seamap

environmental and biological atlas of the gulf of mexico 2003

gulf states marine fisheries commission

number 172

July 2009

GULF STATES MARINE FISHERIES COMMISSION
COMMISSIONERS AND PROXIES

ALABAMA

Barnett Lawley
Alabama Department of Conservation
and Natural Resources
64 North Union Street
Montgomery, AL 36130-1901

Representative Spencer Collier
P.O. Box 550
Irvington, AL 36544

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

FLORIDA

Ken Haddad, Executive Director
FL Fish and Wildlife Conservation Commission
620 South Meridian Street
Tallahassee, FL 32399-1600

Senator Thad Altman
State Senator, District 24
6767 North Wickham Road, Suite 211
Melbourne, FL 32940

Hayden R. Dempsey
Greenberg Traurig, P.A.
101 East College Avenue
Tallahassee, FL 32302

LOUISIANA

Robert Barham, Secretary
LA Department of Wildlife and Fisheries
P.O. Box 98000
Baton Rouge, LA 70898-9000

Senator Butch Gautreaux
714 2nd Street
Morgan City, LA 70380

Mr. Wilson Gaidry
8911 Park Avenue
Houma, LA 70363

MISSISSIPPI

William Walker, Executive Director
Mississippi Department of Marine Resources
1141 Bayview Avenue
Biloxi, MS 39530

Senator Tommy Gollott
235 Bay View Avenue
Biloxi, MS 39530

Mr. Joe Gill, Jr.
Joe Gill Consulting, LLC
910 Desoto Street
Ocean Springs, MS 39566-0535

TEXAS

Carter Smith, Executive Director
Texas Parks and Wildlife Department
4200 Smith School Road
Austin, TX 78744

Senator Mike Jackson
Texas Senate
P.O. Box 12068
Austin, TX 78711

David McKinney
10747 Ranch Road, 962 E
Cypress Mill, TX 78663

STAFF

Larry B. Simpson
Executive Director

David M. Donaldson
V.K. "Ginny" Herring
Nancy K. Marcellus
Cheryl R. Noble
Madeleine A. Travis
Steven J. VanderKooy
Jeffrey K. Rester

Gregory S. Bray
Joseph P. Ferrer, III
Douglas J. Snyder
Deanna L. Valentine
Donna B. Bellais
Wendy L. Garner

Robert W. Harris
Teri L. Freitas
Ralph E. Hode
James R. Ballard
Alexander L. Miller
Lloyd W. Kirk

SEAMAP ENVIRONMENTAL AND BIOLOGICAL ATLAS OF THE GULF OF MEXICO, 2003

Edited by

Jeffrey K. Rester
Gulf States Marine Fisheries Commission

Butch Pellegrin
National Marine Fisheries Service
Pascagoula Laboratory

Nathaniel Sanders, Jr.
National Marine Fisheries Service
Pascagoula Laboratory

Manuscript Design and Layout

Cheryl Noble
Gulf States Marine Fisheries Commission

GULF STATES MARINE FISHERIES COMMISSION

July 2009
Number 172

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. Jim Hanifen, Chairman
Louisiana Department of Wildlife and Fisheries

Mr. Read Hendon
Gulf Coast Research Laboratory

Mr. John Mareska
Alabama Department of Conservation
and Natural Resources

Mr. Fernando Martinez-Andrade
Texas Parks and Wildlife Department

Mr. Butch Pellegrin
National Marine Fisheries Service
Pascagoula Laboratory

Mr. Bob McMichael
Florida Fish and Wildlife
Conservation Commission
Florida Fish and Wildlife Research Institute

Mr. Richard Leard
Gulf of Mexico Fishery Management Council

Mr. Jeffrey K. Rester
SEAMAP Coordinator
Gulf States Marine Fisheries Commission

DATA COORDINATING WORK GROUP

Mr. Lloyd W. Kirk, Leader
National Marine Fisheries Service
Pascagoula Laboratory

Mr. Butch Pellegrin
Shrimp/Groundfish Work Group Leader
National Marine Fisheries Service
Pascagoula Laboratory

