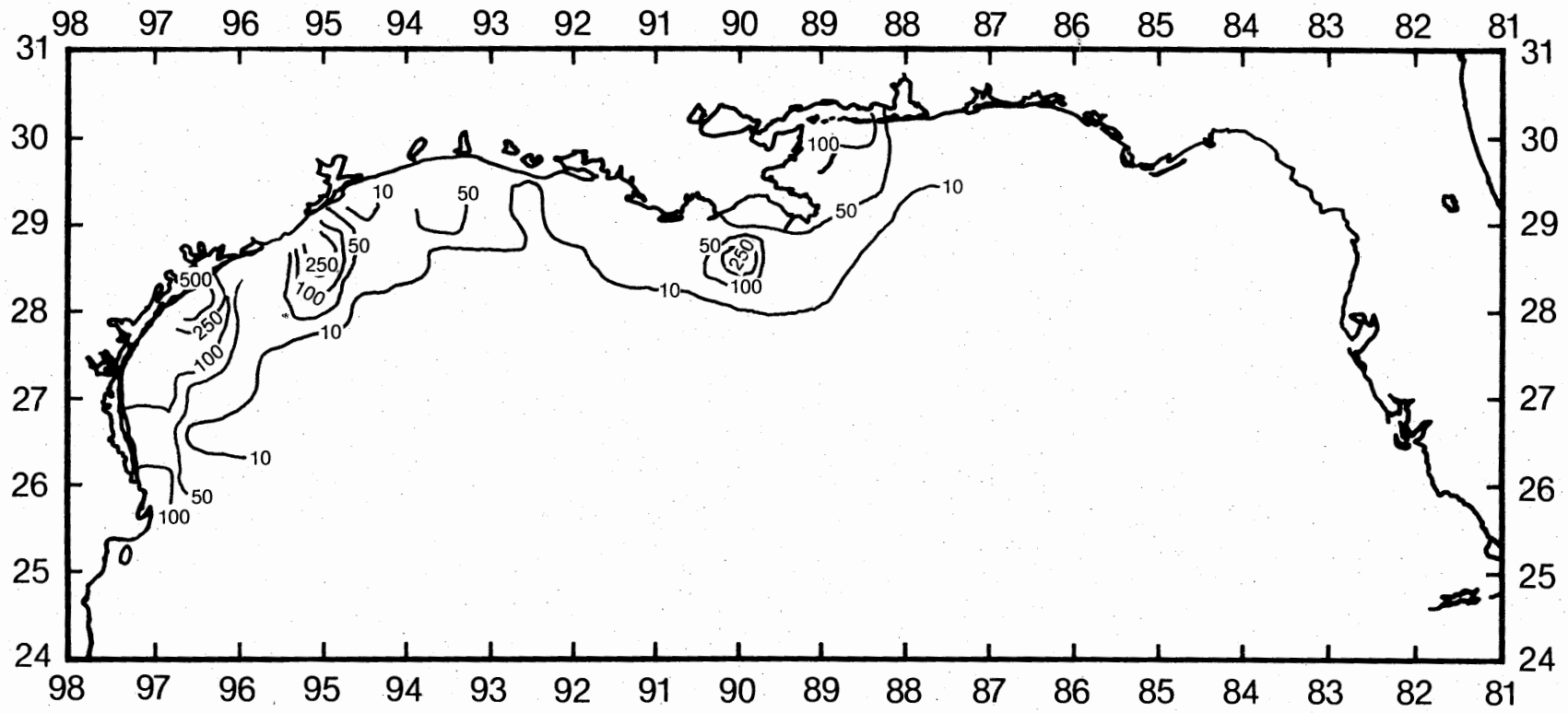


Figure 50. Blackfin searobin, Prionotus rubio, number/hour for June-July 1983.

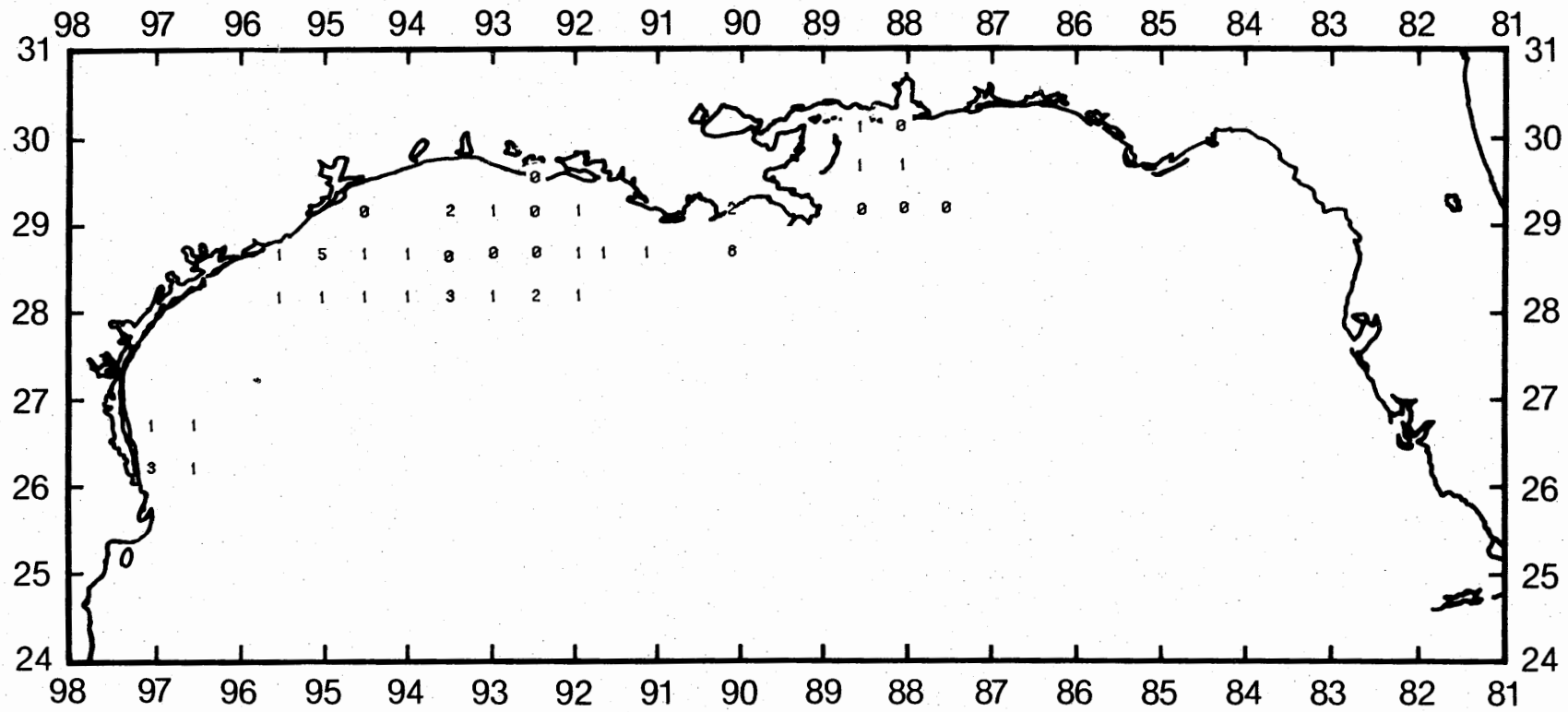


Figure 51. Blackfin searobin, Prionotus rubio, lb/hour for June-July 1983. Weights not collected by Alabama and Texas vessels.

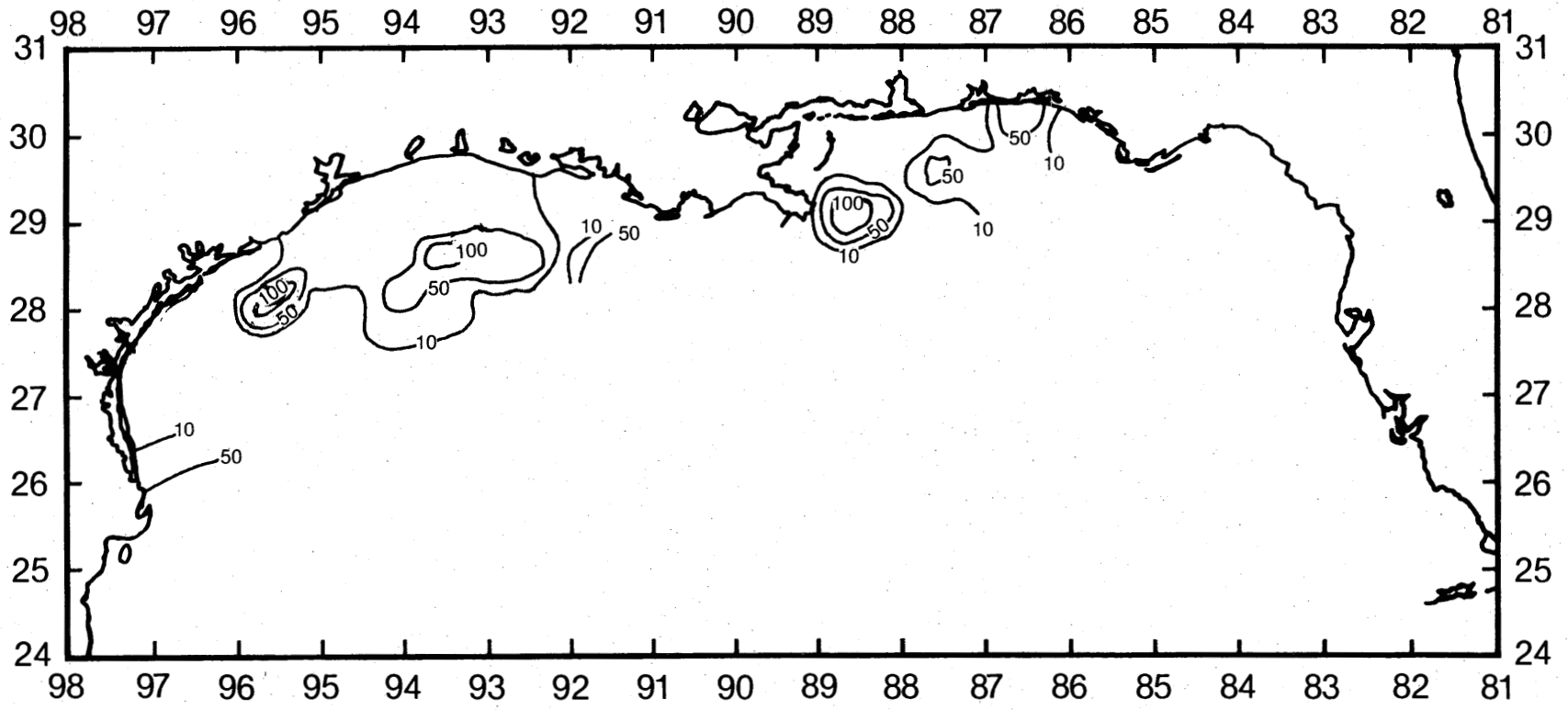


Figure 52. Rough scad, Trachurus lathami, number/hour for June-July 1983.

