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SEAMAP ENVIRONMENTAL AND BIOLOGICAL ATLAS OF THE GULF OF MEXICO, 1999

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The 1999 SEAMAP Atlas was developed as a cooperative effort between the five Gulf States fishery management agencies and the National Marine Fisheries Service (NMFS), to present information collected during SEAMAP research survey activities in the Gulf of Mexico. The SEAMAP Data Coordinating Work Group would like to thank the following agencies for their participation in the project: Florida Fish and Wildlife Conservation Commission, Alabama Department of Conservation and Natural Resources, University of Southern Mississippi Institute of Marine Science, Gulf Coast Research Laboratory (representing the Mississippi Department of Marine Resources), Louisiana Department of Wildlife and Fisheries, Texas Parks and Wildlife Department, and NMFS-Southeast Fisheries Science Center.

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INTRODUCTION

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

The SEAMAP Program began in March 1981 when the National Marine Fisheries Service (NMFS), Southeast Fisheries Science Center (SEFSC), presented a SEAMAP Strategic Plan (1981) to the Gulf States Marine Fisheries Commission (GSMFC). This strategic plan outlined the proposed program organization (goals, objectives, procedures, resource requirements, etc.). A SEAMAP Subcommittee was then formed within the existing framework of the GSMFC. The Subcommittee consists of one representative from each state fishery management agency [Florida Fish and Wildlife Conservation Commission (FFWCC); Alabama Department of Conservation and Natural Resources (ADCNR); Mississippi Department of Marine Resources (MDMR) represented by the University of Southern Mississippi, College of Marine Science, Gulf Coast Research Laboratory (USM/CMS/GCRL); Louisiana Department of Wildlife and Fisheries (LDWF) and Texas Parks and Wildlife Department (TPWD)], one from NMFS Southeast Fisheries Science Center and a non-voting member representing the Gulf of Mexico Fishery Management Council (GMFMC). The Subcommittee has organized and successfully coordinated numerous resource surveys from 1982 through 1999 (Table 1). The resultant data are published in atlases for the surveys in 1982 (Stuntz et al. 1985); 1983 (Thompson and Bane 1986a); 1984 (Thompson and Bane 1986b); 1985 (Thompson et al. 1988); 1986 (Sanders et al. 1990a); 1987 (Sanders et al. 1990b); 1988 (Sanders et al. 1991a); 1989 (Sanders et al. 1991b); 1990 (Sanders et al. 1992); 1991 (Donaldson et al. 1993); 1992 (Donaldson et al. 1994); 1993 (Donaldson et al. 1996); 1994 (Donaldson et al. 1997a); 1995 (Donaldson et al. 1997b); 1996 (Donaldson et al. 1998); 1997 (Rester et al. 1999); and 1998 (Rester et al. 2000). Environmental assessment activities occurred with each of the surveys found in Table 1.

In March 1999, the SEAMAP Subcommittee identified and began to plan the year's SEAMAP survey activities for the Gulf of Mexico. In keeping with the program goal of establishing a coordinated long-term resource data base, it was decided to continue the same types of survey activities conducted in 1982 through 1997. Overall survey objectives in 1982 to 1999 were to assess the distribution and abundance of recreational and commercial organisms collected by plankton, trap/video and trawl gears and document environmental factors that might affect their distribution and abundance. Data from plankton surveys are used for detection and appraisal of fishery resources; in the determination of spawning seasons and areas; in investigations of early survival and recruitment mechanisms; and in estimation of the abundance of a stock based on its spawning production (Sherman et al. 1983). Assessment of the Texas Closure (Nichols 1982, 1984; Nichols and Poffenberger 1987) was the rationale for the establishment of the trawl surveys and to establish a seasonal data base to assess the abundance and distribution of the shrimp and groundfish stocks across the northern Gulf of Mexico. The Reef Fish Survey is designed to determine the relative abundance of reef fish populations and habitat using a fish trap/video recording system (Russell, unpublished report) and a fisheries acoustic system.

A major purpose of SEAMAP is to provide resource survey data to State and Federal management agencies and universities participating in SEAMAP activities. This eighteenth in a series of SEAMAP environmental and biological atlases presents such data, in a summarized form, collected during the 1999 SEAMAP surveys. The area covered in the Gulf of Mexico for all SEAMAP survey activities during 1999 is shown in Figure 1.

MATERIALS AND METHODS

Methodology for the 1999 SEAMAP surveys is similar to that of the 1982 through 1998 surveys. Sampling was conducted within the U.S. Exclusive Economic Zone (EEZ) and state territorial waters. Vessels that participated in collecting plankton and environmental data during the Spring Plankton Survey included the NOAA Ship OREGON II (April 23-May 31).

Vessels that participated in the Summer Shrimp/Groundfish Survey and concurrently sampled plankton and environmental data included the USM/CMS/GCRL vessel TOMMY MUNRO (June 11-13, July 7-9, and Louisiana's portion July 12-15) and the NOAA Ship OREGON II (June 15 - July 20). The TPWD vessels MATAGORDA BAY, LAGUNA MADRE, GALVESTON BAY, SABINE and TRINITY BAY (June 1-29) and the Alabama vessel A.E. VERRILL (June 3-4) did not sample plankton in conjunction with the summer survey.

The Alabama vessel A.E. VERRILL was the only vessel that participated in the Reef Fish Survey (January 25-27; August 5-6; October 28; and December 14.

Vessels that participated in collecting plankton and environmental data during the Fall Plankton Survey included the NOAA Ship GORDON GUNTER (September 3-29); the USM/CMS/GCRL vessel TOMMY MUNRO (September 9-10 and Louisiana's portion October 11-14); the Alabama vessel A.E. VERRILL (September 9); and the Florida vessel SUNCOASTER (September 25-29).

Vessels that participated in the Fall Shrimp/Groundfish Survey and concurrently sampled plankton and environmental data included the NOAA Ship OREGON II (October 16-November 20); the USM/CMS/GCRL vessel TOMMY MUNRO (October 22-26) and the Louisiana vessel PELICAN (November 29-December 3). The Alabama vessel A.E. VERRILL (October 20; and the TPWD vessels MATAGORDA BAY, LAGUNA MADRE, GALVESTON BAY, TRINITY BAY, and SABINE (November 1-December 1) did not sample plankton in conjunction with the fall survey.

PLANKTON SURVEYS

Plankton samples were taken at stations arranged in a systematic grid across the Gulf of Mexico. Such a grid was chosen because of the large survey area. Stations were set at minimum intervals of 30 miles (½ degree) and during the Fall Plankton Survey, Mississippi sampled stations set at intervals of 6 nautical miles.

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. The Tucker trawl, with 1 m^2 mouth, is outfitted with 0.335 micron mesh net. A flowmeter was mounted off-center in the mouth of each net to record the volume of water filtered. A 50-lb weight was attached approximately ½ m below the bongo frame attachment. The neuston net consisted of a 2x1-m pipe frame fitted with a 0.948-mm mesh net on which the cod end was tied off.

At each designated plankton station, either an oblique bongo and surface neuston tow or a surface neuston tow only were made. At bongo stations a standard oblique tow was made to 200 m, or to 2 m off the bottom at depths less than 200 m, with a payout speed of 50 m/min, 30-second settling time depths under 100 m and a 1-minute settling time for depths over 100 m, and a retrieval speed of 20 m/min, at a vessel speed of 1.5 knots to maintain a 45° angle. Neuston tows were made at the surface with the net half-submerged for 10 minutes at a vessel speed of 1.5 knots.

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

Sorted ichthyoplankton specimens from the Polish Sorting and Identification Center were returned to the SEAMAP Archiving Center, managed in conjunction with the FFWCC, for long-term storage under museum conditions. Sorted ichthyoplankton samples from 1982 through 1999 are available for loan to researchers throughout the country. Plankton volumes were determined according to procedures in Smith and Richardson (1977). The alternate bongo sample from each station was retained at USM/CMS/GCRL as a backup for those samples transshipped to the Polish Sorting and Identification Center, in case of loss or damage during transit. These backup unsorted plankton samples containing zooplankton and phytoplankton are stored at the SEAMAP Invertebrate Plankton Archiving Center, managed in conjunction with USM/CMS/GCRL, for use by researchers.

ENVIRONMENTAL DATA

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

Vessel: Vessel code for each vessel.
Station: Station identifiers varied by state and vessel.
Cruise: Cruise numbers varied by state and vessels.
Date: Month/Day/Year.
Time: Local time and time zone, recorded at the start of sampling.
Latitude/longitude: Recorded to seconds.
Barometric pressure: Recorded in millibars.
Wave height: Estimated visually in meters.
Wind speed and direction: Recorded in knots with direction recorded in compass degrees from which the wind was blowing.
Air temperature: Recorded in Centigrade.
Cloud cover: Estimated visually in percent cloud cover.
Secchi depth: Secchi depth in meters, estimated at each daylight station. Standard oceanographic 30-cm white discs were lowered until no longer visible, then raised until visible. If different depths were recorded, an average was used.
Water Color: Forel-Ule data was recorded.

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

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

Salinity: Salinity samples were collected by Niskin bottles and stored for laboratory analysis with a salinometer. Conductivity probes or refractometers were used on some vessels. Salinity samples were also measured with in situ electronic sensors.

Chlorophyll: Chlorophyll samples were collected and frozen for later laboratory analysis. The general procedure for shipboard collection of chlorophyll was to collect more than 9 liters of water from the surface. This was kept stirred by bubbling air through it while filtration was being done. Three samples, to each of which a 1 ml, 1% (W/V), suspension of MgCO3 was added, of up to 3 liters of water from the 9 liter sample were filtered through GF/C filters. The three filters were placed individually in Petri dishes, wrapped in opaque material and frozen until analysis. Each of the three samples was analyzed separately in the laboratory. Values in the tables that follow, are the mean of the three samples.

Laboratory analyses for chlorophyll a and phaeophytin a (chlorophyll degradation product) were conducted by fluorometry and spectrophotometry. The general extraction procedures prior to measurement were similar. Samples analyzed by spectrophotometer included other chlorophyllous products but these have not been included as data in this report. The methodology used is described in Strickland and Parsons (1972) and Jeffrey and Humphrey (1975). Some of the values have been deleted from the data base because of analytical errors. In addition, chlorophyll samples data were also collected using a Seabird CTD. This method only obtains measures of chlorophyll a and is a measure of fluorescence (FL) and appears in the Tables as such.

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

Turbidity: Turbidity values were measured by electronic probes when equipment was available.

TRAWL SURVEYS

Summer Shrimp/Groundfish Survey

The sampling strategy and a description of the statistical rationale for the sampling design as described by Nichols in the 1982 SEAMAP Atlas (Stuntz et al. 1985) has been modified. Since 1987, the strategy has been that day/night sampling sites were chosen randomly in areas stratified by depth and statistical area. These areas are shrimp statistical zones 11 through 22 (Figure 2). Trawl stations sampled by NMFS, Alabama, Mississippi and Louisiana are made with a standard SEAMAP 40-ft net, and Texas sampled with a 20-ft net. Depth strata consisted of 1 fm intervals from 5 to 20 fm, a 2 fm interval from 20 to 22 fm, a 3 fm interval from 22 to 25 fm, 5 fm intervals from 25 to 50 fm and a 10 fm interval from 50 to 60 fm. Additionally, the USM/CMS/GCRL vessel TOMMY MUNRO sampled 1 fm intervals from 2 to 5 fm off Louisiana in July. Trawls were towed perpendicularly to the depth contours and covered the entire depth stratum on each station. Single tows were for a maximum of 60 minutes; for certain stations, a series of consecutive trawl tows was necessary to cover a given depth stratum, with a minimum individual tow across each stratum of 10 minutes and a maximum tow of 60 minutes. The Texas vessels towed 10 minutes parallel to the depth stratum. The Louisiana samples did not cover a complete depth stratum on several stations because of the distance between depth contours.

All Penaeus spp. shrimp were separated from the trawl catch at each station. Total count and weight by species were recorded for each station. A sample of up to 200 shrimp of each species from every trawl was sexed and measured to obtain length-frequency information. Estimated total numbers were derived from the total weights of those processed. Other species of fishes and invertebrates were identified, enumerated and weighed. Weights and individual measurements on selected species other than commercial shrimp were also recorded.

Fall Shrimp/Groundfish Survey

The design of the fall survey was similar to the Summer Shrimp/Groundfish Survey. During the Fall survey trawl stations were made with the standard 40-ft and 20-ft SEAMAP nets and covered NMFS shrimp statistical zones 11 through 21 (Figure 2). Catch rates on all the vessels sampling were treated in the same manner as the Summer Shrimp/Groundfish Survey with the exception to shrimp catches where only 20 shrimp of each species from every trawl were measured, although Louisiana measures a minimum of 50 shrimp.

REEF FISH SURVEY

The primary purpose of this survey is to assess relative abundance and compute population estimates of reef fishes found on natural reef fish habitat in the Gulf of Mexico. Two types of gear are used to deploy video cameras: 1) a single-funnel fish trap (2.13 m long by 0.76 m square) with the camera mounted at a height of 25 cm above the bottom of the trap; or 2) a 4 camera array with 4 cameras mounted orthogonal to each other at a height of 25 cm above the bottom. Both gears are baited with squid before deployment. The resultant video recordings (typically of one hour duration) are processed back at the laboratory where fishes are identified and counted independently by two tape readers. Final counts are entered into the SEAMAP reef fish database along with additional observations on habitat and fish activity.

The hardbottom database from which sampling sites for this survey are chosen was developed in the following manner. Areas of natural reef habitat from Brownsville, Texas to the southern tip of Florida (at 81°00' W longitude and 24°02' N latitude) and between 9 and 110 m water depth were first inscribed on navigation charts, then divided into 10 by 10 nautical mile blocks (primary sample units). Each block was subdivided into 100-m^2, secondary sample units that were numbered and initially classified as being "reef" or "nonreef", then entered into a database. Prior to the survey, blocks are selected from this database in the eastern and western Gulf with probability proportional to the number of "reef" sample units within a block. Within each selected block, 100 sample sites are randomly selected. During the survey each selected block is occupied for one 24-h period, where night hours are devoted to ship's echo sounder surveys of up to 100 sites and daytime hours to trap/video sampling. Each potential sample site surveyed at night is given a final determination as being either a reef site or not based on echo patterns, vertical relief and other characteristics. Up to 8 actual "reef" sites are then randomly selected for sampling during that day (Russell, unpublished report). Trap/video sampling begins one hour after sunrise and ends one hour before sunset. Trap soak time is one hour.

Associated environmental data collected at each site usually includes profiles of salinity, temperature, and surface chlorophyll; and may also include profiles of dissolved oxygen, light transmittance, and fluorescence. Additional environmental and meteorological observations taken on stations follow standard SEAMAP methodology. During the NMFS component of the reef fish survey, fish abundance is also measured with a fisheries acoustic device.

RESULTS

PLANKTON SURVEYS

Twenty thousand six hundred and ninety-one (20,691) identified ichthyoplankton lots were received at the SEAMAP Archiving Center in 1999. Most of these samples have been accessioned into the SEAMAP Archiving Center computer systems and the remaining samples are being prepared for accession; both in dBase and SEAMAP Data Management System.

Plankton stations for the Spring Plankton Survey in conjunction with environmental stations are shown in Figure 3, the Summer Shrimp/Groundfish Survey stations are shown in Figure 4, the Fall Plankton Survey Stations in conjunction with environmental stations are shown in Figure 5, the Fall Shrimp/Groundfish survey stations are shown in Figure 6. Forty-five additional collections were taken by Mississippi during the fall plankton survey in waters of the east Louisiana-Mississippi-Alabama shelf.

ENVIRONMENTAL DATA

Environmental data were collected in conjunction with each plankton station for the Spring (Figure 3) and Fall (Figure 5) plankton surveys. Environmental data stations for the Summer Shrimp/Groundfish Survey are shown in Figure 7 and the Fall Shrimp/Groundfish Survey in Figure 8. Environmental sampling locations are summarized in Figures 7 and 8 by 10-minute squares. A complete listing of environmental stations and dates of sampling by vessel for all SEAMAP surveys is shown in Table 2. In Table 2 under statistical zone, the 99 codes are stations located outside the shrimp statistical zones. Additional environmental information (Secchi readings, Forel-Ule, cloud cover, etc.) may be obtained from the SEAMAP Information System by contacting the SEAMAP Data Manager.

TRAWL SURVEYS

Summer Shrimp/Groundfish Survey

Shrimp and groundfish sampling was conducted during June and July from off Fort Morgan, Alabama to Brownsville, Texas and summarized by 10-minute squares in Figure 9. The Summer Shrimp/Groundfish Survey consisted primarily of biological trawl data and concomitant environmental and plankton data. A species composition listing from the 40-ft and 20-ft trawls is presented in Table 3, ranked in order of abundance, within the categories of finfish, crustaceans and other invertebrates.

Tables 4a-14a present the biological data, from the 40-ft and 20-ft nets, of the eight most abundant fish, six most abundant invertebrates and squid within NMFS shrimp statistical zones 11 and 13 through 22, by depth stratum. Tables 4b-14b list the total catch and environmental data from the 40-ft and 20-ft nets within NMFS statistical zones listed above, by depth stratum.

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

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

where σ = population standard deviation
n = number of samples

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

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

Biological distributions of the ten most abundant finfish plus red snapper, three main penaeid shrimps, five most abundant non-Penaeus invertebrates and squid species, taken from Table 3 are displayed in plots of number/hour and lb/hour in Figures 12-51. Data for the biological plots were computed from the 40-ft and 20-ft trawl data, standardized to 40-ft trawls using relative headrope length. In the plots of lb/hour, a zero value indicates less than 0.5 lb/hr taken; only stations where some of the species were taken are shown. During this time frame, the state of Florida did not participate in any SEAMAP survey activities.

Fall Shrimp/Groundfish Survey

Shrimp and groundfish sampling was conducted during October through December from off Fort Morgan, Alabama to Brownsville, Texas and summarized by 10-minute squares in Figure 10. The Fall Shrimp/Groundfish Survey consisted of biological trawl data and concomitant environmental and plankton data. A species composition listing from the 40-ft and 20 ft trawls is presented in Table 15. The species lists for Table 15 are ranked in order of abundance within the categories of finfish, crustaceans and other invertebrates.

Biological distributions of the ten most abundant finfish plus red snapper, three main penaeid shrimps, five most abundant non-Penaeus invertebrates and squid species, taken from Table 15 are displayed in plots of number/hour and lb/hour in Figures 52 to 91. Data for the biological plots were computed from the 40-ft and 20-ft trawl data, standardized to 40-ft trawls using relative headrope length. In the plots of lb/hour, a zero value indicates less than 0.5 lb/hr taken; only stations where some of the species were taken are shown. During this time frame, the state of Florida did not participate in any SEAMAP survey activities.

Tables 16a-27a present the biological data, from the 40-ft and 20-ft nets, of the eight most abundant fish, six most abundant invertebrates and squid species within NMFS shrimp statistical zones 11 and 13 through 21, by depth stratum. Tables 16b-27b list the total catch and environmental data from the 40-ft and 20-ft nets within the NMFS statistical zone listed above, by depth stratum.

The catch data were calculated using the same equation that was used to compute catch rates for the Summer Shrimp/Groundfish Survey. And, as in the Summer Shrimp/Groundfish Survey, discrepancies in the "b" tables may have occurred.

REAL-TIME DATA MANAGEMENT

The SEAMAP Subcommittee agreed it was imperative to the success of the SEAMAP Program to distribute data on a near real-time basis to the fishing industry and others interested in SEAMAP. To distribute near real-time data, NMFS utilized a cellular phone and/or satellite communications aboard the NOAA Ship OREGON II. This enabled personnel aboard the vessel to transmit daily catch rates and environmental data to the NMFS computer system located at the NMFS Mississippi Laboratories in Pascagoula.

Summarized data were distributed weekly to approximately 285 individuals during the Summer Shrimp/Groundfish Survey. The summarized data in the form of computer plots and data listings were sent to management agencies and industry members. These plots showed station locations, catches of brown, pink, and white shrimp in lb/hr and count/lb and total finfish catch in lb/hr.

In the summer of 1999, discussions with representatives from the shrimp industry led the NMFS to request that near-real-time data not be produced during the 1999 survey. At their request, only one near-real-time mailing was produced in the summer of 1999.

Due to the cancellation of near-real-time data distribution during the Summer Shrimp/Groundfish Survey in 1999, the SEAMAP Subcommittee decided to produce near-real-time data for the Fall Shrimp/Groundfish Survey. This was the second time the data were distributed during the fall. Plots of station locations and catch rates of red snapper were prepared and edited at the NMFS Mississippi Laboratories, and processed

by GSMFC for a summary distribution at the end of the Survey to management agencies, fishermen, processors and researchers.

REEF FISH SURVEY

Primary data collection and sampling for reef fish assessment was conducted throughout the year by personnel of the State of Alabama in artificial reef zones off their state. Station data for these observations can be found in Table 2 and station locations are plotted in Figure 11. A species composition listing from the traps is presented in Table 28. The species list for Table 28 is ranked in order of abundance. Video tapes from all sources were analyzed using NMFS standardized protocols. Due to a lack of funding in 1999, the NMFS portion of the reef fish survey was not conducted.

DISCUSSION

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

Similar analyses and investigations are being undertaken with Summer and Fall Shrimp/Groundfish Survey data. These data sets are being 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 goals.

Much use has already been made of SEAMAP data. For example, during the past SEAMAP surveys an area of very low dissolved bottom oxygen was found off Louisiana in the summers of 1982, 1985-1999. The presence of this phenomenon and some of the related conditions and biological effects were reported by Leming and Stuntz (1984) and Hanifen et al. (1995) , 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 to assist in the identification of the minimum 1997 reduction in red snapper shrimp trawl bycatch mortality rate that would enable the red snapper fishery to still recover to the 20% spawning potential ratio (SPR) by the year 2019 (Goodyear 1997). This analysis was requested and supported by the Gulf of Mexico Fishery Management Council to address the issue of red snapper bycatch. SEAMAP data were also used by some coastal states to determine the status of shrimp stocks and their movements just as the shrimping seasons were to be opened and SEAMAP data were used to develop a guide to the grouper species of the western North Atlantic Ocean (Grace et al. 1994). The primary purpose of the guide is for species identification with projects that deploy underwater video camera systems.

Since SEAMAP's inception in 1982, the goal of plankton activities in the Gulf of Mexico has been to collect data on the early life stages of fishes and invertebrates that will complement and enhance the fishery-independent data gathered on the adult life-stage (Lyczkowski-Shultz and Brasher 1996). An annual larval index for the Atlantic bluefin tuna is generated each year from the Spring Plankton Survey and is used by the International Commission for the Conservation of Atlantic Bluefin Tunas to estimate stock size (Scott et al. 1993). Larval indices generated from the Summer Shrimp/Groundfish and Fall Plankton Surveys have now become an integral part of the king mackerel assessment in the Gulf (Gledhill and Lyczkowski-Shultz

2000). Larvae from SEAMAP collections have formed the basis for formal descriptions of larval development for fishes such as the snappers, cobia, tripletail, and dolphin (Drass et al. 2000; Ditty and Shaw 1992; Ditty and Shaw 1993; Ditty et al. 1994). Data on distribution and relative abundance of larvae of all Gulf fishes captured during SEAMAP surveys have been summarized by Richards et al. 1984, Kelley et al. 1985, Kelley et al. 1990, and Kelley et al. 1993.

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

The National Marine Fisheries Service was charged with evaluating the effects of the Texas Closure and submitted a report (Nance 1998) to the GMFMC in December 1998. This report contained the results and an overview of the effect of the 1998 Texas Closure. After review of these data and other information, the GMFMC voted to continue the Texas Closure for 1999.

DATA REQUESTS

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

Data and specimen requests from SEAMAP participants, cooperators and others will normally be handled on a first-come, first-served and time-available basis. Because of personnel and funding limitations, however, certain priorities must be assigned to the data and specimen requests. These priorities are reviewed by the SEAMAP Subcommittee. For further information on SEAMAP data management, see the Southeast Area Monitoring and Assessment Program (SEAMAP) Management Plan: 1996-2000 (ASMFC 1996).

Data requests and inquiries, as well as requests for plankton samples, can be made by contacting Jeff Rester, the SEAMAP Coordinator, Gulf States Marine Fisheries Commission, P.O. Box 726, Ocean Springs, MS 39566-0726; 228/875-5912 or via e-mail at jrester@gsmfc.org.

Table 1. List of SEAMAP survey activities from 1982 to 1999.

SEAMAP SURVEY ACTIVITIES

YEAR	SPRING PLANKTON	SUMMER SHRIMP/GROUNDFISH	BUTTERFISH	FALL PLANKTON	FALL SHRIMP/GROUNDFISH	WINTER PLANKTON	REEF FISH
1982	APRIL-MAY	JUNE-JULY	--	--	--	--	--
1983	APRIL-MAY	JUNE-JULY	--	--	--	DECEMBER	--
1984	APRIL-MAY	JUNE-JULY	--	AUGUST	--	DECEMBER	--
1985	--	JUNE-JULY	JULY-AUGUST	SEPTEMBER	SEPTEMBER-DECEMBER	--	--
1986	APRIL-MAY	JUNE-JULY	MAY-JUNE	SEPTEMBER	OCTOBER-DECEMBER	--	--
1987	APRIL-MAY	JUNE-JULY	--	SEPTEMBER	SEPTEMBER-DECEMBER	--	--
1988	MARCH-MAY	JUNE-JULY	--	SEPTEMBER-OCTOBER	OCTOBER-DECEMBER	--	--
1989	APRIL-MAY	JUNE-JULY	--	SEPTEMBER-OCTOBER	OCTOBER-DECEMBER	--	--
1990	APRIL-MAY	JUNE-JULY	--	SEPTEMBER-OCTOBER	OCTOBER-DECEMBER	--	--
1991	APRIL-MAY	JUNE-JULY	--	AUGUST-SEPTEMBER	SEPTEMBER-DECEMBER	--	--
1992	APRIL-MAY	JUNE-JULY	--	AUGUST-OCTOBER	OCTOBER-DECEMBER	--	MAY-JUNE
1993	APRIL-MAY	JUNE-JULY	--	SEPTEMBER-OCTOBER	OCTOBER-DECEMBER	JANUARY-FEBRUARY	MAY-JULY, SEPTEMBER/NOVEMBER
1994	APRIL-MAY	JUNE-JULY	--	SEPTEMBER-OCTOBER	OCTOBER-NOVEMBER	--	MAY-JULY, AUGUST-OCTOBER, DECEMBER
1995	APRIL-JUNE	JUNE-JULY	--	SEPTEMBER	OCTOBER-DECEMBER	--	JANUARY, JUNE-AUGUST, DECEMBER
1996	APRIL-JUNE	JUNE-JULY	--	SEPTEMBER-OCTOBER	OCTOBER-DECEMBER	DECEMBER	JULY, AUGUST, NOVEMBER
1997	APRIL-JUNE	JUNE-JULY	--	SEPTEMBER-OCTOBER	OCTOBER-DECEMBER	--	JUNE, JULY, AUGUST, NOVEMBER
1998	APRIL-JUNE	JUNE-JULY	--	SEPTEMBER-OCTOBER	OCTOBER-NOVEMBER	--	MAY, JULY, AUGUST
1999	APRIL-MAY	JUNE-JULY	–	SEPTEMBER-OCTOBER	OCTOBER-DECEMBER	--	JANUARY, AUGUST, OCTOBER, DECEMBER

Table 2. Selected environmental parameters measured during 1999 SEAMAP surveys in the Gulf of Mexico, by individual vessel and survey.

(Gear codes: ST = trawl; PN = bongo and/or neuston; TV = trap/video; EV = environmental).

ALABAMA INSHORE VESSELS, REEF FISH SURVEY

STA#	DATE MM/DD/YY	TIME	POSITION LAT	POSITION LONG	STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M) MID	SAMPLE DEPTHS (M) MAX	TEMPERATURE, C SUR	TEMPERATURE, C MID	TEMPERATURE, C MAX	SALINITY, PPT SUR	SALINITY, PPT MID	SALINITY, PPT MAX	CL, MG/M3 SUR	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
02301	1/25/99	1101	2959.4	8806.3	11	26	13	26	19.0	20.0	20.0	19.0	20.0	20.0			8.6	8.8	7.6	TV
02302	1/26/99	1026	2956.8	8746.5	10	31	16	31	20.0	19.0	20.0	35.0	35.0	32.0			10.0	10.0	11.0	TV
02303	1/27/99	1216	2958.5	8800.6	11	26	13	26	18.0	18.0	20.0	28.0	30.0	31.0			9.6	8.6	9.0	TV
02304	8/ 5/99	1007	3000.7	8743.9	10	28	14	28	30.0	30.0	32.0	30.0	29.0	29.0			6.2	7.8	6.8	TV
02305	8/ 6/99	1020	2958.3	8802.5	11	30	15	30	30.0	29.0	29.0	30.0	32.0	30.0			7.6	6.9	6.2	TV
02306	10/28/99	1024	3002.9	8804.9	11	20	10	20	28.0	27.0	26.0	33.0	33.0	34.0			10.4	9.6	8.8	TV
02307	12/14/99	1000	3001.2	8802.3	11	21	11	21	23.0	23.0	22.0	32.0	32.0	32.0			7.0	7.4	7.2	TV

Table 2. Selected environmental parameters (continued)

OREGON II, SPRING PLANKTON SURVEY

STA#	DATE MM/DD/YY	TIME	POSITION LAT	POSITION LONG	STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M) MID	SAMPLE DEPTHS (M) MAX	TEMPERATURE, C SUR	TEMPERATURE, C MID	TEMPERATURE, C MAX	SALINITY, PPT SUR	SALINITY, PPT MID	SALINITY, PPT MAX	CL, MG/M3 SUR	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
04001	4/23/99	0126	3000.0	8700.0	10	70	35	69	21.9	21.1	19.3	31.0	36.0	36.3						PN
04002	4/23/99	0615	2929.8	8630.0	99	205	99	201	22.0	19.1	14.7	35.5	36.4	35.9						PN
04003	4/23/99	1255	2900.1	8600.0	99	235	101	200	23.4	20.0	15.4	36.3	35.5	36.0						PN
04004	4/23/99	2015	2829.3	8529.4	99	190	105	187	22.8	19.4	15.5	35.1	36.4	36.1						PN
04005	4/24/99	0024	2800.1	8500.1	99	242	100	200	23.5	18.9	15.4	36.0	36.4	36.0						PN
04006	4/24/99	0427	2730.0	8459.9	99	387	102	204	24.1	20.4	16.1	36.3	36.3	36.3						PN
04007	4/24/99	0819	2659.8	8459.8	99	730	99	200	24.6	21.0	16.9	36.4	36.3	36.3						PN
04008	4/24/99	1259	2630.0	8500.0	99	3300	100	201	25.3	20.5	15.4	36.4	36.5	36.1						PN
04009	4/24/99	1646	2559.9	8500.3	99	1841	99	201	25.0	20.3	15.1	36.2	36.6	36.0						PN
04010	4/24/99	2041	2600.0	8430.0	99	211	99	200	24.9	20.4	15.3	36.3	36.5	36.0						PN
04011	4/25/99	0001	2559.9	8400.0	99	140	70	138	24.7	21.0	18.1	36.4	36.3	36.4						PN
04012	4/25/99	0350	2530.2	8400.3	99	138	67	134	25.5	21.5	17.3	36.4	36.3	36.3						PN
04013	4/25/99	0720	2459.7	8400.4	99	125	63	125	25.1	21.0	17.8	36.3	36.2	36.4						PN
04014	4/25/99	1137	2430.0	8359.8	99	1830	100	200	26.0	19.0	14.6	36.3	36.4	35.9						PN
04015	4/25/99	1548	2430.1	8330.1	2	264	99	202	26.7	20.6	15.6	36.2	36.7	36.1						PN
04016	4/25/99	2016	2400.0	8329.8	2	1000	100	201	26.7	25.3	19.0	36.2	36.5	36.7						PN
04017	4/26/99	0049	2400.1	8400.0	99	2280	100	200	26.8	23.3	18.5	36.2	36.7	36.6						PN
04018	4/26/99	0610	2430.2	8430.5	99	3440	100	202	25.1	17.5	12.1	36.3	36.3	35.5						PN
04019	4/26/99	1033	2459.5	8430.5	99	1922	99	200	25.7	18.0	13.5	36.3	36.2	35.8						PN
04020	4/26/99	1446	2459.7	8500.4	99	3350	100	200	25.3	19.6	14.9	36.3	36.5	36.0						PN
04021	4/26/99	1917	2429.8	8500.3	99	3370	98	203	25.5	18.3	13.6	36.3	36.4	35.7						PN
04022	4/26/99	2240	2438.8	8530.0	99	3367	99	203	26.9	25.9	18.1	36.2	36.5	36.4						PN
04023	4/27/99	0253	2500.1	8530.1	99	3300	99	200	26.9	25.6	18.6	36.2	36.5	36.5						PN
04024	4/27/99	0605	2500.2	8600.6	99	3266	100	201	26.7	26.1	22.4	36.2	36.4	36.9						PN
04025	4/27/99	1115	2530.0	8559.5	99	3203	100	200	26.8	26.1	23.2	36.1	36.3	36.9						PN
04026	4/27/99	1459	2529.9	8627.8	99	3260	99	200	26.8	26.3	24.5	36.1	36.3	36.7						PN
04027	4/27/99	2108	2559.9	8600.1	99	3600	97	202	27.0	25.7	22.4	36.2	36.3	36.9						PN
04028	4/28/99	0145	2629.8	8559.9	99	3200		109	27.1	25.9	22.2	36.1	36.6	36.1						PN
04029	4/28/99	0550	2700.1	8600.0	99	3650	102	202	26.3	20.3	15.9	36.3	36.5	36.1						PN
04030	4/28/99	1036	2730.1	8600.0	99	3203	99	203	26.0	20.1	15.5	36.3	36.5	36.1						PN
04031	4/28/99	1436	2800.1	8559.9	99	975	99	201	24.1	19.6	15.9	36.2	36.1	36.1						PN

Table 2. Selected environmental parameters (continued)

OREGON II, SPRING PLANKTON SURVEY

STA#	DATE MM/DD/YY	TIME	POSITION LAT	POSITION LONG	STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M) MID	SAMPLE DEPTHS (M) MAX	TEMPERATURE, C SUR	TEMPERATURE, C MID	TEMPERATURE, C MAX	SALINITY, PPT SUR	SALINITY, PPT MID	SALINITY, PPT MAX	CL, MG/M3 SUR	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
04032	4/28/99	1921	2830.1	8600.2	99	640	98	201	24.2	20.8	16.4	36.2	36.4	36.2						PN
04033	4/29/99	0033	2859.9	8630.0	99	371	100	200	23.4	19.8	15.2	35.4	36.4	36.0						PN
04034	4/29/99	0342	2900.0	8700.1	99	675	101	200	23.9	19.8	15.7	36.2	36.6	36.2						PN
04035	4/29/99	0906	2829.9	8659.9	99	830	100	201	24.5	19.9	14.6	36.1	35.6	35.9						PN
04036	4/29/99	1353	2759.9	8700.0	99	3200	100	200	26.2	18.8	15.1	36.2	36.5	36.0						PN
04037	4/29/99	1942	2730.2	8659.9	99	3020	100	203	25.8	19.5	14.6	36.1	36.4	35.9						PN
04038	4/29/99	2309	2659.8	8659.8	99	2950	100	200	25.6	20.9	15.8	36.2	36.0	36.2						PN
04039	4/30/99	0326	2630.1	8659.8	99	2980	100	200	27.4	25.8	22.5	36.1	36.3	37.1						PN
04040	4/30/99	0711	2600.0	8659.9	99	3180	100	200	26.8	26.3	23.9	36.1	36.3	36.9						PN
04041	4/30/99	1125	2600.3	8730.2	99	3147	100	202	27.1	25.5	22.0	36.2	36.3	36.9						PN
04042	4/30/99	1531	2559.9	8759.9	99	3020	102	202	26.7	26.0	20.8	36.1	36.4	36.8						PN
04043	5/ 1/99	1225	2830.1	8759.9	99	2285	100	200	24.4	19.2	14.5	36.0	36.3	35.9						PN
04044	5/ 1/99	1637	2900.7	8758.9	99	750	99	202	24.3	19.9	14.8	36.3	36.5	35.9						PN
04045	5/ 1/99	2108	2930.0	8800.0	10	44	21	44	22.9	21.3	20.6	33.6	35.5	36.1						PN
04046	5/ 2/99	0144	2900.0	8830.0	99	612	100	200	23.2	19.4	14.7	32.0	36.5	36.0						PN
04047	5/ 2/99	0610	2829.8	8900.0	99	605	101	200	23.4	19.3	14.8	34.8	36.4	36.0						PN
04048	5/ 2/99	1000	2800.0	8900.0	99	1335	100	200	24.1	19.3	15.0	36.0	36.5	36.0						PN
04049	5/ 2/99	1429	2729.9	8900.0	99	1755	99	202	25.0	19.0	14.5	36.3	36.5	35.9						PN
04050	5/ 2/99	1846	2700.1	8900.0	99	2540	100	202	25.1	19.9	14.6	36.3	36.2	35.9						PN
04051	5/ 2/99	2226	2629.7	8900.2	99	2800	100	200	26.2	19.4	14.6	36.3	36.5	35.9						PN
04052	5/ 3/99	0130	2559.9	8900.0	99	3110	101	200	26.0	20.3	15.1	36.3	36.7	36.1						PN
04053	5/ 3/99	0511	2600.0	8930.0	99	3365	100	200	24.6	20.6	14.8	36.2	36.3	36.0						PN
04054	5/ 3/99	0931	2559.9	9000.1	99	2910	100	200	24.2	19.5	13.8	36.2	36.3	35.8						PN
04055	5/ 3/99	1411	2630.0	9000.0	99	2743	100	204	24.9	20.7	12.8	36.4	36.5	35.6						PN
04056	5/ 3/99	1748	2700.0	9000.0	99	2270	101	203	24.4	19.4	14.3	36.2	36.5	35.8						PN
04057	5/ 3/99	2200	2730.2	8959.8	99	1090	100	200	23.7	20.6	16.1	36.3	36.4	36.3						PN
04058	5/ 4/99	0141	2800.1	8959.9	99	526	103	200	24.2	19.3	14.5	36.3	36.5	35.9						PN
04059	5/ 4/99	0524	2758.5	9029.8	99	423	100	200	23.8	20.2	15.4	36.3	36.4	36.1						PN
04060	5/ 4/99	0920	2759.9	9059.9	99	148	72	143	24.3	21.6	17.6	36.3	36.3	36.4						PN
04061	5/ 5/99	1401	2759.7	9359.9	99	81	41	80	24.6	21.5	20.2	34.4	35.9	36.0						PN
04062	5/ 5/99	2349	2800.1	9500.1	19	80	40	80	24.5	22.8	21.1	33.9	36.1	36.3						PN

Table 2. Selected environmental parameters (continued)

OREGON II, SPRING PLANKTON SURVEY

STA#	DATE MM/DD/YY	TIME	POSITION LAT	POSITION LONG	STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M) MID	SAMPLE DEPTHS (M) MAX	TEMPERATURE, C SUR	TEMPERATURE, C MID	TEMPERATURE, C MAX	SALINITY, PPT SUR	SALINITY, PPT MID	SALINITY, PPT MAX	CL, MG/M3 SUR	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
04063	5/ 6/99	0330	2729.9	9500.2	99	850	100	199	25.0	19.4	14.2	34.5	36.3	35.9						PN
04064	5/ 6/99	0737	2659.5	9500.4	99	1464	100	200	24.9	21.3	13.0	33.7	36.4	35.8						PN
04065	5/ 6/99	1154	2629.5	9500.1	99	1580	101	201	25.8	21.3	15.5	36.0	36.4	36.1						PN
04066	5/ 6/99	1553	2600.4	9500.3	99	2375	100	201	26.0	22.7	16.7	36.3	36.2	36.2						PN
04067	5/ 6/99	1950	2600.2	9429.8	99	2930	99	202	25.1	22.4	17.3	36.3	36.2	36.3						PN
04068	5/ 6/99	2305	2600.1	9359.8	99	3110	100	202	25.0	22.3	17.0	36.3	36.2	36.4						PN
04069	5/ 7/99	0418	2629.9	9359.3	99	1575	100	200	25.0	23.6	17.8	36.3	36.4	36.4						PN
04070	5/ 7/99	0828	2700.0	9401.8	99	1280	100	200	25.1	23.4	17.8	36.3	36.3	36.5						PN
04071	5/ 7/99	1301	2729.9	9359.8	99	840	101	202	25.4	22.1	16.4	36.2	36.3	36.2						PN
04072	5/ 7/99	1706	2800.3	9400.4	18	80	40	78	24.2	22.1	19.6	33.9	35.9	36.3						PN
04073	5/ 7/99	2055	2757.1	9329.8	99	117	56	115	24.5	21.6	18.1	35.1	36.0	36.3						PN
04074	5/ 8/99	0013	2800.6	9300.0	16	101	50	100	24.2	21.6	19.0	35.3	35.8	36.5						PN
04075	5/ 8/99	0405	2729.9	9259.9	99	800	100	200	24.5	19.4	14.9	35.6	36.3	35.8						PN
04076	5/ 8/99	0731	2659.8	9259.9	99	1290	98	202	24.6	20.5	14.6	35.8	36.0	35.9						PN
04077	5/ 8/99	1135	2629.8	9300.0	99	1830	102	204	25.2	20.3	14.6	36.0	36.4	35.9						PN
04078	5/ 8/99	1505	2600.7	9300.8	99	2195	99	204	25.2	20.3	14.6	35.8	36.5	36.0						PN
04079	5/ 8/99	2028	2559.8	9230.1	99	2190	100	200	25.3	19.2	13.1	36.1	36.4	35.7						PN
04080	5/ 9/99	0014	2559.9	9200.1	99	2190	100	200	25.0	18.5	13.7	36.2	36.3	35.8						PN
04081	5/ 9/99	0446	2630.1	9200.0	99	1880	100	200	24.6	19.0	13.9	36.2	36.4	35.8						PN
04082	5/ 9/99	0816	2700.0	9159.7	99	790	101	202	24.5	19.7	14.2	36.2	36.5	35.8						PN
04083	5/ 9/99	1304	2730.0	9200.0	99	750	102	202	24.6	19.4	14.3	36.2	36.5	35.9						PN
04084	5/ 9/99	1725	2800.0	9200.1	16	118	56	115	24.4	22.2	18.8	36.2	36.3	36.4						PN
04085	5/10/99	0026	2730.0	9100.0	99	1100		201	24.7	20.4	15.8	36.3	36.2	36.1						PN
04086	5/14/99	0149	3000.1	8659.9	9	40	20	39	23.4	22.5	21.2	34.4	35.2	36.2						PN
04087	5/14/99	0556	2930.2	8629.6	9	198	98	197	23.4	19.5	15.5	34.3	36.3	36.0						PN
04088	5/14/99	1120	2900.1	8559.9	8	239	100	200	23.5	19.2	14.4	35.1	36.5	35.9						PN
04089	5/14/99	1714	2829.6	8530.0	99	195	95	195	24.0	19.8	15.7	35.4	36.2	36.1						PN
04090	5/14/99	2147	2759.9	8500.0	99	247	100	200	24.3	18.6	14.7	35.9	36.4	35.9						PN
04091	5/15/99	0149	2730.1	8500.0	99	392	100	200	24.3	19.4	14.9	35.7	36.4	36.0						PN
04092	5/15/99	0511	2600.0	8500.0	99	800	100	201	25.2	19.9	15.4	36.1	36.2	36.0						PN
04093	5/15/99	0951	2629.9	8500.0	99	1830	100	200	26.2	20.7	16.1	35.7	36.4	36.2						PN

Table 2. Selected environmental parameters (continued)

OREGON II, SPRING PLANKTON SURVEY

STA#	DATE MM/DD/YY	TIME	POSITION LAT	POSITION LONG	STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M) MID	SAMPLE DEPTHS (M) MAX	TEMPERATURE, C SUR	TEMPERATURE, C MID	TEMPERATURE, C MAX	SALINITY, PPT SUR	SALINITY, PPT MID	SALINITY, PPT MAX	CL, MG/M3 SUR	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
04094	5/15/99	1403	2600.1	8500.2	99	3300	100	201	27.2	20.4	14.0	36.2	36.5	35.8						PN
04095	5/15/99	2002	2559.8	8430.2	99	214	100	201	26.2	20.2	14.6	36.4	36.5	35.9						PN
04096	5/15/99	2309	2600.1	8400.1	99	132	66	131	26.7	21.9	17.9	36.3	36.3	36.4						PN
04097	5/16/99	0247	2530.0	8400.0	99	134	67	133	26.8	21.5	17.4	36.4	36.4	36.3						PN
04098	5/16/99	0600	2459.6	8359.9	99	119	58	119	26.9	21.6	18.0	36.3	36.3	36.4						PN
04099	5/16/99	1052	2429.9	8400.0	99	2013	100	200	27.1	18.6	13.8	36.4	36.4	35.8						PN
04100	5/16/99	1640	2430.1	8330.0	2	280	99	200	27.6	18.7	13.3	36.3	36.5	35.7						PN
04101	5/16/99	2100	2400.0	8330.0	2	1005	100	201	27.1	19.4	13.8	36.3	36.5	35.8						PN
04102	5/17/99	0033	2400.3	8400.0	99	2750	100	201	26.6	17.3	12.8	36.3	36.3	35.6						PN
04103	5/17/99	0511	2430.0	8429.9	99	3450	100	200	26.5	18.3	13.9	36.4	36.4	35.8						PN
04104	5/17/99	1057	2459.9	8430.2	99	1820	100	201	26.9	20.2	15.2	36.4	36.5	36.0						PN
04105	5/17/99	1512	2500.0	8459.0	99	3350	100	200	27.1	18.6	14.5	36.2	36.5	36.0						PN
04106	5/17/99	1934	2429.9	8459.8	99	3390	100	201	27.0	19.8	15.3	36.1	36.4	36.0						PN
04107	5/17/99	2321	2442.9	8529.9	99	3350	100	200	26.7	21.1	15.7	36.2	36.3	36.1						PN
04108	5/18/99	0244	2500.1	8529.9	99	3290	100	200	26.5	18.1	13.2	36.2	36.4	35.7						PN
04109	5/18/99	0610	2459.8	8559.9	99	3375	100	201	26.7	21.7	16.5	36.3	36.3	36.2						PN
04110	5/18/99	1309	2529.9	8600.1	99	3100	100	200	27.0	21.7	16.9	36.4	36.3	36.3						PN
04111	5/18/99	1636	2529.9	8627.9	99	3250	100	200	28.4	26.4	22.8	36.1	36.3	36.9						PN
04112	5/18/99	2221	2600.0	8600.0	99	3340	100	200	28.0	26.0	20.8	36.1	36.4	36.8						PN
04113	5/19/99	0253	2630.7	8559.4	99	3100	100	200	27.2	25.9	22.0	36.3	36.4	36.9						PN
04114	5/19/99	0707	2700.1	8559.4	99	3280	101	201	27.9	26.2	21.4	36.2	36.4	36.9						PN
04115	5/19/99	1139	2730.3	8559.9	99	3100	100	201	28.3	24.9	19.1	36.2	36.6	36.7						PN
04116	5/19/99	1604	2800.1	8559.9	99	930	100	201	27.6	20.3	16.6	36.2	36.4	36.3						PN
04117	5/19/99	2010	2830.0	8600.1	99	325	99	201	26.5	19.4	15.2	36.1	36.5	36.0						PN
04118	5/20/99	0025	2900.0	8630.0	99	368	100	200	24.8	20.0	15.3	35.0	36.4	36.0						PN
04119	5/20/99	0338	2900.0	8700.0	99	510	100	200	25.0	19.6	15.2	35.7	36.4	36.0						PN
04120	5/20/99	0755	2829.9	8700.1	99	832	101	201	25.2	19.5	14.7	35.7	36.5	35.9						PN
04121	5/20/99	1311	2759.8	8700.0	99	2750	100	200	26.8	19.7	14.1	36.2	36.5	35.8						PN
04122	5/20/99	1852	2730.0	8700.0	99	3150	100	202	27.2	19.0	12.4	36.2	36.4	35.6						PN
04123	5/20/99	2159	2700.2	8700.5	99	3020	100	200	28.2	25.9	19.6	36.2	36.4	36.6						PN
04124	5/21/99	0209	2629.9	8701.7	99	2950	100	200	27.5	26.4	24.8	36.2	36.3	36.7						PN

Table 2. Selected environmental parameters (continued)

OREGON II, SPRING PLANKTON SURVEY

STA#	DATE MM/DD/YY	TIME	POSITION LAT	POSITION LONG	STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M) MID	SAMPLE DEPTHS (M) MAX	TEMPERATURE, C SUR	TEMPERATURE, C MID	TEMPERATURE, C MAX	SALINITY, PPT SUR	SALINITY, PPT MID	SALINITY, PPT MAX	CL, MG/M3 SUR	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
04125	5/21/99	0400	2615.9	8660.0	99	3160	100	200	27.3	26.3	25.2	36.3	36.3	36.6						PN
04126	5/21/99	0827	2559.9	8730.1	99	3145	100	201	27.6	26.1	24.4	36.3	36.4	36.8						PN
04127	5/21/99	1201	2600.1	8800.2	99	2940	100	200	28.3	26.1	22.5	36.1	36.3	36.9						PN
04128	5/21/99	1646	2630.1	8800.1	99	2700	100	200	27.4	26.2	22.6	36.3	36.3	36.9						PN
04129	5/21/99	2012	2700.0	8759.9	99	2792	99	201	28.0	26.2	22.5	36.3	36.3	36.9						PN
04130	5/22/99	0000	2730.3	8759.9	99	2600	100	200	28.2	25.8	18.3	36.2	36.5	36.4						PN
04131	5/22/99	0335	2800.1	8759.8	99	2495	100	200	25.4	20.1	16.1	34.2	36.6	36.2						PN
04132	5/22/99	0820	2830.1	8800.0	99	2322	98	201	26.0	19.3	15.0	34.2	36.4	36.0						PN
04133	5/22/99	1410	2859.9	8800.0	99	1380	100	201	26.1	19.5	14.8	36.1	36.5	35.9						PN
04134	5/22/99	1858	2930.8	8800.2	11	42	22	41	26.0	23.0	20.9	33.8	36.0	36.3						PN
04135	5/22/99	2306	2900.0	8830.1	11	640	100	200	25.0	19.1	14.6	34.0	36.4	35.9						PN
04136	5/23/99	0325	2830.1	8900.2	13	786	100	200	26.3	19.3	14.9	33.8	36.3	35.9						PN
04137	5/23/99	0805	2759.9	8860.0	99	1280	99	200	26.8	20.2	15.6	36.3	36.5	36.1						PN
04138	5/23/99	1328	2730.1	8900.0	99	1780	100	200	27.5	20.6	15.9	36.4	36.7	36.1						PN
04139	5/23/99	1848	2659.7	8900.1	99	2560	101	200	27.6	19.9	14.6	36.3	36.5	35.9						PN
04140	5/23/99	2242	2630.1	8859.9	99	1216	100	200	27.7	17.9	12.2	36.3	36.3	35.5						PN
04141	5/24/99	0218	2600.1	8900.0	99	3110	100	200	27.6	19.9	14.9	36.4	36.4	36.0						PN
04142	5/24/99	0637	2559.9	8930.0	99	3275	100	200	27.6	19.7	14.9	36.3	36.5	36.0						PN
04143	5/24/99	1128	2600.0	8959.9	99	2836	100	200	27.0	20.5	14.5	36.3	36.5	35.9						PN
04144	5/24/99	1610	2630.4	9000.2	99	2365	100	200	27.5	19.5	14.2	36.3	36.4	35.9						PN
04145	5/24/99	2058	2659.9	9000.0	99	2379	100	201	26.9	19.2	14.6	36.2	36.4	35.9						PN
04146	5/25/99	0039	2730.2	9000.0	99	1200	100	200	26.4	19.3	14.5	35.5	36.5	35.9						PN
04147	5/25/99	0410	2800.0	9000.0	14	550	100	200	26.5	19.0	14.7	35.5	36.5	35.9						PN
04148	5/25/99	0834	2801.5	9030.0	14	239	100	201	26.2	19.4	14.8	36.3	36.4	35.9						PN
04149	5/25/99	1311	2800.1	9100.0	15	140	70	140	26.8	21.2	16.7	36.3	36.3	36.2						PN
04150	5/25/99	1757	2730.0	9059.9	99	1640	99	200	26.9	20.4	14.9	36.3	36.4	36.0						PN
04151	5/25/99	2120	2700.0	9100.0	99	1640	101	201	26.8	19.3	14.6	36.4	36.4	35.9						PN
04152	5/26/99	0055	2630.1	9100.0	99	2100	100	200	27.1	18.1	13.5	36.2	36.3	35.7						PN
04153	5/26/99	0421	2700.0	9100.0	99	2745	100	200	27.1	18.3	13.6	36.2	36.4	35.8						PN
04154	5/26/99	0821	2559.9	9130.0	99	2196	100	200	26.9	20.5	12.8	36.4	36.4	35.6						PN
04155	5/26/99	1216	2600.0	9200.0	99	2195	101	201	27.1	19.1	13.1	36.4	36.5	35.7						PN

Table 2. Selected environmental parameters (continued)

OREGON II, SPRING PLANKTON SURVEY

STA#	DATE MM/DD/YY	TIME	POSITION LAT	POSITION LONG	STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M) MID	SAMPLE DEPTHS (M) MAX	TEMPERATURE, C SUR	TEMPERATURE, C MID	TEMPERATURE, C MAX	SALINITY, PPT SUR	SALINITY, PPT MID	SALINITY, PPT MAX	CL, MG/M3 SUR	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
04156	5/26/99	1751	2629.9	9200.0	99	1830	101	200	27.5	18.6	13.9	36.2	36.4	35.8						PN
04157	5/26/99	2134	2700.0	9159.8	99	1400	100	201	27.1	21.5	16.4	36.4	36.3	36.2						PN
04158	5/27/99	0133	2730.6	9159.9	99	760		200	27.0	21.7	16.7	36.4	36.3	36.3						PN
04159	5/27/99	0456	2800.1	9200.1	16	112	60	111	26.6	21.8	19.5	35.5	36.2	36.5						PN
04160	5/27/99	0840	2800.0	9229.3	16	102	50	102	26.5	22.6	19.1	35.6	36.1	36.5						PN
04161	5/27/99	1206	2800.2	9259.7	16	100	50	100	26.6	22.3	19.2	36.0	36.1	36.4						PN
04162	5/27/99	1709	2730.0	9259.7	99	731	100	200	27.0	20.8	14.0	36.2	36.3	35.8						PN
04163	5/27/99	2059	2700.0	9300.2	99	1215	100	200	27.3	21.7	15.9	36.0	36.2	36.1						PN
04164	5/28/99	0044	2630.1	9300.2	99	1680	100	200	26.9	21.1	13.7	36.1	36.4	35.8						PN
04165	5/28/99	0415	2559.9	9300.0	99	2195	100	200	27.2	19.1	13.8	36.2	36.4	35.8						PN
04166	5/28/99	0759	2559.9	9330.1	99	2379	100	201	27.1	20.4	14.1	35.0	36.4	35.9						PN
04167	5/28/99	1117	2600.0	9400.1	99	2754	100	200	27.1	22.8	16.3	36.3	36.3	36.2						PN
04168	5/28/99	1643	2630.0	9359.9	99	1550	100	200	27.2	22.6	16.8	36.3	36.3	36.2						PN
04169	5/28/99	2033	2700.0	9359.8	99	970	100	201	27.8	22.4	16.3	36.1	36.3	36.2						PN
04170	5/29/99	0038	2730.0	9400.7	99	800	100	200	26.8	21.9	16.2	34.3	36.3	36.2						PN
04171	5/29/99	0426	2802.7	9405.4	18	67	34	66	26.7	22.4	21.3	33.2	35.2	36.3						PN
04172	5/29/99	0744	2800.5	9430.9	18	65	33	65	26.7	23.7	22.2	33.3	35.9	36.2						PN
04173	5/29/99	1111	2800.1	9459.9	18	75	36	75	26.9	23.6	21.3	33.0	36.1	36.3						PN
04174	5/29/99	1525	2729.9	9500.0	99	9145	100	201	27.2	20.6	12.7	34.2	36.3	35.6						PN
04175	5/29/99	2005	2659.5	9500.1	99	1400	100	200	27.7	21.7	12.6	33.4	36.3	35.6						PN
04176	5/29/99	2346	2629.9	9459.9	99	1600	100	201	27.5	22.4	15.5	36.3	36.4	36.1						PN
04177	5/30/99	0318	2600.3	9500.9	99	2340	101	201	27.2	22.5	17.3	36.4	36.2	36.3						PN
04178	5/30/99	0705	2601.1	9529.6	99	1464	101	201	27.7	22.7	16.9	36.3	36.2	36.3						PN
04179	5/30/99	1051	2601.5	9600.0	99	1043	100	200	27.7	22.5	16.2	36.3	36.3	36.2						PN
04180	5/30/99	1501	2629.9	9559.9	99	1097	99	201	27.9	21.8	15.9	36.4	36.4	36.1						PN
04181	5/30/99	1853	2700.2	9558.1	99	805	100	201	27.6	20.7	14.6	30.7	36.3	35.9						PN
04182	5/30/99	2300	2729.3	9600.1	99	204	100	200	27.4	20.0	14.9	29.9	36.4	36.0						PN
04183	5/31/99	0240	2800.0	9600.3	20	41	20	40	27.1	24.9	21.2	31.5	33.4	36.1						PN

Table 2. Selected environmental parameters (continued)

MATAGORDA BAY, SUMMER SHRIMP/GROUNDFISH SURVEY

STA#	DATE MM/DD/YY	TIME	POSITION LAT	POSITION LONG	STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M) MID	SAMPLE DEPTHS (M) MAX	TEMPERATURE, C SUR	TEMPERATURE, C MID	TEMPERATURE, C MAX	SALINITY, PPT SUR	SALINITY, PPT MID	SALINITY, PPT MAX	CL, MG/M3 SUR	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
32001	6/ 1/99	0727	2826.6	9614.3	19	11	6	11	26.9	26.8	26.3	30.2	30.7	31.7			6.3	6.3	5.5	ST
32002	6/ 1/99	0817	2828.5	9611.4	19	11	5	11	27.1	27.1	26.3	30.7	30.6	31.4			6.2	6.4	5.0	ST
32003	6/ 1/99	0857	2829.5	9609.5	19	11	5	11	27.1	27.1	26.6	30.8	30.8	31.6			6.4	6.3	5.5	ST
32004	6/ 1/99	0935	2828.6	9609.5	19	13	6	13	27.1	27.1	26.9	30.9	30.9	31.9			6.3	6.4	6.3	ST
32005	6/ 1/99	1018	2828.4	9606.5	19	14	7	14	27.2	27.1	23.8	31.0	31.3	33.8			6.3	6.3	1.9	ST
32006	6/ 1/99	1117	2822.6	9608.4	19	19	9	19	27.1	26.8	22.0	31.0	31.6	35.1			6.4	6.5	0.9	ST
32007	6/ 1/99	1256	2817.5	9618.5	19	20	10	20	27.3	27.1	23.4	32.8	32.7	35.0			5.9	6.2	4.4	ST
32008	6/ 1/99	1331	2817.5	9619.5	19	19	10	19	27.3	27.1	23.1	32.7	32.6	35.3			6.0	6.1	2.7	ST
32009	6/16/99	1022	2817.4	9620.7	19	18	9	18	29.7	29.8	28.2	30.4	31.6	34.9			5.4	5.6	3.3	ST
32010	6/16/99	1108	2816.4	9619.4	19	20	10	20	29.8	29.0	26.8	30.8	31.7	35.3			5.6	5.5	4.7	ST
32011	6/16/99	1211	2816.4	9622.5	19	18	9	18	30.0	29.6	28.2	30.5	31.5	34.5			5.6	5.7	4.4	ST
32012	6/16/99	1253	2814.4	9622.6	19	20	10	20	30.0	29.6	29.2	31.2	32.2	34.6			5.7	5.9	5.9	ST
32013	6/16/99	1344	2811.4	9622.6	19	23	11	23	29.7	29.1	25.6	32.1	32.6	35.3			5.5	5.7	4.5	ST
32014	6/16/99	1450	2810.6	9626.5	19	20	10	20	29.9	29.1	26.4	32.0	32.1	35.1			5.6	5.6	4.1	ST
32015	6/16/99	1539	2812.6	9624.8	19	20	10	20	30.0	29.3	28.9	31.5	32.3	34.6			5.4	5.8	5.6	ST
32016	6/16/99	1635	2818.5	9625.5	19	6	3	6	30.6	30.3	30.0	30.7	30.5	31.1			5.9	5.8	5.7	ST

Table 2. Selected environmental parameters (continued)

LAGUNA MADRE, SUMMER SHRIMP/GROUNDFISH SURVEY

STA#	DATE MM/DD/YY	TIME	POSITION LAT	POSITION LONG	STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M) MID	SAMPLE DEPTHS (M) MAX	TEMPERATURE, C SUR	TEMPERATURE, C MID	TEMPERATURE, C MAX	SALINITY, PPT SUR	SALINITY, PPT MID	SALINITY, PPT MAX	CL, MG/M3 SUR	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
33001	6/ 8/99	0833	2746.0	9705.7	20	6	3	6	28.3	28.3	28.4	31.4	32.5	32.6			6.9	6.9	7.4	ST
33002	6/ 8/99	0935	2742.6	9708.1	20	6	3	6	28.4	28.4	28.2	33.2	33.3	33.6			6.8	7.2	7.2	ST
33003	6/ 8/99	1013	2740.0	9708.8	20	11	5	11	28.3	28.2	28.2	33.1	33.2	33.3			6.8	7.5	8.0	ST
33004	6/ 8/99	1055	2740.2	9706.3	20	15	7	15	28.4	28.3	28.0		32.8	33.1			7.0	7.3	7.9	ST
33005	6/ 8/99	1134	2740.1	9703.7	20	17	9	17	28.5	28.1	28.1	33.2	33.2	33.4			6.9	7.4	7.7	ST
33006	6/ 8/99	1243	2741.2	9700.6	20	21	10	21	28.3	27.9	26.6	32.7	32.8	32.9			6.6	7.2	6.9	ST
33007	6/ 8/99	1422	2742.4	9703.1	20	15	8	15	28.3	28.3	28.0	32.8	32.7	32.8			6.8	7.3	7.7	ST
33008	6/ 8/99	1448	2742.3	9704.7	20	14	7	14	28.4	28.3	28.2	32.6	32.7	32.8			7.0	6.9	7.4	ST
33009	6/16/99	0827	2753.0	9658.2	20	13	7	13	29.0	29.1	28.9	32.9	33.1	34.0			6.2	6.8	7.0	ST
33010	6/16/99	0909	2754.0	9655.7	20	13	6	13	29.1	29.1	26.4	33.5	33.5	33.5			6.1	6.3	4.2	ST
33011	6/16/99	0959	2756.9	9650.1	20	16	8	16	29.0	28.8	26.2	33.1	33.1	33.8			5.9	6.1	3.6	ST
33012	6/16/99	1044	2754.1	9647.6	20	20	10	20	29.1	28.4	27.8	32.7	35.2	35.4			5.7	6.1	6.8	ST
33013	6/16/99	1152	2749.7	9652.8	20	20	10	20	29.4	28.1	27.7	32.9	35.3	35.5			5.9	6.4	7.0	ST
33014	6/16/99	1341	2750.2	9653.9	20	19	10	19	30.1	27.9	27.1	32.9	35.2	35.4			5.9	6.1	6.3	ST
33015	6/16/99	1455	2747.0	9659.4	20	17	9	17	30.0	29.0	28.6	33.5	33.8	34.0			5.8	6.2	6.2	ST
33016	6/16/99	1527	2745.2	9702.2	20	15	8	15	30.3	28.9	28.4	33.5	34.3	34.2			6.1	6.4	6.0	ST

Table 2. Selected environmental parameters (continued)

GALVESTON BAY, SUMMER SHRIMP/GROUNDFISH SURVEY

STA#	DATE MM/DD/YY	TIME	POSITION LAT	POSITION LONG	STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M) MID	SAMPLE DEPTHS (M) MAX	TEMPERATURE, C SUR	TEMPERATURE, C MID	TEMPERATURE, C MAX	SALINITY, PPT SUR	SALINITY, PPT MID	SALINITY, PPT MAX	CL, MG/M3 SUR	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
34001	6/ 2/99	0938	2605.7	9703.5	21	21	11	21	24.7	24.7	23.4	35.3	36.0	36.2			6.1	6.0	5.0	ST
34002	6/ 2/99	1021	2605.7	9701.6	21	22	11	22	24.8	24.0	22.8	36.3	36.3	36.4			6.6	7.4	9.3	ST
34003	6/ 2/99	1131	2600.4	9700.6	21	25	13	25	24.6	22.6	21.4	36.3	36.3	36.3			6.8	7.1	12.4	ST
34004	6/ 2/99	1225	2558.5	9659.6	22	27	14	27	24.7	23.5	21.3	36.2	36.3	36.4			6.8	9.7	12.8	ST
34005	6/ 2/99	1322	2559.4	9706.6	22	15	7	15	24.5	23.7	22.6	36.3	36.3	36.3			6.4	6.3	8.9	ST
34006	6/ 2/99	1359	2559.6	9708.4	22	8	4	8	25.8	23.5	23.4	36.3	36.0	36.3			5.7	5.3	5.1	ST
34007	6/ 2/99	1444	2601.5	9704.6	21	20	10	20	24.9	23.8	22.8	36.3	36.3	36.3			6.7	6.8	9.6	ST
34008	6/ 2/99	1518	2602.5	9706.5	21	16	8	16	25.3	23.9	23.1	35.9	36.3	36.3			7.6	8.6	6.4	ST
34009	6/16/99	0820	2606.5	9703.5	21	21	10	21	26.7	26.7	23.7	36.5	36.4	36.3			3.6	3.9	3.4	ST
34010	6/16/99	0922	2610.5	9707.5	21	16	8	16	26.6	26.5	26.8	36.3	36.0	36.3			4.3	4.3	2.6	ST
34011	6/16/99	1016	2613.4	9703.4	21	19	10	19	27.4	27.3	27.0	36.5	36.5	36.3			5.7	5.5	5.5	ST
34012	6/16/99	1100	2615.5	9702.4	21	21	11	21	26.7	27.3	26.9	36.5	36.6	36.3			5.2	5.4	5.4	ST
34013	6/16/99	1159	2618.5	9702.5	21	22	11	22	27.6	27.3	27.1	36.5	36.5	36.3			5.1	5.2	4.4	ST
34014	6/16/99	1309	2617.4	9709.6	21	15	7	15	28.1	27.6	27.5	36.2	36.3	36.1			5.0	5.3	5.4	ST
34015	6/16/99	1403	2620.4	9707.6	21	16	8	16	27.8	27.6	27.0	36.2	36.2	36.2			4.4	4.8	4.9	ST
34016	6/19/99	1114	2621.5	9704.5	21	20	10	20	27.7	27.4	27.4	36.3	36.3	36.4			5.9	6.0	6.1	ST

Table 2. Selected environmental parameters (continued)

SABINE, SUMMER SHRIMP/GROUNDFISH SURVEY

STA#	DATE MM/DD/YY	TIME	POSITION LAT	POSITION LONG	STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M) MID	SAMPLE DEPTHS (M) MAX	TEMPERATURE, C SUR	TEMPERATURE, C MID	TEMPERATURE, C MAX	SALINITY, PPT SUR	SALINITY, PPT MID	SALINITY, PPT MAX	CL, MG/M3 SUR	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
40001	6/ 7/99	0911	2938.5	9353.2	17	5	2	5	29.8	29.7	29.4	18.6	19.6	20.4			8.2	8.2	6.0	ST
40002	6/ 7/99	1030	2935.4	9343.8	17	11	6	11	29.2	28.6	28.0	22.7	27.6	29.0			7.6	5.2	5.0	ST
40003	6/ 7/99	1154	2934.4	9346.8	17	12	6	12	29.7	28.8	28.2	21.0	26.2	29.8			7.8	6.3	5.9	ST
40004	6/ 7/99	1235	2934.4	9349.9	17	11	6	11	29.9	28.8	28.2	17.7	23.7	29.0			7.6	5.5	4.9	ST
40005	6/ 7/99	1423	2932.4	9350.8	17	12	6	12	30.1	28.9	28.2	19.1	26.9	29.3			7.8	6.3	6.2	ST
40006	6/ 7/99	1512	2931.4	9351.8	17	12	6	12	30.2	28.4	28.3	20.8	28.6	29.1			8.2	7.0	7.1	ST
40007	6/ 7/99	1605	2935.5	9355.9	17	7	4	7	30.4	29.7	28.5	16.5	20.6	29.0			8.4	5.8	3.6	ST
40008	6/ 7/99	1653	2932.6	9357.5	17	11	6	11	30.7	29.2	28.3	17.2	28.5	29.5			9.2	6.3	6.1	ST
40009	6/16/99	0815	2939.6	9346.8	17	8	4	8	28.9	29.1	28.9	15.9	24.7	27.3			7.9	5.5	4.3	ST
40010	6/16/99	0851	2939.5	9345.2	17	8	4	8	28.9	28.2	28.7	16.8	25.7	27.1			7.0	5.0	3.6	ST
40011	6/16/99	0934	2941.6	9344.7	17	7	4	7	28.9	29.1	29.2	16.4	21.7	25.1			7.7	7.7	3.4	ST
40012	6/16/99	1011	2942.4	9343.3	17	6	3	6	29.0	28.9	28.7	16.5	21.9	24.7			7.5	5.0	1.5	ST
40013	6/16/99	1106	2940.5	9343.7	17	8	4	8	29.0	29.3	28.7	16.2	23.2	26.7			7.8	6.0	1.6	ST
40014	6/16/99	1148	2940.6	9341.4	17	8	4	8	29.2	29.2	28.8	16.9	24.6	26.3			8.1	5.4	3.8	ST
40015	6/16/99	1243	2937.6	9344.7	17	9	4	9	29.1	29.1	28.7	18.3	25.9	28.1			7.5	6.1	4.1	ST
40016	6/16/99	1341	2935.5	9342.4	17	11	6	11	29.4	28.8	28.7	19.7	27.0	28.4			7.3	5.0	4.0	ST

Table 2. Selected environmental parameters (continued)

TRINITY BAY, SUMMER SHRIMP/GROUNDFISH SURVEY

STA#	DATE MM/DD/YY	TIME	POSITION LAT	POSITION LONG	STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M) MID	SAMPLE DEPTHS (M) MAX	TEMPERATURE, C SUR	TEMPERATURE, C MID	TEMPERATURE, C MAX	SALINITY, PPT SUR	SALINITY, PPT MID	SALINITY, PPT MAX	CL, MG/M3 SUR	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
65001	6/10/99	1016	2922.3	9442.4	18	4	2	4	29.5	29.4	29.4	19.8	19.7	19.7			6.2	6.0	6.1	ST
65002	6/10/99	1105	2927.5	9435.5	18	5	3	5	29.5	29.3	29.3	18.3	18.1	18.9			6.7	6.3	6.4	ST
65003	6/10/99	1130	2928.1	9433.6	18	5	3	5	29.6		29.4	18.1	18.1	18.0					6.7	ST
65004	6/10/99	1226	2923.5	9431.7	18	12	6	12	28.8	28.5	28.5	26.4	30.0	29.7			6.4	6.2	6.5	ST
65005	6/10/99	1250	2921.2	9429.5	18	12	6	12	28.9	28.6	28.7	27.4	29.6	30.1			6.3	6.4	6.2	ST
65006	6/10/99	1316	2921.6	9432.4	18	12	6	12	29.2	28.4	28.4	19.5	29.7	30.1			7.3	6.4	6.4	ST
65007	6/10/99	1346	2924.8	9435.5	18	11	6	11	29.9	29.1	29.1	17.6	17.4	17.4			7.1	6.7	5.8	ST
65008	6/10/99	1416	2922.5	9436.5	18	10	5	10	30.0	29.4	29.4	17.6	17.8	18.1			7.0	6.0	5.9	ST
65009	6/29/99	1016	2919.6	9437.5	18	10	5	10	29.1	29.0	28.9	28.8	29.0	28.5			4.8	5.6	4.6	ST
65010	6/29/99	1049	2916.5	9440.0	18	11	6	11	29.1	29.1	28.9	29.0	29.0	29.1			4.8	5.0	4.8	ST
65011	6/29/99	1124	2915.6	9443.8	18	9	5	9	29.4	29.3	29.2	29.2	29.2	29.3			4.6	4.9	5.2	ST
65012	6/29/99	1218	2913.5	9442.2	18	13	7	13	29.8	29.1	29.1	28.5	30.0	30.9			5.7	4.8	4.4	ST
65013	6/29/99	1238	2912.6	9442.6	18	13	7	13	29.7	29.1	29.1	28.6	30.7	29.3			5.8	4.8	4.8	ST
65014	6/29/99	1310	2910.8	9446.6	18	16	8	16	29.6	29.6	29.2	28.7	29.9	30.2			5.4	5.4	4.6	ST
65015	6/29/99	1338	2909.1	9451.4	18	13	7	13	29.6	29.5	29.4	29.0	29.5	30.2			5.2	5.1	4.8	ST
65016	6/29/99	1416	2913.7	9451.4	18	8	4	8	29.6	29.5	29.1	29.0	29.8	29.9			5.3	5.3	4.5	ST

Table 2. Selected environmental parameters (continued)

ALABAMA INSHORE VESSELS, SUMMER SHRIMP/GROUNDFISH SURVEY

STA#	DATE MM/DD/YY	TIME	POSITION LAT	POSITION LONG	STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M) MID	SAMPLE DEPTHS (M) MAX	TEMPERATURE, C SUR	TEMPERATURE, C MID	TEMPERATURE, C MAX	SALINITY, PPT SUR	SALINITY, PPT MID	SALINITY, PPT MAX	CL, MG/M3 SUR	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
2301	6/ 3/99	0900	3009.3	8802.9	11	7	4	7	27.3	27.3	27.0	28.8	29.9	30.9			7.7	7.7	7.7	ST
2302	6/ 3/99	1104	3001.5	8815.1	11	24	12	24	28.8	25.6	23.0	26.6	33.8	35.3			7.3	7.7	8.2	ST
2303	6/ 3/99	1205	2958.2	8819.6	11	30	15	30	29.2	22.8	22.0	25.1	35.3	35.8			7.2	8.2	8.5	ST
2304	6/ 3/99	1409	2954.1	8826.1	11	32	16	32	30.3	23.2	21.4	25.2	35.9	36.0			6.7	7.6	7.1	ST
2305	6/ 3/99	1610	3000.5	8827.1	11	27	13	27	30.1	25.1	22.2	25.5	35.0	35.7			6.7	7.3	7.9	ST
2306	6/ 3/99	2000	3002.0	8824.0	11	24	12	24	30.3	24.9		24.8	33.7				7.5	8.3		ST
2307	6/ 3/99	2227	3007.4	8804.9	11	16	8	16	28.7	27.2	24.2	24.9	30.5	33.7			8.1	8.2	8.3	ST
2308	6/ 4/99	0952	3012.8	8813.0	11	13	7	13	28.3	27.5	26.8	28.5	30.0	30.7			7.4	7.5	7.6	ST
2309	6/ 4/99	1042	3013.6	8816.3	11	8	4	8	28.0	27.8	27.0	29.4	29.7	30.2			7.6	7.7	7.9	ST
2310	6/ 4/99	1149	3008.8	8814.1	11	18	9	18	28.9	26.9	23.8	28.6	31.3	33.7			6.5	6.8	7.3	ST
2311	6/ 4/99	1321	3009.1	8813.1	11	18	9	18	29.0	26.6	23.6	28.6	31.6	34.2			6.6	7.0	7.6	ST

Table 2. Selected environmental parameters (continued)

TOMMY MUNRO, SUMMER SHRIMP/GROUNDFISH SURVEY

STA#	DATE MM/DD/YY	TIME	POSITION LAT	POSITION LONG	STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M) MID	SAMPLE DEPTHS (M) MAX	TEMPERATURE, C SUR	TEMPERATURE, C MID	TEMPERATURE, C MAX	SALINITY, PPT SUR	SALINITY, PPT MID	SALINITY, PPT MAX	CL, MG/M3 SUR	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
17001	6/11/99	0636	2946.1	8836.4	11	24	11	22	28.4	24.2	22.4	28.0	34.0	34.0			5.8		4.4	ST
17002	6/11/99	1102	2935.8	8837.4	11	22	11	21	28.8	25.3	22.9	28.0	34.0	36.0			5.3	3.8	2.6	ST
17003	6/11/99	1244	2932.7	8835.0	11	36	18	35	28.5	23.2	21.6	28.0	36.0	36.0			2.6	2.7	2.2	ST
17004	6/11/99	1457	2926.7	8838.6	11	46	23	45	31.0	22.6	21.8	28.0	36.0	36.0			3.9	2.8	3.0	ST
17005	6/11/99	1710	2923.2	8847.0	11	37	18	36	30.1	23.9	21.9	28.0	34.0	36.0			4.0	1.4	1.3	ST
17006	6/11/99	1913	2922.3	8850.5	11	28	14	27	30.0	25.0	22.5	27.0	33.0	37.0			4.2	3.8	2.8	ST
17007	6/11/99	2122	2917.4	8855.9	11	30	15	29	29.0	27.0	23.2	15.0	30.0	36.0			13.4	4.2	3.8	ST
17008	6/11/99	2345	2920.9	8856.4	11	21	10	20	28.9	28.0	24.0	13.0	28.0	35.0			12.0	5.6	3.4	ST
17009	6/12/99	0218	2922.5	8856.4	11	19	9	18	29.4	28.5	24.3	16.0	28.0	34.0			7.5	4.8	2.5	ST
17010	6/12/99	0320	2923.9	8859.5	11	14	7	13	29.1	28.0	25.8	17.0	28.0	32.0			6.2	4.4	2.8	ST
17011	6/12/99	0502	2927.0	8849.9	11	18	9	17	28.1	27.5	24.8	27.0	30.0	34.0			5.2	4.6	3.6	ST
17012	6/12/99	0822	2948.0	8848.8	11	10	5	9	27.8	28.5	28.0	24.0	25.0	28.0			6.2	6.2	4.0	ST
17013	6/12/99	1131	2930.0	8830.1	11	50	25	49	28.0	22.0	22.1	27.0	36.0	36.0			7.3	5.2	5.9	PN
17014	6/12/99	1601	2912.3	8833.3	11	71	35	70	29.4	23.8	22.1	22.0	36.0	36.0			5.7	5.2	4.8	ST
17015	6/12/99	2005	2925.8	8846.8	11	24	12	23	28.0	27.8	23.2	26.0	29.0	35.0			6.8	5.6	3.2	ST
17016	6/12/99	2158	2931.1	8836.1	11	38	19	37	28.0	22.8	21.5	27.0	35.0	36.0			7.6	3.0	3.4	ST
17017	6/13/99	0052	2932.6	8823.3	11	47	24	46	28.4	22.7	21.6	26.0	36.0	36.0			5.8	4.1	3.6	ST
17018	6/13/99	0436	2931.0	8836.5	11	36	18	35	28.4	22.7	21.5	28.0	36.0	36.0			5.0	2.9	3.2	ST
17019	6/13/99	0901	3000.0	8844.5	11	15	7	14	28.0	28.5	24.9	26.0	30.0	33.0			6.8	6.3	4.0	ST
17020	6/13/99	1055	3003.4	8846.3	11	13	6	12	28.0	28.5	25.0	25.0	27.0	32.0			6.6	5.9	2.0	ST
17021	6/13/99	1308	3000.3	8830.6	11	26	13	25	29.2	24.7	23.5	26.0	33.0	36.0			4.6	4.6	3.6	PN
17022	6/13/99	2009	2948.7	8834.2	11	26	13	25	28.0	25.6	22.0	27.0	35.0	36.0			7.4	6.2	8.2	ST
17023	6/13/99	2304	3001.8	8847.2	11	12	6	11	28.0	27.2	27.2	24.0	27.0	29.0			6.6	4.5	2.6	ST
17024	7/ 7/99	0555	2915.6	8939.3	13	6	3	5	29.5	29.5	29.4	8.9	15.6	26.2			5.1	6.0	4.1	ST
17025	7/ 7/99	0854	2911.7	9001.4	14	6	3	5	29.2	30.1	29.8	20.4	22.9	25.4			7.8	5.1	3.5	ST
17026	7/ 7/99	1459	2901.3	9048.3	14	4	2	3	30.7	30.2	30.8	24.8	25.0	24.6			6.8	5.7	5.5	ST

Table 2. Selected environmental parameters (continued)

TOMMY MUNRO, SUMMER SHRIMP/GROUNDFISH SURVEY

STA#	DATE MM/DD/YY	TIME	POSITION LAT	POSITION LONG	STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M) MID	SAMPLE DEPTHS (M) MAX	TEMPERATURE, C SUR	TEMPERATURE, C MID	TEMPERATURE, C MAX	SALINITY, PPT SUR	SALINITY, PPT MID	SALINITY, PPT MAX	CL, MG/M3 SUR	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
17027	7/ 7/99	1605	2859.5	9046.2	14	8	4	7	31.0	30.1	29.8	24.8	26.6	31.0			6.6	6.0	2.8	ST
17028	7/ 7/99	2004	2902.0	9021.0	14	8	4	7	30.2	27.1	29.6	26.1	30.1	30.6			5.3	5.4	3.6	ST
17029	7/ 8/99	0411	2911.6	9122.0	15	4	2	3	29.5	29.4	29.3	24.2	24.2	24.3			4.3	4.2	4.0	ST
17030	7/ 8/99	1253	2929.2	9226.8	16	8	4	7	30.7	30.4	30.2	19.3	18.9	20.8			5.6	5.8	4.2	ST
17031	7/ 8/99	1830	2943.4	9318.8	17	6	3	5	30.6	30.5	30.1	15.1	15.1	16.0			9.5	9.4	8.2	ST
17032	7/ 8/99	2201	2940.4	9254.4	16	4	2	3	30.4	30.6	30.6	13.1	13.1	13.0			4.4	5.5	5.5	ST
17033	7/ 9/99	0105	2933.0	9234.0	16	6	3	5	29.9	30.1	30.2	7.9	7.5	13.9			7.6	7.7	7.9	ST
17034	7/ 9/99	0510	2909.7	9214.8	16	8	4	7	29.3	29.5	29.5	27.9	27.7	29.7			6.3	6.2	5.8	ST

Table 2. Selected environmental parameters (continued)

OREGON II, SUMMER SHRIMP/GROUNDFISH SURVEY

STA#	DATE MM/DD/YY	TIME	POSITION LAT	POSITION LONG	STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M) MID	SAMPLE DEPTHS (M) MAX	TEMPERATURE, C SUR	TEMPERATURE, C MID	TEMPERATURE, C MAX	SALINITY, PPT SUR	SALINITY, PPT MID	SALINITY, PPT MAX	CL, MG/M3 SUR	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
00001	6/15/99	2055	3000.0	8800.2	11	26	13	26	29.5	27.8	22.5	28.8	31.6	35.3		1.184				PN
00002	6/15/99	2349	2954.0	8810.0	11	31	15	30	29.1	26.0	22.0	30.5	33.0	35.9		0.484				ST
00003	6/16/99	0216	2948.7	8812.0	11	33	17	33	29.2	24.2	21.8	31.1	35.4	36.0		0.474				ST
00004	6/16/99	0559	2949.1	8804.5	11	33	18	32	29.0	23.7	21.9	30.5	34.7	35.8		0.474				ST
00005	6/16/99	0832	2929.8	8800.2	11	44	22	44	29.1	23.7	21.3	27.5	36.0	36.2		1.568				PN
00006	6/16/99	1053	2924.5	8808.6	11	53	26	52	29.7	24.1	21.1	27.9	36.1	36.2		1.294				ST
00008	6/17/99	456	2907.7	8844.8	11	82	42	80	29.9	22.0	18.9	22.5	36.2	36.4		4.584				ST
00009	6/17/99	834	2906.4	8857.1	11	36	18	36	29.3	23.9	21.5	24.2	35.4	36.2		4.205				ST
00010	6/17/99	1406	2920.8	8812.8	11	64	32	64	29.6	22.1	19.3	28.8	36.1	36.4		1.321				ST
00011	6/17/99	1519	2915.9	8808.9	11	133	68	130	30.0	20.6	14.2	28.9	36.3	35.8		1.414				ST
00012	6/17/99	1753	2919.3	8804.0	11	97	50	97	30.0	21.4	16.0	28.9	36.2	36.1		1.223				ST
00013	6/17/99	2031	2920.4	8808.4	11	81	40	80	29.5	21.3	18.7	28.8	36.2	36.4		1.785				ST
00014	6/17/99	2319	2921.6	8810.4	11	60	30	60	29.7	22.9	19.8	28.5	36.1	36.4		1.495				ST
00015	6/18/99	0126	2929.4	8811.7	11	46	23	46	29.6	23.6	21.1	29.0	36.1	36.2		1.487				ST
00016	6/20/99	6	2922.6	8823.4	11	55	27	54	28.0	23.4	21.1	31.2	36.2	36.2		2.139				ST
00018	6/21/99	414	2914.3	8830.5	11	90	45	90	28.1	23.0	18.8	32.7	36.2	36.4		0.835				ST
00019	6/21/99	811	2859.7	8859.9	11	69	35	68	28.1	23.4	21.9	23.2	35.5	36.1		2.899				PN
00020	6/22/99	2233	2629.9	9630.1	21	78	40	78	28.4	25.4	23.1	36.3	36.2	36.2		0.134				PN
00021	6/23/99	34	2628.3	9631.0	21	72	36	70	28.4	26.5	23.2	36.3	36.2	36.2		0.127				ST
00022	6/23/99	0317	2621.6	9640.8	21	45	23	44	28.1	28.1	23.4	36.3	36.3	36.2		0.117				ST
00025	6/23/99	744	2613.9	9656.6	21	32	16	31	28.6	28.1	27.9	34.8	35.4	35.8		0.681				ST
00026	6/23/99	946	2619.8	9702.6	21	22	11	21	28.4	28.5	28.4	35.2	35.2	35.2		0.400				ST
00027	6/23/99	1133	2613.6	9710.0	21	13	7	12	28.7	28.7	28.6	35.6	35.6	35.6		1.123				ST
00028	6/23/99	1415	2602.2	9706.6	21	17	8	16	28.6	28.5	28.5	35.8	35.8	35.9		0.757				ST
00029	6/23/99	1527	2600.0	9659.9	22	27	13	26	28.5	28.2	28.1	35.7	35.8	36.2		0.496				PN
00030	6/23/99	1726	2600.5	9652.7	21	32	15	32	28.6	28.2	26.9	36.2	36.2	36.0		0.469				ST
00031	6/23/99	1910	2604.1	9654.0	21	33	17	33	29.0	28.1	27.4	35.2	36.2	36.3		0.574				ST
00032	6/23/99	2206	2601.0	9629.1	21	61	30	60	28.5	27.8	23.1	36.4	36.3	36.3		0.103				PN
00033	6/24/99	8	2603.1	9634.4	21	55	27	54	27.9	24.1	23.5	36.3	36.3	36.3		0.139				ST

Table 2. Selected environmental parameters (continued)

OREGON II, SUMMER SHRIMP/GROUNDFISH SURVEY

STA#	DATE MM/DD/YY	TIME	POSITION LAT	POSITION LONG	STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M) MID	SAMPLE DEPTHS (M) MAX	TEMPERATURE, C SUR	TEMPERATURE, C MID	TEMPERATURE, C MAX	SALINITY, PPT SUR	SALINITY, PPT MID	SALINITY, PPT MAX	CL, MG/M3 SUR	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
00035	6/24/99	0445	2617.4	9654.0	21	33	16	33	28.7	28.4	27.7	34.6	35.2	36.0		0.571				ST
00036	6/24/99	800	2630.3	9713.8	21	13	6	13	28.6	28.6	28.6	35.4	35.4	35.4		1.123				ST
00037	6/24/99	958	2630.6	9705.3	21	22	11	22	28.8	28.8	27.7	33.3	34.4	35.9		0.569				ST
00038	6/24/99	1056	2629.9	9659.9	21	34	17	33	28.9	28.1	27.3	32.6	36.3	36.3		0.305				PN
00039	6/24/99	1403	2627.4	9641.0	21	45	22	44	28.6	28.3	24.1	36.2	36.3	36.2		0.879				ST
00040	6/24/99	1710	2644.1	9637.3	21	91	44	90	28.8	24.3	19.6	36.3	36.3	36.4		0.103				ST
00042	6/24/99	2050	2640.8	9639.9	21	73	35	73	29.0	26.8	22.1	34.9	36.2	36.2		0.286				ST
00043	6/25/99	0041	2624.6	9650.4	21	40	20	39	29.0	27.6	25.2	33.3	36.3	36.2		0.381				ST
00045	6/25/99	0412	2622.6	9705.1	21	22	11	22	28.7	28.7	27.8	35.2	35.2	35.6		0.608				ST
00046	6/25/99	953	2700.3	9721.3	20	13	6	12	29.0	29.0	29.0	33.6	33.6	33.6		0.967				ST
00047	6/25/99	1218	2700.0	9700.2	21	40	20	39	29.1	28.1	26.6	32.8	36.1	36.0		0.379				PN
00048	6/25/99	1545	2703.5	9644.1	20	73	36	73	29.2	25.2	21.4	31.5	36.2	36.3		0.496				ST
00049	6/25/99	2117	2639.4	9705.1	21	32	16	31	29.2	28.3	27.8	33.4	36.3	36.3		0.359				ST
00050	6/25/99	2241	2641.3	9709.6	21	24	12	23	28.9	28.3	27.9	34.6	35.4	36.1		0.410				ST
00051	6/26/99	132	2653.7	9720.7	21	15	8	15	28.9	28.8	28.6	34.5	34.5	34.6		1.648				ST
00052	6/26/99	0237	2655.7	9721.3	21	13	6	13	29.0	28.9	28.9	34.4	34.5	34.5		1.741				ST
00053	6/26/99	0439	2703.5	9712.5	20	28	14	28	28.8	28.8	27.6	33.5	34.0	35.8		0.471				ST
00054	6/26/99	743	2717.3	9717.3	20	15	7	14	28.9	28.9	28.0	33.5	33.5	34.6		1.272				ST
00055	6/26/99	903	2717.2	9712.6	20	21	10	20	28.9	28.9	28.0	33.3	33.4	35.4		0.686				ST
00056	6/26/99	1323	2719.1	9640.5	20	68	34	68	28.9	25.7	21.7	32.9	36.1	36.2		0.286				ST
00057	6/26/99	1613	2709.5	9637.5	20	85	43	82	29.2	23.4	19.8	32.4	36.2	36.4		0.432				ST
00058	6/26/99	1830	2700.0	9630.0	21	130	65	130	29.2	22.4	17.6	33.6	36.2	36.4		0.381				PN
00059	6/26/99	2124	2704.2	9636.0	20	93	46	93	29.2	23.6	19.0	32.6	36.3	36.4		0.459				ST
00061	6/27/99	48	2706.0	9647.2	20	65	32	63	29.1	26.2	21.7	33.3	36.4	36.3		0.271				ST
00063	6/27/99	0441	2711.6	9705.1	20	31	14	29	29.0	28.9	27.7	33.1	33.3	36.0		0.254				ST
00064	6/27/99	727	2727.6	9702.0	20	27	14	25	28.9	28.7	27.4	33.7	33.9	36.1		0.430				ST
00065	6/27/99	1002	2731.5	9701.0	20	25	12	24	29.0	28.9	27.5	33.8	33.8	35.8		0.430				ST/PN
00066	6/27/99	1158	2730.1	9651.1	20	35	17	34	28.9	28.5	25.5	33.0	34.8	36.1		0.315				ST
00067	6/27/99	1449	2722.2	9656.8	20	35	18	34	29.1	28.0	24.6	33.6	34.6	36.1		0.308				ST
00068	6/27/99	2029	2708.3	9717.4	20	17	9	16	28.6	28.6	27.5	35.6	35.6	36.0		1.631				ST
00069	6/27/99	2220	2715.7	9716.7	20	16	8	15	28.6	28.5	27.8	35.3	35.4	35.8		1.800				ST

Table 2. Selected environmental parameters (continued)

OREGON II, SUMMER SHRIMP/GROUNDFISH SURVEY

STA#	DATE MM/DD/YY	TIME	POSITION LAT	POSITION LONG	STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M) MID	SAMPLE DEPTHS (M) MAX	TEMPERATURE, C SUR	TEMPERATURE, C MID	TEMPERATURE, C MAX	SALINITY, PPT SUR	SALINITY, PPT MID	SALINITY, PPT MAX	CL, MG/M3 SUR	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
00070	6/27/99	2343	2722.7	9716.7	20	13	7	13	28.5	28.5	28.2	35.1	35.1	35.4		2.293				ST
00071	6/28/99	0306	2720.4	9658.7	20	35	18	34	29.0	28.1	24.3	33.3	35.9	36.2		0.264				ST
00072	6/28/99	0435	2729.6	9700.2	20	30	15	30	29.0	28.0	25.3	33.3	34.7	30.1		0.300				ST
00073	6/28/99	823	2729.8	9629.8	20	72	36	71	28.9	26.8	21.5	33.1	36.3	36.2		0.337				PN
00074	6/28/99	1206	2749.9	9637.1	20	30	15	29	29.0	28.4	24.3	32.9	33.5	36.2		0.305				ST
00075	6/28/99	1513	2746.7	9655.7	20	20	10	20	29.1	29.0	28.4	34.6	34.9	35.1		0.750				ST
00076	6/28/99	2030	2736.5	9708.2	20	12	7	12	28.8	28.3	28.7	35.3	35.3	35.2		2.220				ST
00077	6/28/99	2206	2732.0	9704.6	20	21	10	20	28.7	28.7	26.7	35.6	35.6	35.8		0.730				ST
00078	6/29/99	0320	2730.1	9621.8	20	87	44	87	29.0	24.7	19.2	33.2	36.2	36.4		0.303				ST
00080	6/29/99	925	2749.3	9607.0	20	62	31	60	29.0	27.4	22.3	31.7	36.2	36.3		0.474				ST
00082	6/29/99	1313	2752.7	9618.9	20	47	23	46	29.0	26.5	22.1	32.2	35.4	36.2		0.398				ST
00083	6/29/99	1528	2758.0	9622.9	20	33	17	33	29.0	28.1	22.5	33.1	34.1	36.1		0.330				ST
00084	6/29/99	1700	2800.2	9629.9	19	25	12	25	29.2	29.2	25.3	34.3	34.3	35.8		0.415				PN
00085	6/29/99	1922	2758.8	9611.3	19	41	20	40	29.5	28.6	22.2	30.6	35.8	36.1		0.596				ST
00086	6/29/99	2222	2801.3	9624.5	19	27	13	26	29.0	28.9	23.7	33.8	34.0	35.9		0.308				ST
00087	6/29/99	2347	2802.3	9617.5	19	31	17	30	28.9	28.9	22.4	33.4	33.5	36.1		0.303				ST
00088	6/30/99	224	2804.2	9609.7	19	32	15	32	29.1	28.0	22.7	31.1	33.7	36.1		0.520				ST
00089	6/30/99	0356	2807.0	9605.5	19	33	15	32	28.9	28.3	23.5	31.6	34.0	35.9		0.479				ST
00090	6/30/99	616	2800.1	9600.0	19	43	21	42	28.8	28.7	23.5	32.1	36.3	36.1		0.425				PN
00091	6/30/99	840	2803.6	9607.8	19	35	17	34	28.9	28.4	23.2	31.1	33.7	36.0		0.459				ST
00092	6/30/99	1114	2807.1	9551.2	19	36	18	36	28.6	28.4	23.7	32.9	34.1	35.9		0.379				ST
00093	6/30/99	1425	2829.9	9559.9	19	15	8	14	29.2	29.0	26.9	32.4	32.5	34.0		1.663				PN
00094	6/30/99	1727	2821.7	9610.9	19	18	7	17	28.9	29.1	25.4	33.3	33.6	35.0		2.317				ST
00095	6/30/99	1839	2827.1	9614.6	19	11	5	10	28.9	28.9	26.6	33.3	33.3	34.6		3.822				ST
00096	6/30/99	2044	2831.0	9607.0	19	9	4	8	29.4	29.4	28.1	32.7	32.6	33.4		4.371				ST
00097	7/ 1/99	121	2807.1	9552.8	19	37	18	36	29.0	28.5	23.9	32.0	35.5	35.9		0.508				ST
00098	7/ 1/99	0405	2803.4	9556.5	19	38	18	36	29.0	28.6	25.6	31.9	35.3	36.3		0.379				ST
00100	7/ 1/99	742	2754.5	9546.0	20	53	26	53	28.8	28.5	23.2	34.1	36.3	36.2		0.266				ST
00102	7/ 1/99	1229	2742.9	9547.9	20	85	43	85	28.9	24.7	18.7	33.0	36.3	36.4		0.256				ST
00103	7/ 1/99	1547	2754.9	9543.7	20	56	28	55	29.1	26.6	23.2	32.9	36.3	36.3		0.252				ST
00106	7/ 1/99	2210	2755.1	9528.2	20	62	31	61	28.7	28.3	20.6	35.1	36.3	36.3		0.256				ST

Table 2. Selected environmental parameters (continued)