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

Mr. Read Hendon
Reef Fish Work Group Leader
Gulf Coast Research Laboratory

Mr. Michael Murphy
Red Drum Work Group Leader
Florida Fish and Wildlife
Conservation Commission
Florida Fish and Wildlife Research Institute

Ms. Terry Romaire
Environmental Data Work Group Leader
Louisiana Department of Wildlife and Fisheries

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

PAGE

LIST OF FIGURES

PAGE

LIST OF FIGURES

PAGE

ACKNOWLEDGMENTS

The 2003 SEAMAP Atlas was developed as a cooperative effort between the five Gulf States fishery management agencies and the National Marine Fisheries Service (NMFS), to present information collected during SEAMAP research survey activities in the Gulf of Mexico. The SEAMAP Data Coordinating Work Group would like to thank the following agencies for their participation in the project: Florida Fish and Wildlife Conservation Commission, Alabama Department of Conservation and Natural Resources, University of Southern Mississippi College of Science and Technology, 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 Gregg Bray and 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.). A SEAMAP Subcommittee was then formed within the existing framework of the GSMFC. The Subcommittee consists of one representative from each state fishery management agency [Florida Fish and Wildlife Conservation Commission (FWC); Alabama Department of Conservation and Natural Resources (ADCNR); Mississippi Department of Marine Resources (MDMR) represented by the University of Southern Mississippi, College of Science and Technology, Gulf Coast Research Laboratory (USM/COST/GCRL); Louisiana Department of Wildlife and Fisheries (LDWF); and Texas Parks and Wildlife Department (TPWD)], one from NMFS SEFSC and a non-voting member representing the Gulf of Mexico Fishery Management Council (GMFMC). The Subcommittee has organized and successfully coordinated numerous resource surveys from 1982 through 2003 (Table 1). The resultant data are published in atlases for the surveys in 1982 (Stuntz et al. 1985); 1983 (Thompson and Bane 1986a); 1984 (Thompson and Bane 1986b); 1985 (Thompson et al. 1988); 1986 (Sanders et al. 1990a); 1987 (Sanders et al. 1990b); 1988 (Sanders et al. 1991a); 1989 (Sanders et al. 1991b); 1990 (Sanders et al. 1992); 1991 (Donaldson et al. 1993); 1992 (Donaldson et al. 1994); 1993 (Donaldson et al. 1996); 1994 (Donaldson et al. 1997a); 1995 (Donaldson et al. 1997b); 1996 (Donaldson et al. 1998); 1997 (Rester et al. 1999); 1998 (Rester et al. 2000); 1999 (Rester et al. 2001); 2000 (Rester et al. 2002); 2001 (Rester et al. 2004); 2002 (Rester et al. 2008). Environmental assessment activities occurred with each of the surveys found in Table 1.

In March 2003, 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 2002. Overall survey objectives in 1982 to 2003 were to assess the distribution and abundance of recreational and commercial organisms collected by plankton, trap/video and trawl gears and document environmental factors that might affect their distribution and abundance. Data from plankton surveys are used for detection and assessment of fishery resources; in the determination of spawning seasons and areas; in investigations of early survival and recruitment mechanisms; and in estimation of the abundance of a stock based on its spawning production (Sherman et al. 1983). Assessment of the Texas Closure (Nichols 1982, 1984; Nichols and Poffenberger 1987) was the rationale for the establishment of the trawl surveys and to establish a seasonal data base to assess the abundance and distribution of the shrimp and groundfish stocks across the northern Gulf of Mexico. The Reef Fish Survey is designed to determine the relative abundance of reef fish populations and habitat using a fish trap/video recording system (Russell, unpublished report).

A major purpose of SEAMAP is to provide resource survey data to State and Federal management agencies and universities participating in SEAMAP activities. This twenty-second in a series of SEAMAP environmental and biological atlases presents such data, in a summarized form, collected during the 2003 SEAMAP surveys. The area covered in the Gulf of Mexico for all SEAMAP survey activities during 2003 is shown in Figure 1.

