Gulf States Marine Fisheries Commission
Commissioners

ALABAMA
James Martin
Alabama Department of Conservation and
Natural Resources
64 North Union Street
Montgomery, AL 36130

Representative Walter Penry
Alabama House of Representatives
12040 County Road 54
Daphne, AL 36526

Chris Nelson
Bon Secour Fisheries, Inc.
P.O. Box 60
Bon Secour, AL 36511

FLORIDA
Virginia Wetherell
Executive Director
Florida Department of Environmental Protection
3900 Commonwealth Boulevard
Tallahassee, FL 32399

Patrick K. McFarland
405 Woodward Avenue
Port Saint Joe, FL 32496

LOUISIANA
James Jenkins
Secretary
Louisiana Department of Wildlife and Fisheries
P.O. Box 98000
Baton Rouge, LA 70898-9000

Representative Warren Triche
Louisiana House of Representatives
100 Tauzin Lane
Thibodaux, LA 70301

Frederic Miller
P.O. Box 5098
Shreveport, LA 71135-5098

MISSISSIPPI
Earl Glade Woods
Executive Director
Mississippi Department of Marine
Resources
152 Gateway Drive
Biloxi, MS 39531

Representative Ed Ryan
Mississippi House of Representatives
145 Crawford Street
Biloxi, MS 39530

George Sekul
Gulf Central Seafoods, Inc.
155 5th Street
Biloxi, MS 39530

TEXAS
Andrew Sansom
Executive Director
Texas Parks and Wildlife Department
4200 Smith School Road
Austin, TX 78744

Senator J.E. "Buster" Brown
Texas Senate
P.O. Box 12068
Austin, TX 78711

L. Don Perkins
1319 Winrock Boulevard
Houston, TX 77057

Staff

Larry B. Simpson
Executive Director

Ronald R. Lukens
David M. Donaldson
Steven J. VanderKooy
Jeffrey K. Rester
Virginia K. Herring

Nancy K. Marcellus
Cynthia B. Yocom
Cheryl R. Noble
Madeleine A. Travis
Jason S. Keenum

SEAMAP ENVIRONMENTAL AND BIOLOGICAL ATLAS OF THE GULF OF MEXICO, 1996

Edited by

David M. Donaldson
Gulf States Marine Fisheries Commission

David Hanisko
Johnson Controls
Pascagoula, Mississippi

Nathaniel Sanders, Jr.
National Marine Fisheries Service
Pascagoula Laboratory

Perry A. Thompson
National Marine Fisheries Service
Pascagoula Laboratory

Manuscript Design and Layout

Cheryl Noble
Gulf States Marine Fisheries Commission

GULF STATES MARINE FISHERIES COMMISSION

January 1998
Number 52

This project was supported in part by the National Oceanic and Atmospheric Administration, National Marine Fisheries Service, under State/Federal Project Number NA47FS0038.

SEAMAP SUBCOMMITTEE

Mr. Richard Waller, Chairman
University of Southern Mississippi
Institute of Marine Sciences
Gulf Coast Research Laboratory

Mr. Terry Cody
Texas Parks and Wildlife Department

Mr. James Hanifen
Louisiana Department of Wildlife and Fisheries

Mr. Stevens Heath
Alabama Department of Conservation and Natural Resources
Marine Resources Division

Mr. Mark Leiby
Florida Dept. of Environmental Protection
Florida Marine Research Institute

Dr. Joanne Lyczkowski-Shultz
National Marine Fisheries Service
Pascagoula Laboratory

Dr. Richard Leard
Gulf of Mexico Fishery Management Council

Mr. David Donaldson
SEAMAP Coordinator
Gulf States Marine Fisheries Commission

DATA COORDINATING WORK GROUP

Mr. Kenneth Savastano, Leader
National Marine Fisheries Service
Stennis Space Center

Mr. Terry Henwood
Adult Finfish Work Group Leader
National Marine Fisheries Service
Pascagoula Laboratory

Mr. Perry Thompson
Environmental Data Work Group Leader
National Marine Fisheries Service
Pascagoula Laboratory

Dr. Joanne Lyczkowski-Shultz
Plankton Work Group Leader
National Marine Fisheries Service
Pascagoula Laboratory

Mr. Michael Murphy
Red Drum Work Group Leader
Florida Department of Environmental Protection
Florida Marine Research Institute

Mr. Richard Waller
SEAMAP Chairman
Reef Fish Work Group Leader
University of Southern Mississippi
Institute of Marine Sciences
Gulf Coast Research Laboratory

Mr. Stevens Heath
Shrimp/Groundfish Work Group Leader
Alabama Department of Conservation and Natural Resources
Marine Resources Division

TABLE OF CONTENTS

PAGE

LIST OF TABLES

PAGE

LIST OF TABLES

PAGE

LIST OF TABLES

PAGE

LIST OF TABLES

PAGE

LIST OF TABLES

PAGE

LIST OF FIGURES

PAGE

LIST OF FIGURES

LIST OF FIGURES

PAGE

LIST OF FIGURES

PAGE

ACKNOWLEDGMENTS

The 1996 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 Department of Environmental Protection, 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.

Special thanks go to Rosanne Brasher with Johnson Controls and to Cheryl Noble of the Gulf States Marine Fisheries Commission staff for their assistance in preparing this atlas.

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.); within the existing framework of the GSMFC, a SEAMAP Subcommittee was then formed. The Subcommittee consists of one representative from each state fishery management agency [Florida Department of Environmental Protection (FDEP); Alabama Department of Conservation and Natural Resources (ADCNR); Mississippi Department of Marine Resources (MDMR) represented by the University of Southern Mississippi Institute of Marine Science, Gulf Coast Research Laboratory (USM/IMS/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 organized and successfully coordinated a number of surveys between 1982 through 1995 (Table 1). The 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); and 1995 (Donaldson et. al. 1997b). Environmental assessment activities occurred with each of the surveys found in Table 1.

In March 1996, 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 1995. Overall survey objectives in 1982 to 1995 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. The basis for plankton work was primarily assessment of selected finfish and invertebrate eggs and larvae across the northern Gulf of Mexico (Sherman et al. 1983). The basis for the trawl surveys which started with the Texas Closure (Nichols 1982, 1984; Nichols and Poffenberger 1987), was to establish a seasonal data base to assess the abundance and distribution of the shrimp and groundfish stocks across the northern Gulf of Mexico. The basis for the Reef Fish Survey is 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 fifteenth in a series of SEAMAP environmental and biological atlases presents such data, in a summarized form, collected during the 1996 SEAMAP surveys. The area covered in the Gulf of Mexico for all SEAMAP survey activities during 1996 is shown in Figure 1.

MATERIALS AND METHODS

Methodology for the 1996 SEAMAP surveys is similar to that of the 1982 through 1995 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 17-May 24) and the Florida vessel SUNCOASTER (May 20 and 25).

Vessels that participated in the Summer Shrimp/Groundfish Survey and concurrently sampled plankton and environmental data included the USM/IMS/GCRL vessel TOMMY MUNRO (June 6-10, 25 and July 5-7); the NOAA Ship OREGON II (June 14 - July 17); and the Louisiana vessel PELICAN (July 1-5). The TPWD vessels ARANSAS BAY, MATAGORDA BAY, LAGUNA MADRE, GALVESTON BAY and SABINE (June 4-29) and the Alabama vessel A.E. VERRILL (June 5) did not sample plankton in conjunction with the summer survey.

Vessels that participated in the Reef Fish Survey and concurrently sampled environmental data included the Alabama vessel A.E. VERRILL (May 8; August 29; September 24; and October 24); and the NOAA Ship CHAPMAN (June 29-August 21).

Vessels that participated in collecting plankton and environmental data during the Fall Plankton Survey included the NOAA Ship CHAPMAN (September 5-25); the USM/IMS/GCRL vessel TOMMY MUNRO (September 21-23); the Alabama vessel A.E. VERRILL (October 10); the Florida vessel SUNCOASTER (September 11-14) and the Louisiana vessel PELICAN (September 30-October 3).

Vessels that participated in the Fall Shrimp/Groundfish Survey and concurrently sampled plankton and environmental data included the NOAA Ship OREGON II (October 11-November 22); the USM/IMS/GCRL vessel TOMMY MUNRO (October 21-25) and the Louisiana vessel PELICAN (December 2-5). The Alabama vessel A.E. VERRILL (October 28-30); and the TPWD vessels ARANSAS BAY, MATAGORDA BAY, LAGUNA MADRE, GALVESTON BAY and SABINE (November 13-20) did not sample plankton in conjunction with the fall survey.

In addition, the NOAA vessel CHAPMAN participated in the Winter Plankton Survey (December 3-16). The Winter Plankton Survey has been identified as a priority by the SEAMAP Subcommittee; however, due to limited funding, a long term survey has not yet been implemented. Therefore, winter sampling is opportunistic and does not occur on a regular basis.

PLANKTON SURVEYS

Plankton samples were taken at stations arranged in a systematic grid across the Gulf of Mexico. Such a grid was chosen because of the large survey area. Stations were set at minimum intervals of 30 miles (1/2 degree) and during the Fall Plankton Survey, Mississippi sampled stations set at an interval of 6 nautical miles. The exceptions were with LDWF vessels, which collected samples opportunistically at the end of a trawl station.

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

At each designated plankton station, either an oblique bongo/surface neuston tow or a surface neuston tow was made. In deep water bongo stations (more than 95 m) a standard oblique tow was made to 200 m, or to 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. Tucker trawls fitted with three 0.335-mm mesh nets sampled the water column in the following method: net 1 was fished obliquely from the surface to near-bottom; net 2 was opened at the near bottom and fished for three minutes; and net 3 was fished during trawl retrieval from near bottom to the surface. The Louisiana vessels made plankton tows with small, 20-cm bongo nets with 0.333-mm mesh and soft cod ends.

Samples were preserved initially in 10% buffered formalin. After a 48-hr period, 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 FDEP, for long-term storage under museum-like conditions. Sorted ichthyoplankton samples from 1982 through 1996 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/IMS/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/IMS/GCRL, for use by researchers.

ENVIRONMENTAL SURVEYS

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

Vessel: Vessel code for each vessel.
Station: Station identifiers varied by state and vessel.
Cruise: Cruise numbers varied by state and vessels.
Date: Month/Day/Year.
Time: Local time and time zone, recorded at the start of sampling.
Latitude/longitude: Recorded to seconds.
Barometric pressure: Recorded in millibars.
Wave height: Estimated visually in meters.
Wind speed and direction: Recorded in 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 $MgCO_3$ 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 were also collected using a Seabird CTD. This method only obtains measures of chlorophyll a and is a measure of fluorescence (FL).

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.

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 and 13 through 21 (Figure 2). Trawl stations for NMFS, Alabama, Mississippi and Louisiana vessels are made with a standard SEAMAP 40-ft net, and 20-ft net for Texas vessels. 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/IMS/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 vessels did not cover a complete depth stratum on several stations because of the distance between depth strata.

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 and 13 through 22 (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.

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. The primary gear used to observe fishes and to record reef habitat is a Hi-8 video camera in an underwater housing mounted outside a single funnel, baited fish trap. 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 east and west 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

Twelve thousand eight hundred and seventy (12,870) identified ichthyoplankton lots were received at the SEAMAP Archiving Center in 1996. 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 and the Winter Plankton Survey stations are shown in Figure 12.

Forty-four additional collections were taken by Mississippi during the fall plankton survey in waters of the east Louisiana-Mississippi-Alabama shelf.

ENVIRONMENTAL SURVEYS

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 Gulf Shores, 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.

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

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

where α = 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 13-92. 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 4a-13a 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 statistical zones 11 and 13 through 21, by depth stratum. Tables 4b-13b list the total catch and environmental data from the 40-ft and 20-ft nets within NMFS statistical zones listed above, by depth stratum.

Fall Shrimp/Groundfish Survey

Shrimp and groundfish sampling was conducted during October through December from off Mobile Bay, 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 14. The species lists for Table 14 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 14 are displayed in plots of number/hour and lb/hour in Figures 13 to 92. 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 15a-25a 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 statistical zones 11 and 13 through 22, by depth stratum. Tables 15b-25b 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.

REEF FISH SURVEY

Primary data collection and sampling for reef fish assessment was conducted during June to August from the Texas Flower Garden Banks to the Florida Keys by NMFS personnel; and throughout the year by personnel of the State of Alabama in their state waters. 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 26. The species list for Table 26 is ranked in order of abundance. Video tapes from all sources were analyzed using standardized protocols (Russell, unpublished report).

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 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 will be utilized in resource management decisions, and because of the program's ability to process data quickly, the capability exists to optimize some fisheries on a real-time basis. The long-term data set on all of the species collected, not just those of commercial and recreational importance, offers an opportunity to examine ecological relationships, with the eventual goal of developing management models that take into account the multi-species nature of most Gulf fisheries. The value of the SEAMAP program

lies in its use for both immediate and long-range management. In addition, there are many studies and other uses for SEAMAP data that are not mentioned here.

Much use has already been made of SEAMAP data. For example, during the past SEAMAP surveys an area of very low dissolved bottom oxygen was found off Louisiana in the summers of 1982, 1985-1996. 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.

Richards et al. 1984, Kelley et al. 1985, Kelley et al. 1990, and Kelley et al. 1993 used SEAMAP ichthyoplankton data to identify larval abundance and distribution of key Gulf of Mexico species. SEAMAP ichthyoplankton data were also used to estimate spawning stock sizes of bluefin tuna in the Gulf of Mexico (McGowan and Richards 1986; Scott et al. 1990; Scott and Turner 1991). The results of this work were recognized by the International Commission for the Conservation of Atlantic Tunas as a reliable index of stock size. Continuation of the ichthyoplankton surveys each spring by SEAMAP will provide information on Gulf of Mexico tuna stocks.

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 still allow small brown shrimp to be protected from harvest but would allow the taking of larger brown shrimp by fishermen in deeper waters.

National Marine Fisheries Service was charged with evaluating the effects of the Texas Closure and submitted a report (Nance, unpublished report) to the GMFMC in December 1996. This report contained the results and an overview of the effect of the 1996 Texas Closure. After review of these data and other information, the GMFMC voted to continue the Texas Closure for 1997.

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.

Data requests and inquiries, as well as requests for plankton samples, can be made by contacting David Donaldson, 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 dmd@gsmfc.org.

Table 1. List of SEAMAP survey activities from 1982 to 1995.

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	--	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

Table 2. Selected environmental parameters measured during 1996 SEAMAP surveys in the Gulf of Mexico, by individual vessel and survey. (Gear codes: ST = trawl; PN = bongo and/or neuston; TV = trap/video).

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	4/17/96	943	3000.0	8700.0	10	72	36	70	18.7	17.0	17.6	35.2	35.5	36.2			6.1	5.0	4.5	PN
04002	4/17/96	1511	2930.0	8630.0	9	210	100	200	19.0	18.1	15.7	35.4	36.2	36.1			7.2	4.9	4.0	PN
04003	4/17/96	2048	2900.1	8559.6	8	240	101	200	19.6	18.5	15.2	36.1	36.1	36.0			6.9	6.3	3.9	PN
04004	4/18/96	204	2830.0	8529.9	99	195	98	194	19.3	18.1	14.8	35.9	36.1	35.9			6.9	5.5	3.7	PN
04005	4/18/96	645	2800.3	8459.9	6	250	100	199	20.3	17.2	13.9	36.1	36.1	35.8			6.7	5.0	3.9	PN
04006	4/18/96	1154	2730.2	8500.2	99	404	100	200	23.0	18.2	15.2	36.4	36.5	36.0		0.073	6.4	4.4	4.1	PN
04007	4/18/96	1640	2700.1	8500.3	99	450	101	200	22.7	18.9	13.8	36.4	36.4	35.8			6.4	4.4	3.8	PN
04008	4/18/96	2145	2630.3	8459.9	99	1646	100	200	22.4	17.2	12.9	36.3	36.4	35.6			6.5	4.3	3.8	PN
04009	4/19/96	210	2600.1	8459.5	99	2934	100	196	25.3	20.7	16.3	36.4	36.6	36.2			6.0	4.8	3.8	PN
04010	4/19/96	617	2559.9	8429.9	99	215	100	201	25.1	20.3	14.8	36.4	36.7	36.0			6.0	4.4	4.0	PN
04011	4/19/96	952	2559.9	8400.2	99	135	67	133	23.4	21.4	14.8	36.4	36.7	36.0			6.2	4.9	4.5	PN
04012	4/19/96	1356	2530.0	8400.0	99	130	65	129	24.5	21.3	15.6	36.4	36.4	36.1		0.077	6.1	5.1	4.6	PN
04013	4/19/96	1711	2500.0	8359.9	99	122	61	121	23.2	20.5	17.4	36.4	36.4	36.4			6.3	6.6	5.5	PN
04014	4/19/96	2120	2429.9	8400.0	99	2419	101	201	24.2	19.9	14.5	36.4	36.5	36.1			6.1	5.4	4.1	PN
04015	4/20/96	56	2430.6	8430.3	99	3447	99	202	26.4	25.3	19.5	36.2	36.5	36.7			5.8	5.4	4.4	PN
04017	4/20/96	908	2459.8	8459.8	99	3349	103	202	25.5	25.1	22.6	36.2	36.4	36.9			5.9	5.8	4.5	PN
04018	4/20/96	1442	2500.0	8529.9	99	3285			26.5			36.6				0.056				PN
04023	4/21/96	849	2629.9	8559.8	99	3203	103	201	24.1	18.6	14.3	36.4	36.3	35.9			6.2	5.3	3.9	PN
04024	4/21/96	1244	2700.2	8600.1	99	3185	101	201	22.2	17.0	12.0	36.4	36.2	35.5			6.4	4.0	3.7	PN
04027	4/22/96	32	2830.0	8559.9	99	666	100	200	21.9	19.0	15.7	36.3	37.0	36.1			6.6	5.9	3.9	PN
04028	4/22/96	507	2900.1	8629.8	99	384	102	202	21.1	18.6	15.1	36.1	36.1	36.0			6.7	6.3	4.0	PN
04029	4/22/96	852	2859.9	8659.8	99	700	100	200	22.4	19.7	16.7	36.4	36.4	36.3			6.4	6.3	4.1	PN
04030	4/22/96	1331	2830.0	8700.0	99	904	102	200	21.5	19.1	16.0	36.3	36.2	36.1		0.069	6.7	5.6	4.0	PN
04031	4/22/96	1727	2800.0	8700.1	99	2821	101	200	22.4	17.8	13.6	36.4	36.4	35.7			6.6	4.3	3.9	PN
04032	4/22/96	2155	2729.8	8659.8	99	3040	99	200	21.7	18.9	11.2	36.3	36.4	35.4			6.5	5.1	3.8	PN
04033	4/23/96	150	2700.0	8659.9	99	2900	100	200	23.0	16.5	12.7	36.4	36.2	35.6			6.5	4.1	3.7	PN
04034	4/23/96	637	2629.9	8700.0	99	3000	100	201	24.7	18.1	14.1	36.4	36.3	35.8			6.2	4.1	3.6	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
04035	4/23/96	847	2616.1	8659.9	99	3072	101	200	25.0	19.0	13.3	36.5	36.5	35.7			6.2	4.4	4.0	PN
04036	4/23/96	1343	2600.0	8729.9	99	3130	101	200	23.6	18.4	14.2	36.4	36.4	35.8		0.072	6.3	4.3	4.0	PN
04037	4/23/96	1816	2600.1	8800.0	99	3003	98	201	24.1	19.1	14.8	36.4	36.3	35.9			6.4	5.4	3.8	PN
04038	4/23/96	2244	2630.1	8800.0	99	2694	100	201	23.8	18.4	14.1	36.3	36.4	35.8			6.4	4.3	3.8	PN
04039	4/24/96	218	2700.1	8800.0	99	2730	100	201	23.0	18.3	13.6	36.3	36.4	35.7			6.5	4.2	3.8	PN
04040	4/24/96	902	2729.9	8800.1	99	2560	101	203	22.5	17.2	13.6	36.4	36.4	35.8			6.5	4.2	3.9	PN
04041	4/24/96	1333	2800.1	8800.1	99	2420	100	200	22.4	18.4	14.2	36.3	36.6	35.8		0.081	6.6	4.5	3.9	PN
04042	4/24/96	1747	2829.9	8800.0	99	2275	100	201	22.9	18.5	14.9	36.4	36.3	35.9			6.4	4.9	4.1	PN
04043	4/24/96	2130	2900.0	8800.0	11	1376	101	201	22.3	20.0	15.3	36.4	36.4	36.0			6.4	5.6	3.8	PN
04044	4/25/96	147	2930.1	8760.0	10	44	22	43	20.8	20.0	17.8	34.4	35.5	36.0			5.3	6.3	3.3	PN
04045	4/25/96	620	2900.0	8830.0	99	620	101	201	21.4	18.6	14.6	36.1	36.4	35.9			6.6	4.3	3.8	PN
04046	4/25/96	938	2859.9	8859.8	99	74	37	73	21.3	19.9	19.2	27.1	36.2	36.2			7.4	5.4	4.4	PN
04047	4/25/96	1358	2830.0	8900.0	99	834	103	200	22.3	18.5	14.9	36.3	36.2	36.0		0.083	6.5	4.6	3.8	PN
04048	4/25/96	1759	2800.0	8900.0	99	1310	100	201	22.3	19.8	15.7	36.3	36.4	36.1			6.6	5.9	3.9	PN
04049	4/25/96	2201	2729.9	8900.0	99	1830	99	202	22.6	18.8	14.3	36.4	36.4	35.9			6.4	4.7	3.9	PN
04050	4/26/96	131	2700.0	8859.9	99	2275	102	200	23.3	18.9	14.7	36.3	36.5	35.9			6.3	4.3	3.9	PN
04051	4/26/96	527	2630.2	8859.9	99	2875	102	206	24.1	20.8	16.7	36.4	36.3	36.3			6.0	6.2	4.4	PN
04052	4/26/96	841	2559.9	8900.1	99	3111	100	202	24.2	23.7	19.1	36.4	36.4	36.6			6.1	5.9	4.4	PN
04053	4/26/96	1320	2600.0	8930.0	99	3220	104	200	24.7	23.7	20.9	36.4	36.4	36.8			6.1	6.0	4.3	PN
04054	4/26/96	1654	2600.0	9000.0	99	2912	100	200	25.0	23.7	20.6	36.4	36.4	36.7			6.1	6.0	4.3	PN
04055	4/26/96	2030	2630.1	9000.1	99	2720	102	208	24.9	23.8	18.7	36.4	36.4	36.5			6.1	6.0	4.5	PN
04056	4/26/96	2352	2700.1	8959.9	99	2366	100	204	24.7	21.1	16.1	36.4	36.4	36.1			6.2	6.2	4.3	PN
04057	4/27/96	353	2729.8	8960.0	99	1100	102	202	24.0	18.1	14.8	36.3	36.3	35.9			6.3	4.5	3.8	PN
04058	4/27/96	1055	2730.1	9100.0	99	1116	101	201	24.2	18.9	14.8	36.3	36.1	35.9		0.056	6.3	6.4	3.6	PN
04059	4/27/96	1430	2700.0	9100.0	99	1711	100	201	24.3	18.1	13.2	36.3	36.4	35.7			6.3	4.3	3.9	PN
04060	4/27/96	1838	2630.1	9100.0	99	2093	100	202	24.3	16.8	12.6	36.4	36.2	35.6			6.3	4.2	3.9	PN
04061	4/27/96	2222	2600.0	9100.0	99	2912	101	199	24.0	18.1	14.3	36.3	36.4	35.9			5.4	3.8	3.8	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
04062	4/28/96	205	2559.9	9130.0	99	2196	100	199	24.1	18.3	14.3	36.4	36.4	35.9			5.4	4.2	4.0	PN
04063	4/28/96	520	2600.1	9159.8	99	2196	103	204	24.0	19.9	16.4	36.3	36.3	36.2			6.3	5.9	4.3	PN
04064	4/28/96	913	2629.3	9200.1	99	1812	100	203	24.1	20.7	16.4	36.4	36.3	36.1			6.3	6.3	3.6	PN
04065	4/28/96	1247	2700.2	9159.9	99	1422	101	200	24.0	20.4	16.8	36.3	36.3	36.3			6.3	5.9	3.7	PN
04066	4/28/96	1651	2730.1	9200.0	99	1432	99	201	23.9	21.0	15.6	36.3	36.5	36.0			6.3	5.5	3.6	PN
04067	4/28/96	2238	2730.0	9259.9	99	922	103	199	22.8	19.5	14.6	36.2	36.2	35.9			6.5	5.8	3.6	PN
04068	4/29/96	230	2700.0	9300.0	99	1275	101	200	23.2	19.0	14.8	36.2	36.4	35.9			6.4	3.8	3.5	PN
04069	4/29/96	653	2630.1	9300.1	99	1665	101	202	23.1	18.8	14.1	35.6	36.4	35.8			6.5	4.3	3.5	PN
04070	4/29/96	907	2616.1	9300.0	99	1885	100	203	22.7	19.2	14.3	35.4	36.3	35.9			6.6	4.9	3.5	PN
04071	4/29/96	1350	2600.0	9330.0	99	2288	100	203	23.8	22.1	16.5	36.4	36.3	36.2		0.027	6.3	6.3	3.5	PN
04072	4/30/96	1115	2730.0	9359.9	99	915	102	206	22.0	20.2	15.6	36.3	36.3	36.1		0.073	6.5	6.4	3.6	PN
04073	4/30/96	1715	2730.0	9500.0	99	914	100	202	22.4	18.1	13.9	36.0	36.4	35.8			6.5	3.7	3.5	PN
04074	4/30/96	2108	2700.0	9500.1	99	1527	100	200	22.0	19.7	13.9	35.4	36.3	35.8			6.7	5.8	3.5	PN
04075	5/ 1/96	125	2630.0	9460.0	99	1665	100	200	23.1	20.8	15.3	36.4	36.4	36.4			6.4	4.9	3.5	PN
04076	5/ 1/96	514	2600.2	9500.1	99	2350	101	202	23.4	21.5	16.4	36.4	36.3	36.2			6.3	6.2	3.6	PN
04077	5/ 1/96	919	2600.9	9530.2	99	1455	100	200	23.0	20.2	14.4	36.2	36.3	35.9			6.4	4.8	3.5	PN
04078	5/ 1/96	1259	2601.0	9560.0	99	1025	105	207	22.4	17.1	13.9	35.3	36.3	35.8		0.111	6.6	3.7	3.4	PN
04079	5/ 1/96	1702	2630.0	9600.0	99	1074	104	198	22.0	17.6	14.0	35.5	36.2	35.8			6.6	3.9	3.5	PN
04080	5/ 1/96	2113	2659.9	9600.1	99	880	101	201	21.8	18.0	13.0	36.2	36.3	35.7			4.8	3.9	3.5	PN
04081	5/ 2/96	126	2730.0	9559.9	20	215	101	198	22.1	18.9	14.6	36.3	36.4	35.9			6.5	4.7	3.5	PN
04082	5/ 2/96	501	2759.7	9600.1	20	47	23	45	20.5	20.3	19.8	34.4	34.8	36.0		0.289	6.7	6.8	5.9	PN
04083	5/ 2/96	1416	2800.0	9500.0	19	80	41	78	21.8	21.3	18.4	36.1	36.2	35.9			6.6	6.6	5.9	PN
04084	5/ 2/96	1745	2800.0	9430.0	18	71	35	70	22.2	21.3	18.4	36.2	36.2	35.9			6.2	6.7	6.2	PN
04085	5/ 2/96	2101	2800.0	9400.0	17	82	40	81	20.9	20.3	17.4	35.5	35.4	35.8			6.7	6.9	6.3	PN
04086	5/ 3/96	407	2800.2	9259.9	16	107	54	105	21.5	18.6	17.3	36.1	36.0	36.0			6.6	6.9	4.9	PN
04087	5/ 3/96	740	2800.0	9230.0	16	107	54	106	22.0	19.9	17.4	36.3	36.2	36.1			6.5	6.8	4.9	PN
04088	5/ 3/96	1107	2759.9	9159.9	99	120	63	119	22.3	18.9	17.3	36.2	36.1	36.2		0.072	6.5	6.1	4.0	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
04089	5/ 3/96	2014	2800.1	9100.0	14	151	75	150	22.7	19.2	16.5	36.3	36.2	36.2			6.5	6.1	3.7	PN
04090	5/ 4/96	118	2759.0	9030.0	99	403	102	199	23.8	19.0	15.1	36.4	36.2	36.0			6.3	6.1	3.7	PN
04091	5/ 4/96	432	2800.1	9000.4	14	550	103	203	23.5	18.8	15.2	36.3	36.3	36.0		0.053	6.3	4.8	3.8	PN
04092	5/ 8/96	43	2959.9	8660.0	9	72	36	72	22.8	19.7	18.2	34.6	35.6	36.1			6.6	6.2	4.9	PN
04093	5/ 8/96	526	2930.0	8630.0	9	212	105	210	23.4	17.5	13.5	34.7	36.3	35.7			6.4	4.2	3.6	PN
04094	5/ 8/96	1013	2859.9	8600.2	99	250	102	202	23.5	17.7	14.0	35.6	36.3	35.9			6.6	4.5	3.8	PN
04095	5/ 8/96	1812	2830.0	8530.0	99	373	104	199	23.7	18.3	15.1									PN
04096	5/ 8/96	2313	2800.0	8459.9	5	247	128	247	23.0	16.8	12.7									PN
04097	5/ 9/96	351	2730.0	8500.0	5	404	98	223	25.1	18.8	14.2									PN
04098	5/ 9/96	655	2700.1	8500.0	99	850	97	200	24.8	17.6	12.4									PN
04099	5/ 9/96	1041	2630.3	8460.0	99	1900	98	200	25.3	18.9	13.0									PN
04100	5/ 9/96	1420	2559.7	8459.9	99	3300	117	207	26.5	18.7	14.7									PN
04101	5/ 9/96	1838	2600.1	8430.1	99	222	103	200	26.1	17.0	12.7									PN
04102	5/ 9/96	2136	2600.0	8400.1	99	138	69	138	25.8	20.7	14.8									PN
04103	5/10/96	140	2530.0	8400.0	3	138	67	135	25.9	20.0	16.3									PN
04104	5/10/96	504	2459.0	8359.9	2	126	62	126	26.5	20.4	17.5									PN
04105	5/10/96	840	2430.0	8359.9	99	2000	114	200	27.4	19.8	15.9									PN
04106	5/12/96	2300	2429.9	8430.0	99	3440	100	182	27.5	21.8	17.8	36.3	36.5	36.4		0.043	5.6	6.2	4.1	PN
04107	5/13/96	433	2430.0	8500.1	99	3367	100	153	27.0	25.7	23.7	36.3	36.4	36.9			2.4	5.6	4.7	PN
04108	5/13/96	846	2459.9	8459.9	99	3349	101	197	27.6	25.3	19.3									PN
04109	5/13/96	1302	2500.0	8530.0	99	3330	100	200	27.9	25.0	23.0									PN
04110	5/13/96	1740	2500.2	8559.7	99	3276	100	200	27.7	25.2	24.1									PN
04111	5/13/96	2206	2530.3	8600.0	99	3300	108	209	27.3	25.0	23.0									PN
04112	5/14/96	128	2530.0	8628.0	99	3620	101	206	27.4	25.1	21.9	36.3	36.3							PN
04113	5/14/96	601	2600.0	8559.8	99	3200	99	199	26.7	25.1	20.4	36.3	36.3	35.3						PN
04114	5/14/96	1022	2629.9	8559.9	99	3128	100	207	27.7	25.3	20.0	36.2	36.4	36.7						PN
04115	5/14/96	1443	2700.1	8559.9	99	3200	100	200	27.6	22.7	16.8	36.2	36.5	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
04116	5/14/96	1924	2730.0	8600.0	99	3212	101	200	26.6	18.9	13.9	36.4	36.4	35.8						PN
04117	5/14/96	2300	2800.0	8600.0	99	1000	101	199	25.3	18.3	14.8	36.4	36.2	35.9						PN
04118	5/15/96	321	2830.0	8600.0	99	339	101	202	24.0	19.2	14.9	35.7	36.3	35.9						PN
04119	5/15/96	913	2859.9	8629.9	99	339	109	219	24.3	18.4	13.9									PN
04120	5/15/96	1735	2900.0	8700.0	99	700	100	200	24.8	19.2	15.0									PN
04121	5/15/96	2143	2830.0	8700.0	99	870	107	200	25.4	18.5	14.6									PN
04122	5/16/96	122	2800.6	8659.9	99	2860	112	210	25.7	17.4	12.5									PN
04123	5/16/96	513	2730.0	8659.8	99	3013	105	220	26.3	16.5	12.0									PN
04124	5/16/96	845	2700.6	8659.8	99	2927	107	196	25.4	17.3	12.2									PN
04125	5/16/96	1325	2630.0	8700.0	99	2980	100	200	28.1	24.2	17.9	36.2	36.9	36.5			5.7	4.7	4.7	PN
04126	5/16/96	1604	2616.1	8659.9	99	3076	100	200	27.9	24.9	19.0	36.3	36.5	36.6			5.0	5.4	4.5	PN
04127	5/16/96	2050	2600.0	8729.8	99	3090	104	204	27.8	22.0	14.8	36.3	36.3	36.1			5.8	6.6	4.1	PN
04128	5/17/96	38	2600.0	8800.1	99	2965	101	201	26.6	18.9	14.1	36.5	36.5	35.8			6.0	4.3	4.0	PN
04129	5/17/96	443	2630.1	8759.9	99	2690	101	201	25.6	17.5	12.9	36.4	36.4	35.6			6.1	4.1	3.9	PN
04130	5/17/96	818	2700.1	8800.0	99	2727	102	199	25.4	16.9	12.2	36.4	36.3	35.5			6.2	3.9	3.7	PN
04131	5/17/96	1321	2730.0	8800.0	99	2562	100	200	25.8	17.7	12.1	36.4	36.3	35.5		0.064	6.0	4.0	3.8	PN
04132	5/17/96	1731	2800.1	8800.0	99	2435	100	200	26.1	19.4	15.3	36.4	36.3	36.1			6.0	6.1	3.9	PN
04133	5/17/96	2130	2830.0	8800.0	99	2272	101	200	25.2	19.5	16.7	36.3	36.3	36.2			6.2	6.3	4.1	PN
04134	5/18/96	59	2900.0	8759.9	99	1370	101	201	25.4	18.6	15.4	36.4	36.2	36.0			6.2	5.8	4.0	PN
04135	5/18/96	457	2930.0	8800.0	11	45	23	42	24.8	19.7	19.2	33.4	35.2	36.1			6.3	5.5	4.1	PN
04136	5/18/96	1212	2859.9	8829.9	99	642	101	202	25.9	18.8	14.9	36.4	36.5	35.9		0.058	6.1	4.3	3.9	PN
04137	5/18/96	1616	2900.1	8859.8	11	71	35	70	27.1	21.9	18.7	26.2	36.0	36.4			5.2	5.7	4.0	PN
04138	5/18/96	2020	2830.0	8859.7	99	840	101	201	25.9	19.5	15.1	36.4	36.3	36.0			6.1	5.9	4.0	PN
04139	5/19/96	10	2800.0	8900.0	99	1310	101	201	25.8	18.8	16.6	36.3	36.2	36.2			6.2	6.1	4.4	PN
04140	5/19/96	408	2730.0	8900.0	99	1730	100	201	25.4	19.3	15.1	36.3	36.4	36.0			6.2	5.2	3.9	PN
04141	5/19/96	825	2700.0	8900.0	99	2353	102	199	26.0	18.5	14.8	36.4	36.2	35.9			6.1	5.3	3.9	PN
04142	5/19/96	1309	2630.0	8859.8	99	3090	100	200	26.4	20.0	15.2	36.4	36.2	36.1		0.037	5.8	6.3	3.9	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
04143	5/19/96	1627	2600.0	8900.0	99	3130	100	200	26.4	21.2	17.3	36.4	36.3	36.3			6.0	6.1	4.2	PN
04144	5/19/96	2052	2600.0	8929.9	99	3295	100	200	26.2	23.8	20.5	36.4	36.4	36.7			5.3	6.0	4.2	PN
04145	5/20/96	39	2559.9	9000.0	99	3012	101	201	26.2	23.9	20.8	36.0	36.4	36.8			2.9	5.9	4.2	PN
04146	5/20/96	450	2630.1	8959.8	99	2785	100	201	26.4	21.5	17.5	36.5	36.3	36.4			5.9	5.9	4.2	PN
04147	5/20/96	841	2700.0	9000.0	99	2397	100	201	26.0	17.7	12.7	36.4	36.8	35.6			6.0	4.4	3.8	PN
04148	5/20/96	1318	2730.0	8959.9	99	1182	100	200	26.1	18.8	14.2	36.1	36.3	35.8						PN
04149	5/20/96	1643	2800.2	8959.8	99	546	100	200	26.2	19.5	14.5	36.2	36.4	36.0		0.067	6.1	4.5	4.0	PN
04150	5/20/96	2114	2759.0	9030.1	99	414	100	200	26.1	18.5	14.2	36.4	36.5	35.8			6.1	4.2	3.7	PN
04151	5/21/96	38	2759.9	9100.0	99	154	79	153	25.7	20.4	15.2	36.2	36.5	36.0			5.9	4.9	3.6	PN
04152	5/21/96	445	2730.0	9100.0	99	1075	100	202	26.0	18.3	14.4	36.2	36.2	35.9			6.2	4.7	3.7	PN
04153	5/21/96	844	2659.9	9100.2	99	1751	100	202	25.4	18.8	14.8	36.1	36.1	35.9			6.1	6.7	3.6	PN
04154	5/21/96	1420	2630.0	9059.9	99	2090	100	200	26.5	20.2	15.7	36.4	36.2	36.1		0.072	5.3	6.2	3.5	PN
04155	5/21/96	1759	2600.1	9100.0	99	2730	100	200	27.7	20.7	16.4	36.5	36.3	36.2			5.9	6.5	3.9	PN
04156	5/21/96	2150	2559.9	9130.0	99	2260	101	199	27.0	21.4	16.3	36.5	36.4	36.2			5.9	6.4	3.5	PN
04157	5/22/96	109	2559.9	9200.0	99	2364	101	200	26.9	21.4	16.5	36.6	36.4	36.1			5.9	6.4	4.1	PN
04158	5/22/96	511	2630.0	9200.0	99	1820	100	202	26.3	20.4	17.7	36.4	36.3	36.4			6.0	6.6	4.1	PN
04159	5/22/96	952	2700.0	9200.0	99	1390	110	215	26.5	20.4	15.5	36.4	36.3	36.0			6.0	6.3	3.5	PN
04160	5/22/96	1503	2729.9	9159.9	99	771	100	200	26.1	20.0	15.6	35.4	36.3	36.1		0.063	6.2	6.4	3.6	PN
04161	5/22/96	2001	2800.0	9200.0	16	120	61	120	27.2	20.6	17.7	34.8	36.3	36.2			3.8	6.7	4.4	PN
04162	5/22/96	2353	2759.9	9230.0	99	107	54	107	26.5	19.9	17.6	35.2	36.2	36.2			6.1	6.5	4.0	PN
04163	5/23/96	307	2800.0	9300.0	16	108	55	108	26.7	19.1	17.2	35.4	35.9	36.1			6.1	7.0	4.4	PN
04164	5/23/96	733	2730.0	9300.0	99	840	102	200	26.3	19.2	14.9	35.7	36.3	36.0			6.0	5.0	3.5	PN
04165	5/23/96	1255	2659.8	9259.8	99	1227	100	200	26.8	20.9	15.9	36.1	36.3	36.1		0.108	4.4	5.8	3.5	PN
04166	5/23/96	1656	2630.0	9300.0	99	1724	100	200	26.9	20.0	15.3	36.0	36.2	36.0			5.9	6.2	3.6	PN
04167	5/23/96	1945	2616.0	9300.0	99	1875	100	200	26.9	19.4	14.8	36.0	36.2	35.9			6.0	5.6	3.9	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
04168	5/23/96	2359	2559.9	9330.0	99	2272	101	200	26.5	20.0	15.5	36.4	36.4	36.1			5.9	5.5	4.0	PN
04169	5/24/96	322	2559.9	9400.1	99	2272	102	200	26.5	21.5	16.8	36.4	36.3	36.2			5.9	6.4	3.6	PN
04170	5/24/96	733	2630.2	9359.9	99	1555	102	203	26.3	21.7	17.0	36.4	36.3	36.2			5.9	6.1	3.6	PN
04171	5/24/96	1122	2700.1	9400.0	99	979	101	201	26.6	21.4	16.3	36.4	36.3	36.2		0.063	5.9	6.0	3.6	PN
04172	5/24/96	1531	2729.9	9359.9	99	836	100	200	26.7	19.0	13.8	35.3	36.2	35.8			5.8	4.8	3.4	PN

Table 2. Selected environmental parameters (continued)

SUNCOASTER, 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
1	5/20/96	0439	2800.0	8500.0	99	256	100	200	25.4	17.4	13.1	36.0	36.3	35.7	0.071		3.4	2.6	2.4	PN
2	5/20/96	0843	2730.0	8500.0	5	312	100	200	25.9	19.0	15.0	36.5	36.3	36.0	0.088		3.5	3.7	2.6	PN
3	5/20/96	1232	2659.9	8459.2	99	620	100	200	27.6	21.7	16.5	36.4	36.8	36.2	0.089		3.4	3.0	2.8	PN
4	5/20/96	1619	2630.0	8500.0	99	630	100	200	27.8	24.0	18.8	36.3	36.7	36.6	0.037		3.3	3.3	2.8	PN
5	5/20/96	2017	2600.0	8500.0	99	900	100	200	27.5	24.0	18.9	36.3	36.5	36.6	0.072		3.4	3.5	2.9	PN
6	5/23/96	0709	2430.0	8330.0	2	284	100	200	25.6	16.6	11.9	36.4	36.3	35.5	0.071		3.4	2.7	2.4	PN
7	5/23/96	1100	2430.0	8400.0	99	900	100	200	26.4	18.0	13.1	36.4	36.5	35.7	0.108		3.3	2.8	2.4	PN
8	5/23/96	1505	2400.0	8359.9	99	900	100	200	27.0	18.7	13.8	36.5	36.5	35.8	0.089		3.4	3.0	2.4	PN
9	5/23/96	2051	2430.0	8430.0	99	900	100	200	27.6	19.3	14.1	36.5	36.5	35.9	0.214		3.6	3.4	2.6	PN
10	5/24/96	0037	2430.0	8500.0	99	900	100	200	27.6	25.9	18.8	36.3	36.5	36.6	0.018		3.3	3.5	2.8	PN
11	5/24/96	0446	2430.0	8530.0	99	900	100	200	27.7	26.1	22.9	36.1	36.6	36.9	0.071		3.3	3.5	3.0	PN
12	5/24/96	0913	2500.0	8530.0	99	900	100	200	27.7	25.0	23.2	36.3	36.4	36.9	0.036		3.3	3.7	3.0	PN
13	5/24/96	1323	2500.0	8500.0	99	900	100	200	28.1	26.3	19.6	36.3	36.6	36.7	0.178		3.4	3.5	2.8	PN
14	5/24/96	1736	2500.0	8430.0	99	900			27.8			36.5			0.125		3.1			PN
15	5/24/96	2126	2500.0	8400.0	3	127			27.2			36.3			0.107		3.3			PN
16	5/25/96	0107	2530.0	8400.0	3	135	63	127	26.7	18.7	15.5	35.9	36.2	36.1	0.089		3.5	3.9	2.8	PN
17	5/25/96	0459	2600.0	8400.0	4	137			26.6			36.2			0.107		2.3			PN
18	5/25/96	0829	2600.0	8430.0	99	217			27.8			36.3			0.073		2.2			PN

Table 2. Selected environmental parameters (continued)

ARANSAS 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
31001	6/ 4/96	0909	2757.4	9656.3	20	9	4	9	27.6	27.7	27.9	32.9	32.8	32.8			9.8	9.0	7.5	ST
31002	6/ 4/96	0948	2757.6	9653.4	20	13	6	13	28.0	27.9	26.6	32.6	32.7	32.7			6.2	6.1	6.2	ST
31003	6/ 4/96	1025	2758.8	9651.3	20	13	6	13	27.9	27.8	27.8	33.1	32.8	33.1			6.4	6.3	6.1	ST
31004	6/ 4/96	1104	2756.6	9649.6	20	17	8	17	27.9	27.5	27.5	32.4	32.3	32.6			6.4	6.4	5.6	ST
31005	6/ 4/96	1136	2755.7	9649.4	20	17	8	17	27.8	27.5	27.5	32.4	33.1	32.8			6.7	6.4	6.3	ST
31006	6/ 4/96	1350	2753.5	9649.4	20	20	10	20	28.0	27.4	27.2	32.2	32.3	32.1			7.0	6.5	6.1	ST
31007	6/ 4/96	1430	2753.9	9652.2	20	17	8	17	27.9	27.4	27.4	32.4	32.6	32.5			6.5	6.4	6.3	ST
31008	6/ 4/96	1506	2754.6	9654.5	20	14	7	14	28.1	27.8	27.7	32.7	32.9	32.8			6.2	6.0	5.9	ST
31009	6/27/96	0814	2747.6	9702.6	20	10	5	10	28.5	28.5	28.5	35.7	35.8	36.3			5.7	5.7	5.6	ST
31010	6/27/96	0919	2739.5	9705.5	20	15	7	15	28.3	28.5	28.3	35.7	36.0	36.0			5.9	5.9	5.7	ST
31011	6/27/96	1017	2745.6	9701.5	20	15	7	15	28.5	28.4	28.4	35.5	35.8	35.5			5.8	5.7	5.5	ST
31012	6/27/96	1108	2749.6	9658.5	20	15	7	15	28.8	28.6	28.6	35.3	35.4	36.1			5.7	5.6	5.4	ST
31013	6/27/96	1146	2752.5	9657.5	20	13	6	13	29.0	28.8	28.7	35.6	35.8	35.5			5.5	5.6	5.3	ST
31014	6/27/96	1225	2755.6	9657.4	20	11	5	11	29.1	28.9	28.9	35.3	35.8	35.7			5.5	5.5	5.2	ST
31015	6/27/96	1305	2753.5	9659.7	20	9	4	9	29.2	29.0	29.0	36.0	35.8	35.8			5.5	5.5	5.1	ST
31016	6/27/96	1340	2750.7	9701.5	20	9	4	9	29.0	28.8	27.8	35.8	35.7	35.9			5.2	5.3	4.6	ST

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/ 4/96	1015	2820.6	9617.4	19	16	8	16	28.1	28.0	27.4	31.8	31.8	31.9			6.4	6.4	5.1	ST
32002	6/ 4/96	1048	2820.5	9616.5	19	17	9	17	28.1	27.8	27.7	32.0	32.0	31.8			6.2	6.1	6.0	ST
32003	6/ 4/96	1143	2819.5	9612.3	19	20	10	20	27.7	27.5	27.4	31.8	31.7	31.9			6.1	5.9	5.7	ST
32004	6/ 4/96	1231	2820.5	9610.5	19	20	10	20	28.0	27.6	27.0	31.8	31.8	32.5			6.2	6.1	4.4	ST
32005	6/ 4/96	1342	2825.6	9604.5	19	17	9	17	28.3	27.7	26.9	31.6	31.6	32.0			6.2	6.2	4.5	ST
32006	6/ 4/96	1439	2827.6	9610.5	19	13	6	13	29.0	27.7	27.7	31.7	31.7	31.6			6.1	6.0	5.2	ST
32007	6/ 4/96	1527	2825.5	9613.5	19	13	6	13	29.2	28.0	27.5	31.7	31.6	31.9			6.0	5.7	5.3	ST
32008	6/ 4/96	1607	2826.6	9614.5	19	10	5	10	29.1	28.2	27.5	31.6	31.5	31.7			6.3	6.2	4.8	ST
32009	6/27/96	1055	2817.5	9614.6	19	23	11	23	27.9	28.0	27.8	33.8	33.9	34.4			6.7	6.6	6.4	ST
32010	6/27/96	1518	2816.5	9622.5	19	22	11	22	28.7	28.1	27.8	34.0	33.8	34.3			6.6	6.6	6.6	ST
32011	6/27/96	1556	2817.6	9619.7	19	22	11	22	28.9	28.1	27.9	33.9	33.9	34.4			6.4	6.6	6.5	ST
32012	6/27/96	1631	2818.7	9618.4	19	22	11	22	28.8	28.1	28.0	34.0	33.9	34.3			6.2	6.5	6.4	ST
32013	6/29/96	1023	2817.5	9624.5	19	13	7	13	28.6	28.7	27.9	33.4	33.9	33.7			6.0	6.0	4.7	ST
32014	6/29/96	1103	2815.6	9627.4	19	12	6	12	29.6	29.4	28.9	34.4	34.4	34.3			5.8	5.9	5.5	ST
32015	6/29/96	1224	2812.5	9620.6	19	23	11	23	28.5	28.3	28.2	33.7	33.8	34.3			5.7	5.7	5.9	ST
32016	6/29/96	1314	2815.7	9617.4	19	21	11	21	28.6	28.4	28.3	33.8	34.1	33.9			5.6	5.7	5.9	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/ 4/96	0949	2612.9	9703.3	21	20	10	20	26.6	26.3	25.3	34.5	34.6	34.8			6.4	6.6	6.8	ST
33002	6/ 4/96	1037	2612.4	9701.3	21	24	12	24	26.6	26.5	24.9	34.7	34.6	35.4			6.4	6.4	6.7	ST
33003	6/ 4/96	1121	2613.7	9702.5	21	21	11	21	27.0	25.2	24.8	34.4	34.8	34.8			6.5	6.4	6.8	ST
33004	6/ 4/96	1206	2616.4	9702.3	21	22	11	22	27.3	25.7	24.0	34.6	33.8	34.4			6.6	6.5	6.6	ST
33005	6/ 4/96	1305	2618.8	9706.5	21	18	9	18	27.4	27.0	26.1	34.6	34.2	34.8			6.5	6.6	6.7	ST
33006	6/ 4/96	1355	2619.5	9711.6	21	8	4	8	27.6	27.5	27.3	35.2	35.1	35.2			6.5	6.6	6.7	ST
33007	6/ 4/96	1420	2616.8	9710.8	21	9	5	9	27.4	27.4	27.2	35.3	35.1	35.5			6.5	6.5	6.8	ST
33008	6/ 4/96	1534	2614.7	9710.5	21	8	4	8	27.5	27.9	27.9	35.5	35.3	35.3			7.0	7.0	8.0	ST
33009	6/17/96	1015	2605.7	9708.6	21	11	6	11	26.5	24.8	23.1	36.5	36.3	36.4			6.1	6.2	6.4	ST
33010	6/17/96	1056	2605.4	9707.5	21	15	8	15	26.6	22.5	22.5	36.5	36.5	36.5			6.2	6.4	6.3	ST
33011	6/17/96	1130	2605.7	9706.5	21	18	9	18	26.8	25.2	22.3	36.3	36.8	36.3			6.0	6.2	6.2	ST
33012	6/17/96	1223	2602.4	9703.5	21	22	11	22	27.1	22.7	22.7	36.6	36.7	37.0			6.0	6.5	6.6	ST
33013	6/17/96	1325	2605.7	9659.6	21	27	14	27	27.2	22.0	21.8	36.9	37.1	36.9			6.0	6.2	6.0	ST
33014	6/17/96	1419	2609.3	9700.7	21	26	13	26	27.1	25.8	21.9	36.9	37.1	36.8			6.1	6.3	6.4	ST
33015	6/17/96	1455	2609.8	9701.7	21	23	12	23	27.3	22.7	21.9	36.7	37.0	37.1			6.0	6.7	6.4	ST
33016	6/17/96	1548	2606.3	9703.7	21	21	11	21	27.1	22.8	22.6	36.1	36.9	36.6			6.1	6.5	6.5	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/ 4/96	1219	2919.3	9439.3	18	11	6	11	29.5	28.5	28.5	24.6	24.9	25.3			8.3	7.5	7.3	ST
34002	6/ 4/96	1308	2918.7	9442.4	18	8	4	8	30.4	28.7	28.5	24.0	24.7	24.8			8.1	9.1	8.5	ST
34003	6/ 4/96	1409	2914.8	9443.2	18	12	6	12	29.6	28.3	28.1	24.4	25.4	25.7			7.2	8.3	7.8	ST
34004	6/ 4/96	1459	2912.7	9446.9	18	13	7	13	28.7	28.3	28.2	25.1	25.5	25.5			8.9	8.2	7.8	ST
34005	6/13/96	1044	2922.2	9441.7	18	6	3	6	27.7	27.5	27.2	29.2	29.3	29.8			8.9	8.9	4.0	ST
34006	6/13/96	1118	2922.7	9441.0	18	7	3	7	28.1	27.6	27.1	28.5	28.7	29.8			9.3	9.5	6.0	ST
34007	6/13/96	1150	2923.2	9435.8	18	9	5	9	28.4	27.6	27.1	27.9	29.8	30.6			9.6	9.6	6.0	ST
34008	6/13/96	1218	2926.7	9435.0	18	7	4	7	28.8	28.5	27.3	28.0	28.1	30.0			9.0	8.8	9.2	ST
34009	6/17/96	1111	2918.6	9439.5	18	9	5	9	29.4	29.0	28.6	28.2	30.7	31.0			7.5	8.0	8.0	ST
34010	6/17/96	1235	2918.5	9444.5	18	5	3	5	30.0	29.1	29.1	31.7	31.7	31.7			8.6	8.9	8.7	ST
34011	6/17/96	1413	2911.5	9451.5	18	11	6	11	29.5	28.6	28.6	31.9	32.0	32.3			8.5	9.0	9.1	ST
34012	6/17/96	1540	2912.5	9441.6	18	16	8	16	30.0	29.0	28.9	28.7	28.8	29.6			7.8	7.8	6.8	ST
34013	6/17/96	1624	2912.6	9438.5	18	16	8	16	30.4	29.5	29.5	27.5	28.2	31.5			7.7	8.0	8.1	ST
34014	6/17/96	1654	2915.6	9439.6	18	14	7	14	30.0	29.0	28.8	29.2	29.7	29.4			8.3	8.2	8.9	ST
34015	6/17/96	1741	2919.5	9432.6	18	13	7	13	30.0	29.1	28.2	27.7	28.2	31.1			8.3	8.1	7.6	ST
34016	6/17/96	1820	2922.6	9427.6	18	13	7	13	29.8	29.3	29.0	29.0	30.4	31.0			8.1	8.6	8.5	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/ 3/96	0726	2939.1	9349.3	17	8	4	8	28.7	28.7	28.6	16.1	16.2	16.7			6.6	6.6	6.4	ST
40002	6/ 3/96	0822	2942.5	9347.2	17	4	2	4	28.6	28.5	28.4	15.9	16.0	15.9			6.4	6.4	6.4	ST
40003	6/ 3/96	0914	2938.4	9346.8	17	8	4	8	28.4	28.3	28.3	15.2	16.0	17.5			7.7	6.9	5.4	ST
40004	6/ 3/96	1002	2934.3	9345.4	17	12	6	12	28.5	28.4	28.2	16.6	17.0	21.5			7.6	5.9	5.7	ST
40005	6/ 3/96	1053	2936.4	9341.9	17	10	5	10	28.7	28.5	28.6	15.4	16.4	23.0			7.7	6.4	3.5	ST
40006	6/ 3/96	1137	2936.5	9340.6	17	10	5	10	28.6	28.5	28.5	15.1	16.6	25.5			8.7	7.2	3.7	ST
40007	6/ 3/96	1220	2936.4	9337.8	17	11	6	11	28.8	28.4	28.3	15.4	17.6	24.4			7.7	5.4	5.7	ST
40008	6/ 3/96	1308	2939.4	9335.6	17	9	4	9	28.7	28.4	28.4	13.2	15.7	24.8			9.0	6.0	5.0	ST
40009	6/18/96	0821	2937.4	9347.2	17	8	4	8	28.8	28.7	27.3	27.1	28.2	27.2			4.1	3.9	0.6	ST
40010	6/18/96	1004	2939.5	9357.2	17	3	2	3	29.8	29.8	29.8	28.4	28.4	28.4			5.0	4.9	4.9	ST
40011	6/18/96	1041	2938.6	9357.7	17	4	2	4	29.7	29.6	29.4	28.2	28.2	28.2			6.3	6.2	5.9	ST
40012	6/18/96	1125	2936.5	9353.0	17	5	2	5	29.5	29.1	28.9	27.4	27.4	27.4			6.5	6.1	5.6	ST
40013	6/18/96	1207	2935.5	9353.6	17	6	3	6	29.6	29.5	29.6	27.5	27.5	29.0			6.2	5.6	1.1	ST
40014	6/18/96	1254	2934.6	9351.4	17	8	4	8	29.6	29.3	27.5	27.4	29.4	31.4			6.6	6.5	1.8	ST
40015	6/18/96	1337	2933.5	9351.6	17	10	5	10	29.9	29.4	26.9	27.9	29.7	32.2			6.7	6.1	1.2	ST
40016	6/18/96	1411	2932.6	9350.2	17	11	6	11	30.0	29.3	27.1	28.9	29.3	28.9			7.2	6.9	1.2	ST

Table 2. Selected environmental parameters (continued)

A.E. VERRILL, 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/ 5/96	828	3011.0	8803.4	11	5	3	5	26.3	26.4	26.2	18.3	25.3	28.1			6.5	6.2	4.3	ST
2302	6/ 5/96	1001	3010.1	8803.8	11	7	4	7	26.9	26.3	26.1	23.1	27.0	28.2			6.2	6.2	4.3	ST
2303	6/ 5/96	1051	3009.3	8802.9	11	8	4	8	27.3	26.3	26.2	23.3	27.5	28.7			6.0	6.0	4.7	ST
2304	6/ 5/96	1148	3007.7	8803.9	11	18	9	18	27.8	26.3	21.1	21.7	28.3	34.1			6.3	5.0	3.6	ST
2305	6/ 5/96	1346	3005.0	8811.6	11	20	10	20	27.3	26.3	20.6	25.3	28.5	34.7			6.2	6.0	3.1	ST
2306	6/ 5/96	1502	3000.2	8816.2	11	28	14	28	28.8	22.0	20.5	26.8	33.3	34.7			6.1	6.2	3.4	ST
2307	6/ 5/96	1607	2959.9	8816.8	11	29	14	29	28.9	21.6	20.4	27.0	34.4	34.7			6.0	5.4	3.5	ST
2308	6/ 5/96	1802	3002.0	8824.0	11	24	12	24	28.7	25.1	20.7	28.8	31.1	34.8			6.0	5.9	3.5	ST
2309	6/ 5/96	2000	3010.3	8820.0	11	15	8	15	28.1	27.1	21.4	23.6	28.7	33.3			6.2	6.2	5.0	ST
2310	6/ 5/96	2135	3012.7	8809.4	11	12	6	12	28.1	27.3	24.3	24.9	26.4	28.7			6.1	6.2	3.4	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/ 6/96	0739	2929.3	8839.5	11	33	16	32	27.5	24.5	20.1	31.2			0.211		6.8	6.2	5.0	ST
17002	6/ 6/96	1030	2925.2	8843.7	11	39	19	38	27.4	23.2	20.2	21.6	35.8	35.8	9.812		7.7	6.0	4.6	ST
17003	6/ 6/96	1344	2919.1	8855.6	11	25	12	24	29.1	24.7	21.3	11.0	33.1	35.5	17.367		8.0	4.0	3.5	ST
17004	6/ 6/96	1740	2915.3	8827.2	11	85	42	84	28.3	20.4	19.5	23.5	36.3	36.4	8.709		7.0	6.7	5.0	ST
17005	6/ 6/96	2200	2907.3	8849.9	11	96	47	94	27.7	19.7	17.9	25.0	36.2	36.3	8.392		7.0	5.4	5.6	ST
17006	6/ 7/96	0259	2906.9	8845.9	11	87	43	86	27.5	21.2	18.8	26.8	36.1	36.4	7.214		7.2	6.5	6.2	ST
17007	6/ 7/96	0541	2909.2	8845.8	11	76	38	75	27.4	21.0	19.3	26.4	36.2	36.4	5.084		6.8	6.5	3.8	ST
17008	6/ 7/96	0941	2915.8	8823.1	11	94	47	93	28.2	18.8	20.8	24.6	36.4	36.3	6.560		7.4	6.0	5.2	ST
17009	6/ 7/96	1230	2930.0	8830.0	11	50	25	49	28.1	23.2	20.2	32.8	36.2	36.1	0.216		6.7	5.1	4.1	PN
17010	6/ 7/96	2023	2912.9	8847.5	11	65	37	64	27.6	19.4	18.8	19.6	36.0	36.2	8.074		7.4	4.8	4.7	ST
17011	6/ 7/96	2353	2917.6	8847.9	11	56	28	55	27.1	21.7	19.3	17.4	36.1	36.2	5.252		6.9	5.4	4.5	ST
17012	6/ 8/96	0332	2919.9	8848.5	11	47	23	46	27.2	21.7	19.5	20.5	35.2	35.9	6.242		6.2	4.9	4.2	ST
17013	6/ 8/96	0543	2917.9	8853.9	11	33	16	32	26.7	23.1	19.8	21.3	35.7	35.8	10.709		6.2	5.2	4.1	ST
17014	6/ 8/96	2000	2923.4	8854.5	11	18	8	17	26.9	25.8	21.8	20.8	31.3	35.1	8.261		8.4	5.7	4.8	ST
17015	6/ 9/96	0025	2940.2	8824.8	11	40	20	39	26.7	22.6	19.5	29.9	35.2	36.0	0.523		5.2	5.2	8.0	ST
17016	6/ 9/96	0446	2945.5	8834.9	11	26	13	25	26.5	26.5	20.3	26.4	31.7	35.2	0.673		6.2	5.2	3.9	ST
17017	6/ 9/96	0914	2957.7	8834.3	11	24	12	23	27.0	26.9	20.7	23.7	30.7	35.0	1.084		6.5	5.6	4.5	ST
17018	6/ 9/96	1111	3001.4	8844.2	11	15	7	14	27.3	27.0	21.5	22.5	27.6	34.3	1.682		6.6	5.9	4.1	ST
17019	6/ 9/96	1329	3003.4	8845.3	11	13	7	12	27.6	27.3	21.5	22.2	24.4	34.5	1.850		5.3	5.1	3.3	ST
17020	6/ 9/96	1536	3011.8	8846.1	11	11	5	10	27.5	27.1	25.3	18.2	26.5	30.9	2.318		6.0	5.1	3.9	ST
17021	6/ 9/96	1811	3000.0	8829.8	11	26	13	25	27.6	24.5	20.8	25.2	32.4	34.9	0.598		6.4	5.7	4.8	PN
17022	6/ 9/96	2137	2944.9	8847.4	11	11	5	10	27.3	27.1	26.7	27.7	27.8	30.0	0.587		6.4	6.4	5.8	ST
17023	6/ 9/96	2344	2947.2	8836.7	11	20	10	19	26.5	26.8	21.2	28.0	30.7	35.0	0.320		6.8	6.2	4.9	ST
17024	6/10/96	0230	2953.9	8835.3	11	24	12	23	26.7	26.8	20.7	26.0	30.8	35.6	0.481		5.2	4.3	4.1	ST
17025	6/10/96	0525	2957.8	8831.3	11	27	13	26	26.5	25.7	20.6	25.4	31.8	34.8	0.668		5.0	4.3	4.1	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
17026	6/25/96	1817	3005.4	8830.6	11	17	8	16	31.7	27.3	21.6	24.9	31.9	35.1	1.976		7.0	5.8	4.8	ST
17027	6/25/96	2016	3005.1	8828.5	11	17	8	16	30.9	27.2	21.3	25.0	31.8	35.1	1.949		6.6	5.4	4.7	ST
17028	6/25/96	2246	3002.5	8843.3	11	14	7	13	31.0	27.1	21.7	22.8	31.7	34.7	2.467		7.2	3.6	3.6	ST
17029	7/ 5/96	2038	2917.9	8945.3	13	4	2	3	31.1	30.7	30.8	10.9	11.3	11.6	17.607		8.2	7.1	6.7	ST
17030	7/ 6/96	0200	2901.2	9023.5	14	8	4	7	30.8	28.5	28.0	16.0	27.9	30.4	14.317		6.4	2.8	2.7	ST
17031	7/ 6/96	0629	2905.0	9012.8	14	4	2	3	29.2	29.1	28.8	20.1	26.5	27.4	14.819		4.6	4.2	4.2	ST
17032	7/ 6/96	1118	2852.6	9047.9	14	8	4	7	31.8	30.5	30.5	19.4	22.3	25.1	3.757		6.9	7.0	6.8	ST
17033	7/ 6/96	1708	2909.6	9129.7	15	6	3	5	33.9	30.5	30.0	4.8	19.1	22.0	34.117		13.4	3.3	3.2	ST
17034	7/ 6/96	2049	2919.4	9155.4	15	6	3	5	32.6	29.9	30.0	4.9	19.6	19.9	48.185		14.3	4.0	3.6	ST
17035	7/ 7/96	0112	2928.2	9225.2	16	8	4	7	30.6	30.0	29.1	23.0	25.6	28.7	18.703		8.3	6.0	3.4	ST
17036	7/ 7/96	0504	2939.0	9253.4	16	6	3	5	30.5	30.1	30.3	17.6	18.5	18.9	12.950		7.8	7.0	6.9	ST
17037	7/ 7/96	0744	2934.3	9236.9	16	4	2	3	29.6	29.5	29.7	19.9	20.4	20.3	13.212		5.6	5.6	5.6	ST
17038	7/ 7/96	1250	2942.6	9316.4	17	8	4	7	32.1	30.0	29.8	18.3	27.5	28.7	5.981		7.0	3.0	3.0	ST
17039	7/ 7/96	1437	2942.1	9322.4	17	6	3	5	32.2	31.5	30.1	18.4	22.3	27.0	5.340		6.8	6.1	3.4	ST
17040	7/ 7/96	2013	2945.0	9335.7	17	4	2	3	32.6	32.0	32.0	16.6	16.6	16.7	17.280		7.4	7.4	7.5	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	6/14/96	1322	2959.8	8759.7	11	23	11	23	28.4	27.1	20.5	23.3	33.9	34.7		1.792	7.7	7.1	4.7	PN
00002	6/14/96	1615	2945.4	8804.6	11	35	17	35	28.2	23.0	20.8	29.1	35.6	35.6		7.643	7.3	7.8	5.9	ST
00003	6/14/96	1818	2950.3	8810.2	11	32	16	32	28.7	23.1	20.8	29.3	34.5	35.5		0.967	7.3	6.6	5.1	ST
00004	6/14/96	1955	2946.5	8812.9	11	36	18	36	29.0	23.6	20.7	29.1	34.9	35.6		0.972	4.8	5.9	5.3	ST
00005	6/14/96	2242	2955.4	8809.4	11	30	15	30	28.8	25.3	20.6	25.4	34.2	35.3		1.016	7.3	7.3	4.8	ST
00006	6/15/96	0151	3000.3	8824.4	11	25	12	25	28.3	26.8	20.6	21.0	31.0	34.8		1.087	5.2	4.6	3.6	ST
00007	6/15/96	0404	2956.1	8825.7	11	29	15	29	28.2	22.8	20.5	28.2	34.3	35.2		0.911	7.0	5.2	3.8	ST
00009	6/15/96	0958	2929.9	8809.0	11	45	22	45	29.2	21.8	20.1	29.7	36.1	36.1		1.140	7.8	6.4	5.2	ST
00010	6/15/96	1203	2930.0	8759.9	10	43	21	43	29.5	25.4	20.3	29.0	36.2	36.1		1.485	8.2	7.4	5.9	PN
00011	6/15/96	1342	2928.4	8804.0	11	44	22	44	29.4	23.8	20.2	29.5	35.7	36.2		1.258	8.8	6.8	5.4	ST
00012	6/15/96	1533	2925.4	8806.7	11	53	26	53	29.0	22.4	19.7	30.1	36.1	36.3		1.143	7.4	7.0	5.1	ST
00013	6/15/96	1757	2919.1	8815.4	11	78	39	77	29.3	19.6	19.0	30.0	36.2	36.3		1.282	7.3	7.0	4.9	ST
00014	6/15/96	2110	2937.7	8821.2	11	40	20	40	28.5	22.1	20.3	28.6	35.4	35.8		0.706	6.0	7.5	5.1	ST
00016	6/16/96	0446	2900.1	8859.9	11	69	34	68	31.1	22.8	19.4	10.4	36.1	36.3		0.100	15.4	7.9	4.6	PN
00017	6/16/96	0710	2900.9	8857.4	11	89	44	88	29.0	21.6	18.5	22.1	36.0	36.3		1.000	12.3	5.7	4.2	ST
00018	6/21/96	1348	2601.0	9629.9	21	63	31	62	27.5	23.6	20.5	36.4	36.3	36.3		0.303	5.7	8.1	5.8	PN
00019	6/21/96	1624	2602.7	9635.5	21	55	27	55	27.7	23.4	20.8	36.3	36.3	36.4		0.332	7.2	8.1	6.6	ST
00021	6/21/96	2022	2601.0	9650.5	21	41	20	41	28.1	22.1	21.4	36.2	36.3	36.4		0.418	5.8	7.4	7.1	ST
00022	6/21/96	2152	2559.9	9659.7	21	26	13	25	26.7	22.4	22.2	36.4	36.4	36.4		0.471	6.4	7.2	6.7	PN
00023	6/22/96	0040	2605.5	9704.3	21	20	10	19	25.7	22.6	22.2	36.3	36.2	36.3		0.715	6.9	7.1	6.8	ST
00024	6/22/96	0243	2614.4	9701.5	21	23	11	22	27.5	25.0	21.6	36.5	37.0	36.3		0.667	7.0	7.3	6.9	ST
00025	6/22/96	0404	2620.4	9700.5	21	29	15	29	27.5	23.7	21.6	36.4	37.0	36.3		0.667	7.0	7.5	6.9	ST
00026	6/22/96	0525	2626.9	9704.9	21	21	10	21	26.1	22.9	21.8	36.6	36.2	36.4		0.840	7.0	7.4	7.3	ST
00027	6/22/96	0728	2630.1	9713.8	21	13	6	13	23.0	22.7	22.7	35.8	36.1	36.1		1.033	5.3	6.9	7.3	ST
00028	6/22/96	1003	2626.2	9658.7	21	34	16	33	27.3	23.4	21.6	36.3	36.4	36.3		0.474	6.7	8.0	6.8	ST
00029	6/22/96	1322	2628.1	9637.9	21	56	28	54	27.9	23.0	20.2	36.4	36.5	36.4		0.273	7.0	7.9	6.0	ST
00030	6/22/96	1451	2630.2	9629.8	21	86	43	85	28.1	22.5	18.8	36.4	36.4	36.4		0.232	6.9	8.1	4.1	PN

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
00031	6/22/96	2107	2629.1	9701.9	21	30	14	28	27.3	23.2	21.7	36.4	36.3	36.3		0.738	7.1	8.1	7.1	ST/PN
00032	6/22/96	2318	2635.3	9659.9	21	35	16	33	27.4	25.2	22.0	36.4	36.6	36.3		0.464	6.9	7.6	7.4	ST
00033	6/23/96	0034	2635.3	9702.8	21	30	15	30	26.1	23.4	21.9	36.3	36.4	36.3		0.728	7.1	8.1	7.5	ST
00034	6/23/96	0250	2632.1	9704.5	21	27	13	27	26.1	24.6	21.7	36.3	36.4	36.3		0.650	7.3	7.4	6.8	ST
00035	6/23/96	0441	2630.3	9713.7	21	14	6	13	23.5	23.0	22.7	36.0	36.0	36.1		0.823	7.3	7.6	7.7	ST
00036	6/23/96	0643	2637.9	9717.3	21	12	6	12	22.1	22.0	21.8	35.7	35.9	35.7		1.023	6.8	6.7	7.3	ST
00037	6/23/96	0755	2637.5	9712.7	21	19	9	18	23.3	21.5	21.5	35.6	36.0	36.0		0.918	6.4	7.4	7.3	ST
00038	6/23/96	0928	2640.0	9714.4	21	16	7	15	23.4	22.6	21.5	35.7	35.9	35.8		0.610	7.6	7.5	7.6	ST
00039	6/23/96	1142	2645.3	9710.9	21	26	13	25	24.5	21.6	20.6	35.9	36.2	36.1		0.537	7.4	7.7	7.4	ST
00040	6/23/96	1308	2648.0	9711.9	21	26	13	25	25.1	21.6	20.6	35.9	35.9	36.1		0.461	7.2	7.7	7.7	ST
00041	6/23/96	1443	2652.0	9709.3	21	28	14	27	25.5	23.7	20.6	36.0	36.5	36.1		0.452	7.3	7.8	7.7	ST
00042	6/23/96	1629	2658.0	9708.3	21	30	15	30	27.1	22.0	20.8	36.0	36.0	36.1		0.344	7.0	7.4	7.9	ST
00043	6/23/96	1756	2659.9	9700.0	21	41	20	40	27.1	24.4	20.8	36.2	35.4	36.2		0.430	6.9	7.5	7.7	PN
00044	6/23/96	2025	2656.1	9704.5	21	35	16	34	27.2	24.1	20.8	36.2	35.1	36.1		0.488	7.0	7.6	7.6	ST
00045	6/23/96	2336	2643.4	9658.8	21	40	21	39	27.7	23.9	20.4	36.4	36.3	36.2		0.293	6.7	8.0	7.6	ST
00046	6/24/96	0258	2639.0	9716.5	21	15	7	14	23.0	21.6	21.5	35.7	35.9	35.9		0.855	6.2	5.8	6.6	ST
00047	6/24/96	0533	2656.9	9716.0	21	22	11	22	25.5	22.4	22.0	35.8	36.1	36.1		0.508	7.3	7.7	7.8	ST
00048	6/24/96	0731	2705.2	9716.9	20	18	9	18	26.6	25.9	23.3	35.8	35.6	36.1		0.503	5.1	7.2	7.8	ST
00049	6/24/96	0951	2714.2	9708.1	20	28	14	27	27.5	27.6	27.9	36.1	36.3	36.1		0.366	6.2	6.9	7.7	ST
00050	6/24/96	1228	2705.4	9700.0	20	40	20	39	27.5	24.8	20.9	36.0	36.6	36.1		0.298	7.0	7.8	7.9	ST
00051	6/24/96	1546	2654.8	9645.3	21	74	37	73	28.1	23.3	19.9	36.4	36.3	36.3		0.205	6.9	8.1	5.5	ST
00053	6/24/96	2014	2708.9	9631.8	20	109	54	108	28.0	22.6	18.3	36.4	36.4	36.3		0.259	6.7	7.7	3.9	ST
00054	6/24/96	2223	2710.2	9635.7	20	91	45	90	28.0	21.9	19.0	36.4	36.1	36.3		0.269	6.8	7.6	4.2	ST
00055	6/25/96	0316	2700.2	9645.4	20	72	36	71	28.0	23.2	20.2	36.3	36.3	36.3		0.281	6.9	7.9	6.1	ST
00056	6/25/96	0655	2720.9	9658.4	20	35	17	35	28.0	28.0	22.9	36.1	36.1	36.0		0.291	5.5	6.6	8.1	ST
00057	6/25/96	0820	2729.7	9700.0	20	28	13	26	27.8	27.8	24.7	36.0	36.0	35.8		0.342	6.6	6.8	7.3	PN
00058	6/25/96	1145	2731.3	9650.8	20	37	19	36	27.9	28.0	20.6	35.7	36.1	35.9		0.315	6.7	6.9	7.1	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
00059	6/25/96	1452	2740.1	9657.5	20	23	12	22	28.0	27.7	27.1	35.7	35.7	35.8		0.442	6.7	6.9	6.8	ST
00060	6/25/96	1724	2736.3	9710.7	20	11	5	11	28.6	28.6	28.5	35.5	35.5	35.5		1.790	6.4	6.8	6.8	ST
00061	6/25/96	2042	2717.0	9719.6	20	11	5	10	27.6	27.6	27.4	35.8	35.8	35.8		0.855	6.7	6.9	7.1	ST
00062	6/25/96	2234	2722.4	9715.6	20	14	7	13	27.8	27.8	27.7	36.0	36.0	36.0		0.977	6.6	7.0	7.0	ST
00063	6/26/96	0039	2728.6	9710.4	20	18	9	17	27.9	27.9	27.4	35.6	35.6	35.9		0.769	6.7	6.9	7.0	ST
00064	6/26/96	0453	2756.0	9657.2	20	10	5	10	28.7	28.7	28.7	35.1	35.1	35.1		2.781	5.4	6.3	6.4	ST
00065	6/26/96	0655	2759.3	9646.8	20	16	8	16	28.0	28.1	28.2	34.2	34.3	34.6		1.153	6.6	6.6	6.7	ST
00066	6/26/96	1128	2736.8	9628.5	20	65	32	64	27.9	24.8	19.8	36.1	36.0	36.1		0.232	6.3	7.5	5.6	ST
00067	6/26/96	1347	2735.5	9621.6	20	82	41	82	27.9	23.4	19.5	36.3	36.3	36.2		0.259	6.9	8.0	5.2	ST
00068	6/26/96	1721	2730.1	9630.0	20	74	37	74	28.2	23.7	19.8	36.3	36.3	36.2		0.273	6.9	8.0	5.7	PN
00069	6/26/96	2027	2718.9	9635.0	20	84	42	83	28.3	22.6	19.3	36.4	36.3	36.3		0.410	5.9	7.9	4.5	ST
00070	6/26/96	2306	2728.9	9636.5	20	64	32	63	27.9	23.6	20.0	36.1	36.4	36.1		0.347	6.8	8.1	6.2	ST
00072	6/27/96	0139	2729.4	9641.2	20	54	27	54	28.0	27.3	20.2	36.3	36.3	36.1		0.266	6.8	7.1	6.6	ST
00074	6/27/96	0756	2809.0	9635.6	19	14	7	14	28.2	28.2	28.2	31.0	34.0	34.0		1.407	5.0	6.5	6.4	ST
00075	6/27/96	1202	2824.5	9610.3	19	15	7	14	28.4	28.2	28.1	33.8	33.8	33.8		0.693	6.8	6.8	6.7	ST
00076	6/27/96	1449	2810.2	9610.3	19	25	13	25	28.9	28.3	26.5	33.6	33.7	34.2		0.354	6.8	6.9	6.1	ST
00077	6/27/96	1744	2803.1	9617.2	19	31	15	31	28.8	27.8	22.3	33.4	33.7	35.5		0.381	6.1	6.7	5.9	ST
00078	6/27/96	2038	2759.8	9628.2	20	26	13	26	28.6	28.0	25.2	33.8	35.1	35.8		0.652	4.2	6.6	7.0	ST/PN
00079	6/28/96	0016	2808.8	9609.5	19	26	13	25	28.5	28.3	25.4	33.6	33.6	34.5		0.444	6.5	6.9	6.0	ST
00080	6/28/96	0246	2823.5	9611.1	19	15	7	14	28.8	28.5	28.0	33.8	33.8	33.8		0.840	6.5	6.8	6.1	ST
00081	6/28/96	0517	2816.9	9558.9	19	24	12	24	28.6	28.5	24.5	33.7	33.7	34.6		0.444	6.8	6.8	5.7	ST
00082	6/28/96	0840	2826.1	9540.0	19	24	12	23	28.6	28.1	24.3	32.6	33.1	34.4		0.564	5.2	6.6	4.8	ST
00083	6/28/96	1012	2829.9	9540.0	19	20	10	19	28.7	28.5	27.4	32.3	32.5	33.5		0.486	6.8	6.9	6.9	ST
00084	6/28/96	1251	2844.6	9528.3	19	13	6	12	28.9	28.5	28.0	33.6	33.6	33.6		2.770	5.6	6.6	4.4	ST
00085	6/28/96	1558	2830.1	9522.4	19	26	13	25	28.6	28.6	24.0	31.7	32.1	34.5		0.540	6.9	6.9	4.5	ST
00086	6/28/96	1822	2828.0	9505.2	19	35	18	35	28.8	28.2	21.7	31.9	32.6	35.8		0.706	7.0	6.7	3.6	ST
00087	6/28/96	2022	2830.3	9511.2	19	30	14	29	29.1	28.5	23.5	32.0	32.1	34.8		0.620	6.4	6.9	5.0	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
00088	6/28/96	2314	2838.1	9523.1	19	21	10	20	28.8	28.8	28.2	32.0	32.5	32.9		0.589	6.9	7.0	7.0	ST
00089	6/29/96	0201	2824.6	9518.7	19	32	16	31	28.8	28.2	22.4	32.2	33.9	35.5		0.537	5.4	6.8	6.1	ST
00090	6/29/96	0424	2816.6	9527.7	19	35	17	35	28.2	26.8	20.4	34.2	35.1	35.8		0.523	7.0	6.7	5.0	ST
00091	6/29/96	0538	2810.4	9525.6	19	45	22	45	28.2	25.6	20.6	35.0	35.0	36.0		0.356	6.7	7.3	6.4	ST
00092	6/29/96	0832	2811.9	9518.5	19	44	22	43	28.3	26.7	20.5	33.5	35.2	36.0		0.442	6.1	6.9	6.0	ST
00093	6/29/96	1052	2812.3	9517.3	19	45	22	44	28.4	25.8	20.3	33.5	35.2	35.9		0.381	6.9	7.1	5.8	ST
00096	6/29/96	1811	2745.1	9547.4	20	74	37	74	28.3	23.8	19.1	34.8	36.3	36.2		0.352	6.9	7.8	5.9	ST
00097	6/29/96	2031	2755.0	9549.5	20	55	27	54	28.4	28.0	20.1	34.5	36.0	36.0		0.320	5.9	7.0	6.0	ST
00100	6/30/96	0040	2806.8	9554.9	19	36	18	35	28.8	27.5	20.6	33.7	34.3	35.6		0.454	6.9	6.9	4.8	ST
00101	6/30/96	0421	2753.0	9534.0	20	64	32	64	28.3	23.2	19.5	34.8	35.3	36.2		0.335	6.8	7.5	5.5	ST
00102	6/30/96	0958	2757.7	9450.0	18	91	45	90	28.6	21.2	18.4	33.7	36.3	36.4		0.327	6.1	7.7	4.3	ST
00103	6/30/96	1322	2817.8	9451.9	18	46	23	45	29.2	25.7	20.8	32.2	35.4	35.9		0.400	7.0	7.4	6.4	ST
00104	6/30/96	1606	2820.9	9503.5	19	36	18	35	29.1	28.1	20.9	32.1	33.0	35.8		0.444	6.6	7.0	6.2	ST
00105	6/30/96	2039	2751.5	9526.1	20	85	42	84	28.7	20.8	18.4	34.7	35.9	36.3		0.320	6.8	7.6	4.4	ST
00106	6/30/96	2138	2746.0	9527.9	20	123	61	122	28.9	20.2	16.3	34.7	36.2	36.2		0.308	6.9	7.3	3.9	ST
00107	7/ 1/96	0152	2753.4	9509.5	20	109	55	108	28.7	22.0	17.0	33.7	36.3	36.2		0.379	5.7	7.6	3.9	ST
00108	7/ 1/96	0321	2759.2	9513.4	20	71	35	71	29.0	21.4	19.2	34.3	35.6	36.2		0.308	4.4	7.4	5.5	ST
00109	7/ 1/96	0741	2830.1	9500.1	19	33	16	33	29.0	28.3	22.0	32.0	32.4	35.6		0.574	4.1	6.3	3.3	PN
00110	7/ 1/96	0911	2834.2	9455.1	18	29	15	28	28.9	28.4	23.8	32.1	32.9	35.0		0.503	4.5	6.8	4.5	ST
00111	7/ 1/96	1225	2849.3	9448.8	18	20	10	20	28.9	28.7	24.7	33.1	33.2	31.8		0.536	6.9	6.9	4.9	ST
00113	7/ 1/96	1607	2913.6	9450.3	18	11	5	11	31.6	30.4	29.9	22.6	24.9	29.1		4.061	8.5	8.6	6.4	ST
00114	7/ 1/96	1820	2900.0	9500.1	19	15	7	15	30.0	29.5	28.5	32.2	32.3	33.2		0.696	3.4	3.8	5.7	PN
00115	7/ 1/96	2022	2859.3	9510.5	19	10	6	10	30.9	30.9	30.7	29.8	29.3	29.9		2.503	3.5	3.2	3.1	ST
00116	7/ 1/96	2320	2846.6	9448.4	18	21	11	20	29.6	28.5	24.9	32.8	33.3	34.7		0.527	4.1	7.0	4.8	ST
00117	7/ 3/96	1810	2915.2	9437.6	18	14	7	13	31.2	29.7	28.1	25.9	30.8	32.3		4.032	7.3	6.4	1.9	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
00118	7/ 3/96	2225	2859.0	9412.9	18	18	9	18	30.2	29.3	26.2	32.0	32.0	34.3		1.233	4.1	2.2	3.9	ST
00119	7/ 4/96	0035	2856.7	9420.5	18	14	7	13	30.5	29.8	29.1	0.7	0.7	0.7		0.010	1.3	1.4	0.9	ST
00120	7/ 4/96	0437	2835.6	9445.0	18	31	15	29	29.6	28.1	28.9	0.5	0.5	0.6		0.010	3.5	4.3	0.8	ST
00121	7/ 4/96	0841	2851.1	9417.0	18	24	12	24	29.8	28.8	23.5	32.2	32.7	35.4		6.838	6.7	6.8	2.1	ST
00122	7/ 4/96	1208	2835.5	9426.9	18	32	16	32	29.6	28.2	22.2	32.3	34.5	35.5		0.371	6.9	7.1	5.7	ST
00123	7/ 4/96	1544	2811.3	9415.5	18	54	27	53	30.0	27.2	20.0	32.6	35.5	36.0		0.398	6.8	7.2	5.9	ST
00126	7/ 4/96	1925	2759.5	9415.2	18	84	42	84	29.8	23.5	18.3	34.5	36.3	36.3		0.342	6.9	7.9	3.9	ST
00127	7/ 4/96	2300	2811.9	9401.2	18	64	32	64	30.0	22.1	19.1	32.3	35.6	36.3		0.488	6.9	7.9	4.9	ST
00131	7/ 5/96	0535	2808.3	9350.9	17	72	36	72	29.6	21.4	19.4	33.6	35.5	36.3		0.418	6.9	7.7	5.7	ST
00132	7/ 5/96	1043	2758.0	9419.7	18	90	45	90	29.1	22.7	18.1	36.4	36.4	36.3		0.232	6.8	8.1	4.1	ST
00133	7/ 5/96	1612	2813.7	9335.6	17	64	32	63	30.3	23.3	19.7	33.1	36.0	36.3		0.361	6.8	8.1	6.3	ST
00136	7/ 5/96	2255	2826.1	9307.3	17	44	22	44	30.1	27.6	19.6	30.6	35.2	36.1		1.072	6.8	7.3	5.5	ST
00138	7/ 6/96	0247	2828.5	9313.9	17	40	20	39	30.0	27.7	20.2	29.2	35.1	36.1		0.799	6.8	7.1	5.5	ST
00141	7/ 6/96	0742	2829.9	9330.0	17	43	21	43	29.9	26.8	19.6	31.6	34.1	35.9		0.632	6.9	6.4	5.4	PN
00142	7/ 6/96	1023	2832.9	9341.1	17	36	18	36	30.1	28.4	20.5	31.8	33.2	36.0		0.545	6.1	7.0	5.0	ST
00143	7/ 6/96	1227	2840.2	9338.6	17	30	15	30	30.1	28.7	22.6	30.4	32.5	35.8		0.615	6.9	6.6	4.8	ST
00144	7/ 6/96	1402	2841.3	9336.4	17	29	15	28	30.2	28.1	22.9	30.3	33.2	35.8		0.591	5.9	6.3	5.0	ST
00145	7/ 6/96	1700	2900.1	9329.4	17	23	12	23	30.2	29.2	26.0	29.9	31.2	34.8		0.562	6.9	7.0	3.0	PN
00146	7/ 6/96	2018	2848.2	9327.3	17	25	13	23	30.3	26.7	24.5	30.6	34.6	35.6		0.667	6.8	5.2	5.5	ST
00147	7/ 6/96	2224	2837.7	9326.2	17	34	17	34	30.3	28.3	22.0	31.2	33.0	35.9		0.564	6.8	6.5	5.7	ST
00148	7/ 7/96	0057	2841.3	9336.9	17	24	13	23	30.2	28.8	25.9	30.5	32.5	35.1		0.642	6.9	6.8	4.5	ST
00149	7/ 7/96	0448	2914.9	9402.7	18	12	6	11	31.0	30.9	29.8	29.1	29.2	30.8		1.121	6.8	7.0	5.4	ST
00151	7/ 7/96	0802	2929.7	9359.9	17	12	6	12	31.3	30.6	29.1	26.6	28.7	31.3		2.073	7.1	6.8	0.9	PN
00152	7/ 7/96	1134	2930.0	9330.0	17	10	5	10	31.0	30.5	29.5	25.7	26.1	28.3		1.534	6.6	6.7	1.8	PN
00153	7/ 7/96	1344	2922.4	9322.8	17	13	6	12	31.0	30.1	27.1	22.5	27.9	32.7		3.502	7.7	5.6	0.0	ST
00154	7/ 7/96	1550	2922.7	9318.5	17	12	6	11	31.2	30.4	27.4	22.3	28.0	32.5		3.192	8.1	6.5	0.0	ST
00155	7/ 7/96	2022	2923.9	9323.6	17	13	6	12	32.2	30.3	27.3	19.6	27.0	32.5		4.286	8.5	5.2	0.0	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
00156	7/ 7/96	2112	2920.9	9325.1	17	16	8	16	31.0	29.4	27.2	24.0	28.7	33.6		2.457	7.2	3.8	0.0	ST
00157	7/ 8/96	0241	2936.9	9255.7	16	9	4	8	30.9	31.0	28.6	17.7	18.4	29.4		10.000	7.3	6.1	0.0	ST
00158	7/ 8/96	0332	2931.9	9257.9	16	12	6	11	30.5	30.5	26.7	25.4	26.6	32.7		2.322	6.9	6.4	0.0	ST
00160	7/ 8/96	0852	2910.5	9240.8	16	20	10	20	30.0	29.8	25.8	27.9	29.0	33.9		1.521	6.6	5.7	0.0	ST
00161	7/ 8/96	1108	2903.7	9244.4	16	24	12	24	30.0	29.8	24.8	29.6	29.8	35.5		1.153	5.7	6.4	0.7	ST
00162	7/ 8/96	1341	2857.9	9238.0	16	26	13	25	29.8	28.2	24.5	27.0	32.3	35.7		3.241	6.7	3.8	3.5	ST
00164	7/ 8/96	1907	2905.5	9303.3	17	22	11	22	30.1	29.3	24.9	29.7	32.2	35.2		1.292	6.8	6.8	1.1	ST
00165	7/ 8/96	2023	2906.5	9302.0	17	20	10	20	30.0	29.9	24.7	28.6	30.9	35.3		1.287	6.4	6.7	1.0	ST
00166	7/ 8/96	2201	2906.2	9254.7	16	22	11	22	29.9	29.8	24.5	29.8	30.8	35.4		1.250	6.6	6.8	1.2	ST
00167	7/ 9/96	0043	2858.4	9249.1	16	24	12	24	29.7	29.8	25.0	29.9	30.3	35.5		1.043	6.9	6.4	2.3	ST
00169	7/ 9/96	0355	2845.5	9245.3	16	29	15	28	29.7	29.3	24.2	26.7	29.2	35.8		1.797	6.7	4.8	3.4	ST
00170	7/ 9/96	0541	2843.0	9252.5	16	32	16	32	29.7	28.1	23.5	27.4	32.9	35.9		2.144	6.4	4.8	4.7	ST
00171	7/ 9/96	0745	2844.5	9243.0	16	30	15	30	29.8	27.2	23.2	26.4	33.6	35.9		2.466	6.7	2.0	4.7	ST
00172	7/ 9/96	1018	2831.6	9242.1	16	46	23	46	29.8	27.2	20.4	29.3	35.1	36.1		1.531	6.9	7.0	6.1	ST
00175	7/ 9/96	1616	2833.9	9302.9	17	40	20	39	30.5	27.0	21.3	31.5	35.2	36.0		0.635	6.4	7.3	5.4	ST
00177	7/ 9/96	1927	2829.8	9259.9	16	45	22	45	30.3	25.7	20.1	32.1	35.5	36.0		0.491	6.9	7.5	5.2	PN
00178	7/ 9/96	2124	2837.3	9300.8	17	34	17	34	30.2	27.0	22.4	28.7	35.0	35.9		2.122	6.9	6.7	6.5	ST
00179	7/10/96	0344	2833.0	9218.2	16	44	22	43	29.8	26.8	20.4	28.6	35.1	36.1		1.126	6.9	7.3	5.6	ST
00180	7/10/96	0836	2819.2	9243.4	16	56	28	56	30.2	25.6	18.8	32.1	35.4	36.2		0.664	6.8	7.7	4.6	ST
00182	7/10/96	1305	2809.9	9231.0	16	73	36	72	30.3	22.7	17.7	32.0	35.8	36.3		0.374	6.8	7.2	5.1	ST
00183	7/10/96	1545	2807.6	9227.1	16	85	43	84	30.1	22.1	17.6	31.6	35.9	36.2		0.486	6.9	7.2	4.3	ST
00184	7/10/96	1743	2805.4	9221.3	16	92	43	92	30.4	21.8	18.0	30.8	36.0	36.6		0.484	6.6	8.0	3.7	ST
00185	7/10/96	2042	2806.2	9231.5	16	90	45	90	29.9	22.4	17.1	31.8	36.2	36.2		0.515	6.9	8.3	4.1	ST
00186	7/10/96	2319	2816.5	9231.0	16	64	32	64	30.8	22.6	18.8	28.9	35.8	36.2		1.311	6.0	8.0	4.8	ST
00189	7/11/96	0408	2830.1	9229.8	16	50	25	49	30.2	24.7	19.9	28.0	35.7	36.1		1.636	7.0	7.8	6.3	PN

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
00190	7/11/96	0708	2839.3	9214.9	16	40	21	39	30.1	28.9	25.4	27.7	35.4	36.1		1.678	6.9	6.6	5.4	ST
00192	7/11/96	1005	2845.3	9212.3	16	34	17	34	30.5	28.2	22.4	28.6	35.0	36.1		1.206	6.5	7.0	5.2	ST
00193	7/11/96	1300	2901.6	9202.8	16	18	9	17	30.6	29.7	25.8	24.9	29.1	35.7		2.440	8.2	6.2	0.7	ST
00194	7/11/96	1521	2907.5	9209.9	16	12	6	12	30.4	29.7	26.0	22.1	29.3	35.6		7.873	6.3	6.1	0.0	ST
00195	7/11/96	1629	2909.4	9212.3	16	8	4	8	31.5	30.6	26.5	21.2	21.4	35.5		8.501	9.5	6.1	0.0	ST
00196	7/11/96	1818	2901.0	9220.3	16	22	11	21	30.3	25.8	24.9	24.8	35.4	35.7		2.679	8.4	4.4	1.9	ST
00197	7/11/96	1955	2900.0	9229.9	16	24	12	24	31.4	30.0	24.8	25.1	30.7	35.6		1.985	7.9	7.0	1.8	PN
00198	7/11/96	2208	2907.5	9226.3	16	18	9	18	30.6	30.2	25.1	26.5	27.9	35.5		1.912	7.5	6.1	0.0	ST
00199	7/12/96	0103	2900.5	9213.0	16	21	11	20	30.7	27.5	24.9	27.1	34.5	35.7		2.828	4.6	5.8	1.4	ST
00200	7/12/96	0438	2858.3	9142.5	15	16	8	15	30.0	26.7	26.5	21.3	35.4	35.6		3.941	5.4	0.0	0.3	ST
00201	7/12/96	0628	2901.1	9141.1	15	9	5	9	31.4	29.7	26.9	11.5	18.9	35.2		1.000	12.6	4.0	0.0	ST
00202	7/12/96	0727	2859.7	9137.9	15	12	6	11	31.0	28.1	26.7	12.1	31.5	35.6		8.906	7.9	0.1	0.0	ST
00203	7/12/96	0921	2854.3	9144.4	15	19	9	19	31.0	28.9	25.8	23.2	29.3	35.9		2.530	7.7	3.8	1.0	ST
00204	7/12/96	1248	2836.0	9131.9	15	33	17	32	31.2	25.3	20.8	25.7	36.0	36.2		1.783	7.3	6.1	4.4	ST
00205	7/12/96	1519	2820.1	9139.2	15	65	33	64	30.3	23.5	19.0	27.8	36.1	36.1		1.243	7.1	7.6	5.6	ST
00207	7/12/96	2102	2804.2	9158.3	15	86	43	86	30.3	22.5	17.3	32.1	35.9	36.2		0.703	6.7	8.1	4.2	ST
00208	7/13/96	0025	2814.1	9150.3	15	72	36	72	32.0	22.3	18.5	28.9	35.9	36.1		0.906	7.0	8.2	4.8	ST
00210	7/13/96	0416	2814.7	9143.5	15	74	37	74	30.3	22.7	18.3	29.5	36.1	36.1		1.087	6.8	7.9	4.3	ST
00212	7/13/96	0859	2810.4	9120.3	15	90	45	90	30.6	20.5	17.1	25.9	36.2	36.1		1.993	7.4	8.2	4.1	ST
00214	7/13/96	1315	2819.9	9114.3	15	63	31	62	30.9	22.3	18.4	28.9	36.0	36.2		1.033	4.4	8.8	3.9	ST
00216	7/13/96	1553	2828.5	9111.2	15	39	19	38	30.0	28.0	20.5	26.4	35.3	36.1		3.350	6.6	6.7	4.9	ST
00217	7/13/96	1817	2836.6	9121.2	15	29	15	29	31.5	27.9	21.7	25.3	33.0	36.1		2.357	7.3	3.7	2.7	ST
00219	7/13/96	2118	2837.7	9126.0	15	28	14	28	31.5	26.7	21.9	21.6	34.8	36.1		5.670	8.6	3.3	2.7	ST
00220	7/13/96	2335	2831.3	9137.6	15	46	23	46	31.5	23.1	20.0	25.1	36.0	36.1		1.885	7.2	3.6	4.4	ST
00222	7/14/96	0428	2827.6	9116.3	15	45	23	43	31.1	24.1	20.0	22.1	35.9	36.1		3.079	7.6	7.8	5.6	ST
00223	7/14/96	0652	2839.5	9117.7	15	23	12	23	31.0	27.6	23.8	20.8	34.0	36.1		3.902	7.8	4.4	0.1	ST
00224	7/14/96	0818	2844.8	9117.0	15	15	7	15	30.5	28.4	26.5	14.3	30.8	35.7		6.371	8.2	2.9	0.0	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
00225	7/14/96	1041	2838.4	9102.7	15	17	8	17	30.5	29.5	25.4	20.7	26.4	35.9		5.609	5.8	4.4	0.0	ST
00226	7/14/96	1547	2816.4	9019.4	14	76	38	75	30.4	22.0	18.3	30.8	30.1	36.2		1.270	7.2	8.3	5.1	ST
00227	7/14/96	1810	2825.2	9027.8	14	46	23	45	30.2	25.9	19.9	22.4	35.8	36.2		4.772	7.9	7.6	3.6	ST
00229	7/14/96	2057	2833.1	9030.8	14	32	16	32	30.7	27.9	21.2	17.3	35.4	36.1		6.002	8.3	5.7	1.6	ST
00230	7/14/96	2213	2836.7	9033.1	14	23	11	23	30.9	27.7	22.6	18.9	35.5	36.0		5.788	8.2	6.2	0.2	ST
00231	7/15/96	0038	2845.1	9018.2	14	26	13	25	30.3	27.8	22.2	26.7	35.4	36.0		2.864	5.5	6.7	0.4	ST
00232	7/15/96	0223	2853.2	9025.0	14	18	9	17	30.8	27.2	24.8	22.2	35.2	35.8		5.360	7.5	0.0	0.0	ST
00233	7/15/96	0359	2857.6	9022.5	14	16	8	15	30.4	27.5	25.9	23.4	35.3	36.0		4.570	5.0	0.7	0.0	ST
00234	7/15/96	0505	2900.1	9023.0	14	10	5	9	30.0	29.8	27.3	20.3	26.8	35.5		7.492	5.0	3.1	0.4	ST
00235	7/15/96	0820	2837.2	9030.3	14	24	12	23	30.5	27.7	23.0	18.0	35.5	36.0		5.871	6.6	6.2	0.2	ST
00236	7/15/96	0940	2837.3	9023.8	14	29	14	29	28.9	28.3	22.0	20.1	35.3	36.1		5.568	7.6	7.0	0.9	ST
00237	7/15/96	1100	2830.1	9029.6	14	38	19	38	30.1	26.5	20.7	18.7	35.7	36.1		8.295	8.4	6.2	2.2	PN
00238	7/15/96	1634	2841.2	8941.3	13	93	47	92	30.8	19.8	15.7	21.4	36.2	36.1		4.330	7.8	5.5	4.2	ST
00239	7/15/96	2000	2843.6	8950.8	13	72	36	71	31.0	21.8	18.4	24.3	36.0	36.3		2.440	6.8	5.7	3.7	ST
00240	7/15/96	2135	2840.8	8955.0	13	76	38	76	31.2	21.3	18.3	25.7	36.2	36.4		2.347	7.5	7.9	3.0	ST
00241	7/15/96	2341	2845.8	9007.6	14	34	17	34	31.0	27.9	21.2	19.9	35.4	36.1		3.477	7.6	7.0	1.3	ST
00242	7/16/96	0120	2853.6	9013.8	14	22	11	21	30.6	27.9	23.7	22.0	34.9	36.0		6.874	7.6	1.2	0.0	ST
00243	7/16/96	0332	2900.9	9003.5	14	19	9	18	30.3	28.3	25.0	20.4	35.3	35.9		7.748	7.8	5.6	0.0	ST
00244	7/16/96	0521	2904.1	8953.1	13	23	12	22	29.8	28.4	23.5	21.8	35.5	36.0		5.355	7.5	6.1	0.0	ST
00245	7/16/96	0636	2903.2	8948.4	13	30	15	30	30.0	27.8	21.0	21.6	35.7	36.2		4.862	5.9	6.1	0.1	ST
00246	7/16/96	0838	2852.8	8951.3	13	46	23	46	30.7	24.2	19.5	24.9	36.1	36.2		2.156	7.3	7.3	1.3	ST
00247	7/16/96	1208	2859.1	8934.7	13	34	17	34	30.7	27.8	21.7	19.4	35.7	36.0		5.419	8.6	6.4	3.7	ST
00248	7/16/96	1303	2859.0	8932.4	13	28	14	27	30.7	28.2	22.0	20.8	35.6	36.2		4.320	8.4	4.2	3.5	ST/PN
00249	7/16/96	1548	2909.3	8942.2	13	16	8	15	30.5	29.1	25.4	20.6	34.0	35.7		5.459	8.3	3.2	0.4	ST
00250	7/16/96	1736	2914.8	8950.9	13	8	4	8	31.6	31.2	26.5	18.1	18.7	33.4		1.000	9.6	9.1	0.0	ST
00251	7/16/96	2004	2914.0	8941.7	13	9	5	9	31.0	30.6	26.0	14.4	23.0	22.9		10.000	3.5	1.8	3.0	ST
00252	7/16/96	2156	2905.1	8944.8	13	27	13	27	31.0	26.8	27.2	20.2	35.7	36.1		5.189	8.2	2.4	1.7	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
00253	7/16/96	2315	2902.4	8942.0	13	34	17	34	30.8	26.8	21.4	21.0	35.9	36.1		5.538	8.3	5.7	2.5	ST
00254	7/17/96	0102	2859.5	8935.6	13	34	17	32	30.5	25.1	21.2	17.7	35.9	36.1		10.000	8.5	2.1	4.5	ST
00255	7/17/96	0205	2856.9	8936.0	13	55	28	54	30.3	22.8	19.2	18.4	36.1	36.2		10.000	8.0	6.5	3.7	ST