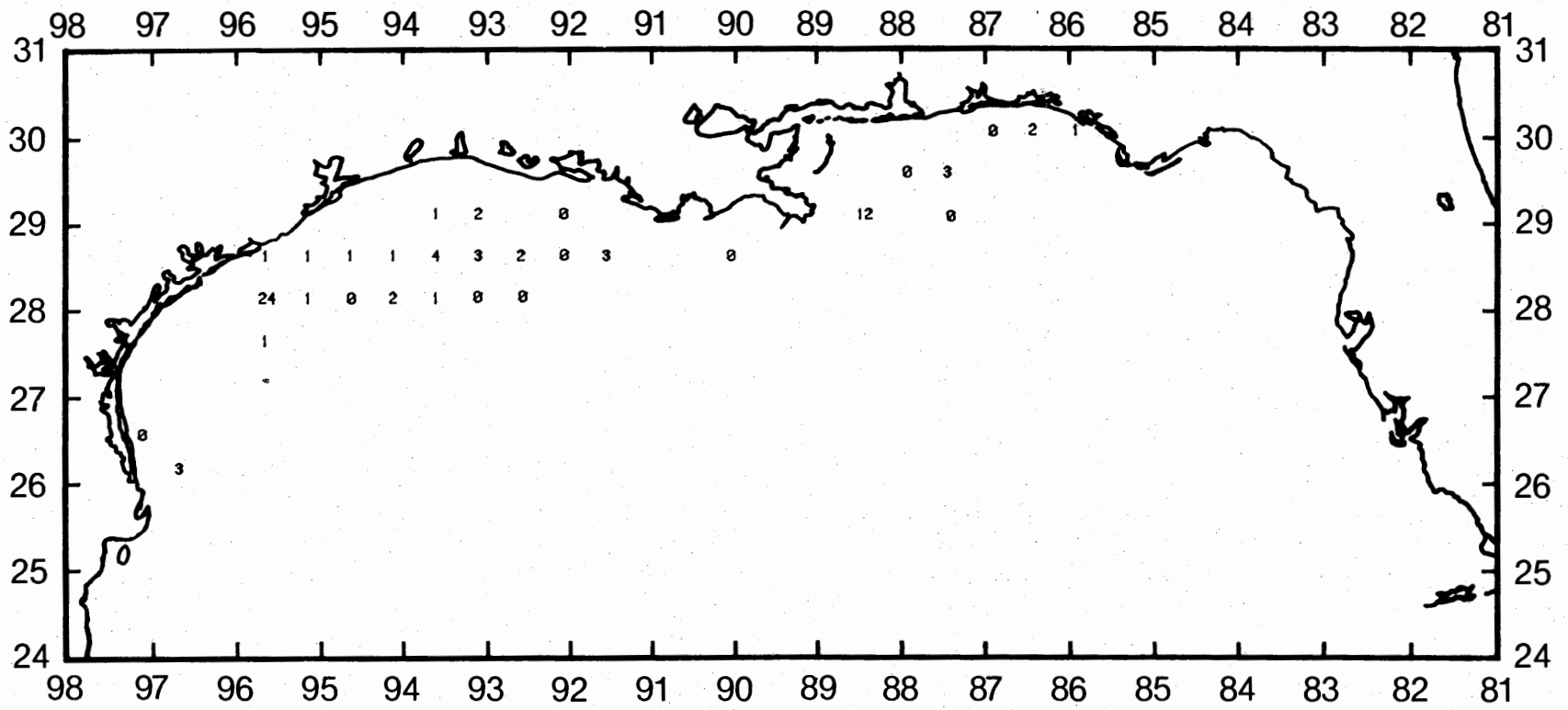


Figure 53. Rough scad, Trachurus lathami, lb/hour for June-July 1983. Weights not collected by Alabama and Texas vessels.

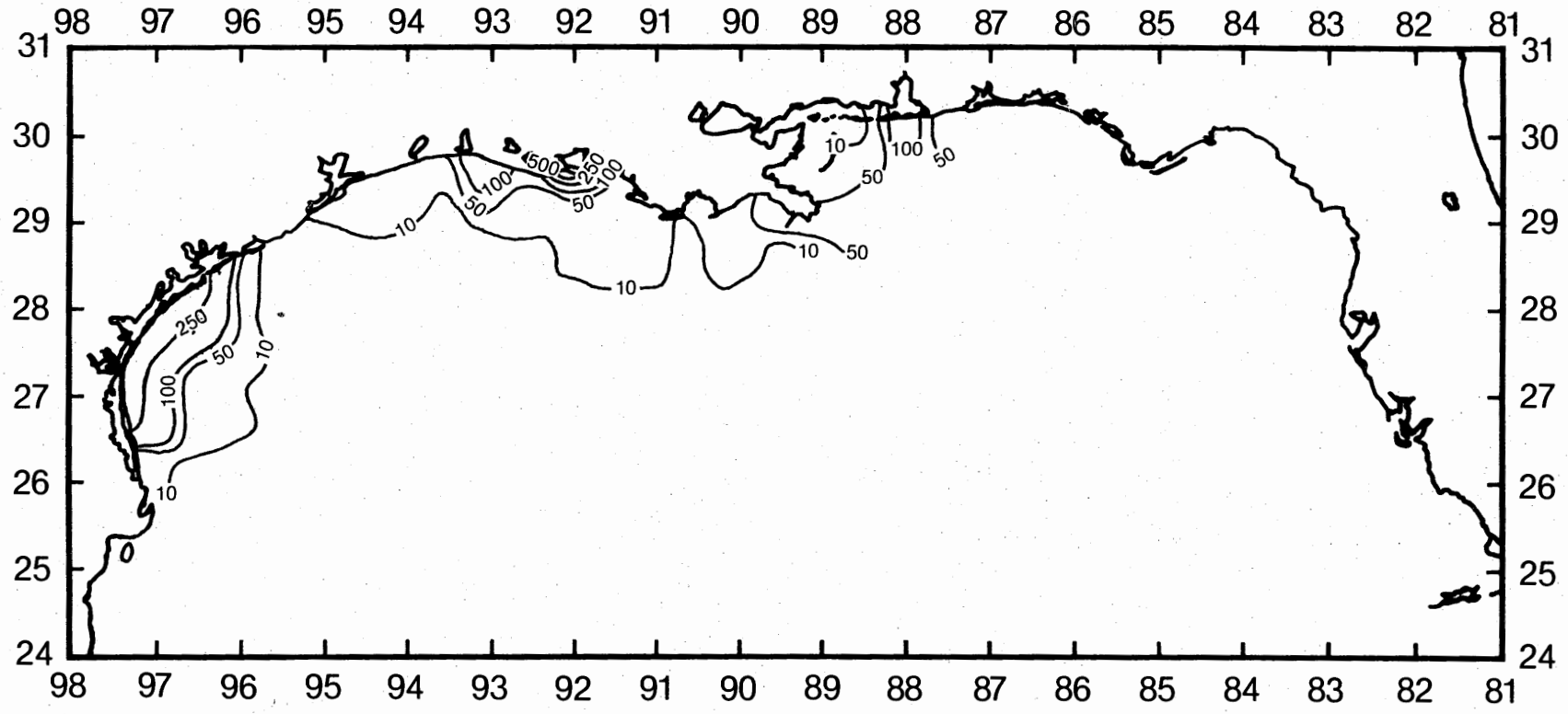


Figure 54. Sand seatrout, Cynoscion arenarius, number/hour for June-July 1983.

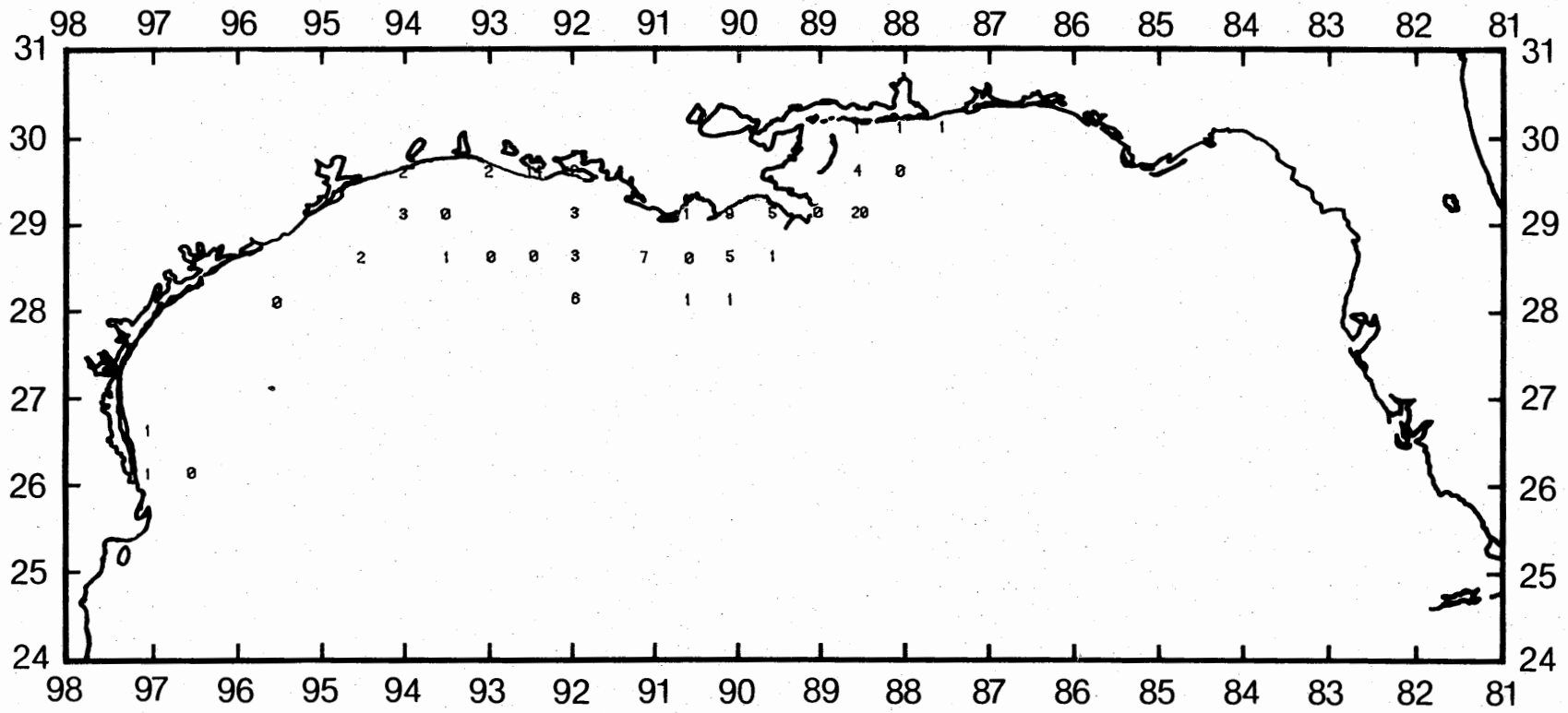


Figure 55. Sand seatrout, Cynoscion arenarius, lb/hour for June-July 1983. Weights not collected by Alabama and Texas vessels.