MATERIALS AND METHODS

Methodology for the 2003 SEAMAP surveys is similar to that of the 1982 through 2002 surveys. Sampling was conducted within the U.S. Exclusive Economic Zone (EEZ) and state territorial waters. The NOAA Ship OREGON II collected plankton and environmental data during the Spring Plankton Survey from May 13 to May 31 with the USM/COST/GCRL vessel TOMMY MUNRO collecting data on May 13 to May 16.

Vessels that participated in the Summer Shrimp/Groundfish Survey and concurrently sampled plankton and environmental data included the USM/COST/GCRL vessel TOMMY MUNRO (July 3-6), the Louisiana vessel PELICAN (July 8-11), and the NOAA Ship OREGON II (June 11-July 17) and CARETTA (July 24-July 28). The TPWD vessels SAN JACINTO, LAGUNA MADRE, R.J. KEMP, MATAGORDA BAY, and NUECES (June 2-24) and the Alabama vessel A.E. VERRILL (June 10 and July 2) did not sample plankton in conjunction with the summer survey.

The NOAA Ship GANDY participated in the Reef Fish Survey from October 22-November 23.

Vessels that participated in collecting plankton and environmental data during the Fall Plankton Survey included the NOAA Ship GORDON GUNTER (August 29-September 28); the Louisiana vessel PELICAN (September 29-October 1); and the Alabama vessel A.E. VERRILL (September 9).

Vessels that participated in the Fall Shrimp/Groundfish Survey and concurrently sampled plankton and environmental data included the NOAA Ships OREGON II (October 11-November 18) and the Louisiana vessel PELICAN (December 16-19). The Alabama vessel A.E. VERRILL (October 21 and November 11); the USM/COST/GCRL vessel TOMMY MUNRO (October 9-14);and the TPWD vessels MATAGORDA BAY, SAN JACINTO, R.J. KEMP, NUECES, and SABINE (November 5-21) did not sample plankton in conjunction with the fall survey.

PLANKTON SURVEYS

Since 1982 SEAMAP resource surveys have been conducted by the National Marine Fisheries Service in cooperation with the states of Florida, Alabama, Mississippi, Louisiana, and Texas. Plankton sampling is carried out during these surveys at predetermined SEAMAP stations arranged in a fixed, systematic grid pattern across the entire Gulf of Mexico. Most but not all SEAMAP stations (designated by a unique SEAMAP number) are located at ~56 km or ½ degree intervals along this grid. Some SEAMAP stations are located at < 56 km intervals especially along the continental shelf edge, while others have been moved to avoid obstructions, navigational hazards or shallow water. Most SEAMAP plankton samples are taken during either dedicated plankton and shrimp/bottomfish (trawl) surveys but over the years additional samples were taken using SEAMAP gear and collection methods at locations other than designated SEAMAP stations and/or outside established SEAMAP surveys, e.g. during Louisiana seasonal trawl surveys, SEAMAP Squid/Butterfish survey; and other serendipitous or special projects.

The sampling gear and methodology used to collect SEAMAP plankton samples are similar to those recommended by Kramer et al. (1972), Smith and Richardson (1977) and Posgay and Marak (1980). A 61 cm bongo net fitted with 0.333 (0.335)[1] mm mesh netting is fished in an oblique tow path from a maximum depth of 200 m or to 2-5 m off the bottom at depths less than 200 m. A mechanical flowmeter is mounted off-center in the mouth of each bongo net to record the volume of water filtered. Volume filtered ranges from ~20 to 600 m^3 but is typically 30 to 40 m^3 at the shallowest stations and 300 to 400 m^3 at the deepest stations. A single or double 2x1 m pipe frame neuston net fitted with 0.947 (0.950)[1] mm mesh netting is towed at the surface with the frame half-submerged for 10 minutes. Samples are taken upon arrival on station regardless of time of day. At each station either a bongo and/or neuston tow are made depending on the specific survey. Samples are routinely preserved in 5 to 10 % formalin and later transferred after 48 hours to 95 % ethanol for long term storage. During some surveys selected samples are preserved initially in

[1] Mesh size change in database does not represent an actual change in gear but only a change in the accuracy at which plankton mesh aperture size can be measured by the manufacturer.

95 % ethanol and later transferred to fresh ethanol.