Table 2. Selected environmental parameters (continued)

PELICAN, 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
37368	7/ 1/96	1212	2900.0	9030.0	14	8	4	8	30.3	30.0	29.5	13.2	22.7	28.8	11.872		8.3	6.8	5.7	PN
37369	7/ 1/96	1655	2859.4	9020.1	14	13	7	13	30.7	26.7	25.5	17.4	28.6	34.5	16.285		10.1	3.3	0.2	ST
37370	7/ 2/96	0425	2859.3	9020.2	14	13	7	13	29.8	28.8	25.5	20.8	26.2	34.1	6.493		7.4	7.2	6.1	ST
37371	7/ 2/96	0750	2900.1	9000.1	14	26	12	26	29.3	27.8	25.5	20.9	34.9	35.7	24.102		7.9	7.2	5.4	PN
37372	7/ 2/96	0957	2853.0	9006.8	14	29	15	29	29.5	28.0	23.0	26.8	35.2	35.8	6.101		6.8	6.1	3.2	ST
37373	7/ 2/96	1145	2852.7	9017.0	14	21	10	21	29.8	26.4	24.8	21.3	35.5	35.6	7.042		7.2	2.5	1.1	ST
37374	7/ 2/96	1357	2859.9	9021.9	14	11	6	11	30.2	30.1	26.3	19.3	19.5	32.3	18.269		9.5	8.5	0.3	ST
37375	7/ 2/96	1551	2856.1	9028.5	14	16	8	16	30.5	29.9	24.8	20.4	22.3	34.8	10.235		8.0	5.0	0.0	ST
37376	7/ 2/96	2122	2853.2	9006.6	14	27	14	27	29.4	26.9	22.8	33.5	35.5	35.9	0.641		6.3	4.8	3.0	ST
37377	7/ 2/96	2345	2852.8	9016.8	14	22	11	22	29.5	27.4	24.8	24.1	34.1	35.8	11.958		7.5	1.1	1.1	ST
37378	7/ 3/96	0217	2900.3	9021.4	14	12	6	12	29.7	29.6	26.5	16.3	22.5	31.8	45.784		11.5	6.0	0.3	ST
37379	7/ 3/96	0416	2856.2	9028.4	14	16	8	16	29.5	29.8	24.8	18.7	25.0	35.0	25.162		9.0	6.1	0.0	ST
37380	7/ 3/96	0725	2839.0	9019.6	14	28	14	28	29.4	29.0	22.5	26.6	34.6	36.1	4.687		6.2	5.9	1.9	ST
37381	7/ 3/96	0958	2835.9	9025.2	14	33	17	33	29.6	25.5	21.7	24.3	35.8	36.1	5.079		6.8	5.2	1.3	ST
37382	7/ 3/96	1119	2829.9	9030.2	14	40	20	40	29.4	25.0	21.5	28.5	35.7	36.1	2.077		6.1	5.1	2.8	PN
37383	7/ 3/96	1346	2829.6	9041.5	14	35	17	35	29.8	27.4	22.1	25.6	35.3	36.1	3.912		5.1	4.0	3.2	ST
37384	7/ 3/96	2132	2839.4	9019.5	14	25	13	25	29.6	27.8	22.5	32.3	34.5	36.0	0.776		6.2	3.4	2.7	ST
37385	7/ 3/96	2314	2835.9	9025.1	14	32	16	32	30.0	27.7	21.8	29.6	35.5	36.2	3.043		7.0	6.1	1.8	ST
37386	7/ 4/96	0212	2829.9	9041.3	14	35	18	35	29.9	28.1	21.8	26.8	35.2	36.3	3.140		7.0	6.2	2.9	ST
37387	7/ 4/96	0705	2830.0	9100.2	15	33	17	33	29.1	25.1	25.2	26.8	32.4	32.4	1.112		6.2	5.8	2.0	PN
37388	7/ 4/96	0853	2833.3	9051.5	14	25	12	25	29.3	28.4	24.0	26.9	34.7	36.2	3.443		6.3	6.0	3.6	ST
37389	7/ 4/96	1022	2834.6	9054.5	14	23	12	23	29.6	28.8	25.5	27.8	34.0	35.9	3.128		6.4	6.1	3.2	ST
37390	7/ 4/96	1257	2846.6	9058.5	14	14	7	14	30.0	30.0	29.0	29.6	31.4	32.6	2.419		6.1	5.9	3.2	ST
37391	7/ 4/96	1503	2850.7	9101.9	15	9	5	9	30.3	30.1	30.0	19.3	28.2	29.4	9.565		7.5	5.0	4.7	ST
37392	7/ 4/96	2123	2833.2	9051.6	14	25	13	25	29.7	28.1	23.5	22.8	34.8	36.1	5.281		8.0	6.4	2.3	ST
37393	7/ 4/96	2258	2834.9	9054.5	14	23	12	23	30.0	28.7	24.9	22.5	34.7	36.0	6.068		8.1	6.0	2.8	ST

Table 2. Selected environmental parameters (continued)

PELICAN, 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
37394	7/ 5/96	0124	2846.9	9058.7	14	13	7	13	29.9	30.2	28.5	23.3	29.1	33.6	4.635		7.0	5.9	2.3	ST
37395	7/ 5/96	0319	2850.9	9102.0	15	9	5	9	30.1	30.0	29.8	19.1	29.6	30.5	8.741		7.1	5.4	4.0	ST
37396	7/ 5/96	0700	2859.9	9130.0	15	9	5	9	30.3	27.3	27.3	15.4	35.1	35.2	15.630		7.2	0.6	0.4	PN
37397	7/ 5/96	1033	2900.0	9100.0	15	7	4	7	30.4	29.9	30.0	15.4	25.4	25.5	15.907		7.3	3.5	3.2	PN

Table 2. Selected environmental parameters (continued)

A.E. VERRILL, 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	5/ 8/96	0918	2958.3	8806.6	11	27	17	27	18.0	18.0	17.5	27.0	30.0	31.0			7.4	6.4	5.8	TV
02302	5/ 8/96	1113	2959.3	8806.1	11	24	12	24	19.0	19.0	18.0	26.0	30.0	31.0			7.6	7.2	5.8	TV
02303	8/29/96	0845	3002.3	8803.6	11	21	6	21	29.0	29.0	29.0	29.0	31.0	31.0			8.0	7.2		TV
02304	8/29/96	1220	3001.0	8804.5	11	21	11	21	30.0	30.0	29.0	30.0	32.0	32.0			8.0	7.6	7.0	TV
02305	9/24/96	0956	2959.2	8806.9	11	24	12	24	27.5	28.0	27.5	30.0	32.0	34.0			6.2	7.0	5.8	TV
02306	9/24/96	1134	2958.2	8805.9	11	26	13	26	27.5	28.0	27.5	30.0	30.0	34.0			6.2	7.2	6.0	TV
02307	10/24/96	0949	3000.4	8806.9	11	23	12	23	22.0	24.0	24.0	32.0	32.0	35.0			7.8	7.0	6.8	TV

Table 2. Selected environmental parameters (continued)

CHAPMAN, 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
00002	6/29/96	0741	2652.7	9646.4	21	70	35	65	28.0	23.5	21.0	36.4	36.2	36.4		0.151	5.7	7.0	6.4	TV
00003	6/29/96	0948	2652.3	9646.2	21	68	34		28.0	23.5		36.4	35.8			0.124	5.7	5.8		TV
00004	6/29/96	1312	2652.6	9646.6	21	65	32	61	28.3	23.3	21.1	36.4	36.3	36.3		0.103	5.7	6.9	6.0	TV
00005	6/29/96	1442	2652.7	9646.7	21	62	32	60	28.4	23.7	21.1	36.4	36.2	36.3		0.112	5.2	6.8	5.9	TV
00006	6/29/96	1621	2652.6	9646.8	21	69	35	66	28.2	23.4	20.3	36.4	36.2	36.3		0.144	5.5	6.7	5.4	TV
00007	6/29/96	1801	2652.6	9646.6	21	66	33	61	28.2	23.3	20.7	36.4	36.3	36.3			5.5	6.6	5.5	TV
00008	6/30/96	0742	2702.5	9642.8	20	70	34	67	28.0	23.8	21.3	36.4	36.3	36.3			5.7	6.7	6.1	TV
00009	6/30/96	0926	2702.4	9642.6	20	71	33	62	28.1	24.0	21.8	36.4	36.3	36.3			5.6	6.8	6.5	TV
00010	6/30/96	1139	2702.4	9642.4	20	66	34	61	28.2	23.9	21.9	36.4	36.3	36.4			5.6	6.8	6.4	TV
00011	6/30/96	1309	2701.9	9642.2	20	62	32	57	28.2	24.2	22.1	36.4	36.3	36.3			5.6	6.7	6.6	TV
00012	6/30/96	1430	2702.6	9642.2	20	68	34	66	28.7	24.1	21.2	36.4	36.3	36.3			5.5	6.6	6.1	TV
00013	6/30/96	1547	2702.3	9642.1	20	81	41	78	28.7	23.3	19.7	36.4	36.3	36.3			5.4	6.7	4.0	TV
00014	6/30/96	1741	2702.6	9642.3	20	68	33	65	28.7	24.0	21.9	36.4	36.3	36.4			5.5	6.6	6.6	TV
00015	7/ 1/96	0752	2726.4	9631.4	20	64	32	60	27.9	24.0	21.2	36.4	36.3	36.3			5.7	6.8	6.3	TV
00016	7/ 1/96	0959	2726.0	9631.6	20	66	31	63	28.0	24.0	20.6	36.4	36.3	36.3			5.7	6.7	6.0	TV
00017	7/ 1/96	1128	2726.8	9631.2	20	82	39	77	27.9	23.3	19.7	36.4	36.3	36.3			5.7	6.7	4.8	TV
00018	7/ 1/96	1258	2726.4	9631.5	20	60	30	55	28.5	24.3	21.3	36.0	36.3	36.3			5.5	6.5	6.0	TV
00019	7/ 1/96	1418	2726.6	9631.3	20	70	35	62	29.0	23.6	20.9	35.7	36.3	36.2			5.4	6.7	6.0	TV
00020	7/ 1/96	1543	2726.2	9631.3	20	68	31	62	29.0	24.0	20.9	35.7	36.3	36.2			5.4	6.6	6.0	TV
00021	7/ 1/96	1703	2726.6	9631.6	20	70	35	65	29.0	23.7	20.5	35.9	36.3	36.3			5.5	6.7	5.7	TV
00022	7/ 1/96	1816	2726.5	9631.5	20	60	30	59	28.8	23.8	21.1	36.0	36.3	36.3			5.4	6.6	6.0	TV
00023	7/ 3/96	0732	2752.3	9351.2	99	49	24	47	29.1	27.1	22.0	33.4	36.0	36.2			5.5	6.1	6.9	TV
00024	7/ 3/96	0857	2752.0	9351.5	99	61	32	60	29.3	24.6	21.0	33.4	36.1	36.3			5.5	6.7	6.7	TV
00025	7/ 3/96	1017	2752.0	9350.9	99	85	40	76	29.4	22.3	20.0	33.3	36.0	36.3		0.261	5.4	6.8	6.3	TV
00026	7/ 3/96	1146	2753.4	9350.5	99	93	47	87	29.6	21.3	19.1	33.3	36.2	36.3		0.227	5.4	6.6	5.1	TV
00027	7/ 3/96	1313	2752.8	9351.2	99	78	38	73	29.6	22.3	19.8	33.3	36.1	36.3		0.208	5.5	6.8	5.9	TV

Table 2. Selected environmental parameters (continued)

CHAPMAN, 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
00028	7/ 3/96	1440	2750.8	9351.5	99	94	45	84	30.0	21.5	18.5	33.2	36.1	36.6		0.225	5.2	6.6	4.9	TV
00029	7/ 3/96	1614	2751.9	9351.6	99	55	27	54	30.0	26.5	20.7	33.3	35.8	36.3		0.232	5.0	6.3	6.5	TV
00030	7/ 3/96	1740	2752.2	9351.4	99	54	27	52	28.9	25.8	20.9	33.4	36.0	36.4		0.247	5.4	6.3	6.6	TV
00031	7/ 4/96	0739	2752.7	9348.2	99	80	41	77	29.3	22.4	19.5	33.4	36.0	36.3		0.259	5.4	6.7	5.7	TV
00032	7/ 4/96	0947	2751.9	9348.4	99	78	36	76	29.5	22.6	19.8	33.4	36.1	36.3		0.247	5.5	6.8	6.0	TV
00033	7/ 4/96	1107	2751.6	9349.5	99	67	33	67	29.5	22.9	20.1	33.6	35.5	36.3		0.203	5.4	6.4	6.4	TV
00034	7/ 4/96	1232	2752.8	9350.0	99	79	40	77	29.6	22.3	19.4	33.6	36.1	36.3		0.205	5.5	6.6	5.2	TV
00035	7/ 4/96	1403	2753.7	9348.7	99	86	43	77	29.7	21.8	19.4	33.3	36.1	36.3		0.195	5.2	6.6	5.2	TV
00036	7/ 4/96	1529	2752.5	9349.1	99	34	17	32	30.3	27.0	24.4	33.5	34.6	35.7		0.200	5.4	5.8	6.2	TV
00037	7/ 4/96	1713	2752.4	9348.7	99	39	18	36	30.2	26.6	24.1	33.4	34.9	36.5		0.252	5.4	5.8	6.5	TV
00038	7/ 5/96	0730	2754.6	9336.2	99	26	12	24	29.6	28.9	24.4	33.9	35.5	36.1		0.217	4.8	5.5	5.4	TV
00039	7/ 5/96	0905	2756.6	9335.5	99	50	25	47	29.6	26.0	21.2	33.7	35.8	36.3		0.225	5.4	6.2	6.4	TV
00040	7/ 5/96	1041	2757.6	9336.6	99	79	40	76	29.7	22.4	19.3	33.5	36.1	36.3		0.232	5.4	6.7	5.3	TV
00041	7/ 5/96	1216	2757.2	9337.6	99	91	45	84	29.8	22.1	19.3	33.5	36.0	36.3		0.227	5.3	6.6	5.2	TV
00042	7/ 5/96	1342	2757.4	9336.2	99	71	36	70	30.3	22.9	19.9	33.2	36.1	36.2		0.198	5.2	6.6	5.9	TV
00043	7/ 5/96	1512	2755.1	9335.1	99	49	24	46	30.9	27.4	21.7	33.2	35.4	36.2		0.217	5.2	5.9	6.3	TV
00044	7/ 5/96	1646	2755.4	9335.9	99	32	15	30	30.6	28.8	23.5	33.3	35.1	36.1		0.229	5.3	5.5	6.3	TV
00045	7/ 8/96	0730	2753.6	9318.5	99	57	27	54	29.8	25.9	21.1	34.5	35.6	36.5		0.229	5.3	6.6	6.4	TV
00046	7/ 8/96	0914	2754.0	9318.0	99	52	26	43	29.7	25.7	22.6	34.4	36.0	36.2		0.195	5.4	6.5	6.6	TV
00047	7/ 8/96	1047	2754.8	9318.0	99	68	34	68	29.7	23.5	20.4	34.4	35.9	36.3		0.183	5.4	6.8	6.1	TV
00048	7/ 8/96	1217	2754.1	9319.0	99	90	45	80	29.6	22.2	19.4	34.1	36.1	36.3		0.169	5.4	6.8	5.3	TV
00049	7/ 8/96	1346	2754.3	9317.5	99	51	25	43	29.7	26.0	22.5	34.1	36.1	36.2		0.173	5.4	6.2	6.6	TV
00050	7/ 8/96	1506	2753.1	9318.0	99	71	35	70	29.8	24.3	20.6	34.0	36.1	36.2		0.242	5.3	6.7	6.4	TV
00051	7/ 8/96	1636	2753.7	9316.9	99	52	26	47	29.9	27.4	23.0	34.0	36.3	36.2		0.181	5.5	6.1	6.6	TV
00052	7/ 8/96	1755	2753.7	9316.5	99	60	30	54	29.9	24.8	22.1	34.0	36.0	36.2		0.227	5.4	6.5	6.6	TV
00053	7/ 9/96	0742	2748.8	9303.0	99	59	30	51	29.4	24.1	22.2	35.2	35.9	36.3		0.178	5.5	6.7	6.8	TV

Table 2. Selected environmental parameters (continued)

CHAPMAN, 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
00054	7/ 9/96	0906	2748.0	9303.0	99	79	38	64	29.5	22.7	20.9	35.1	36.2	36.3		0.164	5.3	6.7	6.1	TV
00055	7/ 9/96	1049	2748.8	9303.5	99	78	40	77	29.7	23.1	20.5	35.0	36.2	36.3		0.156	5.4	6.7	5.8	TV
00056	7/ 9/96	1221	2750.0	9304.0	99	80	41	80	29.9	23.4	20.3	34.9	36.3	36.3		0.154	5.2	6.7	5.9	TV
00057	7/ 9/96	1342	2750.0	9304.0	99	88	44	80	30.1	22.8	20.3	34.6	36.3	36.3		0.171	5.2	6.6	5.9	TV
00058	7/ 9/96	1504	2748.0	9304.5	99	61	31	58	30.2	24.5	21.9	34.6	35.9	36.3		0.166	5.2	6.5	6.5	TV
00059	7/ 9/96	1635	2748.0	9304.1	99	61	29	61	30.2	25.7	21.4	34.5	36.1	36.3		0.183	5.1	6.2	6.1	TV
00060	7/ 9/96	1817	2749.0	9302.5	99	60	30	55	30.1	25.3	22.4	34.5	36.0	36.3		0.237	5.2	6.3	6.5	TV
00061	7/10/96	0728	2749.6	9253.7	99	64	32	61	29.5	24.1	21.0	34.9	35.9	36.2		0.195	5.3	6.5	6.5	TV
00062	7/10/96	0845	2749.4	9253.3	99	87	43	84	29.6	22.5	19.4	34.9	36.2	36.3		0.176	5.2	6.6	5.1	TV
00063	7/10/96	1005	2749.4	9253.1	99	100	51	99	29.7	21.8	19.0	34.9	36.0	36.4		0.169	5.2	6.5	4.8	TV
00064	7/10/96	1125	2749.4	9253.2	99	66	33	63	30.5	24.1	20.8	34.6	35.8	36.3		0.127	5.1	6.5	6.4	TV
00065	7/10/96	1245	2749.4	9253.5	99	93	46	87	30.0	22.2	19.9	35.0	36.1	36.3		0.156	5.1	6.5	5.8	TV
00066	7/10/96	1402	2749.1	9253.7	99	83	41	79	30.8	22.7	20.1	34.7	36.0	36.3		0.151	5.1	6.5	6.2	TV
00067	7/10/96	1521	2749.3	9253.5	99	87	44	82	31.2	22.7	19.4	34.8	36.0	36.4		0.161	5.0	6.5	5.2	TV
00068	7/11/96	0732	2819.9	9227.1	16	58	29	56	30.3	25.0	18.7	31.4	34.6	36.1		0.701	5.4	6.4	4.3	TV
00069	7/11/96	0902	2820.4	9226.9	16	59	29	56	30.0	25.0	18.9	30.5	34.9	36.1		0.806	5.4	6.4	4.7	TV
00070	7/11/96	1028	2820.3	9227.0	16	58	27	54	29.9	25.3	19.0	29.7	35.2	36.1		0.874	5.3	6.2	4.9	TV
00071	7/11/96	1155	2819.8	9227.2	16	59	29	55	30.2	23.1	18.8	29.1	35.5	36.1		0.806	5.5	6.7	4.7	TV
00072	7/11/96	1326	2820.6	9227.4	16	56	27	55	30.6	24.0	18.9	28.6	35.2	36.1		1.016	5.5	6.5	5.0	TV
00073	7/11/96	1455	2820.7	9227.6	16	55	22	52	31.1	27.4	19.1	28.2	34.9	36.0		1.282	5.5	5.7	5.0	TV
00074	7/11/96	1726	2820.9	9228.3	16	58	28	57	31.3	25.3	18.8	28.1	35.1	36.1		1.521	5.3	6.3	4.5	TV
00075	7/12/96	0724	2802.7	9227.5	16	63	32	63	30.0	26.2	21.0	34.4	36.2	36.3		0.269	5.1	6.1	6.3	TV
00076	7/12/96	0857	2802.6	9226.9	16	62	30	59	30.0	25.9	21.3	35.0	35.7	36.3		0.195	5.1	6.0	6.2	TV
00077	7/12/96	1036	2802.9	9226.9	16	79	38	74	30.1	24.7	20.3	35.1	36.1	36.3		0.176	5.0	6.2	5.9	TV
00078	7/12/96	1220	2800.6	9229.9	16	89	44	84	30.0	23.1	19.8	35.2	36.2	36.5		0.156	5.0	6.3	6.1	TV
00079	7/12/96	1400	2802.6	9227.2	16	63	31	62	30.4	25.3	20.7	35.1	36.2	36.4		0.159	5.0	6.0	5.7	TV

Table 2. Selected environmental parameters (continued)

CHAPMAN, 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
00080	7/12/96	1555	2804.1	9227.8	16	88	44	87	30.2	24.8	18.5	35.1	35.9	36.3		0.164	4.8	6.0	3.9	TV
00081	7/12/96	1729	2804.3	9227.1	16	86	43	85	30.4	23.7	18.7	35.0	36.1	36.3		0.198	4.8	6.2	4.2	TV
00082	7/13/96	0722	2758.4	9222.7	99	62	31	58	29.9	25.9	21.1	35.0	35.9	36.4		0.208	5.0	6.0	6.4	TV
00083	7/13/96	0856	2757.9	9222.4	99	90	45	84	29.9	22.5	19.9	35.0	36.1	36.3		0.178	4.9	6.2	5.4	TV
00084	7/13/96	1027	2757.4	9222.1	99	95	47	95	30.1	22.5	19.3	35.0	36.1	36.4		0.161	4.9	6.1	4.9	TV
00085	7/13/96	1216	2756.3	9223.6	99	113	55	113	30.5	21.9	18.2	34.4	35.6	36.3		0.186	4.6	5.9	3.8	TV
00086	7/13/96	1340	2756.0	9222.3	99	60	31	60	30.7	25.9	21.9	35.0	36.2	36.3		0.159	4.9	5.9	6.1	TV
00087	7/13/96	1511	2755.1	9223.3	99	82	41	77	31.0	24.0	20.8	34.8	36.2	36.3		0.164	4.7	6.1	6.0	TV
00088	7/13/96	1655	2754.0	9222.7	99	96	48	96	30.9	23.1	19.1	35.0	36.3	36.3		0.193	4.7	6.0	4.3	TV
00089	7/14/96	0728	2757.7	9159.5	99	83	40	83	30.2	24.1	19.5	35.1	36.2	36.3		0.220	4.8	6.1	5.0	TV
00090	7/14/96	0900	2756.7	9200.3	99	91	44	88	30.0	24.3	19.5	35.3	36.2	36.3		0.249	4.7	6.1	4.8	TV
00092	7/14/96	1157	2757.6	9201.1	99	102	51	101	30.2	21.9	19.1	35.2	36.2	36.3		0.151	4.6	5.9	4.6	TV
00093	7/14/96	1334	2758.0	9201.1	99	78	39	74	30.2	24.1	20.8	35.1	35.6	36.3		0.198	4.7	5.9	5.7	TV
00094	7/14/96	1502	2758.0	9201.5	99	75	37	73	30.2	24.9	20.9	35.0	35.7	36.3		0.183	4.7	5.8	5.6	TV
00095	7/14/96	1642	2758.6	9201.2	99	105	52	98	30.1	22.1	18.8	35.0	36.2	36.4		0.210	4.2	5.9	4.5	TV
00096	7/15/96	0725	2750.8	9150.2	99	92	42	87	29.6	23.7	20.2	35.3	36.2	36.4		0.198	4.7	5.9	5.6	TV
00097	7/15/96	0854	2750.6	9150.6	99	85	42	81	29.7	24.1	20.4	35.2	36.1	36.3		0.169	4.7	5.8	5.2	TV
00098	7/15/96	1029	2751.3	9150.2	99	127	62	119	30.0	22.3	17.7	35.0	36.1	36.2		0.151	4.6	5.8	3.6	TV
00099	7/15/96	1158	2751.5	9149.8	99	120	60	104	30.4	22.5	19.1	35.1	36.2	36.3		0.139	4.6	5.8	4.3	TV
00100	7/15/96	1326	2751.2	9149.4	99	108	53	107	30.5	22.8	19.3	35.0	36.2	36.3		0.132	4.5	5.8	4.5	TV
00101	7/15/96	1446	2751.1	9149.0	99	105	50	100	30.3	23.2	19.5	35.2	36.1	36.4		0.159	4.6	5.9	5.0	TV
00102	7/15/96	1630	2749.9	9148.6	99	106	53	101	30.6	23.3	19.6	35.1	36.2	36.3		0.151	4.6	5.9	4.8	TV
00103	7/24/96	0749	2926.1	8743.9	99	70	33	65	30.1	22.5	18.3	28.6	36.2	36.3		1.944	6.5	7.6	3.9	TV
00104	7/24/96	0952	2925.2	8744.5	99	67	33	66	30.0	23.2	18.9	29.0	36.2	36.3		1.836	6.4	7.4	4.1	TV
00105	7/24/96	1147	2924.7	8744.5	99	68	34	67	30.1	22.9	18.9	29.4	35.9	36.3		1.736	6.5	7.4	4.0	TV
00106	7/24/96	1337	2924.5	8746.0	99	66	31	62	30.1	23.4	19.4	30.1	36.1	36.4		1.199	6.3	7.3	4.8	TV

Table 2. Selected environmental parameters (continued)

CHAPMAN, 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
00107	7/24/96	1515	2923.9	8747.0	99	74	31	61	30.4	23.3	19.6	29.4	35.9	36.2		1.629	6.3	7.2	4.9	TV
00108	7/24/96	1717	2920.7	8745.9	99	102	48	95	30.5	20.7	17.8	31.3	36.2	36.3		1.814	5.9	7.1	3.9	TV
00109	7/25/96	0721	2926.6	8733.5	99	80	38	76	29.9	22.6	18.6	29.6	36.2	36.3		1.653	6.4	7.4	3.8	TV
00110	7/25/96	0901	2926.7	8734.5	99	80	36	71	29.9	22.9	18.5	29.5	36.1	36.3		1.724	5.9	7.0	3.5	TV
00111	7/25/96	1055	2926.2	8734.5	99	80	36	75	29.7	23.0	18.7	29.8	35.7	36.3		1.785	6.0	6.8	3.8	TV
00112	7/25/96	1239	2926.5	8734.9	99	73	35	68	29.5	22.7	18.5	30.7	35.9	36.3		1.499	5.9	6.6	3.6	TV
00113	7/26/96	0723	2935.5	8727.3	10	69	34	67	29.4	20.1	17.4	30.1	36.0	36.2		1.143	6.0	6.0	4.3	TV
00114	7/26/96	0910	2935.5	8725.5	10	72	34	69	29.5	20.6	17.4	30.2	36.1	36.3		0.911	6.0	5.1	4.0	TV
00115	7/26/96	1122	2935.5	8720.9	10	91	45	87	29.6	20.6	16.0	30.4	36.1	36.2		0.933	5.9	5.3	4.1	TV
00116	7/26/96	1306	2933.5	8721.8	10	102	48	97	29.7	20.6	16.0	30.3	36.1	36.1		0.904	5.9	4.8	4.0	TV
00117	7/26/96	1442	2932.5	8722.4	10	104	52	99	29.9	19.6	16.4	30.2	36.1	36.1		0.845	6.0	4.3	4.0	TV
00118	7/26/96	1608	2932.5	8722.6	10	94	47	86	30.5	19.9	16.8	30.0	36.1	36.2		1.089	6.0	4.5	4.0	TV
00119	7/27/96	0711	2951.6	8715.5	10	65	29	59	29.5	23.4	19.8	29.7	35.9	36.3		1.087	6.1	7.0	5.2	TV
00120	7/27/96	0840	2951.4	8716.5	10	62	29	60	29.6	22.8	20.0	29.8	35.8	36.2		1.150	6.0	6.0	5.1	TV
00121	7/27/96	1030	2950.3	8718.1	10	68	33	65	29.6	22.1	19.5	29.8	36.1	36.2		0.923	6.2	6.5	4.7	TV
00122	7/27/96	1208	2950.3	8716.4	10	76	36	73	29.8	21.6	19.0	29.6	35.8	36.3		0.891	6.1	5.5	4.4	TV
00123	7/27/96	1354	2952.0	8715.5	10	59	29	58	29.9	21.4	20.0	29.8	35.8	36.4		0.884	6.2	5.0	5.4	TV
00124	7/27/96	1539	2954.7	8712.5	10	59	36	56	30.1	22.0	21.0	29.9	36.0	36.4		0.860	6.2	6.0	5.7	TV
00125	7/27/96	1737	2957.1	8717.5	10	32	15	30	30.1	24.5	21.9	29.3	35.2	35.8		1.294	6.3	5.9	4.2	TV
00126	7/28/96	0730	2958.1	8700.0	10	84	40	80	29.4	21.2	17.9	30.0	36.0	36.3		0.857	5.9	5.6	4.2	TV
00127	7/28/96	0915	2958.4	8702.5	10	68	33	65	29.6	22.1	19.4	29.7	35.9	36.3		0.599	5.9	6.2	4.8	TV
00128	7/28/96	1030	2958.2	8702.5	10	68	33	65	29.8	22.0	19.1	29.7	35.9	36.3		0.701	6.0	6.2	4.7	TV
00129	7/28/96	1226	2955.9	8703.4	10	84	39	77	30.0	21.6	16.9	29.9	36.0	36.2		0.796	6.0	6.0	3.8	TV
00130	7/28/96	1354	2955.7	8703.4	10	76	35	71	30.9	21.7	18.5	31.4	35.9	36.3		0.857	5.3	6.1	4.3	TV
00131	7/28/96	1526	2955.5	8704.5	10	80	37	74	30.3	21.7	17.8	29.9	36.1	36.4		0.740	6.0	6.3	4.0	TV
00132	7/28/96	1723	2954.8	8709.5	10	74	36	73	30.5	22.2	19.0	30.1	35.8	36.3		0.894	6.0	5.6	4.8	TV

Table 2. Selected environmental parameters (continued)

CHAPMAN, 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
00133	7/29/96	0719	3008.2	8659.5	9	30	14	28	29.4	28.5	24.0	31.0	35.5	35.9		0.527	5.8	6.0	6.0	TV
00134	7/29/96	0912	3009.0	8658.5	9	30	14	28	29.5	28.2	23.8	31.0	35.3	35.7		0.452	5.8	5.8	5.7	TV
00135	7/29/96	1106	3009.6	8657.5	9	29	15	28	29.6	27.8	23.9	31.1	35.5	35.9		0.374	5.7	5.8	5.8	TV
00136	7/29/96	1242	3007.9	8658.0	9	33	15	30	29.9	28.2	23.9	31.0	35.0	35.8		0.388	5.8	5.8	5.8	TV
00137	7/29/96	1422	3005.7	8657.5	9	59	28	57	30.1	23.9	21.4	30.6	35.9	36.2		0.342	5.8	6.0	5.4	TV
00138	7/29/96	1608	3006.2	8657.5	9	49	24	46	30.3	24.1	22.6	30.8	35.8	36.1		0.371	5.8	5.9	5.9	TV
00139	7/30/96	0715	3004.7	8641.5	9	59	28	57	29.6	22.9	20.9	31.1	35.7	36.2		0.503	5.8	6.2	4.9	TV
00140	7/30/96	0846	3004.8	8641.5	9	56	26	52	29.6	23.5	21.4	31.1	35.8	35.9		0.454	5.7	6.1	5.0	TV
00141	7/30/96	1016	3004.8	8642.5	9	56	27	54	29.7	23.0	20.8	31.1	35.8	36.2		0.444	5.7	6.2	4.7	TV
00142	7/30/96	1152	3004.9	8643.5	9	56	26	53	29.9	24.3	21.4	30.9	35.9	35.9		0.425	5.8	6.3	4.9	TV
00143	7/30/96	1328	3004.9	8645.5	9	58	34	58	30.1	21.5	20.6	30.7	35.8	36.2		0.437	5.7	4.8	4.7	TV
00144	7/30/96	1452	3004.9	8645.5	9	76	38	73	29.9	21.5	19.1	30.5	35.8	36.4		0.523	5.8	5.0	4.5	TV
00145	7/30/96	1648	3007.7	8649.5	9	51	26	48	30.2	24.0	21.7	30.7	35.7	35.8		0.461	5.8	6.0	5.0	TV
00146	8/ 1/96	0730	2917.6	8545.5	8	62	31	60	29.8	26.9	18.8	33.6	36.0	36.3		0.393	5.4	6.4	4.5	TV
00147	8/ 1/96	0912	2917.2	8544.5	8	70	32	66	29.6	26.6	18.9	33.4	36.1	36.3		0.481	5.4	5.8	4.2	TV
00148	8/ 1/96	1042	2917.3	8544.5	8	59	30	56	29.7	27.2	20.6	33.6	36.0	36.5		0.476	5.5	5.8	5.4	TV
00149	8/ 1/96	1221	2916.9	8543.5	8	70	35	65	29.6	26.0	19.5	33.6	36.0	36.2		0.488	5.4	6.0	4.5	TV
00150	8/ 1/96	1354	2916.3	8542.5	8	70	35	66	29.8	26.2	19.4	33.6	36.1	36.3		0.540	5.4	6.0	4.6	TV
00151	8/ 1/96	1526	2915.5	8541.5	8	70	35	65	29.7	25.7	19.6	33.4	36.0	36.2		0.669	5.4	6.0	4.8	TV
00152	8/ 1/96	1657	2914.3	8541.5	8	76	36	69	29.8	24.8	19.1	33.4	36.3	36.2		0.701	5.4	6.1	4.4	TV
00153	8/ 2/96	0713	2856.6	8519.5	8	63	31	60	29.6	25.9	20.3	33.0	35.8	36.3		0.359	5.4	6.8	5.9	TV
00154	8/ 2/96	0922	2856.6	8518.5	8	62	26	57	29.7	28.5	20.5	33.0	36.0	36.3		0.317	5.3	6.0	5.8	TV
00155	8/ 2/96	1039	2856.6	8518.5	8	62	30	59	29.8	28.2	20.5	33.1	35.9	36.3		0.320	5.4	6.2	5.7	TV
00156	8/ 2/96	1219	2855.9	8517.5	8	70	34	66	29.8	25.6	20.1	33.2	36.1	36.3		0.379	5.2	6.9	5.5	TV
00157	8/ 2/96	1345	2855.9	8517.5	8	70	33	64	29.8	23.8	20.0	33.1	36.0	36.3		0.437	5.5	7.4	5.4	TV
00158	8/ 2/96	1516	2853.3	8516.5	8	68	33	61	29.9	24.5	20.1	33.0	35.8	36.3		0.440	5.5	7.4	5.6	TV

Table 2. Selected environmental parameters (continued)

CHAPMAN, 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
00160	8/ 3/96	0716	2813.6	8444.3	6	70	38		25.0			35.0								TV
00161	8/ 3/96	0854	2815.5	8445.2	6	73	33	66	29.6	22.9	17.9	34.4	36.0	36.3		0.234	5.0	7.0	3.9	TV
00162	8/ 3/96	1058	2816.5	8445.8	6	68	34	65	29.6	23.7	17.8	34.4	35.7	36.3		0.264	5.2	7.0	3.9	TV
00163	8/ 3/96	1231	2817.5	8446.7	6	73	36	70	29.7	23.3	17.7	34.3	36.1	36.2		0.232	5.3	7.1	3.8	TV
00164	8/ 3/96	1358	2817.5	8446.5	6	73	35	69	29.9	23.1	17.7	34.2	36.2	36.2		0.278	5.3	7.6	3.8	TV
00165	8/ 3/96	1530	2818.5	8447.3	6	73	36	68	29.9	23.3	17.6	34.1	35.6	36.2		0.327	5.3	7.0	3.8	TV
00166	8/ 3/96	1714	2818.5	8447.2	6	73	36	70	29.7	22.8	17.7	34.1	36.0	36.2		0.364	5.4	7.0	3.8	TV
00167	8/ 4/96	0713	2826.5	8420.1	6	40	18	37	29.4	29.3	27.2	35.1	35.8	36.3		0.298	4.9	5.4	5.3	TV
00168	8/ 4/96	0854	2827.0	8422.3	6	40	19	38	29.5	29.2	25.7	35.0	35.9	36.3		0.293	5.0	5.3	5.6	TV
00169	8/ 4/96	1021	2827.5	8422.9	6	45	20	41	29.5	28.8	23.5	35.0	35.9	36.3		0.296	5.0	5.4	6.2	TV
00170	8/ 4/96	1155	2828.5	8422.3	6	43	19	36	29.6	28.8	24.5	34.9	35.9	36.3		0.217	5.0	5.5	6.0	TV
00171	8/ 4/96	1330	2828.5	8420.7	6	30	14	28	29.6	29.1	27.5	35.0	35.8	36.2		0.281	5.0	5.5	5.3	TV
00172	8/ 4/96	1506	2829.5	8422.2	6	30	15	28	29.6	28.9	27.5	34.9	35.9	36.3		0.266	4.9	5.6	5.6	TV
00173	8/ 4/96	1633	2830.0	8421.5	6	38	17	35	29.7	29.0	27.3	34.7	35.7	36.2		0.344	5.2	5.6	5.8	TV
00174	8/ 5/96	0716	2828.5	8413.9	6	34	16	32	29.2	29.3	27.9	34.4	36.0	36.2		0.361	5.2	5.5	5.4	TV
00175	8/ 5/96	0855	2830.0	8415.1	6	29	14	28	29.3	29.7	27.9	34.5	35.8	36.3		0.339	4.8	5.3	5.3	TV
00176	8/ 5/96	1032	2829.5	8418.0	6	31	15	28	29.3	29.5	27.6	34.3	35.8	36.5		0.369	4.6	5.3	5.3	TV
00177	8/ 5/96	1208	2828.0	8418.5	6	32	16	32	29.5	29.4	27.6	34.8	35.8	36.2		0.242	5.2	5.4	5.3	TV
00178	8/ 5/96	1341	2827.0	8419.4	6	40	19	38	29.5	28.6	25.2	34.9	36.1	36.5		0.229	5.0	5.3	5.7	TV
00179	8/ 5/96	1511	2826.5	8417.8	6	30	15	29	29.6	29.4	27.8	34.7	35.7	36.2		0.276	5.1	5.3	5.2	TV
00180	8/ 5/96	1704	2826.0	8413.0	6	36	18	34	29.9	29.1	26.1	34.5	36.0	36.4		0.332	5.0	5.5	5.6	TV
00181	8/10/96	0717	2434.5	8251.2	2	20	9	19	29.4	29.4	29.4	36.4	36.4	36.4		0.491	5.5	5.5	5.4	TV
00182	8/10/96	0911	2433.5	8255.4	2	23	11	22	29.1	29.1	29.1	36.3	36.2	36.3		0.161	4.8	3.6	5.6	TV
00183	8/10/96	1052	2431.5	8257.8	2	22	11	21	29.6	29.0	28.7	36.3	36.3	36.3		0.137	5.5	5.6	5.6	TV
00184	8/10/96	1230	2433.5	8257.8	2	21	10	20	29.8	29.1	28.8	36.0	36.3	36.3		0.129	5.0	5.2	5.4	TV
00185	8/10/96	1405	2435.5	8258.8	2	17	8	15	29.7	29.0	29.0	35.5	36.3	36.3		0.161	4.3	5.2	5.4	TV

Table 2. Selected environmental parameters (continued)

CHAPMAN, 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
00186	8/10/96	1524	2436.4	8258.7	2	16	8	15	29.8	29.1	29.1	35.8	36.3	36.3		0.171	4.2	5.2	5.3	TV
00187	8/10/96	1712	2438.3	8258.2	2	27	13	25	29.8	28.8	28.7	36.3	36.2	36.3		0.222	4.8	5.4	5.5	TV
00188	8/11/96	0716	2441.6	8246.0	2	26	12	24	29.4	29.4	29.2	36.3	36.3	36.3		0.208	4.6	5.2	5.3	TV
00189	8/11/96	0848	2442.3	8246.4	2	17	9	16	29.5	29.4	29.4	36.3	36.3	36.3		0.171	4.6	5.2	5.1	TV
00190	8/11/96	1026	2442.4	8246.4	2	23	10	20	29.7	29.5	29.4	36.3	36.3	36.3		0.122	4.5	5.1	5.2	TV
00191	8/11/96	1145	2442.5	8246.5	2	22	11	21	29.6	29.4	29.2	36.3	36.3	36.3		0.137	4.4	5.0	5.2	TV
00192	8/11/96	1310	2443.7	8247.0	2	17	9	17	29.5	29.1	29.1	36.1	36.3	36.3		0.142	4.6	5.1	5.2	TV
00193	8/11/96	1437	2443.7	8247.9	2	15	7	14	29.6	29.3	29.3	36.0	36.2	36.3		0.144	4.9	5.2	5.2	TV
00194	8/11/96	1559	2443.7	8248.6	2	24	12	23	29.7	29.6	29.5	36.3	36.3	36.3		0.347	4.7	5.0	5.1	TV
00195	8/12/96	0715	2436.5	8305.4	2	21	9	19	29.6	29.0	28.1	36.2	36.4	36.3		0.181	5.0	5.4	5.6	TV
00196	8/12/96	0848	2437.0	8304.8	2	15	7	14	29.6	28.7	28.4	36.0	36.1	36.3		0.164	4.2	5.2	5.3	TV
00197	8/12/96	1022	2436.0	8303.0	2	22	11	21	29.8	29.1	28.0	36.1	36.2	36.4		0.178	4.2	5.2	5.4	TV
00198	8/12/96	1143	2437.0	8302.4	2	24	12	23	29.7	29.3	28.4	36.1	36.2	36.3		0.127	4.5	5.1	5.2	TV
00199	8/12/96	1312	2438.0	8302.5	2	16	8	15	29.2	28.9	28.9	36.1	36.3	36.3		0.195	4.7	5.1	5.2	TV
00200	8/12/96	1439	2439.0	8302.1	2	16	8	16	30.2	29.4	29.1	36.2	36.2	36.3		0.213	4.4	5.1	5.2	TV
00201	8/12/96	1612	2439.5	8300.8	2	22	11	22	29.6	29.2	28.8	36.3	36.3	36.3		0.288	5.0	5.3	5.5	TV
00202	8/13/96	0729	2441.5	8341.9	2	60	28	57	29.6	25.6	19.5	36.3	36.4	36.6		0.166	4.9	6.3	4.4	TV
00204	8/13/96	1116	2442.4	8345.2	2	81	38	77	30.0	22.5	19.7	36.8	36.9	36.5		0.167	2.8	5.7	4.4	TV
00205	8/13/96	1245	2442.5	8345.2	2	81	37	76	30.4	22.7	19.8	36.3	36.5	36.5		0.139	4.9	6.0	4.5	TV
00206	8/13/96	1424	2443.5	8348.1	2	115	55	109	30.9	20.2	18.3	36.3	36.5	36.4		0.169	4.8	4.6	4.4	TV
00207	8/13/96	1554	2444.5	8349.6	2	106	53	99	31.0	20.4	18.3	35.6	36.3	36.4		0.161	4.9	4.7	4.5	TV
00208	8/13/96	1708	2444.5	8349.5	2	102	51	97	30.5	20.4	18.3	36.0	36.4	36.4		0.183	4.8	4.6	4.3	TV
00209	8/14/96	0718	2451.5	8347.8	2	80	37	74	29.9	22.4	19.7	36.3	36.6	36.6		0.178	4.9	5.8	4.2	TV
00210	8/14/96	0858	2452.9	8349.8	2	75	36	71	30.1	24.3	20.2	36.3	36.4	36.8		0.210	4.9	5.9	4.3	TV
00211	8/14/96	1034	2453.5	8347.9	2	78	36	74	30.2	25.3	19.5	36.2	36.3	36.6		0.161	4.7	6.0	4.0	TV
00212	8/14/96	1200	2454.6	8348.8	2	84	42	80	30.0	22.4	19.5	36.2	36.0	36.7		0.166	5.0	5.1	4.2	TV

Table 2. Selected environmental parameters (continued)

CHAPMAN, 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
00213	8/14/96	1331	2455.5	8347.8	2	80	39	76	30.1	23.3	19.6	36.2	36.1	36.5		0.156	5.1	6.0	4.3	TV
00214	8/14/96	1502	2456.5	8347.1	2	83	42	77	30.4	22.2	20.3	36.5	36.4	36.7		0.144	5.0	6.0	4.5	TV
00215	8/14/96	1627	2456.5	8347.3	2	74	36	70	30.0	23.7	20.2	36.1	36.3	36.6		0.188	5.1	6.2	4.4	TV
00216	8/16/96	0720	2446.5	8409.8	99	51	25	47	29.6	27.5	20.2	36.1	36.6	36.2		0.171	4.9	6.4	5.8	TV
00217	8/16/96	0848	2747.0	8409.7	5	51	24	48	29.7	28.8	20.3	36.1	35.8	36.3		0.154	4.8	6.0	5.4	TV
00218	8/16/96	1019	2747.5	8409.8	5	53	26	50	29.8	29.2	20.4	36.0	36.3	36.3		0.142	4.4	5.4	5.5	TV
00219	8/16/96	1139	2747.5	8409.7	5	49	24	47	29.8	28.7	20.5	36.0	35.3	36.3		0.139	4.9	6.1	5.6	TV
00220	8/16/96	1309	2748.0	8409.7	5	53	22	48	29.9	29.5	20.3	36.1	36.1	36.3		0.124	4.9	5.3	5.7	TV
00221	8/16/96	1431	2748.5	8409.6	5	45	22	42	30.0	29.3	22.1	36.1	35.9	36.4		0.132	4.9	6.0	6.6	TV
00222	8/16/96	1551	2748.5	8409.5	5	46	22	43	30.7	29.6	21.4	35.6	36.1	36.4		0.142	4.9	5.6	6.4	TV
00223	8/17/96	0718	2814.5	8407.9	6	36	16	32	29.6	29.5	27.3	35.6	35.7	36.3		0.242	4.8	5.2	5.5	TV
00224	8/17/96	0840	2815.5	8408.1	6	37	18	34	29.6	29.4	26.5	35.5	35.7	36.3		0.208	4.7	5.1	5.5	TV
00225	8/17/96	1000	2815.5	8407.3	6	34	16	32	29.8	29.4	26.9	35.4	35.7	36.6		0.193	4.7	5.1	5.6	TV
00226	8/17/96	1118	2816.5	8407.2	6	41	21	39	29.6	29.6	26.1	35.5	36.0	36.4		0.188	4.7	5.3	5.6	TV
00227	8/17/96	1244	2816.5	8405.8	6	35	18	33	29.6	29.5	26.6	35.5	35.8	36.3		0.205	4.8	5.1	5.7	TV
00228	8/17/96	1406	2817.5	8406.5	6	37	17	35	29.6	29.8	26.9	35.5	35.8	36.4		0.215	4.9	5.2	5.7	TV
00229	8/17/96	1529	2818.5	8406.2	6	33	16	32	29.6	29.6	27.2	35.4	36.7	36.5		0.222	5.1	5.2	5.6	TV
00230	8/17/96	1716	2818.5	8409.7	6	38	19	35	30.4	29.6	26.6	35.3	36.0	36.4		0.232	4.9	5.4	5.9	TV
00231	8/18/96	0718	2820.5	8409.7	6	37	15	30	29.5	29.5	26.9	35.4	35.5	36.3		0.222	4.6	5.1	5.7	TV
00232	8/18/96	0855	2820.5	8409.0	6	34	15	31	29.7	29.6	27.0	35.5	35.6	36.6		0.193	4.8	5.1	5.8	TV
00233	8/18/96	1025	2821.0	8409.8	6	34	17	33	29.6	29.8	26.7	35.4	35.7	36.3		0.171	4.6	5.0	5.6	TV
00234	8/18/96	1148	2821.5	8407.9	6	38	19	36	29.8	29.9	26.9	35.3	35.8	36.3		0.178	4.8	5.2	5.7	TV
00235	8/18/96	1305	2822.3	8408.0	6	34	17	32	29.8	29.7	26.8	35.3	35.7	36.4		0.166	4.9	5.2	5.8	TV
00236	8/18/96	1423	2822.2	8407.4	6	38	19	37	29.8	29.8	27.0	35.4	36.0	36.3		0.208	4.8	5.4	5.9	TV
00237	8/18/96	1551	2823.5	8406.3	6	37	17	33	30.0	29.7	27.7	35.4	35.7	36.3		0.237	4.9	5.2	5.3	TV
00238	8/19/96	0722	2830.5	8413.2	6	36	17	32	29.5	29.6	28.2	35.6	36.1	36.2		0.288	4.8	4.9	4.6	TV

Table 2. Selected environmental parameters (continued)

CHAPMAN, 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
00239	8/19/96	0855	2831.0	8415.0	6	29	14	27	29.5	29.7	28.1	35.7	36.0	36.2		0.264	4.6	5.0	4.8	TV
00240	8/19/96	1023	2832.0	8414.8	6	39	19	33	29.5	28.9	27.7	35.7	36.1	36.2		0.254	5.2	5.0	5.0	TV
00241	8/19/96	1201	2831.5	8417.8	6	33	15	31	29.5	29.5	27.8	35.6	35.8	36.2		0.227	4.8	5.0	4.9	TV
00242	8/19/96	1325	2832.0	8414.7	6	38	18	35	29.6	29.2	27.7	35.4	36.0	36.3		0.225	5.0	5.1	4.9	TV
00243	8/19/96	1506	2834.5	8415.6	6	29	15	26	29.8	29.6	28.2	35.8	35.9	36.2		0.247	4.9	5.0	5.1	TV
00244	8/19/96	1636	2835.5	8415.2	6	28	14	24	29.8	29.4	28.3	35.8	35.9	36.3		0.296	4.8	5.2	5.3	TV
00245	8/20/96	0716	2832.9	8420.9	6	27	13	24	29.5	29.5	27.7	35.5	35.5	36.2		0.298	4.7	5.1	4.9	TV
00246	8/20/96	0839	2833.5	8421.0	6	31	15	28	29.5	29.5	27.9	35.6	35.6	36.2		0.264	5.0	5.1	4.8	TV
00247	8/20/96	1010	2834.0	8420.3	6	30	15	28	29.4	29.4	28.0	35.5	35.6	36.2		0.249	4.8	4.9	4.8	TV
00248	8/20/96	1145	2834.5	8421.5	6	35	18	34	29.5	29.4	27.6	35.6	35.6	36.2		0.193	4.8	4.7	4.7	TV
00249	8/20/96	1311	2835.5	8420.7	6	29	15	29	29.5	29.5	28.6	35.6	35.5	36.2		0.232	4.8	5.0	5.1	TV
00250	8/20/96	1439	2836.5	8421.3	6	35	18	32	29.5	29.5	28.0	35.6	35.7	36.2		0.227	4.6	5.1	4.9	TV
00251	8/20/96	1616	2838.0	8422.0	6	37	19	35	29.6	29.4	27.5	35.6	35.5	36.2		0.242	4.7	4.9	5.0	TV
00252	8/21/96	0710	2843.0	8423.6	6	37	18	37	29.3	29.1	26.8	35.7	35.8	36.3		0.325	4.8	4.9	4.9	TV
00253	8/21/96	0850	2841.0	8424.0	6	35	18	33	29.3	29.3	27.8	35.7	35.7	36.2		0.242	4.8	5.0	4.8	TV
00254	8/21/96	1017	2841.0	8423.2	6	34	17	29	29.2	28.1	27.7	35.7	36.1	36.2		0.288	4.6	4.9	4.9	TV
00255	8/21/96	1139	2840.5	8423.3	6	28	15	25	29.2	29.2	28.1	35.7	35.7	36.2		0.259	5.2	5.3	5.4	TV

Table 2. Selected environmental parameters (continued)

CHAPMAN, 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
28001	9/ 5/96	1832	2602.6	9629.8	99	60	30	57	27.8	26.3	21.9	35.8	36.1	36.4			6.7	8.2	7.9	PN
28002	9/ 5/96	2222	2559.8	9700.1	21	27	14	25	27.2	26.8	25.3	36.0	36.1	36.4		0.339	7.5	8.0	6.9	PN
28003	9/ 6/96	0221	2629.1	9659.7	21	34	16	32	28.2	28.4	26.2	36.0	36.2	36.4		0.077	6.8	7.9	6.4	PN
28004	9/ 6/96	0556	2630.4	9629.8	99	83	39	78	27.8	24.9	20.4	35.7	36.4	36.3		0.088	6.9	9.2	7.2	PN
28005	9/ 6/96	1009	2700.2	9639.3	21	86	41	82	28.1	25.4	17.4	36.2	36.3	36.3		0.065	6.7	8.7	3.1	PN
28006	9/ 6/96	1429	2700.4	9711.2	20	26	13	24	28.2	28.2	28.1	36.3	36.3	36.4		0.527	6.8	6.8	6.5	PN
28007	9/ 6/96	1841	2729.4	9658.9	20	28	14	27	28.9	28.9	28.4	36.2	36.2	36.4		0.455	7.3	7.8	4.7	PN
28008	9/ 6/96	2218	2729.9	9629.4	20	73	38	70	28.4	26.5	22.3	36.1	36.0	36.5		0.070	7.1	8.8	8.2	PN
28009	9/ 7/96	0214	2759.4	9629.1	19	27	12	24	29.2	29.7	28.5	32.4	34.3	36.2		0.305	4.9	6.5	5.6	PN
28010	9/ 7/96	0510	2820.3	9619.6	19	15	7	13	29.3	29.4	29.5	30.8	30.9	32.4		0.225	6.8	8.1	8.1	PN
28011	9/ 7/96	0819	2829.9	9559.4	19	15	7	14	30.0	29.9	29.4	28.4	29.0	34.4		0.458	6.2	8.2	3.8	PN
28012	9/ 7/96	1157	2759.5	9559.6	19	42	21	42	29.2	28.8	22.4	34.2	36.3	37.2		0.317	6.8	7.4	7.7	PN
28013	9/ 7/96	1645	2735.4	9600.1	20	134	67	128	28.5	23.0	19.3	36.2	36.3	36.4		0.255	6.6	8.3	4.4	PN
28014	9/ 7/96	2043	2745.4	9529.4	99	104	48	95	28.5	24.0	18.6	36.2	36.2	36.4		0.053	6.7	9.0	4.4	PN
28015	9/ 7/96	2323	2759.6	9529.2	99	53	27	50	29.1	28.5	21.0	34.4	36.1	36.8		0.187	6.5	7.4	7.4	PN
28016	9/ 8/96	0317	2830.1	9530.0	19	25	12	24	29.2	29.3	28.8	33.4	34.2	36.3		0.251	7.8	7.8	7.7	PN
28017	9/ 8/96	0658	2829.9	9459.7	18	32	15	30	29.0	29.3	26.5	35.0	35.4	36.7		0.162	6.4	7.7	8.4	PN
28018	9/ 8/96	1101	2759.3	9459.4	19	80	38	76	29.2	27.5	20.3	35.3	36.4	36.4		0.099	6.6	7.8	6.1	PN
28019	9/ 8/96	1424	2759.6	9429.4	18	70	35	67	29.1	25.3	21.7	35.3	36.1	36.4		1.461	7.1	8.1	8.3	PN
28020	9/ 8/96	1823	2829.3	9428.7	18	37	19	37	29.1	29.3	24.2	33.6	35.5	36.7		0.221	7.8	7.7	5.0	PN
28021	9/ 8/96	2224	2859.9	9429.9	18	18	9	18	29.2	29.7	29.5	26.6	34.0	34.7		0.292	8.8	8.8	7.7	PN
28022	9/ 9/96	0154	2900.5	9459.3	18	17	8	16	29.3	29.8	25.8	28.3	33.2	37.9		1.121	7.5	7.1	6.1	PN
28023	9/ 9/96	0651	2926.5	9430.0	18	10	5	9	28.8	29.5	29.5	33.4	33.0	33.0		3.341	4.2	4.6	4.6	PN
28024	9/ 9/96	1029	2929.9	9359.8	18	13	5	12	29.0	29.4	29.9	25.2	31.0	32.2		3.385	7.6	6.9	5.8	PN
28025	9/ 9/96	1408	2859.9	9359.5	18	17	9	17	29.0	29.7	29.3	32.6	32.7	33.0		0.256	6.2	7.7	7.7	PN
28026	9/ 9/96	1747	2829.2	9400.8	18	37	17	34	29.1	29.2	27.0	34.2	36.2	36.7		0.318	6.1	7.4	7.8	PN

Table 2. Selected environmental parameters (continued)

CHAPMAN, 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
28027	9/ 9/96	2139	2800.2	9359.9	17	75	37	73	29.3	28.0	20.3	35.2	35.9	36.4		0.113	6.4	8.4	6.4	PN
28028	9/10/96	0108	2800.3	9329.3	99	85	41	80	29.0	24.1	20.6	36.2	36.4	36.4		0.075	6.8	9.0	7.1	PN
28029	9/10/96	0505	2830.5	9329.6	17	38	19	37	29.0	28.8	22.3	32.5	36.0	36.3		0.237	7.2	7.6	6.5	PN
28030	9/10/96	0906	2859.9	9330.0	17	20	10	19	28.5	29.2	29.3	31.3	32.0	35.0		0.284	6.0	7.9	6.0	PN
28031	9/10/96	1258	2930.3	9329.8	17	8	4	7	29.6	29.3	29.4	26.8	27.0	26.9		2.141	4.7	6.6	7.9	PN
28032	9/10/96	1633	2929.8	9300.3	17	14	7	12	29.0	29.4	29.5	27.4	31.2	30.3		1.253	6.7	5.5	6.3	PN
28033	9/10/96	2000	2929.4	9229.3	16	8	4	7	29.8	29.7	29.5	29.3	31.7	31.7		13.223	8.5	2.3	3.5	PN
28034	9/11/96	0040	2859.7	9300.5	16	24	11	22	29.5	29.9	28.4	29.7	33.1	35.0		0.221	7.4	7.7	4.6	PN
28035	9/11/96	0424	2900.5	9230.8	16	25	11	22	29.4	29.7	28.1	25.8	34.0	36.1		0.251	7.4	8.1	6.7	PN
28036	9/11/96	0802	2900.3	9200.7	16	19	9	18	29.4	28.7	26.4	23.6	34.3	35.9		2.019	9.2	4.4	2.6	PN
28037	9/11/96	1316	2830.1	9130.3	15	45	23	45	30.4	29.2	21.5	30.5	36.2	36.1		1.280	6.4	7.7	1.3	PN
28038	9/11/96	1637	2829.7	9200.7	15	48	23	46	29.5	24.9	20.3	32.8	35.4	36.1		0.160	6.4	7.7	4.1	PN
28039	9/11/96	2013	2830.4	9230.6	16	48	23	46	29.6	29.4	21.5	34.2	35.9	36.2		0.262	6.6	7.4	4.1	PN
28040	9/11/96	2331	2830.1	9300.5	16	44	19	41	29.4	29.1	23.0	34.8	36.3	36.5		0.083	5.8	7.3	6.2	PN
28041	9/12/96	0329	2800.9	9259.6	17	101	48	96	28.8	23.8	18.3	36.1	36.3	36.4		0.045	6.5	8.8	4.7	PN
28042	9/12/96	0741	2759.6	9230.1	99	106	50	100	29.1	24.2	18.8	36.2	36.4	36.4		0.062	6.6	9.2	5.1	PN
28043	9/12/96	1151	2759.8	9159.7	99	116	58	111	29.2	21.0	17.5	34.1	36.1	36.3		0.113	6.6	5.4	3.5	PN
28044	9/12/96	1537	2759.0	9130.0	15	171	86	169	29.9	19.4	14.4	33.0	36.2	35.9		0.195	6.9	5.2	4.4	PN
28045	9/12/96	1945	2800.0	9100.3	15	141	70	140	30.1	21.9	16.0	36.3	36.1	36.2		0.085	6.7	8.0	4.3	PN
28046	9/13/96	0003	2805.4	9028.7	14	146	69	135	29.4	21.7	16.2	34.1	36.3	36.2		0.153	7.0	8.5	5.1	PN
28047	9/13/96	0405	2820.0	9000.0	14	107	51	102	30.1	21.9	16.9	30.8	36.2	36.2		0.491	6.8	7.4	5.4	PN
28048	9/13/96	0605	2829.9	8958.9	99	237	95	190	30.4	17.7	14.7	23.7	36.3	35.9		3.847	9.3	4.2	4.0	PN
28049	9/13/96	0958	2834.4	8929.8	13	213	90	185	30.2	17.7	14.5	24.9	36.3	35.9		1.595	7.8	4.0	3.6	PN
28050	9/13/96	1541	2859.4	8901.0	13	69	32	65	29.6	22.6	19.6	30.9	36.0	36.3		25.512	7.3	6.9	5.8	PN
28051	9/13/96	2014	2913.5	8829.7	11	108	54	104	29.5	20.9	17.2	31.8	36.2	36.3		0.199	4.3	6.0	3.7	PN
28052	9/13/96	2350	2915.4	8800.0	11	227	96	192	29.2	18.2	14.0	32.3	36.4	35.8		0.116	6.7	4.6	4.2	PN

Table 2. Selected environmental parameters (continued)

CHAPMAN, 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
28053	9/14/96	0412	2929.8	8729.8	99	71	33	65	29.0	25.7	18.5	32.3	35.9	36.3		0.135	6.9	7.9	5.5	PN
28054	9/14/96	0749	2930.0	8800.1	10	44	20	41	29.3	29.6	23.8	31.4	35.6	36.2		0.144	7.3	8.4	6.6	PN
28055	9/14/96	1116	2930.2	8829.6	11	50	22	47	29.6	26.3	21.9	30.2	36.0	36.2		0.280	7.2	6.7	7.2	PN
28078	9/20/96	1721	3000.3	8729.3	10	25	15	24	28.8	29.6	26.5	32.1	34.0	36.1		0.142	6.7	6.8	7.1	PN
28079	9/20/96	2128	3000.4	8659.0	10	74	36	70	28.6	23.4	18.5	33.1	36.1	36.2		0.093	6.5	7.6	4.1	PN
28080	9/20/96	2350	2947.5	8659.6	10	187	89	178	28.6	18.4	14.8	33.1	36.3	36.0		0.093	7.3	6.2	6.6	PN
28081	9/21/96	0453	2930.5	8628.6	9	190	88	176	28.8	18.2	15.0	33.8	36.3	36.0		0.080	7.3	5.9	6.7	PN
28082	9/21/96	0851	2930.1	8559.7	8	55	26	52	28.8	29.6	21.3	34.0	36.0	36.4		0.078	7.5	8.9	9.1	PN
28083	9/21/96	1126	2911.9	8559.9	8	174	79	170	28.8	18.8	15.1	34.1	36.4	36.0		0.132	7.5	6.2	5.9	PN
28084	9/21/96	1548	2859.8	8530.7	8	69	33	63	28.8	26.5	20.8	35.0	36.3	36.4		0.141	7.7	9.7	8.2	PN
28085	9/21/96	1902	2839.4	8530.3	99	176	80	154	29.2	19.6	15.9	35.8	36.5	36.1		0.096	7.3	6.7	6.9	PN
28086	9/21/96	2342	2829.3	8500.8	8	104	50	97	29.2	22.2	18.4	35.5	36.4	36.5		0.081	7.6	9.5	7.4	PN
28087	9/22/96	0345	2759.5	8500.2	6	251	97	193	29.6	19.6	14.0	36.2	36.5	35.8		0.053	7.7	7.2	8.0	PN
28088	9/22/96	0752	2759.6	8430.5	6	77	38	75	29.4	24.3	19.8	36.0	36.4	36.4		0.093	8.2	10.7	8.0	PN
28089	9/22/96	1125	2759.8	8400.5	5	47	23	44	29.2	29.2	21.8	35.9	35.9	36.4		0.100	8.3	9.0	9.8	PN
28090	9/22/96	1459	2800.0	8329.5	5	29	13	26	29.3	29.2	24.7	36.0	36.0	36.2		0.130	8.4	9.7	9.9	PN
28091	9/22/96	1818	2800.0	8300.2	6	13	6	12	29.4	29.4	29.4	36.0	36.0	36.1		1.477	7.4	7.8	7.7	PN
28092	9/22/96	2218	2830.4	8300.2	6	10	5	9	28.5	28.5	28.4	35.0	35.0	35.0		0.474	6.3	7.4	7.7	PN
28093	9/23/96	0201	2829.9	8329.5	6	23	11	22	29.1	29.1	29.1	35.8	35.8	35.8		0.393	7.9	9.2	9.7	PN
28094	9/23/96	0535	2830.6	8400.1	6	35	17	35	28.8	28.9	26.1	35.6	35.6	36.2		0.117	7.9	9.0	9.6	PN
28095	9/23/96	0915	2830.4	8429.9	6	49	25	49	28.8	29.5	20.5	35.1	36.1	36.3		0.077	8.0	9.3	8.3	PN
28096	9/23/96	1441	2900.2	8459.6	8	37	16	36	28.2	29.0	21.5	33.7	35.1	36.3		0.125	8.1	9.2	8.8	PN
28097	9/23/96	1811	2900.4	8430.0	7	33	16	32	28.6	29.4	23.8	34.2	35.9	36.3		0.089	7.3	8.4	8.3	PN
28098	9/23/96	2257	2859.9	8359.3	6	29	14	28	28.7	28.7	29.1	35.6	35.6	36.0		0.125	6.4	7.6	7.2	PN
28099	9/24/96	0214	2859.9	8330.1	6	17	9	17	28.4	28.4	28.4	34.6	34.6	34.6		0.374	4.3	7.2	7.3	PN
28100	9/24/96	0419	2900.2	8315.5	6	10	5	9	27.6	27.7	27.7	33.4	33.4	33.3		0.393	5.6	8.2	8.6	PN

Table 2. Selected environmental parameters (continued)

CHAPMAN, 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
28101	9/24/96	0847	2930.2	8335.3	7	10	5	9	27.3	27.3	27.4	32.9	32.9	32.9		0.507	7.2	8.8	9.0	PN
28102	9/24/96	1133	2930.4	8400.6	7	21	9	20	28.5	28.4	28.3	34.7	34.8	34.8		0.425	7.7	8.4	8.7	PN
28103	9/24/96	1404	2947.4	8400.2	7	10	5	9	27.8	27.4	27.4	32.8	33.0	33.1			5.4	8.2	8.7	PN
28104	9/24/96	1741	2930.2	8430.7	7	23	12	23	28.8	28.5	28.5	35.1	35.2	35.3			6.9	7.4	7.4	PN
28105	9/24/96	2100	2927.7	8458.7	7	12	6	11	27.8	27.9	27.9	34.5	34.4	34.4			5.9	7.6	8.0	PN
28106	9/25/96	0036	2930.5	8530.1	8	15	7	12	28.0	28.2	28.2	34.5	34.6	34.7			7.2	8.8	8.8	PN
28107	9/25/96	0257	2948.1	8530.0	8	20	11	19	27.4	27.4	27.8	33.7	33.7	35.4			8.1	10.3	7.5	PN
28108	9/25/96	0624	3000.3	8600.4	8	31	11	31	27.7	27.7	25.3	33.2	33.2	36.1			6.4	9.4	9.5	PN
28109	9/25/96	1044	3000.4	8630.1	9	55	26	55	28.1	28.3	20.2	33.3	35.6	36.3			6.1	8.4	6.8	PN
28110	9/25/96	1453	3020.4	8629.6	9	23	10	23	27.7	28.1	27.2	31.5	32.7	35.7			8.0	8.2	4.5	PN
28111	9/25/96	1825	3019.6	8659.5	10	20	10	19	27.7	28.2	26.8	31.0	31.7	35.7			8.0	8.5	4.6	PN
28112	9/25/96	2240	3014.5	8729.4	10	11	5	10	27.3	27.3	27.8	30.4	30.4	30.8			7.9	9.9	10.3	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
19	9/11/96	1830	2730.0	8300.0	5	17	9	17	29.9	29.9	28.7	36.3	36.3	36.3	0.523		3.6	3.6	3.4	PN
20	9/11/96	2215	2730.0	8330.0	5	41	19	38	29.6	29.6	23.4	36.3	36.3	36.3	0.187		3.5	3.6	3.7	PN
21	9/12/96	0147	2730.0	8400.0	5	62	29	58	29.6	27.4	21.3	35.6	36.4	36.4	0.157		3.5	3.8	3.5	PN
22	9/12/96	0520	2730.0	8430.1	99	135	63	125	29.6	20.6	17.5	36.2	36.4	36.4	0.059		3.5	3.6	2.7	PN
23	9/12/96	0937	2700.0	8430.0	5	178	89	177	29.8	20.2	13.6	36.0	36.8	35.8	0.190		3.5	2.9	2.4	PN
24	9/12/96	1333	2700.0	8400.0	5	82	40	80	29.9	24.5	19.7	35.0	36.5	36.5	0.119		3.2	4.1	2.7	PN
25	9/12/96	1713	2700.0	8330.0	5	53	26	52	29.8	29.3	22.3	35.8	36.3	36.3	0.077		3.5	3.7	3.7	PN
26	9/12/96	2043	2700.0	8300.0	5	34	14	28	29.7	29.6	24.7	36.2	36.2	36.4	0.103		3.5	3.6	4.1	PN
27	9/13/96	0120	2630.0	8229.9	4	19	10	19	29.6	29.6	29.3	36.1	36.1	36.3	0.318		3.6	3.6	3.7	PN
28	9/13/96	0440	2630.0	8300.4	4	37	17	34	29.5	29.8	25.3	35.5	36.2	36.4	0.081		3.6	3.7	4.2	PN
29	9/13/96	0818	2630.0	8330.0	4	59	29	58	29.6	26.0	22.2	35.5	36.5	36.5	0.090		3.6	4.1	3.5	PN
30	9/13/96	1150	2630.4	8400.0	4	126	62	124	29.8	21.7	17.3	35.6	36.6	36.4	0.106		3.6	4.0	2.6	PN
31	9/13/96	1528	2630.0	8430.0	99	202	99	198	30.1	17.9	12.7	36.1	36.5	35.6	0.144		3.6	2.9	2.4	PN
32	9/13/96	2022	2600.0	8430.0	99	221	100	200	29.9	18.7	13.2	36.3	36.5	35.7	0.238		3.6	2.9	2.5	PN
33	9/14/96	0131	2600.0	8400.0	99	138	65	130	29.8	21.2	15.9	36.2	36.6	36.1	0.220		3.6	3.6	2.5	PN
34	9/14/96	0517	2600.0	8330.0	3	63	31	63	29.6	29.7	21.9	35.9	36.4	36.5	0.148		3.6	3.6	3.4	PN
35	9/14/96	0846	2600.0	8300.0	4	45	22	45	29.7	29.6	24.3	35.9	36.3	36.5	0.144		3.6	3.6	3.9	PN
36	9/14/96	1209	2600.0	8230.0	4	30	14	28	30.0	29.5	25.7	36.3	36.4	36.4	0.710		3.7	3.7	4.0	PN
37	9/14/96	1650	2530.0	8200.0	3	19	9	18	30.1	29.6	29.6	36.0	36.1	36.1	0.570		3.7	3.8	3.8	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
17001	9/21/96	0844	2958.9	8744.1	10	29			28.3			31.6								PN
17002	9/21/96	0953	3005.0	8744.0	10	17			28.1			31.8								PN
17003	9/21/96	1046	3010.9	8744.0	10	12			27.7			30.3								PN
17004	9/21/96	1215	3010.8	8756.2	10	14			27.5			30.4								PN
17005	9/21/96	1324	3004.8	8756.0	10	16			27.4			30.3								PN
17006	9/21/96	1435	2958.9	8756.0	10	25			28.6			32.2								PN
17007	9/21/96	1547	2952.8	8755.9	10	32			28.6			31.9								PN
17008	9/21/96	1732	2952.8	8808.0	11	34			28.6			32.5								PN
17009	9/21/96	1831	2958.9	8808.0	11	27			28.2			31.5								PN
17010	9/21/96	1933	3004.9	8808.0	11	20			28.2			31.1								PN
17011	9/21/96	2032	3010.8	8808.0	11	12			27.7			29.7								PN
17012	9/21/96	2158	3010.9	8820.1	11	12			27.1			28.9								PN
17013	9/21/96	2250	3004.9	8820.0	11	19			27.5			30.6								PN
17014	9/21/96	2345	2958.8	8820.0	11	30			27.9			31.2								PN
17015	9/22/96	0048	2952.8	8820.3	11	33			28.0			31.5								PN
17016	9/22/96	0158	2946.7	8820.2	11	36			27.7			32.1								PN
17017	9/22/96	0338	2940.9	8832.1	11	31			27.8			32.1								PN
17018	9/22/96	0455	2946.9	8831.9	11	29			28.2			31.8								PN
17019	9/22/96	0629	2952.9	8832.0	11	27			28.1			31.5								PN
17020	9/22/96	0729	2958.9	8832.0	11	26			28.2			31.3								PN
17021	9/22/96	0829	3004.9	8832.0	11	18			28.1			31.3								PN
17022	9/22/96	0925	3010.9	8831.9	11	12			27.6			31.1								PN
17023	9/22/96	1045	3010.9	8844.0	11	13			28.2			31.3								PN
17024	9/22/96	1133	3004.9	8844.1	11	15			28.1			31.5								PN
17025	9/22/96	1218	2958.8	8844.0	11	15			28.1			31.5								PN
17026	9/22/96	1310	2952.8	8844.0	11	15			28.1			31.1								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
17027	9/22/96	1400	2946.9	8844.0	11	15			28.3			31.5								PN
17028	9/22/96	1446	2940.8	8844.0	11	15			28.3			31.5								PN
17029	9/22/96	1536	2934.9	8844.0	11	15			28.1			31.0								PN
17030	9/22/96	1624	2928.9	8844.0	11	19			28.2			31.5								PN
17031	9/22/96	1751	2922.9	8856.0	11	18			27.8			31.7								PN
17032	9/22/96	1855	2928.9	8856.0	11	12			27.7			32.0								PN
17033	9/22/96	1949	2934.9	8856.0	11	10			27.8			31.6								PN
17034	9/22/96	2058	2927.9	8902.5	12	8	4	7	27.2	27.3	27.0	29.9	30.8	31.2	4.032		6.2	5.5	5.2	PN
17035	9/22/96	2316	2922.9	8908.0	12	9			27.4			26.3								PN
17036	9/23/96	0014	2924.0	8916.0	12	6			26.4			18.9								PN
17037	9/23/96	0139	2930.8	8915.2	12	4			27.0			24.6								PN
17038	9/23/96	0237	2934.2	8911.4	12	5			26.9			24.8								PN
17039	9/23/96	0325	2937.6	8907.6	12	4			27.0			25.7								PN
17040	9/23/96	0421	2941.8	8905.7	12	3			26.9			23.7								PN
17041	9/23/96	0558	2950.5	8901.5	12	6			27.0			27.3								PN
17042	9/23/96	0641	2954.6	8859.0	11	6			27.0			27.9								PN
17043	9/23/96	0727	2959.4	8858.9	11	6	3	5	27.1	26.5	26.8	28.3	28.4	28.4	3.791		6.2	5.0	5.2	PN
17044	9/23/96	0904	3003.5	8859.3	11	7			27.3			29.4								PN
17045	9/23/96	0947	3008.0	8900.0	11	9			27.3			29.6								PN
17046	9/23/96	1043	3009.5	8851.5	11	12			27.3			30.5								PN

Table 2. Selected environmental parameters (continued)

PELICAN, 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
37398	9/30/96	1130	2900.0	9030.1	14	9	5	9	26.3	26.3	26.3	26.9	27.1	27.4	3.925		4.2	5.1	5.0	PN
37399	9/30/96	1526	2905.2	9006.5	14	10	4	10	26.1	26.5	26.5	27.7	28.4	28.4	3.282		4.6	5.7	5.7	ST
37400	9/30/96	1714	2857.8	9003.3	14	23	12	23	27.7	29.0	25.6	30.3	34.8	35.8	2.041		4.8	5.0	2.3	ST
37401	9/30/96	1955	2905.2	9006.5	14	10	5	10	26.3	26.8	26.7	28.7	28.3	28.6	2.126		6.4	6.0	5.9	ST
37402	9/30/96	2218	2857.4	9003.4	14	23	12	23	27.5	28.1	26.0	31.7	33.4	35.8	1.488		5.2	5.3	2.6	ST
37403	10/ 1/96	0227	2903.1	8938.6	13	24	11	24	26.8	27.2	28.2	28.5	30.5	33.2	2.940		4.8	5.1	4.9	ST
37404	10/ 1/96	0743	2900.2	8929.8	13	12	6	12	26.5	26.3	26.8	27.4	29.4	32.8	1.943		4.8	5.2	4.1	PN
37405	10/ 1/96	0931	2903.3	8938.6	13	22	10	22	26.9	26.9	27.7	28.8	28.9	33.7	2.024		6.2	5.4	3.8	ST
37406	10/ 1/96	1152	2859.8	9000.1	14	22	10	22	27.5	27.7	27.6	31.0	32.1	33.8	3.925		4.6	5.1	4.3	PN
37407	10/ 1/96	1559	2837.1	9025.4	14	26	13	26	27.8	27.7	26.2	31.9	32.0	35.5	0.455		5.3	5.3	0.7	ST
37408	10/ 1/96	1715	2830.0	9030.0	14	37	17	37	27.7	28.5	23.8	31.5	36.0	36.0	0.612		5.5	5.2	2.8	PN
37409	10/ 1/96	2014	2837.2	9025.3	14	27	13	27	27.5	27.6	26.3	31.6	31.9	35.5	0.307		5.4	5.4	0.7	ST
37410	10/ 1/96	2244	2830.3	9034.6	14	34	15	34	27.5	28.6	24.8	31.2	36.0	35.9	0.450		5.2	5.1	2.2	ST
37411	10/ 2/96	0047	2834.3	9042.7	14	20	10	20	27.5	27.6	28.2	31.3	31.8	35.3	0.135		5.2	5.5	1.2	ST
37412	10/ 2/96	0214	2829.7	9044.1	14	31	14	31	27.6	27.7	25.6	31.4	36.2	35.8	0.387		4.8	5.0	1.5	ST
37413	10/ 2/96	0421	2836.3	9054.7	14	18	8	18	26.9	27.0	28.3	29.4	30.0	34.8	1.676		5.0	5.4	2.9	ST
37414	10/ 2/96	0756	2830.6	9034.8	14	32	15	32	27.6	28.5	25.0	32.2	34.9	35.8	0.370		6.1	5.2	1.6	ST
37415	10/ 2/96	0939	2834.1	9042.7	14	20	9	20	27.4	27.8	27.3	31.3	33.1	35.3	0.370		4.7	5.5	0.8	ST
37416	10/ 2/96	1053	2830.0	9044.3	14	30	15	30	27.5	28.8	26.0	31.3	34.8	35.8	0.604		5.4	4.8	1.5	ST
37417	10/ 2/96	1302	2836.4	9054.8	14	18	10	18	27.9	27.3	28.2	29.5	30.7	35.2	2.187		5.7	4.9	2.3	ST
37418	10/ 2/96	1404	2830.0	9100.2	15	31	16	31	27.6	28.0	25.9	31.0	33.7	36.0	0.935		5.4	3.2	1.9	PN
37419	10/ 2/96	1558	2837.8	9101.2	15	16	8	16	27.0	27.0	26.9	29.4	29.4	29.4	2.257		4.8	5.4	5.2	ST
37420	10/ 2/96	1753	2847.4	9108.0	15	7	5	7	27.0	27.0	27.0	28.9	29.0	29.2	1.008		4.4	5.7	5.7	ST
37421	10/ 2/96	2001	2848.2	9107.5	15	7	3	7	26.9	26.9	27.0	28.9	28.9	29.1	1.110		5.6	5.9	5.9	ST
37422	10/ 2/96	2159	2838.1	9100.8	15	17	8	17	26.9	27.1	27.6	29.7	30.2	31.6	1.825		4.5	5.1	4.1	ST
37423	10/ 3/96	0206	2851.3	9041.2	14	15	7	15	27.5	27.5	27.5	31.3	31.4	32.5	0.964		4.8	5.6	4.6	ST

Table 2. Selected environmental parameters (continued)

PELICAN, 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
37424	10/ 3/96	0347	2852.0	9048.3	14	8	4	8	27.0	27.0	27.0	28.6	28.7	28.7	1.110		5.0	6.0	6.0	ST
37425	10/ 3/96	0800	2852.0	9048.0	14	9	4	9	26.8	26.8	26.9	28.6	28.7	29.6	1.724		4.8	5.7	5.0	ST
37426	10/ 3/96	1035	2851.6	9041.0	14	15	7	15	27.7	27.7	27.7	32.9	33.1	33.1	1.075		4.5	5.3	5.3	ST
37427	10/ 3/96	1230	2900.2	9100.3	15	5	2	5	26.3	26.3	26.3	27.2	27.3	27.3	7.043		6.2	5.8	5.8	PN
37428	10/ 3/96	1657	2900.0	9129.9	15	11	5	11	26.1	26.1	26.1	28.4	29.6	29.8	4.276		4.9	5.7	5.4	PN

Table 2. Selected environmental parameters (continued)