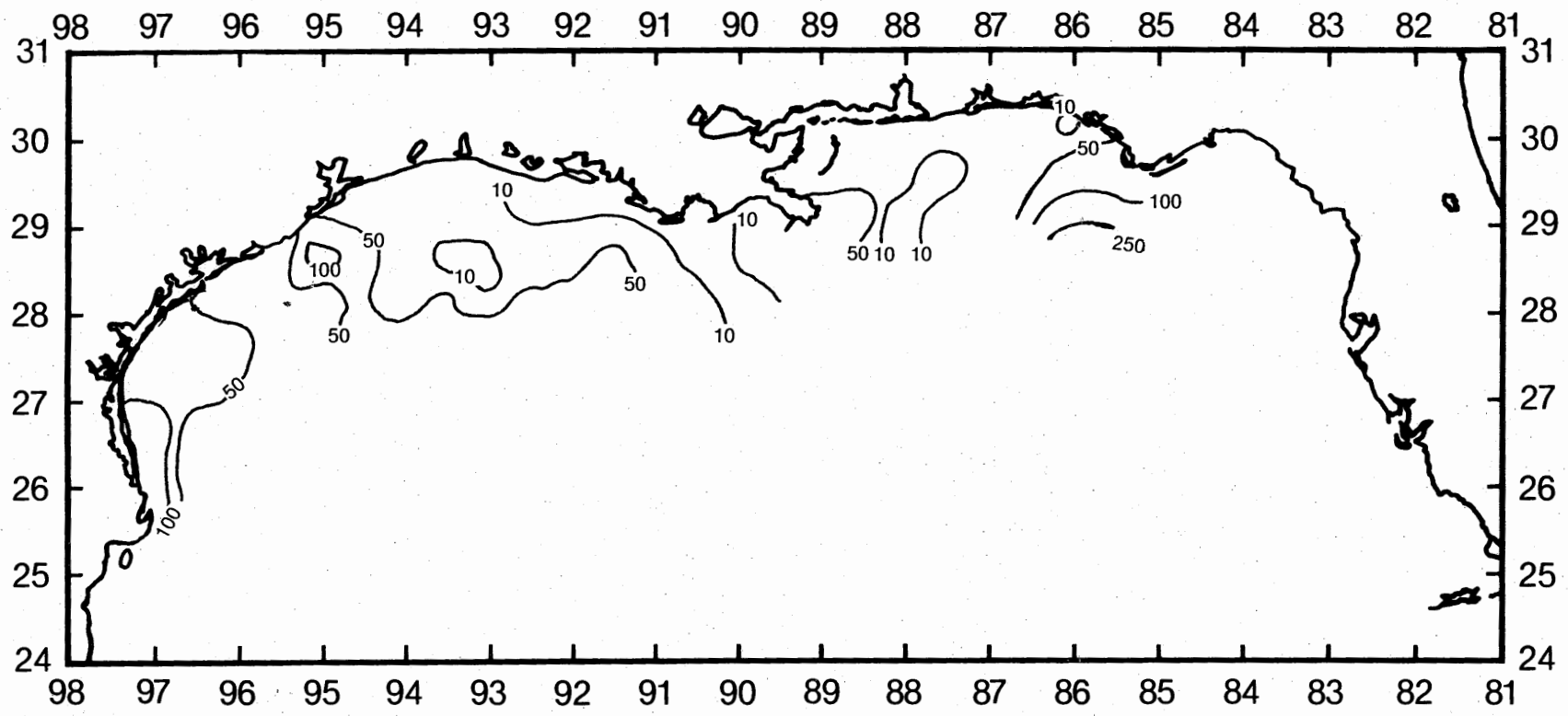


Figure 56. Rock sea bass, Centropristis philadelphica, number/hour for June-July 1983.

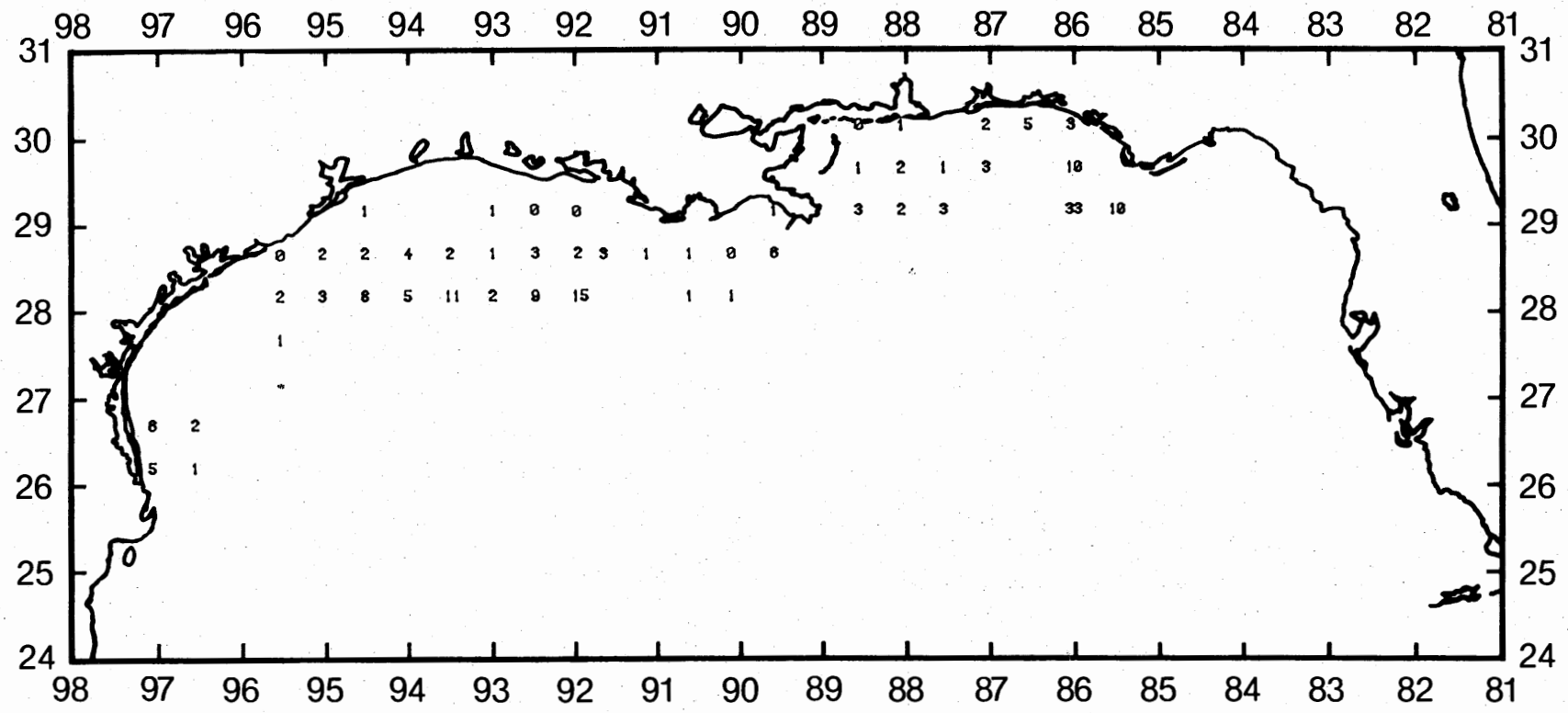


Figure 57. Rock sea bass, Centropristis philadelphica, lb/hour for June-July 1983. Weights not collected by Alabama and Texas vessels.

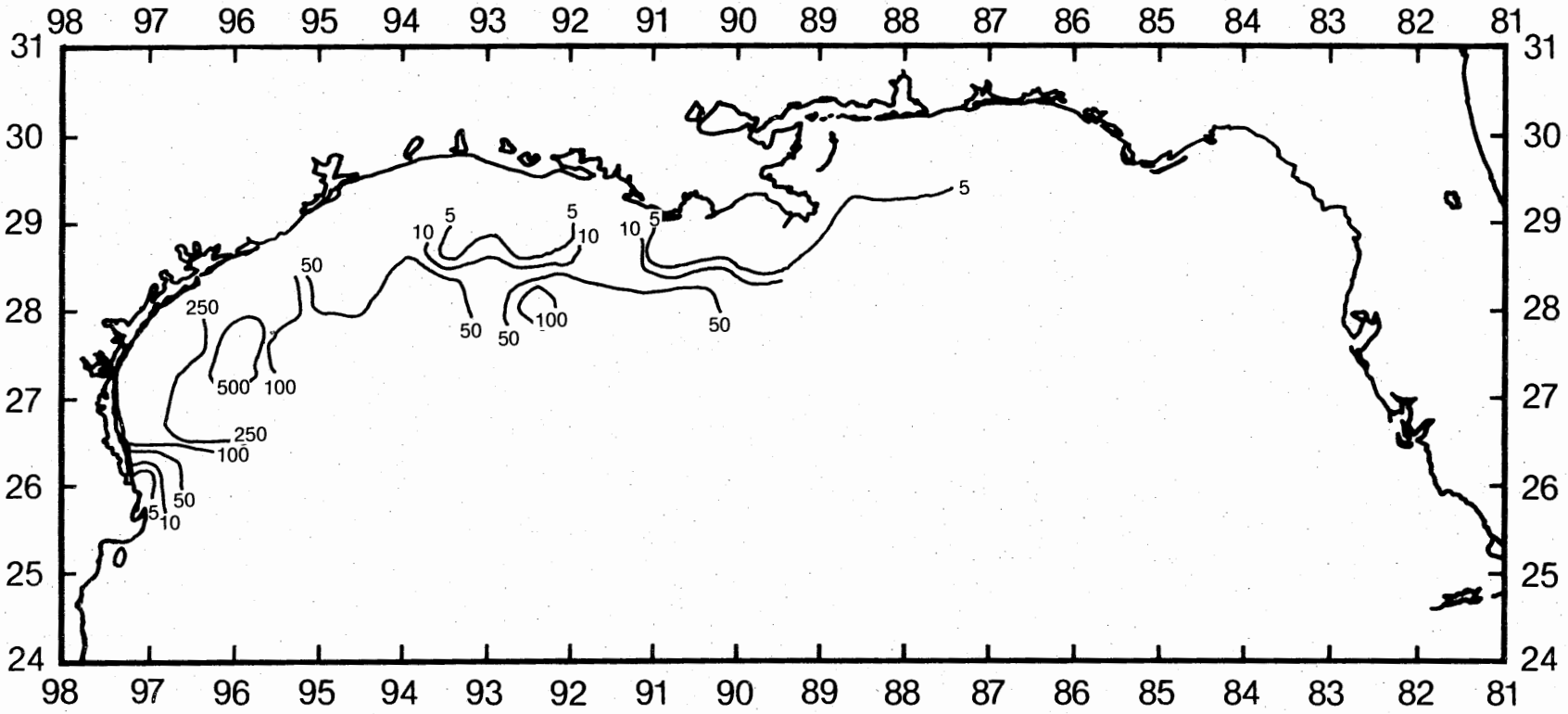


Figure 58. Blackear bass, Serranus atrobranchus, number/hour for June-July 1983.

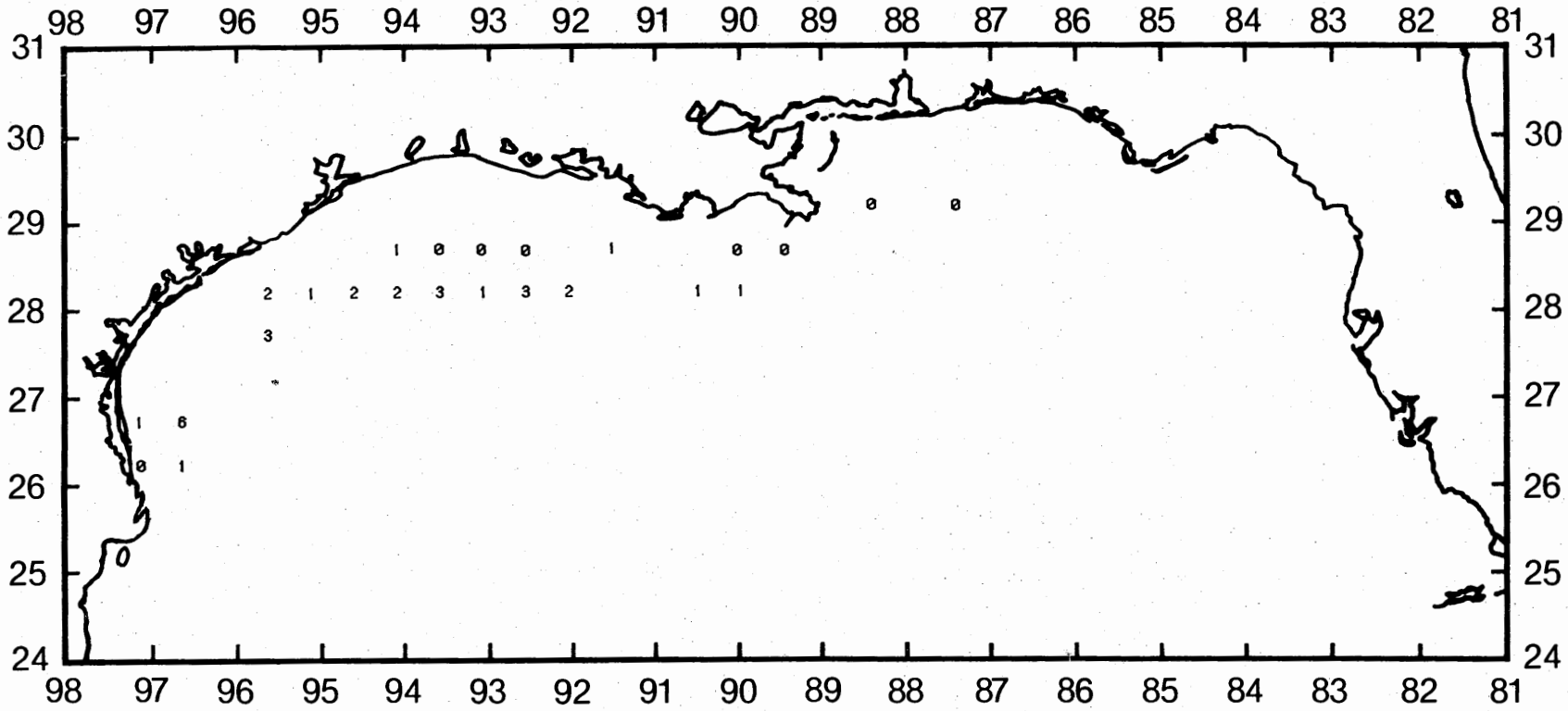


Figure 59. Blackear bass, Serranus atrobranchus, lb/hour for June-July 1983.