Initial processing of one bongo sample and one neuston sample (except those collected by Louisiana vessels) from each SEAMAP station was accomplished at the Sea Fisheries Institute, Plankton Sorting and Identification Center (ZSIOP), in Szczecin, Poland, under a Joint Studies Agreement with NMFS. Plankton samples collected by Louisiana vessels were retained by LDWF for sorting and identification at their facilities using the same protocols used at ZSIOP. Wet plankton volumes of bongo net samples were measured by displacement to estimate net-caught zooplankton biomass (Smith and Richardson 1977). Fish eggs and larvae were removed from bongo net samples, and fish larvae only from neuston net samples. Fish eggs were not identified further, but larvae were identified to the lowest possible taxon (to family in most cases). Body length (either notochord or standard length) was measured.

Sorted ichthyoplankton specimens from ZSIOP and LDWF were sent to the SEAMAP Archiving Center, managed in conjunction with the FWC, for long-term storage under museum conditions. Sorted ichthyoplankton samples from 1982 through 2003 are available for loan to researchers throughout the country. The alternate bongo and neuston samples from each station are retained at USM/COST/GCRL as a backup for those samples transshipped to ZSIOP in case of loss or damage during transit. These backup unsorted plankton samples are curated and housed at the SEAMAP Invertebrate Plankton Archiving Center, managed in conjunction with USM/COST/GCRL, and are available for use by researchers.

See the SEAMAP Operations Manual for a more detailed description of sampling methods and protocols. Refer to the NOAA vessel cruise reports for more specific information on the individual SEAMAP Plankton Surveys conducted during 2003.

ENVIRONMENTAL DATA

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

Vessel: Vessel code for each vessel.
Station: Station identifiers varied by state and vessel.
Cruise: Cruise numbers varied by state and vessels.
Date: Month/Day/Year.
Time: Local time and time zone, recorded at the start of sampling.
Latitude/longitude: Recorded to seconds.
Barometric pressure: Recorded in millibars.
Wave height: Estimated visually in meters.
Wind speed and direction: Recorded in knots with direction recorded in compass degrees from which the wind was blowing.
Air temperature: Recorded in Centigrade.
Cloud cover: Estimated visually in percent cloud cover.
Secchi depth: Secchi depth in meters, estimated at each daylight station. Standard oceanographic 30-cm white discs were lowered until no longer visible, and 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 data were also collected using a CTD. This method only obtains measures of chlorophyll a and is a measure of fluorescence (FL) and appears in the Tables as such.

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

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

TRAWL SURVEYS

Summer Shrimp/Groundfish Survey

The sampling strategy and a description of the statistical rationale for the sampling design as described by Nichols in the 1982 SEAMAP Atlas (Stuntz et al. 1985) have 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 10 through 21 (Figure 2). Trawl stations sampled by NMFS, Alabama, Mississippi and Louisiana are made with a standard SEAMAP 40-ft net, and Texas sampled with a 20-ft net. Depth strata consisted of 1 fm intervals from 5 to 20 fm, a 2 fm interval from 20 to 22 fm, a 3 fm interval from 22 to 25 fm, 5 fm intervals from 25 to 50 fm and a 10 fm interval from 50 to 60 fm. Trawls were towed perpendicularly to the depth contours and covered the entire depth stratum on each station. Single tows were for a maximum of 55 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 55 minutes. The Texas vessels towed 10 minutes parallel to the depth stratum. The Louisiana samples did not cover a complete depth stratum on several stations because of the distance between depth contours.

All *Litopenaeus setiferus*, *Farfantepenaeus aztecus*, and *Farfantepenaeus duorarum* 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 10 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, although Louisiana measures a minimum of 50 shrimp.

REEF FISH SURVEY

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

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

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

RESULTS

PLANKTON SURVEYS

The SEAMAP Archiving Center received 22,374 identified ichthyoplankton lots in 2003. Most of these samples have been accessioned into the SEAMAP Archiving Center computer systems and the remaining samples are being prepared for accession.