A.E. VERRILL, 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	10/10/96	0850	3011.7	8802.7	11	15	8	15	20.8	23.5	23.9	19.0	32.0	32.8			8.6	5.6	5.8	PN
2302	10/10/96	0948	3014.0	8807.9	11	6	3	6	23.6	23.8	24.0	31.8	32.6	32.8			6.3	6.2	5.6	PN
2303	10/10/96	1040	3008.3	8807.2	11	15	8	15	23.3	23.9	24.5	31.7	32.8	31.7			6.8	6.5	6.0	PN
2304	10/10/96	1108	3007.3	8804.2	11	18	9	18	22.5	24.3	24.5	27.3	33.3	33.7			7.8	6.5	6.1	PN
2305	10/10/96	1138	3007.4	8800.0	11	17	9	17	22.8	24.6	24.6	28.0	33.5	33.6			7.2	6.2	5.9	PN
2306	10/10/96	1222	3011.6	8800.0	11	9	5	9	23.4	24.3	24.4	30.2	33.1	33.3			7.0	6.4	5.8	PN
2307	10/10/96	1349	3016.5	8800.8	11	4	2	4	21.5	21.2	22.1	17.8	18.8	26.3			9.9	10.1	8.5	PN
2308	10/10/96	1414	3016.5	8802.8	11	15	8	15	22.3	23.1	23.5	17.7	30.5	29.4			10.2	5.2	5.5	PN
2309	10/10/96	1441	3016.7	8805.0	11	4	2	4	21.2	20.8	21.5	14.7	16.2	26.5			10.8	10.8	10.0	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	10/11/96	823	2617.0	9622.4	21	77	38	77	32.8	32.0	29.4	32.4	32.4	32.2		0.354	6.4	6.5	7.4	ST
00002	10/11/96	1040	2616.1	9624.9	21	76	37	76	32.8	32.0	30.4	32.4	32.4	32.2		0.391	6.4	6.5	6.8	ST
00003	10/11/96	1253	2616.5	9633.3	21	54	26	53	31.9	32.0	32.0	31.3	32.0	32.3		0.872	6.5	6.4	6.3	ST
00006	10/11/96	1826	2602.0	9630.0	21	60	31	60	32.0	32.0	32.0	31.9	32.3	32.4		0.669	6.4	6.4	6.4	PN
00007	10/11/96	2212	2602.9	9651.8	21	34	17	33	31.3	31.4	31.6	30.1	30.2	30.4		1.937	6.7	6.4	6.3	ST
00008	10/12/96	18	2610.2	9701.1	21	27	12	25	30.6	30.7	31.5	28.8	29.0	30.5		2.808	6.8	6.6	6.2	ST
00009	10/12/96	236	2600.0	9700.0	21	25	12	25	30.7	30.7	30.8	29.6	29.6	29.6		2.000	6.3	6.5	6.5	PN
00010	10/12/96	1815	2601.1	9705.9	21	16	8	15	31.1	30.4	30.5	28.0	28.8	28.9		2.972	7.2	6.8	5.8	ST
00011	10/12/96	2338	2630.0	9701.5	21	32	15	30	30.6	30.9	30.2	28.2	29.1	30.2		2.105	6.8	6.7	5.5	ST/PN
00012	10/13/96	132	2628.9	9652.9	21	41	20	40	31.2	31.5	32.0	29.8	30.3	32.1		1.565	6.9	6.6	6.0	ST
00014	10/13/96	432	2631.9	9646.3	21	45	22	45	30.9	32.0	32.0	30.0	31.7	32.1		1.092	6.7	6.3	6.0	ST
00015	10/13/96	708	2630.0	9629.7	21	85	42	85	31.2	32.0	27.6	31.2	32.2	32.1		0.689	6.4	6.2	7.2	PN
00016	10/13/96	1142	2611.8	9701.6	21	23	12	23	30.5	31.1	31.5	28.7	29.5	30.5		1.101	7.0	6.6	5.8	ST
00017	10/13/96	1231	2614.0	9701.8	21	24	11	23	30.4	31.0	31.4	28.4	29.5	30.1		0.984	7.1	6.7	5.3	ST
00018	10/13/96	1639	2636.9	9715.4	21	15	7	15	30.7	30.2	30.0	27.6	27.6	27.6		2.010	7.4	7.6	7.0	ST
00019	10/13/96	1818	2639.1	9705.7	21	31	15	31	30.7	31.0	31.5	28.3	29.4	30.2		1.309	7.0	6.9	5.8	ST
00020	10/13/96	1934	2641.1	9704.9	21	33	17	33	30.3	31.2	31.5	27.5	29.8	30.9		1.353	7.5	6.2	5.6	ST
00021	10/13/96	2121	2635.6	9715.8	21	13	6	12	30.1	30.0	30.2	27.6	27.6	27.7		1.526	7.6	7.5	6.9	ST
00022	10/14/96	38	2645.0	9713.0	21	22	11	21	30.2	30.2	31.3	27.1	27.8	29.7		1.223	6.8	7.1	5.3	ST
00023	10/14/96	215	2649.0	9714.5	21	22	10	21	30.3	30.3	31.1	27.6	27.6	29.0		1.082	7.2	7.2	5.8	ST
00024	10/14/96	334	2650.8	9720.4	21	14	6	13	30.3	30.3	30.5	27.1	27.1	27.2		1.287	6.9	7.4	7.3	ST
00025	10/14/96	514	2654.0	9717.7	21	18	9	17	30.1	30.1	30.4	27.0	27.0	27.9		1.402	5.6	7.2	6.2	ST
00026	10/14/96	646	2659.0	9719.3	21	16	8	16	30.0	30.1	30.3	26.8	26.8	27.0		1.326	7.2	7.4	7.2	ST
00027	10/14/96	828	2703.9	9721.2	20	13	7	13	30.2	30.2	30.2	26.7	26.7	26.7		1.836	6.8	7.3	7.2	ST
00028	10/14/96	1109	2655.9	9707.5	21	29	15	29	30.6	31.0	31.5	28.5	29.5	30.8		1.011	6.7	6.9	5.4	ST
00029	10/14/96	1335	2643.8	9709.4	21	28	13	26	30.2	30.7	31.4	27.6	28.8	29.9		1.250	7.1	7.0	5.8	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
00030	10/14/96	1505	2646.0	9705.5	21	33	16	33	30.1	31.2	31.5	26.9	30.2	30.9		1.453	7.2	6.8	5.9	ST
00031	10/14/96	1604	2645.5	9659.5	21	41	20	41	31.1	31.5	31.9	29.8	30.8	31.6		0.569	6.8	6.8	5.7	ST
00032	10/14/96	1937	2700.0	9711.7	21	27	13	26	30.0	30.5	31.3	26.4	28.2	29.7		2.012	7.5	6.9	5.6	PN
00033	10/14/96	2200	2706.0	9718.0	20	18	9	17	29.9	30.0	30.1	26.2	26.3	26.4		2.132	6.5	6.8	6.5	ST
00034	10/15/96	128	2722.1	9707.6	20	25	13	24	30.1	30.1	30.2	27.3	27.4	27.9		0.794	7.0	7.0	6.8	ST
00035	10/15/96	344	2720.0	9658.2	20	36	18	36	30.5	30.6	31.3	28.7	28.9	30.4		0.867	6.8	7.1	5.0	ST
00036	10/15/96	609	2713.7	9641.9	20	74	36	74	30.9	31.6	31.8	30.2	31.7	32.1		0.598	6.7	6.5	6.3	ST
00037	10/15/96	957	2703.1	9637.5	20	91	45	91	31.2	31.9	27.9	30.5	32.0	32.0		0.725	6.6	6.5	6.5	ST
00040	10/15/96	1603	2716.0	9636.7	20	83	41	82	31.0	31.8	28.2	29.9	32.0	32.1		0.689	6.8	6.3	5.9	ST
00041	10/15/96	1918	2729.8	9631.0	20	72	36	72	31.4	31.5	31.7	31.8	31.9	32.0		0.772	6.5	6.5	6.0	PN
00042	10/15/96	2318	2709.0	9639.7	20	82	41	82	31.0	31.7	31.5	30.3	31.9	32.1		0.530	6.8	6.5	6.1	ST
00044	10/16/96	323	2700.2	9629.4	20	143	70	142	31.3	31.5	22.9	30.9	32.1	31.9		0.708	6.6	6.4	4.2	PN
00045	10/16/96	539	2700.1	9641.5	20	84	41	83	31.0	31.7	30.0	30.0	31.8	32.4		0.515	6.6	6.4	6.3	PN
00046	10/16/96	911	2700.6	9657.5	20	46	22	46	30.6	30.9	31.8	28.6	29.6	31.8		0.738	6.9	6.9	5.5	ST/PN
00047	10/16/96	1148	2708.0	9703.2	20	35	17	35	29.8	30.5	31.0	25.8	28.3	29.7		2.215	7.6	7.0	5.2	ST
00048	10/16/96	1400	2711.9	9709.0	20	28	13	27	29.9	30.4	30.5	25.3	28.9	29.2		2.750	6.9	6.5	5.8	ST
00049	10/16/96	1656	2724.1	9717.2	20	13	6	13	31.1	30.0	29.8	25.1	25.2	26.6		0.292	8.0	7.9	6.5	ST
00050	10/16/96	1909	2732.0	9712.7	20	11	6	11	30.4	29.6	29.6	24.9	25.1	25.6		3.758	7.5	7.7	6.8	ST
00051	10/16/96	2125	2729.6	9700.6	20	28	14	27	30.0	30.2	30.4	26.6	29.2	29.6		2.762	6.9	6.9	6.8	PN
00052	10/17/96	8	2741.1	9652.1	20	27	14	27	30.3	30.0	25.9	27.9	28.5	30.3		2.015	6.9	6.9	6.7	ST
00053	10/17/96	110	2741.4	9648.1	20	31	15	30	29.7	30.1	30.7	26.9	28.6	30.0		2.132	7.0	6.6	6.4	ST
00054	10/17/96	409	2738.9	9632.6	20	54	27	54	31.1	31.3	31.4	31.1	31.5	31.7		1.170	6.6	6.3	6.3	ST
00056	10/17/96	814	2736.1	9635.1	20	55	27	55	30.9	31.3	31.5	30.6	31.6	31.8		1.074	6.7	6.6	6.0	ST
00060	10/17/96	1853	2734.9	9559.9	20	149	74	149	27.4	23.4	16.9	36.2	36.4	36.2		0.510	5.5	6.5	3.5	PN
00061	10/17/96	2050	2739.2	9602.4	20	110	55	110	27.0	26.3	20.0	36.0	36.3	36.4		0.664	5.6	5.3	4.5	ST
00063	10/18/96	123	2735.3	9621.8	20	83	41	83	26.8	27.6	23.5	35.6	36.4	36.4		0.540	5.7	5.6	5.4	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
00064	10/18/96	605	2801.4	9652.3	19	11	5	10	24.9	24.9	24.6	27.8	27.8	29.5		3.184	5.9	6.2	5.5	ST
00065	10/18/96	902	2746.6	9701.1	20	12	6	11	24.9	24.8	24.8	28.3	28.3	28.3		0.142	5.4	6.1	6.1	ST
00066	10/18/96	1058	2742.0	9700.2	20	20	10	18	24.8	24.9	25.3	29.6	29.8	31.6		2.066	6.2	6.1	5.4	ST
00067	10/18/96	1329	2730.6	9706.7	20	21	10	21	25.0	25.0	25.4	29.8	29.8	30.4		2.427	6.0	6.1	5.8	ST
00068	10/18/96	1925	2800.1	9630.2	19	26	13	26	25.8	25.9	26.0	34.3	34.3	34.5		1.597	5.6	5.6	5.7	PN
00069	10/18/96	2103	2805.9	9627.4	19	23	11	23	25.3	25.4	25.5	33.0	33.1	33.1		2.166	5.8	6.0	5.9	ST
00070	10/18/96	2336	2812.9	9631.7	19	12	6	11	24.1	24.1	24.2	28.0	27.9	28.0		2.657	5.5	6.3	6.2	ST
00071	10/19/96	335	2824.9	9615.2	19	13	6	12	23.8	23.8	23.8	28.0	28.0	28.0		2.571	5.6	5.8	5.8	ST
00072	10/19/96	446	2818.1	9618.0	19	19	9	18	24.0	24.0	24.6	29.3	29.3	30.7		2.234	6.1	6.0	6.0	PN
00073	10/19/96	556	2813.2	9616.1	19	24	12	23	24.4	24.9	25.5	31.6	32.6	33.3		2.288	5.9	6.0	5.7	ST
00074	10/19/96	735	2815.0	9618.6	19	21	11	21	24.2	24.5	21.3	30.4	30.7	32.2		1.861	6.1	6.1	6.0	ST
00075	10/19/96	1035	2820.4	9614.0	19	18	9	17	23.9	23.9	24.1	29.1	29.1	29.7		2.662	6.1	6.0	6.0	ST
00076	10/19/96	1250	2831.1	9605.2	19	11	6	11	23.7	23.7	23.7	28.1	28.1	28.1		3.233	6.1	6.2	6.1	ST
00077	10/19/96	1408	2830.1	9600.1	19	14	7	13	23.6	23.7	23.6	27.8	27.7	27.9		3.028	6.3	6.3	6.1	PN
00078	10/19/96	1703	2812.1	9601.1	19	26	13	26	25.8	25.8	25.8	34.7	34.7	34.8		1.458	5.8	6.1	6.0	ST
00079	10/19/96	1914	2800.1	9600.2	19	45	22	45	26.1	26.1	26.1	35.3	35.3	35.3		1.363	5.4	5.7	5.7	PN
00080	10/19/96	2353	2759.0	9532.6	20	55	27	55	26.7	26.7	26.7	36.0	36.0	36.0		1.104	5.6	5.6	5.6	ST/PN
00082	10/20/96	359	2746.0	9536.9	20	83	41	82	27.3	27.3	22.7	36.4	36.4	36.3		0.296	5.6	5.6	5.2	ST
00083	10/20/96	619	2743.9	9554.3	20	84	41	83	27.0	27.0	22.5	36.3	36.3	36.3		0.298	5.6	5.7	5.4	ST
00084	10/20/96	748	2741.0	9550.3	20	122	61	122	27.4	24.3	19.6	36.4	36.3	36.4		0.296	5.6	6.5	4.2	ST
00086	10/20/96	1303	2744.9	9530.0	20	108	53	107	27.4	27.4	20.7	36.4	36.4	36.3		0.220	5.6	5.7	5.2	PN
00088	10/20/96	1611	2752.9	9533.6	20	64	32	64	26.8	26.8	28.8	36.2	36.2	36.2		1.123	5.6	5.7	5.6	ST
00089	10/20/96	1916	2759.8	9531.0	20	55	27	55	26.4	26.6	26.7	35.8	36.0	36.1		1.438	5.6	5.4	5.5	ST
00092	10/21/96	37	2817.3	9534.8	19	33	15	33	25.4	25.4	25.5	34.4	34.4	34.4		1.011	5.5	6.0	5.9	ST
00093	10/21/96	232	2817.7	9529.0	19	35	17	34	25.6	25.6	25.6	34.6	34.6	34.6		1.035	5.9	5.9	5.9	ST
00094	10/21/96	429	2829.7	9527.4	19	28	13	27	25.3	25.3	25.3	34.3	34.3	34.3		1.231	5.6	5.9	5.8	ST/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
00095	10/21/96	735	2834.1	9534.8	19	20	10	20	24.1	24.1	24.5	30.7	32.0	33.1		1.546	5.8	6.1	5.6	ST
00096	10/21/96	1224	2807.8	9541.0	19	41	20	40	25.7	26.1	26.1	34.9	35.6	35.6		0.488	5.8	5.6	5.6	ST
00097	10/21/96	1600	2820.1	9529.1	19	31	15	31	25.7	25.7	25.6	34.6	34.6	34.6		1.158	5.6	5.9	5.7	ST
00098	10/21/96	1815	2825.3	9513.3	19	34	17	34	25.8	25.8	25.8	34.7	34.8	34.8		1.040	5.7	5.8	5.7	ST
00099	10/21/96	2040	2819.9	9510.0	19	37	18	36	26.0	26.0	26.0	35.2	35.2	35.3		0.842	5.5	5.7	5.6	ST
00100	10/21/96	2138	2814.6	9509.0	19	45	23	45	26.0	26.0	26.0	35.3	35.4	35.6		1.118	5.7	5.7	5.6	ST
00101	10/22/96	209	2803.7	9501.4	19	66	32	65	26.5	26.5	26.8	36.0	36.0	36.2		0.838	5.6	5.6	5.6	ST
00102	10/22/96	1113	2855.5	9513.0	19	13	6	12	23.3	23.5	24.2	28.7	29.3	32.2		2.877	6.3	6.8	6.4	ST
00103	10/22/96	1316	2846.4	9510.9	19	21	10	20	23.5	23.9	24.9	30.3	31.0	33.8		1.565	6.7	6.6	6.0	ST
00104	10/22/96	1525	2838.4	9513.4	19	25	12	24	23.7	23.9	24.8	30.3	31.7	33.7		1.429	7.3	7.5	6.4	ST
00105	10/22/96	1759	2844.1	9524.7	19	16	8	15	23.3	23.3	24.5	29.7	29.7	33.1		3.011	7.4	7.1	5.7	ST
00106	10/22/96	1928	2844.8	9529.9	19	11	6	10	23.1	23.2	24.2	28.5	28.6	31.9		3.092	6.9	6.9	5.7	PN
00107	10/22/96	2139	2837.2	9534.3	19	16	7	15	23.2	23.5	24.7	30.2	30.3	33.2		2.403	7.5	7.3	4.8	ST
00108	10/23/96	33	2845.5	9514.8	19	20	10	19	23.3	23.5	24.4	30.7	30.9	33.1		1.438	7.2	6.9	5.9	ST
00109	10/23/96	322	2900.0	9500.0	19	16	8	15	22.9	23.3	24.3	30.0	30.5	32.8		2.061	6.9	7.6	5.9	PN
00110	10/25/96	846	2917.7	9429.3	18	14	7	13	22.2	22.2	22.2	28.5	28.5	28.5		4.217	6.6	6.7	6.6	ST
00112	10/25/96	1335	2908.8	9455.1	18	13	6	12	22.2	22.2	22.2	28.1	28.1	28.4		2.835	6.9	6.9	6.8	ST
00113	10/25/96	2029	2902.7	9431.4	18	17	8	17	23.0	23.0	23.0	31.7	31.7	31.7		1.206	6.1	6.2	6.1	ST/PN
00114	10/25/96	2330	2850.0	9433.6	18	21	10	20	24.3	24.3	24.3	33.4	33.4	33.4		1.648	5.9	5.9	5.9	ST
00115	10/26/96	228	2842.0	9423.9	18	26	13	25	24.3	24.5	24.8	33.4	33.5	34.0		1.004	5.8	5.8	5.7	ST
00116	10/26/96	555	2833.5	9444.1	18	33	16	32	24.7	24.7	24.9	34.2	34.2	34.5		0.855	5.8	5.8	5.7	ST
00117	10/26/96	846	2832.3	9431.1	18	35	17	34	25.1	25.1	25.2	34.7	34.8	35.0		0.933	5.8	5.7	5.7	ST
00118	10/26/96	1122	2830.1	9430.1	18	35	18	33	25.1	25.2	25.2	34.8	35.0	35.1		0.679	5.6	5.7	5.7	ST/PN
00120	10/26/96	1607	2810.0	9442.3	18	54	27	53	25.9	25.7	25.8	35.5	35.6	35.7		1.035	6.9	6.1	5.7	ST
00122	10/26/96	2040	2829.1	9459.7	18	35	18	35	25.1	25.1	25.0	34.7	34.9	35.0		1.228	5.6	5.7	5.6	PN
00123	10/26/96	2234	2833.4	9459.8	18	32	16	31	25.0	25.0	24.9	34.4	34.4	34.6		1.128	5.9	5.8	5.6	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
00124	10/27/96	412	2757.0	9502.2	20	90	45	89	26.0	26.6	21.5	35.7	36.4	36.4		0.904	5.8	5.6	5.4	ST
00125	10/27/96	842	2759.9	9437.9	18	71	35	70	26.1	26.3	26.2	35.7	36.0	36.3		0.479	5.7	5.7	5.4	ST
00126	10/27/96	1147	2757.8	9430.1	18	96	48	95	25.6	25.3	19.0	35.5	35.7	36.3		0.435	5.9	5.7	3.6	PN
00127	10/27/96	1453	2759.4	9414.9	18	82	41	81	25.8	25.5	20.0	35.3	35.4	36.3		0.620	5.7	5.8	4.0	ST
00128	10/27/96	2021	2821.9	9338.0	17	55	27	54	25.6	25.5	25.5	35.2	35.4	35.6		0.571	5.9	5.8	5.4	ST
00131	10/28/96	39	2832.9	9339.7	17	36	18	35	25.6	25.6	25.4	35.0	35.0	35.0		0.972	5.8	5.8	5.6	ST
00132	10/28/96	333	2829.9	9400.0	18	41	20	40	25.5	25.5	25.4	35.1	35.1	35.1		0.806	5.8	5.8	5.6	PN
00133	10/28/96	639	2814.8	9406.5	18	56	28	54	25.7	25.6	25.4	35.2	35.3	35.6		0.481	5.8	5.7	4.9	ST
00135	10/28/96	1141	2801.2	9346.7	17	78	38	77	25.7	25.5	21.3	35.2	35.4	36.3		0.359	5.8	5.7	4.3	ST
00136	10/28/96	1611	2802.4	9309.4	17	99	49	98	25.8	25.5	19.5	35.3	35.6	36.3		0.349	5.8	5.7	3.8	ST
00137	10/28/96	2133	2801.7	9326.6	17	90	45	88	25.7	25.4	19.9	35.2	35.5	36.4		0.498	5.8	5.6	4.0	ST/PN
00139	10/29/96	58	2804.9	9325.0	17	82	41	81	25.5	25.5	20.5	35.1	35.4	36.3		0.432	5.8	5.6	3.9	ST
00140	10/29/96	319	2807.8	9324.0	17	74	37	73	25.5	25.5	21.3	35.1	35.5	36.3		0.481	5.8	5.5	3.9	ST
00146	10/29/96	1933	2828.3	9323.0	17	46	23	45	25.8	25.6	25.6	35.4	35.5	35.5		0.498	5.8	5.7	5.7	ST
00147	10/29/96	2239	2842.1	9315.4	17	29	14	27	25.6	25.6	25.4	34.8	34.8	34.8		0.569	5.8	5.9	5.8	ST
00148	10/30/96	38	2848.8	9314.6	17	26	13	25	25.3	25.3	25.3	34.4	34.5	34.6		0.847	5.9	5.8	5.7	ST
00149	10/30/96	321	2843.0	9329.5	17	28	13	27	25.2	24.9	25.0	34.3	34.3	34.4		0.767	5.8	5.8	5.7	ST
00150	10/30/96	641	2827.9	9328.2	17	46	23	44	25.7	25.6	25.6	35.4	35.4	35.4		0.689	5.6	5.7	5.6	ST/PN
00152	10/30/96	1204	2834.4	9341.0	17	35	17	34	25.6	25.4	25.5	34.9	34.9	35.1		0.681	5.8	5.8	5.6	ST
00153	10/30/96	1508	2834.0	9356.9	17	37	18	35	25.9	25.6	25.5	35.0	35.1	35.2		0.371	5.8	5.8	5.5	ST
00154	10/30/96	2058	2903.4	9315.9	17	24	12	23	24.8	24.8	24.5	31.0	33.8	34.0		0.911	6.5	6.0	5.4	ST
00155	10/31/96	0	2914.7	9322.5	17	16	8	15	23.5	23.6	23.8	29.5	30.5	32.3		1.575	6.8	6.5	3.8	ST
00156	10/31/96	322	2924.0	9342.3	17	12	6	11	23.0	22.9	23.5	28.3	29.1	29.7		2.303	6.7	5.8	5.9	ST
00157	10/31/96	633	2919.8	9400.5	18	13	7	11	23.8	23.8	23.3	30.0	30.0	30.2		0.667	6.1	6.2	5.5	ST
00158	10/31/96	838	2921.5	9345.7	17	13	6	12	23.3	23.6	23.1	29.0	29.5	29.7		1.360	6.3	6.2	5.2	ST
00159	10/31/96	1129	2910.5	9349.4	17	17	8	16	23.8	23.7	23.9	29.9	30.2	31.4		0.852	6.4	6.4	5.3	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
00160	10/31/96	1313	2904.2	9346.0	17	19	9	18	24.1	23.8	24.9	29.8	30.9	33.5		0.799	6.4	6.4	5.2	ST
00161	10/31/96	1608	2849.2	9333.5	17	26	13	25	25.1	24.7	25.4	32.7	33.4	34.4		0.623	6.0	5.9	5.5	ST
00163	10/31/96	2116	2907.5	9302.1	17	20	10	18	25.1	25.1	24.8	33.5	33.5	33.7		0.579	4.8	6.0	5.7	ST
00165	11/ 1/96	128	2931.2	9256.7	16	13	6	12	24.0	24.0	24.1	30.2	30.3	32.0		1.473	6.3	6.5	5.7	ST/PN
00166	11/ 1/96	355	2934.2	9252.3	16	11	6	10	24.0	24.2	23.9	29.4	29.9	31.6		1.590	6.3	6.4	4.9	ST
00167	11/ 1/96	728	2940.7	9312.6	17	9	5	8	23.2	22.9	23.1	23.0	26.9	29.4		5.153	7.3	5.4	3.2	ST
00169	11/ 1/96	1128	2922.1	9306.7	17	15	7	14	23.8	24.2	24.2	29.2	32.3	32.5		2.584	6.2	5.7	5.0	ST
00170	11/ 1/96	1422	2907.2	9307.5	17	20	10	19	24.5	24.9	24.5	30.9	34.0	33.9		0.811	5.6	6.0	5.1	ST
00171	11/ 1/96	1642	2905.3	9248.9	16	24	12	23	25.1	24.9	24.6	33.0	33.2	33.8		0.786	6.0	6.0	5.2	ST
00172	11/ 1/96	1945	2904.2	9237.0	16	23	12	22	25.2	25.3	25.0	33.5	33.5	33.6		0.935	5.9	5.9	5.5	ST
00173	11/ 1/96	2245	2907.2	9227.5	16	20	10	19	24.7	24.7	24.8	32.6	33.1	33.5		1.726	6.1	6.0	4.6	ST/PN
00174	11/ 2/96	56	2910.6	9231.2	16	18	9	17	24.5	24.4	24.8	32.2	32.5	33.5		2.188	6.1	5.8	4.6	ST
00175	11/ 2/96	548	2904.8	9150.6	15	11	5	10	23.8	23.8	23.8	31.2	31.2	32.5		4.063	5.5	5.5	4.2	ST
00176	11/ 2/96	752	2904.4	9155.1	15	14	7	12	23.6	23.8	24.8	31.4	31.5	33.6		3.600	5.3	5.4	4.5	ST
00177	11/ 2/96	1025	2900.1	9150.0	15	16	8	15	23.8	23.8	24.3	32.4	32.4	32.6		3.028	5.4	5.5	5.1	ST
00178	11/ 2/96	1302	2850.2	9152.1	15	25	12	24	24.0	24.0	25.5	32.6	32.6	34.8		2.386	5.5	6.1	4.9	ST
00179	11/ 2/96	1609	2852.8	9210.9	16	28	14	27	24.9	24.9	25.5	34.0	34.0	35.0		0.972	5.9	6.0	5.0	ST
00180	11/ 2/96	1824	2848.6	9211.3	16	31	16	30	25.1	25.2	25.5	34.5	34.6	35.1		1.162	5.7	5.7	5.0	ST
00181	11/ 2/96	2025	2839.5	9209.0	16	40	20	38	25.2	25.3	25.6	34.9	34.8	35.3		1.143	5.7	5.8	5.4	ST
00182	11/ 3/96	57	2853.8	9148.1	15	22	11	21	23.7	23.8	25.2	32.9	32.9	34.5		2.840	4.5	5.5	4.1	ST
00183	11/ 3/96	307	2859.1	9140.4	15	15	7	14	23.3	23.3	23.7	32.8	32.8	32.8		2.459	5.4	5.4	5.2	ST
00184	11/ 3/96	653	2851.2	9214.1	16	30	15	29	24.7	24.9	24.7	34.2	34.2	34.2		0.889	6.7	6.6	6.5	ST
00185	11/ 3/96	1101	2842.2	9244.4	16	33	17	32	24.8	24.9	25.0	34.5	34.5	34.6		0.764	6.3	6.2	6.1	ST
00186	11/ 3/96	1336	2846.1	9257.8	16	29	15	28	24.9	24.9	24.9	34.7	34.7	34.7		0.867	6.3	6.2	6.2	ST
00187	11/ 3/96	1518	2843.8	9304.0	17	31	15	30	25.1	25.1	25.1	35.1	35.1	35.1		1.223	6.1	6.3	6.2	ST
00188	11/ 3/96	1813	2843.0	9254.2	16	33	16	32	24.8	24.8	24.8	34.6	34.6	34.6		1.131	6.3	6.4	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
00189	11/ 3/96	2043	2829.9	9300.0	17	46	23	45	25.1	25.2	25.2	35.2	35.2	35.2		1.013	4.5	6.1	6.1	PN
00190	11/ 3/96	2258	2819.2	9253.4	16	55	27	53	24.8	25.0	22.8	34.9	34.9	36.2		0.613	6.2	6.2	4.7	ST
00192	11/ 4/96	338	2800.1	9259.8	16	106	53	105	24.9	25.0	19.2	35.5	35.6	36.4		0.481	4.8	6.3	4.1	PN
00193	11/ 4/96	642	2807.4	9244.5	16	83	42	82	25.0	25.0	20.7	35.1	35.2	36.3		0.625	6.3	6.3	4.6	ST
00194	11/ 4/96	916	2815.7	9237.8	16	64	32	63	24.9	24.9	22.4	34.8	34.8	36.2		0.520	6.1	6.0	4.7	ST
00197	11/ 4/96	1601	2832.2	9227.8	16	48	24	47	25.0	25.0	25.0	35.0	35.1	35.2		0.992	6.1	6.3	6.2	ST/PN
00198	11/ 4/96	2105	2832.6	9157.5	15	45	23	44	25.0	23.1	25.0	35.2	35.2	35.0		1.263	6.3	6.3	6.3	ST/PN
00200	11/ 5/96	250	2811.4	9208.9	16	73	36	72	24.6	24.7	21.7	35.5	35.5	36.2		0.569	4.7	6.1	4.8	ST
00202	11/ 5/96	659	2818.5	9158.7	15	64	32	63	24.8	24.9	23.0	35.5	35.5	36.1		0.628	6.0	6.3	4.4	ST
00204	11/ 5/96	1104	2813.1	9153.0	15	73	36	72	24.8	25.1	22.8	35.3	35.6	36.2		0.315	7.0	6.6	5.1	ST
00206	11/ 5/96	1641	2835.3	9126.7	15	35	17	34	24.0	23.9	24.9	33.9	34.0	35.6		0.911	6.8	6.5	4.1	ST
00207	11/ 5/96	1916	2839.9	9147.9	15	35	18	34	24.7	24.6	24.7	34.7	34.7	34.8		1.651	6.2	6.5	6.2	ST
00208	11/ 5/96	2310	2834.0	9126.8	15	37	18	35	23.9	24.1	24.8	34.0	34.2	35.7		0.681	6.3	6.5	3.9	ST/PN
00209	11/ 6/96	116	2837.2	9116.6	15	27	13	26	23.6	23.7	24.0	33.6	33.7	34.2		1.153	6.5	6.4	6.2	ST
00210	11/ 6/96	316	2833.9	9107.9	15	29	14	28	23.7	23.6	24.5	33.7	33.7	35.0		1.346	6.6	6.6	5.6	ST
00211	11/ 6/96	449	2830.1	9100.2	15	33	16	32	24.0	24.1	24.8	34.3	34.4	35.2		0.842	6.5	6.5	5.9	PN
00212	11/ 6/96	656	2829.9	9049.9	14	34	17	33	23.8	24.3	24.7	33.8	34.3	35.7		1.275	5.0	5.6	5.0	ST
00213	11/ 6/96	912	2836.9	9103.8	15	22	11	21	23.6	23.6	23.6	33.1	33.1	33.2		1.092	6.8	6.9	6.8	ST
00214	11/ 6/96	1051	2840.5	9110.9	15	18	9	17	23.6	23.4	23.3	33.4	33.4	33.5		0.960	6.8	7.0	6.7	ST
00215	11/ 6/96	1404	2836.2	9114.2	15	28	14	27	23.7	23.4	23.6	33.5	33.6	33.8		1.441	5.7	5.4	6.1	ST
00216	11/ 6/96	1733	2824.7	9122.9	15	55	27	54	24.6	24.8	23.4	34.4	35.1	36.0		1.321	6.9	6.4	4.8	ST
00218	11/ 6/96	2126	2818.7	9110.8	15	65	33	64	24.9	24.8	21.3	35.1	35.3	36.3		0.491	6.6	6.6	4.9	ST
00220	11/ 7/96	242	2812.1	9047.0	14	81	40	80	24.9	24.8	21.0	35.9	35.9	36.4		0.337	6.4	6.5	5.3	ST
00221	11/ 7/96	633	2811.4	9027.4	14	86	43	83	25.0	25.2	20.4	35.7	36.0	36.4		0.520	6.4	6.2	5.0	ST
00222	11/ 7/96	1004	2821.4	9014.3	14	64	32	63	25.0	25.1	23.3	35.2	35.9	36.3		0.598	6.9	6.4	6.1	ST
00223	11/ 7/96	1206	2817.9	9013.0	14	81	40	80	25.0	25.0	22.2	35.2	35.9	36.4		0.706	6.5	5.9	5.7	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
00224	11/13/96	832	2830.4	9025.0	14	41	20	41	23.5	23.5	24.5	35.0	35.0	35.8		0.774	5.8	5.8	4.8	ST
00225	11/13/96	1042	2830.6	9029.8	14	38	18	36	23.7	23.3	24.6	34.8	34.8	35.8		1.028	6.3	6.3	4.8	PN
00226	11/13/96	1318	2828.8	9038.0	14	37	18	36	22.5	23.5	24.6	33.9	34.8	35.9		0.708	7.2	6.8	5.1	ST
00227	11/13/96	1550	2828.5	9048.4	14	35	17	35	22.0	22.6	24.5	33.3	33.6	35.9		3.167	7.3	7.0	5.0	ST
00228	11/13/96	1737	2827.9	9049.2	14	36	18	36	22.3	22.6	24.5	33.6	33.9	35.9		3.033	6.0	7.2	5.2	ST
00229	11/13/96	2056	2837.2	9052.6	14	18	9	18	22.4	22.5	22.5	33.6	33.6	33.6		1.492	6.3	6.3	6.3	ST
00230	11/13/96	2347	2850.2	9046.5	14	17	8	16	21.8	21.8	21.8	32.7	32.7	32.7		1.509	6.3	6.5	6.6	ST
00231	11/14/96	249	2800.0	9029.9	14	10	5	10	21.4	21.4	21.4	33.1	33.1	33.0		3.695	5.9	6.4	6.4	PN
00232	11/14/96	745	2858.8	9004.0	14	22	11	22	21.9	21.9	22.3	31.5	31.6	33.1		7.543	6.5	7.1	6.0	ST/PN
00233	11/14/96	936	2857.2	8957.0	13	31	15	30	21.7	22.3	24.9	30.1	31.2	35.6		1.000	7.6	7.6	3.3	ST
00234	11/14/96	1200	2855.2	9004.2	14	27	13	26	22.3	22.2	24.5	31.7	31.8	35.0		6.447	6.6	6.8	1.7	ST
00235	11/14/96	1422	2842.3	9006.5	14	59	29	58	23.1	24.5	20.4	34.0	35.5	36.4		1.350	6.2	4.3	3.8	ST
00236	11/14/96	1612	2840.7	9004.1	14	53	25	52	23.4	24.5	22.0	34.3	35.3	36.2		1.316	5.9	4.5	3.8	ST
00237	11/14/96	1929	2845.9	9020.5	14	22	11	22	22.3	22.3	22.8	32.9	32.9	33.5		1.924	5.9	6.7	5.2	ST
00238	11/14/96	2132	2844.2	9024.0	14	19	9	19	22.5	22.6	22.6	33.0	33.0	33.2		2.918	6.5	6.6	5.8	ST
00239	11/14/96	2347	2838.1	9026.4	14	24	12	24	23.1	23.2	23.2	34.4	34.6	34.8		0.928	6.1	6.0	5.9	ST
00240	11/15/96	503	2840.8	8955.2	13	80	40	80	23.6	22.8	19.5	35.5	36.3	36.4		0.662	5.8	4.7	3.8	ST
00247	11/19/96	1735	2914.7	8832.9	11	74	37	74	23.7	23.7	23.4	36.2	36.2	36.3		0.625	5.6	5.6	5.3	ST
00248	11/19/96	2053	2907.9	8851.0	11	82	41	82	23.3	23.6	21.6	35.2	36.1	36.4		0.930	5.8	5.7	4.7	ST
00249	11/19/96	2309	2905.0	8859.1	11	26	13	26	21.3	21.3	21.2	34.1	34.9	34.9		2.239	5.6	5.8	5.8	ST
00250	11/20/96	40	2900.4	8857.4	11	91	45	89	22.0	23.6	20.3	34.6	36.1	36.4		2.545	5.8	5.5	4.1	ST
00251	11/20/96	422	2858.1	8902.5	13	68	34	67	21.7	22.3	22.5	32.8	35.5	35.7		4.672	5.9	5.6	5.6	ST/PN
00252	11/20/96	628	2905.4	8900.2	13	15	7	15	21.2	21.7	21.6	33.7	34.9	34.8		3.473	5.1	5.5	5.6	PN
00253	11/20/96	910	2901.9	8859.0	11	68	34	67	22.2	22.5	23.4	34.4	35.6	36.0		2.232	5.9	5.6	5.5	ST
00254	11/20/96	1243	2919.1	8850.1	11	44	23	43	22.5	22.4	22.3	27.4	27.3	27.3		1.148	3.5	2.2	4.3	ST
00255	11/20/96	1507	2922.6	8839.2	11	55	28	55	23.1	23.1	23.2	29.4	29.6	29.9		0.513	3.0	2.1	3.2	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
00257	11/20/96	2016	2919.4	8814.3	11	76	38	76	23.7	23.8	23.4	36.2	36.3	36.3		0.366	5.7	5.5	5.4	ST
00258	11/20/96	2123	2921.5	8812.3	11	54	27	54	23.3	23.3	23.6	36.0	36.1	36.2		0.379	5.7	5.7	5.6	ST
00259	11/21/96	12	2925.9	8804.1	11	56	26	54	23.1	23.1	23.0	36.0	36.1	36.1		0.325	5.7	5.7	5.7	ST
00260	11/21/96	138	2932.1	8806.1	11	42	21	41	23.0	23.4	23.6	35.9	36.1	36.2		0.437	5.7	5.6	5.6	ST
00261	11/21/96	403	2929.7	8800.0	10	46	23	46	23.0	23.0	23.0	36.0	36.1	36.1		0.366	5.6	5.6	5.7	PN
00262	11/21/96	650	2914.8	8801.2	11	200	100	174	23.9	20.8	17.9	36.3	36.5	36.4		0.430	5.7	4.5	3.6	PN
00263	11/21/96	1151	2915.0	8828.0	11	85			23.8			36.2				0.308	5.9			ST/PN
00264	11/21/96	1415	2918.4	8814.1	11	81	40	79	23.6	23.4	23.1	36.2	36.2	36.1		0.242	5.7	5.6	5.6	ST
00265	11/21/96	1634	2923.7	8800.0	11	80	37	75	23.9	23.4	22.9	36.3	36.2	36.2		0.354	5.5	5.5	5.4	ST
00266	11/21/96	2022	2944.9	8803.0	11	36	18	36	22.4	22.3	22.5	35.5	35.5	35.7		0.508	5.9	5.8	5.6	ST
00267	11/21/96	2227	2955.7	8806.9	11	31	15	31	22.3	22.1	22.3	35.4	35.4	35.7		0.816	5.9	5.9	5.5	ST
00268	11/22/96	39	2949.9	8810.8	11	33	16	32	22.4	22.2	22.4	35.4	35.5	35.6		0.816	5.8	5.8	5.7	ST
00269	11/22/96	243	2944.3	8821.8	11	36	19	36	22.5	22.5	22.5	35.4	35.5	32.9		1.260	5.7	5.7	3.9	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	10/21/96	0727	2923.3	8851.7	11	22	11	21	23.0	25.2	25.1	33.5	35.5	35.6			6.4	6.2	6.2	ST
17002	10/21/96	0944	2929.3	8838.1	11	38	19	37	24.6	24.5	24.7	34.8	34.8	35.8			6.4	6.3	5.9	ST
17003	10/21/96	1136	2929.9	8838.2	11	38	19	37	24.7	24.7	25.0	34.8	34.9	35.8			6.5	6.4	5.9	ST
17004	10/21/96	1310	2929.9	8839.7	11	30	15	29	24.3	24.3	25.1	34.6	34.6	35.6			6.4	6.4	6.0	ST
17005	10/21/96	1626	2936.5	8858.7	11	4	2	3	22.8	22.7	22.7	32.4	32.5	32.4			7.0	7.0	6.6	ST
17006	10/21/96	1741	2936.3	8852.4	11	12	6	11	22.8	23.0	22.8	32.9	32.9	32.9			7.0	6.9	6.8	ST
17007	10/21/96	2047	2927.2	8845.0	11	23	12	22	22.8	23.7	24.8	33.3	34.3	35.2			6.5	6.4	6.1	ST
17008	10/21/96	2209	2931.0	8840.7	11	23	12	22	24.0	24.1	24.8	34.5	34.5	35.4			6.4	6.5	6.1	ST
17009	10/22/96	0043	2945.6	8851.5	11	4	2	3	22.3	22.3	22.4	32.2	32.1	32.2			6.8	6.9	6.8	ST
17010	10/22/96	0325	2948.6	8832.9	11	28	14	27	23.5	24.0	25.0	34.5	34.5	35.6			6.4	6.3	6.0	ST
17011	10/22/96	0553	2950.9	8841.1	11	18	9	17	22.7	23.0	23.1	33.5	33.6	33.8			6.4	6.5	6.5	ST
17012	10/22/96	0741	2950.4	8840.1	11	19	9	18	23.2	23.4	23.3	33.8	33.9	33.9			6.3	6.5	6.4	ST
17013	10/23/96	1857	3014.2	8845.8	11	5	3	4	21.4	21.4	21.3	31.4	31.3	31.4			6.9	7.0	6.9	ST
17014	10/23/96	2058	3012.3	8831.9	11	7	4	6	21.3	21.6	22.0	30.6	31.0	31.4			7.1	7.0	7.0	ST
17015	10/23/96	2241	3005.9	8829.7	11	17	8	16	22.4	22.9	23.2	32.9	33.4	33.9			7.1	7.2	7.0	ST
17016	10/24/96	0057	3007.1	8837.0	11	15	7	14	22.7	22.6	23.0	33.3	33.4	33.7			7.0	7.1	6.8	ST
17017	10/24/96	0302	3004.2	8848.8	11	12	6	11	21.3		22.3	31.3	31.2	32.4			7.3	7.2	7.0	ST
17018	10/24/96	0444	2957.7	8847.2	11	10	5	9	21.8	21.8	22.2	31.9	32.0	32.2			6.9	6.8	7.0	ST
17019	10/24/96	0543	2956.8	8845.8	11	13	7	12	21.8	22.1	23.1	32.1	32.3	33.5			7.1	7.1	6.3	ST
17020	10/24/96	0735	2948.0	8845.9	11	13	7	12	22.3	22.3	22.2	33.0	33.0	34.4			7.0	7.1	7.0	ST
17021	10/24/96	1005	2935.2	8834.1	11	33	16	32	23.6	23.9	23.9	34.4	34.6	36.1			6.5	6.6	5.5	ST
17022	10/24/96	1120	2930.0	8830.2	11	50	25	49	24.7	24.7	24.9	35.7	35.7	35.9			6.3	6.3	6.2	PN
17023	10/24/96	1313	2936.9	8827.2	11	41	21	40	24.6	24.8	24.9	35.2	35.6	36.0			6.4	6.4	6.3	ST
17024	10/24/96	1522	2943.0	8830.0	11	34	17	33	24.2	24.5	24.2	35.1	35.4	36.0			6.4	6.6	6.1	ST
17025	10/24/96	1712	2945.2	8835.4	11	26	13	25	24.1	24.1	24.2	35.1	35.1	35.2			6.6	6.6	6.5	ST
17026	10/24/96	1942	3000.0	8832.3	11	26	13	25	23.8	23.9	24.1	34.7	34.8	35.0			6.5	6.4	6.3	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
17027	10/24/96	2224	3000.0	8830.2	11	26	13	25	23.9	23.9	24.0	34.7	34.7	34.8			6.4	6.8	6.7	PN
17028	10/25/96	0732	2956.6	8827.0	11	28	14	27	23.8	24.0	24.0	35.2	35.2	35.3			6.3	6.2	6.2	ST
17029	10/25/96	0942	3007.0	8834.2	11	15	8	14	22.4	22.4	22.6	33.0	33.0	33.3			6.8	6.8	6.7	ST

Table 2. Selected environmental parameters (continued)

A.E. VERRILL, 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	10/28/96	1015	3008.2	8816.2	11	18	9	18	23.6	23.8	23.8	33.4	33.6	33.7			6.8	6.5	6.3	ST
2302	10/28/96	1140	3007.9	8819.3	11	19	10	19	23.8	23.7	23.7	33.3	33.7	33.9			6.8	6.6	6.1	ST
2303	10/28/96	1251	3010.8	8823.1	11	11	6	11	23.3	23.1	23.6	31.2	32.2	33.3			7.2	6.9	6.3	ST
2304	10/30/96	1031	3013.5	8815.9	11	7	4	7	24.0	23.9	23.5	32.4	32.5	33.1			6.1	6.0	4.6	ST
2305	10/30/96	1131	3011.6	8819.5	11	6	3	6	23.9	23.9	23.8	32.0	32.0	33.6			7.0	7.0	5.7	ST
2306	10/30/96	1326	3001.4	8826.0	11	24	12	24	24.2	24.3	24.7	34.2	34.5	35.3			6.6	6.6	5.9	ST
2307	10/30/96	1712	3002.2	8814.0	11	23	12	23	24.0	24.2	24.7	33.1	34.2	35.2			6.9	6.5	5.9	ST

Table 2. Selected environmental parameters (continued)

ARANSAS 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
31001	11/10/96	0802	2753.4	9700.4	20	3	2	3	21.2	21.2	21.2	31.3	31.3	31.3			7.0	7.1	7.1	ST
31002	11/10/96	0834	2755.5	9657.5	20	10	5	10	21.8	21.8	21.8	31.2	31.2	31.2			6.8	6.8	6.8	ST
31003	11/10/96	0919	2757.6	9654.4	20	11	6	11	21.8	21.7	21.7	19.5	31.1	31.1			6.4	6.3	6.3	ST
31004	11/10/96	0952	2758.5	9652.4	20	12	6	12	22.1	21.9	21.9	31.1	31.1	31.1			6.6	6.4	6.5	ST
31005	11/10/96	1042	2755.6	9648.3	20	18	9	18	22.2	22.4	22.4	31.1	31.8	31.9			6.4	6.5	6.5	ST
31006	11/10/96	1139	2750.5	9652.6	20	20	10	20	22.6	22.4	22.1	31.4	31.5	31.8			6.4	6.3	6.1	ST
31007	11/10/96	1225	2750.6	9658.4	20	14	7	14	23.0	22.4	22.4	31.4	31.5	31.8			6.6	6.5	6.3	ST
31008	11/10/96	1252	2750.5	9700.5	20	11	6	11	22.9	22.1	22.0	31.4	31.3	31.4			6.7	6.7	6.7	ST
31009	11/20/96	0912	2739.6	9709.4	20	9	5	9	22.3	22.1	22.0	30.6	30.6	30.6			7.0	6.8	6.5	ST
31010	11/20/96	1005	2739.4	9702.6	20	20	10	20	21.6	21.6	21.6	29.9	30.0	30.5			7.4	7.4	7.2	ST
31011	11/20/96	1036	2738.7	9702.4	20	20	10	20	21.7	21.6	22.9	30.0	30.0	30.3			7.3	7.0	7.0	ST
31012	11/20/96	1112	2738.4	9700.5	20	22	11	22	21.8	21.6	21.6	30.0	30.0	32.2			7.0	6.9	6.7	ST
31013	11/20/96	1145	2739.4	9659.3	20	23	12	23	21.8	21.7	21.8	30.6	31.7	31.6			7.2	7.1	6.7	ST
31014	11/20/96	1224	2742.4	9659.6	20	20	10	20	21.9	21.6	21.9	30.4	31.4	32.8			7.0	6.7	6.4	ST
31015	11/20/96	1329	2748.6	9657.4	20	17	9	17	21.9	21.8	21.6	30.2	30.3	30.6			7.0	6.7	6.6	ST
31016	11/20/96	1410	2750.6	9701.4	20	11	6	11	22.4	22.4	22.2	30.7	30.8	31.5			7.1	7.1	6.6	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	11/11/96	1114	2821.4	9611.4	19	18	9	18	21.8	22.0	22.7	32.3	33.3	34.5			7.0	6.6	5.9	ST
32002	11/11/96	1147	2822.5	9610.5	19	18	9	18	21.9	21.6	22.5	32.2	33.1	34.3			6.8	6.7	6.0	ST
32003	11/11/96	1243	2825.0	9608.6	19	16	8	16	21.8	21.6	22.5	32.0	33.0	34.3			6.9	6.6	6.1	ST
32004	11/11/96	1329	2825.4	9604.8	19	17	9	17	21.5	21.6	22.5	32.0	32.8	34.4			7.0	7.0	6.5	ST
32005	11/11/96	1412	2828.5	9605.5	19	14	7	14	21.8	21.4	22.6	32.2	32.5	34.1			7.0	6.8	5.8	ST
32006	11/11/96	1503	2827.5	9608.4	19	14	7	14	21.5	21.8	22.3	31.8	32.7	33.9			7.4	6.6	6.3	ST
32007	11/11/96	1556	2824.6	9613.3	19	14	7	14	21.0	21.9	22.6	31.1	33.6	33.6			7.2	5.9	5.7	ST
32008	11/11/96	1632	2825.5	9616.4	19	9	5	9	21.4	21.5	21.8	31.1	31.7	32.7			7.4	7.0	6.1	ST
32009	11/19/96	1002	2821.5	9618.6	19	14	7	14	21.1	21.1	21.3	28.6	28.7	28.9			6.4	6.3	6.4	ST
32010	11/19/96	1039	2820.0	9620.2	19	13	7	13	21.4	21.1	21.6	28.7	28.8	29.8			6.5	6.4	6.6	ST
32011	11/19/96	1124	2819.5	9623.5	19	10	5	10	21.6	21.2	21.3	28.9	29.0	29.2			6.3	6.2	6.3	ST
32012	11/19/96	1221	2815.5	9626.4	19	14	7	14	22.1	21.2	21.4	29.1	29.2	29.3			6.2	5.9	6.2	ST
32013	11/19/96	1304	2812.6	9626.7	19	18	9	18	22.4	21.5	21.4	29.2	29.7	30.5			6.2	6.1	6.3	ST
32014	11/19/96	1347	2811.5	9624.5	19	21	11	21	22.4	21.1	21.8	29.0	29.4	32.6			6.3	3.2	3.1	ST
32015	11/19/96	1451	2813.4	9618.8	19	23	11	23	23.1	21.1	21.9	28.0	28.7	32.0			6.2	5.9	6.4	ST
32016	11/19/96	1555	2818.6	9617.6	19	19	9	19	22.6	21.0	21.1	27.6	27.8	28.2			6.5	6.4	6.3	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	11/13/96	0821	2559.8	9706.6	22	15	8	15	23.6	23.6	23.6	35.0	35.0	35.0			6.4	6.5	6.5	ST
33002	11/13/96	0857	2558.6	9706.7	22	15	8	15	23.3	23.3	23.3	35.0	35.0	35.0			6.6	6.6	6.8	ST
33003	11/13/96	0942	2600.7	9704.5	21	20	10	20	23.5	23.5	23.6	35.0	34.8	34.9			6.6	6.7	6.8	ST
33004	11/13/96	1020	2602.7	9704.6	21	20	10	20	24.1	24.1	24.1	34.9	35.0	35.0			6.7	6.4	6.6	ST
33005	11/13/96	1112	2606.7	9706.7	21	17	9	17	24.0	23.9	24.1	34.5	34.5	34.5			6.7	6.8	6.8	ST
33006	11/13/96	1215	2611.8	9702.8	21	21	11	21	24.4	24.3	24.3	34.6	34.7	34.6			6.6	7.5	8.7	ST
33007	11/13/96	1308	2609.7	9706.7	21	18	9	18	24.1	24.0	23.9	34.5	34.5	34.5			7.5	7.8	8.4	ST
33008	11/13/96	1426	2607.7	9709.5	21	7	4	7	24.0	24.0	23.9	34.5	34.5	34.5			7.2	7.1	7.5	ST
33009	11/20/96	0903	2614.6	9705.5	21	19	10	19	22.9	22.9	22.9	32.2	32.3	32.4			7.1	7.0	6.9	ST
33010	11/20/96	0929	2615.4	9705.6	21	19	10	19	23.6	22.9	22.9	32.3	32.2	32.3			6.3	7.1	7.0	ST
33011	11/20/96	1013	2614.5	9708.5	21	16	8	16	23.1	23.0	23.1	32.4	32.4	32.4			6.4	7.0	6.8	ST
33012	11/20/96	1049	2616.5	9710.5	21	11	5	11	23.5	23.4	23.5	32.7	32.7	32.7			6.3	7.0	7.1	ST
33013	11/20/96	1132	2620.5	9709.5	21	18	9	18	23.2	23.0	22.9	32.4	32.4	32.4			6.9	6.9	6.9	ST
33014	11/20/96	1225	2618.5	9706.6	21	19	8	19	23.0	22.9	23.1	32.2	32.2	32.2			7.9	7.3	7.0	ST
33015	11/20/96	1313	2618.5	9703.5	21	20	10	20	23.0	22.9	22.7	32.1	32.1	32.1			6.7	7.0	6.8	ST
33016	11/20/96	1347	2620.5	9702.6	21	23	12	23	22.8	22.6	22.4	32.0	31.9	32.1			7.8	7.0	7.1	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	11/12/96	0957	2923.2	9442.5	18	4	2	4	20.6	20.6	20.5	27.7	27.7	27.7			8.0	8.1	7.2	ST
34002	11/12/96	1039	2926.7	9435.8	18	7	3	7	20.6	20.5	21.7	27.8	27.8	27.9			8.1	7.6	5.0	ST
34003	11/12/96	1106	2926.6	9434.9	18	8	4	8	20.8	20.7	22.0	28.0	27.9	28.6			8.3	7.8	4.9	ST
34004	11/12/96	1149	2922.9	9428.6	18	13	7	13	22.4	21.0	21.5	28.3	28.4	28.5			6.1	7.6	7.8	ST
34005	11/12/96	1224	2920.5	9433.6	18	12	6	12	21.5	21.3	22.2	30.0	29.8	30.0			8.1	7.8	6.6	ST
34006	11/12/96	1246	2920.0	9433.4	18	12	6	12	21.5	21.5	21.5	30.0	30.0	29.9			8.1	8.0	7.9	ST
34007	11/12/96	1313	2922.5	9434.7	18	11	6	11	21.7	21.8	23.3	29.9	29.9	30.2			7.5	7.7	5.1	ST
34008	11/12/96	1340	2922.5	9436.5	18	11	6	11	21.6	21.7	23.2	29.5	29.5	29.4			7.5	7.7	5.1	ST
34009	11/19/96	1015	2918.6	9440.7	18	9	5	9	20.4	20.3	20.3	27.5	28.0	28.4			7.0	6.6	6.6	ST
34010	11/19/96	1045	2916.8	9441.8	18	10	5	10	20.7	20.3	20.3	27.5	28.5	28.6			7.3	8.0	7.0	ST
34011	11/19/96	1140	2911.5	9443.0	18	16	8	16	20.9	20.4	20.5	26.6	28.2	29.0			7.5	6.3	7.0	ST
34012	11/19/96	1207	2909.8	9443.5	18	17	9	17	21.0	20.4	20.4	26.7	29.1	29.2			8.8	8.5	9.5	ST
34013	11/19/96	1232	2908.4	9443.8	18	17	9	17	21.1	20.5	21.2	27.1	28.8	29.4			9.4	8.6	8.7	ST
34014	11/19/96	1303	2908.6	9449.1	18	15	8	15	21.2	20.3	20.4	26.7	28.0	28.5			8.7	8.1	8.5	ST
34015	11/19/96	1337	2913.6	9451.6	18	7	4	7	20.6	20.3	20.6	26.2	26.8	27.2			8.1	7.5	7.1	ST
34016	11/19/96	1436	2922.0	9442.2	18	6	3	6	22.1	20.3	20.6	25.4	25.6	27.0			8.2	7.0	2.8	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/ 5/96	1019	2938.7	9352.8	17	4	2	4	20.3	20.2	20.2	23.8	23.4	23.0			7.8	7.4	7.4	ST
40002	11/ 5/96	1100	2937.4	9350.5	17	6	3	6	20.3	20.1	20.3	20.6	22.8	23.7			7.2	7.1	6.9	ST
40003	11/ 5/96	1149	2934.5	9348.5	17	12	6	12	21.2	21.6	21.7	23.8	26.6	27.4			7.5	6.1	5.8	ST
40004	11/ 5/96	1244	2932.4	9353.4	17	12	6	12	21.8	21.0	21.3	24.1	24.6	28.3			7.9	7.0	6.7	ST
40005	11/ 5/96	1337	2935.6	9354.0	17	7	4	7	20.9	20.9	20.7	22.8	24.0	24.1			9.1	8.2	7.9	ST
40006	11/ 5/96	1444	2936.8	9403.5	18	7	4	7	21.3	20.9	21.0	24.1	24.0	24.4			7.4	7.2	7.3	ST
40007	11/ 5/96	1511	2937.5	9403.6	18	6	3	6	21.2	20.8	21.2	24.0	24.0	24.2			7.3	7.0	6.5	ST
40008	11/ 5/96	1549	2938.6	9400.4	18	5	2	5	21.1	20.9	20.7	24.1	24.2	24.2			8.5	7.7	7.3	ST
40009	11/20/96	0850	2941.2	9347.8	17	5	2	5	20.3	20.3	20.2	17.9	17.9	17.8			8.8	8.7	6.4	ST
40010	11/20/96	0931	2941.6	9345.2	17	7	4	7	20.4	19.8	20.4	17.6	17.7	18.9			9.3	7.3	6.5	ST
40011	11/20/96	1025	2940.5	9342.4	17	8	4	8	20.5	19.9	20.2	17.9	18.6	23.5			8.4	7.0	6.0	ST
40012	11/20/96	1106	2940.6	9339.3	17	9	4	9	20.8	19.8	20.2	17.9	19.2	22.5			9.0	7.2	6.0	ST
40013	11/20/96	1149	2939.4	9339.7	17	10	5	10	21.1	20.0	20.4	17.9	26.5	18.9			8.3	8.8	6.9	ST
40014	11/20/96	1253	2939.4	9335.5	17	10	5	10	21.4	21.1	20.2	17.4	20.8	28.8			10.2	9.4	6.8	ST
40015	11/20/96	1406	2936.5	9342.9	17	11	6	11	22.0	20.0	20.6	18.1	28.1	28.0			10.5	7.6	7.8	ST
40016	11/20/96	1511	2932.3	9348.5	17	12	6	12	22.1	20.5	20.7	21.7	29.9	31.0			8.2	7.4	6.8	ST

Table 2. Selected environmental parameters (continued)

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
37429	12/ 2/96	1202	2900.1	9030.0	14	8	3	8	19.3	19.3	19.0	32.2	32.2	32.2	1.606		7.8	7.4	7.5	PN
37430	12/ 2/96	1530	2900.0	8959.5	13	21	11	21	19.9	20.0	22.0	31.1	31.5	33.5	0.672		8.5	7.8	4.9	PN
37431	12/ 2/96	1700	2903.5	8954.5	13	20	10	20	19.5	19.5	23.1	31.0	31.1	33.3	0.992		8.1	7.7	5.5	ST
37432	12/ 2/96	1837	2904.8	8954.4	13	19	9	19	19.5	19.5	22.2	30.5	31.1	33.6	1.186		7.9	7.3	5.7	ST
37433	12/ 2/96	2026	2902.3	8945.8	13	32	16	32	17.4	19.8	23.1	23.2	31.6	35.9	1.883		8.3	7.8	5.0	ST
37434	12/ 2/96	2243	2909.0	8934.4	13	8	4	8	18.3	19.0	21.5	28.5	31.0	33.7	1.938		3.4	2.4	1.9	ST
37435	12/ 2/96	2348	2907.5	8934.8	13	10	5	10	18.4	18.9	21.1	29.1	30.3	33.4	2.018		7.6	6.9	5.5	ST
37436	12/ 3/96	0700	2900.1	8930.0	13	12	6	12	17.5	19.1	21.5	21.3	29.8	33.7	2.109		8.4	7.2	6.9	PN
37437	12/ 3/96	0855	2909.0	8934.5	13	7	3	7	17.4	18.4	20.4	28.4	30.3	32.8	3.424		8.3	7.0	5.6	ST
37438	12/ 3/96	0955	2907.8	8934.8	13	9	4	9	17.4	18.0	19.4	27.9	29.4	31.2	3.490		8.4	7.9	6.9	ST
37439	12/ 3/96	1153	2902.0	8946.3	13	32	15	32	18.1	20.0	23.2	25.0	31.7	35.8	2.002		8.3	7.2	5.4	ST
37440	12/ 3/96	1629	2839.3	9020.9	14	21	10	21	20.9	21.1	21.8	33.3	34.2	37.7	1.947		8.3	7.2	5.4	ST
37441	12/ 3/96	1812	2839.9	9020.8	14	21	11	21	20.9	20.9	21.6	33.5	33.9	34.6	1.838		7.8	7.9	7.1	ST
37442	12/ 3/96	2053	2830.9	9038.1	14	30	14	30	20.9	20.9	22.7	34.0	34.0	35.4	1.084		8.2	8.3	7.5	ST
37443	12/ 3/96	2247	2833.3	9045.7	14	21	11	21	21.0	21.3	21.5	34.0	34.5	34.6	0.460		8.3	8.6	7.6	ST
37444	12/ 4/96	0000	2830.6	9049.2	14	29	14	29	21.0	21.4	22.2	34.3	34.6	35.1	0.707		8.5	8.7	7.6	ST
37445	12/ 4/96	0710	2829.9	9030.1	14	37	18	37	20.8	20.9	23.0	33.7	34.0	35.5	0.645		7.8	7.6	6.3	PN
37446	12/ 4/96	0836	2830.9	9038.2	14	30	14	30	20.8	20.9	22.5	33.7	34.0	35.3	0.832		7.4	7.7	6.5	ST
37447	12/ 4/96	1017	2833.1	9046.0	14	21	10	21	21.2	21.2	21.2	34.4	34.7	34.7	1.557		7.3	7.4	7.2	ST
37448	12/ 4/96	1129	2830.6	9049.5	14	29	15	29	21.3	21.4	22.0	34.5	34.7	35.1	0.840		8.5	8.7	8.6	ST
37449	12/ 4/96	1305	2829.9	9100.6	15	30	15	30	21.4	21.4	21.8	34.7	34.9	35.2	0.847		8.7	7.8	7.1	PN
37450	12/ 4/96	1508	2838.9	9109.7	15	17	5	17	19.9	19.9	20.9	33.4	33.5	34.5	1.108		7.2	6.4	5.2	ST
37451	12/ 4/96	1629	2836.9	9120.6	15	24	12	24	20.4	20.5	21.2	34.0	34.2	35.0	1.061		7.8	7.3	7.0	ST
37452	12/ 4/96	1824	2837.7	9119.5	15	25	13	25	20.4	20.4	21.2	34.1	34.2	35.0	1.495		8.5	8.0	7.8	ST
37453	12/ 4/96	2041	2839.0	9109.9	15	18	9	18	19.9	20.0	20.7	32.0	33.8	34.3	1.014		8.2	8.2	7.5	ST
37454	12/ 4/96	2251	2848.4	9119.0	15	12	5	12	18.8	18.7	19.5	32.2	32.2	32.9	1.356		7.5	7.9	6.9	ST

Table 2. Selected environmental parameters (continued)

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
37455	12/ 5/96	0138	2839.7	9130.5	15	27	13	27	20.2	20.3	21.0	34.0	34.2	34.8	0.986		7.3	7.2	6.8	ST
37456	12/ 5/96	0710	2839.9	9130.7	15	27	17	27	20.2	20.5	21.3	34.2	34.4	34.8	0.904		7.2	7.2	6.7	ST
37457	12/ 5/96	0938	2847.9	9118.8	15	11	5	11	19.5	19.5	19.5	33.3	33.3	33.3	1.476		7.4	7.3	7.1	ST
37458	12/ 5/96	1203	2859.9	9130.0	15	7	4	7	18.5	18.5	18.6	31.5	31.9	32.0	5.452		8.4	7.8	7.3	PN
37459	12/ 5/96	1532	2900.0	9059.9	14	5	3	5	18.0	18.0	17.6	31.5	31.6	31.8	3.949		8.3	8.0	7.9	PN

Table 2. Selected environmental parameters (continued)

CHAPMAN, WINTER 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
28001	12/ 3/96	1807	2930.3	8830.0	11	49	22	48	21.5	21.5	21.5	35.8	35.8	35.8			6.4	6.5	6.4	PN
28002	12/ 3/96	2105	2913.2	8830.0	11	108	54	108	22.7	22.7	22.3	36.4	36.4	36.4			6.2	6.2	5.7	PN
28003	12/ 4/96	2359	2900.0	8829.5	99	600	100	202	22.6	21.0	16.7	36.3	36.4	36.2			6.6	5.5	4.1	PN
28004	12/ 4/96	0447	2829.6	8830.3	99	1767	100	201	24.0	18.6	14.1	36.3	36.4	35.8			6.7	4.3	4.1	PN
28005	12/ 4/96	0852	2830.1	8859.8	99	797	99	201	23.7	19.8	14.2	36.3	36.3	35.8			6.2	4.8	3.9	PN
28006	12/ 4/96	1304	2829.5	8929.9	99	450	98	200	23.0	21.9	17.1	36.1	36.4	36.3			6.3	5.8	3.9	PN
28007	12/ 4/96	1728	2830.4	9000.3	14	88	45	88	22.3	23.6	22.3	35.3	36.2	36.4			6.1	5.8	5.1	PN
28008	12/ 4/96	2116	2829.5	9030.2	14	39	19	39	20.3	20.9	22.7	33.1	34.0	35.2			7.0	6.6	5.8	PN
28009	12/ 5/96	0112	2829.9	9100.1	15	33	15	31	21.4	21.4	21.5	34.9	34.9	35.1			6.3	6.6	6.5	PN
28010	12/ 5/96	0444	2830.3	9129.8	15	44	21	42	21.7	21.7	21.8	35.4	35.4	35.4			6.2	6.3	6.3	PN
28011	12/ 5/96	0820	2830.1	9159.9	15	48	23	47	22.1	22.1	22.2	35.4	35.4	35.4			6.3	6.3	6.2	PN
28012	12/ 5/96	1228	2759.7	9200.4	15	115	58	113	22.3	23.9	21.4	35.4	36.3	36.4			6.6	6.0	4.8	PN
28013	12/ 5/96	1641	2759.9	9130.6	99	159	80	159	21.7	22.4	18.2	34.8	36.3	36.4			6.6	5.3	3.9	PN
28014	12/ 5/96	2100	2800.8	9101.3	15	134	64	134	23.1	23.3	20.6	36.1	36.3	36.4			6.3	6.1	4.6	PN
28015	12/ 6/96	0137	2805.0	9030.6	14	135	67	134	20.5	23.1	19.8	33.8	36.3	36.5			6.9	6.0	4.2	PN
28016	12/ 6/96	0540	2800.3	9000.2	14	523	100	200	23.5	19.8	14.4	36.4	36.4	36.1			6.1	4.4	3.9	PN
28017	12/ 6/96	1001	2800.4	8930.0	99	935	100	202	23.1	18.7	13.4	36.2	36.4	35.7			6.3	4.0	3.9	PN
28018	12/ 6/96	1420	2759.4	8900.1	99	1000	100	200	23.2	17.9	13.2	36.2	36.4	35.7			6.2	4.0	3.8	PN
28019	12/ 6/96	1851	2759.2	8829.2	99	1000	100	200	23.2	18.1	11.8	36.2	36.4	35.5			6.2	3.9	3.7	PN
28020	12/ 6/96	2325	2729.2	8829.1	99	2000	100	200	23.0	17.7	12.4	36.2	36.3	35.6			5.7	4.0	3.8	PN
28021	12/ 7/96	0406	2730.5	8859.9	99	2000	100	201	23.2	18.0	13.3	36.2	36.4	35.7			6.2	4.0	3.9	PN
28022	12/ 7/96	0821	2730.3	8929.6	99	1000	101	200	23.0	18.4	13.6	36.2	36.4	35.7			6.3	4.0	3.8	PN
28023	12/ 7/96	1227	2729.8	9000.7	99	1000	102	201	23.5	18.6	13.4	36.2	36.5	35.7			6.2	7.0	3.8	PN
28024	12/ 7/96	1716	2730.1	9030.5	99	1000	100	202	23.3	18.5	13.4	36.3	36.4	35.9			6.1	3.9	3.9	PN
28025	12/ 7/96	2132	2730.0	9100.9	99	1000	100	200	23.4	19.0	13.8	36.4	36.4	35.8			6.2	4.0	3.8	PN
28027	12/ 8/96	1404	2731.4	9201.1	99	2000	101	204	23.1	19.5	13.9	36.3	36.4	35.8			6.2	4.3	3.9	PN

Table 2. Selected environmental parameters (continued)

CHAPMAN, WINTER 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
28028	12/ 8/96	1920	2659.9	9200.0	99	1000	100	202	23.5	18.8	12.0	36.1	36.3	35.5						PN
28029	12/ 8/96	2319	2659.7	9130.2	99	1820	102	201	23.5	18.5	12.9	36.0	36.4	35.6			6.1	3.8	3.5	PN
28030	12/ 9/96	0343	2659.8	9059.9	99	1638	102	204	23.3	17.7	13.3	36.0	36.2	35.7						PN
28031	12/ 9/96	0725	2659.8	9030.5	99	1456	102	201	23.0	18.5	13.5	36.2	36.4	35.7			6.3	4.0	3.6	PN
28032	12/ 9/96	1214	2700.9	9000.0	99	1000	100	202	23.3	19.3	12.6	36.1	36.5	35.6			6.3	4.2	3.8	PN
28033	12/ 9/96	1650	2700.0	8930.6	99	2000	100	202	23.0	18.5	13.5	35.7	35.7	35.0						PN
28034	12/ 9/96	2034	2700.2	8900.1	99	1000	102	200	23.3	17.9	13.2	36.1	36.4	35.7			6.2	3.9	3.8	PN
28035	12/10/96	0042	2700.2	8829.6	99	2000	100	201	23.8	18.0	12.8	36.1	36.1	35.9						PN
28036	12/10/96	0416	2700.4	8800.2	99	2730	100	200	24.5	20.4	14.4	36.4	36.2	35.9			6.0	4.6	3.8	PN
28037	12/10/96	0817	2700.1	8729.8	99	2000	100	201	24.1	21.2	15.7	36.3	36.4	36.1						PN
28038	12/10/96	1211	2659.3	8700.5	99	1000	102	200	24.8	24.4	16.5	36.3	36.6	36.2			6.1	4.9	4.2	PN
28039	12/10/96	1628	2700.4	8630.2	99	1000	100	202	24.4	20.3	15.4	36.4	36.7	36.1						PN
28040	12/10/96	2009	2659.9	8559.9	99	1000	100	200	24.5	22.0	15.3	36.3	36.5	36.0			6.0	5.3	3.8	PN
28041	12/11/96	0007	2700.0	8529.0	99	1800	100	200	25.7	22.5	17.0	36.3	36.9	36.3						PN
28042	12/11/96	0338	2700.3	8500.0	99	800	100	200	23.7	23.3	16.7	36.4	36.5	36.3			6.1	5.9	4.1	PN
28043	12/11/96	0817	2730.0	8500.4	99	389	100	203	24.1	21.2	15.4	36.3	36.5	36.1						PN
28044	12/11/96	1217	2729.5	8529.4	99	1000	100	202	23.9	20.3	15.8	36.4	36.6	36.1			6.1	4.4	4.1	PN
28045	12/11/96	1642	2730.4	8600.0	99	1000	100	205	24.5	22.0	15.7	36.2	36.3	36.0						PN
28046	12/11/96	2020	2730.3	8630.5	99	1000	100	203	24.4	23.0	16.5	36.4	36.5	36.2			6.0	5.5	4.3	PN
28047	12/12/96	0011	2730.0	8659.5	99	2000	102	202	24.7	24.6	17.5	36.2	36.2	36.2						PN
28048	12/12/96	0355	2730.2	8729.5	99	2000	100	201	24.4	23.1	16.1	36.4	36.7	36.2			6.0	5.8	4.0	PN
28049	12/12/96	0800	2730.4	8759.5	99	2000	100	201	22.7	19.1	13.8	35.9	36.5	35.5						PN
28050	12/12/96	1235	2800.4	8759.9	99	2000	100	202	23.0	18.8	13.2	36.2	36.4	35.7			6.4	4.0	3.8	PN
28051	12/12/96	1701	2800.2	8729.6	99	2000	100	201	24.4	20.8	15.5	36.3	36.3	35.9						PN
28052	12/12/96	2037	2800.4	8659.9	99	1000	99	202	24.5	23.8	16.3	36.4	36.5	36.2			6.0	5.8	4.1	PN
28053	12/13/96	0035	2759.2	8630.3	99	2000	100	202	24.3	22.5	15.9	36.3	36.6	36.0						PN

Table 2. Selected environmental parameters (continued)

CHAPMAN, WINTER 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
28054	12/13/96	0422	2800.1	8600.4	99	9832	100	201	24.1	21.5	15.5	36.4	36.5	36.1			6.1	5.2	4.3	PN
28055	12/13/96	0821	2800.2	8529.8	99	568	100	207	24.0	21.0	15.6	36.2	36.3	35.9						PN
28056	12/13/96	1316	2839.9	8524.7	8	173	85	171	23.8	23.0	16.2	36.4	36.5	36.4			6.1	6.1	3.8	PN
28057	12/13/96	1752	2829.7	8559.7	99	325	99	204	23.4	21.5	15.7	36.5	36.5	36.0						PN
28058	12/13/96	2143	2829.7	8629.8	99	540	100	200	23.0	21.0	15.9	36.4	36.5	36.2			6.2	4.9	3.9	PN
28059	12/14/96	0142	2829.3	8659.5	99	874	100	205	23.9	21.5	15.3	36.4	36.4	36.4						PN
28060	12/14/96	0533	2829.9	8730.4	99	2560	100	201	23.9	22.6	15.5	36.4	36.3	36.0			6.0	6.1	3.7	PN
28061	12/14/96	0935	2830.4	8800.4	99	2000	100	201	24.3	20.5	15.3	36.4	36.5	36.1						PN
28062	12/14/96	1332	2859.9	8759.7	99	1200	100	198	21.0	20.7	15.2	32.9	36.4	36.0						PN
28063	12/14/96	1617	2915.1	8759.7	11	233	100	200	21.0	19.9	14.6	33.9	36.5	35.9						PN
28064	12/14/96	2036	2859.6	8730.0	99	1200	100	200	23.9	20.9	15.3	36.4	36.3	36.2						PN
28065	12/15/96	0001	2859.9	8700.7	99	681	100	201	22.9	20.8	15.4	36.3	36.4	36.1						PN
28066	12/15/96	0339	2900.7	8630.5	99	437	100	200	23.5	20.5	15.9	36.4	36.4	36.2			6.1	4.4	3.9	PN
28067	12/15/96	0808	2911.9	8600.2	8	188	91	181	22.1	21.6	15.5	36.6	36.5	36.0						PN
28068	12/15/96	1212	2859.6	8529.7	99	71	35	70	22.3	22.1	22.0	36.5	36.5	36.4			6.4	6.2	6.2	PN
28069	12/15/96	1551	2900.0	8500.7	8	38	16	32	21.9	21.6	21.2	36.4	36.4	36.6						PN
28070	12/15/96	2230	2930.0	8559.8	99	56	25	56	21.7	21.7	21.5	36.4	36.4	36.4			6.3	6.3	5.7	PN
28071	12/16/96	0159	2929.5	8629.8	9	205	100	201	22.6	22.6	12.5	36.4	36.4	36.4						PN
28072	12/16/96	0628	3000.1	8630.0	9	56	27	55	21.1	21.1	21.1	36.3	36.3	36.3			6.2	6.2	6.0	PN

Table 3. 1996 Summer Shrimp Groundfish Survey species composition list, 380 trawl stations, for those vessels that used either a 40-ft or 20-ft trawl. Species with a total weight of less than 0.2227 kg (0.05 lb) are indicated on the table as 0.0 kg.

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Finfishes					
Stenotomus caprinus	longspine porgy	132837	2019.7	235	62.7
Peprilus burti	gulf butterfish	98879	2037.1	229	61.1
Micropogonias undulatus	Atlantic croaker	52088	1294.7	134	35.7
Chloroscombrus chrysurus	Atlantic bumper	44642	766.8	157	41.9
Prionotus longispinosus	bigeye searobin	17197	160.3	133	35.5
Trachurus lathami	rough scad	8260	154.9	127	33.9
Serranus atrobranchus	blackear bass	7382	96.5	106	28.3
Centropristis philadelphica	rock sea bass	6418	145.3	166	44.3
Etrumeus teres	round herring	5516	25.9	35	9.3
Cynoscion nothus	silver seatrout	5155	235.3	79	21.1
Saurida brasiliensis	largescale lizardfish	4536	29.5	127	33.9
Synodus foetens	inshore lizardfish	4337	459.6	183	48.8
Upeneus parvus	dwarf goatfish	4215	99.2	121	32.3
Leiostomus xanthurus	spot	3706	256.5	74	19.7
Prionotus paralatus	Mexican searobin	3626	47.4	91	24.3
Trichiurus lepturus	Atlantic cutlassfish	3429	103.5	92	24.5
Pristipomoides aquilonaris	wenchman	3336	172.0	110	29.3
Prionotus stearnsi	shortwing searobin	2856	22.8	101	26.9
Anchoa hepsetus	striped anchovy	2855	33.4	50	13.3
Peprilus alepidotus	harvestfish	2352	21.0	51	13.6
Cynoscion arenarius	sand seatrout	2337	184.0	96	25.6
Lagodon rhomboides	pinfish	2279	143.7	90	24.0
Syacium gunteri	shoal flounder	2194	42.9	134	35.7
Opisthonema oglinum	Atlantic thread herring	1720	127.5	22	5.9
Trichopsetta ventralis	sash flounder	1715	36.6	60	16.0
Diplectrum bivittatum	dwarf sand perch	1449	35.9	88	23.5

Table 3. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Lutjanus campechanus	red snapper	1428	126.5	111	29.6
Sphoeroides parvus	least puffer	1405	11.6	70	18.7
Lepophidium brevibarbe	blackedge cusk-eel	1331	39.0	74	19.7
Harengula jaguana	scaled sardine	1267	50.8	64	17.1
Anchoa lyolepis	dusky anchovy	1255	3.0	17	4.5
Halieutichthys aculeatus	pancake batfish	1227	11.0	96	25.6
Larimus fasciatus	banded drum	1121	27.8	33	8.8
Steindachneria argentea	luminous hake	1116	11.2	8	2.1
Bollmannia communis	ragged goby	1018	5.1	27	7.2
Etropus crossotus	fringed flounder	880	8.8	56	14.9
Urophycis cirrata	gulf hake	858	23.6	44	11.7
Urophycis floridana	southern hake	849	67.3	77	20.5
Synodus poeyi	offshore lizardfish	835	7.6	62	16.5
Anchoa mitchilli	bay anchovy	801	1.6	29	7.7
Selene setapinnis	Atlantic moonfish	751	31.5	80	21.3
Prionotus rubio	blackwing searobin	723	16.5	66	17.6
Arius felis	hardhead catfish	630	72.1	49	13.1
Haemulon aurolineatum	tomtate	505	21.2	13	3.5
Porichthys plectrodon	Atlantic midshipman	463	10.4	67	17.9
Symphurus plagiusa	blackcheek tonguefish	330	6.6	52	13.9
Scorpaena calcarata	smoothhead scorpionfish	300	5.1	21	5.6
Cyclopsetta chittendeni	Mexican flounder	289	41.6	55	14.7
Brotula barbata	bearded brotula	285	48.2	46	12.3
Sardinella aurita	Spanish sardine	284	7.2	21	5.6
Antennarius radiosus	singlespot frogfish	271	4.5	36	9.6
Ancylopsetta dilecta	three-eye flounder	251	7.4	42	11.2
Hildebrandia flava	yellow conger	244	20.8	26	6.9
Cynoscion spp.	seatrouts	235	1.9	10	2.7
Mullus auratus	red goatfish	226	18.0	22	5.9

Table 3. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Eucinostomus gula	silver jenny	225	9.3	23	6.1
Hoplunnis macrurus	freckled pike-conger	224	3.4	37	9.9
Brevoortia patronus	gulf menhaden	218	13.0	28	7.5
Caulolatilus intermedius	anchor tilefish	206	9.0	34	9.1
Menticirrhus americanus	southern kingfish	191	9.8	25	6.7
Anchoa nasuta	longnose anchovy	189	0.5	11	2.9
Lagocephalus laevigatus	smooth puffer	185	6.8	41	10.9
Stellifer lanceolatus	star drum	182	3.0	23	6.1
Pontinus longispinis	longspine scorpionfish	172	3.1	13	3.5
Rhomboplites aurorubens	vermilion snapper	172	16.3	16	4.3
Bagre marinus	gafftopsail catfish	168	1.0	3	0.8
Lutjanus synagris	lane snapper	162	21.9	29	7.7
Equetus umbrosus	cubbyu	152	8.0	21	5.6
Engyophrys senta	spiny flounder	151	1.0	20	5.3
Prionotus tribulus	bighead searobin	150	4.8	22	5.9
Prionotus alatus	spiny searobin	141	1.0	11	2.9
Bellator militaris	horned searobin	135	1.2	10	2.7
Syacium papillosum	dusky flounder	134	7.5	14	3.7
Ancylopsetta quadrocellata	ocellated flounder	134	12.9	38	10.1
Bairdiella chrysoura	silver perch	126	5.5	5	1.3
Gymnachirus texae	fringed sole	104	1.4	18	4.8
Chaetodipterus faber	Atlantic spadefish	103	4.2	13	3.5
Lepophidium jeannae	mottled cusk-eel	102	2.8	6	1.6
Rhizoprionodon terraenovae	Atlantic sharpnose shark	100	33.0	26	6.9
Monacanthus hispidus	planehead filefish	100	1.4	17	4.5
Etropus cyclosquamus	shelf flounder	98	0.6	10	2.7
Syacium spp.	lefteye flounders	90	1.5	12	3.2
Raja texana	roundel skate	86	21.8	32	8.5
Sphoeroides dorsalis	marbled puffer	86	1.4	18	4.8

Table 3. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Peristedion gracile	slender searobin	83	1.2	5	1.3
Kathetostoma albigutta	lancer stargazer	82	4.8	24	6.4
Scomberomorus maculatus	Spanish mackerel	78	15.4	12	3.2
Balistes capriscus	gray triggerfish	70	21.0	16	4.3
Ogcocephalus radiatus	polka-dot batfish	65	2.7	15	4.0
Polydactylus octonemus	Atlantic threadfin	64	2.8	14	3.7
Selar crumenophthalmus	bigeye scad	64	3.7	15	4.0
Synagrops bellus	blackmouth bass	61	0.4	4	1.1
Decapterus punctatus	round scad	60	3.7	9	2.4
Ophidion welshi	crested cusk-eel	59	1.9	10	2.7
Orthopristis chrysoptera	pigfish	53	3.6	6	1.6
Citharichthys spilopterus	bay whiff	52	1.0	18	4.8
Eucinostomus argenteus	spotfin mojarra	51	3.0	8	2.1
Sphyraena guachancho	guaguanche	50	7.0	21	5.6
Symphurus diomedianus	spottedfin tonguefish	47	2.1	11	2.9
Ariomma bondi	silver-rag	45	0.6	7	1.9
Citharichthys macrops	spotted whiff	44	0.4	7	1.9
Prionotus roseus	bluespotted searobin	42	1.6	6	1.6
Paralichthys lethostigma	southern flounder	37	13.7	15	4.0
Neomerinthe hemingwayi	spinycheek scorpionfish	36	1.6	5	1.3
Gymnothorax nigromarginatus	blackedge moray	34	5.0	10	2.7
Neobythites gillii	cusk-eel	33	0.1	7	1.9
Ogcocephalus spp.	batfishes	33	2.0	11	2.9
Decodon puellaris	red hogfish	31	1.9	6	1.6
Centropristis ocyura	bank sea bass	28	2.0	3	0.8
Trachinocephalus myops	snakefish	26	1.0	6	1.6
Mustelus canis	smooth dogfish	25	34.6	13	3.5
Prionotus scitulus	leopard searobin	25	0.7	8	2.1
Citharichthys cornutus	horned whiff	25	0.0	10	2.7

Table 3. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Gobionellus oceanicus	highfin goby	22	0.0	6	1.6
Alosa chrysochloris	skipjack herring	20	1.5	1	0.3
Bregmaceros atlanticus	antenna codlet	20	0.0	6	1.6
Anchoviella perfasciata	flat anchovy	19	0.1	1	0.3
Diplectrum formosum	sand perch	18	1.5	5	1.3
Scomber japonicus	chub mackerel	18	0.7	6	1.6
Sphoeroides spengleri	bandtail puffer	18	0.5	4	1.1
Hemicaranx amblyrhynchus	bluntnose jack	15	0.0	2	0.5
Selene vomer	lookdown	15	1.1	3	0.8
Bembrops gobioides	goby flathead	15	0.2	3	0.8
Ophidion holbrooki	bank cusk-eel	15	1.4	4	1.1
Prionotus ophryas	bandtail searobin	14	0.3	3	0.8
Priacanthus arenatus	bigeye	14	2.5	12	3.2
Scomberomorus cavalla	king mackerel	13	4.8	6	1.6
Squatina dumeril	Atlantic angel shark	12	30.0	7	1.9
Etropus rimosus	gray flounder	12	0.2	1	0.3
Calamus leucosteus	whitebone porgy	11	0.5	1	0.3
Serranus phoebe	tattler	10	0.1	4	1.1
Synagrops spinosus	keelcheek bass	10	0.2	2	0.5
Chilomycterus schoepfi	striped burrfish	10	2.0	9	2.4
Urophycis regia	spotted hake	9	0.4	2	0.5
Bathyanthias mexicanus	yellowtail bass	9	0.4	3	0.8
Apogon pseudomaculatus	twospot cardinalfish	9	1.3	2	0.5
Equetus acuminatus	high-hat	9	0.5	4	1.1
Calamus calamus	saucereye porgy	9	4.1	2	0.5
Gymnothorax saxicola	honeycomb moray	8	1.6	3	0.8
Pagrus pagrus	red porgy	8	1.0	4	1.1
Monolene sessilicauda	deepwater flounder	8	1.5	1	0.3
Achirus lineatus	lined sole	8	0.1	2	0.5

Table 3. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Ophichthus gomesi	shrimp eel	7	1.5	4	1.1
Trinectes maculatus	hogchoker	7	0.0	4	1.1
Symphurus civitatus	offshore tonguefish	7	0.1	3	0.8
Opsanus beta	gulf toadfish	7	0.6	2	0.5
Serraniculus pumilio	pygmy sea bass	6	0.0	4	1.1
Apogon aurolineatus	bridle cardinalfish	6	0.1	1	0.3
Astroscopus y-graecum	southern stargazer	6	0.2	3	0.8
Sphyrna tiburo	bonnethead	5	10.5	3	0.8
Raja olseni	spreadfin skate	5	1.4	2	0.5
Hippocampus erectus	lined seahorse	5	0.0	2	0.5
Epinephelus flavolimbatus	yellowedge grouper	5	0.3	5	1.3
Rypticus saponaceus	greater soapfish	5	0.1	2	0.5
Caranx crysos	blue runner	5	1.6	4	1.1
Bothus robinsi	twospot flounder	5	0.1	2	0.5
Paralichthys squamilentus	broad flounder	5	2.2	2	0.5
Aluterus schoepfi	orange filefish	5	0.0	5	1.3
Ophichthus rex	king snake eel	4	6.5	1	0.3
Hirundichthys rondeleti	blackwing flyingfish	4	0.0	1	0.3
Physiculus fulvus	metallic codling	4	0.0	1	0.3
Centropristis striata	black sea bass	4	0.1	1	0.3
Hemanthias vivanus	red barbier	4	0.2	2	0.5
Rypticus maculatus	whitespotted soapfish	4	0.5	2	0.5
Gobiosoma oceanops	neon goby	4	0.0	1	0.3
Antennarius striatus	striated frogfish	4	0.3	1	0.3
Ogcocephalus nasutus	shortnose batfish	4	1.5	1	0.3
Sphyrna lewini	scalloped hammerhead	3	27.3	3	0.8
Scorpaenidae	scorpionfishes	3	0.1	1	0.3
Lopholatilus chamaeleonticeps	tilefish	3	0.0	1	0.3
Trachinotus carolinus	Florida pompano	3	0.3	2	0.5

Table 3. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Pogonias cromis	black drum	3	0.4	2	0.5
Foetorepus agassizi	spotfin dragonet	3	0.0	2	0.5
Ophidion marginatum	striped cusk-eel	3	0.0	1	0.3
Carcharhinus acronotus	blacknose shark	2	0.9	1	0.3
Dasyatis say	bluntnose stingray	2	0.5	2	0.5
Rhinoptera bonasus	cownose ray	2	16.1	2	0.5
Narcine brasiliensis	lesser electric ray	2	0.4	1	0.3
Dorosoma petenense	threadfin shad	2	0.1	2	0.5
Gymnothorax ocellatus	ocellated moray	2	0.2	1	0.3
Gymnothorax kolpos	blacktail moray	2	0.4	1	0.3
Hyporhamphus unifasciatus	halfbeak	2	0.0	1	0.3
Seriola dumerili	greater amberjack	2	0.2	2	0.5
Epinnula americana	snake mackerel	2	0.2	1	0.3
Paralichthys albigutta	gulf flounder	2	0.0	2	0.5
Lactophrys quadricornis	scrawled cowfish	2	0.3	2	0.5
Lophius gastrophysus	blackfin goosefish	2	0.1	2	0.5
Carcharhinus limbatus	blacktip shark	1	601.3	1	0.3
Carcharhinus obscurus	dusky shark	1	1.3	1	0.3
Mustelus norrisi	Florida smoothhound	1	1.5	1	0.3
Dasyatis americana	southern stingray	1	70.1	1	0.3
Synodus intermedius	sand diver	1	0.1	1	0.3
Echiophis intertinctus	spotted spoon-nose eel	1	0.3	1	0.3
Ophichthus spp.	snake eels	1	0.0	1	0.3
Fistularia petimba	red cornetfish	1	0.3	1	0.3
Scorpaena dispar	hunchback scorpionfish	1	0.2	1	0.3
Echeneis naucrates	sharksucker	1	0.6	1	0.3
Remora remora	remora	1	0.1	1	0.3
Rachycentron canadum	cobia	1	15.0	1	0.3
Oligoplites saurus	leatherjack	1	0.1	1	0.3

Table 3. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Conodon nobilis	barred grunt	1	0.0	1	0.3
Equetus wamotoi	blackbar drum	1	0.0	1	0.3
Menticirrhus littoralis	gulf kingfish	1	0.0	1	0.3
Sciaenops ocellatus	red drum	1	4.0	1	0.3
Calamus arctifrons	grass porgy	1	0.1	1	0.3
Chaetodon sedentarius	reef butterflyfish	1	0.1	1	0.3
Chromis enchrysurus	yellowtail reeffish	1	0.0	1	0.3
Bembrops anatirostris	duckbill flathead	1	0.1	1	0.3
Dicrolene intronigra	cusk-eel	1	0.2	1	0.3
Euthynnus alletteratus	little tunny	1	0.1	1	0.3
Citharichthys arenaceus	sand whiff	1	0.0	1	0.3
Cyclopsetta fimbriata	spotfin flounder	1	0.3	1	0.3
Syacium micrurum	channel flounder	1	0.0	1	0.3
Gymnachirus melas	naked sole	1	0.0	1	0.3
Xanthichthys ringens	sargassum triggerfish	1	0.0	1	0.3
Aluterus monoceros	unicorn filefish	1	0.7	1	0.3
<u>Crustaceans</u>					
Trachypenaeus similis	roughback shrimp	35623	163.0	126	33.6
Portunus spinicarpus	longspine swimming crab	28197	147.5	121	32.3
Penaeus aztecus	brown shrimp	19140	271.6	255	68.0
Sicyonia brevirostris	brown rock shrimp	18031	195.5	120	32.0
Portunus gibbesii	irridescent swimming crab	8847	38.7	139	37.1
Squilla empusa	mantis shrimp	8534	84.5	159	42.4
Callinectes similis	lesser blue crab	8455	90.6	225	60.0
Sicyonia dorsalis	lesser rock shrimp	3643	13.2	98	26.1
Squilla chydaea	mantis shrimp	3069	24.3	96	25.6
Trachypenaeus spp.	roughneck shrimps	2878	7.5	4	1.1

Table 3. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Solenocera vioscai	humpback shrimp	2465	12.2	42	11.2
Parapenaeus politus	deepwater rose shrimp	2331	4.8	22	5.9
Penaeus duorarum	pink shrimp	1536	28.8	80	21.3
Anasimus latus	stilt spider crab	786	5.3	44	11.7
Trachypenaeus constrictus	roughneck shrimp	521	1.8	26	6.9
Portunus spinimanus	blotched swimming crab	412	10.8	51	13.6
Callinectes sapidus	blue crab	323	19.9	44	11.7
Calappa sulcata	yellow box crab	300	42.1	74	19.7
Penaeus setiferus	white shrimp	292	11.4	57	15.2
Solenocera necopina	deepwater humpback shrimp	287	1.1	1	0.3
Raninoides louisianensis	gulf frog crab	268	1.4	16	4.3
Ovalipes floridanus	Florida lady crab	168	1.8	27	7.2
Sicyonia burkenroadi	spiny rock shrimp	130	0.2	16	4.3
Speocarcinus spp.	squareback crabs	88	1.2	7	1.9
Myropsis quinquespinosa	fivespine purse crab	80	0.4	9	2.4
Xiphopenaeus kroyeri	seabob	77	0.3	6	1.6
Libinia emarginata	portly spider crab	67	18.5	23	6.1
Hepatus epheliticus	calico crab	65	2.9	22	5.9
Persephona crinita	pink purse crab	48	0.0	20	5.3
Parthenope granulata	bladetooth elbow crab	45	1.9	19	5.1
Pagurus bullisi	hermit crab	42	0.3	10	2.7
Leiolambrus nitidus	white elbow crab	42	0.1	8	2.1
Persephona mediterranea	mottled purse crab	34	0.3	12	3.2
Porcellana sayana	spotted porcelain crab	32	0.0	6	1.6
Arenaeus cribrarius	speckled swimming crab	31	1.1	11	2.9
Stenocionops spinimanus	prickly spider crab	31	5.6	8	2.1
Pagurus pollicaris	flatclaw hermit crab	25	0.3	15	4.0
Podochela sidneyi	shortfinger neck crab	25	0.1	10	2.7
Munida forceps	squat lobster	24	0.1	4	1.1

Table 3. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Stenorhynchus seticornis	yellowline arrow crab	24	0.1	9	2.4
Dardanus insignis	red brocade hermit	23	0.5	9	2.4
Solenocera spp.	humpback shrimps	21	0.2	1	0.3
Paguristes triangulatus	hermit crab	19	1.4	3	0.8
Plesionika longicauda	pandalid shrimp	16	0.0	2	0.5
Collodes robustus	spider crab	16	0.0	7	1.9
Porcellana sigsbeiana	striped porcelain crab	16	0.0	5	1.3
Scyllarus chacei	chace slipper lobster	15	0.0	3	0.8
Stenocionops furcata	furcate crab	15	3.2	4	1.1
Petrochirus diogenes	giant hermit crab	14	1.5	5	1.3
Parthenope serrata	sawtooth elbow crab	14	0.0	5	1.3
Euphrosynoplax clausa	craggy bathyal crab	13	0.3	6	1.6
Libinia dubia	longnose spider crab	12	0.0	8	2.1
Squilla neglecta	mantis shrimp	10	0.1	2	0.5
Acanthocarpus alexandri	gladiator box crab	10	0.0	2	0.5
Ovalipes stephensoni	coarsehand lady crab	7	0.1	3	0.8
Ethusa microphthalma	broadback Sumo crab	7	0.0	2	0.5
Raninoides loevis	furrowed frog crab	6	0.1	1	0.3
Paguristes lymani	lefthand hermit crab	6	0.0	1	0.3
Stenopus scutellatus	golden coral shrimp	5	0.0	2	0.5
Xanthidae	mud crabs	5	0.0	2	0.5
Nibilia antilocapra	shorthorn spiny crab	5	0.1	2	0.5
Metoporhaphis calcarata	false arrow crab	5	0.0	5	1.3
Goneplacidae	brachyuran crab	5	0.1	2	0.5
Pilumnus gracilipes	hairy crab	4	0.0	1	0.3
Scyllarides nodifer	ridged slipper lobster	4	1.4	3	0.8
Galatheidae	squat lobsters	4	0.0	1	0.3
Calappa flammea	flame box crab	4	0.5	3	0.8
Rhithropanopeus harrisi	Harris mud crab	3	0.0	2	0.5

Table 3. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Heilprinia timessus	turnip spindle	5	0.0	1	0.3
Pitar cordatus	Schwengel's pitar	5	0.0	4	1.1
Beroe ovata	comb jelly	5	0.1	3	0.8
Echinaster serpentarius	starfish	5	0.0	2	0.5
Murex spp.	murexes	4	0.7	3	0.8
Busycon sinistrum	lightning whelk	4	0.1	3	0.8
Astropecten articulatus	plated-margined sea star	4	0.0	4	1.1
Molpadia cubana	sea cucumber	4	0.1	2	0.5
Algae	algae	4	0.0	4	1.1
Distorsio clathrata	Atlantic distorsio	3	0.0	2	0.5
Armina tigrina	tiger armina	3	0.0	1	0.3
Ventricolaria rigida	rigid venus	3	0.1	1	0.3
Ctenophora	comb jellies	3	0.0	1	0.3
Astropecten americanus	starfish	3	0.0	2	0.5
Encope aberrans	sand dollar	3	0.0	2	0.5
Holothuria spp.	sea cucumbers	3	0.0	1	0.3
Molpadia barbouri	sea cucumber	3	0.0	2	0.5
Strombus alatus	Florida fighting conch	2	0.0	1	0.3
Aplysia spp.	sea hares	2	0.2	2	0.5
Noetia ponderosa	ponderous ark	2	0.0	2	0.5
Anthozoa	anthozoans	2	0.0	2	0.5
Annelida	segmented worms	2	0.0	1	0.3
Clypeaster spp.	cake urchins	2	0.3	1	0.3
Clypeaster prostratus	sea biscuit	2	0.3	2	0.5
Architectonica nobilis	common sundial	1	0.0	1	0.3
Conus stimpsoni	yellow cone	1	0.0	1	0.3
Anadara ovalis	blood ark	1	0.0	1	0.3
Chione intapurpurea	lady-in-waiting venus	1	0.0	1	0.3
Chione clenchi	Clench venus	1	0.0	1	0.3

Table 3. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Stomolophus meleagris	many-mouthed sea jelly	1	0.1	1	0.3
Anthenoides piercei	starfish	1	0.0	1	0.3
Schizaster orbignyanus	heart urchin	1	0.0	1	0.3
Asteroporpa annulata	starfish	1	0.0	1	0.3
Ophiothrix angulata	angular brittle star	1	0.0	1	0.3
Stylocidaris affinis	sea urchin	1	0.0	1	0.3
Holothuroidea	sea cucumbers	1	0.0	1	0.3
Holothuriidae	sea cucumbers	1	0.0	1	0.3

Table 4a

Statistical Zone 11

Summary of dominant organisms taken in statistical zone 11 during the 1996 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	24.0	24.00	0.1	0.09	3	476.6	287.40	1.1	0.64	11	259.5	143.32	0.7	0.34	19
Trachypenaeus spp.	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	11	107.2	94.11	0.2	0.19	19
Sicyonia brevirostris	0.0	0.00	0.0	0.00	3	5.6	4.29	0.0	0.03	11	83.9	42.90	0.6	0.36	19
Portunus spinicarpus	0.0	0.00	0.0	0.00	3	0.2	0.23	0.0	0.00	11	64.8	23.32	0.2	0.06	19
Squilla spp.	0.0	0.00	0.0	0.00	3	43.6	37.60	0.4	0.32	11	128.2	74.81	1.1	0.55	19
Parapenaeus politus	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	11	0.7	0.66	0.0	0.00	19
Stenotomus caprinus	6.0	6.00	0.1	0.09	3	673.0	283.31	2.5	0.97	11	1315.0	249.73	10.5	4.77	19
Peprilus burti	143.4	138.31	4.6	4.51	3	768.1	391.75	11.6	6.87	11	309.0	139.83	5.4	2.77	19
Anchoa hepsetus	59.9	48.13	0.4	0.22	3	70.3	35.95	0.6	0.48	11	484.6	472.47	4.7	4.40	19
Serranus atrobranchus	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	11	37.8	20.37	0.3	0.20	19
Micropogonias undulatus	1234.3	79.55	20.6	4.10	3	26.1	25.82	0.4	0.42	11	0.0	0.00	0.0	0.00	19
Centropristis philadelphica	2.0	2.00	0.0	0.00	3	38.2	31.88	0.1	0.09	11	80.2	23.81	0.6	0.17	19
Trachurus lathami	0.0	0.00	0.0	0.00	3	104.5	63.10	0.6	0.28	11	89.6	33.45	1.0	0.52	19
Prionotus longispinosus	7.9	3.95	0.1	0.13	3	86.1	76.08	0.4	0.40	11	64.5	29.96	0.3	0.14	19
Squid	0.0	0.00	0.0	0.00	3	562.4	240.71	5.9	2.17	11	669.4	201.48	10.1	3.19	19

Table 4a (continued)
Statistical Zone 11

Summary of dominant organisms taken in statistical zone 11 during the 1996 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	6.3	5.79	0.0	0.02	9	2.8	2.79	0.0	0.00	2	30.6	30.56	0.1	0.08	6
Trachypenaeus spp.	400.6	304.60	1.1	0.80	9	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	6
Sicyonia brevirostris	213.5	107.30	1.9	1.03	9	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	6
Portunus spinicarpus	341.8	157.82	1.4	0.60	9	60.7	60.70	0.6	0.57	2	39.3	30.53	0.6	0.38	6
Squilla spp.	104.3	54.46	0.9	0.45	9	51.6	51.63	0.6	0.60	2	28.0	13.96	0.3	0.14	6
Parapenaeus politus	34.2	19.57	0.0	0.02	9	34.9	34.88	0.1	0.06	2	353.6	158.77	0.6	0.29	6
Stenotomus caprinus	243.1	120.80	8.6	4.28	9	352.0	35.95	17.4	0.75	2	391.2	193.49	22.2	10.37	6
Peprilus burti	3.1	3.13	0.1	0.06	9	18.0	18.00	1.1	1.09	2	3.8	2.60	0.1	0.06	6
Anchoa hepsetus	0.0	0.00	0.0	0.00	9	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	6
Serranus atrobranchus	133.6	69.94	1.8	0.95	9	96.6	94.58	2.0	1.97	2	224.7	59.45	5.6	1.63	6
Micropogonias undulatus	0.0	0.00	0.0	0.00	9	13.8	8.21	0.9	0.46	2	6.6	3.97	0.6	0.29	6
Centropristis philadelphica	44.0	15.93	0.9	0.50	9	19.7	13.74	2.5	1.87	2	66.8	45.55	8.1	4.50	6
Trachurus lathami	0.0	0.00	0.0	0.00	9	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	6
Prionotus longispinosus	10.8	6.97	0.5	0.33	9	25.8	25.81	3.5	3.49	2	47.8	16.90	5.3	1.53	6
Squid	63.8	32.01	1.4	0.83	9	25.0	25.00	0.2	0.18	2	457.2	287.34	5.8	3.63	6

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 1996 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			Over 40 fm		
Environmental category	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	97.0	48.20	3	36.3	9.90	11	47.1	9.22	19	29.0	7.28	9	92.3	56.80	2	98.7	11.31	6
Total finfish kg	79.6	51.65	3	23.4	9.35	11	30.2	6.79	19	20.4	5.40	9	89.4	55.80	2	88.7	10.67	6
Total crustacean kg	3.6	1.15	3	4.3	1.54	11	4.8	1.43	19	7.1	2.57	9	2.4	1.45	2	3.8	1.44	6
Total others kg	14.7	10.07	3	8.2	2.28	11	11.9	2.89	19	1.4	0.79	9	0.0	0.00	2	6.0	3.86	6
Surface temperature	26.8	0.27	3	28.6	0.52	11	27.9	0.21	20	28.2	0.35	8	28.6	1.26	3	28.2	0.28	7
Midwater temperature	26.3	0.04	3	27.0	0.15	11	24.8	0.40	20	22.6	0.27	8	21.3	1.01	3	20.3	0.38	7
Bottom temperature	26.2	0.05	3	22.6	0.58	11	20.6	0.07	20	20.0	0.12	8	19.1	0.18	3	19.1	0.34	7
Surface salinity	21.6	1.64	3	23.1	0.76	11	25.6	0.97	20	27.8	1.54	8	15.8	2.78	3	25.5	0.97	7
Midwater salinity	26.6	0.66	3	28.8	0.77	11	32.8	0.46	19	35.7	0.14	8	36.1	0.03	3	36.2	0.04	7
Bottom salinity	28.3	0.18	3	33.3	0.69	11	35.1	0.09	19	36.0	0.06	8	36.2	0.05	3	36.3	0.02	7
Surface chlorophyll	0.0	0.00	0	2.6	0.83	8	3.6	2.06	9	4.2	2.33	4	6.7	1.41	2	7.2	0.66	5
Surface fluorescence	1.0	0.00	3	1.0	0.00	11	1.4	0.33	20	1.0	0.06	8	0.7	0.30	3	1.0	0.04	7
Surface oxygen	6.2	0.15	3	6.6	0.24	11	6.4	0.20	20	7.0	0.41	8	9.9	2.75	3	7.9	0.74	7
Midwater oxygen	6.1	0.07	3	5.5	0.24	11	5.7	0.23	20	6.1	0.34	8	6.0	0.95	3	6.3	0.22	7
Bottom oxygen	4.4	0.13	3	4.3	0.24	11	4.3	0.17	20	5.2	0.43	8	4.6	0.06	3	5.0	0.31	7

Table 5a

Statistical Zone 13

Summary of dominant organisms taken in statistical zone 13 during the 1996 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 between 31-40 fm.

	0- 5 FM					6-10 FM					11-20 FM				
SPECIES	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Trachypenaeus similis	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1	1085.3	486.07	5.8	2.44	7
Squilla spp.	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1	491.2	204.78	2.1	0.84	7
Parapenaeus politus	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	7
Penaeus aztecus	15.0	15.00	0.1	0.11	2	0.0	0.00	0.0	0.00	1	301.3	100.21	3.2	1.06	7
Portunus spinicarpus	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	7
Solenocera vioscai	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	7
Prionotus longispinosus	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1	3113.2	1833.05	17.7	10.96	7
Peprilus burti	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1	377.6	354.54	16.4	15.60	7
Centropristis philadelphica	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1	442.6	183.42	2.5	0.82	7
Serranus atrobranchus	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1	26.4	20.86	0.3	0.27	7
Steindachneria argentea	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	7
Trichopsetta ventralis	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1	17.5	14.17	0.2	0.16	7
Bollmannia communis	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1	17.7	11.96	0.1	0.05	7
Cynoscion arenarius	10.0	10.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1	138.2	52.58	7.9	3.96	7
Squid	0.0	0.00	0.0	0.00	2	36.9	0.00	0.3	0.00	1	226.1	137.48	3.5	2.01	7

Table 5a (continued)

Statistical Zone 13

Summary of dominant organisms taken in statistical zone 13 during the 1996 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 between 31-40 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
Trachypenaeus similis	180.1	151.08	0.7	0.59	2	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	3
Squilla spp.	274.7	230.69	2.3	2.07	2	0.0	0.00	0.0	0.00	0	284.4	212.52	3.5	2.51	3
Parapenaeus politus	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	0	1612.5	1098.53	3.6	2.24	3
Penaeus aztecus	79.5	56.46	1.2	0.72	2	0.0	0.00	0.0	0.00	0	11.5	7.44	0.5	0.35	3
Portunus spinicarpus	31.2	31.15	0.1	0.08	2	0.0	0.00	0.0	0.00	0	661.5	330.30	5.0	2.40	3
Solenocera vioscai	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	0	738.0	378.63	4.5	2.28	3
Prionotus longispinosus	52.5	15.54	0.7	0.51	2	0.0	0.00	0.0	0.00	0	57.7	43.13	2.9	1.82	3
Peprilus burti	2447.5	2447.50	98.1	98.09	2	0.0	0.00	0.0	0.00	0	18.2	11.56	0.7	0.49	3
Centropristis philadelphica	87.1	87.12	3.2	3.20	2	0.0	0.00	0.0	0.00	0	28.7	16.90	3.3	1.86	3
Serranus atrobranchus	56.0	55.96	0.6	0.63	2	0.0	0.00	0.0	0.00	0	553.8	293.31	12.0	6.67	3
Steindachneria argentea	43.8	43.85	0.3	0.31	2	0.0	0.00	0.0	0.00	0	478.7	405.64	9.2	8.61	3
Trichopsetta ventralis	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	0	416.4	179.15	7.0	3.16	3
Bollmannia communis	193.3	193.27	1.0	1.00	2	0.0	0.00	0.0	0.00	0	5.0	5.00	0.0	0.05	3
Cynoscion arenarius	47.3	40.35	6.3	5.56	2	0.0	0.00	0.0	0.00	0	18.0	18.00	6.2	6.18	3
Squid	397.4	391.62	8.2	7.89	2	0.0	0.00	0.0	0.00	0	921.4	479.61	10.8	5.43	3

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 1996 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 trawls samples were taken in depths between 31-40 fm.