OREGON II, SUMMER SHRIMP/GROUNDFISH SURVEY

STA#	DATE MM/DD/YY	TIME	POSITION LAT	POSITION LONG	STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M) MID	SAMPLE DEPTHS (M) MAX	TEMPERATURE, C SUR	TEMPERATURE, C MID	TEMPERATURE, C MAX	SALINITY, PPT SUR	SALINITY, PPT MID	SALINITY, PPT MAX	CL, MG/M3 SUR	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
00107	7/ 2/99	13	2800.2	9530.1	19	54	27	53	28.5	25.3	22.1	33.5	35.0	36.0		0.305				PN
00108	7/ 2/99	0321	2812.5	9533.6	19	38	18	35	28.9	27.9	22.5	32.5	34.2	35.5		0.354				ST
00109	7/ 2/99	0542	2828.3	9538.5	19	21	11	21	28.7	28.7	28.0	33.2	33.6	34.0		0.574				ST
00110	7/ 2/99	918	2816.2	9549.0	19	26	13	26	28.8	28.7	26.4	32.4	34.0	35.0		0.339				ST
00111	7/ 2/99	1201	2831.1	9536.7	19	22	12	21	28.9	28.7	28.1	32.2	33.5	33.9		0.305				ST
00112	7/ 2/99	1403	2830.3	9533.1	19	24	12	24	29.0	28.6	25.0	32.2	32.6	34.7		0.449				ST
00113	7/ 2/99	1509	2830.0	9529.9	19	25	13	24	29.3	29.1	26.1	32.2	32.2	33.9		0.469				PN
00114	7/ 2/99	1749	2846.0	9530.2	19	9	5	9	29.2	29.1	28.8	32.6	32.7	33.3		6.413				PN
00115	7/ 2/99	2001	2846.5	9523.6	19	12	7	12	29.1	29.1	27.3	32.6	32.6	33.3		3.714				ST
00116	7/ 2/99	2210	2852.9	9516.7	19	13	6	12	29.0	28.9	27.0	32.6	32.6	33.5		0.762				ST
00117	7/ 2/99	2352	2849.6	9514.5	19	18	9	17	29.0	28.9	26.3	32.6	32.6	34.0		0.520				ST
00118	7/ 3/99	243	2842.1	9518.3	19	20	10	19	28.8	28.7	26.0	33.3	33.3	34.0		1.287				ST
00119	7/ 3/99	0434	2838.9	9514.6	19	22	10	21	28.9	28.9	25.1	32.5	32.5	34.1		0.537				ST
00120	7/ 3/99	0549	2838.1	9508.4	19	24	12	24	28.9	29.0	26.3	32.4	32.4	34.1		0.464				ST
00121	7/ 3/99	734	2839.8	9507.5	19	24	12	23	28.9	29.0	27.9	31.6	31.9	33.2		0.435				ST
00123	7/ 3/99	1210	2832.6	9510.8	19	29	14	28	29.1	29.0	25.7	32.4	32.4	34.4		0.410				ST
00124	7/ 3/99	1405	2830.0	9500.1	19	32	16	32	29.2	28.9	25.0	32.0	32.9	34.9		0.249				PN
00125	7/ 3/99	1806	2816.6	9510.9	19	39	19	37	29.2	28.7	24.6	32.0	32.7	35.3		0.457				ST
00127	7/ 3/99	2241	2816.9	9452.4	18	45	22	44	28.9	26.3	22.3	33.3	35.3	35.8		0.215				ST
00131	7/ 4/99	926	2844.5	9443.0	18	24	12	23	29.2	29.3	27.8	30.0	30.2	32.5		0.549				ST
00132	7/ 4/99	1131	2849.4	9435.5	18	18	9	17	29.4	29.4	28.4	29.0	29.0	31.7		0.896				ST
00133	7/ 4/99	1502	2913.9	9444.7	18	11	6	10	30.2	29.6	29.2	30.5	30.9	31.3		9.998				ST
00134	7/ 4/99	1803	2922.7	9427.0	18	12	6	12	29.4	29.4	29.1	30.2	30.2	30.6		4.686				ST
00136	7/ 4/99	2208	2905.5	9413.0	18	15	7	14	29.5	29.5	29.2	28.9	28.9	29.6		0.982				ST
00137	7/ 4/99	2254	2905.9	9409.4	18	17	8	16	29.5	29.5	29.1	28.8	28.8	30.3		0.777				ST
00138	7/ 5/99	203	2900.0	9430.0	18	18	9	17	29.5	24.5	28.8	29.4	29.4	31.3		0.537				PN
00139	7/ 6/99	2231	2904.6	9504.2	19	11	6	10	29.7	29.8	29.6	26.6	28.4	28.5		6.212				ST
00140	7/ 7/99	2334	2900.0	9459.9	18	16	8	15	29.2	29.4	28.7	31.1	31.7	32.2		8.449				PN
00141	7/ 7/99	0419	2830.0	9430.0	18	34	16	34	29.1	27.5	23.1	30.4	34.8	35.4		8.781				PN
00142	7/ 7/99	0910	2758.4	9442.4	18	79	41	79	28.5	24.9	19.0	34.1	36.3	36.4		8.852				ST
00143	7/ 7/99	1238	2801.5	9459.5	18	74	36	72	28.9	25.7	18.9	32.3	36.4	36.4		8.803				ST

Table 2. Selected environmental parameters (continued)

OREGON II, SUMMER SHRIMP/GROUNDFISH SURVEY

STA#	DATE MM/DD/YY	TIME	POSITION LAT	POSITION LONG	STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M) MID	SAMPLE DEPTHS (M) MAX	TEMPERATURE, C SUR	TEMPERATURE, C MID	TEMPERATURE, C MAX	SALINITY, PPT SUR	SALINITY, PPT MID	SALINITY, PPT MAX	CL, MG/M3 SUR	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
00144	7/ 7/99	1603	2759.4	9516.4	20	64	32	64	29.1	27.9	20.4	32.6	35.8	36.3		8.625				ST
00145	7/ 7/99	2020	2758.8	9459.9	18	82	44	82	24.9	19.7	13.6	34.2	38.9	39.2		0.698				ST/PN
00146	7/ 7/99	2313	2805.4	9450.1	18	55	28	55	24.5	22.3	16.7	35.2	38.8	39.1		0.457				ST
00147	7/ 8/99	0213	2756.4	9437.3	18	94	45	89	24.2	17.9	13.1	36.2	38.7	39.2		0.349				ST
00148	7/ 8/99	0418	2758.6	9434.4	18	72	39	71	24.2	21.3	14.7	36.3	38.9	39.2		0.391				ST
00150	7/ 8/99	0717	2800.0	9429.8	18	69	35	69	24.2	20.4	14.4	36.5	38.9	39.2		0.484				PN
00151	7/ 8/99	1201	2813.7	9353.2	17	65	35	65	24.6	22.8	15.8	38.1	38.5	39.1		0.239				ST
00154	7/ 8/99	1720	2826.8	9346.3	17	45	25	45	24.3	20.9	17.2	36.1	37.6	38.7		0.344				ST
00156	7/ 8/99	2049	2830.1	9354.0	17	40	21	38	24.2	23.9	17.4	35.6	37.3	38.6		0.376				ST/PN
00160	7/ 9/99	0200	2820.4	9350.3	17	55	27	55	24.1	24.0	16.4	37.6	38.4	39.0		0.029				ST
00161	7/ 9/99	0357	2818.7	9357.8	17	63	30	63	24.2	23.0	15.8	38.3	38.8	39.1		0.261				ST
00163	7/ 9/99	1016	2827.3	9336.3	17	45	18	43	23.9	22.4	17.6	35.6	37.8	38.4		0.291				ST
00166	7/ 9/99	1650	2806.3	9327.7	17	73	31	73	29.0	28.4	21.2	35.4	36.0	36.1						ST
00167	7/ 9/99	1831	2759.9	9330.1	99	91	45	91	29.2	26.1	17.9	34.6	36.3	36.7		2.940				PN
00168	7/ 9/99	2128	2803.2	9315.3	17	90	46	89	29.0	25.2	18.3	34.6	36.2	36.3		9.282				ST
00169	7/10/99	0138	2809.1	9303.0	17	70	35	70	28.8	26.8	19.5	32.8	35.8	36.4		9.074				ST
00170	7/10/99	0520	2806.6	9237.7	16	90	45	90	29.4	24.1	18.2	32.9	35.6	36.4		9.248				ST
00171	7/10/99	0909	2805.9	9224.6	16	91	44	91	29.0	23.2	18.5	32.7	35.9	36.4		8.906				ST
00173	7/10/99	1339	2806.1	9243.2	16	81	40	81	29.3	25.7	19.0	33.0	36.6	36.4		9.153				ST
00174	7/10/99	1728	2809.2	9304.9	17	70	35	70	28.9	28.1	21.0	34.1	36.3	36.3		8.933				ST
00176	7/10/99	2210	2835.6	9303.3	17	37	18	37	28.8	28.9	24.0	32.7	33.3	35.6		8.974				ST
00177	7/10/99	2336	2837.7	9310.3	17	32	16	31	28.8	28.8	24.7	33.3	34.3	35.3		8.962				ST
00178	7/11/99	0408	2840.0	9339.0	17	31	15	31	28.6	26.9	25.0	23.9	35.1	35.8		9.035				ST
00179	7/11/99	0529	2842.0	9348.4	17	27	13	27	29.0	28.6	24.4	30.4	34.5	35.5		8.840				ST
00180	7/11/99	0737	2837.4	9353.2	17	29	11	29	29.0	28.6	23.6	30.2	34.1	35.5		9.087				ST
00181	7/11/99	1118	2845.2	9323.6	17	27	14	27	28.6	28.9	28.6	34.2	35.0	35.9		8.960				ST
00182	7/11/99	1417	2900.4	9324.3	17	24	11	24	29.9	29.6	23.6	28.2	30.3	33.5		8.078				ST
00183	7/11/99	1528	2900.5	9330.4	17	22	12	22	29.7	29.0	27.6	28.4	31.5	33.7		7.504				PN
00184	7/11/99	1743	2856.9	9342.1	17	22	11	22	30.0	28.8	28.5	28.3	33.9	34.4		9.162				ST
00185	7/11/99	2018	2907.8	9336.3	17	18	10	18	29.4	29.3	28.7	30.1	30.7	32.1		8.762				ST
00186	7/11/99	2348	2912.1	9316.5	17	16	7	15	30.0	29.5	28.9	25.3	29.6	31.9		8.051				ST

Table 2. Selected environmental parameters (continued)

OREGON II, SUMMER SHRIMP/GROUNDFISH SURVEY

STA#	DATE MM/DD/YY	TIME	POSITION LAT	POSITION LONG	STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M) MID	SAMPLE DEPTHS (M) MAX	TEMPERATURE, C SUR	TEMPERATURE, C MID	TEMPERATURE, C MAX	SALINITY, PPT SUR	SALINITY, PPT MID	SALINITY, PPT MAX	CL, MG/M3 SUR	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
00187	7/12/99	0323	2851.2	9314.3	17	26	13	25	29.6	28.0	26.6	29.4	33.5	35.1		8.139				ST
00189	7/12/99	0546	2854.9	9311.1	17	24	13	24	29.7	28.6	25.7	27.9	32.7	39.6		8.188				ST
00190	7/12/99	0747	2859.8	9259.8	16	24	12	23	29.4	29.4	26.5	28.8	29.9	34.1		7.998				PN
00191	7/12/99	0943	2907.3	9301.7	17	18	9	17	29.7	29.2	29.2	26.1	30.1	31.1		8.464				ST
00192	7/12/99	1155	2900.4	9245.3	16	25	12	25	29.5	29.3	25.1	28.3	29.9	34.8		6.190				ST
00194	7/12/99	1608	2919.1	9245.5	16	16	7	15	29.6	29.2	27.5	25.6	27.9	32.7		8.867				ST
00196	7/12/99	2137	2923.4	9322.8	17	12	6	12	29.3	29.6	28.5	23.4	27.1	29.9		6.369				ST
00197	7/13/99	0214	2917.9	9237.0	16	16	7	15	29.7	29.4	27.7	20.1	29.0	33.6		5.399				ST
00199	7/13/99	0421	2922.5	9232.1	16	11	6	10	29.9	29.5	29.1	23.8	28.1	30.0		6.784				ST
00201	7/13/99	0922	2935.7	9258.5	16	11	5	10	29.3	29.7	28.6	17.9	23.4	29.1		4.098				ST/PN
00202	7/13/99	1414	2914.8	9227.4	16	12	6	11	29.7	30.0	29.1	23.4	23.9	31.1		6.850				ST
00203	7/13/99	1505	2912.5	9227.0	16	16	7	15	29.9	29.9	27.8	24.0	26.8	33.7		7.687				ST
00204	7/13/99	1721	2908.8	9216.6	16	11	5	10	29.8	29.1	29.0	18.6	31.0	31.9		3.348				ST
00205	7/13/99	2019	2909.7	9210.8	16	11	5	10	29.7	29.3	29.0	18.2	30.0	31.9		3.399				ST
00206	7/13/99	2221	2901.3	9209.6	16	20	11	19	29.8	29.0	26.2	16.6	32.9	34.7		3.685				ST
00207	7/14/99	0040	2848.4	9208.6	16	30	15	30	29.8	28.1	24.4	28.2	34.1	35.4		7.912				ST
00208	7/14/99	0319	2849.1	9155.3	15	26	13	26	29.9	29.2	25.0	25.8	32.3	35.3		5.261				ST
00209	7/14/99	0446	2841.2	9159.6	15	40	19	39	29.5	29.2	23.3	31.9	33.6	35.8		7.326				ST
00210	7/14/99	0751	2844.2	9211.0	16	36	13	36	29.6	29.2	23.7	33.3	33.5	35.7		0.977				ST
00211	7/14/99	0848	2846.8	9207.7	16	32	15	30	29.7	28.0	24.4	30.6	33.8	35.5		0.733				ST
00212	7/14/99	1045	2850.4	9208.1	16	28	15	28	29.9	28.8	25.1	29.5	32.9	35.3		8.415				ST
00213	7/14/99	1547	2844.6	9251.1	16	32	16	31	29.3	29.1	25.3	31.4	34.8	35.2		8.869				ST
00214	7/14/99	1835	2836.0	9248.8	16	36	18	36	30.4	28.5	23.9	29.7	33.9	35.7		8.234				ST
00215	7/14/99	2319	2817.4	9216.8	16	63	32	63	29.5	28.3	21.4	31.7	35.6	36.1		8.772				ST
00218	7/15/99	0522	2823.4	9147.4	15	58	29	58	29.8	26.3	21.9	32.4	35.8	36.1		9.162				ST
00219	7/15/99	0935	2809.3	9133.5	15	90	45	89	29.6	23.1	19.7	32.5	36.1	36.4		9.277				ST
00221	7/15/99	1427	2811.0	9104.7	15	90	45	90	29.6	24.9	19.8	34.3	35.9	36.3		8.276				ST
00222	7/15/99	1745	2831.9	9113.2	15	34	17	34	29.9	29.4	24.1	31.6	34.8	35.8		8.767				ST
00223	7/15/99	2014	2835.9	9121.4	15	31	15	30	30.5	28.1	24.2	29.8	34.3	35.7		9.045				ST
00224	7/15/99	2135	2839.3	9125.3	15	27	13	27	30.5	28.8	25.1	29.7	33.9	35.4		8.440				ST
00225	7/15/99	2354	2837.8	9133.1	15	32	16	32	30.2	28.3	24.1	29.6	34.5	35.6		8.769				ST

Table 2. Selected environmental parameters (continued)

OREGON II, SUMMER SHRIMP/GROUNDFISH SURVEY

STA#	DATE MM/DD/YY	TIME	POSITION LAT	POSITION LONG	STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M) MID	SAMPLE DEPTHS (M) MAX	TEMPERATURE, C SUR	TEMPERATURE, C MID	TEMPERATURE, C MAX	SALINITY, PPT SUR	SALINITY, PPT MID	SALINITY, PPT MAX	CL, MG/M3 SUR	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
00226	7/16/99	0150	2831.9	9137.0	15	45	23	45	29.7	27.5	22.6	31.4	34.7	35.9		9.026				ST
00227	7/16/99	0528	2901.8	9145.8	15	11	5	10	29.9	29.6	28.7	26.2	28.7	32.1		6.906				ST
00228	7/16/99	0657	2904.4	9149.0	15	11	5	10	29.3	29.6	28.8	19.6	28.7	21.7		4.911				ST
00229	7/16/99	0822	2900.3	9148.3	15	15	8	15	29.6	29.5	27.6	27.4	30.5	33.9		6.874				ST
00230	7/16/99	1227	2854.5	9117.4	15	11	4	6	29.9	30.0		25.3	28.2			6.037				ST
00231	7/16/99	1554	2836.7	9111.5	15	25	12	25	29.8	29.4	25.7	31.6	33.5	35.4		9.018				ST
00232	7/16/99	1759	2840.3	9123.4	15	26	13	25	30.2	28.3	25.6	30.8	33.7	35.3		9.287				ST
00233	7/16/99	1938	2829.6	9130.2	15	46	23	46	30.3	26.6	22.5	31.2	34.9	35.9		9.519				PN
00234	7/16/99	2225	2840.0	9119.4	15	24	12	23	30.5	29.4	26.1	30.4	33.1	35.2		8.642				ST
00235	7/16/99	2340	2844.4	9119.6	15	14	7	14	29.9	29.5	28.9	29.7	31.4	34.3		7.705				ST
00236	7/17/99	0229	2848.5	9104.0	15	9	5	9	30.0	30.0	29.4	29.4	29.5	32.9		8.503				ST/PN
00237	7/17/99	0633	2851.6	9048.6	14	11	6	11	29.6	29.7	28.8	28.2	29.7	34.0		7.712				ST
00238	7/17/99	0945	2832.5	9050.0	14	26	14	25	29.9	29.0	26.3	31.0	34.0	35.5		8.735				ST/PN
00239	7/17/99	1139	2832.2	9038.5	14	30	15	30	29.9	28.8	26.2	29.3	34.9	35.6		8.330				ST
00240	7/17/99	1322	2828.3	9045.5	14	36	17	36	30.1	29.7	24.5	32.9	34.2	35.8		8.618				ST
00242	7/17/99	1629	2818.7	9041.2	14	55	27	55	29.7	28.6	23.1	35.3	36.0	36.0		8.654				ST
00243	7/17/99	1754	2818.6	9045.4	14	54	27	54	29.8	26.0	22.9	34.2	35.2	36.0		8.672				ST
00244	7/17/99	2013	2816.2	9044.5	14	60	29	59	29.7	27.5	22.1	34.4	36.1	36.1		9.365				ST
00245	7/18/99	0032	2823.2	9057.9	14	44	21	44	29.8	29.3	23.0	31.1	34.1	35.9		8.435				ST
00246	7/18/99	0322	2812.6	9052.7	14	82	41	82	29.7	23.6	20.3	31.5	35.8	36.3		8.845				ST
00247	7/18/99	0625	2814.8	9055.8	14	73	36	73	29.6	24.7	21.0	31.5	35.6	36.2		8.359				ST
00248	7/18/99	1019	2829.6	9029.8	14	38	19	38	29.7	28.1	24.6	28.4	35.2	35.8		7.519				PN
00249	7/18/99	1231	2838.2	9024.6	14	19	9	19	29.8	28.7	26.9	26.7	34.5	35.5		7.499				ST
00250	7/18/99	1620	2841.2	9002.9	14	42	21	42	29.3	29.2	23.8	28.7	35.9	36.0		7.035				ST
00251	7/18/99	1739	2840.7	9001.2	14	108	54	108	29.1	22.6	19.1	29.2	36.1	36.4		7.272				ST
00252	7/18/99	2004	2840.4	8956.2	13	86	43	86	29.4	23.7	20.0	32.8	35.9	36.3		8.694				ST
00253	7/18/99	2129	2840.0	9002.3	14	109	59	109	29.3	27.1	23.4	30.0	35.3	35.9		7.629				ST
00254	7/18/99	2332	2840.6	9010.9	14	38	19	37	29.4	27.5	25.1	31.6	35.2	35.9		8.227				ST
00255	7/19/99	0224	2837.7	9023.5	14	25	12	25	29.4	28.6	26.5	26.8	34.8	35.7		7.170				ST
00256	7/19/99	0549	2857.3	9023.8	14	14	7	13	29.1	29.2	28.0	26.7	28.2	34.2		6.791				ST/PN
00257	7/19/99	0647	2853.3	9021.8	14	20	9	18	28.8	29.3	27.5	30.3	32.5	35.3		7.299				ST

Table 2. Selected environmental parameters (continued)

OREGON II, SUMMER SHRIMP/GROUNDFISH SURVEY

STA#	DATE MM/DD/YY	TIME	POSITION LAT	POSITION LONG	STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M) MID	SAMPLE DEPTHS (M) MAX	TEMPERATURE, C SUR	TEMPERATURE, C MID	TEMPERATURE, C MAX	SALINITY, PPT SUR	SALINITY, PPT MID	SALINITY, PPT MAX	CL, MG/M3 SUR	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
00258	7/19/99	0900	2855.7	9013.5	14	19	10	19	29.3	29.5	27.8	24.3	28.5	35.3		6.100				ST
00259	7/19/99	1038	2852.6	9006.5	14	28	13	28	29.4	29.1	26.5	24.6	34.7	35.7		6.076				ST
00260	7/19/99	1300	2855.5	8955.4	13	35	17	35	29.4	29.1	24.7	24.0	34.3	35.9		3.497				ST
00261	7/19/99	1401	2859.9	8959.9	13	24	12	24	29.8	28.5	26.9	24.3	35.0	35.7		4.801				PN
00262	7/19/99	1609	2909.8	8955.2	13	13	6	13	30.0	29.4	28.1	23.5	27.4	34.7		4.901				ST
00263	7/19/99	2002	2855.0	9015.3	14	20	9	19	30.7	29.1	27.6	23.8	30.6	35.4		5.104				ST
00264	7/19/99	2139	2853.5	9005.3	14	28	13	28	29.4	29.1	25.8	28.5	34.6	35.8		6.923				ST
00265	7/20/99	0008	2910.4	8956.6	13	11	5	11	29.9	29.8	28.4	24.1	24.1	34.0		4.987				ST
00266	7/20/99	0136	2909.3	8950.1	13	18	9	18	29.2	29.4	27.9	20.9	28.8	34.9		3.812				ST
00267	7/20/99	0307	2903.7	8945.0	13	29	14	29	29.2	28.7	26.0	17.9	34.2	35.8		4.024				ST
00268	7/20/99	0448	2859.2	8934.7	13	38	19	38	29.0	28.5	26.1	14.1	35.3	35.9		2.139				ST/PN

Table 2. Selected environmental parameters (continued)

TOMMY MUNRO, SUMMER SHRIMP/GROUNDFISH SURVEY

STA#	DATE MM/DD/YY	TIME	POSITION LAT	POSITION LONG	STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M) MID	SAMPLE DEPTHS (M) MAX	TEMPERATURE, C SUR	TEMPERATURE, C MID	TEMPERATURE, C MAX	SALINITY, PPT SUR	SALINITY, PPT MID	SALINITY, PPT MAX	CL, MG/M3 SUR	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
37645	7/12/99	1800	2900.0	8932.6	13	15	8	15	30.5	29.0	28.0	11.6	32.3	34.9	55.866		6.6	7.2	1.9	PN
37646	7/12/99	1925	2900.3	8932.8	13	17	8	17	31.4	28.9	28.4	9.0	32.1	35.1	48.885		8.0	8.0	3.5	ST
37647	7/12/99	2036	2900.2	8932.8	13	17	8	17	31.4	28.9	28.4	9.0	32.1	35.1	48.885		8.0	8.0	3.5	ST
37648	7/12/99	2159	2902.4	8939.3	13	27	15	27	30.3	28.6	26.9	18.4	35.1	35.7	16.736		4.9	4.6	3.7	ST
37649	7/13/99	0152	2857.1	9008.1	14	21	10	21	30.3	29.1	27.4	23.9	33.7	35.7			5.3	5.7	2.9	ST
37650	7/13/99	0630	2900.1	9030.1	14	10	6	10	29.9	29.7	28.0	25.7	28.1	34.0	2.789		4.6	3.7	0.6	PN
37651	7/13/99	0933	2859.3	9008.1	14	19	8	19	30.1	29.3	27.7	25.6	30.7	35.6	5.102		4.0	4.8	3.0	ST
37652	7/13/99	1057	2900.3	8959.8	13	15	8	15	29.8	29.2	28.6	20.2	29.8	35.0	16.124		4.9	4.8	4.2	PN
37653	7/13/99	1347	2902.5	8939.0	13	29	16	29	29.7	28.7	25.8	18.3	35.0	35.8	18.935		5.3	4.1	4.1	ST
37654	7/13/99	1836	2840.3	9013.8	14	31	17	31	29.7	28.4	25.1	26.1	35.3	35.8	7.254		5.6	4.3	1.3	ST
37655	7/13/99	1937	2837.2	9018.5	14	36	18	36	29.6	28.1	24.9	26.0	35.2	35.8	7.546		4.5	4.3	1.1	ST
37656	7/13/99	2040	2836.5	9018.8	14	36	18	36	29.6	28.1	24.9	26.0	35.2	35.8	7.546		4.5	4.3	1.1	ST
37657	7/13/99	2225	2840.3	9014.2	14	33	17	33	29.6	28.4	24.8	26.2	35.2	35.9	6.244		4.6	4.4	1.5	ST
37658	7/14/99	0039	2835.1	9031.6	14	29	15	29	29.8	28.9	25.6	27.6	34.6	35.7	2.931		4.8	4.7	3.5	ST
37659	7/14/99	0231	2833.9	9043.6	14	22	11	22	30.0	29.6	26.4	28.0	32.2	35.5	1.792		2.9	4.4	1.3	ST
37660	7/14/99	0332	2832.8	9047.5	14	25	13	25	29.5	29.5	25.5	29.2	33.9	35.6	1.228		4.0	4.7	0.1	ST
37661	7/14/99	0608	2830.1	9029.9	14	39	21	39	29.1	25.9	24.3	30.1	35.9	35.9	4.185		2.3	5.6	2.0	PN
37662	7/14/99	0742	2835.6	9030.9	14	28	15	28	29.4	28.9	26.2	30.0	34.5	35.7	4.779		2.5	4.5	3.3	ST
37663	7/14/99	0935	2834.7	9043.3	14	21	11	21	29.7	29.7	26.6	31.0	33.2	35.5	3.119		2.9	4.8	0.7	ST
37664	7/14/99	1045	2832.8	9047.7	14	25	13	25	30.1	29.5	25.7	31.8	34.0	35.5	1.737		2.8	5.4	0.1	ST
37665	7/14/99	1233	2830.2	9100.2	15	34	15	34	29.8	28.9	24.1	31.3	34.1	35.8	0.728		4.0	4.8	1.4	PN
37666	7/14/99	1534	2830.4	9108.4	15	37	22	37	30.1	29.2	24.0	31.7	34.3	35.8	0.564		3.1	5.7	1.1	ST
37667	7/14/99	1701	2832.0	9111.6	15	33	17	33	30.5	29.1	24.7	31.8	34.1	35.6	0.481		4.1	5.8	1.7	ST
37668	7/14/99	1921	2839.2	9117.2	15	23	12	23	30.5	29.1	26.3	31.2	33.3	35.1	1.192		3.5	4.9	1.3	ST
37669	7/14/99	2049	2839.0	9117.4	15	23	11	23	30.2	29.2	26.1	31.1	32.7	35.3	0.230		4.8	5.1	1.4	ST
37670	7/14/99	2245	2830.3	9108.7	15	34	18	34	29.9	29.2	24.1	31.8	34.2	35.7	0.299		4.6	5.8	0.8	ST
37671	7/15/99	0002	2833.9	9111.8	15	30	18	30	29.8	28.9	24.8	31.5	34.3	35.6	0.427		3.9	5.5	1.8	ST
37672	7/15/99	0256	2851.8	9120.1	15	10	5	10	29.6	29.7	28.9	23.4	27.2	34.1	37.547		8.2	5.8	2.4	ST
37673	7/15/99	0703	2851.7	9118.3	15	11	6	11	29.6	29.4	29.1	24.1	31.8	33.9	14.899		6.1	6.0	1.6	ST
37674	7/15/99	0911	2900.0	9130.0	15	11	6	11	29.6	29.5	28.6	15.3	24.4	33.7	30.448		5.5	4.6	0.8	PN
37675	7/15/99	1230	2900.1	9059.9	14	6	4	6	30.3	30.3	30.0	26.4	26.5	26.7	10.543		6.0	4.6	3.9	PN

Table 2. Selected environmental parameters (continued)

GORDON GUNTER, FALL PLANKTON SURVEY

STA#	DATE MM/DD/YY	TIME	POSITION LAT	POSITION LONG	STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M) MID	SAMPLE DEPTHS (M) MAX	TEMPERATURE, C SUR	TEMPERATURE, C MID	TEMPERATURE, C MAX	SALINITY, PPT SUR	SALINITY, PPT MID	SALINITY, PPT MAX	CL, MG/M3 SUR	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
63001	9/ 3/99	1517	2559.9	9659.9	22	24	11	23	29.6	27.5	25.3	36.0	36.2	36.3			5.5	5.8	6.0	PN
63002	9/ 3/99	1937	2602.0	9631.2	21	56	27	54	29.9	28.2	22.5	35.8	36.4	36.3			5.5	5.7	5.1	PN
63003	9/ 3/99	2245	2602.0	9600.6	99	9866	100	200	29.9	21.7	16.7	36.0	36.4	36.2			5.3	4.9	3.4	PN
63004	9/ 4/99	0526	2629.8	9630.1	21	78	40	77	29.2	25.3	20.5	36.0	36.1	36.3			5.4	6.1	3.4	PN
63005	9/ 4/99	1351	2630.0	9700.0	21	33	15	30	27.8	27.8	23.6	36.3	36.3	36.2			5.6	5.4	5.8	PN
63006	9/ 4/99	1435	2629.9	9701.1	21	24	12	24	28.5	28.0	25.2	36.2	36.2	36.0			5.6	5.5	5.1	PN
63007	9/ 4/99	1825	2629.0	9640.2	21	81	41	80	28.5	25.0	21.3	36.1	36.3	36.4			5.7	6.2	4.2	PN
63008	9/ 4/99	2338	2700.2	9700.0	20	780	101	201	28.8	17.3	13.7	36.1	36.3	35.7			5.6	3.8	3.6	PN
63009	9/ 5/99	0451	2735.2	9700.4	20	134	67	133	28.5	20.0	15.8	36.0	36.4	36.1			5.7	3.9	3.6	PN
63010	9/ 5/99	0900	2730.1	9630.1	20	68	33	66	29.1	25.7	22.8	36.1	36.2	35.6			5.4	6.1	5.4	PN
63011	9/ 5/99	1252	2729.9	9659.9	20	25	13	25	28.8	28.5	27.3	36.1	36.1	36.1			5.4	5.4	5.2	PN
63012	9/ 5/99	1826	2759.5	9630.4	20	25	12	22	29.3	29.4	29.3	36.3	36.3	36.3			5.3	5.2	5.2	PN
63013	9/ 6/99	2239	2801.4	9600.9	19	40	20	39	28.9	27.9	24.2	36.1	36.1	36.3			5.4	5.6	4.4	PN
63014	9/ 6/99	0220	2818.0	9619.9	19	16	8	15	29.8	29.8	29.8	36.2	36.2	36.2			5.0	4.9	4.8	PN
63015	9/ 6/99	0543	2828.2	9600.0	19	15	7	14	29.9	29.9	29.9	36.3	36.3	36.3			5.0	5.1	5.0	PN
63016	9/ 6/99	0936	2829.8	9530.0	19	23	11	22	30.1	30.1	30.0	36.3	36.3	36.3			5.1	4.9	4.9	PN
63017	9/ 6/99	1344	2759.9	9530.1	20	50	25	49	29.6	28.0	22.8	36.0	36.1	32.3			5.3	5.2	4.6	PN
63018	9/ 6/99	1557	2745.2	9530.2	20	98	47	97	29.2	24.3	19.5	36.1	36.2	36.4			5.3	5.7	3.4	PN
63019	9/ 6/99	1839	2729.8	9530.0	99	655	100	201	28.8	17.8	13.7	36.1	36.3	35.8			5.5	3.5	3.5	PN
63020	9/ 7/99	0018	2759.9	9459.8	99	76	38	76	29.4	26.6	21.1	36.1	36.3	36.4			5.4	5.9	4.3	PN
63021	9/ 7/99	0502	2830.2	9501.5	19	30	15	29	29.3	29.3	27.8	36.2	36.2	36.3			5.3	5.2	5.1	PN
63022	9/ 7/99	0925	2900.2	9500.2	19	13	6	12	30.2	30.2	30.1	35.8	35.8	35.8			5.1	5.1	5.1	PN
63023	9/ 7/99	1415	2924.5	9427.6	18	11	5	10	30.1	29.7	29.7	34.4	34.8	35.3			5.9	5.0	3.3	PN
63024	9/ 7/99	1828	2859.9	9429.9	18	17	8	16	30.9	30.4	30.3	35.0	35.0	35.1			5.1	5.2	5.3	PN
63025	9/ 7/99	2210	2829.9	9430.4	18	33	16	32	30.3	29.8	26.1	36.7	36.1	36.3			5.2	5.4	4.5	PN
63026	9/ 8/99	0203	2801.1	9429.9	18	64	32	64	29.5	28.0	22.2	36.0	36.2	36.3			5.3	5.7	5.5	PN
63027	9/ 8/99	0611	2730.2	9430.3	99	630	99	198	29.4	19.7	14.4	36.0	36.5	35.9			5.2	3.7	3.7	PN
63028	9/ 8/99	1559	2800.0	9400.0	99	77	38	76	30.2	29.5	21.3	36.3	36.3	36.4			5.4	5.5	4.7	PN
63029	9/ 8/99	2000	2830.0	9400.0	17	37	18	36	30.3	29.7	24.5	36.2	36.3	36.1			5.3	5.1	4.1	PN
63030	9/ 8/99	2349	2859.9	9400.0	17	18	9	17	30.4	30.4	30.3	34.2	34.2	34.2			5.1	5.1	5.1	PN
63031	9/ 9/99	0349	2930.0	9359.2	17	11	5	10	30.1	30.1	30.1	34.8	34.8	34.8			5.0	4.9	4.9	PN

Table 2. Selected environmental parameters (continued)

GORDON GUNTER, FALL PLANKTON SURVEY

STA#	DATE MM/DD/YY	TIME	POSITION LAT	POSITION LONG	STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M) MID	SAMPLE DEPTHS (M) MAX	TEMPERATURE, C SUR	TEMPERATURE, C MID	TEMPERATURE, C MAX	SALINITY, PPT SUR	SALINITY, PPT MID	SALINITY, PPT MAX	CL, MG/M3 SUR	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
63032	9/ 9/99	0729	2933.4	9329.7	17	11	5	9	30.1	30.1	30.1	33.2	33.2	34.0			5.6	5.8	4.2	PN
63033	9/ 9/99	1318	2900.1	9331.8	17	22	8	19	30.4	30.4	30.1	33.6	33.6	32.3			5.3	5.2	4.4	PN
63034	9/ 9/99	1744	2830.2	9330.0	17	38	18	37	30.1	29.7	24.2	35.5	36.1	36.1			5.2	5.2	4.5	PN
63035	9/ 9/99	2147	2800.1	9329.4	17	92	45	91	29.9	28.7	18.6	36.3	36.3	35.4			5.2	5.8	3.7	PN
63036	9/10/99	0202	2729.9	9329.8	99	538	101	201	29.7	21.3	14.9	36.1	36.5	35.9			5.3	4.6	3.3	PN
63037	9/10/99	0709	2759.7	9300.1	99	103	51	102	29.7	25.4	18.3	36.3	36.3	36.4			5.2	6.3	3.4	PN
63038	9/10/99	1152	2830.1	9300.1	17	43	20	41	29.8	29.1	23.0	35.1	36.3	36.2			5.2	5.5	4.4	PN
63039	9/10/99	1629	2859.9	9300.1	17	25	11	23	30.3	30.0	28.6	33.4	33.4	35.5			5.1	5.2	4.1	PN
63040	9/10/99	2107	2930.0	9300.0	17	13	6	13	30.0	30.1	30.5	32.7	32.7	33.6			5.5	5.5	5.0	PN
63041	9/11/99	0105	2923.8	9231.3	16	10	5	9	30.2	29.9	29.7	32.5	32.5	32.5			6.1	5.7	4.0	PN
63042	9/11/99	0500	2859.9	9230.0	16	24	12	23	29.7	29.7	27.8	32.8	32.8	35.8			5.1	5.1	3.0	PN
63043	9/11/99	0858	2830.0	9230.4	16	47	22	45	29.6	29.9	24.0	34.4	36.2	36.1			5.2	5.2	4.8	PN
63044	9/11/99	1255	2800.1	9229.8	16	102	50	100	29.9	24.8	18.1	36.3	36.6	36.4			5.3	6.2	3.4	PN
63045	9/11/99	1710	2729.8	9230.1	99	874	101	202	30.3	20.0	14.8	36.3	36.7	35.9			5.5	4.5	3.8	PN
63046	9/11/99	2229	2800.0	9200.1	16	116	58	116	29.9	22.6	17.8	36.2	36.3	36.4			5.4	5.3	3.8	PN
63047	9/12/99	0237	2829.9	9159.8	15	48	24	48	29.9	29.9	23.0	34.0	36.1	36.1			5.2	5.0	4.0	PN
63048	9/12/99	0708	2859.8	9158.6	15	17	8	16	29.7	29.8	28.5	30.0	33.2	35.5			5.3	3.5	1.3	PN
63049	9/12/99	1020	2855.5	9131.9	15	14	6	13	29.7	29.9	29.1	28.3	29.0	34.6			5.5	5.3	1.8	PN
63050	9/12/99	1422	2830.2	9130.2	15	44	22	44	29.9	30.2	23.7	33.5	36.1	36.0			5.3	5.2	3.0	PN
63051	9/12/99	1854	2800.0	9130.2	99	128	64	128	29.9	23.6	17.1	34.0	36.6	36.2			5.4	5.4	4.0	PN
63052	9/12/99	2251	2730.0	9130.0	99	1061	100	200	29.9	21.5	16.9	36.2	36.5	36.3			5.3	4.4	4.3	PN
63053	9/13/99	0408	2800.3	9059.6	14	148	74	148	29.8	20.9	14.4	33.0	36.8	35.9			5.3	4.4	3.8	PN
63054	9/13/99	0842	2830.0	9100.1	15	35	16	33	29.5	29.1	25.6	32.7	35.7	36.1			5.2	4.9	3.6	PN
63055	9/13/99	1056	2840.9	9058.1	14	11	5	9	29.7	29.7	29.5	30.1	30.1	30.9			5.3	5.2	5.0	PN
63056	9/13/99	1457	2848.1	9030.0	14	17	8	17	29.6	29.6	27.5	31.2	31.3	35.1			5.3	5.2	0.1	PN
63057	9/13/99	1728	2828.6	9030.0	14	38	17	37	29.6	29.8	24.3	34.1	35.6	36.0			5.4	5.0	1.7	PN
63058	9/13/99	2041	2805.0	9030.1	14	145	73	143	29.8	20.9	15.4	34.6	36.6	36.0			5.3	4.0	3.9	PN
63059	9/14/99	0134	2730.0	9030.1	99	1020	101	200	29.6	18.6	13.6	34.5	36.4	35.8			5.3	4.2	3.8	PN
63060	9/14/99	0725	2800.3	8960.0	99	538	100	200	29.5	18.4	14.6	36.3	36.5	35.9			5.4	4.8	4.1	PN
63061	9/14/99	1138	2829.9	9000.0	99	90	43	86	29.7	26.0	20.6	36.2	36.3	36.5			5.4	5.6	4.1	PN
63062	9/14/99	1605	2901.6	9000.5	14	20	10	20	29.4	29.5	27.9	27.3	28.0	35.5			6.5	5.9	0.0	PN

Table 2. Selected environmental parameters (continued)

GORDON GUNTER, FALL PLANKTON SURVEY

STA#	DATE MM/DD/YY	TIME	POSITION LAT	POSITION LONG	STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M) MID	SAMPLE DEPTHS (M) MAX	TEMPERATURE, C SUR	TEMPERATURE, C MID	TEMPERATURE, C MAX	SALINITY, PPT SUR	SALINITY, PPT MID	SALINITY, PPT MAX	CL, MG/M3 SUR	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
63063	9/14/99	1915	2857.9	8933.3	13	40	20	39	29.3	29.8	26.7	24.5	33.3	36.0			6.4	4.2	4.1	PN
63064	9/14/99	2333	2829.9	8930.0	99	498	101	202	29.1	18.4	14.3	35.8	36.5	35.8			5.4	4.7	4.0	PN
63065	9/15/99	0452	2830.2	8900.0	99	850	100	200	29.5	19.3	16.5	36.0	36.5	36.2			5.4	4.4	4.6	PN
63066	9/15/99	0937	2859.9	8859.6	99	75	36	72	28.7	26.4	23.4	30.5	35.9	36.1			5.4	1.5	3.1	PN
63067	9/15/99	1315	2900.2	8829.9	11	620	102	208	28.9	18.4	13.5	34.1	36.5	35.7			5.6	3.8	3.9	PN
63068	9/15/99	1319	2913.2	8829.6	11	116	57	115	29.0	22.8	16.9	32.3	36.2	36.2			5.4	4.0	2.7	PN
63069	9/15/99	1820	2930.2	8829.8	11	49	24	47	28.9	28.4	24.1	31.9	36.1	36.1			5.3	4.8	2.5	PN
63070	9/15/99	2250	3000.1	8830.2	11	25	12	24	28.5	28.5	27.6	32.7	32.7	35.3			5.2	5.3	0.9	PN
63071	9/16/99	0234	2959.9	8759.8	10	22	11	22	28.5	28.5	26.8	33.5	33.5	35.6			5.2	5.0	1.4	PN
63072	9/16/99	0608	2929.9	8759.9	99	42	20	39	28.6	29.6	24.0	32.2	35.3	36.1			5.2	5.0	3.9	PN
63073	9/22/99	0038	3013.0	8730.0	10	14	7	13	27.0	27.0	27.0	34.0	34.0	34.0			5.4	5.6	5.6	PN
63074	9/22/99	0246	3000.0	8730.0	10	24	12	23	27.5	27.5	27.5	34.4	34.4	34.4			5.4	5.4	5.4	PN
63075	9/22/99	0625	2929.7	8729.9	99	70	34	70	27.7	23.9	22.4	34.3	36.2	36.2			5.5	5.1	4.6	PN
63076	9/22/99	1043	2947.9	8700.2	10	184	92	184	28.1	20.4	15.6	34.9	36.7	36.1			5.4	4.3	3.7	PN
63077	9/22/99	1315	3000.0	8700.1	10	67	32	67	27.7	26.4	23.7	35.0	35.7	36.1			5.5	4.5	4.2	PN
63078	9/22/99	1617	3019.2	8659.7	9	18	9	18	26.9	26.9	26.9	34.3	34.3	34.3			5.7	5.6	5.5	PN
63079	9/22/99	1934	3018.9	8630.0	9	20	10	20	26.5	27.4	27.3	32.6	35.0	35.1			6.1	6.0	5.6	PN
63080	9/22/99	2213	2959.9	8630.0	9	55	27	54	27.5	27.6	23.3	35.1	35.2	36.3			5.7	5.7	4.7	PN
63081	9/23/99	0154	2929.9	8630.1	99	202	100	200	27.6	19.5	14.6	35.2	36.4	35.9			5.6	3.7	3.6	PN
63082	9/23/99	0622	2911.7	8600.3	99	187	93	187	27.6	19.2	15.5	35.3	36.5	36.0			5.6	3.7	3.7	PN
63083	9/23/99	0951	2929.3	8600.0	99	55	26	55	27.8	27.8	24.3	35.7	35.7	36.2			5.5	5.3	5.1	PN
63084	9/23/99	1421	2958.8	8559.8	8	30	15	30	27.2	27.0	26.4	35.3	35.3	35.9			5.4	5.4	4.8	PN
63085	9/23/99	1855	2948.3	8530.7	8	18	9	18	27.2	27.0	27.1	34.9	35.0	35.0			6.0	5.5	5.2	PN
63086	9/23/99	2148	2927.1	8530.0	8	17	8	17	27.4	27.4	27.5	35.4	35.4	35.5			5.5	5.6	5.6	PN
63087	9/24/99	0105	2923.0	8500.0	8	23	11	23	27.8	27.8	27.8	35.8	35.8	35.8			5.3	5.5	5.5	PN
63088	9/24/99	0430	2929.9	8429.9	7	21	10	20	27.8	27.8	27.8	35.9	35.9	35.9			5.3	5.3	5.2	PN
63089	9/24/99	0808	2930.1	8400.0	7	18	9	18	27.6	27.6	27.6	35.9	36.0	35.9			5.2	5.2	5.2	PN
63090	9/24/99	0959	2939.9	8359.4	7	13	6	13	26.9	26.9	26.9	35.7	35.7	35.7			5.5	5.4	5.4	PN
63091	9/24/99	1244	2930.0	8345.0	7	12	5	12	27.1	27.2	27.0	35.6	35.6	35.6			5.6	5.4	5.5	PN
63092	9/24/99	1910	2859.6	8321.4	6	11	5	11	27.3	26.9	26.9	35.0	34.9	34.9			5.5	5.7	5.7	PN
63093	9/24/99	2041	2900.1	8329.9	7	16	8	15	27.8	27.6	27.6	35.5	35.5	35.6			5.3	5.2	5.3	PN

Table 2. Selected environmental parameters (continued)

GORDON GUNTER, FALL PLANKTON SURVEY

STA#	DATE MM/DD/YY	TIME	POSITION LAT	POSITION LONG	STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M) MID	SAMPLE DEPTHS (M) MAX	TEMPERATURE, C SUR	TEMPERATURE, C MID	TEMPERATURE, C MAX	SALINITY, PPT SUR	SALINITY, PPT MID	SALINITY, PPT MAX	CL, MG/M3 SUR	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
63094	9/24/99	2355	2900.0	8400.0	6	27	13	26	28.4	28.4	28.4	36.3	36.3	36.3			5.1	5.2	5.3	PN
63095	9/25/99	0324	2900.1	8430.0	7	30	15	29	28.1	28.1	28.1	36.2	36.2	36.2			5.2	5.3	5.2	PN
63096	9/25/99	0635	2859.9	8459.8	6	36	15	35	27.7	27.7	27.0	35.5	35.5	36.2			5.5	5.4	5.4	PN
63097	9/25/99	1043	2859.9	8530.0	99	67	33	67	27.8	26.0	22.1	35.4	36.0	36.3			5.5	6.1	5.1	PN
63098	9/25/99	1452	2830.0	8530.1	99	192	85	192	27.8	18.5	14.0	35.1	36.4	35.8			5.7	3.7	3.4	PN
63099	9/25/99	1846	2830.0	8500.8	8	99	49	98	28.1	24.0	20.6	35.5	36.3	36.3			5.5	6.1	4.2	PN
63100	9/25/99	2214	2829.9	8432.9	6	51	25	50	28.0	28.0	25.9	35.7	35.8	36.2			5.4	5.3	5.3	PN
63101	9/26/99	0156	2829.9	8432.9	6	33	16	32	28.2	28.1	28.1	36.2	36.2	36.2			5.4	5.3	5.2	PN
63102	9/26/99	0534	2830.3	8429.9	6	20	10	19	28.1	28.1	28.1	36.3	36.3	36.3			5.4	5.4	5.3	PN
63103	9/26/99	0759	2830.0	8411.0	6	13	7	13	27.4	27.4	27.4	35.6	35.6	35.6			5.3	5.3	5.1	PN
63104	9/26/99	1226	2800.1	8405.0	6	14	7	14	27.5	27.5	27.5	35.8	35.8	35.8			5.3	5.4	5.3	PN
63105	9/26/99	1524	2800.0	8430.0	5	27	12	26	28.1	28.1	28.1	36.1	36.1	36.1			5.4	5.2	5.3	PN
63106	9/26/99	1845	2800.4	8400.6	6	42	20	41	28.1	28.1	27.9	35.7	35.7	36.0			5.3	5.5	4.9	PN
63107	9/26/99	2201	2800.2	8430.0	6	70	35	69	28.2	25.4	23.5	35.4	36.2	36.3			5.4	6.2	5.5	PN
63108	9/27/99	0112	2801.5	8458.1	6	217	101	201	28.3	19.3	13.7	35.1	36.3	35.7			5.6	3.7	3.5	PN
63109	9/27/99	0801	2730.0	8430.1	99	117	58	117	27.8	21.4	17.7	34.9	36.3	36.3			5.7	5.4	3.5	PN
63110	9/27/99	1156	2729.8	8400.8	5	57	28	57	28.3	28.0	24.3	34.8	35.8	36.3			5.5	5.7	5.5	PN
63111	9/27/99	1616	2730.2	8329.3	5	37	19	37	28.7	28.4	28.7	35.3	35.5	36.0			5.5	5.3	5.0	PN
63112	9/27/99	2249	2629.8	8329.6	4	55	27	55	28.2	27.5	23.9	34.2	35.9	36.2			5.5	5.8	5.6	PN
63113	9/28/99	0218	2630.0	8400.0	4	117	58	116	28.5	22.8	18.5	34.9	36.3	36.4			5.5	5.5	3.4	PN
63114	9/28/99	0723	2559.9	8330.4	3	60	30	60	28.4	27.4	22.9	34.8	36.2	36.3			5.4	6.1	5.2	PN
63115	9/28/99	1056	2600.0	8400.1	99	130	65	130	28.8	22.9	17.9	34.9	36.4	36.4			5.5	5.7	3.3	PN
63116	9/28/99	1455	2559.8	8430.0	99	206	99	200	29.0	19.8	13.3	35.2	36.5	35.7			5.5	4.0	3.8	PN
63117	9/28/99	1925	2630.0	8430.1	99	188	94	188	28.1	19.3	13.5	35.1	36.5	35.7			5.7	3.8	3.5	PN
63118	9/29/99	2158	2915.0	8759.9	99	239	100	200	28.1	20.3	15.3	35.3	36.4	36.0			5.5	4.0	4.0	PN

Table 2. Selected environmental parameters (continued)

TOMMY MUNRO, FALL PLANKTON SURVEY

STA#	DATE MM/DD/YY	TIME	POSITION LAT	POSITION LONG	STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M) MID	SAMPLE DEPTHS (M) MAX	TEMPERATURE, C SUR	TEMPERATURE, C MID	TEMPERATURE, C MAX	SALINITY, PPT SUR	SALINITY, PPT MID	SALINITY, PPT MAX	CL, MG/M3 SUR	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
17001	9/ 9/99	0906	3000.0	8729.9	10	25	12	24	28.8	29.2	26.6	31.0	34.7	36.2			5.7	4.4	3.8	PN
17002	9/ 9/99	1254	2930.7	8730.2	10	68	34	67	28.4	25.3	21.2	30.0	35.7	35.8			2.9	3.1	2.6	PN
17003	9/ 9/99	1701	2900.6	8730.4	99	1721	75	150	28.5	22.2	17.6	30.5	36.3	35.8			3.1	2.7	2.5	PN
17004	9/ 9/99	2055	2900.0	8800.0	99	1383	75	150	28.8	22.6	18.0	31.3	36.1	36.1			5.8	3.9	5.2	PN
17005	9/10/99	0109	2930.3	8800.3	11	43	22	42	29.1	28.7	23.8	31.9	35.8	36.1			3.0	3.0	2.9	PN
17006	9/10/99	0516	3000.4	8800.4	11	21	10	20	28.8	28.8	25.6	32.1	32.3	36.0			3.2	3.0	1.0	PN
17007	9/10/99	0830	3000.0	8830.0	11	24	12	23	28.8	29.2	27.5	31.9	31.9	33.8			5.2	5.5	3.8	PN
17008	9/10/99	1207	2930.4	8830.6	11	49	24	48	29.3	26.1	22.7	31.2	35.8	36.6			2.9	1.9	2.2	PN
17009	9/10/99	1613	2900.7	8830.2	11	700	100	200	28.8	18.9	16.3	31.6	36.4	35.6			3.6	3.1	3.4	PN

Table 2. Selected environmental parameters (continued)

SUNCOASTER, FALL PLANKTON SURVEY

STA#	DATE MM/DD/YY	TIME	POSITION LAT	POSITION LONG	STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M) MID	SAMPLE DEPTHS (M) MAX	TEMPERATURE, C SUR	TEMPERATURE, C MID	TEMPERATURE, C MAX	SALINITY, PPT SUR	SALINITY, PPT MID	SALINITY, PPT MAX	CL, MG/M3 SUR	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
26001	9/25/99	1432	2729.9	8300.2	5	18	8	15	28.5	28.5	28.4	23.6	23.6	23.4	0.930		7.9	0.8	6.8	PN
26002	9/26/99	0125	2700.2	8430.7	99	179	88	174	28.0	17.5	14.4	27.2	29.8	31.9	0.080		10.6	11.9	11.5	PN
26003	9/26/99	0640	2700.7	8406.4	5	84	38	77	28.4	24.5	20.6	34.6	36.2	36.3	0.130		5.4	6.3	4.5	PN
26004	9/26/99	1110	2700.0	8330.0	5	53	23	43	28.3	28.5	26.6	35.1	35.2	36.3	0.170		5.2	5.3	5.3	PN
26005	9/26/99	1640	2700.0	8300.1	5	34	14	32	28.7	28.7	28.7	35.9	35.9	35.9	1.840		5.2	5.2	5.2	PN
26006	9/26/99	2225	2630.0	8300.0	4	39	13	34	28.7	28.7	28.9	35.8	35.8	36.0	0.530		4.6	5.1	5.1	PN
26007	9/27/99	0248	2630.0	8230.9	4	21	10	19	28.3	28.3	28.3	35.4	35.4	35.4	1.110		4.8	4.8	4.8	PN
26008	9/27/99	0755	2600.0	8230.0	4	29	13	25	28.9	28.9	28.9	36.0	36.0	36.0	0.670		5.1	5.1	5.1	PN
26009	9/27/99	1258	2530.8	8200.2	3	20	8	17	29.3	29.0	28.9	36.2	36.1	36.1	0.960		5.4	5.4	5.3	PN
26010	9/27/99	1640	2530.0	8230.1	3	33	16	32	29.1	29.2	29.2	35.1	35.5	35.6	0.220		5.3	5.2	5.1	PN
26011	9/27/99	2006	2530.0	8300.0	3	53	25	51	28.8	28.5	24.6	35.2	35.7	36.2	0.100		5.3	5.5	5.6	PN
26012	9/29/99	0015	2559.7	8300.0	3	47	21	44	28.9	28.9	26.9	35.7	35.7	36.3	0.130		5.3	5.3	4.4	PN

Table 2. Selected environmental parameters (continued)

ALABAMA INSHORE VESSELS, FALL PLANKTON SURVEY

STA#	DATE MM/DD/YY	TIME	POSITION LAT	POSITION LONG	STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M) MID	SAMPLE DEPTHS (M) MAX	TEMPERATURE, C SUR	TEMPERATURE, C MID	TEMPERATURE, C MAX	SALINITY, PPT SUR	SALINITY, PPT MID	SALINITY, PPT MAX	CL, MG/M3 SUR	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
2301	9/29/99	0827	3012.0	8802.5	11	15	8	15	26.3	26.7	26.7	27.4	31.9	32.1	1.533		6.4	5.5	5.5	PN
2302	9/29/99	0918	3013.4	8807.2	11	7	4	7	27.1	27.1	26.5	32.0	32.0	32.0	1.290		6.0	6.4	3.9	PN
2303	9/29/99	1013	3007.2	8806.6	11	16	8	16	27.0	26.7	26.4	32.5	32.7	33.1	0.884		6.1	6.0	4.7	PN
2304	9/29/99	1042	3007.4	8804.2	11	18	9	18	26.8	26.7	26.5	31.0	32.6	33.2	2.448		5.8	6.1	5.4	PN
2305	9/29/99	1115	3007.6	8801.4	11	19	9	19	27.1	26.4	26.7	31.6	32.9	33.5	1.271		6.2	5.5	5.3	PN
2306	9/29/99	1202	3012.1	8801.2	11	6	3	6	27.7	26.9	26.6	31.4	31.9	32.8	3.813		5.6	5.8	5.9	PN
2307	9/29/99	1320	3015.4	8801.2	11	4	2	4	26.5	26.4	26.5	27.8	28.8	29.7	3.738		5.1	5.3	4.9	PN
2308	9/29/99	1339	3015.7	8802.3	11	15	8	15	26.7	26.5	26.7	25.0	30.1	32.4	2.411		6.4	4.7	5.2	PN
2309	9/29/99	1405	3015.4	8803.7	11	3	2	3	27.6	27.7	26.7	24.8	24.7	27.3	2.019		6.7	6.8	6.8	PN

Table 2. Selected environmental parameters (continued)

TOMMY MUNRO, FALL PLANKTON SURVEY

STA#	DATE MM/DD/YY	TIME	POSITION LAT	POSITION LONG	STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M) MID	SAMPLE DEPTHS (M) MAX	TEMPERATURE, C SUR	TEMPERATURE, C MID	TEMPERATURE, C MAX	SALINITY, PPT SUR	SALINITY, PPT MID	SALINITY, PPT MAX	CL, MG/M3 SUR	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
37676	10/11/99	1840	2835.4	9022.0	14	35	18	35	26.6	26.9	27.3	33.3	34.7	35.4	3.034		8.4	7.5	7.6	ST
37677	10/11/99	2003	2835.1	9022.5	14	35	18	35	26.6	26.9	27.3	33.3	34.7	35.4	3.034		8.4	7.5	7.6	ST
37678	10/11/99	2121	2838.3	9023.6	14	25	17	25	26.6	26.9	27.4	33.6	34.6	35.5	1.501		6.2	6.3	5.9	ST
37679	10/11/99	2235	2839.9	9027.4	14	18	10	18	26.5	26.6	27.3	33.6	33.7	35.5	1.969		6.4	6.2	5.3	ST
37680	10/12/99	0059	2830.3	9033.2	14	36	18	36	26.9	27.3	27.7	34.5	35.3	35.9	1.160		6.1	5.5	5.3	ST
37681	10/12/99	0307	2830.2	9047.6	14	32	16	32	27.2	27.2	27.5	35.3	35.3	35.8	0.644		5.6	5.6	5.1	ST
37682	10/12/99	0657	2830.0	9059.9	14	24	13	24	27.1	27.1	27.1	35.4	35.4	35.4	0.639		5.5	5.9	5.9	PN
37683	10/12/99	1009	2830.7	9048.1	14	22	12	22	27.4	27.4	27.4	35.5	35.5	35.5	0.754		5.4	5.6	5.6	ST
37684	10/12/99	1248	2831.5	9033.8	14	27	13	27	27.1	27.2	27.3	35.0	35.1	35.3	0.811		4.9	5.2	5.3	ST
37685	10/12/99	1345	2829.9	9030.6	14	29	18	29	27.8	27.9	27.9	36.0	36.2	36.2	0.507		5.8	5.8	6.0	PN
37686	10/12/99	1619	2838.4	9024.0	14	21	11	21	26.6	26.6	27.1	34.0	34.1	34.9	1.997		6.1	6.1	5.7	ST
37687	10/12/99	1724	2839.9	9028.5	14	18	10	18	26.5	26.5	27.1	33.3	33.6	34.9	2.073		4.5	6.0	5.4	ST
37688	10/12/99	1942	2850.9	9025.3	14	19	9	19	26.3	26.4	26.9	33.2	33.6	34.8	1.894		6.6	6.4	4.8	ST
37689	10/12/99	2145	2857.0	9031.4	14	13	6	13	26.1	26.1	26.1	30.6	30.6	30.7	2.008		5.4	5.4	5.4	ST
37690	10/13/99	0017	2856.4	9047.3	14	10	5	10	25.9	25.9	25.9	31.2	31.2	31.2	2.089		5.8	5.8	5.9	ST
37691	10/13/99	0213	2852.1	9046.8	14	12	6	12	26.1	26.1	26.5	31.8	31.8	33.8	2.376		6.4	6.3	5.0	ST
37692	10/13/99	0650	2900.3	9100.2	15	6	3	6	25.5	25.5	25.5	30.0	30.0	30.0	2.991		3.3	5.7	5.6	PN
37693	10/13/99	0915	2856.1	9047.1	14	9	5	9	25.9	25.9	25.9	31.3	31.3	31.3	1.620		5.7	5.7	5.7	ST
37694	10/13/99	1033	2852.1	9046.5	14	11	7	11	26.0	26.0	26.4	31.5	31.6	33.5	2.227		6.1	6.1	4.7	ST
37695	10/13/99	1248	2859.9	9030.2	14	11	5	11	26.4	26.1	26.1	29.7	29.8	30.4	2.141		4.3	5.8	5.1	PN
37696	10/13/99	1405	2856.2	9030.0	14	11	5	11	26.3	26.2	26.2	30.1	30.2	31.3	1.997		4.6	6.1	5.6	ST
37697	10/13/99	1548	2846.3	9031.6	14	19	8	19	26.6	26.5	27.0	33.3	33.7	34.7	0.707		6.6	6.5	5.2	ST
37698	10/13/99	1758	2857.9	9018.7	14	13	6	13	26.4	26.4	26.4	31.1	31.5	33.3	2.272		4.8	6.6	4.6	ST
37699	10/13/99	1901	2858.0	9019.2	14	13	6	13	26.4	26.4	26.4	31.1	31.5	33.3	2.272		4.8	6.6	4.6	ST
37700	10/13/99	2048	2855.1	9009.5	14	22	10	22	26.6	26.6	27.0	33.5	33.7	34.7	1.123		6.5	6.4	5.0	ST
37701	10/13/99	2256	2849.0	9008.6	14	29	16	29	26.8	26.7	26.8	34.3	34.6	34.8	1.659		5.8	6.0	5.8	ST
37702	10/14/99	0725	2848.6	9008.1	14	28	15	28	26.6	26.6	26.5	34.3	34.3	34.5	1.311		6.5	6.8	6.7	ST
37703	10/14/99	0959	2855.7	9008.5	14	18	10	18		26.5	26.9		33.8	34.6	1.796			6.2	5.9	ST
37704	10/14/99	1115	2900.0	9000.2	14	19	9	19	26.6	26.5	26.7	33.4	33.4	34.0	2.318		4.9	6.5	5.7	PN
37705	10/14/99	1455	2900.3	8930.5	13	13	6	13	26.5	26.2	26.6	26.1	30.4	33.4	10.502		7.6	6.6	4.8	PN

Table 2. Selected environmental parameters (continued)

OREGON II, FALL SHRIMP/GROUNDFISH SURVEY

STA#	DATE MM/DD/YY	TIME	POSITION LAT	POSITION LONG	STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M) MID	SAMPLE DEPTHS (M) MAX	TEMPERATURE, C SUR	TEMPERATURE, C MID	TEMPERATURE, C MAX	SALINITY, PPT SUR	SALINITY, PPT MID	SALINITY, PPT MAX	CL, MG/M3 SUR	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
00001	10/16/99	0946	2607.4	9708.5	21	11	6	11	27.6	27.6	27.6	34.4	34.4	34.4		0.106	5.8	6.0	6.0	ST
00002	10/16/99	1150	2610.4	9658.1	21	26	15	26	27.1	27.1	27.1	34.1	34.2	34.2		0.074	6.3	6.0	5.6	ST
00003	10/16/99	1550	2610.5	9624.7	21	65	37	65	27.5	27.9	27.5	35.5	36.3	36.3		0.017	5.9	5.9	5.5	ST
00004	10/16/99	1746	2605.9	9628.5	21	63	31	62	27.8	27.8	27.4	35.6	36.2	36.3		0.002	5.8	5.6	5.3	ST
00005	10/16/99	2127	2601.4	9626.6	21	65	31	64	27.8	27.7	27.7	36.2	36.2	36.2		0.028	5.8	5.8	5.5	ST/PN
00006	10/17/99	0109	2629.9	9626.0	21	83	40	83	27.6	27.8	22.6	35.5	36.2	36.3		0.022	5.9	5.9	4.5	PN
00007	10/17/99	0349	2631.8	9638.5	21	63	31	63	27.5	28.0	27.5	35.5	36.3	36.3		0.021	5.9	5.8	5.3	ST
00008	10/17/99	0732	2639.0	9652.7	21	44	20	44	27.1	27.8	27.6	34.6	36.0	36.2		0.048	5.8	5.7	5.2	ST
00010	10/17/99	1032	2638.4	9705.5	21	31	14	31	26.8	26.9	27.1	33.3	33.8	34.4		0.087	6.2	6.0	5.5	ST
00011	10/17/99	1102	2638.2	9707.6	21	25	14	23	26.9	26.8	27.0	33.3	33.3	34.3		0.090	6.3	6.2	5.2	ST
00012	10/17/99	1250	2632.2	9714.2	21	14	7	14	27.4	27.4	27.1	33.8	33.8	33.8		0.013	6.2	6.2	5.6	ST
00013	10/17/99	1456	2629.9	9700.2	21	32	14	32	27.2	27.0	27.7	33.6	33.9	36.0		0.067	6.2	6.0	5.6	PN
00015	10/17/99	1822	2616.9	9650.2	21	40	20	40	27.1	27.3	27.8	34.1	34.8	36.0		0.037	6.0	5.6	5.0	ST
00016	10/17/99	2126	2615.1	9700.5	21	27	13	27	27.1	27.1	27.2	33.9	33.9	34.3		0.067	6.3	6.3	5.4	ST
00017	10/17/99	2325	2620.1	9710.3	21	16	7	16	27.3	27.3	27.3	34.2	34.1	34.1		0.145	6.0	6.1	6.2	ST
00018	10/18/99	0222	2608.7	9658.0	21	28	15	28	27.1	27.1	27.2	34.1	34.1	34.2		0.070	6.2	6.2	6.1	ST
00019	10/18/99	0542	2559.8	9704.9	22	18	10	18	27.1	27.1	27.2	34.5	34.5	34.5		0.072	6.0	6.1	6.4	ST
00020	10/18/99	0626	2602.3	9706.8	21	14	7	14	27.0	27.1	27.0	34.5	34.5	34.5		0.012	6.0	6.1	6.4	ST
00021	10/18/99	0946	2615.0	9701.7	21	26	14	26	26.7	26.7	26.7	33.7	33.7	33.7		0.106	6.1	6.2	6.3	ST
00022	10/18/99	1902	2637.5	9659.4	21	36	18	35	26.4	26.5	27.1	33.8	34.1	35.1		0.086	6.0	5.9	5.8	ST
00023	10/18/99	2141	2643.1	9708.9	21	25	13	24	26.0	26.0	26.0	33.0	33.1	33.1		0.014	5.9	5.9	5.9	ST
00024	10/18/99	2337	2637.8	9716.6	21	11	6	11	25.6	25.6	25.6	33.3	33.3	33.3		0.014	6.0	6.1	6.3	ST
00025	10/19/99	0259	2655.9	9719.4	21	16	8	16	25.4	25.4	25.4	32.6	32.6	32.6		0.015	6.1	6.2	6.3	ST
00026	10/19/99	0518	2653.9	9714.8	21	22	12	22	25.6	25.7	25.7	32.5	32.5	32.5		0.011	6.0	6.1	6.2	ST
00027	10/19/99	0758	2700.7	9717.0	20	17	9	17	25.4	25.4	25.4	32.2	32.2	32.2		0.112	5.9	6.0	6.0	ST
00028	10/19/99	0914	2704.3	9714.8	20	23	12	22	25.3	25.4	25.4	32.3	32.3	32.3		0.092	6.1	6.1	6.2	ST
00029	10/19/99	1222	2716.7	9715.9	20	17	9	17	25.1	25.0	25.1	31.7	31.7	31.7		0.139	6.1	6.1	6.2	ST
00030	10/19/99	1403	2722.1	9715.7	20	13	7	13	24.7	24.7	24.7	31.7	31.7	31.7		0.127	6.3	6.3	6.4	ST
00031	10/19/99	1649	2714.0	9703.2	20	31	15	29	26.3	26.3	26.3	34.8	34.8	34.8		0.087	5.8	5.8	5.9	ST

Table 2. Selected environmental parameters (continued)

OREGON II, FALL SHRIMP/GROUNDFISH SURVEY

STA#	DATE MM/DD/YY	TIME	POSITION LAT	POSITION LONG	STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M) MID	SAMPLE DEPTHS (M) MAX	TEMPERATURE, C SUR	TEMPERATURE, C MID	TEMPERATURE, C MAX	SALINITY, PPT SUR	SALINITY, PPT MID	SALINITY, PPT MAX	CL, MG/M3 SUR	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
00032	10/19/99	2003	2707.7	9715.3	20	20	10	20	25.0	25.0	25.0	32.1	32.1	32.1		0.106	6.1	6.1	6.2	ST
00033	10/19/99	2230	2703.1	9702.5	20	36	17	34	26.1	26.2	26.3	34.8	34.8	35.0		0.071	5.9	5.9	5.9	ST
00034	10/20/99	0225	2707.0	9640.0	20	80	40	80	27.2	27.2	24.1	36.3	36.3	36.2		0.036	5.8	6.0	5.1	ST
00036	10/20/99	0801	2700.9	9638.3	20	87	42	87	26.9	27.0	23.0	36.3	36.3	36.3		0.036	5.7	6.0	4.7	ST/PN
00038	10/20/99	1501	2714.3	9654.8	20	40	20	40	26.5	26.5	26.6	35.5	35.5	35.6		0.085	5.8	5.8	5.8	ST
00040	10/20/99	1858	2722.4	9645.9	20	54	26	54	26.9	26.9	26.9	35.8	35.8	35.8		0.075	5.6	5.6	5.6	ST
00042	10/20/99	2328	2730.0	9653.4	20	34	17	34	25.3	26.0	26.1	34.2	35.1	35.2		0.084	6.1	6.0	5.9	ST
00043	10/21/99	0157	2739.5	9700.5	20	20	10	20	24.5	24.6	24.8	32.9	33.1	33.3		0.081	6.3	6.3	6.2	ST
00044	10/21/99	0311	2740.8	9708.4	20	12	6	12	22.6	22.7	22.8	30.5	30.6	30.6		0.230	6.6	6.7	6.8	ST
00045	10/21/99	0532	2729.9	9700.0	20	26	13	26	25.2	25.2	25.2	34.1	34.1	34.1		0.088	6.1	6.1	6.3	PN
00046	10/21/99	0749	2740.6	9709.1	20	11	5	11	22.8	22.8	22.7	30.6	30.6	30.6		0.212	6.6	6.6	6.6	ST
00047	10/21/99	1018	2737.1	9651.0	20	31	15	31	25.0	25.4	26.1	34.0	34.2	35.2		0.076	6.0	5.9	5.9	ST
00048	10/21/99	1205	2729.2	9653.4	20	34	17	34	25.4	25.5	25.9	34.4	34.5	34.8		0.086	6.1	6.1	5.9	ST
00049	10/21/99	1402	2723.4	9645.1	20	48	24	48	26.8	26.7	26.6	36.0	36.0	36.0		0.079	5.7	5.6	5.7	ST
00052	10/21/99	1844	2722.1	9628.7	20	91	46	91	26.9	26.9	21.3	36.2	36.2	36.3		0.055	5.9	6.0	4.1	ST
00054	10/21/99	2129	2719.1	9625.0	20	113	56	113	26.9	27.1	20.1	36.1	36.3	36.4		0.051	5.8	6.1	3.3	ST
00055	10/22/99	0145	2739.8	9625.3	20	65	32	65	26.8	26.8	26.9	36.2	36.3	36.3		0.048	5.9	5.9	5.9	ST
00057	10/22/99	0508	2739.9	9637.3	20	45	22	45	25.5	26.1	26.3	34.8	35.5	35.7		0.078	6.0	6.0	5.9	ST
00058	10/22/99	0834	2751.6	9653.5	20	18	9	18	24.2	24.3	24.6	32.1	32.1	32.7		0.122	6.4	6.4	6.1	ST
00059	10/22/99	1023	2759.8	9653.9	20	11	5	11	22.9	22.9	22.8	30.5	30.5	30.4		0.196	6.8	6.7	6.8	ST
00060	10/22/99	1300	2805.7	9635.7	19	17	9	17	23.6	24.2	24.6	31.3	31.9	33.0		0.150	6.4	6.1	6.2	ST
00061	10/22/99	1603	2758.8	9620.7	20	34	17	34	25.7	25.6	25.9	34.9	34.9	35.2		0.058	6.1	6.0	5.7	ST/PN
00062	10/22/99	1738	2804.9	9619.7	19	28	14	28	25.0	25.4	25.5	33.8	34.6	34.8		0.078	6.5	6.2	5.9	ST
00063	10/22/99	2244	2740.9	9645.5	20	32	16	32	25.5	25.6	26.0	34.6	34.7	35.3		0.086	6.1	6.1	6.0	ST
00064	10/23/99	0201	2759.5	9649.9	20	16	8	16	23.5	23.6	24.6	31.0	31.1	32.5		0.134	6.6	6.6	6.2	ST
00065	10/23/99	0503	2806.4	9631.3	19	20	10	20	23.5	24.3	24.8	31.3	32.7	33.7		0.150	6.6	6.6	6.1	ST
00066	10/23/99	0619	2804.1	9625.1	19	24	12	24	23.7	25.1	25.9	32.5	34.0	35.1		0.060	6.5	6.2	6.1	ST
00067	10/23/99	0856	2812.4	9626.5	19	19	10	19	23.2	24.5	24.7	31.1	32.6	33.3		0.176	6.6	6.5	6.3	ST
00068	10/23/99	1202	2820.4	9621.7	19	12	6	12	23.6	23.8	24.4	31.4	31.4	32.2		0.210	6.4	6.3	6.0	ST/PN
00069	10/23/99	1535	2805.9	9557.9	19	36	17	36	26.2	26.2	26.4	35.4	35.4	36.0		0.045	6.0	6.0	5.9	ST
00070	10/23/99	1710	2759.8	9559.8	20	45	22	45	26.1	26.1	26.3	35.9	35.9	36.0		0.068	6.0	6.0	5.9	PN

Table 2. Selected environmental parameters (continued)

OREGON II, FALL SHRIMP/GROUNDFISH SURVEY

STA#	DATE MM/DD/YY	TIME	POSITION LAT	POSITION LONG	STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M) MID	SAMPLE DEPTHS (M) MAX	TEMPERATURE, C SUR	TEMPERATURE, C MID	TEMPERATURE, C MAX	SALINITY, PPT SUR	SALINITY, PPT MID	SALINITY, PPT MAX	CL, MG/M3 SUR	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
00071	10/23/99	2132	2812.7	9627.4	19	16	8	16	23.3	23.3	24.7	31.3	31.3	33.3		0.221	6.8	6.8	6.1	ST
00072	10/23/99	2305	2807.0	9620.9	19	24	12	24	24.3	24.9	25.8	33.0	33.4	35.0		0.061	6.5	6.2	5.9	ST
00073	10/24/99	0219	2809.3	9600.3	19	30	15	30	25.3	23.3	26.2	34.7	34.7	35.4		0.049	6.2	6.2	5.9	ST
00075	10/24/99	0606	2749.2	9550.0	20	60	30	60	26.5	26.5	26.6	36.2	36.3	36.3		0.053	5.8	5.9	5.9	ST
00076	10/24/99	0918	2742.6	9557.2	20	88	44	88	26.4	26.4	21.8	36.2	36.2	36.3		0.067	5.9	6.0	4.5	ST
00077	10/24/99	1357	2759.8	9530.2	20	53	26	53	26.3	26.3	26.4	35.9	36.1	36.2		0.037	5.9	5.9	5.9	PN
00078	10/24/99	1635	2812.0	9528.5	19	40	20	40	26.0	26.1	26.1	35.6	35.8	35.9		0.036	6.0	5.9	5.9	ST
00080	10/24/99	2102	2824.4	9525.6	19	29	14	29	25.0	25.3	25.9	34.5	34.4	33.8		0.068	5.8	5.4	4.8	ST/PN
00082	10/25/99	0111	2844.6	9531.2	19	10	6	10	23.1	23.1	23.1	30.7	30.7	30.7		0.303	7.0	7.0	7.1	ST
00083	10/25/99	0419	2835.4	9550.6	19	11	5	11	23.0	23.0	23.1	30.4	30.4	30.5		0.374	7.0	7.0	7.1	ST
00084	10/25/99	0616	2826.5	9558.2	19	17	7	17	23.3	23.3	24.0	31.0	31.0	31.6		0.130	6.9	6.9	6.2	ST/PN
00085	10/25/99	0854	2828.6	9607.3	19	12	6	12	23.1	23.1	23.1	30.6	30.6	30.6		0.284	7.0	6.9	7.0	ST
00086	10/25/99	1115	2823.2	9555.1	19	21	10	21	24.0	24.5	25.2	32.9	33.3	34.3		0.037	6.5	6.4	6.0	ST
00088	10/25/99	1554	2834.5	9531.5	19	20	10	20	24.0	23.8	24.1	32.3	32.4	32.7		0.095	6.9	7.0	6.7	ST
00089	10/25/99	1715	2827.8	9527.0	19	29	14	28	24.0	24.1	25.5	32.8	33.6	34.4		0.071	6.7	6.5	5.7	ST
00090	10/25/99	2152	2809.3	9555.9	19	31	15	30	25.6	25.6	25.6	35.2	35.2	35.2		0.085	6.0	6.1	6.1	ST
00091	10/25/99	2339	2809.4	9550.6	19	33	17	33	25.1	25.2	26.2	35.0	35.0	35.8		0.072	6.1	6.1	5.8	ST
00092	10/26/99	0205	2809.2	9537.0	19	40	20	40	25.8	25.8	25.9	35.6	35.6	35.7		0.047	5.9	5.9	6.0	ST
00096	10/26/99	0642	2759.3	9531.2	19	55	27	55	26.1	26.2	26.3	35.9	35.9	36.2		0.046	5.9	5.9	5.9	ST
00097	10/26/99	1034	2819.3	9527.4	19	33	16	33	25.0	25.0	26.0	34.6	34.6	35.4		0.035	6.2	6.2	5.2	ST
00098	10/26/99	1245	2829.1	9522.0	19	29	15	29	24.0	25.0	24.7	33.2	34.4	34.6		0.043	6.4	6.1	6.2	ST
00099	10/26/99	1538	2818.3	9506.7	19	40	20	40	26.0	25.7	25.7	35.7	35.7	35.7		0.046	6.0	6.0	5.9	ST
00101	10/26/99	1933	2759.0	9506.3	19	83	42	83	26.5	26.3	21.4	36.3	36.2	36.3		0.037	5.9	6.0	3.6	ST
00103	10/27/99	0005	2818.9	9503.4	19	40	20	40	25.5	25.5	25.5	35.6	35.6	35.7		0.052	6.1	6.1	6.2	ST
00113	10/29/99	1941	2759.7	9459.6	18	84	42	84	26.3	26.3	20.9	36.3	36.3	38.3		0.031	6.0	6.2	3.8	PN
00114	10/29/99	2248	2757.6	9449.9	18	88	44	87	26.3	26.3	19.8	36.3	36.3	36.4		0.039	5.9	6.1	3.1	ST
00115	10/30/99	226	2759.6	9427.0	18	65	32	64	26.0	26.0	24.6	36.2	36.2	36.2		0.051	5.9	6.0	4.7	ST
00117	10/30/99	630	2802.3	9405.5	18	67	33	66	26.3	26.3	26.3	36.4	36.4	36.4		0.027	6.0	6.0	6.0	ST/PN
00118	10/30/99	1252	2800.2	9434.8	18	65	32	65	26.0	26.0	26.0	36.2	36.2	36.2		0.041	5.9	5.9	5.8	ST/PN
00119	10/30/99	1632	2805.7	9455.3	18	54	26	54	26.0	25.9	26.1	36.1	36.1	36.2		0.043	6.0	6.0	5.9	ST
00120	10/31/99	255	2913.6	9443.0	18	10	5	10	22.2	22.2	22.3	29.3	29.3	29.5		0.180	6.9	7.0	7.0	ST
00121	10/31/99	543	2859.9	9500.0	18	16	7	15	22.7	22.9	23.4	31.3	31.5	32.5		0.088	6.9	6.9	6.6	PN

Table 2. Selected environmental parameters (continued)

OREGON II, FALL SHRIMP/GROUNDFISH SURVEY

STA#	DATE MM/DD/YY	TIME	POSITION LAT	POSITION LONG	STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M) MID	SAMPLE DEPTHS (M) MAX	TEMPERATURE, C SUR	TEMPERATURE, C MID	TEMPERATURE, C MAX	SALINITY, PPT SUR	SALINITY, PPT MID	SALINITY, PPT MAX	CL, MG/M3 SUR	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
00122	10/31/99	745	2858.1	9503.0	19	16	8	16	22.9	23.0	23.8	32.0	32.0	33.3		0.061	6.7	6.7	6.3	ST
00123	10/31/99	1342	2850.5	9418.6	18	24	11	23	24.1	24.0	23.9	34.2	34.2	34.2		0.048	6.4	6.4	6.4	ST
00124	10/31/99	1714	2830.3	9400.3	18	38	19	38	24.9	24.9	25.2	35.3	35.3	35.6		0.077	6.2	6.1	6.0	PN
00125	10/31/99	1926	2826.3	9358.8	17	45	23	45	25.2	25.3	25.6	35.6	35.7	35.9		0.042	6.1	6.1	5.9	ST
00128	11/ 1/99	43	2814.0	9346.4	17	64	32	63	25.7	25.8	24.7	36.1	36.1	36.2		0.060	6.0	6.0	4.0	ST
00131	11/ 1/99	604	2837.8	9351.9	17	29	14	28	24.5	24.5	24.6	34.9	34.9	34.9		0.049	6.3	6.3	6.3	ST
00132	11/ 1/99	844	2830.7	9346.0	17	41	21	40	24.4	24.6	25.6	35.0	35.2	35.9		0.037	6.2	6.1	5.6	ST
00133	11/ 1/99	1140	2830.7	9329.4	17	42	21	42	25.2	25.2	25.2	36.0	36.0	36.0		0.036	6.1	6.1	6.1	PN
00134	11/ 1/99	1601	2811.3	9318.3	17	64	32	63	25.8	25.8	24.5	36.3	36.3	36.3		0.035	6.1	6.1	4.9	ST
00135	11/ 1/99	2220	2833.7	9302.9	17	42	21	42	25.4	25.4	25.4	36.0	36.0	36.0		0.052	6.0	6.0	6.1	ST/PN
00136	11/ 2/99	144	2844.1	9317.3	17	27	12	26	24.3	24.3	23.3	34.7	34.7	35.7		0.042	6.3	6.3	6.1	ST
00138	11/ 2/99	652	2838.6	9343.4	17	33	16	33	24.3	24.3	25.4	35.0	35.0	35.8		0.044	6.3	6.3	5.8	ST
00139	11/ 2/99	1139	2848.9	9320.2	17	27	13	26	24.0	24.0	24.0	34.7	34.6	34.4		0.044	6.2	6.2	6.2	ST
00140	11/ 2/99	1758	2922.4	9317.8	17	7	3	6	21.8	21.8	21.8	32.2	32.2	32.2		0.140	6.8	6.8	7.0	ST
00141	11/ 2/99	1943	2919.8	9317.3	17	16	8	15	22.5	22.5	22.5	33.3	33.3	33.3		0.090	6.5	6.5	6.6	ST
00142	11/ 2/99	2308	2912.4	9303.3	17	18	9	17	22.9	22.9	22.9	33.9	33.9	33.9		0.078	6.4	6.4	6.5	ST
00145	11/ 3/99	346	2930.0	9300.0	17	13	6	12	21.4	21.5	21.5	32.0	32.0	32.0		0.180	6.9	7.0	7.1	PN
00146	11/ 3/99	734	2905.9	9252.9	16	22	11	21	22.9	22.9	22.9	33.8	33.8	33.8		0.073	6.5	6.6	6.7	ST
00148	11/ 3/99	1032	2900.1	9259.9	16	24	12	24	23.3	23.3	23.3	34.2	34.2	34.2		0.063	6.3	6.3	6.4	PN
00149	11/ 3/99	1331	2850.6	9242.8	16	27	13	26	24.1	24.1	24.1	35.4	35.3	35.3		0.081	6.3	6.4	6.4	ST
00150	11/ 3/99	1641	2858.9	9233.9	16	25	13	25	22.9	22.9	23.1	34.1	34.2	34.4		0.150	6.7	6.7	6.4	ST
00151	11/ 3/99	1957	2842.3	9238.9	16	33	17	32	24.5	24.5	24.5	35.8	35.8	35.8		0.057	6.2	6.2	6.3	ST
00152	11/ 3/99	2224	2838.4	9230.2	16	35	17	35	24.7	24.7	24.8	35.9	35.9	35.9		0.047	6.1	6.1	6.1	ST
00153	11/ 4/99	28	2833.8	9236.6	16	40	20	39	24.9	24.9	24.9	36.0	36.0	36.0		0.067	6.2	6.2	6.3	ST
00154	11/ 4/99	204	2830.3	9231.7	16	48	24	47	25.1	25.2	25.2	36.1	36.1	36.1		0.066	6.1	6.2	6.2	PN
00155	11/ 4/99	600	2800.0	9231.7	16	104	52	103	25.3	25.3	19.1	36.3	36.3	36.5		0.057	6.2	6.2	3.9	PN
00156	11/ 4/99	853	2804.4	9240.5	16	87	42	87	25.3	25.3	20.5	36.3	36.3	36.5		0.042	6.0	6.2	3.6	ST
00157	11/ 4/99	1218	2809.9	9252.6	16	67	33	66	25.3	25.2	25.2	36.3	36.3	36.3		0.021	6.1	6.1	6.1	ST
00159	11/ 4/99	1549	2806.9	9302.2	17	80	40	80	25.4	25.2	21.1	36.3	36.3	36.5		0.026	6.2	6.5	3.6	ST
00161	11/ 4/99	1834	2800.6	9300.5	17	103	56	102	25.4	25.4	20.2	36.3	36.3	36.5		0.027	6.1	6.3	3.8	PN

Table 2. Selected environmental parameters (continued)

OREGON II, FALL SHRIMP/GROUNDFISH SURVEY

STA#	DATE MM/DD/YY	TIME	POSITION LAT	POSITION LONG	STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M) MID	SAMPLE DEPTHS (M) MAX	TEMPERATURE, C SUR	TEMPERATURE, C MID	TEMPERATURE, C MAX	SALINITY, PPT SUR	SALINITY, PPT MID	SALINITY, PPT MAX	CL, MG/M3 SUR	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
00162	11/ 4/99	2158	2809.3	9309.3	17	73	36	73	25.2	25.2	22.0	36.3	36.3	36.4		0.070	6.1	6.1	3.8	ST
00164	11/ 5/99	46	2803.9	9307.6	17	95	47	94	25.3	25.3	20.0	36.3	36.3	36.5		0.031	6.2	6.2	3.7	ST
00165	11/ 5/99	449	2809.9	9330.8	17	62	31	61	25.1	25.1	25.1	36.3	36.3	36.3		0.043	6.1	6.1	6.1	ST
00166	11/ 5/99	700	2800.0	9330.0	17	95	47	94	25.0	25.0	20.0	36.3	36.3	36.5		0.040	6.2	6.2	3.5	PN
00167	11/ 5/99	1108	2813.8	9306.3	17	65	32	65	25.2	25.2	25.2	36.2	36.2	36.3		0.054	6.0	6.0	5.9	ST
00169	11/ 5/99	1957	2805.3	9220.0	16	89	44	88	25.2	25.2	20.2	36.3	36.3	36.5		0.061	6.1	6.3	4.0	ST
00171	11/ 5/99	2357	2800.2	9200.4	16	117	58	116	25.6	25.5	18.0	36.4	36.4	36.4		0.018	6.3	6.3	3.9	PN
00172	11/ 6/99	432	2830.3	9200.0	16	47	24	45	25.0	25.0	25.0	36.1	36.1	36.1		0.051	6.1	6.1	6.2	PN
00173	11/ 6/99	732	2842.2	9208.6	16	34	17	33	23.9	23.9	23.9	35.4	35.4	35.4		0.060	6.3	6.3	6.4	ST
00175	11/ 6/99	1052	2833.0	9217.8	16	45	21	45	24.6	24.6	24.6	36.0	36.0	36.0		0.056	6.1	6.1	6.1	ST
00178	11/ 6/99	1615	2838.9	9227.3	16	36	16	35	24.4	24.4	24.4	35.8	35.8	35.9		0.051	6.3	6.2	6.2	ST
00179	11/ 6/99	1923	2852.8	9223.9	16	29	14	28	23.6	23.7	23.7	35.2	35.2	35.3		0.080	6.4	6.4	6.2	ST
00180	11/ 6/99	2208	2906.6	9229.3	16	20	10	19	22.3	22.3	22.3	33.5	33.6	33.7		0.120	6.9	6.9	6.6	ST
00181	11/ 6/99	2359	2915.7	9226.4	16	11	5	10	20.9	20.9	21.3	31.8	31.8	32.3		0.230	7.5	7.6	7.2	ST
00182	11/ 7/99	153	2910.0	9222.2	16	14	7	13	21.0	21.1	21.4	32.6	32.7	33.0		0.180	3.6	7.2	7.1	ST
00183	11/ 7/99	323	2908.4	9218.3	16	13	6	12	20.8	21.2	21.8	32.3	32.9	33.4		0.160	7.0	6.9	6.5	ST
00184	11/ 7/99	440	2903.1	9217.9	16	20	10	19	22.0	22.0	22.2	33.7	33.7	33.9		0.095	6.7	6.7	6.6	ST
00185	11/ 7/99	618	2857.5	9213.0	16	24	12	23	22.8	22.8	22.8	34.5	34.5	34.5		0.062	6.6	6.6	6.7	ST
00186	11/ 7/99	849	2903.2	9218.2	16	20	9	19	22.0	22.0	22.3	33.8	33.7	33.9		0.094	6.6	6.6	6.5	ST
00187	11/ 7/99	1027	2910.1	9219.0	16	9	4	9	20.3	20.5	20.8	31.6	31.8	32.1		0.160	7.1	6.9	6.7	ST
00188	11/ 7/99	1151	2912.1	9225.5	16	11	6	10	20.4	20.8	21.2	31.2	31.8	32.4		0.270	7.4	7.4	7.0	ST
00189	11/ 7/99	1301	2913.6	9229.0	16	13	6	12	20.3	20.8	21.5	30.8	31.9	32.5		0.160	7.5	7.6	6.5	ST
00190	11/ 7/99	1458	2905.3	9233.3	16	22	11	22	22.4	22.3	22.4	33.6	33.6	33.8		0.110	6.9	6.9	6.6	ST
00191	11/ 7/99	1630	2900.0	9230.0	16	25	12	24	22.9	23.3	24.5	34.3	34.5	35.2		0.130	6.6	6.5	6.3	PN
00192	11/ 7/99	2041	2852.8	9202.8	16	26	13	26	22.8	22.8	22.8	34.3	34.3	34.4		0.063	6.6	6.6	6.4	ST
00193	11/ 7/99	2247	2901.7	9202.8	16	18	9	17	21.5	22.0	22.1	33.0	33.5	33.7		0.140	6.8	6.7	6.5	ST/PN
00194	11/ 8/99	49	2906.6	9154.4	15	9	4	8	20.6	20.6	20.8	31.3	31.4	31.8		0.120	7.4	7.4	6.9	ST
00195	11/ 8/99	736	2849.8	9221.9	16	31	15	30	23.2	23.3	23.6	35.0	35.0	35.2		0.071	6.4	6.5	6.4	ST
00196	11/ 8/99	925	2847.4	9217.6	16	31	16	31	23.1	23.2	23.5	34.8	34.9	36.2		0.070	6.3	6.3	6.2	ST
00197	11/ 8/99	1223	2847.7	9201.0	16	27	13	26	22.3	22.3	22.7	33.8	33.8	34.2		0.048	6.6	6.6	6.2	ST
00198	11/ 8/99	1431	2853.8	9158.6	15	24	12	23	22.4	22.5	22.5	33.8	34.1	34.2		0.047	6.7	6.7	6.4	ST

Table 2. Selected environmental parameters (continued)

OREGON II, FALL SHRIMP/GROUNDFISH SURVEY

STA#	DATE MM/DD/YY	TIME	POSITION LAT	POSITION LONG	STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M) MID	SAMPLE DEPTHS (M) MAX	TEMPERATURE, C SUR	TEMPERATURE, C MID	TEMPERATURE, C MAX	SALINITY, PPT SUR	SALINITY, PPT MID	SALINITY, PPT MAX	CL, MG/M3 SUR	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
00199	11/ 8/99	1648	2902.1	9204.4	16	17	9	17	21.8	21.8	22.2	32.8	33.3	33.7		0.130	6.9	6.7	6.4	ST
00200	11/ 8/99	1941	2902.1	9143.2	15	12	6	12	21.1	21.4	21.4	31.4	32.6	32.7		0.120	7.3	6.6	6.3	ST
00201	11/ 8/99	2135	2859.5	9136.0	15	11	6	11	21.2	21.2	21.3	31.9	32.2	32.4		0.120	7.2	6.8	6.2	ST
00202	11/ 8/99	2307	2859.8	9130.5	15	11	5	10	20.7	20.9	20.9	30.3	31.8	31.9		0.250	7.7	7.2	6.4	PN
00203	11/ 9/99	302	2834.7	9140.9	15	40	20	39	24.3	24.3	24.4	35.6	35.6	35.6		0.065	6.2	6.2	6.2	ST
00204	11/ 9/99	745	2900.8	9148.2	15	14	7	13	20.7	21.2	21.6	31.2	32.0	32.9		0.095	7.3	7.0	6.0	ST
00205	11/ 9/99	955	2848.3	9149.5	15	25	12	25	23.2	23.3	23.8	34.8	34.8	35.2		0.051	6.4	6.4	6.0	ST
00206	11/ 9/99	1130	2847.6	9153.4	15	26	13	26	22.4	23.0	23.9	33.8	34.6	35.4		0.064	6.4	6.3	6.1	ST
00207	11/ 9/99	1546	2843.1	9127.0	15	24	12	23	22.7	22.7	22.7	33.7	33.8	33.9		0.130	6.6	6.4	6.1	ST
00208	11/ 9/99	1721	2830.4	9130.3	15	46	23	46	23.9	23.9	24.9	35.0	35.2	36.1		0.045	6.2	6.3	5.9	ST/PN
00209	11/ 9/99	2200	2826.7	9150.8	15	55	23	55	24.6	24.7	24.9	35.9	36.0	36.1		0.047	6.2	6.1	6.0	ST
00212	11/10/99	455	2759.8	9129.4	15	150	75	148	25.3	23.0	15.4	36.4	36.4	36.0		0.019	6.4	5.6	3.7	PN
00213	11/10/99	801	2810.5	9137.2	15	82	41	81	25.2	25.2	21.8	36.4	36.4	36.5		0.025	6.2	6.2	4.0	ST
00214	11/10/99	1218	2834.0	9118.1	15	33	17	32	23.5	23.4	24.1	34.5	34.6	35.3		0.074	6.4	6.3	5.5	ST
00215	11/10/99	1445	2850.5	9115.3	15	10	5	9	22.4	22.2	22.2	32.7	32.7	32.7		0.160	6.8	6.8	6.7	ST
00216	11/10/99	1835	2836.4	9057.7	14	20	9	20	24.5	24.3	24.2	35.7	35.7	35.7		0.085	6.2	6.1	6.0	ST
00217	11/10/99	2001	2829.8	9059.9	14	33	17	33	23.9	24.1	24.1	35.3	35.8	35.8		0.140	6.3	6.1	6.1	PN
00218	11/10/99	2216	2827.0	9108.0	15	40	20	39	24.4	24.4	24.4	35.6	35.7	35.8		0.060	6.3	6.2	6.1	ST
00219	11/11/99	100	2817.9	9103.8	15	64	32	63	24.6	24.8	24.9	35.9	36.2	36.3		0.047	6.2	6.1	6.0	ST
00221	11/11/99	341	2814.6	9101.4	15	73	36	72	24.6	25.0	23.4	36.0	36.3	36.3		0.039	6.2	6.1	5.1	ST
00222	11/11/99	600	2800.0	9100.0	15	148	74	147	24.9	21.2	16.9	36.4	36.6	36.2		0.032	6.4	4.7	3.7	PN
00223	11/11/99	935	2810.1	9052.8	14	88	44	88	25.0	25.0	20.4	36.3	36.4	36.5		0.290	6.1	6.2	4.0	ST
00224	11/11/99	1231	2815.9	9042.9	14	62	31	61	25.1	25.0	24.9	36.3	36.3	36.3		0.015	6.2	6.2	6.1	ST
00225	11/11/99	1628	2822.3	9110.2	15	55	22	55	24.5	24.6	24.6	35.8	36.0	36.1		0.087	6.3	6.0	6.1	ST
00227	11/11/99	2051	2833.9	9051.5	14	22	10	21	24.8	24.7	24.6	35.9	35.9	35.9		0.076	6.2	6.1	6.1	ST
00228	11/11/99	2128	2831.3	9050.7	14	32	16	31	24.6	24.6	24.5	35.9	36.0	36.0		0.089	6.2	6.0	5.9	ST
00229	11/11/99	2319	2830.5	9047.4	14	30	15	29	24.6	24.6	24.6	35.9	36.0	36.0		0.010	6.1	5.9	5.9	ST
00230	11/12/99	42	2834.1	9043.5	14	22	11	21	24.1	24.4	24.7	35.2	35.3	35.9		0.091	6.2	6.3	6.0	ST
00231	11/12/99	211	2830.0	9038.7	14	35	17	34	25.2	25.3	24.9	36.3	36.3	36.3		0.026	6.2	6.2	5.9	ST
00232	11/12/99	729	2828.1	9103.1	15	35	17	34	24.4	24.4	24.7	36.1	36.0	36.2		0.059	6.1	6.2	6.0	ST
00233	11/12/99	926	2830.6	9055.3	14	32	16	31	24.6	24.7	24.8	36.1	36.1	36.2		0.061	6.1	6.1	6.1	ST