Plankton stations for the Spring Plankton Survey in conjunction with environmental are shown in Figure 3. The plankton stations for the Summer Shrimp/Groundfish Survey are shown in Figure 4. Plankton stations for the Fall Plankton Survey in conjunction with environmental stations are shown in Figure 5, while the plankton stations for the Fall Shrimp/Groundfish Survey are shown in Figure 6.

ENVIRONMENTAL DATA

Environmental data were collected in conjunction with each plankton station for the Spring (Figure 3) and Fall (Figure 5) Plankton Surveys. Environmental data stations for the Summer Shrimp/Groundfish Survey are shown in Figure 7 and the Fall Shrimp/Groundfish Survey in Figure 8. Environmental sampling locations are shown in Figures 7 and 8. 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, stations located outside the shrimp statistical zones are blank. Additional environmental information (Secchi readings, Forel-Ule, cloud cover, etc.) may be obtained from the SEAMAP Information System by contacting the SEAMAP Data Manager.

TRAWL SURVEYS

Summer Shrimp/Groundfish Survey

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

Tables 4a-14a present the biological data, from the 40-ft and 20-ft nets, of the eight most abundant fish, six most abundant invertebrates and squid within NMFS shrimp statistical zones 10 through 21, by depth stratum. Tables 4b-14b list the total catch and environmental data from the 40-ft and 20-ft nets within NMFS statistical zones listed above, by depth stratum.

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

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

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 invertebrates and squid species, taken from Table 3 are displayed in plots of number/hour and

lb/hour in Figures 12-51 computed within a 30 x 30 minute grid. The number in each grid square is the average number/hour or lb/hour from all stations (may be one or more stations) that were sampled within a particular grid. The number for the 30 x 30 minute grid is located in the lower right hand corner of the grid. 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.

Fall Shrimp/Groundfish Survey

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

Biological distributions of the ten most abundant finfish plus red snapper, three main penaeid shrimps, five most abundant invertebrates and squid species, taken from Table 15 are displayed in plots of number/hour and lb/hour in Figures 52 to 91 computed within a 30 x 30 minute grid. The number in each grid square is the average number/hour or lb/hour from all stations (may be one or more stations) that were sampled within a particular grid. The number for the 30 x 30 minute grid is located in the lower right hand corner of the grid. 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.

Tables 16a-27a present the biological data, from the 40-ft and 20-ft nets, of the eight most abundant fish, six most abundant invertebrates and squid species within NMFS shrimp statistical zones 10 through 22, by depth stratum. Tables 16b-27b list the total catch and environmental data from the 40-ft and 20-ft nets within the NMFS statistical zone listed above, by depth stratum.

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

REAL-TIME DATA MANAGEMENT

The SEAMAP Subcommittee agreed it was imperative to the success of the SEAMAP Program to distribute data on a near real-time basis to the fishing industry and others interested in SEAMAP. To distribute near real-time data, NMFS utilized 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 225 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 were conducted during October and November by NMFS personnel. Station data for these observations can be found in Table 2 and station locations are plotted in Figure 11. Video cameras were used at all stations. No fish traps were used during this year's survey. Video tapes from all sources were analyzed using NMFS standardized protocols.

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 Plankton Survey. In 1986, the SEAMAP Subcommittee renewed its commitment for the collection of baseline plankton data. These ichthyoplankton samples are and will continue to be used by researchers studying taxonomy, age and growth, bioenergetics, and other life history aspects, as well as spawning biomass and recruitment. Information on species' relative distributions within the Gulf of Mexico can be analyzed with respect to environmental data to assess population abundance as a function of environmental change.

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

Much use has already been made of SEAMAP data. For example, during the past SEAMAP surveys an area of very low dissolved bottom oxygen was found off Louisiana in the summers of 1982, 1985-2003. The presence of this phenomenon and some of the related conditions and biological effects were reported by Leming and Stuntz (1984) and Hanifen et al. (1995), and during such occurrences, SEAMAP has distributed special environmental bulletins and news releases to management agencies and the shrimp industry. In addition, SEAMAP data were used to assist in the identification of the minimum 1997 reduction in red snapper shrimp trawl bycatch mortality rate that would enable the red snapper fishery to still recover to the 20% spawning potential ratio (SPR) by the year 2019 (Goodyear 1997). This analysis was requested and supported by the Gulf of Mexico Fishery Management Council to address the issue of red snapper bycatch. SEAMAP data were also used by some coastal states to determine the status of shrimp stocks and their movements just as the shrimping seasons were to be opened and SEAMAP data were used to develop a guide to the grouper species of the western North Atlantic Ocean (Grace et al. 1994). The primary purpose of the guide is for species identification with projects that deploy underwater video camera systems.