	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm		
Environmental category	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	29.0	6.31	2	0.0	0.00	1	78.7	24.19	7	148.5	86.07	2	0.0	0.00	0	128.4	49.57	3
Total finfish kg	29.0	6.31	2	0.0	0.00	1	59.4	21.27	7	131.8	80.93	2	0.0	0.00	0	81.9	38.09	3
Total crustacean kg	0.0	0.00	2	0.0	0.00	1	15.4	4.45	7	8.2	2.78	2	0.0	0.00	0	33.5	15.91	3
Total others kg	0.0	0.00	2	0.0	0.00	1	3.5	1.95	7	8.5	7.43	2	0.0	0.00	0	12.8	5.54	3
Surface temperature	31.2	0.17	3	30.5	0.00	1	30.5	0.16	7	30.5	0.21	2	31.0	0.00	1	31.0	0.22	2
Midwater temperature	30.8	0.20	3	29.1	0.00	1	27.3	0.44	7	23.5	0.72	2	21.8	0.00	1	20.5	0.77	2
Bottom temperature	27.8	1.52	3	25.4	0.00	1	22.6	0.83	7	19.4	0.14	2	18.4	0.00	1	17.0	1.28	2
Surface salinity	14.5	2.07	3	20.6	0.00	1	20.4	0.55	7	21.6	3.24	2	24.3	0.00	1	23.5	2.12	2
Midwater salinity	17.7	3.43	3	34.0	0.00	1	35.7	0.05	7	36.1	0.02	2	36.0	0.00	1	36.2	0.01	2
Bottom salinity	22.7	6.28	3	35.7	0.00	1	36.1	0.03	7	36.2	0.01	2	36.3	0.00	1	36.2	0.15	2
Surface chlorophyll	17.6	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface fluorescence	7.0	3.00	3	5.5	0.00	1	5.8	0.72	7	6.1	3.92	2	2.4	0.00	1	3.3	0.99	2
Surface oxygen	7.1	1.84	3	8.3	0.00	1	7.9	0.36	7	7.7	0.35	2	6.8	0.00	1	7.7	0.15	2
Midwater oxygen	6.0	2.18	3	3.2	0.00	1	4.7	0.69	7	6.9	0.40	2	5.7	0.00	1	6.7	1.20	2
Bottom oxygen	3.2	1.94	3	0.4	0.00	1	2.3	0.67	7	2.5	1.20	2	3.7	0.00	1	3.6	0.60	2

Table 6a

Statistical Zone 14

Summary of dominant organisms taken in statistical zone 14 during the 1996 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
Trachypenaeus similis	0.0	0.00	0.0	0.00	3	1.8	1.80	0.0	0.01	10	1437.7	503.17	5.8	2.07	22
Portunus gibbesii	0.0	0.00	0.0	0.00	3	5.6	3.92	0.0	0.01	10	615.9	296.98	2.2	1.02	22
Squilla spp.	0.0	0.00	0.0	0.00	3	25.9	18.56	0.1	0.06	10	285.4	80.52	2.9	0.91	22
Penaeus aztecus	20.0	20.00	0.2	0.18	3	1.2	1.20	0.0	0.02	10	129.8	62.87	1.7	0.73	22
Callinectes similis	86.0	83.02	0.3	0.27	3	2.0	1.19	0.0	0.01	10	98.0	32.04	1.2	0.38	22
Sicyonia dorsalis	0.0	0.00	0.0	0.00	3	0.4	0.40	0.0	0.00	10	58.4	38.58	0.2	0.10	22
Stenotomus caprinus	0.0	0.00	0.0	0.00	3	143.8	142.03	0.9	0.88	10	1736.1	613.54	12.2	3.84	22
Peprilus burti	0.0	0.00	0.0	0.00	3	0.6	0.43	0.0	0.01	10	456.7	404.68	15.6	13.79	22
Prionotus longispinosus	13.8	11.20	0.1	0.09	3	15.6	10.58	0.1	0.05	10	906.9	281.83	7.5	2.82	22
Centropristis philadelphica	0.0	0.00	0.0	0.00	3	32.6	31.72	0.2	0.18	10	142.5	42.24	1.5	0.46	22
Micropogonias undulatus	2.0	2.00	0.1	0.09	3	2.1	1.85	0.1	0.12	10	113.0	62.02	6.8	3.57	22
Sphoeroides parvus	0.0	0.00	0.0	0.00	3	0.8	0.80	0.0	0.00	10	111.7	85.88	0.8	0.64	22
Trachurus lathami	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	10	31.8	16.02	0.5	0.26	22
Trichiurus lepturus	44.0	44.00	2.1	2.09	3	0.0	0.00	0.0	0.00	10	51.1	21.29	0.6	0.30	22
Squid	266.0	200.99	4.4	3.22	3	30.6	20.54	0.4	0.32	10	128.5	57.46	1.7	0.63	22

Table 6a (continued)
Statistical Zone 14

Summary of dominant organisms taken in statistical zone 14 during the 1996 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
Trachypenaeus similis	108.0	36.00	0.4	0.30	2	0.0	0.00	0.0	0.00	1	0.0	0.00	0.00	0	0
Portunus gibbesii	97.0	87.00	0.5	0.43	2	0.0	0.00	0.0	0.00	1	0.0	0.00	0.00	0	0
Squilla spp.	72.5	31.50	1.2	0.82	2	0.0	0.00	0.0	0.00	1	0.0	0.00	0.00	0	0
Penaeus aztecus	323.5	56.50	6.3	1.02	2	2.7	0.00	0.1	0.00	1	0.0	0.00	0.00	0	0
Callinectes similis	25.0	15.00	0.6	0.50	2	2.7	0.00	0.0	0.00	1	0.0	0.00	0.00	0	0
Sicyonia dorsalis	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1	0.0	0.00	0.00	0	0
Stenotomus caprinus	860.5	619.50	12.4	9.27	2	81.8	0.00	6.3	0.00	1	0.0	0.00	0.00	0	0
Peprilus burti	3785.0	159.00	114.3	12.48	2	840.0	0.00	42.1	0.00	1	0.0	0.00	0.00	0	0
Prionotus longispinosus	13.0	13.00	0.4	0.39	2	16.4	0.00	1.9	0.00	1	0.0	0.00	0.00	0	0
Centropristis philadelphica	72.5	31.50	2.8	0.25	2	2.7	0.00	0.2	0.00	1	0.0	0.00	0.00	0	0
Micropogonias undulatus	51.5	20.50	3.3	1.25	2	0.0	0.00	0.0	0.00	1	0.0	0.00	0.00	0	0
Sphoeroides parvus	2.5	2.50	0.1	0.07	2	0.0	0.00	0.0	0.00	1	0.0	0.00	0.00	0	0
Trachurus lathami	328.5	123.50	6.3	2.43	2	0.0	0.00	0.0	0.00	1	0.0	0.00	0.00	0	0
Trichiurus lepturus	73.0	11.00	5.0	1.16	2	0.0	0.00	0.0	0.00	1	0.0	0.00	0.00	0	0
Squid	400.5	103.50	6.4	0.25	2	921.8	0.00	12.0	0.00	1	0.0	0.00	0.00	0	0

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 1996 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			Over 40 fm		
Environmental category	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	31.7	15.11	3	3.8	1.94	10	77.1	20.65	22	185.9	32.27	2	71.9	0.00	1	0.0	0.00	0
Total finfish kg	25.3	13.88	3	3.3	1.66	10	60.1	18.56	22	167.7	28.64	2	58.3	0.00	1	0.0	0.00	0
Total crustacean kg	0.9	0.91	3	0.2	0.11	10	15.3	4.40	22	11.1	3.41	2	0.0	0.00	1	0.0	0.00	0
Total others kg	5.5	4.17	3	0.4	0.36	10	1.8	0.60	22	6.1	0.68	2	13.6	0.00	1	0.0	0.00	0
Surface temperature	30.4	0.43	5	30.2	0.13	11	29.9	0.12	22	29.9	0.26	3	0.0	0.00	0	30.4	0.00	1
Midwater temperature	29.6	0.35	5	28.9	0.39	11	27.8	0.17	22	25.8	0.45	3	0.0	0.00	0	22.0	0.00	1
Bottom temperature	28.8	0.57	5	26.1	0.45	11	23.1	0.29	22	20.7	0.46	3	0.0	0.00	0	18.3	0.00	1
Surface salinity	17.8	1.39	5	21.1	1.09	11	24.3	0.94	22	23.2	2.86	3	0.0	0.00	0	30.8	0.00	1
Midwater salinity	25.2	1.15	5	28.2	1.70	11	35.1	0.10	22	35.8	0.02	3	0.0	0.00	0	30.1	0.00	1
Bottom salinity	29.4	1.74	5	34.2	0.45	11	36.0	0.04	22	36.1	0.02	3	0.0	0.00	0	36.2	0.00	1
Surface chlorophyll	11.2	2.56	4	16.2	5.02	8	5.9	1.48	15	2.1	0.00	1	0.0	0.00	0	0.0	0.00	0
Surface fluorescence	7.7	0.05	5	7.2	0.34	11	6.9	0.31	22	6.9	1.09	3	0.0	0.00	0	1.3	0.00	1
Surface oxygen	6.2	0.67	5	8.1	0.56	11	7.0	0.19	22	7.5	0.70	3	0.0	0.00	0	7.2	0.00	1
Midwater oxygen	4.8	0.90	5	4.9	0.78	11	5.3	0.38	22	6.3	0.72	3	0.0	0.00	0	8.3	0.00	1
Bottom oxygen	4.0	1.13	5	1.1	0.60	11	2.0	0.29	22	2.9	0.41	3	0.0	0.00	0	5.1	0.00	1

Table 7a

Statistical Zone 15

Summary of dominant organisms taken in statistical zone 15 during the 1996 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	4	0.0	0.00	0.0	0.00	5	1135.5	1066.26	5.9	5.30	5
Squilla spp.	0.4	0.43	0.0	0.00	4	0.9	0.59	0.0	0.00	5	181.9	172.40	1.7	1.59	5
Portunus gibbesii	0.0	0.00	0.0	0.00	4	1.4	0.92	0.0	0.00	5	414.0	379.49	1.5	1.32	5
Sicyonia dorsalis	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	5	350.3	286.68	1.1	0.77	5
Callinectes similis	5.9	3.71	0.0	0.00	4	0.4	0.40	0.0	0.00	5	120.6	95.27	1.4	1.05	5
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	5
Micropogonias undulatus	186.0	186.00	3.4	3.35	4	0.0	0.00	0.0	0.00	5	4689.3	4643.50	122.4	120.94	5
Stenotomus caprinus	3.0	3.00	0.0	0.02	4	0.0	0.00	0.0	0.00	5	1797.5	521.17	11.2	3.90	5
Peprilus burti	0.5	0.50	0.0	0.00	4	0.0	0.00	0.0	0.00	5	1231.7	744.61	38.1	23.80	5
Serranus atrobranchus	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	5	104.4	93.44	0.4	0.29	5
Prionotus paralatus	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	5	13.3	10.34	0.1	0.05	5
Centropristis philadelphica	0.0	0.00	0.0	0.00	4	0.5	0.55	0.0	0.00	5	19.8	18.65	0.2	0.16	5
Cynoscion nothus	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	5	350.0	348.81	23.6	23.42	5
Trichiurus lepturus	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	5	327.4	217.41	7.7	4.59	5
Squid	18.0	9.90	0.3	0.18	4	0.0	0.00	0.0	0.00	5	261.1	143.42	4.4	2.46	5

Table 7a (continued)

Statistical Zone 15

Summary of dominant organisms taken in statistical zone 15 during the 1996 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	666.3	435.74	4.4	2.59	4	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	3
Squilla spp.	435.2	209.29	4.4	2.32	4	27.2	17.41	0.3	0.25	6	4.0	4.00	0.0	0.02	3
Portunus gibbesii	262.3	109.88	1.4	0.61	4	10.5	7.17	0.0	0.04	6	0.0	0.00	0.0	0.00	3
Sicyonia dorsalis	217.1	160.38	1.2	0.98	4	0.7	0.67	0.0	0.01	6	0.0	0.00	0.0	0.00	3
Callinectes similis	276.1	109.38	3.7	1.32	4	10.6	6.51	0.2	0.09	6	0.0	0.00	0.0	0.00	3
Portunus spinicarpus	13.2	8.22	0.0	0.03	4	193.0	115.99	1.9	1.07	6	23.7	16.40	0.1	0.08	3
Micropogonias undulatus	1.4	1.36	0.1	0.08	4	0.5	0.50	0.0	0.03	6	1.2	1.20	0.2	0.20	3
Stenotomus caprinus	2007.8	1003.91	6.9	1.76	4	377.7	71.77	11.0	2.32	6	284.9	15.67	14.5	0.58	3
Peprilus burti	775.0	775.00	24.9	24.86	4	143.0	106.33	5.7	3.79	6	329.7	293.75	17.4	14.80	3
Serranus atrobranchus	402.7	270.94	2.1	1.00	4	164.8	77.83	2.0	0.93	6	62.7	16.81	1.1	0.23	3
Prionotus paralatus	472.4	290.53	2.5	1.06	4	26.8	8.23	0.7	0.37	6	97.1	84.08	3.9	3.42	3
Centropristis philadelphica	314.6	128.26	3.8	1.79	4	66.4	19.71	3.8	1.56	6	18.2	10.70	1.7	0.84	3
Cynoscion nothus	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	3
Trichiurus lepturus	17.8	11.65	0.5	0.22	4	6.8	2.38	0.5	0.16	6	2.3	2.33	0.2	0.17	3
Squid	128.6	70.53	3.1	1.59	4	395.8	175.16	6.3	3.05	6	640.0	330.05	8.2	4.45	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 1996 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			Over 40 fm		
Environmental category	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	11.7	6.52	4	6.6	5.76	5	260.4	186.63	5	79.7	16.49	4	56.1	3.69	6	82.1	15.70	3
Total finfish kg	11.5	6.40	4	6.6	5.76	5	242.8	190.26	5	56.5	20.43	4	42.8	4.71	6	71.9	14.20	3
Total crustacean kg	0.0	0.00	4	0.0	0.00	5	13.2	11.33	5	19.8	6.50	4	5.5	1.93	6	0.7	0.49	3
Total others kg	0.2	0.23	4	0.0	0.00	5	4.6	2.45	5	3.0	1.48	4	8.3	2.64	6	10.3	4.50	3
Surface temperature	31.3	0.55	7	30.6	0.19	5	30.9	0.45	5	30.9	0.43	3	30.9	0.39	4	30.4	0.14	2
Midwater temperature	29.6	0.40	7	28.3	0.46	5	26.5	0.58	5	25.1	1.50	3	22.7	0.28	4	21.5	1.02	2
Bottom temperature	29.1	0.52	7	26.2	0.26	5	22.7	0.80	5	20.2	0.17	3	18.5	0.16	4	17.2	0.08	2
Surface salinity	12.9	2.31	7	18.3	2.16	5	24.0	1.18	5	24.5	1.26	3	28.8	0.34	4	29.0	3.10	2
Midwater salinity	25.1	2.37	7	30.7	1.48	5	34.0	0.63	5	35.7	0.20	3	36.0	0.06	4	36.0	0.13	2
Bottom salinity	28.2	2.29	7	35.7	0.07	5	35.4	0.75	5	36.1	0.00	3	36.1	0.01	4	36.2	0.01	2
Surface chlorophyll	22.0	6.43	6	0.0	0.00	0	1.1	0.00	1	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface fluorescence	5.0	0.66	7	5.5	1.09	5	3.9	0.80	5	2.8	0.45	3	1.1	0.07	4	1.3	0.64	2
Surface oxygen	9.9	1.26	7	7.0	0.58	5	7.4	0.39	5	7.1	0.29	3	6.3	0.64	4	7.1	0.35	2
Midwater oxygen	3.7	0.59	7	2.2	0.93	5	4.7	0.56	5	6.0	1.26	3	8.1	0.26	4	8.1	0.05	2
Bottom oxygen	2.7	0.68	7	0.3	0.19	5	2.4	0.69	5	5.0	0.35	3	4.7	0.37	4	4.1	0.05	2

Table 8a

Statistical Zone 16

Summary of dominant organisms taken in statistical zone 16 during the 1996 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
Sicyonia brevirostris	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	4	267.6	159.27	2.1	1.27	13
Portunus spinicarpus	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	13
Trachypenaeus similis	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	4	395.8	185.10	2.0	0.87	13
Penaeus aztecus	276.8	273.31	1.5	1.55	5	0.0	0.00	0.0	0.00	4	193.4	63.48	2.2	0.60	13
Callinectes similis	103.1	95.22	0.5	0.45	5	0.5	0.50	0.0	0.00	4	117.9	50.71	1.5	0.55	13
Squilla spp.	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	4	104.2	32.02	0.9	0.28	13
Stenotomus caprinus	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	4	3326.3	966.40	31.6	7.99	13
Peprilus burti	3.5	2.73	0.1	0.06	5	2.8	2.30	0.1	0.05	4	980.3	572.80	23.2	11.95	13
Micropogonias undulatus	1917.4	1819.64	28.0	26.61	5	0.0	0.00	0.0	0.00	4	646.9	397.51	14.8	7.92	13
Chloroscombrus chrysurus	574.4	317.79	1.1	0.66	5	7.2	2.65	0.1	0.04	4	175.8	78.41	3.8	1.81	13
Peprilus alepidotus	602.8	507.50	4.2	3.47	5	6.3	4.02	0.1	0.03	4	92.0	39.96	0.6	0.20	13
Prionotus longispinosus	0.0	0.00	0.0	0.00	5	0.3	0.25	0.0	0.01	4	273.8	143.51	1.9	0.65	13
Synodus foetens	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	4	39.5	16.77	4.3	2.02	13
Syacium gunteri	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	4	71.6	36.06	1.6	0.72	13
Squid	1.4	1.41	0.0	0.00	5	0.6	0.60	0.0	0.00	4	345.0	130.40	5.1	1.60	13

Table 8a (continued)
Statistical Zone 16

Summary of dominant organisms taken in statistical zone 16 during the 1996 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
Sicyonia brevirostris	33.4	9.99	0.4	0.15	6	688.6	323.66	11.0	5.20	4	0.0	0.00	0.0	0.00	2
Portunus spinicarpus	33.8	18.88	0.2	0.12	6	733.4	284.15	5.9	2.28	4	0.0	0.00	0.0	0.00	2
Trachypenaeus similis	2.1	2.07	0.0	0.02	6	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	2
Penaeus aztecus	9.3	0.91	0.3	0.05	6	32.6	11.78	1.8	0.65	4	8.9	4.86	0.9	0.41	2
Callinectes similis	195.5	176.57	3.1	2.83	6	6.7	5.74	0.1	0.13	4	0.0	0.00	0.0	0.00	2
Squilla spp.	10.4	7.93	0.1	0.06	6	57.7	20.69	0.6	0.29	4	0.0	0.00	0.0	0.00	2
Stenotomus caprinus	479.6	130.87	25.0	9.82	6	281.9	65.86	14.4	3.86	4	311.2	40.21	15.5	2.56	2
Peprilus burti	205.9	52.07	9.0	2.13	6	2.8	0.98	0.3	0.11	4	158.1	147.86	15.0	14.33	2
Micropogonias undulatus	12.6	4.98	0.8	0.32	6	1.3	0.95	0.2	0.18	4	6.5	6.50	1.1	1.11	2
Chloroscombrus chrysurus	2.4	2.03	0.1	0.11	6	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	2
Peprilus alepidotus	2.2	2.17	0.0	0.01	6	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	2
Prionotus longispinosus	10.3	10.34	0.3	0.25	6	0.5	0.54	0.1	0.07	4	4.1	1.07	1.1	0.84	2
Synodus foetens	58.9	5.16	7.1	0.60	6	37.4	4.57	5.5	0.71	4	42.7	20.71	6.2	3.07	2
Syacium gunteri	9.2	7.73	0.1	0.08	6	0.8	0.78	0.0	0.01	4	0.0	0.00	0.0	0.00	2
Squid	338.8	58.04	4.8	0.78	6	47.0	42.94	0.7	0.56	4	503.0	97.00	4.9	0.78	2

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 1996 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			Over 40 fm		
Environmental category	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	46.1	32.80	5	0.8	0.65	4	112.1	27.20	13	78.7	18.45	6	57.6	14.15	4	65.7	14.29	2
Total finfish kg	41.2	28.35	5	0.4	0.22	4	93.6	24.63	13	68.5	15.91	6	35.2	7.36	4	57.6	12.40	2
Total crustacean kg	5.0	4.44	5	0.0	0.00	4	12.6	3.78	13	5.3	3.65	6	20.2	7.75	4	1.7	0.13	2
Total others kg	0.0	0.00	5	0.5	0.45	4	6.0	1.56	13	5.0	0.81	6	2.3	0.81	4	6.7	1.98	2
Surface temperature	30.6	0.30	5	30.5	0.04	4	30.1	0.15	12	30.0	0.10	5	30.4	0.20	3	30.2	0.15	3
Midwater temperature	30.2	0.26	5	30.0	0.20	4	28.6	0.39	12	26.7	0.71	5	23.7	0.98	3	22.1	0.18	3
Bottom temperature	28.8	0.66	5	25.9	0.34	4	24.4	0.27	12	21.2	1.03	5	18.4	0.36	3	17.6	0.26	3
Surface salinity	19.9	1.02	5	24.7	0.94	4	27.5	0.50	12	29.1	0.80	5	31.0	1.04	3	31.4	0.33	3
Midwater salinity	20.9	1.32	5	28.2	0.61	4	32.0	0.66	12	35.4	0.13	5	35.7	0.12	3	36.0	0.09	3
Bottom salinity	26.6	3.08	5	34.9	0.73	4	35.6	0.16	12	36.1	0.01	5	36.2	0.02	3	36.3	0.11	3
Surface chlorophyll	15.0	1.88	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface fluorescence	5.4	1.59	5	3.6	1.42	4	1.9	0.21	12	1.3	0.22	5	0.8	0.28	3	0.5	0.01	3
Surface oxygen	7.7	0.64	5	7.2	0.41	4	6.6	0.27	12	6.9	0.02	5	6.5	0.27	3	6.8	0.10	3
Midwater oxygen	6.2	0.23	5	6.2	0.07	4	5.4	0.44	12	7.2	0.21	5	7.6	0.23	3	7.8	0.33	3
Bottom oxygen	3.2	1.41	5	0.2	0.17	4	2.6	0.49	12	5.7	0.21	5	4.8	0.15	3	4.0	0.18	3

Table 9a

Statistical Zone 17

Summary of dominant organisms taken in statistical zone 17 during the 1996 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
Portunus spinicarpus	0.0	0.00	0.0	0.00	14	0.0	0.00	0.0	0.00	9	40.7	22.61	0.1	0.07	9
Sicyonia brevirostris	0.0	0.00	0.0	0.00	14	0.0	0.00	0.0	0.00	9	658.5	288.09	6.6	2.88	9
Penaeus aztecus	119.0	76.93	0.6	0.41	14	6.7	5.33	0.0	0.03	9	34.9	21.16	1.2	0.86	9
Squilla spp.	0.0	0.00	0.0	0.00	14	0.2	0.17	0.0	0.00	9	106.9	50.75	1.3	0.63	9
Callinectes similis	61.9	35.97	0.3	0.24	14	6.0	2.97	0.0	0.00	9	36.2	27.06	0.5	0.31	9
Portunus gibbesii	0.0	0.00	0.0	0.00	14	0.0	0.00	0.0	0.00	9	55.4	21.91	0.5	0.20	9
Stenotomus caprinus	0.0	0.00	0.0	0.00	14	0.0	0.00	0.0	0.00	9	2555.0	510.98	45.3	4.94	9
Peprilus burti	133.3	102.21	2.2	1.66	14	22.7	19.84	0.4	0.33	9	510.4	235.67	13.1	5.96	9
Micropogonias undulatus	668.3	236.92	16.1	7.75	14	608.7	601.20	12.8	12.69	9	23.8	18.46	2.3	1.80	9
Chloroscombrus chrysurus	338.6	216.14	4.2	2.77	14	34.7	12.57	0.4	0.13	9	141.0	84.56	5.2	2.98	9
Upeneus parvus	0.0	0.00	0.0	0.00	14	0.0	0.00	0.0	0.00	9	111.0	35.79	2.0	0.69	9
Synodus foetens	0.0	0.00	0.0	0.00	14	0.0	0.00	0.0	0.00	9	57.0	14.86	7.9	2.50	9
Trachurus lathami	0.0	0.00	0.0	0.00	14	0.0	0.00	0.0	0.00	9	155.8	77.56	3.5	2.05	9
Leiostomus xanthurus	19.2	9.28	0.4	0.22	14	10.7	10.67	0.2	0.24	9	115.0	89.69	13.7	10.87	9
Squid	11.0	4.27	0.2	0.10	14	0.0	0.00	0.0	0.00	9	237.1	128.80	3.2	1.50	9

Table 9a (continued)
Statistical Zone 17

Summary of dominant organisms taken in statistical zone 17 during the 1996 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
Portunus spinicarpus	2386.3	1330.88	9.5	5.35	7	15.6	9.34	0.1	0.06	5	0.0	0.00	0.00	0	0
Sicyonia brevirostris	657.6	206.60	6.5	2.22	7	9.6	7.36	0.1	0.10	5	0.0	0.00	0.00	0	0
Penaeus aztecus	51.2	15.07	1.7	0.44	7	24.6	15.03	1.3	0.84	5	0.0	0.00	0.00	0	0
Squilla spp.	23.3	8.77	0.2	0.10	7	2.4	2.40	0.1	0.05	5	0.0	0.00	0.00	0	0
Callinectes similis	26.4	16.92	0.4	0.24	7	0.0	0.00	0.0	0.00	5	0.0	0.00	0.00	0	0
Portunus gibbesii	44.6	15.64	0.4	0.13	7	0.0	0.00	0.0	0.00	5	0.0	0.00	0.00	0	0
Stenotomus caprinus	755.1	146.30	29.3	4.57	7	599.7	116.36	27.8	2.74	5	0.0	0.00	0.00	0	0
Peprilus burti	38.5	21.21	1.4	0.83	7	11.4	4.94	0.9	0.52	5	0.0	0.00	0.00	0	0
Micropogonias undulatus	9.2	4.03	0.7	0.30	7	0.0	0.00	0.0	0.00	5	0.0	0.00	0.00	0	0
Chloroscombrus chrysurus	5.2	4.37	0.2	0.15	7	0.0	0.00	0.0	0.00	5	0.0	0.00	0.00	0	0
Upeneus parvus	69.6	44.59	1.4	0.79	7	60.3	31.90	1.9	1.03	5	0.0	0.00	0.00	0	0
Synodus foetens	59.8	5.86	6.2	1.02	7	77.3	8.81	12.2	1.68	5	0.0	0.00	0.00	0	0
Trachurus lathami	41.2	24.30	0.8	0.42	7	15.9	5.45	0.4	0.15	5	0.0	0.00	0.00	0	0
Leiostomus xanthurus	22.7	19.78	2.1	1.81	7	0.0	0.00	0.0	0.00	5	0.0	0.00	0.00	0	0
Squid	165.8	83.82	2.3	0.71	7	170.6	70.53	3.3	1.28	5	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 1996 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			Over 40 fm		
Environmental category	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	31.4	11.05	14	16.0	15.39	9	136.0	22.70	9	171.2	94.16	7	55.1	7.40	5	0.0	0.00	0
Total finfish kg	29.2	11.06	14	15.9	15.41	9	118.8	23.68	9	147.7	88.90	7	49.5	6.45	5	0.0	0.00	0
Total crustacean kg	1.6	0.86	14	0.0	0.00	9	13.2	5.02	9	20.7	6.53	7	1.7	0.96	5	0.0	0.00	0
Total others kg	0.0	0.00	14	0.1	0.10	9	4.0	1.59	9	2.9	0.74	7	3.7	1.22	5	0.0	0.00	0
Surface temperature	29.8	0.33	17	30.5	0.45	8	30.2	0.03	10	30.1	0.14	4	30.0	0.36	2	0.0	0.00	0
Midwater temperature	29.4	0.26	17	29.6	0.31	8	28.4	0.31	10	27.3	0.22	4	22.3	0.93	2	0.0	0.00	0
Bottom temperature	28.9	0.29	17	27.7	0.26	8	23.7	0.57	10	20.2	0.41	4	19.6	0.15	2	0.0	0.00	0
Surface salinity	21.4	1.46	17	22.0	1.65	8	30.2	0.32	10	30.7	0.56	4	33.3	0.23	2	0.0	0.00	0
Midwater salinity	22.8	1.44	17	25.5	1.82	8	32.8	0.40	10	34.9	0.27	4	35.8	0.26	2	0.0	0.00	0
Bottom salinity	25.2	1.29	17	29.7	1.57	8	35.5	0.13	10	36.0	0.03	4	36.3	0.01	2	0.0	0.00	0
Surface chlorophyll	9.5	3.88	3	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface fluorescence	2.1	0.03	17	2.7	0.29	8	0.9	0.16	10	0.8	0.10	4	0.4	0.03	2	0.0	0.00	0
Surface oxygen	6.8	0.28	17	7.6	0.17	8	6.6	0.12	10	6.7	0.11	4	6.9	0.05	2	0.0	0.00	0
Midwater oxygen	6.0	0.27	17	5.8	0.36	8	6.6	0.17	10	7.0	0.21	4	7.9	0.20	2	0.0	0.00	0
Bottom oxygen	4.0	0.52	17	1.7	0.89	8	4.2	0.60	10	5.4	0.03	4	6.0	0.30	2	0.0	0.00	0

Table 10a

Statistical Zone 18

Summary of dominant organisms taken in statistical zone 18 during the 1996 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	27.5	12.21	0.2	0.14	8	93.4	51.94	1.0	0.59	14	236.9	178.72	3.6	2.62	7
Portunus spinicarpus	0.0	0.00	0.0	0.00	8	0.0	0.00	0.0	0.00	14	10.2	10.22	0.1	0.07	7
Trachypenaeus similis	0.0	0.00	0.0	0.00	8	21.8	21.78	0.1	0.14	14	325.0	282.64	1.9	1.70	7
Sicyonia brevirostris	0.0	0.00	0.0	0.00	8	3.6	2.95	0.0	0.04	14	13.6	8.97	0.1	0.09	7
Squilla spp.	0.0	0.00	0.0	0.00	8	27.5	22.13	0.3	0.24	14	62.2	39.07	0.6	0.38	7
Portunus gibbesii	0.0	0.00	0.0	0.00	8	45.4	28.80	0.3	0.18	14	9.2	5.02	0.1	0.05	7
Chloroscombrus chrysurus	1678.0	1636.05	26.7	26.24	8	1655.3	1067.64	28.6	17.41	14	60.2	19.74	7.4	4.54	7
Stenotomus caprinus	0.0	0.00	0.0	0.00	8	473.8	330.04	5.6	4.25	14	1833.2	622.20	27.2	6.21	7
Micropogonias undulatus	2071.4	1810.70	55.9	51.04	8	718.2	430.04	18.2	11.17	14	0.6	0.61	0.0	0.02	7
Peprilus burti	21.3	12.06	0.6	0.37	8	536.9	387.32	8.1	5.56	14	1023.4	623.55	20.3	8.05	7
Cynoscion nothus	61.2	28.29	2.5	1.31	8	140.1	69.11	5.1	2.76	14	0.0	0.00	0.0	0.00	7
Opisthonema oglinum	0.0	0.00	0.0	0.00	8	146.0	78.46	11.1	5.88	14	1.6	1.63	0.2	0.17	7
Leiostomus xanthurus	37.6	22.61	1.1	0.66	8	88.0	67.57	6.3	5.15	14	0.0	0.00	0.0	0.00	7
Lutjanus campechanus	0.0	0.00	0.0	0.00	8	57.1	34.95	2.5	1.46	14	35.6	9.35	1.8	0.47	7
Squid	44.1	14.81	1.2	0.38	8	100.2	39.50	2.0	0.74	14	251.2	91.84	5.5	1.36	7

Table 10a (continued)
Statistical Zone 18

Summary of dominant organisms taken in statistical zone 18 during the 1996 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	4.0	2.00	0.2	0.20	2	27.5	12.15	1.9	0.92	6	22.1	10.80	1.0	0.67	2
Portunus spinicarpus	19.0	16.00	0.1	0.05	2	493.4	303.46	4.8	2.35	6	40.2	32.68	0.2	0.23	2
Trachypenaeus similis	0.5	0.50	0.0	0.00	2	0.3	0.33	0.0	0.00	6	0.0	0.00	0.0	0.00	2
Sicyonia brevirostris	6.0	2.00	0.1	0.00	2	384.3	324.57	5.6	3.84	6	0.0	0.00	0.0	0.00	2
Squilla spp.	0.0	0.00	0.0	0.00	2	29.6	15.80	0.4	0.21	6	0.0	0.00	0.0	0.00	2
Portunus gibbesii	0.5	0.50	0.0	0.00	2	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	2
Chloroscombrus chrysurus	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	2
Stenotomus caprinus	310.0	7.00	11.8	4.20	2	842.3	424.66	26.1	3.43	6	325.6	68.71	19.4	5.49	2
Micropogonias undulatus	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	2
Peprilus burti	10.5	3.50	0.6	0.27	2	21.8	14.42	1.7	1.09	6	128.8	61.25	9.7	3.92	2
Cynoscion nothus	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	2
Opisthonema oglinum	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	2
Leiostomus xanthurus	0.0	0.00	0.0	0.00	2	6.8	6.83	0.7	0.69	6	0.0	0.00	0.0	0.00	2
Lutjanus campechanus	5.5	2.50	7.1	6.82	2	2.5	0.90	0.4	0.21	6	0.0	0.00	0.0	0.00	2
Squid	573.5	209.50	6.9	1.00	2	133.3	66.46	1.9	0.82	6	101.9	43.79	1.0	0.49	2

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 1996 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			Over 40 fm		
Environmental category	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	95.6	85.99	8	101.5	45.77	14	79.3	12.33	7	43.0	4.32	2	72.7	11.38	6	59.1	20.76	2
Total finfish kg	93.5	85.41	8	96.0	44.82	14	66.2	12.23	7	35.2	5.23	2	57.5	13.30	6	56.1	18.59	2
Total crustacean kg	0.9	0.62	8	2.5	1.43	14	7.5	4.85	7	0.5	0.00	2	12.8	6.63	6	1.9	1.95	2
Total others kg	1.1	0.52	8	2.3	0.89	14	5.5	1.34	7	7.3	0.91	2	2.4	0.73	6	1.4	0.55	2
Surface temperature	29.0	0.38	7	30.1	0.21	14	29.4	0.16	6	29.6	0.36	2	30.0	0.00	1	29.2	0.34	3
Midwater temperature	28.3	0.26	7	29.3	0.20	14	28.5	0.11	6	26.5	0.78	2	22.1	0.00	1	22.5	0.68	3
Bottom temperature	27.8	0.32	7	28.6	0.25	14	24.7	0.93	6	20.4	0.41	2	19.1	0.00	1	18.2	0.07	3
Surface salinity	28.2	0.86	7	25.6	2.05	14	27.2	5.34	6	32.4	0.22	2	32.3	0.00	1	34.9	0.79	3
Midwater salinity	29.0	0.85	7	26.5	2.09	14	27.9	5.48	6	35.5	0.02	2	35.6	0.00	1	36.3	0.04	3
Bottom salinity	29.7	0.85	7	27.8	2.21	14	28.8	5.67	6	35.9	0.02	2	36.3	0.00	1	36.4	0.02	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	1.1	0.00	7	1.5	0.30	14	1.5	1.08	6	0.4	0.00	2	0.5	0.00	1	0.3	0.03	3
Surface oxygen	8.7	0.27	7	7.2	0.55	14	5.4	0.64	6	6.9	0.10	2	6.9	0.00	1	6.6	0.25	3
Midwater oxygen	9.0	0.20	7	7.1	0.63	14	6.5	0.44	6	7.3	0.10	2	7.9	0.00	1	7.9	0.12	3
Bottom oxygen	7.2	0.72	7	6.5	0.68	14	3.8	0.78	6	6.2	0.25	2	4.9	0.00	1	4.1	0.12	3

Table 11a

Statistical Zone 19

Summary of dominant organisms taken in statistical zone 19 during the 1996 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 less than 6 fm or 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	0.0	0.00	0.0	0.00	0	31.9	11.78	0.5	0.20	13	536.9	238.23	5.1	2.09	22
Trachypenaeus similis	0.0	0.00	0.0	0.00	0	4.2	4.15	0.0	0.00	13	490.0	201.63	2.4	1.03	22
Squilla spp.	0.0	0.00	0.0	0.00	0	54.4	29.74	0.5	0.22	13	40.1	17.31	0.3	0.13	22
Callinectes similis	0.0	0.00	0.0	0.00	0	68.0	26.78	0.7	0.35	13	28.3	9.15	0.2	0.06	22
Sicyonia dorsalis	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	13	21.1	11.52	0.0	0.03	22
Sicyonia brevirostris	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	13	1.0	0.70	0.0	0.01	22
Peprilus burti	0.0	0.00	0.0	0.00	0	122.8	44.96	2.0	0.68	13	1048.0	629.84	8.0	4.75	22
Chloroscombrus chrysurus	0.0	0.00	0.0	0.00	0	2982.1	2111.51	32.6	20.54	13	211.6	71.37	3.6	1.25	22
Stenotomus caprinus	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	13	585.4	199.72	2.7	0.94	22
Micropogonias undulatus	0.0	0.00	0.0	0.00	0	1257.8	653.09	23.1	13.49	13	5.8	3.11	0.1	0.06	22
Cynoscion nothus	0.0	0.00	0.0	0.00	0	186.9	80.21	6.6	2.90	13	33.1	14.51	1.3	0.52	22
Trachurus lathami	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	13	55.0	41.30	1.3	1.11	22
Larimus fasciatus	0.0	0.00	0.0	0.00	0	197.3	120.51	4.8	2.91	13	2.7	2.73	0.1	0.06	22
Diplectrum bivittatum	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	13	32.6	11.50	0.5	0.18	22
Squid	0.0	0.00	0.0	0.00	0	48.6	15.48	0.9	0.26	13	176.8	40.68	2.5	0.58	22

Table 11a (continued)

Statistical Zone 19

Summary of dominant organisms taken in statistical zone 19 during the 1996 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 less than 6 fm or 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	18.9	8.41	0.6	0.32	5	0.0	0.00	0.0	0.00	0	0.0	0.00	0.00	0	0
Trachypenaeus similis	76.6	42.23	0.4	0.23	5	0.0	0.00	0.0	0.00	0	0.0	0.00	0.00	0	0
Squilla spp.	16.7	16.19	0.1	0.11	5	0.0	0.00	0.0	0.00	0	0.0	0.00	0.00	0	0
Callinectes similis	6.8	2.91	0.1	0.07	5	0.0	0.00	0.0	0.00	0	0.0	0.00	0.00	0	0
Sicyonia dorsalis	18.0	18.00	0.1	0.08	5	0.0	0.00	0.0	0.00	0	0.0	0.00	0.00	0	0
Sicyonia brevirostris	43.2	26.64	0.4	0.27	5	0.0	0.00	0.0	0.00	0	0.0	0.00	0.00	0	0
Peprilus burti	4595.9	2777.98	60.5	35.08	5	0.0	0.00	0.0	0.00	0	0.0	0.00	0.00	0	0
Chloroscombrus chrysurus	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	219.6	90.54	8.1	3.81	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
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
Trachurus lathami	52.2	31.22	1.4	0.71	5	0.0	0.00	0.0	0.00	0	0.0	0.00	0.00	0	0
Larimus fasciatus	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
Diplectrum bivittatum	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	88.6	36.73	3.1	1.32	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 1996 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 less than 6 fm or greater than 30 fm.

	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm		
Environmental category	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	0.0	0.00	0	86.0	40.91	13	35.5	6.54	22	89.7	34.31	5	0.0	0.00	0	0.0	0.00	0
Total finfish kg	0.0	0.00	0	82.1	40.84	13	23.4	5.85	22	82.9	33.86	5	0.0	0.00	0	0.0	0.00	0
Total crustacean kg	0.0	0.00	0	2.4	0.83	13	8.2	3.14	22	3.2	1.12	5	0.0	0.00	0	0.0	0.00	0
Total others kg	0.0	0.00	0	1.1	0.37	13	3.9	0.71	22	3.4	1.40	5	0.0	0.00	0	0.0	0.00	0
Surface temperature	30.0	0.92	2	28.8	0.18	12	28.6	0.08	23	28.3	0.06	3	0.0	0.00	0	0.0	0.00	0
Midwater temperature	29.6	1.36	2	28.4	0.18	12	28.1	0.09	23	26.0	0.32	3	0.0	0.00	0	0.0	0.00	0
Bottom temperature	29.1	1.60	2	27.9	0.15	12	25.1	0.59	23	20.5	0.08	3	0.0	0.00	0	0.0	0.00	0
Surface salinity	30.7	0.86	2	32.6	0.33	12	32.9	0.19	23	34.0	0.50	3	0.0	0.00	0	0.0	0.00	0
Midwater salinity	30.4	1.10	2	32.9	0.32	12	33.3	0.19	23	35.1	0.05	3	0.0	0.00	0	0.0	0.00	0
Bottom salinity	30.8	0.89	2	33.0	0.30	12	34.5	0.22	23	36.0	0.02	3	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	2.5	0.00	2	2.0	0.24	12	1.2	0.20	23	0.4	0.03	3	0.0	0.00	0	0.0	0.00	0
Surface oxygen	4.9	1.40	2	5.8	0.26	12	6.3	0.15	23	6.6	0.24	3	0.0	0.00	0	0.0	0.00	0
Midwater oxygen	4.7	1.50	2	6.1	0.23	12	6.6	0.08	23	7.1	0.12	3	0.0	0.00	0	0.0	0.00	0
Bottom oxygen	4.0	0.85	2	5.5	0.21	12	5.6	0.21	23	6.1	0.18	3	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 1996 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
Portunus spinicarpus	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	15	13.3	12.78	0.1	0.13	6
Penaeus aztecus	1.3	0.92	0.0	0.00	6	88.8	50.94	0.9	0.61	15	80.5	55.93	1.0	0.75	6
Callinectes similis	89.3	84.69	0.9	0.91	6	132.1	101.78	0.9	0.65	15	22.8	11.37	0.4	0.20	6
Trachypenaeus similis	0.4	0.42	0.0	0.00	6	8.5	4.22	0.0	0.02	15	20.0	14.91	0.1	0.05	6
Squilla spp.	6.6	3.39	0.1	0.06	6	47.9	25.91	0.6	0.34	15	9.6	5.19	0.1	0.06	6
Solenocera vioscai	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	15	0.0	0.00	0.0	0.00	6
Stenotomus caprinus	0.0	0.00	0.0	0.00	6	2.6	1.80	0.0	0.02	15	160.9	120.37	1.0	0.66	6
Peprilus burti	0.0	0.00	0.0	0.00	6	7.9	3.39	0.1	0.08	15	49.6	14.01	1.7	0.89	6
Trachurus lathami	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	15	181.5	170.87	1.0	0.93	6
Serranus atrobranchus	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	15	0.5	0.48	0.0	0.00	6
Upeneus parvus	0.0	0.00	0.0	0.00	6	0.7	0.70	0.0	0.01	15	29.3	19.94	0.2	0.18	6
Etrumeus teres	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	15	0.0	0.00	0.0	0.00	6
Chloroscombrus chrysurus	74.5	63.04	1.8	1.64	6	111.6	58.02	2.2	1.35	15	136.2	98.95	3.6	2.54	6
Pristipomoides aquilonaris	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	15	0.0	0.00	0.0	0.00	6
Squid	4.0	2.97	0.0	0.05	6	26.8	5.12	0.7	0.17	15	211.4	77.46	4.6	1.79	6

Table 12a (continued)
Statistical Zone 20

Summary of dominant organisms taken in statistical zone 20 during the 1996 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
Portunus spinicarpus	74.0	25.83	0.2	0.08	5	100.8	55.19	0.5	0.30	6	60.2	44.80	0.4	0.28	8
Penaeus aztecus	9.1	2.86	0.3	0.07	5	31.2	18.63	1.4	0.93	6	21.5	12.73	1.2	0.68	8
Callinectes similis	22.5	13.82	0.1	0.06	5	1.6	0.61	0.0	0.01	6	0.0	0.00	0.0	0.00	8
Trachypenaeus similis	119.9	59.54	0.5	0.26	5	4.7	3.33	0.0	0.01	6	0.0	0.00	0.0	0.00	8
Squilla spp.	17.5	8.30	0.2	0.10	5	19.3	11.79	0.2	0.12	6	13.2	10.23	0.2	0.14	8
Solenocera vioscai	0.4	0.40	0.0	0.00	5	6.0	4.74	0.0	0.03	6	50.2	21.96	0.2	0.10	8
Stenotomus caprinus	264.1	89.25	5.8	3.83	5	103.2	63.70	5.1	3.18	6	131.0	24.21	8.0	1.57	8
Peprilus burti	5.1	4.50	0.2	0.17	5	19.9	9.79	1.4	0.73	6	394.1	289.88	8.3	4.95	8
Trachurus lathami	41.2	27.47	0.9	0.56	5	18.6	15.93	0.8	0.74	6	26.8	11.55	1.1	0.54	8
Serranus atrobranchus	87.1	36.91	1.1	0.47	5	63.6	25.09	1.3	0.58	6	115.3	42.47	1.8	0.69	8
Upeneus parvus	50.0	44.70	1.2	1.14	5	72.7	53.18	2.4	1.75	6	66.7	14.54	2.3	0.54	8
Etrumeus teres	260.1	260.08	1.0	1.05	5	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	8
Chloroscombrus chrysurus	0.0	0.00	0.0	0.00	5	1.2	1.15	0.1	0.06	6	0.0	0.00	0.0	0.00	8
Pristipomoides aquilonaris	79.2	35.00	2.2	0.90	5	49.1	18.77	1.3	0.55	6	87.9	25.72	9.8	3.21	8
Squid	219.5	180.70	4.7	3.40	5	182.2	71.44	3.8	1.82	6	151.4	45.06	3.2	1.03	8

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 1996 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			Over 40 fm		
Environmental category	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	21.4	8.10	6	14.2	3.06	15	35.0	11.63	6	28.9	6.02	5	35.3	13.74	6	55.9	7.89	8
Total finfish kg	18.5	7.65	6	8.5	2.43	15	25.0	12.48	6	21.5	5.40	5	28.0	12.37	6	48.6	8.25	8
Total crustacean kg	1.8	1.63	6	3.0	1.59	15	2.1	1.04	6	2.0	0.56	5	2.7	1.09	6	3.1	0.96	8
Total others kg	2.0	1.31	6	1.9	0.56	15	7.9	2.76	6	5.6	3.39	5	4.6	1.92	6	4.7	1.09	8
Surface temperature	28.6	0.28	5	28.1	0.14	17	28.0	0.13	7	28.0	0.26	3	28.2	0.14	7	28.4	0.16	7
Midwater temperature	28.5	0.23	5	27.9	0.17	17	27.8	0.09	7	26.7	0.98	3	23.4	0.39	7	21.9	0.42	7
Bottom temperature	28.4	0.23	5	27.6	0.31	17	25.1	0.99	7	20.4	0.24	3	19.7	0.15	7	18.2	0.45	7
Surface salinity	35.1	0.57	5	34.5	0.36	17	35.1	0.56	7	35.6	0.54	3	35.5	0.33	7	35.5	0.42	7
Midwater salinity	35.1	0.58	5	34.6	0.36	17	35.4	0.53	7	36.3	0.18	3	36.0	0.16	7	36.2	0.06	7
Bottom salinity	35.2	0.62	5	34.7	0.36	17	35.4	0.54	7	36.1	0.02	3	36.2	0.03	7	36.3	0.02	7
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	0.8	0.49	5	0.6	0.10	17	0.4	0.05	7	0.3	0.02	3	0.3	0.02	7	0.3	0.02	7
Surface oxygen	6.3	0.87	5	6.2	0.12	17	6.1	0.37	7	6.6	0.34	3	6.4	0.35	7	6.5	0.19	7
Midwater oxygen	6.4	0.68	5	6.3	0.13	17	6.7	0.06	7	7.3	0.25	3	7.7	0.10	7	7.7	0.09	7
Bottom oxygen	5.8	0.51	5	6.2	0.18	17	7.2	0.24	7	6.8	0.56	3	5.8	0.11	7	4.3	0.18	7

Table 13a

Statistical Zone 21

Summary of dominant organisms taken in statistical zone 21 during the 1996 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	0.0	0.00	0.0	0.00	4	20.6	11.96	0.1	0.04	9	233.2	131.01	2.1	1.09	24
Trachypenaeus similis	0.0	0.00	0.0	0.00	4	42.7	41.92	0.2	0.24	9	61.5	37.18	0.3	0.16	24
Penaeus duorarum	0.0	0.00	0.0	0.00	4	43.3	29.63	0.7	0.45	9	71.6	41.22	0.7	0.36	24
Portunus spinicarpus	0.0	0.00	0.0	0.00	4	19.3	19.33	0.1	0.06	9	21.1	8.48	0.0	0.02	24
Callinectes similis	0.0	0.00	0.0	0.00	4	25.8	17.40	0.1	0.06	9	44.0	15.03	0.3	0.12	24
Sicyonia dorsalis	0.0	0.00	0.0	0.00	4	12.0	8.00	0.0	0.00	9	37.1	13.03	0.1	0.03	24
Stenotomus caprinus	0.0	0.00	0.0	0.00	4	57.2	33.96	0.3	0.21	9	512.4	202.60	2.1	0.83	24
Peprilus burti	23.3	21.37	0.2	0.25	4	55.8	35.12	0.2	0.10	9	20.2	10.83	0.2	0.13	24
Etrumeus teres	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	9	2.0	1.30	0.0	0.01	24
Trachurus lathami	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	9	4.9	1.96	0.0	0.02	24
Saurida brasiliensis	0.0	0.00	0.0	0.00	4	1.3	1.33	0.0	0.00	9	35.8	26.57	0.2	0.14	24
Upeneus parvus	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	9	23.4	13.26	0.2	0.11	24
Prionotus stearnsi	0.0	0.00	0.0	0.00	4	4.0	4.00	0.0	0.03	9	28.5	28.04	0.2	0.18	24
Lagodon rhomboides	14.9	13.11	0.3	0.26	4	9.3	6.49	0.2	0.12	9	0.0	0.00	0.0	0.00	24
Squid	2.9	1.66	0.1	0.06	4	16.7	8.00	0.3	0.17	9	78.5	28.25	1.8	0.67	24

Table 13a (continued)

Statistical Zone 21

Summary of dominant organisms taken in statistical zone 21 during the 1996 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	7.4	2.34	0.4	0.16	4	5.7	0.00	0.2	0.00	1	0.0	0.00	0.00	0	0
Trachypenaeus similis	96.0	94.67	0.6	0.63	4	0.0	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	4	0.0	0.00	0.0	0.00	1	0.0	0.00	0.00	0	0
Portunus spinicarpus	109.0	90.46	0.3	0.18	4	0.0	0.00	0.0	0.00	1	0.0	0.00	0.00	0	0
Callinectes similis	25.3	24.90	0.3	0.31	4	10.2	0.00	0.1	0.00	1	0.0	0.00	0.00	0	0
Sicyonia dorsalis	60.5	60.50	0.2	0.23	4	0.0	0.00	0.0	0.00	1	0.0	0.00	0.00	0	0
Stenotomus caprinus	761.1	519.28	4.6	3.12	4	48.7	0.00	1.0	0.00	1	0.0	0.00	0.00	0	0
Peprilus burti	0.3	0.32	0.0	0.00	4	6607.9	0.00	118.0	0.00	1	0.0	0.00	0.00	0	0
Etrumeus teres	1.7	1.70	0.1	0.06	4	4341.5	0.00	17.4	0.00	1	0.0	0.00	0.00	0	0
Trachurus lathami	498.9	485.41	7.0	6.80	4	125.7	0.00	2.9	0.00	1	0.0	0.00	0.00	0	0
Saurida brasiliensis	254.5	157.90	0.9	0.52	4	0.0	0.00	0.0	0.00	1	0.0	0.00	0.00	0	0
Upeneus parvus	112.5	98.24	2.7	2.37	4	57.7	0.00	2.9	0.00	1	0.0	0.00	0.00	0	0
Prionotus stearnsi	52.9	27.72	0.2	0.14	4	48.7	0.00	0.5	0.00	1	0.0	0.00	0.00	0	0
Lagodon rhomboides	18.5	15.95	1.0	0.96	4	318.1	0.00	17.4	0.00	1	0.0	0.00	0.00	0	0
Squid	447.7	300.05	6.6	4.38	4	1003.0	0.00	18.4	0.00	1	0.0	0.00	0.00	0	0

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 1996 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			Over 40 fm		
Environmental category	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	12.1	7.57	4	17.0	8.92	9	10.9	2.77	24	34.0	19.53	4	184.2	0.00	1	0.0	0.00	0
Total finfish kg	2.6	1.01	4	4.8	3.05	9	4.3	1.62	24	24.8	15.42	4	165.2	0.00	1	0.0	0.00	0
Total crustacean kg	0.0	0.00	4	1.8	1.29	9	3.7	1.37	24	2.3	1.69	4	0.0	0.00	1	0.0	0.00	0
Total others kg	7.4	7.44	4	10.7	5.70	9	2.2	0.69	24	7.0	4.38	4	18.5	0.00	1	0.0	0.00	0
Surface temperature	27.5	0.06	3	24.6	0.63	10	26.6	0.17	25	27.6	0.21	4	27.8	0.21	3	28.1	0.00	1
Midwater temperature	27.6	0.15	3	23.3	0.57	10	23.7	0.30	25	23.4	0.48	4	23.3	0.17	3	22.5	0.00	1
Bottom temperature	27.5	0.22	3	22.6	0.43	10	22.1	0.26	25	20.8	0.20	4	20.2	0.16	3	18.8	0.00	1
Surface salinity	35.3	0.10	3	35.8	0.17	10	36.1	0.15	25	36.3	0.05	4	36.4	0.02	3	36.4	0.00	1
Midwater salinity	35.2	0.05	3	36.0	0.22	10	36.1	0.18	25	36.1	0.24	4	36.4	0.05	3	36.4	0.00	1
Bottom salinity	35.3	0.07	3	36.0	0.15	10	36.1	0.13	25	36.3	0.06	4	36.4	0.03	3	36.4	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	0.2	0.00	3	0.6	0.12	10	0.4	0.04	25	0.4	0.03	4	0.3	0.03	3	0.2	0.00	1
Surface oxygen	6.7	0.17	3	6.4	0.21	10	6.7	0.09	25	6.6	0.30	4	6.5	0.42	3	6.9	0.00	1
Midwater oxygen	6.7	0.15	3	6.7	0.19	10	7.2	0.12	25	7.8	0.18	4	8.0	0.07	3	8.1	0.00	1
Bottom oxygen	7.2	0.42	3	6.9	0.18	10	7.0	0.10	25	7.3	0.25	4	5.8	0.15	3	4.1	0.00	1

Table 14. 1996 Fall Shrimp Groundfish Survey species composition list, 374 trawl stations, for those vessels that used either a 40-ft or 20-ft trawl. Species with a total weight of less than 0.2227 kg (0.05 lb) are indicated on the table as 0.0 kg.

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Finfishes					
Chloroscombrus chrysurus	Atlantic bumper	98028	1018.9	180	47.2
Stenotomus caprinus	longspine porgy	89806	2334.0	235	61.7
Micropogonias undulatus	Atlantic croaker	66863	3221.5	228	59.8
Peprilus burti	gulf butterfish	16388	727.1	186	48.8
Leiostomus xanthurus	spot	8511	809.5	169	44.4
Arius felis	hardhead catfish	6960	769.3	90	23.6
Prionotus longispinosus	bigeye searobin	6527	206.2	195	51.2
Centropristis philadelphica	rock sea bass	5513	197.4	231	60.6
Serranus atrobranchus	blackear bass	5136	67.7	97	25.5
Trachurus lathami	rough scad	5110	147.9	101	26.5
Cynoscion nothus	silver seatrout	4713	208.5	166	43.6
Upeneus parvus	dwarf goatfish	4519	134.5	90	23.6
Synodus foetens	inshore lizardfish	4236	541.7	208	54.6
Trichiurus lepturus	Atlantic cutlassfish	4178	182.5	129	33.9
Cynoscion arenarius	sand seatrout	3900	410.7	207	54.3
Syacium gunteri	shoal flounder	3483	58.0	185	48.6
Pristipomoides aquilonaris	wenchman	3438	247.0	64	16.8
Lagodon rhomboides	pinfish	2823	167.5	151	39.6
Prionotus paralatus	Mexican searobin	2710	62.5	92	24.1
Diplectrum bivittatum	dwarf sand perch	2172	36.1	106	27.8
Lutjanus campechanus	red snapper	2028	109.2	177	46.5
Cynoscion spp.	seatrouts	1770	5.2	50	13.1
Trichopsetta ventralis	sash flounder	1494	34.3	59	15.5
Stellifer lanceolatus	star drum	1456	22.8	68	17.8
Sphoeroides parvus	least puffer	1188	8.4	119	31.2
Halieutichthys aculeatus	pancake batfish	1188	9.3	116	30.4

Table 14. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Mullus auratus	red goatfish	1167	51.6	57	15.0
Harengula jaguana	scaled sardine	1094	38.4	67	17.6
Anchoa hepsetus	striped anchovy	1041	12.5	48	12.6
Syacium papillosum	dusky flounder	984	57.4	15	3.9
Porichthys plectrodon	Atlantic midshipman	929	13.2	95	24.9
Lepophidium brevibarbe	blackedge cusk-eel	928	37.8	74	19.4
Prionotus stearnsi	shortwing searobin	925	8.4	48	12.6
Selene setapinnis	Atlantic moonfish	838	31.1	106	27.8
Etropus crossotus	fringed flounder	774	12.0	89	23.4
Prionotus rubio	blackwing searobin	749	48.3	57	15.0
Larimus fasciatus	banded drum	713	39.3	27	7.1
Peprilus alepidotus	harvestfish	694	16.4	93	24.4
Cyclopsetta chittendeni	Mexican flounder	665	59.7	116	30.4
Lutjanus synagris	lane snapper	557	25.0	86	22.6
Chaetodipterus faber	Atlantic spadefish	542	28.5	109	28.6
Saurida brasiliensis	largescale lizardfish	538	2.8	71	18.6
Opisthonema oglinum	Atlantic thread herring	480	16.3	54	14.2
Menticirrhus americanus	southern kingfish	470	33.0	45	11.8
Anchoa mitchilli	bay anchovy	438	0.7	28	7.3
Citharichthys spilopterus	bay whiff	328	4.9	63	16.5
Brevoortia patronus	gulf menhaden	315	30.5	40	10.5
Bagre marinus	gafftopsail catfish	291	20.1	24	6.3
Scorpaena calcarata	smoothhead scorpionfish	265	3.3	51	13.4
Pontinus longispinis	longspine scorpionfish	238	12.7	8	2.1
Symphurus plagiusa	blackcheek tonguefish	228	4.4	69	18.1
Bellator militaris	horned searobin	219	1.5	27	7.1
Balistes capriscus	gray triggerfish	211	20.2	51	13.4
Gymnachirus texae	fringed sole	205	2.9	56	14.7
Lagocephalus laevigatus	smooth puffer	202	19.4	56	14.7

Table 14. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Caulolatilus intermedius	anchor tilefish	199	11.5	33	8.7
Haemulon aurolineatum	tomtate	188	8.0	21	5.5
Synodus poeyi	offshore lizardfish	168	1.6	39	10.2
Urophycis floridana	southern hake	157	17.8	18	4.7
Ancylopsetta quadrocellata	ocellated flounder	153	16.1	43	11.3
Prionotus roseus	bluespotted searobin	152	5.4	5	1.3
Symphurus diomedianus	spottedfin tonguefish	137	3.3	20	5.2
Caranx crysos	blue runner	136	13.2	30	7.9
Diplectrum formosum	sand perch	132	9.0	15	3.9
Ogcocephalus spp.	batfishes	128	3.7	30	7.9
Eucinostomus gula	silver jenny	127	3.7	45	11.8
Anchoa nasuta	longnose anchovy	117	0.4	4	1.0
Decapterus punctatus	round scad	114	2.9	11	2.9
Lepophidium jeannae	mottled cusk-eel	110	3.7	11	2.9
Hoplunnis macrurus	freckled pike-conger	109	2.4	27	7.1
Brotula barbata	bearded brotula	106	21.8	35	9.2
Symphurus civitatus	offshore tonguefish	106	1.5	16	4.2
Orthopristis chrysoptera	pigfish	100	8.5	22	5.8
Paralichthys lethostigma	southern flounder	99	34.2	57	15.0
Ophidion welshi	crested cusk-eel	98	4.0	26	6.8
Rhomboplites aurorubens	vermilion snapper	92	9.0	15	3.9
Ancylopsetta dilecta	three-eye flounder	91	4.4	19	5.0
Trachinocephalus myops	snakefish	90	4.9	10	2.6
Engyophrys senta	spiny flounder	89	1.0	23	6.0
Raja texana	roundel skate	87	33.0	44	11.5
Scomberomorus maculatus	Spanish mackerel	87	17.8	17	4.5
Hildebrandia flava	yellow conger	79	6.4	18	4.7
Rhizoprionodon terraenovae	Atlantic sharpnose shark	76	72.2	28	7.3
Equetus umbrosus	cubbyu	76	4.0	16	4.2

Table 14. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Bollmannia communis	ragged goby	74	0.8	19	5.0
Urophycis cirrata	gulf hake	70	3.7	11	2.9
Bairdiella chrysoura	silver perch	68	2.7	6	1.6
Sphyraena guachancho	guaguanche	66	7.9	20	5.2
Monacanthus hispidus	planehead filefish	66	1.8	25	6.6
Kathetostoma albigutta	lancer stargazer	65	4.9	16	4.2
Anchoa lyolepis	dusky anchovy	58	0.0	7	1.8
Prionotus tribulus	bighead searobin	54	5.1	22	5.8
Selene vomer	lookdown	52	1.6	18	4.7
Etrumeus teres	round herring	49	0.8	5	1.3
Steindachneria argentea	luminous hake	42	0.5	3	0.8
Etropus microstomus	smallmouth flounder	42	0.3	5	1.3
Prionotus scitulus	leopard searobin	41	0.7	6	1.6
Antennarius radiosus	singlespot frogfish	41	0.7	11	2.9
Ophidion holbrooki	bank cusk-eel	40	1.9	5	1.3
Priacanthus arenatus	bigeye	38	5.1	13	3.4
Decodon puellaris	red hogfish	38	2.5	12	3.1
Sardinella aurita	Spanish sardine	37	1.4	13	3.4
Selar crumenophthalmus	bigeye scad	37	2.0	11	2.9
Sphoeroides dorsalis	marbled puffer	36	2.3	9	2.4
Alosa chrysochloris	skipjack herring	34	1.0	6	1.6
Prionotus ophryas	bandtail searobin	31	0.6	14	3.7
Hemanthias leptus	longtail bass	28	4.8	4	1.0
Neomerinthe hemingwayi	spinycheek scorpionfish	26	11.2	8	2.1
Centropristis ocyura	bank sea bass	26	2.2	7	1.8
Ophidion grayi	blotched cusk-eel	25	1.4	7	1.8
Bathyanthias mexicanus	yellowtail bass	21	0.3	2	0.5
Equetus wamotoi	blackbar drum	21	2.2	4	1.0
Scomberomorus cavalla	king mackerel	21	2.6	13	3.4

Table 14. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Syacium spp.	lefteye flounders	20	0.1	12	3.1
Equetus acuminatus	high-hat	19	0.8	3	0.8
Ariomma bondi	silver-rag	19	0.4	1	0.3
Narcine brasiliensis	lesser electric ray	18	4.6	7	1.8
Rachycentron canadum	cobia	17	6.5	11	2.9
Caranx hippos	crevalle jack	17	1.4	9	2.4
Sphyrna tiburo	bonnethead	16	23.2	12	3.1
Mustelus canis	smooth dogfish	15	16.2	10	2.6
Gymnothorax nigromarginatus	blackedge moray	15	1.3	5	1.3
Epinephelus flavolimbatus	yellowedge grouper	15	1.4	8	2.1
Hemicaranx amblyrhynchus	bluntnose jack	15	0.5	8	2.1
Ogcocephalus radiatus	polka-dot batfish	15	0.3	7	1.8
Conger oceanicus	conger eel	14	2.5	4	1.0
Eucinostomus argenteus	spotfin mojarra	13	0.1	6	1.6
Lactophrys quadricornis	scrawled cowfish	12	1.0	6	1.6
Conodon nobilis	barred grunt	11	0.5	4	1.0
Polydactylus octonemus	Atlantic threadfin	10	0.4	3	0.8
Citharichthys macrops	spotted whiff	10	0.1	5	1.3
Ophichthus gomesi	shrimp eel	9	1.6	3	0.8
Gobionellus oceanicus	highfin goby	9	0.0	1	0.3
Aluterus schoepfi	orange filefish	9	1.0	6	1.6
Scorpaena dispar	hunchback scorpionfish	8	1.9	5	1.3
Menticirrhus littoralis	gulf kingfish	8	0.8	5	1.3
Chilomycterus schoepfi	striped burrfish	8	1.5	8	2.1
Citharichthys cornutus	horned whiff	7	0.1	2	0.5
Rhinoptera bonasus	cownose ray	6	33.3	3	0.8
Apogonidae	cardinalfishes	6	0.2	1	0.3
Apogon pseudomaculatus	twospot cardinalfish	6	0.2	1	0.3
Echeneis naucrates	sharksucker	6	1.9	6	1.6

Table 14. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Ogcocephalus parvus	roughback batfish	6	0.2	1	0.3
Dasyatis americana	southern stingray	5	12.0	5	1.3
Syngnathus louisianae	chain pipefish	5	0.0	1	0.3
Sciaenops ocellatus	red drum	5	28.1	5	1.3
Archosargus probatocephalus	sheepshead	5	6.2	4	1.0
Bembrops anatirostris	duckbill flathead	5	0.4	1	0.3
Bothus robinsi	twospot flounder	5	0.1	1	0.3
Trinectes maculatus	hogchoker	5	0.0	3	0.8
Squatina dumeril	Atlantic angel shark	4	1.5	3	0.8
Pomatomus saltatrix	bluefish	4	2.1	2	0.5
Gobiidae	gobies	4	0.0	1	0.3
Paralichthys squamilentus	broad flounder	4	1.7	3	0.8
Dasyatis sabina	Atlantic stringray	3	1.4	3	0.8
Ocyurus chrysurus	yellowtail snapper	3	0.3	1	0.3
Chaetodon ocellatus	spotfin butterflyfish	3	0.3	1	0.3
Chaetodon sedentarius	reef butterflyfish	3	0.3	1	0.3
Labridae	wrasses	3	0.1	1	0.3
Otophidium omostigmum	polka-dot cusk-eel	3	0.1	1	0.3
Bothus ocellatus	eyed flounder	3	0.1	3	0.8
Carcharhinus acronotus	blacknose shark	2	7.2	2	0.5
Mustelus norrisi	Florida smoothhound	2	7.5	2	0.5
Dasyatis say	bluntnose stingray	2	2.2	2	0.5
Gymnothorax saxicola	honeycomb moray	2	0.2	1	0.3
Mugil curema	white mullet	2	0.1	2	0.5
Prionotus spp.	searobins	2	0.0	1	0.3
Rypticus maculatus	whitespotted soapfish	2	0.1	2	0.5
Synagrops spinosus	keelcheek bass	2	0.0	1	0.3
Remora remora	remora	2	1.6	2	0.5
Trachinotus carolinus	Florida pompano	2	0.8	1	0.3

Table 14. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Uraspis secunda	cottonmouth jack	2	0.6	2	0.5
Haemulon plumieri	white grunt	2	0.1	2	0.5
Pogonias cromis	black drum	2	17.0	2	0.5
Calamus nodosus	knobbed porgy	2	0.4	2	0.5
Bothidae	lefteye flounders	2	0.0	1	0.3
Etropus cyclosquamus	shelf flounder	2	0.0	2	0.5
Paralichthys albigutta	gulf flounder	2	0.4	2	0.5
Gymnachirus melas	naked sole	2	0.0	1	0.3
Aluterus monoceros	unicorn filefish	2	0.6	2	0.5
Torpedo nobiliana	Atlantic torpedo	1	1.1	1	0.3
Gymnothorax ocellatus	ocellated moray	1	0.1	1	0.3
Congridae	conger eels	1	0.0	1	0.3
Sphyraena spp.	barracudas	1	0.0	1	0.3
Serraniculus pumilio	pygmy sea bass	1	0.0	1	0.3
Oligoplites saurus	leatherjack	1	0.0	1	0.3
Seriola dumerili	greater amberjack	1	0.8	1	0.3
Calamus arctifrons	grass porgy	1	0.1	1	0.3
Calamus calamus	saucereye porgy	1	0.4	1	0.3
Bembrops gobioides	goby flathead	1	0.0	1	0.3
Dicrolene intronigra	cusk-eel	1	0.0	1	0.3
Etropus spp.	lefteye flounders	1	0.0	1	0.3
Achirus lineatus	lined sole	1	0.0	1	0.3
Symphurus urospilus	spottail tonguefish	1	0.0	1	0.3
Antennarius	frogfishes	1	0.0	1	0.3
Ogcocephalus nasutus	shortnose batfish	1	0.0	1	0.3
<u>Crustaceans</u>					
Portunus spinicarpus	longspine swimming crab	31317	265.9	77	20.2

Table 14. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Trachypenaeus similis	roughback shrimp	13378	44.0	157	41.2
Penaeus aztecus	brown shrimp	9237	197.9	268	70.3
Callinectes similis	lesser blue crab	8003	133.5	235	61.7
Portunus gibbesii	irridescent swimming crab	7023	32.7	221	58.0
Sicyonia brevirostris	brown rock shrimp	6810	81.7	101	26.5
Penaeus setiferus	white shrimp	4475	78.0	146	38.3
Squilla empusa	mantis shrimp	3396	36.5	183	48.0
Sicyonia dorsalis	lesser rock shrimp	2852	7.7	86	22.6
Solenocera vioscai	humpback shrimp	2309	13.4	42	11.0
Squilla chydaea	mantis shrimp	1222	11.8	73	19.2
Xiphopenaeus kroyeri	seabob	866	4.9	31	8.1
Trachypenaeus constrictus	roughneck shrimp	772	1.4	39	10.2
Penaeus duorarum	pink shrimp	605	11.0	79	20.7
Anasimus latus	stilt spider crab	598	6.4	23	6.0
Portunus spinimanus	blotched swimming crab	365	9.9	69	18.1
Parapenaeus politus	deepwater rose shrimp	349	0.5	8	2.1
Calappa sulcata	yellow box crab	236	39.9	81	21.3
Porcellana sayana	spotted porcelain crab	102	0.0	5	1.3
Pagurus pollicaris	flatclaw hermit crab	74	0.9	21	5.5
Arenaeus cribrarius	speckled swimming crab	65	1.1	12	3.1
Raninoides louisianensis	gulf frog crab	60	0.7	15	3.9
Callinectes sapidus	blue crab	44	4.8	19	5.0
Paguridae	right-handed hermit crabs	41	0.4	8	2.1
Hepatus epheliticus	calico crab	29	1.7	14	3.7
Libinia emarginata	portly spider crab	25	6.6	12	3.1
Sicyonia burkenroadi	spiny rock shrimp	23	0.1	6	1.6
Persephona mediterranea	mottled purse crab	20	0.0	13	3.4
Libinia dubia	longnose spider crab	18	0.6	10	2.6
Squilla neglecta	mantis shrimp	13	0.1	6	1.6

Table 14. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Myropsis quinquespinosa	fivespine purse crab	13	0.1	6	1.6
Stenocionops spinimanus	prickly spider crab	12	3.5	2	0.5
Dromidia antillensis	hairy sponge crab	9	0.5	1	0.3
Leiolambrus nitidus	white elbow crab	9	0.0	2	0.5
Ovalipes floridanus	Florida lady crab	7	0.1	4	1.0
Podochela sidneyi	shortfinger neck crab	7	0.1	3	0.8
Calappa flammea	flame box crab	7	1.0	5	1.3
Petrolisthes armatus	green porcelain crab	6	0.1	1	0.3
Speocarcinus spp.	squareback crabs	6	0.1	2	0.5
Nibilia antilocapra	shorthorn spiny crab	5	0.0	2	0.5
Parthenope granulata	bladetooth elbow crab	5	0.0	3	0.8
Persephona crinita	pink purse crab	4	0.0	4	1.0
Solenocera spp.	humpback shrimps	3	0.0	1	0.3
Petrochirus diogenes	giant hermit crab	3	1.1	1	0.3
Portunus sayi	sargassum swimming crab	3	0.0	2	0.5
Collodes	spider crabs	3	0.0	1	0.3
Stenocionops coelata	spider crab	3	0.2	2	0.5
Goneplacidae	brachyuran crab	3	0.0	3	0.8
Euphrosynoplax clausa	craggy bathyal crab	3	0.0	1	0.3
Palicidae	stilt crabs	3	0.1	1	0.3
Dardanus insignis	red brocade hermit	3	0.0	1	0.3
Exhippolysmata oplophoroides	redleg humpback shrimp	2	0.0	2	0.5
Portunus spp.	swimming crabs	2	0.0	1	0.3
Parthenope serrata	sawtooth elbow crab	2	0.0	2	0.5
Sicyonia parri	rock shrimp	1	0.0	1	0.3
Scyllarides nodifer	ridged slipper lobster	1	0.2	1	0.3
Scyllarus chacei	chace slipper lobster	1	0.0	1	0.3
Stenorhynchus seticornis	yellowline arrow crab	1	0.0	1	0.3
Speocarcinus lobatus	gulf squareback crab	1	0.0	1	0.3

Table 14. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Others					
Amusium papyraceum	paper scallop	3031	28.7	73	19.2
Renilla mulleri	short-stemmed sea pansy	2386	6.8	37	9.7
Loligo pealeii	longfin squid	1213	54.9	98	25.7
Loligo pleii	arrow squid	1143	8.2	82	21.5
Aurelia aurita	moon jellyfish	1035	253.3	71	18.6
Lolliguncula brevis	Atlantic brief squid	1004	11.5	103	27.0
Astropecten duplicatus	spiny beaded sea star	688	1.2	54	14.2
Chrysaora quinquecirrha	sea nettle	613	17.1	31	8.1
Actinidae	sea anemones	381	2.1	27	7.1
Astropecten cingulatus	starfish	363	5.2	30	7.9
Luidia clathrata	sea star	246	2.9	44	11.5
Anadara baughmani	Baughman's ark	219	3.7	13	3.4
Stomolophus meleagris	many-mouthed sea jelly	194	176.2	22	5.8
Pitar cordatus	Schwengel's pitar	116	2.1	13	3.4
Loligo spp.	squids	83	0.5	13	3.4
Argopecten gibbus	calico scallop	65	2.0	5	1.3
Encope aberrans	sand dollar	57	0.7	2	0.5
Ophiolepis elegans	brittle star	56	0.0	15	3.9
Neverita duplicata	shark eye	49	1.1	18	4.7
Clypeaster ravenelii	cake urchin	31	4.3	9	2.4
Pyrosoma spp.	pelagic tunicates	27	2.0	6	1.6
Polystira albida	white giant turris	24	0.5	5	1.3
Cantharus cancellarius	cancellate cantharus	22	0.0	7	1.8
Tethyaster grandis	starfish	21	1.2	8	2.1
Clypeaster prostratus	sea biscuit	20	1.8	3	0.8
Aurelia spp.	jellyfishes	16	3.0	4	1.0
Tamoya haplonema	sea wasp	16	1.7	5	1.3

Table 14. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Anthozoa	anthozoans	14	0.1	3	0.8
Molpadia spp.	sea cucumber	14	0.5	3	0.8
Ascidiacea	sea squirts	13	0.1	2	0.5
Pecten raveneli	Ravenel's scallop	12	0.0	4	1.0
Echinaster spp.	thorny sea stars	11	0.0	3	0.8
Stylocidaris affinis	sea urchin	10	0.2	3	0.8
Molpadia cubana	sea cucumber	9	0.6	3	0.8
Algae	algae	9	0.7	9	2.4
Sargassaceae	sargassum	7	0.3	7	1.8
Busycon contrarium	lightning whelk	6	1.6	4	1.0
Porifera	sponges	6	1.4	3	0.8
Astrocyclus caecilia	basket star	6	0.3	1	0.3
Ophiothrix angulata	angular brittle star	6	0.0	1	0.3
Holothuroidea	sea cucumbers	6	0.1	2	0.5
Thais haemastoma	rocksnail	5	0.1	3	0.8
Gorgonidae	gorgonians	5	0.2	1	0.3
Polystira tellea	delicate giant turret	4	0.0	2	0.5
Scyphozoa	jellyfishes	4	0.1	2	0.5
Mellita quinquiesperforata	five-slotted sand dollar	4	0.0	4	1.0
Distorsio clathrata	Atlantic distorsio	3	0.1	2	0.5
Pelecypoda	bivalve mollusks	3	0.0	1	0.3
Macoma spp.	macoma	3	0.0	1	0.3
Chione clenchi	Clench venus	3	0.0	1	0.3
Chiropsalmus quadrumanus	jellyfish	3	0.5	2	0.5
Ophiuroidea	brittlestars	3	0.0	2	0.5
Centrostephanus longispinosus	sea urchin	3	0.5	1	0.3
Molpadia barbouri	sea cucumber	3	0.1	1	0.3
Sconsia striata	royal bonnet	2	0.0	1	0.3
Cymatium parthenopeum	giant triton	2	0.0	1	0.3

Table 14. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Busycon sinistrum	lightning whelk	2	0.1	2	0.5
Fasciolaria lilium	banded tulip	2	0.0	1	0.3
Anadara ovalis	blood ark	2	0.0	2	0.5
Caretta caretta	loggerhead turtle	2	187.6	2	0.5
Styela plicata	tunicate	2	0.0	1	0.3
Luidia alternata	banded luidia	2	0.0	2	0.5
Strombus alatus	Florida fighting conch	1	0.0	1	0.3
Busycotypus spiratus	pearwhelk	1	0.1	1	0.3
Terebra dislocata	eastern auger	1	0.0	1	0.3
Hydroidae	hydras	1	0.0	1	0.3
Paranthus rapiformis	onion anemone	1	0.0	1	0.3
Calliactris tricolor	common sea anemone	1	0.0	1	0.3
Ctenophora	comb jellies	1	0.0	1	0.3
Polychaeta	bristleworms	1	0.0	1	0.3
Chloeia viridis	red-tipped fire worm	1	0.0	1	0.3
Anthenoides piercei	starfish	1	0.0	1	0.3
Hemipholis elongata	brittle star	1	0.0	1	0.3
Arbacia punctulata	purple sea-urchin	1	0.0	1	0.3
Dendrochirotidae	sea cucumber	1	0.0	1	0.3

Table 15a

Statistical Zone 11

Summary of dominant organisms taken in statistical zone 11 during the 1996 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
Portunus spinicarpus	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	12	11.4	10.78	0.1	0.10	20
Solenocera vioscai	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	12	3.0	2.24	0.0	0.00	20
Penaeus aztecus	18.3	10.31	0.1	0.09	6	54.1	33.42	0.7	0.40	12	10.2	5.93	0.2	0.15	20
Trachypenaeus similis	4.4	3.05	0.0	0.00	6	1.0	0.57	0.0	0.00	12	69.5	63.69	0.1	0.12	20
Sicyonia brevirostris	0.0	0.00	0.0	0.00	6	0.9	0.61	0.0	0.00	12	2.9	2.16	0.0	0.04	20
Anasimus latus	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	12	0.0	0.00	0.0	0.00	20
Stenotomus caprinus	0.0	0.00	0.0	0.00	6	4.1	1.48	0.1	0.03	12	456.7	206.04	16.8	7.99	20
Chloroscombrus chrysurus	99.7	55.83	1.5	1.23	6	574.4	203.69	9.8	4.25	12	217.8	136.46	4.6	2.33	20
Arius felis	119.4	91.47	8.0	4.22	6	123.7	94.37	25.6	20.54	12	503.9	355.40	28.4	22.05	20
Micropogonias undulatus	416.0	244.99	16.8	9.41	6	167.9	95.11	11.1	6.62	12	51.1	21.53	3.0	1.31	20
Serranus atrobranchus	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	12	7.0	3.76	0.1	0.03	20
Syacium papillosum	0.0	0.00	0.0	0.00	6	0.4	0.38	0.0	0.00	12	39.9	21.17	2.2	1.22	20
Leiostomus xanthurus	84.1	56.23	7.1	4.69	6	16.7	13.36	1.4	1.21	12	10.3	6.31	0.9	0.56	20
Cynoscion arenarius	89.7	57.55	1.3	0.56	6	8.9	5.06	1.0	0.61	12	4.1	2.71	0.3	0.15	20
Squid	2.0	1.26	0.0	0.00	6	2.8	1.46	0.1	0.05	12	19.1	7.45	0.5	0.28	20

Table 15a (continued)

Statistical Zone 11

Summary of dominant organisms taken in statistical zone 11 during the 1996 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
Portunus spinicarpus	18.5	10.46	0.1	0.06	6	107.8	80.86	1.3	0.80	5	2475.2	1626.29	18.1	9.38	4
Solenocera vioscai	0.8	0.75	0.0	0.00	6	1.0	0.98	0.0	0.00	5	631.2	430.32	3.9	2.78	4
Penaeus aztecus	20.3	12.08	0.6	0.43	6	49.1	28.67	1.9	0.93	5	108.6	33.91	3.8	1.08	4
Trachypenaeus similis	3.6	2.31	0.0	0.01	6	0.0	0.00	0.0	0.00	5	122.5	78.78	0.4	0.28	4
Sicyonia brevirostris	28.8	16.45	0.4	0.27	6	78.4	35.92	1.6	0.82	5	12.3	12.27	0.1	0.10	4
Anasimus latus	0.0	0.00	0.0	0.00	6	9.7	9.71	0.1	0.10	5	329.2	284.46	2.9	2.66	4
Stenotomus caprinus	257.7	102.74	14.3	6.59	6	418.1	75.58	22.4	5.34	5	91.1	52.12	6.6	5.02	4
Chloroscombrus chrysurus	4.5	3.67	0.3	0.28	6	0.8	0.80	0.1	0.15	5	0.0	0.00	0.0	0.00	4
Arius felis	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	4
Micropogonias undulatus	12.1	5.11	0.7	0.26	6	134.0	81.83	8.2	5.03	5	53.2	48.96	5.0	4.30	4
Serranus atrobranchus	13.5	11.29	0.1	0.07	6	28.0	18.03	0.3	0.21	5	580.9	401.05	10.7	7.13	4
Syacium papillosum	76.5	48.37	4.8	3.05	6	64.3	35.82	3.5	1.96	5	0.0	0.00	0.0	0.00	4
Leiostomus xanthurus	53.2	38.95	4.4	3.12	6	33.0	15.27	2.8	1.31	5	132.4	62.51	13.9	6.09	4
Cynoscion arenarius	21.0	13.03	2.0	1.33	6	15.3	5.76	1.6	0.53	5	288.7	93.16	29.5	9.73	4
Squid	6.5	3.48	0.2	0.10	6	16.9	9.77	0.1	0.08	5	24.3	13.40	1.1	0.53	4

Table 15b

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 1996 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			Over 40 fm		
Environmental category	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	63.8	13.94	6	56.9	20.05	12	78.7	24.93	20	57.5	11.12	6	131.0	56.82	5	159.0	20.25	4
Total finfish kg	62.4	13.76	6	55.3	19.96	12	76.1	24.86	20	54.0	10.81	6	69.2	5.58	5	127.4	23.35	4
Total crustacean kg	1.8	0.91	6	0.8	0.42	12	1.3	0.60	20	2.6	1.00	6	5.7	1.60	5	30.8	10.76	4
Total others kg	0.5	0.45	6	0.7	0.51	12	1.2	0.47	20	0.7	0.53	6	56.1	54.84	5	1.0	0.62	4
Surface temperature	22.5	0.42	7	22.7	0.21	12	23.3	0.20	18	23.8	0.33	8	23.0	0.43	3	23.5	0.26	7
Midwater temperature	22.5	0.39	7	22.9	0.17	11	23.6	0.24	18	23.9	0.33	8	23.1	0.35	3	23.1	0.46	6
Bottom temperature	22.6	0.33	7	23.1	0.15	12	23.9	0.28	18	24.0	0.35	8	23.3	0.14	3	21.5	0.86	6
Surface salinity	31.8	0.24	7	32.8	0.25	12	34.6	0.17	18	33.7	1.17	8	35.5	0.56	3	35.9	0.26	7
Midwater salinity	31.9	0.21	7	33.0	0.22	12	34.9	0.11	18	33.8	1.19	8	36.0	0.19	3	36.2	0.05	6
Bottom salinity	32.4	0.31	7	33.6	0.15	12	35.3	0.16	18	34.1	1.24	8	36.1	0.08	3	36.3	0.05	6
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	1.3	0.00	7	1.3	0.00	12	1.2	0.08	18	0.9	0.15	8	1.1	0.59	3	0.7	0.31	7
Surface oxygen	6.8	0.13	7	6.9	0.09	12	6.3	0.08	18	5.4	0.49	8	5.7	0.09	3	5.7	0.05	7
Midwater oxygen	6.8	0.14	7	6.9	0.08	12	6.3	0.08	18	5.1	0.66	8	5.6	0.03	3	5.4	0.18	6
Bottom oxygen	6.4	0.34	7	6.6	0.09	12	5.9	0.14	18	5.4	0.38	8	5.5	0.12	3	4.8	0.33	6

Table 16a

Statistical Zone 13

Summary of dominant organisms taken in statistical zone 13 during the 1996 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
Portunus spinicarpus	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	5	0.6	0.57	0.0	0.00	7
Trachypenaeus similis	22.7	18.56	0.0	0.04	2	162.8	91.31	0.5	0.30	5	387.2	166.01	1.1	0.47	7
Callinectes similis	253.3	189.18	1.3	0.92	2	77.2	44.64	0.4	0.20	5	327.5	152.87	2.7	1.44	7
Portunus gibbesii	332.9	291.50	1.1	0.75	2	21.9	13.78	0.1	0.07	5	139.0	80.25	0.6	0.25	7
Penaeus aztecus	66.1	24.89	0.6	0.25	2	58.3	13.70	0.4	0.09	5	133.6	79.47	1.3	0.97	7
Squilla spp.	16.6	2.13	0.1	0.04	2	52.2	23.29	0.5	0.28	5	41.7	14.62	0.2	0.10	7
Micropogonias undulatus	67.6	33.81	4.2	1.95	2	471.5	297.37	25.6	16.09	5	903.4	485.59	46.9	24.20	7
Trichiurus lepturus	40.3	40.34	1.7	1.69	2	121.0	93.16	3.3	2.64	5	335.5	219.89	14.5	10.60	7
Serranus atrobranchus	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	7
Leiostomus xanthurus	24.9	14.52	2.1	0.83	2	2.1	1.33	0.2	0.13	5	106.1	67.07	9.5	6.42	7
Cynoscion arenarius	78.7	59.94	6.7	5.79	2	66.9	24.33	5.6	3.10	5	32.9	8.30	3.4	1.06	7
Prionotus longispinosus	15.0	15.00	0.2	0.17	2	1.6	1.60	0.0	0.02	5	76.3	33.62	2.2	1.06	7
Centropristis philadelphica	0.0	0.00	0.0	0.00	2	1.6	1.60	0.0	0.02	5	26.2	9.83	0.4	0.17	7
Lagodon rhomboides	0.0	0.00	0.0	0.00	2	1.6	0.98	0.1	0.04	5	78.4	67.97	3.5	3.05	7
Squid	11.1	5.46	0.0	0.05	2	107.3	59.49	1.4	0.77	5	11.1	5.85	0.1	0.03	7

Table 16a (continued)

Statistical Zone 13

Summary of dominant organisms taken in statistical zone 13 during the 1996 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
Portunus spinicarpus	0.0	0.00	0.0	0.00	1	794.1	0.00	5.3	0.00	1	34608.9	0.00	381.5	0.00	1
Trachypenaeus similis	321.0	0.00	1.3	0.00	1	458.8	0.00	1.8	0.00	1	0.0	0.00	0.0	0.00	1
Callinectes similis	188.6	0.00	3.5	0.00	1	377.6	0.00	4.7	0.00	1	0.0	0.00	0.0	0.00	1
Portunus gibbesii	294.3	0.00	0.9	0.00	1	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
Penaeus aztecus	85.7	0.00	1.3	0.00	1	91.8	0.00	1.8	0.00	1	6.7	0.00	0.1	0.00	1
Squilla spp.	63.8	0.00	1.1	0.00	1	268.2	0.00	1.8	0.00	1	540.0	0.00	8.7	0.00	1
Micropogonias undulatus	55.2	0.00	2.9	0.00	1	42.4	0.00	2.9	0.00	1	366.7	0.00	28.2	0.00	1
Trichiurus lepturus	6.7	0.00	0.2	0.00	1	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
Serranus atrobranchus	18.1	0.00	0.2	0.00	1	977.6	0.00	14.1	0.00	1	931.1	0.00	19.5	0.00	1
Leiostomus xanthurus	77.1	0.00	9.1	0.00	1	187.1	0.00	25.3	0.00	1	0.0	0.00	0.0	0.00	1
Cynoscion arenarius	70.5	0.00	14.7	0.00	1	183.5	0.00	15.4	0.00	1	215.6	0.00	32.5	0.00	1
Prionotus longispinosus	41.9	0.00	4.2	0.00	1	24.7	0.00	1.1	0.00	1	215.6	0.00	19.5	0.00	1
Centropristis philadelphica	143.8	0.00	3.5	0.00	1	98.8	0.00	2.4	0.00	1	260.0	0.00	21.7	0.00	1
Lagodon rhomboides	6.7	0.00	0.9	0.00	1	35.3	0.00	1.1	0.00	1	0.0	0.00	0.0	0.00	1
Squid	0.0	0.00	0.0	0.00	1	7.1	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1

Table 16b

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 1996 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			Over 40 fm		
Environmental category	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	40.1	14.49	2	53.5	17.96	5	95.9	32.93	7	54.1	0.00	1	93.0	0.00	1	529.3	0.00	1
Total finfish kg	34.8	16.91	2	47.9	17.14	5	87.0	33.07	7	44.6	0.00	1	67.4	0.00	1	133.3	0.00	1
Total crustacean kg	5.2	2.42	2	2.7	1.03	5	6.9	2.08	7	9.5	0.00	1	25.7	0.00	1	396.0	0.00	1
Total others kg	0.0	0.00	2	2.6	1.27	5	1.6	1.65	7	0.0	0.00	1	0.0	0.00	1	0.0	0.00	1
Surface temperature	17.9	0.27	4	19.4	1.07	3	19.3	0.74	5	0.0	0.00	0	21.7	0.00	1	23.6	0.00	1
Midwater temperature	18.6	0.25	4	20.1	0.80	3	20.3	0.51	5	0.0	0.00	0	22.3	0.00	1	22.8	0.00	1
Bottom temperature	20.6	0.46	4	21.7	0.22	3	23.3	0.48	5	0.0	0.00	0	22.5	0.00	1	19.5	0.00	1
Surface salinity	28.5	0.25	4	28.5	3.72	3	28.1	1.66	5	0.0	0.00	0	32.8	0.00	1	35.5	0.00	1
Midwater salinity	30.2	0.32	4	31.9	1.54	3	31.4	0.12	5	0.0	0.00	0	35.5	0.00	1	36.3	0.00	1
Bottom salinity	32.8	0.56	4	34.1	0.40	3	34.8	0.59	5	0.0	0.00	0	35.7	0.00	1	36.4	0.00	1
Surface chlorophyll	2.7	0.43	4	1.6	0.46	2	1.4	0.33	4	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface fluorescence	3.5	0.00	4	3.5	0.00	3	3.0	0.49	5	0.0	0.00	0	4.7	0.00	1	0.7	0.00	1
Surface oxygen	6.9	1.19	4	7.1	1.03	3	8.2	0.15	5	0.0	0.00	0	5.9	0.00	1	5.8	0.00	1
Midwater oxygen	6.0	1.24	4	6.7	0.58	3	7.6	0.11	5	0.0	0.00	0	5.6	0.00	1	4.7	0.00	1
Bottom oxygen	5.0	1.07	4	6.1	0.42	3	4.8	0.40	5	0.0	0.00	0	5.6	0.00	1	3.8	0.00	1

Table 17a

Statistical Zone 14

Summary of dominant organisms taken in statistical zone 14 during the 1996 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	63.0	23.62	0.5	0.19	2	116.6	50.03	1.6	0.62	17
Callinectes similis	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	2	44.1	16.17	1.2	0.50	17
Trachypenaeus similis	0.0	0.00	0.0	0.00	0	12.5	12.50	0.1	0.08	2	68.3	39.26	0.3	0.18	17
Portunus gibbesii	0.0	0.00	0.0	0.00	0	30.7	22.40	0.2	0.12	2	50.7	13.60	0.5	0.16	17
Squilla spp.	0.0	0.00	0.0	0.00	0	5.1	5.14	0.0	0.04	2	11.5	3.70	0.2	0.09	17
Sicyonia brevirostris	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	2	5.1	2.96	0.1	0.06	17
Micropogonias undulatus	0.0	0.00	0.0	0.00	0	2600.2	1071.83	122.6	53.12	2	3341.9	542.57	156.8	25.58	17
Leiostomus xanthurus	0.0	0.00	0.0	0.00	0	18.6	1.95	1.4	0.67	2	164.7	57.59	12.9	5.00	17
Stenotomus caprinus	0.0	0.00	0.0	0.00	0	87.4	87.43	1.6	1.60	2	193.7	61.35	4.0	1.26	17
Prionotus longispinosus	0.0	0.00	0.0	0.00	0	237.8	37.21	4.5	1.32	2	178.3	24.09	5.5	0.73	17
Lagodon rhomboides	0.0	0.00	0.0	0.00	0	10.3	10.29	0.3	0.27	2	41.9	18.69	2.1	1.01	17
Arius felis	0.0	0.00	0.0	0.00	0	417.5	359.19	79.2	65.45	2	6.5	4.60	1.8	1.26	17
Peprilus burti	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	2	6.5	3.31	0.4	0.18	17
Cynoscion arenarius	0.0	0.00	0.0	0.00	0	26.6	26.57	3.5	3.47	2	61.5	13.85	7.8	2.02	17
Squid	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	2	9.1	3.82	0.1	0.04	17

Table 17a (continued)
Statistical Zone 14

Summary of dominant organisms taken in statistical zone 14 during the 1996 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	133.0	62.07	2.8	1.39	3	11.5	0.00	0.2	0.00	1	27.4	15.39	1.6	0.92	3
Callinectes similis	52.7	30.70	0.5	0.36	3	43.4	0.00	0.8	0.00	1	21.3	15.50	0.6	0.44	3
Trachypenaeus similis	112.0	100.24	0.5	0.39	3	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	3
Portunus gibbesii	16.7	7.34	0.2	0.15	3	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	3
Squilla spp.	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	1	2.1	2.14	0.0	0.00	3
Sicyonia brevirostris	0.0	0.00	0.0	0.00	3	71.5	0.00	0.4	0.00	1	2.4	2.35	0.0	0.03	3
Micropogonias undulatus	598.2	235.77	42.0	17.52	3	31.9	0.00	1.2	0.00	1	0.0	0.00	0.0	0.00	3
Leiostomus xanthurus	1358.8	825.70	152.2	99.47	3	803.0	0.00	83.3	0.00	1	30.0	24.88	3.9	3.23	3
Stenotomus caprinus	173.0	77.68	8.0	5.09	3	331.9	0.00	13.2	0.00	1	177.5	56.82	9.4	2.43	3
Prionotus longispinosus	9.3	2.69	0.4	0.21	3	75.3	0.00	3.2	0.00	1	18.3	16.58	1.3	0.97	3
Lagodon rhomboides	237.6	170.20	16.1	10.99	3	67.7	0.00	6.0	0.00	1	0.0	0.00	0.0	0.00	3
Arius felis	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	3
Peprilus burti	183.9	154.39	10.6	9.12	3	144.3	0.00	12.4	0.00	1	81.9	41.20	7.6	3.86	3
Cynoscion arenarius	29.3	16.40	3.7	2.92	3	16.6	0.00	1.6	0.00	1	3.3	1.86	0.6	0.32	3
Squid	2.6	2.62	0.1	0.06	3	7.7	0.00	0.1	0.00	1	49.8	33.96	1.2	0.69	3

Table 17b

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 1996 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			Over 40 fm		
Environmental category	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	0.0	0.00	0	231.7	4.42	2	219.5	30.79	17	258.9	138.24	3	138.1	0.00	1	53.8	6.21	3
Total finfish kg	0.0	0.00	0	229.0	3.99	2	214.2	30.64	17	253.8	135.63	3	134.0	0.00	1	43.1	6.83	3
Total crustacean kg	0.0	0.00	0	2.3	0.80	2	4.6	1.15	17	5.0	2.76	3	2.3	0.00	1	4.3	1.35	3
Total others kg	0.0	0.00	0	0.4	0.38	2	0.3	0.34	17	0.0	0.00	3	1.7	0.00	1	6.4	2.18	3
Surface temperature	19.6	1.00	3	22.3	0.25	3	21.7	0.22	17	23.5	0.08	3	24.0	0.93	2	25.0	0.04	3
Midwater temperature	19.6	1.00	3	22.3	0.25	3	21.9	0.25	17	23.8	0.35	3	24.8	0.29	2	25.0	0.13	3
Bottom temperature	19.4	1.11	3	22.3	0.26	3	22.9	0.29	17	23.7	0.82	3	21.8	1.44	2	21.2	0.55	3
Surface salinity	32.2	0.46	3	33.1	0.28	3	33.5	0.21	17	34.7	0.20	3	34.6	0.62	2	35.6	0.20	3
Midwater salinity	32.3	0.43	3	33.1	0.27	3	33.9	0.23	17	35.1	0.16	3	35.7	0.21	2	35.9	0.01	3
Bottom salinity	32.3	0.37	3	33.2	0.27	3	35.2	0.25	17	35.9	0.12	3	36.3	0.10	2	36.4	0.01	3
Surface chlorophyll	2.8	1.17	2	0.0	0.00	0	1.1	0.18	9	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface fluorescence	1.9	0.92	3	2.0	0.47	3	2.0	0.49	17	1.0	0.16	3	1.0	0.38	2	0.5	0.11	3
Surface oxygen	7.3	0.73	3	6.4	0.07	3	7.2	0.25	17	6.0	0.15	3	6.6	0.35	2	6.4	0.03	3
Midwater oxygen	7.3	0.47	3	6.5	0.09	3	7.4	0.22	17	5.5	0.54	3	5.4	1.05	2	6.2	0.17	3
Bottom oxygen	7.3	0.45	3	6.2	0.23	3	6.1	0.38	17	4.5	0.33	3	4.9	1.15	2	5.3	0.20	3

Table 18a

Statistical Zone 15

Summary of dominant organisms taken in statistical zone 15 during the 1996 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
Trachypenaeus similis	0.0	0.00	0.0	0.00	0	255.4	138.95	0.8	0.41	7	198.6	67.59	0.9	0.28	15
Penaeus aztecus	0.0	0.00	0.0	0.00	0	16.9	7.32	0.2	0.07	7	104.3	37.60	1.8	0.71	15
Portunus gibbesii	0.0	0.00	0.0	0.00	0	95.2	62.53	0.4	0.24	7	86.2	26.37	0.5	0.14	15
Callinectes similis	0.0	0.00	0.0	0.00	0	77.6	29.06	0.3	0.16	7	42.3	12.96	0.6	0.16	15
Penaeus setiferus	0.0	0.00	0.0	0.00	0	93.0	24.08	2.1	0.54	7	17.6	3.75	0.6	0.11	15
Squilla spp.	0.0	0.00	0.0	0.00	0	42.4	18.79	0.3	0.13	7	21.3	6.09	0.2	0.08	15
Micropogonias undulatus	0.0	0.00	0.0	0.00	0	646.2	149.17	27.7	6.21	7	1151.1	388.39	50.7	16.79	15
Stenotomus caprinus	0.0	0.00	0.0	0.00	0	257.5	145.75	3.7	1.95	7	426.6	136.20	7.0	2.12	15
Prionotus longispinosus	0.0	0.00	0.0	0.00	0	93.6	27.74	1.0	0.43	7	150.1	31.44	3.2	0.62	15
Cynoscion nothus	0.0	0.00	0.0	0.00	0	144.1	77.09	2.2	0.77	7	133.7	83.65	3.1	0.67	15
Chloroscombrus chrysurus	0.0	0.00	0.0	0.00	0	173.3	98.18	2.1	1.16	7	4.5	1.92	0.1	0.07	15
Centropristis philadelphica	0.0	0.00	0.0	0.00	0	10.6	9.92	0.2	0.16	7	46.4	12.92	0.7	0.19	15
Cynoscion arenarius	0.0	0.00	0.0	0.00	0	76.2	31.05	5.8	2.90	7	38.5	12.56	4.1	1.30	15
Trichiurus lepturus	0.0	0.00	0.0	0.00	0	68.3	31.99	1.6	0.75	7	35.3	25.91	0.6	0.28	15
Squid	0.0	0.00	0.0	0.00	0	21.0	7.92	0.3	0.12	7	26.7	12.71	0.4	0.14	15

Table 18a (continued)

Statistical Zone 15

Summary of dominant organisms taken in statistical zone 15 during the 1996 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
Trachypenaeus similis	36.1	20.60	0.2	0.13	3	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	1
Penaeus aztecus	149.2	39.98	3.7	1.35	3	77.6	31.78	2.7	0.91	6	36.0	0.00	2.7	0.00	1
Portunus gibbesii	27.2	16.06	0.2	0.15	3	0.7	0.67	0.0	0.02	6	0.0	0.00	0.0	0.00	1
Callinectes similis	54.8	9.29	1.4	0.20	3	119.2	76.83	3.1	2.07	6	0.0	0.00	0.0	0.00	1
Penaeus setiferus	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	1
Squilla spp.	28.2	10.47	0.3	0.20	3	21.9	11.87	0.2	0.17	6	0.0	0.00	0.0	0.00	1
Micropogonias undulatus	1298.0	824.74	61.4	33.47	3	5.3	3.49	0.7	0.48	6	0.0	0.00	0.0	0.00	1
Stenotomus caprinus	568.7	129.64	11.8	3.17	3	269.7	95.05	8.3	2.13	6	72.0	0.00	3.3	0.00	1
Prionotus longispinosus	41.5	17.01	1.8	0.82	3	46.0	18.10	2.5	0.90	6	12.0	0.00	0.4	0.00	1
Cynoscion nothus	3.2	3.24	0.3	0.32	3	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	1
Chloroscombrus chrysurus	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	1
Centropristis philadelphica	49.5	17.51	1.4	0.64	3	62.8	27.21	3.0	1.10	6	0.0	0.00	0.0	0.00	1
Cynoscion arenarius	40.5	15.49	4.7	1.73	3	14.7	9.40	2.2	1.36	6	0.0	0.00	0.0	0.00	1
Trichiurus lepturus	7.7	7.67	0.5	0.52	3	13.6	7.20	0.9	0.46	6	4.0	0.00	0.2	0.00	1
Squid	1.3	1.33	0.0	0.00	3	6.3	5.37	0.2	0.17	6	8.0	0.00	0.0	0.00	1

Table 18b

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 1996 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			Over 40 fm		
Environmental category	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	0.0	0.00	0	60.1	11.99	7	87.8	20.89	15	110.3	31.39	3	44.9	6.37	6	12.7	0.00	1
Total finfish kg	0.0	0.00	0	51.6	10.14	7	80.6	20.58	15	101.5	32.75	3	35.4	5.92	6	9.1	0.00	1
Total crustacean kg	0.0	0.00	0	4.5	1.22	7	5.5	0.99	15	8.5	1.43	3	7.1	2.75	6	3.6	0.00	1
Total others kg	0.0	0.00	0	4.1	2.82	7	1.5	0.60	15	0.3	0.15	3	2.3	0.62	6	0.0	0.00	1
Surface temperature	18.5	0.00	1	21.8	0.73	9	22.8	0.44	15	24.8	0.22	2	24.8	0.02	3	0.0	0.00	0
Midwater temperature	18.5	0.00	1	21.8	0.73	9	22.8	0.42	15	23.9	0.84	2	24.9	0.11	3	0.0	0.00	0
Bottom temperature	18.6	0.00	1	22.3	0.69	9	23.5	0.43	15	24.2	0.81	2	22.4	0.55	3	0.0	0.00	0
Surface salinity	31.5	0.00	1	32.5	0.28	9	33.8	0.16	15	34.8	0.42	2	35.3	0.12	3	0.0	0.00	0
Midwater salinity	31.9	0.00	1	32.7	0.31	9	33.9	0.17	15	35.2	0.06	2	35.5	0.10	3	0.0	0.00	0
Bottom salinity	32.0	0.00	1	33.3	0.24	9	34.8	0.16	15	35.5	0.50	2	36.2	0.04	3	0.0	0.00	0
Surface chlorophyll	5.5	0.00	1	1.2	0.11	4	1.1	0.12	5	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface fluorescence	0.5	0.00	1	1.8	0.50	9	1.1	0.19	15	1.3	0.03	2	0.5	0.09	3	0.0	0.00	0
Surface oxygen	8.4	0.00	1	6.5	0.38	9	6.7	0.28	15	6.6	0.30	2	6.5	0.29	3	0.0	0.00	0
Midwater oxygen	7.8	0.00	1	6.5	0.38	9	6.7	0.19	15	6.4	0.05	2	6.5	0.10	3	0.0	0.00	0
Bottom oxygen	7.3	0.00	1	5.8	0.41	9	5.9	0.31	15	5.6	0.75	2	4.8	0.21	3	0.0	0.00	0

Table 19a

Statistical Zone 16

Summary of dominant organisms taken in statistical zone 16 during the 1996 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
Sicyonia brevirostris	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	2	11.1	7.74	0.2	0.12	9
Penaeus aztecus	8.8	0.00	0.1	0.00	1	114.3	109.52	0.6	0.55	2	118.5	41.87	1.9	0.78	9
Portunus gibbesii	220.6	0.00	0.5	0.00	1	362.8	153.56	0.9	0.01	2	25.7	14.08	0.1	0.07	9
Trachypenaeus similis	0.0	0.00	0.0	0.00	1	138.6	18.65	0.4	0.08	2	27.7	15.10	0.1	0.08	9
Callinectes similis	28.2	0.00	0.3	0.00	1	21.0	17.88	0.3	0.15	2	32.3	12.12	0.5	0.20	9
Squilla spp.	56.5	0.00	0.2	0.00	1	22.2	14.10	0.1	0.03	2	25.9	15.45	0.1	0.08	9
Stenotomus caprinus	3.5	0.00	0.0	0.00	1	1912.2	1817.50	24.7	23.86	2	2497.4	662.88	38.5	8.52	9
Micropogonias undulatus	1.8	0.00	0.1	0.00	1	218.1	218.11	10.7	10.72	2	1879.9	846.17	77.2	32.61	9
Chloroscombrus chrysurus	308.8	0.00	2.5	0.00	1	1058.8	927.48	9.1	8.17	2	268.7	254.17	3.1	2.65	9
Leiostomus xanthurus	7.1	0.00	0.2	0.00	1	0.0	0.00	0.0	0.00	2	67.0	23.02	4.7	1.57	9
Peprilus burti	340.6	0.00	14.4	0.00	1	30.3	9.20	1.4	0.53	2	50.1	19.38	2.3	0.81	9
Prionotus longispinosus	5.3	0.00	0.2	0.00	1	87.9	10.03	1.8	0.45	2	88.3	22.12	1.2	0.31	9
Centropristis philadelphica	47.6	0.00	0.6	0.00	1	21.6	0.51	0.5	0.07	2	65.3	29.27	1.3	0.48	9
Cynoscion nothus	0.0	0.00	0.0	0.00	1	26.5	9.15	1.3	0.45	2	88.1	34.70	5.0	1.75	9
Squid	21.2	0.00	0.6	0.00	1	47.6	32.97	0.7	0.14	2	18.1	7.05	0.2	0.06	9