Table 2. Selected environmental parameters (continued)

OREGON II, FALL SHRIMP/GROUNDFISH SURVEY

STA#	DATE MM/DD/YY	TIME	POSITION LAT	POSITION LONG	STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M) MID	SAMPLE DEPTHS (M) MAX	TEMPERATURE, C SUR	TEMPERATURE, C MID	TEMPERATURE, C MAX	SALINITY, PPT SUR	SALINITY, PPT MID	SALINITY, PPT MAX	CL, MG/M3 SUR	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
00234	11/12/99	1117	2835.0	9046.0	14	20	10	20	24.1	24.1	24.7	35.3	35.3	36.0		0.120	6.0	6.0	5.9	ST
00235	11/16/99	0644	2900.4	8942.1	13	42	21	42	22.5	24.7	25.1	32.4	35.9	36.2		0.130	3.4	1.8	2.7	ST
00236	11/16/99	0841	2906.1	8936.1	13	15	7	15	22.5	22.6	24.4	33.2	33.2	34.7		0.230	6.2	6.2	4.7	ST
00237	11/16/99	1116	2914.2	8949.0	13	10	5	10	22.0	22.0	23.9	32.1	32.1	34.6		0.200	6.9	6.9	3.9	ST
00238	11/16/99	1412	2856.6	8955.5	13	33	16	33	22.8	25.0	25.1	32.4	35.7	36.2		0.029	7.3	6.0	5.1	ST
00239	11/16/99	1616	2856.7	9009.5	14	19	10	19	22.4	23.1	24.4	32.1	32.8	35.0		0.330	7.6	7.0	4.2	ST
00240	11/16/99	1903	2851.4	9010.3	14	25	12	25	23.5	23.6	25.0	34.1	34.2	35.8		0.230	6.6	6.6	4.6	ST
00241	11/16/99	2045	2844.8	9008.3	14	34	17	34	23.5	24.6	24.6	35.3	36.2	36.3		0.160	6.8	6.2	6.1	ST
00242	11/16/99	2307	2839.5	9011.2	14	43	21	43	24.4	24.5	24.3	36.1	36.1	36.3		0.080	6.1	6.1	5.5	ST
00243	11/17/99	0309	2813.4	9022.7	14	83	41	83	24.9	24.9	22.0	36.4	36.4	36.4		0.025	6.1	6.2	4.5	ST
00244	11/17/99	0555	2829.8	9029.2	14	38	19	38	24.5	24.5	24.5	36.4	36.4	36.4		0.064	6.0	6.1	6.1	PN
00245	11/17/99	0945	2852.9	9026.3	14	18	9	18	22.8	22.8	23.1	34.2	34.2	34.5		0.069	6.6	6.7	6.4	ST
00246	11/17/99	1417	2840.7	9001.9	14	60	30	60	24.3	24.6	24.8	35.9	36.2	36.3		0.059	6.4	6.2	6.1	ST
00247	11/17/99	1617	2840.8	8946.4	13	91	45	91	24.9	25.2	21.3	36.1	36.3	36.5		0.103	6.2	6.1	3.9	ST
00248	11/17/99	2007	2844.1	8932.7	13	91	45	90	24.7	24.9	20.3	35.5	36.2	36.5		0.084	5.9	6.2	3.7	ST
00250	11/18/99	0135	2903.9	8934.5	13	16	8	16	21.5	22.0	24.5	32.3	32.6	34.8		0.226	6.9	6.9	4.2	ST/PN
00251	11/18/99	0347	2902.4	8938.8	13	25	13	25	22.1	22.4	24.8	32.4	32.7	35.2		0.144	6.9	7.1	4.1	ST
00252	11/18/99	0542	2908.7	8950.3	13	17	8	17	21.9	21.9	24.4	32.6	32.6	34.9		0.120	6.9	6.8	4.2	ST
00253	11/18/99	0759	2859.9	9000.1	14	24	12	24	22.5	23.0	25.2	33.3	33.7	36.1		0.147	6.7	6.4	3.7	PN
00254	11/18/99	1122	2900.0	9029.9	14	10	5	10	21.8	21.8	21.8	32.9	32.9	33.0		0.273	7.0	7.0	6.6	PN
00255	11/18/99	1530	2830.2	9000.0	14	90	44	90	25.1	25.0	21.2	36.3	36.3	36.5		0.024	6.2	6.3	3.9	PN
00256	11/18/99	2217	2904.8	8857.9	11	34	17	34	20.1	25.1	24.7	20.7	35.9	36.3		0.962	8.9	5.6	5.6	ST/PN
00257	11/19/99	0156	2909.3	8838.7	11	85	42	85	24.2	25.0	22.7	36.1	36.4	36.2		0.052	6.1	6.2	5.0	ST
00258	11/19/99	0410	2911.9	8837.3	11	75	37	75	23.7	23.8	22.2	35.8	35.9	36.3		0.047	6.0	6.2	4.5	ST
00260	11/19/99	0656	2915.4	8837.0	11	64	32	64	23.9	23.9	23.4	36.0	36.0	36.1		0.068	6.1	6.2	5.3	ST
00262	11/19/99	1043	2915.4	8830.1	11	68	34	68	23.7	23.7	23.4	36.1	36.1	36.3		0.052	6.2	6.2	5.3	ST/PN
00263	11/19/99	1321	2918.3	8813.6	11	83	41	83	23.8	23.7	20.3	36.0	36.0	36.4		0.041	6.3	6.4	3.7	ST
00264	11/19/99	1557	2915.9	8812.7	11	90	45	90	23.9	23.8	19.9	36.1	36.1	36.4		0.051	6.3	6.4	3.7	ST
00265	11/19/99	1714	2911.6	8812.5	11	253	110	200	24.8	19.3	15.2	36.4	36.4	36.0		0.034	6.4	3.8	3.4	PN
00266	11/19/99	2042	2915.5	8823.1	11	78	38	78	24.4	24.3	20.3	36.3	36.2	36.4		0.042	6.2	6.3	3.7	ST
00267	11/19/99	2151	2915.6	8825.3	11	91	45	91	24.4	24.7	19.9	36.3	36.4	36.4		0.047	6.2	6.3	3.7	ST

Table 2. Selected environmental parameters (continued)

OREGON II, FALL SHRIMP/GROUNDFISH SURVEY

STA#	DATE MM/DD/YY	TIME	POSITION LAT	POSITION LONG	STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M) MID	SAMPLE DEPTHS (M) MAX	TEMPERATURE, C SUR	TEMPERATURE, C MID	TEMPERATURE, C MAX	SALINITY, PPT SUR	SALINITY, PPT MID	SALINITY, PPT MAX	CL, MG/M3 SUR	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
00268	11/19/99	2343	2917.7	8827.7	11	65	33	65	24.1	24.6	24.5	36.2	36.4	36.3		0.049	6.2	6.1	6.1	ST
00270	11/20/99	0628	2928.9	8810.5	11	44	21	42	23.1	23.2	23.2	35.8	35.8	35.8		0.043	6.3	6.4	6.4	ST
00272	11/20/99	1051	2926.0	8801.8	11	51	24	51	24.0	24.0	24.0	36.2	36.2	36.2		0.030	6.2	6.2	6.2	ST/PN
00273	11/20/99	1403	2945.3	8803.8	11	35	17	35	22.4	22.3	22.3	34.4	35.5	35.5		0.058	6.5	6.5	6.5	ST
00274	11/20/99	1633	2959.9	8800.2	11	25	11	24	21.0	21.1	20.6	34.6	34.9	34.8		0.125	6.9	6.7	6.4	PN
00275	11/20/99	1902	2948.8	8805.4	11	29	14	28	22.4	22.4	22.3	35.5	35.5	35.5		0.071	6.5	6.5	6.4	ST
00276	11/20/99	2013	2945.4	8803.8	11	32	16	31	22.3	22.2	22.1	35.4	35.4	35.4		0.071	6.5	6.5	6.5	ST
00277	11/20/99	2128	2939.9	8803.8	11	38	18	38	23.1	23.1	23.1	35.9	35.9	35.9		0.035	6.4	6.4	6.4	ST

Table 2. Selected environmental parameters (continued)

TOMMY MUNRO, FALL SHRIMP/GROUNDFISH SURVEY

STA#	DATE MM/DD/YY	TIME	POSITION LAT	POSITION LONG	STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M) MID	SAMPLE DEPTHS (M) MAX	TEMPERATURE, C SUR	TEMPERATURE, C MID	TEMPERATURE, C MAX	SALINITY, PPT SUR	SALINITY, PPT MID	SALINITY, PPT MAX	CL, MG/M3 SUR	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
17001	10/22/99	0705	2921.0	8850.0	11	36	18	35	25.3	25.5	25.4	32.7	34.4	34.3			4.8	5.6	4.3	ST
17002	10/22/99	0845	2922.4	8902.2	12	11	6	10	22.8	22.9	22.7	32.5	32.5	32.4			5.9	6.3	6.3	ST
17003	10/22/99	1032	2924.1	8906.5	12	6	3	5	21.6	21.6	21.5	32.5	32.6	32.4			5.6	5.3	5.8	ST
17004	10/22/99	1405	2930.9	8839.7	11	26	13	25	25.4	24.9	25.3	34.6	34.6	35.0			3.4	5.8	4.8	ST
17005	10/22/99	1445	2931.6	8838.6	11	28	14	27	25.1	24.9	25.2	34.3	34.7	35.0			5.4	5.5	3.5	ST
17006	10/22/99	1534	2929.7	8837.1	11	38	19	37	24.9	25.1	25.3	34.8	34.9	35.1			5.4	3.7	4.5	ST
17007	10/22/99	1640	2930.4	8835.3	11	41	22	40	24.9	24.6	25.1	34.7	35.0	35.3			4.9	4.7	4.5	ST
17008	10/22/99	1850	2926.0	8846.0	11	26	14	25	24.5	25.0	25.7	34.3	35.0	35.2			5.8	4.9	3.2	ST
17009	10/22/99	2015	2922.7	8853.3	11	19	10	18	24.1	23.9	24.5	33.9	34.0	35.1			6.2	4.9	5.3	ST
17010	10/22/99	2159	2916.5	8902.7	13	10	5	9	20.7	22.5	22.4	22.4	32.6	32.7			5.5	5.9	4.0	ST
17011	10/22/99	2332	2922.8	8857.6	11	17	8	16	23.6	23.8	25.3	33.2	33.3	35.0			6.1	6.4	5.5	ST
17012	10/23/99	0104	2921.4	8845.9	11	48	24	47	24.8	25.4	25.4	34.1	35.6	36.0			5.6	5.0	4.7	ST
17013	10/23/99	0455	2942.6	8854.3	11	4	2	3	20.2	20.2	20.1	31.5	31.5	31.5			6.3	6.3	6.3	ST
17014	10/23/99	0607	2946.3	8851.3	11	8	4	7	22.2	22.2	22.2	33.3	33.3	33.3			6.4	6.4	6.3	ST
17015	10/24/99	2115	3009.5	8834.1	11	13	7	12	22.0	22.0	22.2	33.7	33.7	35.0			6.6	6.6	6.3	ST
17016	10/24/99	2254	3011.8	8829.0	11	7	3	6	21.0	20.7	20.5	32.8	32.8	32.9			6.5	7.0	6.9	ST
17017	10/25/99	0037	2959.8	8824.8	11	28	14	27	24.5	24.2	24.1	35.8	35.7	35.7			5.5	5.4	5.3	ST
17018	10/25/99	0237	2958.0	8814.7	11	31	15	30	24.3	24.2	24.2	35.7	35.6	35.7			5.5	5.8	5.7	ST
17019	10/25/99	0414	2952.4	8817.1	11	33	17	32	24.7	24.7	24.6	35.6	35.6	35.6			5.6	5.7	5.5	ST
17020	10/25/99	0749	2935.2	8836.1	11	25	12	24	24.0	24.0	23.8	35.1	35.1	35.2			6.0	6.1	5.9	ST
17021	10/25/99	1012	2937.5	8856.9	11	8	4	7	21.1	21.2	21.2	34.1	34.2	34.2			5.8	6.4	6.3	ST
17022	10/25/99	1231	2942.1	8839.5	11	21	10	20	24.0	23.7	23.6	35.2	35.1	35.0			6.0	5.5	5.4	ST
17023	10/25/99	1356	2947.1	8837.1	11	23	11	22	24.6	24.5	24.5	35.5	35.5	35.5			5.9	5.7	5.6	ST
17024	10/25/99	1500	2949.2	8840.9	11	19	9	18	24.1	24.0	24.0	35.4	35.4	35.4			5.7	6.0	5.9	ST
17025	10/25/99	1652	2956.7	8845.9	11	13	6	12	23.3	23.1	23.2	35.2	35.1	35.2			6.0	6.0	6.0	ST
17026	10/25/99	1907	2943.5	8837.8	11	23	12	22	24.2	24.2	24.2	35.4	35.6	35.6			5.7	5.7	5.5	ST
17027	10/25/99	2105	2930.0	8829.9	11	50	25	49	25.3	25.9	23.0	35.6	36.4	36.7			5.8	5.8	4.6	PN
17028	10/26/99	0050	3000.1	8829.7	11	26	13	25	24.3	24.3	24.1	35.8	35.8	35.6			5.9	6.0	6.0	PN
17029	10/26/99	0730	3000.1	8849.7	11	4	2	3	20.8	20.2	20.1	34.9	35.5	35.3			6.2	5.6	6.0	ST
17030	10/26/99	0921	3005.2	8836.3	11	17	8	16	23.2	23.0	22.9	35.3	35.4	35.4			5.7	6.0	5.9	ST

Table 2. Selected environmental parameters (continued)

ALABAMA INSHORE VESSELS, FALL SHRIMP/GROUNDFISH SURVEY

STA#	DATE MM/DD/YY	TIME	POSITION LAT	POSITION LONG	STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M) MID	SAMPLE DEPTHS (M) MAX	TEMPERATURE, C SUR	TEMPERATURE, C MID	TEMPERATURE, C MAX	SALINITY, PPT SUR	SALINITY, PPT MID	SALINITY, PPT MAX	CL, MG/M3 SUR	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
2301	10/28/99	0957	3011.1	8814.6	11	14	7	14	22.2	22.3	22.9	33.5	33.6	34.2	0.523		6.6	6.5	5.6	ST
2302	10/28/99	1125	3011.2	8821.0	11	10	5	10	21.6	21.4	21.5	33.3	33.2	33.3	1.533		6.7	6.6	6.6	ST
2303	10/28/99	1406	2953.5	8824.0	11	33	17	33	25.5	25.4	25.4	35.6	35.6	35.7	0.222		6.2	6.3	5.4	ST
2304	10/28/99	1547	2957.9	8822.3	11	31	16	31	24.8	24.6	24.5	35.4	35.5	35.5	0.307		6.3	6.6	6.2	ST
2305	10/28/99	1815	3000.7	8822.3	11	28	14	28	24.6	24.4	24.2	35.5	35.5	35.5	0.379		6.5	6.5	6.5	ST
2306	10/28/99	2023	3006.2	8807.6	11	20	10	20	22.4	22.7	23.2	33.3	33.9	34.4	1.159		6.7	6.6	6.2	ST
2307	10/28/99	2124	3009.1	8804.1	11	13	7	13	22.5	22.8	23.7	33.5	33.7	34.8	0.991		6.5	6.6	6.2	ST
2308	10/28/99	2217	3008.3	8803.3	11	16	8	16	22.6	23.0	23.9	33.9	34.1	34.9	0.636		6.5	6.5	6.3	ST

Table 2. Selected environmental parameters (continued)

MATAGORDA BAY, FALL SHRIMP/GROUNDFISH SURVEY

STA#	DATE MM/DD/YY	TIME	POSITION LAT	POSITION LONG	STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M) MID	SAMPLE DEPTHS (M) MAX	TEMPERATURE, C SUR	TEMPERATURE, C MID	TEMPERATURE, C MAX	SALINITY, PPT SUR	SALINITY, PPT MID	SALINITY, PPT MAX	CL, MG/M3 SUR	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
32001	11/ 1/99	1003	2823.5	9612.4	19	16	8	16	23.1	23.1	23.9	32.5	32.4	33.9			7.0	6.9	6.6	ST
32002	11/ 1/99	1042	2825.5	9612.5	19	13	7	13	23.0	23.0	24.0	32.2	32.1	33.5			6.9	6.0	5.9	ST
32003	11/ 1/99	1118	2826.5	9613.4	19	12	11	12	23.0	23.0	23.9	32.1	32.0	33.4			6.3	6.5	5.7	ST
32004	11/ 1/99	1220	2831.5	9606.5	19	9	4	9	22.9	22.8	23.9	31.8	31.7	32.9			6.1	6.2	5.2	ST
32005	11/ 1/99	1256	2829.5	9605.5	19	12	6	12	23.0	22.9	23.9	31.8	31.8	32.8			6.0	6.1	5.8	ST
32006	11/ 1/99	1350	2824.5	9603.5	19	18	9	18	23.6	23.6	24.4	33.1	33.2	33.9			5.4	5.6	4.0	ST
32007	11/ 1/99	1425	2824.5	9605.5	19	17	9	17	23.5	23.5	24.2	32.8	33.2	33.9			5.4	5.5	5.2	ST
32008	11/ 1/99	1505	2822.5	9606.5	19	19	9	19	23.8	23.8	24.3	33.5	33.5	34.5			5.0	5.2	5.2	ST
32009	11/16/99	0927	2823.4	9621.7	19	5	2	5	21.9	21.9	21.8	32.2	32.2	32.3			6.5	6.5	6.6	ST
32010	11/16/99	1022	2817.4	9625.5	19	10	5	10	22.0	22.0	22.0	32.0	32.2	32.3			6.4	6.4	6.4	ST
32011	11/16/99	1109	2813.3	9624.8	19	19	10	19	21.7	21.8	22.5	32.4	32.6	34.2			6.5	6.5	6.4	ST
32012	11/16/99	1150	2811.4	9624.5	19	21	11	21	21.9	22.1	22.5	32.7	33.1	34.2			6.5	6.5	6.3	ST
32013	11/16/99	1254	2815.5	9622.6	19	18	9	18	22.0	21.8	22.8	32.4	32.6	34.1			6.5	6.4	5.9	ST
32014	11/16/99	1337	2816.6	9620.5	19	19	9	19	22.2	21.9	22.8	32.3	32.3	32.7			6.5	6.4	6.0	ST
32015	11/16/99	1423	2815.4	9616.7	19	22	11	22	22.5	22.4	22.6	33.5	34.2	34.3			6.4	6.5	6.3	ST
32016	11/16/99	1511	2819.6	9617.5	19	18	9	18	22.3	22.0	22.4	32.8	33.5	33.8			6.3	6.1	5.6	ST

Table 2. Selected environmental parameters (continued)

LAGUNA MADRE, FALL SHRIMP/GROUNDFISH SURVEY

STA#	DATE MM/DD/YY	TIME	POSITION LAT	POSITION LONG	STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M) MID	SAMPLE DEPTHS (M) MAX	TEMPERATURE, C SUR	TEMPERATURE, C MID	TEMPERATURE, C MAX	SALINITY, PPT SUR	SALINITY, PPT MID	SALINITY, PPT MAX	CL, MG/M3 SUR	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
33001	11/ 8/99	0900	2752.6	9658.5	20	12	6	12	22.3	22.2	22.3	31.9	32.1	32.1			8.5	8.8	9.0	ST
33002	11/ 8/99	0934	2753.6	9659.6	20	9	5	9	22.4	22.4	22.4	31.8	32.0	32.0			9.0	9.3	9.0	ST
33003	11/ 8/99	1032	2756.6	9653.5	20	13	7	13	22.7	22.5	22.6	32.4	32.5	32.5			9.0	9.0	9.1	ST
33004	11/ 8/99	1143	2751.5	9651.6	20	19	10	19	23.2	23.1	23.1	33.3	33.4	33.7			8.4	9.1	9.1	ST
33005	11/ 8/99	1220	2752.6	9654.5	20	16	8	16	23.1	22.8	23.1	32.7	32.7	33.0			9.3	9.0	8.9	ST
33006	11/ 8/99	1302	2749.4	9656.6	20	17	9	17	23.1	23.1	23.3	32.8	33.4	33.6			9.0	9.1	8.7	ST
33007	11/ 8/99	1337	2747.5	9659.5	20	16	8	16	23.4	23.0	23.0	32.8	32.9	33.0			9.3	9.1	9.2	ST
33008	11/ 8/99	1409	2746.7	9659.3	20	16	8	16	23.4	22.9	22.9	32.7	32.8	33.2			8.7	9.1	8.8	ST
33009	11/19/99	0825	2749.2	9701.4	20	9	5	9	22.8	22.8	22.8	32.2	32.5	32.5			9.0	9.1	9.0	ST
33010	11/23/99	1218	2742.1	9707.3	20	11	6	11	23.8	23.6	23.6	33.5	34.1	34.0			9.4	9.1	9.2	ST
33011	11/23/99	1256	2742.5	9704.1	20	14	7	14	23.7	23.7	23.7	33.7	34.2	34.8			9.3	9.6	9.1	ST
33012	11/23/99	1327	2741.3	9704.4	20	15	7	15	23.9	23.9	23.8	34.1	34.4	34.2			9.1	8.9	8.8	ST
33013	11/23/99	1355	2739.6	9704.4	20	16	8	16	24.1	24.0	24.0	34.4	34.7	34.8			8.8	9.3	8.7	ST
33014	11/23/99	1429	2736.6	9703.5	20	20	10	20	24.3	24.0	24.0	34.6	34.6	34.9			8.8	8.9	8.6	ST
33015	11/23/99	1606	2744.6	9657.6	20	20	10	20	23.5	23.5	23.5	33.7	34.1	34.0			9.3	9.4	9.1	ST
33016	11/23/99	1643	2746.4	9700.5	20	16	8	16	23.5	23.5	23.5	33.5	33.7	33.9			8.7	8.5	8.7	ST

Table 2. Selected environmental parameters (continued)

GALVESTON BAY, FALL SHRIMP/GROUNDFISH SURVEY

STA#	DATE MM/DD/YY	TIME	POSITION LAT	POSITION LONG	STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M) MID	SAMPLE DEPTHS (M) MAX	TEMPERATURE, C SUR	TEMPERATURE, C MID	TEMPERATURE, C MAX	SALINITY, PPT SUR	SALINITY, PPT MID	SALINITY, PPT MAX	CL, MG/M3 SUR	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
34001	11/ 8/99	0826	2604.5	9708.7	21	7	4	7	23.8	23.7	23.7	34.7	34.7	34.8			6.5	6.7	7.0	ST
34002	11/ 8/99	0941	2557.4	9706.6	22	14	7	14	23.9	23.8	23.8	34.8	34.9	35.0			5.3	5.4	5.4	ST
34003	11/ 8/99	1122	2559.3	9659.5	22	26	13	26	24.4	24.3	24.3	35.3	35.2	35.5			5.5	5.4	5.5	ST
34004	11/ 8/99	1213	2601.5	9703.6	21	20	10	20	24.4	24.1	24.2	34.9	34.9	35.0			4.9	5.0	4.9	ST
34005	11/ 8/99	1326	2608.6	9704.7	21	18	9	18	24.2	23.7	23.7	34.8	34.7	34.7			4.6	4.6	4.9	ST
34006	11/ 8/99	1400	2609.4	9704.5	21	17	9	17	24.3	23.8	23.8	34.7	34.7	34.8			4.3	4.4	4.4	ST
34007	11/ 8/99	1442	2610.5	9703.6	21	18	9	18	24.5	24.5	23.9	35.0	34.8	34.8			4.6	4.6	4.5	ST
34008	11/ 8/99	1535	2607.6	9707.6	21	15	8	15	24.2	23.7	23.7	34.7	34.7	34.8			4.6	4.6	4.5	ST
34009	11/18/99	0900	2610.4	9705.6	21	17	9	17	22.9	22.9	23.0	33.3	33.5	34.2			6.7	6.7	6.7	ST
34010	11/18/99	0939	2611.6	9704.5	21	17	9	17	22.9	22.9	23.0	33.6	33.5	33.7			7.4	7.2	6.9	ST
34011	11/18/99	1011	2612.7	9703.6	21	19	10	19	22.9	22.9	22.9	33.4	33.3	34.2			7.0	6.9	7.8	ST
34012	11/18/99	1050	2614.6	9703.4	21	18	9	18	22.9	22.9	22.9	33.5	33.3	34.4			7.4	6.9	9.2	ST
34013	11/18/99	1122	2615.6	9704.7	21	18	9	18	22.8	22.8	22.9	33.5	33.6	33.9			8.0	7.6	10.1	ST
34014	11/18/99	1153	2615.6	9705.6	21	17	9	17	22.9	22.9	22.9	33.4	33.3	34.1			7.6	7.4	8.0	ST
34015	11/18/99	1257	2621.5	9702.7	21	23	12	23	22.9	22.9	22.3	33.8	33.8	34.4			10.8	8.7	12.4	ST
34016	11/18/99	1347	2621.4	9706.6	21	17	9	17	22.7	22.8	22.6	33.7	33.6	33.7			10.0	9.1	11.3	ST

Table 2. Selected environmental parameters (continued)

SABINE, FALL SHRIMP/GROUNDFISH SURVEY

STA#	DATE MM/DD/YY	TIME	POSITION LAT	POSITION LONG	STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M) MID	SAMPLE DEPTHS (M) MAX	TEMPERATURE, C SUR	TEMPERATURE, C MID	TEMPERATURE, C MAX	SALINITY, PPT SUR	SALINITY, PPT MID	SALINITY, PPT MAX	CL, MG/M3 SUR	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
40001	11/ 1/99	0839	2938.5	9352.3	17	5	2	5	21.0	21.1	21.1	28.9	28.9	28.9			7.0	6.8	6.5	ST
40002	11/ 1/99	0935	2936.5	9353.7	17	6	3	6	20.9	21.1	21.1	29.1	29.1	29.0			6.3	6.0	6.1	ST
40003	11/ 1/99	1018	2935.4	9351.3	17	7	4	7	21.0	21.0	21.1	28.8	28.8	29.1			6.3	6.1	6.0	ST
40004	11/ 1/99	1100	2935.5	9352.7	17	7	4	7	21.2	21.0	21.6	29.1	29.1	29.4			6.0	5.9	5.6	ST
40005	11/ 1/99	1215	2935.5	9355.2	17	7	4	7	21.5	21.5	21.5	29.5	29.5	29.8			7.0	6.9	6.5	ST
40006	11/ 1/99	1306	2936.6	9357.6	17	6	3	6	21.3	21.3	21.4	29.2	29.2	29.4			6.6	6.8	6.5	ST
40007	11/ 1/99	1357	2938.4	9359.2	17	5	2	5	21.2	21.3	21.3	28.9	28.9	28.9			6.8	6.7	7.0	ST
40008	11/ 1/99	1432	2939.5	9359.6	17	4	2	4	21.6	21.6	21.6	29.0	29.1	29.0			7.1	7.2	7.1	ST
40009	11/16/99	1006	2940.2	9352.6	17	2	1	2	20.3	20.3	20.3	28.4	28.7	28.6			7.2	7.1	6.9	ST
40010	11/16/99	1107	2939.5	9349.3	17	6	3	6	20.4	20.3	20.2	29.6	29.8	29.8			7.3	7.1	6.1	ST
40011	11/16/99	1210	2943.4	9343.3	17	4	2	4	20.6	20.5	20.5	30.1	30.1	30.1			6.2	6.0	5.8	ST
40012	11/17/99	0837	2940.6	9337.3	17	9	4	9	20.2	20.1	20.1	30.5	30.4	30.4			7.0	6.9	7.0	ST
40013	11/17/99	0939	2936.6	9334.7	17	11	6	11	20.2	20.2	20.3	31.1	31.0	32.2			6.9	6.6	6.9	ST
40014	11/17/99	1021	2936.6	9339.2	17	11	6	11	20.3	20.3	20.3	31.0	31.0	31.0			7.7	7.5	7.4	ST
40015	11/17/99	1055	2937.4	9341.7	17	10	5	10	20.5	20.5	20.5	31.2	31.2	31.2			7.3	7.2	7.3	ST
40016	11/17/99	1133	2935.5	9341.3	17	11	6	11	20.6	20.6	20.6	31.5	31.4	31.5			7.3	7.1	7.3	ST

Table 2. Selected environmental parameters (continued)

TRINITY BAY, FALL SHRIMP/GROUNDFISH SURVEY

STA#	DATE MM/DD/YY	TIME	POSITION LAT	POSITION LONG	STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M) MID	SAMPLE DEPTHS (M) MAX	TEMPERATURE, C SUR	TEMPERATURE, C MID	TEMPERATURE, C MAX	SALINITY, PPT SUR	SALINITY, PPT MID	SALINITY, PPT MAX	CL, MG/M3 SUR	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
65001	11/ 4/99	0921	2924.2	9442.0	18	5	3	5	20.0	20.0	19.9	30.0	30.0	30.0			6.9	6.9	6.2	ST
65002	11/ 4/99	1014	2923.9	9432.8	18	11	6	11	20.3	20.3	20.7	30.1	30.2	30.2			6.6	6.6	5.6	ST
65003	11/ 4/99	1032	2924.7	9431.5	18	12	6	12	20.4	20.6	20.7	30.0	30.2	30.2			6.7	6.6	6.3	ST
65004	11/ 4/99	1053	2924.8	9429.5	18	12	6	12	20.3	20.4	20.7	30.2	30.0	30.1			6.6	6.5	5.9	ST
65005	11/ 4/99	1116	2921.3	9432.6	18	12	6	12	20.3	20.5	20.8	30.2	30.1	30.3			7.0	6.6	6.0	ST
65006	11/ 4/99	1204	2918.6	9438.7	18	10	5	10	20.5	20.6	20.7	30.7	31.0	30.9			6.6	6.2	6.1	ST
65007	11/ 4/99	1223	2916.6	9437.6	18	13	7	13	20.5	20.5	20.6	30.8	30.7	30.8			6.1	6.1	6.0	ST
65008	11/ 4/99	1304	2916.9	9442.3	18	9	5	9	20.7	20.7	20.7	30.6	30.7	30.8			6.0	6.0	6.1	ST
65009	12/ 1/99	1215	2912.6	9443.7	18	13	7	13	18.6	18.5	18.4	29.9	30.0	30.0			7.4	7.3	7.3	ST
65010	12/ 1/99	1231	2913.0	9444.7	18	13	7	13	18.5	18.5	18.4	30.0	30.1	30.0			7.3	7.3	7.4	ST
65011	12/ 1/99	1259	2912.8	9445.8	18	13	7	13	18.5	18.5	18.4	30.0	30.1	30.0			7.3	7.3	7.4	ST
65012	12/ 1/99	1322	2911.7	9444.7	18	14	7	14	18.4	18.4	18.3	30.0	30.0	30.0			7.1	7.4	7.0	ST
65013	12/ 1/99	1354	2909.8	9445.5	18	15	8	15	18.6	18.5	18.4	30.1	30.1	30.0			7.0	7.1	7.1	ST
65014	12/ 1/99	1425	2911.9	9449.8	18	12	6	12	19.2	19.3	19.2	30.5	30.5	30.5			7.2	7.4	7.3	ST
65015	12/ 1/99	1451	2910.2	9452.5	18	12	6	12	19.0	18.9	18.9	30.3	30.5	30.7			7.0	7.0	7.3	ST
65016	12/ 1/99	1538	2917.9	9446.1	18	4	2	4	18.9	18.9	18.9	30.5	30.4	30.6			7.3	7.3	7.4	ST

Table 2. Selected environmental parameters (continued)

LUMCON PELICAN, FALL SHRIMP/GROUNDFISH SURVEY

STA#	DATE MM/DD/YY	TIME	POSITION LAT	POSITION LONG	STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M) MID	SAMPLE DEPTHS (M) MAX	TEMPERATURE, C SUR	TEMPERATURE, C MID	TEMPERATURE, C MAX	SALINITY, PPT SUR	SALINITY, PPT MID	SALINITY, PPT MAX	CL, MG/M3 SUR	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
37707	11/29/99	1617	2900.0	9007.3	14	15	6	15	21.1	21.2	24.7	31.3	31.3	36.0	1.257		8.5	8.7	5.4	ST
37708	11/29/99	1816	2859.4	9009.3	14	12	8	12	21.1	21.7	24.4	31.3	31.8	35.2	1.326		7.4	8.0	5.0	ST
37709	11/29/99	2002	2859.8	9007.4	14	18	10	18	21.0	22.3	24.5	31.3	32.7	36.1	0.801		9.1	8.1	4.9	ST
37710	11/29/99	2306	2904.2	8953.2	13	20	12	20	21.3	21.2	24.8	32.2	32.2	36.2	2.106		8.6	8.4	5.0	ST
37711	11/30/99	0325	2901.8	8934.4	13	13	7	13	21.3	23.3	24.9	32.2	34.0	35.5	6.580		6.9	5.3	5.2	ST
37712	11/30/99	0637	2900.0	8930.0	13	14	7	14	23.6	23.6		35.2	35.2		0.945		5.2	5.1		PN
37713	11/30/99	0825	2901.6	8934.4	13	13	9	13	23.3	23.3	24.4	34.7	34.8	36.0	2.475		6.4	6.4	6.2	ST
37714	11/30/99	1133	2904.2	8953.2	13	15	9	15	21.3	21.3	21.5	32.8	32.8	33.1	1.476		7.8	7.9	7.8	ST
37715	11/30/99	1300	2859.9	9000.4	14	25									2.934					PN
37716	11/30/99	1506	2859.3	9009.3	14	15	10	15	21.8	21.8	22.2	33.2	33.2	33.5	3.007		7.9	8.2	7.7	ST
37717	11/30/99	2019	2835.1	9044.4	14	20	11	20	22.7	22.7	22.7	35.6	35.6	35.6	0.569		7.5	7.5	7.6	ST
37718	11/30/99	2137	2832.6	9045.0	14	26	18	26	23.3	23.3	23.3	36.3	36.3	36.3	0.559		7.6	7.5	7.1	ST
37719	11/30/99	2352	2832.1	9057.8	14	24	13	24	22.8	22.8	22.8	36.0	36.0	36.0	0.768		7.3	7.3	7.2	ST
37720	12/ 1/99	0146	2831.2	9103.1	15	30	15	30	22.9	22.9	22.9	35.9	36.0	35.9	0.475		7.2	7.3	7.4	ST
37721	12/ 1/99	0650	2831.3	9030.1	14	31	16	31	23.6	23.6	23.6	36.3	36.3	36.3	0.367		7.0	7.2	7.2	PN
37722	12/ 1/99	0921	2835.1	9044.5	14	20	10	20	22.6	22.6	22.6	35.9	35.9	35.9	0.848		7.5	7.6	7.7	ST
37723	12/ 1/99	1044	2832.7	9045.1	14	23	11	23	23.0	23.0	23.0	36.1	36.1	36.1	0.743		7.1	7.3	7.6	ST
37724	12/ 1/99	1312	2831.8	9057.9	14	29	17	29	23.2	23.1	23.1	36.2	36.3	36.3	0.569		7.7	7.4	7.3	ST
37725	12/ 1/99	1410	2830.0	9059.9	14	33	19	33	23.1	23.0	23.0	36.2	36.1	36.2	0.522		7.6	7.6	7.5	PN
37726	12/ 1/99	1541	2831.2	9103.1	15	31	17	31	23.1	23.1	23.0	36.2	36.2	36.2	0.740		7.6	7.6	7.4	ST
37727	12/ 1/99	1820	2838.2	9110.8	15	20	12	20	21.2	21.7	22.0	33.1	33.9	34.3	0.541		8.0	7.7	7.3	ST
37728	12/ 1/99	2026	2846.8	9109.5	15	11	7	11	20.5	20.5	20.5	33.0	33.0	33.0	0.935		7.8	7.9	8.1	ST
37729	12/ 1/99	2227	2853.3	9117.5	15	9	5	9	19.5	19.5	19.5	33.3	33.3	33.3	1.357		8.3	8.0	8.3	ST
37730	12/ 2/99	0054	2857.8	9129.1	15	11	7	11	19.0	19.0	19.0	33.9	33.9	33.9	1.405		7.8	8.1	8.3	ST
37731	12/ 2/99	0645	2900.1	9130.0	15	11	5	11	19.1	19.1	19.1	33.8	33.8	33.8	2.267		7.9	8.1	8.2	PN
37732	12/ 2/99	0812	2857.9	9129.1	15	12	7	12	19.5	19.5	19.5	33.8	33.8	33.9	1.081		6.6	8.1	8.4	ST
37733	12/ 2/99	1059	2853.4	9117.8	15	7	3	7	19.8	19.8	19.8	33.4	33.4	33.4	1.917		8.6	8.7	8.4	ST
37734	12/ 2/99	1328	2846.9	9109.6	15	8	4	8	20.6	20.5	20.5	33.2	33.2	33.2	1.146		8.6	9.0	9.2	ST
37735	12/ 2/99	1553	2838.2	9110.7	15	18	10	18	22.1	22.1	22.4	35.0	35.1	35.6	0.907		7.7	7.7	7.8	ST
37736	12/ 3/99	0703	2900.0	9100.0	15	7	3	7	19.4	19.4	19.4	31.9	31.9	31.9	2.081		7.0	8.1	7.9	PN

Table 3. 1999 Summer Shrimp/Groundfish Survey species composition list, 377 trawl stations, for those vessels that used either a 40-ft or 20-ft trawl. Species with a total weight of less than 0.0227 kg (0.05 lb) are indicated on the table as 0.0 kg.

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Finfishes					
Micropogonias undulatus	Atlantic croaker	51724	1821.4	197	52.3
Stenotomus caprinus	longspine porgy	43386	1096.4	221	58.6
Peprilus burti	gulf butterfish	30132	1347.9	191	50.7
Chloroscombrus chrysurus	Atlantic bumper	11991	314.1	158	41.9
Trachurus lathami	rough scad	10400	185.4	124	32.9
Serranus atrobranchus	blackear bass	8400	78.0	121	32.1
Trichiurus lepturus	Atlantic cutlassfish	8300	283.0	149	39.5
Prionotus longispinosus	bigeye searobin	6856	116.9	175	46.4
Cynoscion arenarius	sand seatrout	6472	196.9	130	34.5
Cynoscion nothus	silver seatrout	6221	242.0	120	31.8
Centropristis philadelphica	rock sea bass	6006	138.7	177	46.9
Upeneus parvus	dwarf goatfish	5705	98.1	127	33.7
Anchoa hepsetus	striped anchovy	4268	59.9	80	21.2
Prionotus stearnsi	shortwing searobin	3547	31.6	96	25.5
Pristipomoides aquilonaris	wenchman	3034	159.7	95	25.2
Leiostomus xanthurus	spot	2837	150.0	104	27.6
Prionotus paralatus	Mexican searobin	2665	35.0	83	22.0
Saurida brasiliensis	largescale lizardfish	2619	16.7	110	29.2
Harengula jaguana	scaled sardine	2616	108.7	58	15.4
Lagodon rhomboides	pinfish	2583	111.1	159	42.2
Peprilus alepidotus	harvestfish	2469	33.4	58	15.4
Stellifer lanceolatus	star drum	2450	33.1	54	14.3

Table 3. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Selene setapinnis	Atlantic moonfish	1441	56.9	92	24.4
Synodus foetens	inshore lizardfish	1289	124.4	158	41.9
Syacium gunteri	shoal flounder	1152	19.3	119	31.6
Diplectrum bivittatum	dwarf sand perch	1126	26.3	85	22.5
Brevoortia patronus	gulf menhaden	831	36.2	34	9.0
Cynoscion spp.	seatrouts	827	4.0	17	4.5
Trichopsetta ventralis	sash flounder	795	18.3	55	14.6
Halieutichthys aculeatus	pancake batfish	771	5.1	62	16.4
Sphoeroides parvus	least puffer	740	2.2	68	18.0
Bollmannia communis	ragged goby	689	2.6	39	10.3
Lepophidium brevibarbe	blackedge cusk-eel	645	21.3	70	18.6
Arius felis	hardhead catfish	631	72.7	39	10.3
Steindachneria argentea	luminous hake	630	5.2	6	1.6
Decapterus punctatus	round scad	603	11.0	21	5.6
Larimus fasciatus	banded drum	511	17.8	43	11.4
Opisthonema oglinum	Atlantic thread herring	482	36.5	40	10.6
Porichthys plectrodon	Atlantic midshipman	482	7.4	77	20.4
Menticirrhus americanus	southern kingfish	455	41.5	38	10.1
Syacium papillosum	dusky flounder	449	28.9	19	5.0
Bagre marinus	gafftopsail catfish	419	6.5	9	2.4
Lutjanus campechanus	red snapper	400	69.2	84	22.3
Anchoa nasuta	longnose anchovy	368	0.7	3	0.8
Etrumeus teres	round herring	366	3.3	24	6.4
Sardinella aurita	Spanish sardine	347	23.1	33	8.8
Anchoa mitchilli	bay anchovy	321	0.4	32	8.5
Etropus crossotus	fringed flounder	317	4.3	58	15.4

Table 3. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Monacanthus hispidus	planehead filefish	294	3.1	62	16.4
Prionotus rubio	blackwing searobin	248	8.2	18	4.8
Citharichthys spilopterus	bay whiff	220	1.8	46	12.2
Orthopristis chrysoptera	pigfish	216	6.8	19	5.0
Synodus poeyi	offshore lizardfish	205	2.0	41	10.9
Hildebrandia flava	yellow conger	202	14.8	25	6.6
Polydactylus octonemus	Atlantic threadfin	201	7.8	31	8.2
Ophidion holbrooki	bank cusk-eel	193	11.9	3	0.8
Balistes capriscus	gray triggerfish	185	12.2	52	13.8
Scorpaena calcarata	smoothhead scorpionfish	179	7.3	21	5.6
Anchoviella perfasciata	flat anchovy	173	0.5	9	2.4
Lagocephalus laevigatus	smooth puffer	170	7.7	51	13.5
Urophycis floridana	southern hake	166	10.7	33	8.8
Engraulis eurystole	silver anchovy	162	1.2	4	1.1
Cyclopsetta chittendeni	Mexican flounder	156	14.3	52	13.8
Decapterus macarellus	mackeral scad	147	1.1	2	0.5
Caranx crysos	blue runner	133	11.8	25	6.6
Antennarius radiosus	singlespot frogfish	111	1.2	27	7.2
Selene vomer	lookdown	102	0.3	14	3.7
Selar crumenophthalmus	bigeye scad	100	2.9	16	4.2
Hoplunnis macrurus	freckled pike-conger	94	0.8	35	9.3
Chaetodipterus faber	Atlantic spadefish	93	0.9	15	4.0
Symphurus plagiusa	blackcheek tonguefish	93	1.2	27	7.2
Brotula barbata	bearded brotula	89	13.9	26	6.9
Kathetostoma albigutta	lancer stargazer	87	3.9	24	6.4
Caulolatilus intermedius	anchor tilefish	86	6.1	21	5.6

Table 3. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Pontinus longispinis	longspine scorpionfish	82	1.1	8	2.1
Lutjanus synagris	lane snapper	82	7.6	18	4.8
Rhomboplites aurorubens	vermilion snapper	79	21.2	8	2.1
Peprilus triacanthus	butterfish	79	0.6	6	1.6
Centropristis ocyura	bank sea bass	73	5.0	5	1.3
Priacanthus arenatus	bigeye	73	5.9	30	8.0
Eucinostomus gula	silver jenny	73	2.9	13	3.4
Umbrina coroides	sand drum	70	0.5	1	0.3
Mullus auratus	red goatfish	66	3.9	14	3.7
Gobionellus hastatus	sharptail goby	66	0.1	3	0.8
Lepophidium jeannae	mottled cusk-eel	66	1.5	15	4.0
Ancylopsetta dilecta	three-eye flounder	66	4.8	25	6.6
Prionotus ophryas	bandtail searobin	61	0.7	10	2.7
Conodon nobilis	barred grunt	61	5.7	6	1.6
Equetus umbrosus	cubbyu	61	4.1	15	4.0
Engyophrys senta	spiny flounder	61	0.4	24	6.4
Sphyraena guachancho	guaguanche	56	8.2	22	5.8
Gymnachirus texae	fringed sole	52	0.4	20	5.3
Urophycis cirrata	gulf hake	51	1.2	10	2.7
Ogcocephalus parvus	roughback batfish	48	2.0	12	3.2
Diplectrum formosum	sand perch	45	0.6	10	2.7
Haemulon aurolineatum	tomtate	42	1.2	5	1.3
Scomberomorus maculatus	Spanish mackerel	42	5.0	15	4.0
Prionotus tribulus	bighead searobin	41	1.3	17	4.5
Ophidion welshi	crested cusk-eel	41	1.5	10	2.7
Anchoa lyolepis	dusky anchovy	40	0.0	6	1.6

Table 3. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Raja texana	roundel skate	38	13.9	20	5.3
Rhinoptera bonasus	cownose ray	38	257.3	15	4.0
Rhizoprionodon terraenovae	Atlantic sharpnose shark	34	21.4	19	5.0
Chilomycterus schoepfi	striped burrfish	33	5.0	10	2.7
Ogcocephalus declivirostris	slantbrow batfish	31	1.2	13	3.4
Neomerinthe hemingwayi	spinycheek scorpionfish	29	7.9	9	2.4
Seriola dumerili	greater amberjack	29	5.6	12	3.2
Equetus iwamotoi	blackbar drum	29	2.0	10	2.7
Bellator brachychir	shortfin searobin	25	0.0	6	1.6
Achirus lineatus	lined sole	25	0.1	3	0.8
Bathyanthias mexicanus	yellowtail bass	24	0.3	6	1.6
Caulolatilus microps	blueline tilefish	24	8.5	8	2.1
Etropus cyclosquamus	shelf flounder	24	0.0	7	1.9
Bairdiella chrysoura	silver perch	23	1.3	8	2.1
Ophidion grayi	blotched cusk-eel	23	0.8	8	2.1
Paralichthys lethostigma	southern flounder	23	8.7	22	5.8
Eucinostomus argenteus	spotfin mojarra	22	0.6	4	1.1
Ophichthus gomesi	shrimp eel	20	1.3	7	1.9
Scorpaena brasiliensis	barbfish	20	0.3	2	0.5
Hemicaranx amblyrhynchus	bluntnose jack	20	0.7	6	1.6
Ancylopsetta quadrocellata	ocellated flounder	20	2.2	14	3.7
Scomberomorus cavalla	king mackerel	18	0.4	4	1.1
Syacium spp.	lefteye flounders	18	0.1	6	1.6
Prionotus scitulus	leopard searobin	17	0.1	4	1.1
Symphurus diomedianus	spottedfin tonguefish	16	0.5	9	2.4
Squatina dumeril	Atlantic angel shark	15	36.5	10	2.7

Table 3. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Dorosoma petenense	threadfin shad	15	0.4	5	1.3
Seriola zonata	banded rudderfish	15	1.8	5	1.3
Citharichthys macrops	spotted whiff	15	0.2	5	1.3
Prionotus roseus	bluespotted searobin	14	0.4	4	1.1
Bellator militaris	horned searobin	14	0.2	4	1.1
Hemanthias aureorubens	streamer bass	14	0.4	5	1.3
Gymnothorax saxicola	honeycomb moray	13	1.2	6	1.6
Trinectes maculatus	hogchoker	13	0.2	4	1.1
Ariomma bondi	silver-rag	12	1.0	2	0.5
Symphurus civitatus	offshore tonguefish	12	0.1	7	1.9
Ogcocephalus pantostictus	spotted batfish	12	0.0	3	0.8
Gymnothorax nigromarginatus	blackedge moray	11	0.9	5	1.3
Bregmaceros atlanticus	antenna codlet	11	0.0	7	1.9
Peristedion gracile	slender searobin	10	0.0	3	0.8
Decodon puellaris	red hogfish	10	0.4	4	1.1
Paralichthys squamilentus	broad flounder	10	1.6	6	1.6
Physiculus fulvus	metallic codling	8	0.1	4	1.1
Neobythites gillii	cusk-eel	8	0.1	4	1.1
Mustelus norrisi	Florida smoothhound	7	4.3	5	1.3
Hippocampus erectus	lined seahorse	7	0.0	6	1.6
Bellator egretta	streamer searobin	6	0.1	1	0.3
Serraniculus pumilio	pygmy sea bass	6	0.0	4	1.1
Apogon aurolineatus	bridle cardinalfish	6	0.0	2	0.5
Menticirrhus littoralis	gulf kingfish	6	0.9	2	0.5
Calamus calamus	saucereye porgy	6	5.1	4	1.1
Pagrus pagrus	red porgy	6	2.1	2	0.5

Table 3. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Ophidion marginatum	striped cusk-eel	6	0.1	1	0.3
Aluterus schoepfi	orange filefish	6	0.0	4	1.1
Lonchopisthus micrognathus	swordtail jawfish	5	0.0	2	0.5
Monacanthus setifer	pygmy filefish	5	0.0	2	0.5
Mustelus canis	smooth dogfish	4	4.0	4	1.1
Sphyrna tiburo	bonnethead	4	3.8	4	1.1
Astrapogon alutus	bronze cardinalfish	4	0.0	2	0.5
Apogon pseudomaculatus	twospot cardinalfish	4	0.0	2	0.5
Caranx hippos	crevalle jack	4	0.0	4	1.1
Ogcocephalus spp.	batfishes	4	0.1	2	0.5
Ogcocephalus radiatus	polka-dot batfish	4	1.9	1	0.3
Dasyatis say	bluntnose stingray	3	1.1	2	0.5
Trachinocephalus myops	snakefish	3	0.0	2	0.5
Epinephelus flavolimbatus	yellowedge grouper	3	1.0	3	0.8
Serranus notospilus	saddle bass	3	0.0	1	0.3
Phaeoptyx xenus	sponge cardinalfish	3	0.0	1	0.3
Bembrops anatirostris	duckbill flathead	3	0.1	1	0.3
Otophidium omostigmum	polka-dot cusk-eel	3	0.0	1	0.3
Aluterus scriptus	scrawled filefish	3	0.0	3	0.8
Sphoeroides dorsalis	marbled puffer	3	0.1	2	0.5
Antennarius striatus	striated frogfish	3	0.0	3	0.8
Ogcocephalus nasutus	shortnose batfish	3	0.0	2	0.5
Narcine brasiliensis	lesser electric ray	2	1.5	1	0.3
Gymnothorax funebris	green moray	2	8.5	1	0.3
Epinephelus niveatus	snowy grouper	2	0.0	2	0.5
Priacanthus cruentatus	glasseye snapper	2	0.0	1	0.3

Table 3. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Synagrops bellus	blackmouth bass	2	0.0	2	0.5
Seriola fasciata	lesser amberjack	2	0.3	1	0.3
Equetus acuminatus	high-hat	2	0.0	1	0.3
Citharichthys cornutus	horned whiff	2	0.0	1	0.3
Aluterus heudeloti	dotterel filefish	2	0.0	1	0.3
Aluterus monoceros	unicorn filefish	2	0.1	2	0.5
Ogcocephalus corniger	longnose batfish	2	0.2	1	0.3
Carcharhinus acronotus	blacknose shark	1	3.6	1	0.3
Sphyrna lewini	scalloped hammerhead	1	0.6	1	0.3
Raja olseni	spreadfin skate	1	0.2	1	0.3
Dasyatis americana	southern stingray	1	0.5	1	0.3
Hoplunnis diomedianus	blacktail pike-conger	1	0.0	1	0.3
Fistularia petimba	red cornetfish	1	0.0	1	0.3
Fistularia tabacaria	bluespotted cornetfish	1	0.0	1	0.3
Syngnathus louisianae	chain pipefish	1	0.0	1	0.3
Mugil curema	white mullet	1	0.0	1	0.3
Membras martinica	rough silverside	1	0.0	1	0.3
Scorpaena dispar	hunchback scorpionfish	1	0.2	1	0.3
Epinephelus adscensionis	rock hind	1	0.5	1	0.3
Epinephelus guttatus	red hind	1	0.2	1	0.3
Mycteroperca microlepis	gag	1	0.6	1	0.3
Hemanthias leptus	longtail bass	1	0.5	1	0.3
Rypticus maculatus	whitespotted soapfish	1	0.0	1	0.3
Caranx bartholomaei	yellowjack	1	0.0	1	0.3
Trachinotus carolinus	Florida pompano	1	0.1	1	0.3
Pogonias cromis	black drum	1	5.2	1	0.3

Table 3. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Sciaenops ocellatus	red drum	1	8.7	1	0.3
Halichoeres garnoti	yellowhead wrasse	1	0.0	1	0.3
Astroscopus y-graecum	southern stargazer	1	0.0	1	0.3
Blenniidae	combtooth blennies	1	0.0	1	0.3
Gobionellus boleosoma	darter goby	1	0.0	1	0.3
Cyclopsetta fimbriata	spotfin flounder	1	0.0	1	0.3
Bothus robinsi	twospot flounder	1	0.0	1	0.3
Lactophrys triqueter	smooth trunkfish	1	0.0	1	0.3
Sphoeroides nephelus	southern puffer	1	0.0	1	0.3
Sphoeroides spengleri	bandtail puffer	1	0.0	1	0.3
Opsanus beta	gulf toadfish	1	0.0	1	0.3
Opsanus tau	oyster toadfish	1	0.2	1	0.3
Crustaceans					
Penaeus aztecus	brown shrimp	38178	534.2	290	76.9
Trachypenaeus similis	roughback shrimp	25932	104.9	136	36.1
Callinectes similis	lesser blue crab	22663	225.4	235	62.3
Squilla empusa	mantis shrimp	10317	85.0	156	41.4
Portunus spinicarpus	longspine swimming crab	6336	34.2	80	21.2
Portunus gibbesii	irridescent swimming crab	3165	12.3	150	39.8
Trachypenaeus constrictus	roughneck shrimp	2895	11.1	34	9.0
Squilla chydaea	mantis shrimp	2598	14.0	102	27.1
Sicyonia brevirostris	brown rock shrimp	2520	19.7	67	17.8
Xiphopenaeus kroyeri	seabob	2021	13.8	33	8.8
Sicyonia dorsalis	lesser rock shrimp	1603	3.4	71	18.8

Table 3. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Penaeus setiferus	white shrimp	1429	61.0	97	25.7
Solenocera vioscai	humpback shrimp	1109	3.9	42	11.1
Penaeus duorarum	pink shrimp	728	17.1	63	16.7
Parapenaeus politus	deepwater rose shrimp	491	0.6	12	3.2
Callinectes sapidus	blue crab	321	35.5	67	17.8
Portunus spinimanus	blotched swimming crab	299	8.1	38	10.1
Calappa sulcata	yellow box crab	169	41.7	47	12.5
Anasimus latus	stilt spider crab	145	0.7	33	8.8
Libinia dubia	longnose spider crab	53	0.2	18	4.8
Scyllarus chacei	chace slipper lobster	53	0.2	4	1.1
Plesionika longicauda	pandalid shrimp	50	0.0	6	1.6
Portunus sayi	sargassum swimming crab	50	0.1	20	5.3
Raninoides louisianensis	gulf frog crab	40	0.3	13	3.4
Persephona crinita	pink purse crab	39	0.1	20	5.3
Arenaeus cribrarius	speckled swimming crab	36	1.3	9	2.4
Pagurus pollicaris	flatclaw hermit crab	35	0.5	16	4.2
Hepatus epheliticus	calico crab	34	2.7	13	3.4
Paguristes triangulatus	hermit crab	33	0.0	2	0.5
Ovalipes floridanus	Florida lady crab	28	0.1	17	4.5
Stenorhynchus seticornis	yellowline arrow crab	24	0.0	10	2.7
Squilla neglecta	mantis shrimp	21	0.1	4	1.1
Sicyonia burkenroadi	spiny rock shrimp	20	0.0	7	1.9
Libinia emarginata	portly spider crab	20	0.9	8	2.1
Paguridae	right-handed hermit crabs	12	0.1	1	0.3
Pseudorhombilia quadridentata	goneplacid crab	12	0.0	8	2.1
Dardanus insignis	red brocade hermit	12	0.1	6	1.6

Table 3. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Plesionika longipes	shrimp	9	0.0	3	0.8
Euphrosynoplax clausa	craggy bathyal crab	9	0.1	2	0.5
Raninoides loevis	furrowed frog crab	8	0.0	1	0.3
Parthenope granulata	bladetooth elbow crab	8	0.0	6	1.6
Munida forceps	squat lobster	6	0.0	2	0.5
Leiolambrus nitidus	white elbow crab	6	0.0	4	1.1
Myropsis quinquespinosa	fivespine purse crab	5	0.0	3	0.8
Menippe adina	Gulf stone crab	5	0.0	2	0.5
Scyllarides nodifer	ridged slipper lobster	5	0.3	3	0.8
Pagurus bullisi	hermit crab	4	0.0	3	0.8
Persephona mediterranea	mottled purse crab	4	0.0	4	1.1
Stenocionops coelata	spider crab	4	0.6	1	0.3
Speocarcinus lobatus	gulf squareback crab	4	0.0	3	0.8
Alpheidae	snapping shrimps	3	0.0	2	0.5
Manucomplanus curallinus	right-handed hermit crab	3	0.0	1	0.3
Calappa flammea	flame box crab	3	0.4	3	0.8
Lysmata wurdemanni	peppermint shrimp	2	0.0	2	0.5
Hexapanopeus angustifrons	smooth mud crab	2	0.0	1	0.3
Danielum ixbauchac	red sea crab	2	0.0	1	0.3
Scyllarus depressus	scaled slipper lobster	2	0.0	1	0.3
Collodes robustus	spider crab	2	0.0	1	0.3
Podochela sidneyi	shortfinger neck crab	2	0.0	2	0.5
Lironeca ovalis	isopod	1	0.0	1	0.3
Palaemonetes spp.	shore shrimps	1	0.0	1	0.3
Sicyonia parri	rock shrimp	1	0.0	1	0.3
Myropsis spp.	purse crabs	1	0.0	1	0.3

Table 3. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Menippe spp.	stone crabs	1	0.0	1	0.3
Stenocionops spinimanus	prickly spider crab	1	0.4	1	0.3
Porcellana sayana	spotted porcelain crab	1	0.0	1	0.3
Parthenope serrata	sawtooth elbow crab	1	0.0	1	0.3
Others					
Zoobotryon	Bryozoan	350372	3.1	1	0.3
Loligo pleii	arrow squid	15880	188.4	165	43.8
Loligo pealeii	longfin squid	4988	57.0	78	20.7
Lolliguncula brevis	Atlantic brief squid	2912	29.6	128	34.0
Chrysaora quinquecirrha	sea nettle	2613	55.5	84	22.3
Loligo spp.	squids	1949	12.3	18	4.8
Amusium papyraceum	paper scallop	1894	16.3	65	17.2
Astropecten duplicatus	spiny beaded sea star	1105	1.1	52	13.8
Renilla mulleri	short-stemmed sea pansy	564	3.6	45	11.9
Luidia clathrata	sea star	201	3.1	35	9.3
Actinidae	sea anemones	173	0.3	34	9.0
Astropecten cingulatus	starfish	144	1.2	27	7.2
Anadara baughmani	Baughman's ark	94	1.5	9	2.4
Pitar cordatus	Schwengel's pitar	72	1.4	13	3.4
Clypeaster ravenelii	cake urchin	63	7.4	7	1.9
Ophiolepis elegans	brittle star	60	0.1	13	3.4
Ctenophora	comb jellies	58	0.2	1	0.3
Polystira albida	white giant turris	55	0.5	9	2.4
Clypeaster prostratus	sea biscuit	47	9.6	2	0.5

Table 3. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Calliactris tricolor	common sea anemone	42	0.1	11	2.9
Mellita quinquiesperforata	five-slotted sand dollar	42	0.2	2	0.5
Aurelia aurita	moon jellyfish	41	1.3	9	2.4
Stomolophus meleagris	many-mouthed sea jelly	34	32.2	7	1.9
Cnidaria	jellyfish	22	0.0	2	0.5
Laevicardium sybariticum	delicate eggcockle	21	0.2	2	0.5
Tethyaster grandis	starfish	16	0.3	6	1.6
Neverita duplicata	shark eye	11	0.2	9	2.4
Thais haemastoma	rocksnail	9	0.1	4	1.1
Pecten raveneli	Ravenel's scallop	9	0.0	4	1.1
Luidia alternata	banded luidia	8	0.4	5	1.3
Cantharus cancellarius	cancellate cantharus	7	0.0	4	1.1
Moira atropos	mud heart-urchin	7	0.1	1	0.3
Distorsio clathrata	Atlantic distorsio	5	0.0	2	0.5
Muricanthus fulvescens	giant eastern murex	5	0.5	4	1.1
Busycon sinistrum	lightning whelk	5	0.5	5	1.3
Macoma brevifrons	short macoma	5	0.0	1	0.3
Ventricolaria rigida	rigid venus	5	0.2	1	0.3
Phyllorhiza punctata	jellyfish	5	3.0	3	0.8
Paranthus rapiformis	onion anemone	5	0.0	3	0.8
Schizaster orbignyanus	heart urchin	5	0.7	2	0.5
Agriopuma texasianum	Texas venus	4	0.0	1	0.3
Polychaeta	bristleworms	4	0.0	4	1.1
Sconsia striata	royal bonnet	3	0.0	1	0.3
Fasciolaria tulipa	true tulip	3	0.0	1	0.3
Encope aberrans	sand dollar	3	0.0	1	0.3

Table 3. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Anadara ovalis	blood ark	2	0.0	2	0.5
Atrina seminuda	half-naked penshell	2	0.0	1	0.3
Anthozoa	anthozoans	2	0.0	1	0.3
Gorgonidae	gorgonians	2	0.2	2	0.5
Ophiodermatidae	basket stars	2	0.0	1	0.3
Asteroporpa annulata	starfish	2	0.0	1	0.3
Pentamera pulcherrima	sea cucumber	2	0.0	1	0.3
Mollusca	molluscs	1	0.0	1	0.3
Neverita	moon snail	1	0.0	1	0.3
Tonna galea	giant tun	1	0.0	1	0.3
Fasciolaria lilium	banded tulip	1	0.0	1	0.3
Conus austini	cone shell	1	0.0	1	0.3
Aplysia spp.	sea hares	1	0.0	1	0.3
Argopecten gibbus	calico scallop	1	0.0	1	0.3
Tellina alternata	alternate tellin	1	0.0	1	0.3
Chione clenchi	Clench venus	1	0.0	1	0.3
Macrocallista maculata	calico clam	1	0.0	1	0.3
Caretta caretta	loggerhead turtle	1	90.9	1	0.3
Tunicata	tunicates	1	0.0	1	0.3
Styela plicata	tunicate	1	0.0	1	0.3
Porifera	sponges	1	0.0	1	0.3
Chiropsalmus quadrumanus	jellyfish	1	0.0	1	0.3
Bryozoa	moss animals	1	0.0	1	0.3
Nereidae	polychaetes	1	0.0	1	0.3
Astropecten articulatus	plated-margined sea star	1	0.0	1	0.3
Echinaster serpentarius	starfish	1	0.0	1	0.3
Holothuroidea	sea cucumbers	1	0.0	1	0.3

Table 4a

Statistical Zone 11

Summary of dominant organisms taken in statistical zone 11 during the 1999 Summer Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight (WT) in kg per hour, the SEM for 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 similis	2.0	2.00	0.0	0.00	3	46.0	39.25	0.2	0.14	10	1297.3	617.95	4.6	2.13	20
Squilla spp.	0.7	0.67	0.0	0.00	3	36.7	19.57	0.3	0.24	10	901.7	376.37	5.9	2.43	20
Callinectes similis	7.3	7.33	0.1	0.06	3	31.6	23.32	0.3	0.30	10	490.4	252.28	2.5	1.28	20
Penaeus aztecus	8.0	5.29	0.1	0.09	3	34.1	25.49	0.4	0.35	10	178.7	71.06	2.2	0.79	20
Portunus spinicarpus	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	10	223.0	185.28	0.3	0.20	20
Sicyonia brevirostris	0.0	0.00	0.0	0.00	3	1.2	0.91	0.0	0.00	10	273.9	228.92	0.6	0.36	20
Stenotomus caprinus	0.0	0.00	0.0	0.00	3	28.2	16.02	0.2	0.10	10	528.7	179.61	9.2	4.48	20
Peprilus burti	4.0	4.00	0.0	0.00	3	61.6	55.67	0.3	0.33	10	1129.6	456.12	65.1	36.32	20
Micropogonias undulatus	294.0	288.02	5.0	5.00	3	3.2	1.65	0.2	0.12	10	2.0	1.19	0.1	0.05	20
Harengula jaguana	126.7	62.55	3.7	2.10	3	33.6	31.86	1.1	0.99	10	322.9	228.45	15.4	11.81	20
Serranus atrobranchus	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	10	312.9	261.07	1.0	0.73	20
Prionotus longispinosus	3.3	1.76	0.0	0.00	3	4.0	1.24	0.0	0.01	10	134.3	53.67	2.1	1.08	20
Trichiurus lepturus	2.0	2.00	0.1	0.09	3	3.0	2.41	0.0	0.02	10	128.4	80.17	6.7	4.48	20
Trachurus lathami	0.0	0.00	0.0	0.00	3	5.5	4.17	0.0	0.01	10	132.7	80.23	1.1	0.59	20
Squid	114.0	111.01	0.6	0.64	3	49.4	25.99	0.5	0.26	10	187.4	49.04	2.4	0.67	20

Table 4a (continued)

Statistical Zone 11

Summary of dominant organisms taken in statistical zone 11 during the 1999 Summer Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight (WT) in kg per hour, the SEM for weight and the number (N) of samples taken.

	21-30 FM					31-40 FM					>40 FM				
SPECIES	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Trachypenaeus similis	718.0	700.52	2.3	2.26	6	7.5	7.50	0.0	0.03	5	0.0	0.00	0.0	0.00	3
Squilla spp.	341.6	311.55	1.6	1.23	6	31.4	19.46	0.3	0.30	5	28.6	28.65	0.1	0.12	3
Callinectes similis	315.2	309.98	1.5	1.47	6	27.7	21.40	0.1	0.10	5	0.0	0.00	0.0	0.00	3
Penaeus aztecus	456.4	421.38	6.4	5.56	6	16.2	8.62	0.7	0.31	5	42.2	38.96	2.5	2.29	3
Portunus spinicarpus	185.8	112.77	1.2	0.79	6	40.1	32.76	0.5	0.29	5	10.8	10.81	0.1	0.10	3
Sicyonia brevirostris	60.8	20.61	0.7	0.27	6	9.6	7.00	0.1	0.05	5	0.0	0.00	0.0	0.00	3
Stenotomus caprinus	842.4	397.69	39.7	20.88	6	830.1	462.71	52.9	29.83	5	101.6	92.00	7.5	6.63	3
Peprilus burti	559.4	479.16	39.8	39.37	6	0.8	0.75	0.1	0.07	5	0.0	0.00	0.0	0.00	3
Micropogonias undulatus	309.4	257.45	19.3	16.16	6	1152.0	819.85	89.4	65.74	5	1127.9	888.05	91.9	71.50	3
Harengula jaguana	5.7	5.67	0.2	0.23	6	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	3
Serranus atrobranchus	116.8	105.78	0.3	0.26	6	35.6	35.57	0.5	0.52	5	64.7	35.09	1.3	0.65	3
Prionotus longispinosus	83.8	38.68	3.9	2.07	6	174.1	55.42	6.4	2.34	5	33.0	13.98	3.1	1.50	3
Trichiurus lepturus	93.9	80.33	2.4	2.28	6	36.4	28.51	1.5	1.42	5	3.5	1.61	0.6	0.44	3
Trachurus lathami	12.8	8.83	0.2	0.16	6	4.8	4.80	0.4	0.38	5	5.5	3.59	0.3	0.30	3
Squid	184.4	144.16	1.4	1.09	6	97.0	63.14	0.8	0.54	5	101.5	79.02	0.9	0.60	3

Table 4b

Statistical Zone 11

Summary of mean total catch and environmental data (X), the standard error of the mean (SEM) and the number (N) of samples taken during the 1999 Summer Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m³, and oxygen in ppm.

	0-5 FM			6-10 FM			11-20 FM			21-30 FM			31-40 FM			>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	67.3	1.82	3	50.4	19.86	10	160.3	51.44	20	144.8	42.93	6	187.6	93.91	5	146	85.79	3
Total finfish kg	49.7	18.08	3	47.3	20.22	10	133.3	52.40	20	128.1	47.51	6	183	93.93	5	141	84.26	3
Total crustacean kg	1.8	1.82	3	1.5	1.36	10	17.6	5.99	20	15	11.64	6	3.2	1.28	5	3	1.87	3
Total others kg	15.5	15.45	3	1.2	0.58	10	9.1	5.66	20	1.5	1.08	6	1.4	0.70	5	1	0.41	3
Surface temperature	27.7	0.21	3	28.6	0.17	10	29.1	0.15	21	29	0.38	8	29.2	0.36	4	30	0.36	5
Midwater temperature	27.9	0.35	3	27.6	0.22	10	25	0.35	21	23.1	0.24	8	23	0.37	4	22	0.40	5
Bottom temperature	27.4	0.32	3	25	0.39	10	22.3	0.16	20	21.5	0.13	8	20.8	0.72	4	17	0.95	5
Surface salinity	27.4	1.71	3	24.6	1.45	10	26	0.97	21	28	0.56	8	25.6	1.76	4	28	1.63	5
Midwater salinity	28.2	1.59	3	29.3	0.54	10	33.6	0.49	21	35.9	0.13	8	35.9	0.16	4	36	0.02	5
Bottom salinity	29.7	0.87	3	32.6	0.54	10	35.7	0.14	20	36.1	0.04	8	36.2	0.11	4	36	0.12	5
Surface chlorophyll	0.0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0
Surface fluorescence	2.9	0.00	3	2.9	0.00	10	2.5	0.22	21	2.3	0.26	8	2.2	0.43	4	2	0.67	5
Surface oxygen	7.2	0.48	3	6.8	0.25	10	6.7	0.69	16	6.2	0.85	4	5.7	0.00	1	0	0.00	0
Midwater oxygen	7.2	0.50	3	6	0.44	10	5.3	0.57	15	3.8	0.55	4	5.2	0.00	1	0	0.00	0
Bottom oxygen	6.5	1.27	3	4.8	0.80	10	4.7	0.65	15	4	0.65	4	4.8	0.00	1	0	0.00	0

Table 5a

Statistical Zone 13

Summary of dominant organisms taken in statistical zone 13 during the 1999 Summer Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight (WT) in kg per hour, the SEM for weight and the number (N) of samples taken. No trawl samples were taken in depths greater than 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
Squilla spp.	0.0	0.00	0.0	0.00	1	216.3	97.74	1.5	1.13	5	1178.8	412.21	5.9	2.24	5
Trachypenaeus similis	0.0	0.00	0.0	0.00	1	427.2	274.60	1.2	0.75	5	701.5	304.10	2.6	1.22	5
Penaeus aztecus	126.7	0.00	0.9	0.00	1	135.5	116.51	1.7	1.49	5	211.2	98.58	3.0	1.45	5
Callinectes similis	0.0	0.00	0.0	0.00	1	56.1	37.76	0.3	0.18	5	74.3	41.25	0.3	0.16	5
Portunus spinicarpus	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	5
Portunus gibbesii	0.0	0.00	0.0	0.00	1	8.0	6.46	0.0	0.00	5	17.1	9.21	0.0	0.00	5
Micropogonias undulatus	940.0	0.00	45.8	0.00	1	652.9	424.75	28.8	18.70	5	15.6	11.32	0.7	0.51	5
Cynoscion arenarius	56.7	0.00	1.2	0.00	1	1564.8	1287.24	5.2	4.12	5	447.3	432.68	5.6	4.12	5
Trichiurus lepturus	36.7	0.00	0.6	0.00	1	169.8	147.55	1.3	1.12	5	1797.1	1656.45	11.0	9.95	5
Cynoscion nothus	0.0	0.00	0.0	0.00	1	9.6	9.60	0.5	0.55	5	676.7	475.62	3.5	2.86	5
Prionotus longispinosus	0.0	0.00	0.0	0.00	1	221.3	176.49	2.8	2.31	5	132.8	57.44	1.5	0.64	5
Centropristis philadelphica	0.0	0.00	0.0	0.00	1	28.8	23.27	0.4	0.37	5	249.7	112.27	3.1	1.51	5
Cynoscion spp.	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	5	285.6	285.60	1.5	1.47	5
Steindachneria argentea	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	5
Squid	23.3	0.00	0.3	0.00	1	322.8	263.09	2.1	1.64	5	620.7	545.63	1.8	1.67	5

Table 5a (continued)

Statistical Zone 13

Summary of dominant organisms taken in statistical zone 13 during the 1999 Summer Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight (WT) in kg per hour, the SEM for weight and the number (N) of samples taken. No trawl samples were taken in depths greater than 40 fm.

	21-30 FM					31-40 FM					>40 FM				
SPECIES	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Squilla spp.	0.0	0.00	0.0	0.00	0	150.0	0.00	1.6	0.00	1	0.0	0.00	0.00	0	0
Trachypenaeus similis	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	1	0.0	0.00	0.00	0	0
Penaeus aztecus	0.0	0.00	0.0	0.00	0	12.0	0.00	0.3	0.00	1	0.0	0.00	0.00	0	0
Callinectes similis	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	1	0.0	0.00	0.00	0	0
Portunus spinicarpus	0.0	0.00	0.0	0.00	0	264.0	0.00	1.6	0.00	1	0.0	0.00	0.00	0	0
Portunus gibbesii	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	1	0.0	0.00	0.00	0	0
Micropogonias undulatus	0.0	0.00	0.0	0.00	0	6558.0	0.00	384.5	0.00	1	0.0	0.00	0.00	0	0
Cynoscion arenarius	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	1	0.0	0.00	0.00	0	0
Trichiurus lepturus	0.0	0.00	0.0	0.00	0	12.0	0.00	4.9	0.00	1	0.0	0.00	0.00	0	0
Cynoscion nothus	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	1	0.0	0.00	0.00	0	0
Prionotus longispinosus	0.0	0.00	0.0	0.00	0	36.0	0.00	1.1	0.00	1	0.0	0.00	0.00	0	0
Centropristis philadelphica	0.0	0.00	0.0	0.00	0	264.0	0.00	7.6	0.00	1	0.0	0.00	0.00	0	0
Cynoscion spp.	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	1	0.0	0.00	0.00	0	0
Steindachneria argentea	0.0	0.00	0.0	0.00	0	762.0	0.00	8.5	0.00	1	0.0	0.00	0.00	0	0
Squid	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	1	0.0	0.00	0.00	0	0

Table 5b

Statistical Zone 13

Summary of mean total catch and environmental data (X), the standard error of the mean (SEM) and the number (N) of samples taken during the 1999 Summer Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m³, and oxygen in ppm. No trawl samples were taken in depths greater than 40 fm.

	0-5 FM			6-10 FM			11-20 FM			21-30 FM			31-40 FM			>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	56.1	0.00	1	54.5	29.44	5	64.7	18.35	5	0.0	0.00	0	414.5	0.00	1	0.0	0.00	0
Total finfish kg	54.5	0.00	1	46.6	24.60	5	49.2	16.55	5	0.0	0.00	0	411.8	0.00	1	0.0	0.00	0
Total crustacean kg	1.5	0.00	1	5.8	3.34	5	13.3	4.75	5	0.0	0.00	0	2.7	0.00	1	0.0	0.00	0
Total others kg	0.0	0.00	1	2.2	1.59	5	1.9	1.59	5	0.0	0.00	0	0.0	0.00	1	0.0	0.00	0
Surface temperature	29.5	0.00	1	30.3	0.32	7	29.7	0.18	5	29.0	0.00	1	0.0	0.00	0	29.4	0.00	1
Midwater temperature	29.5	0.00	1	29.2	0.13	7	28.7	0.10	5	28.5	0.00	1	0.0	0.00	0	23.7	0.00	1
Bottom temperature	29.4	0.00	1	28.3	0.10	7	26.1	0.41	5	26.1	0.00	1	0.0	0.00	0	20.0	0.00	1
Surface salinity	8.9	0.00	1	16.9	2.56	7	20.6	1.45	5	14.1	0.00	1	0.0	0.00	0	32.8	0.00	1
Midwater salinity	15.6	0.00	1	29.5	1.16	7	34.7	0.20	5	35.3	0.00	1	0.0	0.00	0	35.9	0.00	1
Bottom salinity	26.2	0.00	1	34.8	0.14	7	35.8	0.03	5	35.9	0.00	1	0.0	0.00	0	36.3	0.00	1
Surface chlorophyll	0.0	0.00	0	42.4	8.92	4	17.8	1.10	2	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface fluorescence	2.1	0.00	1	3.2	0.51	7	3.3	0.52	5	2.1	0.00	1	0.0	0.00	0	8.7	0.00	1
Surface oxygen	5.1	0.00	1	6.9	0.74	4	5.1	0.20	2	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater oxygen	6.0	0.00	1	7.0	0.76	4	4.3	0.25	2	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom oxygen	4.1	0.00	1	3.3	0.49	4	3.9	0.20	2	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0

Table 6a

Statistical Zone 14

Summary of dominant organisms taken in statistical zone 14 during the 1999 Summer Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight (WT) in kg per hour, the SEM for 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
Penaeus aztecus	119.9	51.64	0.9	0.42	4	4.7	2.17	0.1	0.04	5	561.3	179.77	6.0	1.96	17
Trachypenaeus similis	0.7	0.68	0.0	0.00	4	6.5	6.46	0.0	0.02	5	180.7	100.22	1.1	0.61	17
Squilla spp.	0.0	0.00	0.0	0.00	4	17.8	11.83	0.1	0.10	5	134.5	55.06	1.1	0.52	17
Portunus spinicarpus	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	17
Callinectes similis	3.8	2.21	0.0	0.00	4	7.1	6.34	0.2	0.19	5	25.3	13.09	0.4	0.19	17
Solenocera vioscai	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	17
Peprilus burti	2.0	2.05	0.2	0.19	4	3.5	2.32	0.4	0.27	5	576.6	269.14	13.3	7.48	17
Micropogonias undulatus	662.9	341.98	24.4	12.21	4	12.1	7.48	0.6	0.34	5	308.9	100.12	16.3	5.60	17
Trachurus lathami	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	5	342.9	182.89	4.9	2.71	17
Anchoa hepsetus	4.1	4.09	0.1	0.06	4	90.9	89.77	0.6	0.54	5	592.1	469.46	5.6	3.46	17
Trichiurus lepturus	212.6	75.58	6.9	3.55	4	4.4	3.15	0.0	0.03	5	353.5	253.19	7.3	5.20	17
Prionotus longispinosus	1.4	1.36	0.0	0.03	4	7.2	2.46	0.1	0.05	5	228.0	79.79	3.2	1.15	17
Stenotomus caprinus	0.0	0.00	0.0	0.00	4	3.6	3.60	0.0	0.00	5	211.5	85.86	1.6	0.61	17
Serranus atrobranchus	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	5	12.1	10.38	0.1	0.05	17
Squid	108.1	81.92	2.8	2.37	4	78.4	48.02	0.7	0.48	5	517.8	193.20	3.3	0.94	17

Table 6a (continued)

Statistical Zone 14

Summary of dominant organisms taken in statistical zone 14 during the 1999 Summer Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight (WT) in kg per hour, the SEM for weight and the number (N) of samples taken.

	21-30 FM					31-40 FM					>40 FM				
SPECIES	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Penaeus aztecus	49.3	17.69	1.0	0.50	5	111.6	31.30	3.2	0.55	3	18.4	18.41	0.9	0.87	2
Trachypenaeus similis	43.7	43.73	0.3	0.31	5	78.0	78.00	0.2	0.18	3	0.0	0.00	0.0	0.00	2
Squilla spp.	40.5	37.92	0.7	0.65	5	16.9	7.08	0.3	0.14	3	80.5	39.55	0.8	0.22	2
Portunus spinicarpus	1.2	1.20	0.0	0.00	5	93.0	49.13	0.7	0.36	3	467.0	225.68	3.6	1.64	2
Callinectes similis	46.1	24.35	1.0	0.58	5	8.8	1.80	0.1	0.08	3	2.0	2.05	0.0	0.03	2
Solenocera vioscai	39.9	39.86	0.1	0.13	5	13.4	7.54	0.0	0.04	3	55.9	4.09	0.4	0.12	2
Peprilus burti	161.7	124.88	12.1	9.76	5	20.3	15.53	1.9	1.31	3	5.5	5.45	0.4	0.37	2
Micropogonias undulatus	9.6	7.67	0.6	0.46	5	294.9	233.98	18.1	13.24	3	1176.8	890.45	76.6	52.84	2
Trachurus lathami	67.0	31.86	0.8	0.40	5	14.8	12.01	0.1	0.10	3	0.0	0.00	0.0	0.00	2
Anchoa hepsetus	37.0	25.60	0.8	0.55	5	3.9	3.25	0.1	0.04	3	0.0	0.00	0.0	0.00	2
Trichiurus lepturus	62.1	27.42	3.1	1.38	5	181.0	143.69	7.3	5.01	3	2.0	2.05	0.0	0.00	2
Prionotus longispinosus	7.9	4.04	0.3	0.17	5	4.0	4.00	0.3	0.27	3	10.2	10.23	0.4	0.40	2
Stenotomus caprinus	39.8	23.09	0.4	0.27	5	51.3	28.53	2.6	1.29	3	88.6	88.64	5.5	5.49	2
Serranus atrobranchus	137.0	131.30	1.3	1.21	5	121.3	43.34	1.8	0.73	3	197.7	23.18	4.0	0.00	2
Squid	87.9	17.66	0.7	0.11	5	74.1	24.29	0.5	0.22	3	5.5	5.45	0.0	0.00	2

Table 6b

Statistical Zone 14

Summary of mean total catch and environmental data (X), the standard error of the mean (SEM) and the number (N) of samples taken during the 1999 Summer Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m³, and oxygen in ppm.

	0-5 FM			6-10 FM			11-20 FM			21-30 FM			31-40 FM			>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	81.9	28.87	4	9.2	5.61	5	83.1	17.83	17	31.0	14.19	5	45.8	20.74	3	105.1	51.14	2
Total finfish kg	53.2	8.50	4	7.6	5.29	5	69.6	16.04	17	26.8	13.96	5	40.0	19.57	3	98.9	49.90	2
Total crustacean kg	2.3	1.77	4	0.5	0.30	5	9.8	3.11	17	3.4	2.33	5	4.8	0.56	3	5.9	1.55	2
Total others kg	25.7	22.56	4	0.8	0.53	5	3.6	1.14	17	0.6	0.22	5	0.2	0.17	3	0.0	0.00	2
Surface temperature	30.2	0.26	6	29.6	0.16	5	29.7	0.09	19	29.6	0.10	7	29.6	0.01	2	29.4	0.16	3
Midwater temperature	29.6	0.50	6	29.3	0.17	5	29.0	0.12	19	27.8	0.53	7	26.1	1.41	2	24.4	1.35	3
Bottom temperature	29.7	0.37	6	27.9	0.31	5	26.0	0.21	19	23.8	0.33	7	21.5	0.55	2	21.0	1.29	3
Surface salinity	24.7	0.90	6	26.3	0.64	5	28.1	0.62	19	31.3	0.99	7	33.0	1.44	2	30.3	0.68	3
Midwater salinity	26.5	1.01	6	30.3	1.14	5	34.1	0.28	19	35.4	0.26	7	35.8	0.27	2	35.7	0.23	3
Bottom salinity	28.7	1.51	6	34.9	0.34	5	35.7	0.04	19	36.0	0.03	7	36.1	0.08	2	36.2	0.13	3
Surface chlorophyll	6.7	3.88	2	5.1	0.00	1	4.4	0.81	10	4.2	0.00	1	0.0	0.00	0	0.0	0.00	0
Surface fluorescence	6.9	0.00	6	7.0	0.28	5	7.1	0.19	19	7.9	0.28	7	8.9	0.50	2	7.9	0.48	3
Surface oxygen	6.2	0.47	6	4.0	0.00	1	4.0	0.33	11	2.3	0.00	1	0.0	0.00	0	0.0	0.00	0
Midwater oxygen	5.1	0.34	6	4.8	0.00	1	4.7	0.14	11	5.6	0.00	1	0.0	0.00	0	0.0	0.00	0
Bottom oxygen	3.3	0.65	6	3.0	0.00	1	1.5	0.36	11	2.0	0.00	1	0.0	0.00	0	0.0	0.00	0

Table 7a

Statistical Zone 15

Summary of dominant organisms taken in statistical zone 15 during the 1999 Summer Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight (WT) in kg per hour, the SEM for 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 similis	14.9	13.72	0.1	0.07	4	14.4	9.25	0.0	0.02	5	484.7	236.69	2.4	1.18	15
Penaeus aztecus	416.2	346.84	3.2	2.66	4	19.6	12.61	0.1	0.05	5	108.7	40.49	1.7	0.68	15
Squilla spp.	8.1	5.38	0.0	0.05	4	5.1	3.13	0.0	0.02	5	127.6	70.16	0.9	0.43	15
Callinectes similis	12.9	8.07	0.1	0.09	4	8.6	4.59	0.1	0.04	5	24.5	10.48	0.3	0.11	15
Portunus gibbesii	11.6	5.10	0.1	0.04	4	21.3	11.90	0.1	0.06	5	27.3	10.05	0.1	0.04	15
Sicyonia dorsalis	8.0	8.00	0.0	0.05	4	3.9	2.43	0.0	0.00	5	9.2	5.13	0.0	0.01	15
Stenotomus caprinus	77.6	59.75	0.4	0.28	4	34.2	24.25	0.2	0.19	5	505.0	210.96	3.2	1.31	15
Micropogonias undulatus	732.7	537.40	20.4	17.73	4	1384.8	1368.85	56.3	56.03	5	10.0	5.03	0.3	0.14	15
Peprilus burti	0.9	0.91	0.0	0.00	4	0.0	0.00	0.0	0.00	5	300.8	252.30	2.0	1.51	15
Chloroscombrus chrysurus	441.1	55.59	10.4	3.12	4	100.8	64.02	2.8	1.80	5	173.7	112.91	7.1	4.67	15
Trachurus lathami	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	5	194.2	117.88	2.8	1.71	15
Centropristis philadelphica	2.9	1.90	0.0	0.02	4	4.4	3.06	0.0	0.02	5	75.6	21.92	0.8	0.26	15
Serranus atrobranchus	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	5	21.7	20.29	0.1	0.10	15
Prionotus longispinosus	14.5	8.80	0.1	0.11	4	68.5	62.53	0.7	0.63	5	55.0	17.44	0.7	0.22	15
Squid	100.3	58.11	1.3	0.75	4	72.7	60.11	1.3	1.10	5	150.4	66.86	1.0	0.51	15

Table 7a (continued)

Statistical Zone 15

Summary of dominant organisms taken in statistical zone 15 during the 1999 Summer Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight (WT) in kg per hour, the SEM for weight and the number (N) of samples taken.

	21-30 FM					31-40 FM					>40 FM				
SPECIES	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Trachypenaeus similis	863.8	0.00	5.5	0.00	1	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	3
Penaeus aztecus	139.2	0.00	2.8	0.00	1	74.5	0.00	3.2	0.00	1	3.6	1.83	0.2	0.09	3
Squilla spp.	229.8	0.00	2.9	0.00	1	8.3	0.00	0.2	0.00	1	0.0	0.00	0.0	0.00	3
Callinectes similis	43.0	0.00	0.3	0.00	1	80.7	0.00	0.8	0.00	1	0.0	0.00	0.0	0.00	3
Portunus gibbesii	49.8	0.00	0.1	0.00	1	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	3
Sicyonia dorsalis	96.2	0.00	0.2	0.00	1	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	3
Stenotomus caprinus	486.8	0.00	2.9	0.00	1	456.2	0.00	18.7	0.00	1	109.8	47.02	5.6	2.27	3
Micropogonias undulatus	0.0	0.00	0.0	0.00	1	12.4	0.00	1.1	0.00	1	7.8	6.40	0.7	0.57	3
Peprilus burti	14.7	0.00	0.2	0.00	1	875.2	0.00	28.8	0.00	1	185.7	62.44	15.2	4.95	3
Chloroscombrus chrysurus	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	3
Trachurus lathami	3.4	0.00	0.1	0.00	1	46.6	0.00	0.8	0.00	1	36.0	14.14	1.5	0.73	3
Centropristis philadelphica	319.2	0.00	5.2	0.00	1	50.7	0.00	0.1	0.00	1	0.0	0.00	0.0	0.00	3
Serranus atrobranchus	523.0	0.00	2.7	0.00	1	67.2	0.00	0.6	0.00	1	0.5	0.53	0.0	0.00	3
Prionotus longispinosus	14.7	0.00	0.3	0.00	1	38.3	0.00	1.1	0.00	1	0.0	0.00	0.0	0.00	3
Squid	64.5	0.00	0.6	0.00	1	8.3	0.00	0.2	0.00	1	160.4	73.64	1.4	0.76	3

Table 7b

Statistical Zone 15

Summary of mean total catch and environmental data (X), the standard error of the mean (SEM) and the number (N) of samples taken during the 1999 Summer Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m³, and oxygen in ppm.

	0-5 FM			6-10 FM			11-20 FM			21-30 FM			31-40 FM			>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	48.1	18.76	4	65.4	59.40	5	26.8	6.61	15	27.8	0.00	1	64.4	0.00	1	48.3	22.41	3
Total finfish kg	41.2	17.60	4	62.4	58.46	5	20.3	6.12	15	15.4	0.00	1	58.8	0.00	1	45.9	21.55	3
Total crustacean kg	4.9	2.87	4	1.9	1.23	5	5.6	2.05	15	11.8	0.00	1	5.2	0.00	1	0.2	0.15	3
Total others kg	2.3	1.06	4	1.1	1.13	5	0.9	0.56	15	0.5	0.00	1	0.5	0.00	1	2.2	1.02	3
Surface temperature	29.7	0.14	3	29.7	0.08	7	30.1	0.07	15	29.8	0.22	3	29.8	0.00	1	29.6	0.02	2
Midwater temperature	29.7	0.17	3	29.6	0.08	7	29.0	0.11	15	27.8	0.78	3	26.3	0.00	1	24.0	0.85	2
Bottom temperature	29.2	0.17	3	28.6	0.22	6	24.9	0.22	15	22.8	0.24	3	21.9	0.00	1	19.7	0.01	2
Surface salinity	25.7	1.89	3	23.9	1.87	7	30.6	0.40	15	31.5	0.20	3	32.4	0.00	1	33.4	0.87	2
Midwater salinity	27.0	1.53	3	29.1	0.94	7	33.8	0.18	15	34.4	0.42	3	35.8	0.00	1	36.0	0.09	2
Bottom salinity	30.5	3.10	3	31.6	1.99	6	35.5	0.06	15	35.8	0.04	3	36.1	0.00	1	36.4	0.01	2
Surface chlorophyll	37.5	0.00	1	22.7	7.77	2	0.6	0.12	7	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface fluorescence	8.5	0.00	3	7.1	0.50	7	8.4	0.24	15	8.6	0.66	3	9.2	0.00	1	8.8	0.50	2
Surface oxygen	6.3	1.95	2	5.8	0.30	2	4.0	0.22	7	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater oxygen	5.0	0.80	2	5.3	0.70	2	5.4	0.16	7	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom oxygen	3.2	0.80	2	1.2	0.40	2	1.4	0.13	7	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0

Table 8a

Statistical Zone 16

Summary of dominant organisms taken in statistical zone 16 during the 1999 Summer Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight (WT) in kg per hour, the SEM for 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 similis	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	9	369.3	258.15	1.8	1.20	9
Portunus spinicarpus	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	9	0.0	0.00	0.0	0.00	9
Penaeus aztecus	348.8	153.38	2.2	0.98	6	19.4	8.74	0.2	0.07	9	97.9	62.21	1.3	0.78	9
Squilla spp.	2.7	2.73	0.0	0.00	6	0.1	0.11	0.0	0.00	9	111.6	80.63	1.0	0.72	9
Xiphopenaeus kroyeri	203.1	136.32	0.8	0.62	6	0.0	0.00	0.0	0.00	9	0.0	0.00	0.0	0.00	9
Callinectes similis	40.6	19.62	0.1	0.09	6	0.8	0.55	0.0	0.00	9	45.7	24.13	0.7	0.43	9
Micropogonias undulatus	1069.9	875.40	31.6	27.89	6	3131.0	1868.95	72.6	42.72	9	180.6	167.40	4.2	3.67	9
Chloroscombrus chrysurus	1374.5	1098.65	3.7	2.46	6	636.7	398.61	12.8	7.81	9	81.1	48.87	3.1	1.83	9
Stenotomus caprinus	0.0	0.00	0.0	0.00	6	0.8	0.78	0.0	0.01	9	469.7	267.19	5.6	2.99	9
Peprilus burti	0.5	0.47	0.0	0.01	6	41.8	30.00	0.9	0.73	9	184.8	109.00	8.1	4.56	9
Trachurus lathami	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	9	198.1	105.72	4.6	2.58	9
Peprilus alepidotus	255.5	126.99	2.4	1.14	6	201.5	126.84	5.4	3.60	9	1.0	1.03	0.0	0.00	9
Selene setapinnis	27.8	25.70	0.1	0.09	6	0.3	0.26	0.0	0.01	9	96.9	88.40	5.1	4.58	9
Prionotus stearnsi	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	9	1.1	1.05	0.0	0.00	9
Squid	58.9	35.85	0.6	0.32	6	91.2	82.99	1.6	1.45	9	49.9	27.73	0.6	0.31	9

Table 8a (continued)

Statistical Zone 16

Summary of dominant organisms taken in statistical zone 16 during the 1999 Summer Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight (WT) in kg per hour, the SEM for weight and the number (N) of samples taken.

	21-30 FM					31-40 FM					>40 FM				
SPECIES	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Trachypenaeus similis	0.0	0.00	0.0	0.00	0	1.3	1.33	0.0	0.00	3	0.0	0.00	0.0	0.00	4
Portunus spinicarpus	0.0	0.00	0.0	0.00	0	788.3	175.20	4.5	1.31	3	5.1	5.14	0.0	0.02	4
Penaeus aztecus	0.0	0.00	0.0	0.00	0	26.0	1.15	1.4	0.03	3	7.4	4.53	0.5	0.33	4
Squilla spp.	0.0	0.00	0.0	0.00	0	4.0	4.00	0.0	0.03	3	39.3	38.89	0.4	0.35	4
Xiphopenaeus kroyeri	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	4
Callinectes similis	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	4
Micropogonias undulatus	0.0	0.00	0.0	0.00	0	5.7	3.84	0.5	0.35	3	2.0	2.00	0.3	0.28	4
Chloroscombrus chrysurus	0.0	0.00	0.0	0.00	0	1.3	1.33	0.0	0.05	3	0.0	0.00	0.0	0.00	4
Stenotomus caprinus	0.0	0.00	0.0	0.00	0	195.3	45.86	10.1	2.09	3	117.1	12.58	5.8	0.72	4
Peprilus burti	0.0	0.00	0.0	0.00	0	14.7	4.81	1.0	0.31	3	289.1	73.25	22.3	6.57	4
Trachurus lathami	0.0	0.00	0.0	0.00	0	1.3	1.33	0.0	0.03	3	188.1	83.29	5.6	2.23	4
Peprilus alepidotus	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	4
Selene setapinnis	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	4
Prionotus stearnsi	0.0	0.00	0.0	0.00	0	32.0	12.06	0.2	0.11	3	239.2	233.98	2.6	2.55	4
Squid	0.0	0.00	0.0	0.00	0	7.3	5.46	0.5	0.44	3	314.0	69.45	3.3	0.56	4

Table 8b

Statistical Zone 16

Summary of mean total catch and environmental data (X), the standard error of the mean (SEM) and the number (N) of samples taken during the 1999 Summer Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m³, and oxygen in ppm.