Since SEAMAP's inception in 1982, the goal of plankton activities in the Gulf of Mexico has been to collect data on the early life stages of fishes and invertebrates that will complement and enhance the fishery-independent data gathered on the adult life-stage (Lyczkowski-Shultz and Brasher 1996). An annual larval index for the Atlantic bluefin tuna is generated each year from the Spring Plankton Survey and is used by the International Commission for the Conservation of Atlantic Bluefin Tunas to estimate stock size (Scott et al. 1993). Larval indices generated from the Summer Shrimp/Groundfish and Fall Plankton Surveys have now become an integral part of the king mackerel assessment in the Gulf (Gledhill and Lyczkowski-Shultz 2000). Larvae from SEAMAP collections have formed the basis for formal descriptions of larval development for fishes such as the snappers, cobia, tripletail, and dolphin (Drass et al. 2000; Ditty and Shaw 1992; Ditty and Shaw 1993; Ditty et al. 1994). Data on distribution and relative abundance of larvae of all Gulf fishes captured during SEAMAP surveys have been summarized by Richards et al. 1984, Kelley et al. 1985, Kelley et al. 1990, and Kelley et al. 1993.

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

The National Marine Fisheries Service was charged with evaluating the effects of the Texas Closure and submitted a report to the GMFMC in December 2002. This report contained the results and an overview of the effect of the 2002 Texas Closure. After review of these data and other information, the GMFMC voted to continue the Texas Closure for 2003.

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: 2006-2010 (ASMFC 2006).

Data requests and inquiries, as well as requests for plankton samples, can be made by contacting Jeff Rester, the SEAMAP Coordinator, Gulf States Marine Fisheries Commission, 2404 Government Street, Ocean Springs, MS 39566-0726; (228) 875-5912 or via e-mail at jrester@gsmfc.org.

Table 1. List of SEAMAP survey activities from 1982 to 2003.