Table 19a (continued)

Statistical Zone 16

Summary of dominant organisms taken in statistical zone 16 during the 1996 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
Sicyonia brevirostris	380.3	353.68	1.6	1.22	3	386.6	365.93	5.6	5.31	5	28.8	2.79	0.3	0.04	2
Penaeus aztecus	43.0	16.09	1.4	0.62	3	39.1	19.58	1.5	0.81	5	37.0	4.03	1.7	0.14	2
Portunus gibbesii	1.3	1.33	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	10.3	10.33	0.1	0.11	3	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	2
Callinectes similis	21.0	13.00	0.7	0.42	3	12.5	4.19	0.3	0.11	5	3.5	3.50	0.1	0.09	2
Squilla spp.	6.7	1.33	0.1	0.02	3	2.3	1.45	0.0	0.02	5	12.0	12.00	0.1	0.09	2
Stenotomus caprinus	704.0	151.23	22.1	2.33	3	306.6	34.61	12.2	1.68	5	307.6	156.61	14.1	7.98	2
Micropogonias undulatus	731.7	558.44	39.0	26.93	3	15.3	5.53	1.3	0.44	5	0.0	0.00	0.0	0.00	2
Chloroscombrus chrysurus	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
Leiostomus xanthurus	255.0	139.49	28.8	16.20	3	26.1	12.45	2.9	1.49	5	4.7	4.74	0.6	0.57	2
Peprilus burti	104.0	104.00	7.1	7.12	3	70.4	30.33	5.0	2.32	5	76.5	76.50	4.5	4.48	2
Prionotus longispinosus	28.7	14.52	1.2	0.60	3	17.0	10.18	0.9	0.53	5	5.7	3.74	0.7	0.48	2
Centropristis philadelphica	27.7	23.78	2.1	1.74	3	56.1	36.95	2.9	1.52	5	25.6	18.61	1.9	1.38	2
Cynoscion nothus	2.7	2.67	0.3	0.26	3	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	2
Squid	2.7	2.67	0.0	0.00	3	8.0	1.64	0.4	0.21	5	30.1	7.95	2.5	0.81	2

Table 19b

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 1996 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			Over 40 fm		
Environmental category	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	36.1	0.00	1	71.2	20.22	2	159.2	38.12	9	135.2	4.47	3	52.6	8.87	5	49.2	9.65	2
Total finfish kg	23.3	0.00	1	60.3	22.26	2	154.3	38.10	9	130.3	5.02	3	44.0	3.15	5	41.0	7.81	2
Total crustacean kg	4.0	0.00	1	2.9	0.77	2	3.6	1.29	9	4.4	1.75	3	7.8	6.06	5	4.0	0.33	2
Total others kg	9.6	0.00	1	8.0	2.80	2	1.1	0.60	9	0.8	0.15	3	0.7	0.46	5	4.2	1.51	2
Surface temperature	0.0	0.00	0	24.2	0.16	3	24.9	0.07	9	25.0	0.12	3	24.8	0.15	2	24.9	0.05	2
Midwater temperature	0.0	0.00	0	24.2	0.14	3	24.9	0.06	9	25.1	0.08	3	24.8	0.11	2	25.0	0.04	2
Bottom temperature	0.0	0.00	0	24.3	0.28	3	25.0	0.12	9	24.5	0.86	3	22.1	0.32	2	19.9	0.75	2
Surface salinity	0.0	0.00	0	30.6	0.85	3	34.0	0.26	9	34.9	0.06	3	35.1	0.35	2	35.3	0.21	2
Midwater salinity	0.0	0.00	0	30.9	0.81	3	34.0	0.22	9	35.0	0.08	3	35.1	0.38	2	35.4	0.21	2
Bottom salinity	0.0	0.00	0	32.4	0.57	3	34.4	0.20	9	35.6	0.32	3	36.2	0.02	2	36.3	0.03	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	0.0	0.00	0	1.8	0.22	3	1.0	0.10	9	0.9	0.16	3	0.5	0.02	2	0.6	0.07	2
Surface oxygen	0.0	0.00	0	6.2	0.07	3	6.1	0.10	9	6.0	0.15	3	5.4	0.70	2	5.6	0.75	2
Midwater oxygen	0.0	0.00	0	6.2	0.22	3	6.1	0.09	9	6.1	0.15	3	6.1	0.05	2	6.3	0.00	2
Bottom oxygen	0.0	0.00	0	5.1	0.33	3	5.6	0.23	9	5.4	0.43	3	4.8	0.05	2	4.3	0.25	2

Table 20a

Statistical Zone 17

Summary of dominant organisms taken in statistical zone 17 during the 1996 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
Portunus spinicarpus	0.0	0.00	0.0	0.00	9	0.0	0.00	0.0	0.00	14	0.0	0.00	0.0	0.00	11
Sicyonia brevirostris	0.0	0.00	0.0	0.00	9	0.0	0.00	0.0	0.00	14	122.7	47.70	1.8	0.67	11
Penaeus aztecus	2.7	2.67	0.0	0.00	9	14.7	6.45	0.2	0.10	14	38.7	22.70	0.7	0.41	11
Squilla spp.	195.8	82.65	1.5	0.65	9	27.2	15.68	0.2	0.11	14	4.4	2.09	0.1	0.05	11
Penaeus setiferus	231.1	108.98	1.8	0.58	9	11.4	6.44	0.2	0.14	14	0.0	0.00	0.0	0.00	11
Xiphopenaeus kroyeri	312.7	67.95	1.5	0.38	9	0.4	0.43	0.0	0.00	14	0.0	0.00	0.0	0.00	11
Stenotomus caprinus	0.0	0.00	0.0	0.00	9	987.7	331.93	16.9	5.92	14	1446.9	478.38	41.4	10.75	11
Peprilus burti	499.1	494.62	17.9	17.86	9	91.5	54.21	3.9	2.38	14	54.0	39.03	3.0	2.19	11
Chloroscombrus chrysurus	0.6	0.56	0.0	0.01	9	377.1	278.20	3.3	2.33	14	15.8	10.66	0.3	0.20	11
Micropogonias undulatus	0.0	0.00	0.0	0.00	9	48.7	44.75	2.7	2.50	14	322.3	143.60	20.1	7.77	11
Trichiurus lepturus	42.1	41.37	1.1	1.03	9	31.0	19.41	0.9	0.63	14	3.7	2.48	0.2	0.13	11
Pristipomoides aquilonaris	0.0	0.00	0.0	0.00	9	0.0	0.00	0.0	0.00	14	0.3	0.28	0.0	0.02	11
Upeneus parvus	0.0	0.00	0.0	0.00	9	0.0	0.00	0.0	0.00	14	11.8	4.42	0.3	0.09	11
Leiostomus xanthurus	1.9	0.95	0.1	0.05	9	45.2	39.69	3.6	3.34	14	40.5	20.57	3.4	1.58	11
Squid	14.9	5.13	0.2	0.08	9	50.2	14.07	0.5	0.15	14	48.5	17.97	0.5	0.13	11

Table 20a (continued)

Statistical Zone 17

Summary of dominant organisms taken in statistical zone 17 during the 1996 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
Portunus spinicarpus	0.5	0.48	0.0	0.00	6	26.2	24.87	0.3	0.26	4	1071.8	622.11	4.8	1.86	7
Sicyonia brevirostris	300.6	171.37	3.7	2.31	6	128.0	94.94	1.7	1.34	4	2.9	2.86	0.1	0.10	7
Penaeus aztecus	68.3	18.70	2.3	0.64	6	20.4	11.99	0.9	0.58	4	11.0	4.37	0.5	0.22	7
Squilla spp.	7.7	4.82	0.1	0.08	6	3.4	3.40	0.0	0.01	4	30.2	19.70	0.4	0.19	7
Penaeus setiferus	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	7
Xiphopenaeus kroyeri	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	7
Stenotomus caprinus	581.6	170.96	21.7	6.25	6	815.3	308.63	40.6	16.66	4	369.4	94.50	17.4	4.80	7
Peprilus burti	194.3	129.10	9.0	5.87	6	54.5	36.85	3.0	2.04	4	277.5	189.84	13.9	9.00	7
Chloroscombrus chrysurus	4.8	2.59	0.3	0.13	6	3.5	3.50	0.3	0.34	4	0.0	0.00	0.0	0.00	7
Micropogonias undulatus	165.8	37.58	14.6	3.21	6	23.3	14.31	1.6	1.08	4	0.0	0.00	0.0	0.00	7
Trichiurus lepturus	49.3	31.75	3.1	1.91	6	21.0	19.05	1.6	1.55	4	3.4	2.19	0.3	0.19	7
Pristipomoides aquilonaris	1.8	1.13	0.0	0.02	6	10.2	5.55	0.7	0.62	4	259.7	84.92	16.9	6.38	7
Upeneus parvus	8.7	4.17	0.3	0.11	6	121.2	21.13	3.8	0.91	4	158.0	54.49	5.4	2.06	7
Leiostomus xanthurus	70.9	14.99	7.3	1.76	6	51.8	24.17	5.5	2.69	4	0.0	0.00	0.0	0.00	7
Squid	6.9	2.38	0.3	0.09	6	89.3	45.54	0.4	0.13	4	77.9	28.78	4.8	1.94	7

Table 20b

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 1996 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			Over 40 fm		
Environmental category	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	55.6	23.26	9	97.2	24.05	14	93.6	16.34	11	84.1	13.76	6	94.1	25.96	4	102.2	11.00	7
Total finfish kg	21.6	19.19	9	65.5	19.72	14	88.5	15.98	11	76.6	14.45	6	89.5	27.58	4	89.1	11.49	7
Total crustacean kg	5.5	1.02	9	1.2	0.33	14	3.8	1.21	11	7.0	2.72	6	3.6	2.41	4	6.5	2.52	7
Total others kg	28.5	17.79	9	30.1	19.05	14	1.2	0.64	11	0.9	0.37	6	0.9	0.03	4	6.5	2.10	7
Surface temperature	20.9	0.28	10	22.9	0.32	10	25.2	0.12	11	25.5	0.15	4	25.5	0.00	1	25.7	0.06	4
Midwater temperature	20.5	0.30	10	22.5	0.49	10	25.2	0.10	11	25.5	0.10	4	25.5	0.00	1	25.5	0.02	4
Bottom temperature	20.6	0.28	10	22.8	0.49	10	25.1	0.12	11	25.4	0.10	4	21.3	0.00	1	20.3	0.39	4
Surface salinity	19.7	0.82	10	26.3	1.31	10	33.8	0.48	11	35.3	0.07	4	35.1	0.00	1	35.2	0.05	4
Midwater salinity	21.8	1.09	10	29.2	0.71	10	34.4	0.19	11	35.4	0.06	4	35.5	0.00	1	35.5	0.04	4
Bottom salinity	23.1	1.23	10	30.4	0.66	10	34.6	0.16	11	35.4	0.08	4	36.3	0.00	1	36.3	0.04	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	1.4	0.41	10	1.4	0.20	10	0.8	0.07	11	0.7	0.11	4	0.5	0.00	1	0.4	0.03	4
Surface oxygen	8.5	0.30	10	7.3	0.42	10	5.8	0.12	11	5.5	0.32	4	5.8	0.00	1	5.8	0.00	4
Midwater oxygen	7.7	0.36	10	6.5	0.20	10	5.9	0.05	11	5.8	0.09	4	5.5	0.00	1	5.7	0.03	4
Bottom oxygen	6.4	0.40	10	5.8	0.36	10	5.6	0.08	11	5.7	0.15	4	3.9	0.00	1	4.0	0.11	4

Table 21a

Statistical Zone 18

Summary of dominant organisms taken in statistical zone 18 during the 1996 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 setiferus	51.6	15.52	0.4	0.13	10	120.1	55.22	1.6	0.73	15	0.0	0.00	0.0	0.00	5
Portunus gibbesii	33.6	17.23	0.1	0.06	10	59.2	15.81	0.2	0.05	15	8.1	7.03	0.1	0.05	5
Trachypenaeus similis	0.6	0.60	0.0	0.00	10	33.7	13.39	0.1	0.04	15	40.8	21.15	0.3	0.20	5
Xiphopenaeus kroyeri	172.2	108.56	1.2	0.85	10	3.6	2.18	0.0	0.02	15	0.0	0.00	0.0	0.00	5
Squilla spp.	10.2	4.29	0.1	0.04	10	29.2	9.88	0.4	0.13	15	30.1	26.09	0.3	0.30	5
Callinectes similis	7.8	4.74	0.0	0.00	10	20.7	7.54	0.1	0.03	15	9.1	6.74	0.3	0.25	5
Stenotomus caprinus	0.0	0.00	0.0	0.00	10	139.7	69.54	2.1	1.04	15	1830.9	385.16	52.5	12.08	5
Peprilus burti	15.6	6.82	0.4	0.25	10	8.1	5.32	0.3	0.17	15	110.8	93.46	5.9	4.76	5
Trachurus lathami	0.0	0.00	0.0	0.00	10	0.4	0.40	0.0	0.04	15	17.1	9.42	0.7	0.37	5
Micropogonias undulatus	0.0	0.00	0.0	0.00	10	1.6	1.46	0.1	0.07	15	279.3	88.96	14.8	6.28	5
Leiostomus xanthurus	0.0	0.00	0.0	0.00	10	2.0	1.27	0.1	0.05	15	95.6	40.40	7.9	3.44	5
Larimus fasciatus	0.0	0.00	0.0	0.00	10	0.0	0.00	0.0	0.00	15	92.0	87.57	5.4	5.07	5
Upeneus parvus	0.0	0.00	0.0	0.00	10	0.0	0.00	0.0	0.00	15	12.2	5.92	0.4	0.22	5
Trichiurus lepturus	3.6	2.40	0.1	0.04	10	2.3	0.72	0.0	0.02	15	13.4	12.91	0.5	0.49	5
Squid	4.2	1.80	0.1	0.04	10	9.8	3.98	0.1	0.03	15	8.9	6.23	0.4	0.27	5

Table 21a (continued)

Statistical Zone 18

Summary of dominant organisms taken in statistical zone 18 during the 1996 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 setiferus	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1
Portunus gibbesii	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1
Trachypenaeus similis	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1
Xiphopenaeus kroyeri	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1
Squilla spp.	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1
Callinectes similis	6.5	3.77	0.1	0.09	4	9.3	9.29	0.3	0.29	2	0.0	0.00	0.0	0.00	1
Stenotomus caprinus	1433.3	295.80	52.2	13.36	4	545.6	142.78	16.2	6.37	2	205.5	0.00	13.3	0.00	1
Peprilus burti	215.5	75.84	9.2	3.65	4	32.1	32.14	1.7	1.72	2	132.7	0.00	5.5	0.00	1
Trachurus lathami	289.0	172.09	8.1	4.45	4	69.8	13.01	1.6	0.40	2	381.8	0.00	12.7	0.00	1
Micropogonias undulatus	109.8	92.54	7.6	6.13	4	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1
Leiostomus xanthurus	74.0	32.64	7.2	2.88	4	1.4	1.43	0.2	0.23	2	0.0	0.00	0.0	0.00	1
Larimus fasciatus	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1
Upeneus parvus	46.5	8.93	1.2	0.36	4	121.6	91.58	4.0	3.20	2	132.7	0.00	5.5	0.00	1
Trichiurus lepturus	93.0	35.79	4.6	2.52	4	20.2	15.49	0.6	0.21	2	0.0	0.00	0.0	0.00	1
Squid	15.8	6.34	0.3	0.15	4	34.3	34.29	0.1	0.06	2	29.1	0.00	0.7	0.00	1

Table 21b

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 1996 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			Over 40 fm		
Environmental category	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	51.8	32.45	10	13.5	3.64	15	110.4	27.92	5	112.4	18.62	4	40.8	10.90	2	68.6	0.00	1
Total finfish kg	0.8	0.58	10	9.1	3.55	15	106.9	28.10	5	111.1	18.72	4	39.4	10.83	2	65.3	0.00	1
Total crustacean kg	2.2	1.06	10	2.5	0.88	15	3.4	1.15	5	0.7	0.29	4	1.0	0.29	2	0.8	0.00	1
Total others kg	48.3	32.56	10	1.2	0.63	15	0.4	0.25	5	0.6	0.29	4	0.4	0.36	2	1.7	0.00	1
Surface temperature	20.9	0.16	10	21.9	0.24	13	24.8	0.15	7	25.7	0.19	2	25.9	0.20	2	25.7	0.10	2
Midwater temperature	20.6	0.08	10	21.5	0.30	13	24.8	0.14	7	25.6	0.10	2	25.9	0.37	2	25.4	0.09	2
Bottom temperature	20.9	0.18	10	21.9	0.30	13	24.9	0.12	7	25.6	0.19	2	25.8	0.41	2	19.5	0.51	2
Surface salinity	26.2	0.54	10	28.7	0.45	13	34.2	0.23	7	35.3	0.21	2	35.5	0.24	2	35.4	0.12	2
Midwater salinity	26.5	0.58	10	29.2	0.29	13	34.3	0.25	7	35.3	0.24	2	35.7	0.35	2	35.6	0.16	2
Bottom salinity	26.8	0.59	10	29.5	0.26	13	34.5	0.23	7	35.4	0.31	2	35.9	0.38	2	36.3	0.03	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	0.7	0.00	10	1.1	0.31	13	1.1	0.12	7	0.9	0.11	2	0.5	0.00	2	0.5	0.09	2
Surface oxygen	7.8	0.16	10	7.5	0.30	13	5.8	0.05	7	6.4	0.55	2	5.8	0.05	2	5.8	0.10	2
Midwater oxygen	7.4	0.15	10	7.4	0.24	13	5.8	0.03	7	5.9	0.15	2	5.7	0.00	2	5.8	0.05	2
Bottom oxygen	6.2	0.47	10	7.0	0.39	13	5.7	0.04	7	5.6	0.05	2	5.2	0.25	2	3.8	0.20	2

Table 22a

Statistical Zone 19

Summary of dominant organisms taken in statistical zone 19 during the 1996 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
Trachypenaeus similis	47.8	24.85	0.2	0.14	3	155.9	45.79	0.3	0.10	19	213.0	65.88	0.6	0.16	16
Penaeus setiferus	220.6	116.70	3.2	1.50	3	135.8	50.94	1.9	0.71	19	25.0	10.09	0.7	0.30	16
Squilla spp.	74.1	62.09	1.0	0.83	3	61.4	20.68	0.5	0.18	19	34.4	12.43	0.3	0.10	16
Penaeus aztecus	30.0	19.29	0.1	0.09	3	5.1	2.09	0.1	0.02	19	38.7	11.83	0.5	0.18	16
Portunus gibbesii	87.3	3.30	0.3	0.12	3	54.4	19.27	0.2	0.05	19	26.4	7.11	0.2	0.07	16
Sicyonia dorsalis	0.0	0.00	0.0	0.00	3	5.8	1.93	0.0	0.00	19	36.8	17.42	0.1	0.03	16
Chloroscombrus chrysurus	38.0	24.58	0.1	0.09	3	14.1	6.71	0.1	0.06	19	1646.2	975.56	15.9	8.09	16
Stenotomus caprinus	0.0	0.00	0.0	0.00	3	0.5	0.39	0.0	0.01	19	501.3	170.68	11.0	3.66	16
Peprilus burti	2.6	2.61	0.1	0.08	3	18.9	10.26	0.7	0.41	19	91.7	41.32	3.9	1.84	16
Micropogonias undulatus	0.0	0.00	0.0	0.00	3	6.0	3.44	0.3	0.13	19	93.2	39.36	5.2	2.23	16
Cynoscion spp.	153.5	77.62	0.5	0.40	3	55.9	26.27	0.1	0.04	19	4.9	3.45	0.0	0.00	16
Stellifer lanceolatus	292.1	254.09	4.6	4.10	3	47.0	16.91	0.8	0.29	19	6.1	2.97	0.2	0.11	16
Syacium gunteri	2.6	2.61	0.0	0.04	3	19.8	5.41	0.2	0.06	19	53.0	6.25	0.7	0.14	16
Cynoscion nothus	26.0	26.00	0.1	0.09	3	65.7	16.95	0.6	0.17	19	35.9	15.55	1.1	0.55	16
Squid	19.2	8.84	0.1	0.08	3	35.1	8.04	0.4	0.09	19	10.4	3.27	0.2	0.08	16

Table 22a (continued)

Statistical Zone 19

Summary of dominant organisms taken in statistical zone 19 during the 1996 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					>40 FM				
SPECIES	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Trachypenaeus similis	12.7	5.85	0.0	0.02	4	0.0	0.00	0.0	0.00	1	0.0	0.00	0.00	0	0
Penaeus setiferus	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	1	0.0	0.00	0.00	0	0
Squilla spp.	40.3	16.59	0.5	0.19	4	0.0	0.00	0.0	0.00	1	0.0	0.00	0.00	0	0
Penaeus aztecus	62.2	23.00	1.9	0.73	4	39.6	0.00	1.3	0.00	1	0.0	0.00	0.00	0	0
Portunus gibbesii	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	1	0.0	0.00	0.00	0	0
Sicyonia dorsalis	113.9	64.52	0.3	0.15	4	0.0	0.00	0.0	0.00	1	0.0	0.00	0.00	0	0
Chloroscombrus chrysurus	190.4	190.42	8.4	8.39	4	0.0	0.00	0.0	0.00	1	0.0	0.00	0.00	0	0
Stenotomus caprinus	365.8	197.32	9.1	4.11	4	42.0	0.00	1.0	0.00	1	0.0	0.00	0.00	0	0
Peprilus burti	69.9	69.26	3.4	3.38	4	0.0	0.00	0.0	0.00	1	0.0	0.00	0.00	0	0
Micropogonias undulatus	54.0	20.91	3.7	1.44	4	3.6	0.00	0.3	0.00	1	0.0	0.00	0.00	0	0
Cynoscion spp.	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	1	0.0	0.00	0.00	0	0
Stellifer lanceolatus	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	1	0.0	0.00	0.00	0	0
Syacium gunteri	14.2	6.45	0.3	0.17	4	3.6	0.00	0.1	0.00	1	0.0	0.00	0.00	0	0
Cynoscion nothus	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	1	0.0	0.00	0.00	0	0
Squid	3.8	1.95	0.2	0.08	4	3.6	0.00	0.2	0.00	1	0.0	0.00	0.00	0	0

Table 22b

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 1996 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			Over 40 fm		
Environmental category	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	53.9	14.92	3	11.4	2.10	19	49.5	12.45	16	40.6	13.88	4	8.2	0.00	1	0.0	0.00	0
Total finfish kg	21.7	11.02	3	5.7	1.32	19	45.7	12.83	16	36.3	15.03	4	5.5	0.00	1	0.0	0.00	0
Total crustacean kg	5.5	1.61	3	3.4	0.99	19	3.2	0.62	16	3.7	1.19	4	2.2	0.00	1	0.0	0.00	0
Total others kg	26.4	25.01	3	2.0	0.92	19	0.5	0.23	16	0.1	0.09	4	0.0	0.00	1	0.0	0.00	0
Surface temperature	21.5	0.10	2	22.7	0.23	24	24.7	0.28	17	26.0	0.12	3	26.5	0.00	1	0.0	0.00	0
Midwater temperature	21.4	0.15	2	22.6	0.25	24	24.6	0.37	17	26.1	0.03	3	26.5	0.00	1	0.0	0.00	0
Bottom temperature	21.5	0.25	2	23.1	0.25	24	24.7	0.37	17	26.1	0.04	3	26.8	0.00	1	0.0	0.00	0
Surface salinity	30.0	1.10	2	29.7	0.33	24	32.4	0.58	17	35.2	0.15	3	36.0	0.00	1	0.0	0.00	0
Midwater salinity	30.4	1.36	2	30.1	0.42	24	32.8	0.50	17	35.4	0.09	3	36.0	0.00	1	0.0	0.00	0
Bottom salinity	31.0	1.77	2	31.3	0.50	24	33.8	0.24	17	35.5	0.10	3	36.2	0.00	1	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	2.1	0.00	2	2.4	0.09	24	1.5	0.11	17	1.0	0.26	3	0.8	0.00	1	0.0	0.00	0
Surface oxygen	6.9	0.55	2	6.6	0.11	24	6.0	0.13	17	5.6	0.12	3	5.6	0.00	1	0.0	0.00	0
Midwater oxygen	6.6	0.40	2	6.5	0.10	24	6.0	0.21	17	5.7	0.03	3	5.6	0.00	1	0.0	0.00	0
Bottom oxygen	6.2	0.10	2	6.0	0.08	24	5.7	0.17	17	5.6	0.03	3	5.6	0.00	1	0.0	0.00	0

Table 23a

Statistical Zone 20

Summary of dominant organisms taken in statistical zone 20 during the 1996 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
Portunus spinicarpus	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	12	0.0	0.00	0.0	0.00	14
Callinectes similis	0.0	0.00	0.0	0.00	3	0.8	0.54	0.0	0.02	12	98.8	45.78	1.1	0.46	14
Trachypenaeus similis	0.0	0.00	0.0	0.00	3	2.0	1.54	0.0	0.00	12	260.1	92.79	1.0	0.48	14
Sicyonia dorsalis	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	12	12.3	3.54	0.0	0.00	14
Penaeus aztecus	2.0	2.00	0.0	0.00	3	8.3	5.43	0.0	0.02	12	77.4	32.88	1.2	0.46	14
Squilla spp.	0.0	0.00	0.0	0.00	3	4.7	3.14	0.1	0.05	12	51.8	10.68	0.4	0.13	14
Chloroscombrus chrysurus	706.0	697.00	15.5	15.45	3	561.4	166.18	3.7	0.96	12	1433.9	1112.35	14.7	12.24	14
Stenotomus caprinus	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	12	3.0	2.07	0.0	0.02	14
Peprilus burti	2.0	2.00	0.0	0.00	3	23.8	13.92	0.6	0.47	12	39.9	24.09	1.2	0.73	14
Pristipomoides aquilonaris	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	12	0.0	0.00	0.0	0.00	14
Upeneus parvus	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	12	1.8	1.80	0.0	0.03	14
Serranus atrobranchus	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	12	1.0	0.97	0.0	0.00	14
Prionotus paralatus	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	12	0.2	0.19	0.0	0.00	14
Trachurus lathami	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	12	0.0	0.00	0.0	0.00	14
Squid	20.0	20.00	0.3	0.27	3	13.0	5.37	0.2	0.08	12	7.3	3.73	0.2	0.19	14

Table 23a (continued)

Statistical Zone 20

Summary of dominant organisms taken in statistical zone 20 during the 1996 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
Portunus spinicarpus	2.6	2.14	0.0	0.01	5	38.8	35.81	0.2	0.19	7	442.1	227.94	2.7	1.41	15
Callinectes similis	81.6	20.05	1.8	0.42	5	82.4	26.41	2.0	0.64	7	13.5	8.12	0.2	0.16	15
Trachypenaeus similis	27.0	26.01	0.1	0.07	5	7.4	4.52	0.0	0.02	7	0.1	0.13	0.0	0.00	15
Sicyonia dorsalis	217.6	180.16	0.6	0.43	5	49.8	27.13	0.1	0.05	7	0.4	0.27	0.0	0.00	15
Penaeus aztecus	37.4	14.26	1.2	0.51	5	37.8	13.36	1.1	0.48	7	38.1	11.79	1.7	0.52	15
Squilla spp.	42.8	25.37	0.3	0.14	5	22.1	13.40	0.3	0.20	7	5.1	1.97	0.1	0.02	15
Chloroscombrus chrysurus	1997.9	1976.92	20.8	19.63	5	10.8	5.67	0.6	0.27	7	1.2	1.20	0.1	0.05	15
Stenotomus caprinus	288.8	122.48	5.1	2.01	5	213.8	67.49	4.7	1.43	7	135.9	29.92	5.5	1.36	15
Peprilus burti	231.4	168.68	7.6	4.96	5	56.6	30.69	2.7	1.42	7	104.6	54.22	4.2	2.05	15
Pristipomoides aquilonaris	0.4	0.40	0.0	0.01	5	19.8	13.65	0.8	0.77	7	216.0	40.21	17.5	2.79	15
Upeneus parvus	9.4	6.00	0.1	0.08	5	60.9	21.91	1.1	0.57	7	160.2	88.50	4.1	2.15	15
Serranus atrobranchus	57.4	32.30	0.4	0.20	5	55.3	19.43	0.5	0.20	7	117.3	39.37	1.2	0.38	15
Prionotus paralatus	10.8	4.33	0.1	0.04	5	49.2	35.81	0.4	0.26	7	108.4	27.72	2.1	0.67	15
Trachurus lathami	19.2	18.46	0.4	0.40	5	12.8	10.21	0.3	0.27	7	88.9	42.27	1.4	0.52	15
Squid	10.2	4.60	0.3	0.19	5	8.1	3.24	0.1	0.05	7	11.9	3.43	0.6	0.16	15

Table 23b

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 1996 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			Over 40 fm		
Environmental category	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	40.9	39.55	3	47.5	23.91	12	38.3	16.48	14	51.2	22.46	5	33.1	4.08	7	62.2	6.62	15
Total finfish kg	24.5	23.20	3	12.3	2.36	12	28.7	16.03	14	46.5	23.53	5	28.4	4.61	7	55.3	6.11	15
Total crustacean kg	0.0	0.00	3	1.2	0.53	12	5.2	1.24	14	4.4	1.30	5	4.2	1.16	7	5.0	1.88	15
Total others kg	16.4	16.36	3	33.9	22.58	12	4.2	3.26	14	0.5	0.14	5	0.5	0.17	7	1.6	0.26	15
Surface temperature	21.8	0.32	3	25.2	1.13	12	26.1	1.02	15	29.1	1.06	5	29.7	1.45	3	28.6	0.58	13
Midwater temperature	21.7	0.26	3	24.9	1.09	12	26.2	1.07	15	29.4	1.11	5	30.0	1.58	3	28.3	0.84	13
Bottom temperature	21.7	0.24	3	24.9	1.10	12	26.2	1.05	15	29.6	1.19	5	30.8	0.97	3	23.7	1.22	13
Surface salinity	31.0	0.24	3	28.1	1.07	12	28.7	0.49	15	32.5	1.48	5	32.7	1.81	3	33.9	0.82	13
Midwater salinity	31.0	0.23	3	29.1	0.76	12	29.6	0.32	15	32.9	1.31	5	33.3	1.46	3	34.7	0.62	13
Bottom salinity	31.0	0.24	3	29.4	0.71	12	30.6	0.33	15	33.5	1.06	5	33.4	1.37	3	34.7	0.59	13
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	0.9	0.00	3	1.2	0.28	12	1.6	0.20	15	1.1	0.11	5	0.8	0.15	3	0.5	0.06	13
Surface oxygen	6.9	0.07	3	6.8	0.18	12	6.9	0.11	15	6.3	0.28	5	6.3	0.34	3	6.0	0.15	13
Midwater oxygen	6.9	0.10	3	6.8	0.16	12	6.8	0.10	15	6.2	0.29	5	6.2	0.27	3	6.0	0.13	13
Bottom oxygen	6.8	0.17	3	6.5	0.08	12	6.3	0.18	15	5.8	0.16	5	6.0	0.20	3	5.2	0.25	13

Table 24a

Statistical Zone 21

Summary of dominant organisms taken in statistical zone 21 during the 1996 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	2	21.0	21.00	0.0	0.04	14	297.8	151.76	0.6	0.31	17
Penaeus aztecus	3.0	3.00	0.0	0.00	2	19.4	9.70	0.2	0.18	14	118.3	42.08	1.5	0.49	17
Portunus gibbesii	210.0	210.00	0.5	0.55	2	35.6	16.90	0.3	0.17	14	159.4	63.94	0.7	0.21	17
Callinectes similis	3.0	3.00	0.0	0.00	2	4.0	2.34	0.0	0.04	14	29.6	10.45	0.6	0.25	17
Squilla spp.	6.0	6.00	0.1	0.14	2	0.9	0.92	0.0	0.00	14	37.8	13.94	0.5	0.21	17
Sicyonia brevirostris	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	14	67.1	34.76	0.5	0.22	17
Chloroscombrus chrysurus	159.0	15.00	2.9	1.23	2	644.6	380.23	5.0	3.04	14	8137.3	3263.98	69.7	25.96	17
Stenotomus caprinus	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	14	52.5	18.47	0.6	0.21	17
Upeneus parvus	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	14	6.3	3.45	0.1	0.07	17
Syacium gunteri	0.0	0.00	0.0	0.00	2	5.4	2.74	0.0	0.03	14	58.6	12.08	0.8	0.19	17
Diplectrum bivittatum	0.0	0.00	0.0	0.00	2	4.1	2.81	0.1	0.03	14	57.4	18.79	0.7	0.28	17
Peprilus burti	3.0	3.00	0.1	0.14	2	0.4	0.43	0.0	0.00	14	17.4	13.91	0.3	0.27	17
Centropristis philadelphica	0.0	0.00	0.0	0.00	2	5.0	2.24	0.1	0.04	14	24.4	7.38	0.4	0.11	17
Synodus foetens	0.0	0.00	0.0	0.00	2	0.3	0.31	0.0	0.01	14	11.0	4.32	0.5	0.17	17
Squid	0.0	0.00	0.0	0.00	2	10.6	2.51	0.1	0.03	14	25.1	10.24	0.4	0.14	17

Table 24a (continued)
Statistical Zone 21

Summary of dominant organisms taken in statistical zone 21 during the 1996 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	132.0	78.51	0.6	0.40	6	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
Penaeus aztecus	50.2	19.83	1.7	0.66	6	0.0	0.00	0.0	0.00	1	20.0	0.00	1.1	0.00	1
Portunus gibbesii	4.0	4.00	0.0	0.02	6	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
Callinectes similis	138.1	58.52	4.5	1.82	6	2.3	0.00	0.1	0.00	1	0.0	0.00	0.0	0.00	1
Squilla spp.	43.6	14.35	0.7	0.28	6	0.0	0.00	0.0	0.00	1	10.0	0.00	0.2	0.00	1
Sicyonia brevirostris	20.9	8.44	0.2	0.11	6	2.3	0.00	0.0	0.00	1	26.7	0.00	0.3	0.00	1
Chloroscombrus chrysurus	16.8	10.44	0.7	0.42	6	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
Stenotomus caprinus	442.4	198.15	8.5	3.84	6	198.5	0.00	4.6	0.00	1	3293.3	0.00	66.1	0.00	1
Upeneus parvus	33.2	24.50	0.6	0.44	6	1093.8	0.00	38.4	0.00	1	676.7	0.00	22.3	0.00	1
Syacium gunteri	86.1	16.92	1.5	0.38	6	2.3	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
Diplectrum bivittatum	66.6	32.10	1.3	0.67	6	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
Peprilus burti	63.8	39.29	3.1	1.78	6	0.0	0.00	0.0	0.00	1	16.7	0.00	1.1	0.00	1
Centropristis philadelphica	50.6	16.09	1.3	0.38	6	11.5	0.00	0.2	0.00	1	36.7	0.00	5.3	0.00	1
Synodus foetens	47.5	19.26	4.6	1.90	6	23.1	0.00	2.3	0.00	1	250.0	0.00	32.1	0.00	1
Squid	14.7	7.01	0.1	0.06	6	30.0	0.00	0.4	0.00	1	10.0	0.00	0.3	0.00	1

Table 24b

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 1996 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			Over 40 fm		
Environmental category	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	42.3	39.55	2	26.7	9.98	14	90.3	25.61	17	40.9	6.42	6	71.3	0.00	1	187.9	0.00	1
Total finfish kg	19.1	16.36	2	16.2	6.34	14	83.5	26.28	17	31.2	8.69	6	70.3	0.00	1	181.8	0.00	1
Total crustacean kg	1.4	1.36	2	1.6	0.66	14	5.7	1.61	17	9.1	3.03	6	0.0	0.00	1	3.0	0.00	1
Total others kg	21.8	21.82	2	8.8	6.61	14	1.1	0.29	17	0.5	0.29	6	1.0	0.00	1	3.0	0.00	1
Surface temperature	24.0	0.00	1	26.4	0.96	14	28.7	0.72	19	31.3	0.21	4	32.0	0.00	1	32.3	0.55	3
Midwater temperature	24.0	0.00	1	26.2	0.96	14	28.9	0.77	19	31.7	0.15	4	32.0	0.00	1	32.0	0.00	3
Bottom temperature	23.9	0.00	1	26.3	0.97	14	29.2	0.82	19	32.0	0.02	4	32.0	0.00	1	29.1	0.82	3
Surface salinity	34.5	0.00	1	30.5	0.79	14	29.6	0.64	19	30.2	0.37	4	31.9	0.00	1	32.0	0.42	3
Midwater salinity	34.5	0.00	1	30.6	0.78	14	30.3	0.52	19	31.2	0.40	4	32.3	0.00	1	32.4	0.08	3
Bottom salinity	34.5	0.00	1	30.7	0.75	14	31.1	0.42	19	32.0	0.16	4	32.4	0.00	1	32.1	0.03	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	2.0	0.00	1	1.9	0.11	14	1.7	0.12	19	1.0	0.21	4	0.7	0.00	1	0.5	0.11	3
Surface oxygen	7.2	0.00	1	6.9	0.17	14	7.0	0.09	19	6.7	0.09	4	6.4	0.00	1	6.4	0.00	3
Midwater oxygen	7.1	0.00	1	7.2	0.08	14	6.8	0.07	19	6.5	0.11	4	6.4	0.00	1	6.4	0.10	3
Bottom oxygen	7.5	0.00	1	7.0	0.15	14	6.1	0.19	19	6.0	0.12	4	6.4	0.00	1	7.1	0.18	3

Table 25a

Statistical Zone 22

Summary of dominant organisms taken in statistical zone 22 during the 1996 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 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 setiferus	0.0	0.00	0.0	0.00	0	105.0	33.00	1.1	0.27	2	0.0	0.00	0.00	0	0
Penaeus duorarum	0.0	0.00	0.0	0.00	0	102.0	24.00	1.5	0.41	2	0.0	0.00	0.00	0	0
Portunus gibbesii	0.0	0.00	0.0	0.00	0	24.0	6.00	0.1	0.14	2	0.0	0.00	0.00	0	0
Arenaeus cribrarius	0.0	0.00	0.0	0.00	0	9.0	9.00	0.3	0.27	2	0.0	0.00	0.00	0	0
Trachypenaeus constrictus	0.0	0.00	0.0	0.00	0	9.0	3.00	0.0	0.00	2	0.0	0.00	0.00	0	0
Persephona mediterranea	0.0	0.00	0.0	0.00	0	3.0	3.00	0.0	0.00	2	0.0	0.00	0.00	0	0
Cynoscion nothus	0.0	0.00	0.0	0.00	0	24.0	24.00	0.1	0.14	2	0.0	0.00	0.00	0	0
Cynoscion arenarius	0.0	0.00	0.0	0.00	0	9.0	9.00	0.0	0.00	2	0.0	0.00	0.00	0	0
Narcine brasiliensis	0.0	0.00	0.0	0.00	0	6.0	6.00	1.8	1.77	2	0.0	0.00	0.00	0	0
Ogcocephalus radiatus	0.0	0.00	0.0	0.00	0	3.0	3.00	0.1	0.14	2	0.0	0.00	0.00	0	0
Squid	0.0	0.00	0.0	0.00	0	9.0	9.00	0.1	0.14	2	0.0	0.00	0.00	0	0

Table 25b

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 1996 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 10 fm.

	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			Over 40 fm		
Environmental category	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n	X	SEM	n
Total catch kg	0.0	0.00	0	5.5	2.73	2	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total finfish kg	0.0	0.00	0	1.4	1.36	2	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total crustacean kg	0.0	0.00	0	2.7	0.00	2	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Total others kg	0.0	0.00	0	0.0	0.00	2	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface temperature	0.0	0.00	0	23.5	0.15	2	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater temperature	0.0	0.00	0	23.5	0.15	2	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom temperature	0.0	0.00	0	23.5	0.15	2	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Surface salinity	0.0	0.00	0	35.0	0.00	2	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater salinity	0.0	0.00	0	35.0	0.03	2	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom salinity	0.0	0.00	0	35.0	0.02	2	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	0.0	0.00	0	6.5	0.10	2	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Midwater oxygen	0.0	0.00	0	6.6	0.05	2	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0
Bottom oxygen	0.0	0.00	0	6.7	0.15	2	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0	0.0	0.00	0

Table 26. 1996 Reef Fish Survey species composition list, 250 trap stations. Species with a total weight of less than 0.0227 kg (0.05 lb) are indicated on the table as 0.0 k

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT	NUMBER OF TRAPS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Finfishes					
Lutjanus campechanus	red snapper	96	41.6	9	3.4
Pagrus pagrus	red porgy	85	30.1	23	8.8
Haemulon aurolineatum	tomtate	84	9.5	4	1.5
Rhomboplites aurorubens	vermilion snapper	49	30.4	8	3.1
Balistes capriscus	gray triggerfish	24	16.7	9	3.4
Centropristis ocyura	bank sea bass	17	2.4	8	3.1
Ocyurus chrysurus	yellowtail snapper	15	1.9	2	0.8
Epinephelus morio	red grouper	6	7.0	5	1.9
Calamus nodosus	knobbed porgy	3	1.8	2	0.8
Holacanthus bermudensis	blue angelfish	3	2.1	2	0.8
Centropristis philadelphica	rock sea bass	2	0.2	1	0.4
Gymnothorax moringa	spotted moray	1	1.7	1	0.4
Muraena retifera	reticulated moray	1	0.9	1	0.4
Mycteroperca phenax	scamp	1	0.5	1	0.4
Seriola rivoliana	almaco jack	1	1.7	1	0.4
Haemulon parra	sailors choice	1	1.0	1	0.4
Calamus proridens	littlehead porgy	1	0.4	1	0.4
Pomacanthus paru	French angelfish	1	0.9	1	0.4
Crustaceans					
Stenorhynchus seticornis	yellowline arrow crab	1	0.0	1	0.4

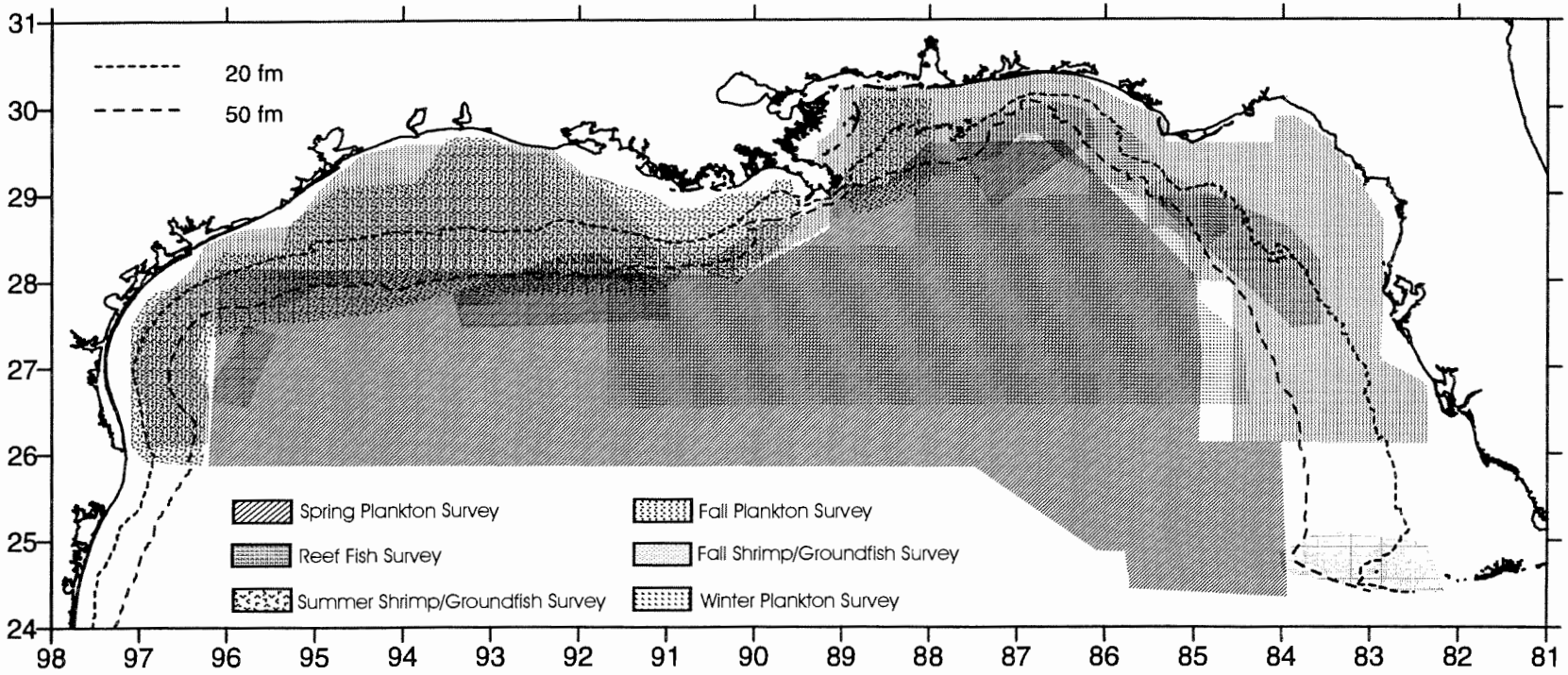

Figure 1. 1996 SEAMAP Surveys, Gulf of Mexico.

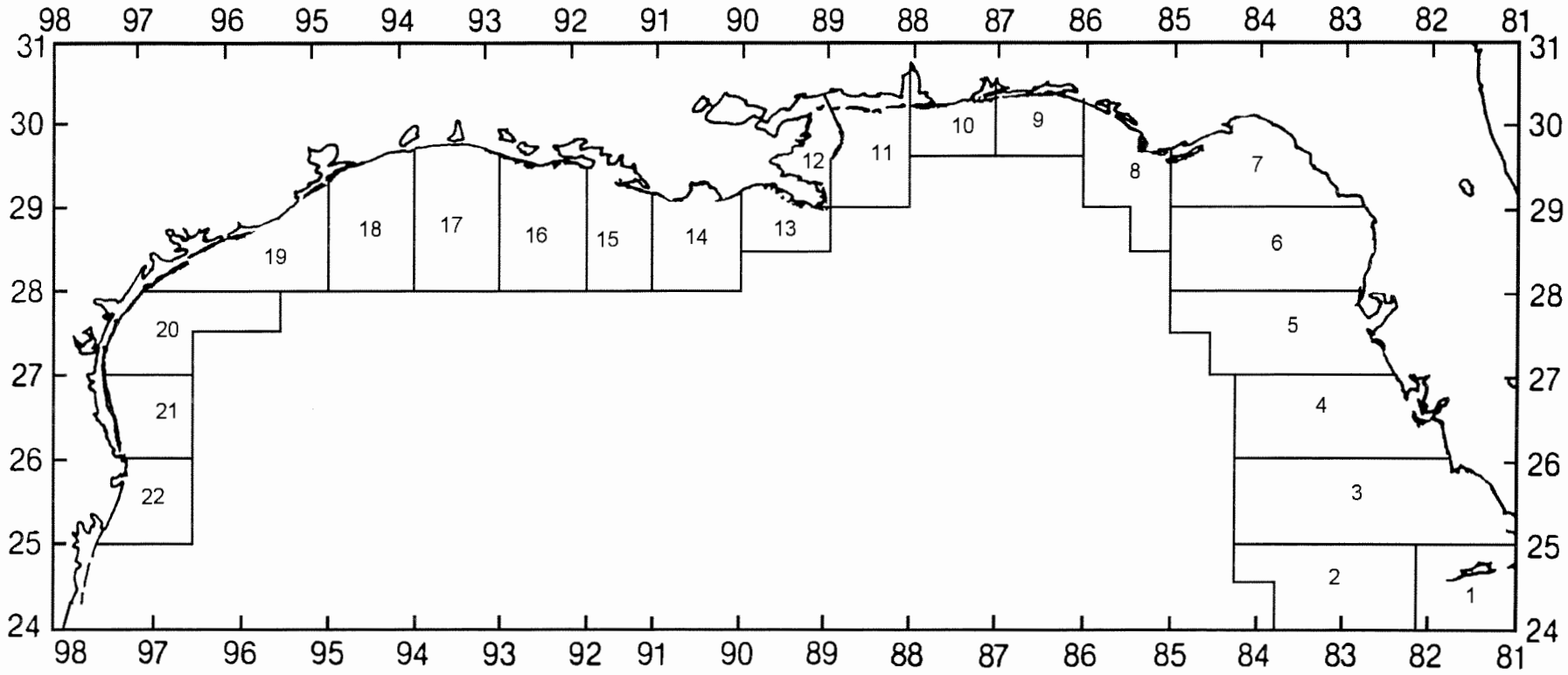

Figure 2. Statistical zones for shrimp in the Gulf of Mexico.

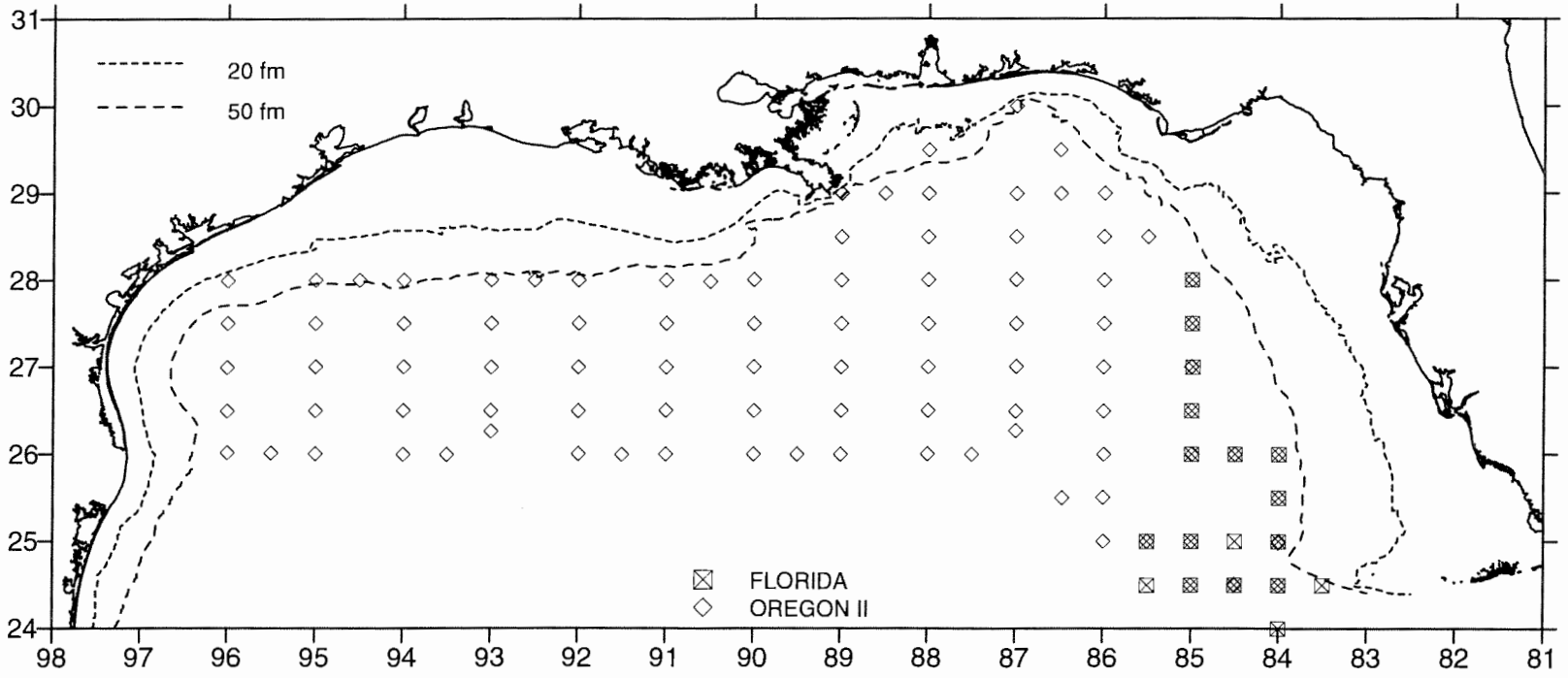

Figure 3. Locations of plankton and environmental stations during 1996 Spring Plankton Survey.

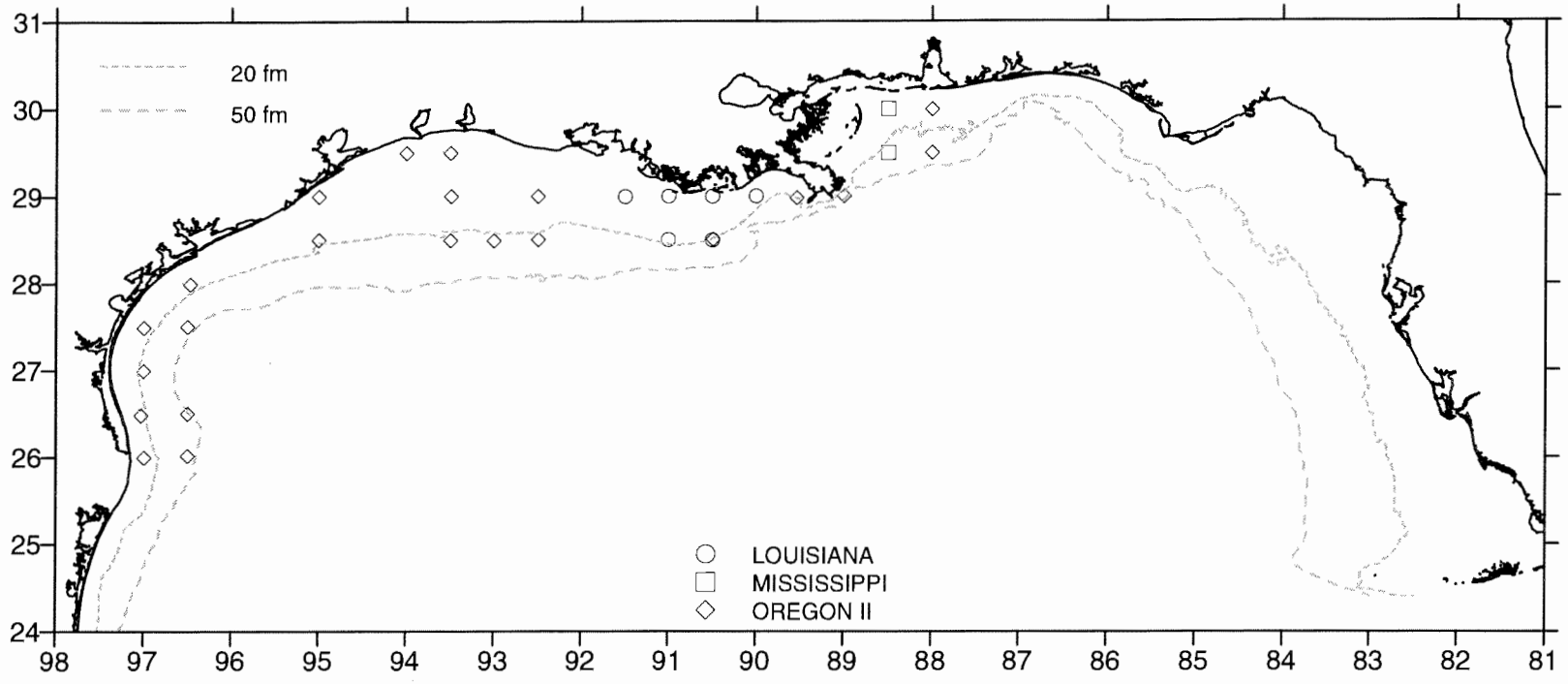

Figure 4. Locations of plankton stations during 1996 Summer Shrimp/Groundfish Survey.

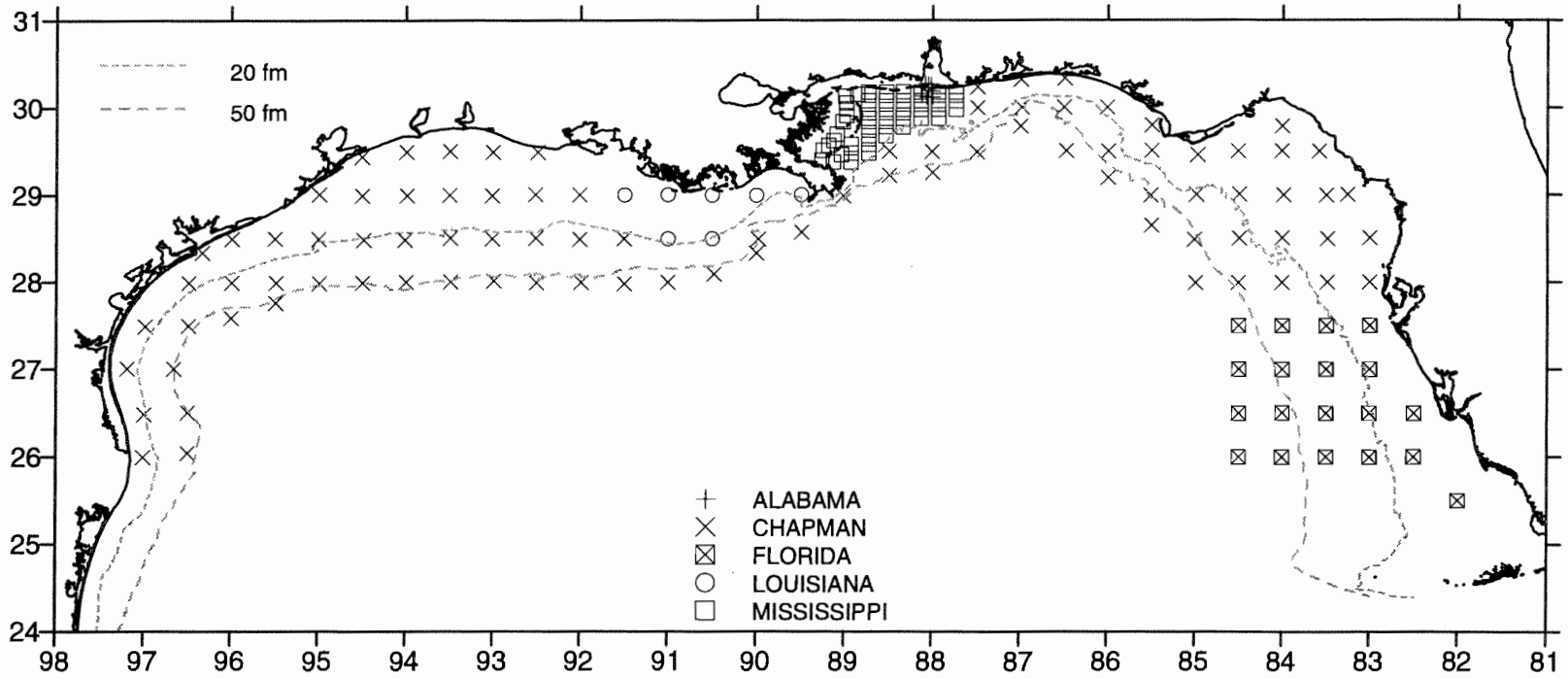

Figure 5. Locations of plankton and environmental stations during 1996 Fall Plankton Survey.

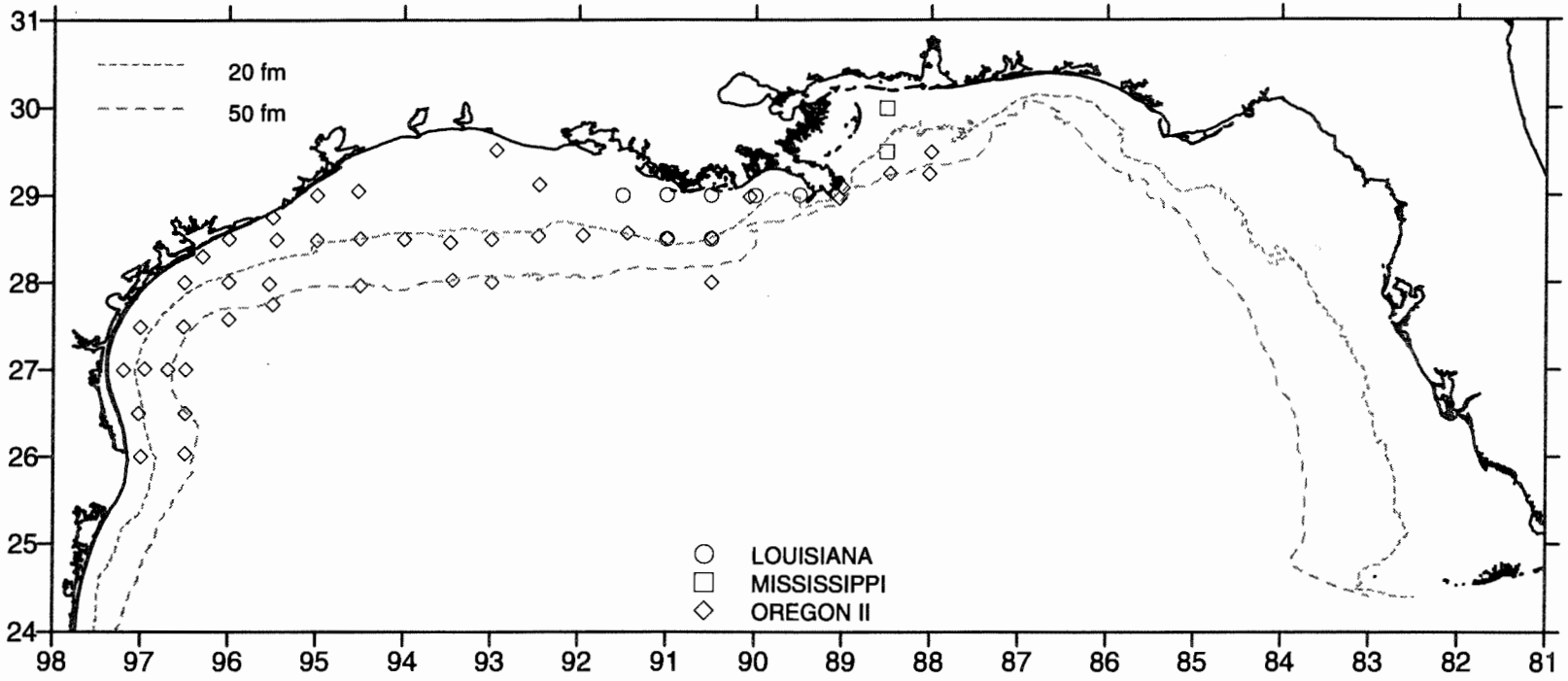

Figure 6. Locations of plankton stations during 1996 Fall Shrimp/Groundfish Survey.

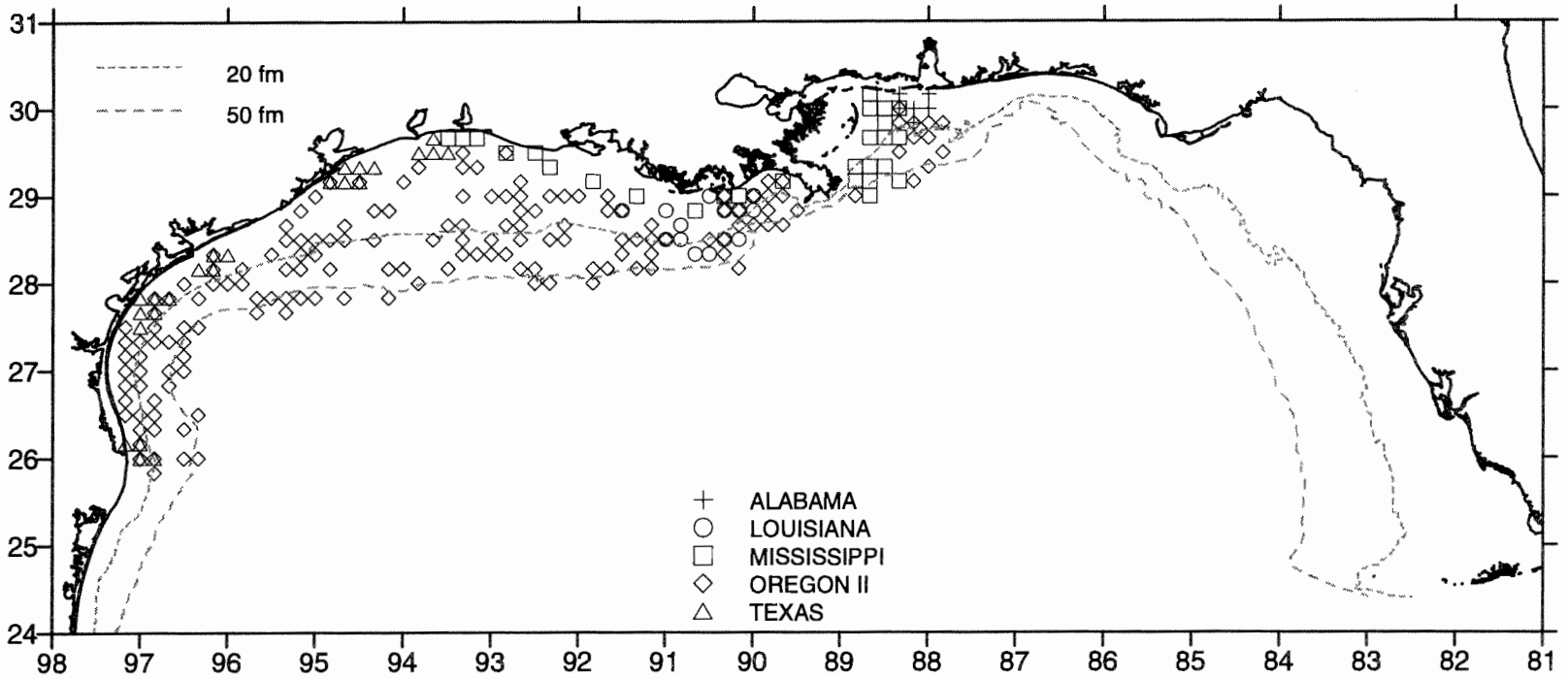

Figure 7. Locations of environmental stations during the 1996 Summer Shrimp/Groundfish Survey summarized by 10-minute squares.

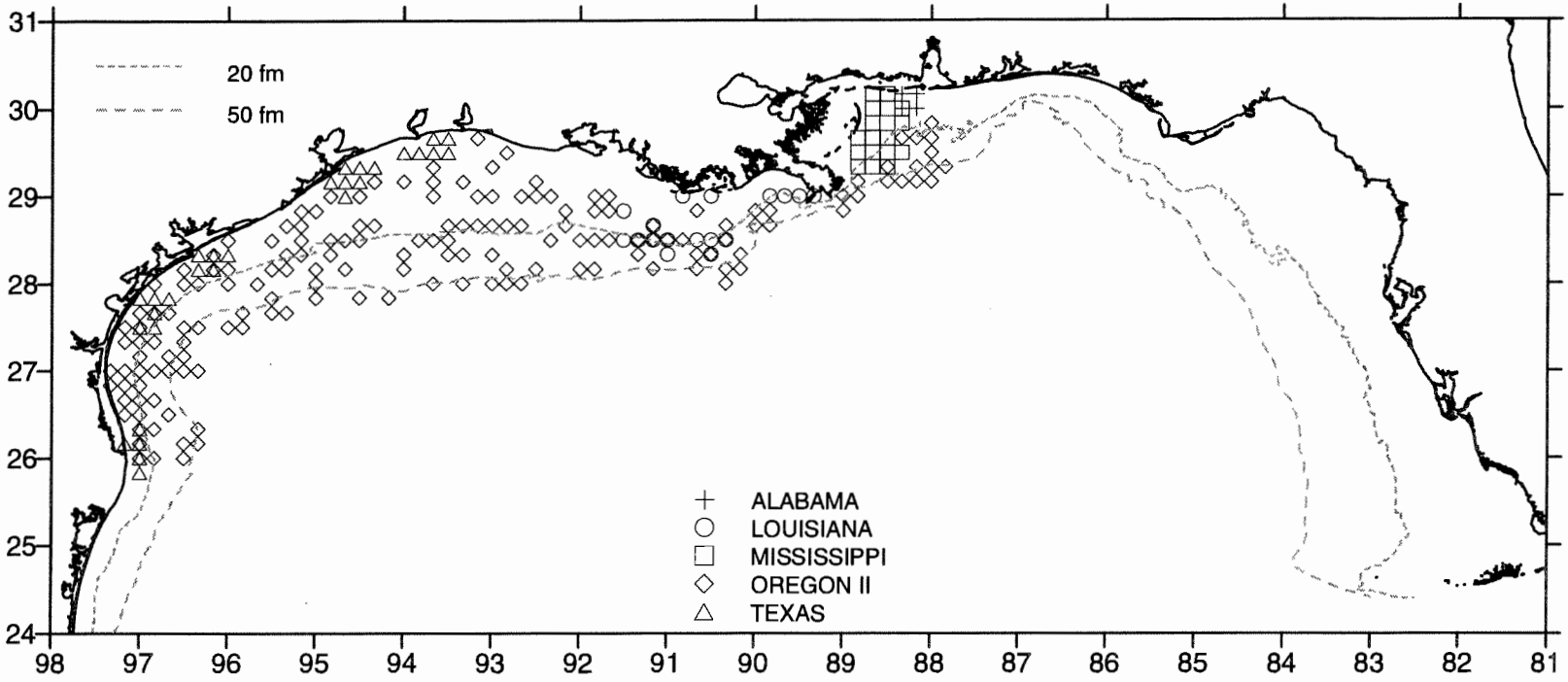

Figure 8. Locations of environmental stations during the 1996 Fall Shrimp/Groundfish Survey summarized by 10-minute squares.

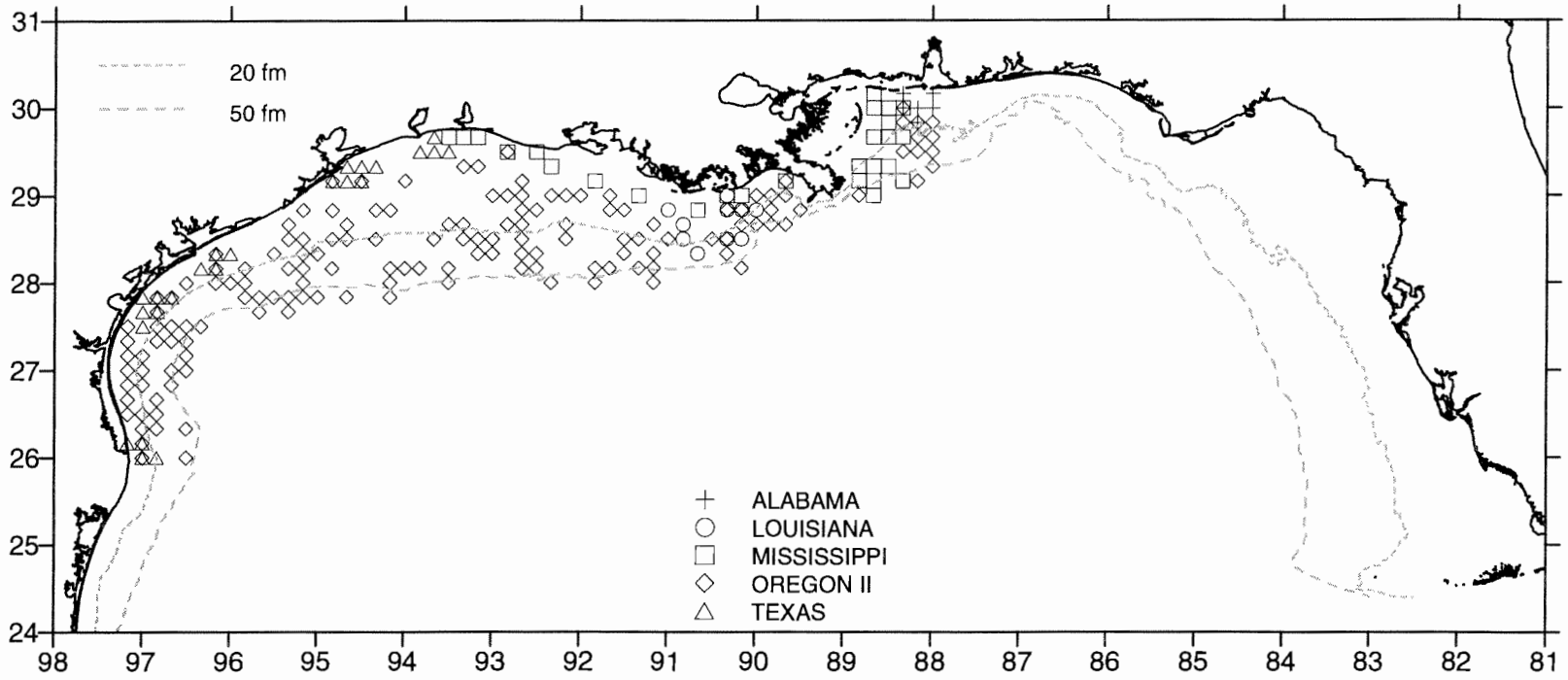

Figure 9. Locations of trawl stations during the 1996 Summer Shrimp/Groundfish Survey summarized by 10-minute squares.

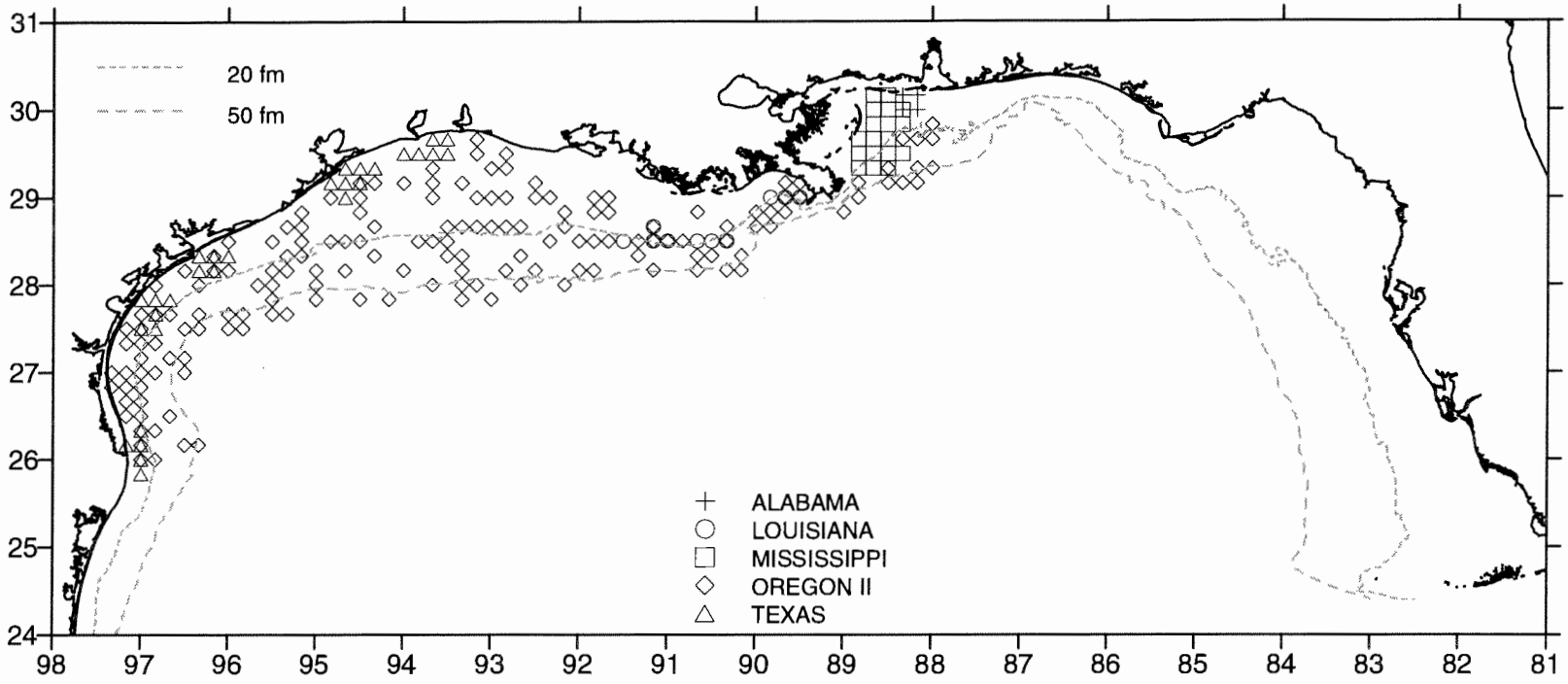

Figure 10. Locations of trawl stations during the 1996 Fall Shrimp/Groundfish Survey, summarized by 10-minute squares.

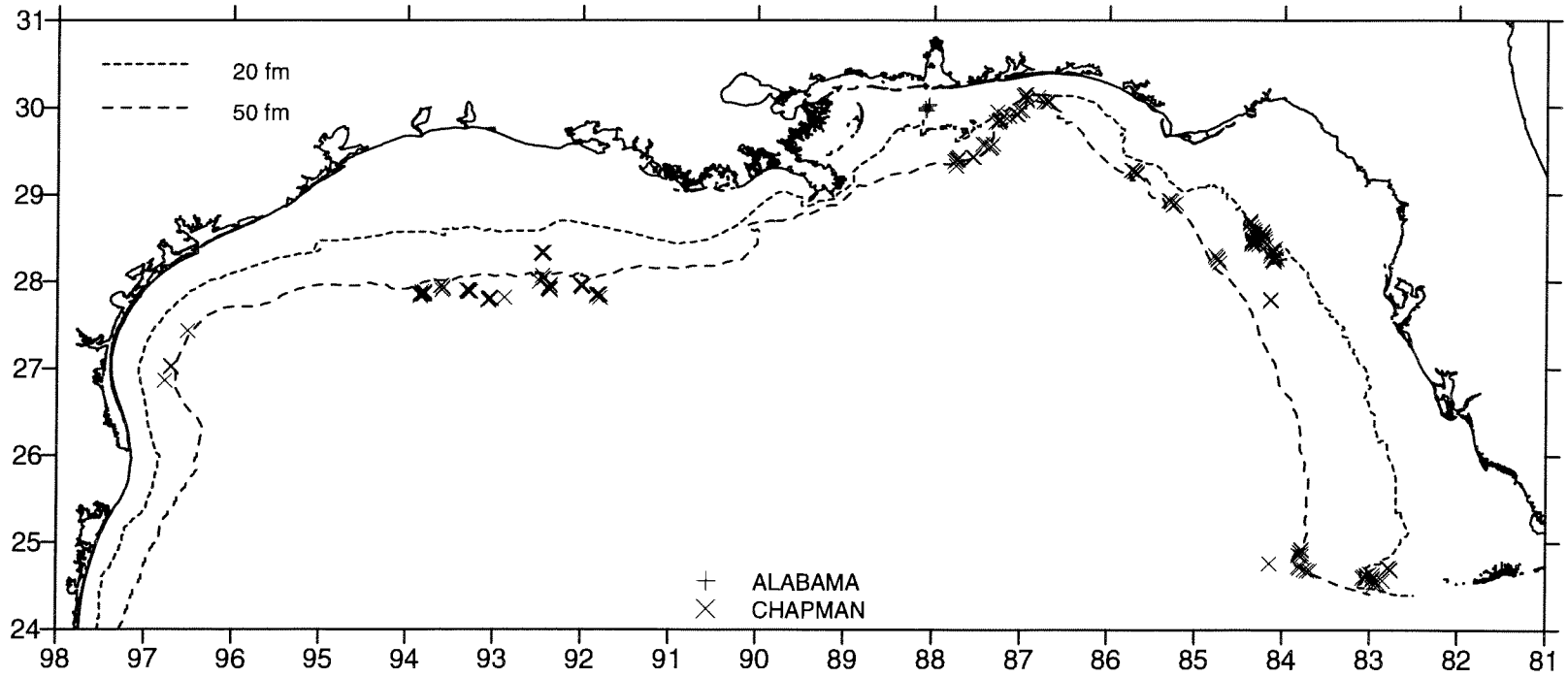

Figure 11. Locations of trap stations during the 1996 Spring Reef Fish Survey.

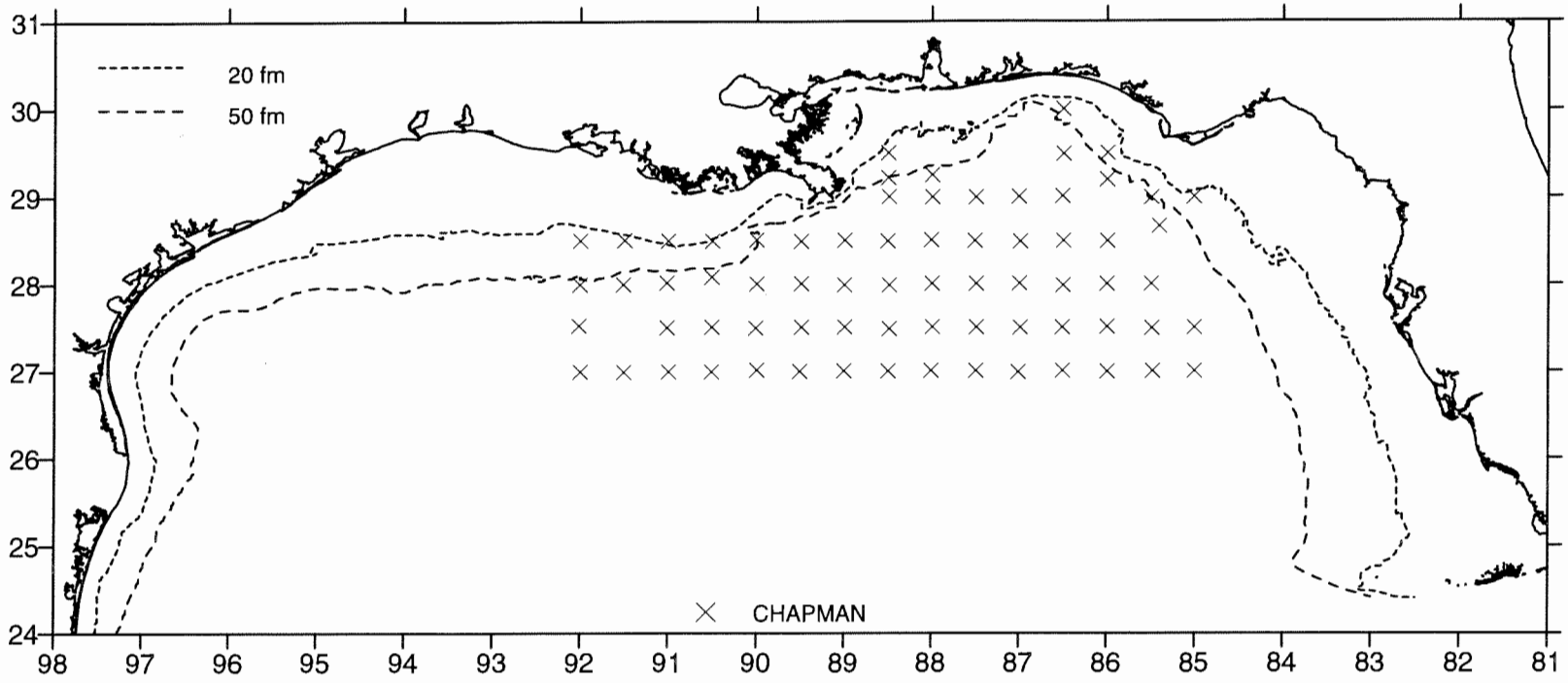

Figure 12. Locations of plankton stations during the 1996 Winter Plankton Survey.

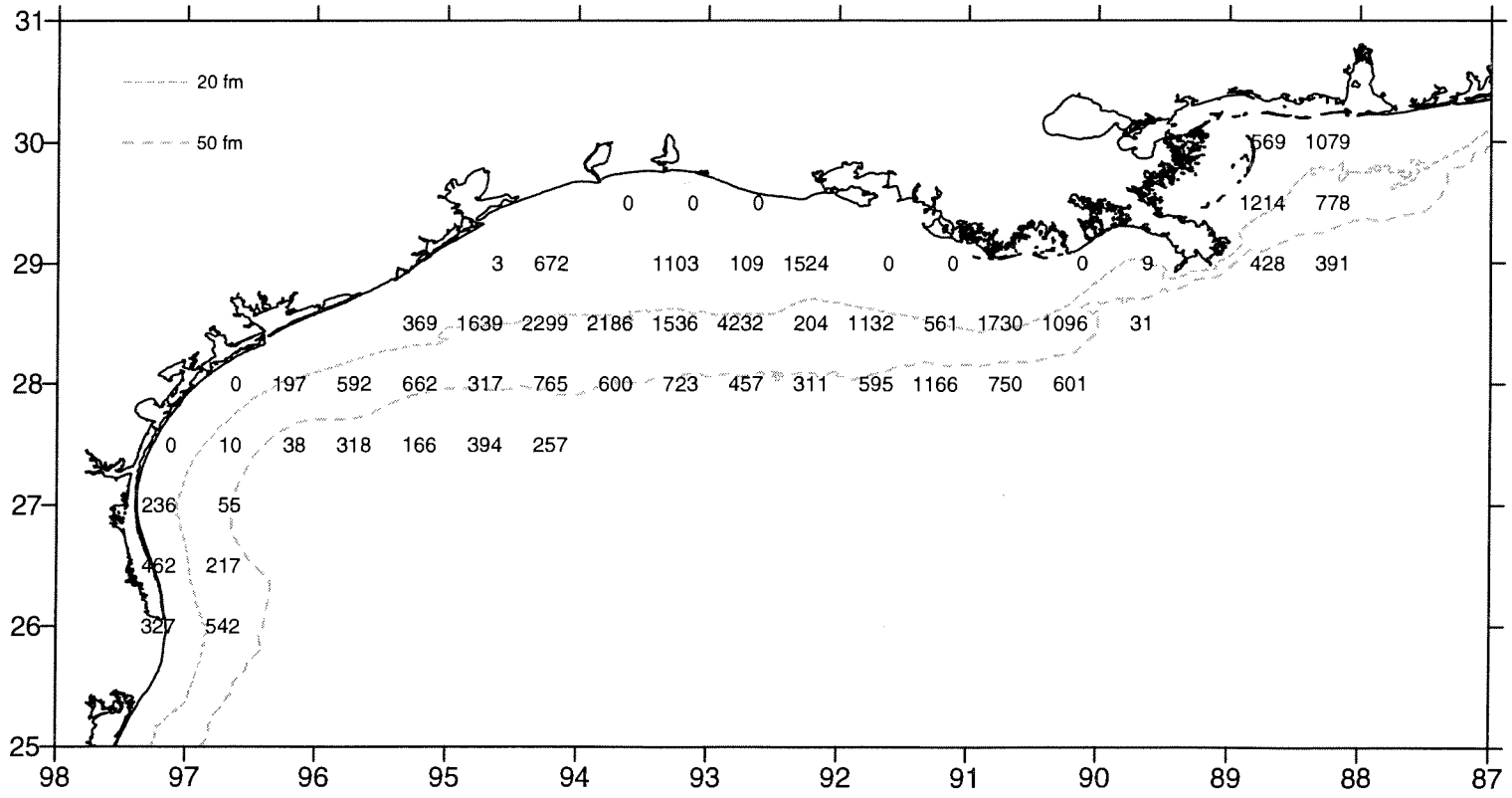

Figure 13. Longspine porgy, Stenotomus caprinus, number/hour for June-July 1996.

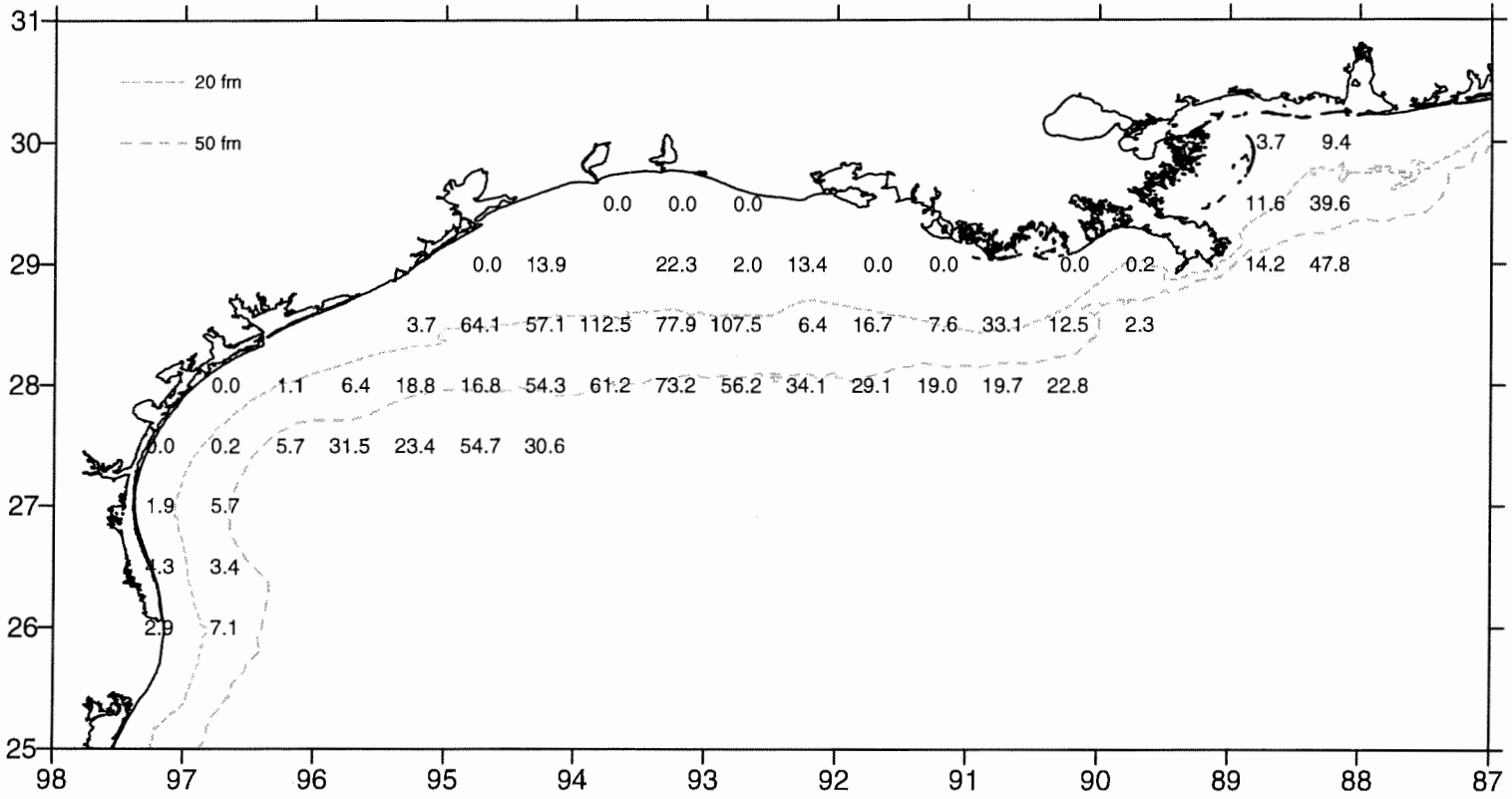

Figure 14. Longspine porgy, Stenotomus caprinus, lb/hour for June-July 1996.

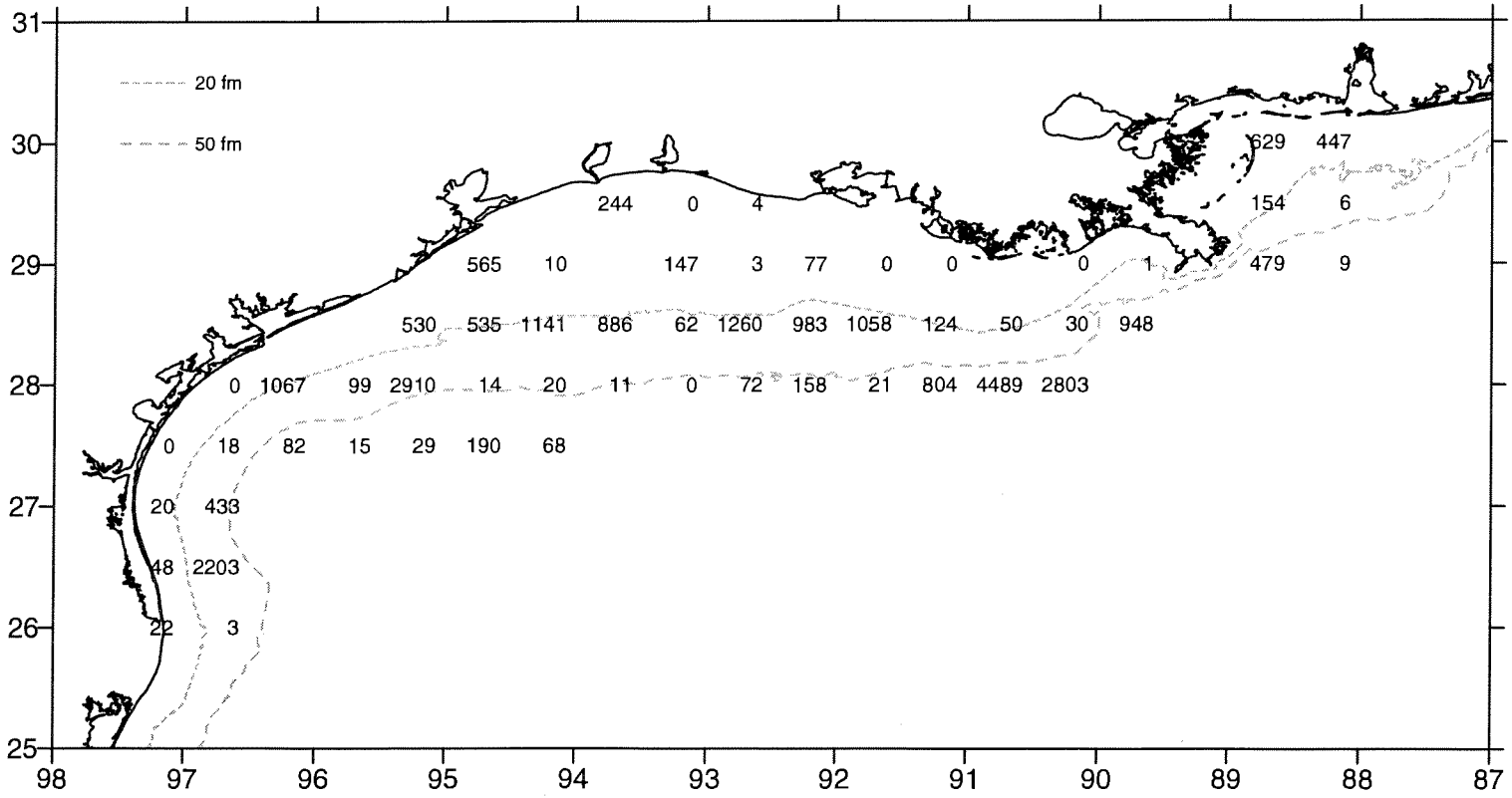

Figure 15. Gulf butterfish, Peprilus burti, number/hour for June-July 1996.

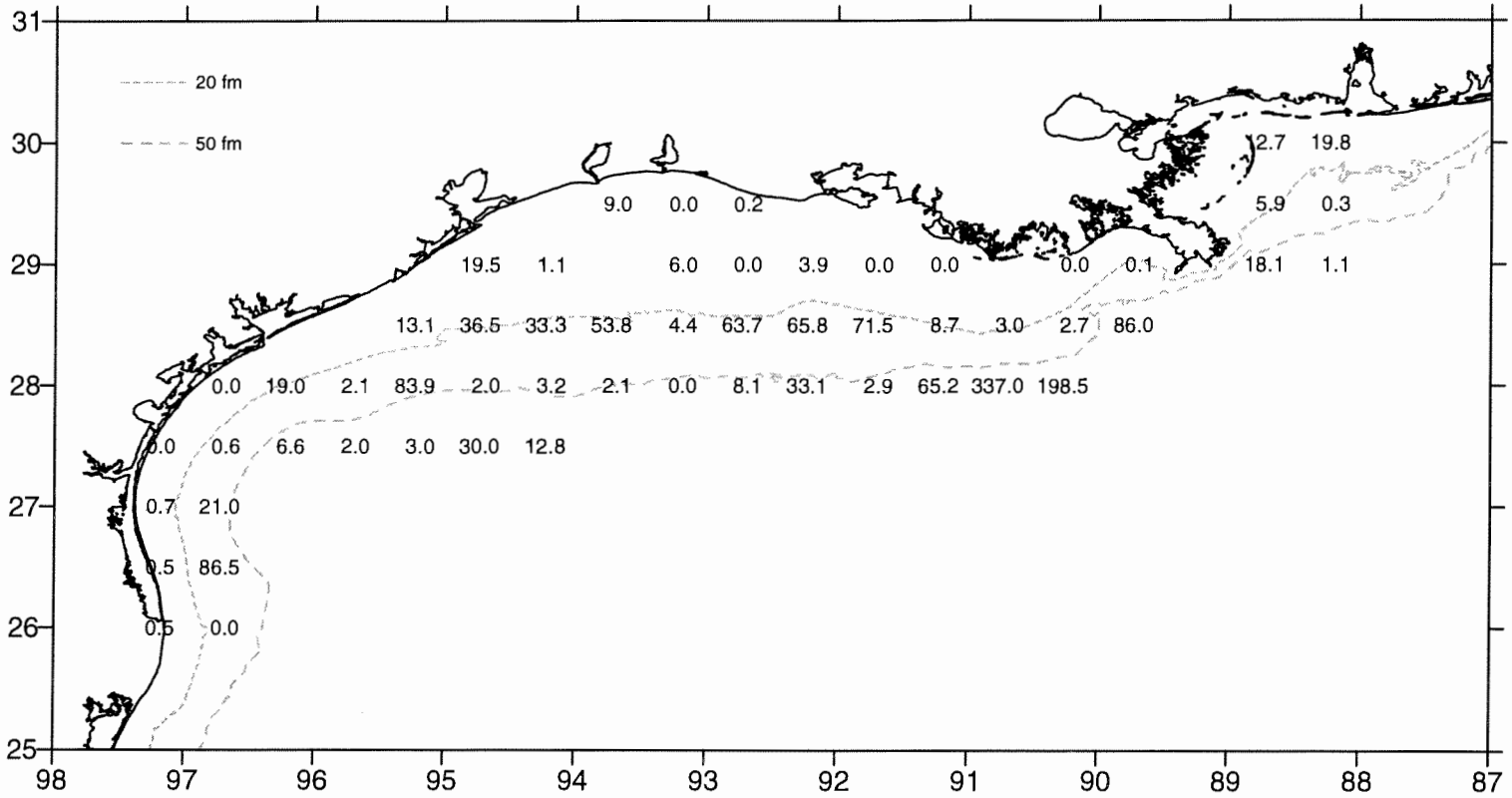

Figure 16. Gulf butterfish, Peprilus burti, lb/hour for June-July 1996.