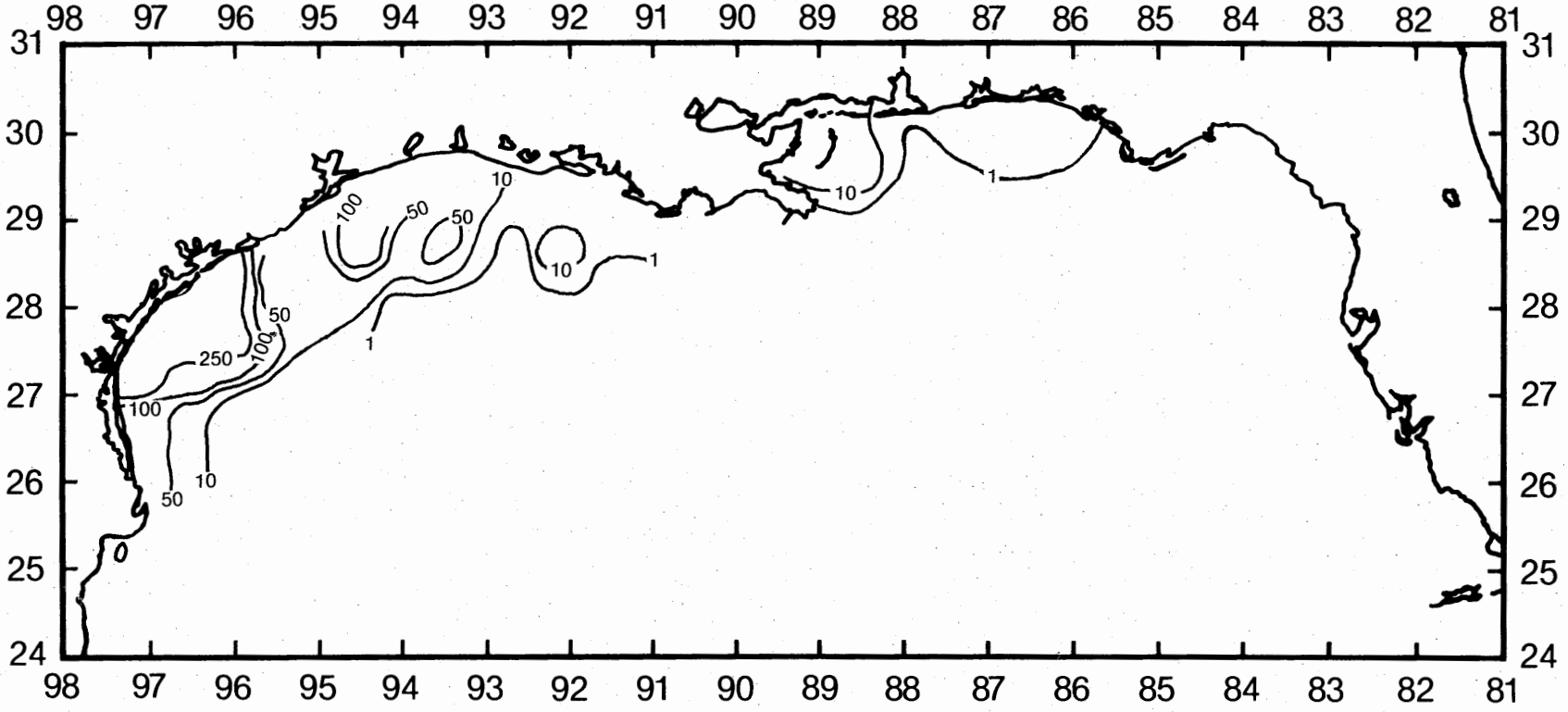


Figure 60. Shoal flounder, Syacium gunteri, number/hour for June-July 1983.

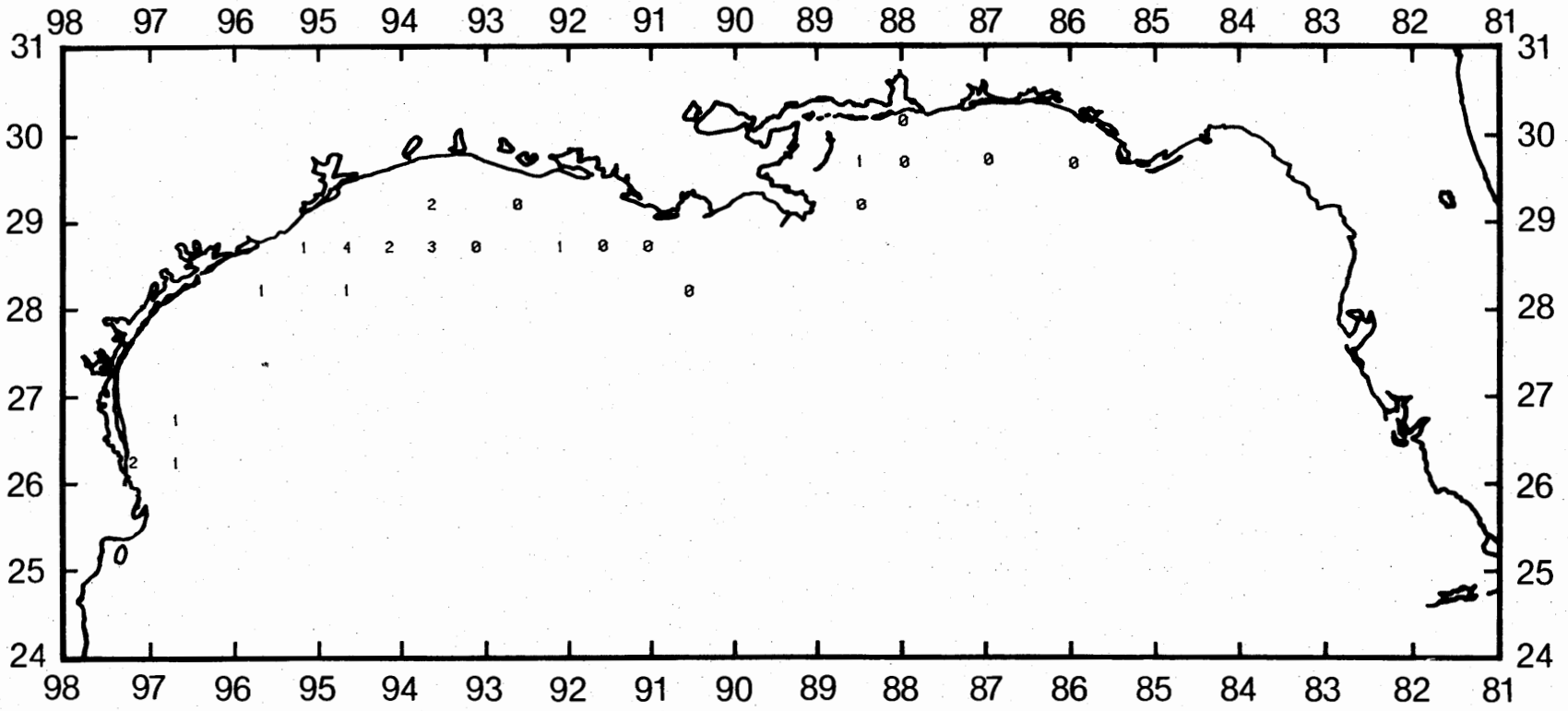


Figure 61. Shoal flounder, Syacium gunteri, lb/hour for June-July 1983. Weights not collected by Alabama and Texas vessels.

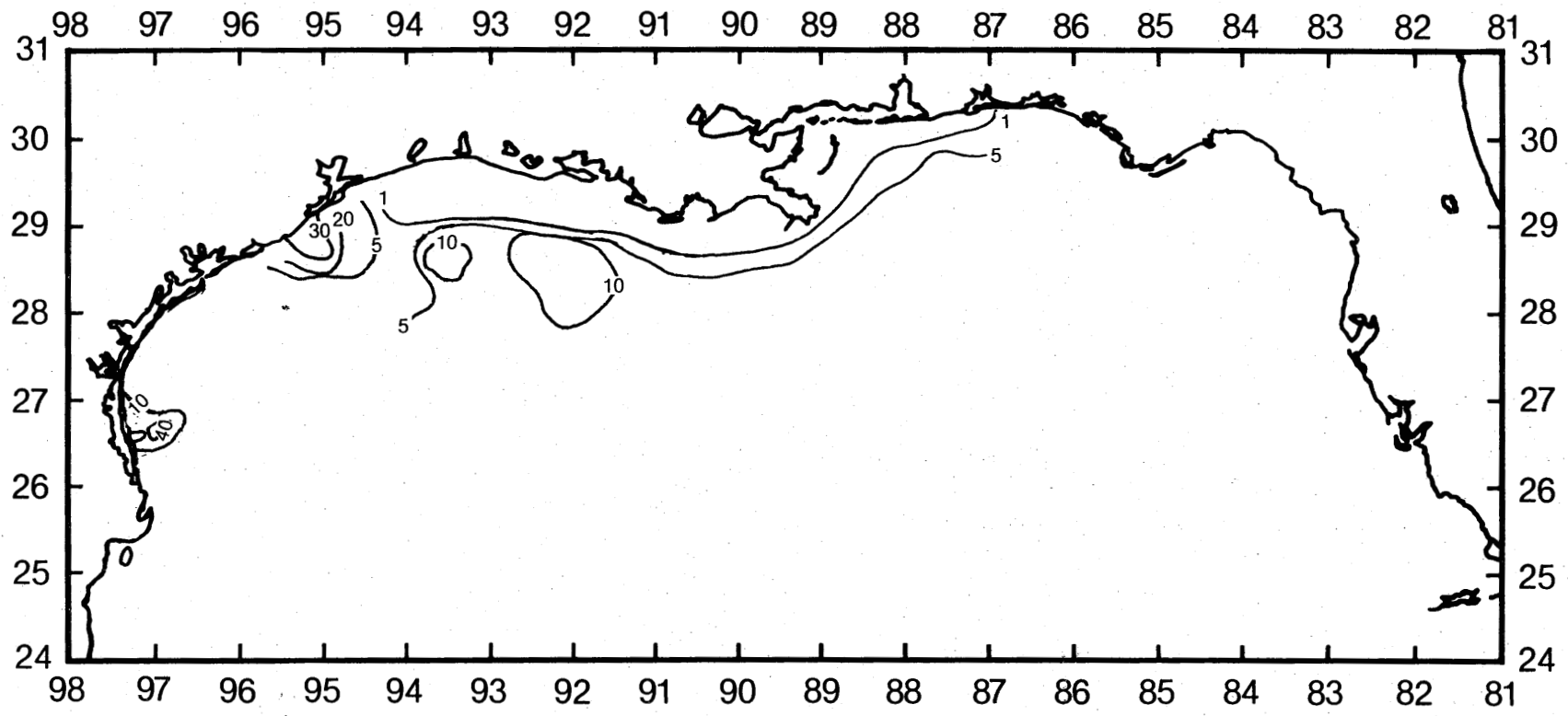


Figure 62. Red snapper, Lutjanus campechanus, number/hour for June-July 1983.