SEAMAP SURVEY ACTIVITIES							
YEAR	SPRING PLANKTON	SUMMER SHRIMP/GROUNDFISH	BUTTERFISH	FALL PLANKTON	FALL SHRIMP/GROUNDFISH	WINTER PLANKTON	REEF FISH
1982	APRIL-MAY	JUNE-JULY	--	--	--	--	--
1983	APRIL-MAY	JUNE-JULY	--	--	--	DECEMBER	--
1984	APRIL-MAY	JUNE-JULY	--	AUGUST	--	DECEMBER	--
1985	--	JUNE-JULY	JULY-AUGUST	SEPTEMBER	SEPTEMBER-DECEMBER	--	--
1986	APRIL-MAY	JUNE-JULY	MAY-JUNE	SEPTEMBER	OCTOBER-DECEMBER	--	--
1987	APRIL-MAY	JUNE-JULY	--	SEPTEMBER	SEPTEMBER-DECEMBER	--	--
1988	MARCH-MAY	JUNE-JULY	--	SEPTEMBER-OCTOBER	OCTOBER-DECEMBER	--	--
1989	APRIL-MAY	JUNE-JULY	--	SEPTEMBER-OCTOBER	OCTOBER-DECEMBER	--	--
1990	APRIL-MAY	JUNE-JULY	--	SEPTEMBER-OCTOBER	OCTOBER-DECEMBER	--	--
1991	APRIL-MAY	JUNE-JULY	--	AUGUST-SEPTEMBER	SEPTEMBER-DECEMBER	--	--
1992	APRIL-MAY	JUNE-JULY	--	AUGUST-OCTOBER	OCTOBER-DECEMBER	--	MAY-JUNE
1993	APRIL-MAY	JUNE-JULY	--	SEPTEMBER-OCTOBER	OCTOBER-DECEMBER	JANUARY-FEBRUARY	MAY-JULY, SEPTEMBER/NOVEMBER
1994	APRIL-MAY	JUNE-JULY	--	SEPTEMBER-OCTOBER	OCTOBER-NOVEMBER	--	MAY-JULY, AUGUST-OCTOBER, DECEMBER
1995	APRIL-JUNE	JUNE-JULY	--	SEPTEMBER	OCTOBER-DECEMBER	--	JANUARY, JUNE-AUGUST, DECEMBER
1996	APRIL-JUNE	JUNE-JULY	--	SEPTEMBER-OCTOBER	OCTOBER-DECEMBER	DECEMBER	JULY, AUGUST, NOVEMBER
1997	APRIL-JUNE	JUNE-JULY	--	SEPTEMBER-OCTOBER	OCTOBER-DECEMBER	--	JUNE, JULY, AUGUST, NOVEMBER
1998	APRIL-JUNE	JUNE-JULY	--	SEPTEMBER-OCTOBER	OCTOBER-NOVEMBER	--	MAY, JULY, AUGUST
1999	APRIL-MAY	JUNE-JULY	--	SEPTEMBER-OCTOBER	OCTOBER-NOVEMBER	--	JANUARY, AUGUST, OCTOBER, DECEMBER
2000	APRIL-MAY	JUNE-JULY	--	SEPTEMBER-OCTOBER	OCTOBER-DECEMBER	--	OCTOBER, NOVEMBER
2001	APRIL-MAY	JUNE-JULY	--	AUGUST-OCTOBER	OCTOBER-DECEMBER	--	MAY, JUNE, OCTOBER
2002	APRIL-MAY	JUNE-JULY	--	AUGUST-OCTOBER	OCTOBER-DECEMBER	--	FEBRUARY-MAY, OCTOBER
2003	MAY	JUNE-JULY	--	AUGUST-OCTOBER	OCTOBER-DECEMBER	--	OCTOBER-NOVEMBER

Table 2. Selected environmental parameters measured during 2003 SEAMAP surveys in the Gulf of Mexico, by individual vessel and survey.
(Gear codes: ST = trawl; PN = bongo; NN = neuston net; BG = bathythermograph (CTD); TV = trap/video; EV = environmental).