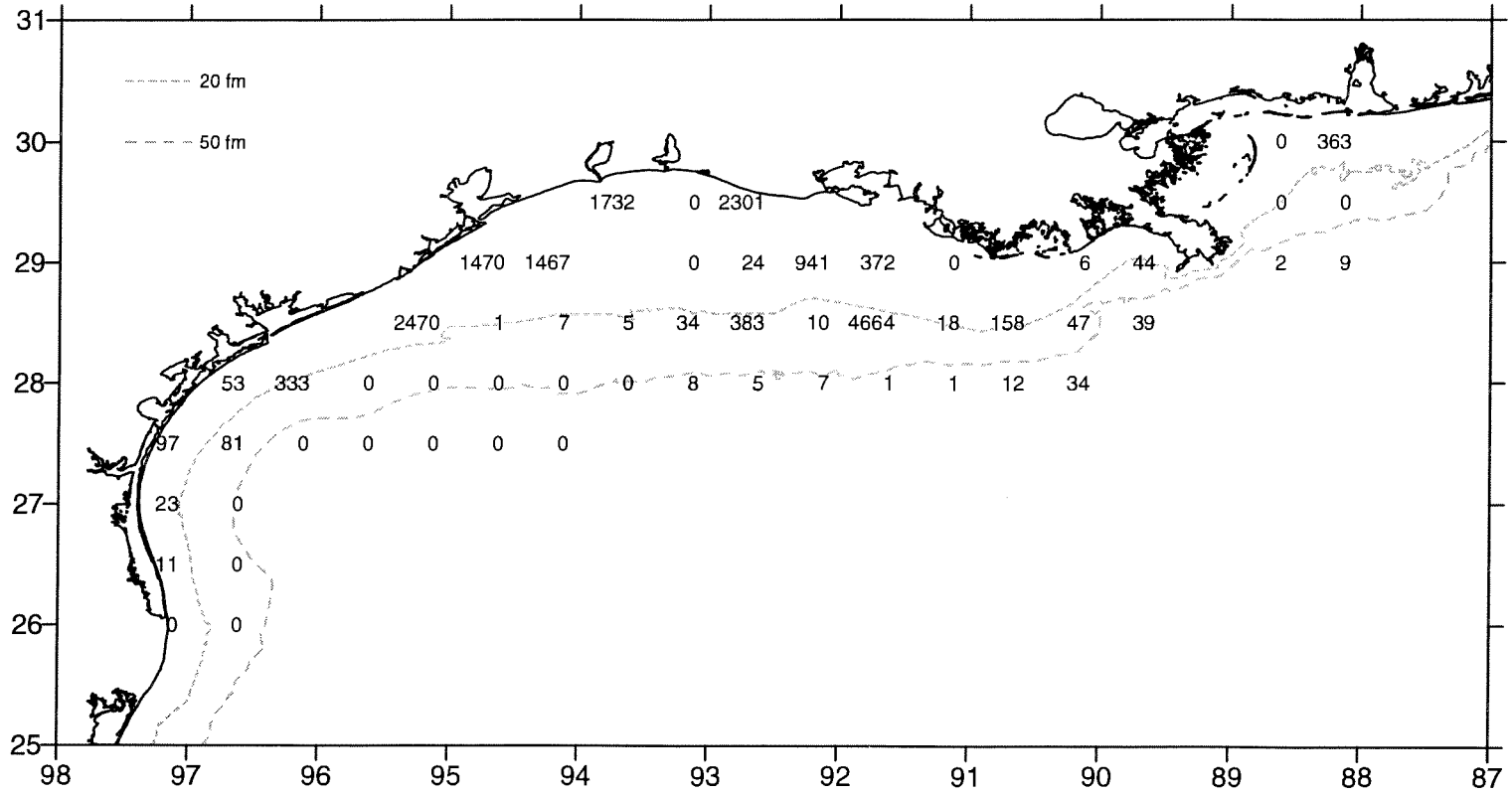

Figure 17. Atlantic croaker, Micropogonias undulatus, number/hour for June-July 1996.

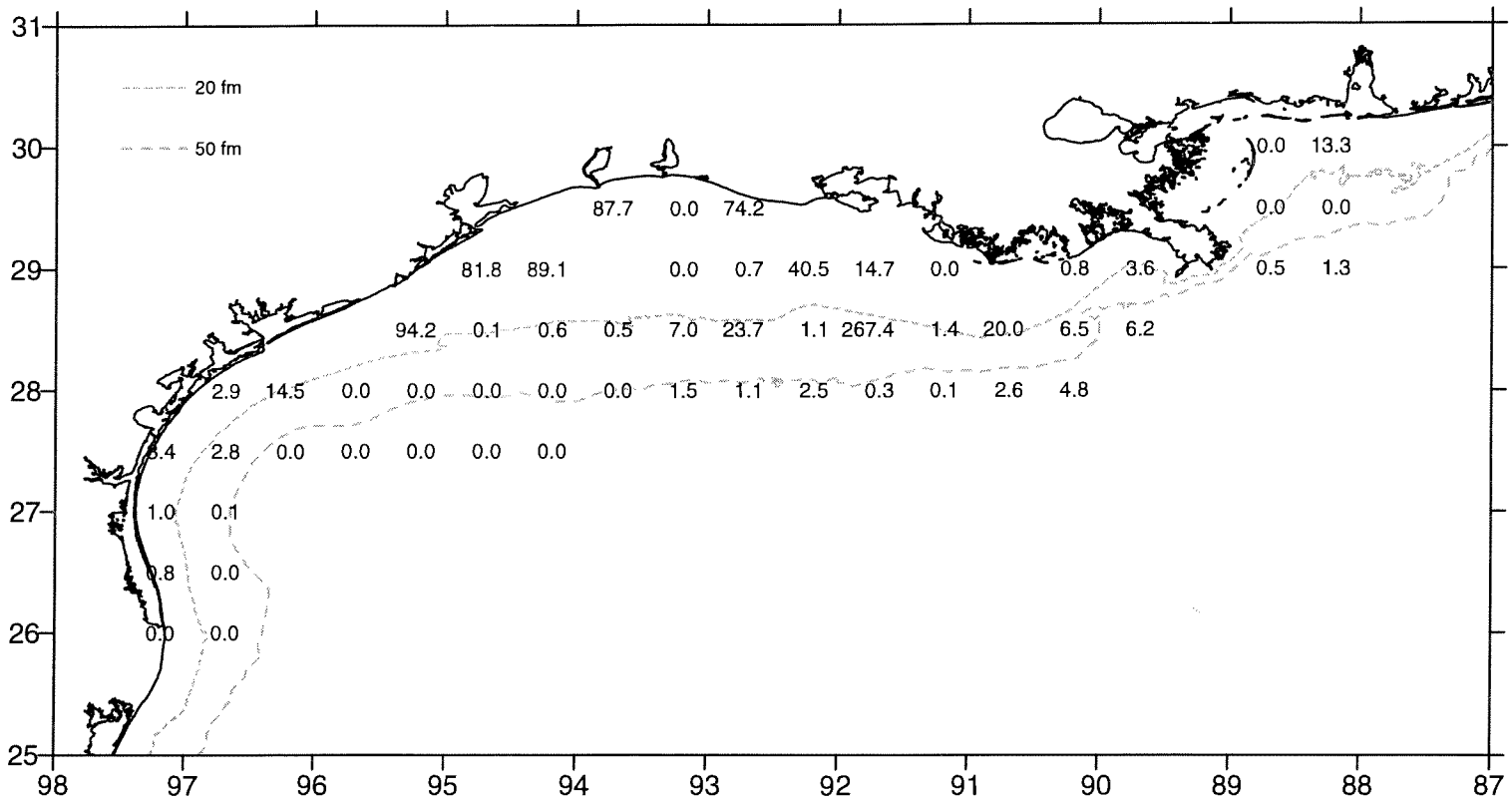

Figure 18. Atlantic croaker, Micropogonias undulatus, lb/hour for June-July 1996.

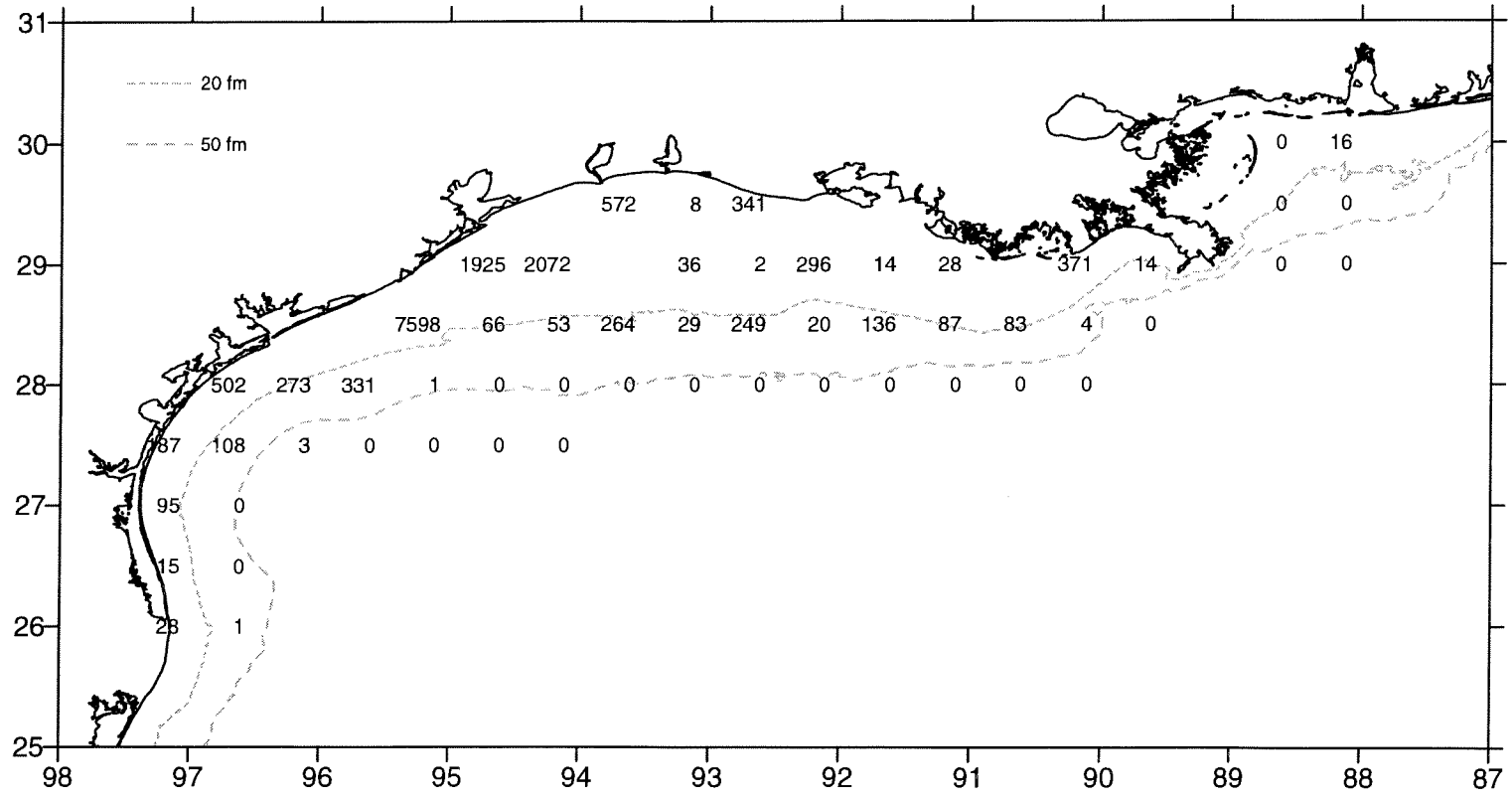

Figure 19. Atlantic bumper, Chloroscombrus chrysurus, number/hour for June-July 1996.

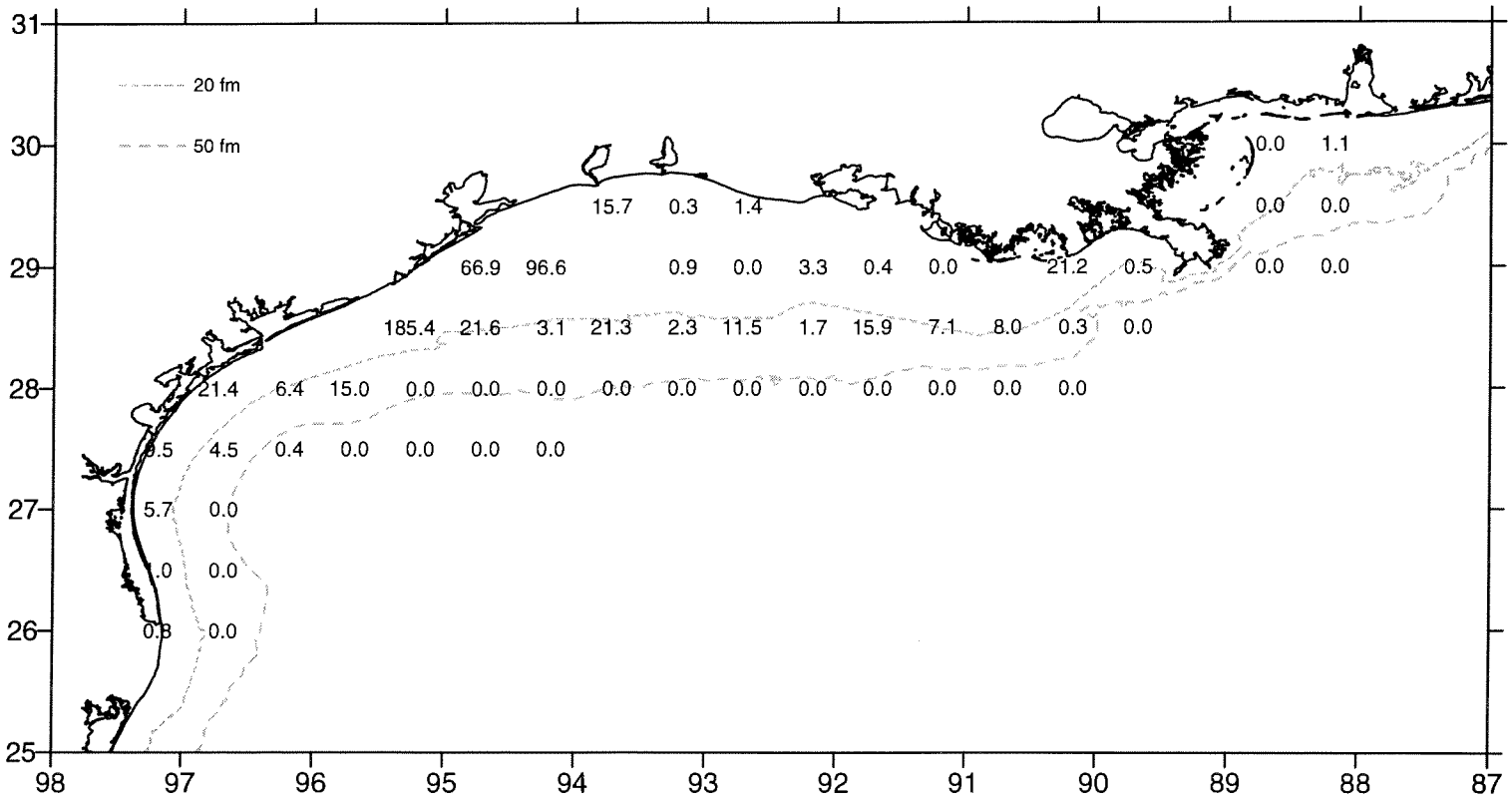

Figure 20. Atlantic bumper, Chloroscombrus chrysurus, lb/hour for June-July 1996.

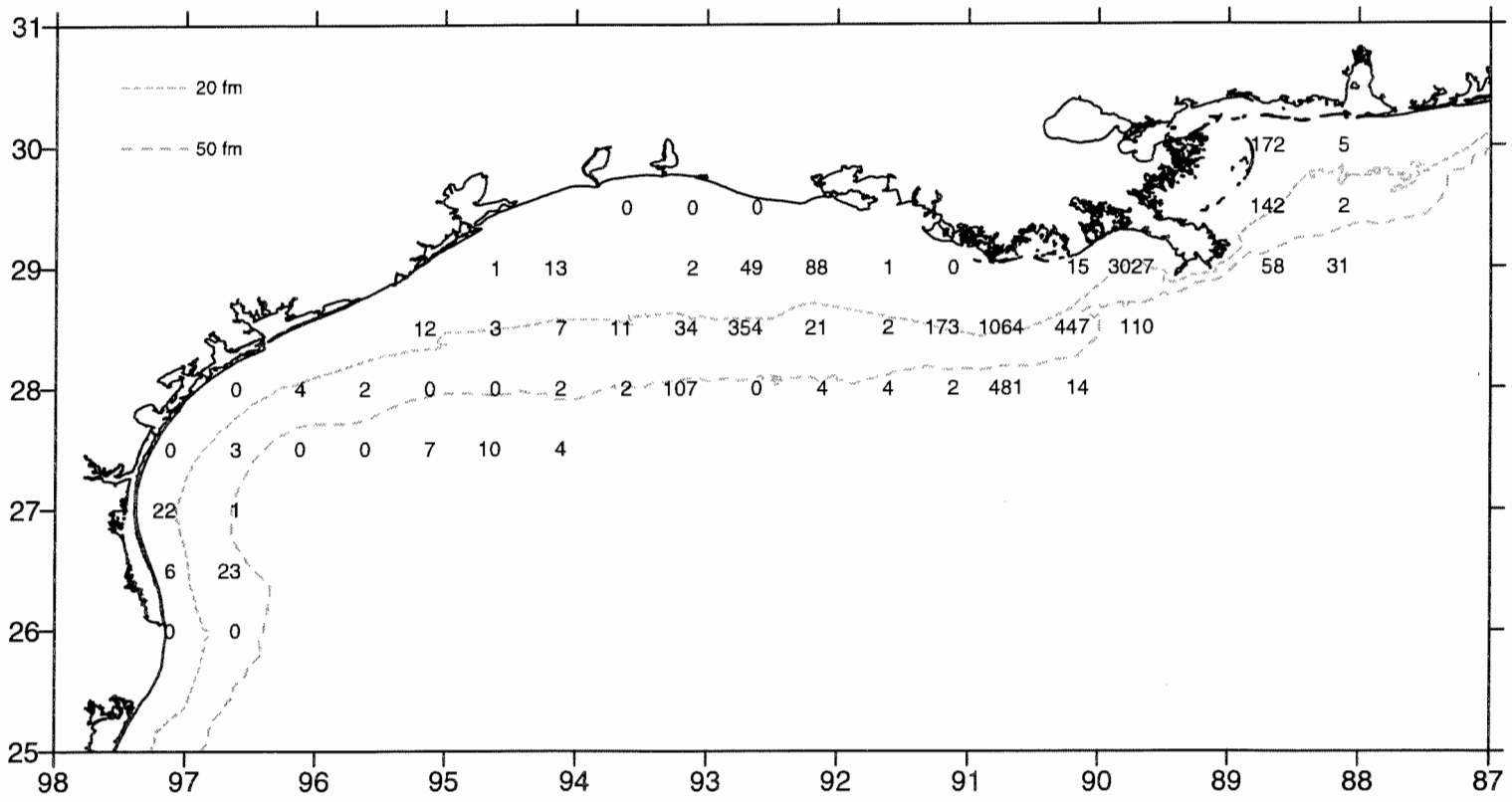

Figure 21. Bigeye searobin, Prionotus longispinosus, number/hour for June-July 1996.

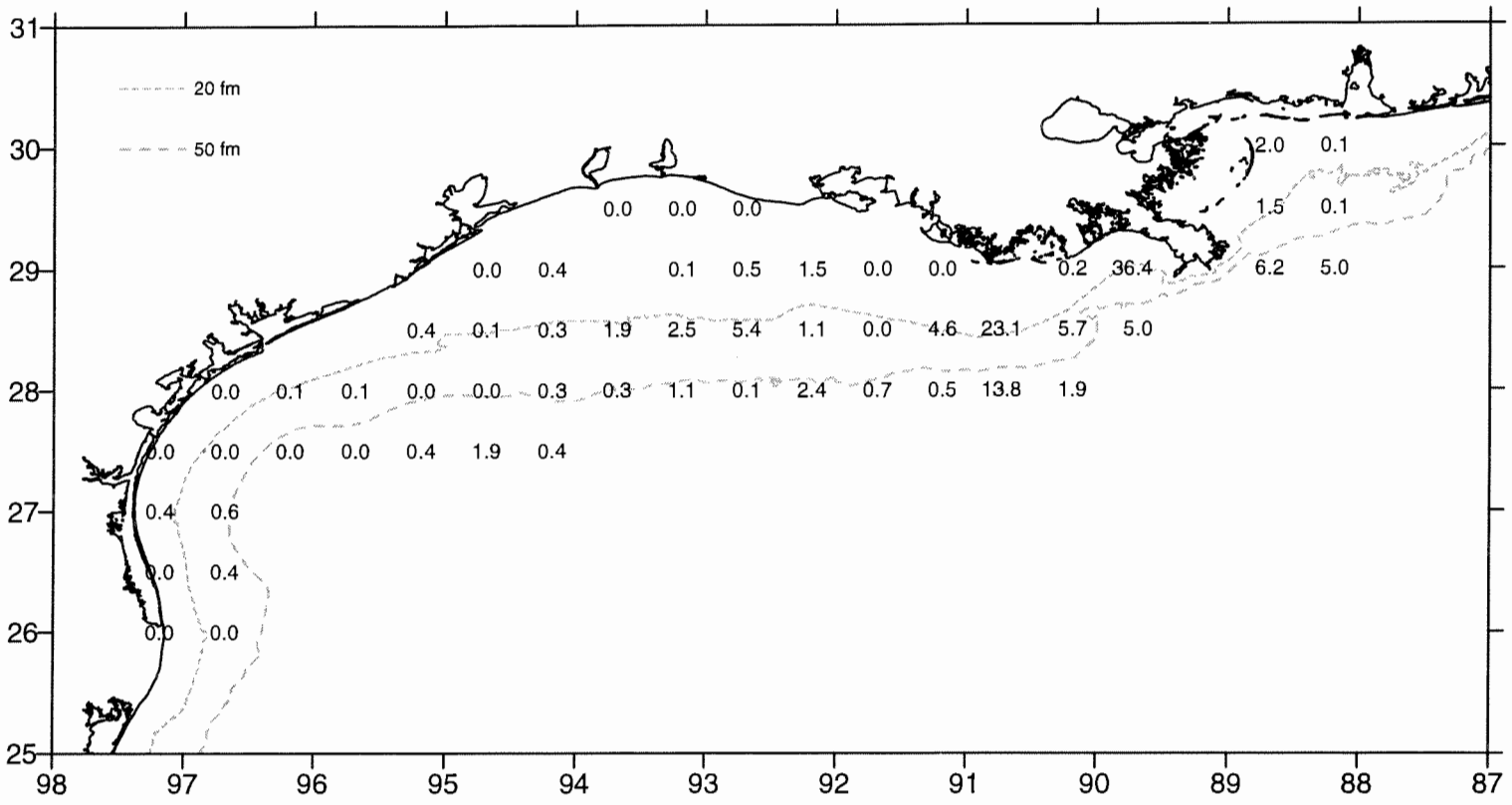

Figure 22. Bigeye searobin, Prionotus longispinosus, lb/hour for June-July 1996.

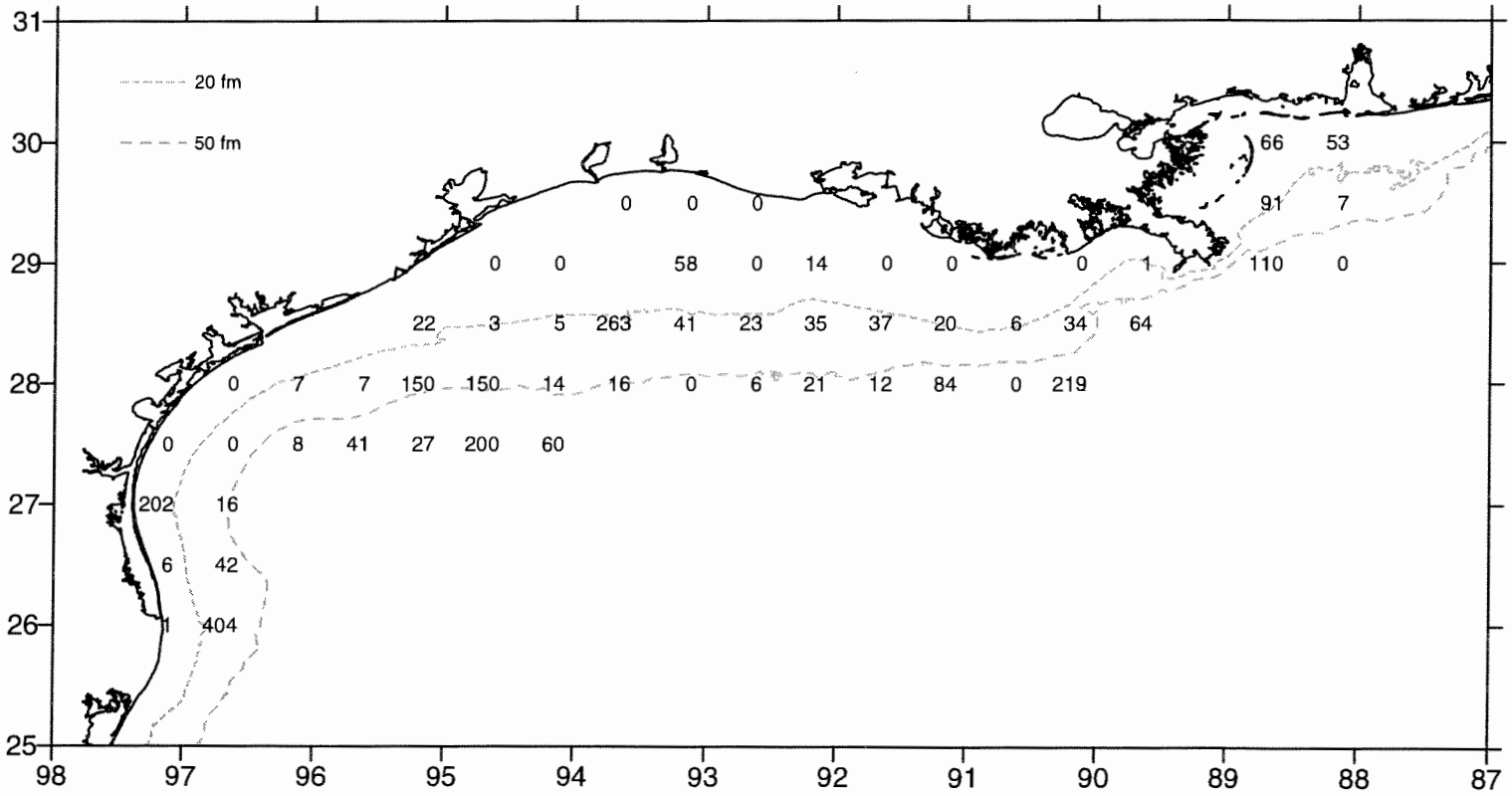

Figure 23. Rough scad, Trachurus lathami, number/hour for June-July 1996.

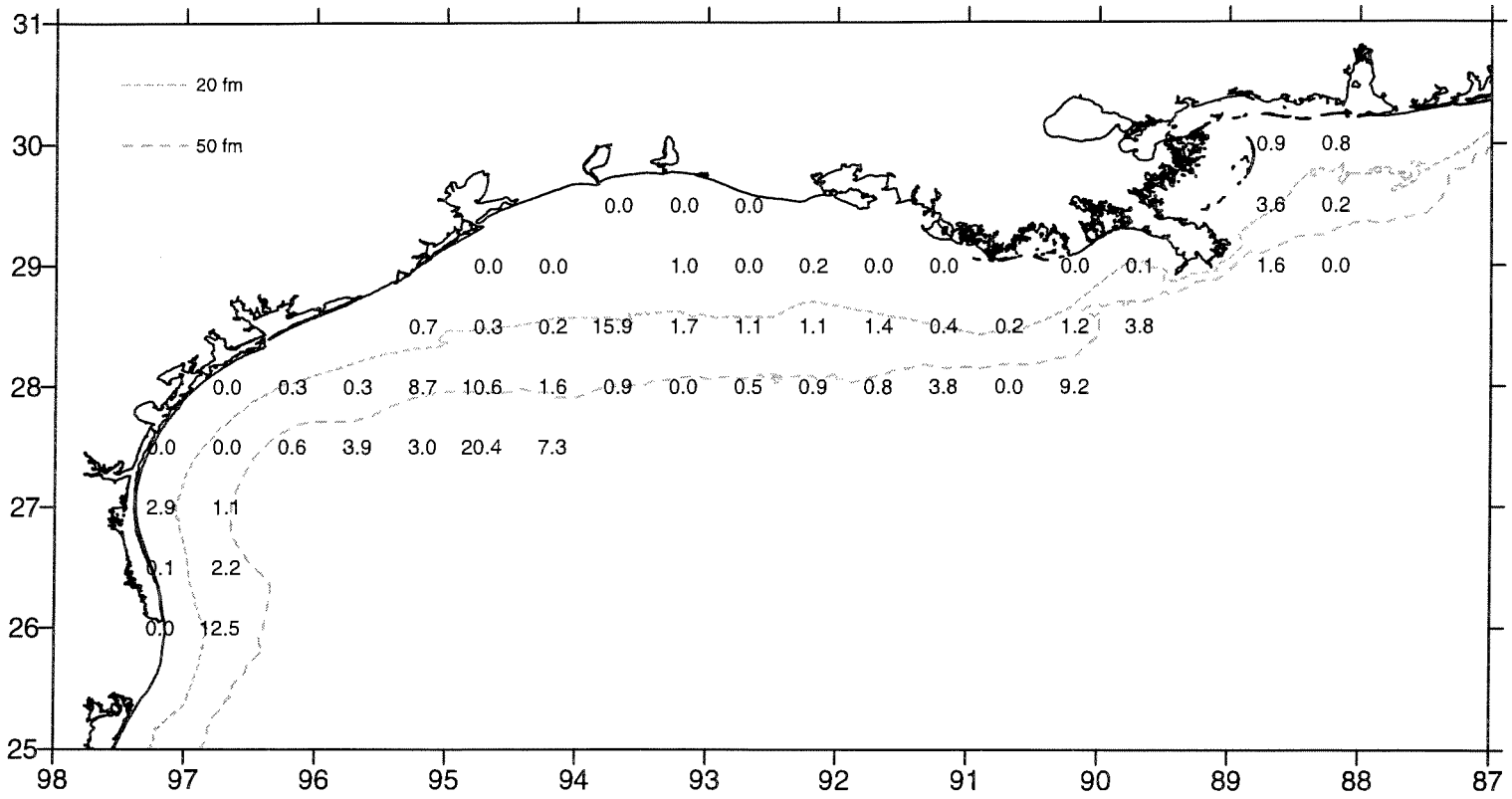

Figure 24. Rough scad, Trachurus lathami, lb/hour for June-July 1996.

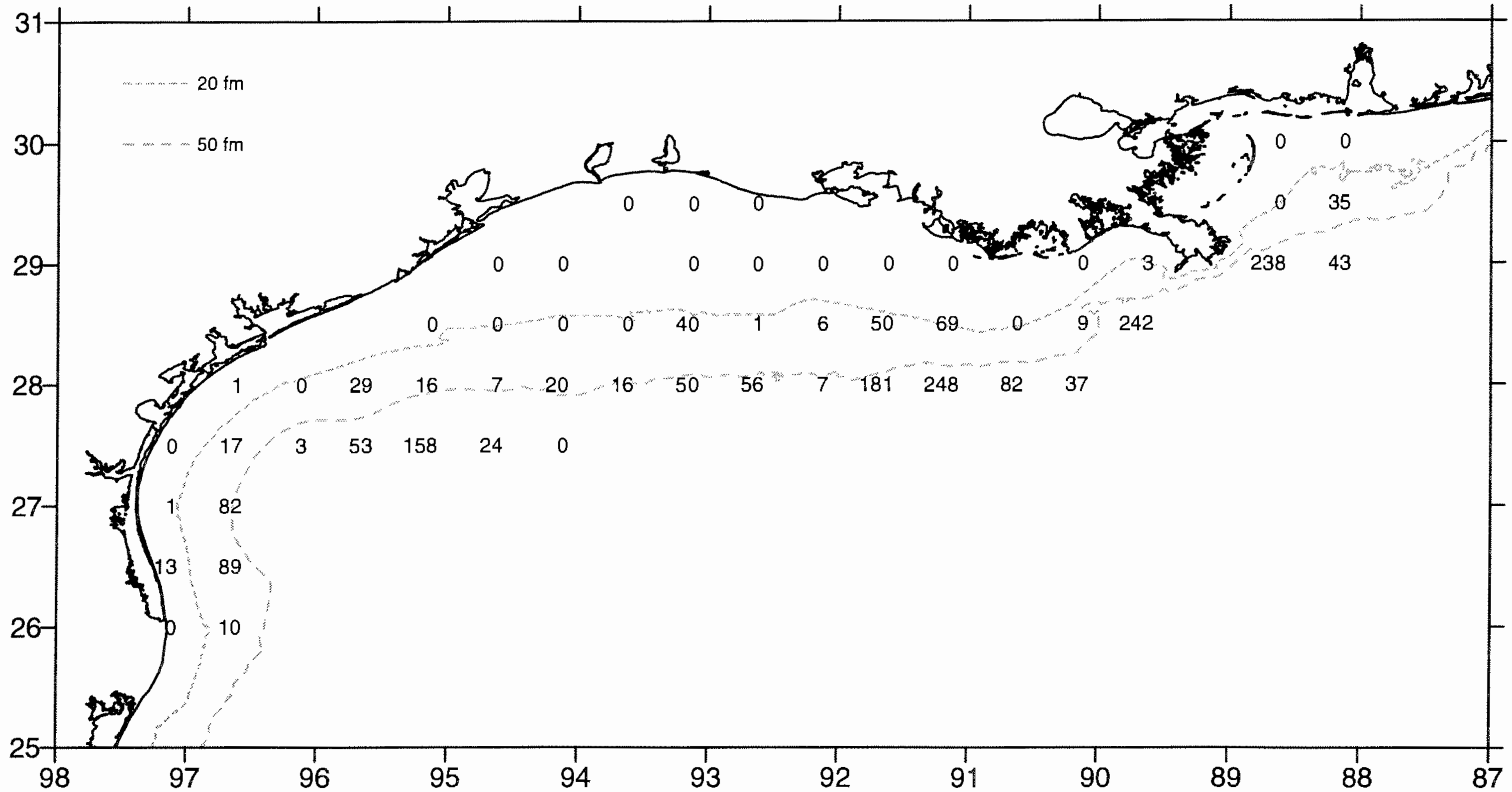

Figure 25. Blackear bass, Serranus atrobranchus, number/hour for June-July 1996.

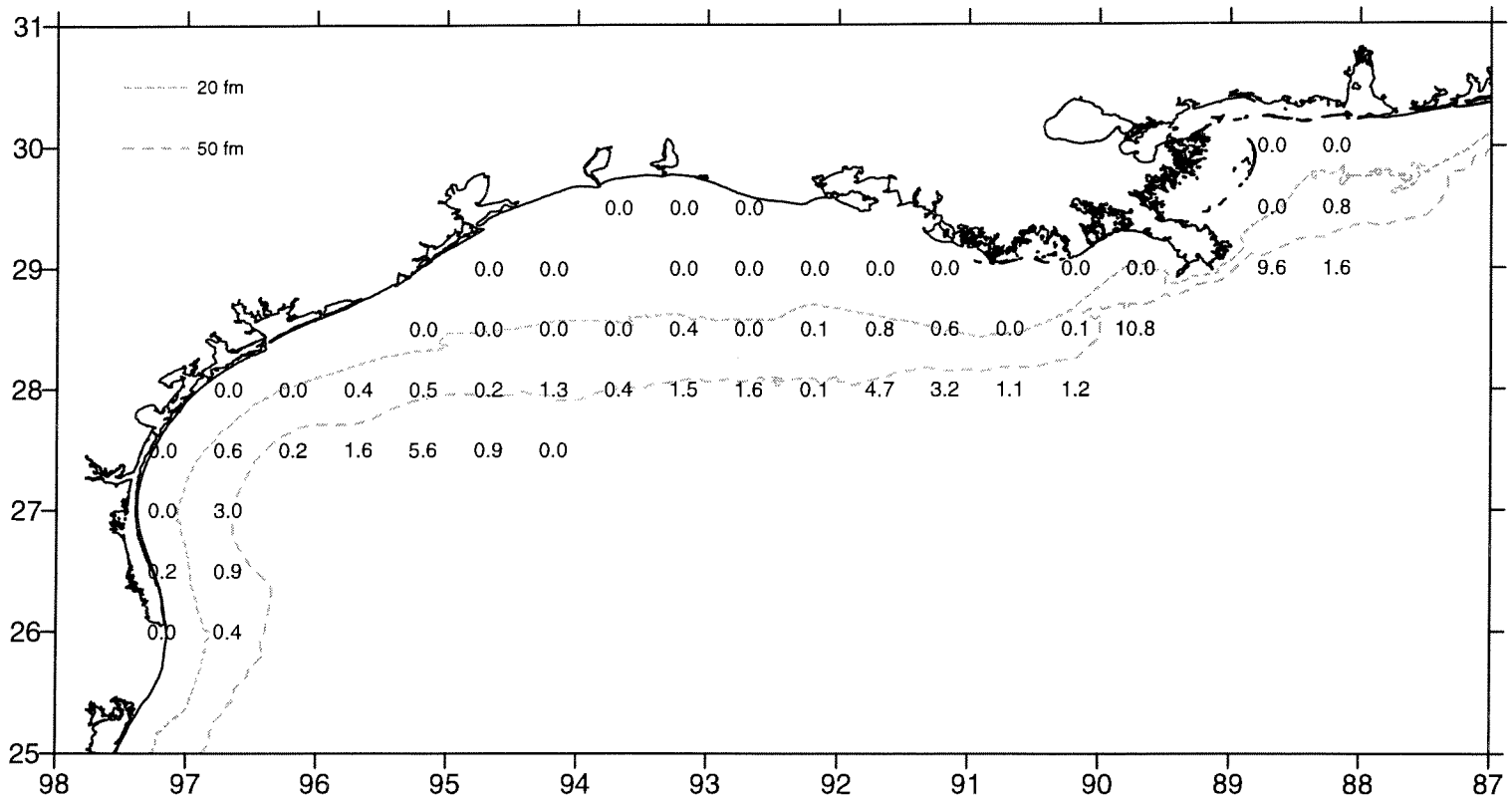

Figure 26. Blackear bass, Serranus atrobranchus, lb/hour for June-July 1996.

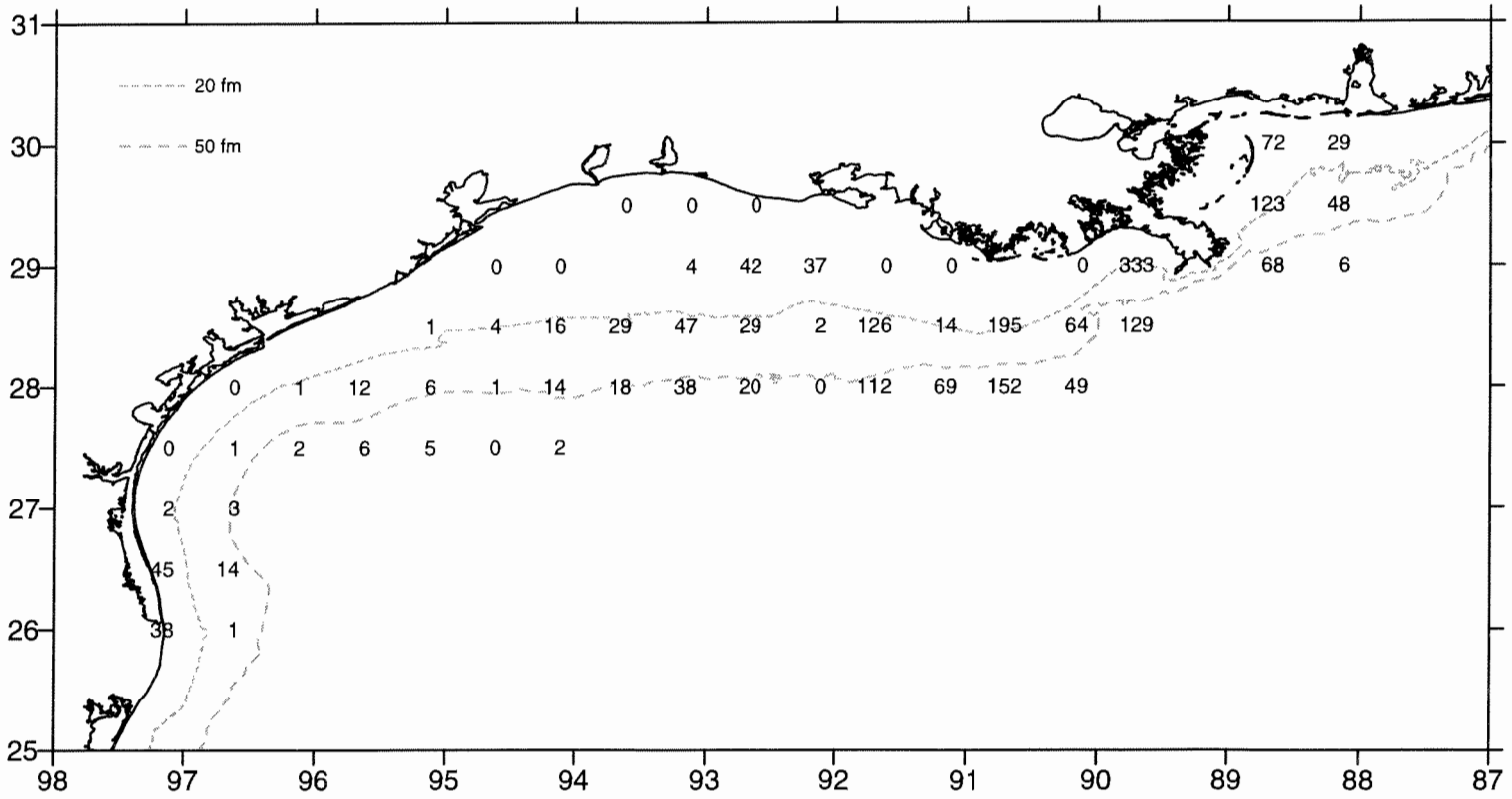

Figure 27. Rock sea bass, Centropristis philadelphica, number/hour for June-July 1996.

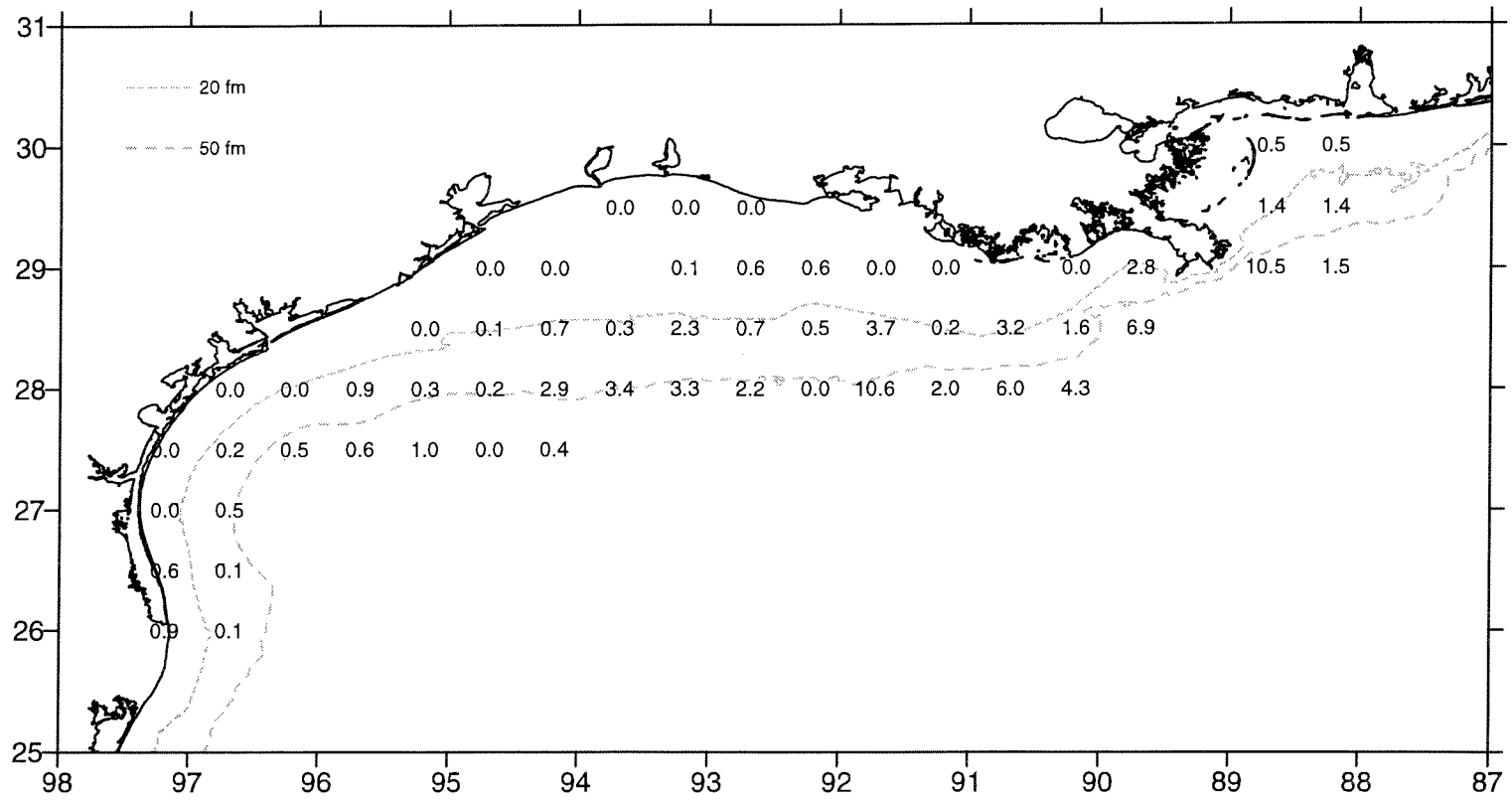

Figure 28. Rock sea bass, Centropristis philadelphica, lb/hour for June-July 1996.

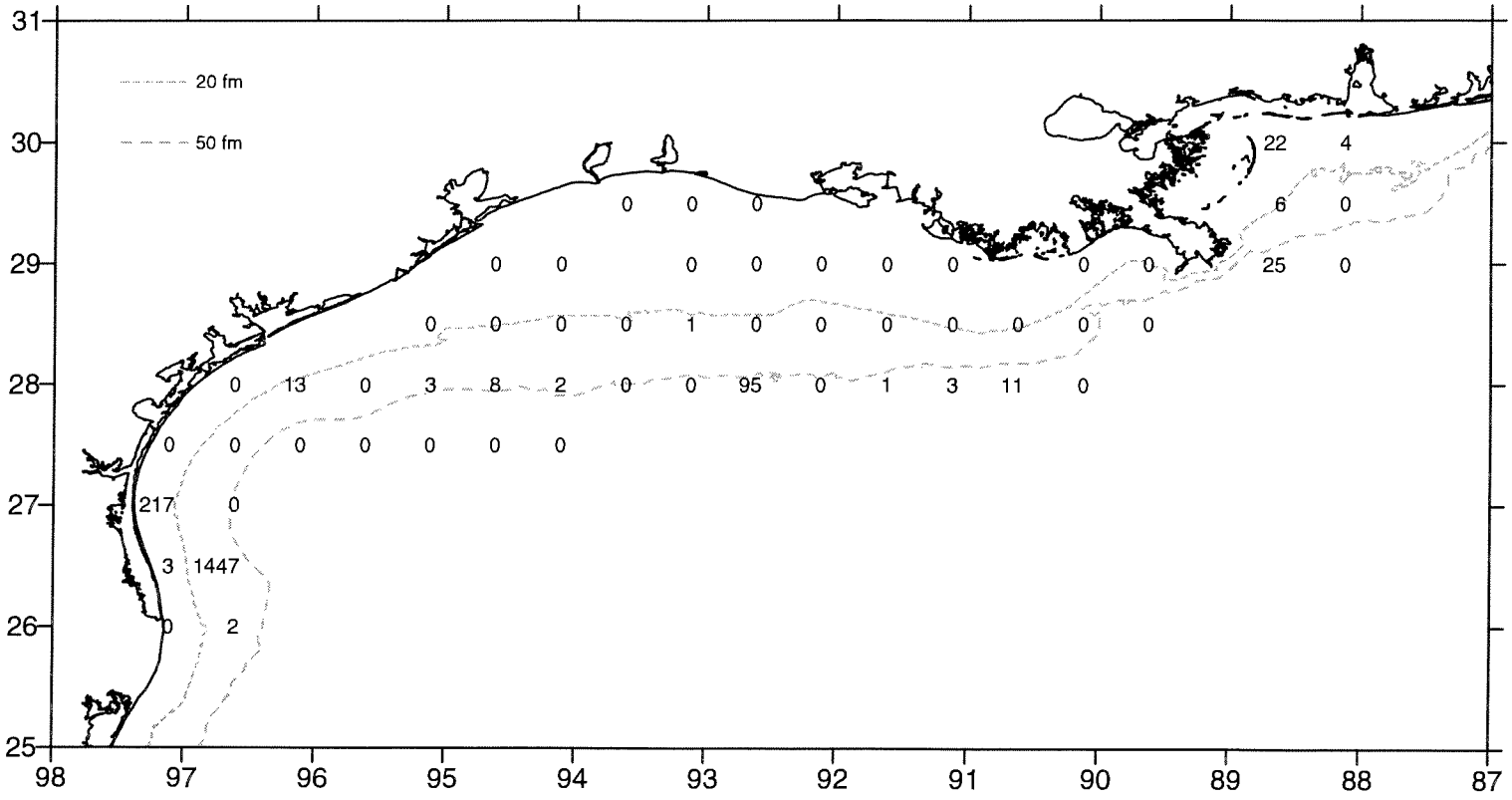

Figure 29. Round herring, Etrumeus teres, number/hour for June-July 1996.

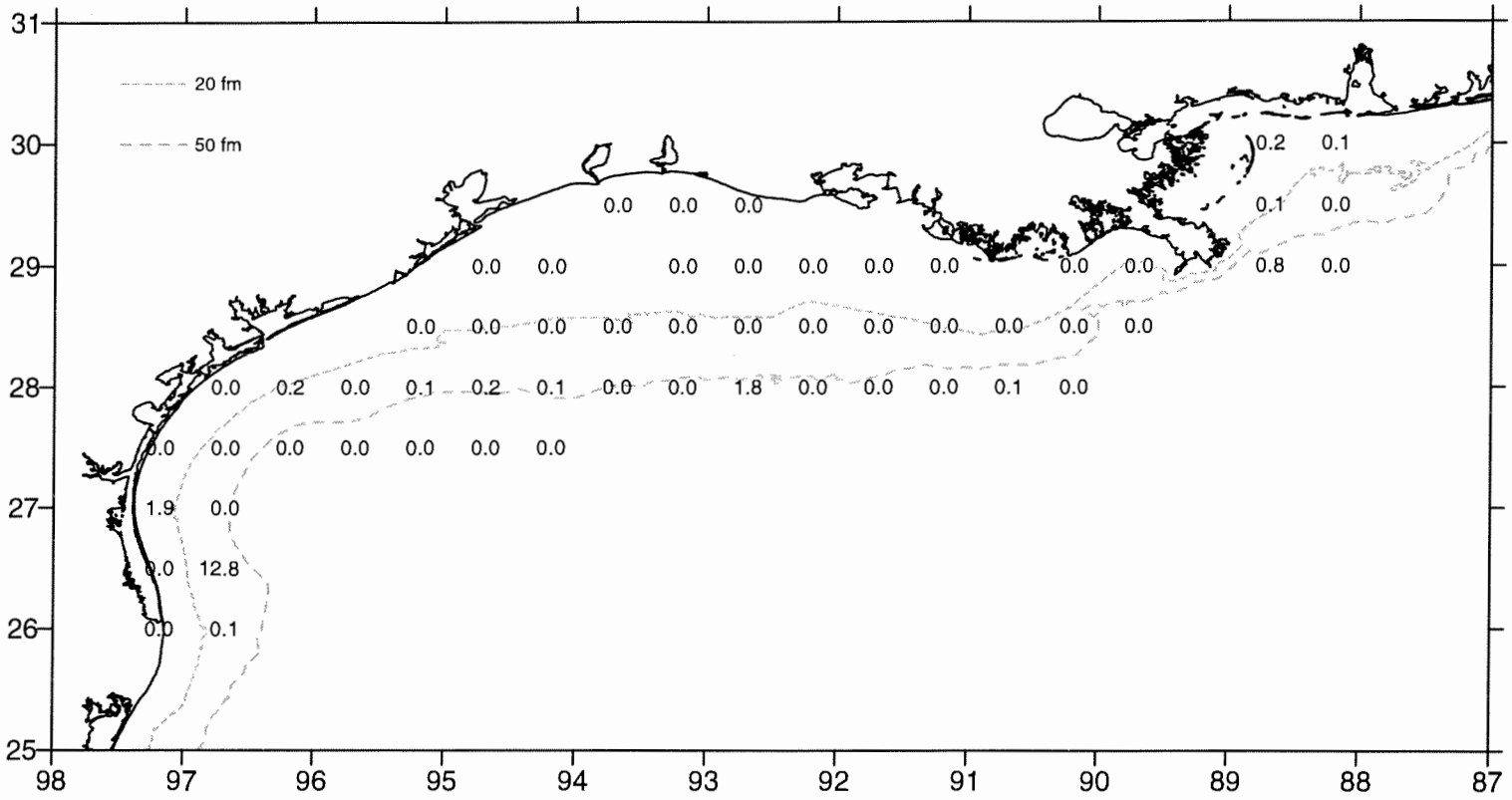

Figure 30. Round herring, Etrumeus teres, lb/hour for June-July 1996.

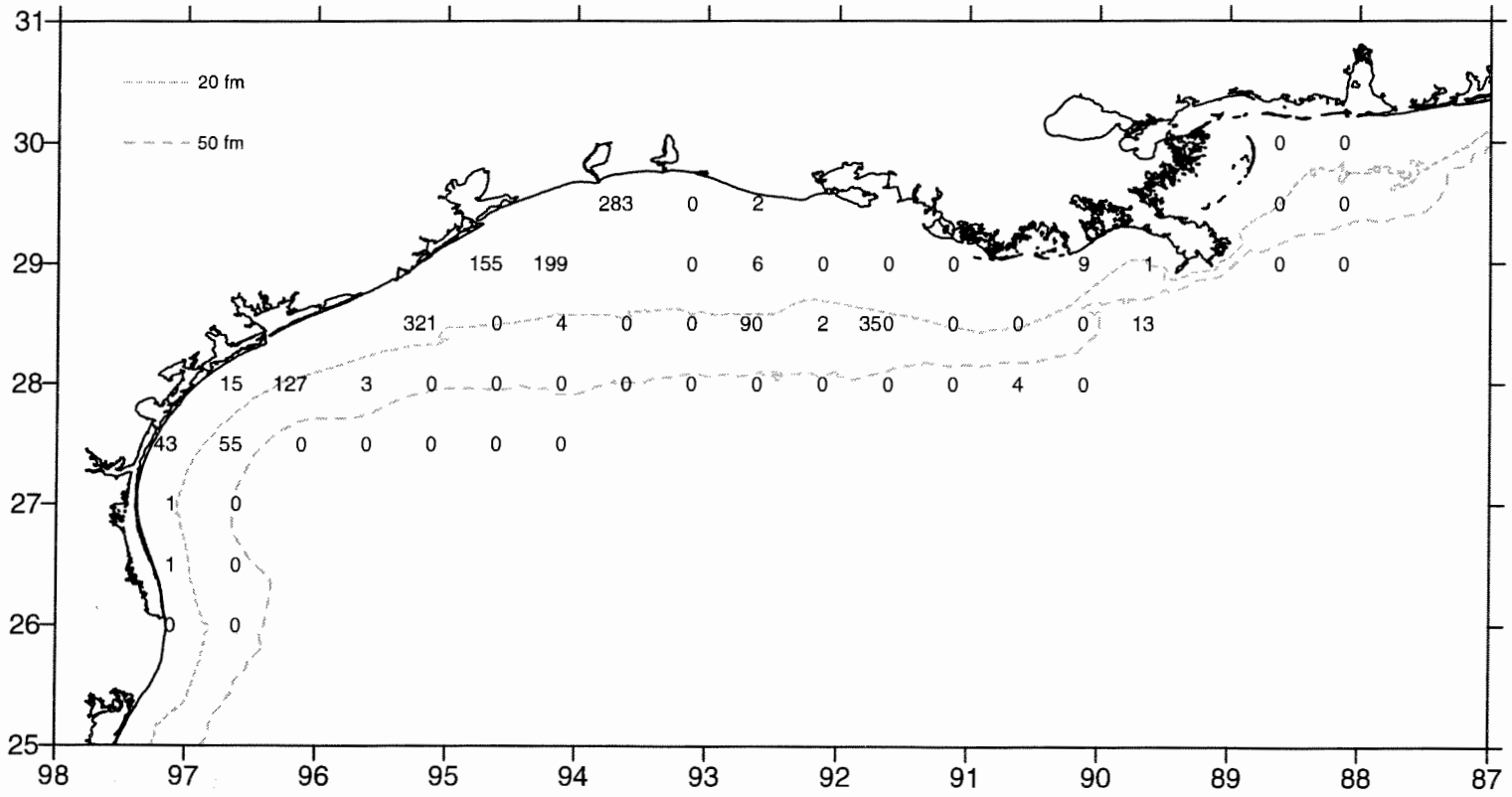

Figure 31. Sand seatrout, Cynoscion nothus, number/hour for June-July 1996.

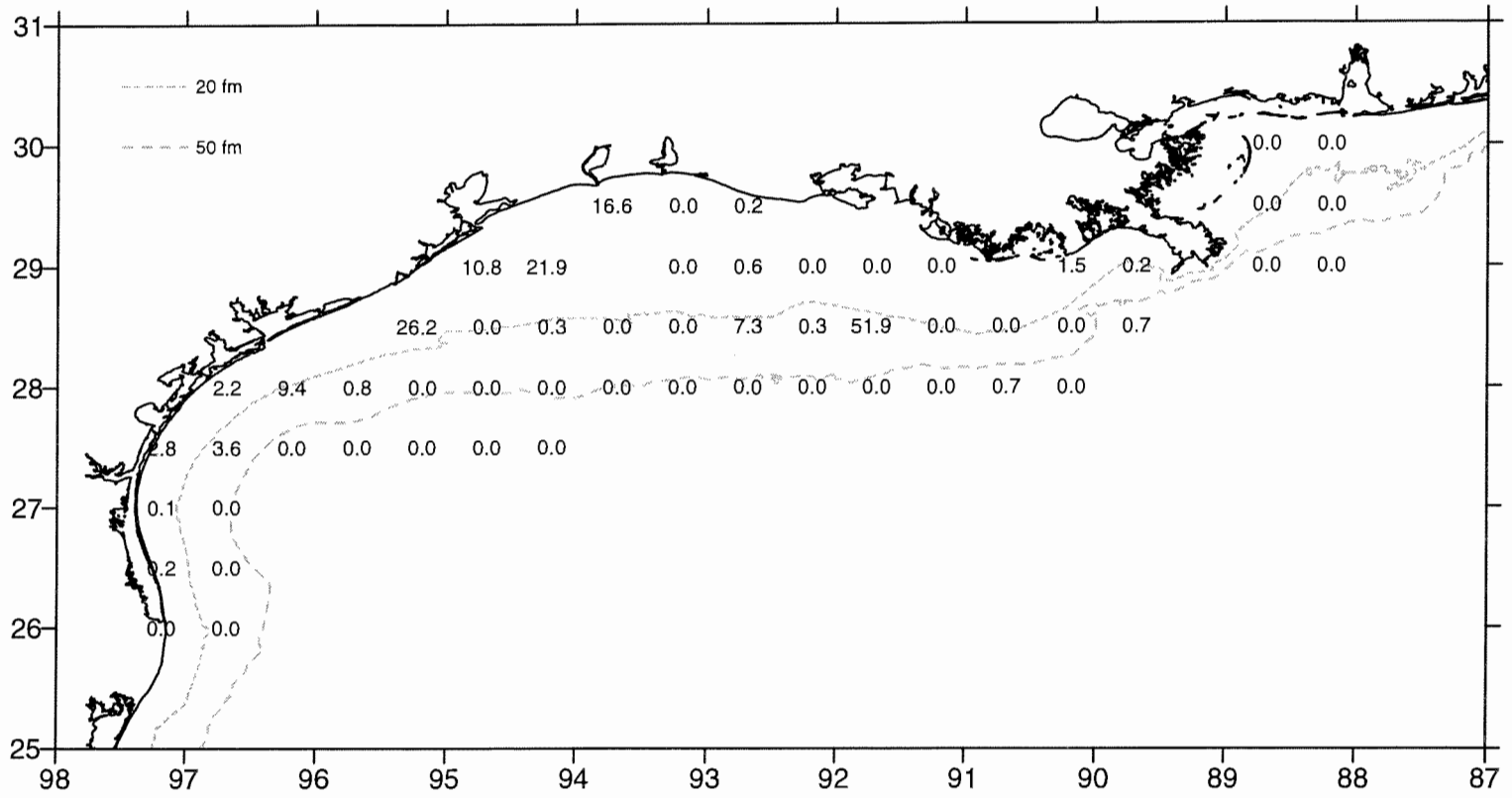

Figure 32. Sand seatrout, Cynoscion nothus, lb/hour for June-July 1996.

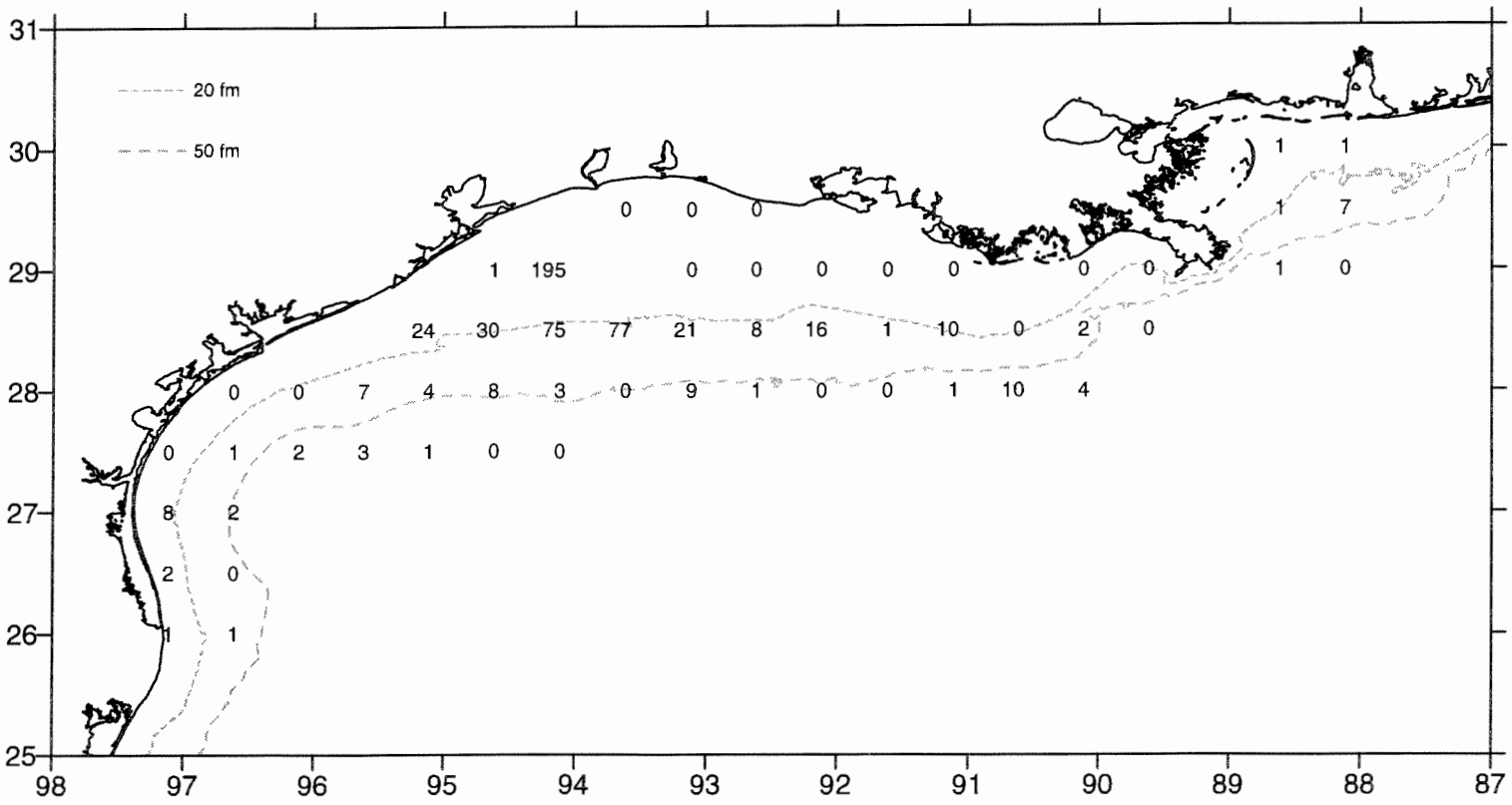

Figure 33. Red snapper, Lutjanus campechanus, number/hour for June-July 1996.

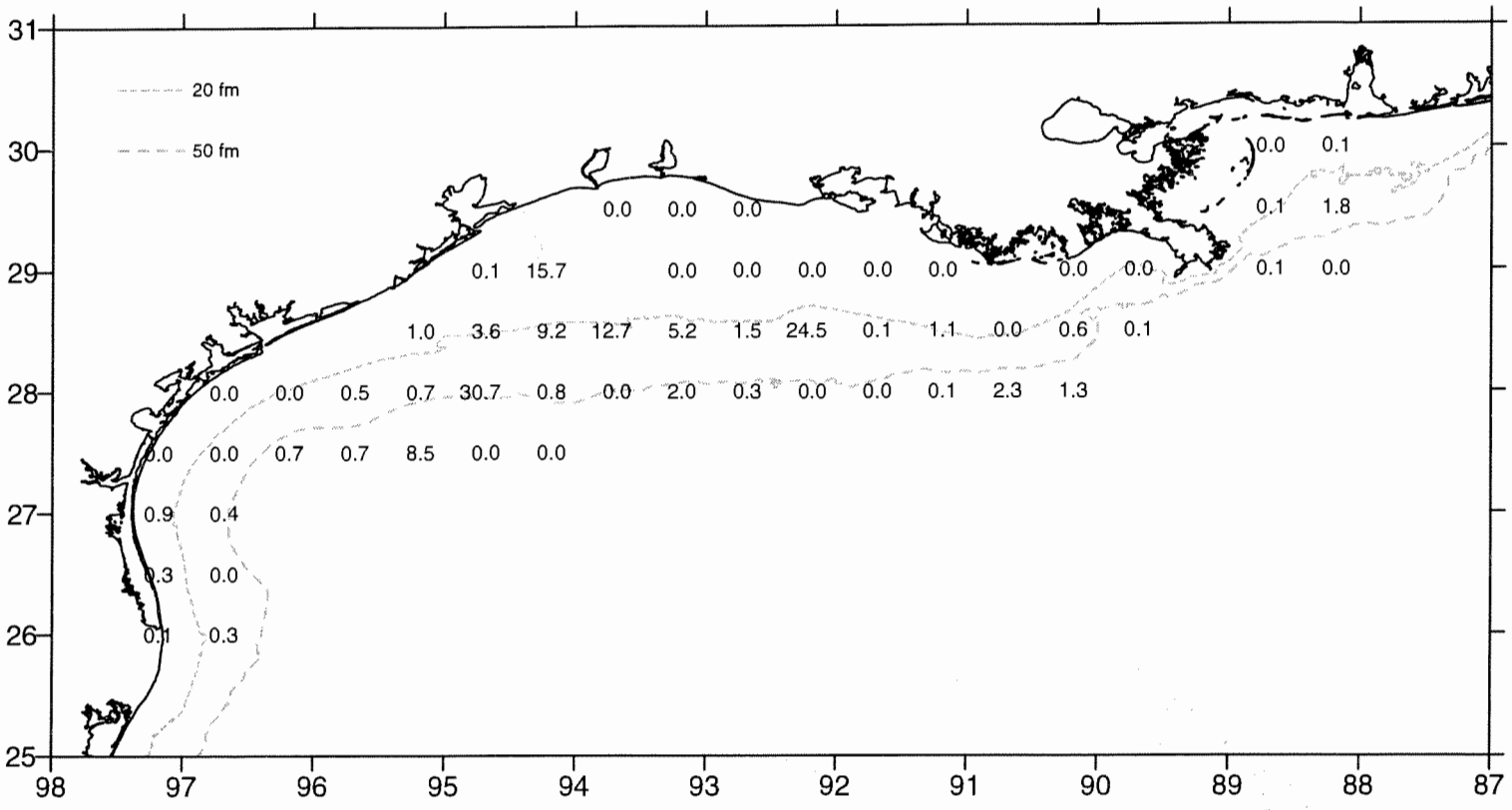

Figure 34. Red snapper, Lutjanus campechanus, lb/hour for June-July 1996.

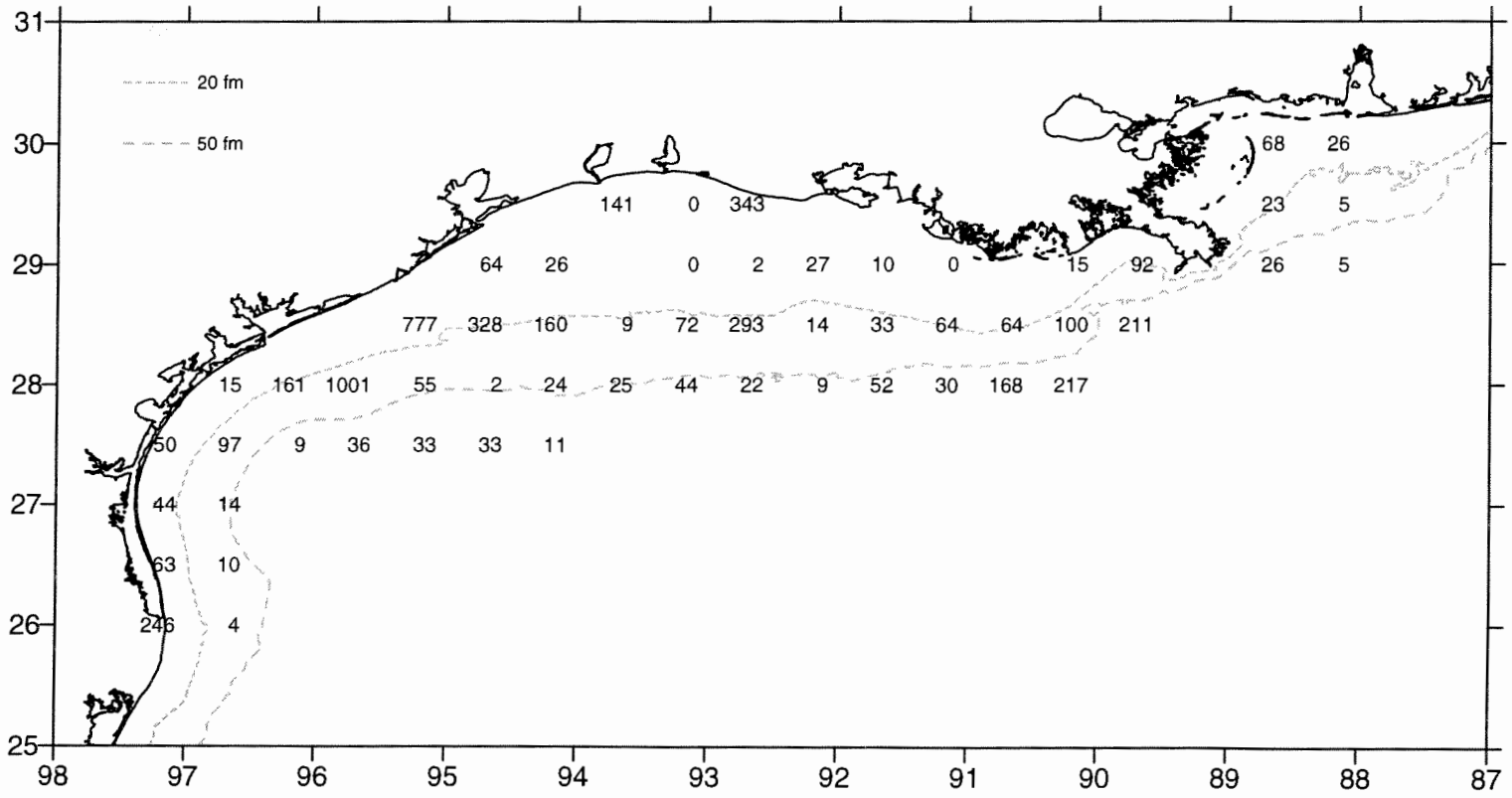

Figure 35. Brown shrimp, Penaeus aztecus, number/hour for June-July 1996.

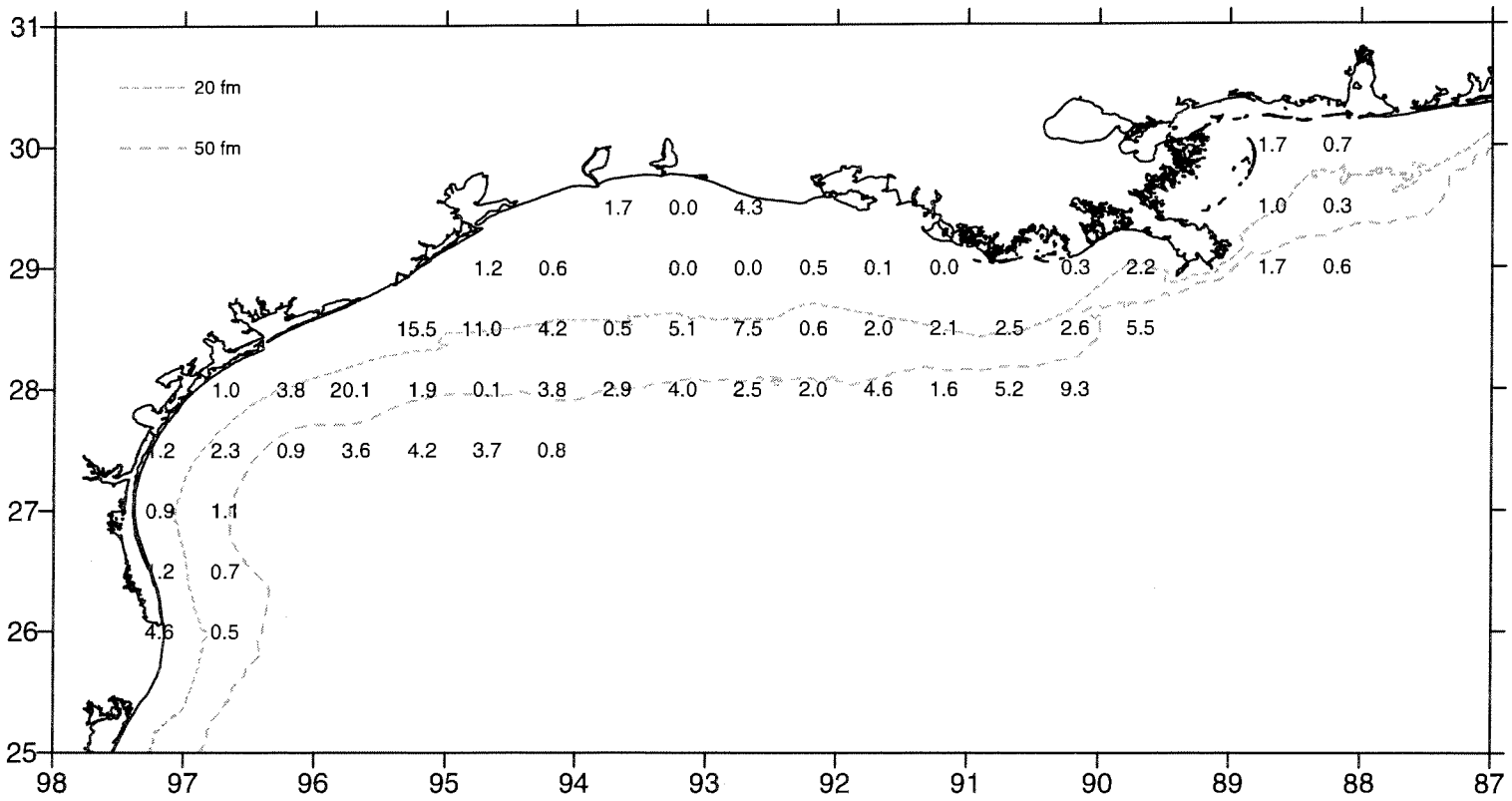

Figure 36. Brown shrimp, Penaeus aztecus, lb/hour for June-July 1996.

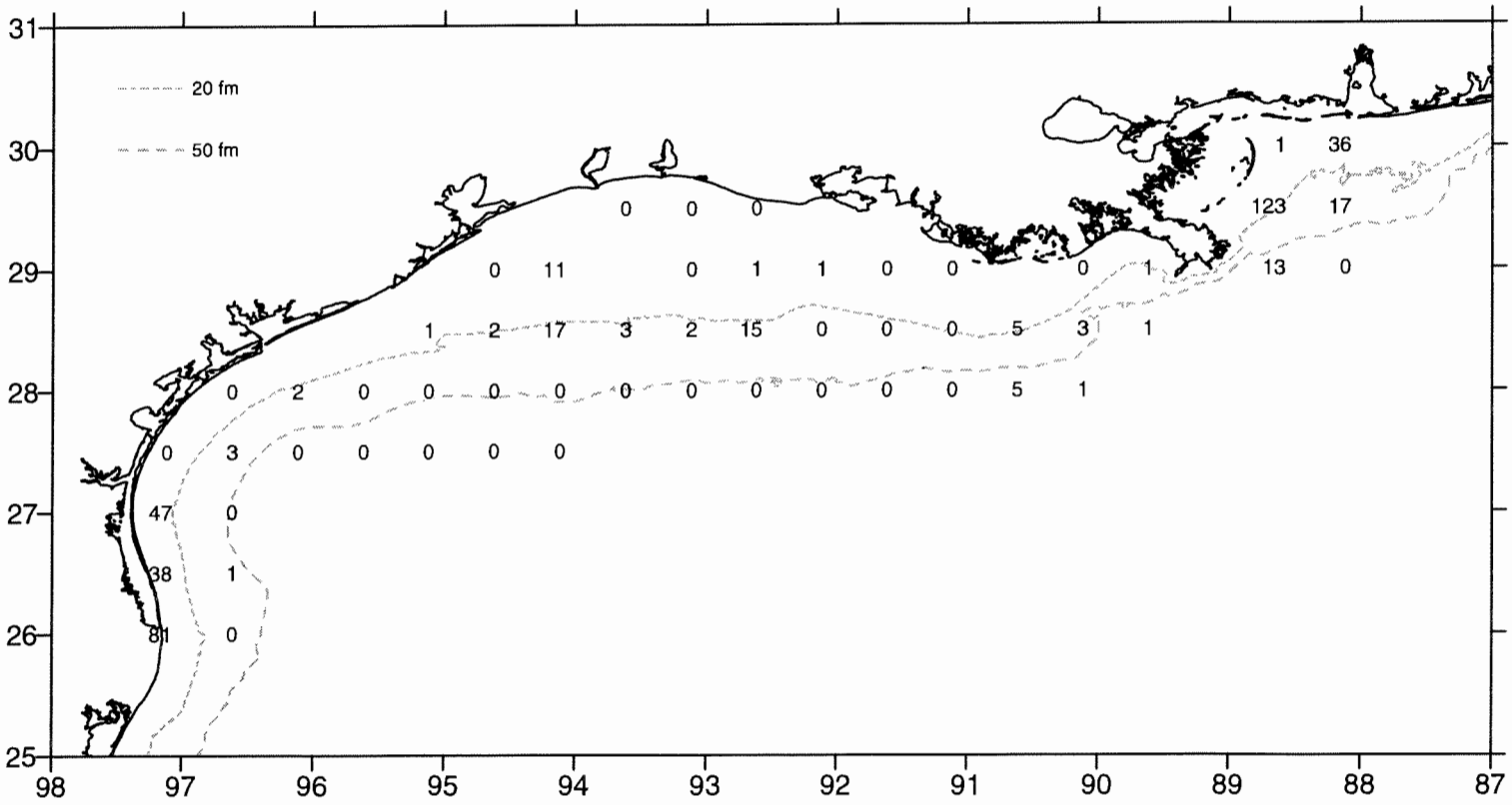

Figure 37. Pink shrimp, Penaeus duorarum, number/hour for June-July 1996.

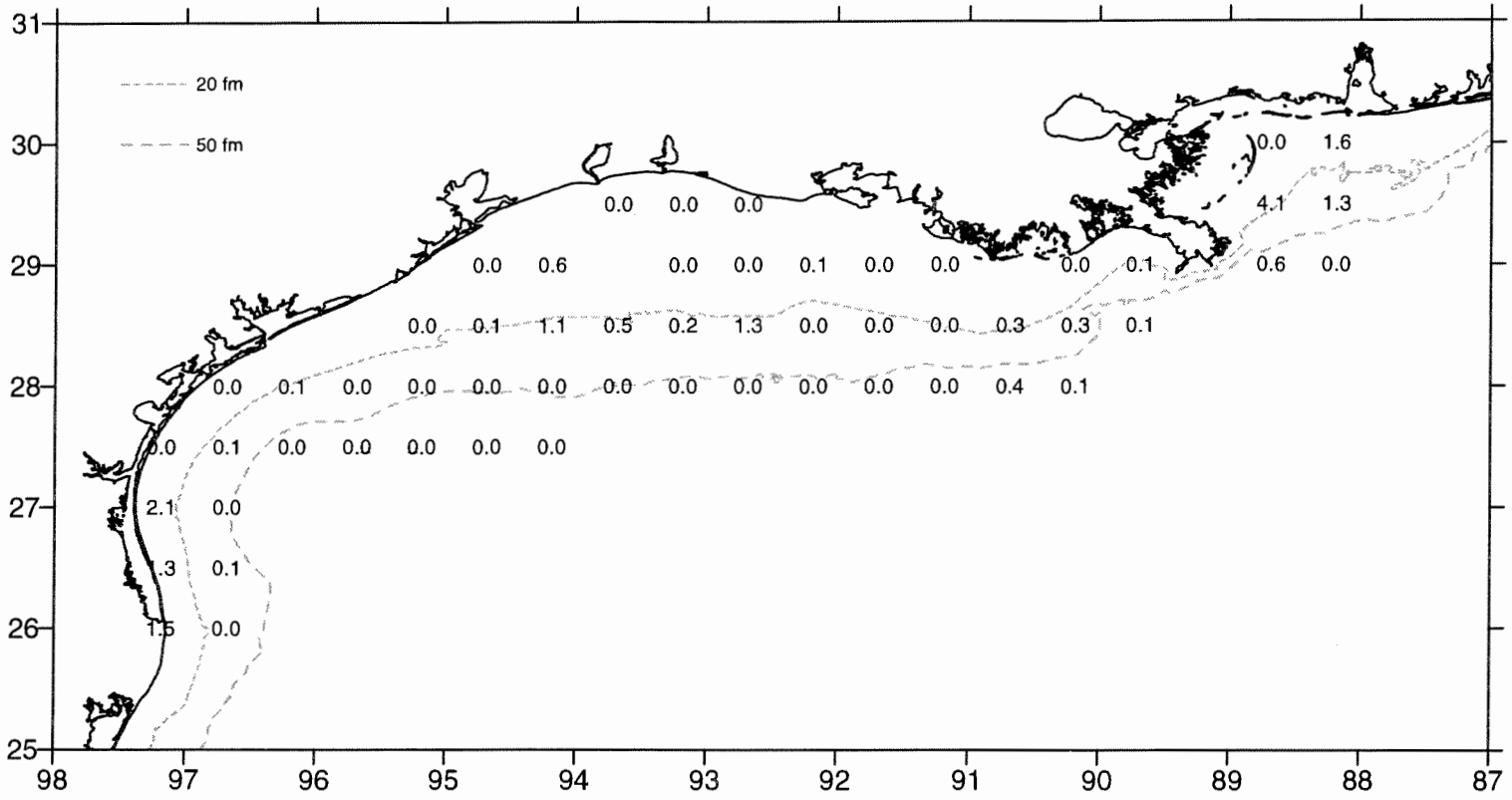

Figure 38. Pink shrimp, Penaeus duorarum, lb/hour for June-July 1996.

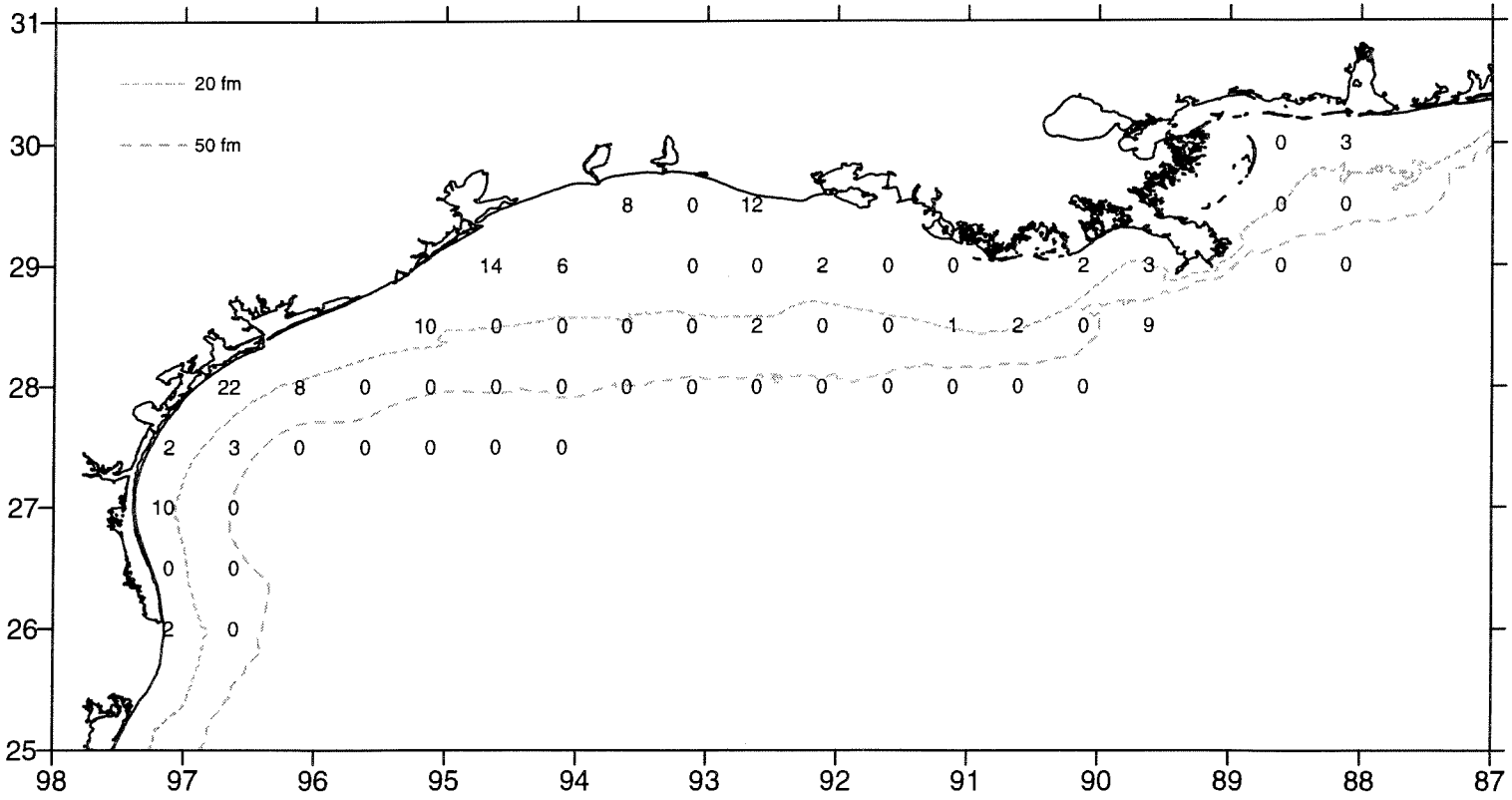

Figure 39. White shrimp, Penaeus setiferus, number/hour for June-July 1996.

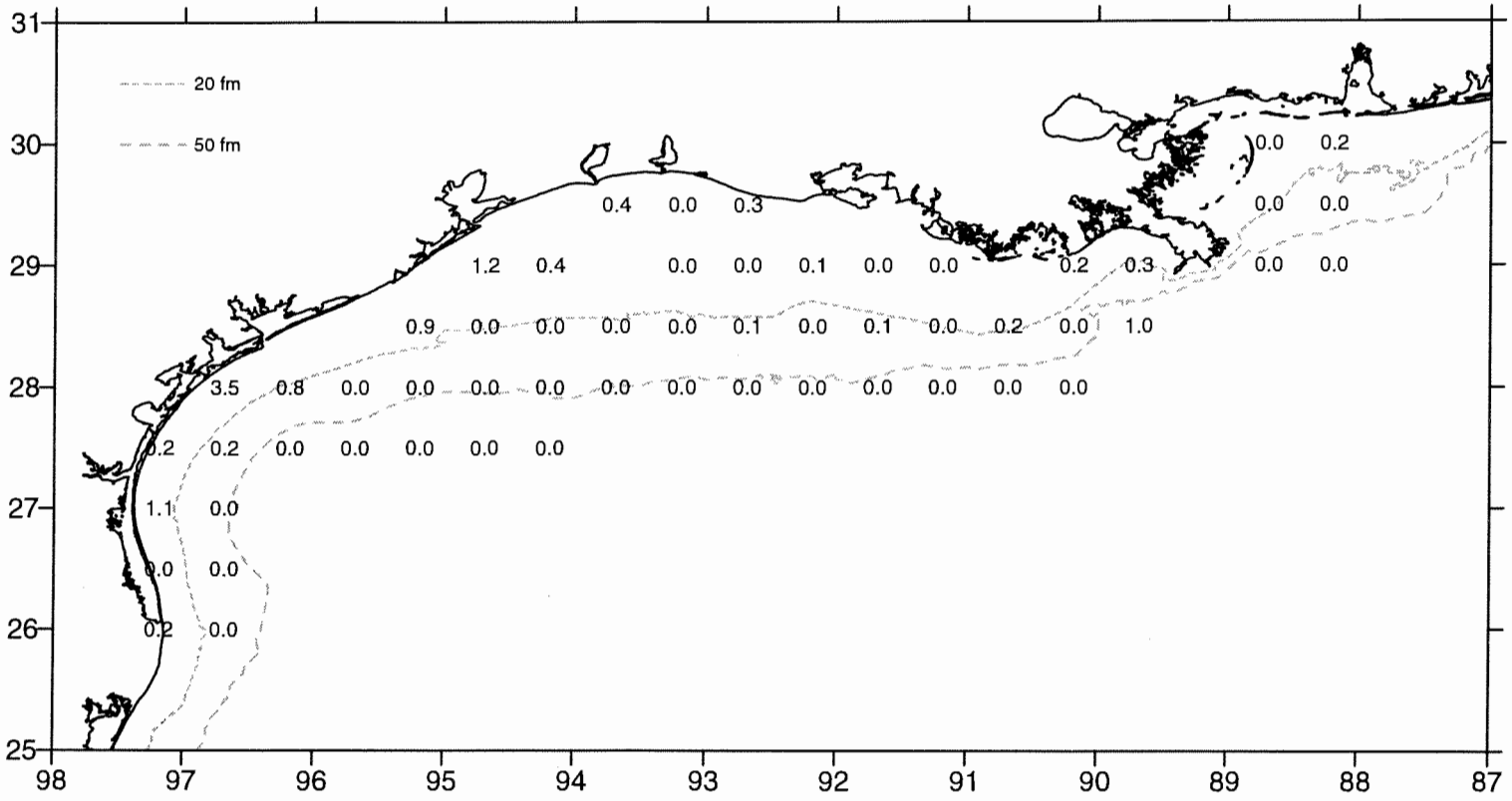

Figure 40. White shrimp, Penaeus setiferus, lb/hour for June-July 1996.

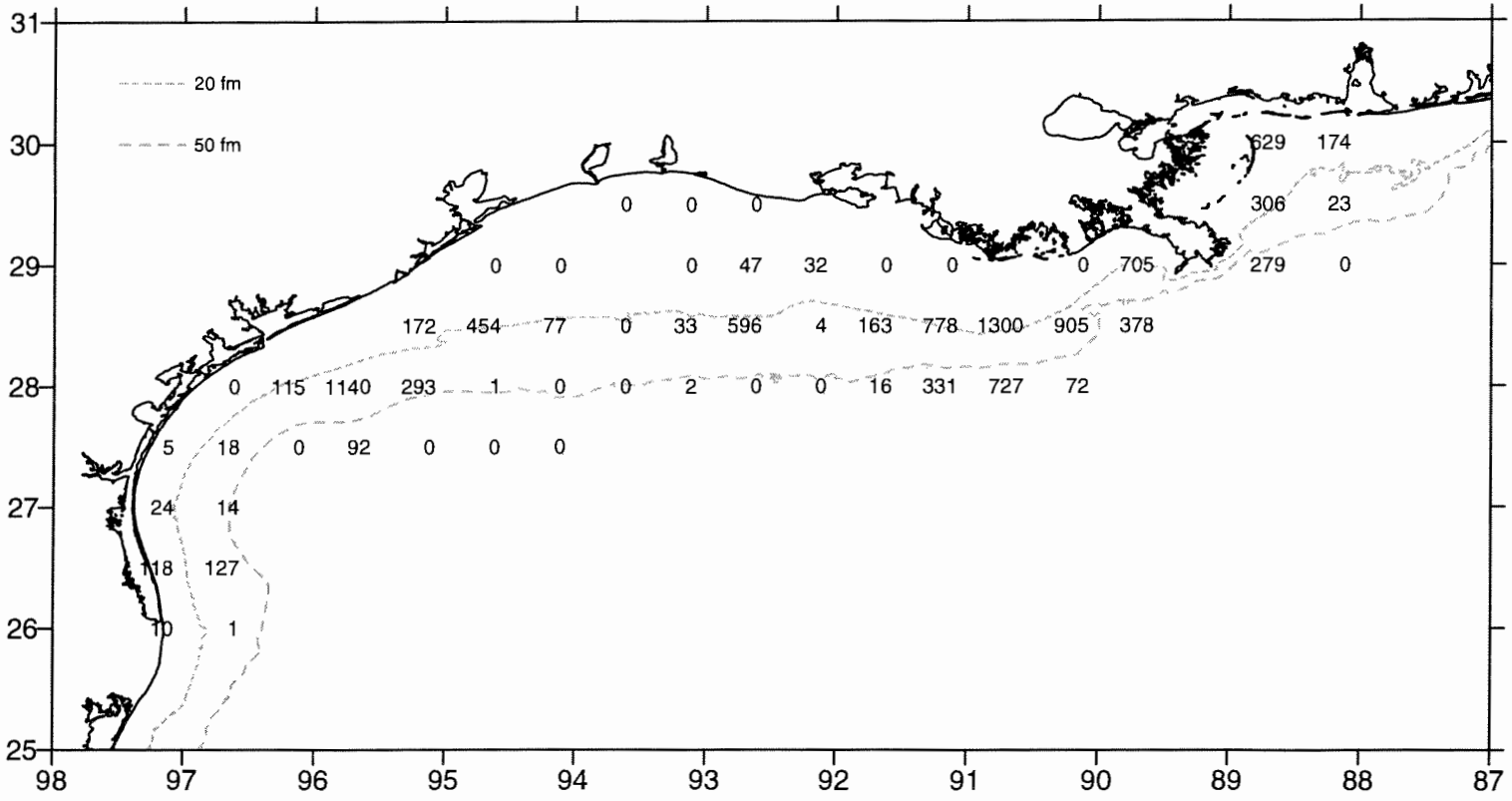

Figure 41. Roughback shrimp, Trachypenaeus similis, number/hour for June-July 1996.

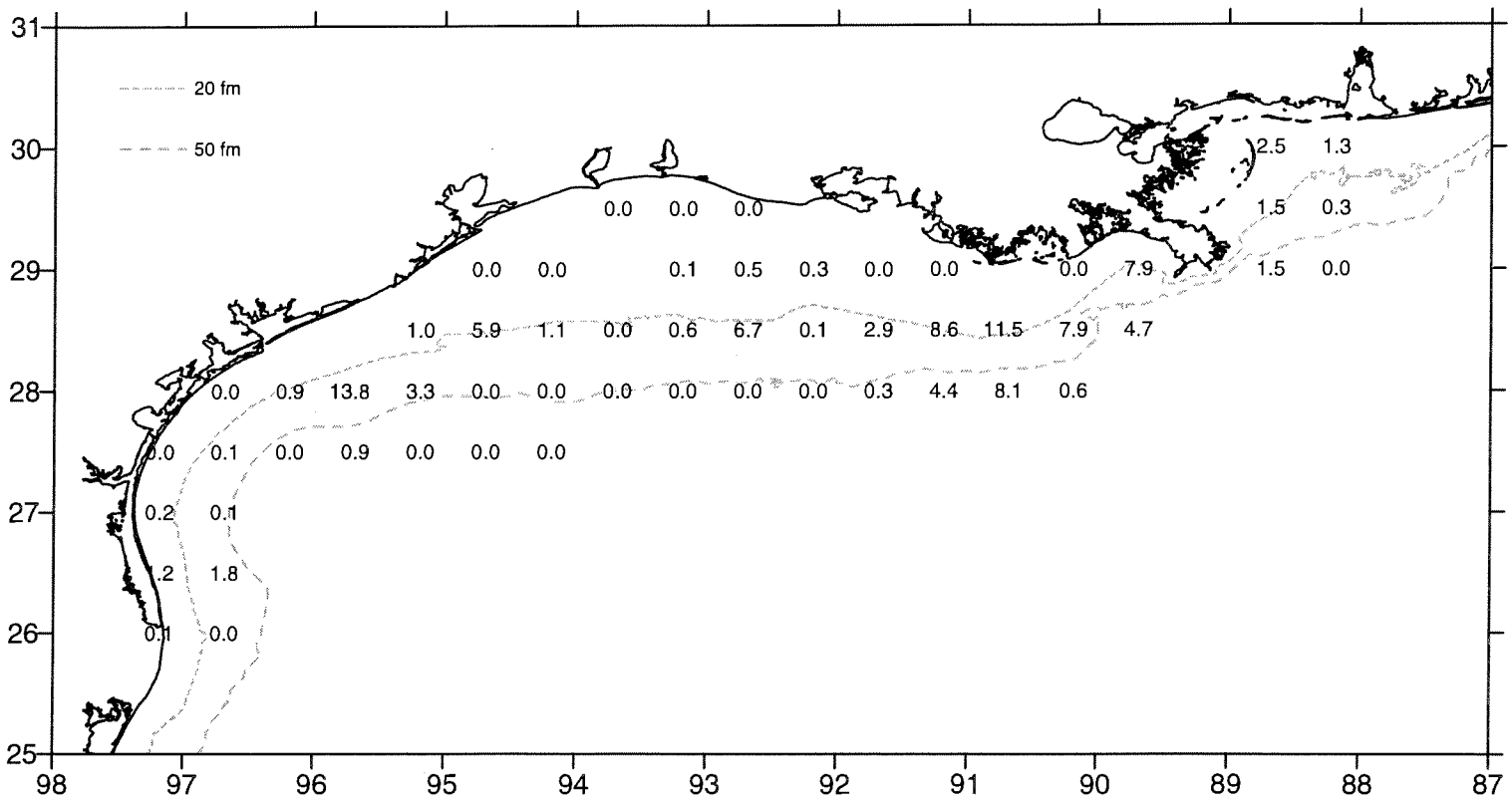

Figure 42. Roughback shrimp, Trachypenaeus similis, lb/hour for June-July 1996.