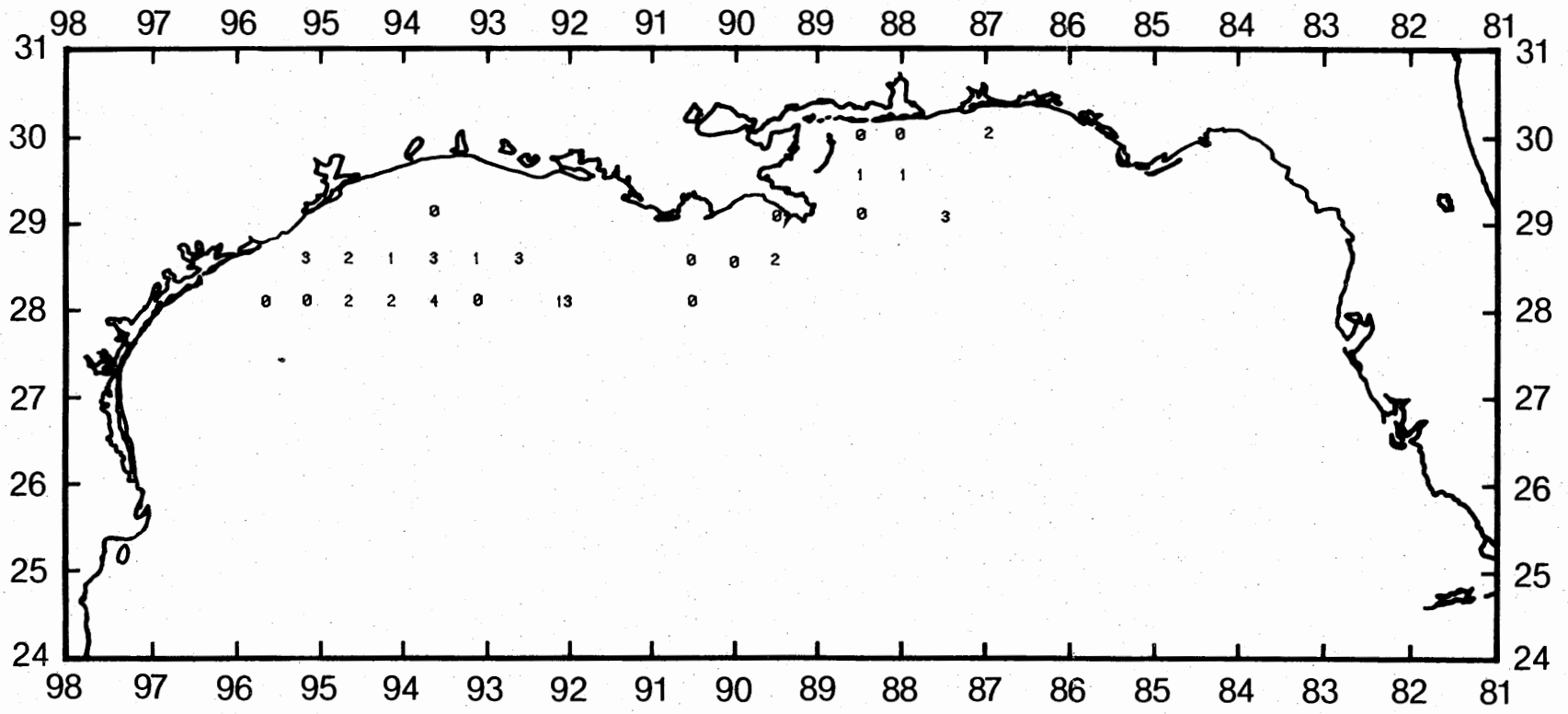


Figure 63. Red snapper, Lutjanus campechanus, lb/hour for June-July 1983. Weights not collected by Alabama and Texas vessels.

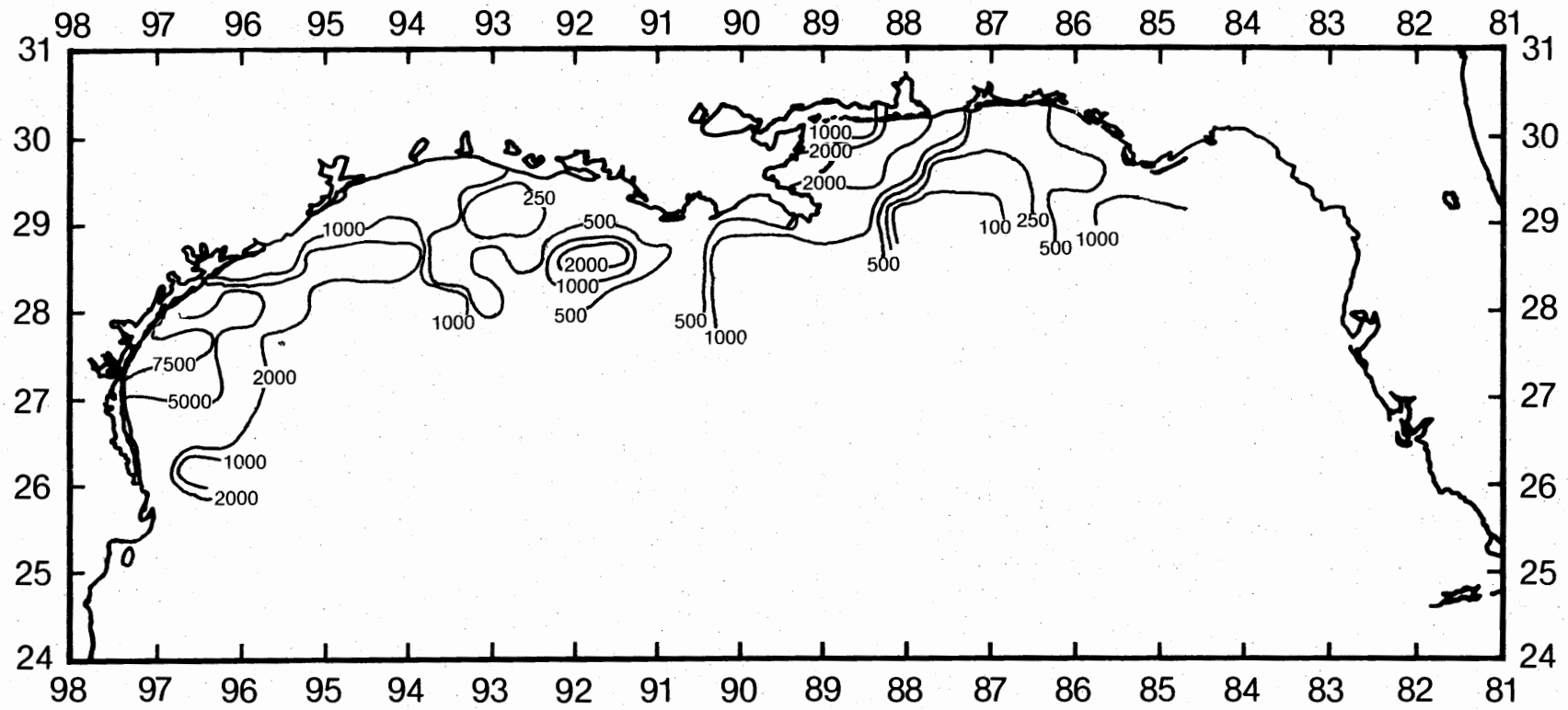


Figure 64. Roughneck shrimp, Trachypenaeus spp., number/hour for June-July 1983.

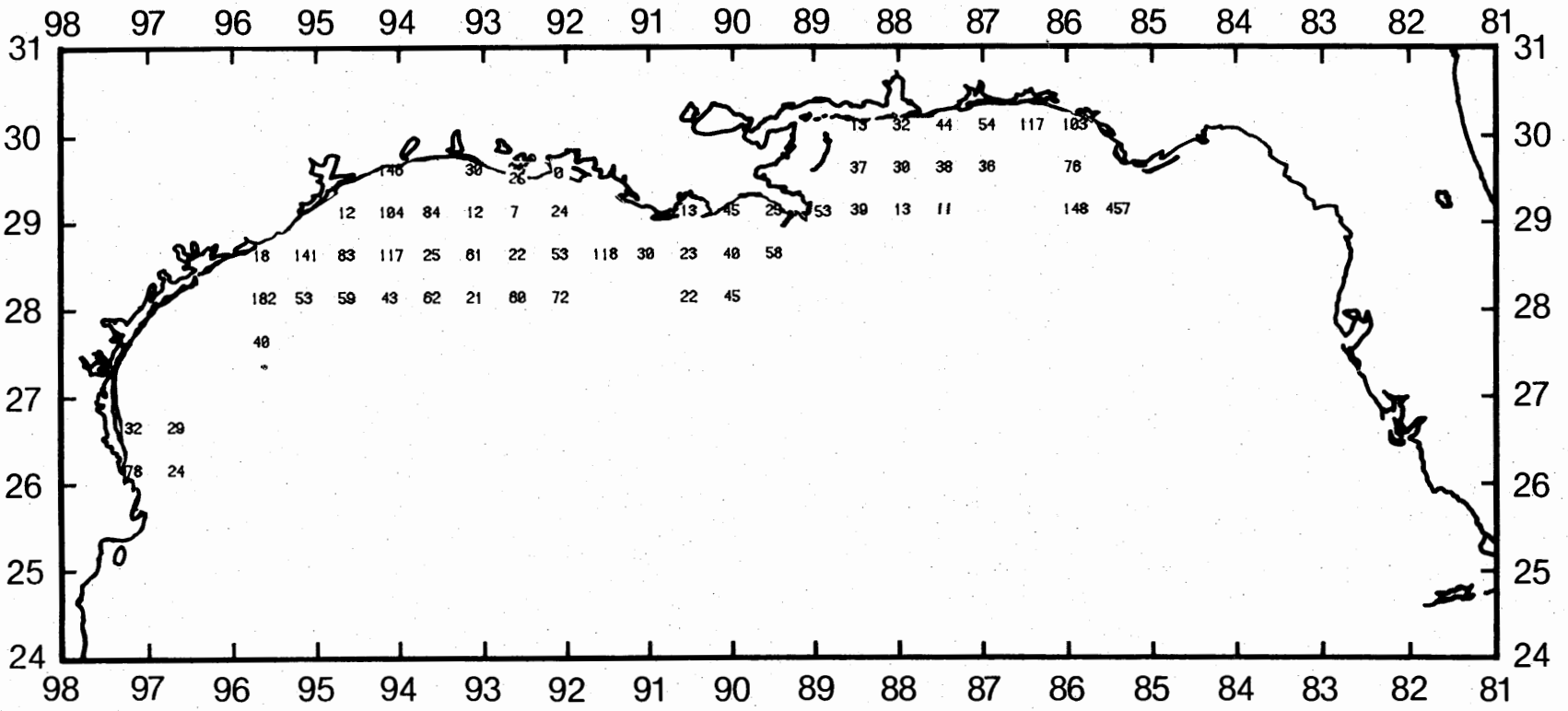


Figure 65. Roughneck shrimp, Trachypenaeus spp., lb/hour for June-July 1983. Weights not collected by Alabama and Texas vessels.