	0-5 FM			6-10 FM			11-20 FM			21-30 FM			31-40 FM			>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	60.4	30.41	6	106.3	55.02	9	44.5	11.94	9	0.0	0.00	0	44.8	3.80	3	57.1	9.28	4
Total finfish kg	53.7	30.59	6	104.0	55.00	9	38.2	10.98	9	0.0	0.00	0	37.6	2.90	3	52.4	9.16	4
Total crustacean kg	5.4	2.21	6	0.4	0.19	9	5.7	2.96	9	0.0	0.00	0	6.1	1.09	3	1.1	0.94	4
Total others kg	1.2	0.79	6	1.8	1.49	9	0.6	0.33	9	0.0	0.00	0	1.2	0.76	3	3.6	0.77	4
Surface temperature	30.1	0.31	4	29.7	0.07	8	29.7	0.11	9	0.0	0.00	0	29.5	0.00	1	29.2	0.09	3
Midwater temperature	30.1	0.24	4	29.5	0.11	8	28.8	0.17	9	0.0	0.00	0	28.3	0.00	1	24.3	0.71	3
Bottom temperature	30.1	0.23	4	28.5	0.25	8	25.0	0.32	9	0.0	0.00	0	21.4	0.00	1	18.6	0.24	3
Surface salinity	17.1	4.30	4	21.5	1.09	8	28.5	1.58	9	0.0	0.00	0	31.7	0.00	1	32.8	0.08	3
Midwater salinity	16.8	4.31	4	27.5	0.96	8	32.9	0.59	9	0.0	0.00	0	35.6	0.00	1	36.0	0.30	3
Bottom salinity	19.3	3.86	4	31.8	0.58	8	35.2	0.18	9	0.0	0.00	0	36.1	0.00	1	36.4	0.01	3
Surface chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface fluorescence	8.8	0.00	4	5.8	0.73	8	5.9	1.09	9	0.0	0.00	0	8.8	0.00	1	9.1	0.10	3
Surface oxygen	6.0	0.67	4	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater oxygen	6.3	0.49	4	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom oxygen	5.9	0.77	4	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0

Table 9a

Statistical Zone 17

Summary of dominant organisms taken in statistical zone 17 during the 1999 Summer Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight (WT) in kg per hour, the SEM for weight and the number (N) of samples taken. No trawl samples were taken in depths greater than 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	701.3	631.86	5.9	5.38	10	7.5	1.60	0.0	0.03	11	97.6	36.39	1.8	0.66	11
Portunus spinicarpus	0.0	0.00	0.0	0.00	10	0.0	0.00	0.0	0.00	11	0.6	0.37	0.0	0.00	11
Trachypenaeus constrictus	0.0	0.00	0.0	0.00	10	2.6	2.11	0.0	0.00	11	83.7	63.24	0.4	0.28	11
Xiphopenaeus kroyeri	399.9	377.91	3.4	3.26	10	0.0	0.00	0.0	0.00	11	0.0	0.00	0.0	0.00	11
Sicyonia brevirostris	0.0	0.00	0.0	0.00	10	0.0	0.00	0.0	0.00	11	37.0	20.02	0.4	0.20	11
Callinectes similis	28.2	9.68	0.1	0.04	10	8.7	3.18	0.0	0.01	11	33.0	13.93	0.3	0.17	11
Stenotomus caprinus	0.0	0.00	0.0	0.00	10	40.1	21.01	0.3	0.14	11	1043.0	707.01	7.0	3.45	11
Peprilus burti	0.6	0.60	0.0	0.00	10	12.3	4.97	0.3	0.18	11	1068.5	768.25	63.2	46.25	11
Micropogonias undulatus	513.8	215.34	8.4	4.97	10	296.2	105.65	4.6	1.67	11	181.0	116.39	6.5	3.85	11
Chloroscombrus chrysurus	12.1	10.69	0.2	0.16	10	298.3	121.49	6.8	3.65	11	109.2	49.21	3.8	1.68	11
Trichiurus lepturus	28.0	13.34	0.6	0.44	10	4.9	3.78	0.1	0.15	11	281.7	265.72	16.3	16.19	11
Trachurus lathami	0.0	0.00	0.0	0.00	10	0.8	0.56	0.0	0.00	11	3.5	2.38	0.0	0.03	11
Peprilus alepidotus	253.1	208.01	2.1	1.75	10	9.1	3.70	0.1	0.04	11	0.0	0.00	0.0	0.00	11
Cynoscion nothus	26.4	19.19	0.7	0.49	10	48.0	20.32	1.8	0.71	11	187.6	180.63	11.0	10.57	11
Squid	90.8	34.38	1.4	0.54	10	72.1	23.47	1.0	0.32	11	203.6	116.88	2.8	1.62	11

Table 9a (continued)

Statistical Zone 17

Summary of dominant organisms taken in statistical zone 17 during the 1999 Summer Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight (WT) in kg per hour, the SEM for weight and the number (N) of samples taken. No trawl samples were taken in depths greater than 40 fm.

	21-30 FM					31-40 FM					>40 FM				
SPECIES	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Penaeus aztecus	65.5	18.00	2.5	0.61	11	14.0	4.19	0.7	0.20	8	0.0	0.00	0.00	0	0
Portunus spinicarpus	85.1	32.03	0.4	0.22	11	60.5	30.98	0.5	0.26	8	0.0	0.00	0.00	0	0
Trachypenaeus constrictus	0.0	0.00	0.0	0.00	11	0.0	0.00	0.0	0.00	8	0.0	0.00	0.00	0	0
Xiphopenaeus kroyeri	0.0	0.00	0.0	0.00	11	0.0	0.00	0.0	0.00	8	0.0	0.00	0.00	0	0
Sicyonia brevirostris	76.2	25.54	0.8	0.27	11	1.1	0.74	0.0	0.01	8	0.0	0.00	0.00	0	0
Callinectes similis	4.9	2.66	0.1	0.07	11	0.5	0.50	0.0	0.01	8	0.0	0.00	0.00	0	0
Stenotomus caprinus	421.3	70.34	20.9	3.28	11	302.3	42.29	14.3	2.04	8	0.0	0.00	0.00	0	0
Peprilus burti	13.4	5.90	0.9	0.39	11	161.9	71.50	9.9	4.40	8	0.0	0.00	0.00	0	0
Micropogonias undulatus	103.8	86.74	3.6	2.41	11	3.6	1.29	0.3	0.10	8	0.0	0.00	0.00	0	0
Chloroscombrus chrysurus	0.3	0.27	0.0	0.02	11	0.0	0.00	0.0	0.00	8	0.0	0.00	0.00	0	0
Trichiurus lepturus	10.4	9.29	0.2	0.15	11	5.5	2.47	0.1	0.05	8	0.0	0.00	0.00	0	0
Trachurus lathami	61.2	19.38	0.9	0.32	11	95.6	40.98	1.3	0.57	8	0.0	0.00	0.00	0	0
Peprilus alepidotus	0.0	0.00	0.0	0.00	11	0.0	0.00	0.0	0.00	8	0.0	0.00	0.00	0	0
Cynoscion nothus	0.0	0.00	0.0	0.00	11	0.0	0.00	0.0	0.00	8	0.0	0.00	0.00	0	0
Squid	116.9	41.64	1.7	0.61	11	296.6	130.94	2.9	1.01	8	0.0	0.00	0.00	0	0

Table 9b

Statistical Zone 17

Summary of mean total catch and environmental data (X), the standard error of the mean (SEM) and the number (N) of samples taken during the 1999 Summer Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m³, and oxygen in ppm. No trawl samples were taken in depths greater than 40 fm.

	0-5 FM			6-10 FM			11-20 FM			21-30 FM			31-40 FM			>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	34.0	13.74	10	22.7	4.47	11	130.3	71.15	11	43.4	4.99	11	44.3	4.27	8	0.0	0.00	0
Total finfish kg	21.1	6.91	10	20.2	4.62	11	124.0	71.90	11	36.6	4.80	11	37.8	3.58	8	0.0	0.00	0
Total crustacean kg	9.8	6.60	10	0.6	0.29	11	3.4	1.11	11	4.5	1.07	11	2.3	1.39	8	0.0	0.00	0
Total others kg	2.7	1.10	10	0.9	0.43	11	2.9	1.73	11	2.1	0.56	11	4.0	1.14	8	0.0	0.00	0
Surface temperature	29.4	0.21	10	29.8	0.14	11	29.2	0.16	11	24.1	0.08	4	27.1	1.12	5	29.0	0.00	1
Midwater temperature	29.3	0.19	10	29.0	0.11	11	28.6	0.21	11	22.8	0.74	4	25.8	1.24	5	25.2	0.00	1
Bottom temperature	29.0	0.15	10	28.5	0.11	11	25.7	0.57	11	17.1	0.25	4	18.6	1.20	5	18.3	0.00	1
Surface salinity	16.7	0.33	10	22.1	1.19	11	29.7	0.88	11	36.2	0.48	4	35.7	1.08	5	34.6	0.00	1
Midwater salinity	22.3	1.05	10	27.8	0.60	11	33.5	0.44	11	37.8	0.24	4	37.1	0.65	5	36.2	0.00	1
Bottom salinity	25.1	1.26	10	29.9	0.37	11	35.4	0.49	11	38.7	0.12	4	37.4	0.70	5	36.3	0.00	1
Surface chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface fluorescence	6.4	0.00	10	6.9	0.29	11	8.6	0.17	11	0.3	0.08	4	4.6	2.53	4	9.3	0.00	1
Surface oxygen	8.0	0.21	10	7.9	0.24	7	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater oxygen	6.4	0.47	10	5.9	0.27	7	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom oxygen	4.0	0.62	10	5.6	0.39	7	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0

Table 10a

Statistical Zone 18

Summary of dominant organisms taken in statistical zone 18 during the 1999 Summer Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight (WT) in kg per hour, the SEM for 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
Penaeus aztecus	25.2	10.97	0.2	0.10	5	119.8	63.19	0.8	0.38	17	100.9	0.00	1.1	0.00	1
Portunus spinicarpus	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	17	0.0	0.00	0.0	0.00	1
Callinectes similis	15.6	10.15	0.1	0.07	5	107.9	75.54	0.9	0.72	17	43.6	0.00	1.1	0.00	1
Xiphopenaeus kroyeri	13.2	4.80	0.0	0.00	5	102.2	37.26	0.6	0.20	17	0.0	0.00	0.0	0.00	1
Sicyonia brevirostris	0.0	0.00	0.0	0.00	5	1.1	0.90	0.0	0.00	17	0.0	0.00	0.0	0.00	1
Portunus gibbesii	0.0	0.00	0.0	0.00	5	52.5	39.30	0.2	0.17	17	43.6	0.00	0.2	0.00	1
Micropogonias undulatus	394.8	98.38	6.6	2.07	5	1112.3	484.07	23.7	11.17	17	0.0	0.00	0.0	0.00	1
Stenotomus caprinus	0.0	0.00	0.0	0.00	5	17.7	16.32	0.1	0.15	17	1448.2	0.00	12.8	0.00	1
Upeneus parvus	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	17	0.0	0.00	0.0	0.00	1
Cynoscion nothus	6.0	6.00	0.2	0.16	5	75.4	34.10	3.3	1.51	17	152.7	0.00	7.8	0.00	1
Chloroscombrus chrysurus	0.0	0.00	0.0	0.00	5	127.3	75.60	3.8	2.85	17	720.0	0.00	21.0	0.00	1
Stellifer lanceolatus	111.6	53.92	1.3	0.69	5	137.5	38.95	1.8	0.49	17	0.0	0.00	0.0	0.00	1
Cynoscion arenarius	36.0	10.04	0.7	0.11	5	89.4	46.74	1.9	0.84	17	0.0	0.00	0.0	0.00	1
Leiostomus xanthurus	80.4	44.64	1.4	0.73	5	68.5	21.44	1.9	0.75	17	49.1	0.00	3.2	0.00	1
Squid	0.0	0.00	0.0	0.00	5	16.5	8.19	0.3	0.14	17	76.4	0.00	1.0	0.00	1

Table 10a (continued)

Statistical Zone 18

Summary of dominant organisms taken in statistical zone 18 during the 1999 Summer Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight (WT) in kg per hour, the SEM for weight and the number (N) of samples taken.

	21-30 FM					31-40 FM					>40 FM				
SPECIES	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Penaeus aztecus	283.2	112.83	7.2	2.42	4	15.0	0.00	0.6	0.00	1	1.9	1.22	0.1	0.08	3
Portunus spinicarpus	188.4	89.27	0.9	0.45	4	0.0	0.00	0.0	0.00	1	0.9	0.93	0.0	0.00	3
Callinectes similis	18.0	15.15	0.4	0.29	4	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	3
Xiphopenaeus kroyeri	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	3
Sicyonia brevirostris	77.8	22.53	1.0	0.20	4	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	3
Portunus gibbesii	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	3
Micropogonias undulatus	0.3	0.25	0.0	0.03	4	0.0	0.00	0.0	0.00	1	15.9	15.90	0.4	0.42	3
Stenotomus caprinus	341.3	62.93	13.4	0.83	4	319.3	0.00	17.0	0.00	1	195.0	7.26	9.9	0.08	3
Upeneus parvus	13.6	5.48	0.3	0.15	4	1084.3	0.00	40.4	0.00	1	144.6	68.53	5.0	1.65	3
Cynoscion nothus	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	3
Chloroscombrus chrysurus	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	3
Stellifer lanceolatus	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	1	2.6	2.56	0.0	0.02	3
Cynoscion arenarius	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	1	0.5	0.53	0.1	0.12	3
Leiostomus xanthurus	24.0	24.00	2.2	2.23	4	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	3
Squid	23.5	15.84	0.3	0.07	4	0.0	0.00	0.0	0.00	1	60.8	31.30	1.1	0.75	3

Table 10b

Statistical Zone 18

Summary of mean total catch and environmental data (X), the standard error of the mean (SEM) and the number (N) of samples taken during the 1999 Summer Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m³, and oxygen in ppm.

	0-5 FM			6-10 FM			11-20 FM			21-30 FM			31-40 FM			>40 FM		
Environmental category	X	SEM	N	X	SEM	N	X	SEM	N	X	SEM	N	X	SEM	N	X	SEM	N
Total catch kg	17.5	2.53	5	58.3	17.66	17	75.6	0.00	1	34.1	3.41	4	109.1	0.00	1	48.9	6.21	3
Total finfish kg	11.5	2.78	5	46.7	15.33	17	70.7	0.00	1	23.5	2.40	4	103.2	0.00	1	45.7	5.57	3
Total crustacean kg	1.1	0.67	5	5.0	1.62	17	3.7	0.00	1	9.9	2.98	4	4.9	0.00	1	1.6	1.01	3
Total others kg	4.4	2.04	5	6.4	2.51	17	1.2	0.00	1	0.8	0.54	4	1.0	0.00	1	1.6	0.53	3
Surface temperature	29.5	0.10	7	29.5	0.09	16	29.2	0.04	2	26.7	2.18	2	25.8	1.56	3	25.9	1.34	3
Midwater temperature	29.3	0.07	6	28.9	0.31	16	28.4	0.90	2	24.3	2.01	2	22.5	1.63	3	20.9	2.10	3
Bottom temperature	29.2	0.07	7	28.9	0.08	16	25.4	2.37	2	19.5	2.81	2	16.0	1.46	3	15.2	1.89	3
Surface salinity	23.0	2.15	7	27.7	0.94	16	30.2	0.22	2	34.2	0.94	2	35.0	1.37	3	34.8	0.70	3
Midwater salinity	23.1	2.22	7	29.0	0.80	16	32.5	2.31	2	37.1	1.76	2	38.1	0.84	3	38.0	0.83	3
Bottom salinity	23.2	2.15	7	29.6	0.84	16	33.9	1.50	2	37.5	1.65	2	38.3	0.93	3	38.2	0.93	3
Surface chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface fluorescence	0.5	0.00	7	1.9	0.76	16	4.7	4.12	2	0.3	0.12	2	3.2	2.79	3	3.3	2.78	3
Surface oxygen	5.8	0.41	6	6.0	0.28	9	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater oxygen	5.7	0.21	6	5.6	0.26	9	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom oxygen	5.6	0.33	7	5.4	0.28	9	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0

Table 11a

Statistical Zone 19

Summary of dominant organisms taken in statistical zone 19 during the 1999 Summer Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight (WT) in kg per hour, the SEM for weight and the number (N) of samples taken. No trawl samples were taken in depths greater than 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
Penaeus aztecus	102.2	98.91	0.3	0.28	3	125.6	60.68	0.9	0.44	13	695.1	203.63	8.6	2.39	24
Trachypenaeus similis	6.3	6.25	0.0	0.00	3	279.7	199.92	0.4	0.24	13	450.0	169.58	1.5	0.55	24
Callinectes similis	32.6	16.92	0.4	0.27	3	293.8	156.44	2.4	1.31	13	377.4	116.15	3.6	1.30	24
Squilla spp.	6.3	6.25	0.1	0.06	3	132.4	57.70	1.0	0.42	13	106.9	27.24	1.0	0.27	24
Trachypenaeus constrictus	0.0	0.00	0.0	0.00	3	5.2	5.20	0.1	0.05	13	115.7	67.34	0.3	0.17	24
Penaeus setiferus	137.4	88.73	5.9	3.81	3	82.9	34.11	3.7	1.57	13	12.4	7.53	0.6	0.37	24
Micropogonias undulatus	5559.6	2896.80	136.3	68.30	3	1480.4	830.10	43.3	25.60	13	57.2	24.41	2.1	0.90	24
Stenotomus caprinus	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	13	425.0	216.34	3.1	2.04	24
Peprilus burti	3.3	3.33	0.1	0.05	3	1.9	0.98	0.1	0.05	13	295.5	171.87	6.6	2.86	24
Cynoscion nothus	241.4	213.68	8.2	7.43	3	114.6	61.64	2.6	1.37	13	199.1	54.90	7.0	1.78	24
Cynoscion arenarius	1548.3	1353.27	24.7	21.55	3	116.8	66.98	1.8	0.96	13	5.1	2.31	0.3	0.14	24
Upeneus parvus	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	13	103.8	34.03	0.7	0.22	24
Stellifer lanceolatus	323.2	221.13	4.6	3.26	3	165.6	89.60	2.5	1.40	13	6.0	4.25	0.1	0.08	24
Leiostomus xanthurus	637.9	356.77	16.1	8.40	3	61.5	28.76	1.9	0.84	13	17.0	7.23	0.8	0.34	24
Squid	5.3	2.91	0.1	0.05	3	37.3	13.81	0.7	0.27	13	155.6	46.92	1.9	0.54	24

Table 11a (continued)

Statistical Zone 19

Summary of dominant organisms taken in statistical zone 19 during the 1999 Summer Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight (WT) in kg per hour, the SEM for weight and the number (N) of samples taken. No trawl samples were taken in depths greater than 30 fm.

	21-30 FM					31-40 FM					>40 FM				
SPECIES	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Penaeus aztecus	311.5	154.76	5.4	2.60	5	0.0	0.00	0.0	0.00	0	0.0	0.00	0.00	0	0
Trachypenaeus similis	30.8	30.80	0.2	0.16	5	0.0	0.00	0.0	0.00	0	0.0	0.00	0.00	0	0
Callinectes similis	46.2	17.70	0.3	0.15	5	0.0	0.00	0.0	0.00	0	0.0	0.00	0.00	0	0
Squilla spp.	14.2	9.20	0.1	0.06	5	0.0	0.00	0.0	0.00	0	0.0	0.00	0.00	0	0
Trachypenaeus constrictus	12.0	12.00	0.1	0.07	5	0.0	0.00	0.0	0.00	0	0.0	0.00	0.00	0	0
Penaeus setiferus	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	0	0.0	0.00	0.00	0	0
Micropogonias undulatus	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	0	0.0	0.00	0.00	0	0
Stenotomus caprinus	549.2	207.32	15.6	6.21	5	0.0	0.00	0.0	0.00	0	0.0	0.00	0.00	0	0
Peprilus burti	461.4	260.77	18.4	10.53	5	0.0	0.00	0.0	0.00	0	0.0	0.00	0.00	0	0
Cynoscion nothus	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	0	0.0	0.00	0.00	0	0
Cynoscion arenarius	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	0	0.0	0.00	0.00	0	0
Upeneus parvus	45.5	20.66	0.3	0.07	5	0.0	0.00	0.0	0.00	0	0.0	0.00	0.00	0	0
Stellifer lanceolatus	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	0	0.0	0.00	0.00	0	0
Leiostomus xanthurus	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	0	0.0	0.00	0.00	0	0
Squid	556.5	163.11	9.8	3.25	5	0.0	0.00	0.0	0.00	0	0.0	0.00	0.00	0	0

Table 11b

Statistical Zone 19

Summary of mean total catch and environmental data (X), the standard error of the mean (SEM) and the number (N) of samples taken during the 1999 Summer Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m³, and oxygen in ppm. No trawl samples were taken in depths greater than 30 fm.

	0-5 FM			6-10 FM			11-20 FM			21-30 FM			31-40 FM			>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	254.2	138.92	3	74.9	33.57	13	52.4	7.25	24	65.0	17.91	5	0.0	0.00	0	0.0	0.00	0
Total finfish kg	244.3	137.06	3	63.0	32.00	13	33.5	6.69	24	48.0	17.34	5	0.0	0.00	0	0.0	0.00	0
Total crustacean kg	8.4	4.81	3	9.3	3.41	13	16.2	3.60	24	6.8	3.05	5	0.0	0.00	0	0.0	0.00	0
Total others kg	0.6	0.57	3	2.0	0.70	13	2.3	0.64	24	9.7	3.32	5	0.0	0.00	0	0.0	0.00	0
Surface temperature	29.7	0.44	3	28.3	0.29	16	29.1	0.11	25	29.0	0.13	6	0.0	0.00	0	0.0	0.00	0
Midwater temperature	29.6	0.37	3	28.3	0.29	16	28.8	0.10	25	28.0	0.55	6	0.0	0.00	0	0.0	0.00	0
Bottom temperature	29.0	0.55	3	26.3	0.48	16	25.5	0.38	25	23.4	0.58	6	0.0	0.00	0	0.0	0.00	0
Surface salinity	32.0	0.64	3	31.3	0.42	16	32.3	0.17	25	32.1	0.39	6	0.0	0.00	0	0.0	0.00	0
Midwater salinity	31.9	0.71	3	31.7	0.32	16	33.1	0.18	25	34.9	0.53	6	0.0	0.00	0	0.0	0.00	0
Bottom salinity	32.6	0.74	3	33.3	0.46	16	35.0	0.17	25	35.9	0.16	6	0.0	0.00	0	0.0	0.00	0
Surface chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface fluorescence	5.7	0.65	3	4.7	0.55	16	1.8	0.50	25	0.4	0.04	6	0.0	0.00	0	0.0	0.00	0
Surface oxygen	5.9	0.00	1	6.1	0.12	9	5.6	0.07	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater oxygen	5.8	0.00	1	6.2	0.11	9	5.8	0.10	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom oxygen	5.7	0.00	1	3.9	0.61	9	4.9	0.29	6	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0

Table 12a

Statistical Zone 20

Summary of dominant organisms taken in statistical zone 20 during the 1999 Summer Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight (WT) in kg per hour, the SEM for 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
Callinectes similis	0.0	0.00	0.0	0.00	2	775.4	312.20	8.8	3.49	18	670.7	365.26	6.9	3.32	15
Penaeus aztecus	0.0	0.00	0.0	0.00	2	274.1	116.73	2.8	1.16	18	828.8	266.05	8.5	2.22	15
Trachypenaeus similis	0.0	0.00	0.0	0.00	2	82.6	43.33	0.2	0.10	18	258.6	114.19	0.9	0.40	15
Squilla spp.	0.0	0.00	0.0	0.00	2	57.5	23.70	0.6	0.26	18	115.2	51.79	1.1	0.48	15
Portunus gibbesii	0.0	0.00	0.0	0.00	2	98.3	48.96	0.5	0.27	18	4.3	2.39	0.0	0.01	15
Portunus spinicarpus	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	18	0.0	0.00	0.0	0.00	15
Stenotomus caprinus	0.0	0.00	0.0	0.00	2	0.6	0.42	0.0	0.00	18	251.0	112.99	1.1	0.51	15
Peprilus burti	0.0	0.00	0.0	0.00	2	10.5	4.80	0.1	0.04	18	87.7	30.47	3.0	1.17	15
Upeneus parvus	0.0	0.00	0.0	0.00	2	108.4	59.32	0.8	0.46	18	79.0	45.53	0.4	0.24	15
Trachurus lathami	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	18	3.7	3.66	0.0	0.04	15
Micropogonias undulatus	0.0	0.00	0.0	0.00	2	149.3	59.27	2.4	1.04	18	59.3	32.38	1.5	0.74	15
Serranus atrobranchus	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	18	46.3	28.36	0.2	0.15	15
Prionotus paralatus	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	18	95.9	89.98	0.6	0.54	15
Trichiurus lepturus	0.0	0.00	0.0	0.00	2	15.0	8.58	0.4	0.30	18	102.8	59.97	4.4	3.04	15
Squid	3.0	3.00	0.1	0.14	2	67.1	14.52	0.9	0.18	18	267.8	82.96	2.9	0.78	15

Table 12a (continued)

Statistical Zone 20

Summary of dominant organisms taken in statistical zone 20 during the 1999 Summer Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight (WT) in kg per hour, the SEM for weight and the number (N) of samples taken.

	21-30 FM					31-40 FM					>40 FM				
SPECIES	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Callinectes similis	18.3	11.25	0.1	0.06	4	43.9	37.27	0.3	0.28	9	1.2	1.17	0.0	0.01	6
Penaeus aztecus	76.6	24.98	1.4	0.53	4	108.5	60.88	2.1	1.03	9	16.4	5.98	0.8	0.28	6
Trachypenaeus similis	1.6	1.61	0.0	0.00	4	76.0	71.40	0.4	0.37	9	0.0	0.00	0.0	0.00	6
Squilla spp.	0.5	0.54	0.0	0.00	4	15.9	13.50	0.1	0.07	9	2.8	1.14	0.0	0.00	6
Portunus gibbesii	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	9	0.0	0.00	0.0	0.00	6
Portunus spinicarpus	5.8	4.25	0.1	0.04	4	25.4	21.63	0.2	0.14	9	29.8	19.06	0.1	0.08	6
Stenotomus caprinus	222.6	134.84	6.8	4.20	4	103.0	25.96	4.2	1.10	9	59.1	12.82	3.1	0.57	6
Peprilus burti	30.9	27.43	1.4	1.32	4	94.0	33.37	5.6	1.93	9	119.5	115.91	6.9	6.65	6
Upeneus parvus	103.6	18.95	1.3	0.39	4	75.9	33.53	1.4	0.48	9	60.2	12.89	2.1	0.43	6
Trachurus lathami	215.0	75.73	3.6	1.48	4	53.7	19.33	1.2	0.42	9	86.0	18.48	3.3	1.10	6
Micropogonias undulatus	0.3	0.25	0.0	0.02	4	0.2	0.25	0.0	0.02	9	0.0	0.00	0.0	0.00	6
Serranus atrobranchus	23.3	9.96	0.4	0.17	4	61.2	34.54	0.7	0.31	9	98.4	26.58	1.7	0.49	6
Prionotus paralatus	6.1	3.36	0.1	0.08	4	5.3	3.18	0.1	0.05	9	12.0	5.02	0.6	0.31	6
Trichiurus lepturus	0.0	0.00	0.0	0.00	4	1.4	0.75	0.1	0.04	9	0.8	0.78	0.1	0.05	6
Squid	424.8	146.27	5.2	1.94	4	315.1	89.35	3.9	1.15	9	108.8	95.83	1.4	1.27	6

Table 12b

Statistical Zone 20

Summary of mean total catch and environmental data (X), the standard error of the mean (SEM) and the number (N) of samples taken during the 1999 Summer Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m³, and oxygen in ppm.

	0-5 FM			6-10 FM			11-20 FM			21-30 FM			31-40 FM			>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	1.4	1.36	2	32.0	9.56	18	41.1	7.38	15	29.0	9.23	4	27.8	3.98	9	47.4	10.49	6
Total finfish kg	1.4	1.36	2	15.4	4.84	18	19.7	5.39	15	21.8	9.21	4	20.3	3.25	9	44.0	10.00	6
Total crustacean kg	0.0	0.00	2	15.0	5.53	18	17.9	5.40	15	1.7	0.54	4	3.5	1.73	9	1.1	0.34	6
Total others kg	0.0	0.00	2	1.0	0.31	18	3.4	0.76	15	5.3	1.99	4	3.9	1.10	9	2.1	1.33	6
Surface temperature	28.3	0.05	2	28.9	0.15	17	28.9	0.06	16	28.9	0.13	2	29.0	0.06	8	29.1	0.08	4
Midwater temperature	28.3	0.05	2	28.6	0.09	17	28.5	0.09	16	27.5	0.98	2	26.7	0.38	8	24.1	0.35	4
Bottom temperature	28.3	0.10	2	28.0	0.19	17	26.4	0.43	16	22.6	0.57	2	21.6	0.32	8	19.2	0.24	4
Surface salinity	32.3	0.89	2	33.7	0.25	16	33.4	0.19	16	33.1	0.93	2	32.9	0.40	8	32.8	0.18	4
Midwater salinity	32.9	0.36	2	33.9	0.25	17	34.4	0.23	16	35.8	0.47	2	36.2	0.07	8	36.2	0.03	4
Bottom salinity	33.1	0.47	2	34.2	0.26	17	35.3	0.40	16	36.2	0.00	2	36.3	0.02	8	36.4	0.01	4
Surface chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface fluorescence	8.6	0.00	2	6.2	0.83	17	2.0	0.83	16	0.3	0.07	2	1.4	1.04	8	0.4	0.05	4
Surface oxygen	6.9	0.05	2	6.4	0.15	11	6.1	0.27	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater oxygen	7.1	0.15	2	6.8	0.17	11	6.6	0.33	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom oxygen	7.3	0.10	2	6.5	0.45	11	6.9	0.06	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0

Table 13a

Statistical Zone 21

Summary of dominant organisms taken in statistical zone 21 during the 1999 Summer Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight (WT) in kg per hour, the SEM for 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
Penaeus aztecus	0.0	0.00	0.0	0.00	2	6.0	2.99	0.0	0.03	7	571.4	282.06	7.1	3.52	17
Callinectes similis	111.0	111.00	1.8	1.77	2	190.5	171.20	3.1	2.84	7	184.2	109.93	1.1	0.60	17
Trachypenaeus similis	0.0	0.00	0.0	0.00	2	0.9	0.86	0.0	0.00	7	52.8	36.25	0.2	0.16	17
Portunus spinicarpus	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	7	0.5	0.50	0.0	0.00	17
Squilla spp.	9.0	9.00	0.0	0.00	2	15.4	9.61	0.2	0.13	7	39.9	28.14	0.6	0.39	17
Portunus gibbesii	27.0	27.00	0.1	0.14	2	77.4	73.37	0.3	0.34	7	36.4	23.61	0.3	0.19	17
Serranus atrobranchus	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	7	34.7	24.63	0.2	0.13	17
Stenotomus caprinus	0.0	0.00	0.0	0.00	2	0.9	0.86	0.0	0.00	7	307.2	102.99	1.8	0.58	17
Centropristis philadelphica	0.0	0.00	0.0	0.00	2	2.4	1.58	0.0	0.05	7	103.9	73.49	1.1	0.78	17
Upeneus parvus	84.0	84.00	0.5	0.55	2	21.0	14.02	0.2	0.12	7	63.5	41.39	0.6	0.43	17
Prionotus stearnsi	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	7	0.3	0.34	0.0	0.00	17
Lagodon rhomboides	123.0	117.00	3.0	3.00	2	98.4	86.94	1.6	1.35	7	15.4	5.63	0.5	0.17	17
Prionotus paralatus	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	7	95.7	95.74	0.6	0.55	17
Pristipomoides aquilonaris	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	7	0.9	0.73	0.0	0.02	17
Squid	57.0	27.00	0.7	0.41	2	37.6	15.79	0.5	0.19	7	162.9	71.61	2.2	0.99	17

Table 13a (continued)

Statistical Zone 21

Summary of dominant organisms taken in statistical zone 21 during the 1999 Summer Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight (WT) in kg per hour, the SEM for weight and the number (N) of samples taken.

	21-30 FM					31-40 FM					>40 FM				
SPECIES	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Penaeus aztecus	544.2	120.32	9.6	1.64	8	106.8	32.08	3.5	0.87	2	1.5	1.50	0.1	0.14	2
Callinectes similis	143.5	55.39	1.9	0.94	8	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	2
Trachypenaeus similis	185.9	51.30	1.0	0.28	8	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	2
Portunus spinicarpus	97.0	48.02	0.4	0.24	8	85.8	22.16	0.5	0.18	2	0.0	0.00	0.0	0.00	2
Squilla spp.	36.4	9.35	0.1	0.04	8	41.9	11.27	0.6	0.26	2	0.0	0.00	0.0	0.00	2
Portunus gibbesii	0.4	0.19	0.0	0.01	8	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	2
Serranus atrobranchus	281.6	94.29	2.1	0.46	8	278.6	47.14	4.7	1.14	2	40.9	7.13	1.0	0.18	2
Stenotomus caprinus	40.8	10.60	0.6	0.25	8	46.0	6.61	2.3	0.50	2	81.7	27.31	4.1	1.01	2
Centropristis philadelphica	63.2	18.61	1.1	0.36	8	9.8	1.22	1.0	0.14	2	0.0	0.00	0.0	0.00	2
Upeneus parvus	104.3	53.07	1.5	0.93	8	43.0	39.31	1.5	1.35	2	57.1	13.94	1.9	0.28	2
Prionotus stearnsi	33.6	10.73	0.2	0.07	8	199.8	127.59	1.9	1.06	2	113.0	53.00	1.3	0.66	2
Lagodon rhomboides	26.3	10.89	1.2	0.48	8	1.7	1.71	0.2	0.16	2	99.0	96.00	7.0	6.59	2
Prionotus paralatus	9.9	3.03	0.0	0.01	8	13.3	1.35	0.3	0.18	2	11.7	2.31	0.7	0.22	2
Pristipomoides aquilonaris	47.1	12.09	1.1	0.33	8	56.8	10.53	5.9	0.42	2	50.6	7.44	6.9	1.08	2
Squid	174.0	71.11	1.8	0.87	8	63.4	54.86	0.7	0.54	2	830.1	141.12	4.8	3.76	2

Table 13b

Statistical Zone 21

Summary of mean total catch and environmental data (X), the standard error of the mean (SEM) and the number (N) of samples taken during the 1999 Summer Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m³, and oxygen in ppm.

	0-5 FM			6-10 FM			11-20 FM			21-30 FM			31-40 FM			>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	39.5	6.82	2	25.3	12.80	7	28.3	9.05	17	29.4	5.22	8	35.3	5.23	2	63.6	26.76	2
Total finfish kg	34.1	6.82	2	18.7	9.04	7	13.3	5.07	17	12.7	2.50	8	28.5	3.45	2	58.0	23.86	2
Total crustacean kg	5.5	0.00	2	5.8	4.19	7	11.8	5.67	17	14.6	2.66	8	5.3	0.89	2	0.9	0.91	2
Total others kg	2.7	0.00	2	0.4	0.29	7	2.2	0.99	17	1.8	0.79	8	1.1	0.50	2	4.7	3.81	2
Surface temperature	0.0	0.00	0	27.9	0.37	10	27.5	0.40	18	28.5	0.23	5	28.6	0.17	3	28.8	0.24	3
Midwater temperature	0.0	0.00	0	27.6	0.49	10	27.1	0.45	18	27.2	0.80	5	27.0	0.41	3	24.0	0.88	3
Bottom temperature	0.0	0.00	0	27.5	0.55	10	26.2	0.53	18	24.6	0.59	5	22.8	0.37	3	20.1	1.62	3
Surface salinity	0.0	0.00	0	35.7	0.23	10	35.3	0.29	18	35.0	0.79	5	35.8	0.48	3	35.4	0.89	3
Midwater salinity	0.0	0.00	0	35.7	0.23	10	35.9	0.15	18	36.3	0.05	5	36.3	0.03	3	36.2	0.02	3
Bottom salinity	0.0	0.00	0	35.7	0.22	10	36.1	0.07	18	36.2	0.05	5	36.2	0.03	3	36.3	0.07	3
Surface chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface fluorescence	0.0	0.00	0	0.8	0.17	10	0.4	0.03	18	0.4	0.14	5	0.2	0.06	3	0.2	0.09	3
Surface oxygen	0.0	0.00	0	5.4	0.60	5	5.8	0.38	8	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater oxygen	0.0	0.00	0	5.7	0.75	5	6.0	0.41	8	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom oxygen	0.0	0.00	0	5.0	0.64	5	7.0	1.10	8	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0

Table 14a

Statistical Zone 22

Summary of dominant organisms taken in statistical zone 22 during the 1999 Summer Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight (WT) in kg per hour, the SEM for weight and the number (N) of samples taken. No trawl samples were taken in depths greater than 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
Penaeus aztecus	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1	6.0	0.00	0.00	0	1
Trachypenaeus constrictus	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1	6.0	0.00	0.00	0	1
Harengula jaguana	60.0	0.00	1.6	0.00	1	0.0	0.00	0.0	0.00	1	0.0	0.00	0.00	0	1
Conodon nobilis	24.0	0.00	0.5	0.00	1	0.0	0.00	0.0	0.00	1	0.0	0.00	0.00	0	1
Stenotomus caprinus	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1	18.0	0.00	0.00	0	1
Pristipomoides aquilonaris	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1	18.0	0.00	0.30	0	1
Syacium gunteri	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1	18.0	0.00	0.50	0	1
Lagodon rhomboides	0.0	0.00	0.0	0.00	1	12.0	0.00	0.5	0.00	1	0.0	0.00	0.00	0	1
Ancyclopsetta quadrocellata	0.0	0.00	0.0	0.00	1	6.0	0.00	0.3	0.00	1	0.0	0.00	0.00	0	1
Squid	12.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1	0.0	0.00	0.00	0	1

Table 14b

Statistical Zone 22

Summary of mean total catch and environmental data (X), the standard error of the mean (SEM) and the number (N) of samples taken during the 1999 Summer Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m³, and oxygen in ppm. No trawl samples were taken in depths greater than 20 fm.

	0-5 FM			6-10 FM			11-20 FM			21-30 FM			31-40 FM			>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	2.7	0.00	1	0.0	0.00	1	0.0	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total finfish kg	2.7	0.00	1	0.0	0.00	1	0.0	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total crustacean kg	0.0	0.00	1	0.0	0.00	1	0.0	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total others kg	0.0	0.00	1	0.0	0.00	1	0.0	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface temperature	25.8	0.00	1	24.5	0.00	1	26.6	1.93	2	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater temperature	23.5	0.00	1	23.7	0.00	1	25.8	2.34	2	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom temperature	23.4	0.00	1	22.6	0.00	1	24.7	3.40	2	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface salinity	36.3	0.00	1	36.3	0.00	1	36.0	0.23	2	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater salinity	36.0	0.00	1	36.3	0.00	1	36.1	0.26	2	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom salinity	36.3	0.00	1	36.3	0.00	1	36.3	0.11	2	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface fluorescence	0.5	0.00	1	0.5	0.00	1	0.5	0.00	2	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface oxygen	5.7	0.00	1	6.4	0.00	1	6.8	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater oxygen	5.3	0.00	1	6.3	0.00	1	9.7	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom oxygen	5.1	0.00	1	8.9	0.00	1	12.8	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0

Table 15. 1999 Fall Shrimp/Groundfish Survey species composition list, 382 trawl stations, for those vessels that used either a 40-ft or 20-ft trawl. Species with a total weight of less than 0.0227 kg (0.05 lb) are indicated on the table as 0.0 kg.

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Finfishes					
Chloroscombrus chrysurus	Atlantic bumper	89388	1185.3	184	48.2
Micropogonias undulatus	Atlantic croaker	32124	1678.4	249	65.2
Stenotomus caprinus	longspine porgy	19407	729.5	182	47.6
Serranus atrobranchus	blackear bass	8313	88.9	104	27.2
Peprilus burti	gulf butterfish	6367	436.1	155	40.6
Cynoscion nothus	silver seatrout	3866	190.5	173	45.3
Trachurus lathami	rough scad	3735	112.3	96	25.1
Centropristis philadelphica	rock sea bass	3624	155.6	182	47.6
Anchoa hepsetus	striped anchovy	3622	35.7	86	22.5
Leiostomus xanthurus	spot	3582	365.1	142	37.2
Upeneus parvus	dwarf goatfish	3496	92.7	109	28.5
Prionotus longispinosus	bigeye searobin	3046	105.8	139	36.4
Diplectrum bivittatum	dwarf sand perch	3039	44.2	124	32.5
Syacium gunteri	shoal flounder	2844	43.6	137	35.9
Pristipomoides aquilonaris	wenchman	2809	173.6	72	18.8
Lutjanus campechanus	red snapper	2630	89.5	196	51.3
Synodus foetens	inshore lizardfish	2530	257.0	195	51.0
Arius felis	hardhead catfish	2424	259.9	71	18.6
Trichiurus lepturus	Atlantic cutlassfish	2399	88.4	94	24.6
Prionotus paralatus	Mexican searobin	2105	74.2	59	15.4
Opisthonema oglinum	Atlantic thread herring	1975	76.2	74	19.4
Cynoscion spp.	seatrouts	1925	7.2	31	8.1

Table 15. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Cynoscion arenarius	sand seatrout	1892	168.0	163	42.7
Stellifer lanceolatus	star drum	1772	21.5	47	12.3
Lagodon rhomboides	pinfish	1730	108.2	126	33.0
Sphoeroides parvus	least puffer	1655	11.6	97	25.4
Trichopsetta ventralis	sash flounder	1349	29.8	69	18.1
Saurida brasiliensis	largescale lizardfish	1137	3.9	91	23.8
Etropus crossotus	fringed flounder	1009	17.5	115	30.1
Harengula jaguana	scaled sardine	1005	33.0	93	24.3
Selene setapinnis	Atlantic moonfish	993	26.1	89	23.3
Lutjanus synagris	lane snapper	941	50.1	88	23.0
Halieutichthys aculeatus	pancake batfish	854	6.4	79	20.7
Prionotus stearnsi	shortwing searobin	811	14.5	42	11.0
Chaetodipterus faber	Atlantic spadefish	678	43.6	98	25.7
Porichthys plectrodon	Atlantic midshipman	675	10.0	83	21.7
Eucinostomus gula	silver jenny	613	15.3	84	22.0
Syacium papillosum	dusky flounder	517	30.8	28	7.3
Lepophidium brevibarbe	blackedge cusk-eel	506	21.5	66	17.3
Balistes capriscus	gray triggerfish	418	35.5	71	18.6
Cyclopsetta chittendeni	Mexican flounder	377	28.5	106	27.7
Scorpaena calcarata	smoothhead scorpionfish	368	3.0	33	8.6
Menticirrhus americanus	southern kingfish	358	33.0	46	12.0
Synodus poeyi	offshore lizardfish	346	1.7	58	15.2
Mullus auratus	red goatfish	323	22.7	26	6.8
Pontinus longispinis	longspine scorpionfish	300	6.6	9	2.4
Prionotus rubio	blackwing searobin	278	34.8	36	9.4
Larimus fasciatus	banded drum	271	14.6	51	13.4

Table 15. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Bagre marinus	gafftopsail catfish	257	129.5	38	9.9
Caranx crysos	blue runner	234	22.2	38	9.9
Citharichthys spilopterus	bay whiff	229	4.1	46	12.0
Peprilus alepidotus	harvestfish	228	13.0	45	11.8
Hildebrandia flava	yellow conger	184	10.5	31	8.1
Lagocephalus laevigatus	smooth puffer	178	5.7	59	15.4
Equetus umbrosus	cubbyu	176	8.6	20	5.2
Anchoa mitchilli	bay anchovy	167	0.1	19	5.0
Brevoortia patronus	gulf menhaden	166	19.2	29	7.6
Hemicaranx amblyrhynchus	bluntnose jack	156	6.9	31	8.1
Symphurus plagiusa	blackcheek tonguefish	137	2.4	58	15.2
Peristedion gracile	slender searobin	121	2.8	2	0.5
Orthopristis chrysoptera	pigfish	119	10.1	26	6.8
Monacanthus hispidus	planehead filefish	113	2.4	29	7.6
Caulolatilus intermedius	anchor tilefish	107	7.2	21	5.5
Urophycis floridana	southern hake	104	14.8	14	3.7
Equetus iwamotoi	blackbar drum	100	11.4	13	3.4
Haemulon aurolineatum	tomtate	95	6.1	12	3.1
Ophidion welshi	crested cusk-eel	93	4.4	17	4.5
Bollmannia communis	ragged goby	92	0.2	22	5.8
Ogcocephalus parvus	roughback batfish	87	2.0	17	4.5
Scomberomorus maculatus	Spanish mackerel	85	12.7	24	6.3
Sphyraena guachancho	guaguanche	79	15.6	25	6.5
Hoplunnis macrurus	freckled pike-conger	73	1.2	22	5.8
Brotula barbata	bearded brotula	70	18.2	22	5.8
Diplectrum formosum	sand perch	69	9.0	14	3.7

Table 15. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Symphurus diomedianus	spottedfin tonguefish	68	1.4	17	4.5
Kathetostoma albigutta	lancer stargazer	67	3.2	21	5.5
Prionotus roseus	bluespotted searobin	66	3.1	12	3.1
Selene vomer	lookdown	65	0.5	34	8.9
Decodon puellaris	red hogfish	65	2.5	12	3.1
Rhomboplites aurorubens	vermilion snapper	63	6.0	13	3.4
Prionotus ophryas	bandtail searobin	60	0.7	10	2.6
Rhizoprionodon terraenovae	Atlantic sharpnose shark	58	57.8	16	4.2
Ancylopsetta quadrocellata	ocellated flounder	58	8.2	23	6.0
Prionotus tribulus	bighead searobin	57	1.2	14	3.7
Selar crumenophthalmus	bigeye scad	52	3.5	20	5.2
Engyophrys senta	spiny flounder	51	0.3	18	4.7
Bellator militaris	horned searobin	48	0.3	10	2.6
Priacanthus arenatus	bigeye	48	6.6	19	5.0
Paralichthys lethostigma	southern flounder	48	19.0	26	6.8
Lepophidium jeannae	mottled cusk-eel	45	1.8	10	2.6
Ancylopsetta dilecta	three-eye flounder	44	3.5	15	3.9
Antennarius radiosus	singlespot frogfish	44	0.8	11	2.9
Raja texana	roundel skate	38	15.1	22	5.8
Decapterus punctatus	round scad	37	1.2	10	2.6
Sardinella aurita	Spanish sardine	34	1.2	16	4.2
Scomberomorus cavalla	king mackerel	32	7.0	21	5.5
Anchoa lyolepis	dusky anchovy	30	0.0	4	1.0
Gobionellus stigmalophius	spotfin goby	30	0.1	1	0.3
Ophidion holbrooki	bank cusk-eel	26	1.8	5	1.3
Anchoviella perfasciata	flat anchovy	23	0.0	1	0.3

Table 15. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Neomerinthe hemingwayi	spinycheek scorpionfish	23	8.3	10	2.6
Symphurus civitatus	offshore tonguefish	23	0.4	5	1.3
Urophycis cirrata	gulf hake	21	1.1	4	1.0
Apogon pseudomaculatus	twospot cardinalfish	21	0.1	2	0.5
Bathyanthias mexicanus	yellowtail bass	20	0.3	4	1.0
Pristigenys alta	short bigeye	20	0.6	4	1.0
Neobythites gillii	cusk-eel	19	0.2	3	0.8
Syacium micrurum	channel flounder	19	0.2	5	1.3
Gymnachirus texae	fringed sole	19	0.3	13	3.4
Sphoeroides dorsalis	marbled puffer	19	0.4	6	1.6
Dorosoma petenense	threadfin shad	18	0.5	8	2.1
Anchoa spp.	anchovies	18	0.0	1	0.3
Serranus phoebe	tattler	18	0.6	3	0.8
Seriola dumerili	greater amberjack	18	7.5	6	1.6
Sphoeroides spengleri	bandtail puffer	18	0.3	4	1.0
Ogcocephalus radiatus	polka-dot batfish	18	0.6	7	1.8
Caulolatilus microps	blueline tilefish	17	2.9	2	0.5
Rachycentron canadum	cobia	17	21.4	16	4.2
Lactophrys quadricornis	scrawled cowfish	17	2.1	3	0.8
Cyclopsetta fimbriata	spotfin flounder	15	1.7	2	0.5
Etrumeus teres	round herring	14	0.4	5	1.3
Mugil curema	white mullet	14	0.4	3	0.8
Epinephelus niveatus	snowy grouper	14	0.6	6	1.6
Sphyrna tiburo	bonnethead	12	4.5	10	2.6
Ophidiidae	cusk-eels	12	0.1	1	0.3
Etropus cyclosquamus	shelf flounder	12	0.3	4	1.0

Table 15. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Squatina dumeril	Atlantic angel shark	11	25.2	7	1.8
Scorpaena brasiliensis	barbfish	11	1.9	7	1.8
Hemanthias leptus	longtail bass	11	0.1	1	0.3
Myrophis punctatus	speckled worm eel	10	0.1	4	1.0
Peprilus triacanthus	butterfish	10	0.8	1	0.3
Syacium spp.	lefteye flounders	10	0.0	3	0.8
Mustelus canis	smooth dogfish	9	14.9	8	2.1
Gymnothorax nigromarginatus	blackedge moray	8	2.1	5	1.3
Scorpaena dispar	hunchback scorpionfish	8	1.3	2	0.5
Alectis ciliaris	African pompano	8	1.0	2	0.5
Trachinotus carolinus	Florida pompano	8	2.3	3	0.8
Menticirrhus saxatilis	northern kingfish	8	1.3	2	0.5
Ogcocephalus declivirostris	slantbrow batfish	8	0.3	3	0.8
Dasyatis americana	southern stingray	7	8.0	5	1.3
Hemanthias aureorubens	streamer bass	7	0.5	3	0.8
Opistognathus spp.	jawfishes	7	0.2	3	0.8
Monacanthus setifer	pygmy filefish	7	0.2	2	0.5
Trachinocephalus myops	snakefish	6	0.5	4	1.0
Gymnothorax saxicola	honeycomb moray	6	0.8	4	1.0
Physiculus fulvus	metallic codling	6	0.0	3	0.8
Bregmaceros atlanticus	antenna codlet	6	0.0	3	0.8
Rypticus maculatus	whitespotted soapfish	6	0.1	3	0.8
Caranx hippos	crevalle jack	6	0.2	3	0.8
Eucinostomus argenteus	spotfin mojarra	6	0.1	4	1.0
Paraconger caudilimbatus	margintail conger	5	0.2	2	0.5
Centropristis ocyura	bank sea bass	5	0.5	2	0.5

Table 15. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Menticirrhus littoralis	gulf kingfish	5	0.5	5	1.3
Carcharhinus acronotus	blacknose shark	4	14.3	4	1.0
Conger oceanicus	conger eel	4	0.2	2	0.5
Apogon spp.	cardinalfishes	4	0.0	2	0.5
Calamus arctifrons	grass porgy	4	0.1	2	0.5
Gobionellus boleosoma	darter goby	4	0.0	1	0.3
Dasyatis sabina	Atlantic stingray	3	1.6	3	0.8
Rhinoptera bonasus	cownose ray	3	6.2	3	0.8
Hemiramphus brasiliensis	ballyhoo	3	0.1	3	0.8
Prionotus scitulus	leopard searobin	3	0.0	1	0.3
Pomatomus saltatrix	bluefish	3	1.2	3	0.8
Lutjanus griseus	grey snapper	3	0.5	3	0.8
Bairdiella chrysoura	silver perch	3	0.1	3	0.8
Sciaenops ocellatus	red drum	3	13.2	3	0.8
Paralichthys albigutta	gulf flounder	3	1.8	3	0.8
Opsanus tau	oyster toadfish	3	0.5	1	0.3
Narcine brasiliensis	lesser electric ray	2	1.4	2	0.5
Synodus intermedius	sand diver	2	0.2	1	0.3
Ophichthus gomesi	shrimp eel	2	0.2	1	0.3
Moridae	morid cods	2	0.0	1	0.3
Steindachneria argentea	luminous hake	2	0.0	1	0.3
Pogonias cromis	black drum	2	7.8	2	0.5
Calamus bajonado	jolthead porgy	2	1.8	2	0.5
Calamus leucosteus	whitebone porgy	2	0.9	2	0.5
Gobiosoma	naked gobies	2	0.0	1	0.3
Gobioides broussoneti	violet goby	2	0.0	2	0.5

Table 15. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Ophidion grayi	blotched cusk-eel	2	0.1	1	0.3
Ophidion marginatum	striped cusk-eel	2	0.1	2	0.5
Citharichthys macrops	spotted whiff	2	0.1	2	0.5
Etropus microstomus	smallmouth flounder	2	0.0	2	0.5
Paralichthys squamilentus	broad flounder	2	0.4	2	0.5
Ogcocephalus pantostictus	spotted batfish	2	0.0	1	0.3
Pisces	fishes	1	0.0	1	0.3
Raja eglanteria	clearnose skate	1	0.8	1	0.3
Dasyatis say	bluntnose stingray	1	0.6	1	0.3
Gymnura altavela	spiny butterfly ray	1	0.5	1	0.3
Aetobatus narinari	spotted eagle ray	1	6.0	1	0.3
Myliobatis fremin	bullnose ray	1	11.5	1	0.3
Mobula hypostoma	devil ray	1	20.0	1	0.3
Argentina striata	striated argentine	1	0.0	1	0.3
Elops saurus	ladyfish	1	0.2	1	0.3
Echiophis punctifer	snapper eel	1	0.1	1	0.3
Ophichthus puncticeps	palespotted eel	1	0.4	1	0.3
Hirundichthys rondeleti	blackwing flyingfish	1	0.1	1	0.3
Hyporhamphus unifasciatus	halfbeak	1	0.0	1	0.3
Brosmiculus imberbis	morid cod	1	0.0	1	0.3
Fistularia petimba	red cornetfish	1	0.2	1	0.3
Hippocampus erectus	lined seahorse	1	0.0	1	0.3
Corniger spinosus	spinycheek soldierfish	1	0.0	1	0.3
Mugil cephalus	striped mullet	1	0.0	1	0.3
Pontinus rathbuni	highfin scorpionfish	1	0.5	1	0.3
Scorpaena plumieri	spotted scorpionfish	1	0.2	1	0.3

Table 15. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Remora remora	remora	1	0.5	1	0.3
Uraspis secunda	cottonmouth jack	1	0.4	1	0.3
Calamus calamus	saucereye porgy	1	0.3	1	0.3
Chaetodon sedentarius	reef butterflyfish	1	0.0	1	0.3
Pomacentridae	damselfishes	1	0.1	1	0.3
Lonchopisthus micrognathus	swordtail jawfish	1	0.0	1	0.3
Bembrops gobioides	goby flathead	1	0.0	1	0.3
Astroscopus y-graecum	southern stargazer	1	0.5	1	0.3
Gobiidae	gobies	1	0.0	1	0.3
Monolene sessilicauda	deepwater flounder	1	0.0	1	0.3
Achirus lineatus	lined sole	1	0.0	1	0.3
Trinectes maculatus	hogchoker	1	0.0	1	0.3
Gymnachirus melas	naked sole	1	0.0	1	0.3
Chilomycterus schoepfi	striped burrfish	1	0.0	1	0.3
Opsanus beta	gulf toadfish	1	0.1	1	0.3
Ogcocephalus corniger	longnose batfish	1	0.0	1	0.3
Crustaceans					
Penaeus aztecus	brown shrimp	12034	246.0	261	68.3
Trachypenaeus similis	roughback shrimp	8015	15.9	126	33.0
Callinectes similis	lesser blue crab	3638	68.1	200	52.4
Portunus gibbesii	irridescent swimming crab	3521	20.1	170	44.5
Portunus spinicarpus	longspine swimming crab	3162	25.0	61	16.0
Squilla empusa	mantis shrimp	2567	25.0	153	40.1
Penaeus setiferus	white shrimp	1829	38.5	146	38.2

Table 15. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Trachypenaeus constrictus	roughneck shrimp	1693	3.0	31	8.1
Solenocera vioscai	humpback shrimp	1483	8.5	47	12.3
Xiphopenaeus kroyeri	seabob	1176	4.0	15	3.9
Sicyonia brevirostris	brown rock shrimp	965	12.8	45	11.8
Squilla chydaea	mantis shrimp	763	5.8	70	18.3
Sicyonia dorsalis	lesser rock shrimp	683	2.1	81	21.2
Trachypenaeus spp.	roughneck shrimps	571	2.0	4	1.0
Portunus spinimanus	blotched swimming crab	333	6.0	46	12.0
Penaeus duorarum	pink shrimp	183	2.9	45	11.8
Calappa sulcata	yellow box crab	169	31.3	56	14.7
Parapenaeus politus	deepwater rose shrimp	113	0.2	8	2.1
Callinectes sapidus	blue crab	103	5.6	21	5.5
Libinia dubia	longnose spider crab	52	0.4	18	4.7
Anasimus latus	stilt spider crab	51	0.3	14	3.7
Pagurus pollicaris	flatclaw hermit crab	40	0.6	22	5.8
Raninoides louisianensis	gulf frog crab	38	0.3	8	2.1
Plesionika longicauda	pandalid shrimp	30	0.0	5	1.3
Persephona crinita	pink purse crab	24	0.0	15	3.9
Dardanus insignis	red brocade hermit	14	0.1	4	1.0
Paguristes triangulatus	hermit crab	14	0.0	1	0.3
Libinia emarginata	portly spider crab	12	2.0	8	2.1
Pseudorhombilia quadridentata	goneplacid crab	12	0.2	7	1.8
Myropsis quinquespinosa	fivespine purse crab	10	0.1	3	0.8
Hepatus epheliticus	calico crab	10	0.9	7	1.8
Dardanus fucosus	bareye hermit	10	0.1	2	0.5
Menippe adina	Gulf stone crab	9	0.0	6	1.6

Table 15. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Scyllarus depressus	scaled slipper lobster	9	0.0	4	1.0
Sicyonia burkenroadi	spiny rock shrimp	8	0.0	2	0.5
Persephona mediterranea	mottled purse crab	8	0.0	5	1.3
Stenorhynchus seticornis	yellowline arrow crab	8	0.0	4	1.0
Plesionika longipes	shrimp	5	0.0	1	0.3
Petrochirus diogenes	giant hermit crab	5	0.2	3	0.8
Acanthocarpus alexandri	gladiator box crab	5	0.0	2	0.5
Ovalipes floridanus	Florida lady crab	4	0.0	2	0.5
Scyllarus americanus	American slipper lobster	4	0.0	1	0.3
Stenocionops furcata	furcate crab	4	0.1	4	1.0
Stenocionops spinimanus	prickly spider crab	4	1.6	3	0.8
Speocarcinus lobatus	gulf squareback crab	4	0.0	1	0.3
Squilla neglecta	mantis shrimp	3	0.0	3	0.8
Pagurus bullisi	hermit crab	3	0.0	2	0.5
Danielum ixbauchac	red sea crab	3	0.0	2	0.5
Portunus anceps	delicate swimming crab	3	0.0	2	0.5
Scyllarus chacei	chace slipper lobster	3	0.0	1	0.3
Munida forceps	squat lobster	3	0.0	1	0.3
Porcellana sigsbeiana	striped porcelain crab	3	0.0	1	0.3
Dromidia antillensis	hairy sponge crab	3	0.1	3	0.8
Raninoides loevis	furrowed frog crab	3	0.0	2	0.5
Parthenope granulata	bladetooth elbow crab	3	0.0	3	0.8
Diogenidae	left-handed hermit crabs	3	0.0	1	0.3
Callianassidae	ghost shrimps	2	0.0	1	0.3
Libinia spp.	spider crabs	2	0.0	1	0.3
Arenaeus cribrarius	speckled swimming crab	2	0.1	1	0.3

Table 15. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Scyllarides nodifer	ridged slipper lobster	2	0.8	2	0.5
Podochela sidneyi	shortfinger neck crab	2	0.0	1	0.3
Isopoda	isopods	1	0.0	1	0.3
Sicyonia typica	kinglet rock shrimp	1	0.0	1	0.3
Xanthidae	mud crabs	1	0.0	1	0.3
Portunus spp.	swimming crabs	1	0.0	1	0.3
Others					
Astropecten duplicatus	spiny beaded sea star	4498	4.0	47	12.3
Amusium papyraceum	paper scallop	2319	27.5	62	16.2
Lolliguncula brevis	Atlantic brief squid	2200	22.6	142	37.2
Aurelia aurita	moon jellyfish	2200	500.8	53	13.9
Loligo pleii	arrow squid	1737	14.3	86	22.5
Loligo spp.	squids	1604	6.0	41	10.7
Loligo pealeii	longfin squid	1443	28.9	86	22.5
Renilla mulleri	short-stemmed sea pansy	899	2.3	61	16.0
Astropecten cingulatus	starfish	305	1.9	40	10.5
Luidia clathrata	sea star	285	11.8	49	12.8
Chrysaora quinquecirrha	sea nettle	248	2.5	29	7.6
Anadara baughmani	Baughman's ark	94	1.9	14	3.7
Actinidae	sea anemones	91	0.2	22	5.8
Porifera	sponges	63	8.1	5	1.3
Hemipholis elongata	brittle star	62	0.1	3	0.8
Neverita duplicata	shark eye	51	0.5	21	5.5
Polystira albida	white giant turris	50	0.2	5	1.3

Table 15. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Ophiolepis elegans	brittle star	50	0.0	13	3.4
Pitar cordatus	Schwengel's pitar	49	1.3	9	2.4
Paranthus rapiformis	onion anemone	41	0.2	13	3.4
Clypeaster ravenelii	cake urchin	36	3.0	10	2.6
Argopecten gibbus	calico scallop	21	0.1	6	1.6
Tethyaster grandis	starfish	18	1.0	4	1.0
Thais haemastoma	rocksnail	16	0.2	3	0.8
Pecten raveneli	Ravenel's scallop	15	0.1	2	0.5
Asteroidea	starfishes	15	0.6	6	1.6
Scyphozoa	jellyfishes	14	0.2	2	0.5
Cantharus cancellarius	cancellate cantharus	13	0.1	4	1.0
Circomphalus strigillinus	empress venus	13	0.6	2	0.5
Stomolophus meleagris	many-mouthed sea jelly	13	9.2	4	1.0
Sconsia striata	royal bonnet	8	0.1	2	0.5
Chione clenchi	Clench venus	8	0.1	1	0.3
Distorsio clathrata	Atlantic distorsio	6	0.0	4	1.0
Polystira tellea	delicate giant turret	6	0.1	2	0.5
Agriopuma texasianum	Texas venus	5	0.0	2	0.5
Gorgonidae	gorgonians	5	0.0	3	0.8
Ctenophora	comb jellies	5	0.4	3	0.8
Echinaster spp.	thorny sea stars	5	0.0	1	0.3
Goniaster tesselatus	starfish	5	0.2	1	0.3
Busycotypus spiratus	pearwhelk	4	0.2	1	0.3
Echinaster serpentarius	starfish	4	0.0	2	0.5
Moira atropos	mud heart-urchin	4	0.0	4	1.0
Amaea	wentlewrap	3	0.0	1	0.3

Table 15. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Luidia alternata	banded luidia	3	0.0	3	0.8
Anthenoides piercei	starfish	3	0.3	1	0.3
Styela plicata	tunicate	2	0.0	1	0.3
Hermodice carunculata	green fire worm	2	0.0	1	0.3
Astropecten articulatus	plated-margined sea star	2	0.0	2	0.5
Astrogordius cacaoticum	basket star	2	0.0	1	0.3
Molpadia cubana	sea cucumber	2	0.0	1	0.3
Sinum perspectivum	white baby-ear	1	0.0	1	0.3
Murex spp.	murexes	1	0.0	1	0.3
Muricanthus fulvescens	giant eastern murex	1	0.2	1	0.3
Anadara ovalis	blood ark	1	0.0	1	0.3
Atrina spp.	penshells	1	0.6	1	0.3
Laevicardium laevigatum	egg cockle	1	0.1	1	0.3
Macoma brevifrons	short macoma	1	0.0	1	0.3
Semirossia equalis	greater shining bobtail	1	0.0	1	0.3
Octopus spp.	octopuses	1	0.0	1	0.3
Caretta caretta	loggerhead turtle	1	90.6	1	0.3
Ascidiacea	sea squirts	1	0.0	1	0.3
Calliactris tricolor	common sea anemone	1	0.0	1	0.3
Luidia spp.	sea stars	1	0.0	1	0.3
Gorgonocephalidae	basket stars	1	0.0	1	0.3
Asteroporpa annulata	starfish	1	0.0	1	0.3
Centrostephanus longispinosus	sea urchin	1	0.0	1	0.3
Thyonella gemmata	sea cucumber	1	0.0	1	0.3
Paracaudina chilensis	sea cucumber	1	0.0	1	0.3

Table 16a

Statistical Zone 11

Summary of dominant organisms taken in statistical zone 11 during the 1999 Fall Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight (WT) in kg per hour, the SEM for 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
Penaeus aztecus	7.2	7.20	0.2	0.16	5	170.9	109.47	1.6	0.99	9	41.8	40.49	0.6	0.58	21
Portunus spinicarpus	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	9	0.0	0.00	0.0	0.00	21
Trachypenaeus constrictus	0.0	0.00	0.0	0.00	5	78.2	60.94	0.1	0.06	9	3.6	3.57	0.0	0.01	21
Trachypenaeus similis	2.4	2.40	0.0	0.00	5	102.0	68.61	0.2	0.16	9	11.3	10.35	0.0	0.01	21
Portunus spinimanus	0.0	0.00	0.0	0.00	5	0.2	0.21	0.0	0.01	9	0.0	0.00	0.0	0.00	21
Callinectes similis	3.6	3.60	0.1	0.11	5	8.2	5.35	0.1	0.06	9	0.8	0.59	0.0	0.01	21
Stenotomus caprinus	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	9	303.0	114.60	14.2	5.64	21
Chloroscombrus chrysurus	1195.1	1145.29	18.3	15.99	5	307.5	145.29	8.7	7.21	9	87.4	52.82	5.8	3.62	21
Micropogonias undulatus	13.1	13.09	0.6	0.64	5	138.5	83.58	8.4	4.74	9	422.5	199.98	27.5	12.34	21
Leiostomus xanthurus	16.4	16.36	1.6	1.64	5	44.7	37.00	4.4	3.60	9	28.2	13.95	3.5	1.78	21
Anchoa hepsetus	83.0	37.92	1.1	0.55	5	339.3	331.11	2.2	2.11	9	10.4	6.59	0.1	0.05	21
Centropristis philadelphica	1.1	1.09	0.0	0.05	5	5.7	4.58	0.0	0.03	9	4.9	1.57	0.3	0.13	21
Lagodon rhomboides	6.9	4.22	0.4	0.26	5	1.7	1.67	0.1	0.08	9	13.1	3.93	0.9	0.30	21
Serranus atrobranchus	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	9	0.5	0.38	0.0	0.00	21
Squid	91.7	87.54	0.3	0.30	5	36.6	16.28	0.2	0.15	9	4.8	2.37	0.0	0.02	21

Table 16a (continued)

Statistical Zone 11

Summary of dominant organisms taken in statistical zone 11 during the 1999 Fall Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight (WT) in kg per hour, the SEM for weight and the number (N) of samples taken.

	21-30 FM					31-40 FM					>40 FM				
SPECIES	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Penaeus aztecus	79.2	65.39	0.8	0.49	6	72.2	37.59	2.0	1.02	7	148.2	49.86	5.1	1.72	3
Portunus spinicarpus	1.1	0.77	0.0	0.00	6	79.6	60.84	0.7	0.56	7	34.7	17.94	0.4	0.27	3
Trachypenaeus constrictus	124.6	124.62	0.4	0.38	6	0.0	0.00	0.0	0.00	7	0.0	0.00	0.0	0.00	3
Trachypenaeus similis	3.3	3.33	0.0	0.02	6	0.8	0.78	0.0	0.01	7	12.0	12.00	0.0	0.00	3
Portunus spinimanus	0.0	0.00	0.0	0.00	6	9.5	5.47	0.2	0.15	7	65.5	65.50	0.5	0.52	3
Callinectes similis	92.2	88.68	0.9	0.76	6	6.7	4.77	0.2	0.16	7	4.0	4.00	0.1	0.11	3
Stenotomus caprinus	113.3	109.87	6.8	6.70	6	156.0	58.68	8.9	3.35	7	226.5	35.57	14.9	3.31	3
Chloroscombrus chrysurus	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	7	0.0	0.00	0.0	0.00	3
Micropogonias undulatus	135.8	78.71	8.6	4.89	6	19.2	12.99	1.6	0.97	7	39.2	31.42	3.8	2.63	3
Leiostomus xanthurus	41.4	23.64	4.6	2.44	6	66.5	22.66	7.3	2.43	7	227.0	73.08	27.2	8.82	3
Anchoa hepsetus	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	7	0.0	0.00	0.0	0.00	3
Centropristis philadelphica	3.3	2.26	0.1	0.07	6	45.4	28.36	2.2	1.47	7	319.5	116.29	15.7	3.92	3
Lagodon rhomboides	64.5	61.73	3.9	3.71	6	55.7	31.51	4.3	2.05	7	6.5	6.50	0.7	0.73	3
Serranus atrobranchus	33.3	29.51	0.3	0.27	6	67.1	39.10	0.7	0.41	7	87.0	81.07	1.1	1.09	3
Squid	3.8	3.85	0.0	0.00	6	29.6	16.50	0.1	0.04	7	4.0	4.00	0.6	0.64	3

Table 16b

Statistical Zone 11

Summary of mean total catch and environmental data (X), the standard error of the mean (SEM) and the number (N) of samples taken during the 1999 Fall Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m³, and oxygen in ppm.

	0-5 FM			6-10 FM			11-20 FM			21-30 FM			31-40 FM			>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	124.7	75.82	5	40.1	10.88	9	83.4	19.72	21	46.5	14.78	6	62.5	13.85	7	135.8	28.68	3
Total finfish kg	123.7	75.98	5	37.3	10.58	9	81.2	19.70	21	44.0	15.21	6	58.2	13.51	7	127.8	26.82	3
Total crustacean kg	0.5	0.55	5	2.5	1.38	9	1.4	0.83	21	2.7	1.66	6	4.0	1.62	7	7.0	1.94	3
Total others kg	0.5	0.50	5	0.3	0.30	9	0.6	0.60	21	0.1	0.08	6	0.3	0.28	7	0.9	0.91	3
Surface temperature	21.1	0.28	6	23.1	0.26	9	23.8	0.32	21	24.3	0.34	7	23.9	0.11	3	24.2	0.15	7
Midwater temperature	21.0	0.32	6	23.1	0.23	9	24.0	0.26	21	24.5	0.41	7	24.1	0.28	3	23.5	0.72	7
Bottom temperature	20.9	0.34	6	23.6	0.31	9	24.0	0.28	21	24.2	0.41	7	23.8	0.38	3	20.1	0.92	7
Surface salinity	33.3	0.47	6	34.2	0.29	9	34.3	0.71	21	35.3	0.29	7	36.1	0.06	3	36.1	0.08	7
Midwater salinity	33.4	0.55	6	34.3	0.27	9	35.3	0.11	21	35.7	0.21	7	36.1	0.12	3	36.2	0.08	7
Bottom salinity	33.4	0.52	6	35.0	0.12	9	35.3	0.10	21	35.9	0.20	7	36.2	0.08	3	36.3	0.06	7
Surface chlorophyll	1.5	0.00	1	0.7	0.14	3	0.5	0.22	4	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface fluorescence	0.0	0.00	6	0.0	0.00	9	0.1	0.04	21	0.0	0.00	7	0.1	0.01	3	0.0	0.00	7
Surface oxygen	6.3	0.12	6	6.2	0.12	9	6.0	0.22	21	5.8	0.21	7	6.2	0.03	3	6.2	0.05	7
Midwater oxygen	6.4	0.19	6	6.2	0.18	9	6.0	0.11	21	5.5	0.39	7	6.2	0.03	3	5.9	0.36	7
Bottom oxygen	6.4	0.13	6	5.9	0.12	9	5.5	0.20	21	5.3	0.36	7	5.6	0.27	3	4.0	0.22	7

Table 17a

Statistical Zone 12

Summary of dominant organisms taken in statistical zone 12 during the 1999 Fall Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight (WT) in kg per hour, the SEM for weight and the number (N) of samples taken. No trawl samples were taken in depths greater than 10 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	55.4	0.00	0.8	0.00	1	2.4	0.00	0.0	0.00	1	0.0	0.00	0.00	0	0
Penaeus setiferus	36.9	0.00	1.0	0.00	1	4.8	0.00	0.0	0.00	1	0.0	0.00	0.00	0	0
Penaeus duorarum	0.0	0.00	0.0	0.00	1	2.4	0.00	0.0	0.00	1	0.0	0.00	0.00	0	0
Opisthonema oglinum	36.9	0.00	1.0	0.00	1	1699.2	0.00	51.5	0.00	1	0.0	0.00	0.00	0	0
Anchoa hepsetus	535.4	0.00	9.2	0.00	1	840.0	0.00	9.1	0.00	1	0.0	0.00	0.00	0	0
Harengula jaguana	207.7	0.00	4.2	0.00	1	336.0	0.00	6.8	0.00	1	0.0	0.00	0.00	0	0
Selene setapinnis	73.8	0.00	0.4	0.00	1	187.2	0.00	2.8	0.00	1	0.0	0.00	0.00	0	0
Chloroscombrus chrysurus	50.8	0.00	0.6	0.00	1	91.2	0.00	1.3	0.00	1	0.0	0.00	0.00	0	0
Arius felis	147.7	0.00	42.8	0.00	1	28.8	0.00	6.7	0.00	1	0.0	0.00	0.00	0	0
Trichiurus lepturus	55.4	0.00	1.5	0.00	1	62.4	0.00	1.3	0.00	1	0.0	0.00	0.00	0	0
Micropogonias undulatus	9.2	0.00	0.6	0.00	1	57.6	0.00	3.2	0.00	1	0.0	0.00	0.00	0	0
Squid	0.0	0.00	0.0	0.00	1	9.6	0.00	0.1	0.00	1	0.0	0.00	0.00	0	0

Table 17b

Statistical Zone 12

Summary of mean total catch and environmental data (X), the standard error of the mean (SEM) and the number (N) of samples taken during the 1999 Fall Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m³, and oxygen in ppm. No trawl samples were taken in depths greater than 10 fm.

	0-5 FM			6-10 FM			11-20 FM			21-30 FM			31-40 FM			>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	75.5	0.00	1	90.5	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total finfish kg	73.4	0.00	1	89.5	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total crustacean kg	2.1	0.00	1	0.0	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total others kg	0.0	0.00	1	0.0	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface temperature	21.6	0.00	1	22.8	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater temperature	21.6	0.00	1	22.9	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom temperature	21.5	0.00	1	22.7	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface salinity	32.5	0.00	1	32.5	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater salinity	32.6	0.00	1	32.5	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom salinity	32.4	0.00	1	32.4	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface fluorescence	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface oxygen	5.6	0.00	1	5.9	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater oxygen	5.3	0.00	1	6.3	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom oxygen	5.8	0.00	1	6.3	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0

Table 18a

Statistical Zone 13

Summary of dominant organisms taken in statistical zone 13 during the 1999 Fall Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight (WT) in kg per hour, the SEM for 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 constrictus	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	5	887.2	742.45	1.0	0.77	5
Trachypenaeus similis	630.0	0.00	1.4	0.00	1	187.5	123.63	0.4	0.24	5	104.0	104.00	0.3	0.34	5
Solenocera vioscai	0.0	0.00	0.0	0.00	1	2.7	2.73	0.0	0.00	5	0.0	0.00	0.0	0.00	5
Penaeus aztecus	972.0	0.00	7.9	0.00	1	26.5	19.55	0.2	0.20	5	49.7	10.92	0.3	0.08	5
Squilla spp.	204.0	0.00	1.1	0.00	1	116.4	75.80	0.6	0.39	5	269.6	141.04	1.8	1.04	5
Portunus gibbesii	18.0	0.00	0.0	0.00	1	242.9	208.14	0.8	0.67	5	114.4	65.59	0.6	0.32	5
Micropogonias undulatus	450.0	0.00	26.7	0.00	1	25.0	12.92	1.0	0.62	5	149.6	65.87	7.9	3.71	5
Trichiurus lepturus	0.0	0.00	0.0	0.00	1	15.7	11.73	0.2	0.14	5	85.4	39.20	1.7	1.15	5
Anchoa hepsetus	0.0	0.00	0.0	0.00	1	104.3	70.41	0.4	0.24	5	0.6	0.60	0.0	0.00	5
Serranus atrobranchus	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	5
Cynoscion arenarius	516.0	0.00	35.2	0.00	1	27.8	16.55	2.4	1.54	5	38.6	22.93	1.1	0.70	5
Pontinus longispinis	0.0	0.00	0.0	0.00	1	1.6	1.64	0.0	0.02	5	0.0	0.00	0.0	0.00	5
Trichopsetta ventralis	0.0	0.00	0.0	0.00	1	8.2	8.18	0.1	0.15	5	1.4	1.41	0.0	0.03	5
Porichthys plectrodon	0.0	0.00	0.0	0.00	1	48.9	48.27	0.3	0.29	5	39.5	37.87	0.3	0.24	5
Squid	30.0	0.00	0.0	0.00	1	81.7	35.05	0.7	0.38	5	50.6	18.57	1.3	1.17	5

Table 18a (continued)

Statistical Zone 13

Summary of dominant organisms taken in statistical zone 13 during the 1999 Fall Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight (WT) in kg per hour, the SEM for weight and the number (N) of samples taken.

	21-30 FM					31-40 FM					>40 FM				
SPECIES	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Trachypenaeus constrictus	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	3
Trachypenaeus similis	242.4	0.00	0.8	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	3
Solenocera vioscai	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0	397.9	216.42	2.9	1.63	3
Penaeus aztecus	62.4	0.00	0.5	0.00	1	0.0	0.00	0.0	0.00	0	199.3	141.62	3.9	2.77	3
Squilla spp.	50.4	0.00	0.3	0.00	1	0.0	0.00	0.0	0.00	0	56.1	28.20	0.7	0.34	3
Portunus gibbesii	21.6	0.00	0.2	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	3
Micropogonias undulatus	487.2	0.00	30.9	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	3
Trichiurus lepturus	429.6	0.00	22.8	0.00	1	0.0	0.00	0.0	0.00	0	12.9	12.92	0.4	0.42	3
Anchoa hepsetus	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	3
Serranus atrobranchus	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0	133.1	55.53	3.4	1.52	3
Cynoscion arenarius	9.6	0.00	2.3	0.00	1	0.0	0.00	0.0	0.00	0	20.1	11.99	4.2	2.32	3
Pontinus longispinis	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0	113.7	62.52	1.2	0.71	3
Trichopsetta ventralis	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0	88.4	54.40	2.2	1.33	3
Porichthys plectrodon	21.6	0.00	0.4	0.00	1	0.0	0.00	0.0	0.00	0	8.2	3.52	0.0	0.02	3
Squid	45.6	0.00	0.3	0.00	1	0.0	0.00	0.0	0.00	0	16.1	14.49	0.2	0.25	3

Table 18b

Statistical Zone 13

Summary of mean total catch and environmental data (X), the standard error of the mean (SEM) and the number (N) of samples taken during the 1999 Fall Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m³, and oxygen in ppm.

	0-5 FM			6-10 FM			11-20 FM			21-30 FM			31-40 FM			>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	87.3	0.00	1	27.2	11.02	5	25.9	8.07	5	69.8	0.00	1	0.0	0.00	0	42.2	10.01	3
Total finfish kg	76.4	0.00	1	23.5	11.17	5	18.4	6.93	5	63.3	0.00	1	0.0	0.00	0	32.8	10.55	3
Total crustacean kg	10.9	0.00	1	2.5	1.34	5	6.3	2.98	5	4.4	0.00	1	0.0	0.00	0	9.1	0.58	3
Total others kg	0.0	0.00	1	0.5	0.36	5	1.5	1.49	5	2.2	0.00	1	0.0	0.00	0	0.4	0.38	3
Surface temperature	21.4	0.65	2	22.2	0.37	7	22.0	0.43	3	22.5	0.00	1	0.0	0.00	0	24.8	0.11	2
Midwater temperature	22.2	0.26	2	22.6	0.33	7	22.9	1.11	3	24.7	0.00	1	0.0	0.00	0	25.1	0.15	2
Bottom temperature	23.2	0.77	2	24.0	0.51	6	24.9	0.11	3	25.1	0.00	1	0.0	0.00	0	20.8	0.54	2
Surface salinity	27.3	4.87	2	33.3	0.45	7	32.3	0.08	3	32.4	0.00	1	0.0	0.00	0	35.8	0.28	2
Midwater salinity	32.4	0.24	2	33.6	0.40	7	33.5	1.11	3	35.9	0.00	1	0.0	0.00	0	36.2	0.08	2
Bottom salinity	33.6	0.93	2	34.8	0.40	6	35.9	0.34	3	36.2	0.00	1	0.0	0.00	0	36.5	0.03	2
Surface chlorophyll	0.0	0.00	0	2.9	1.28	4	2.1	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface fluorescence	0.2	0.04	2	0.2	0.02	7	0.1	0.04	3	0.1	0.00	1	0.0	0.00	0	0.1	0.01	2
Surface oxygen	6.2	0.70	2	6.6	0.30	7	7.6	0.51	3	3.4	0.00	1	0.0	0.00	0	6.1	0.15	2
Midwater oxygen	6.4	0.50	2	6.4	0.36	7	7.2	0.69	3	1.8	0.00	1	0.0	0.00	0	6.1	0.05	2
Bottom oxygen	4.0	0.05	2	5.4	0.57	6	4.7	0.32	3	2.7	0.00	1	0.0	0.00	0	3.8	0.10	2

Table 19a

Statistical Zone 14

Summary of dominant organisms taken in statistical zone 14 during the 1999 Fall Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight (WT) in kg per hour, the SEM for weight and the number (N) of samples taken. No trawl samples were taken in depths less than 6 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	0.0	0.00	0.0	0.00	0	38.0	12.44	0.4	0.12	5	185.5	52.39	2.4	0.75	17
Portunus gibbesii	0.0	0.00	0.0	0.00	0	17.6	7.36	0.2	0.08	5	110.9	36.17	0.7	0.18	17
Trachypenaeus similis	0.0	0.00	0.0	0.00	0	210.8	154.97	0.5	0.35	5	18.1	7.07	0.2	0.17	17
Callinectes similis	0.0	0.00	0.0	0.00	0	9.2	4.13	0.1	0.06	5	69.9	20.34	2.1	0.62	17
Penaeus setiferus	0.0	0.00	0.0	0.00	0	63.3	21.74	1.2	0.40	5	6.2	3.67	0.2	0.09	17
Squilla spp.	0.0	0.00	0.0	0.00	0	6.0	2.19	0.1	0.04	5	19.2	11.94	0.3	0.20	17
Micropogonias undulatus	0.0	0.00	0.0	0.00	0	110.6	64.85	5.6	3.40	5	2514.3	495.60	117.1	23.19	17
Stenotomus caprinus	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	5	203.6	58.82	4.6	1.45	17
Arius felis	0.0	0.00	0.0	0.00	0	529.1	368.82	9.1	4.24	5	0.0	0.00	0.0	0.00	17
Trichiurus lepturus	0.0	0.00	0.0	0.00	0	340.7	294.81	1.3	0.99	5	20.9	14.06	0.6	0.37	17
Prionotus longispinosus	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	5	141.2	38.76	3.6	0.89	17
Cynoscion nothus	0.0	0.00	0.0	0.00	0	38.9	37.30	0.3	0.22	5	90.7	32.29	6.3	2.19	17
Leiostomus xanthurus	0.0	0.00	0.0	0.00	0	7.2	4.03	0.7	0.37	5	64.0	18.97	5.1	1.49	17
Anchoa hepsetus	0.0	0.00	0.0	0.00	0	69.5	26.86	0.6	0.35	5	0.9	0.92	0.0	0.01	17
Squid	0.0	0.00	0.0	0.00	0	151.7	96.91	0.6	0.35	5	20.3	9.32	0.1	0.03	17

Table 19a (continued)

Statistical Zone 14

Summary of dominant organisms taken in statistical zone 14 during the 1999 Fall Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight (WT) in kg per hour, the SEM for weight and the number (N) of samples taken. No trawl samples were taken in depths less than 6 fm.

	21-30 FM					31-40 FM					>40 FM				
SPECIES	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Penaeus aztecus	185.5	0.00	2.9	0.00	1	1031.2	954.76	12.0	9.84	2	42.2	32.79	1.4	0.92	2
Portunus gibbesii	27.3	0.00	0.1	0.00	1	0.0	0.00	0.0	0.00	2	2.5	2.50	0.0	0.00	2
Trachypenaeus 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	2
Callinectes similis	27.3	0.00	1.0	0.00	1	12.5	5.47	0.5	0.33	2	3.1	1.91	0.0	0.03	2
Penaeus setiferus	0.0	0.00	0.0	0.00	1	3.0	3.00	0.0	0.00	2	0.0	0.00	0.0	0.00	2
Squilla spp.	46.4	0.00	0.6	0.00	1	28.2	25.82	0.1	0.14	2	2.5	2.50	0.0	0.00	2
Micropogonias undulatus	1107.3	0.00	60.5	0.00	1	180.5	47.53	13.0	1.48	2	7.5	7.50	0.7	0.68	2
Stenotomus caprinus	204.5	0.00	17.0	0.00	1	63.5	3.53	1.7	0.09	2	71.0	3.97	6.9	0.87	2
Arius felis	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	2
Trichiurus lepturus	0.0	0.00	0.0	0.00	1	153.6	152.41	5.9	5.81	2	1.2	1.18	0.1	0.08	2
Prionotus longispinosus	27.3	0.00	2.2	0.00	1	39.5	32.47	1.4	1.28	2	15.0	15.00	1.4	1.36	2
Cynoscion nothus	0.0	0.00	0.0	0.00	1	2.4	2.35	0.2	0.21	2	2.5	2.50	0.0	0.00	2
Leiostomus xanthurus	79.1	0.00	8.7	0.00	1	104.5	57.47	11.4	6.38	2	30.0	30.00	3.6	3.64	2
Anchoa hepsetus	0.0	0.00	0.0	0.00	1	147.0	147.00	0.3	0.27	2	0.0	0.00	0.0	0.00	2
Squid	0.0	0.00	0.0	0.00	1	72.2	35.76	0.2	0.06	2	26.6	21.62	0.7	0.01	2

Table 19b

Statistical Zone 14

Summary of mean total catch and environmental data (X), the standard error of the mean (SEM) and the number (N) of samples taken during the 1999 Fall Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m³, and oxygen in ppm. No trawl samples were taken in depths less than 6 fm.

	0-5 FM			6-10 FM			11-20 FM			21-30 FM			31-40 FM			>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	0.0	0.00	0	32.3	7.08	5	173.4	35.25	17	115.3	0.00	1	63.7	23.58	2	33.7	11.76	2
Total finfish kg	0.0	0.00	0	29.1	7.05	5	152.6	26.74	17	110.3	0.00	1	50.1	12.65	2	30.6	10.29	2
Total crustacean kg	0.0	0.00	0	2.5	0.58	5	6.3	1.39	17	5.0	0.00	1	13.3	11.20	2	1.7	0.60	2
Total others kg	0.0	0.00	0	0.7	0.34	5	14.6	14.58	17	0.0	0.00	1	0.0	0.00	2	1.7	0.60	2
Surface temperature	21.8	0.00	1	21.7	0.30	6	23.7	0.18	20	24.5	0.02	2	24.7	0.39	2	25.0	0.05	3
Midwater temperature	21.8	0.00	1	22.2	0.29	6	23.8	0.18	20	24.5	0.01	2	24.8	0.21	2	25.0	0.04	3
Bottom temperature	21.8	0.00	1	23.9	0.41	6	24.0	0.20	20	24.4	0.07	2	24.8	0.05	2	21.2	0.44	3
Surface salinity	32.9	0.00	1	32.2	0.50	6	35.7	0.17	20	36.2	0.11	2	36.1	0.22	2	36.4	0.02	3
Midwater salinity	32.9	0.00	1	32.7	0.42	6	35.8	0.15	20	36.2	0.11	2	36.3	0.09	2	36.4	0.01	3
Bottom salinity	33.0	0.00	1	35.1	0.40	6	36.0	0.05	20	36.3	0.01	2	36.3	0.00	2	36.5	0.03	3
Surface chlorophyll	0.0	0.00	0	1.6	0.48	4	0.9	0.26	9	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface fluorescence	0.3	0.00	1	0.1	0.05	6	0.1	0.01	21	0.1	0.01	2	0.0	0.02	2	0.1	0.09	3
Surface oxygen	7.0	0.00	1	7.9	0.36	6	6.7	0.14	20	6.1	0.05	2	6.3	0.10	2	6.1	0.03	3
Midwater oxygen	7.0	0.00	1	7.8	0.31	6	6.7	0.15	20	6.1	0.00	2	6.2	0.00	2	6.2	0.03	3
Bottom oxygen	6.6	0.00	1	5.6	0.51	6	6.4	0.23	20	5.8	0.30	2	6.1	0.00	2	4.1	0.19	3

Table 20a

Statistical Zone 15

Summary of dominant organisms taken in statistical zone 15 during the 1999 Fall Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight (WT) in kg per hour, the SEM for weight and the number (N) of samples taken. No trawl samples were taken in depths greater than 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	18.3	7.26	0.0	0.03	4	29.0	15.79	0.2	0.13	7	64.2	15.63	1.2	0.36	11
Trachypenaeus similis	123.5	85.12	0.3	0.22	4	93.0	54.73	0.3	0.13	7	34.9	28.43	0.1	0.11	11
Portunus gibbesii	2.1	1.22	0.0	0.00	4	65.0	32.25	0.2	0.13	7	38.8	18.55	0.2	0.10	11
Callinectes similis	3.5	2.36	0.1	0.06	4	31.9	30.69	0.2	0.17	7	28.7	8.67	0.5	0.17	11
Squilla spp.	4.0	2.45	0.0	0.02	4	64.8	51.28	0.4	0.37	7	8.2	4.39	0.1	0.06	11
Penaeus setiferus	40.4	16.35	1.0	0.35	4	25.4	7.88	0.7	0.18	7	3.9	2.25	0.1	0.09	11
Micropogonias undulatus	534.8	260.96	28.0	14.56	4	1276.6	888.90	63.1	44.94	7	266.2	54.80	12.7	2.53	11
Serranus atrobranchus	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	7	10.0	10.00	0.1	0.09	11
Leiostomus xanthurus	0.0	0.00	0.0	0.00	4	1.9	1.26	0.1	0.09	7	11.8	5.45	1.1	0.50	11
Stenotomus caprinus	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	7	73.2	45.89	1.9	1.20	11
Peprilus burti	62.4	60.89	3.8	3.73	4	5.2	2.51	0.4	0.18	7	27.2	14.29	2.5	1.35	11
Anchoa hepsetus	139.2	60.71	2.1	0.90	4	84.7	48.27	1.0	0.66	7	55.1	46.19	0.3	0.18	11
Cynoscion nothus	90.6	34.11	2.4	1.23	4	26.6	8.93	1.7	1.32	7	67.1	29.70	4.6	2.05	11
Centropristis philadelphica	2.5	2.50	0.1	0.11	4	2.4	1.55	0.0	0.02	7	22.4	7.05	0.6	0.19	11
Squid	87.5	31.74	0.6	0.10	4	47.4	25.29	0.3	0.15	7	57.6	16.15	0.4	0.10	11

Table 20a (continued)

Statistical Zone 15

Summary of dominant organisms taken in statistical zone 15 during the 1999 Fall Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight (WT) in kg per hour, the SEM for weight and the number (N) of samples taken. No trawl samples were taken in depths greater than 40 fm.

	21-30 FM					31-40 FM					>40FM				
SPECIES	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Penaeus aztecus	57.2	23.96	1.5	0.64	5	101.6	12.13	3.1	0.25	5	0.0	0.00	0.00	0	0
Trachypenaeus similis	3.2	2.16	0.0	0.01	5	2.0	1.48	0.0	0.02	5	0.0	0.00	0.00	0	0
Portunus gibbesii	3.7	3.69	0.0	0.01	5	0.0	0.00	0.0	0.00	5	0.0	0.00	0.00	0	0
Callinectes similis	15.3	5.12	0.3	0.10	5	23.2	2.53	0.6	0.09	5	0.0	0.00	0.00	0	0
Squilla spp.	2.4	1.70	0.0	0.02	5	27.0	10.99	0.5	0.14	5	0.0	0.00	0.00	0	0
Penaeus setiferus	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	5	0.0	0.00	0.00	0	0
Micropogonias undulatus	421.6	282.24	23.0	13.58	5	34.4	14.08	3.7	1.54	5	0.0	0.00	0.00	0	0
Serranus atrobranchus	78.3	49.63	0.6	0.39	5	363.3	116.22	3.3	1.10	5	0.0	0.00	0.00	0	0
Leiostomus xanthurus	49.5	30.47	5.0	3.15	5	289.4	238.69	30.6	24.38	5	0.0	0.00	0.00	0	0
Stenotomus caprinus	99.5	31.36	3.2	0.87	5	94.5	10.82	3.6	0.57	5	0.0	0.00	0.00	0	0
Peprilus burti	205.7	150.88	18.8	14.09	5	0.0	0.00	0.0	0.00	5	0.0	0.00	0.00	0	0
Anchoa hepsetus	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	5	0.0	0.00	0.00	0	0
Cynoscion nothus	16.2	4.36	1.4	0.49	5	0.5	0.45	0.0	0.03	5	0.0	0.00	0.00	0	0
Centropristis philadelphica	40.8	37.84	1.4	1.23	5	84.8	12.55	2.5	0.58	5	0.0	0.00	0.00	0	0
Squid	48.6	25.39	0.2	0.06	5	0.7	0.44	0.1	0.06	5	0.0	0.00	0.00	0	0

Table 20b

Statistical Zone 15

Summary of mean total catch and environmental data (X), the standard error of the mean (SEM) and the number (N) of samples taken during the 1998 Fall Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m³, and oxygen in ppm. No trawl samples were taken in depths less than 6 fm.

	0-5 FM			6-10 FM			11-20 FM			21-30 FM			31-40 FM			>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	0.0	0.00	0	464.9	214.90	3	91.3	20.54	6	46.4	14.55	2	0.0	0.00	0	54.0	14.79	3
Total finfish kg	0.0	0.00	0	119.3	23.13	3	77.7	14.89	6	43.4	12.95	2	0.0	0.00	0	50.6	15.10	3
Total crustacean kg	0.0	0.00	0	2.5	0.80	3	2.3	0.71	6	3.0	1.59	2	0.0	0.00	0	1.0	0.54	3
Total others kg	0.0	0.00	0	342.8	233.64	3	11.0	9.61	6	0.0	0.00	2	0.0	0.00	0	2.4	0.86	3
Surface temperature	21.2	0.10	2	23.0	1.38	4	23.7	0.22	6	26.3	1.65	2	25.1	0.00	1	25.6	0.36	3
Midwater temperature	21.3	0.30	2	23.0	1.36	4	23.7	0.33	6	26.5	1.36	2	25.2	0.00	1	25.5	0.38	3
Bottom temperature	22.2	0.11	2	23.0	1.36	4	23.8	0.41	6	26.5	1.37	2	25.0	0.00	1	20.3	0.69	3
Surface salinity	30.1	0.39	2	32.3	0.69	4	34.6	0.18	6	35.8	0.16	2	36.0	0.00	1	35.9	0.11	3
Midwater salinity	30.4	0.52	2	32.3	0.68	4	34.7	0.14	6	36.0	0.06	2	36.1	0.00	1	36.0	0.10	3
Bottom salinity	31.0	1.76	2	32.5	0.68	4	34.9	0.16	6	36.0	0.08	2	36.1	0.00	1	36.4	0.03	3
Surface chlorophyll	2.2	0.12	2	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface fluorescence	0.3	0.00	2	1.5	0.34	4	1.0	0.06	6	0.6	0.34	2	0.7	0.00	1	0.4	0.06	3
Surface oxygen	7.2	0.15	2	7.4	0.62	4	7.0	0.61	6	5.9	1.65	2	7.0	0.00	1	7.8	0.15	3
Midwater oxygen	6.9	0.05	2	7.5	0.57	4	7.8	0.15	6	6.6	1.30	2	7.7	0.00	1	7.8	0.15	3
Bottom oxygen	4.9	1.30	2	7.3	0.55	4	7.7	0.19	6	6.6	1.20	2	7.5	0.00	1	3.2	0.12	3

Table 21a

Statistical Zone 16

Summary of dominant organisms taken in statistical zone 16 during the 1999 Fall Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight (WT) in kg per hour, the SEM for 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
Penaeus aztecus	18.8	14.52	0.2	0.20	2	83.2	68.87	0.7	0.62	6	126.8	41.82	1.9	0.57	18
Portunus gibbesii	28.9	28.89	0.1	0.10	2	30.9	13.68	0.1	0.08	6	31.5	15.27	0.4	0.25	18
Trachypenaeus spp.	0.0	0.00	0.0	0.00	2	189.8	108.89	0.6	0.41	6	0.0	0.00	0.0	0.00	18
Callinectes similis	21.9	4.76	0.1	0.05	2	12.1	6.29	0.1	0.06	6	23.9	5.19	0.4	0.11	18
Portunus spinicarpus	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	18
Penaeus setiferus	23.0	5.87	0.8	0.06	2	33.3	14.55	1.1	0.48	6	2.2	0.93	0.1	0.05	18
Chloroscombrus chrysurus	10029.8	18.73	120.5	120.44	2	1577.4	1409.13	18.9	16.96	6	2010.7	997.57	29.1	13.33	18
Stenotomus caprinus	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	6	407.2	203.95	10.5	5.19	18
Peprilus burti	85.7	85.71	4.0	3.99	2	42.5	18.77	2.4	1.03	6	102.5	49.88	6.8	3.27	18
Micropogonias undulatus	3.3	3.33	0.2	0.15	2	45.9	40.99	2.1	1.92	6	109.9	33.30	5.8	1.71	18
Prionotus longispinosus	12.2	12.22	0.3	0.30	2	110.9	110.86	2.1	2.10	6	33.3	11.95	0.9	0.31	18
Opisthonema oglinum	117.6	70.95	3.3	1.97	2	188.6	117.53	5.8	3.62	6	14.1	6.10	1.6	1.13	18
Trachurus lathami	0.0	0.00	0.0	0.00	2	0.6	0.56	0.0	0.01	6	20.4	10.19	0.7	0.32	18
Sphoeroides parvus	3.3	3.33	0.0	0.00	2	6.3	5.62	0.0	0.03	6	41.0	23.12	0.3	0.17	18
Squid	36.7	36.67	0.5	0.51	2	40.6	15.53	0.6	0.22	6	19.0	6.22	0.6	0.21	18

Table 21a (continued)

Statistical Zone 16

Summary of dominant organisms taken in statistical zone 16 during the 1999 Fall Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight (WT) in kg per hour, the SEM for weight and the number (N) of samples taken.