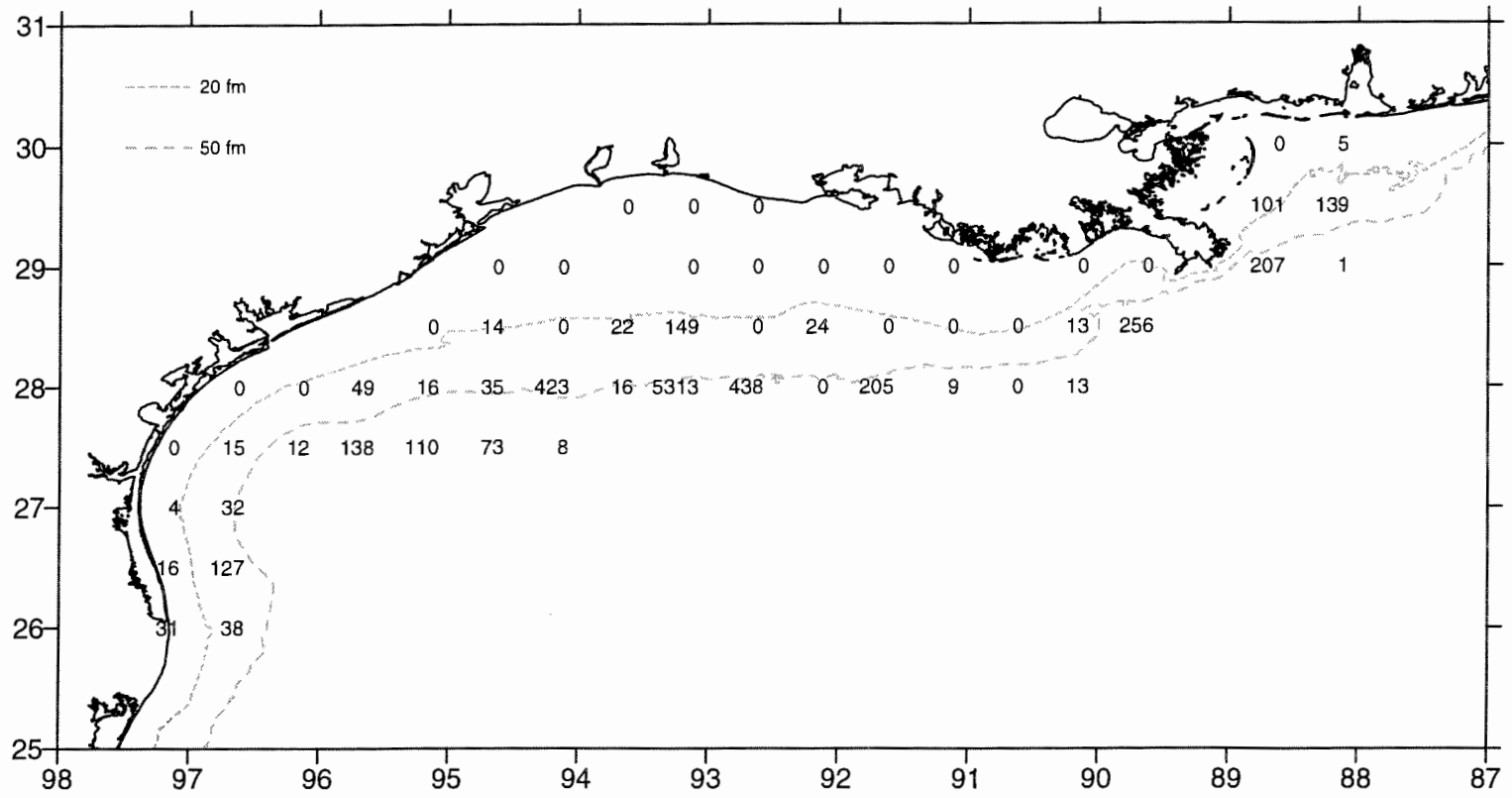

Figure 43. Longspine swimming crab, Portunus spinicarpus, number/hour for June-July 1996.

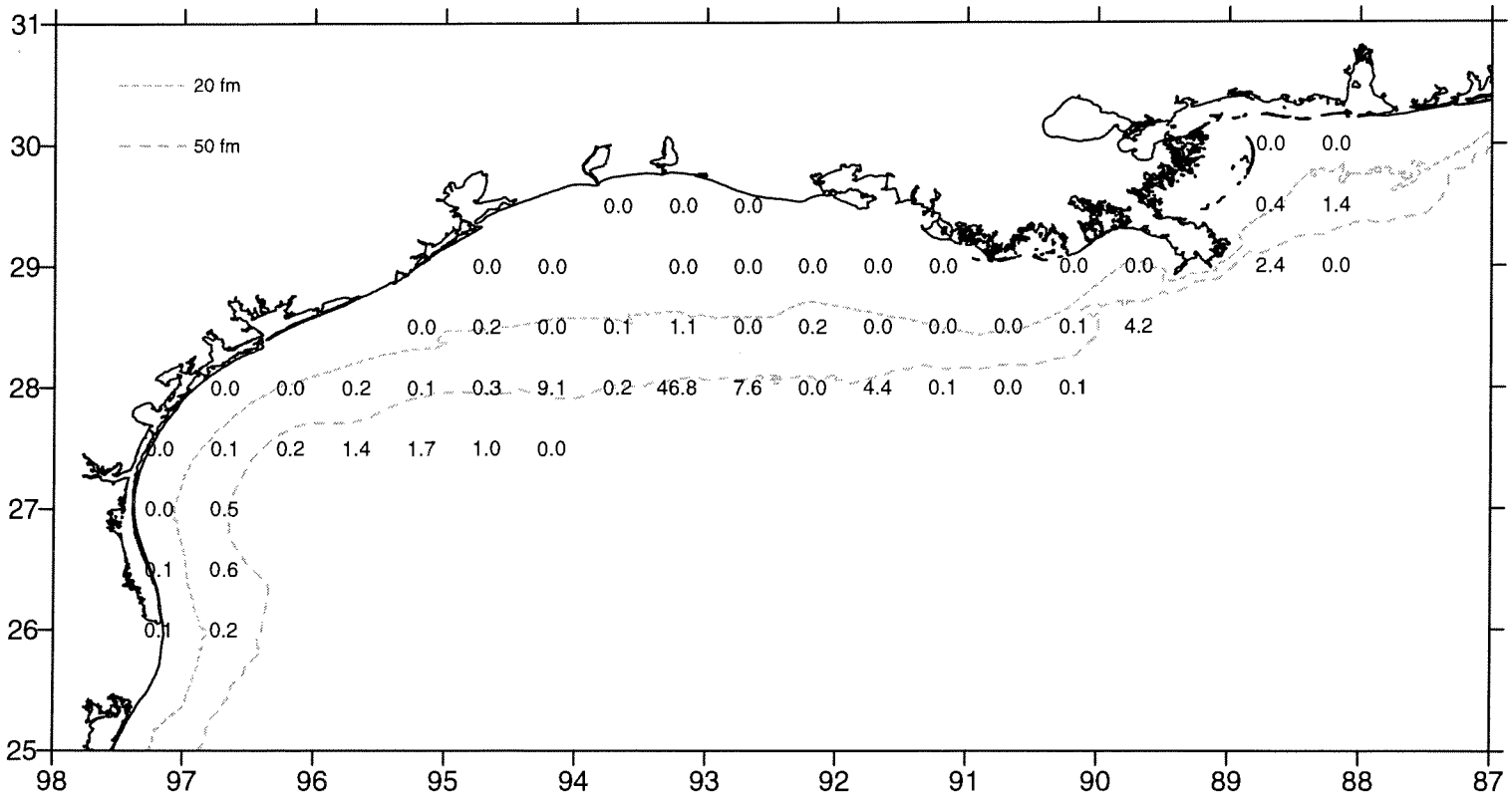

Figure 44. Longspine swimming crab, Portunus spinicarpus, lb/hour for June-July 1996.

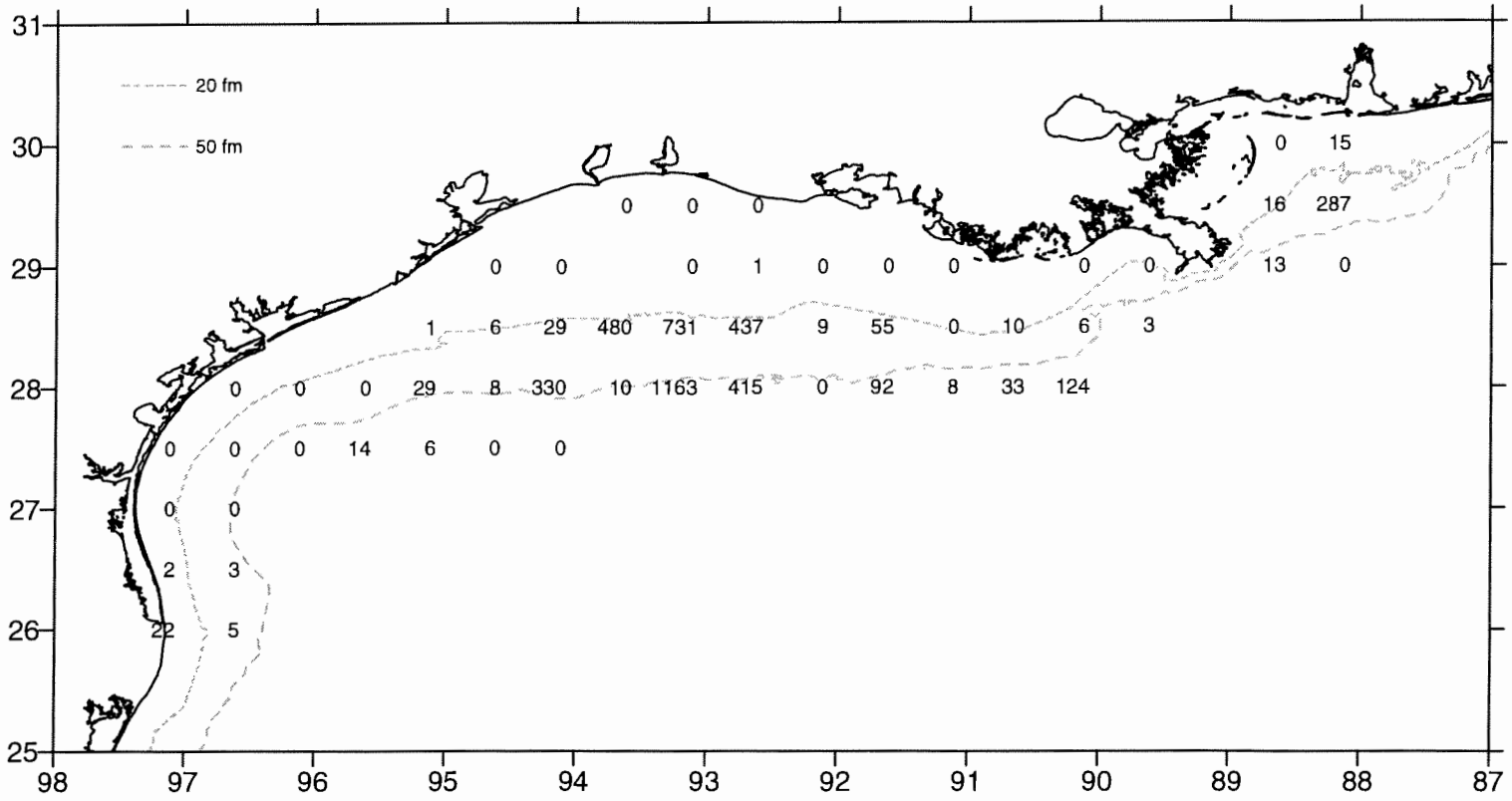

Figure 45. Brown rock shrimp, Sicyonia brevirostris, number/hour for June-July 1996.

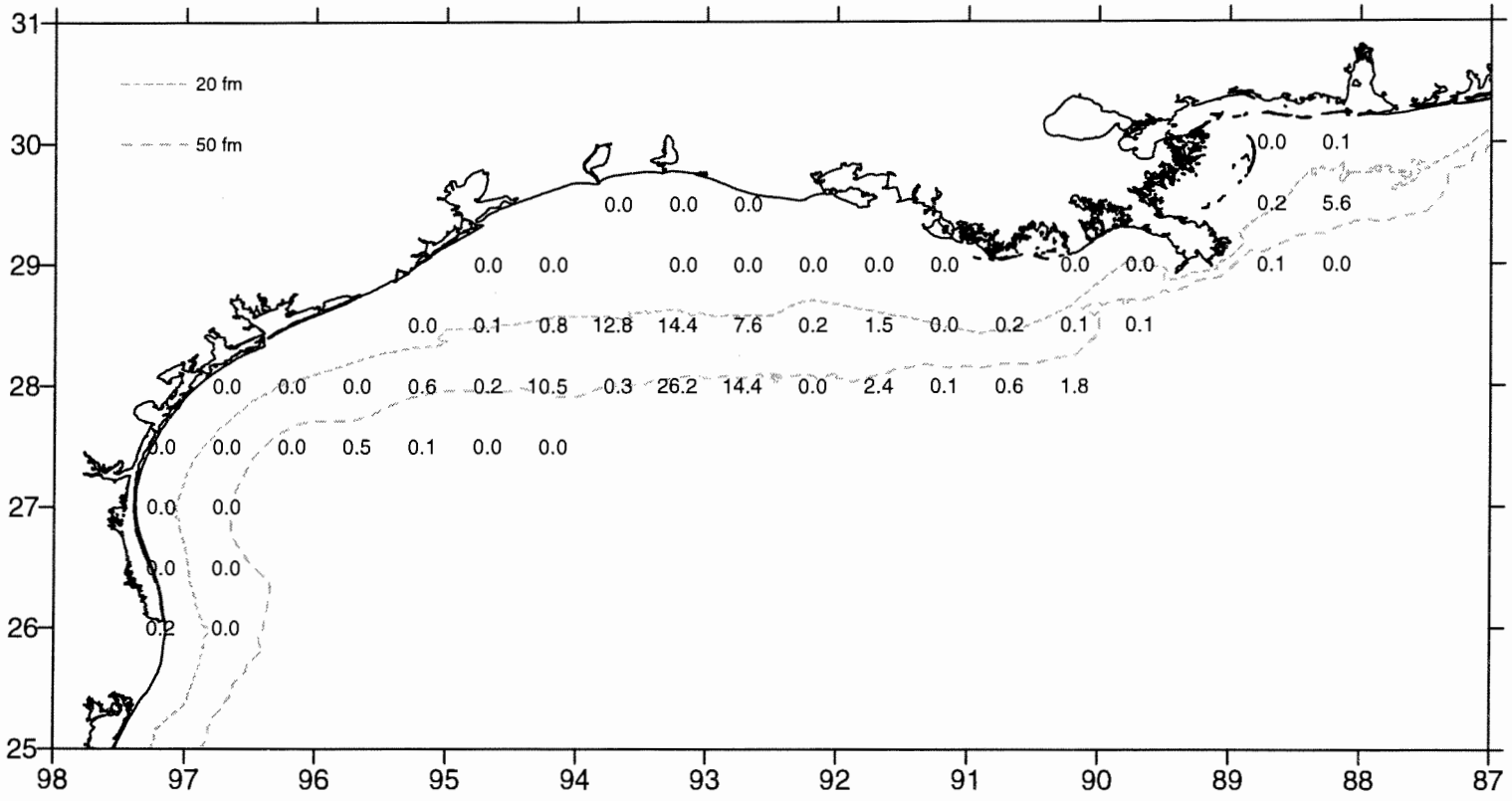

Figure 46. Brown rock shrimp, Sicyonia brevirostris, lb/hour for June-July 1996.

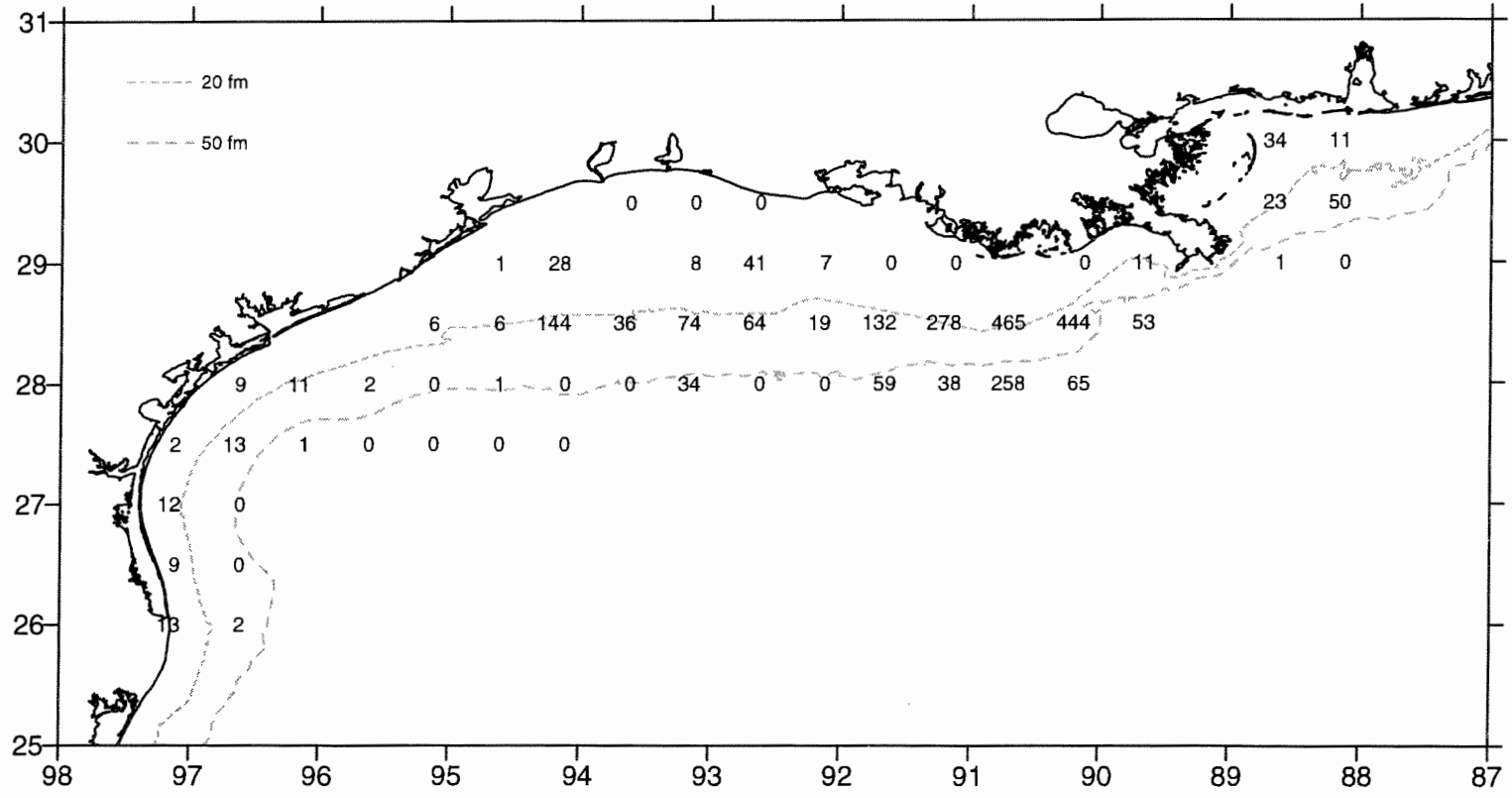

Figure 47. Irridescent swimming crab, Portunus gibbesii, number/hour for June-July 1996.

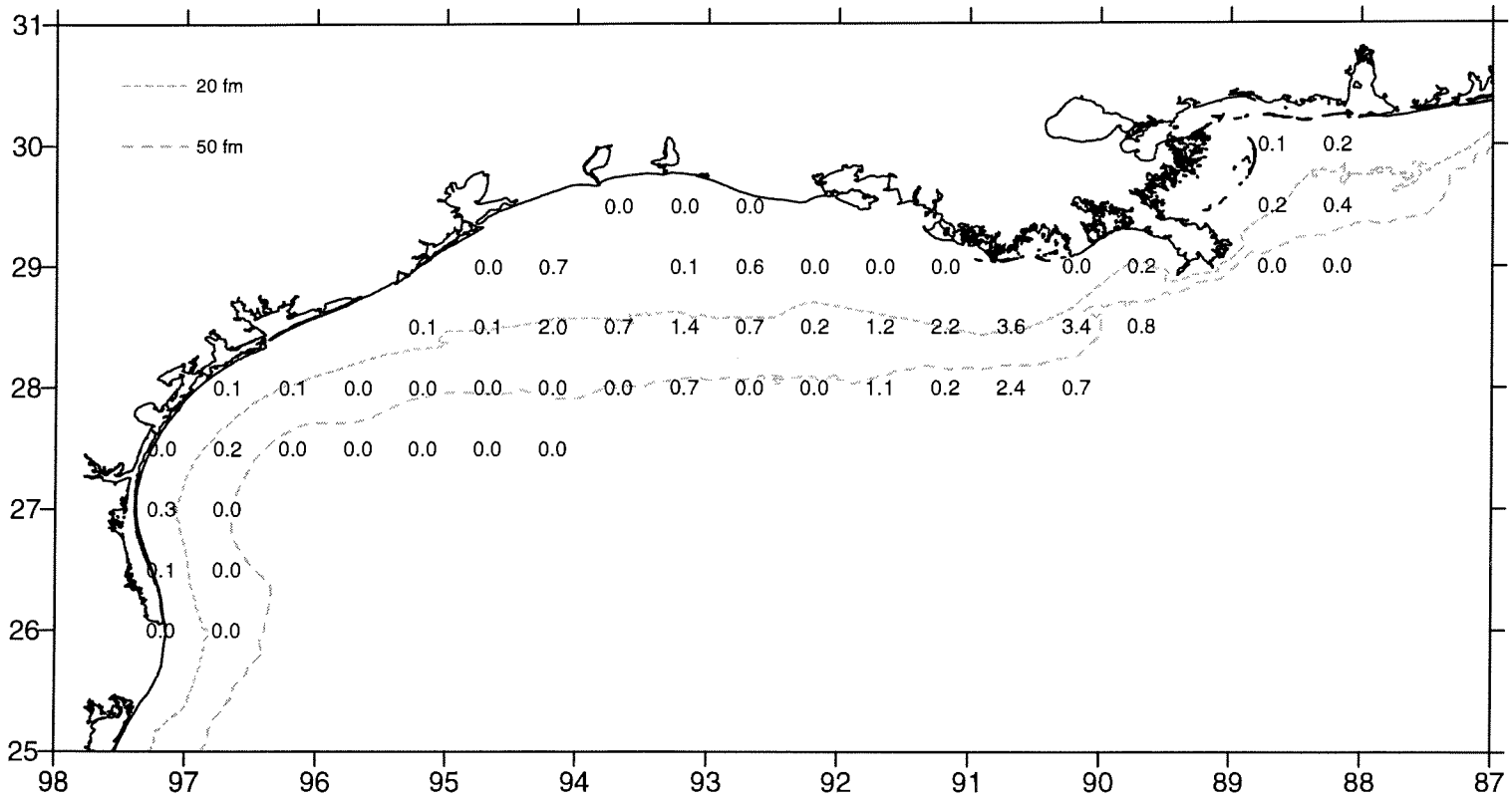

Figure 48. Irridescent swimming crab, Portunus gibbesii, lb/hour for June-July 1996.

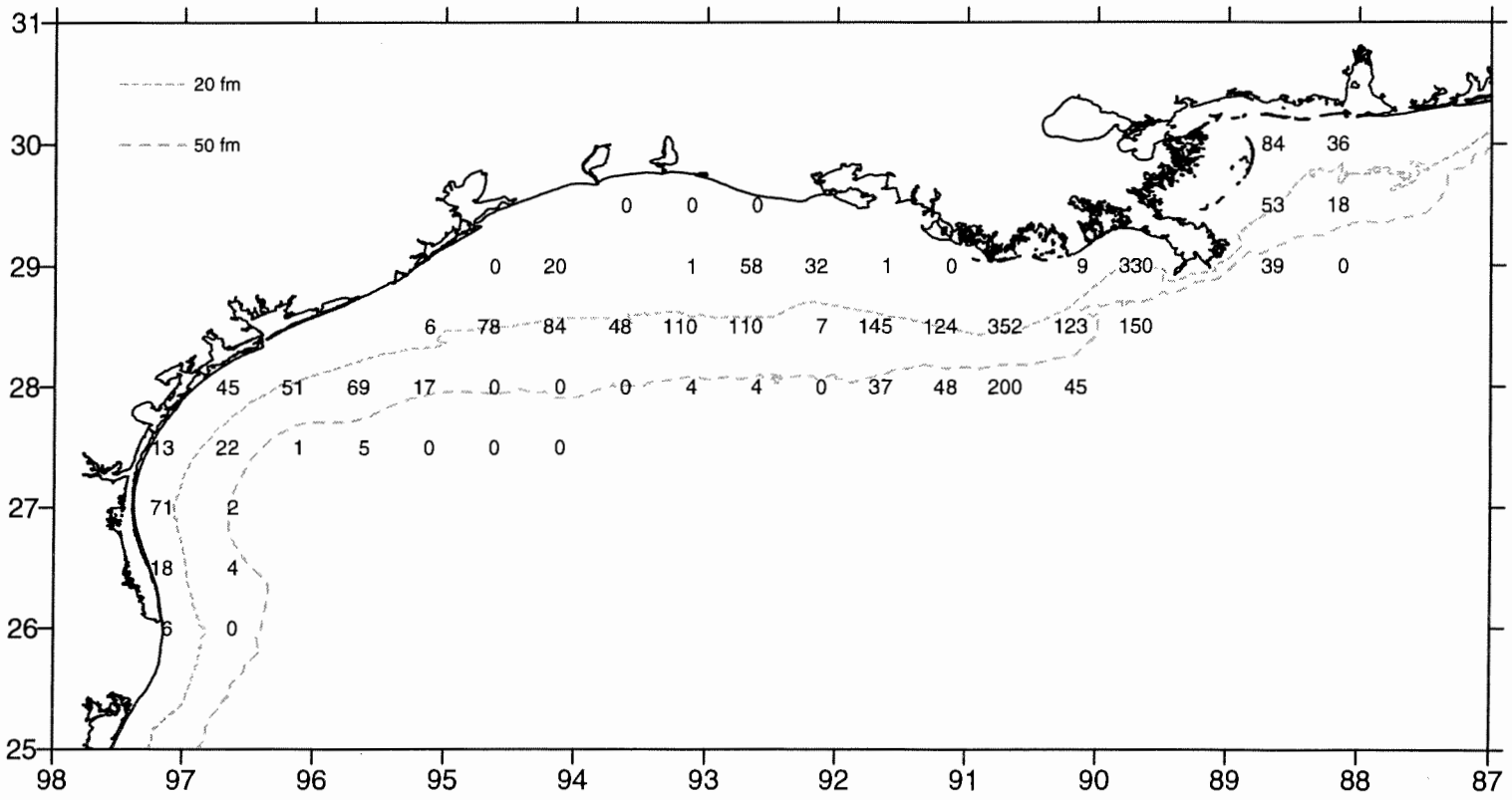

Figure 49. Mantis shrimp, Squilla empusa, number/hour for June-July 1996.

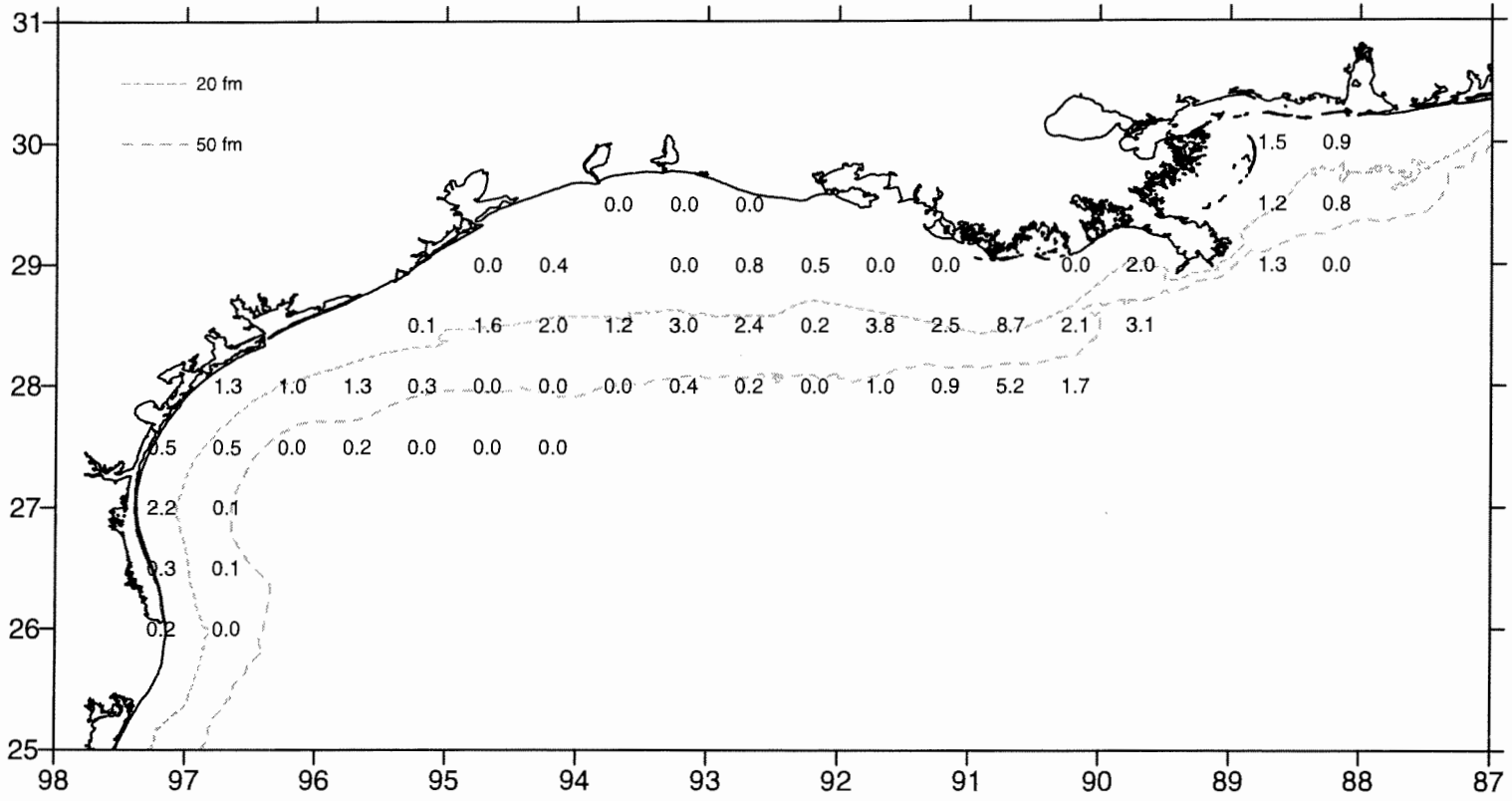

Figure 50. Mantis shrimp, Squilla empusa, lb/hour for June-July 1996.

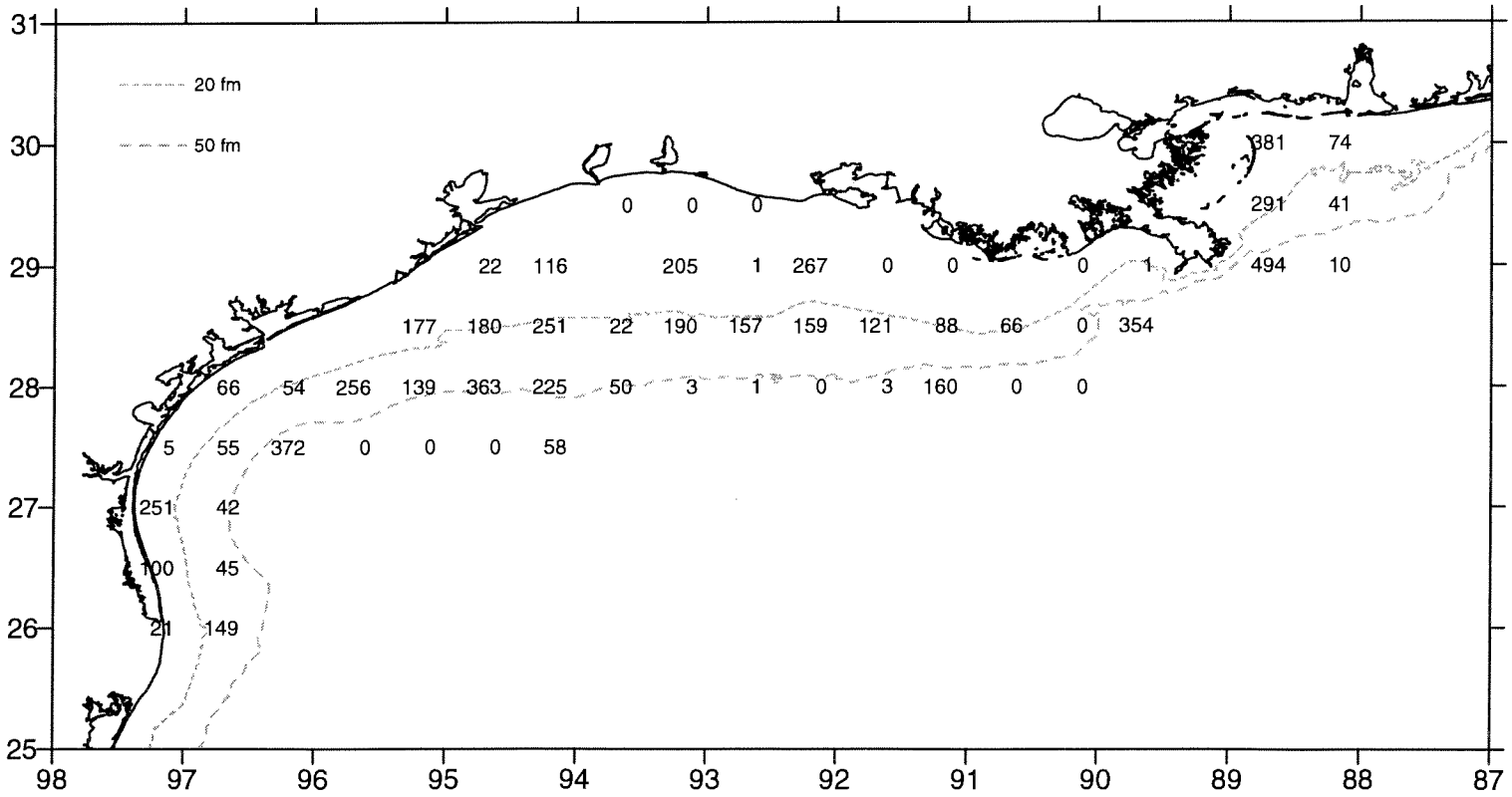

Figure 51. Arrow squid, Loligo pleii, number/hour for June-July 1996.

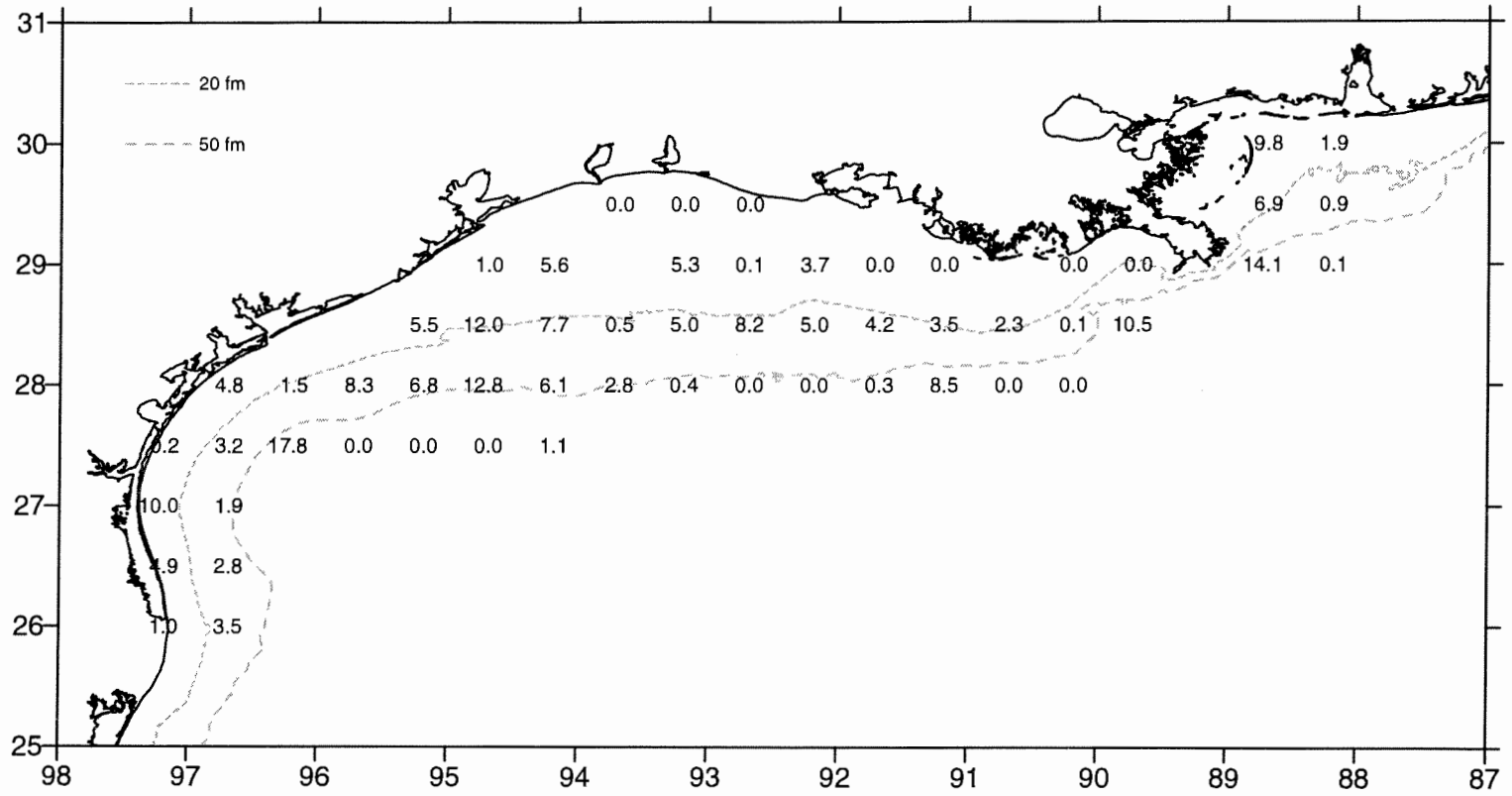

Figure 52. Arrow squid, Loligo pleii, lb/hour for June-July 1996.

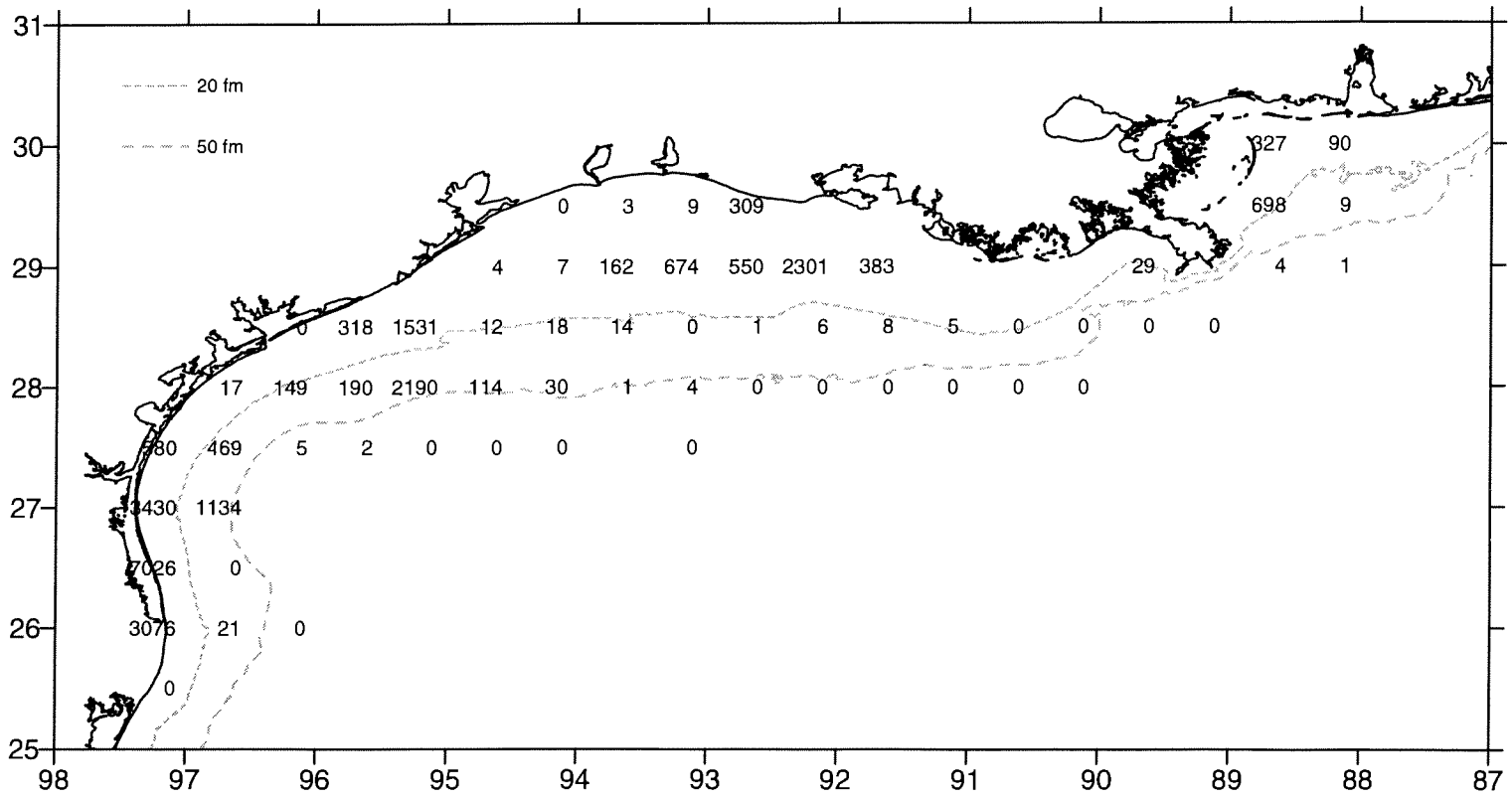

Figure 53. Atlantic bumper, Chloroscombrus chrysurus, number/hour for October-December 1996.

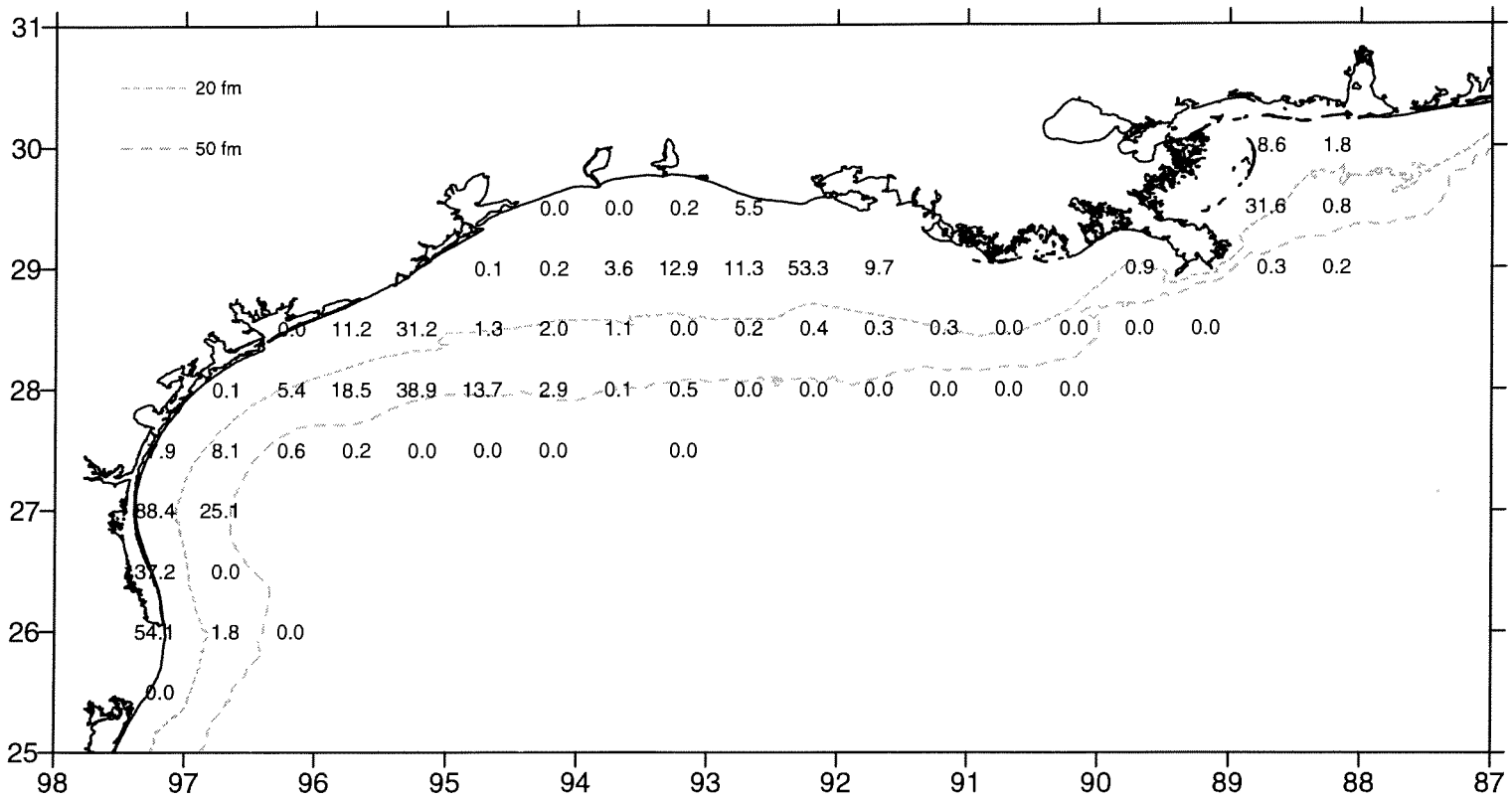

Figure 54. Atlantic bumper, Chloroscombrus chrysurus, lb/hour for October-December 1996.

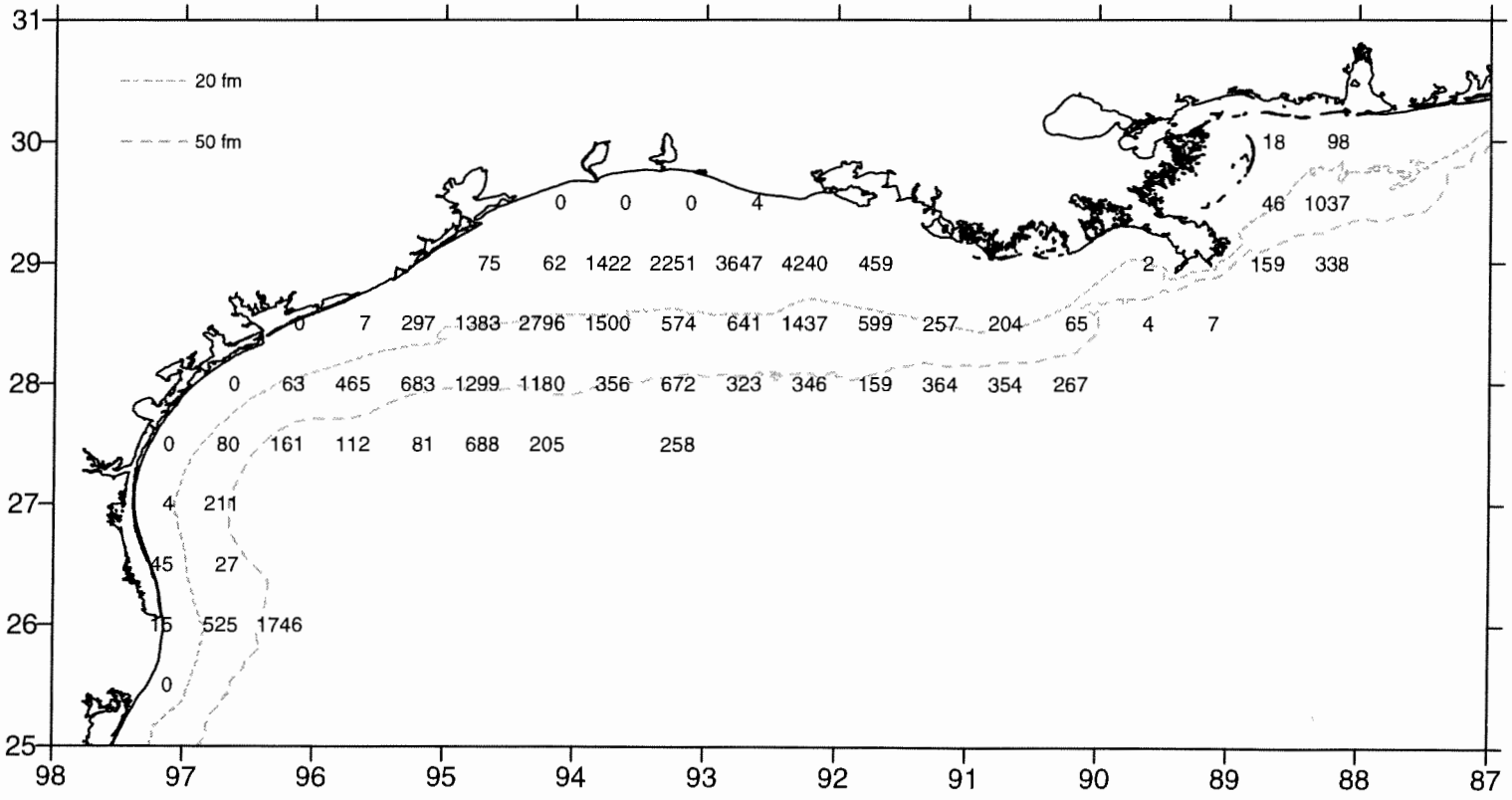

Figure 55. Longspine porgy, Stenotomus caprinus, number/hour for October-December 1996.

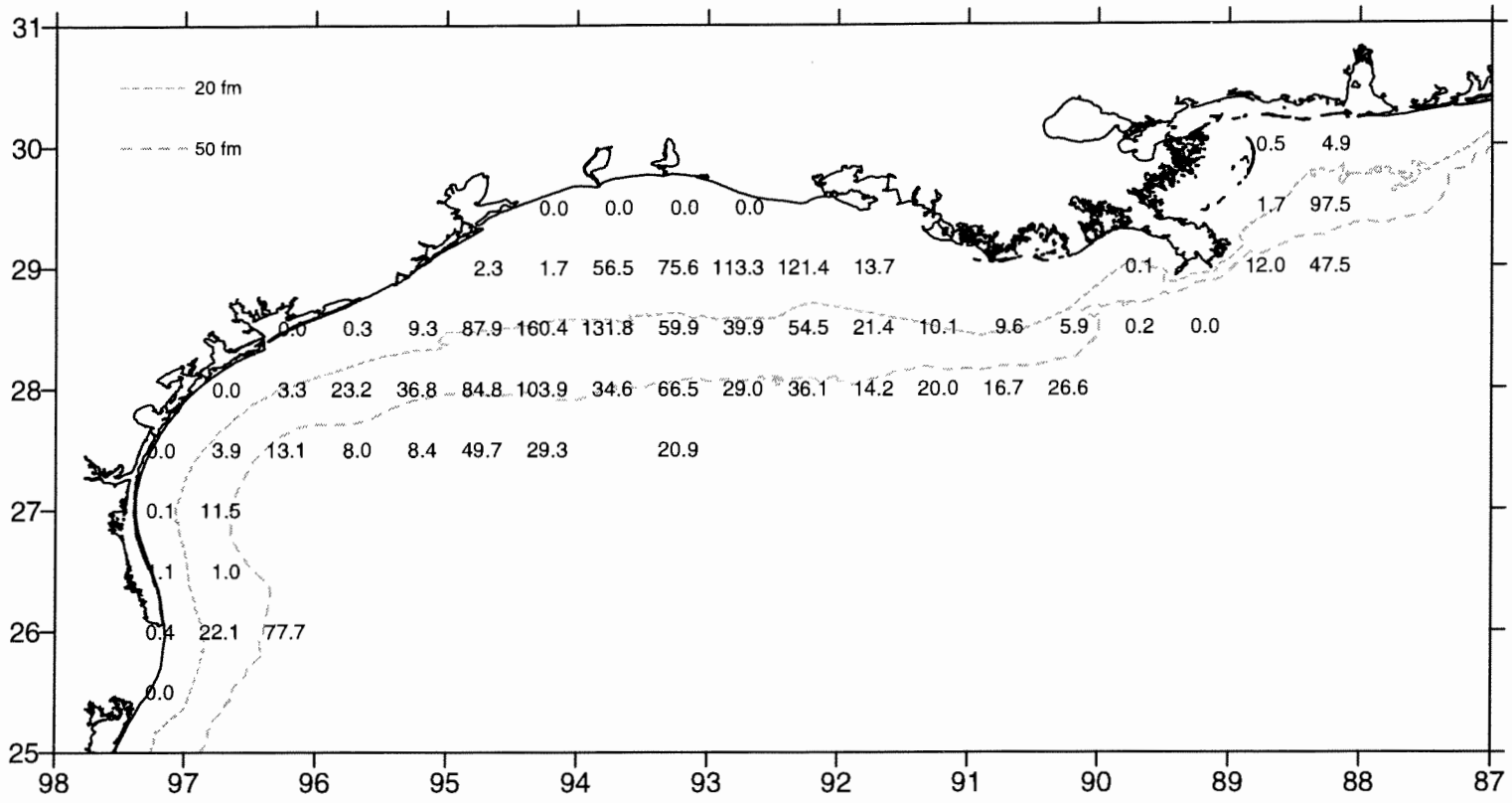

Figure 56. Longspine porgy, Stenotomus caprinus, lb/hour for October-December 1996.

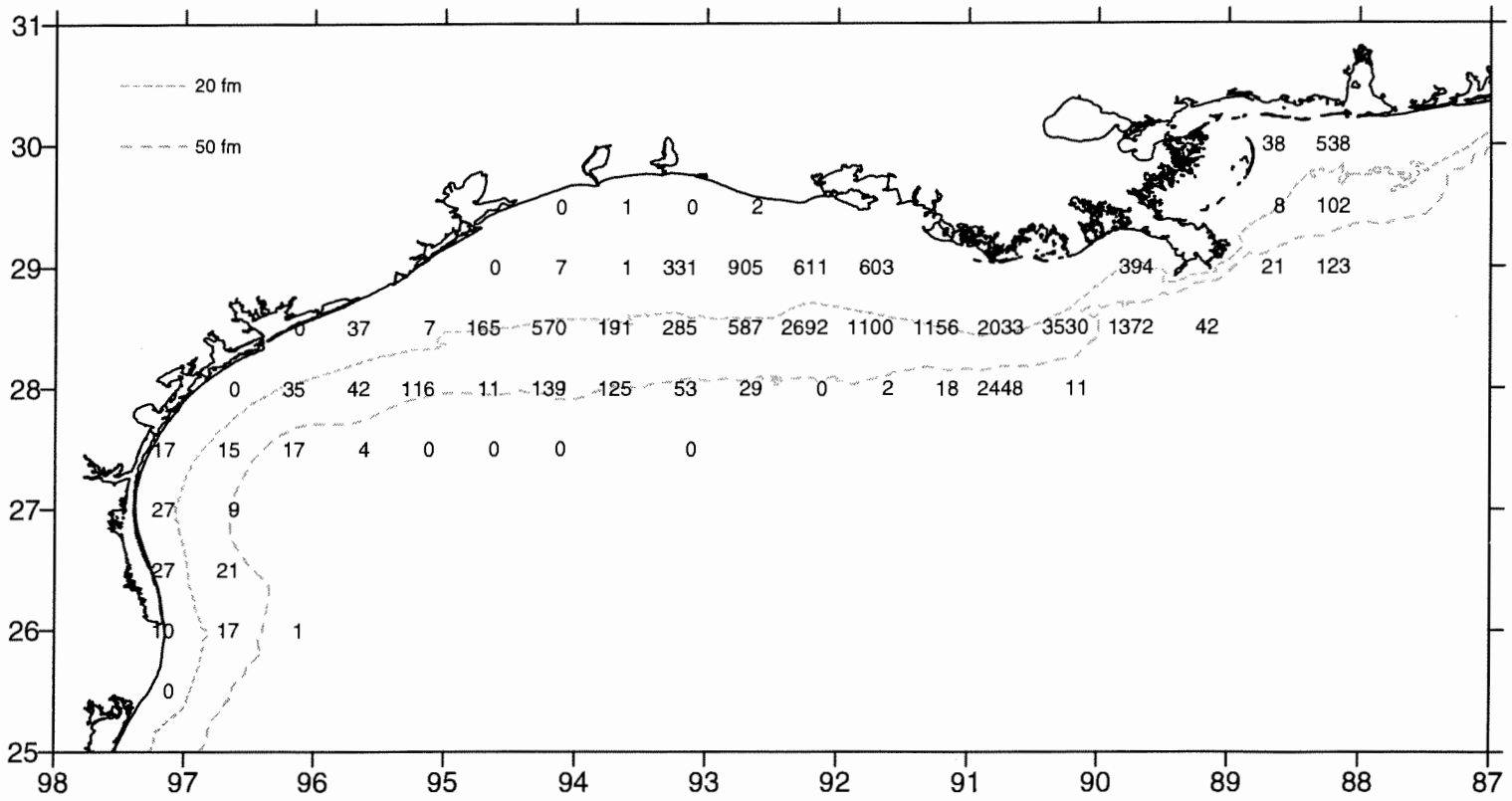

Figure 57. Atlantic croaker, Micropogonias undulatus, number/hour for October-December 1996.

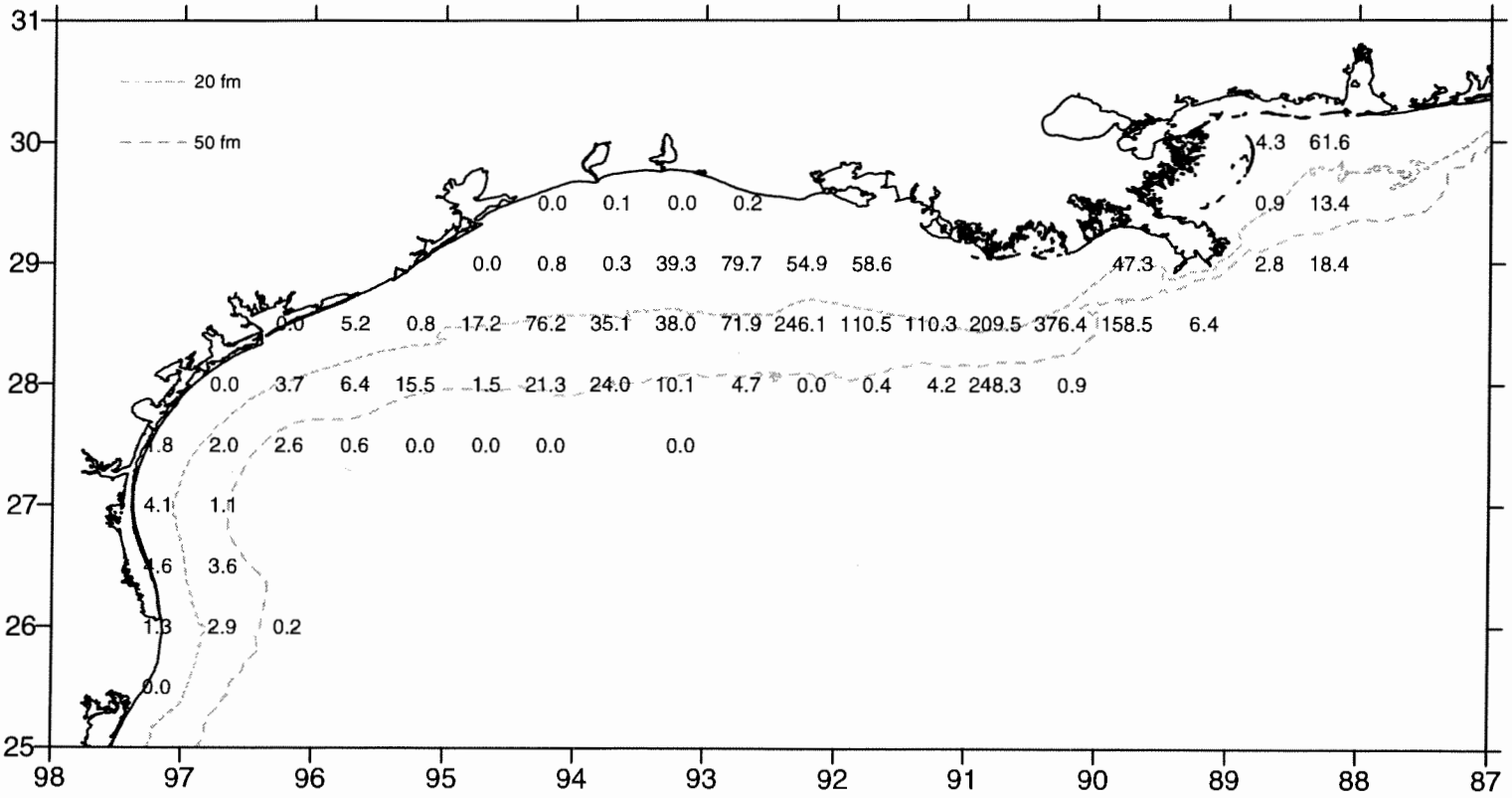

Figure 58. Atlantic croaker, Micropogonias undulatus, lb/hour for October-December 1996.

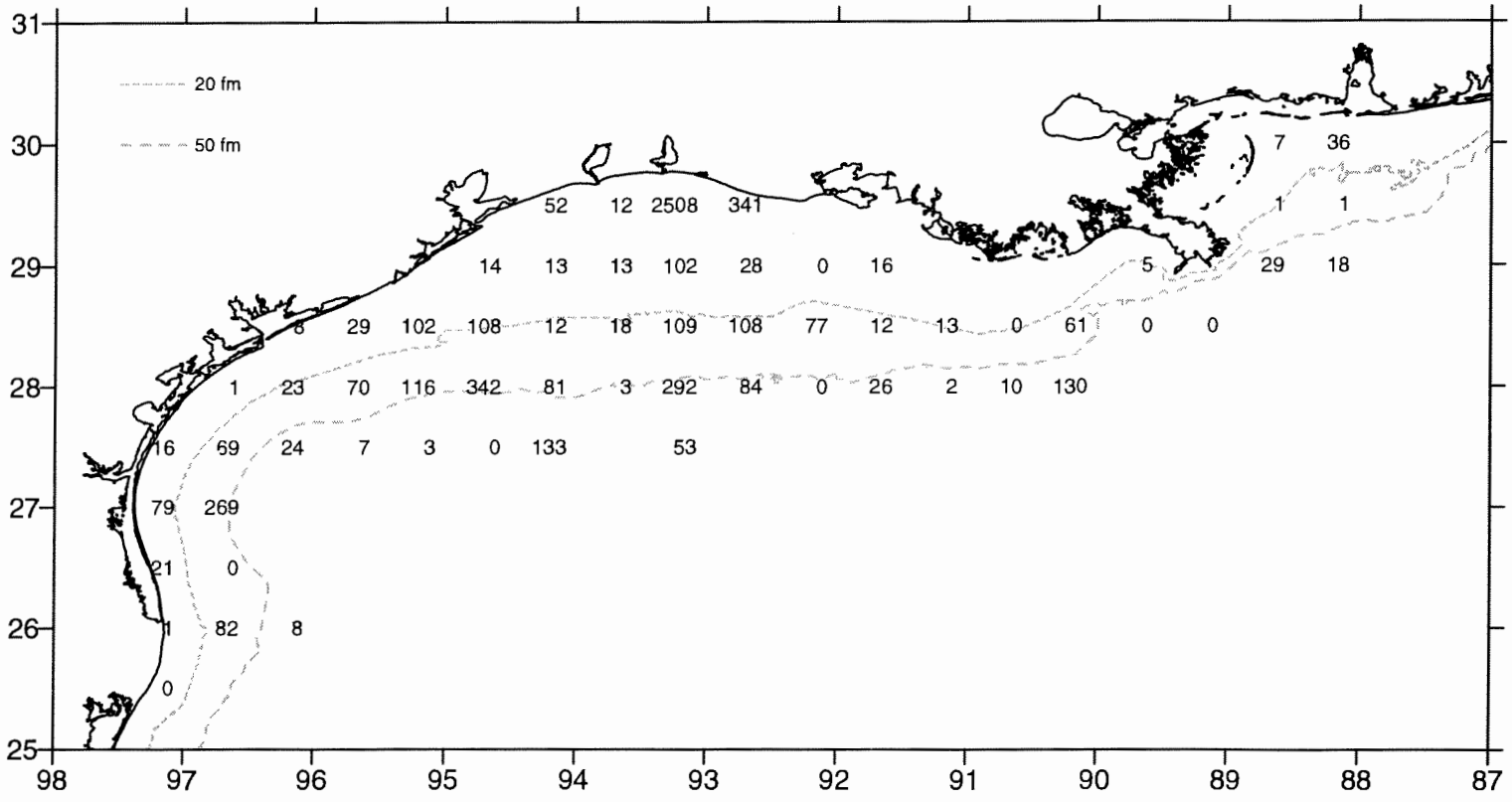

Figure 59. Gulf butterfish, Peprilus burti, number/hour for October-December 1996.

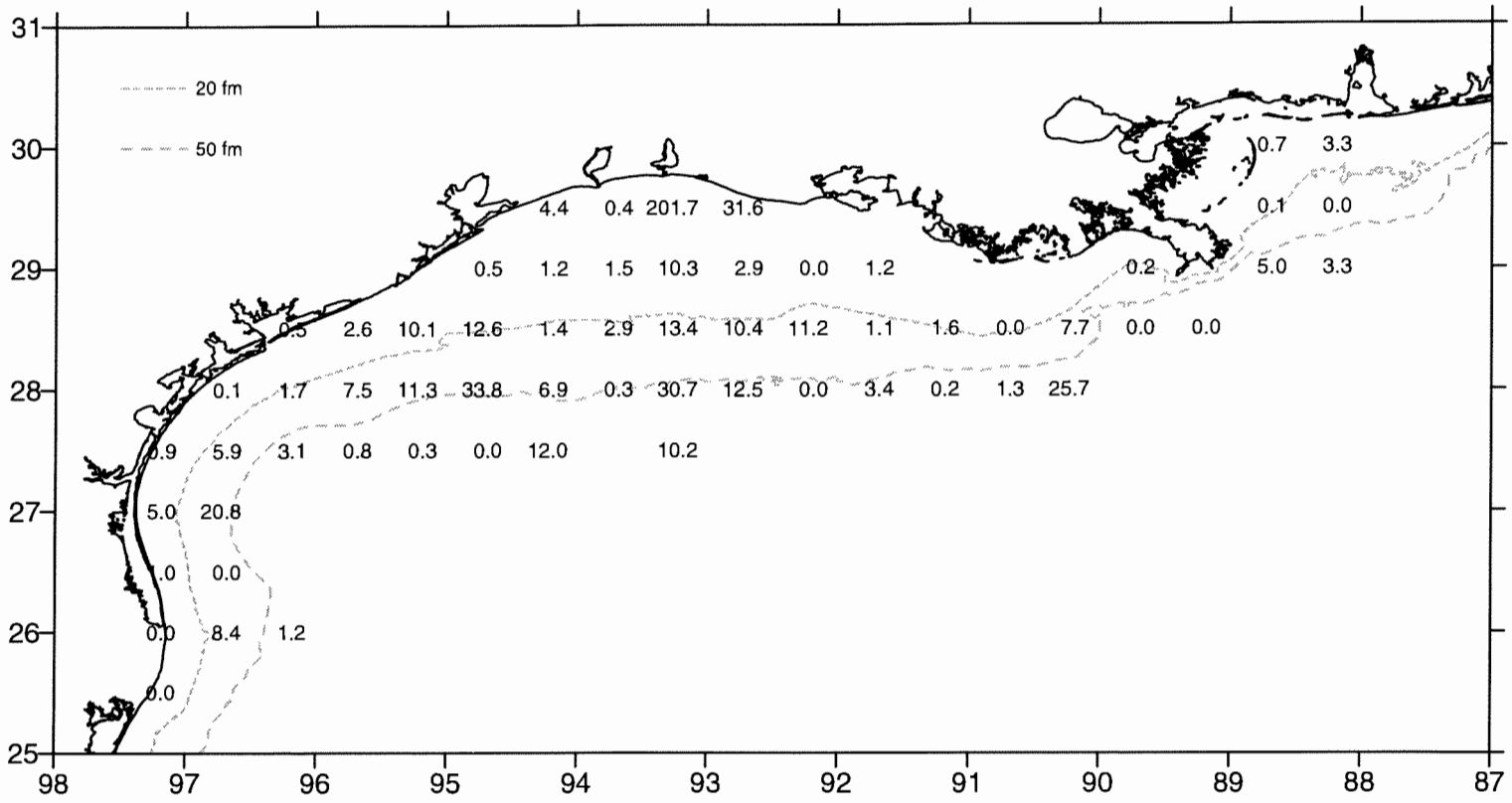

Figure 60. Gulf butterfish, Peprilus burti, lb/hour for October-December 1996.

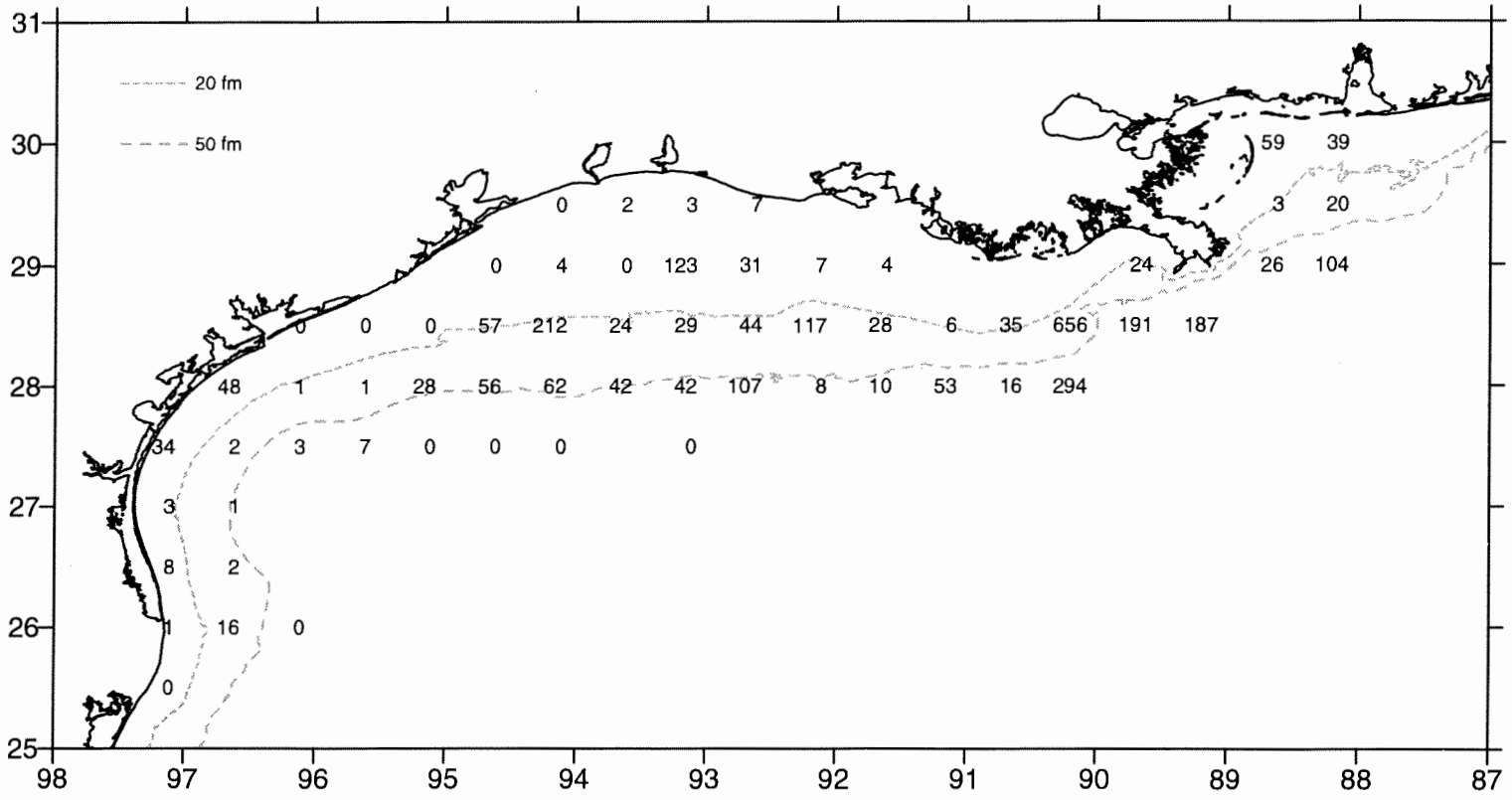

Figure 61. Spot, Leiostomus xanthurus, number/hour for October-December 1996.

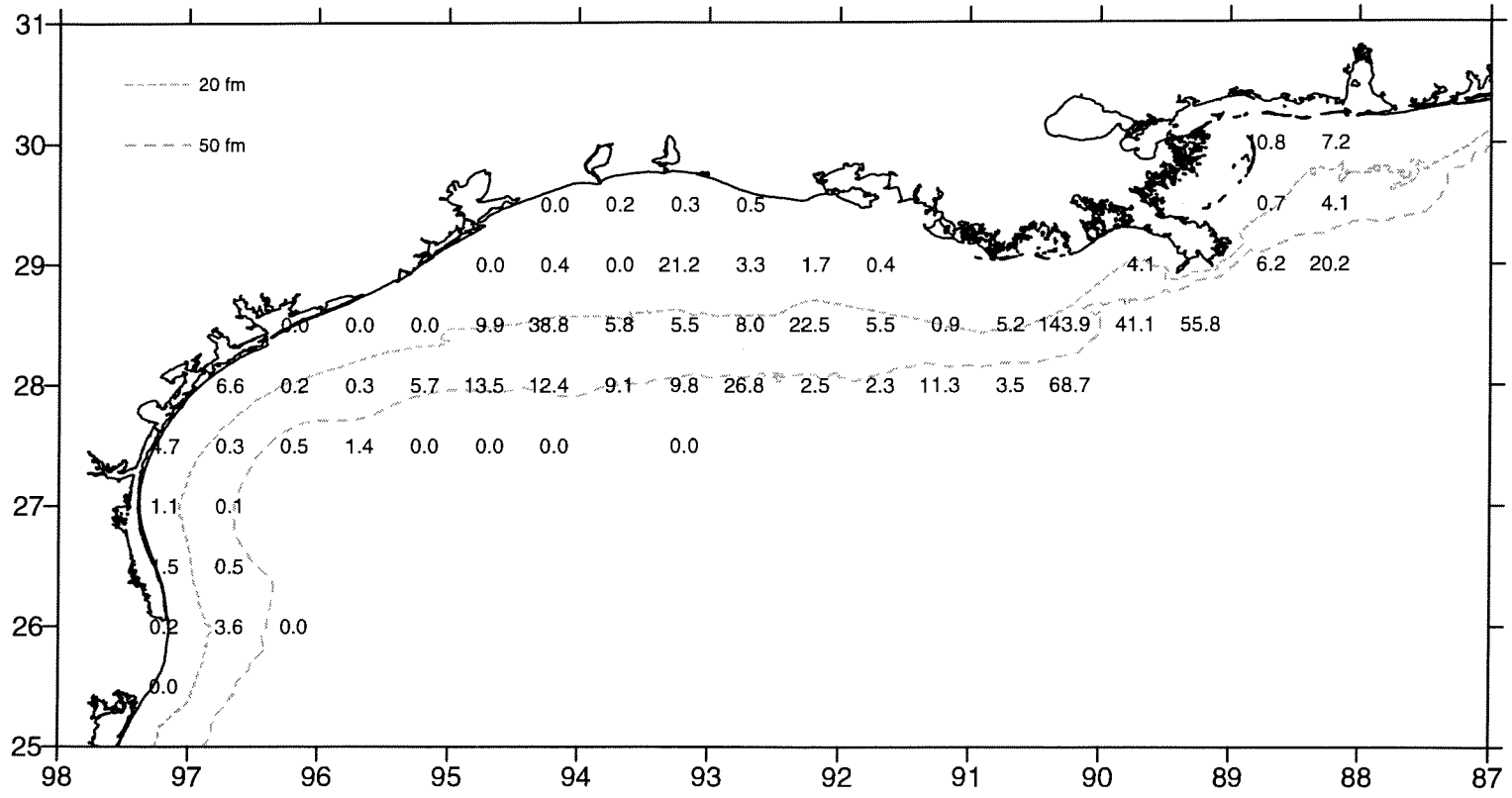

Figure 62. Spot, Leiostomus xanthurus, lb/hour for October-December 1996.

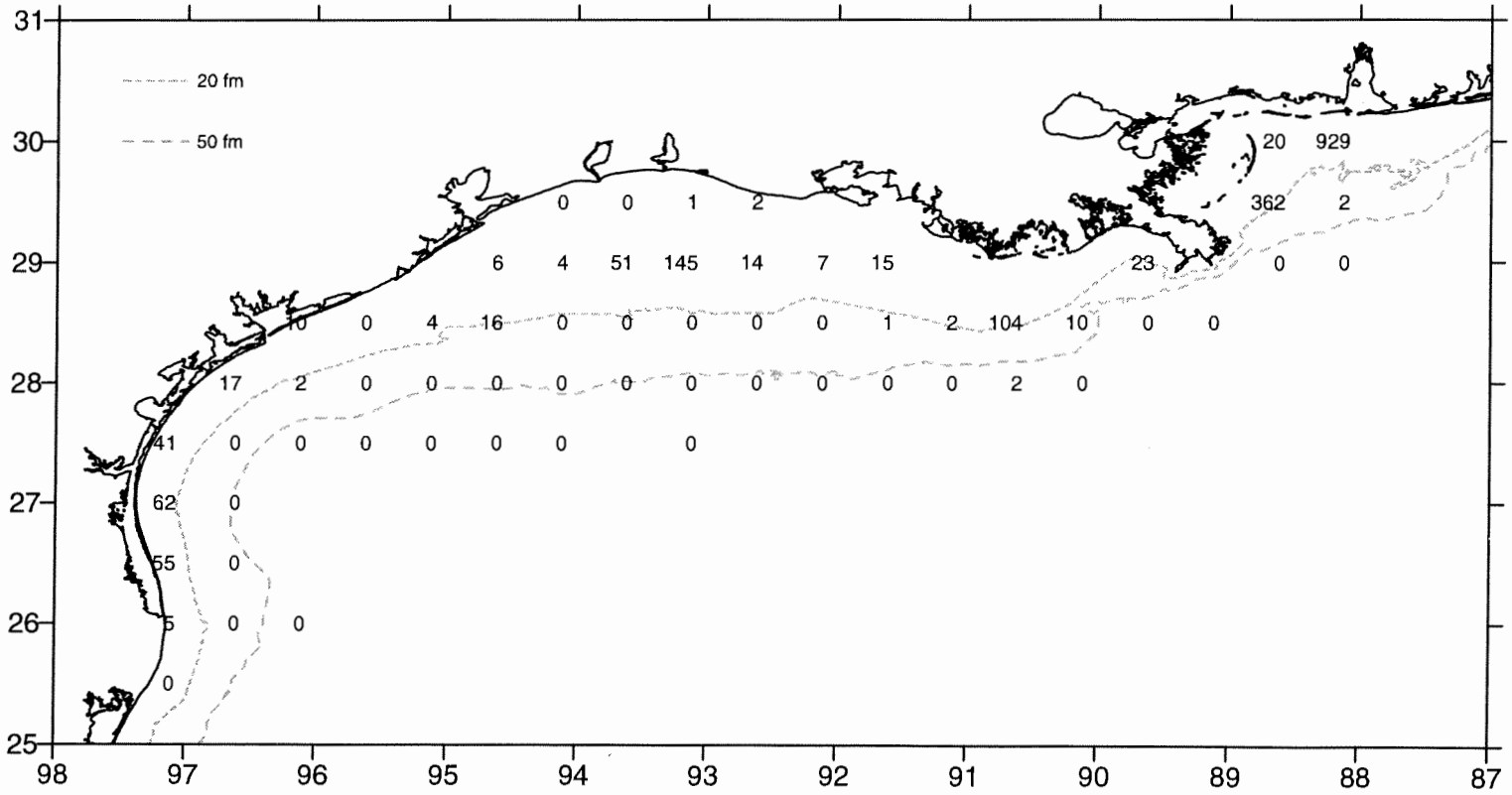

Figure 63. Hardhead catfish, Arius felis, number/hour for October-December 1996.

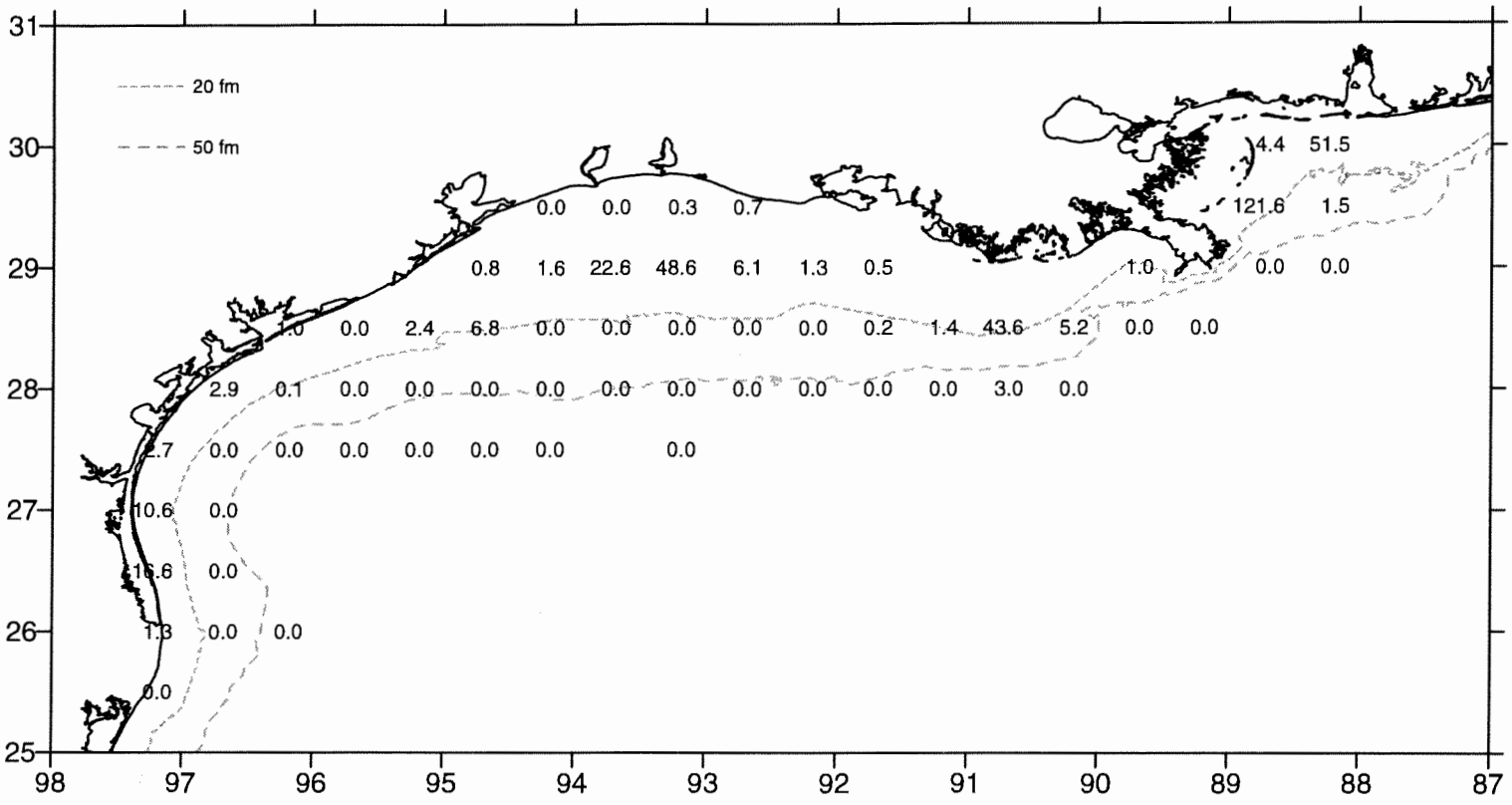

Figure 64. Hardhead catfish, Arius felis, lb/hour for October-December 1996.

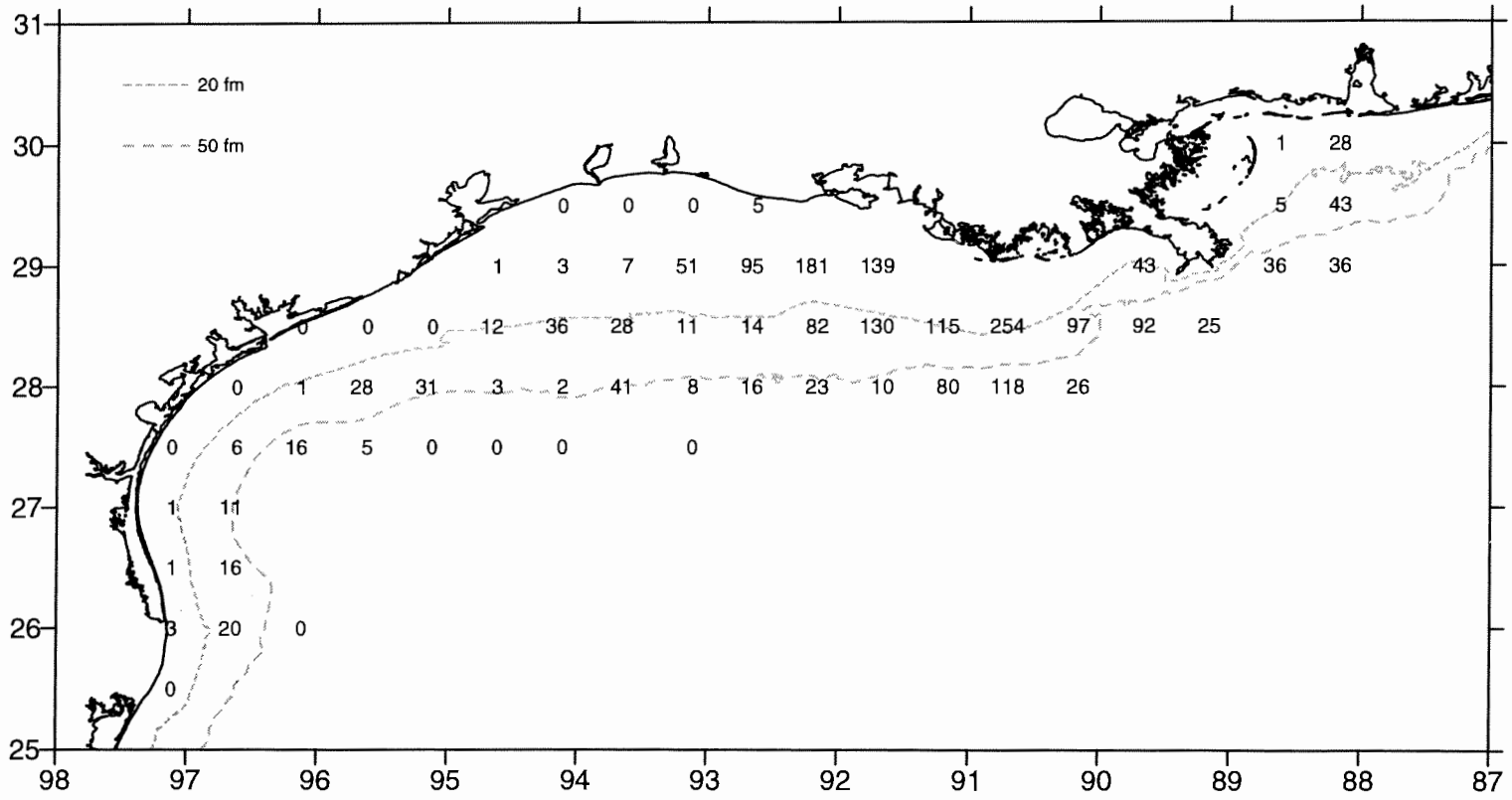

Figure 65. Bigeye searobin, Prionotus longispinosus, number/hour for October-December 1996.

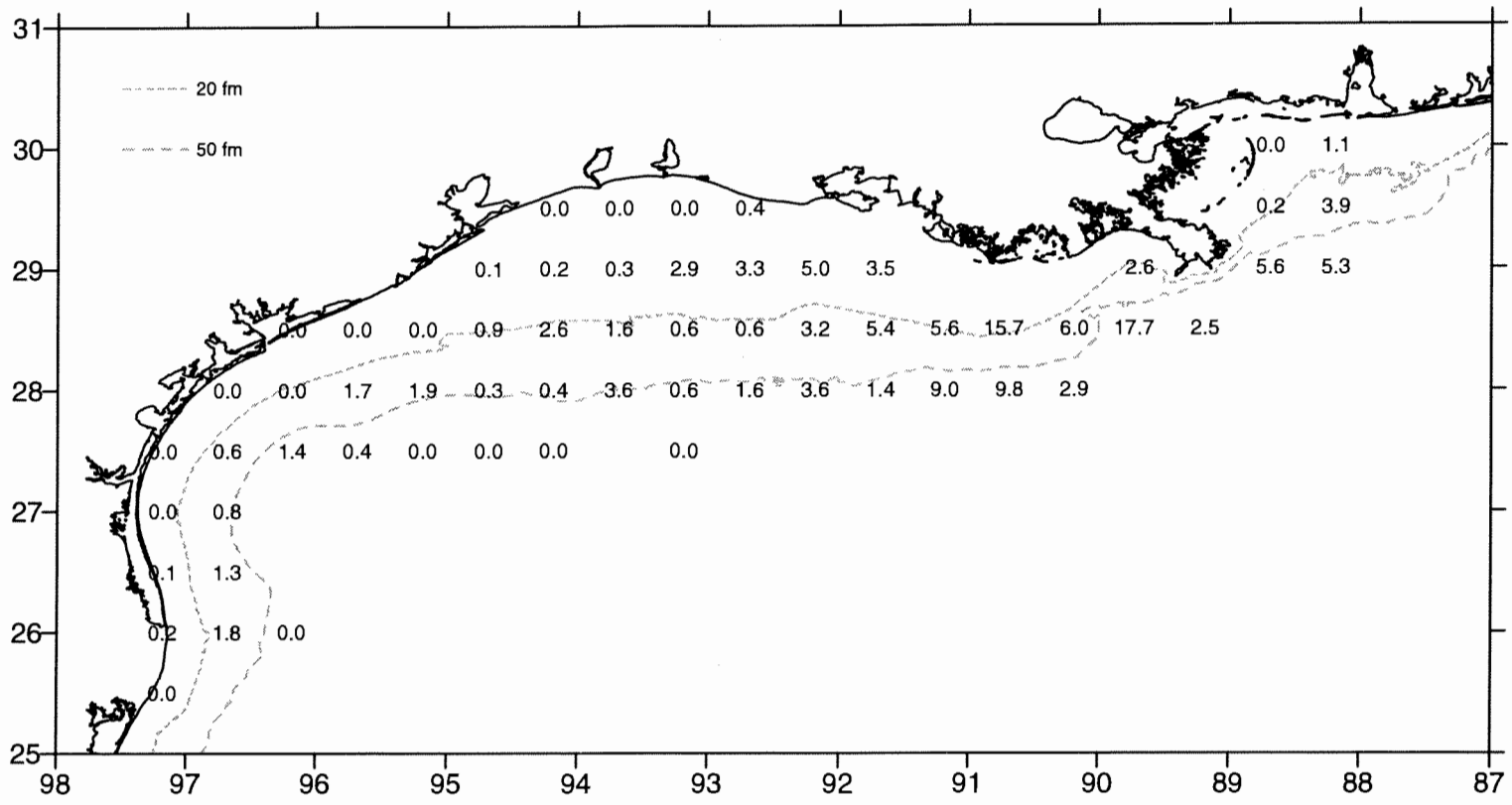

Figure 66. Bigeye searobin, Prionotus longispinosus, lb/hour for October-December 1996.

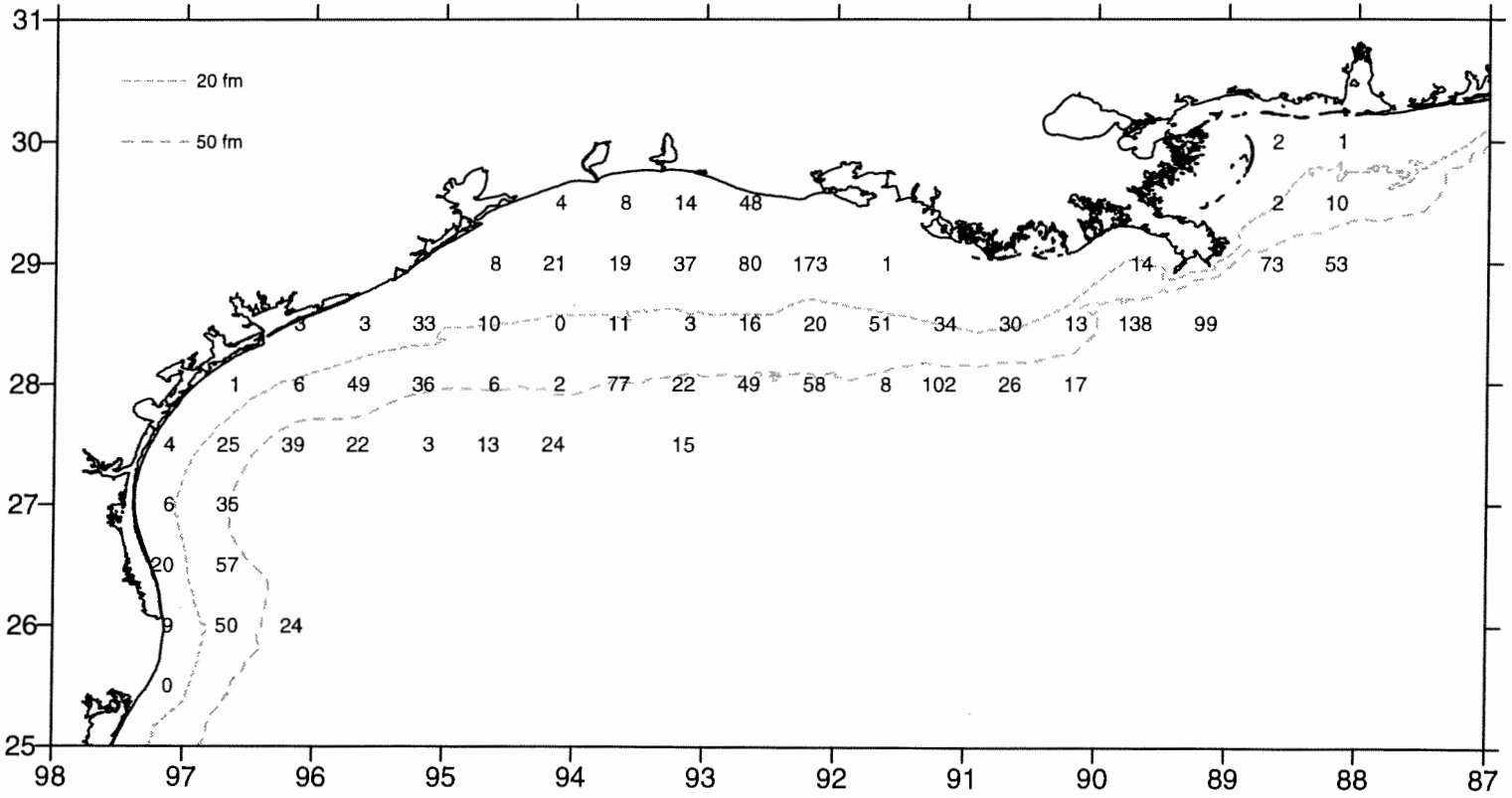

Figure 67. Rock sea bass, Centropristis philadelphica, number/hour for October-December 1996.

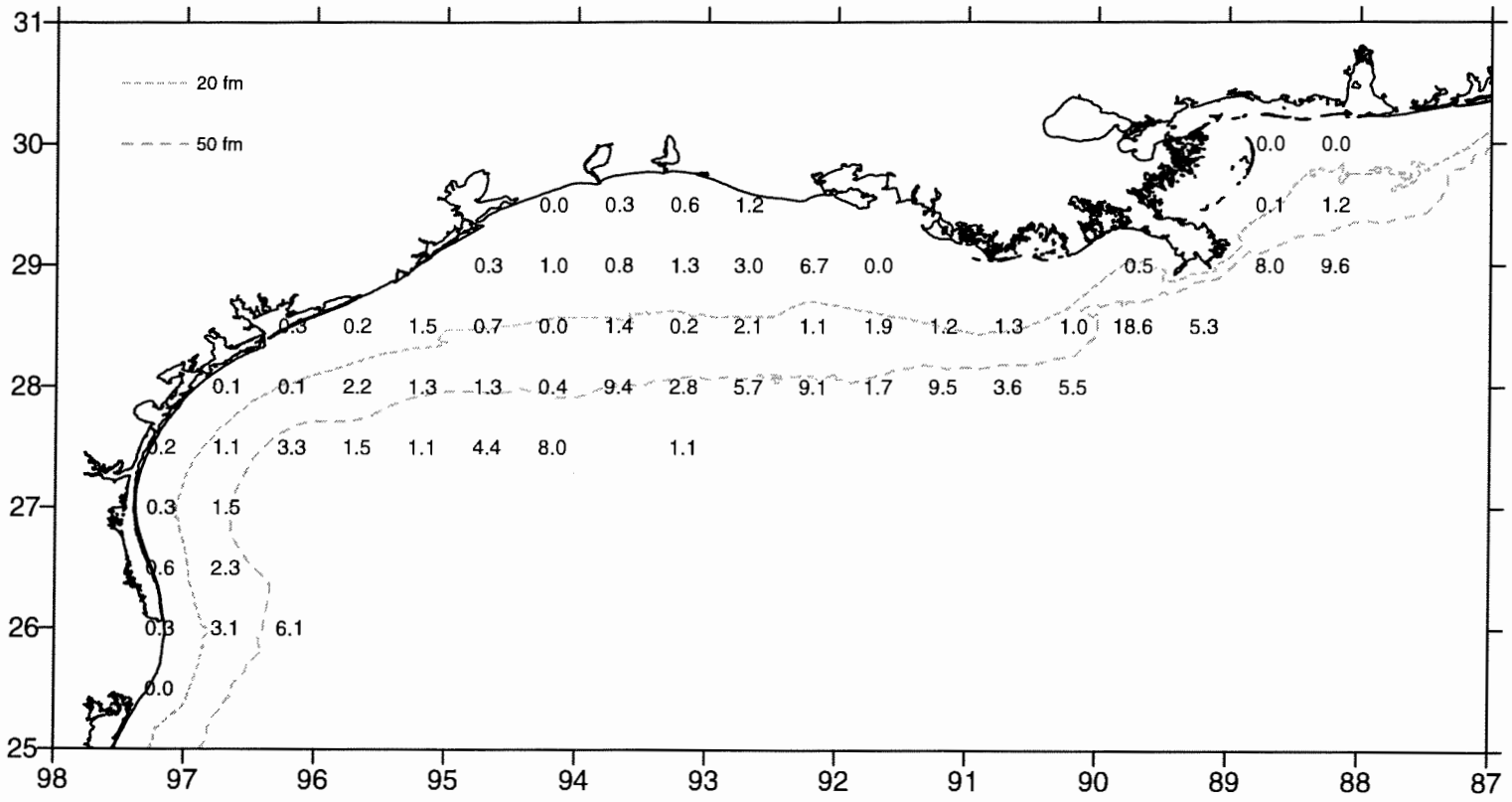

Figure 68. Rock sea bass, Centropristis philadelphica, lb/hour for October-December 1996.