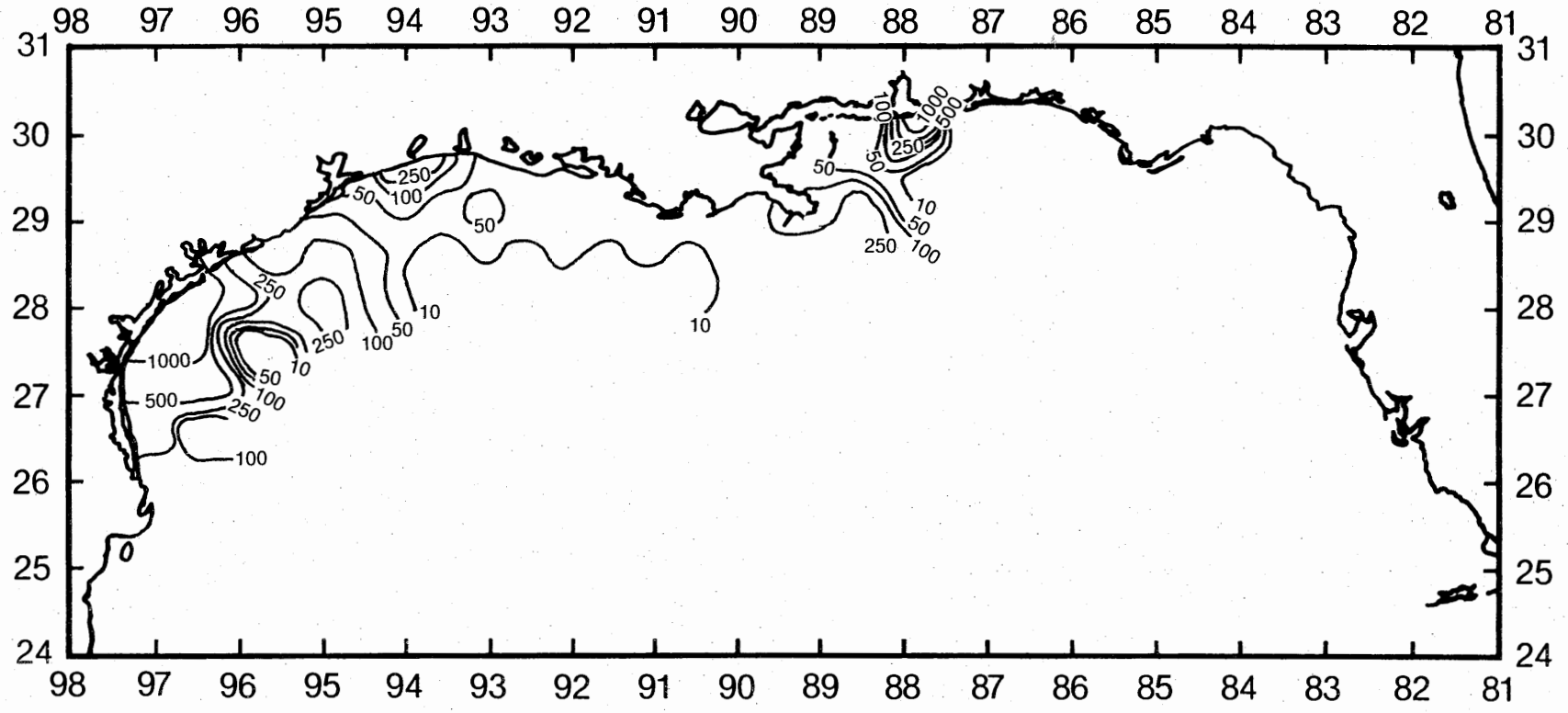


Figure 66. Lesser blue crab, Callinectes similis, number/hour for June-July 1983.

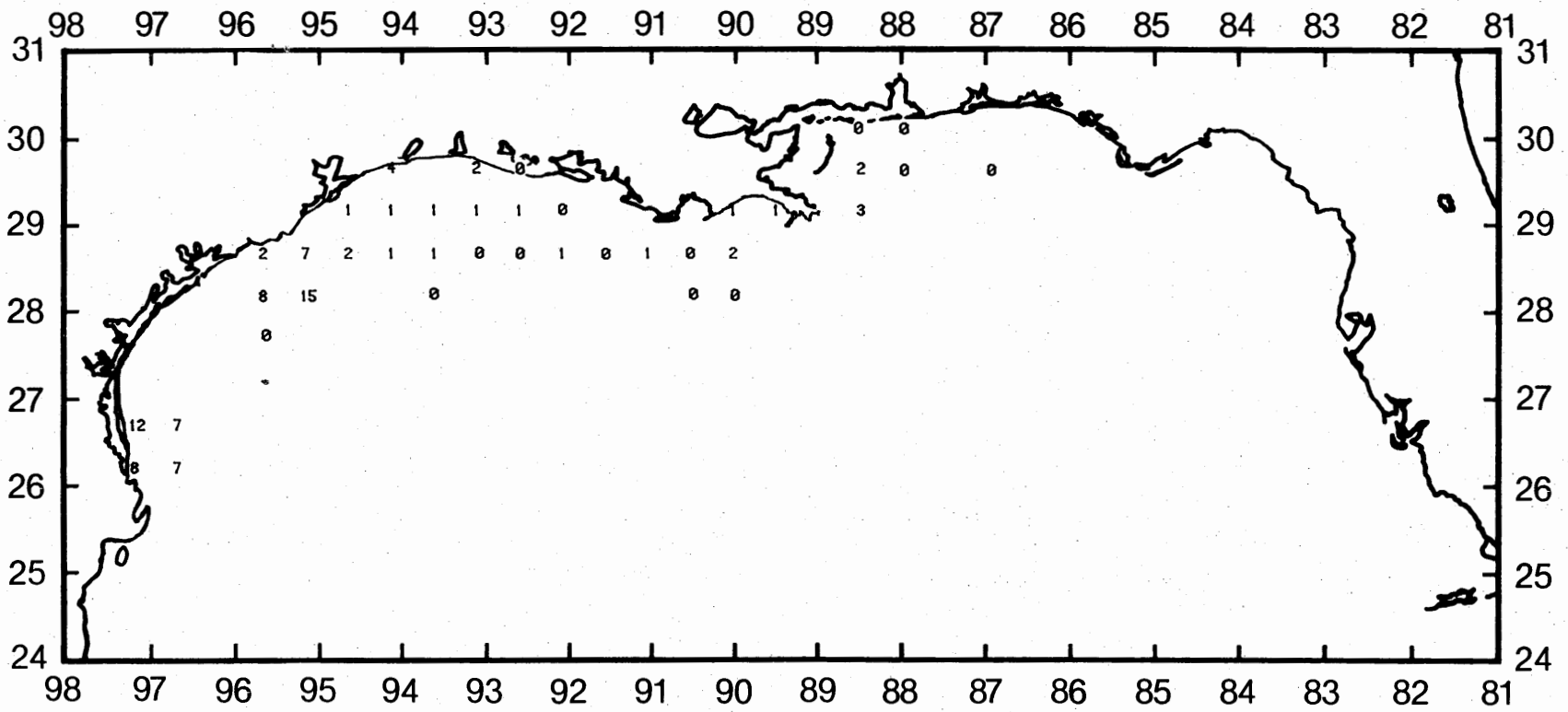


Figure 67. Lesser blue crab, Callinectes similis, lb/hour for June-July 1983. Weights not collected by Alabama and Texas vessels.

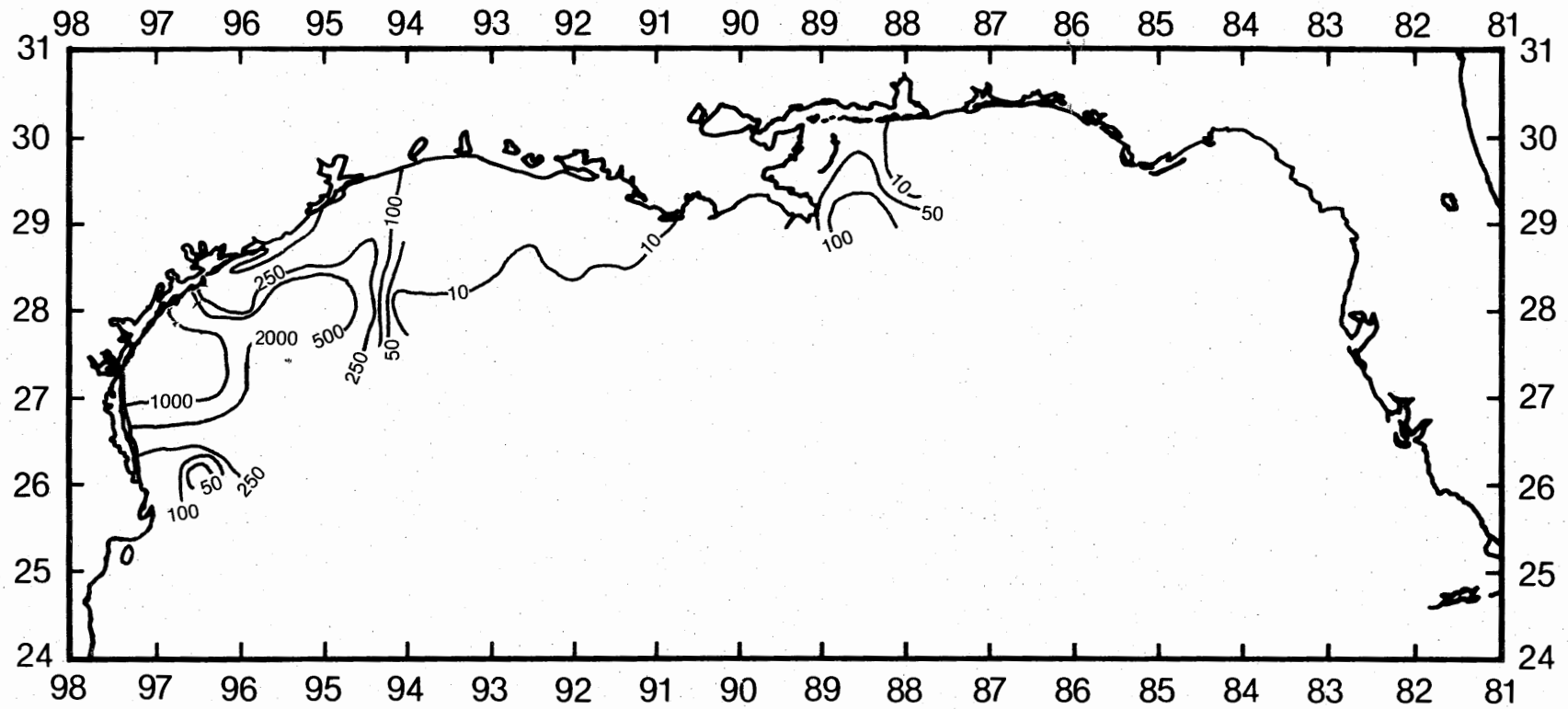


Figure 68. Rock shrimp, Sicyonia dorsalis, number/hour for June-July 1983.