	21-30 FM					31-40 FM					>40 FM				
SPECIES	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Penaeus aztecus	33.6	18.80	1.1	0.61	5	20.7	0.00	0.8	0.00	1	12.4	2.24	0.7	0.15	4
Portunus gibbesii	0.3	0.29	0.0	0.00	5	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	4
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	4
Callinectes similis	12.1	5.54	0.3	0.14	5	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	4
Portunus spinicarpus	0.0	0.00	0.0	0.00	5	5.5	0.00	0.0	0.00	1	166.0	83.99	1.4	0.61	4
Penaeus setiferus	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	4
Chloroscombrus chrysurus	3.3	2.54	0.2	0.17	5	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	4
Stenotomus caprinus	162.6	74.36	5.1	2.27	5	378.5	0.00	14.3	0.00	1	221.6	41.72	10.6	2.37	4
Peprilus burti	202.9	158.07	13.2	10.24	5	10.9	0.00	0.8	0.00	1	5.2	3.60	0.4	0.25	4
Micropogonias undulatus	20.0	7.33	1.9	0.73	5	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	4
Prionotus longispinosus	0.9	0.60	0.0	0.03	5	0.0	0.00	0.0	0.00	1	4.5	4.50	0.4	0.41	4
Opisthonema oglinum	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	4
Trachurus lathami	56.2	28.89	1.8	0.98	5	8.7	0.00	2.3	0.00	1	16.4	14.60	0.8	0.76	4
Sphoeroides parvus	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	4
Squid	5.4	2.51	0.1	0.10	5	62.2	0.00	1.7	0.00	1	28.9	21.95	0.3	0.21	4

Table 21b

Statistical Zone 16

Summary of mean total catch and environmental data (X), the standard error of the mean (SEM) and the number (N) of samples taken during the 1999 Fall Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m³, and oxygen in ppm.

	0-5 FM			6-10 FM			11-20 FM			21-30 FM			31-40 FM			>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	148.3	136.15	2	54.1	21.09	6	79.6	17.38	18	33.9	10.04	5	29.8	0.00	1	76.1	27.86	4
Total finfish kg	145.7	138.67	2	47.6	20.49	6	75.7	17.43	18	31.5	10.10	5	25.3	0.00	1	72.3	27.23	4
Total crustacean kg	1.0	1.01	2	2.9	1.25	6	3.0	0.86	18	1.6	0.96	5	1.0	0.00	1	1.8	0.79	4
Total others kg	1.5	1.52	2	3.1	1.13	6	0.8	0.24	18	0.3	0.20	5	3.5	0.00	1	1.4	0.59	4
Surface temperature	20.3	0.00	1	20.9	0.21	7	23.2	0.19	19	24.9	0.10	4	25.3	0.00	1	25.3	0.08	4
Midwater temperature	20.5	0.00	1	21.2	0.18	7	23.2	0.20	19	24.9	0.11	4	25.2	0.00	1	25.3	0.07	4
Bottom temperature	20.8	0.00	1	21.6	0.15	7	23.4	0.19	19	24.9	0.11	4	25.2	0.00	1	19.5	0.58	4
Surface salinity	31.6	0.00	1	32.1	0.32	7	34.6	0.19	19	36.0	0.04	4	36.3	0.00	1	36.3	0.02	4
Midwater salinity	31.8	0.00	1	32.6	0.27	7	34.6	0.19	19	36.0	0.04	4	36.3	0.00	1	36.3	0.01	4
Bottom salinity	32.1	0.00	1	33.0	0.23	7	34.8	0.19	19	36.0	0.04	4	36.3	0.00	1	36.5	0.03	4
Surface chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface fluorescence	0.2	0.00	1	0.2	0.02	7	0.1	0.01	19	0.1	0.00	4	0.0	0.00	1	0.0	0.01	4
Surface oxygen	7.1	0.00	1	6.7	0.52	7	6.5	0.05	19	6.1	0.02	4	6.1	0.00	1	6.1	0.06	4
Midwater oxygen	6.9	0.00	1	7.2	0.15	7	6.5	0.05	19	6.2	0.03	4	6.1	0.00	1	6.3	0.03	4
Bottom oxygen	6.7	0.00	1	6.7	0.13	7	6.4	0.04	19	6.2	0.04	4	6.1	0.00	1	3.8	0.09	4

Table 22a

Statistical Zone 17

Summary of dominant organisms taken in statistical zone 17 during the 1999 Fall Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight (WT) in kg per hour, the SEM for 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
Penaeus aztecus	0.0	0.00	0.0	0.00	12	74.7	40.07	1.3	0.69	9	97.3	49.47	2.5	1.25	5
Portunus spinicarpus	0.0	0.00	0.0	0.00	12	0.0	0.00	0.0	0.00	9	27.5	15.21	0.1	0.05	5
Xiphopenaeus kroyeri	585.0	270.76	2.0	0.89	12	0.0	0.00	0.0	0.00	9	0.0	0.00	0.0	0.00	5
Sicyonia brevirostris	0.0	0.00	0.0	0.00	12	8.8	8.07	0.1	0.05	9	66.6	26.39	0.8	0.33	5
Trachypenaeus similis	41.5	14.61	0.0	0.03	12	86.5	38.20	0.3	0.14	9	1.0	1.03	0.0	0.01	5
Callinectes similis	29.5	13.92	0.0	0.03	12	52.4	28.47	0.3	0.17	9	10.5	7.16	0.2	0.11	5
Stenotomus caprinus	0.0	0.00	0.0	0.00	12	146.5	101.48	4.0	2.83	9	172.3	73.66	12.0	5.23	5
Centropristis philadelphica	0.0	0.00	0.0	0.00	12	56.8	23.49	2.0	0.84	9	0.0	0.00	0.0	0.00	5
Serranus atrobranchus	0.0	0.00	0.0	0.00	12	0.0	0.00	0.0	0.00	9	0.0	0.00	0.0	0.00	5
Trachurus lathami	0.0	0.00	0.0	0.00	12	0.0	0.00	0.0	0.00	9	0.9	0.86	0.1	0.08	5
Peprilus burti	2.0	1.54	0.0	0.00	12	9.0	2.03	0.3	0.13	9	0.0	0.00	0.0	0.00	5
Micropogonias undulatus	3.0	1.17	0.1	0.04	12	51.0	21.49	2.6	1.09	9	15.2	12.55	1.5	1.11	5
Chloroscombrus chrysurus	1.0	0.67	0.0	0.00	12	92.3	49.29	0.9	0.47	9	0.0	0.00	0.0	0.00	5
Sphoeroides parvus	0.5	0.50	0.0	0.00	12	69.1	36.68	0.5	0.28	9	0.4	0.41	0.0	0.01	5
Squid	14.5	4.87	0.2	0.08	12	87.8	28.94	1.0	0.30	9	15.2	11.45	0.2	0.19	5

Table 22a (continued)

Statistical Zone 17

Summary of dominant organisms taken in statistical zone 17 during the 1999 Fall Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight (WT) in kg per hour, the SEM for weight and the number (N) of samples taken.

	21-30 FM					31-40 FM					>40 FM				
SPECIES	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Penaeus aztecus	80.9	30.55	3.1	1.01	5	39.6	11.81	1.7	0.48	8	29.7	2.99	1.6	0.21	4
Portunus spinicarpus	2.2	2.18	0.0	0.00	5	176.2	97.36	1.2	0.66	8	29.7	17.79	0.3	0.16	4
Xiphopenaeus kroyeri	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	8	0.0	0.00	0.0	0.00	4
Sicyonia brevirostris	59.2	18.49	0.9	0.31	5	21.0	10.85	0.3	0.17	8	0.0	0.00	0.0	0.00	4
Trachypenaeus similis	1.5	1.27	0.0	0.00	5	0.3	0.33	0.0	0.01	8	1.4	1.36	0.0	0.00	4
Callinectes similis	38.9	20.36	1.5	0.55	5	0.3	0.27	0.0	0.01	8	0.0	0.00	0.0	0.00	4
Stenotomus caprinus	192.0	43.43	8.2	1.58	5	132.2	25.76	6.6	1.47	8	207.4	57.98	11.3	2.92	4
Centropristis philadelphica	74.2	25.50	2.7	0.72	5	49.3	19.19	2.6	1.09	8	14.7	7.27	1.3	0.53	4
Serranus atrobranchus	34.8	25.48	0.2	0.14	5	80.0	31.32	0.6	0.23	8	173.7	105.68	2.0	1.22	4
Trachurus lathami	70.3	70.25	2.2	2.17	5	35.0	27.43	1.0	0.74	8	53.3	26.87	1.7	0.67	4
Peprilus burti	108.2	108.22	7.7	7.74	5	10.3	7.45	0.6	0.41	8	32.6	21.19	2.1	1.30	4
Micropogonias undulatus	23.4	12.68	1.9	0.96	5	3.4	1.35	0.4	0.17	8	0.0	0.00	0.0	0.00	4
Chloroscombrus chrysurus	16.6	16.58	0.5	0.47	5	5.7	3.85	0.4	0.22	8	0.0	0.00	0.0	0.00	4
Sphoeroides parvus	0.0	0.00	0.0	0.00	5	0.7	0.68	0.0	0.01	8	0.0	0.00	0.0	0.00	4
Squid	2.2	0.93	0.1	0.08	5	45.4	27.13	0.2	0.11	8	8.5	3.34	0.6	0.24	4

Table 22b

Statistical Zone 17

Summary of mean total catch and environmental data (X), the standard error of the mean (SEM) and the number (N) of samples taken during the 1999 Fall Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m³, and oxygen in ppm.

	0-5 FM			6-10 FM			11-20 FM			21-30 FM			31-40 FM			>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	6.6	1.14	12	31.5	9.43	9	42.7	10.07	5	44.7	9.84	5	32.2	3.88	8	46.4	7.71	4
Total finfish kg	3.2	0.81	12	27.6	9.02	9	36.6	9.73	5	38.3	11.14	5	27.0	3.80	8	40.9	7.09	4
Total crustacean kg	3.0	1.03	12	2.7	1.12	9	5.1	1.95	5	6.2	1.77	5	3.6	1.20	8	2.7	0.28	4
Total others kg	0.2	0.23	12	1.0	0.44	9	0.5	0.38	5	0.3	0.20	5	1.5	0.33	8	2.1	0.94	4
Surface temperature	21.0	0.14	14	21.3	0.48	6	24.3	0.09	4	25.0	0.23	4	25.4	0.14	5	25.2	0.10	4
Midwater temperature	21.0	0.14	14	21.3	0.48	6	24.3	0.10	4	25.1	0.17	4	25.4	0.14	5	25.2	0.09	4
Bottom temperature	21.0	0.16	14	21.4	0.47	6	24.3	0.45	4	25.5	0.09	4	24.3	0.59	5	20.3	0.26	4
Surface salinity	29.6	0.28	14	32.1	0.49	6	34.8	0.07	4	35.6	0.23	4	36.2	0.04	5	36.3	0.00	4
Midwater salinity	29.6	0.27	14	32.1	0.50	6	34.8	0.08	4	35.7	0.18	4	36.2	0.04	5	36.3	0.01	4
Bottom salinity	29.7	0.27	14	32.3	0.44	6	35.2	0.35	4	35.9	0.03	4	36.3	0.04	5	36.5	0.00	4
Surface chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface fluorescence	0.1	0.01	14	0.1	0.02	6	0.0	0.00	4	0.0	0.00	4	0.1	0.01	5	0.0	0.00	4
Surface oxygen	6.8	0.11	14	6.9	0.20	6	6.3	0.02	4	6.1	0.04	4	6.1	0.02	5	6.2	0.02	4
Midwater oxygen	6.7	0.13	14	6.8	0.17	6	6.3	0.02	4	6.1	0.03	4	6.1	0.02	5	6.3	0.07	4
Bottom oxygen	6.5	0.14	14	7.0	0.15	6	6.1	0.11	4	5.9	0.12	4	4.9	0.47	5	3.6	0.06	4

Table 23a

Statistical Zone 18

Summary of dominant organisms taken in statistical zone 18 during the 1999 Fall Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight (WT) in kg per hour, the SEM for 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
Penaeus aztecus	0.0	0.00	0.0	0.00	4	0.7	0.66	0.0	0.00	13	70.2	35.10	1.7	0.86	3
Penaeus setiferus	3.0	1.73	0.0	0.00	4	106.3	32.90	0.9	0.31	13	0.0	0.00	0.0	0.00	3
Trachypenaeus similis	0.0	0.00	0.0	0.00	4	59.0	33.45	0.1	0.05	13	25.2	12.99	0.1	0.04	3
Portunus gibbesii	0.0	0.00	0.0	0.00	4	12.8	10.88	0.0	0.05	13	30.2	14.69	0.2	0.12	3
Callinectes similis	1.5	1.50	0.0	0.00	4	16.1	10.75	0.0	0.04	13	10.0	10.00	0.3	0.30	3
Squilla spp.	1.5	1.50	0.0	0.00	4	14.4	12.12	0.2	0.15	13	12.0	6.04	0.1	0.06	3
Stenotomus caprinus	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	13	15.7	9.22	0.5	0.32	3
Stellifer lanceolatus	72.0	30.98	0.9	0.54	4	233.8	94.84	2.9	0.96	13	0.0	0.00	0.0	0.00	3
Upeneus parvus	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	13	8.2	7.57	2.0	2.01	3
Prionotus paralatus	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	13	0.7	0.71	0.0	0.00	3
Pristipomoides aquilonaris	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	13	0.0	0.00	0.0	0.00	3
Trachurus lathami	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	13	0.4	0.43	0.0	0.02	3
Diplectrum bivittatum	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	13	294.3	128.56	4.2	1.94	3
Lutjanus campechanus	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	13	51.4	12.13	1.2	0.55	3
Squid	88.5	67.50	1.0	0.61	4	11.0	2.70	0.1	0.05	13	22.4	11.21	0.1	0.14	3

Table 23a (continued)

Statistical Zone 18

Summary of dominant organisms taken in statistical zone 18 during the 1999 Fall Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight (WT) in kg per hour, the SEM for weight and the number (N) of samples taken.

	21-30 FM					31-40 FM					>40 FM				
SPECIES	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Penaeus aztecus	2.2	1.26	0.1	0.07	3	52.8	24.08	2.1	0.93	5	7.3	0.44	0.2	0.02	2
Penaeus setiferus	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	2
Trachypenaeus similis	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	2
Portunus gibbesii	3.3	3.27	0.0	0.03	3	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	2
Callinectes similis	4.0	2.55	0.1	0.06	3	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	2
Squilla spp.	0.0	0.00	0.0	0.00	3	2.4	2.40	0.0	0.00	5	0.0	0.00	0.0	0.00	2
Stenotomus caprinus	19.3	16.62	0.8	0.64	3	338.9	110.44	17.3	5.25	5	269.9	43.74	12.0	1.51	2
Stellifer lanceolatus	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	2
Upeneus parvus	30.9	30.37	0.8	0.77	3	101.8	38.68	2.9	1.14	5	135.3	130.65	4.8	4.70	2
Prionotus paralatus	0.0	0.00	0.0	0.00	3	32.3	16.08	0.8	0.51	5	196.9	7.66	6.4	0.78	2
Pristipomoides aquilonaris	2.1	1.04	0.1	0.13	3	48.6	27.98	0.8	0.29	5	206.9	50.05	15.4	3.26	2
Trachurus lathami	2.5	2.02	0.1	0.07	3	30.7	17.48	0.8	0.42	5	166.4	154.07	4.1	3.66	2
Diplectrum bivittatum	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	2
Lutjanus campechanus	39.5	14.67	1.5	0.61	3	16.2	8.75	2.1	1.41	5	0.0	0.00	0.0	0.00	2
Squid	16.4	7.26	0.0	0.03	3	7.4	3.56	0.2	0.21	5	12.3	12.31	0.7	0.70	2

Table 23b

Statistical Zone 18

Summary of mean total catch and environmental data (X), the standard error of the mean (SEM) and the number (N) of samples taken during the 1999 Fall Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m³, and oxygen in ppm.

	0-5 FM			6-10 FM			11-20 FM			21-30 FM			31-40 FM			>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	15.0	11.38	4	9.7	2.31	13	26.0	2.97	3	15.7	8.50	3	51.9	6.79	5	79.7	2.76	2
Total finfish kg	2.0	1.31	4	5.8	1.72	13	22.0	2.83	3	15.0	8.38	3	48.5	6.12	5	76.7	2.61	2
Total crustacean kg	0.0	0.00	4	1.3	0.56	13	3.8	2.00	3	0.3	0.33	3	2.3	1.10	5	1.0	0.27	2
Total others kg	12.3	12.27	4	1.8	0.60	13	0.2	0.20	3	0.0	0.00	3	1.1	0.47	5	2.0	0.12	2
Surface temperature	20.5	0.54	5	19.6	0.35	13	24.1	0.00	1	25.5	0.55	2	26.1	0.11	3	26.3	0.00	2
Midwater temperature	20.5	0.54	5	19.7	0.37	13	24.0	0.00	1	25.4	0.50	2	26.1	0.10	3	26.3	0.01	2
Bottom temperature	20.5	0.56	5	19.8	0.43	13	23.9	0.00	1	25.6	0.43	2	25.6	0.53	3	20.3	0.50	2
Surface salinity	30.2	0.25	5	30.3	0.11	13	34.2	0.00	1	35.7	0.40	2	36.3	0.06	3	36.3	0.01	2
Midwater salinity	30.3	0.29	5	30.3	0.12	13	34.2	0.00	1	35.7	0.39	2	36.3	0.06	3	36.3	0.00	2
Bottom salinity	30.3	0.27	5	30.4	0.19	13	34.2	0.00	1	35.9	0.29	2	36.3	0.05	3	37.4	0.98	2
Surface chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface fluorescence	0.1	0.02	5	0.1	0.00	13	0.0	0.00	1	0.1	0.02	2	0.0	0.01	3	0.0	0.00	2
Surface oxygen	6.7	0.22	5	6.9	0.10	13	6.4	0.00	1	6.1	0.10	2	5.9	0.03	3	5.9	0.05	2
Midwater oxygen	6.7	0.25	5	6.9	0.12	13	6.4	0.00	1	6.1	0.05	2	6.0	0.03	3	6.1	0.05	2
Bottom oxygen	6.6	0.27	5	6.7	0.18	13	6.4	0.00	1	5.9	0.05	2	5.5	0.40	3	3.4	0.35	2

Table 24a

Statistical Zone 19

Summary of dominant organisms taken in statistical zone 19 during the 1999 Fall Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight (WT) in kg per hour, the SEM for 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
Penaeus aztecus	21.3	21.35	0.1	0.10	4	13.7	7.52	0.1	0.05	17	78.4	20.18	1.3	0.36	20
Trachypenaeus similis	0.0	0.00	0.0	0.00	4	45.3	24.22	0.1	0.04	17	65.5	23.30	0.2	0.07	20
Squilla spp.	11.5	11.54	0.2	0.21	4	33.6	19.24	0.3	0.16	17	18.9	5.92	0.1	0.05	20
Callinectes similis	0.6	0.58	0.0	0.00	4	7.0	3.49	0.1	0.04	17	11.4	3.09	0.2	0.06	20
Penaeus setiferus	80.5	78.55	1.5	1.49	4	14.3	4.32	0.4	0.13	17	1.3	0.98	0.0	0.04	20
Sicyonia dorsalis	0.6	0.58	0.0	0.00	4	2.6	0.88	0.0	0.00	17	8.8	2.99	0.1	0.04	20
Chloroscombrus chrysurus	200.1	144.39	0.6	0.32	4	1749.5	1555.01	16.0	14.34	17	1114.8	562.85	15.3	7.14	20
Syacium gunteri	2.3	2.31	0.0	0.03	4	50.3	25.88	0.6	0.27	17	95.6	21.03	1.4	0.32	20
Diplectrum bivittatum	0.6	0.58	0.0	0.00	4	0.0	0.00	0.0	0.00	17	104.4	33.49	1.4	0.45	20
Micropogonias undulatus	3.5	3.46	0.1	0.13	4	14.4	4.86	0.8	0.30	17	69.4	21.67	4.2	1.13	20
Serranus atrobranchus	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	17	9.3	5.94	0.1	0.04	20
Cynoscion spp.	47.3	47.31	0.2	0.21	4	73.1	30.86	0.4	0.15	17	10.6	8.86	0.0	0.01	20
Upeneus parvus	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	17	22.2	8.75	0.5	0.18	20
Stenotomus caprinus	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	17	12.7	6.76	0.2	0.12	20
Squid	156.0	96.28	1.5	0.91	4	104.3	26.92	1.0	0.25	17	67.5	12.78	0.5	0.12	20

Table 24a (continued)

Statistical Zone 19

Summary of dominant organisms taken in statistical zone 19 during the 1999 Fall Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight (WT) in kg per hour, the SEM for weight and the number (N) of samples taken.

	21-30 FM					31-40 FM					>40 FM				
SPECIES	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Penaeus aztecus	42.8	12.12	1.3	0.41	10	0.0	0.00	0.0	0.00	0	12.5	12.55	0.6	0.62	2
Trachypenaeus similis	3.8	2.45	0.0	0.00	10	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	2
Squilla spp.	5.2	1.95	0.1	0.02	10	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	2
Callinectes similis	21.4	3.87	0.5	0.09	10	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	2
Penaeus setiferus	0.0	0.00	0.0	0.00	10	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	2
Sicyonia dorsalis	8.8	4.22	0.0	0.02	10	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	2
Chloroscombrus chrysurus	109.1	71.32	4.1	2.78	10	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	2
Syacium gunteri	8.8	4.27	0.1	0.07	10	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	2
Diplectrum bivittatum	13.8	4.23	0.2	0.11	10	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	2
Micropogonias undulatus	24.6	6.75	1.8	0.43	10	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	2
Serranus atrobranchus	136.8	52.11	1.1	0.42	10	0.0	0.00	0.0	0.00	0	35.2	5.18	0.2	0.22	2
Cynoscion spp.	0.0	0.00	0.0	0.00	10	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	2
Upeneus parvus	84.8	24.50	1.6	0.47	10	0.0	0.00	0.0	0.00	0	14.2	9.82	0.6	0.45	2
Stenotomus caprinus	75.0	12.86	2.1	0.41	10	0.0	0.00	0.0	0.00	0	161.2	36.82	7.6	1.66	2
Squid	26.6	9.13	0.2	0.04	10	0.0	0.00	0.0	0.00	0	6.5	6.55	0.9	0.89	2

Table 24b

Statistical Zone 19

Summary of mean total catch and environmental data (X), the standard error of the mean (SEM) and the number (N) of samples taken during the 1999 Fall Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m³, and oxygen in ppm.

	0-5 FM			6-10 FM			11-20 FM			21-30 FM			31-40 FM			>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	18.1	11.80	4	32.4	15.63	17	34.6	7.76	20	26.4	5.40	10	0.0	0.00	0	57.3	13.64	2
Total finfish kg	8.1	5.46	4	28.0	15.60	17	31.0	7.91	20	23.7	5.56	10	0.0	0.00	0	55.3	15.62	2
Total crustacean kg	1.8	1.84	4	0.9	0.40	17	2.3	0.50	20	2.2	0.51	10	0.0	0.00	0	1.0	0.99	2
Total others kg	8.2	4.77	4	3.3	0.96	17	0.9	0.25	20	0.3	0.15	10	0.0	0.00	0	1.0	0.99	2
Surface temperature	22.5	0.31	4	23.0	0.13	19	24.3	0.28	16	25.9	0.12	5	0.0	0.00	0	26.5	0.00	1
Midwater temperature	22.5	0.30	4	23.1	0.18	19	24.5	0.28	16	25.9	0.13	5	0.0	0.00	0	26.3	0.00	1
Bottom temperature	22.7	0.49	4	23.8	0.17	19	25.2	0.30	16	25.9	0.14	5	0.0	0.00	0	21.4	0.00	1
Surface salinity	31.7	0.32	4	32.0	0.19	19	33.6	0.30	16	35.7	0.05	5	0.0	0.00	0	36.3	0.00	1
Midwater salinity	31.7	0.34	4	32.1	0.21	19	34.1	0.22	16	35.7	0.06	5	0.0	0.00	0	36.2	0.00	1
Bottom salinity	32.0	0.46	4	33.1	0.26	19	34.7	0.21	16	35.8	0.11	5	0.0	0.00	0	36.3	0.00	1
Surface chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface fluorescence	0.1	0.06	4	0.1	0.02	19	0.1	0.01	16	0.0	0.00	5	0.0	0.00	0	0.0	0.00	1
Surface oxygen	6.5	0.19	4	6.4	0.13	19	6.4	0.07	16	6.0	0.04	5	0.0	0.00	0	5.9	0.00	1
Midwater oxygen	6.5	0.17	4	6.3	0.12	19	6.3	0.09	16	6.0	0.04	5	0.0	0.00	0	6.0	0.00	1
Bottom oxygen	6.3	0.40	4	6.0	0.16	19	5.9	0.11	16	6.0	0.06	5	0.0	0.00	0	3.6	0.00	1

Table 25a

Statistical Zone 20

Summary of dominant organisms taken in statistical zone 20 during the 1999 Fall Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight (WT) in kg per hour, the SEM for 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 similis	0.0	0.00	0.0	0.00	5	24.0	7.99	0.0	0.02	15	502.1	441.06	0.3	0.16	14
Penaeus aztecus	16.8	10.46	0.1	0.07	5	11.5	4.55	0.1	0.04	15	62.7	15.74	1.3	0.37	14
Callinectes similis	14.4	12.95	0.0	0.00	5	3.1	1.91	0.0	0.00	15	30.6	8.86	0.4	0.13	14
Squilla spp.	4.8	4.80	0.1	0.11	5	34.0	16.15	0.4	0.18	15	37.9	8.21	0.4	0.08	14
Sicyonia dorsalis	2.4	2.40	0.0	0.00	5	2.8	1.42	0.0	0.00	15	5.1	1.95	0.0	0.00	14
Solenocera vioscai	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	15	0.0	0.00	0.0	0.00	14
Chloroscombrus chrysurus	6272.4	2434.20	55.7	21.59	5	2335.6	2287.52	19.8	19.25	15	246.1	165.62	3.5	2.07	14
Serranus atrobranchus	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	15	3.3	1.68	0.0	0.02	14
Stenotomus caprinus	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	15	4.7	3.87	0.1	0.06	14
Pristipomoides aquilonaris	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	15	0.0	0.00	0.0	0.00	14
Upeneus parvus	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	15	13.1	7.65	0.3	0.17	14
Cynoscion nothus	27.6	11.94	0.3	0.20	5	182.6	35.64	1.4	0.34	15	78.6	36.11	1.4	0.38	14
Cynoscion spp.	466.8	463.81	1.5	1.53	5	4.7	4.74	0.0	0.01	15	48.2	23.95	0.1	0.07	14
Peprilus burti	6.0	4.65	0.2	0.16	5	17.3	11.03	0.7	0.53	15	10.2	5.16	0.6	0.30	14
Squid	169.2	71.58	1.9	0.81	5	84.4	13.51	0.7	0.14	15	49.9	15.58	0.3	0.08	14

Table 25a (continued)

Statistical Zone 20

Summary of dominant organisms taken in statistical zone 20 during the 1999 Fall Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight (WT) in kg per hour, the SEM for weight and the number (N) of samples taken.

	21-30 FM					31-40 FM					>40 FM				
SPECIES	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Trachypenaeus similis	30.2	21.88	0.1	0.09	6	3.3	3.27	0.0	0.01	4	0.0	0.00	0.0	0.00	9
Penaeus aztecus	64.6	10.89	1.8	0.35	6	47.6	14.07	1.7	0.50	4	35.2	8.91	1.4	0.33	9
Callinectes similis	106.1	17.38	2.2	0.36	6	47.4	33.18	0.9	0.65	4	0.2	0.24	0.0	0.01	9
Squilla spp.	23.4	7.39	0.1	0.05	6	10.5	5.42	0.1	0.03	4	2.7	1.43	0.0	0.02	9
Sicyonia dorsalis	53.5	27.42	0.1	0.07	6	21.2	13.92	0.1	0.07	4	0.0	0.00	0.0	0.00	9
Solenocera vioscai	14.0	7.55	0.0	0.03	6	65.1	48.61	0.2	0.16	4	19.6	8.52	0.1	0.05	9
Chloroscombrus chrysurus	89.3	47.76	3.2	1.66	6	11.3	10.91	0.5	0.45	4	0.0	0.00	0.0	0.00	9
Serranus atrobranchus	190.7	86.45	1.5	0.66	6	226.5	125.39	1.8	0.99	4	230.7	71.90	3.3	1.32	9
Stenotomus caprinus	61.4	22.33	1.3	0.46	6	47.7	19.80	1.5	0.52	4	102.9	34.55	5.6	1.81	9
Pristipomoides aquilonaris	14.0	3.58	0.0	0.01	6	23.2	12.90	0.0	0.02	4	145.8	30.69	10.6	2.04	9
Upeneus parvus	18.3	8.39	0.4	0.16	6	42.6	27.90	1.1	0.82	4	127.5	43.15	3.1	1.05	9
Cynoscion nothus	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	9
Cynoscion spp.	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	9
Peprilus burti	45.4	20.39	2.4	1.07	6	24.0	24.00	1.4	1.36	4	30.0	15.07	1.8	0.88	9
Squid	105.4	67.55	0.6	0.24	6	48.7	45.12	0.3	0.19	4	39.5	19.07	1.3	0.49	9

Table 25b

Statistical Zone 20

Summary of mean total catch and environmental data (X), the standard error of the mean (SEM) and the number (N) of samples taken during the 1999 Fall Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m³, and oxygen in ppm.

	0-5 FM			6-10 FM			11-20 FM			21-30 FM			31-40 FM			>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	304.9	177.92	5	62.4	33.11	15	23.3	4.93	14	22.8	2.65	6	23.9	5.32	4	46.3	7.13	9
Total finfish kg	95.5	42.80	5	25.5	18.93	15	14.5	3.04	14	17.3	2.98	6	19.5	4.90	4	40.7	6.55	9
Total crustacean kg	0.0	0.00	5	0.8	0.56	15	3.9	0.62	14	4.8	0.84	6	3.3	1.25	4	2.5	0.43	9
Total others kg	209.5	158.88	5	35.3	27.07	15	4.9	2.42	14	0.7	0.22	6	1.1	0.82	4	3.0	0.68	9
Surface temperature	22.6	0.20	2	23.6	0.18	20	25.2	0.21	13	26.3	0.22	6	26.6	0.11	2	26.9	0.13	5
Midwater temperature	22.6	0.20	2	23.5	0.19	20	25.3	0.23	13	26.5	0.13	6	26.6	0.10	2	26.9	0.14	5
Bottom temperature	22.6	0.20	2	23.6	0.20	20	25.4	0.25	13	26.5	0.11	6	26.7	0.14	2	22.1	0.70	5
Surface salinity	32.0	0.17	2	32.4	0.26	20	34.0	0.26	13	35.7	0.18	6	36.2	0.00	2	36.2	0.03	5
Midwater salinity	32.2	0.25	2	32.6	0.29	20	34.1	0.27	13	35.8	0.09	6	36.3	0.00	2	36.2	0.03	5
Bottom salinity	32.3	0.27	2	32.8	0.30	20	34.3	0.30	13	35.9	0.10	6	36.3	0.00	2	36.3	0.03	5
Surface chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface fluorescence	0.0	0.00	2	0.1	0.02	20	0.1	0.01	13	0.1	0.01	6	0.1	0.00	2	0.0	0.01	5
Surface oxygen	9.0	0.00	2	7.9	0.29	20	6.5	0.31	13	5.8	0.07	6	5.9	0.05	2	5.8	0.04	5
Midwater oxygen	9.2	0.10	2	8.0	0.30	20	6.5	0.33	13	5.8	0.07	6	5.9	0.00	2	6.0	0.02	5
Bottom oxygen	9.0	0.00	2	7.9	0.29	20	6.4	0.30	13	5.8	0.05	6	5.9	0.00	2	4.3	0.31	5

Table 26a

Statistical Zone 21

Summary of dominant organisms taken in statistical zone 21 during the 1999 Fall Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight (WT) in kg per hour, the SEM for weight and the number (N) of samples taken. No trawl samples were taken in depths greater than 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	0.0	0.00	0.0	0.00	1	3.2	2.41	0.1	0.04	17	73.2	25.16	1.3	0.41	12
Portunus spinicarpus	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	17	0.0	0.00	0.0	0.00	12
Callinectes similis	0.0	0.00	0.0	0.00	1	4.8	4.22	0.1	0.06	17	20.6	10.42	0.5	0.25	12
Portunus gibbesii	0.0	0.00	0.0	0.00	1	8.0	3.18	0.1	0.04	17	15.8	7.91	0.1	0.07	12
Squilla spp.	0.0	0.00	0.0	0.00	1	2.1	0.91	0.0	0.01	17	11.8	5.74	0.1	0.07	12
Penaeus duorarum	0.0	0.00	0.0	0.00	1	12.7	5.86	0.2	0.07	17	3.9	1.87	0.0	0.02	12
Chloroscombrus chrysurus	210.0	0.00	0.8	0.00	1	555.8	368.73	6.6	4.33	17	1586.5	604.65	24.3	10.81	12
Cynoscion nothus	0.0	0.00	0.0	0.00	1	58.1	44.31	1.9	1.63	17	40.5	11.76	1.4	0.65	12
Lutjanus campechanus	0.0	0.00	0.0	0.00	1	33.1	15.10	0.7	0.32	17	18.0	5.33	0.4	0.11	12
Serranus atrobranchus	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	17	0.3	0.29	0.0	0.00	12
Lagodon rhomboides	6.0	0.00	0.0	0.00	1	3.2	3.18	0.2	0.24	17	16.1	12.44	0.8	0.57	12
Upeneus parvus	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	17	11.6	7.94	0.3	0.20	12
Diplectrum bivittatum	0.0	0.00	0.0	0.00	1	3.8	1.99	0.0	0.02	17	26.9	7.34	0.4	0.11	12
Trichiurus lepturus	0.0	0.00	0.0	0.00	1	2.5	2.47	0.0	0.00	17	6.6	3.25	0.2	0.10	12
Squid	0.0	0.00	0.0	0.00	1	13.3	5.04	0.1	0.03	17	44.7	13.06	0.4	0.14	12

Table 26a (continued)

Statistical Zone 21

Summary of dominant organisms taken in statistical zone 21 during the 1999 Fall Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight (WT) in kg per hour, the SEM for weight and the number (N) of samples taken. No trawl samples were taken in depths greater than 40 fm.

	21-30 FM					31-40 FM					>40FM				
SPECIES	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Penaeus aztecus	13.7	7.74	0.3	0.24	3	54.0	16.55	1.9	0.66	4	0.0	0.00	0.00	0	0
Portunus spinicarpus	40.7	35.41	0.3	0.26	3	65.2	52.25	0.6	0.51	4	0.0	0.00	0.00	0	0
Callinectes similis	22.3	5.40	0.7	0.17	3	4.0	3.98	0.1	0.14	4	0.0	0.00	0.00	0	0
Portunus gibbesii	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	4	0.0	0.00	0.00	0	0
Squilla spp.	0.0	0.00	0.0	0.00	3	5.0	3.46	0.0	0.00	4	0.0	0.00	0.00	0	0
Penaeus duorarum	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	4	0.0	0.00	0.00	0	0
Chloroscombrus chrysurus	295.6	187.09	5.1	2.08	3	22.8	14.25	1.1	0.69	4	0.0	0.00	0.00	0	0
Cynoscion nothus	10.3	5.18	0.3	0.16	3	0.0	0.00	0.0	0.00	4	0.0	0.00	0.00	0	0
Lutjanus campechanus	9.9	6.12	0.2	0.13	3	17.1	8.47	0.6	0.26	4	0.0	0.00	0.00	0	0
Serranus atrobranchus	10.3	1.16	0.1	0.04	3	95.7	52.85	1.4	0.88	4	0.0	0.00	0.00	0	0
Lagodon rhomboides	28.1	26.50	1.4	1.36	3	12.2	8.60	0.9	0.59	4	0.0	0.00	0.00	0	0
Upeneus parvus	7.8	3.47	0.1	0.12	3	27.0	15.08	0.8	0.40	4	0.0	0.00	0.00	0	0
Diplectrum bivittatum	9.6	1.53	0.2	0.03	3	0.0	0.00	0.0	0.00	4	0.0	0.00	0.00	0	0
Trichiurus lepturus	107.2	85.62	5.7	4.72	3	5.5	3.38	0.5	0.44	4	0.0	0.00	0.00	0	0
Squid	144.0	46.99	0.7	0.22	3	29.9	21.75	0.2	0.14	4	0.0	0.00	0.00	0	0

Table 26b

Statistical Zone 21

Summary of mean total catch and environmental data (X), the standard error of the mean (SEM) and the number (N) of samples taken during the 1999 Fall Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m³, and oxygen in ppm. No trawl samples were taken in depths greater than 40 fm.

	0-5 FM			6-10 FM			11-20 FM			21-30 FM			31-40 FM			>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	5.5	0.00	1	13.0	6.02	17	36.8	10.70	12	20.4	5.30	3	21.1	6.38	4	0.0	0.00	0
Total finfish kg	5.5	0.00	1	12.7	6.04	17	33.7	10.96	12	18.2	5.30	3	17.4	5.77	4	0.0	0.00	0
Total crustacean kg	0.0	0.00	1	0.4	0.22	17	1.9	0.63	12	1.0	0.49	3	3.4	1.06	4	0.0	0.00	0
Total others kg	0.0	0.00	1	0.1	0.08	17	0.8	0.30	12	0.3	0.33	3	0.1	0.13	4	0.0	0.00	0
Surface temperature	23.8	0.00	1	24.6	0.44	17	26.2	0.38	12	27.1	0.02	2	27.7	0.07	4	27.6	0.00	1
Midwater temperature	23.7	0.00	1	24.5	0.45	17	26.2	0.39	12	27.6	0.23	2	27.9	0.06	4	27.8	0.00	1
Bottom temperature	23.7	0.00	1	24.4	0.44	17	26.3	0.45	12	27.7	0.09	2	27.5	0.07	4	22.6	0.00	1
Surface salinity	34.7	0.00	1	33.9	0.17	17	33.7	0.18	12	34.4	0.28	2	35.7	0.16	4	35.5	0.00	1
Midwater salinity	34.7	0.00	1	33.9	0.16	17	33.8	0.18	12	35.4	0.60	2	36.2	0.04	4	36.2	0.00	1
Bottom salinity	34.8	0.00	1	34.1	0.14	17	34.3	0.26	12	36.1	0.10	2	36.2	0.01	4	36.3	0.00	1
Surface chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface fluorescence	0.0	0.00	1	0.0	0.01	17	0.1	0.01	12	0.0	0.01	2	0.0	0.01	4	0.0	0.00	1
Surface oxygen	6.5	0.00	1	6.4	0.36	17	6.4	0.41	12	5.9	0.10	2	5.8	0.03	4	5.9	0.00	1
Midwater oxygen	6.7	0.00	1	6.3	0.30	17	6.2	0.25	12	5.6	0.05	2	5.8	0.06	4	5.9	0.00	1
Bottom oxygen	7.0	0.00	1	6.8	0.48	17	6.2	0.57	12	5.1	0.10	2	5.4	0.06	4	4.5	0.00	1

Table 27a

Statistical Zone 22

Summary of dominant organisms taken in statistical zone 21 during the 1999 Fall Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight (WT) in kg per hour, the SEM for weight and the number (N) of samples taken. No trawl samples were taken in depths less than 6 fm or greater than 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
Penaeus aztecus	0.0	0.00	0.0	0.00	0	6.0	0.00	0.0	0.00	1	29.2	17.18	0.40	0.17	2
Trachypenaeus similis	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	1	17.7	17.73	0.00	0	2
Penaeus duorarum	0.0	0.00	0.0	0.00	0	6.0	0.00	0.0	0.00	1	9.5	9.55	0.10	0.12	2
Penaeus setiferus	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	1	9.5	9.55	0.40	0.43	2
Portunus spinimanus	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	1	5.5	5.45	0.00	0	2
Trachypenaeus constrictus	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	1	9.0	9.00	0.00	0	2
Cynoscion nothus	0.0	0.00	0.0	0.00	0	36.0	0.00	0.3	0.00	1	28.4	4.36	0.50	0.02	2
Chloroscombrus chrysurus	0.0	0.00	0.0	0.00	0	24.0	0.00	0.3	0.00	1	6.8	6.82	0.10	0.12	2
Diplectrum bivittatum	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	1	14.2	2.18	0.20	0.07	2
Syacium gunteri	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	1	21.0	21.00	0.30	0.27	2
Micropogonias undulatus	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	1	8.2	8.18	0.60	0.56	2
Sphoeroides parvus	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	1	11.7	6.27	0.00	0	2
Lutjanus campechanus	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	1	10.1	1.91	0.20	0.07	2
Saurida brasiliensis	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	1	5.5	5.45	0.00	0	2
Squid	0.0	0.00	0.0	0.00	0	18.0	0.00	0.3	0.00	1	3.0	3.00	0.00	0	2

Table 27b

Statistical Zone 22

Summary of mean total catch and environmental data (X), the standard error of the mean (SEM) and the number (N) of samples taken during the 1999 Fall Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m³, and oxygen in ppm. No trawl samples were taken in depths less than 6 fm or greater than 20 fm.

	0-5 FM			6-10 FM			11-20 FM			21-30 FM			31-40 FM			>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	0.0	0.00	0	0.0	0.00	1	5.2	0.25	2	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total finfish kg	0.0	0.00	0	0.0	0.00	1	4.0	1.49	2	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total crustacean kg	0.0	0.00	0	0.0	0.00	1	1.2	1.24	2	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total others kg	0.0	0.00	0	0.0	0.00	1	0.0	0.00	2	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface temperature	0.0	0.00	0	25.5	1.62	2	24.4	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater temperature	0.0	0.00	0	25.5	1.67	2	24.3	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom temperature	0.0	0.00	0	25.5	1.68	2	24.3	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface salinity	0.0	0.00	0	34.7	0.18	2	35.3	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater salinity	0.0	0.00	0	34.7	0.24	2	35.2	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom salinity	0.0	0.00	0	34.7	0.24	2	35.5	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface chlorophyll	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface fluorescence	0.0	0.00	0	0.1	0.00	2	0.1	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface oxygen	0.0	0.00	0	5.7	0.35	2	5.5	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater oxygen	0.0	0.00	0	5.8	0.35	2	5.4	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom oxygen	0.0	0.00	0	5.9	0.50	2	5.5	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0

Table 28. 1999 Reef Fish Survey species composition list, 7 trap stations where a fish trap was used.
Species with a total weight of less than 0.0227 kg (0.05 lb) are indicated on the table as 0.0 kg.

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF SETS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Lutjanus campechanus	red snapper	52	8.3	7.0	100.0
Haemulon aurolineatum	tomtate	3	0.5	2.0	28.6
Lagodon rhomboides	pinfish	1	0.3	1.0	14.3
Balistes capriscus	gray triggerfish	1	0.2	1.0	14.3

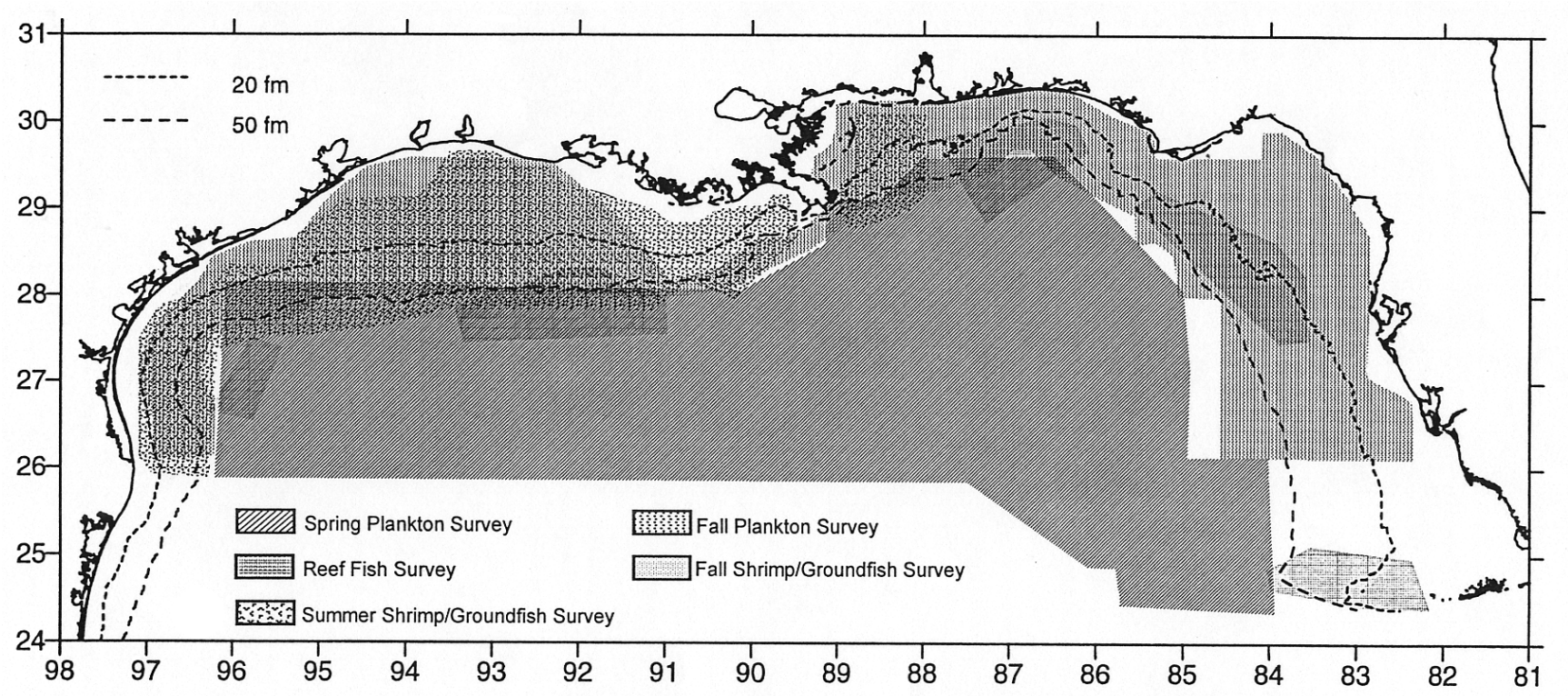


Figure 1. 1999 SEAMAP Surveys, Gulf of Mexico.

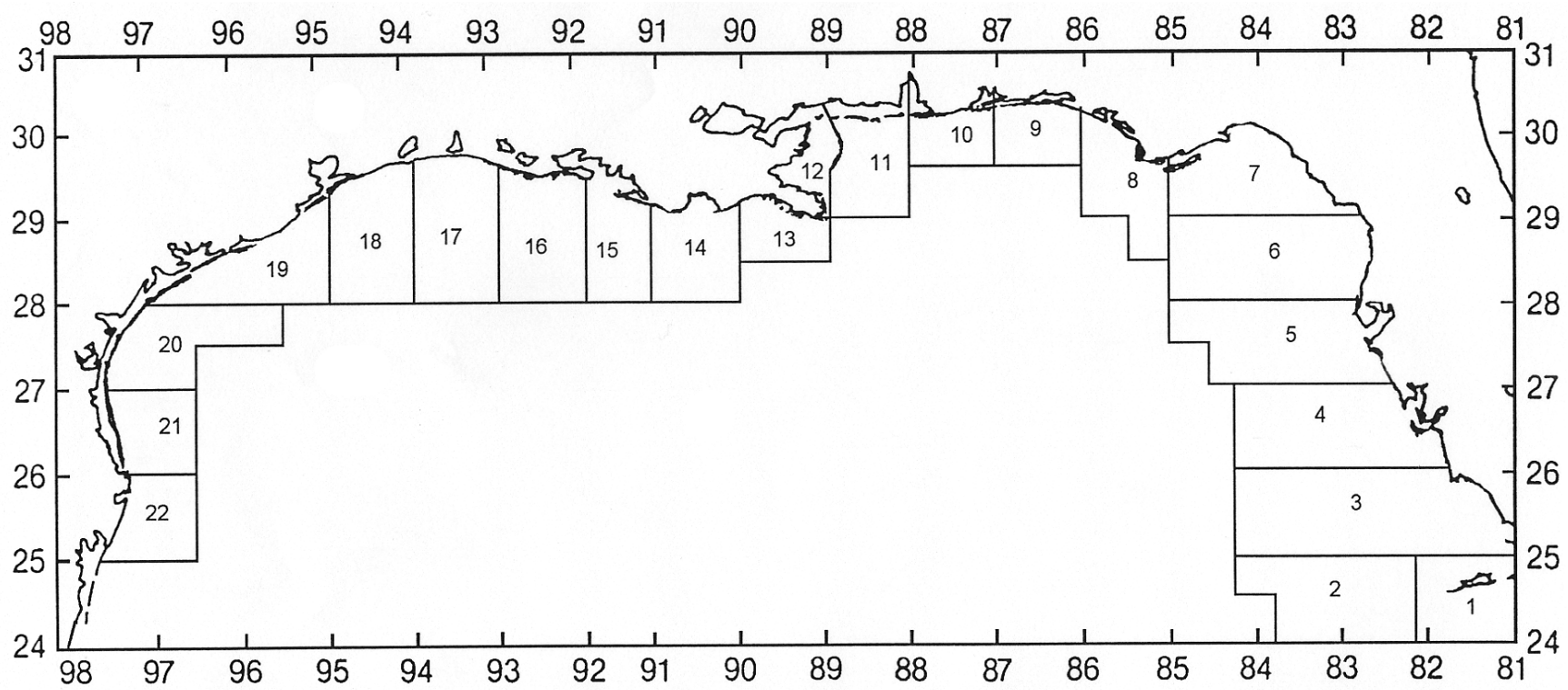


Figure 2. Statistical zones for shrimp in the Gulf of Mexico.

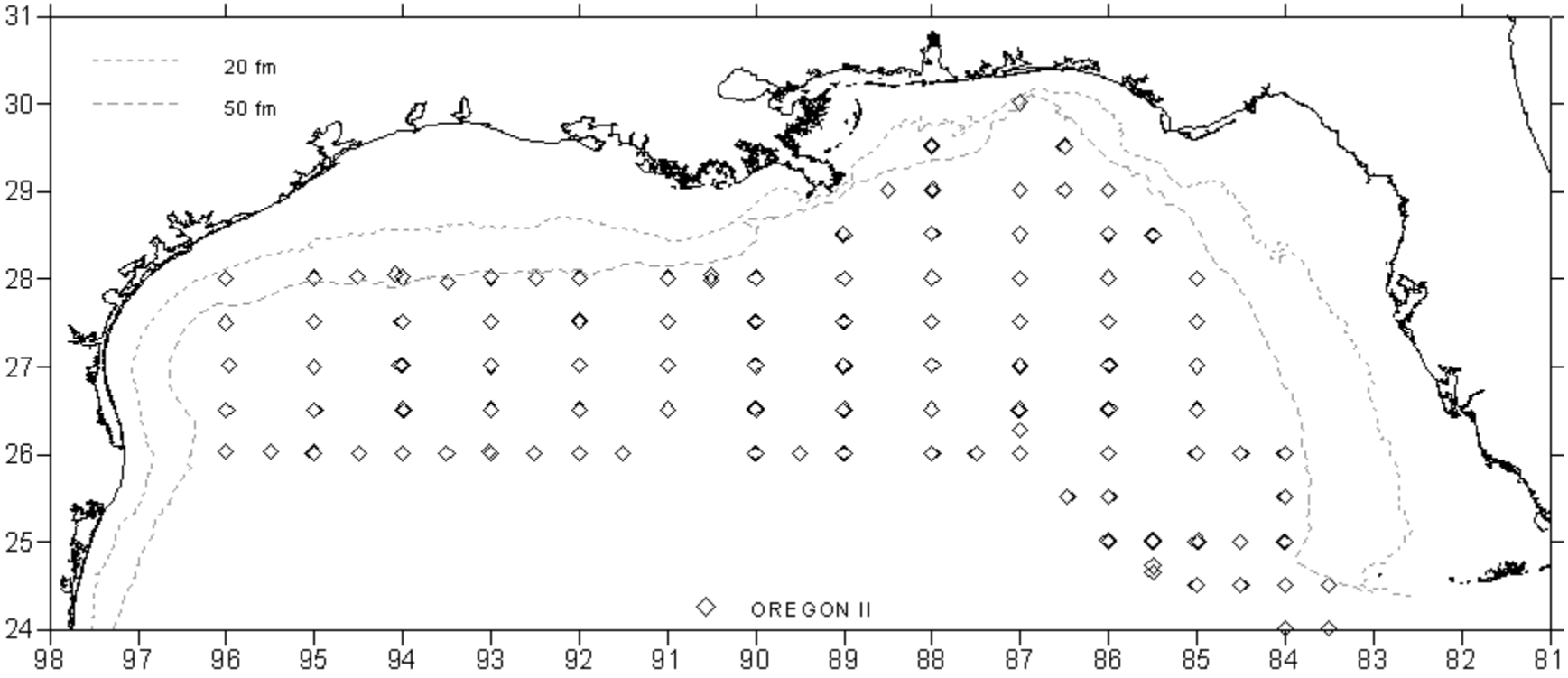


Figure 3. Locations of plankton and environmental stations during the 1999 Spring Plankton Survey.

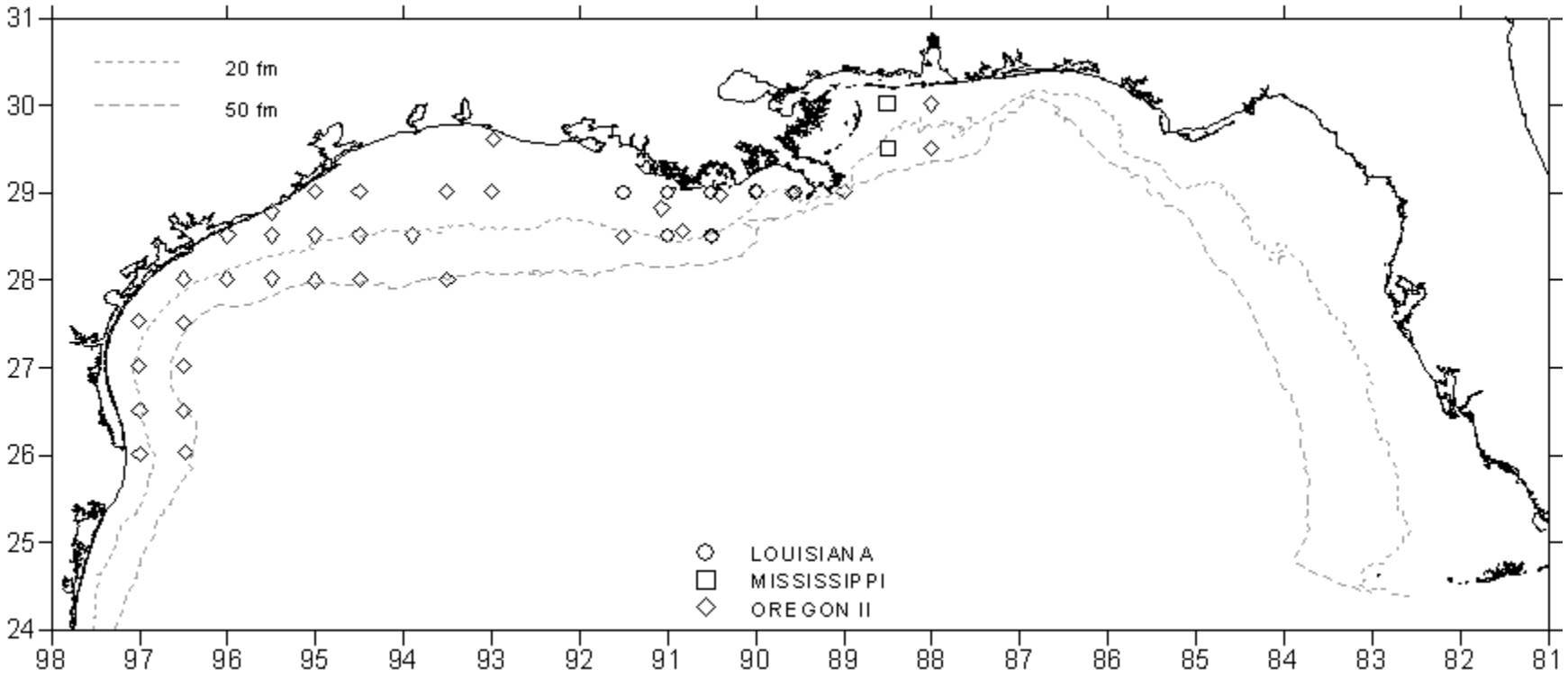


Figure 4. Locations of plankton stations during the 1999 Summer Shrimp/Groundfish Survey.

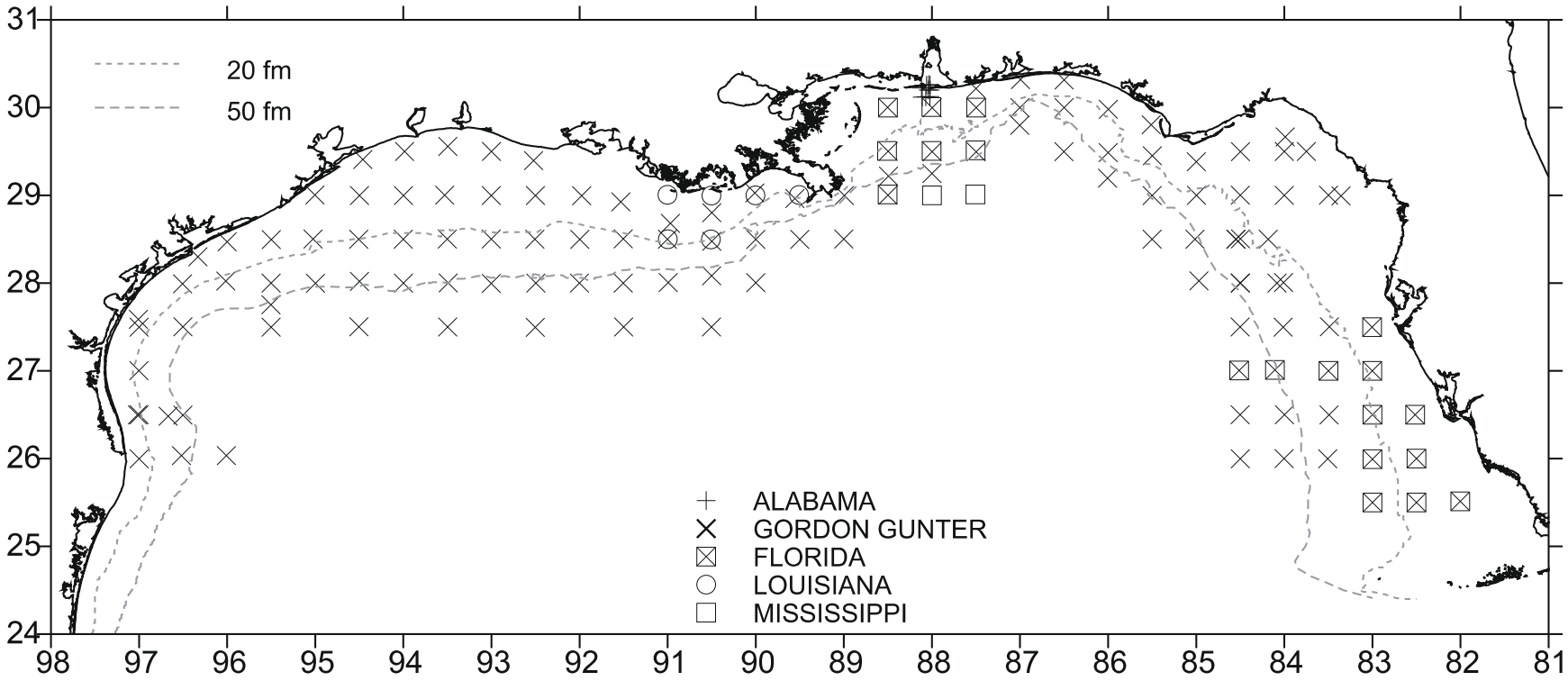


Figure 5. Locations of plankton and environmental stations during the 1999 Fall Plankton Survey.

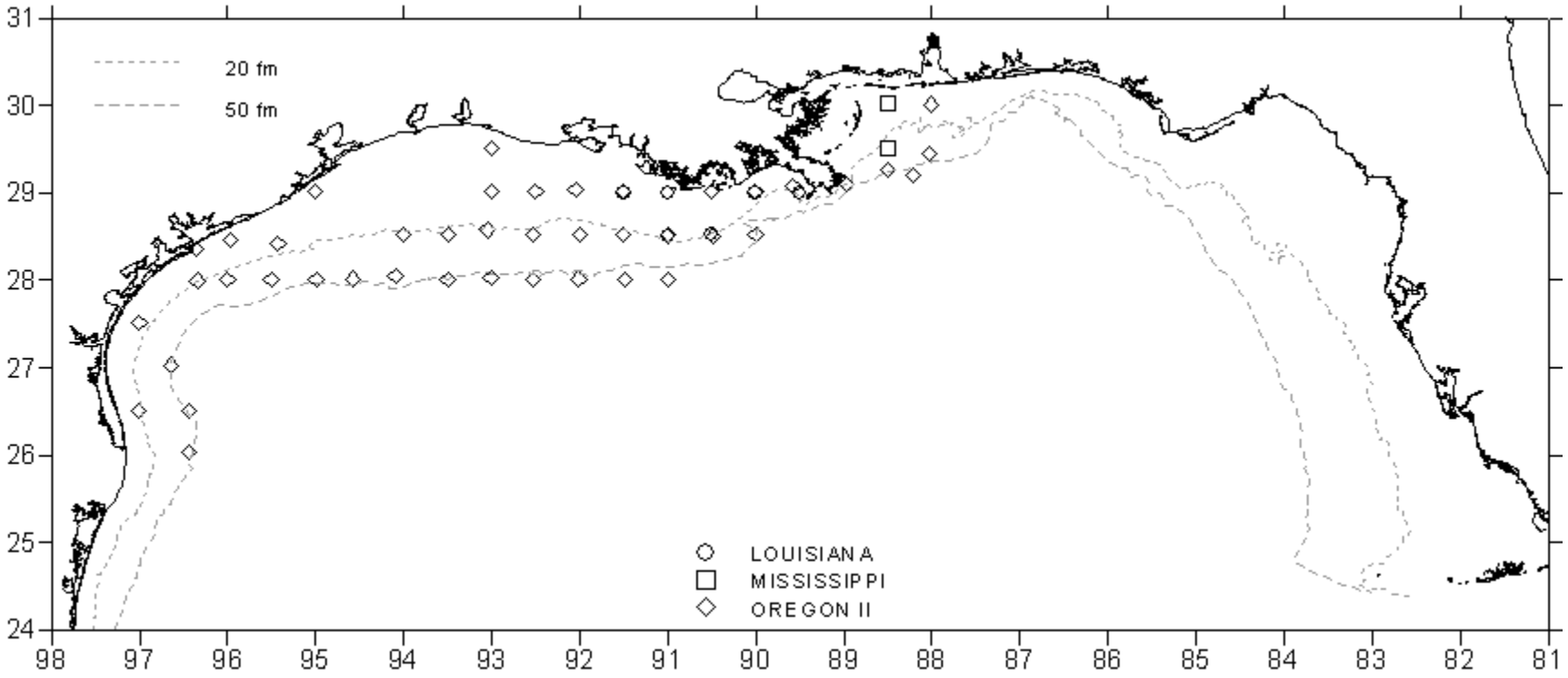


Figure 6. Locations of plankton stations during the 1999 Fall Shrimp/Groundfish Survey.

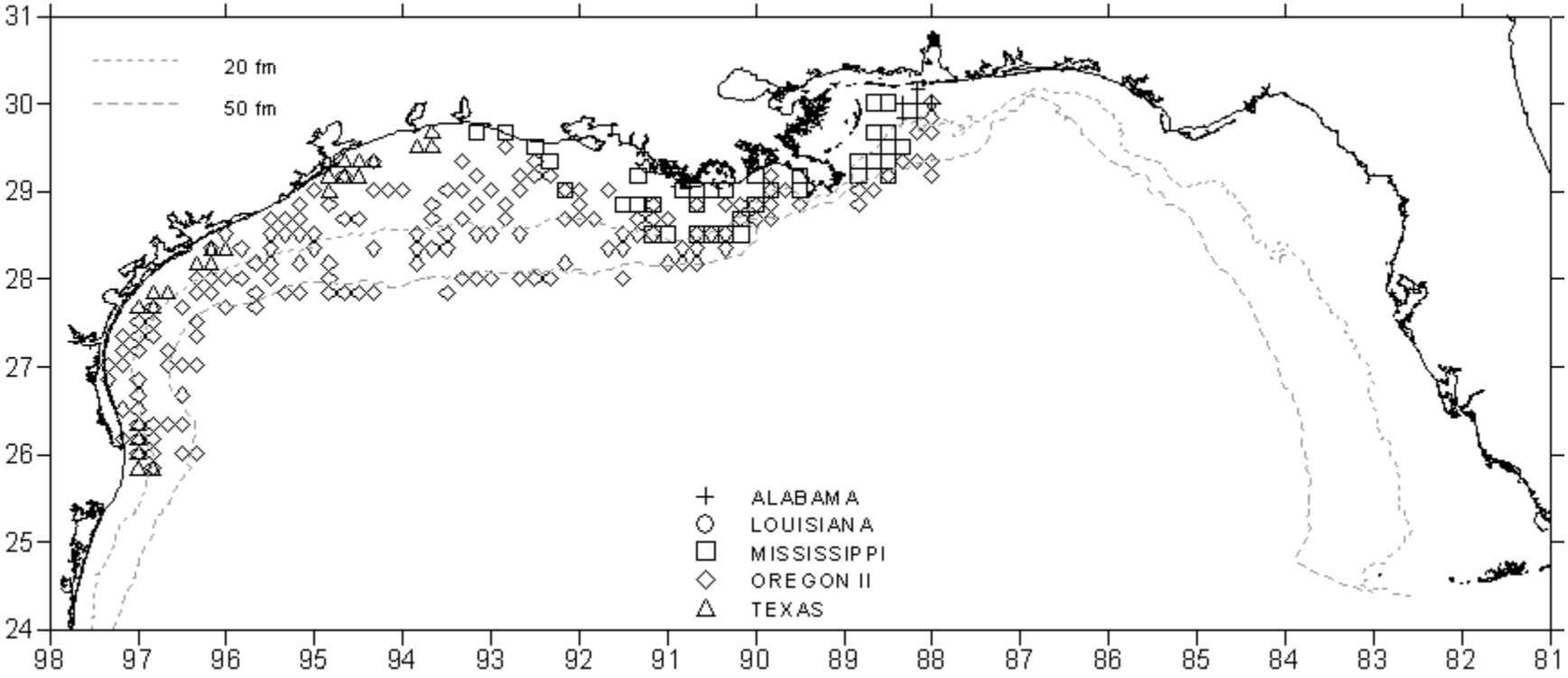


Figure 7. Locations of environmental stations during the 1999 Summer Shrimp/Groundfish Survey summarized by 10-minute squares.

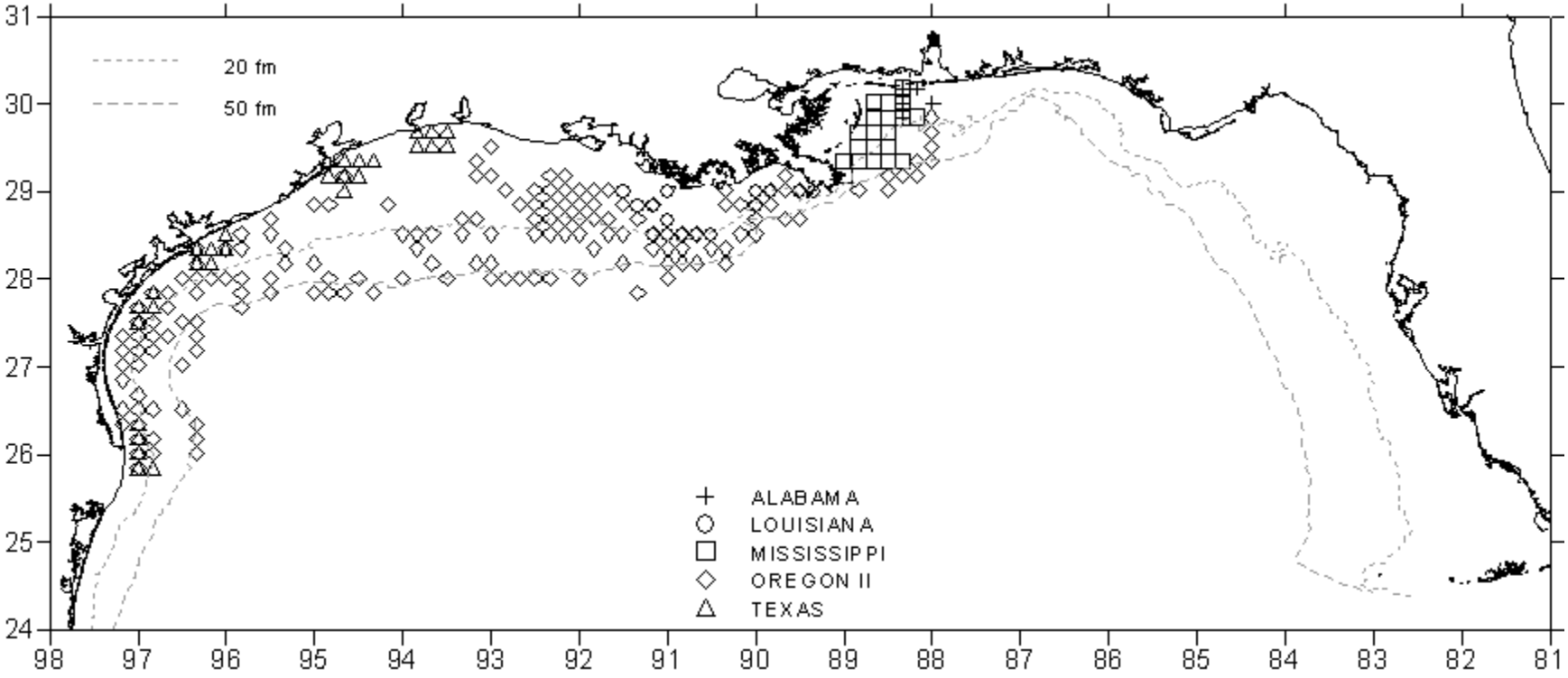


Figure 8. Locations of environmental stations during the 1999 Fall Shrimp/Groundfish Survey summarized by 10-minute squares.

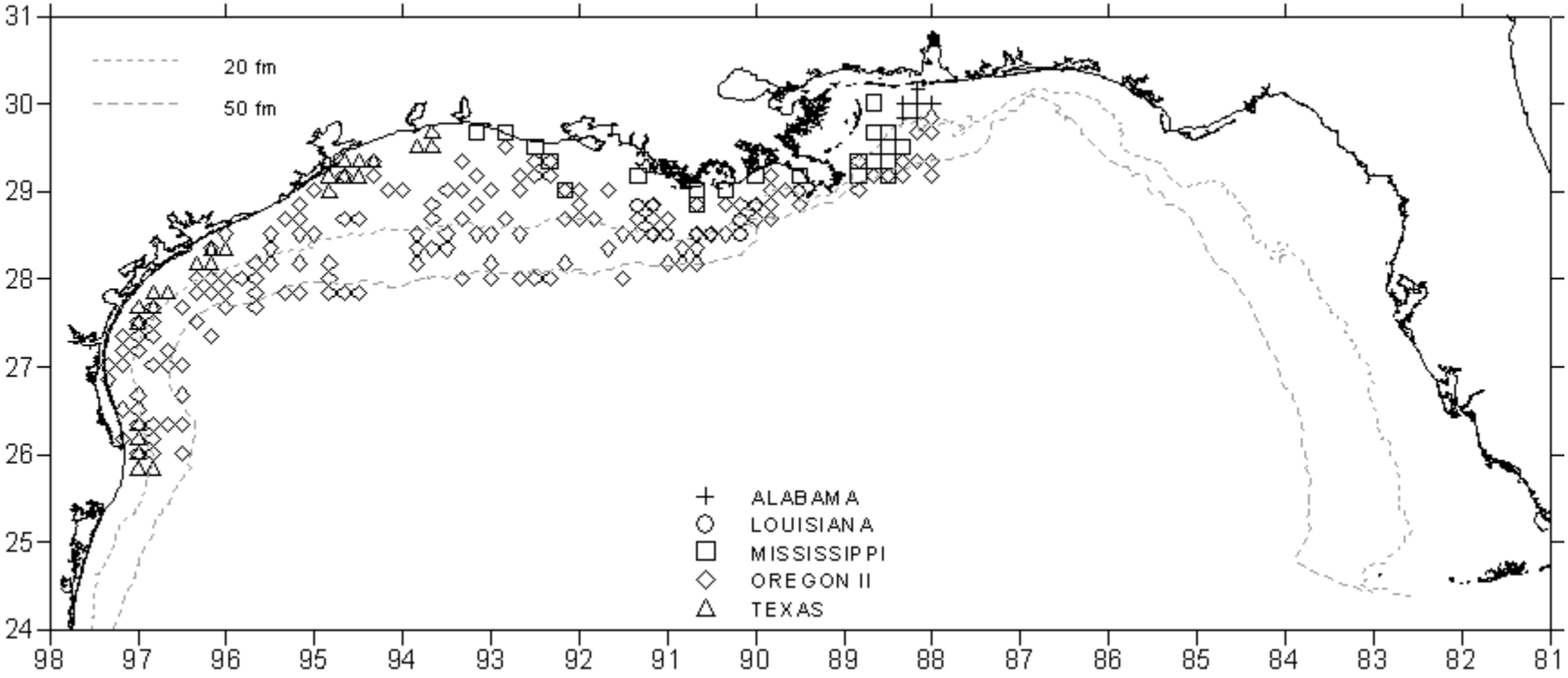


Figure 9. Locations of trawl stations during the 1999 Summer Shrimp/Groundfish Survey summarized by 10-minute squares.

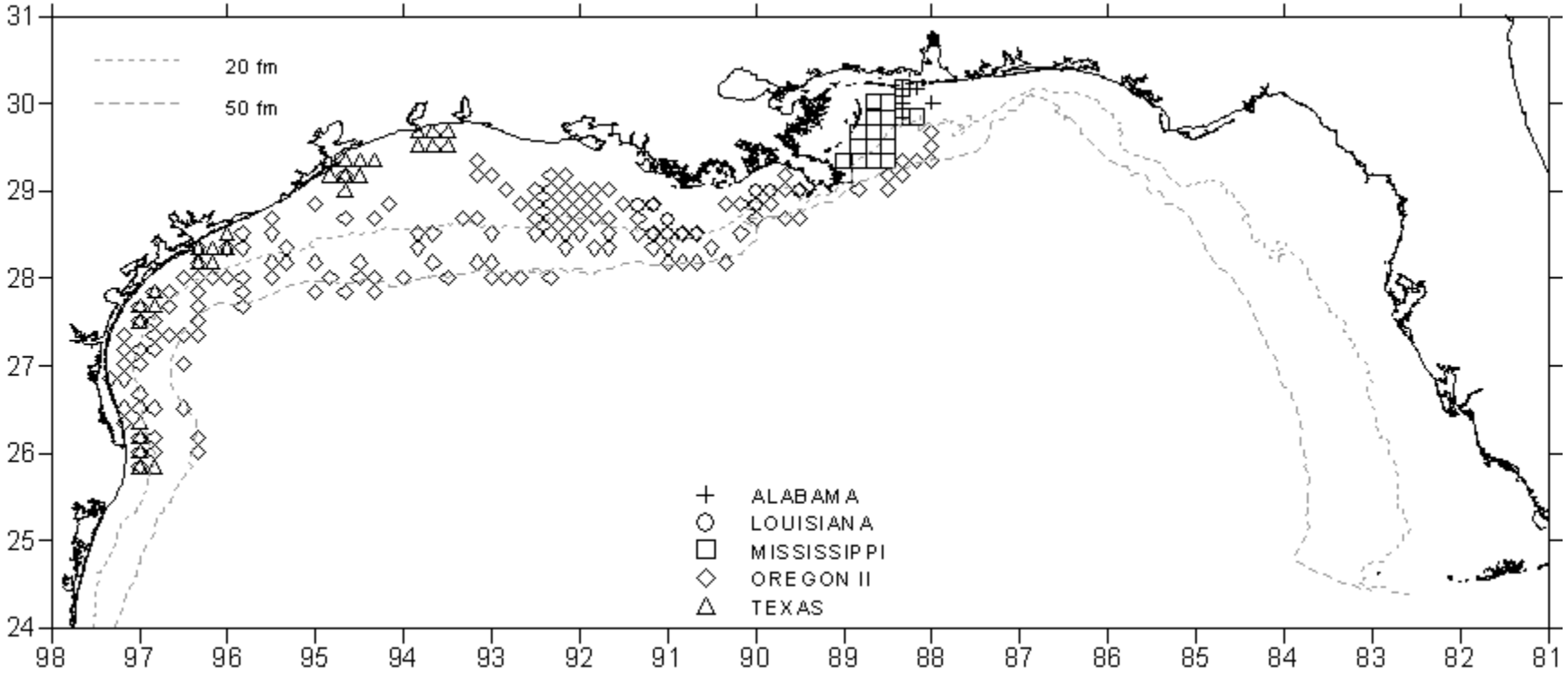


Figure 10. Locations of trawl stations during the 1999 Fall Shrimp/Groundfish Survey summarized by 10-minute squares.

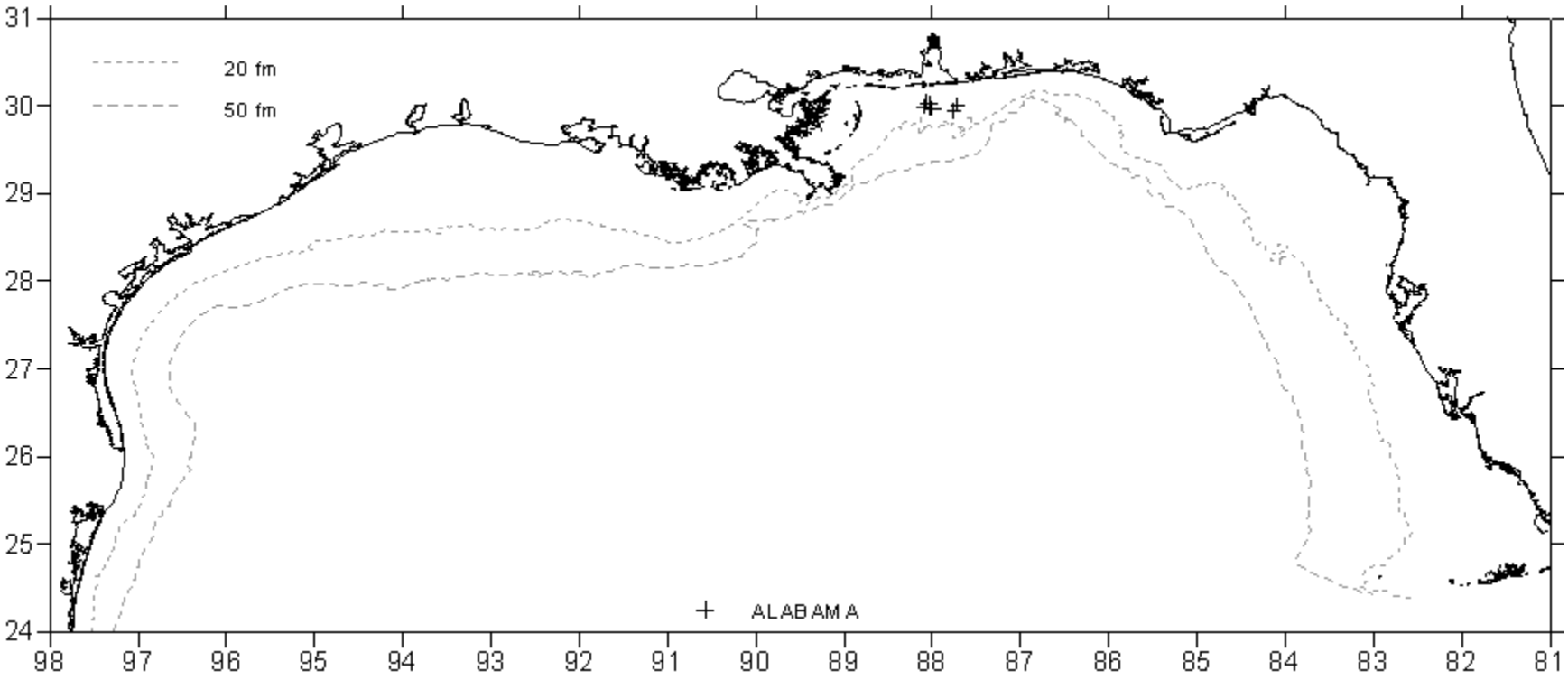


Figure 11. Locations of trap stations during the 1999 Reef Fish Survey.

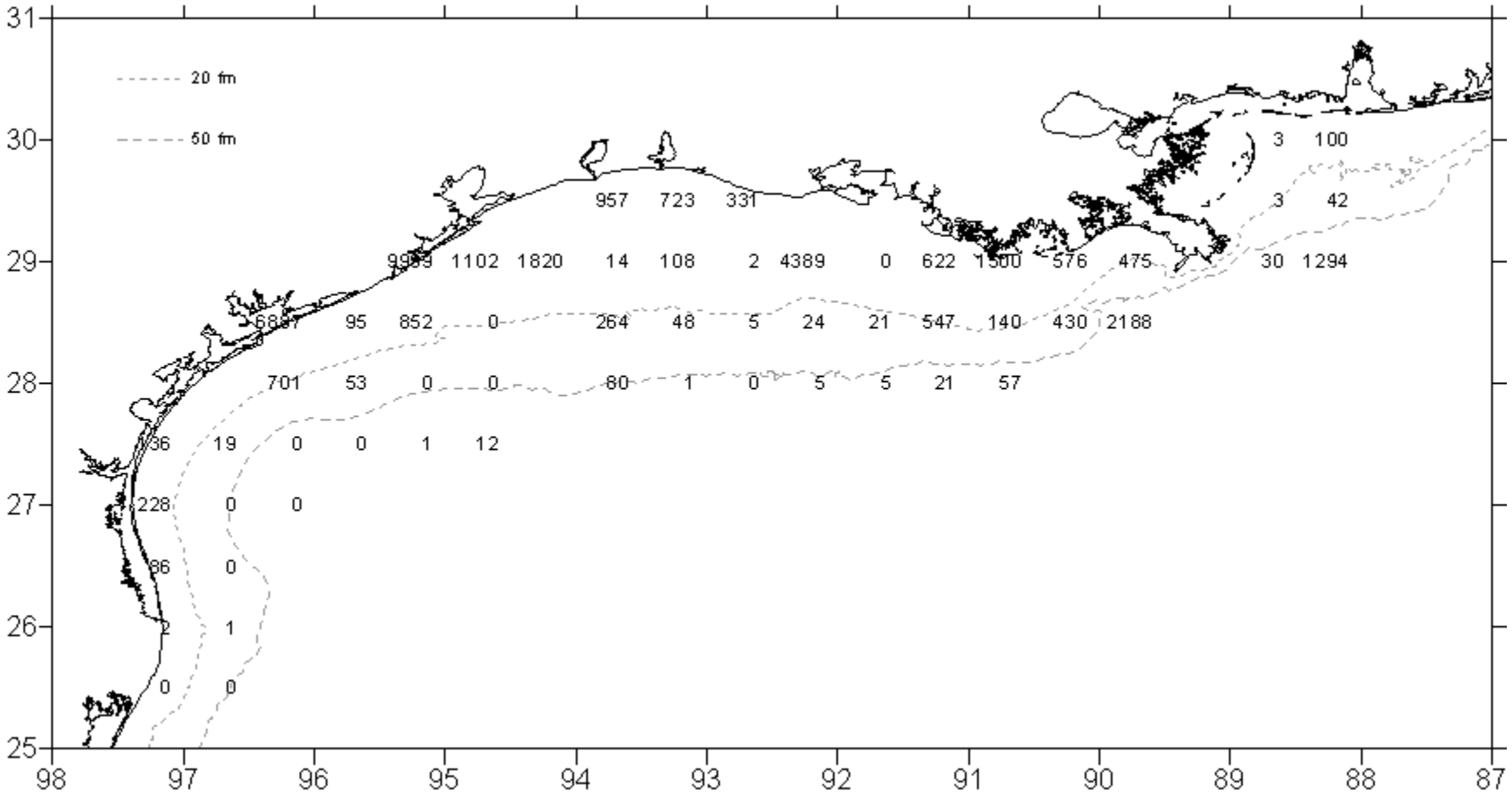


Figure 12. Atlantic croaker, Micropogonias undulatus, number/hour for June-July 1999.

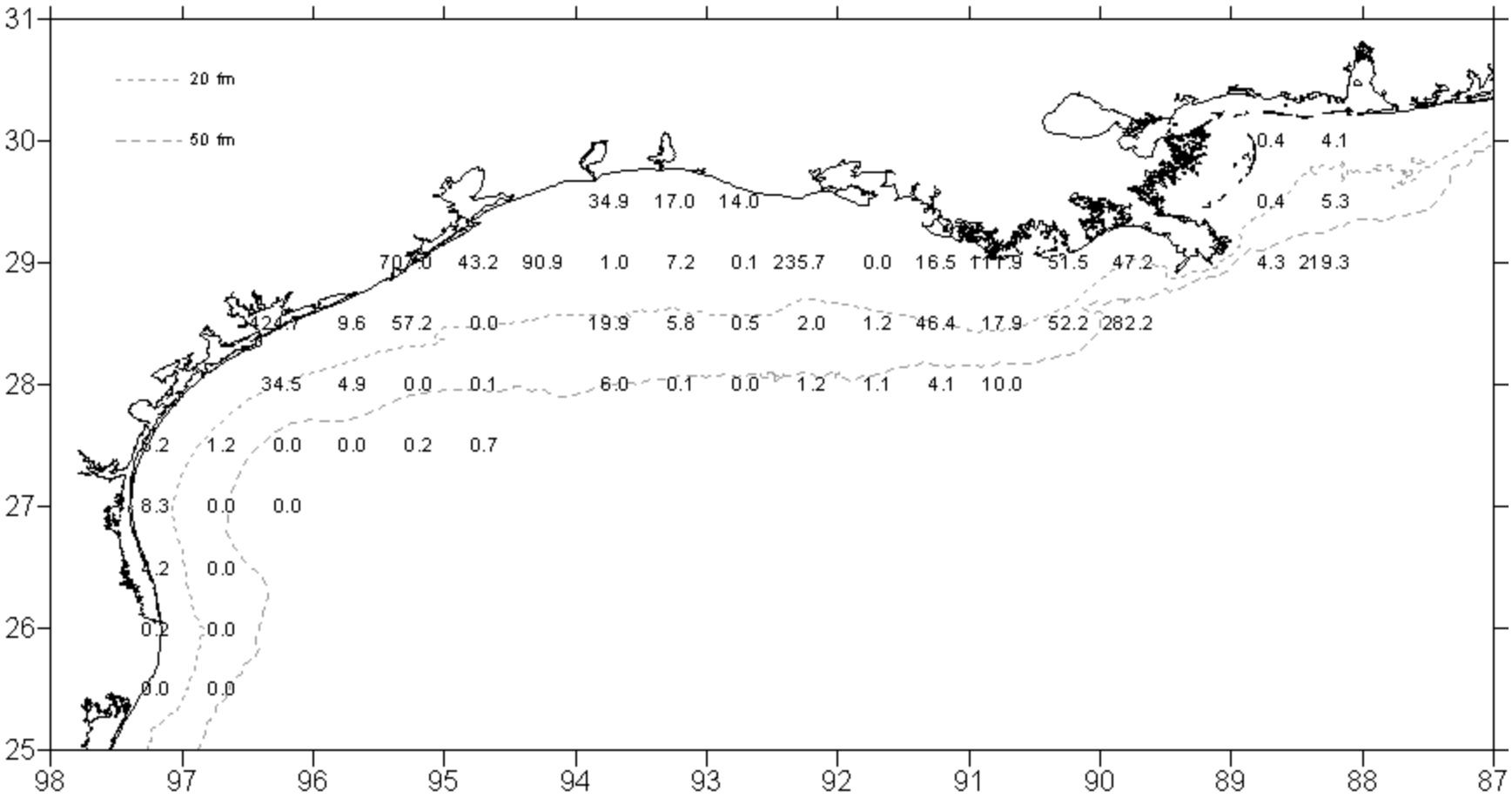
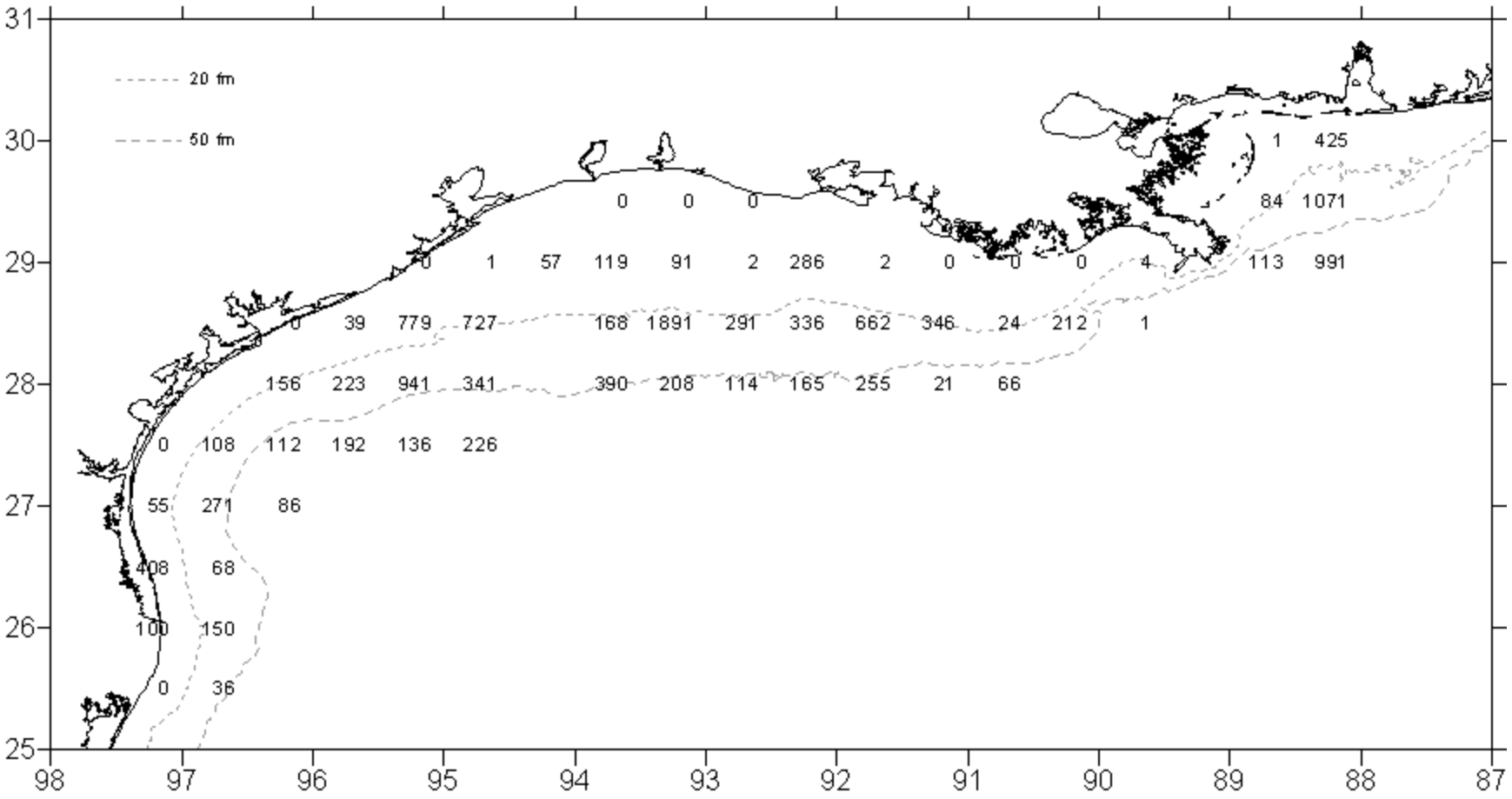


Figure 13. Atlantic croaker, Micropogonias undulatus, lb/hour for June-July 1999.



Figuree 14. Longspine porgy, Stenotomus caprinus, number/hour for June-July 1999.

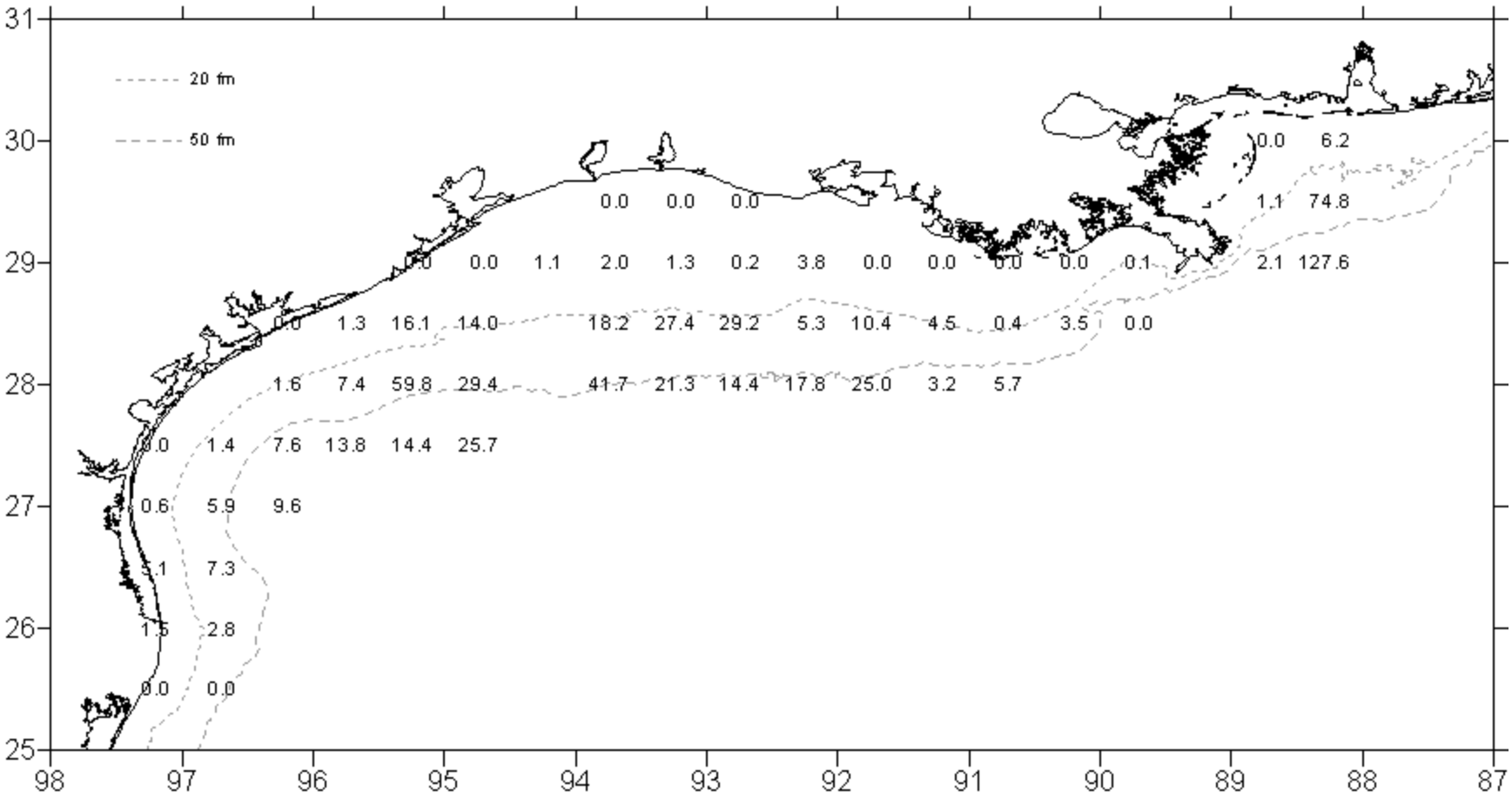


Figure 15. Longspine porgy, Stenotomus caprinus, lb/hour for June-July 1999.