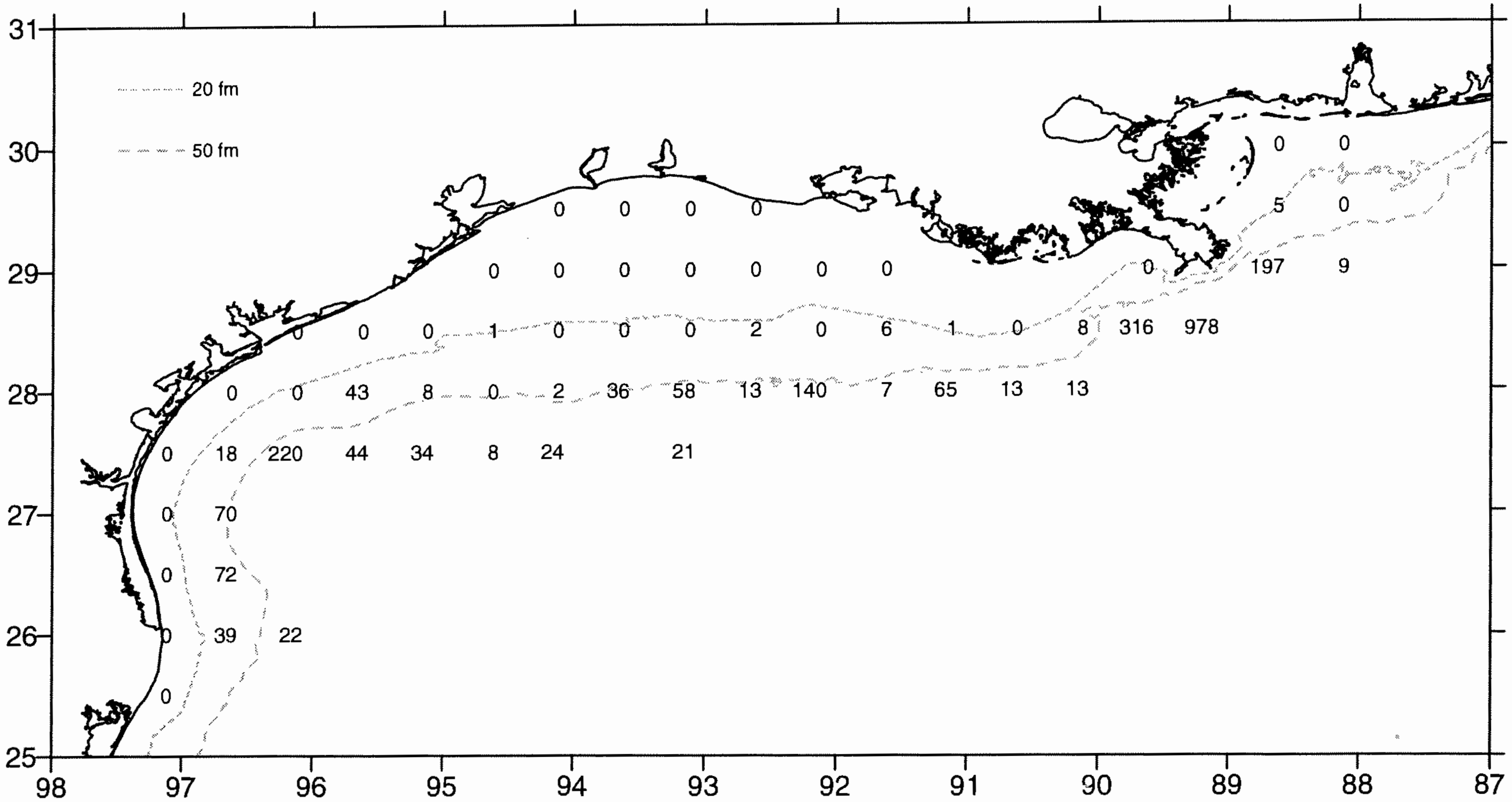

Figure 69. Blackear bass, Serranus atrobranchus, number/hour for October-December 1996.

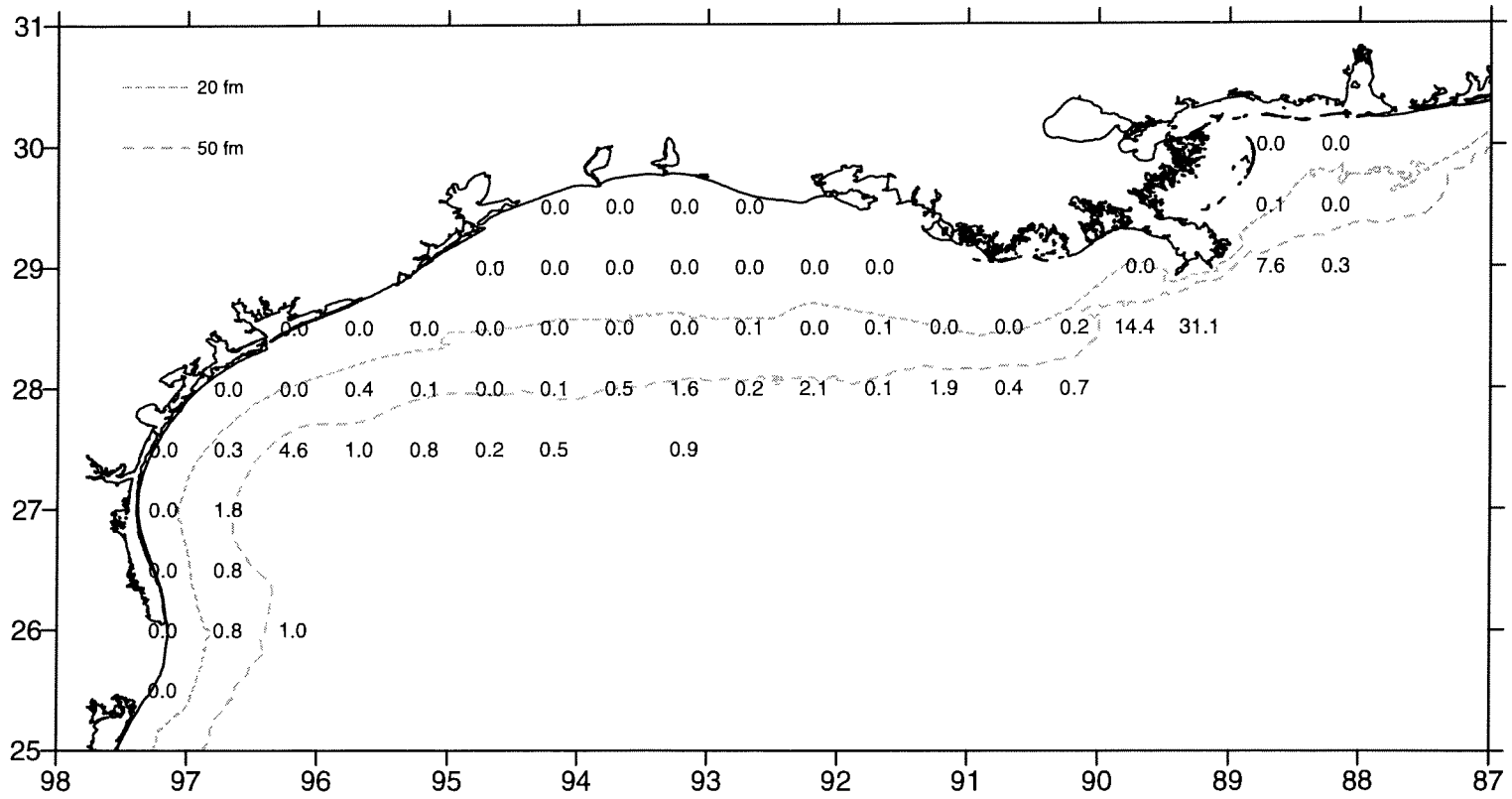

Figure 70. Blackear bass, Serranus atrobranchus, lb/hour for October-December 1996.

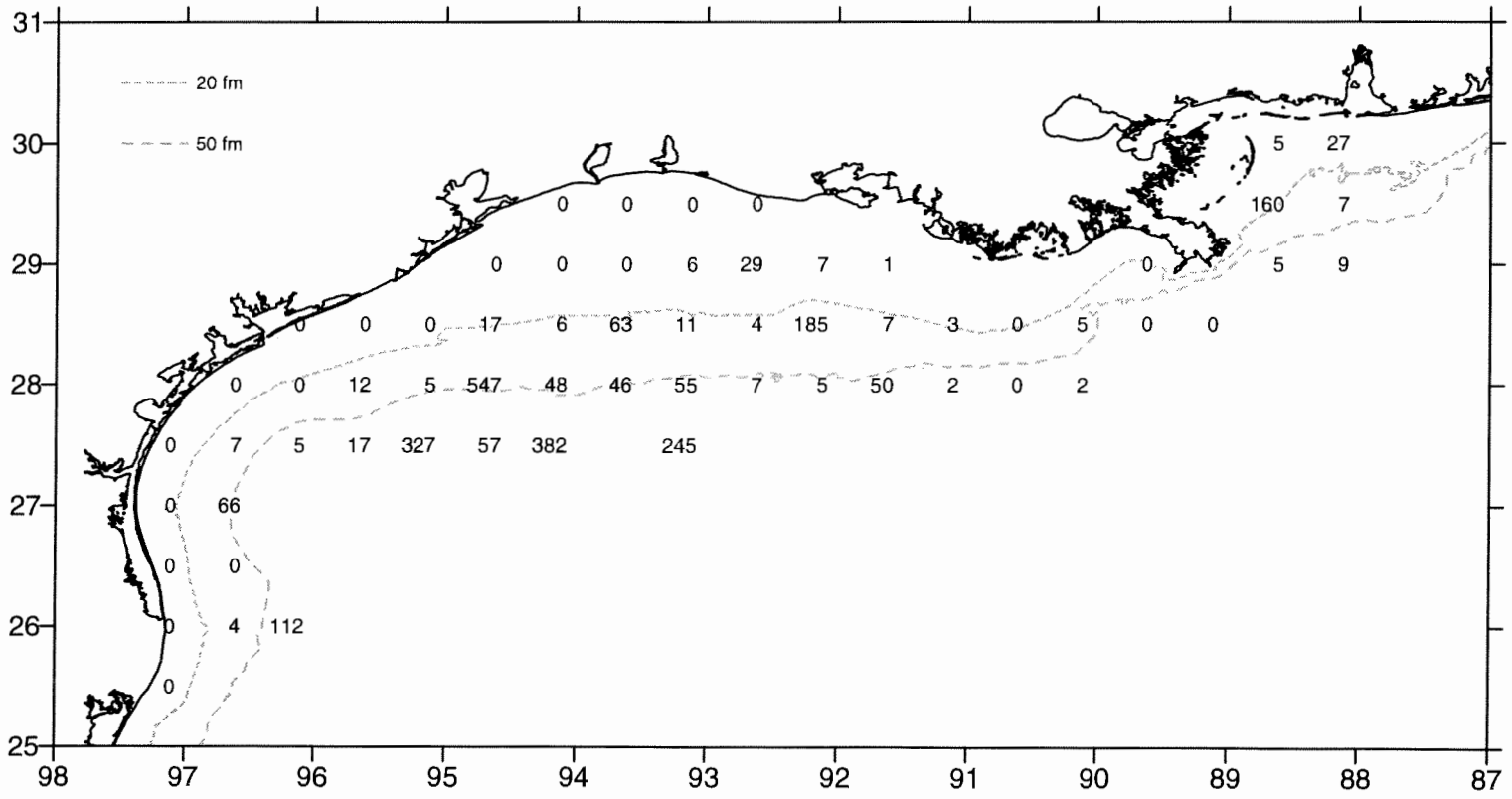

Figure 71. Rough scad, Trachurus lathami, number/hour for October-December 1996.

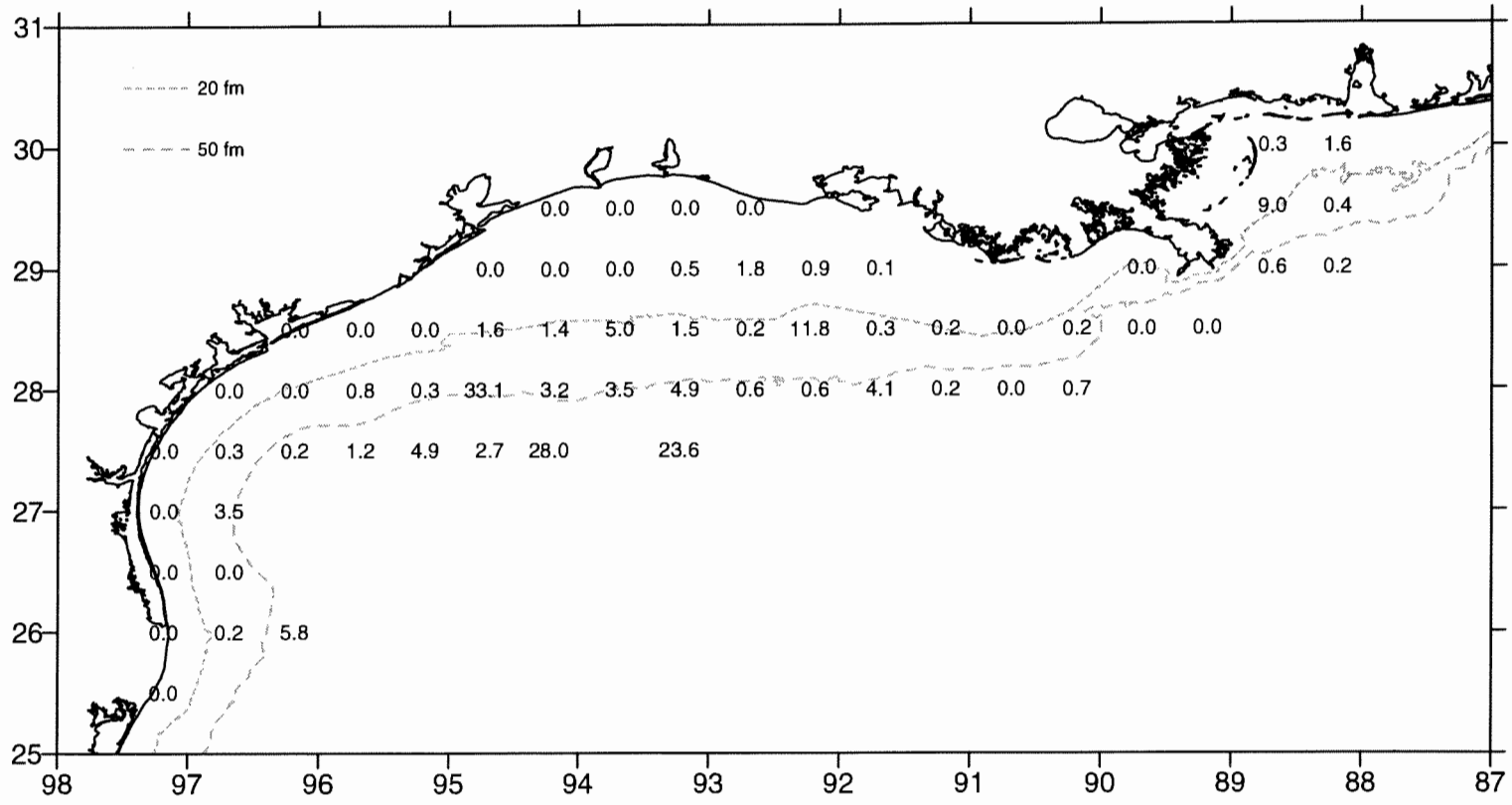

Figure 72. Rough scad, Trachurus lathami, lb/hour for October-December 1996.

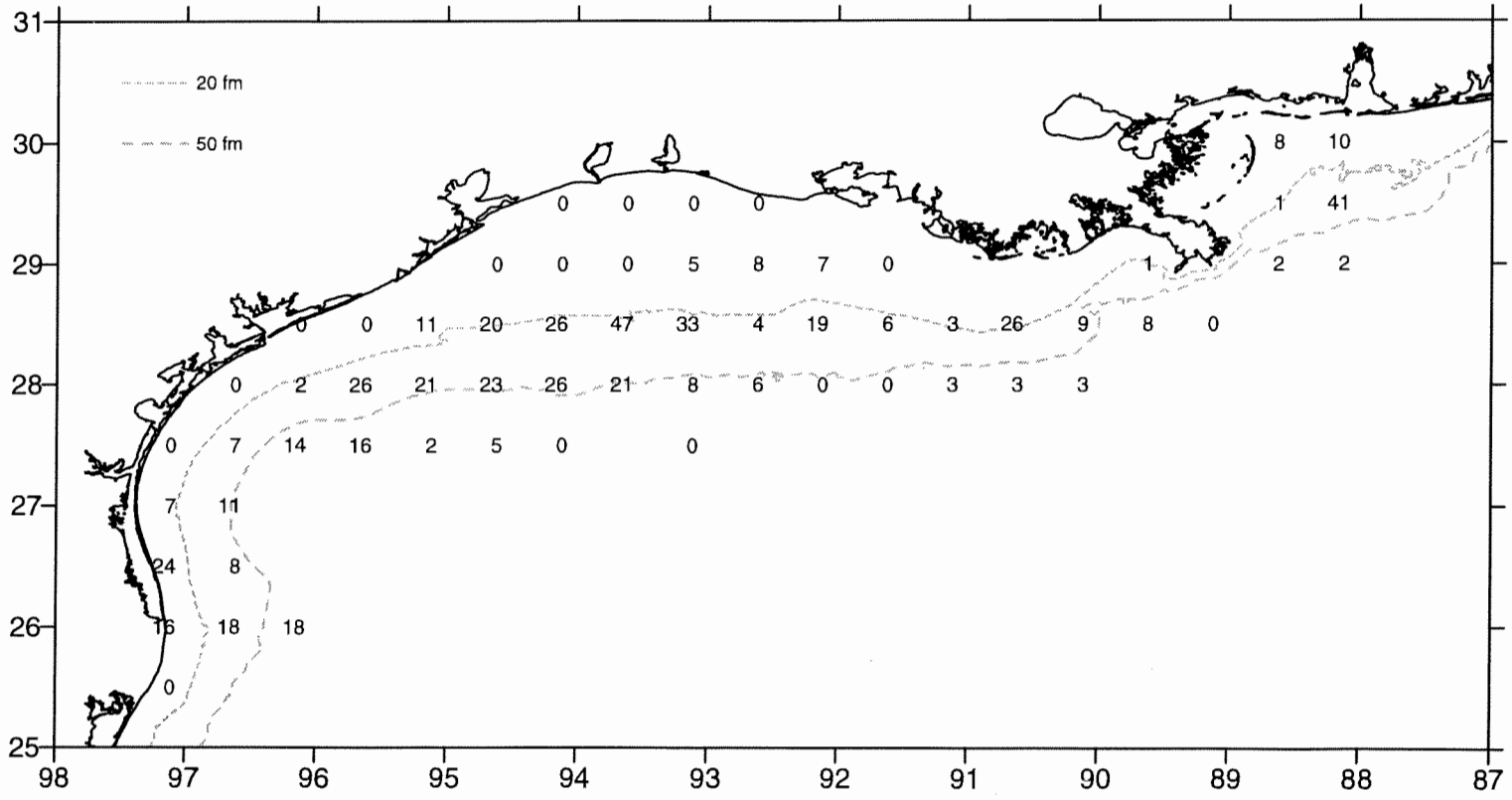

Figure 73. Red snapper, Lutjanus campechanus, number/hour for October-December 1996.

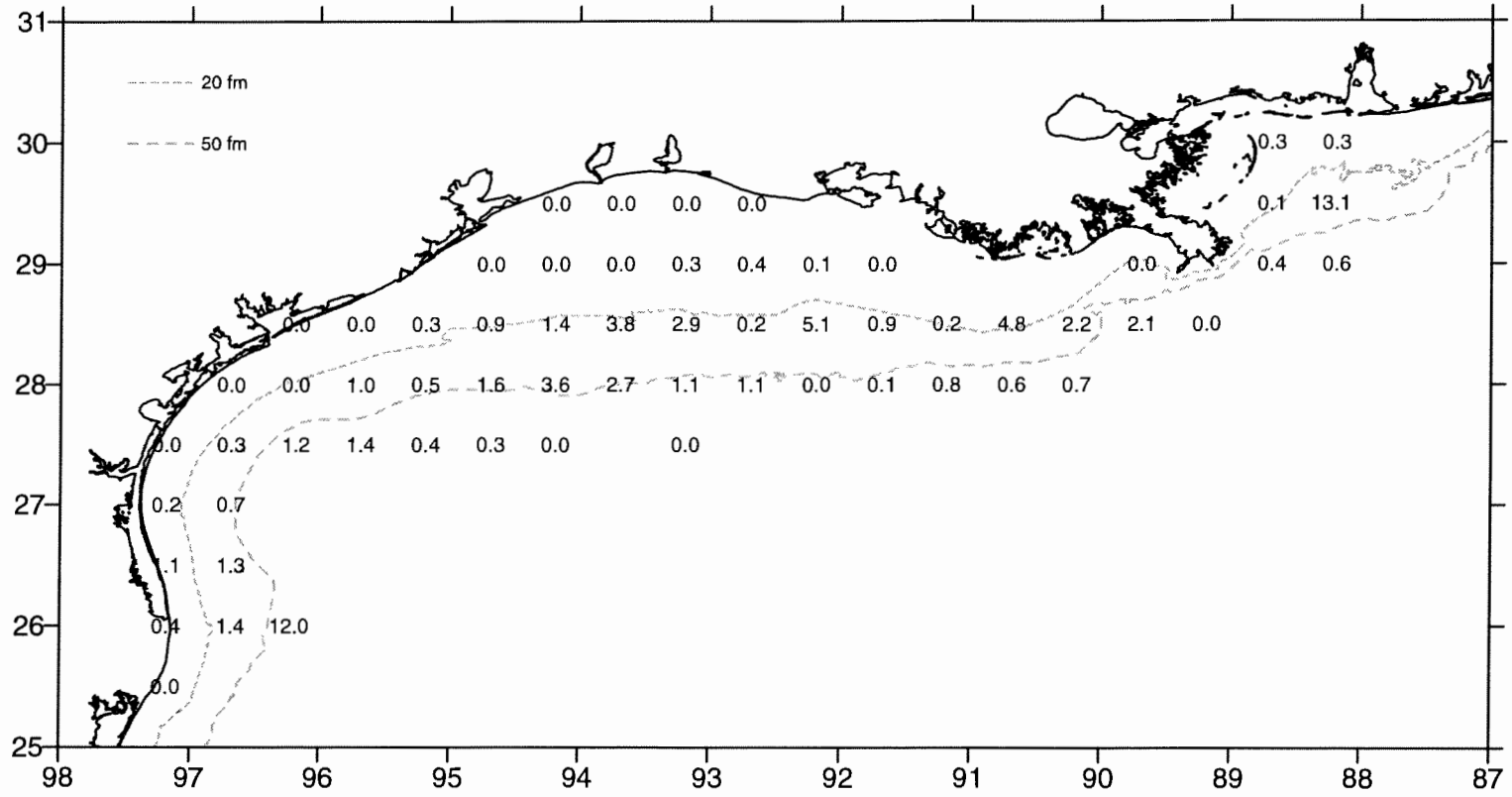

Figure 74. Red snapper, Lutjanus campechanus, lb/hour for October-December 1996.

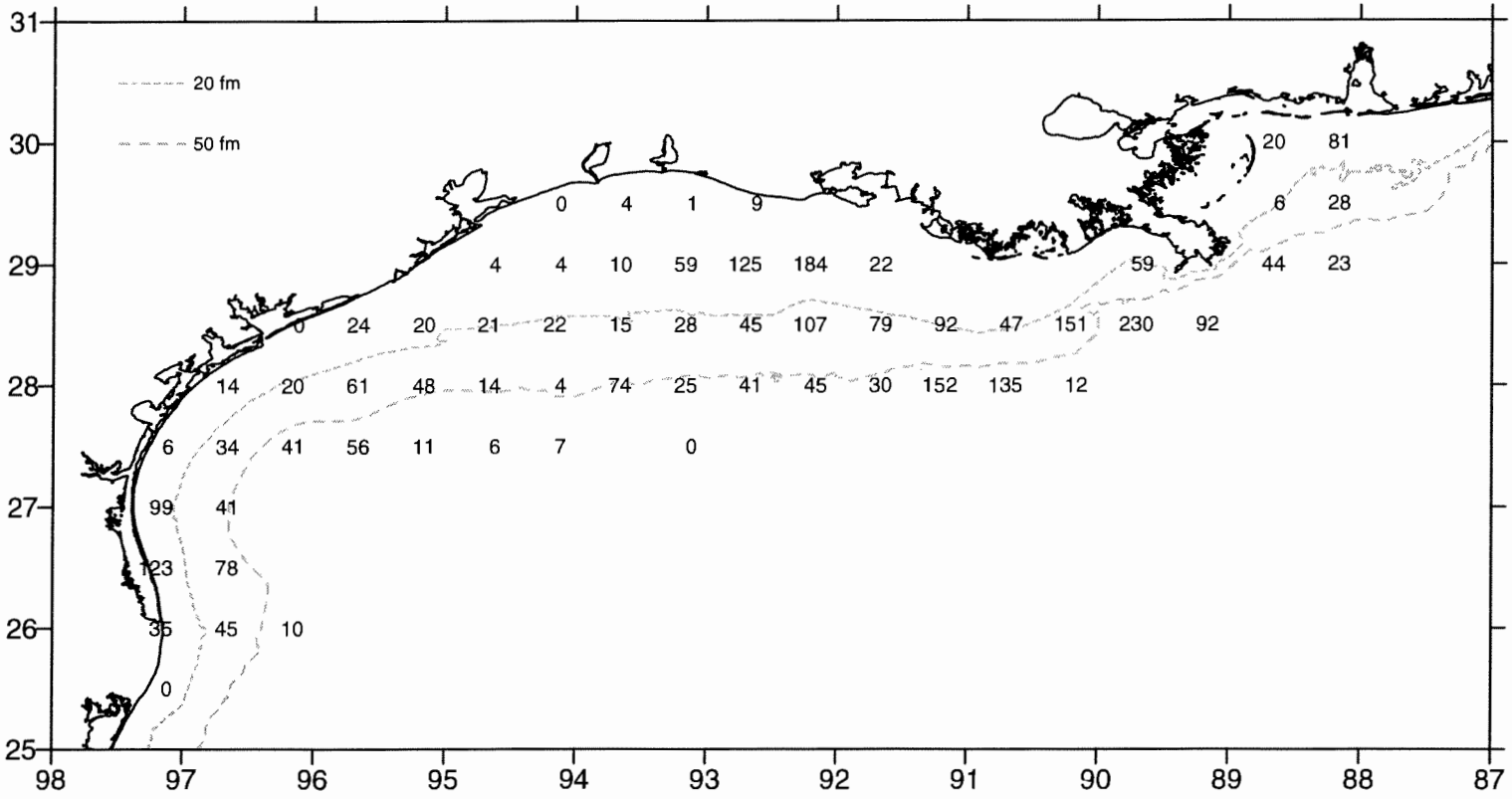

Figure 75. Brown shrimp, Penaeus aztecus, number/hour for October-December 1996.

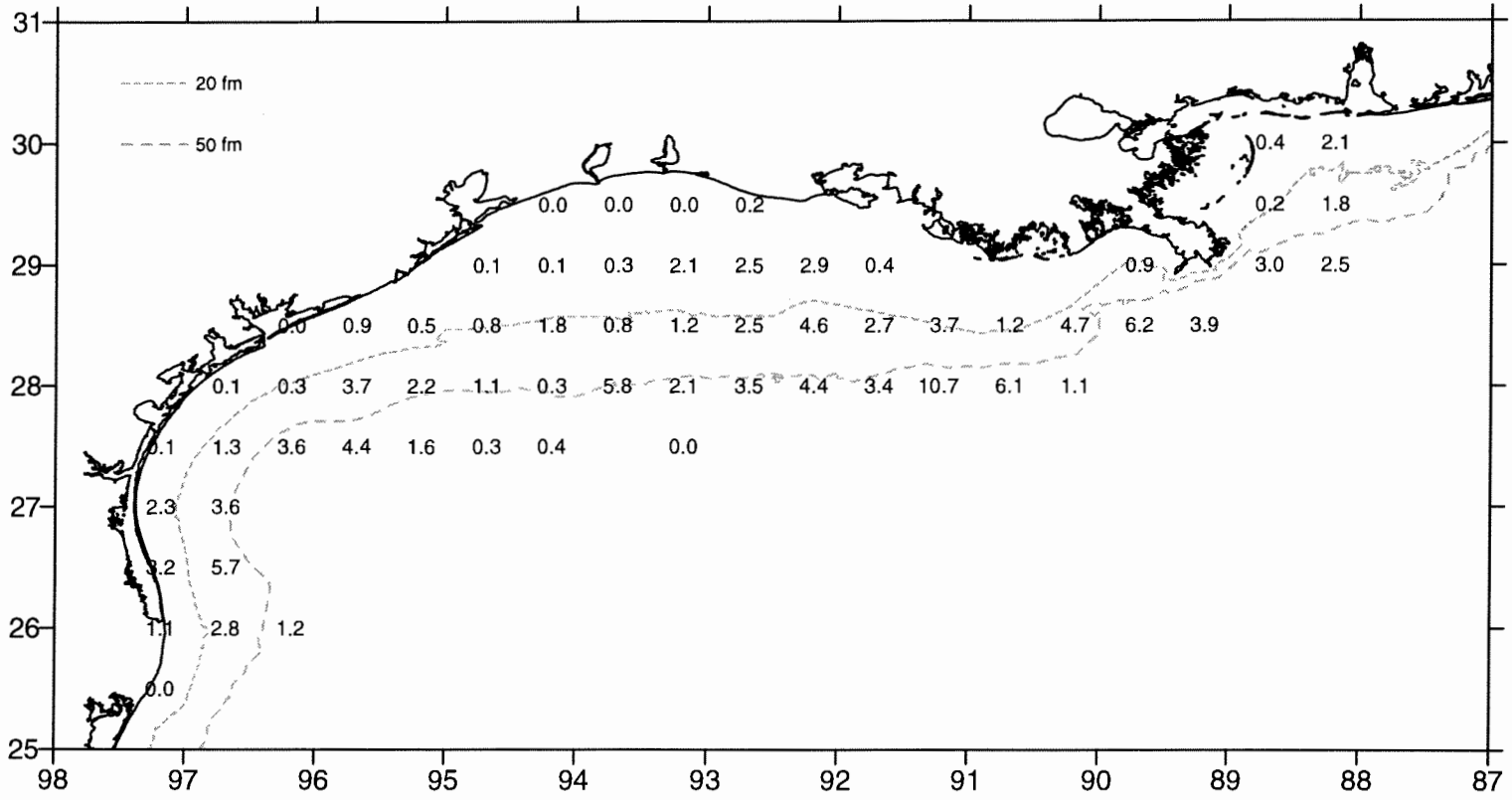

Figure 76. Brown shrimp, Penaeus aztecus, lb/hour for October-December 1996.

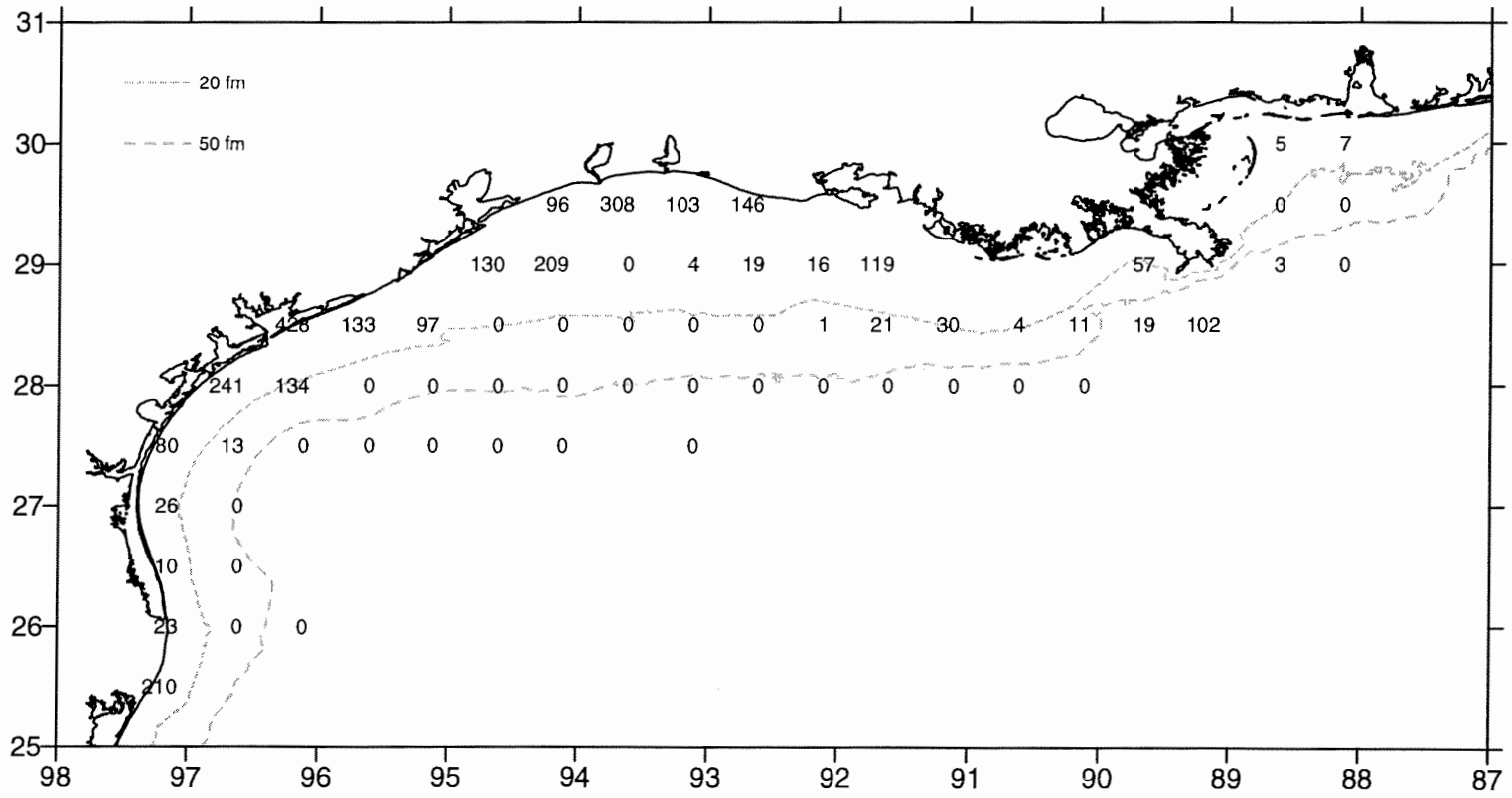

Figure 77. White shrimp, Penaeus setiferus, number/hour for October-December 1996.

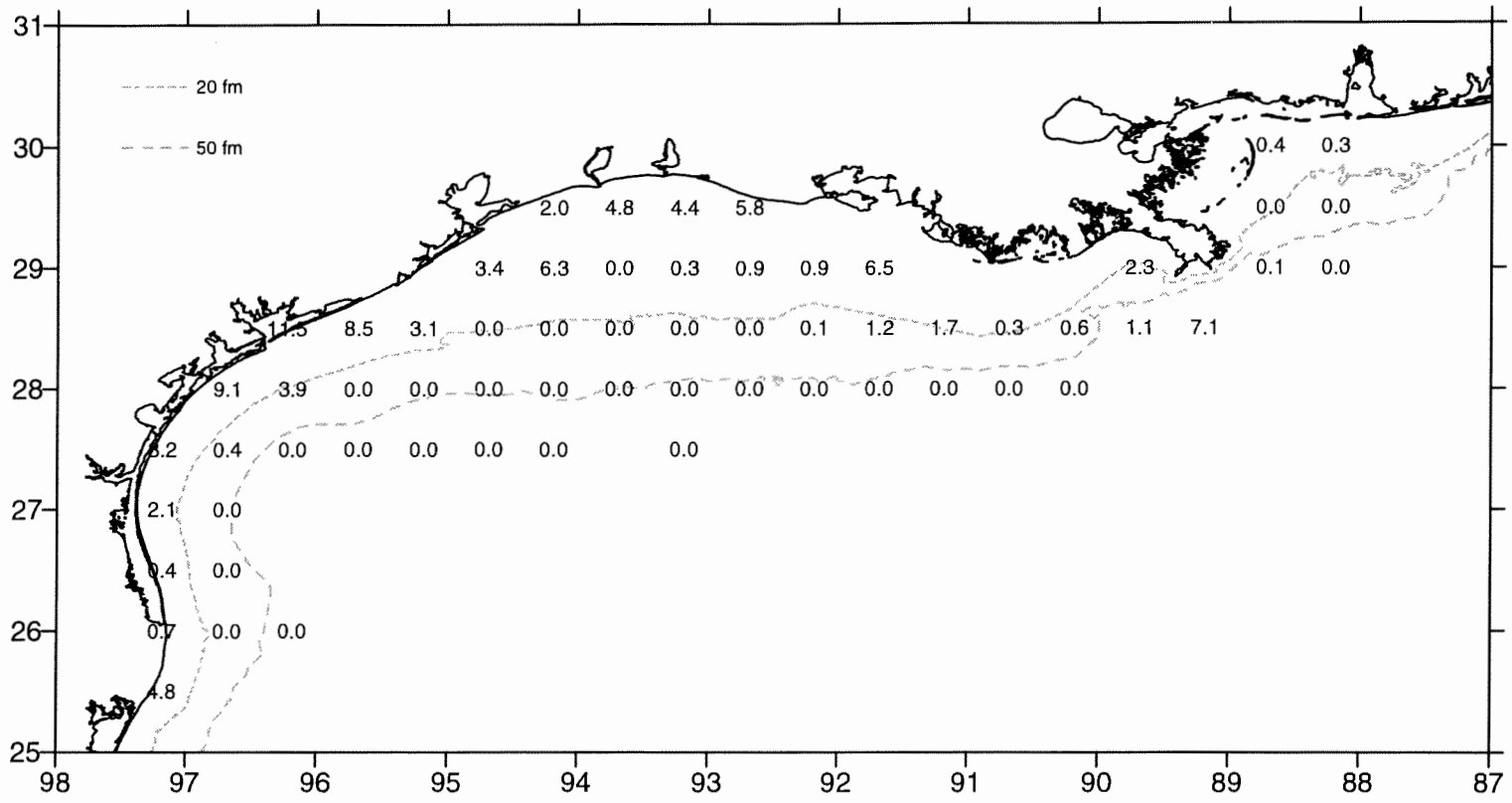

Figure 78. White shrimp, Penaeus setiferus, lb/hour for October-December 1996.

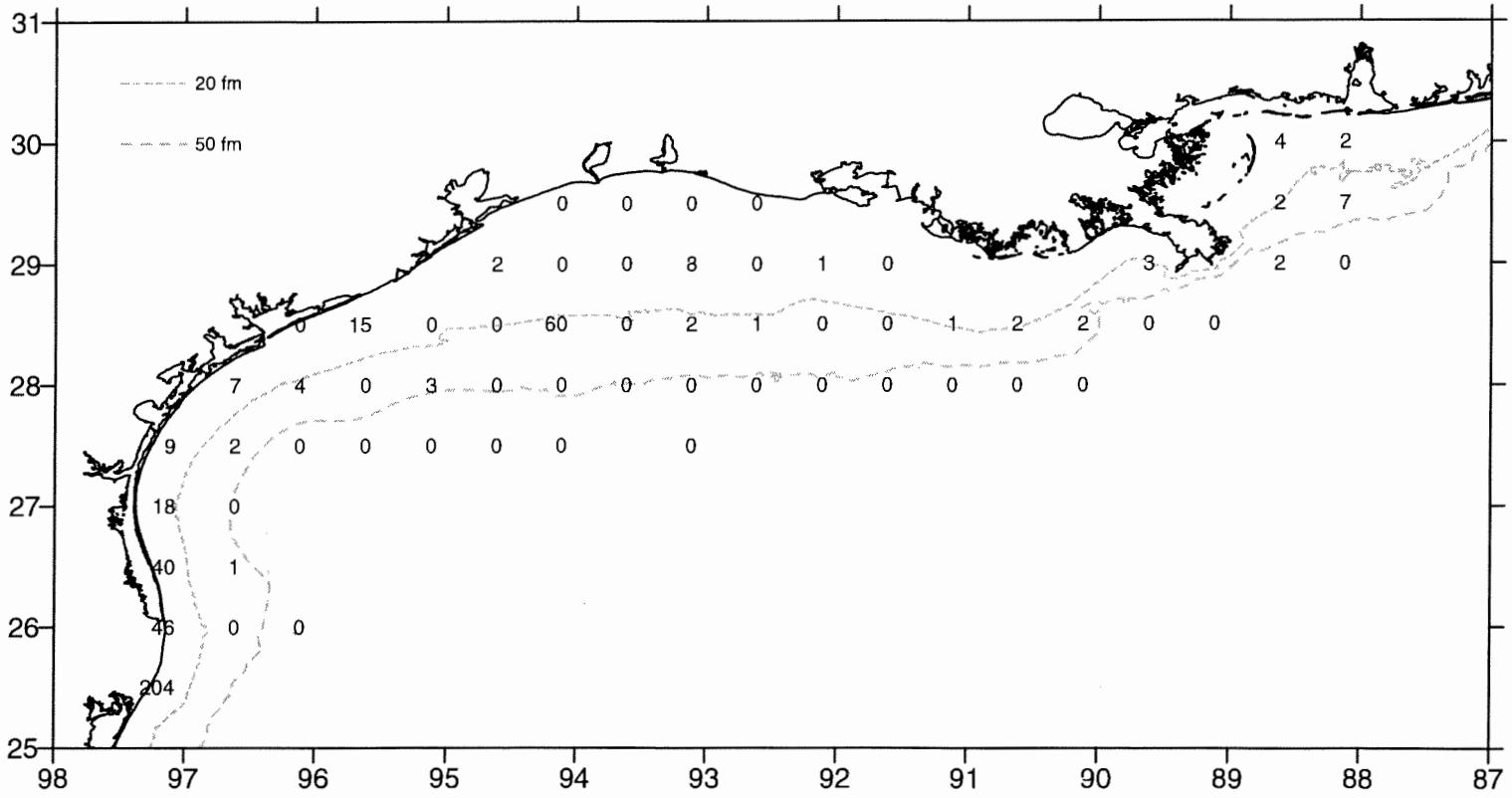

Figure 79. Pink shrimp, Penaeus duorarum, number/hour for October-December 1996.

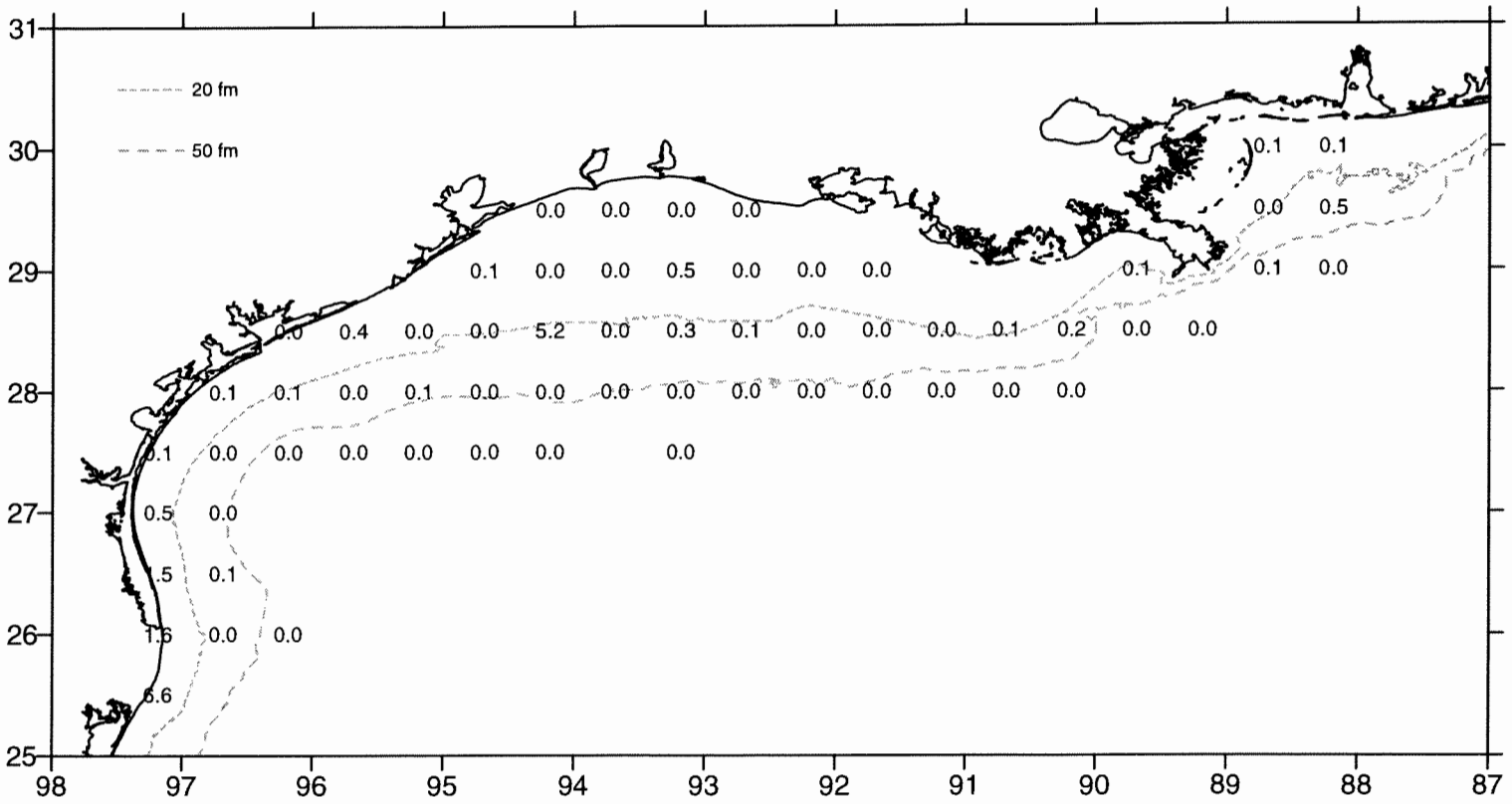

Figure 80. Pink shrimp, Penaeus duorarum, lb/hour for October-December 1996.

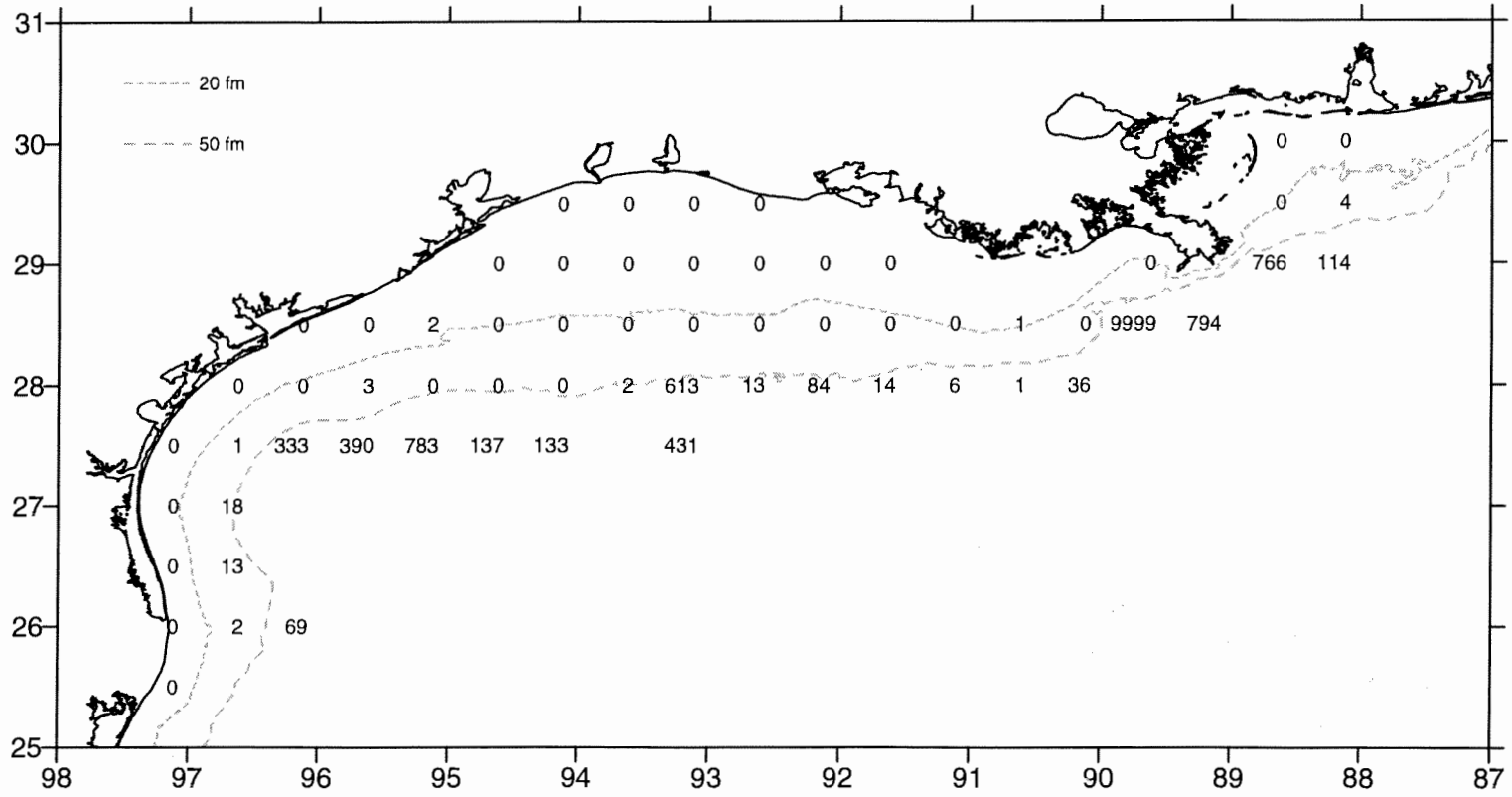

Figure 81. Longspine swimming crab, Portunis spinicarpus, number/hour for October-December 1996

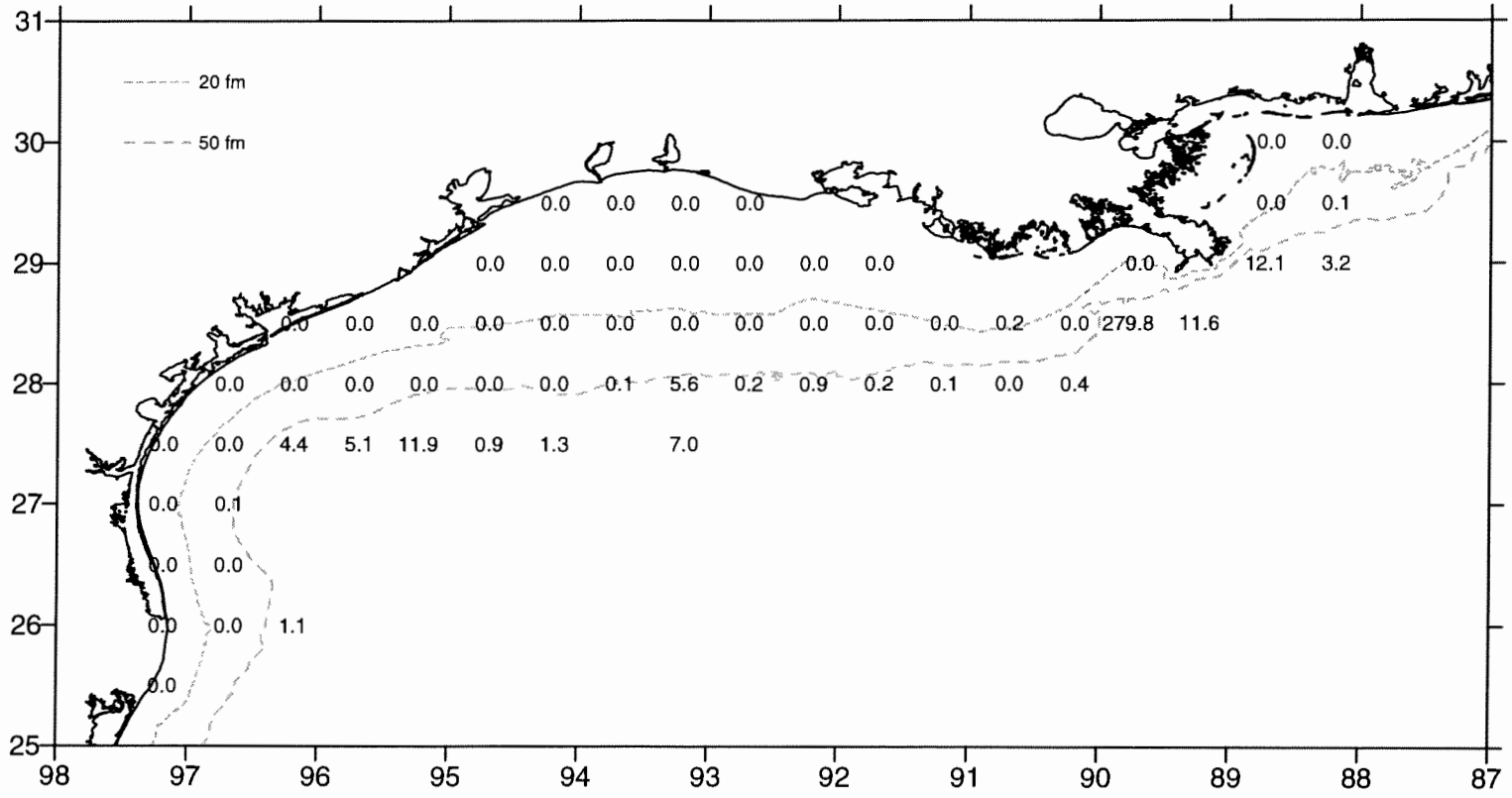

Figure 82. Longspine swimming crab, Portunis spinicarpus, lb/hour for October-December 1996.

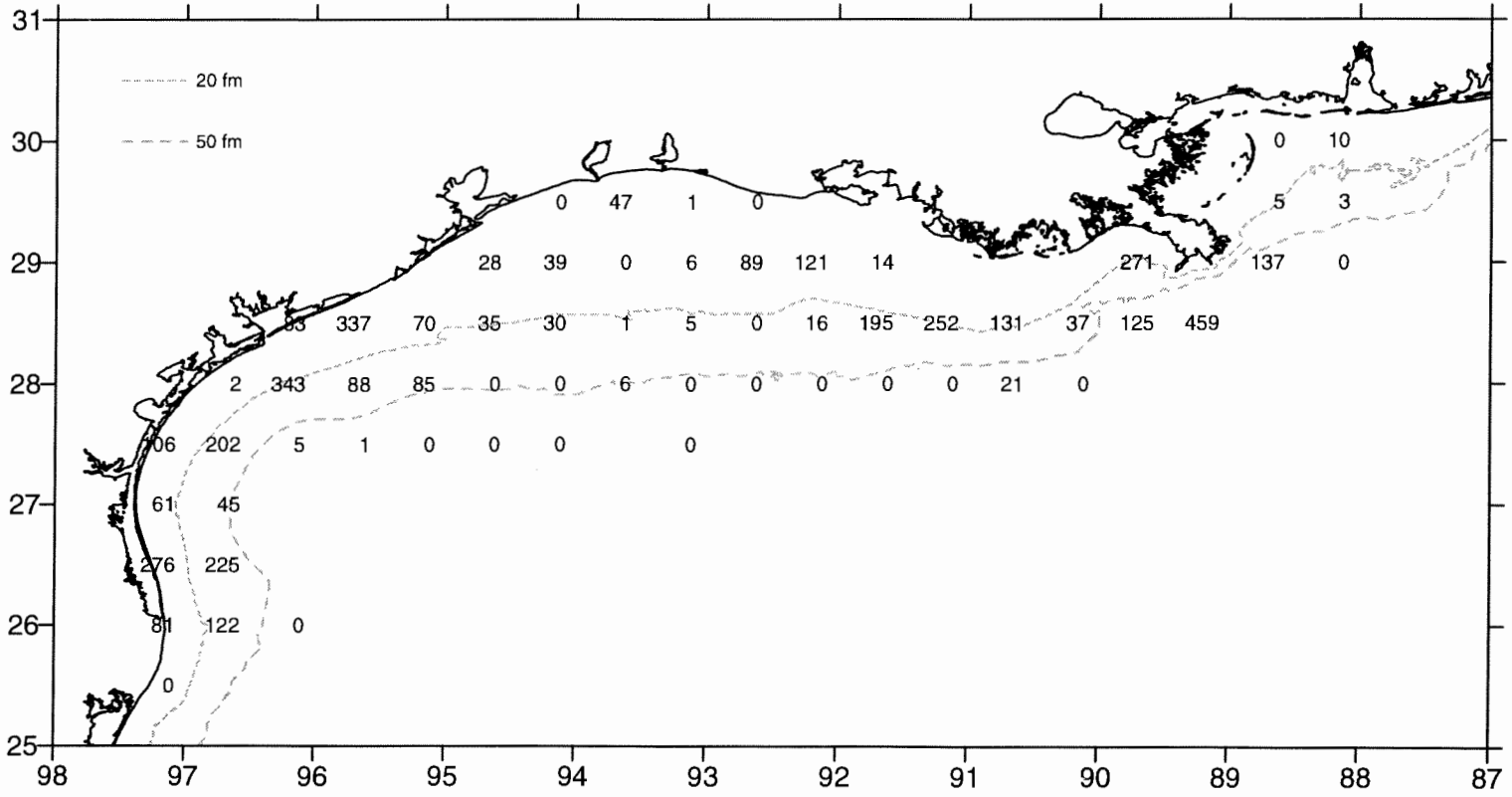

Figure 83. Roughback shrimp, Trachypenaeus similis, number/hour for October-December 1996.

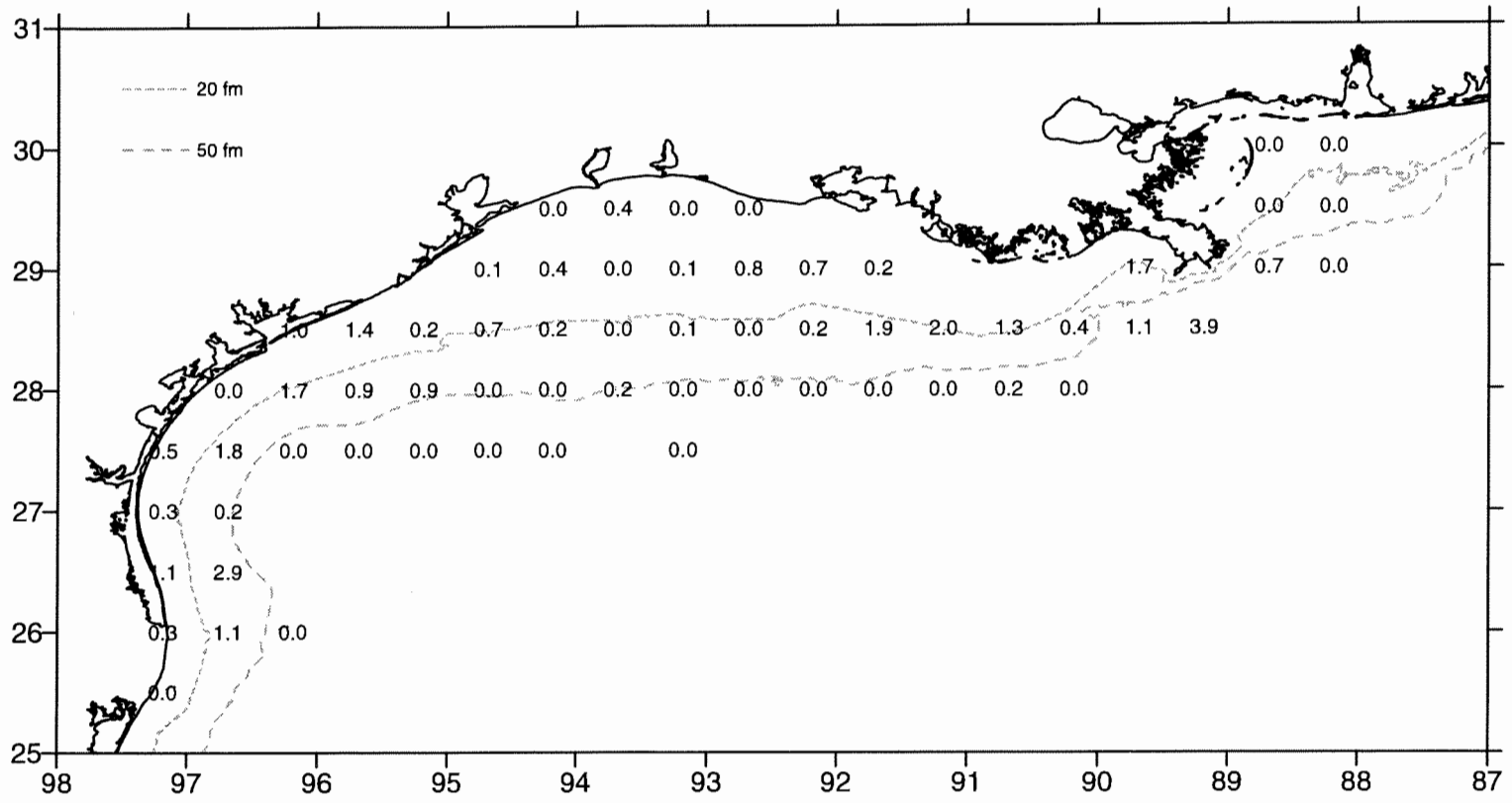

Figure 84. Roughback shrimp, Trachypenaeus similis, lb/hour for October-December 1996.

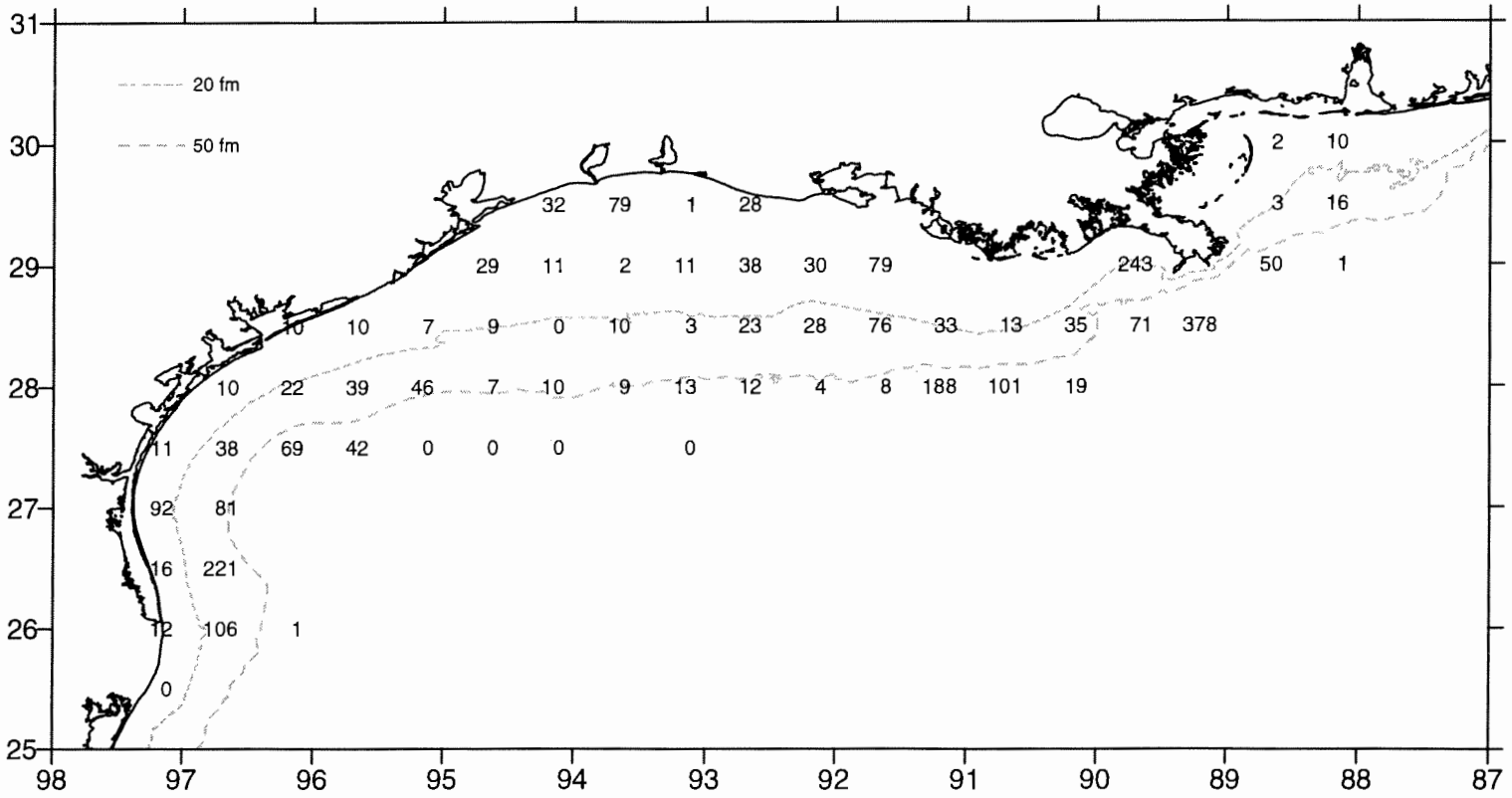

Figure 85. Lesser blue crab, Callinectes similis, number/hour for October-December 1996.

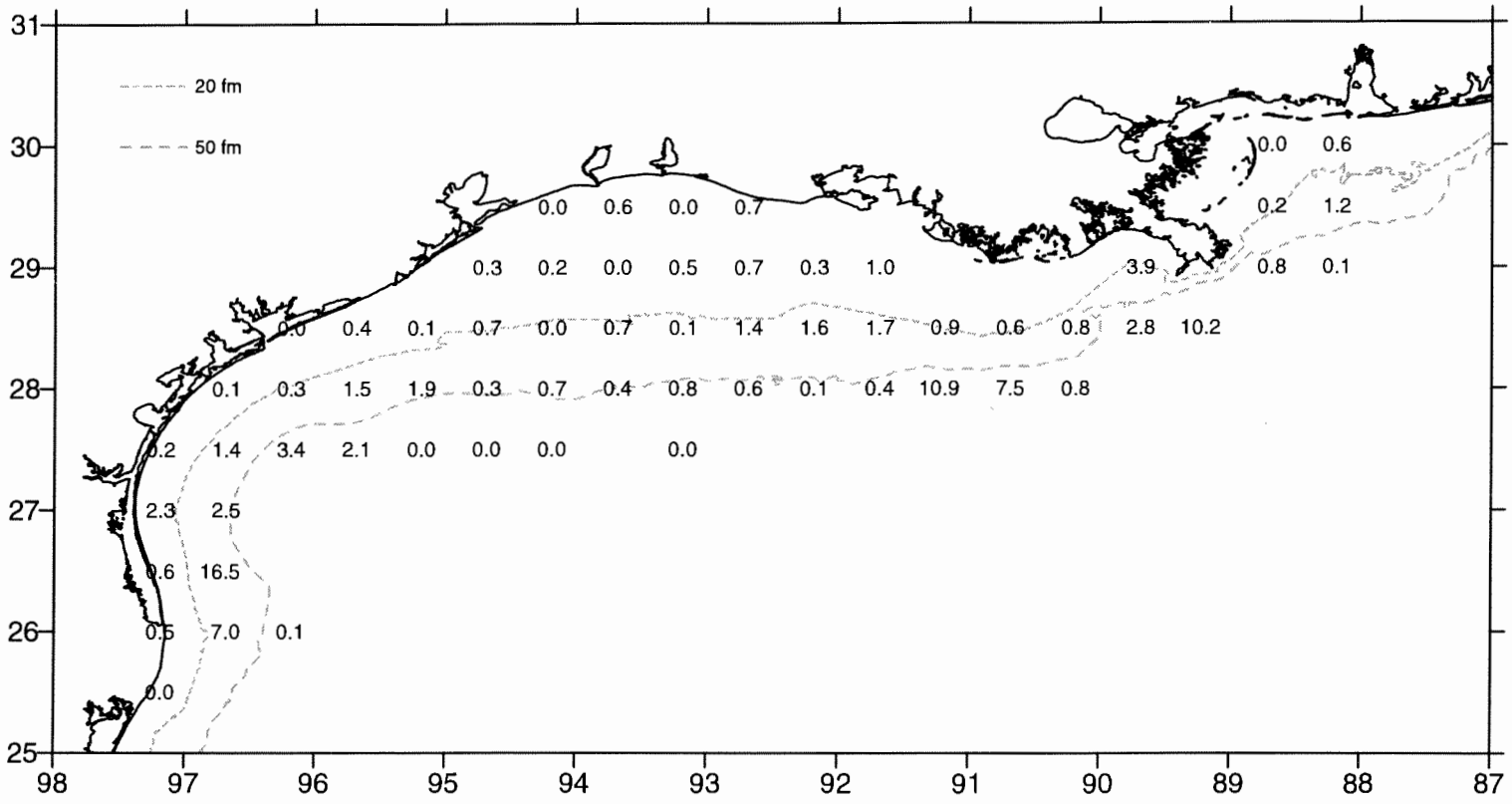

Figure 86. Lesser blue crab, Callinectes similis, lb/hour for October-December 1996.

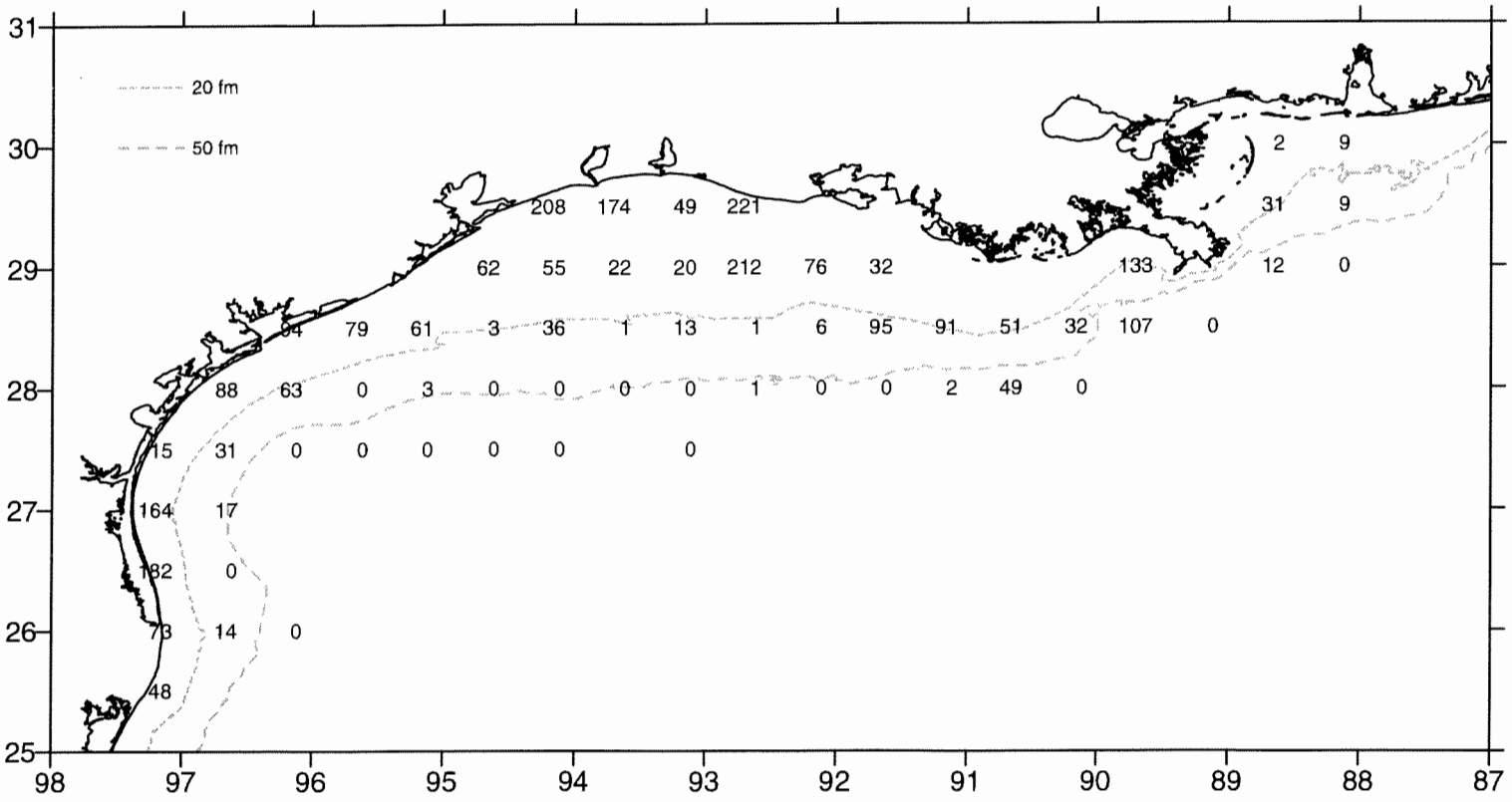

Figure 87. Irridescent swimming crab, Portunus gibbesii, number/hour for October-December 1996

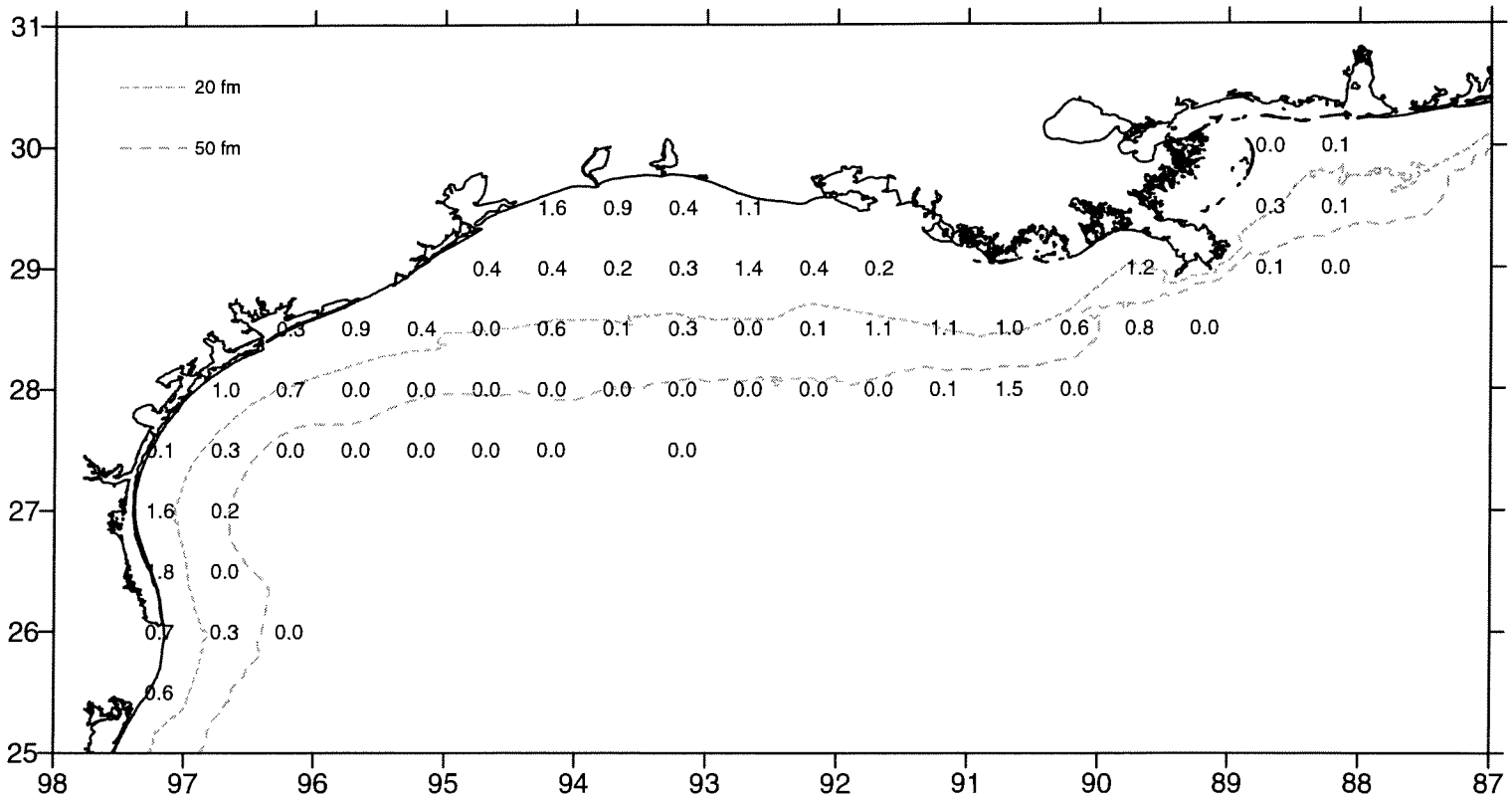

Figure 88. Irridescent swimming crab, Portunus gibbesii, lb/hour for October-December 1996.

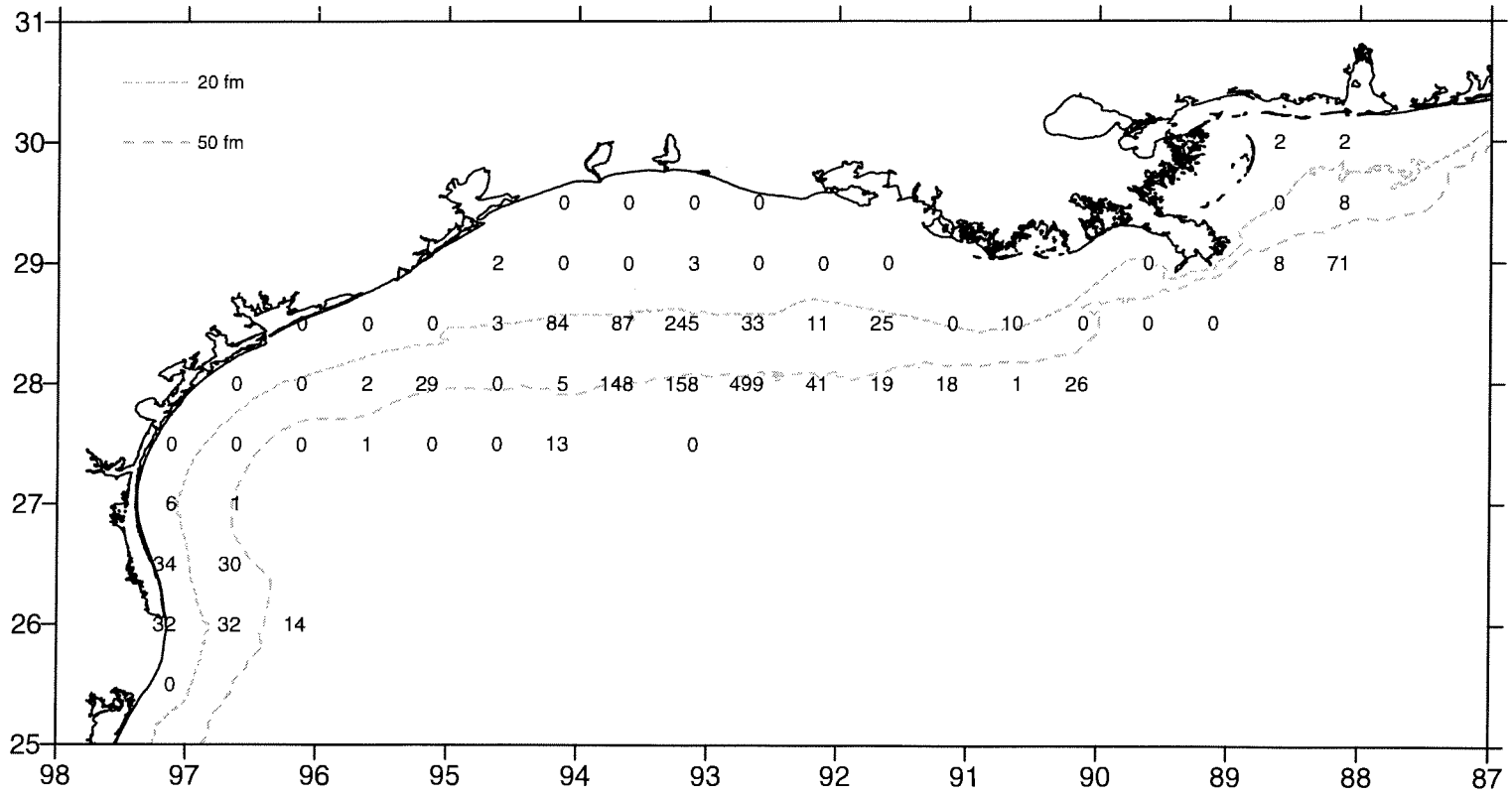

Figure 89. Brown rock shrimp, Sicyonia brevirostris, number/hour for October-December 1996.

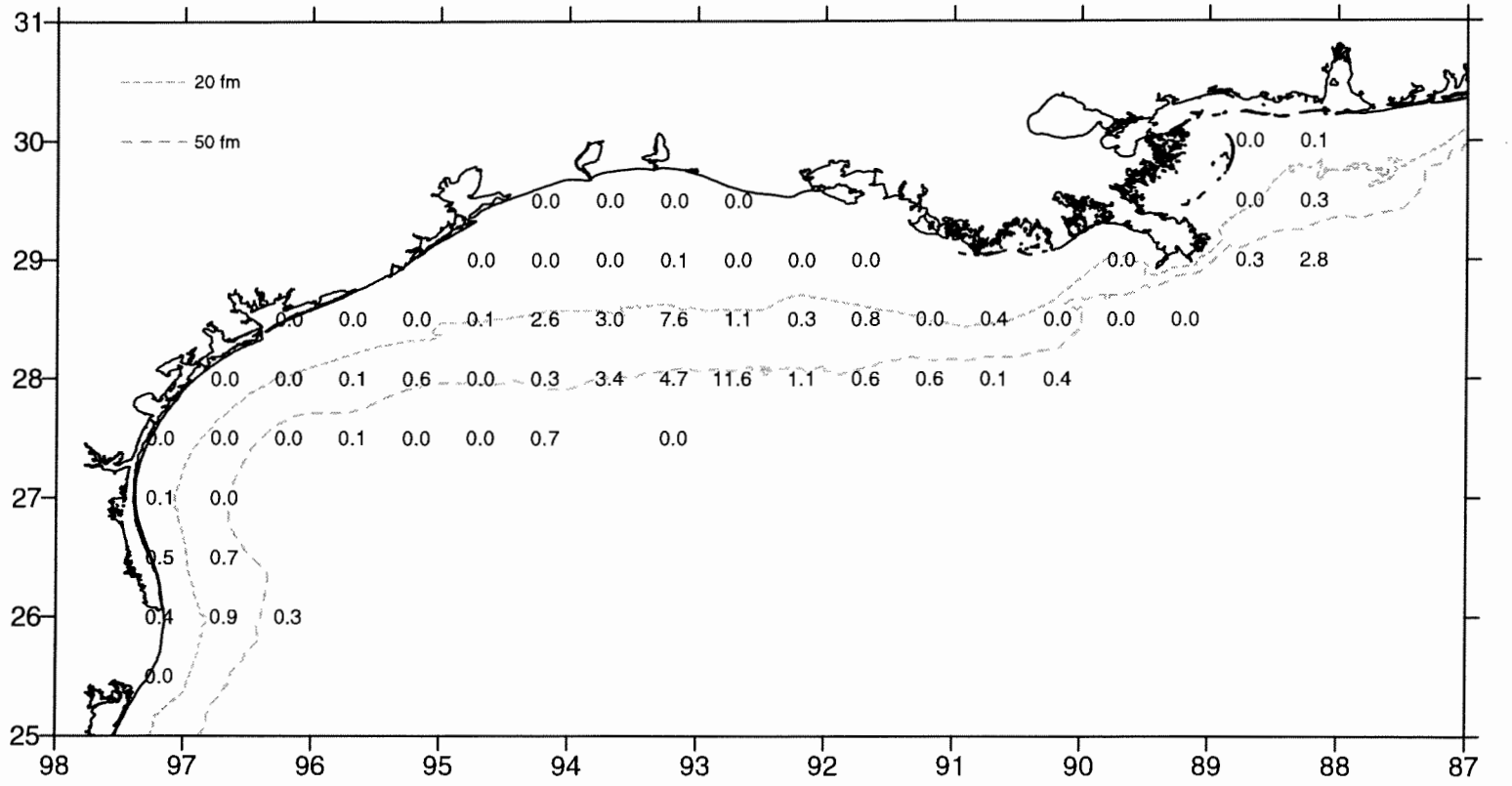

Figure 90. Brown rock shrimp, Sicyonia brevirostris, lb/hour for October-December 1996.

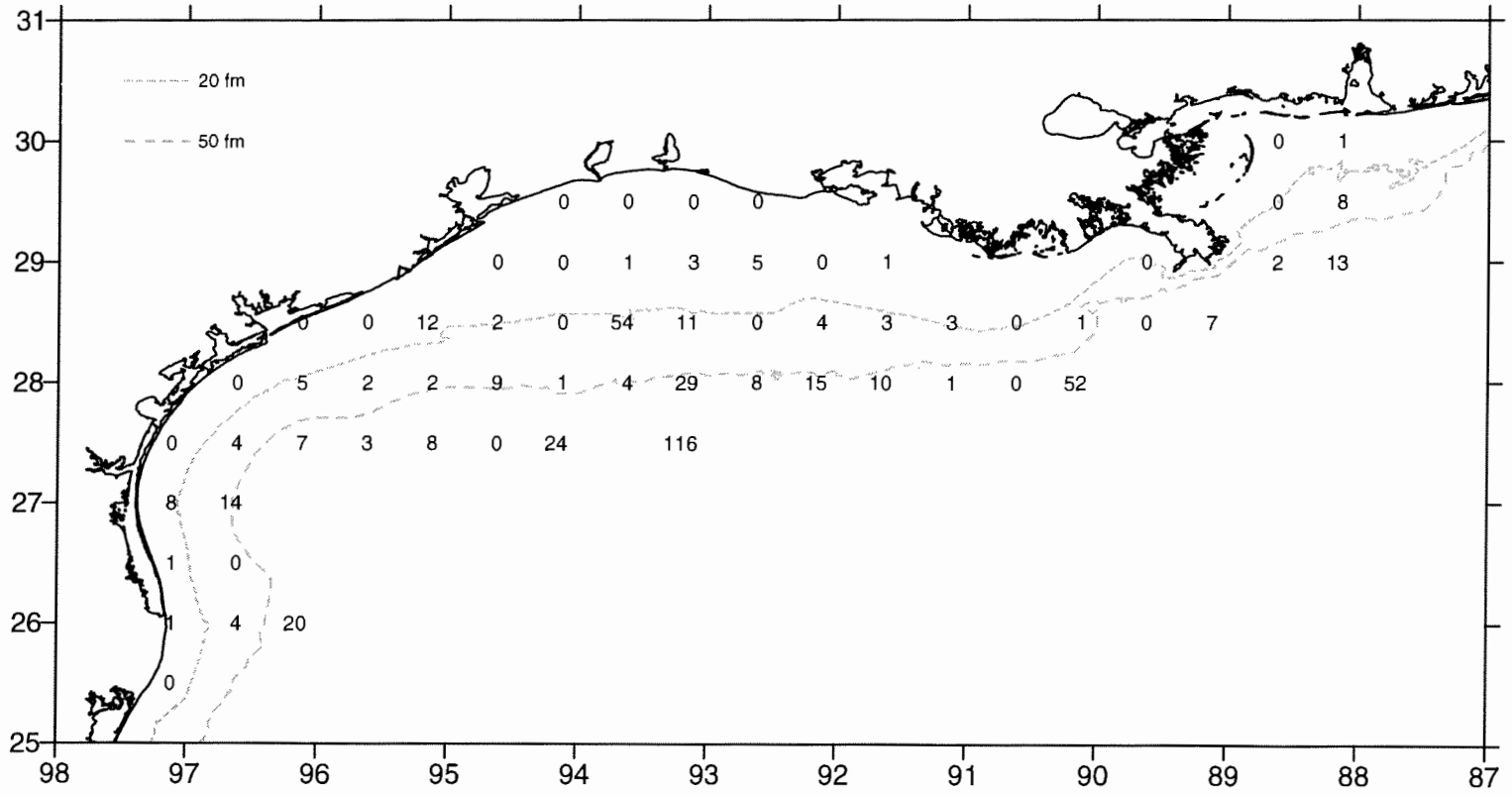

Figure 91. Longfin squid, Loligo pealeii, number/hour for October-December 1996.

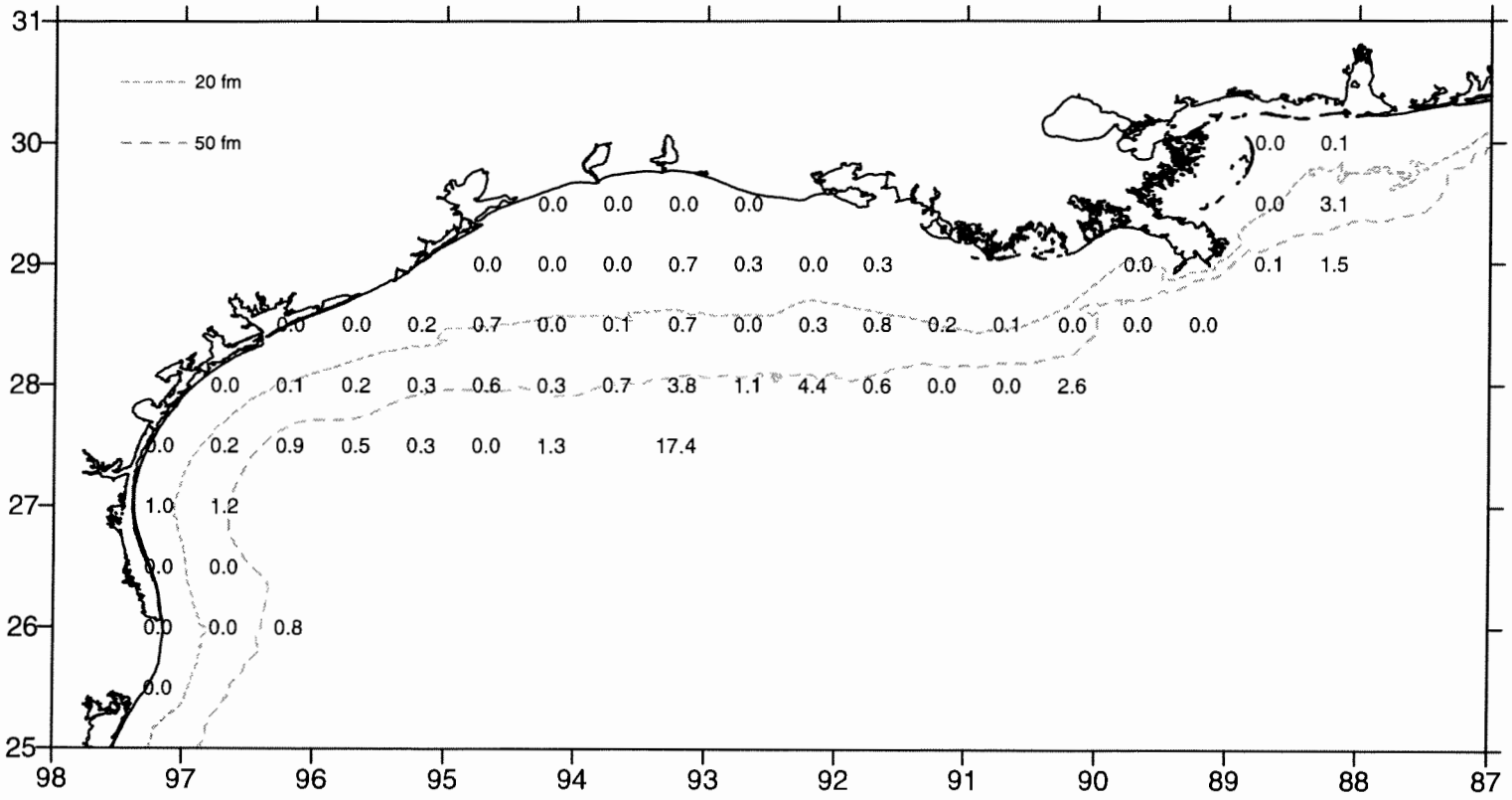

Figure 92. Longfin squid, Loligo pealeii, lb/hour for October-December 1996.

LITERATURE CITED

Atlantic States Marine Fisheries Commission. In press. SEAMAP Management Plan: 1996-2000. Washington, DC: ASMFC.

Center for Wetland Resources. 1980. Management plan and final environmental impact statement for the shrimp fishery of the Gulf of Mexico, United States waters. Louisiana State Univ., Baton Rouge, Louisiana. 185 p.

Donaldson, D.M., N.J. Sanders, and P.A. Thompson. 1993. SEAMAP environmental and biological atlas of the Gulf of Mexico, 1991. Gulf States Marine Fisheries Commission. No. 29. 321 p.

Donaldson, D.M., N.J. Sanders, and P.A. Thompson. 1994. SEAMAP environmental and biological atlas of the Gulf of Mexico, 1992. Gulf States Marine Fisheries Commission. No. 30. 293 p.

Donaldson, D.M., N.J. Sanders, P.A. Thompson and R. Minkler. 1996. SEAMAP environmental and biological atlas of the Gulf of Mexico, 1993. Gulf States Marine Fisheries Commission. No. 34. 284 p.

Donaldson, D.M., N.J. Sanders, P.A. Thompson and R. Minkler. 1997a. SEAMAP environmental and biological atlas of the Gulf of Mexico, 1994. Gulf States Marine Fisheries Commission. No. 40. 277 p.

Donaldson, D.M., N.J. Sanders, P.A. Thompson and R. Minkler. 1997b. SEAMAP environmental and biological atlas of the Gulf of Mexico, 1995. Gulf States Marine Fisheries Commission. No. 41. 280 p.

Eldridge, P.J. 1988. The Southeast Area Monitoring and Assessment Program (SEAMAP): A state-federal-university program for collection, management and dissemination of fishery-independent data and information in the southeast United States. Mar. Fish. Rev. 50(2): 29-39.

Jeffrey, S.W. and G.F. Humphrey. 1975. New spectrophotometric equations for determining chlorophylls a, b, c_1 and c_2 in higher plants, algae and natural phytoplankton. Biochem. Physiol. Pflanzer Bpp. 167: 191-194.

Goodyear, C.P. 1997. An evaluation of the minimum reduction in the 1997 red snapper shrimp bycatch mortality rate consistent with the 2019 recovery target. GMFMC. 14p. + appendix.

Grace, M., K.R. Rademacher and M. Russell. 1994. Pictorial guide to the groupers (Teleostei: Serrenidae) of the western North Atlantic. NOAA Tech. Report. NMFS 118. 46p.

Hanifen, J.G., W.S. Perret, R.P. Allemand and T.L. Romaire. 1995. Potential impacts of hypoxia on fisheries: Louisiana's fishery-independent data. In proceedings of Gulf of Mexico Program's Hypoxia Conference. November 1995, New Orleans, LA.

Kelley, S., J.V. Gartner, Jr., W.J. Richards and L. Ejsymont. 1993. SEAMAP 1984 & 1985 - Ichthyoplankton. Larval distribution and abundance of Carangidae, Clupeidae, Coryphaenidae, Engraulididae, Gobiidae, Istiophoridae, Lutjanidae, Scombridae, Serranidae, and Xiphiidae in the Gulf of Mexico. NOAA Tech. Mem., NMFS-SESC-317.

Kelley, S., J.V. Gartner, Jr., W.J. Richards and L. Ejsymont. 1990. SEAMAP 1986 - Ichthyoplankton. Larval distribution and abundance of Engraulididae, Carangidae, Clupeidae, Gobiidae, Lutjanidae, Serranidae, Coryphaenidae, Istiophoridae and Scombridae in the Gulf of Mexico. NOAA Tech. Mem., NMFS-SESC-245.

Kelley, S., T. Potthoff, W.J. Richards, L. Ejsymont and J.V. Gartner. 1985. SEAMAP 1983 - Ichthyoplankton. Larval distribution and abundance of Engraulididae, Carangidae, Clupeidae, Lutjanidae, Serranidae, Sciaenidae, Coryphaenidae, Istiophoridae, Xiphiidae and Scombridae in the Gulf of Mexico. NOAA Tech. Mem., NMFS-SEFC-167.

Kramer, D., M.J. Kalin, E.G. Stevens, J.R. Thrailkill and J.R. Zweifel. 1972. Collecting and processing data on fish eggs and larvae in the California Current region. NOAA Technical Report. NMFS Circular 370. 38 p.

LITERATURE CITED

Leming, T.D. and W.E. Stuntz. 1984. Zones of coastal hypoxia revealed by satellite scanning have implications for strategic fishing. Nature, 310 (5973): 131-138.

McGowan, M.F. and W.J. Richards. 1986. Distribution and abundance of bluefin tuna (Thunnus thynnus) larvae in the Gulf of Mexico in 1982 and 1983 with estimates of the biomass and population size of the spawning stock from 1977, 1978, and 1981-1983. International Commission for the Conservation of Atlantic Tunas. Collective Volume of Scientific Papers. 24: 182-195.

Nance, J.M. Unpublished report. Biological review of the 1996 Texas Closure report to Gulf of Mexico Fishery Management Council.

Nichols, S. 1982. Impacts of the 1981 and 1982 Texas closure on brown shrimp yields. NOAA, NMFS-SEFC. 44 p.

Nichols, S. 1984. Impacts of the 1982 and 1983 closure of the Texas FCZ on brown shrimp yields. Report to the Gulf of Mexico Fishery Management Council.

Nichols, S. and J.R. Poffenberger. 1987. Analysis of alternative closures for improving brown shrimp yield in the Gulf of Mexico. Report to the Gulf of Mexico Fishery Management Council.

Posgay, J.A. and R.R. Marak. 1980. The MARMAP bongo zooplankton samplers. J. Northw. Atl. Fish. Sci. 1: 9-99.

Richards, W.J., T. Potthoff, S. Kelley, M.F. McGowan, L. Ejsymont, J.H. Power and R.M. Olvera L. 1984. SEAMAP 1982 - Ichthyoplankton. Larval distribution and abundance of Engraulididae, Carangidae, Clupeidae, Lutjanidae, Serranidae, Sciaenidae, Coryphaenidae, Istiophoridae, Xiphiidae and Scombridae in the Gulf of Mexico. NOAA Tech. Mem., NMFS-SEFC-167.

Russell, G.M. Unpublished report. Reef fish assessment methodology for SEAMAP surveys of hardbottom areas. National Marine Fisheries Service. 25 p.

Sanders, N.J., P.A. Thompson and T. Van Devender. 1990a. SEAMAP environmental and biological atlas of the Gulf of Mexico, 1986. Gulf States Marine Fisheries Commission. No. 20. 328 p.

Sanders, N.J., P.A. Thompson and D.M. Donaldson. 1990b. SEAMAP environmental and biological atlas of the Gulf of Mexico, 1987. Gulf States Marine Fisheries Commission. No. 22. 337 p.

Sanders, N.J., D.M. Donaldson and P.A. Thompson. 1991a. SEAMAP environmental and biological atlas of the Gulf of Mexico, 1988. Gulf States Marine Fisheries Commission. No. 23. 320 p.

Sanders, N.J., D.M. Donaldson and P.A. Thompson. 1991b. SEAMAP environmental and biological atlas of the Gulf of Mexico, 1989. Gulf States Marine Fisheries Commission. No. 25. 318 p.

Sanders, N.J., D.M. Donaldson and P.A. Thompson. 1992. SEAMAP environmental and biological atlas of the Gulf of Mexico, 1990. Gulf States Marine Fisheries Commission. No. 27. 311 p.

Scott, G.P., S.C. Turner, C.B. Grimes, W.J. Richards, and E. B. Brothers. 1990. Indices of larval bluefin tuna (Thunnus thynnus) abundance from ichthyoplankton surveys in the Gulf of Mexico. SCRS/90/77 pages 257-270.

LITERATURE CITED

Scott, G.P. and S.C. Turner. 1991. Updated indices of larval bluefin tuna (Thunnus thynnus) abundance from ichthyoplankton surveys in the Gulf of Mexico. SCRS/91/95.

Sherman, K., R. Lasker, W. Richards and A.W. Kendall, Jr. 1983. Ichthyoplankton and fish recruitment studies in large marine ecosystems. Mar. Fish. Rev. 45 (10, 11, 12): 1-25.

Smith, P.E. and S.L. Richardson, eds. 1977. Standard techniques for pelagic fish egg and larva surveys. FAO Fish. Tech. Paper 175. 100 p.

Southeast Area Monitoring and Assessment Program (SEAMAP) Strategic Plan. 1981. Report to the Gulf States Marine Fisheries Commission. 50 p.

Strickland, J.D.H. and T.R. Parsons. 1972. A practical handbook of seawater analysis. Ottawa: Fish. Res. Bd. Can. 310 p.

Stuntz, W.E., C.E. Bryan, K. Savastano, R.S. Waller and P.A. Thompson. 1985. SEAMAP environmental and biological atlas of the Gulf of Mexico, 1982. Gulf States Marine Fisheries Commission. 145 p.

Thompson, P.A. and N. Bane. 1986a. SEAMAP environmental and biological atlas of the Gulf of Mexico, 1983. Gulf States Marine Fisheries Commission. No. 13. 179 p.

Thompson, P.A. and N. Bane. 1986b. SEAMAP environmental and biological atlas of the Gulf of Mexico, 1984. Gulf States Marine Fisheries Commission. No. 15. 171 p.

Thompson, P.A., T. Van Devender and N.J. Sanders, Jr. 1988. SEAMAP environmental and biological atlas of the Gulf of Mexico, 1985. Gulf States Marine Fisheries Commission. No. 17. 338 p.