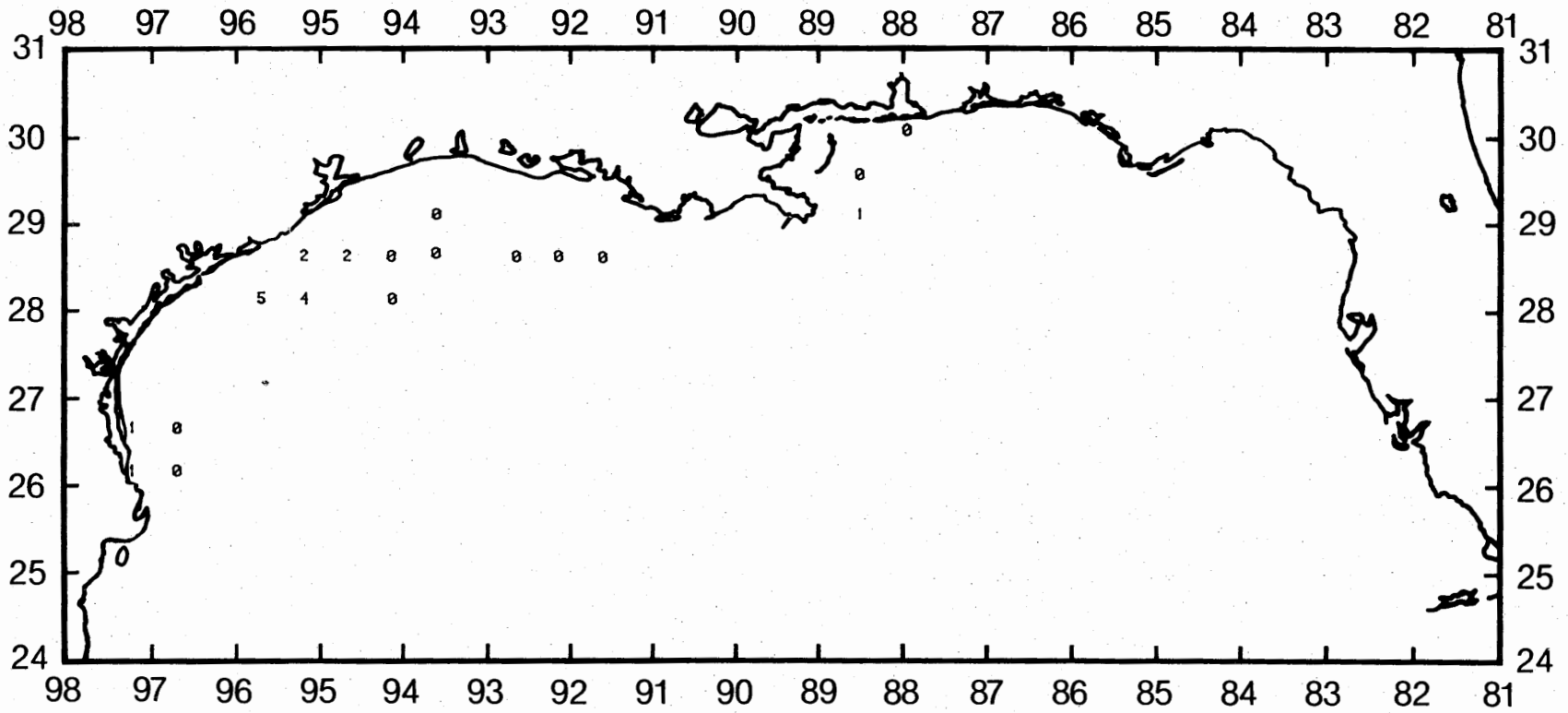


Figure 69. Rock shrimp, Sicyonia dorsalis, lb/hour for June-July 1983. Weights not collected by Alabama and Texas vessels.

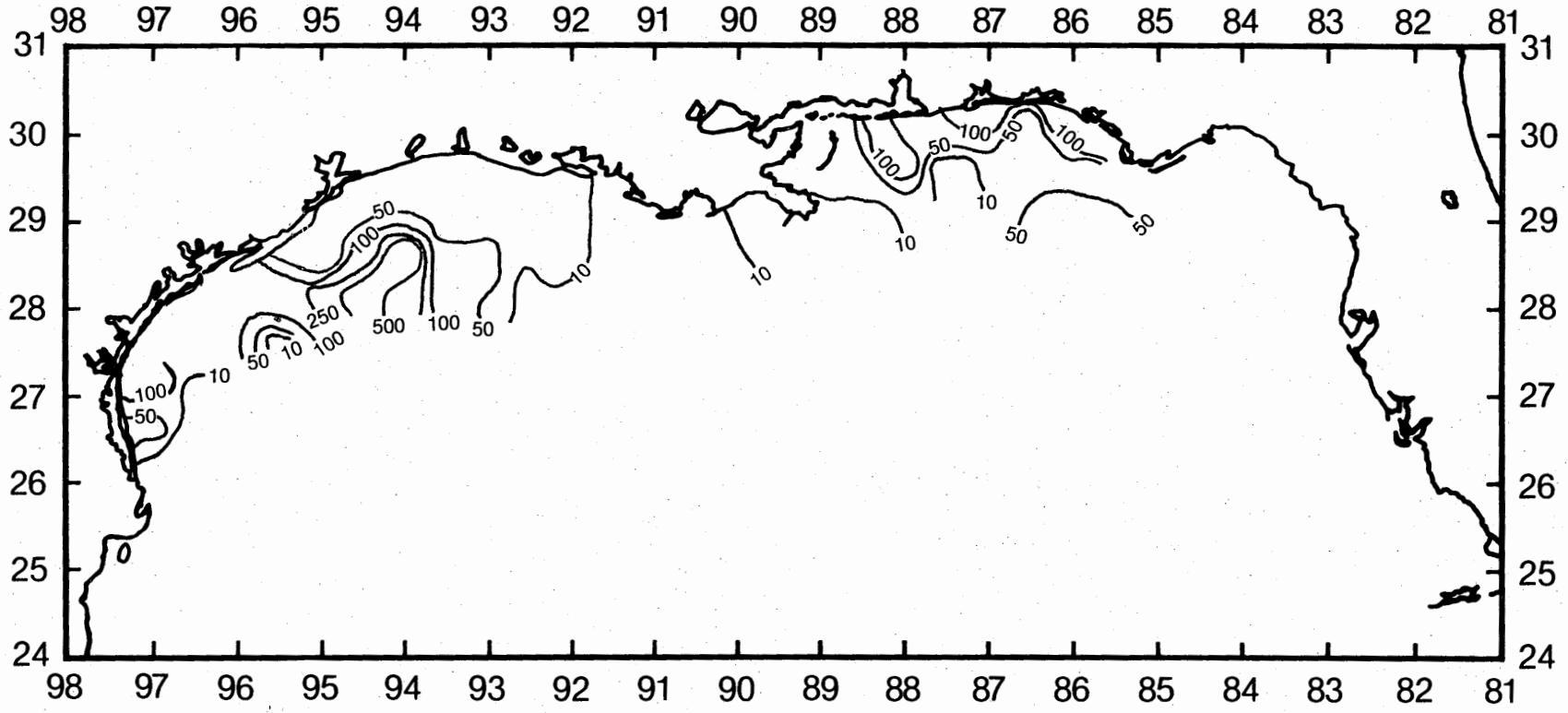


Figure 70. Rock shrimp, Sicyonia brevirostris, number/hour for June-July 1983.

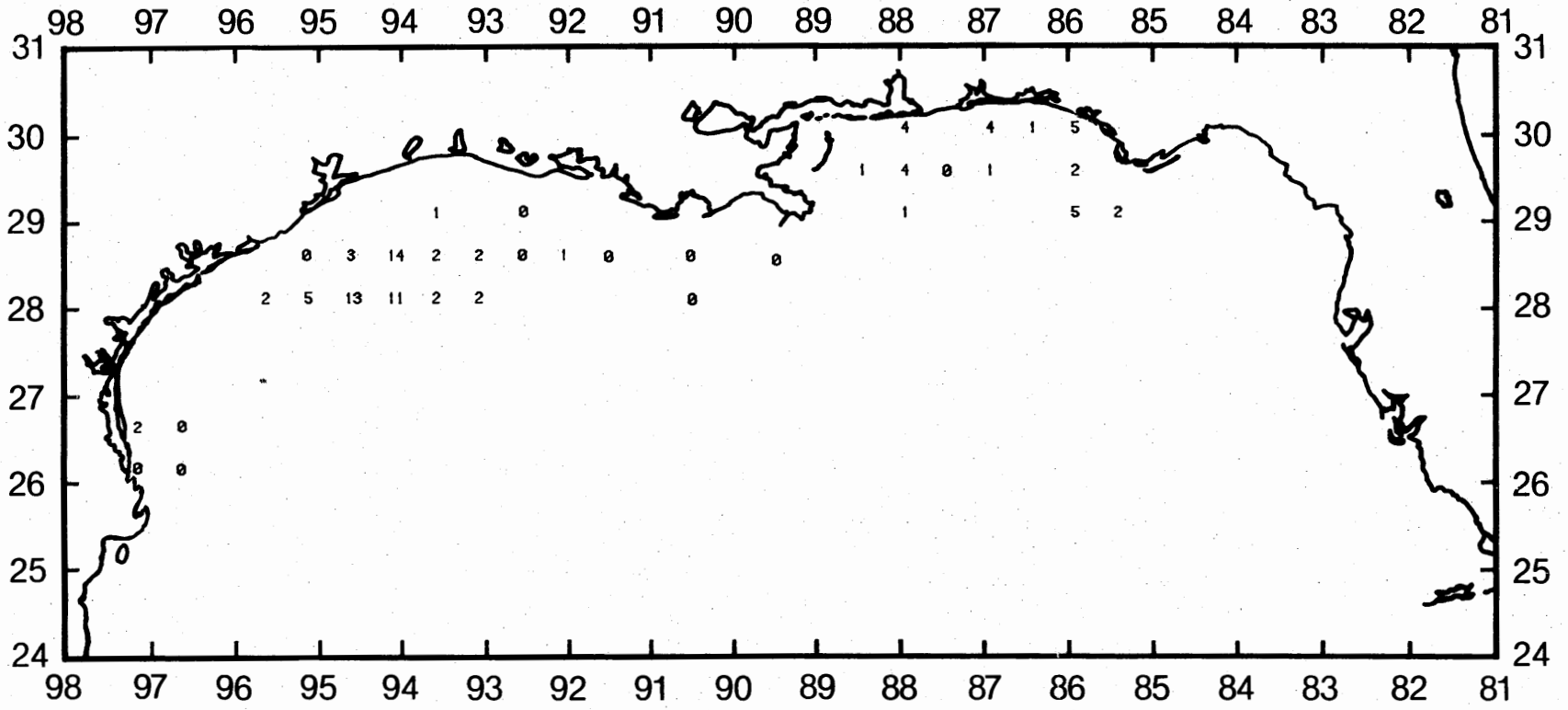


Figure 71. Rock shrimp, Sicyonia brevirostris, lb/hour for June-July 1983. Weights not collected by Alabama and Texas vessels.

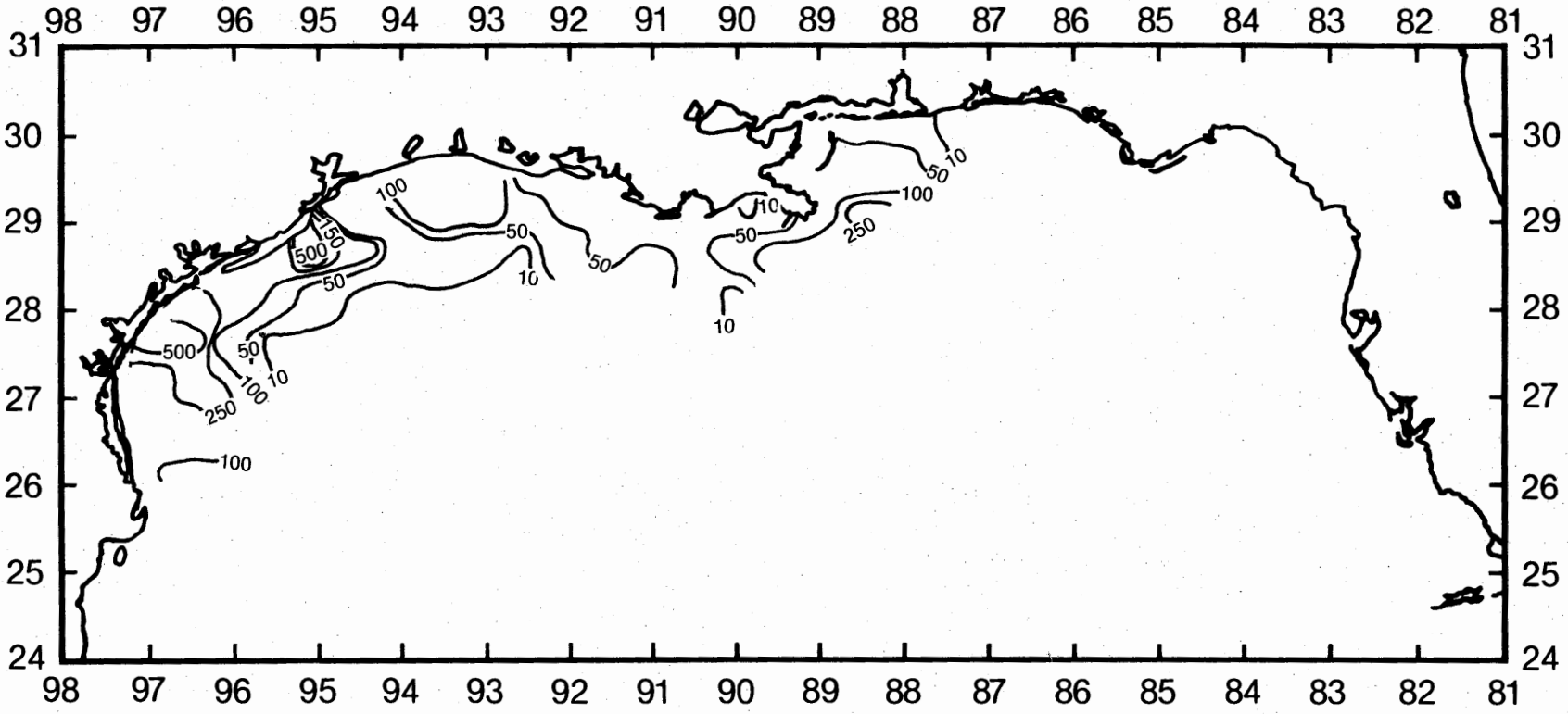


Figure 72. Mantis shrimp, Squilla spp., number/hour for June-July 1983.