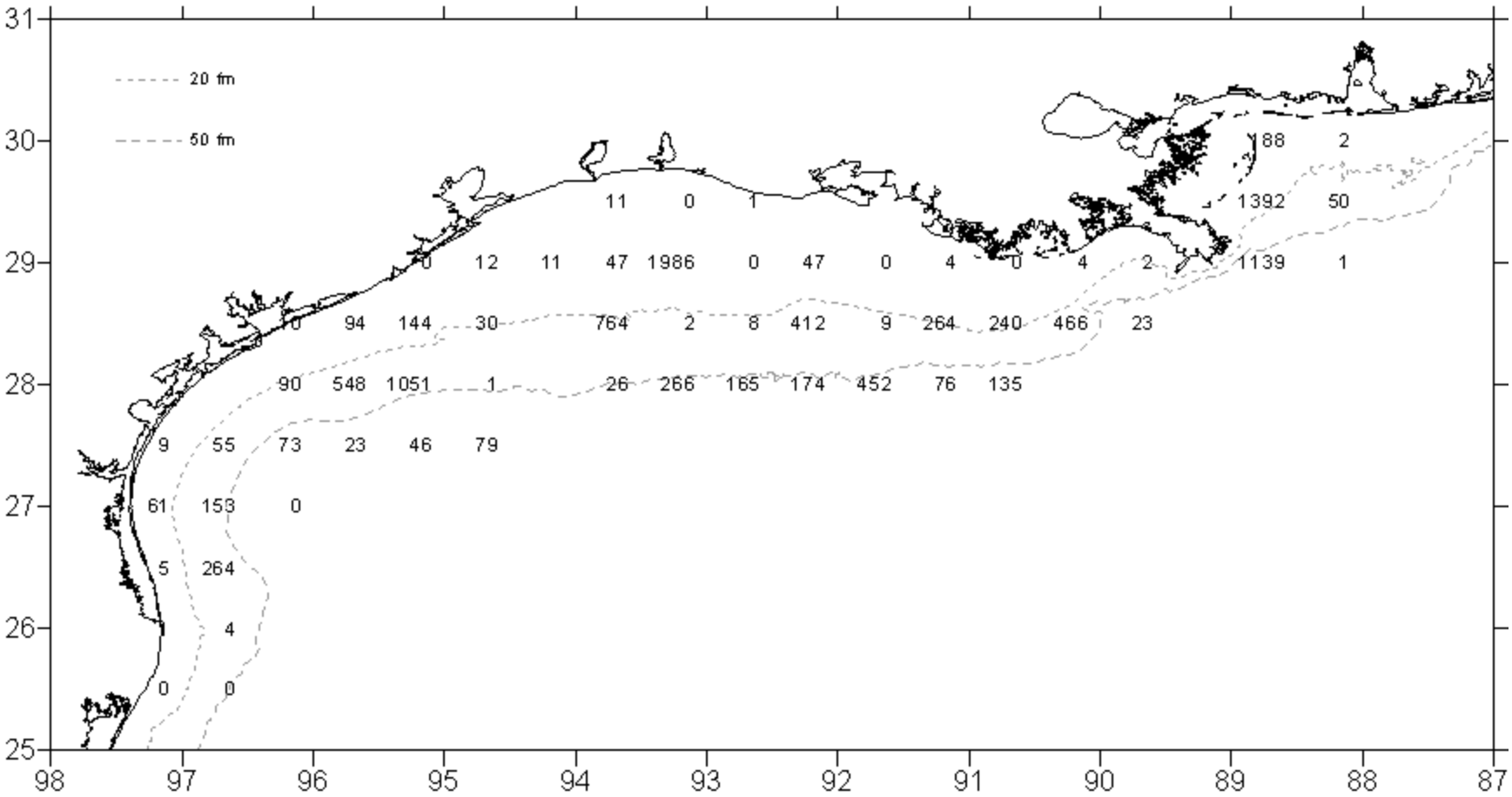


Figure 16. Gulf butterfish, Peprilus burti, number/hour for June-July 1999.

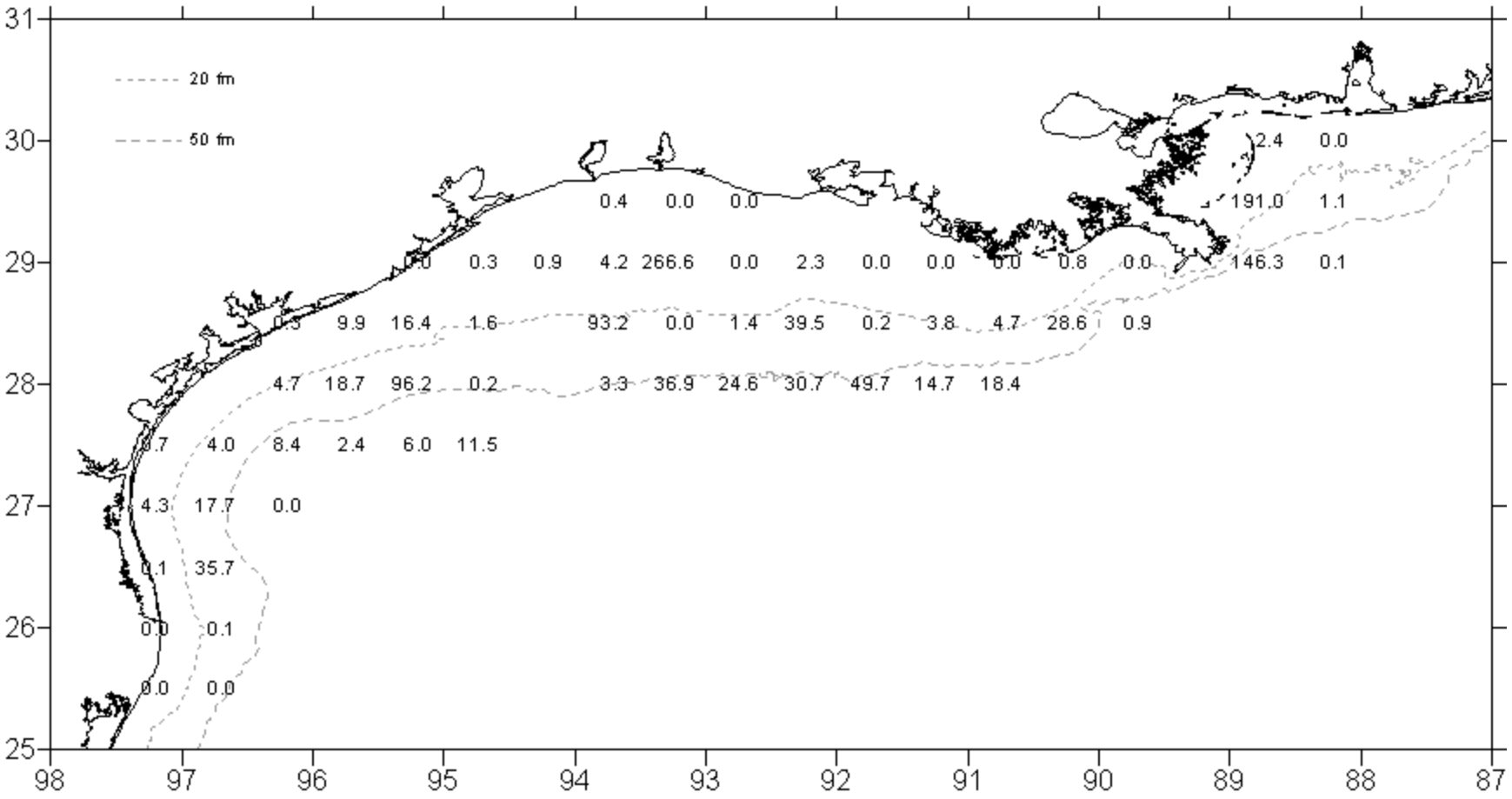


Figure 17. Gulf butterfish, Peprilus burti, lb/hour for June-July 1999.

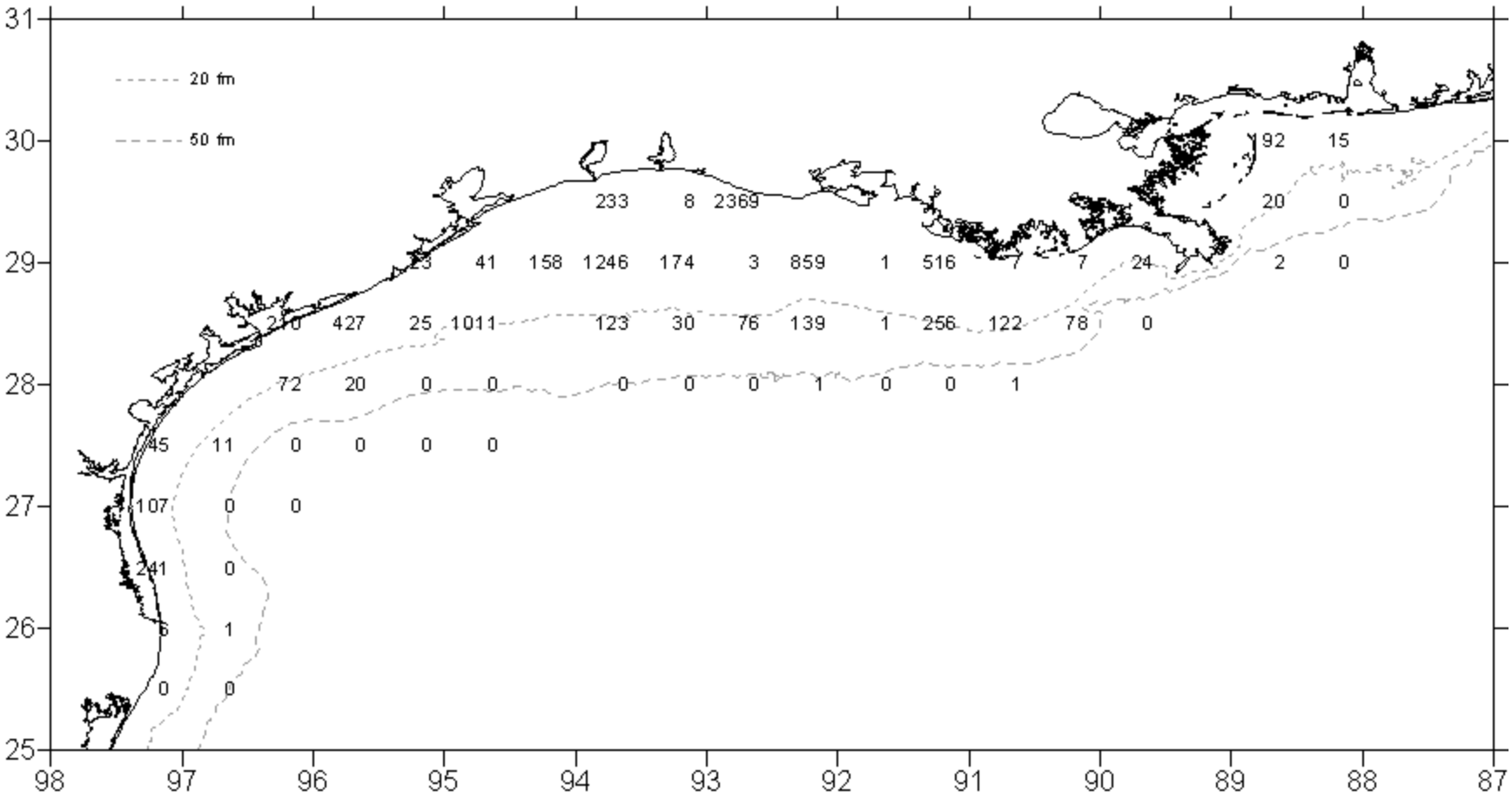


Figure 18. Atlantic bumper, Chloroscombrus chrysurus, number/hour for June-July 1999.

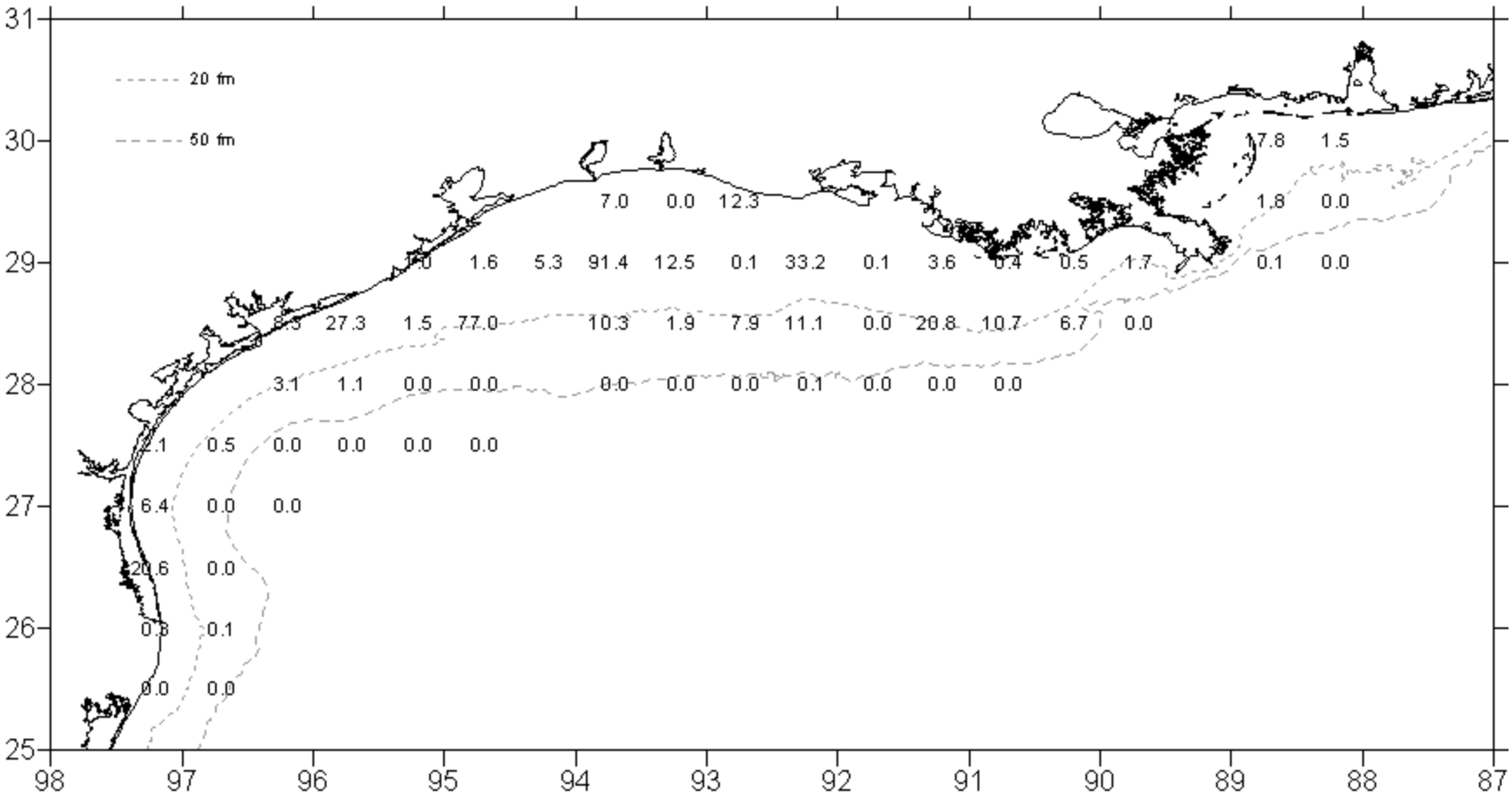


Figure 19. Atlantic bumper, Chloroscombrus chrysurus, lb/hour for June-July 1999.

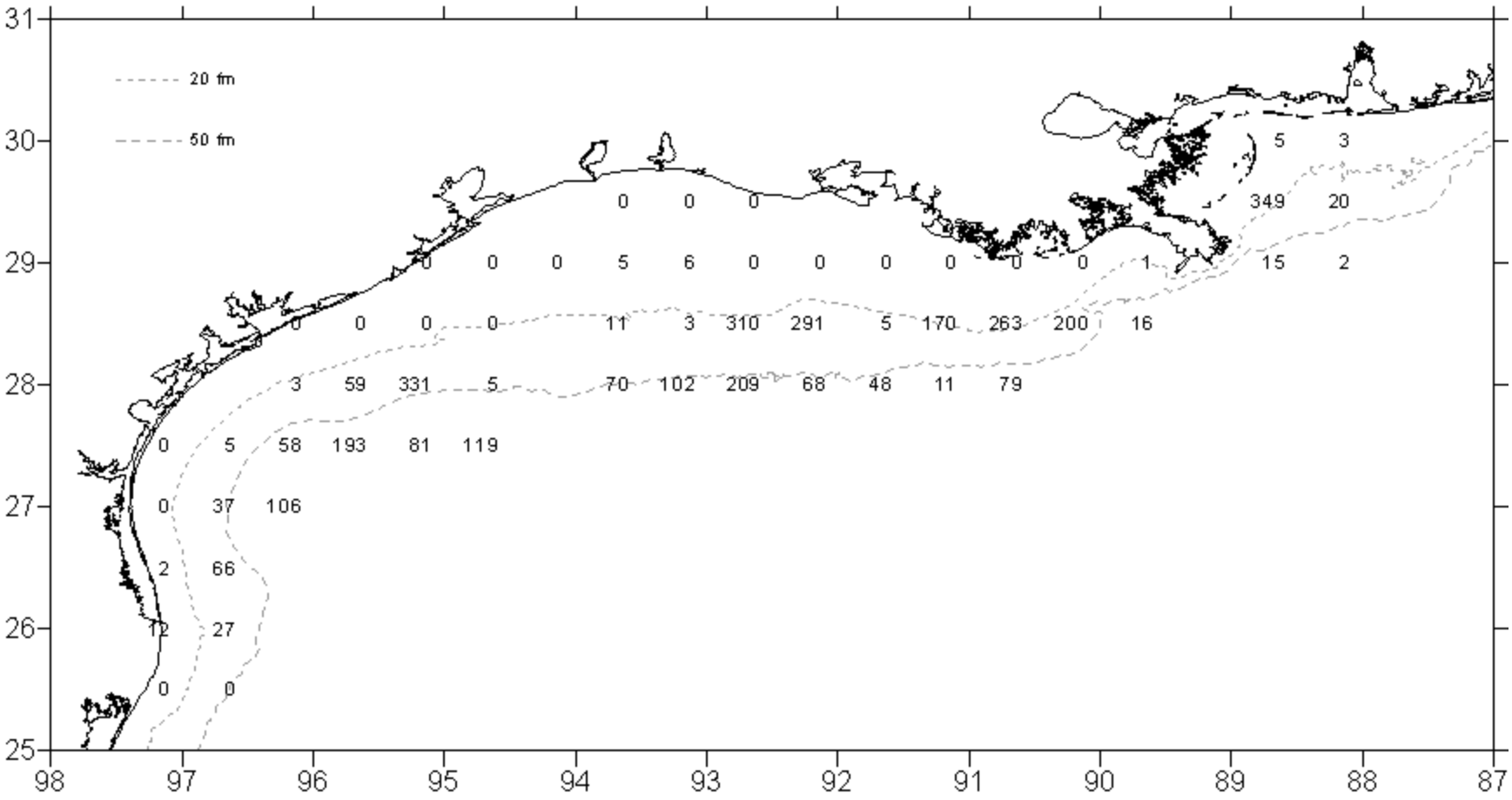


Figure 20. Rough scad, Trachurus lathami, number/hour for June-July 1999.

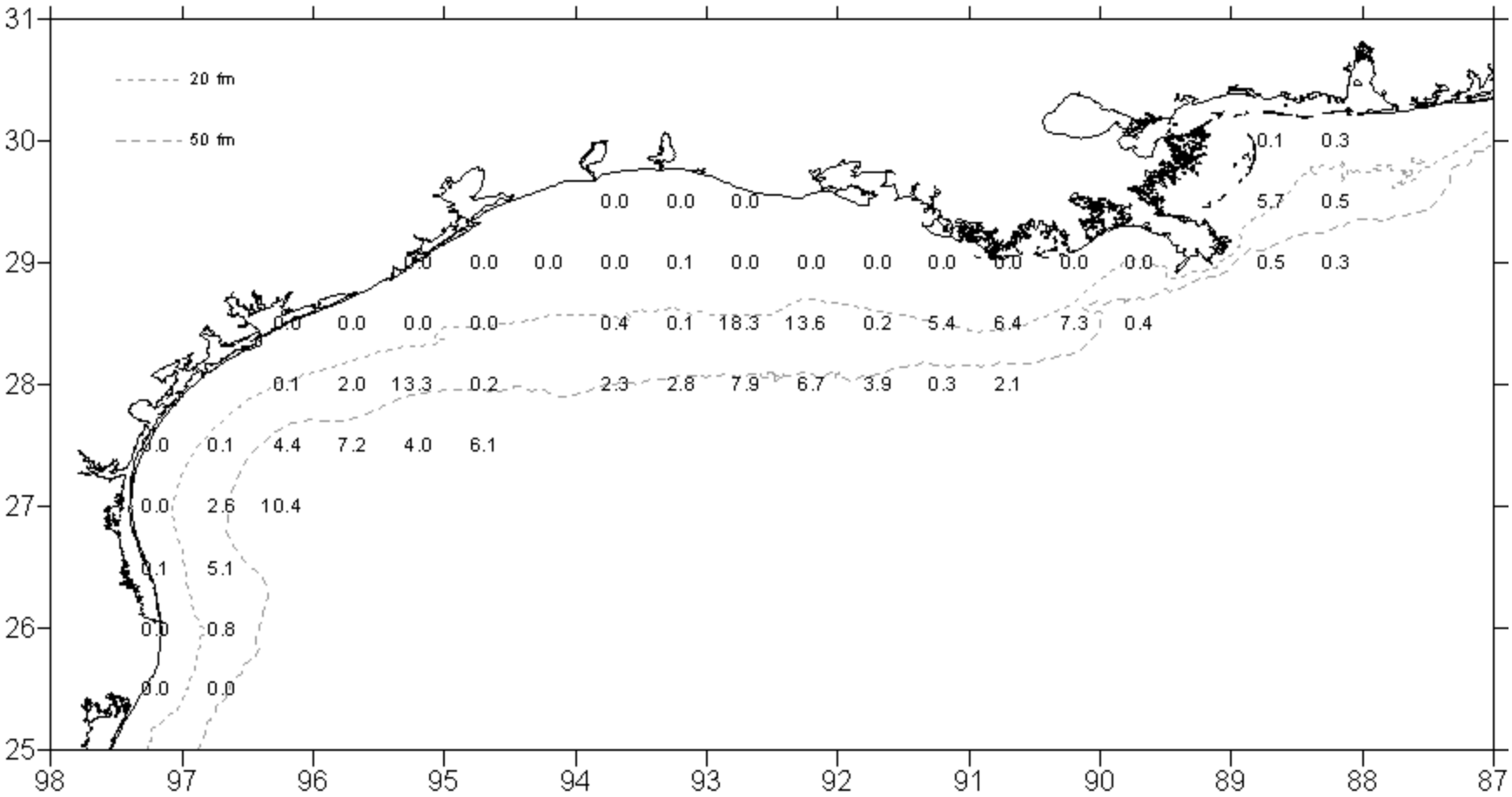


Figure 21. Rough scad, Trachurus lathami, lb/hour for June-July 1999.

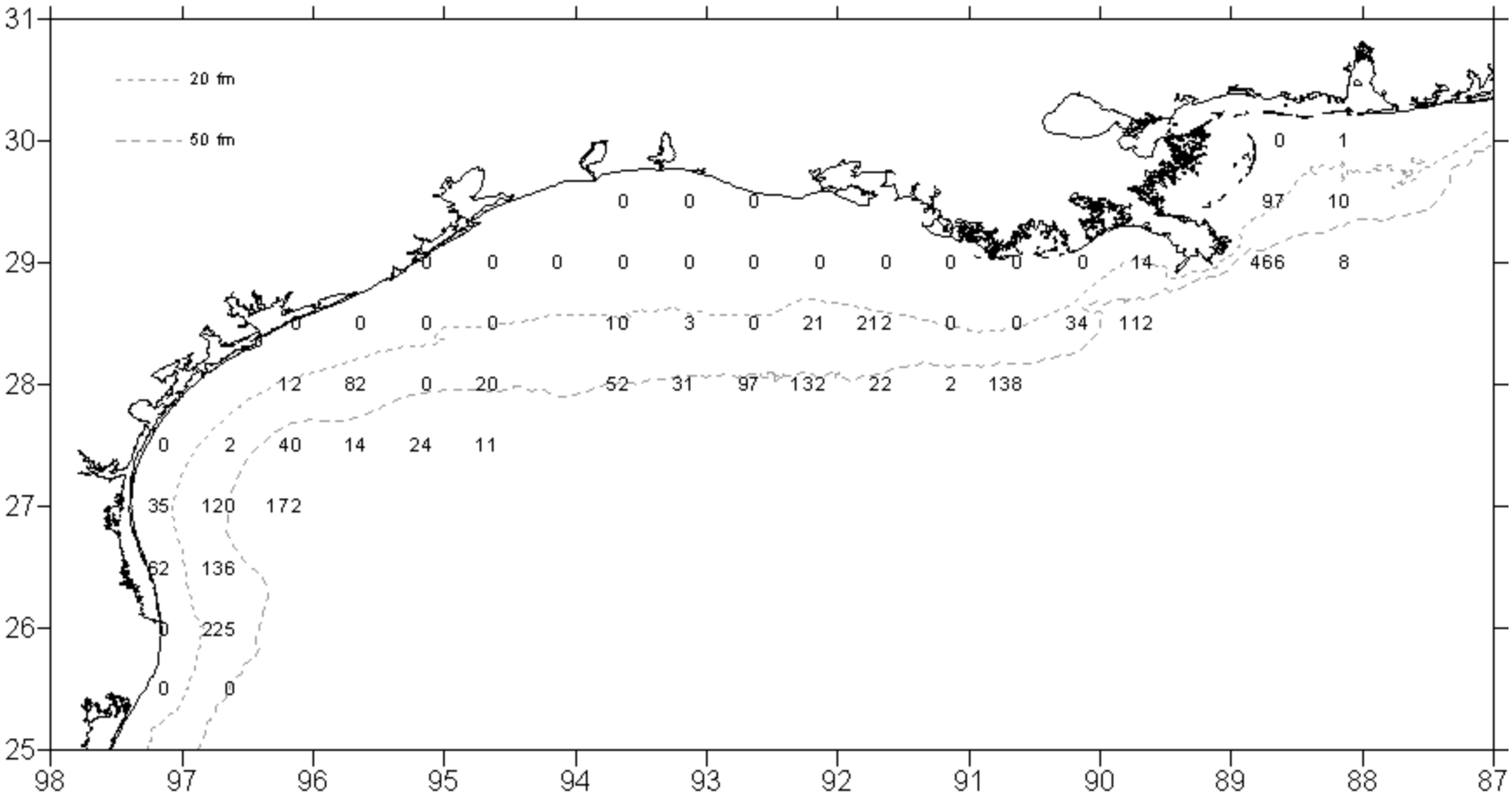


Figure 22. Blackear bass, Serranus altrobranchus, number/hour for June-July 1999.

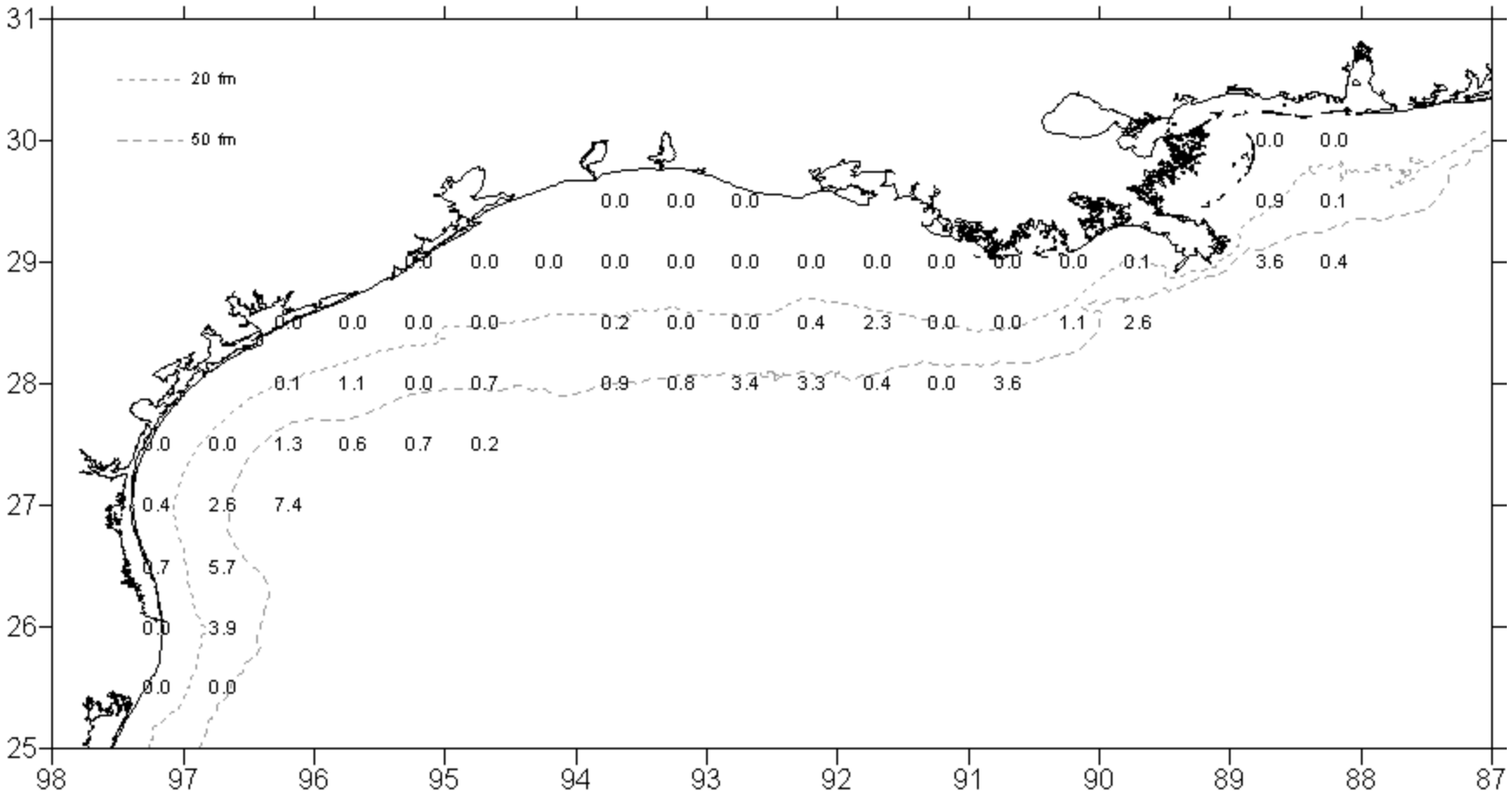


Figure 23. Blackear bass, Serranus altrobranchus, lb/hour for June-July 1999.

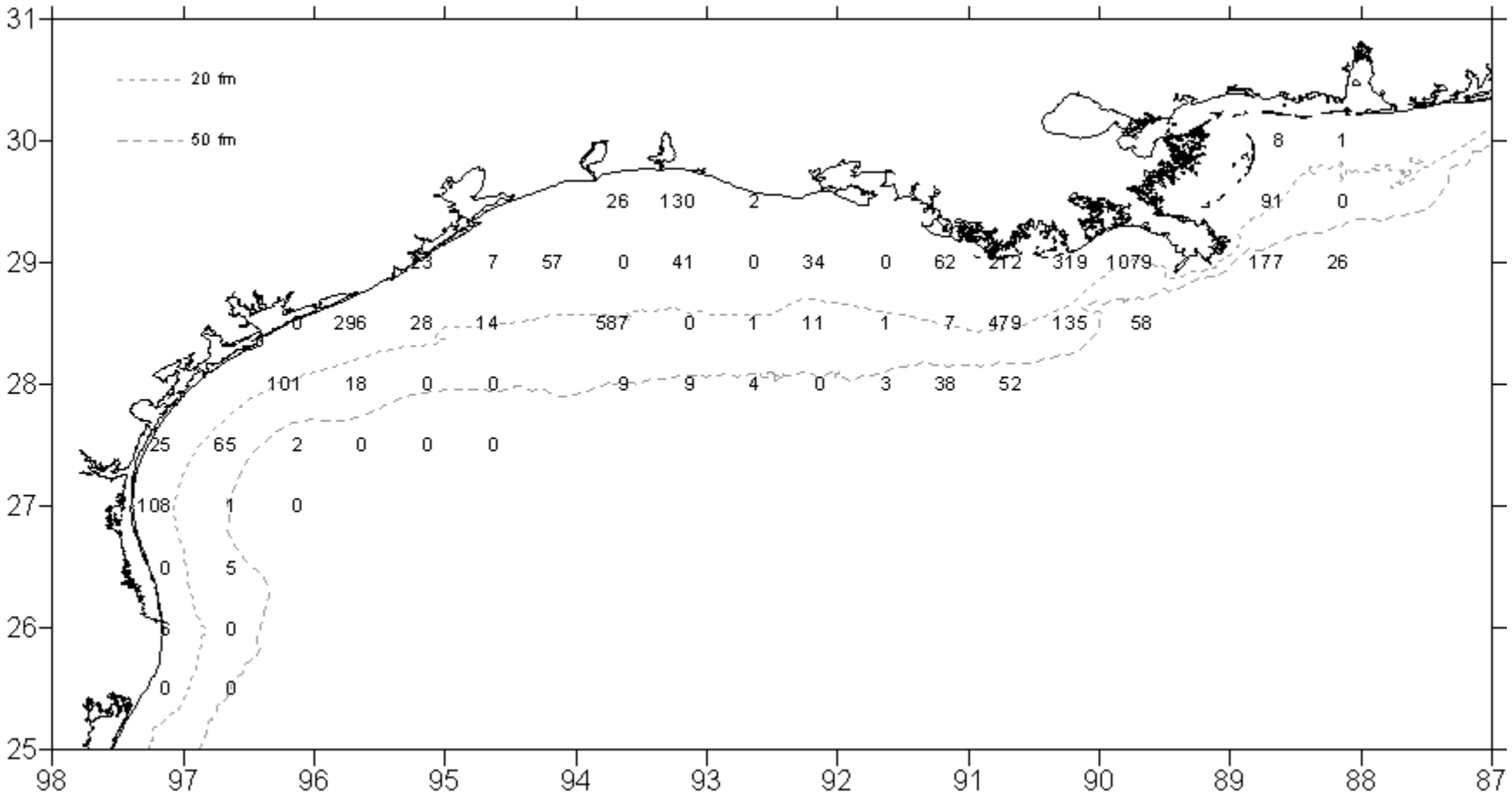


Figure 24. Atlantic cutlassfish, Trichiurus lepturus, number/hour for June-July 1999.

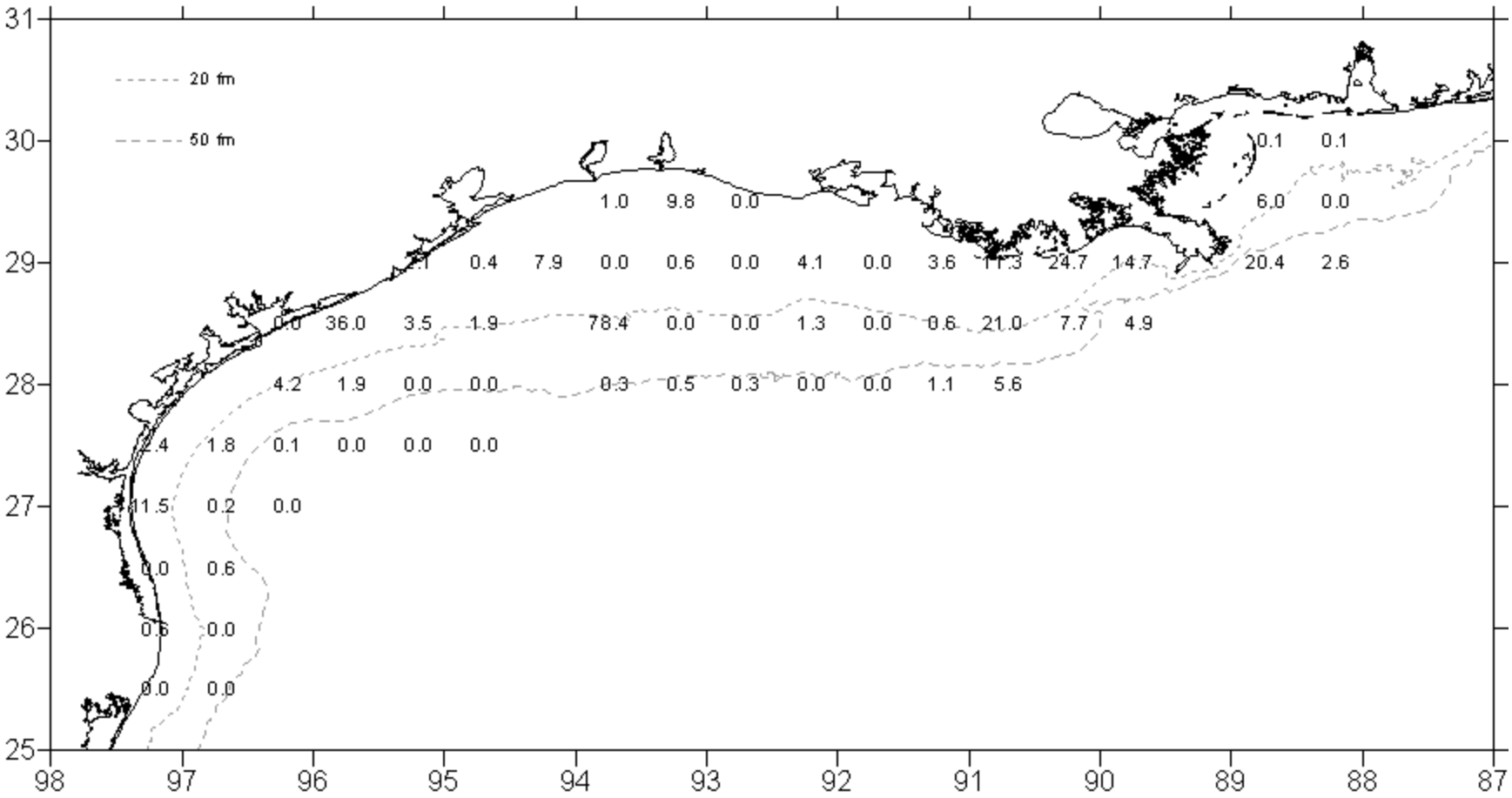


Figure 25. Atlantic cutlassfish, Trichiurus lepturus, lb/hour for June-July 1999.

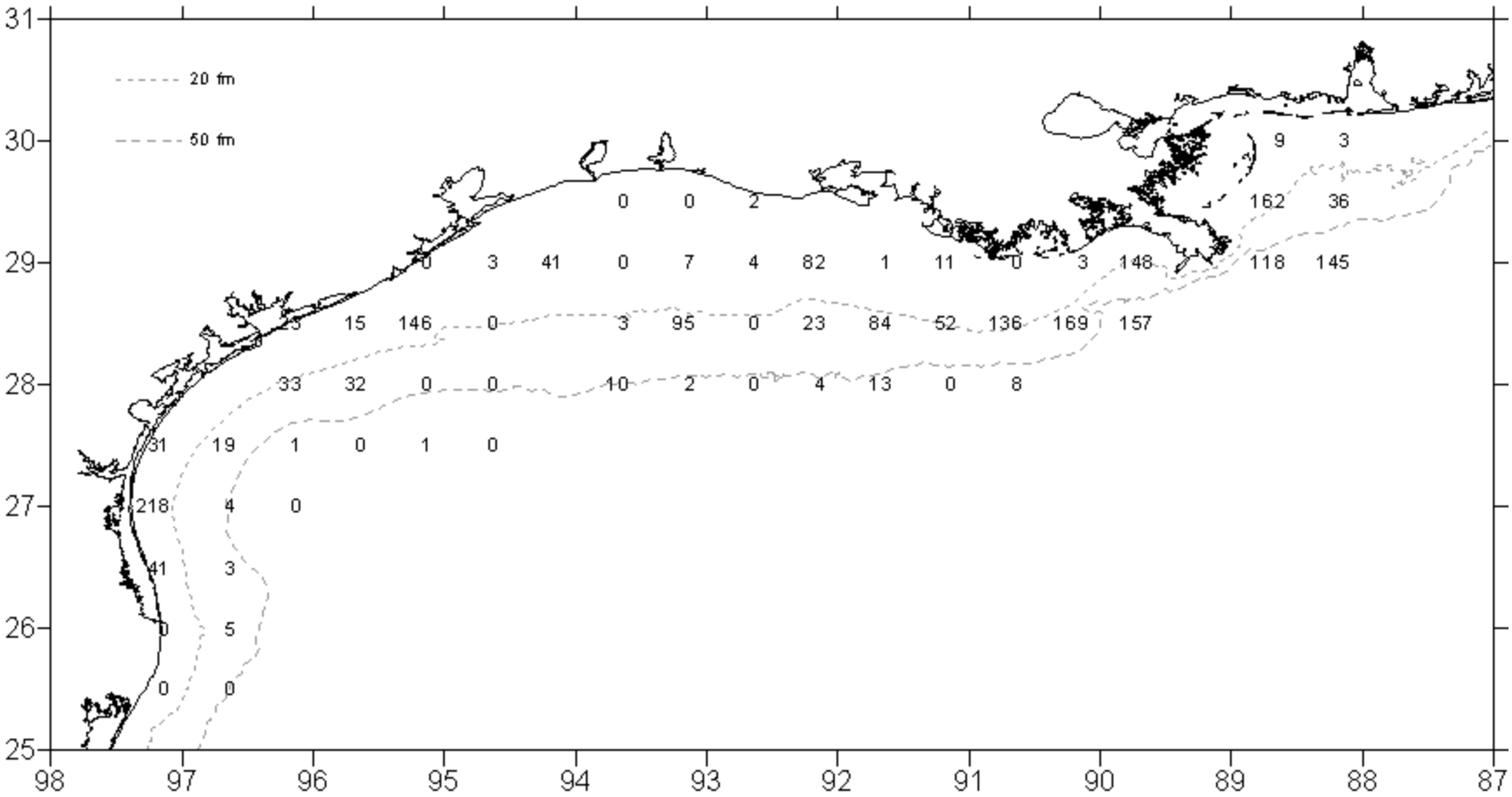


Figure 26. Bigeye searobin, Prionotus longispinosus, number/hour for June-July 1999.

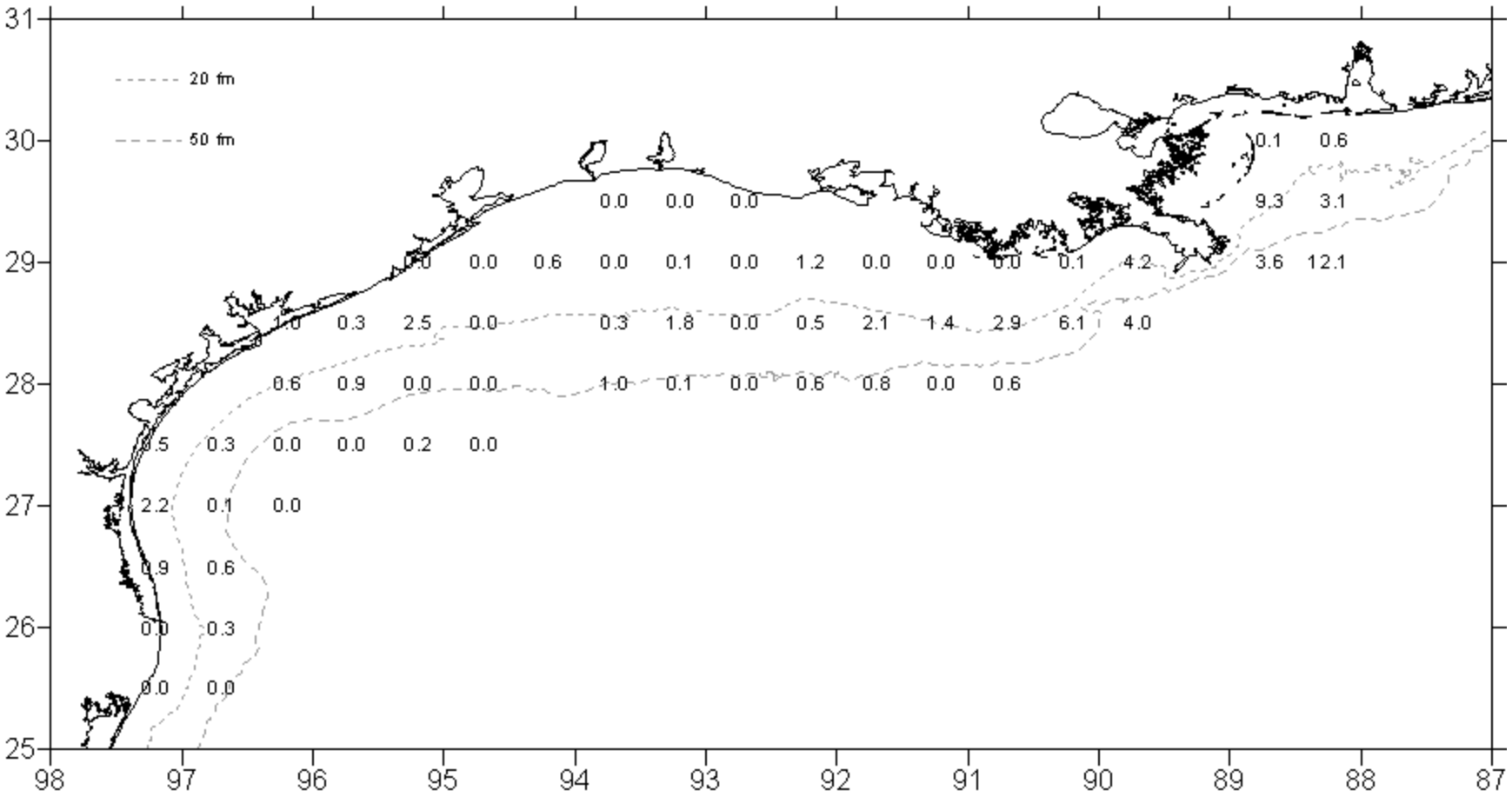


Figure 27. Bigeye searobin, Prionotus longispinosus, lb/hour for June-July 1999.

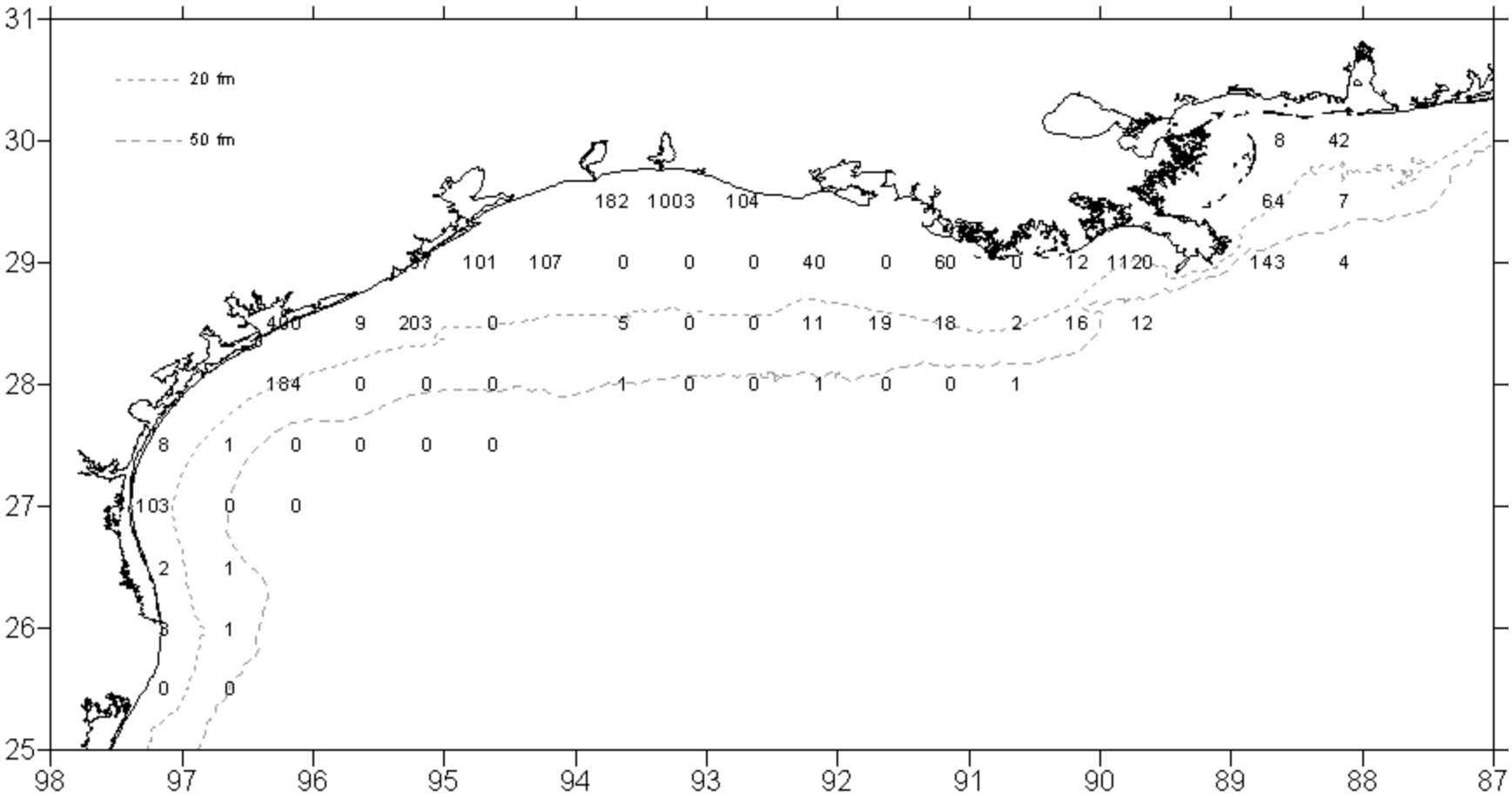


Figure 28. Sand seatrout, Cynoscion arenarius, number/hour for June-July 1999.

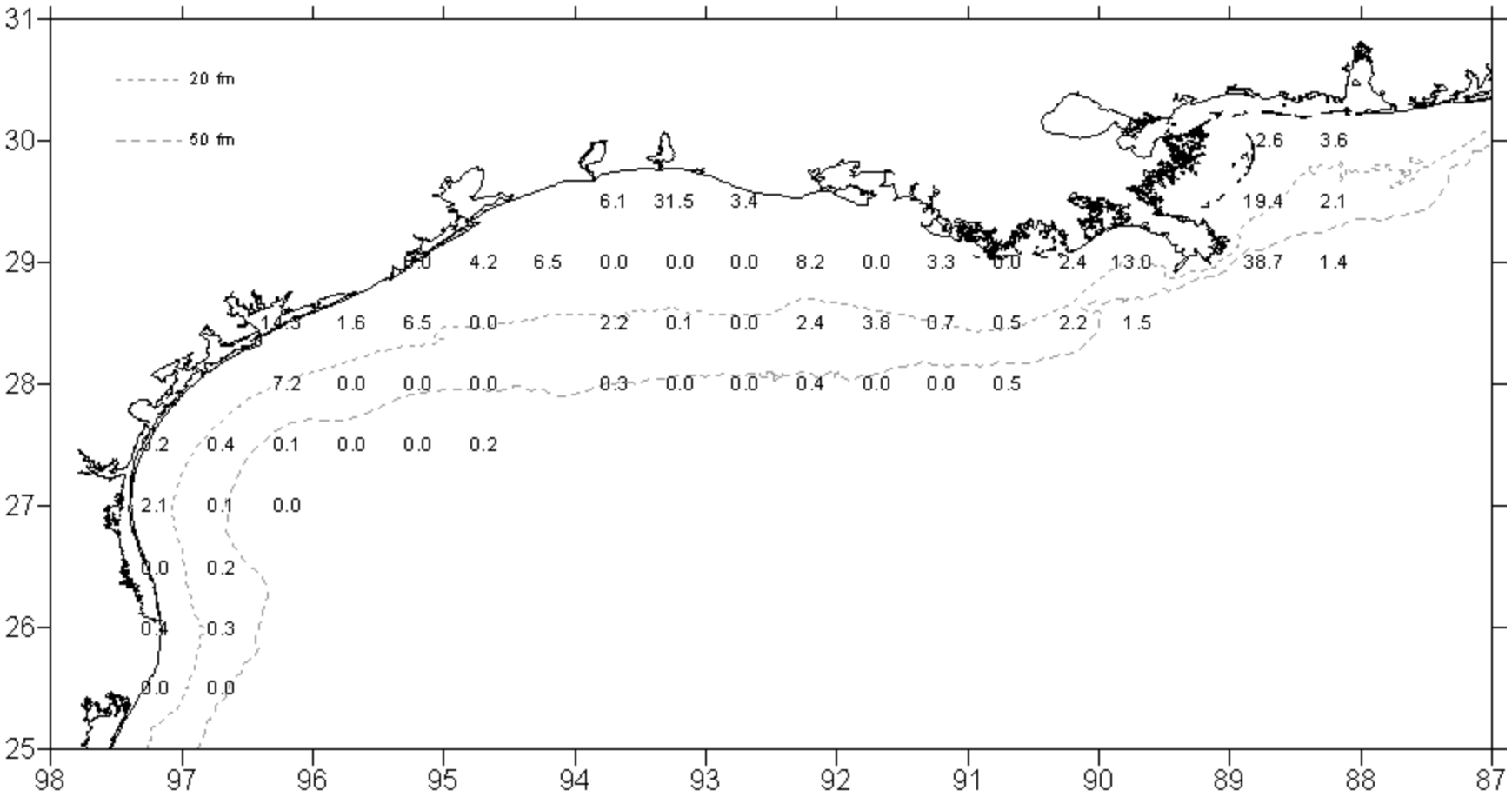


Figure 29. Sand seatrout, Cynoscion arenarius, lb/hour for June-July 1999.

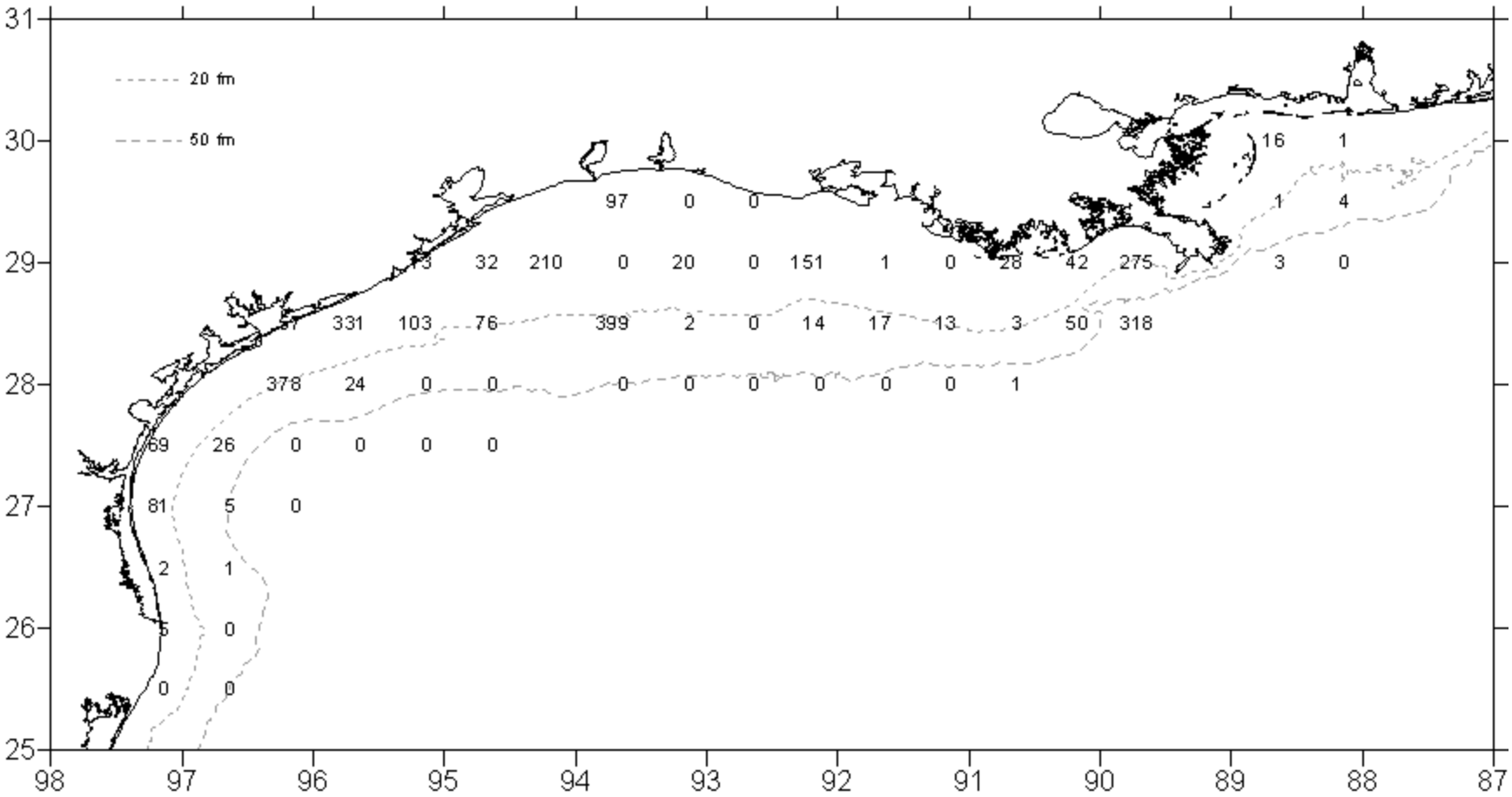


Figure 30. Silver seatrout, Cynoscion nothus, number/hour for June-July 1999.

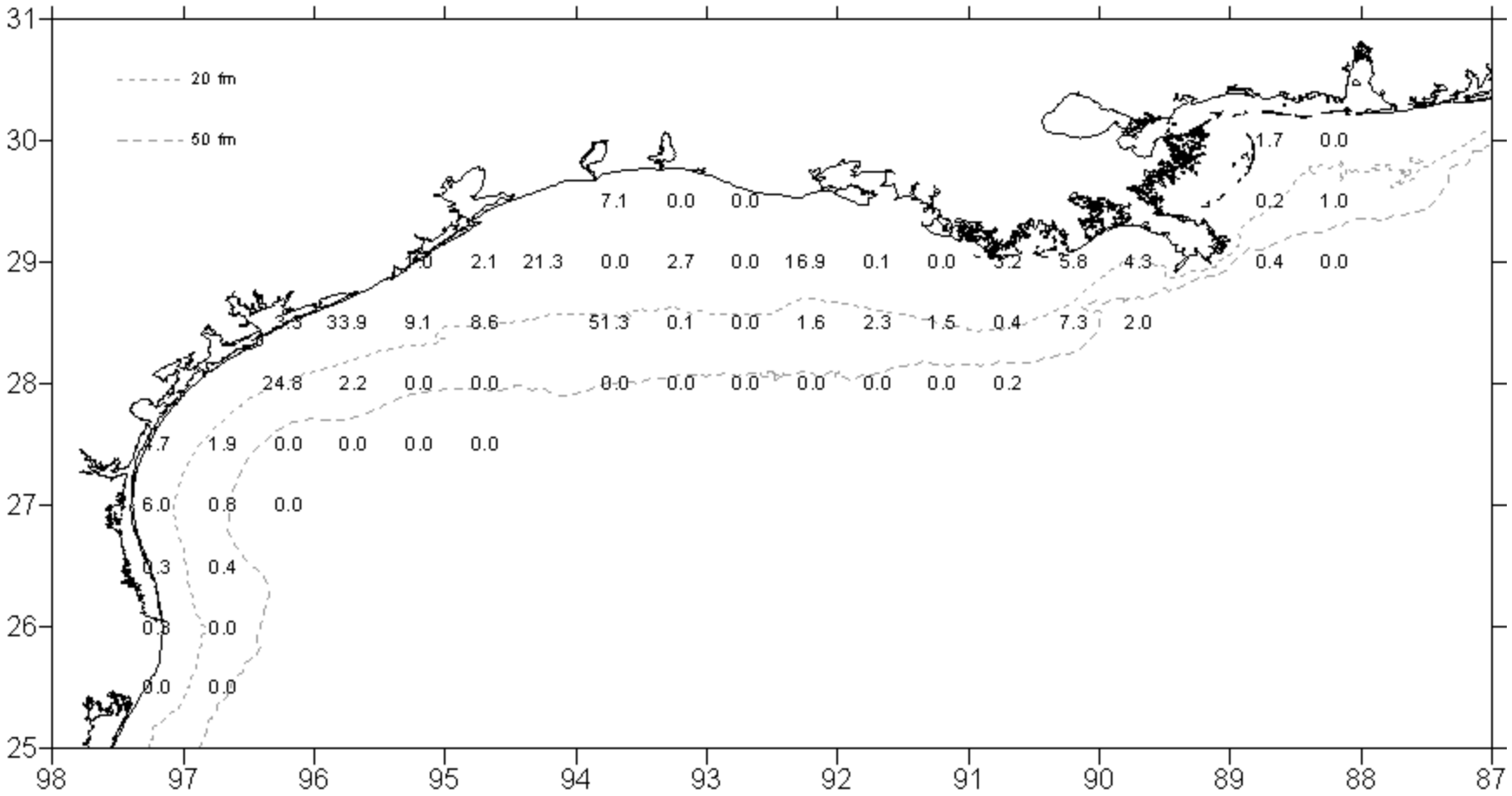


Figure 31. Silver seatrout, Cynoscion nothus, lb/hour for June-July 1999.

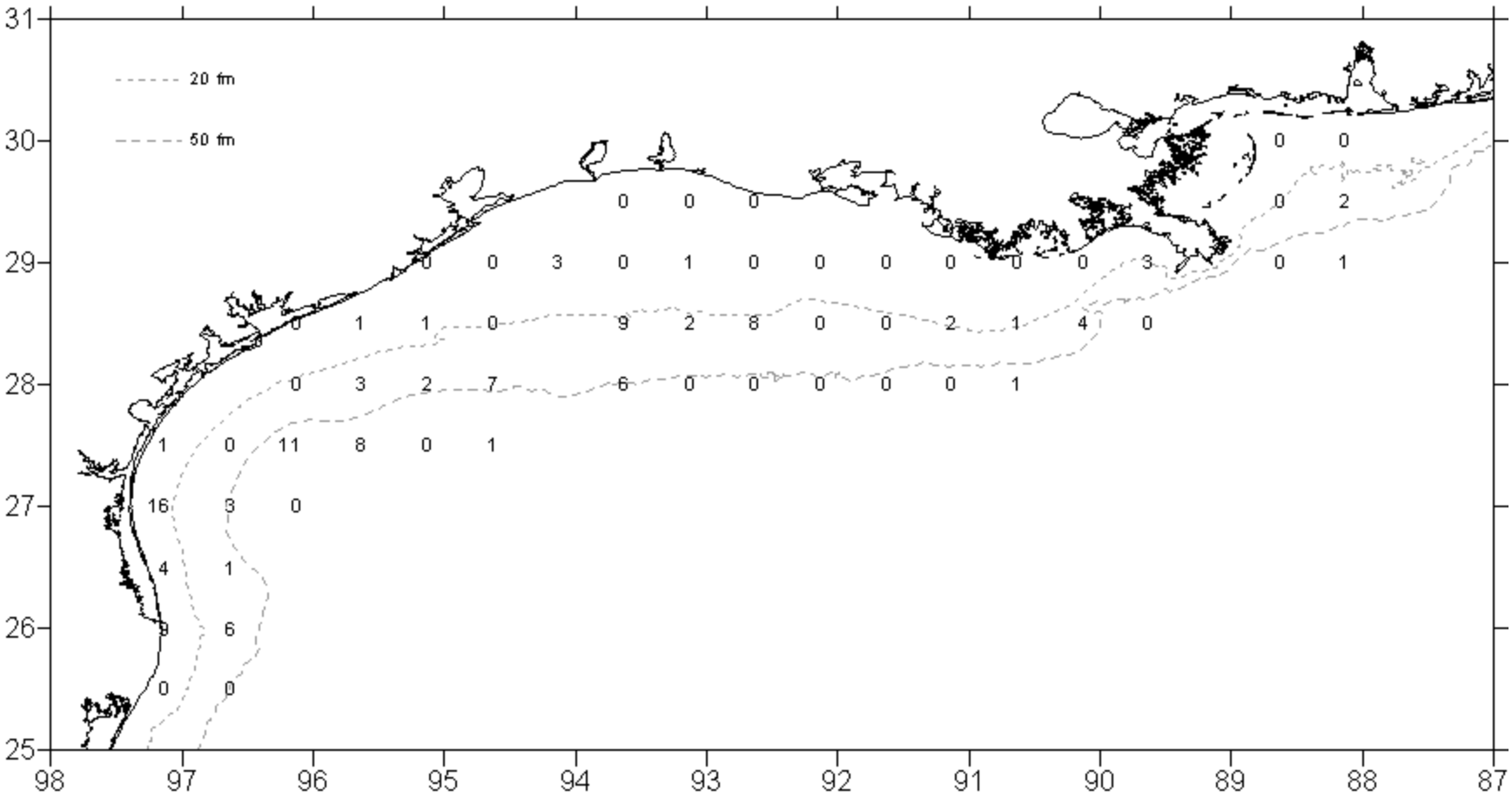


Figure 32. Red snapper, Lutjanus campechanus, number/hour for June-July 1999.

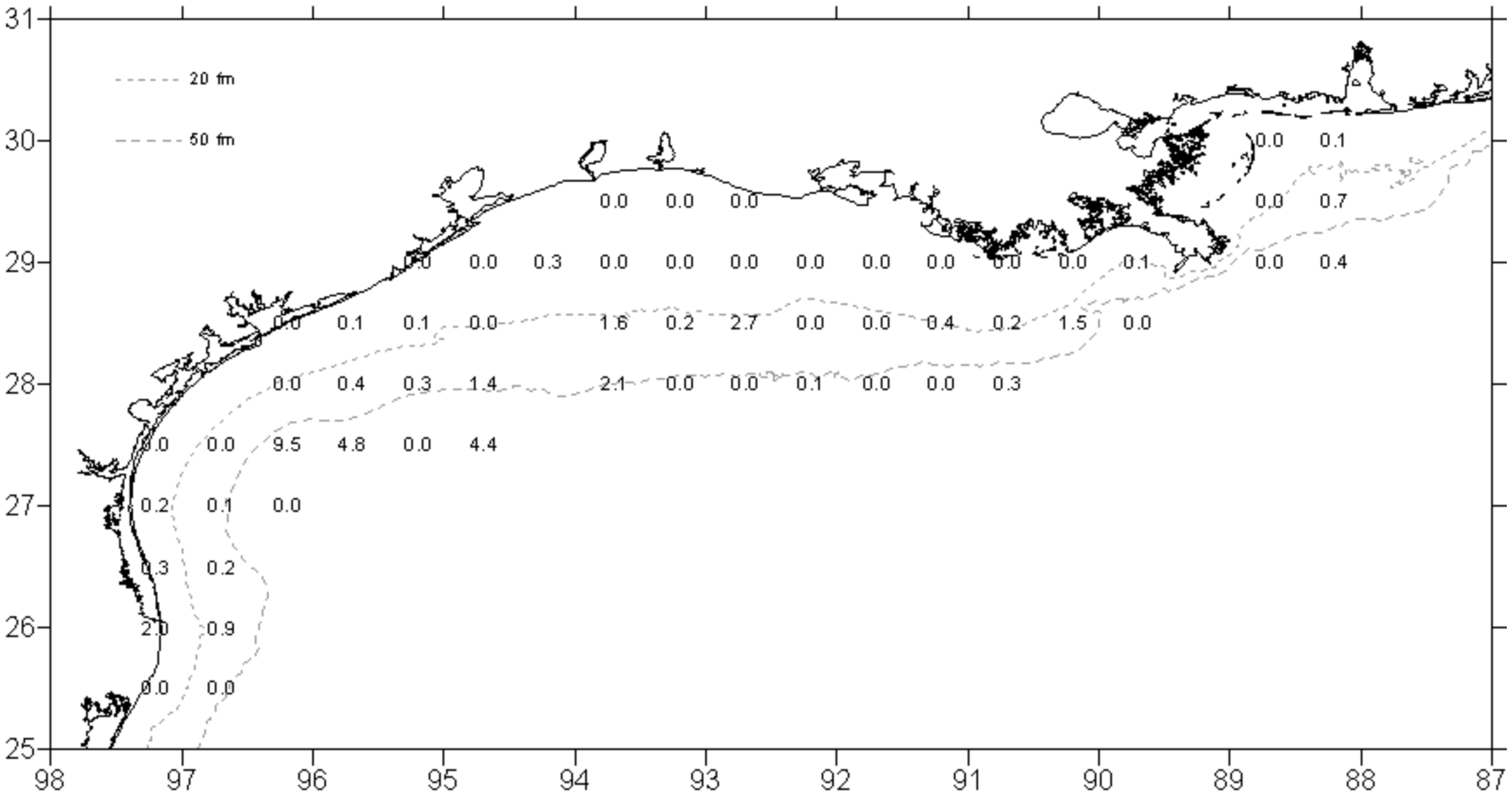


Figure 33. Red snapper, Lutjanus campechanus, lb/hour for June-July 1999.

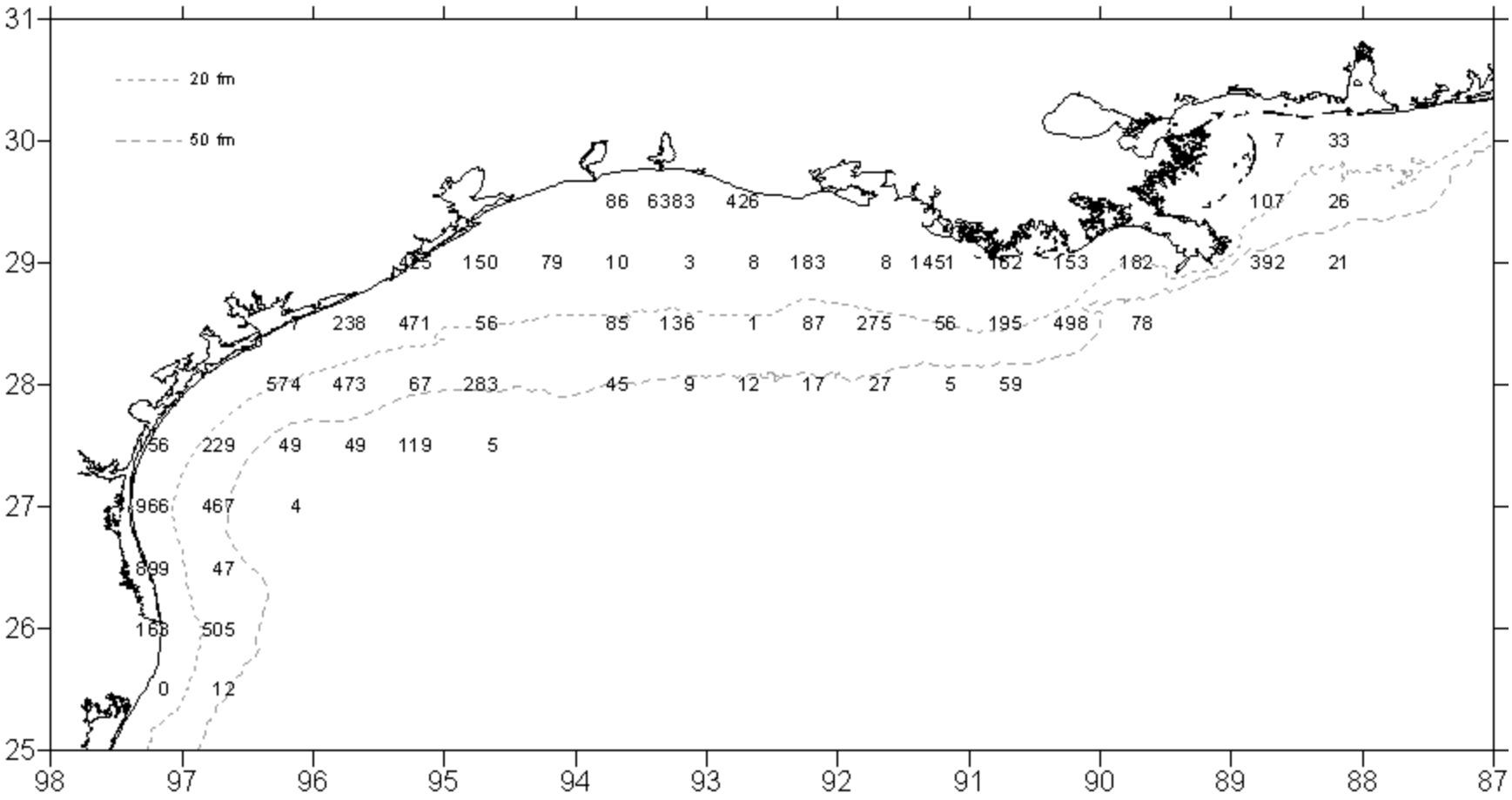


Figure 34. Brown shrimp, Penaeus aztecus, number/hour for June-July 1999.

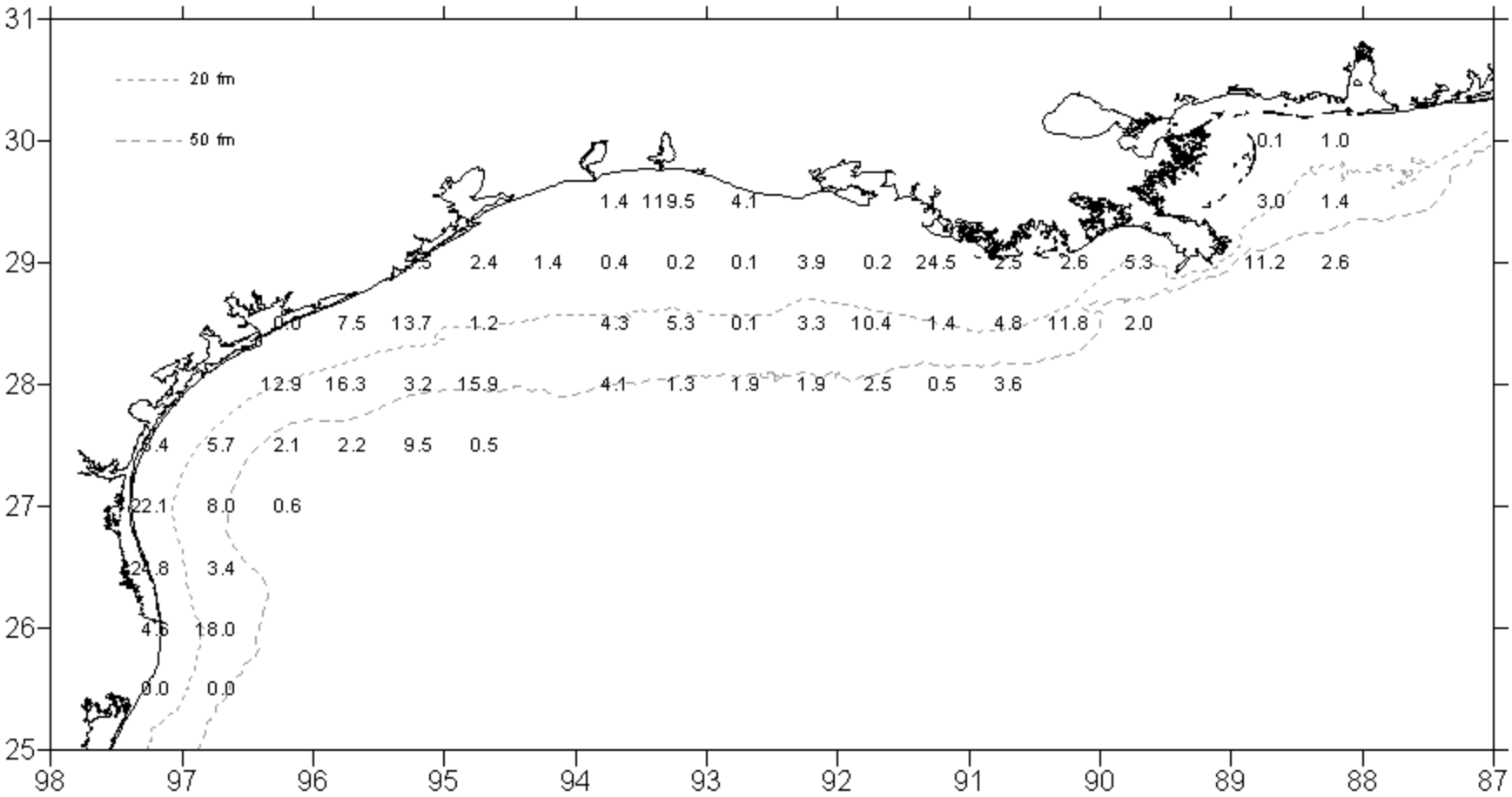


Figure 35. Brown shrimp, Penaeus aztecus, lb/hour for June-July 1999.

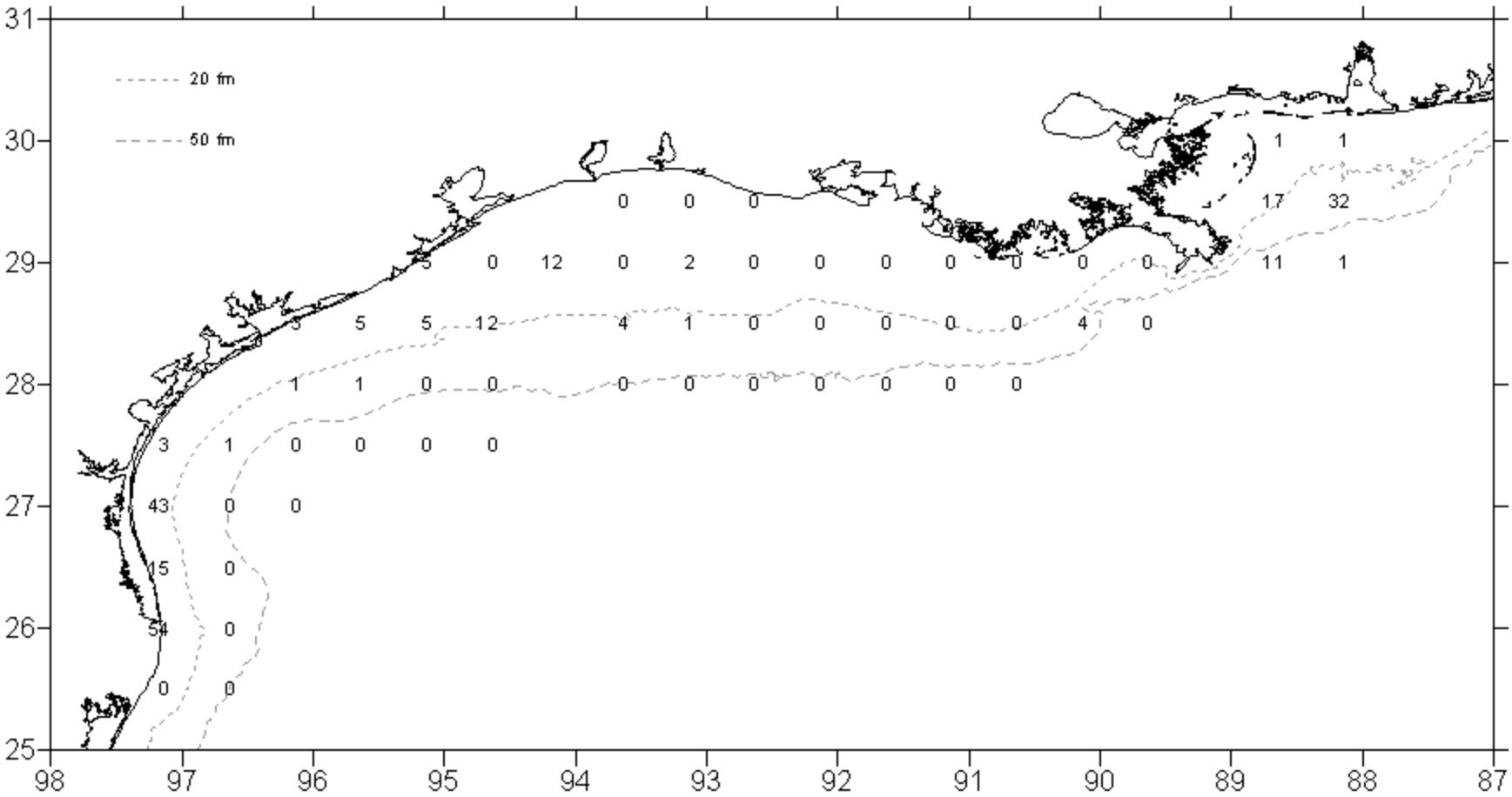


Figure 36. Pink shrimp, Penaeus duorarum, number/hour for June-July 1999.

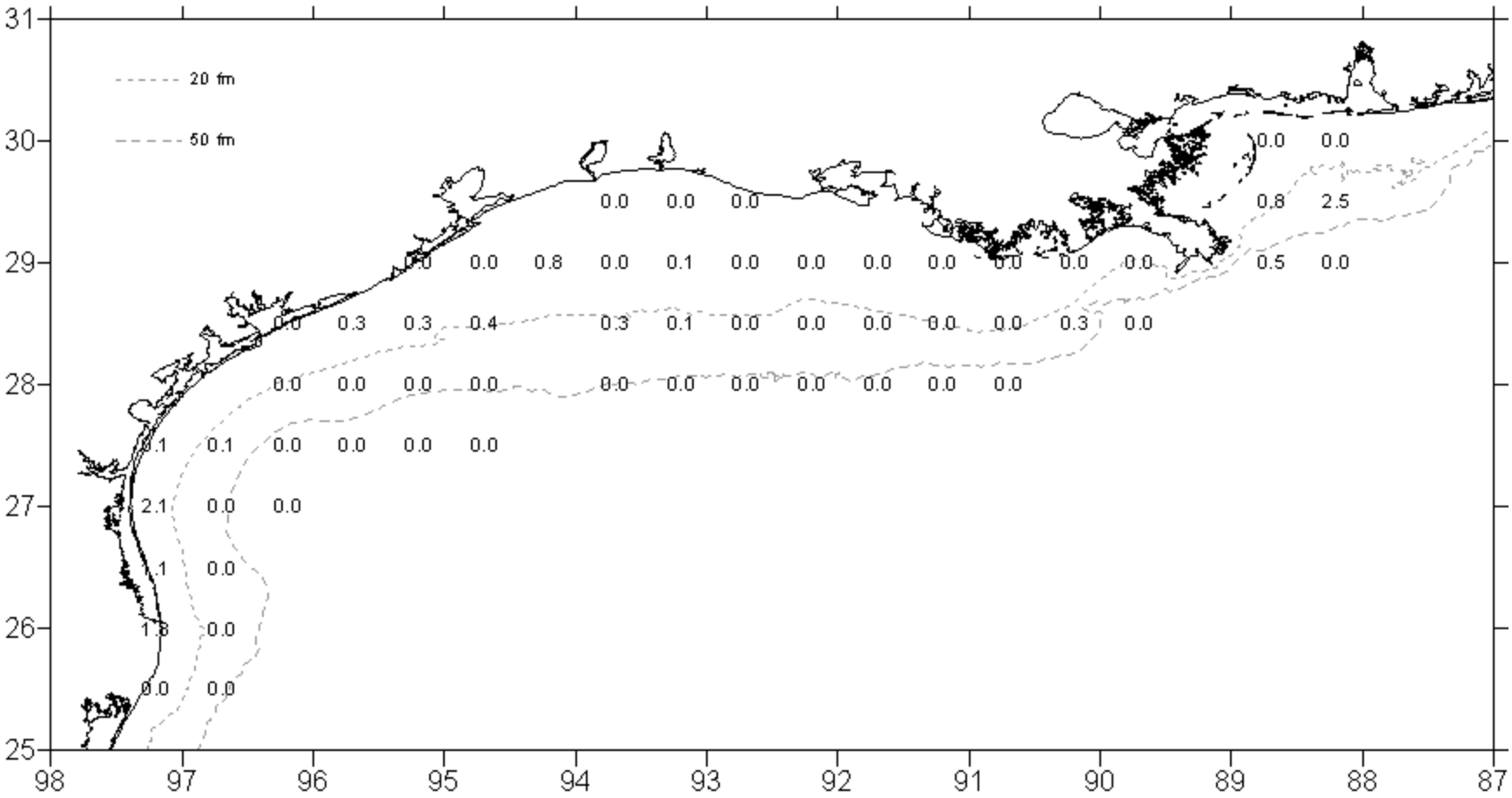


Figure 37. Pink shrimp, Penaeus duorarum, lb/hour for June-July 1999.

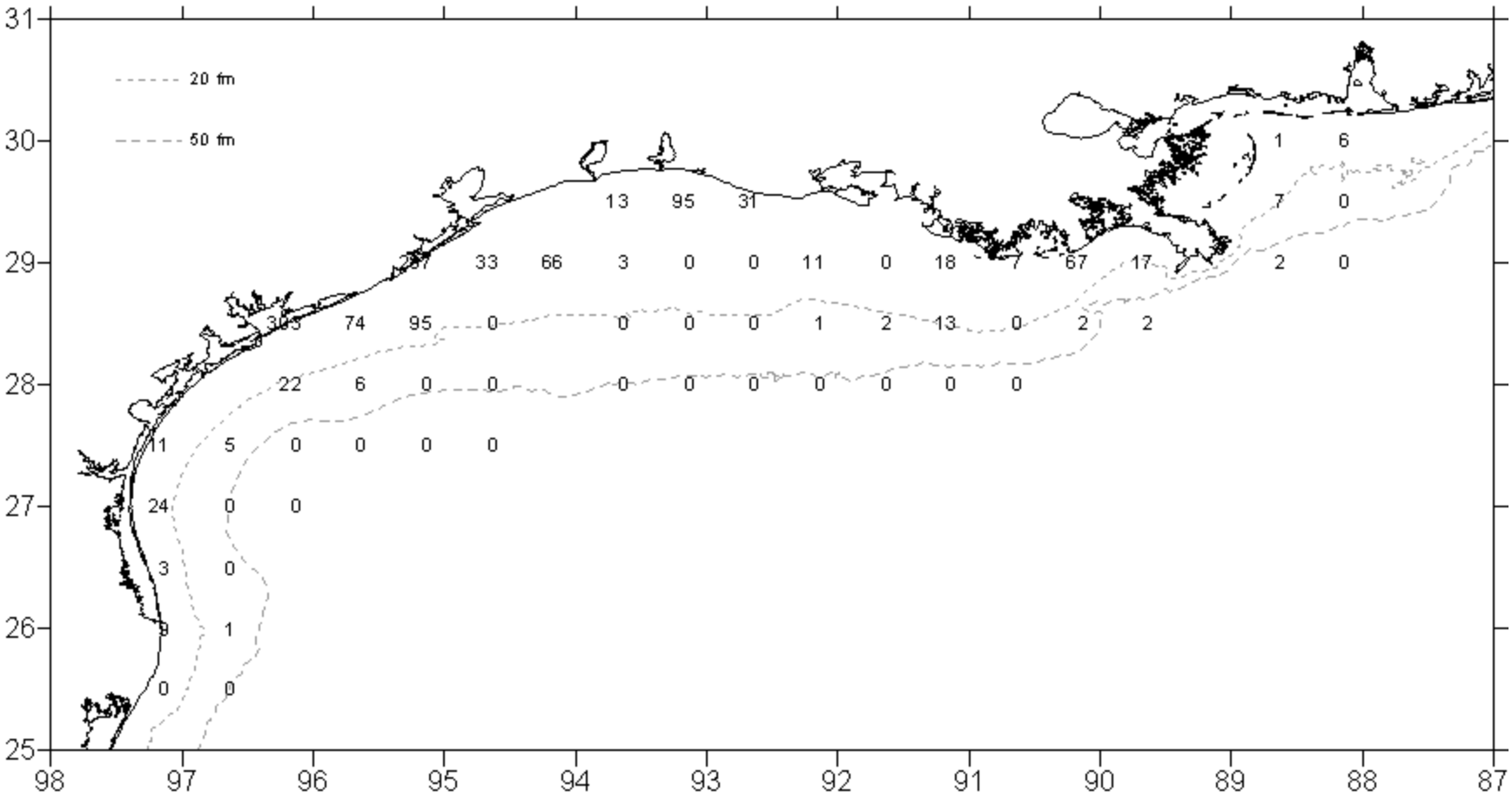


Figure 38. White shrimp, Penaeus setiferus, number/hour for June-July 1999.

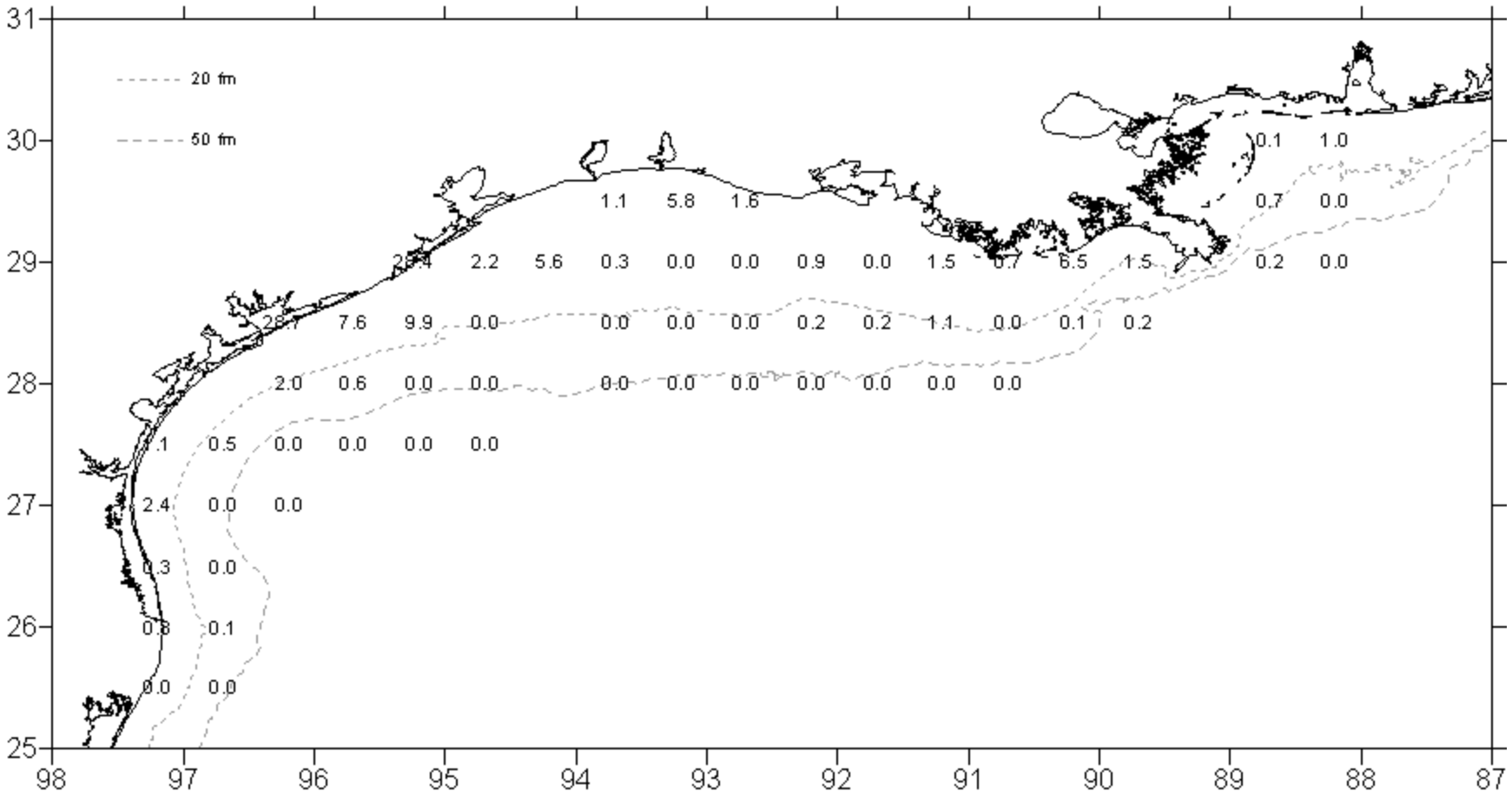


Figure 39. White shrimp, Penaeus setiferus, lb/hour for June-July 1999.

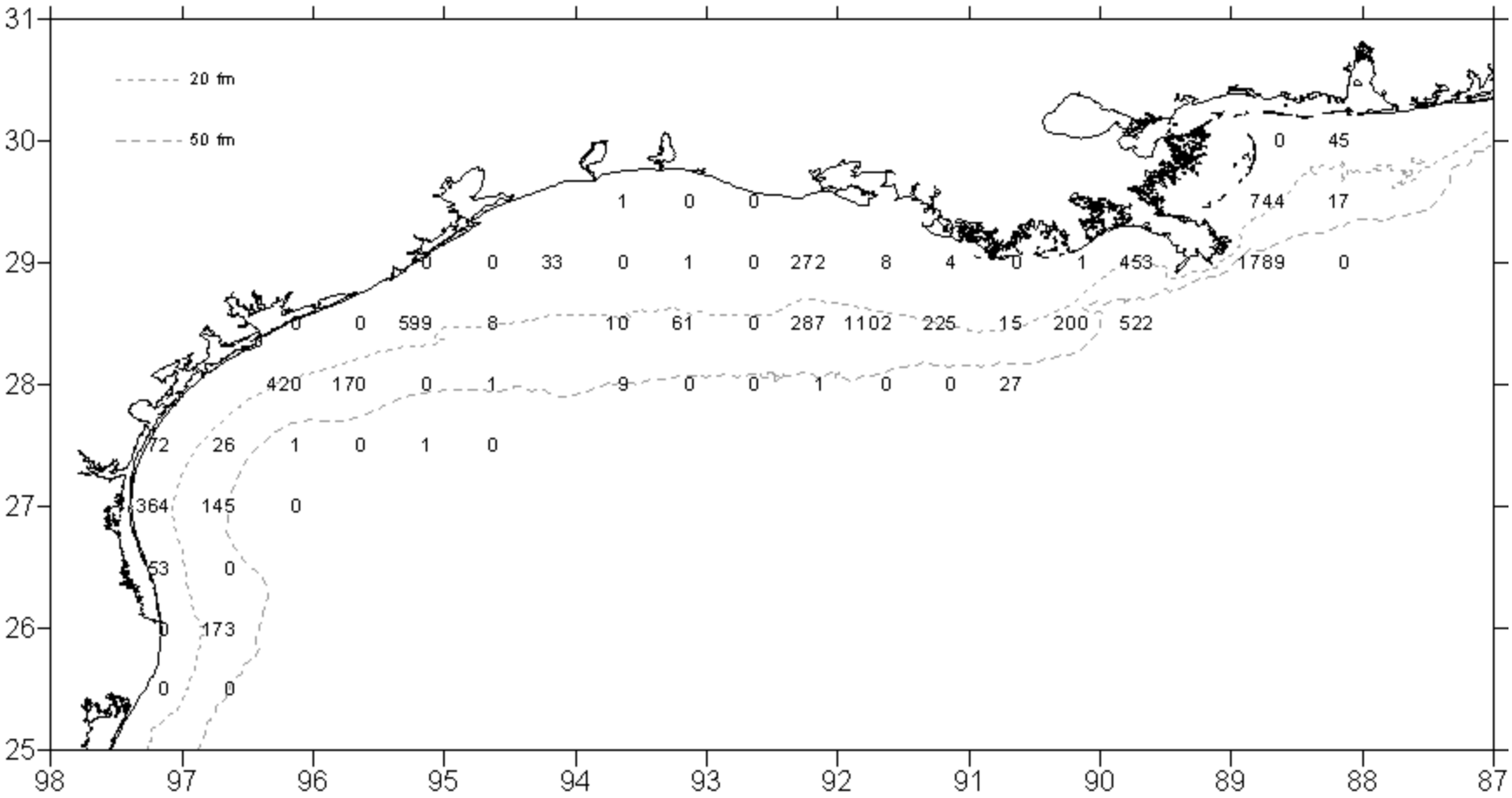


Figure 40. Roughback shrimp, Trachypenaeus similis, number/hour for June-July 1999.

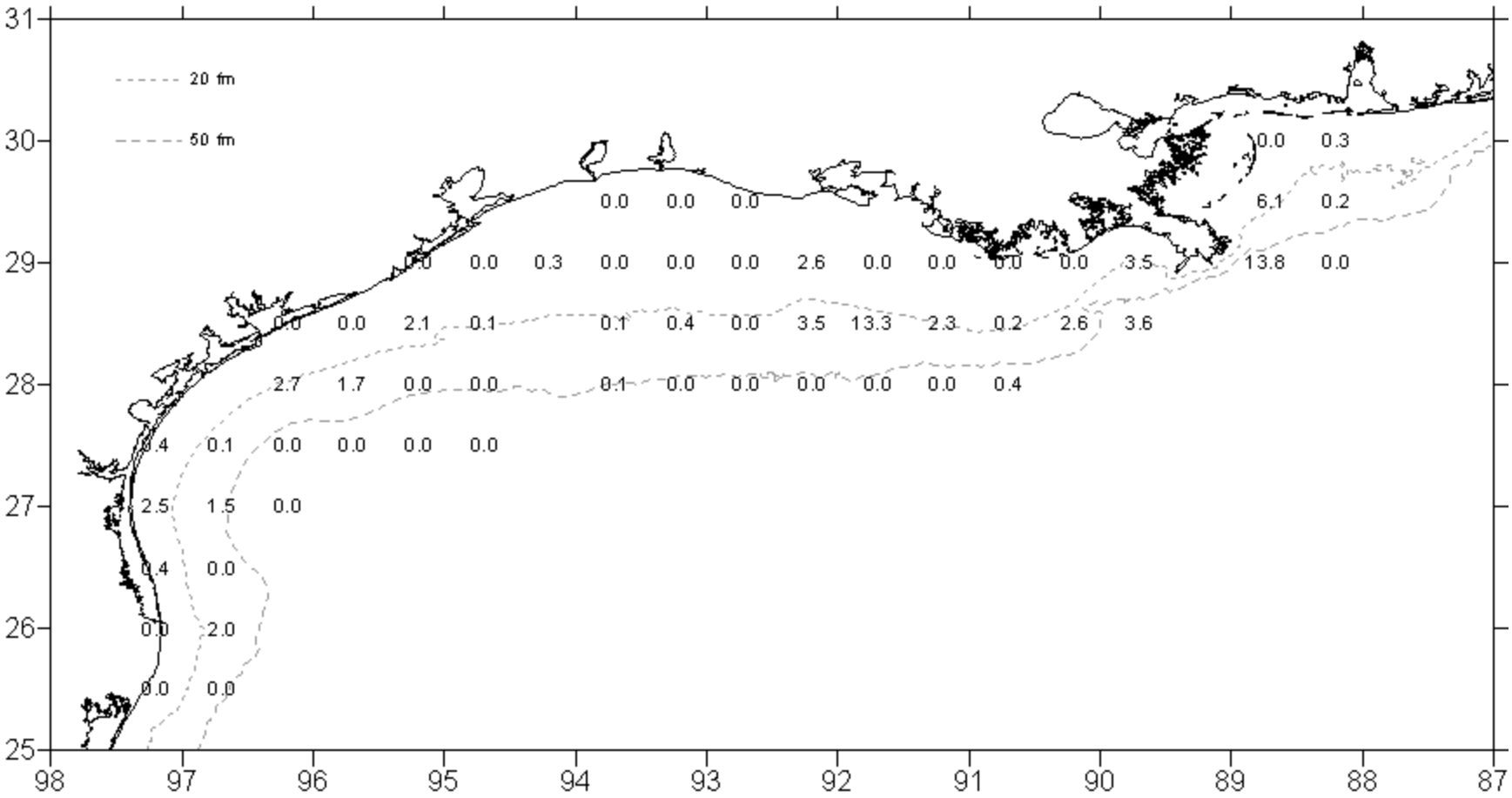


Figure 41. Roughback shrimp, Trachypenaeus similis, lb/hour for June-July 1999.

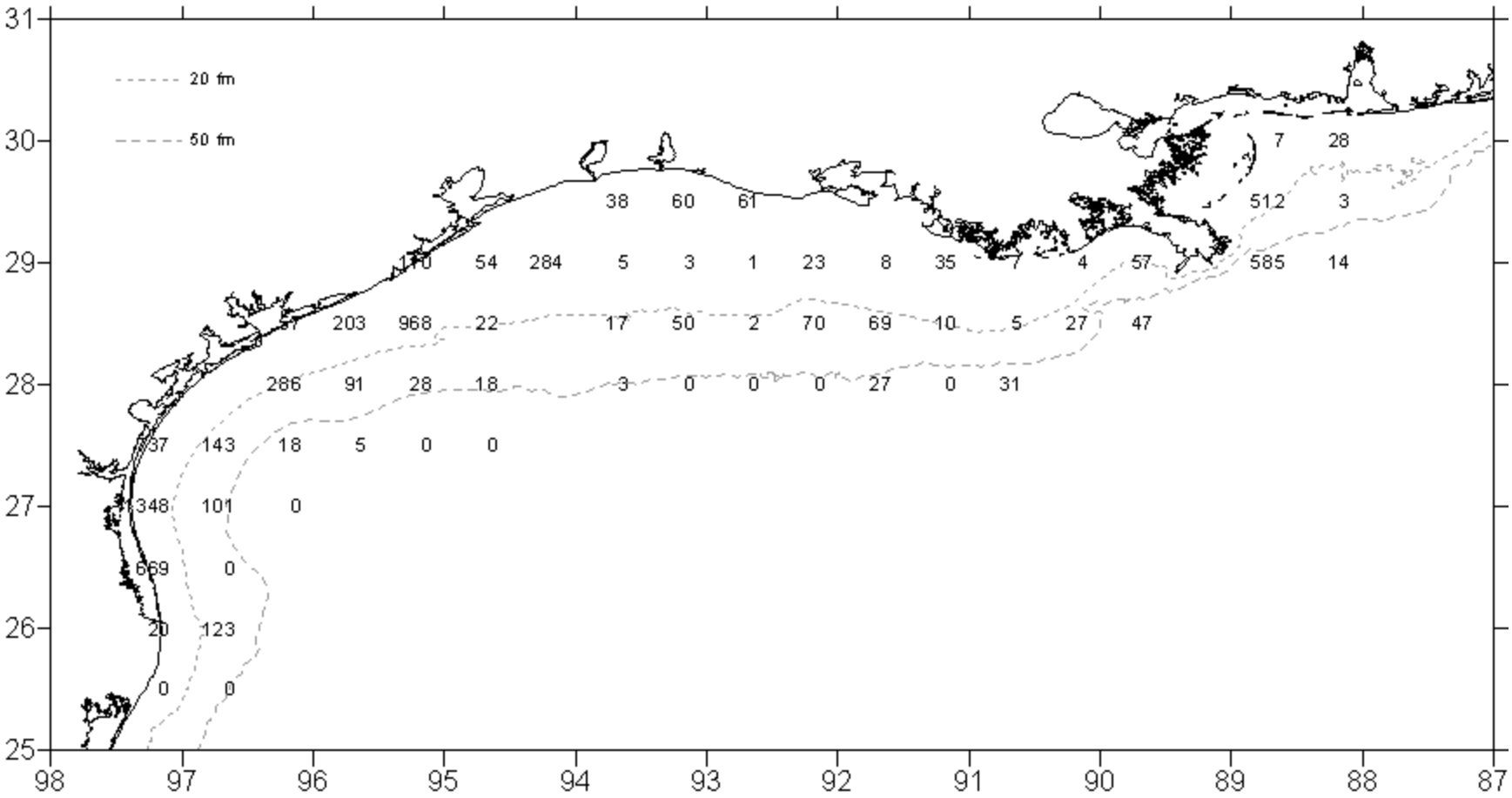


Figure 42. Lesser blue crab, Callinectes similis, number/hour for June-July 1999.

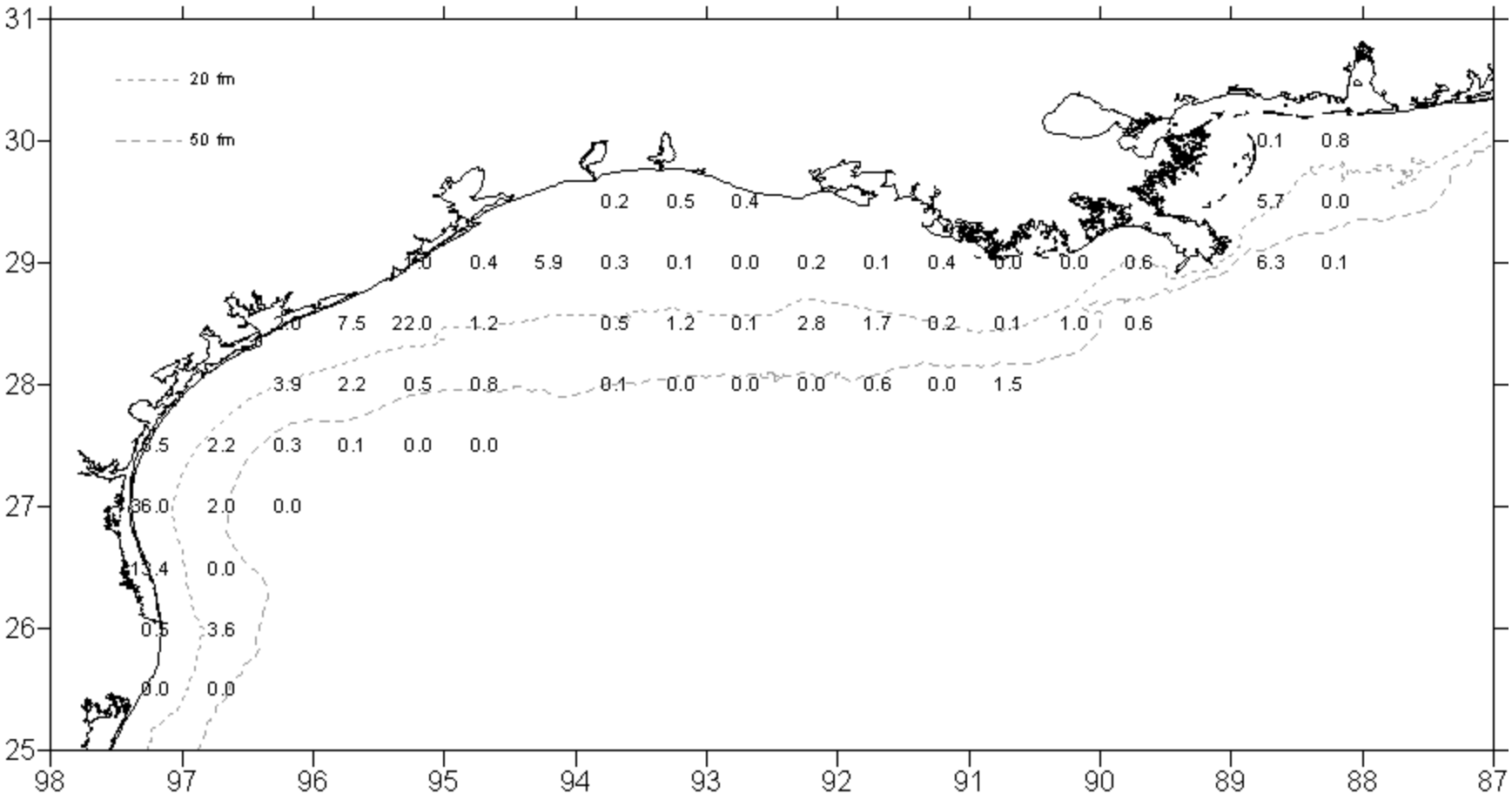


Figure 43. Lesser blue crab, Callinectes similis, lb/hour for June-July 1999.

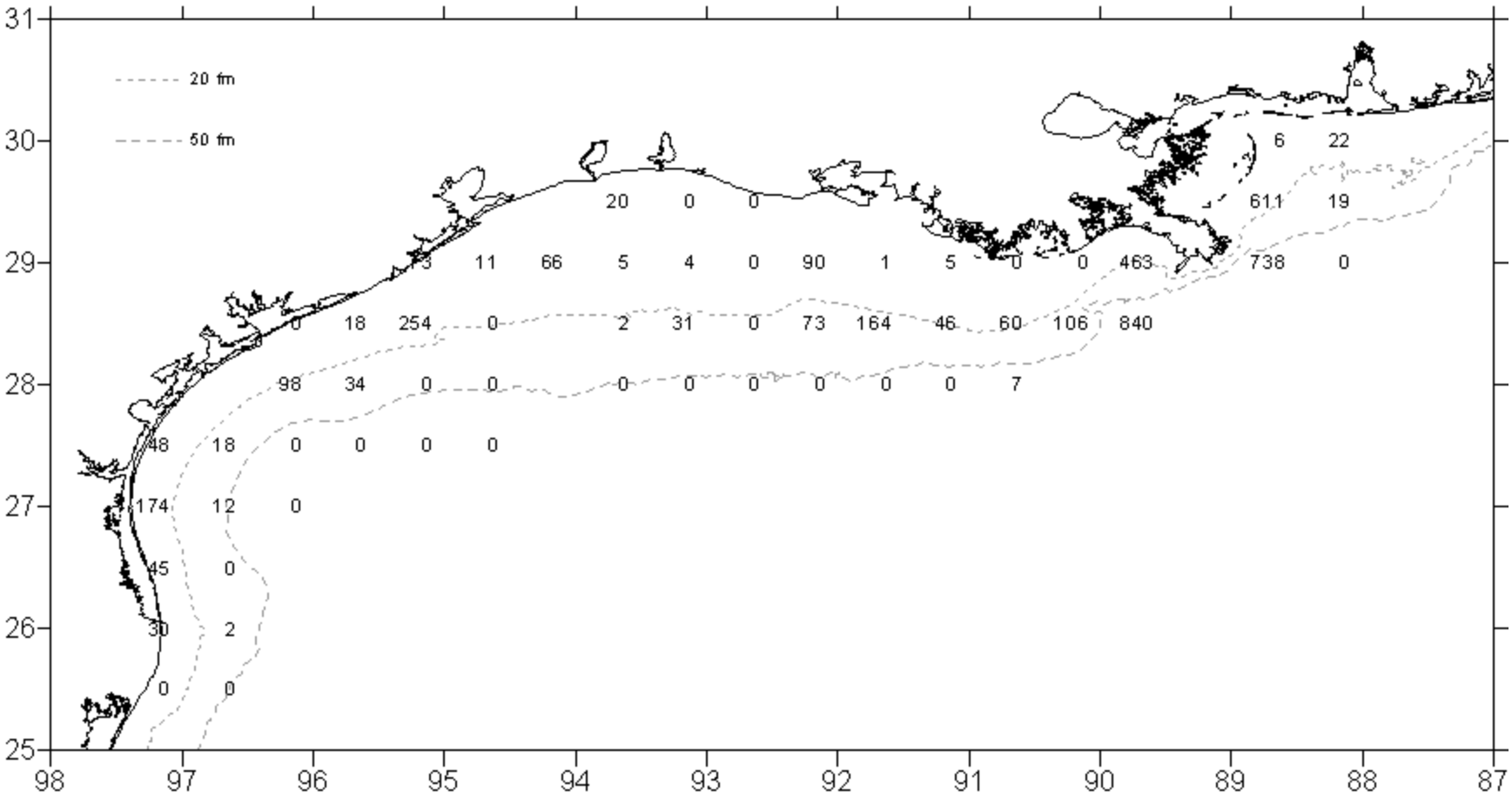


Figure 44. Mantis shrimp, Squilla empusa, number/hour for June-July 1999.

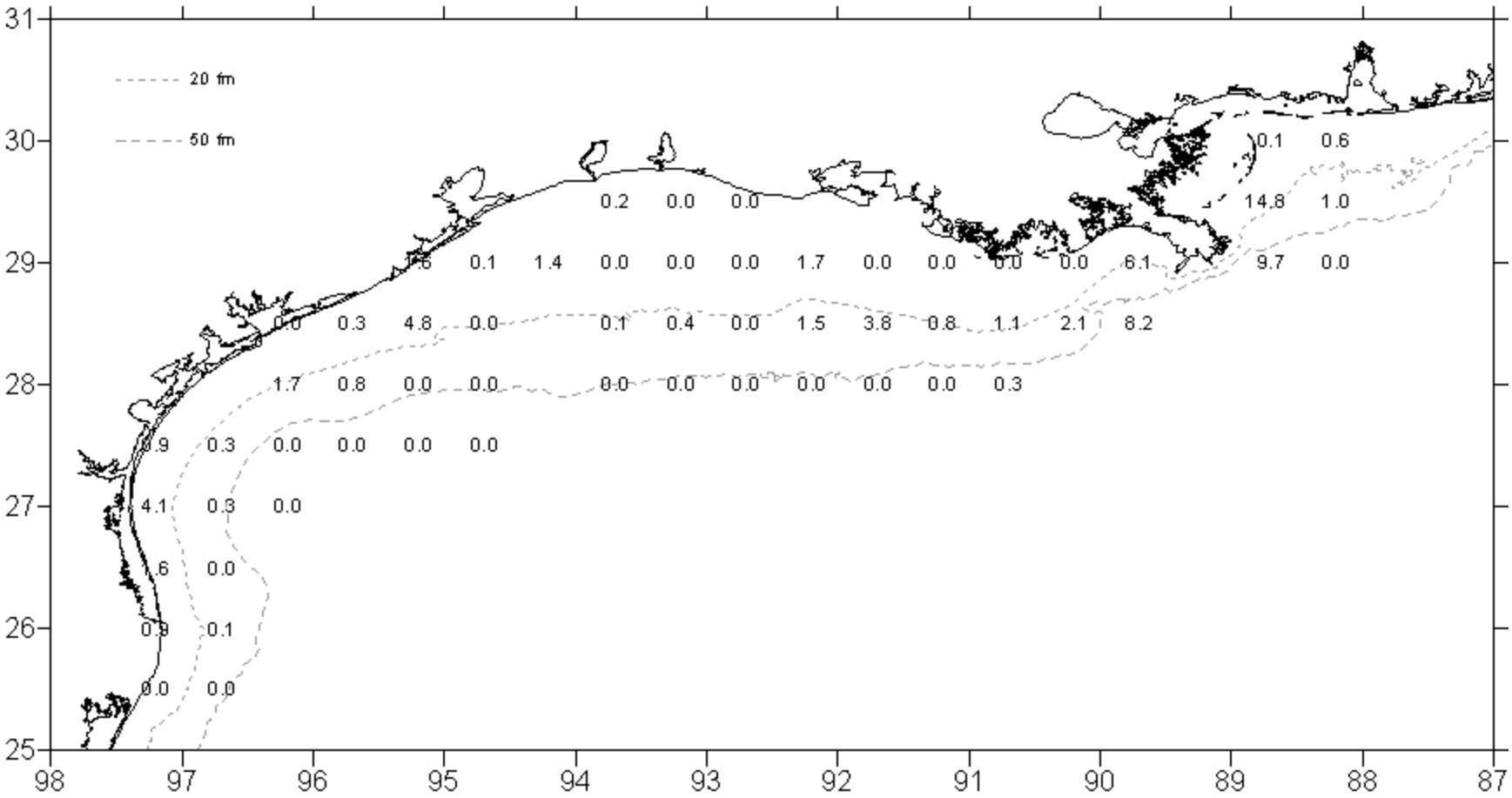


Figure 45. Mantis shrimp, Squilla empusa, lb/hour for June-July 1999.

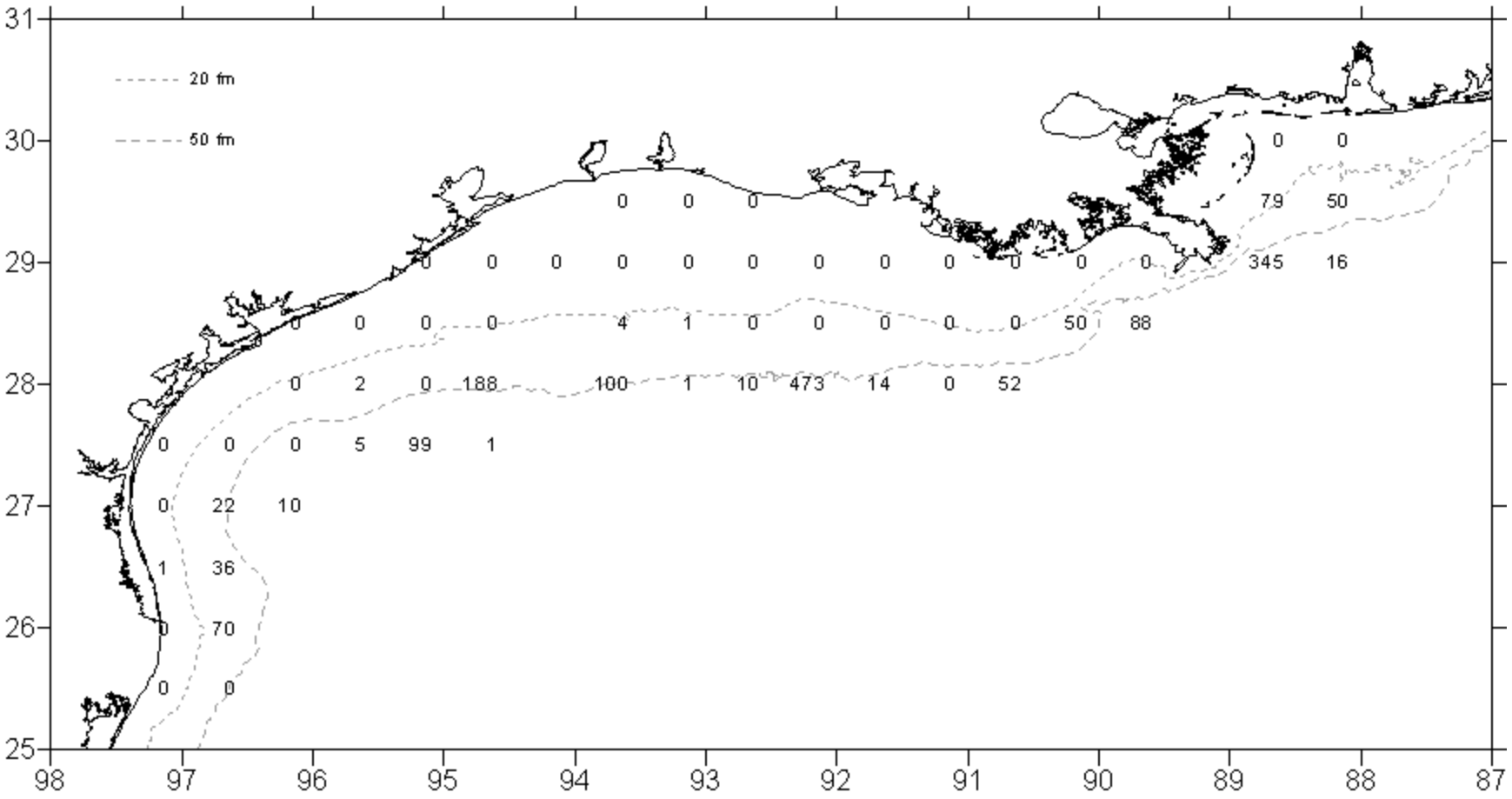


Figure 46. Longspine swimming crab, Portunis spinicarpus, number/hour for June-July 1999.

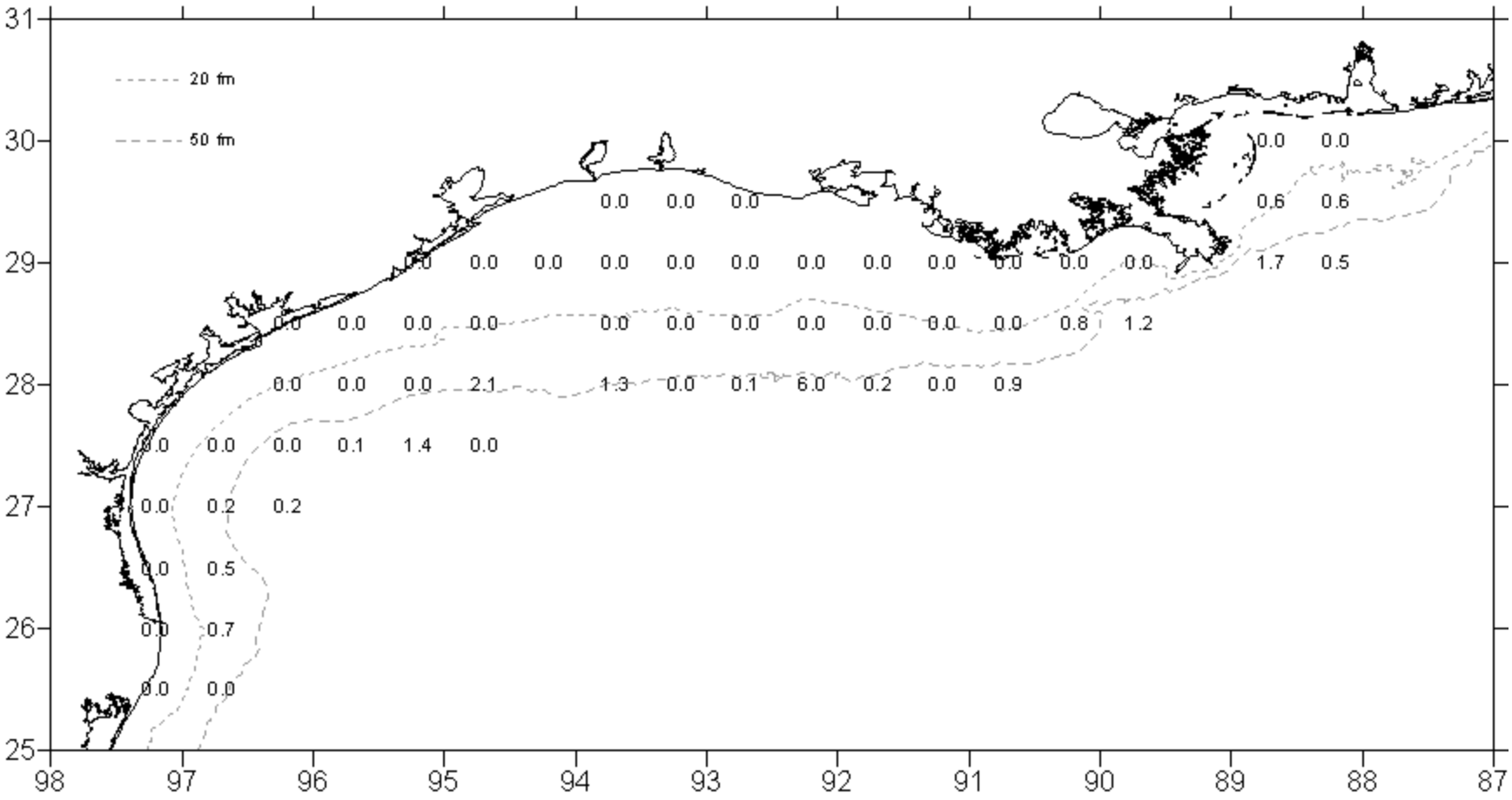


Figure 47. Longspine swimming crab, Portunis spinicarpus, lb/hour for June-July 1999.

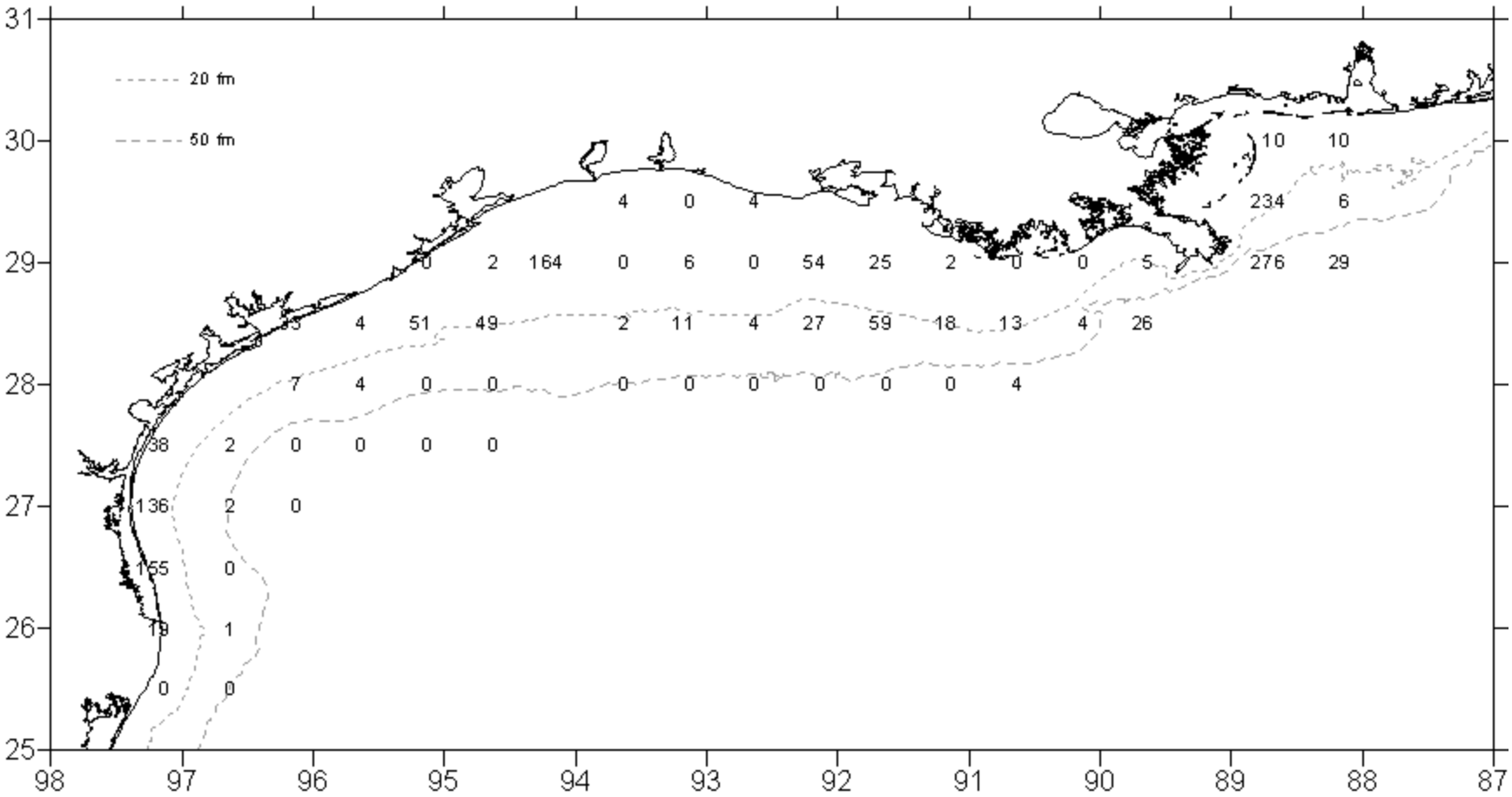


Figure 48. Irridescent swimming crab, Portunus gibbesii, number/hour for June-July 1999.

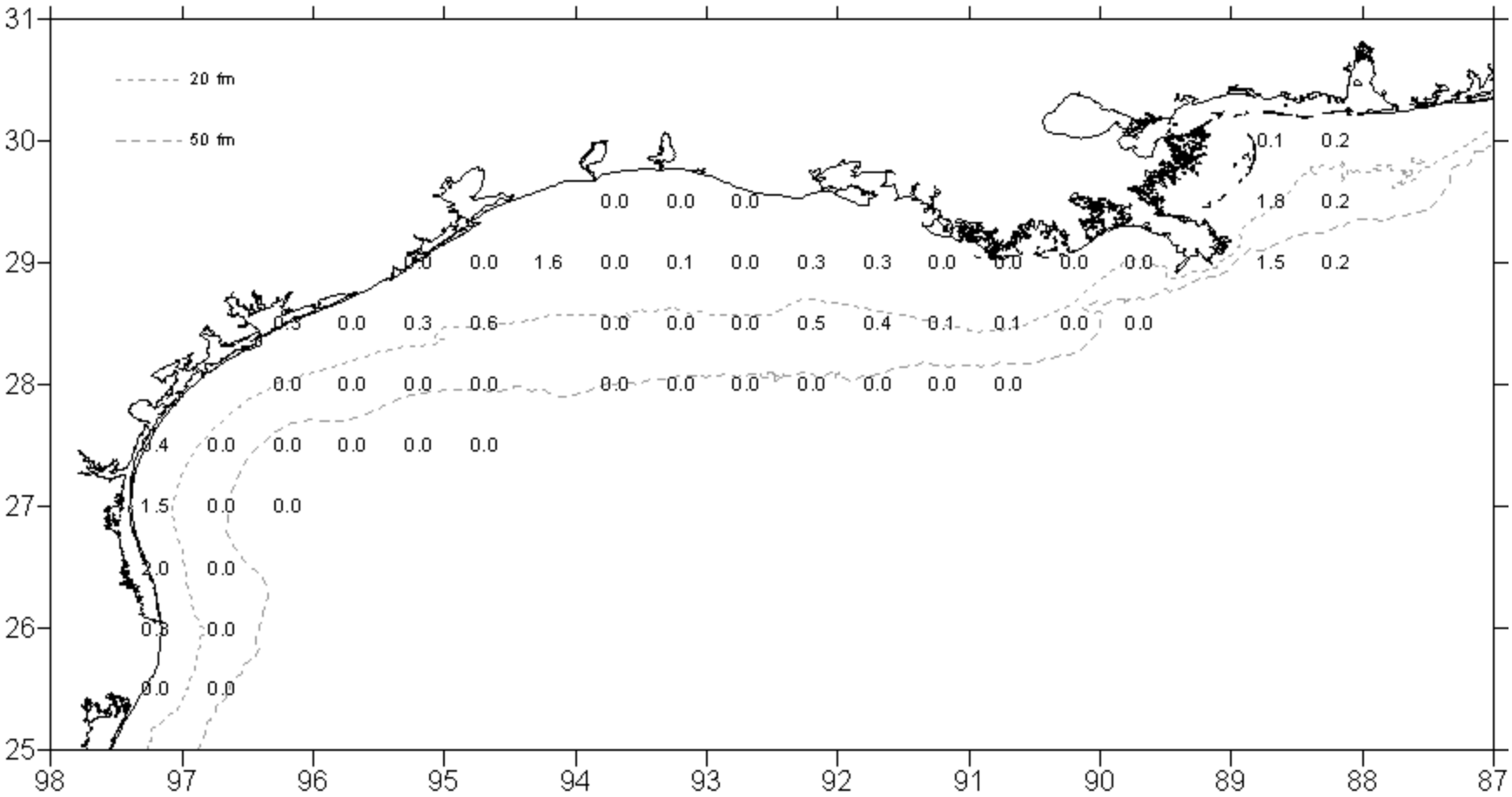


Figure 49. Irridescent swimming crab, Portunus gibbesii, lb/hour for June-July 1999.

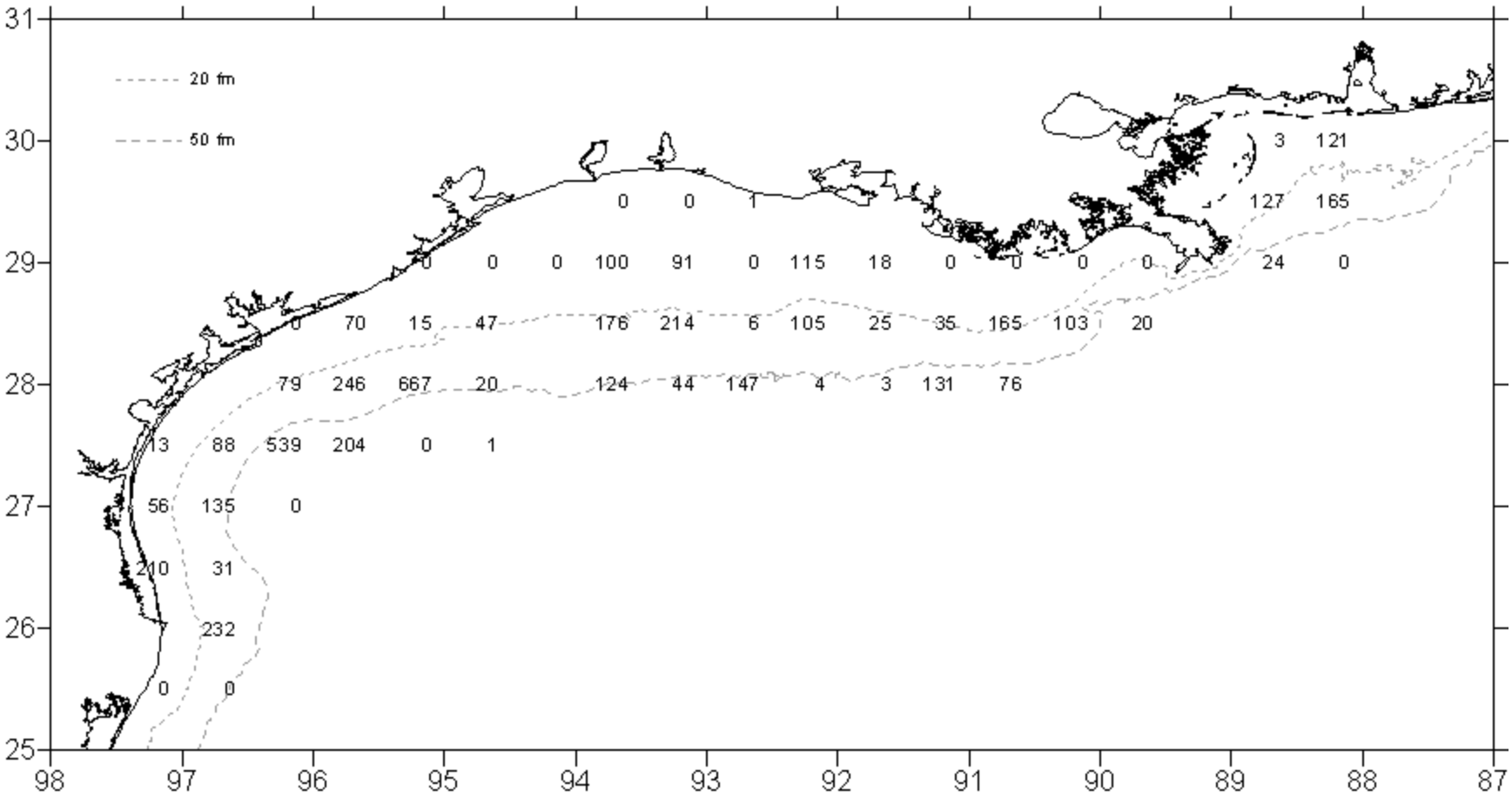


Figure 50. Arrow squid, Loligo pleii, number/hour for June-July 1999.

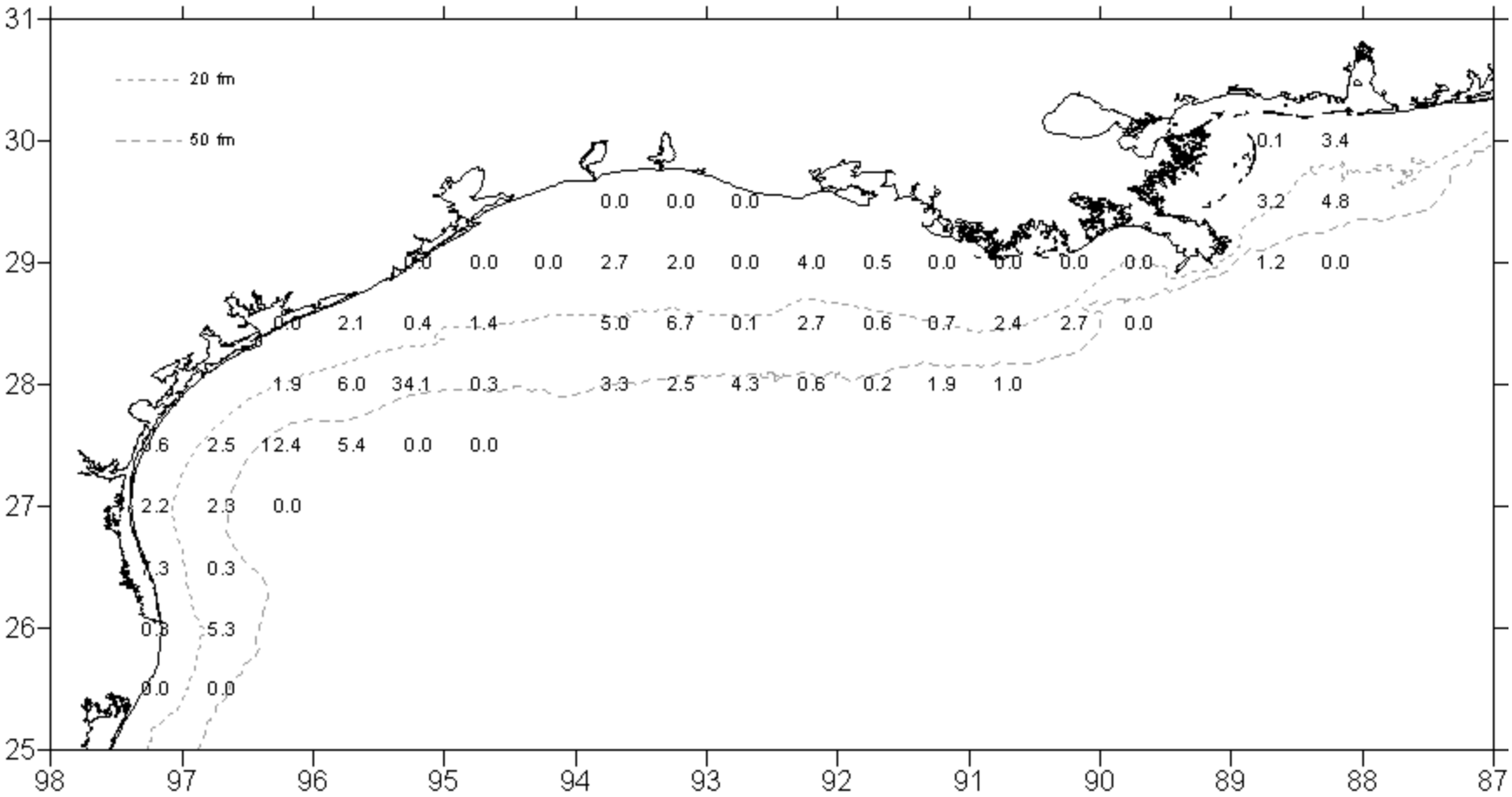


Figure 51. Arrow squid, Loligo pleii, lb/hour for June-July 1999.

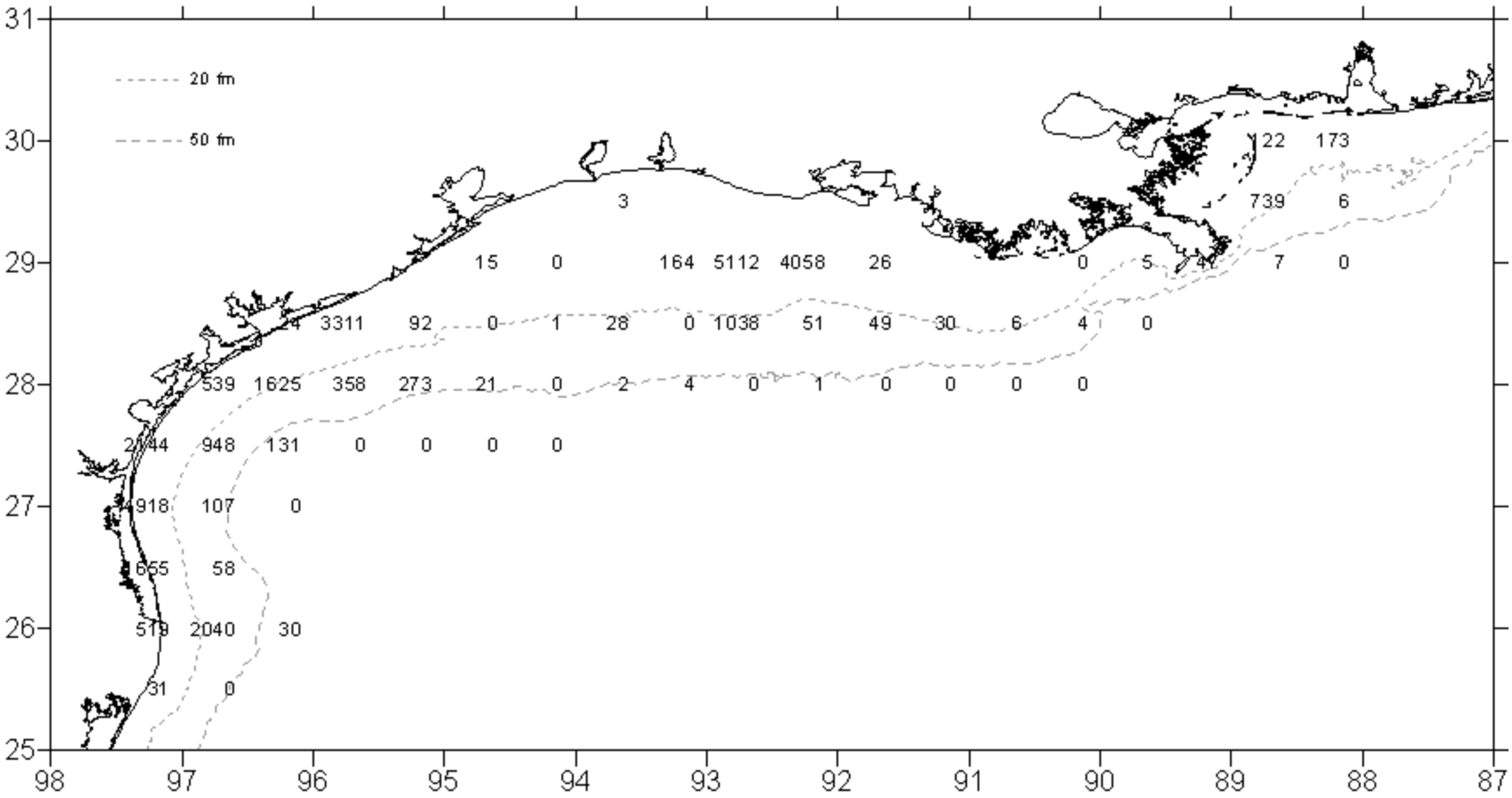


Figure 52. Atlantic bumper, Chloroscombrus chrysurus, number/hour for October-December 1999.

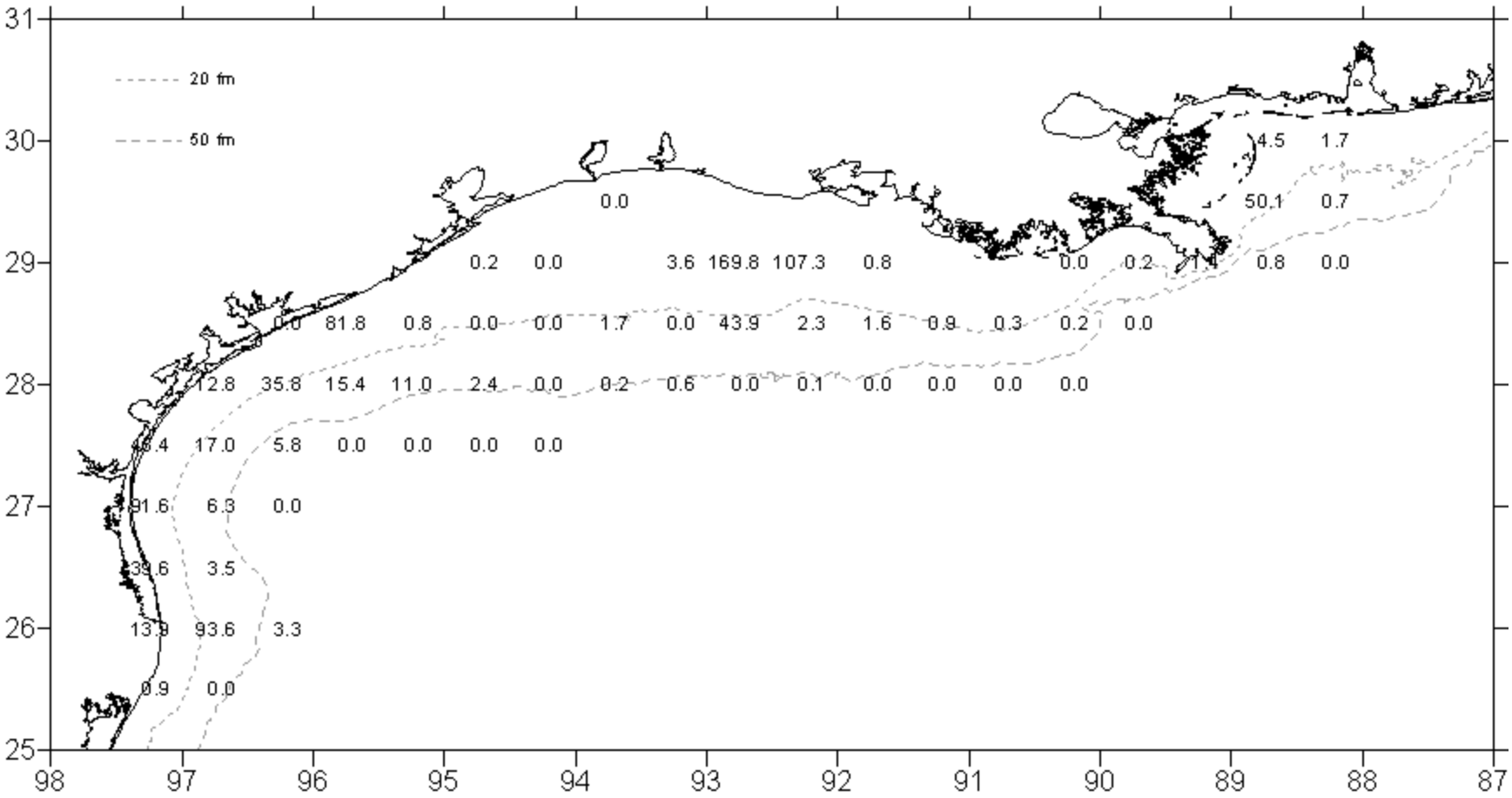


Figure 53. Atlantic bumper, Chloroscombrus chrysurus, lb/hour for October-December 1999.

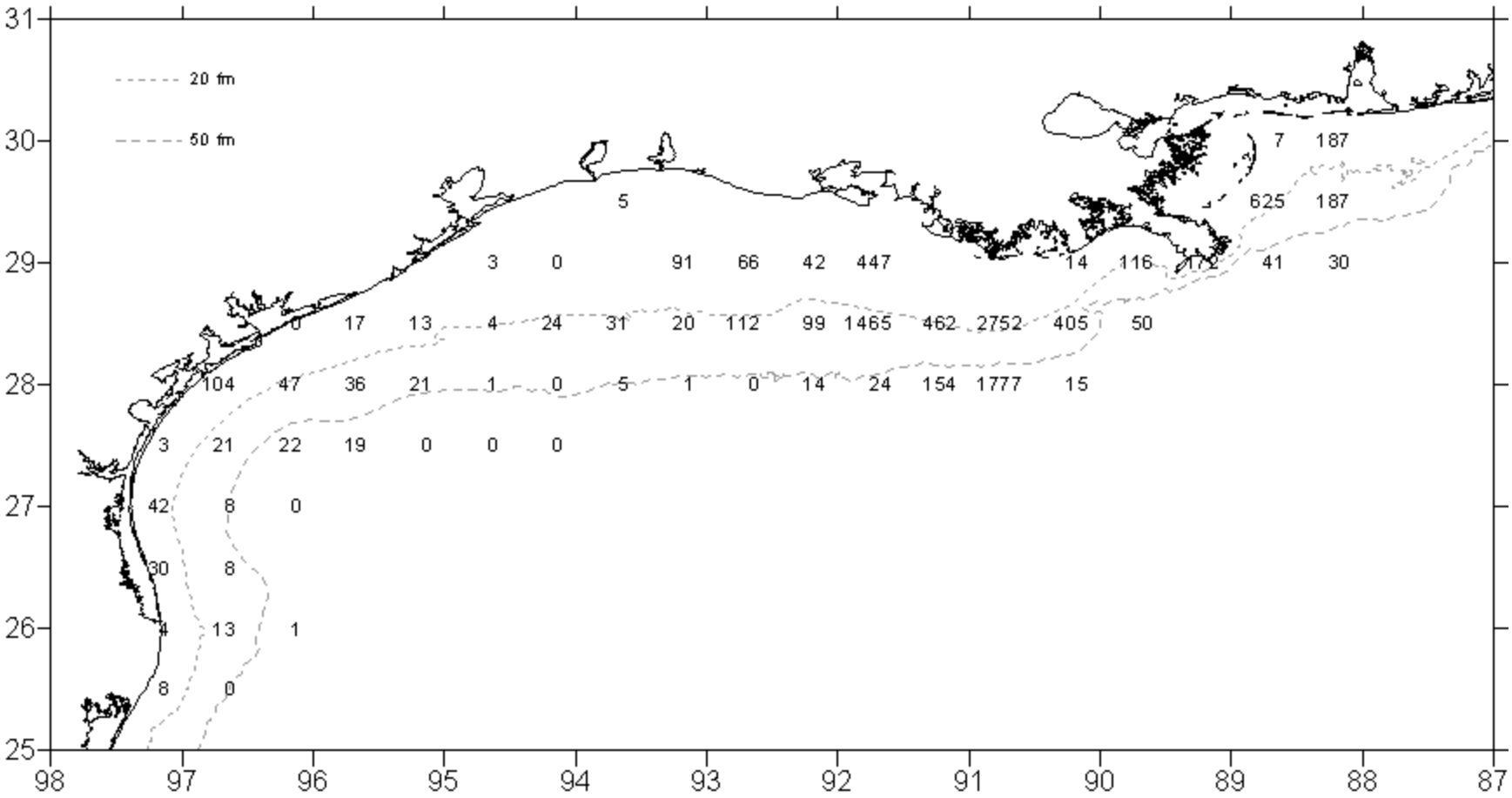


Figure 54. Atlantic croaker, Micropogonias undulatus, number/hour for October-December 1999.

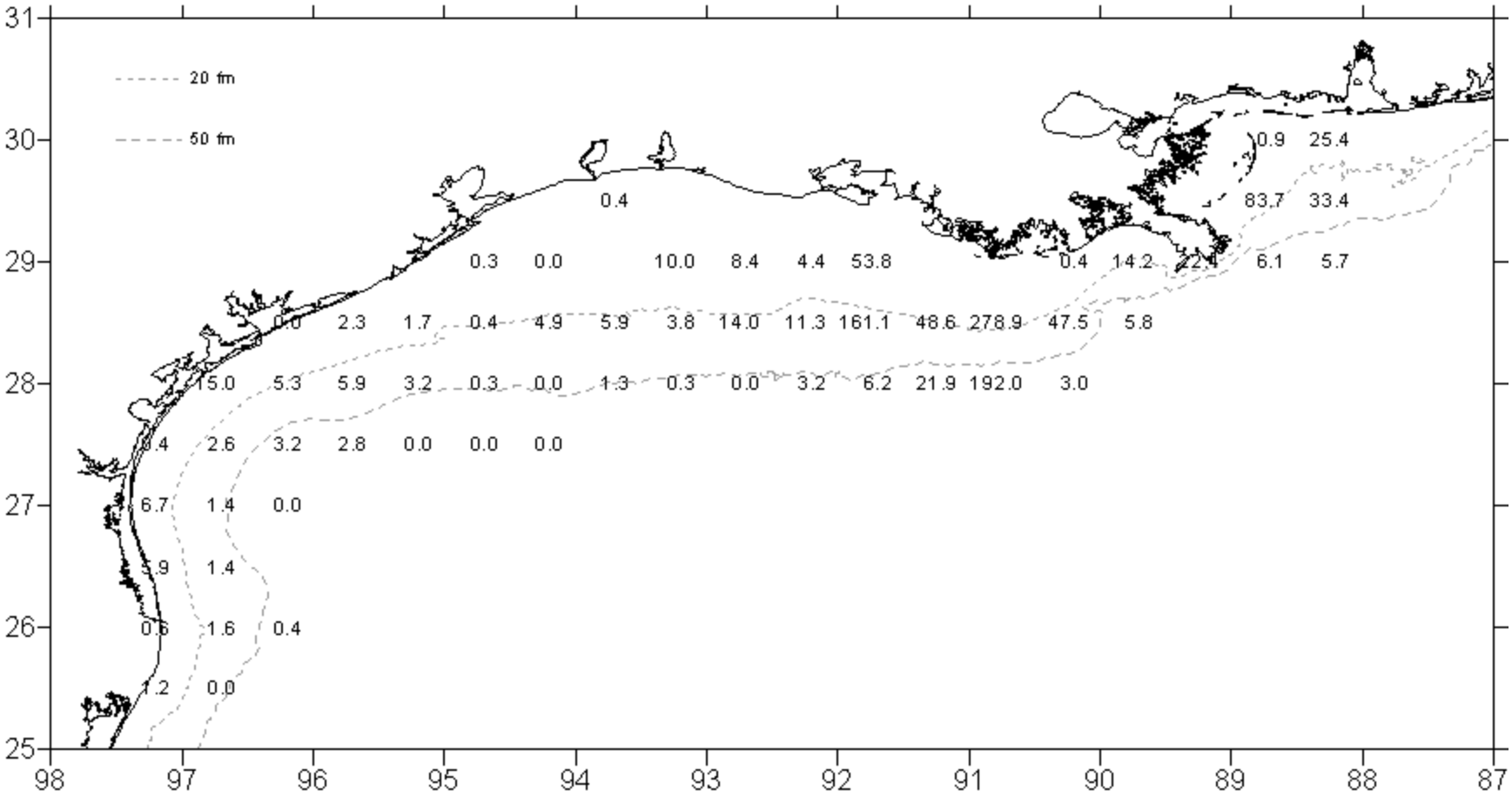


Figure 55. Atlantic croaker, Micropogonias undulatus, lb/hour for October-December 1999.

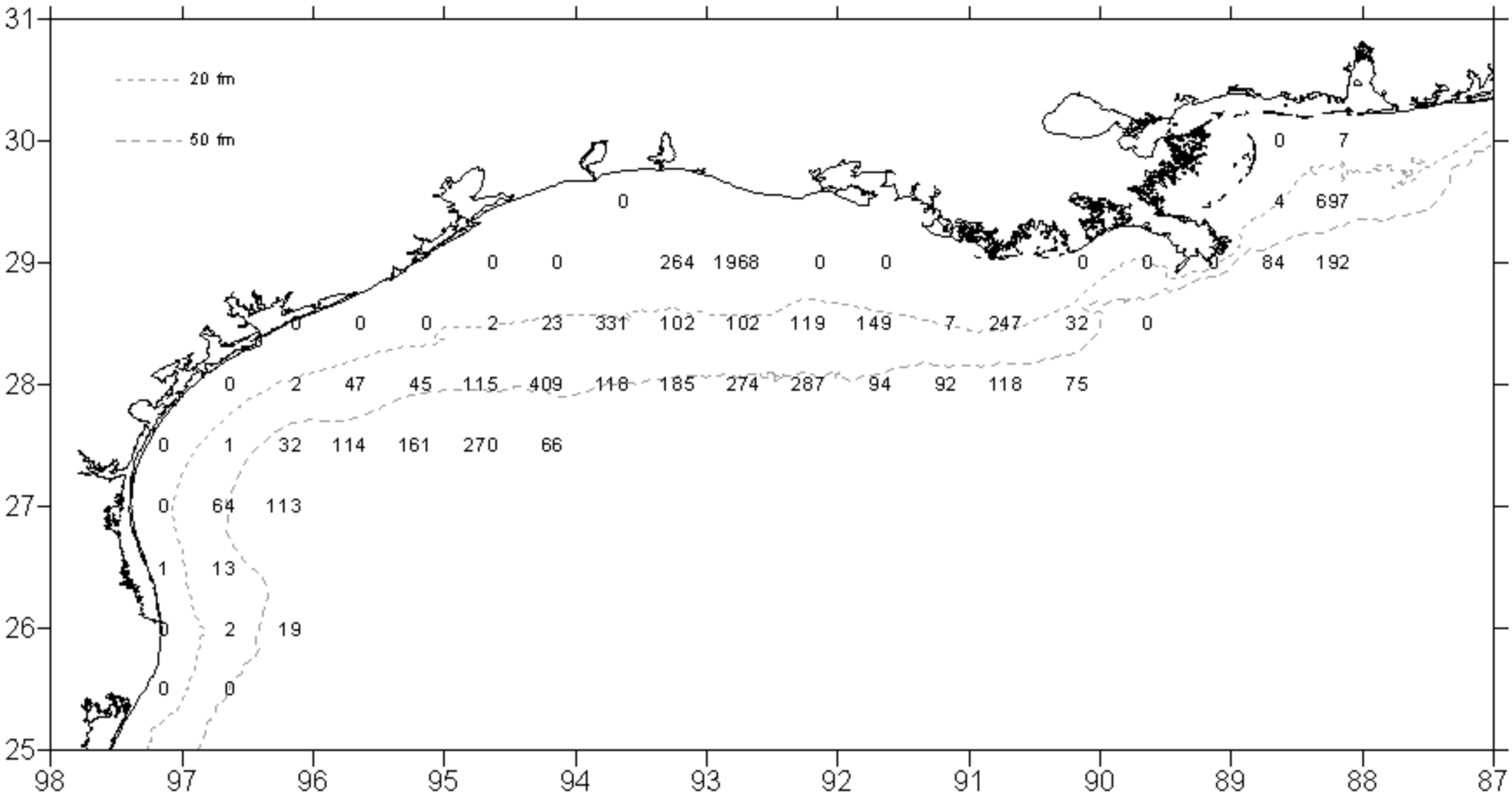


Figure 56. Longspine porgy, Stenotomus caprinus, number/hour for October-December 1999.

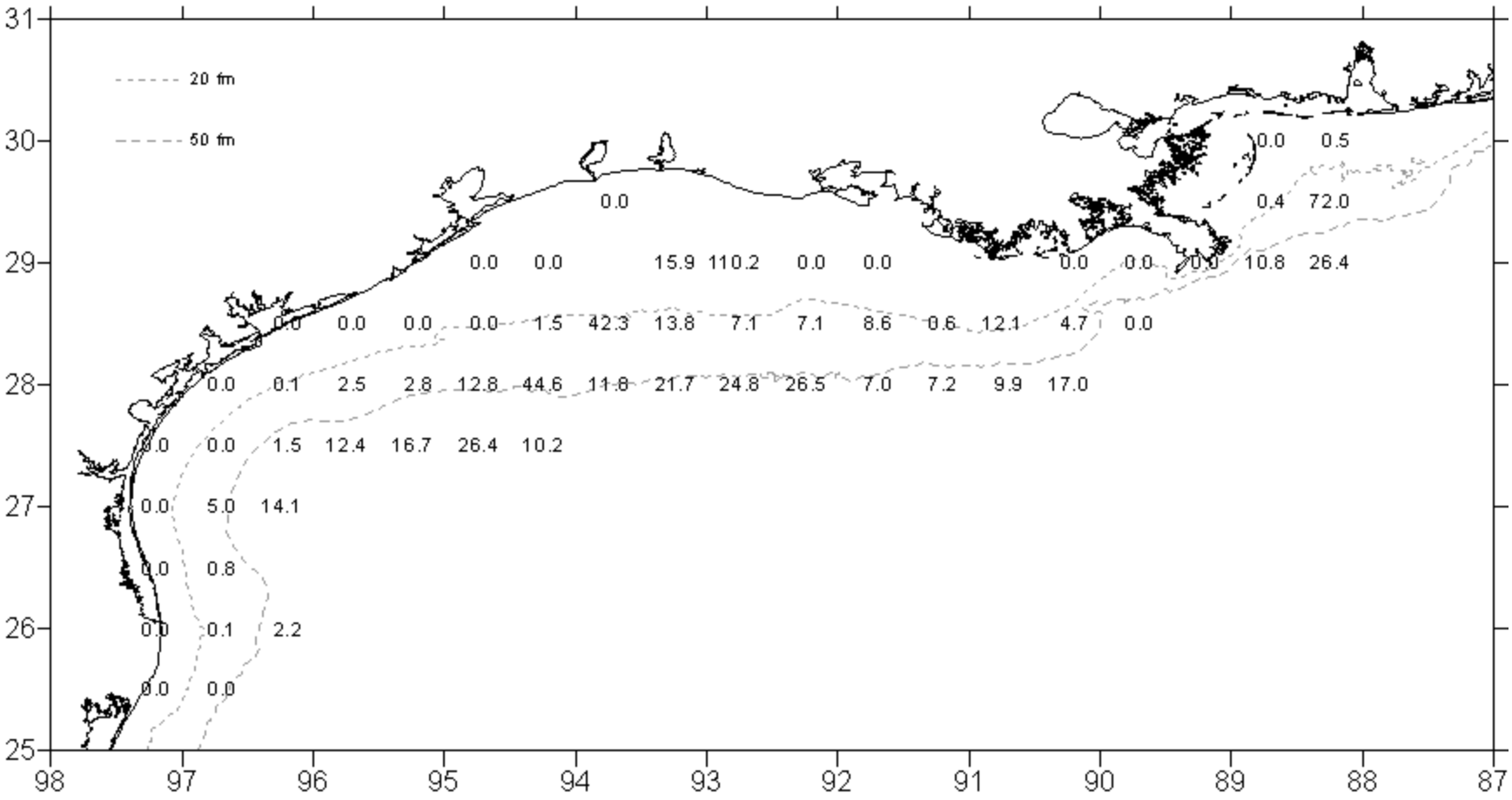


Figure 57. Longspine porgy, Stenotomus caprinus, lb/hour for October-December 1999.

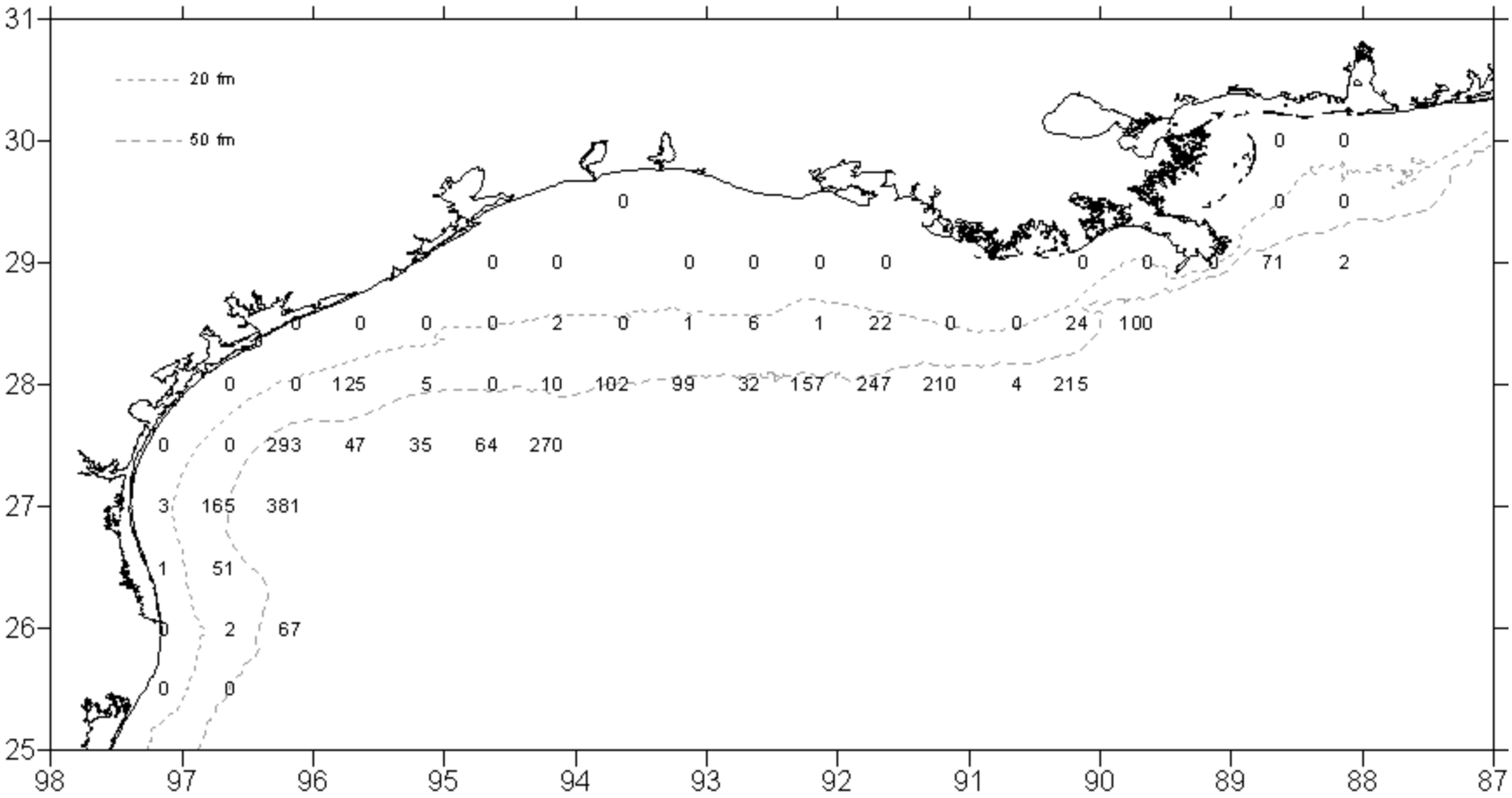


Figure 58. Blackear bass, Serranus altrobranchus, number/hour for October-December 1999.

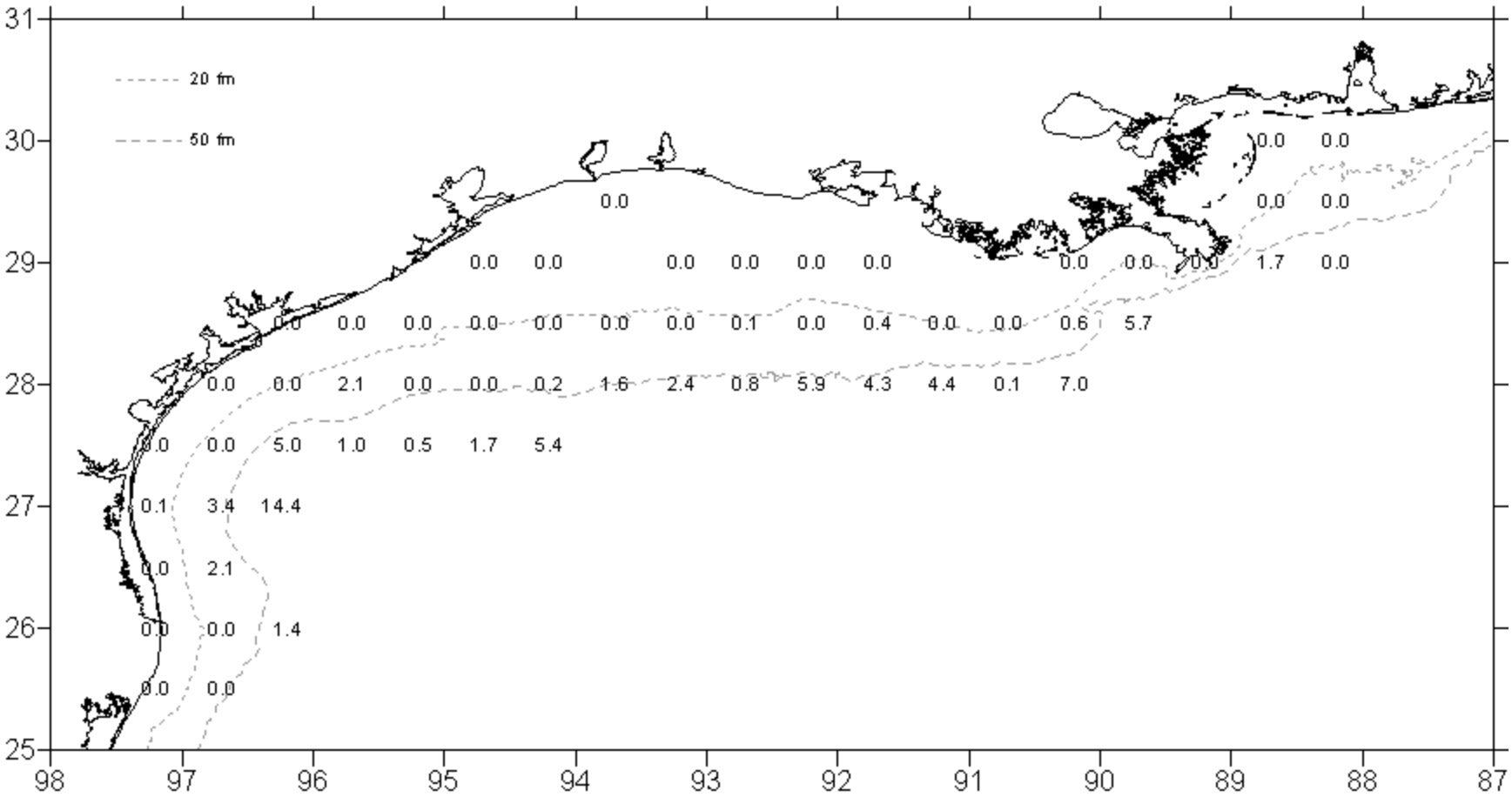


Figure 59. Blackear bass, Serranus altrobranchus, lb/hour for October-December 1999.

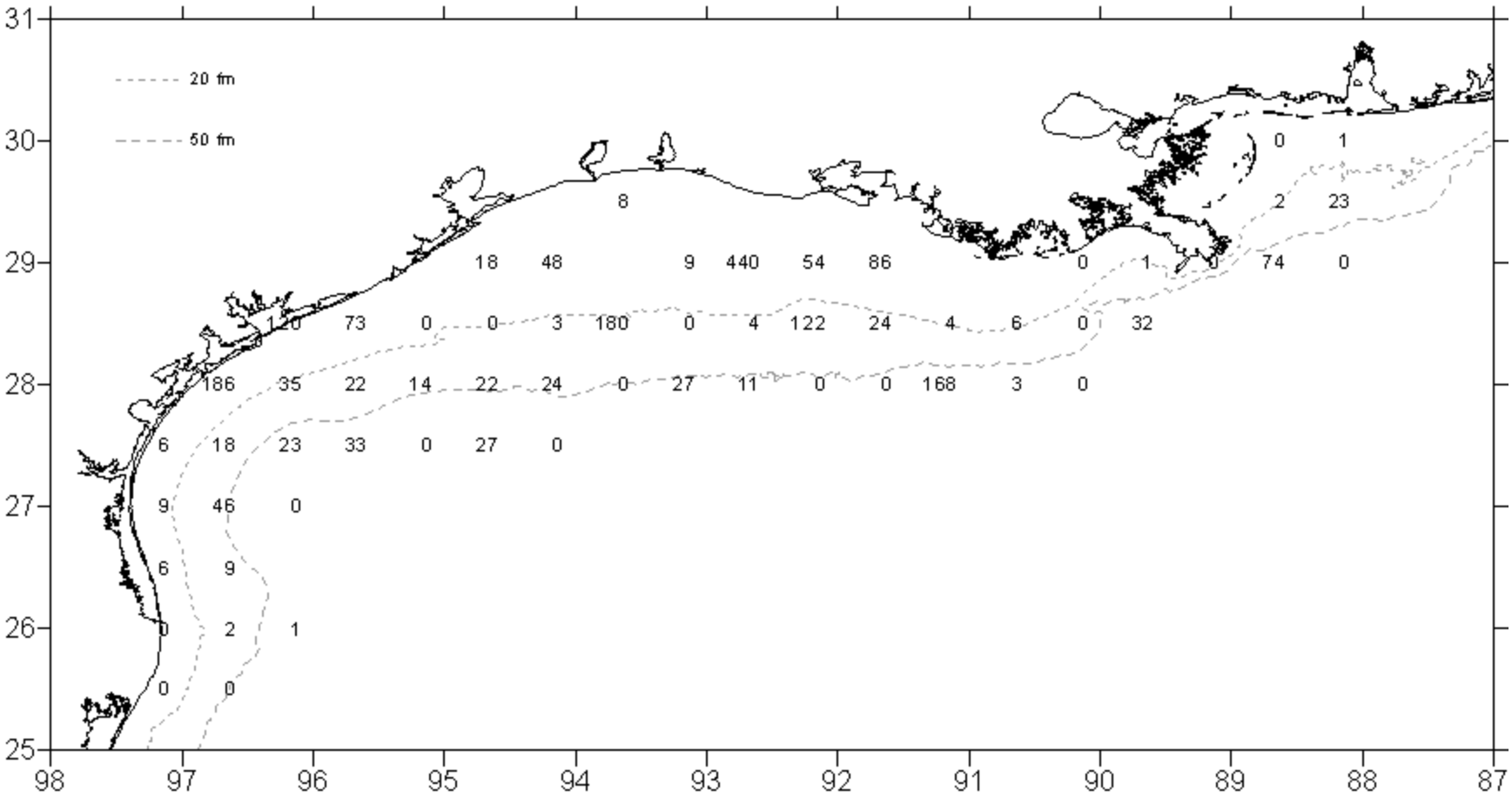


Figure 60. Gulf butterfish, Peprilus burti, number/hour for October-December 1999.

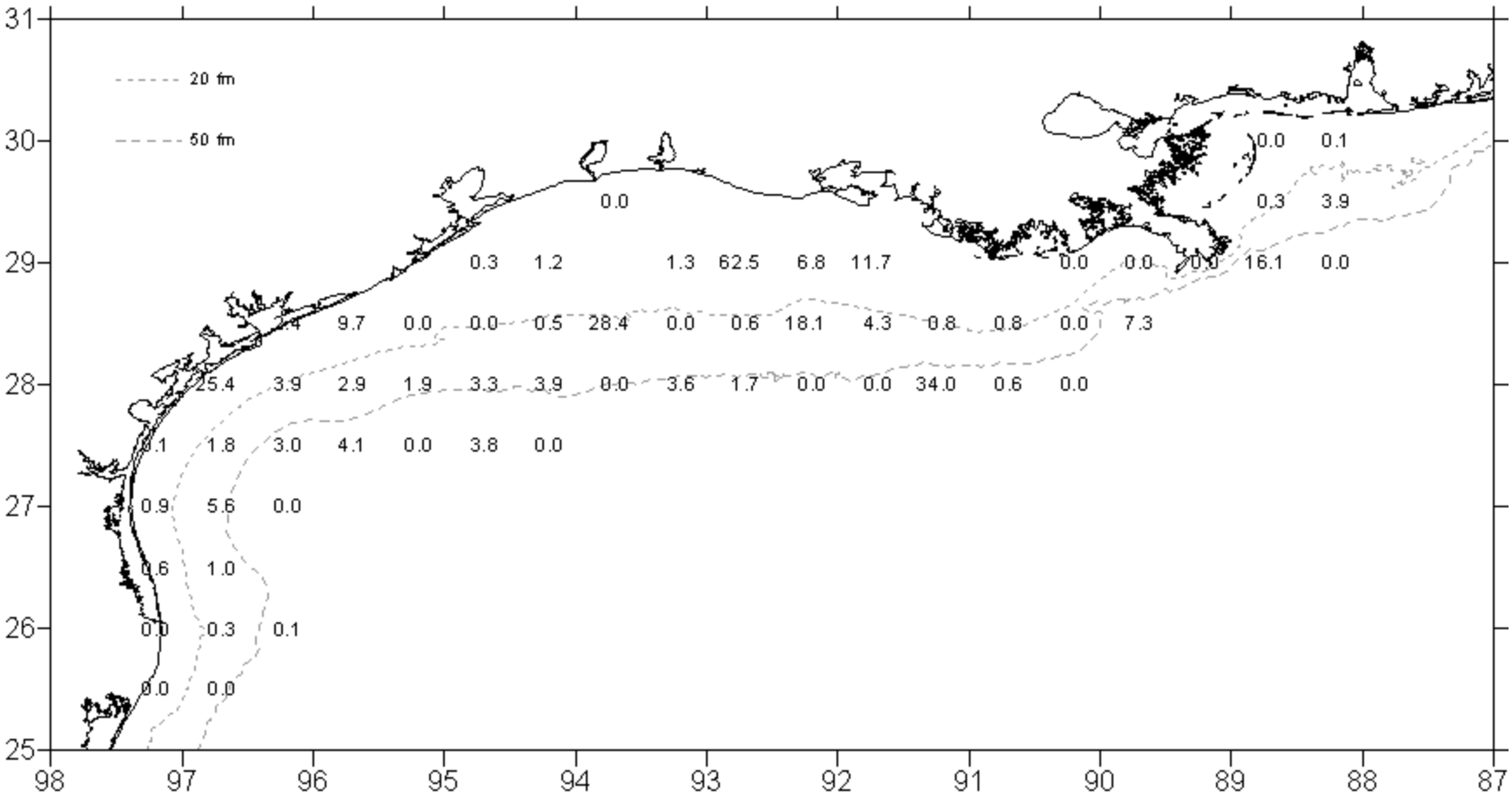


Figure 61. Gulf butterfish, Peprilus burti, lb/hour for October-December 1999.

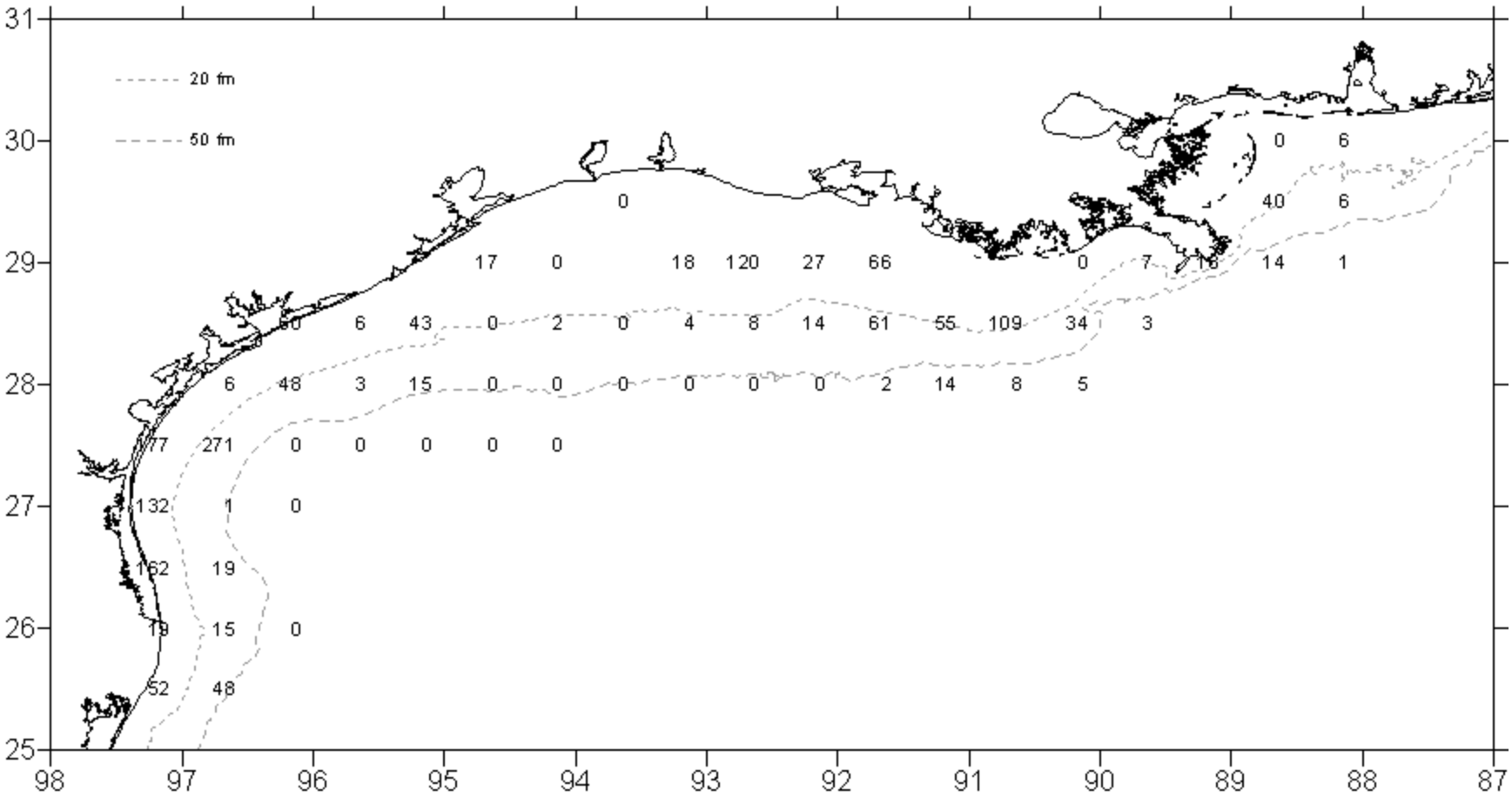


Figure 62. Silver seatrout, Cynoscion nothus, number/hour for October-December 1999.

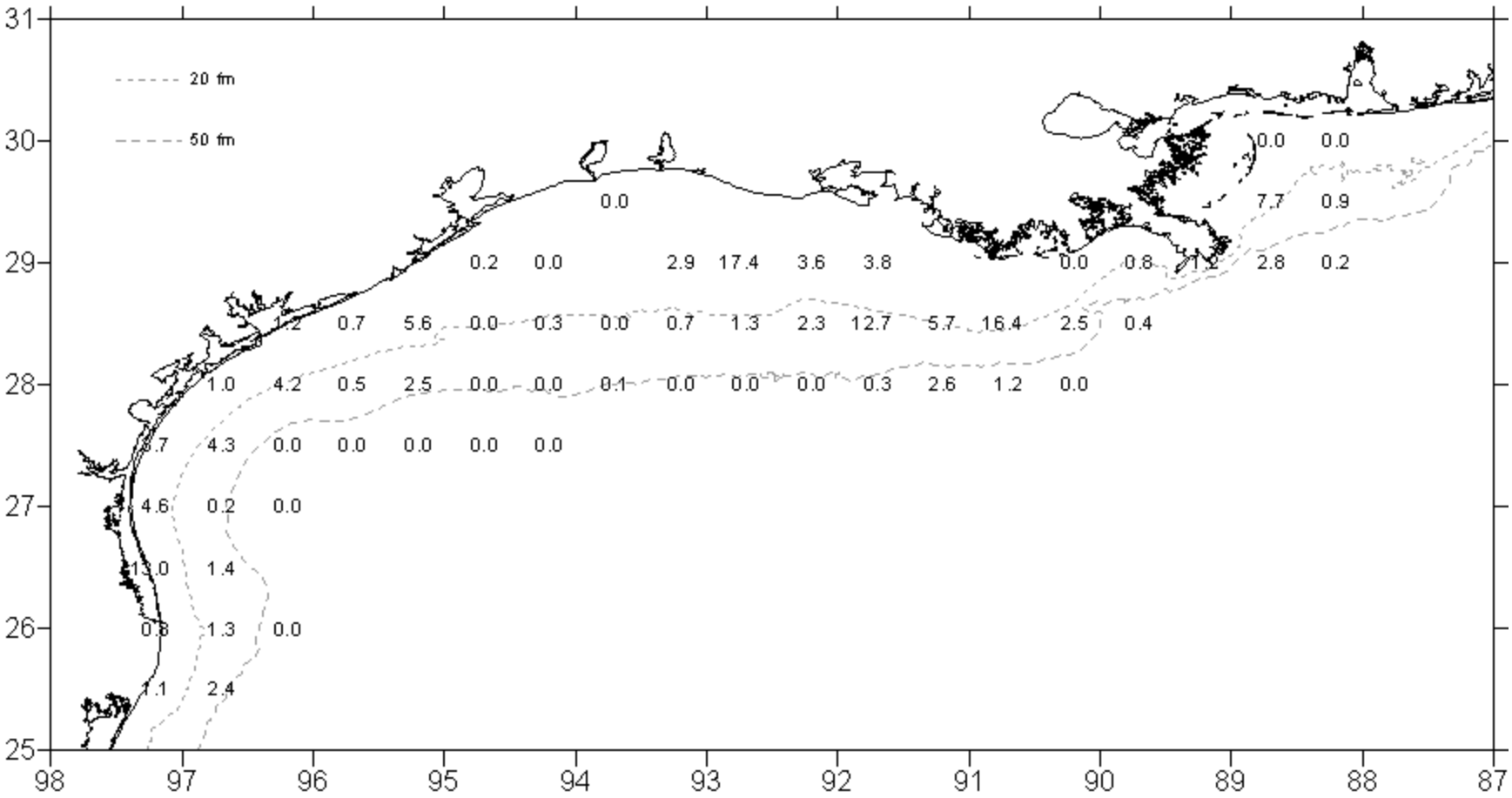


Figure 63. Silver seatrout, Cynoscion nothus, lb/hour for October-December 1999.

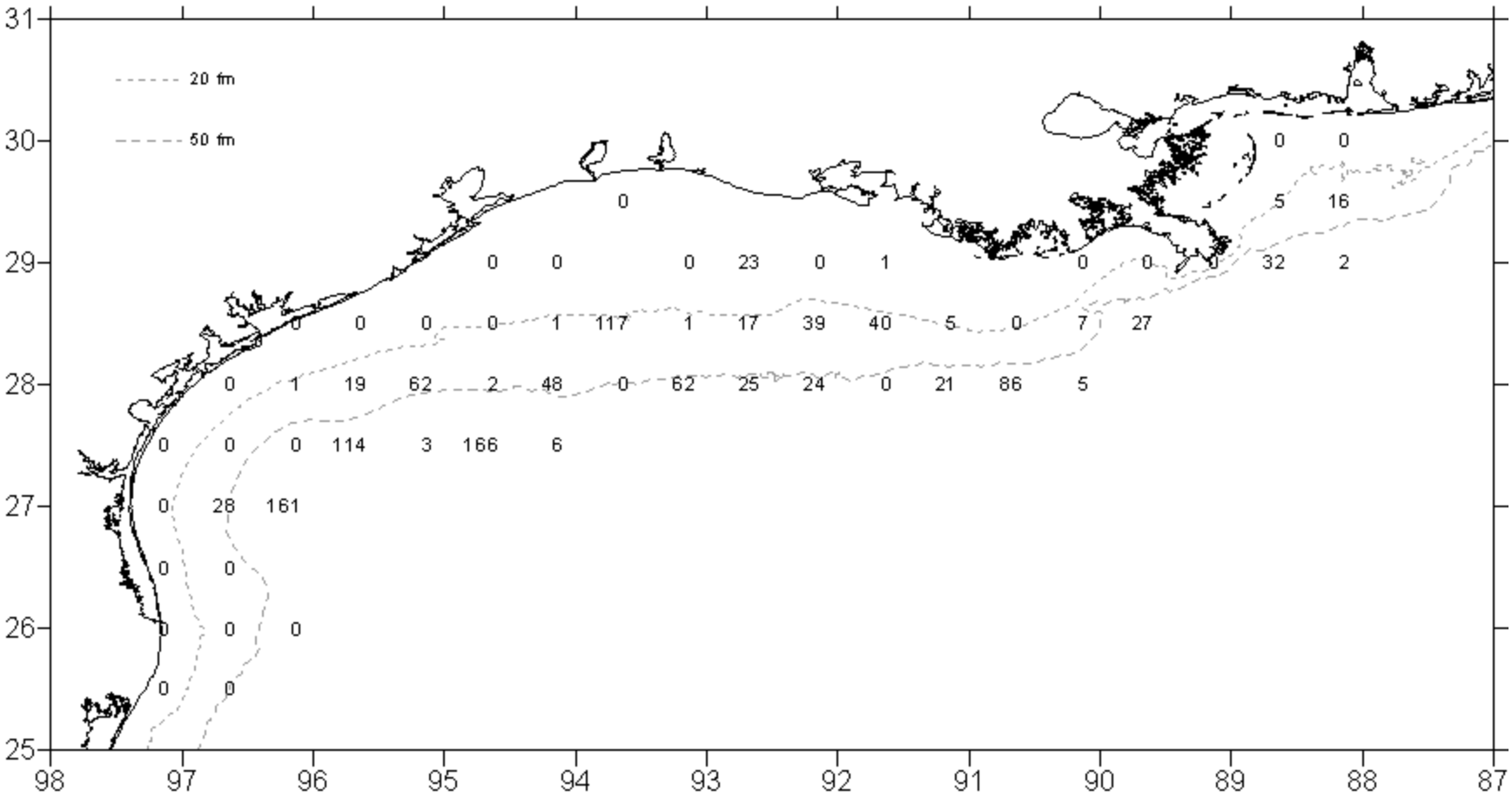


Figure 64. Rough scad, Trachurus lathami, number/hour for October-December 1999.

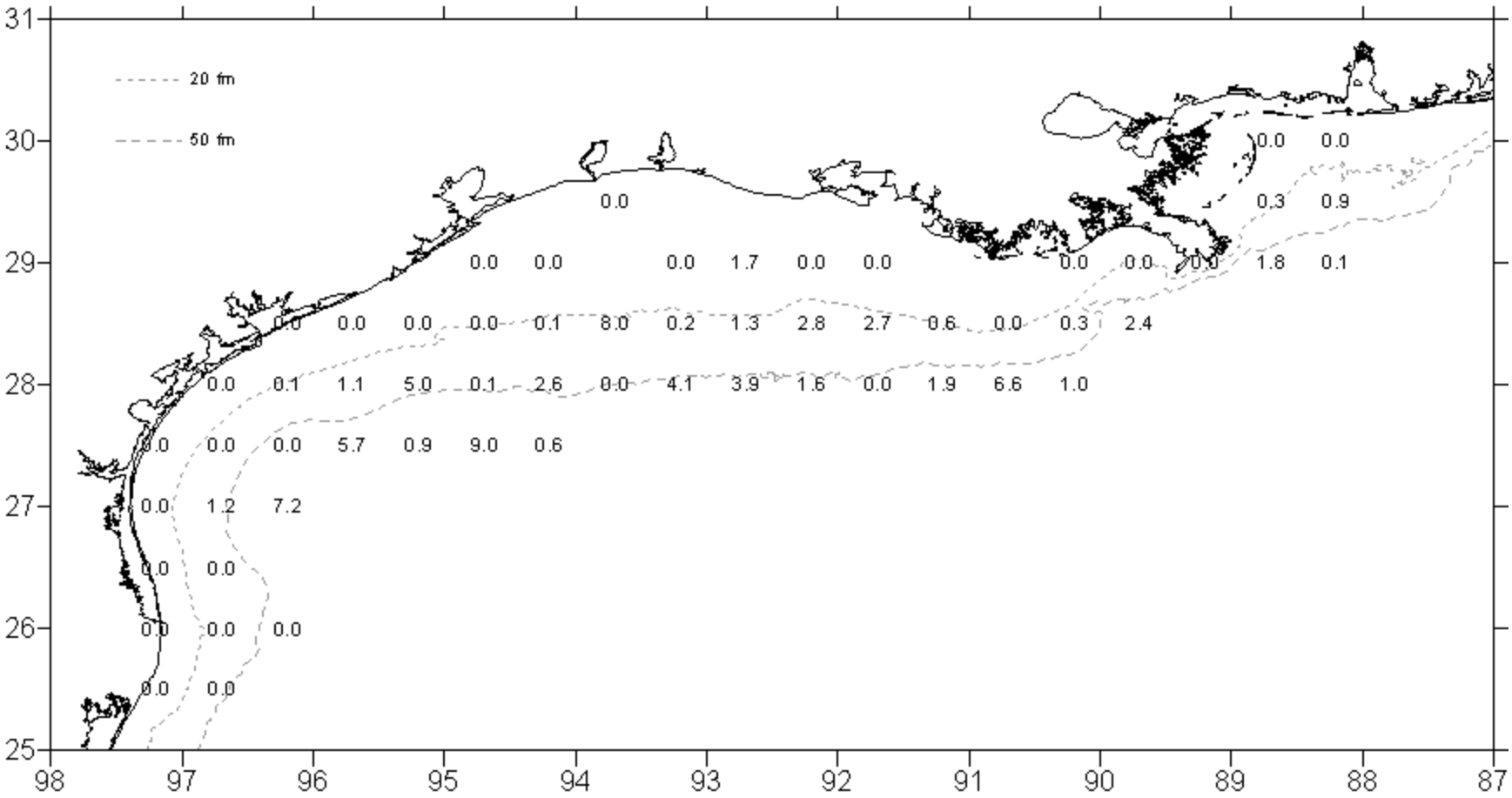


Figure 65. Rough scad, Trachurus lathami, lb/hour for October-December 1999.

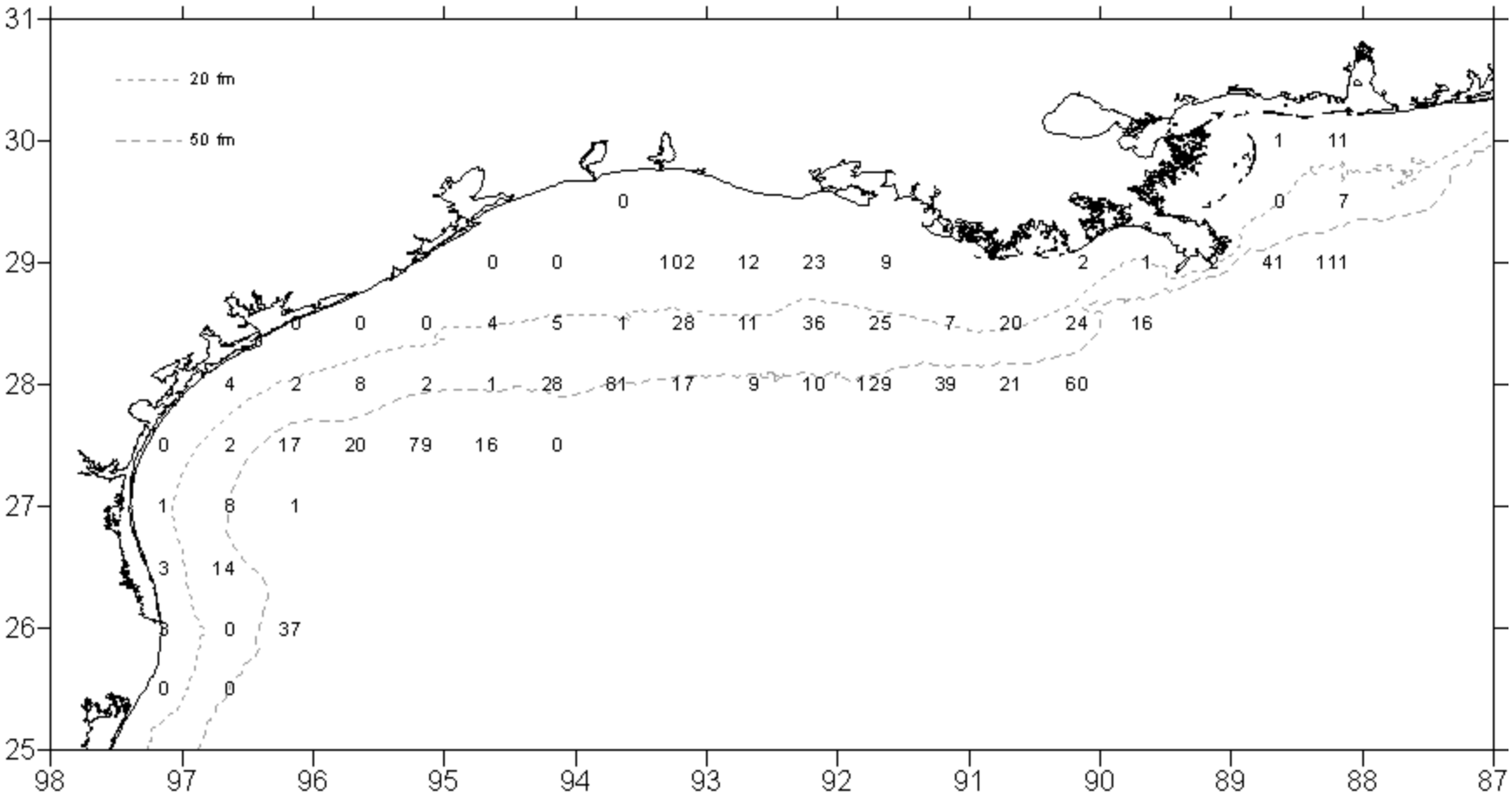


Figure 66. Rock sea bass, Centropristis philadelphica, number/hour for October-December 1999.