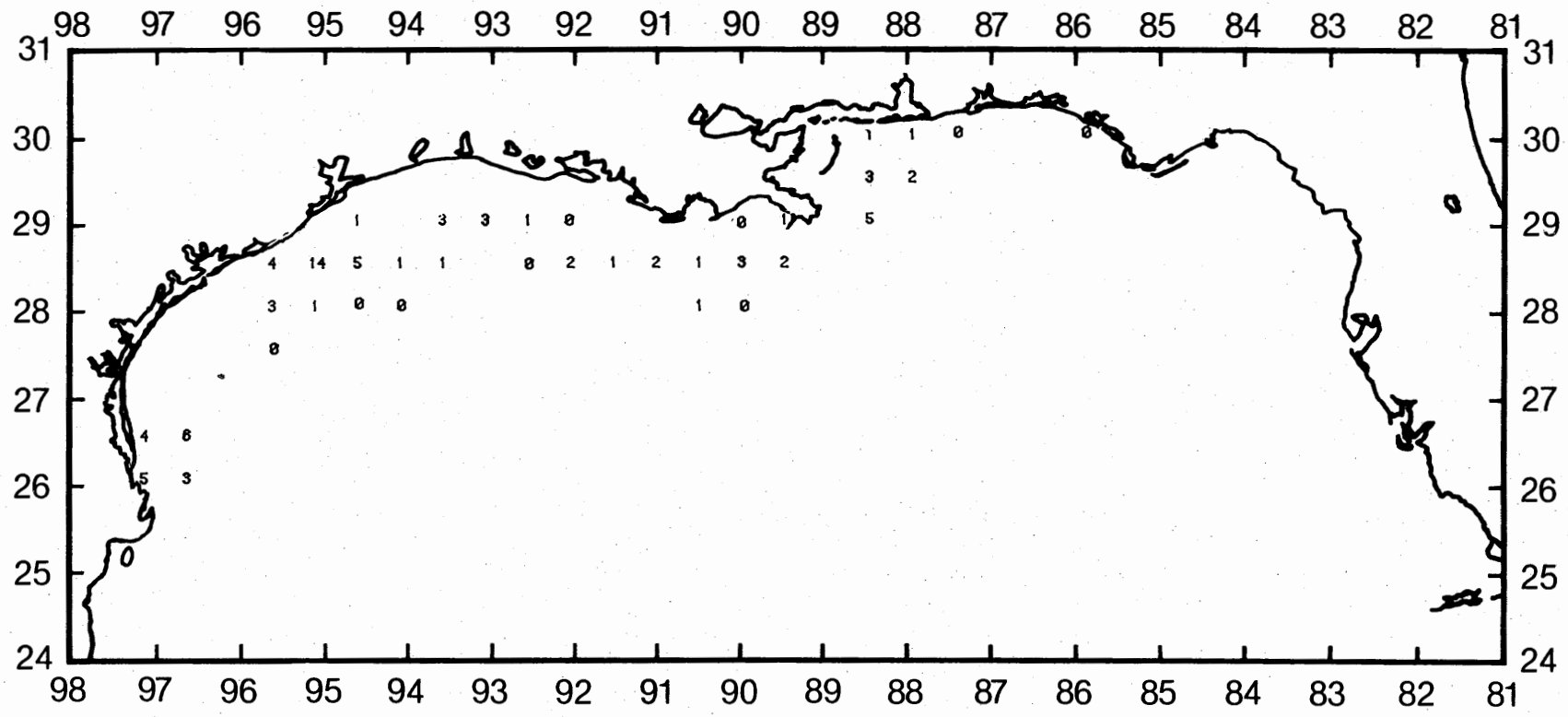


Figure 73. Mantis shrimp, Squilla spp., lb/hour for June-July 1983. Weights not collected by Alabama and Texas vessels.

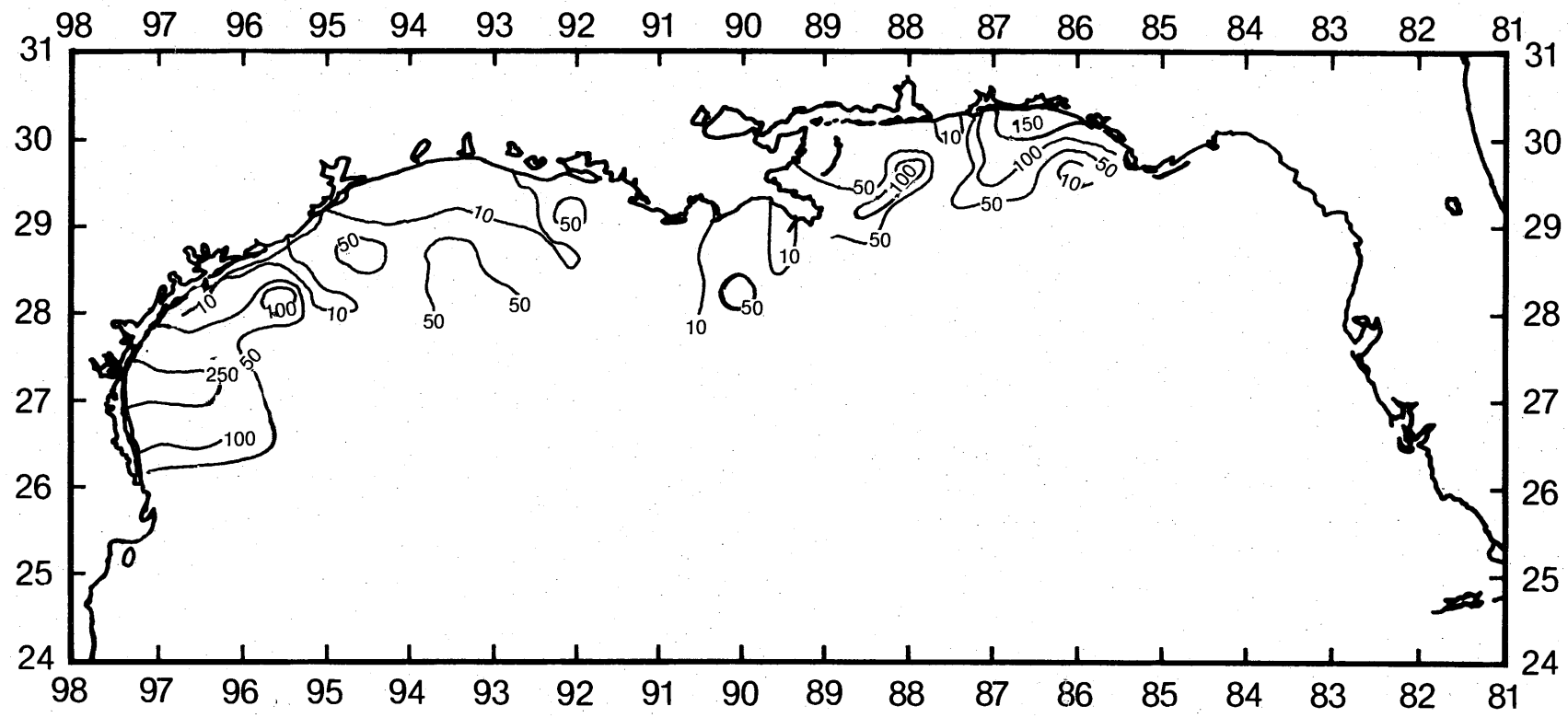


Figure 74. Common squid, Loligo pealei, number/hour for June-July 1983.

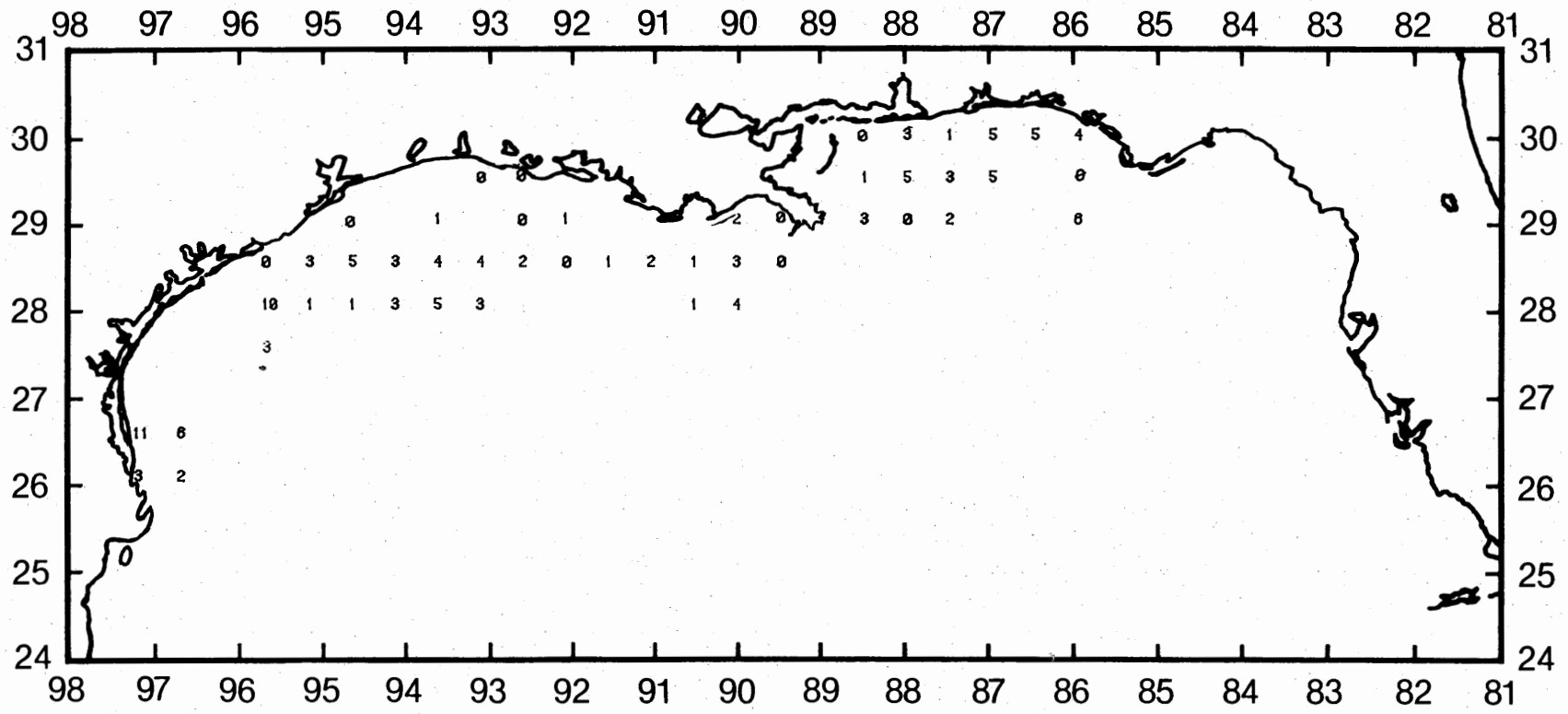


Figure 75. Common squid, Loligo pealei, lb/hour for June-July 1983. Weights not collected by Alabama and Texas vessels.

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