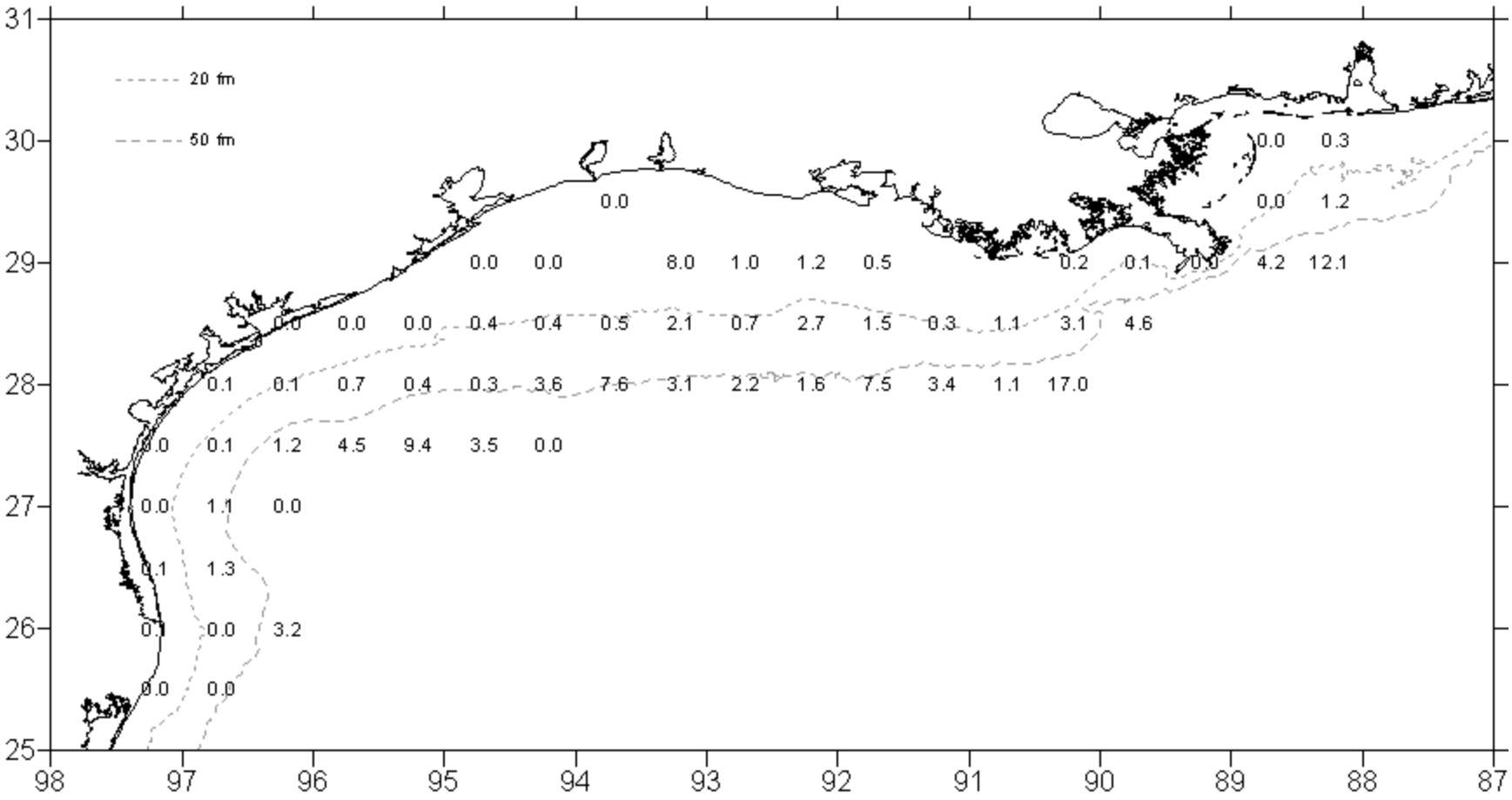


Figure 67. Rock sea bass, Centropristis philadelphica, lb/hour for October-December 1999.

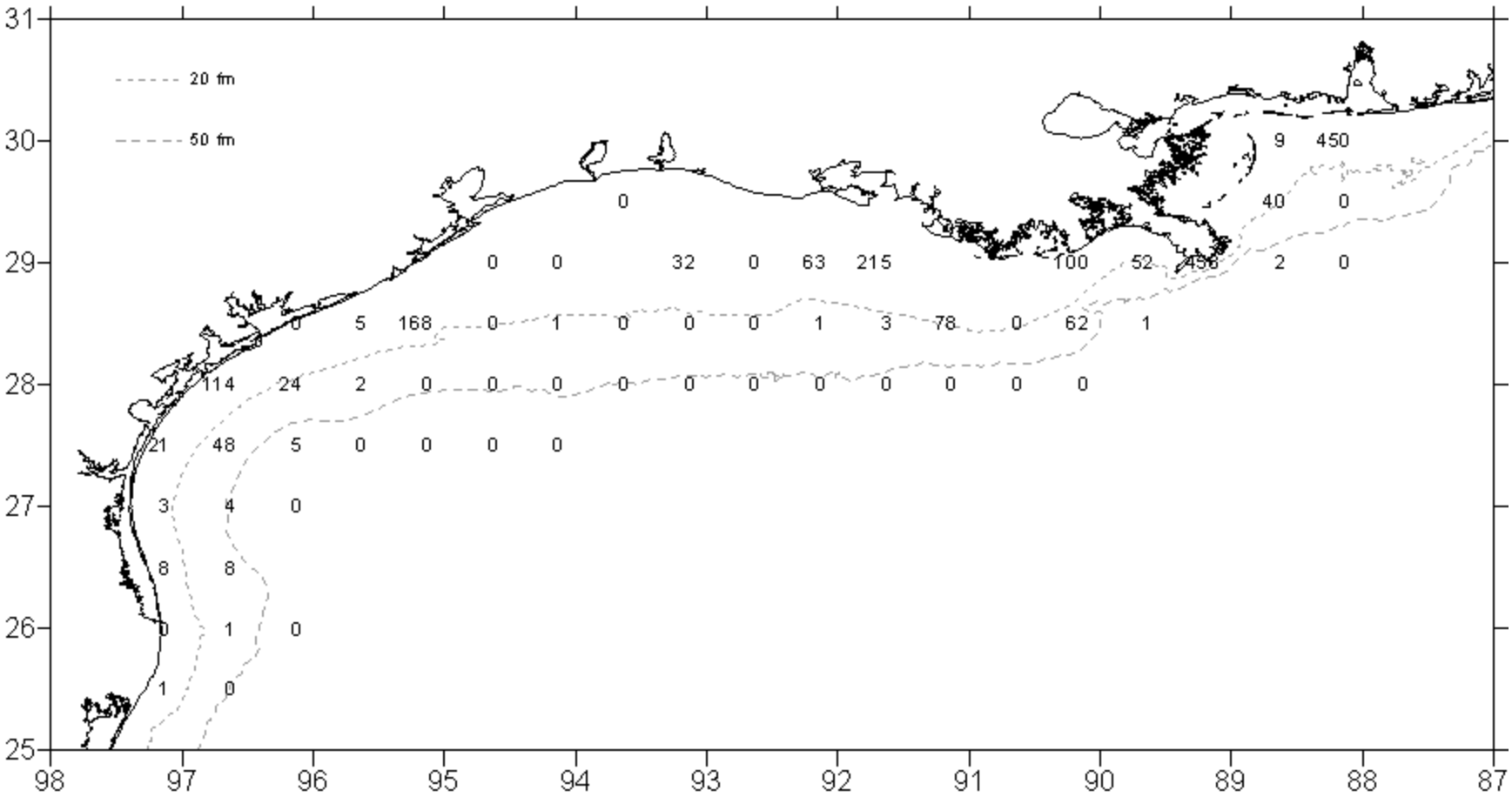


Figure 68. Striped anchovy, Anchoa hepsetus, number/hour October-December 1999.

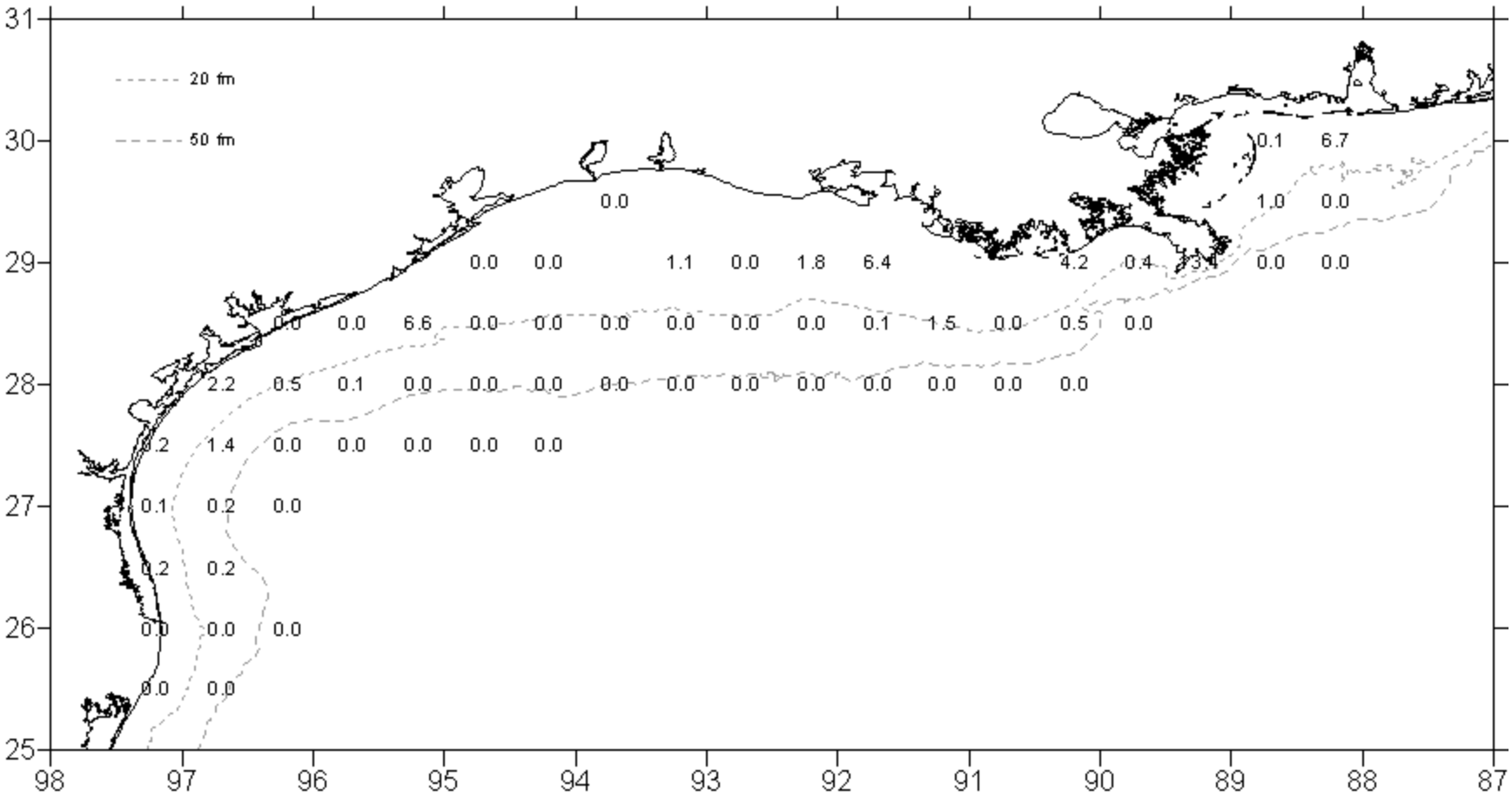


Figure 69. Striped anchovy, Anchoa hepsetus, lb/hour October-December 1999.

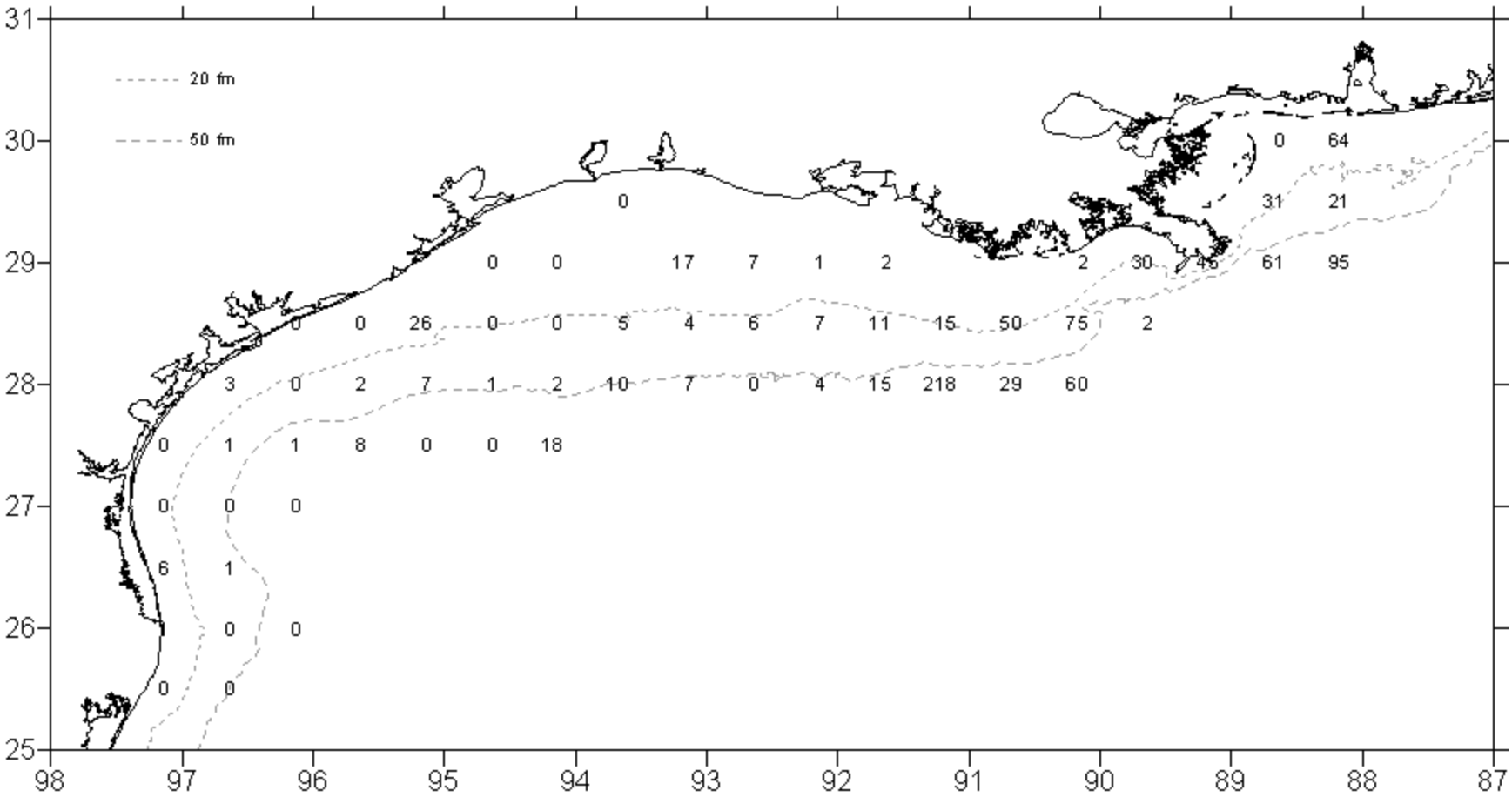


Figure 70. Spot, Leiostomus xanthurus, number/hour for October-December 1999.

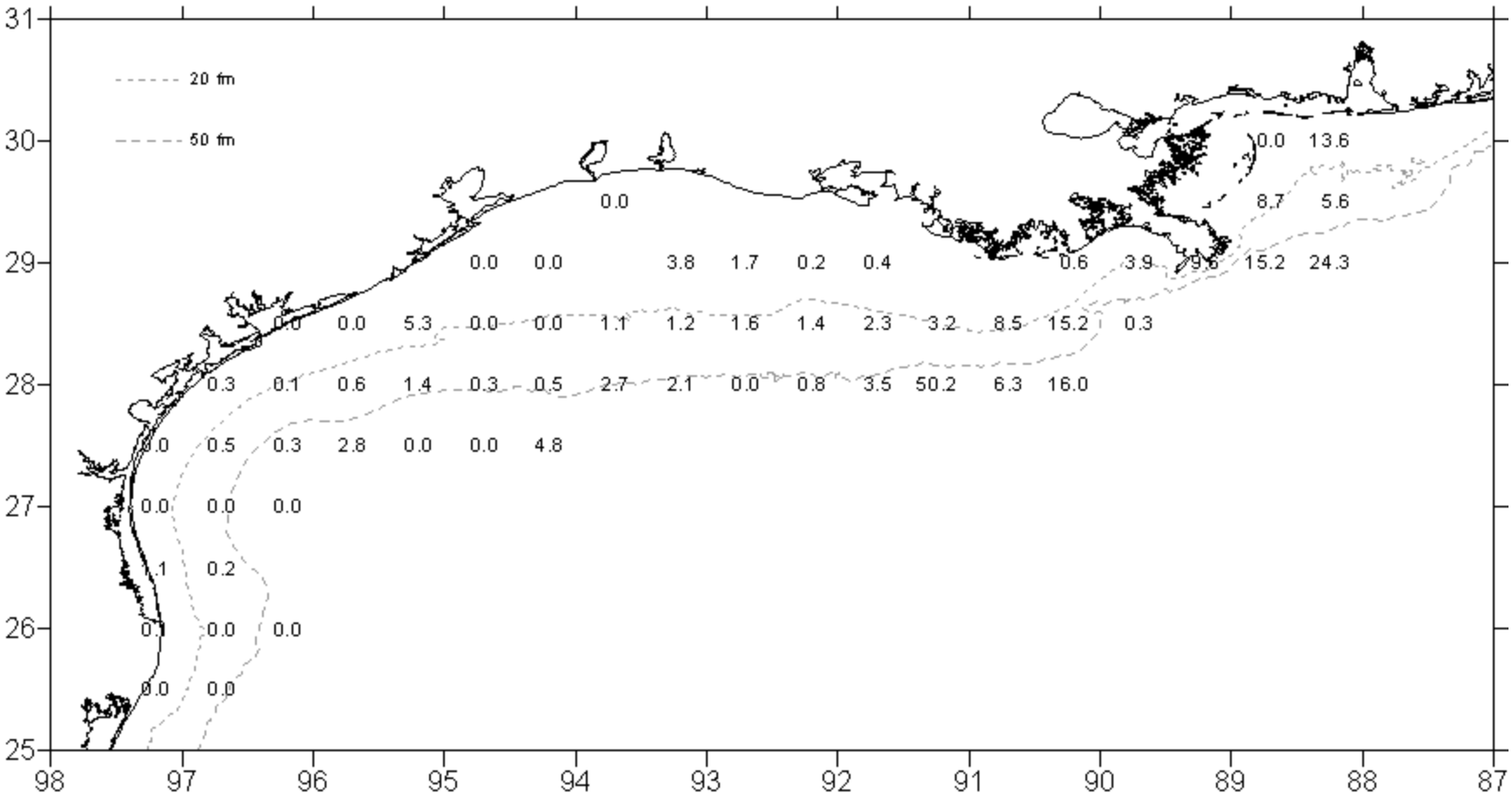


Figure 71. Spot, Leiostomus xanthurus, lb/hour for October-December 1999.

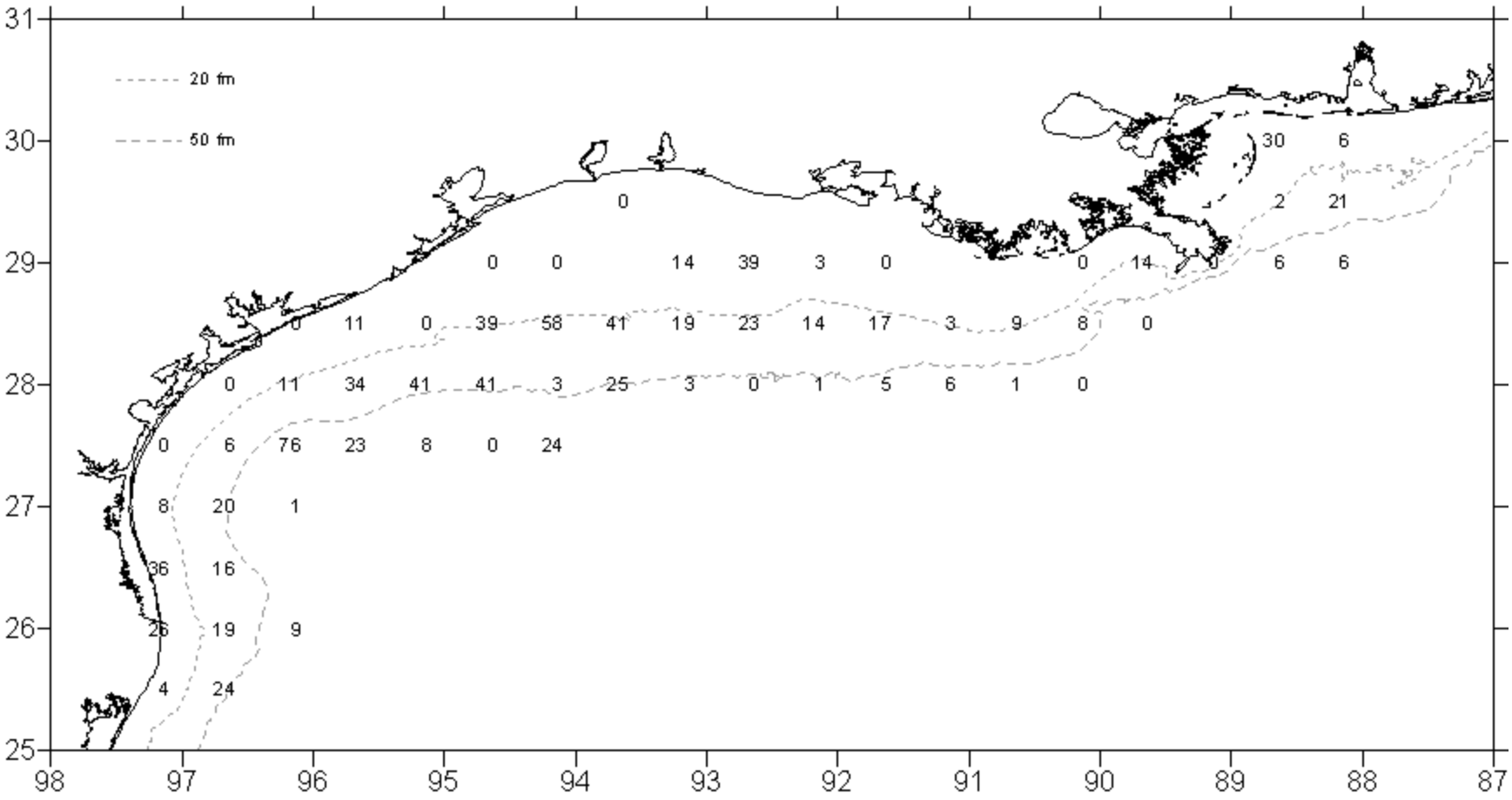


Figure 72. Red snapper, Lutjanus campechanus, number/hour for October-December 1999.

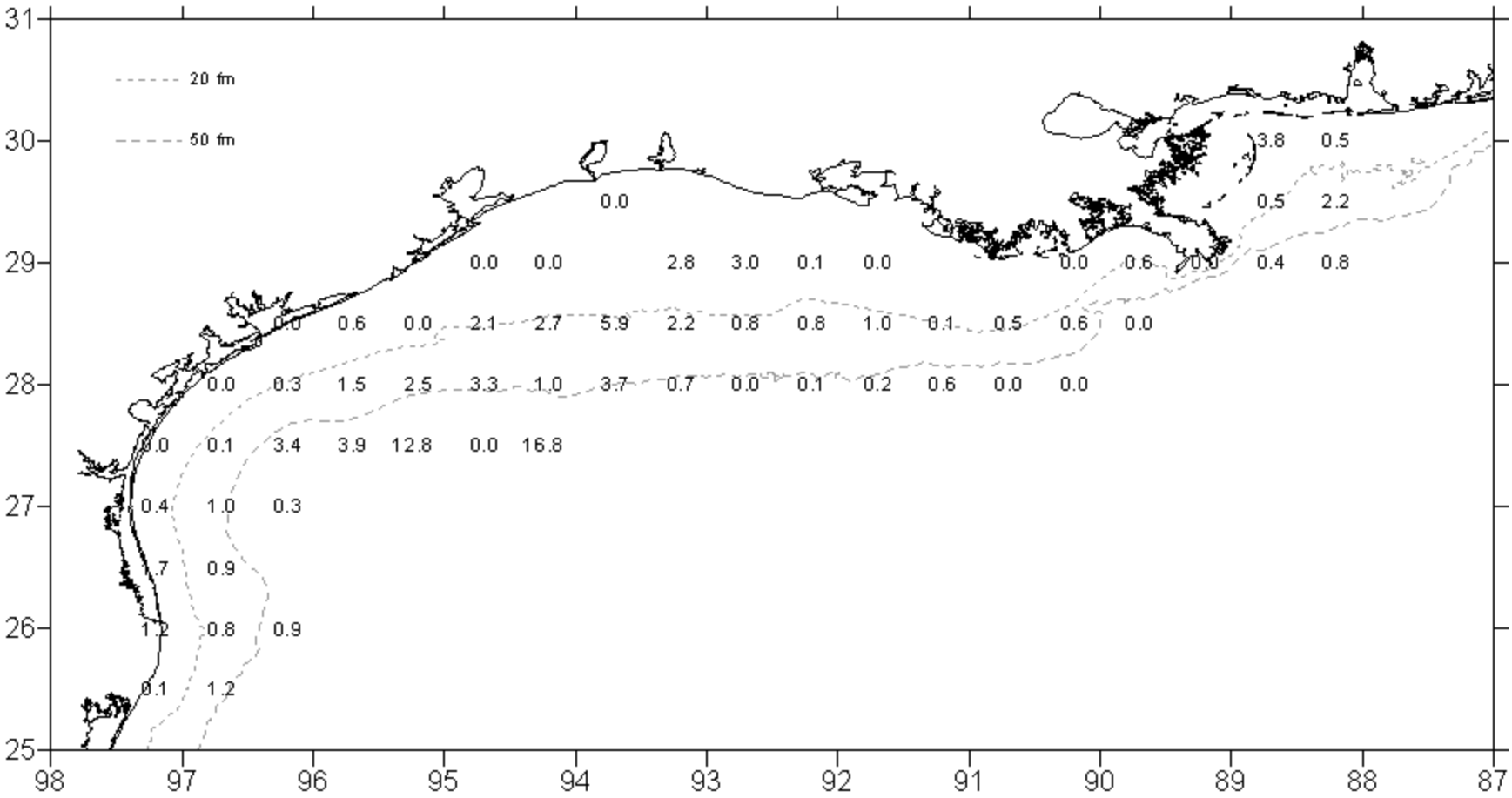


Figure 73. Red snapper, Lutjanus campechanus, lb/hour for October-December 1999.

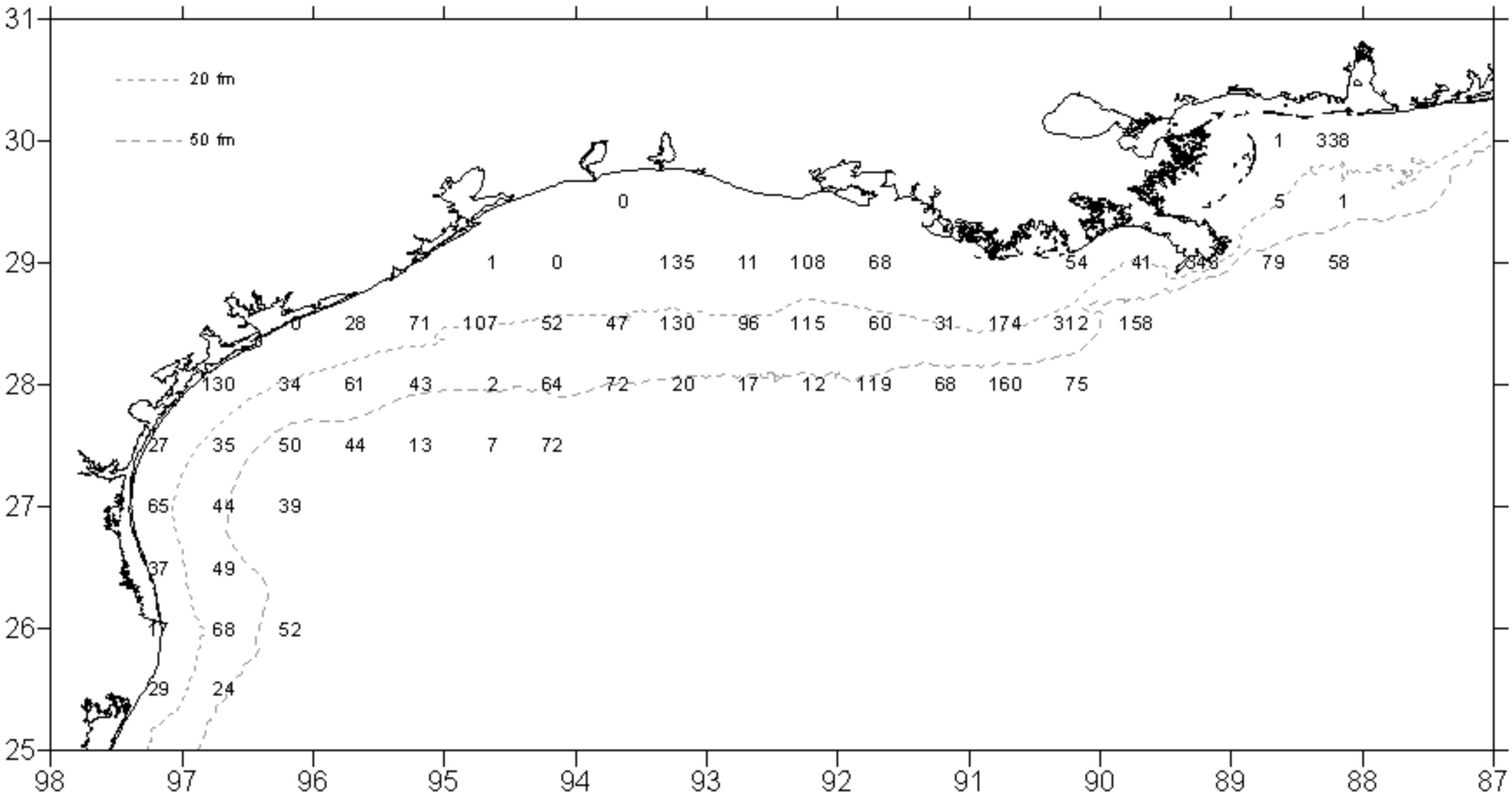


Figure 74. Brown shrimp, Penaeus aztecus, number/hour for October-December 1999.

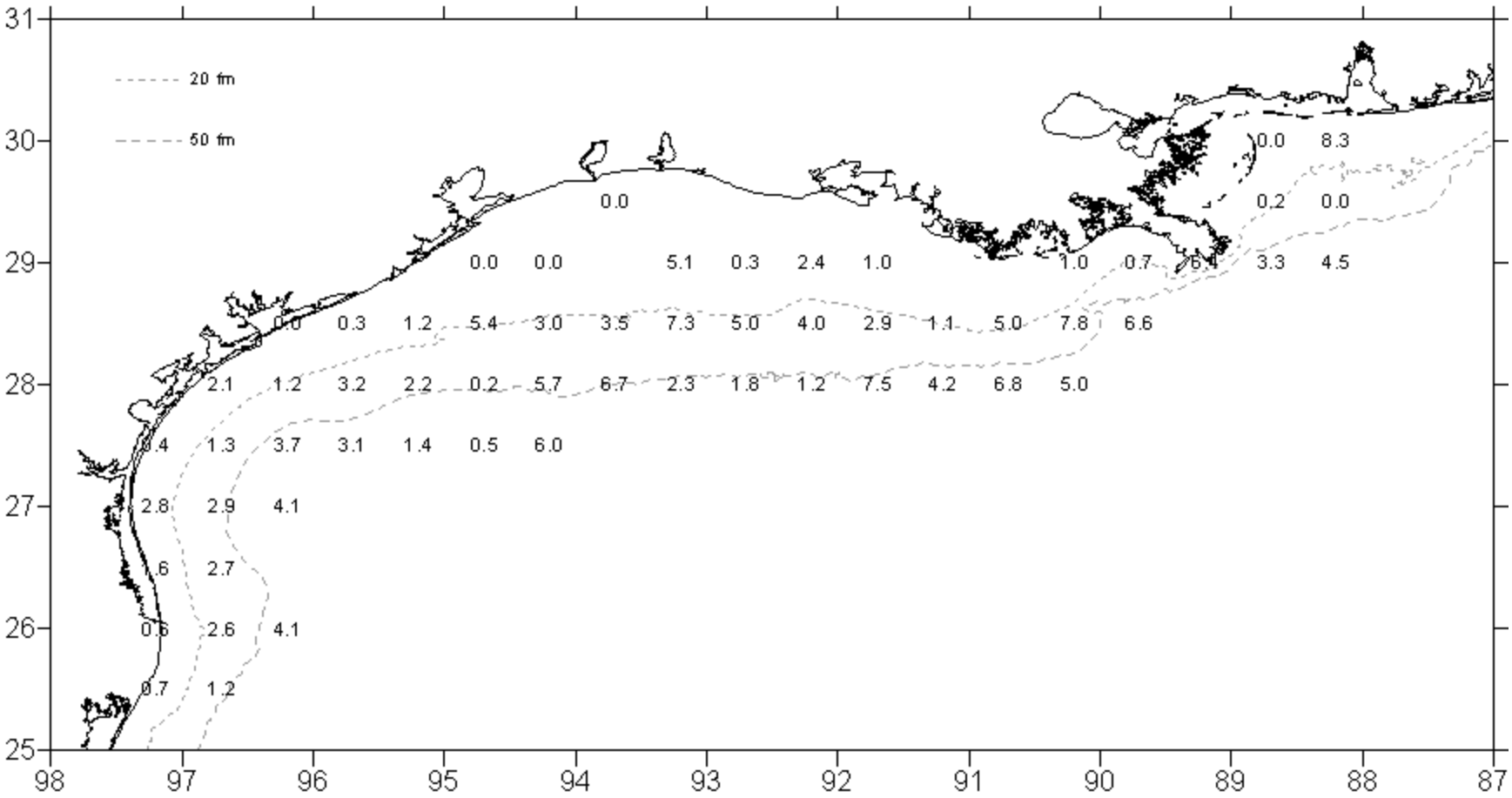


Figure 75. Brown shrimp, Penaeus aztecus, lb/hour for October-December 1999.

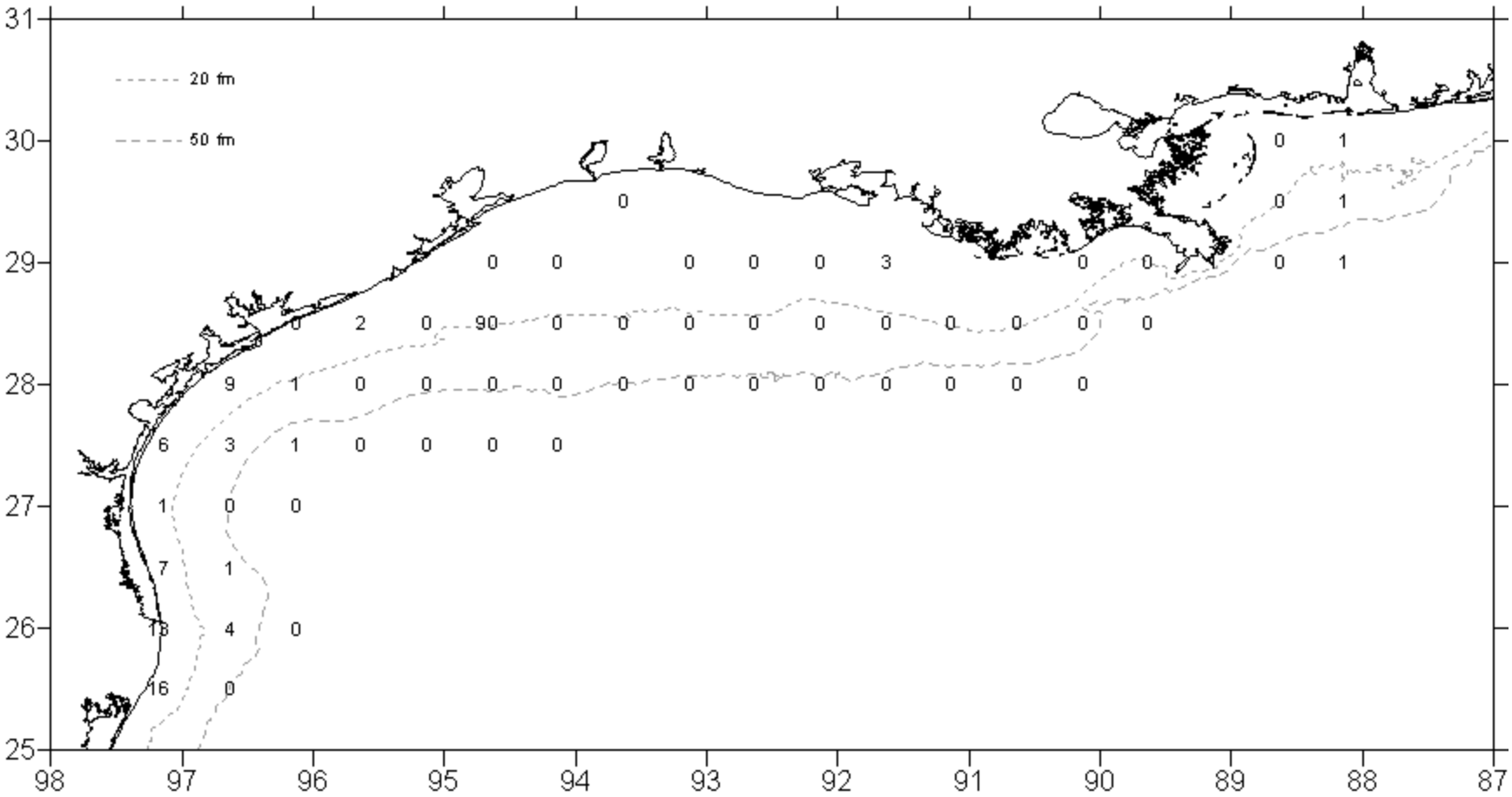


Figure 76. Pink shrimp, Penaeus duorarum, number/hour for October-December 1999.

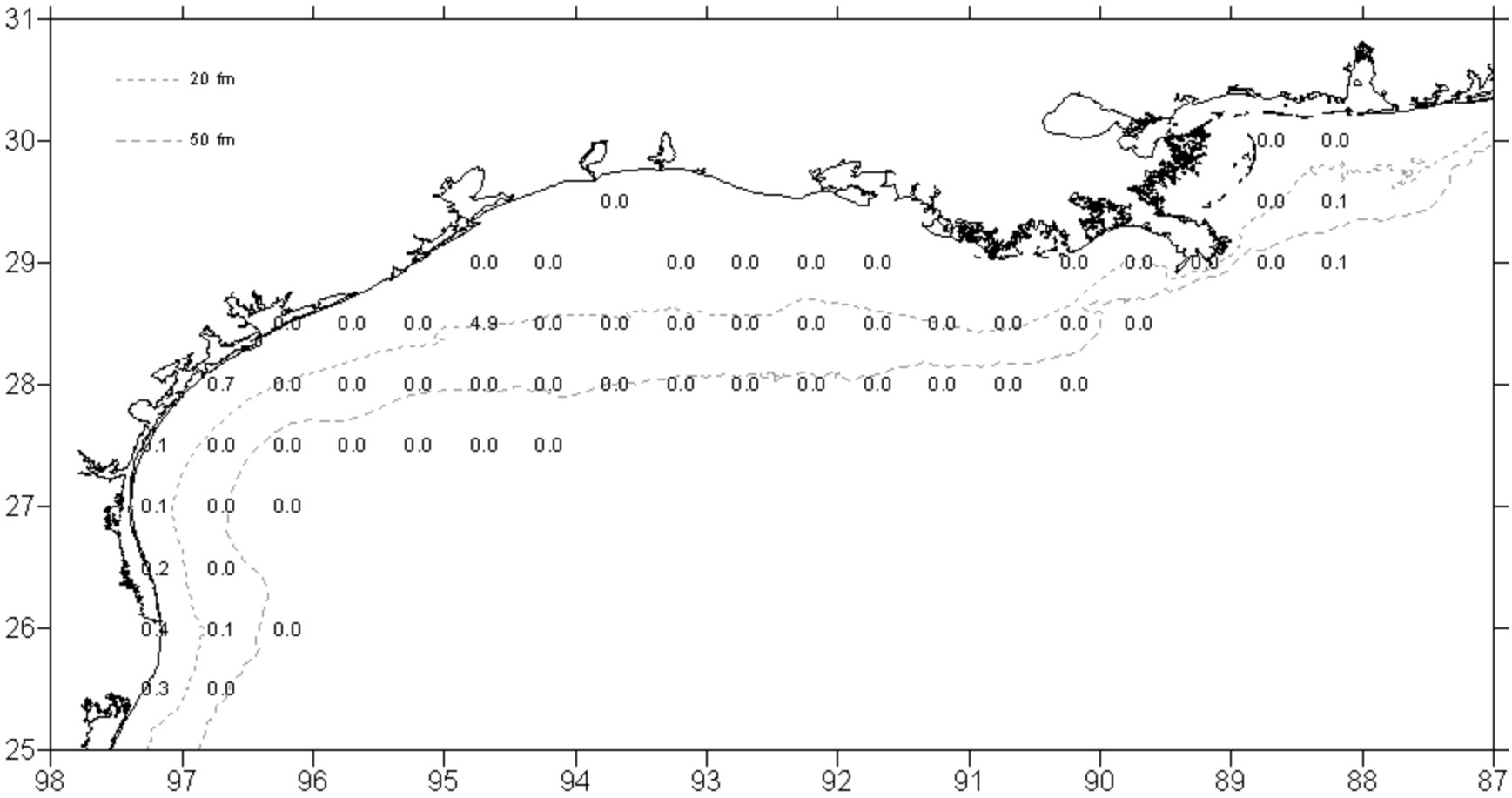


Figure 77. Pink shrimp, Penaeus duorarum, lb/hour for October-December 1999.

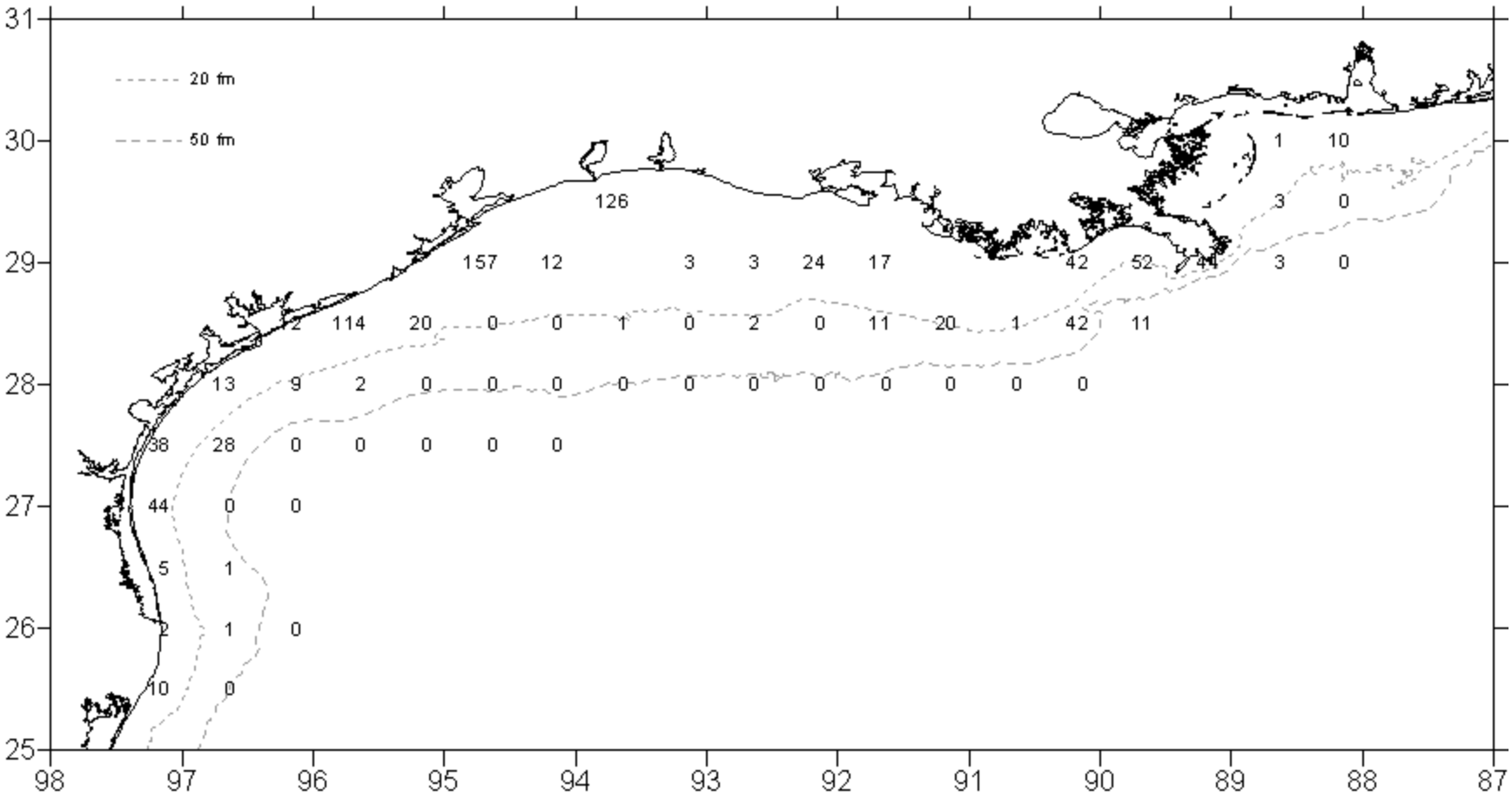


Figure 78. White shrimp, Penaeus setiferus, number/hour for October-December 1999.

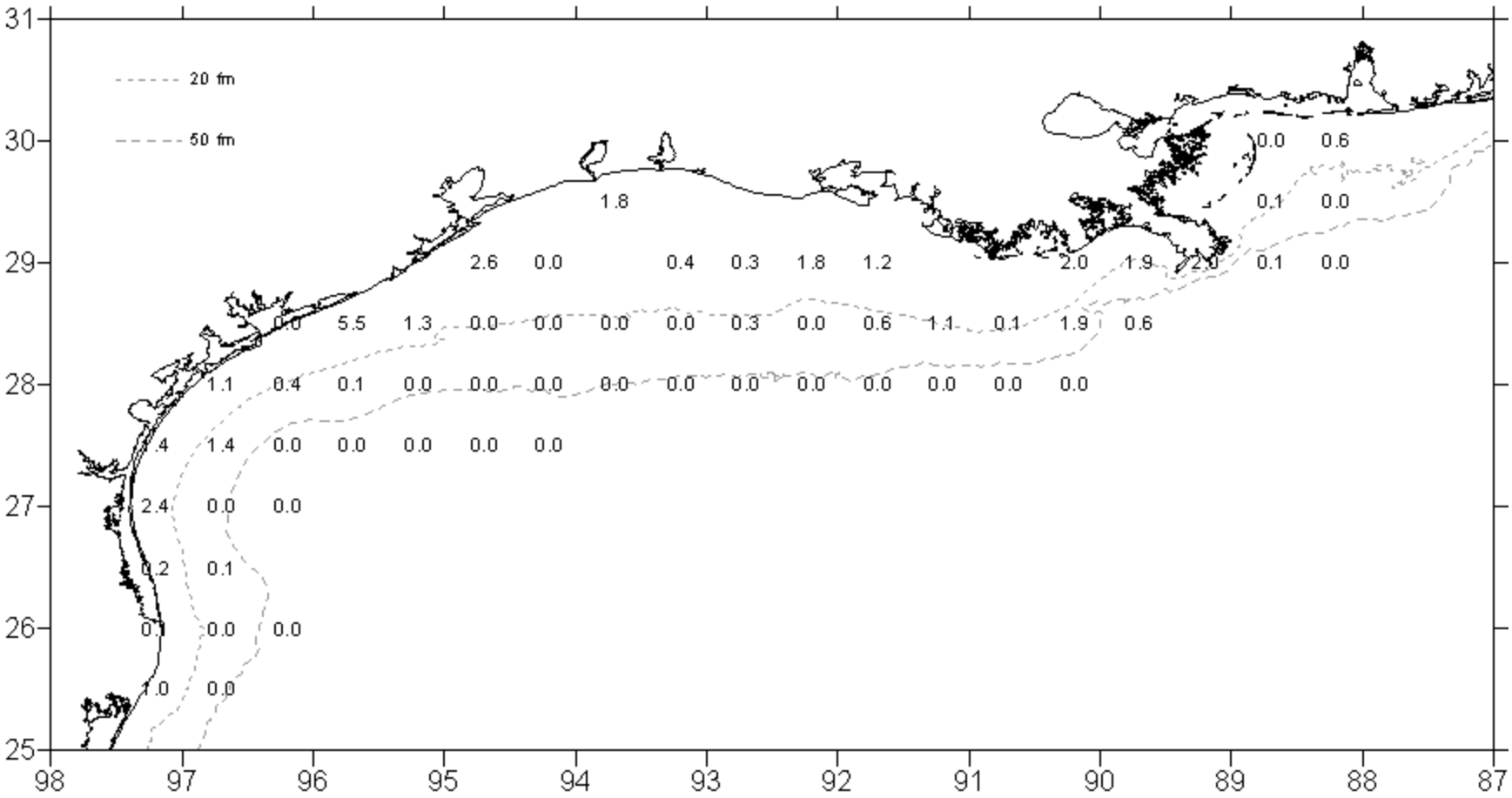


Figure 79. White shrimp, Penaeus setiferus, lb/hour for October-December 1999.

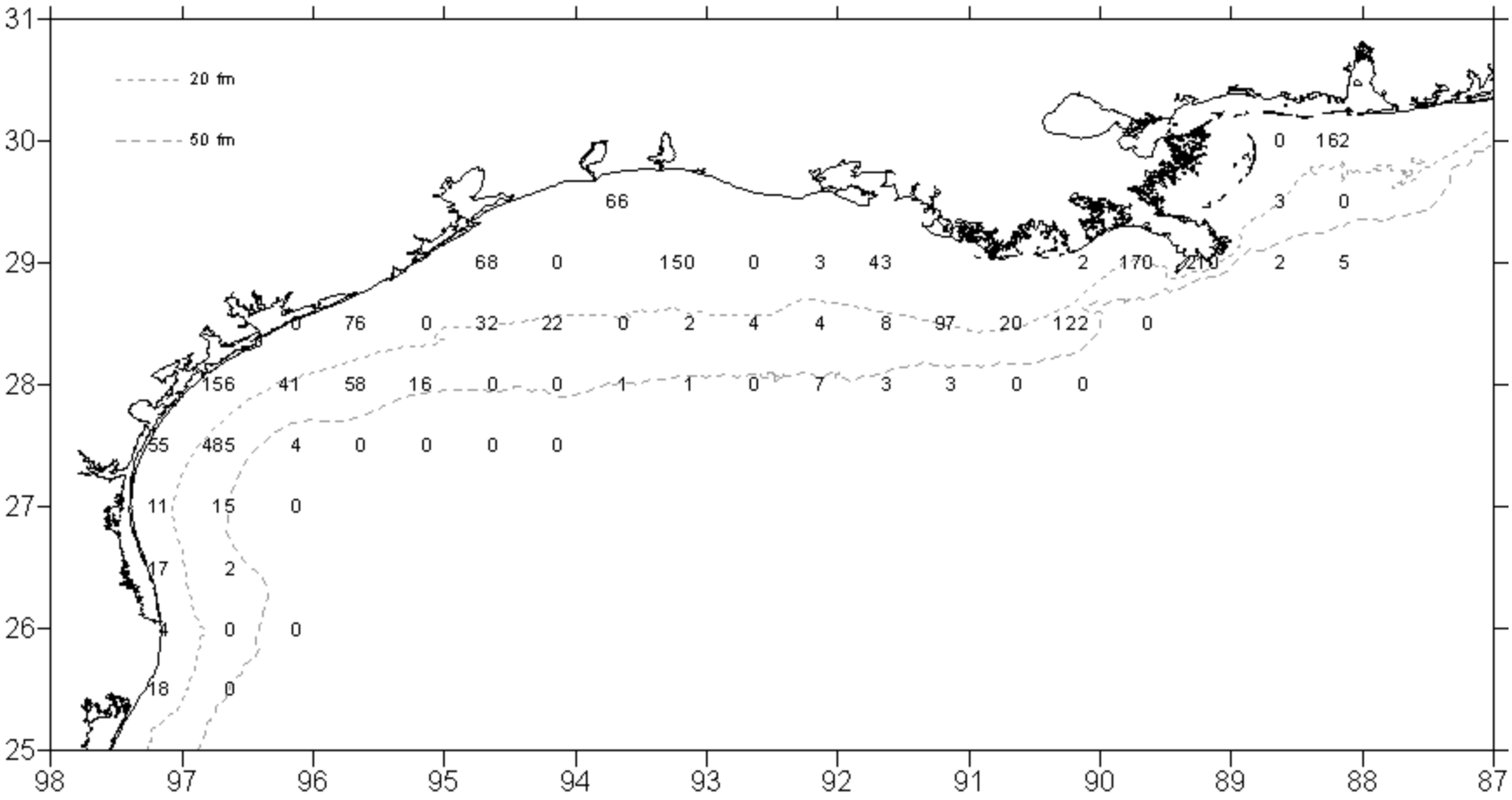


Figure 80. Roughback shrimp, Trachypenaeus similis, number/hour for October-December 1999.

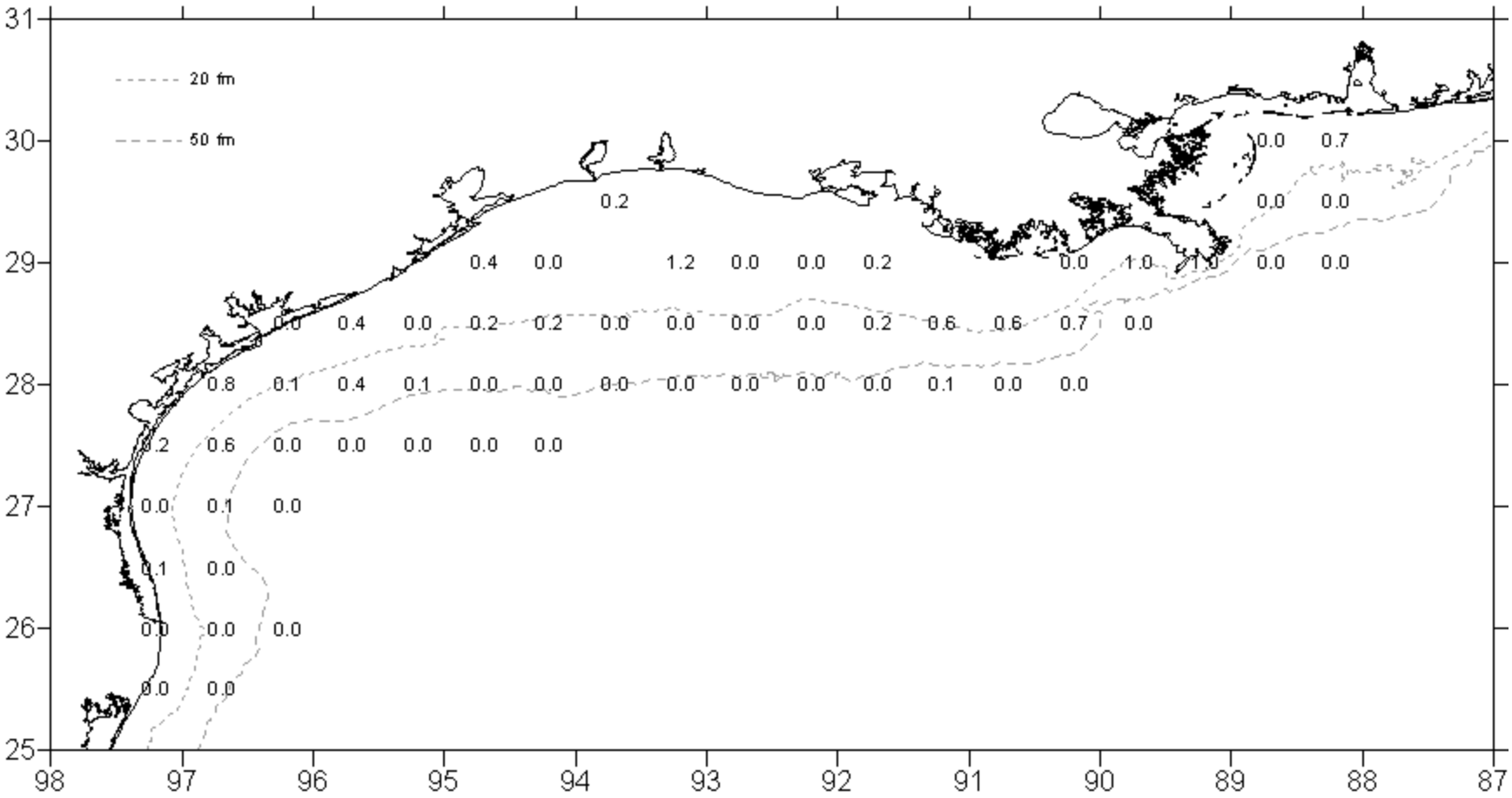


Figure 81. Roughback shrimp, Trachypenaeus similis, lb/hour for October-December 1999.

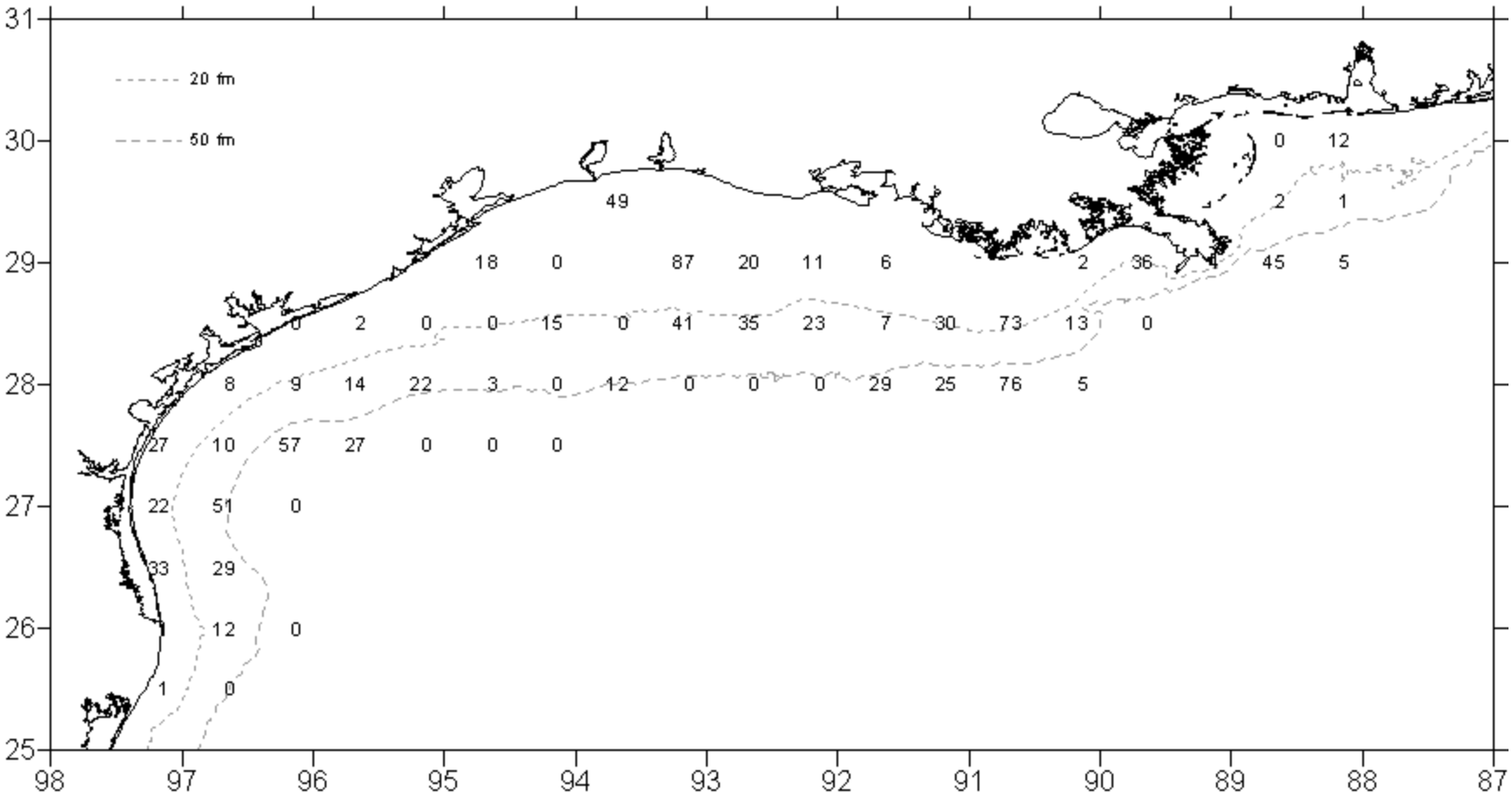


Figure 82. Lesser blue crab, Callinectes similis, number/hour for October-December 1999.

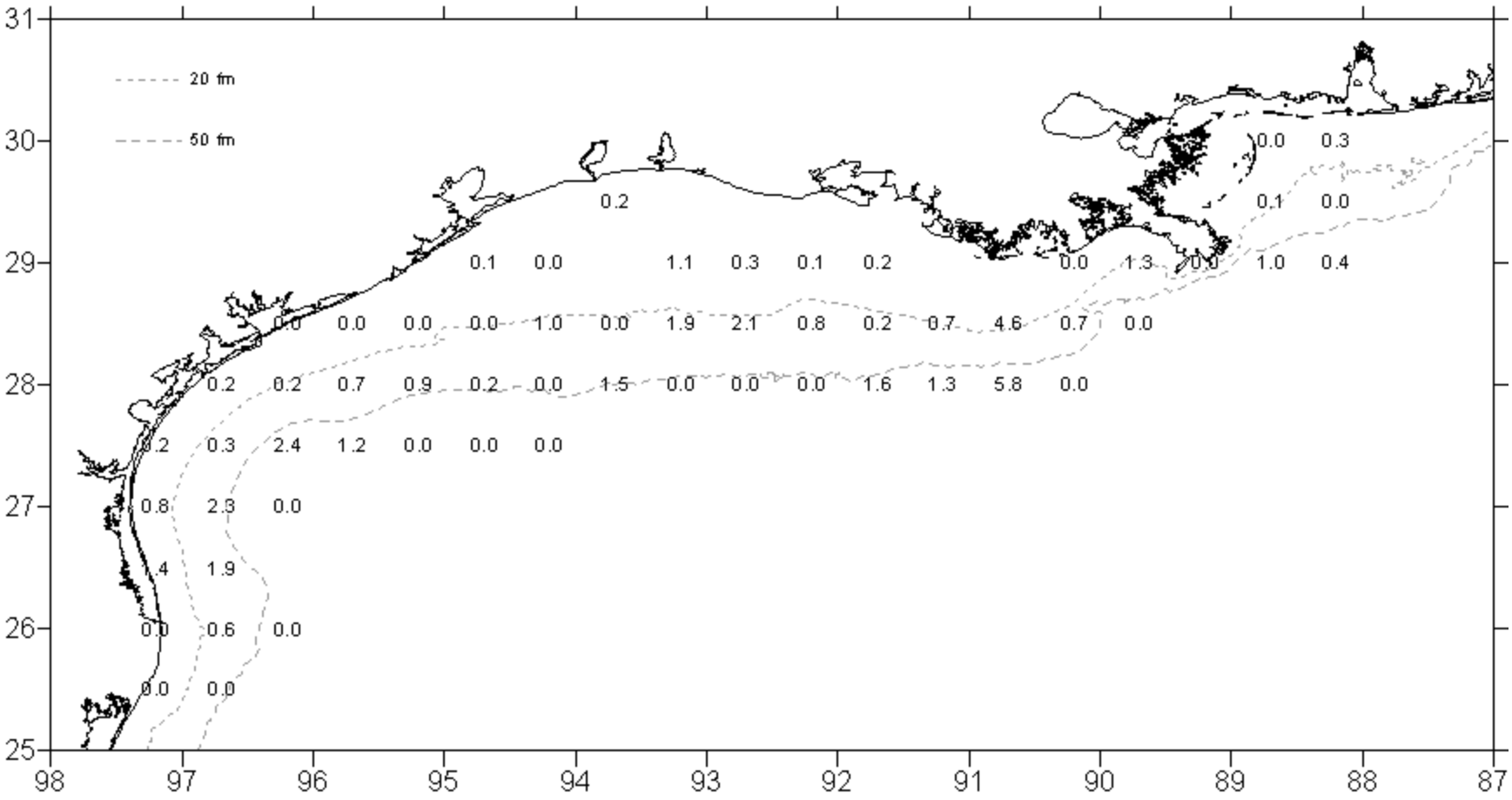


Figure 83. Lesser blue crab, Callinectes similis, lb/hour for October-December 1999.

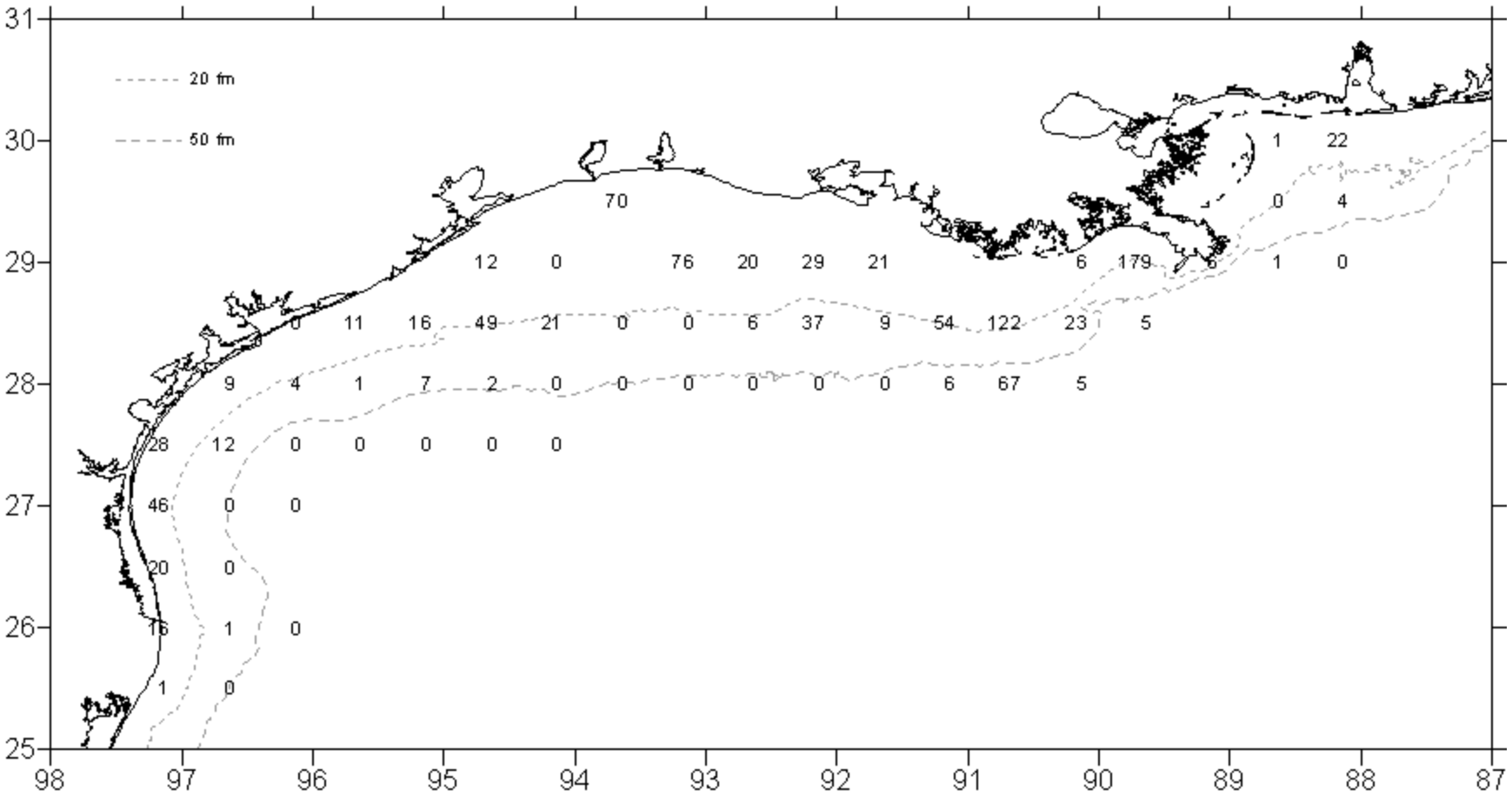


Figure 84. Irridescent swimming crab, Portunus gibbesii, number/hour for October-December 1999.

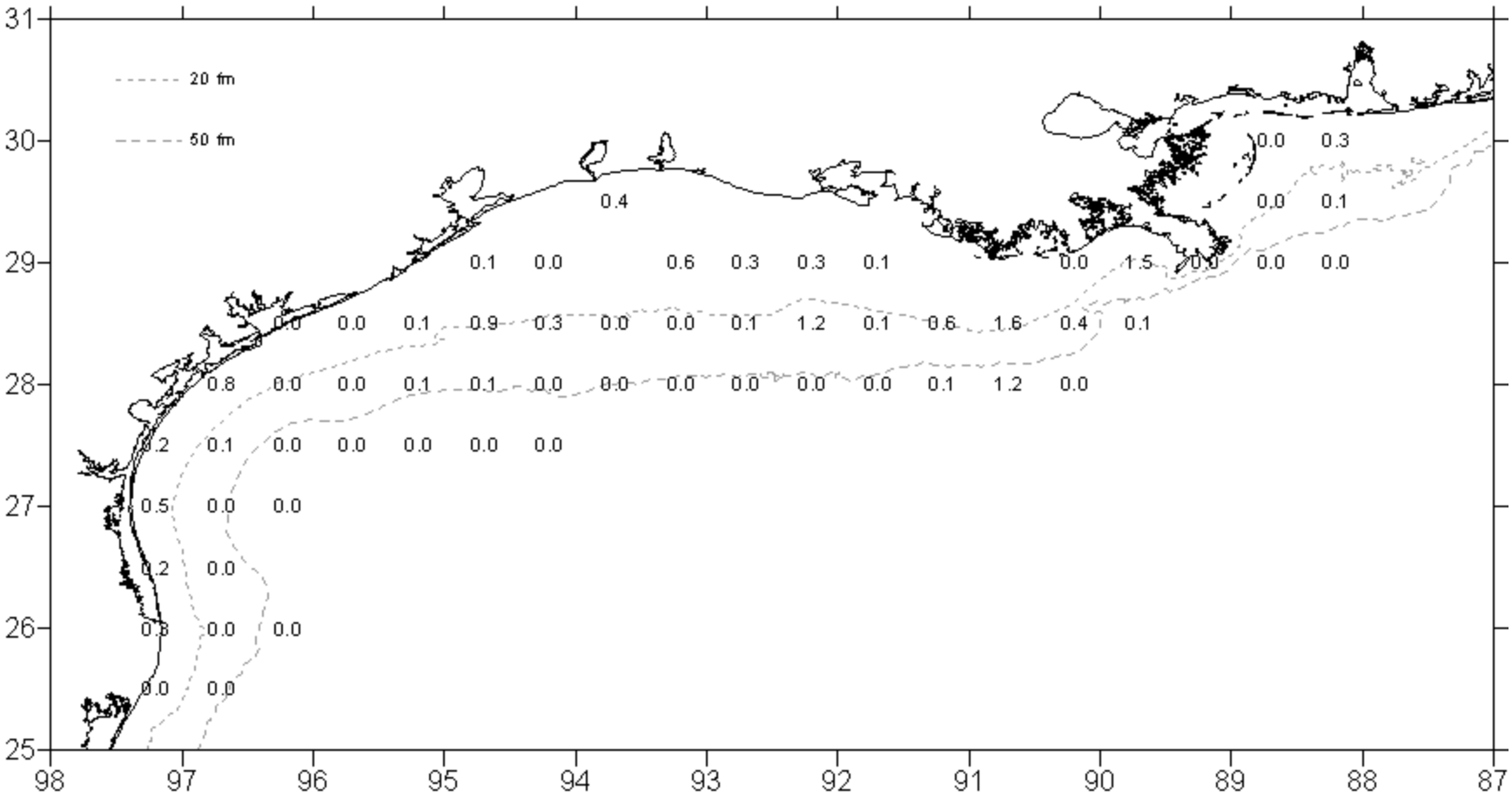


Figure 85. Irridescent swimming crab, Portunus gibbesii, lb/hour for October-December 1999.

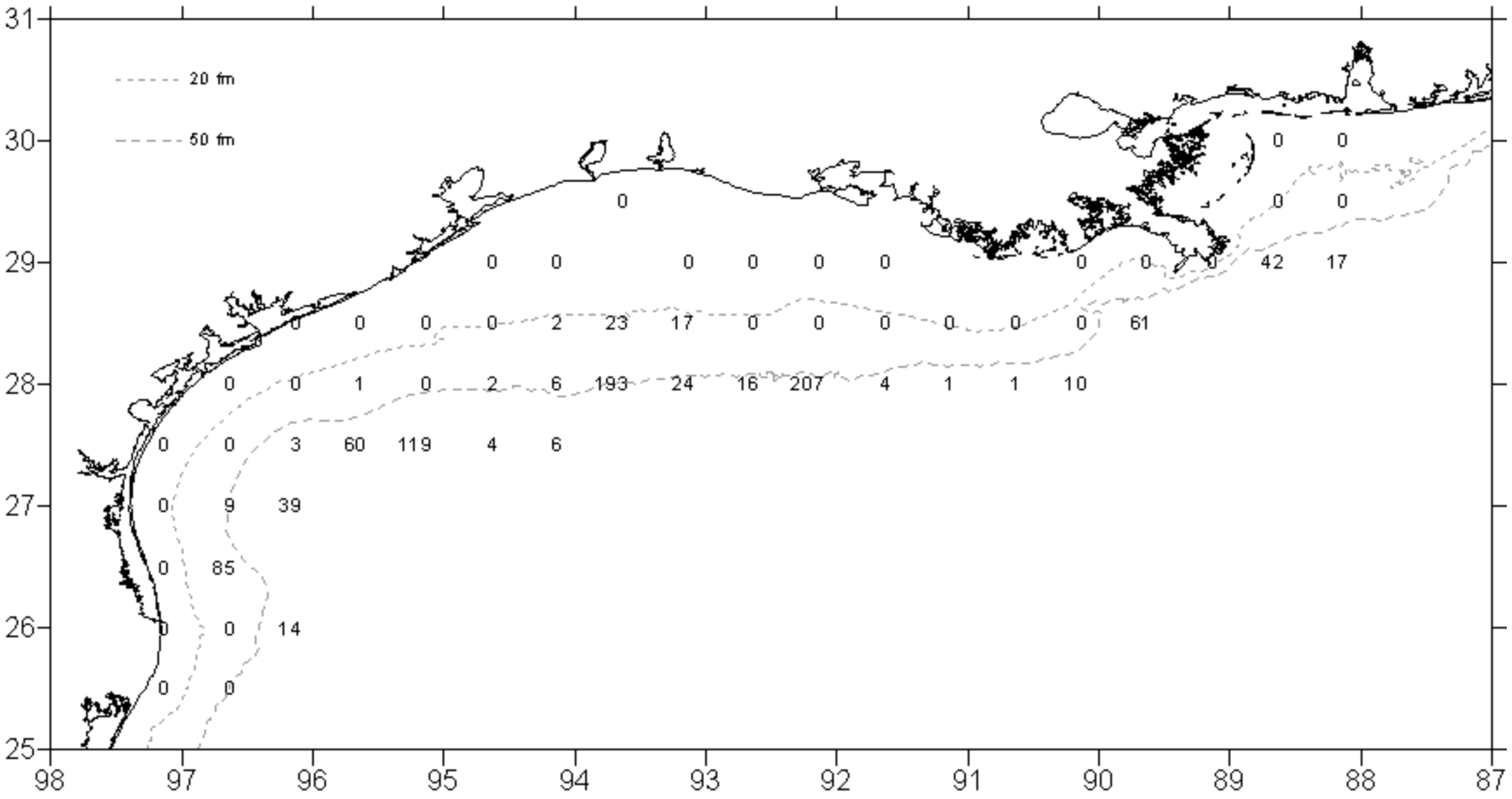


Figure 86. Longspine swimming crab, Portunus spinicarpus, number/hour for October-December 1999.

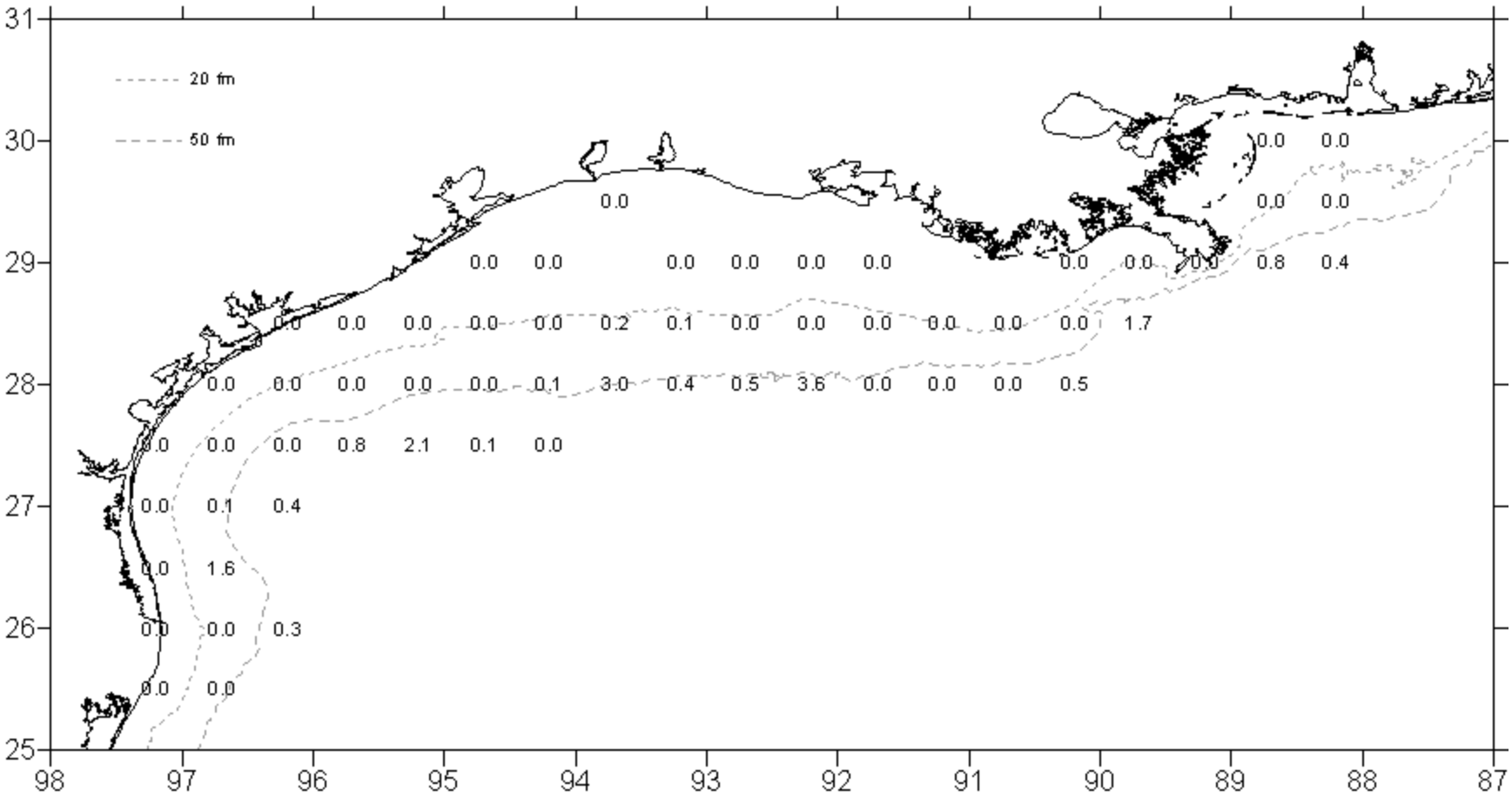


Figure 87. Longspine swimming crab, Portunus spinicarpus, lb/hour for October-December 1999.

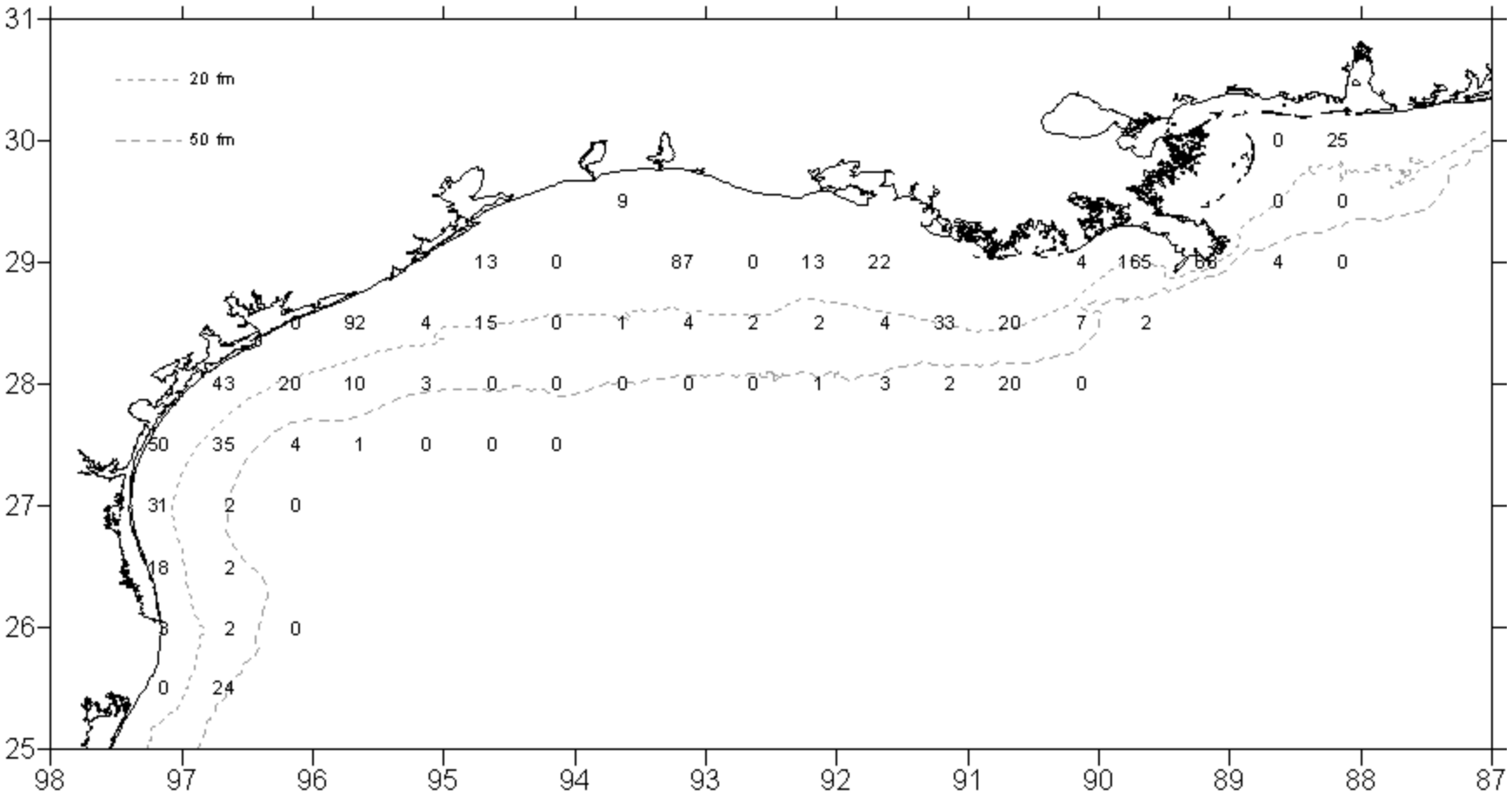


Figure 88. Mantis shrimp, Squilla empusa, number/hour for October-December 1999.

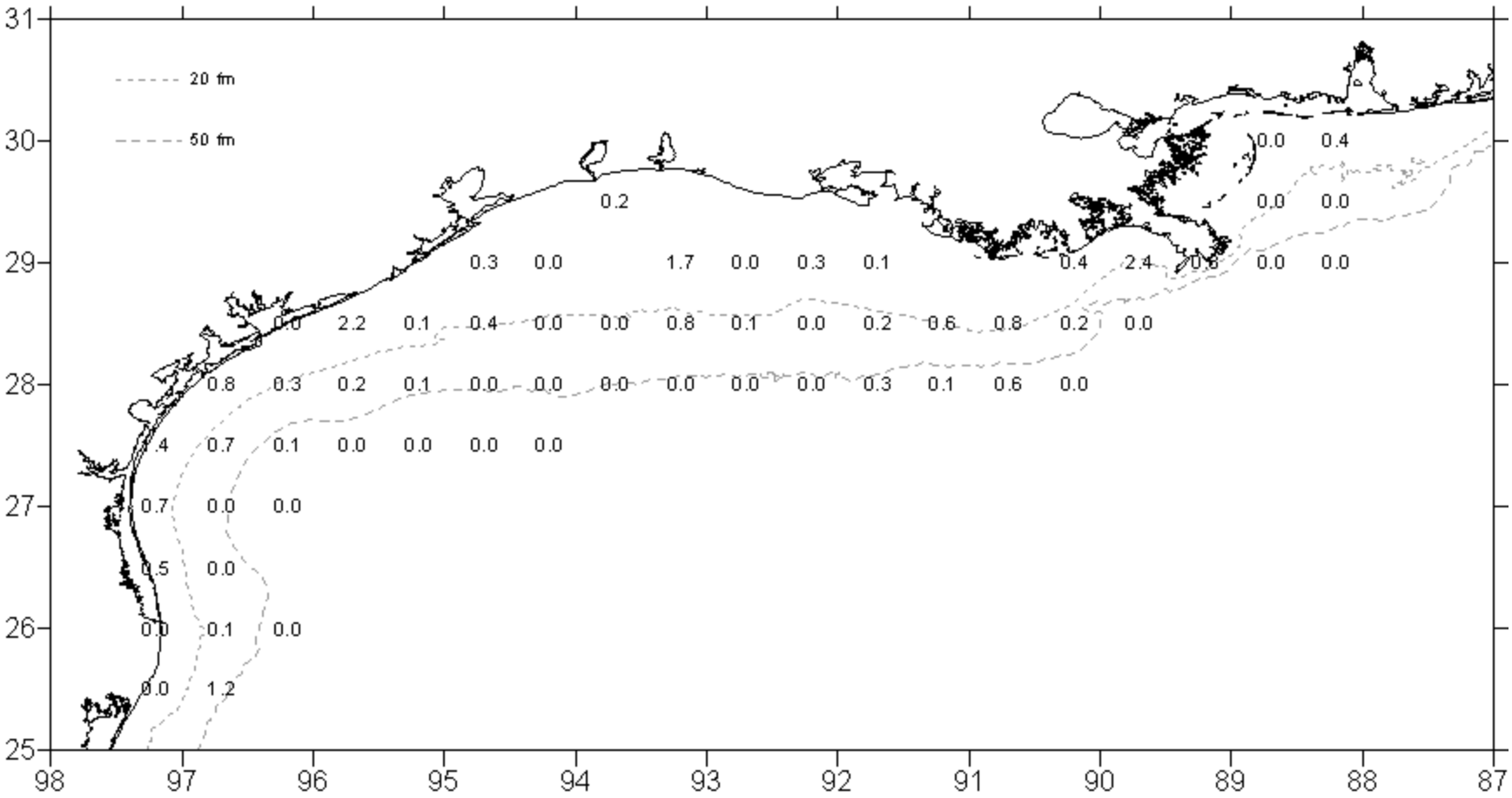


Figure 89. Mantis shrimp, Squilla empusa, lb/hour for October-December 1999.

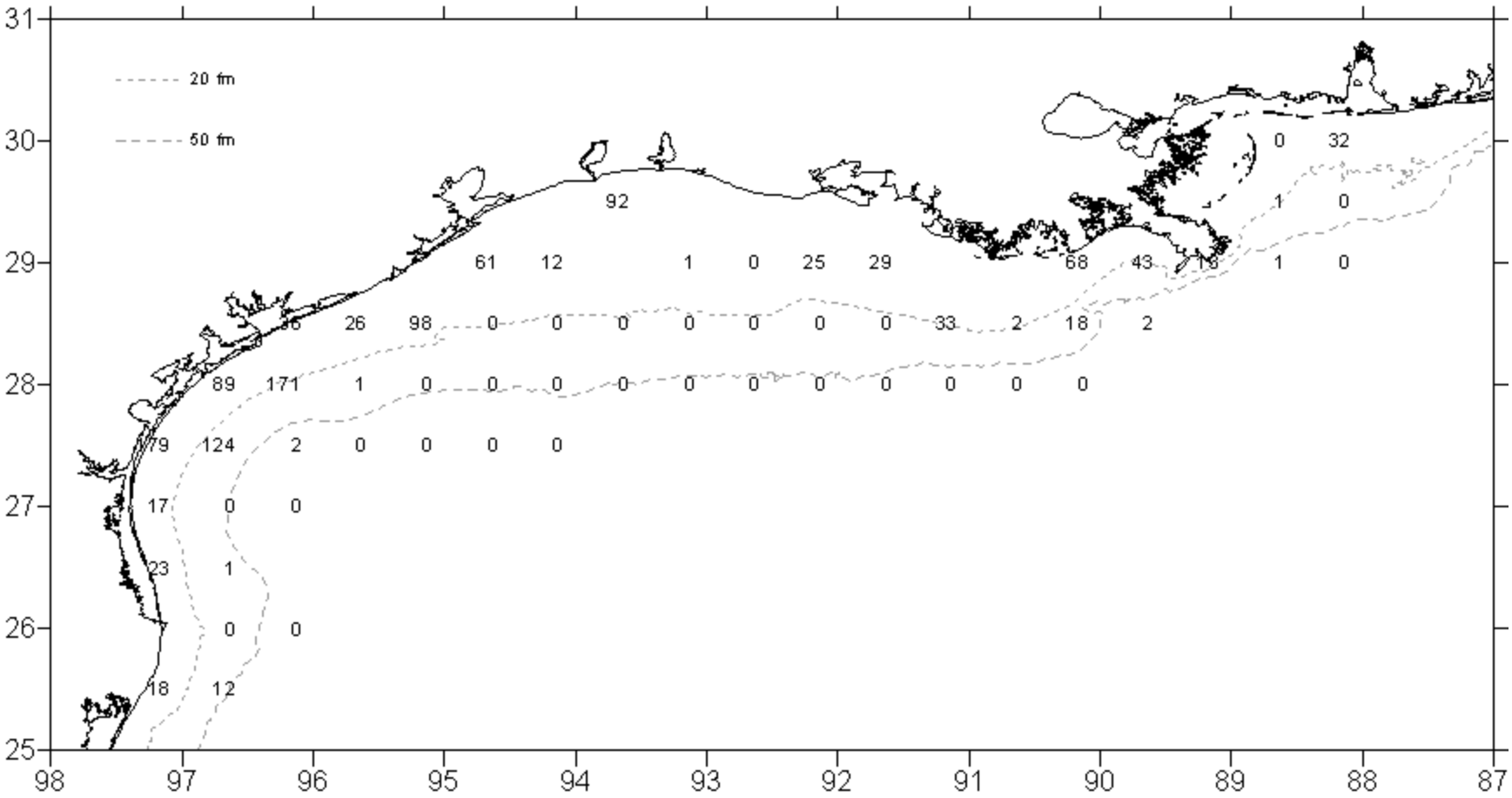


Figure 90. Atlantic brief squid, Lolliguncula brevis, number/hour for October-December 1999.

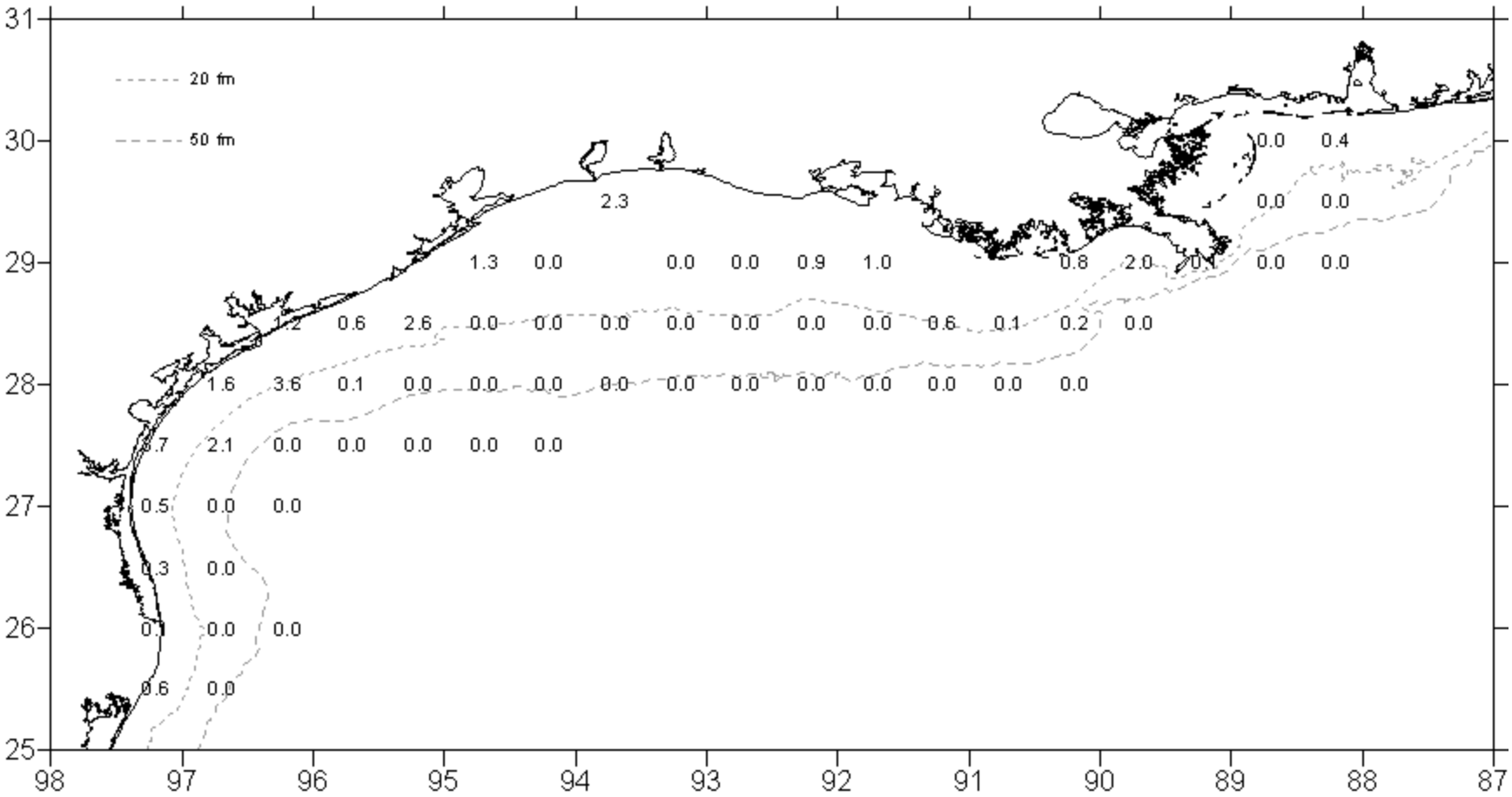


Figure 91. Atlantic brief squid, Lolliguncula brevis, lb/hour for October-December 1999.

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