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	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
1	5/13/2003	1103	2959.9	8700.1	10	73	35	70	25.9	20.9	19.4	33.8	36.1	36.2	1.012	6.6	7.2	5.8	NN
2	5/13/2003	1721	2930.2	8630.3	9	212	100	200	25.9	19.1	14.6	33.9	36.3	35.9	0.127	6.7	5.3	4.1	NN
3	5/13/2003	2256	2912.9	8559.8	8	188	89	181	25.6	19.0	13.3	35.9	36.3	35.7	0.288	6.7	5.2	3.8	PN
4	5/14/2003	449	2840.1	8530.0	8	181	88	177	26.2	19.0	15.4	36.1	36.3	36.0	0.167	6.5	5.1	4.0	NN
5	5/14/2003	1113	2759.7	8459.1	5	254	100	200	25.8	18.1	14.6	36.3	36.4	35.9	0.167	6.6	4.5	4.2	PN
6	5/14/2003	1515	2730.1	8460.0	5	410	101	205	26.3	19.0	14.3	36.5	36.4	35.9	0.030	6.6	5.3	4.4	NN
7	5/14/2003	2010	2700.5	8459.3		1169	100	201	27.0	18.9	15.2	36.5	36.2	36.0	0.090	6.5	6.2	4.5	PN
8	5/15/2003	40	2630.4	8500.2		1861	100	200	27.2	18.7	14.2	36.6	36.4	35.9	0.110	6.5	4.5	4.4	NN
9	5/15/2003	523	2600.3	8459.5		3368	100	200	28.1	18.0	13.6	36.4	36.4	35.8	0.090	6.3	4.4	4.3	PN
10	5/15/2003	932	2559.6	8430.7		225	100	200	27.8	19.0	14.2	36.4	36.5	35.8	0.090	6.4	4.7	4.3	NN
11	5/15/2003	1356	2600.0	8359.0	4	139	66	136	27.0	19.9	16.5	36.4	36.3	36.2	0.070	6.5	6.6	4.4	PN
12	5/15/2003	1815	2530.3	8359.8	3	140	65	135	27.7	20.5	15.4	36.5	36.3	36.0	0.030	6.5	6.9	4.3	NN
13	5/15/2003	2203	2459.3	8359.7		128	61	124	27.8	20.1	16.0	36.3	36.3	36.1	0.090	6.4	6.3	4.3	PN
14	5/16/2003	111	2430.1	8359.3	2	1861	101	200	27.9	20.2	15.4	36.4	36.7	36.0	0.110	6.4	5.0	4.4	NN
15	5/16/2003	430	2429.3	8331.0		354	100	201	27.9	18.2	11.4	36.3	36.3	35.4	0.070	6.3	4.5	4.0	PN
16	5/16/2003	819	2359.0	8329.5	2	1142	100	201	28.2	21.8	17.4	36.3	36.4	36.3	0.070	6.2	7.1	4.6	PN
17	5/16/2003	1314	2401.3	8359.7		2542	100	200	28.2	25.8	20.0	36.2	36.6	36.7	-0.010	6.2	5.8	5.0	NN
18	5/16/2003	1949	2430.8	8429.4		3442	95	201	28.5	24.8	18.3	36.3	36.7	36.5	0.010	6.3	5.5	5.2	PN
19	5/17/2003	20	2500.2	8429.6		2084	100	201	28.0	19.3	14.5	36.4	36.6	35.9	0.130	6.4	4.6	4.4	PN
20	5/18/2003	1240	2459.2	8459.0		3405	99	200	27.7	20.2	15.1	36.4	36.4	36.0	0.090	6.4	6.2	4.5	PN
21	5/18/2003	1618	2430.8	8459.8		3355	100	201	28.4	25.7	21.0	36.2	36.2	36.8	-0.010	6.4	6.2	5.2	NN
22	5/18/2003	2046	2442.0	8529.7		3433	99	202	28.6	25.9	21.1	36.3	36.3	36.8	0.030	6.3	6.2	5.1	PN
23	5/18/2003	2335	2459.8	8530.1		3358	99	202	28.5	22.3	17.2	36.3	36.6	36.3	0.070	6.3	6.3	4.6	NN
24	5/19/2003	459	2458.5	8559.3		3349	100	203	28.6	26.3	19.6	36.2	36.5	36.7	0.050	6.3	5.9	5.2	PN
25	5/19/2003	927	2529.4	8600.5		3256	100	200	27.7	18.3	12.7	36.5	36.4	35.6	0.070	6.4	4.5	4.3	NN
26	5/19/2003	1232	2530.0	8626.0		3256	100	201	27.7	19.3	14.8	36.4	36.4	35.9	0.050	6.4	4.9	4.5	NN
27	5/19/2003	1715	2600.0	8559.7		3274	101	200	27.9	17.8	13.8	36.3	36.4	35.8	0.030	6.5	4.4	4.4	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	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
28	5/19/2003	2048	2629.9	8559.6		3256	100	201	27.8	19.6	14.0	36.4	36.4	35.8	0.030	6.5	5.4	4.4	NN
29	5/20/2003	34	2659.5	8558.8		3256	100	201	27.7	20.3	15.9	36.5	36.5	36.1	0.030	6.4	5.8	4.5	PN
30	5/20/2003	434	2729.7	8559.8		3256	100	301	27.4	19.2	15.8	35.9	36.4	36.1	0.090	6.4	4.9	4.6	NN
31	5/20/2003	816	2759.2	8559.9		930	100	199	27.1	18.9	15.1	35.0	36.3	36.0	0.230	6.5	5.2	4.3	PN
32	5/20/2003	1143	2829.6	8559.8		346	100	201	27.2	19.6	15.6	34.0	36.4	36.1	0.430	6.5	5.1	4.5	NN
33	5/20/2003	1622	2900.0	8630.5		394	100	202	26.3	19.5	14.9	33.5	36.5	36.0	0.270	6.6	4.6	4.4	NN
34	5/20/2003	1941	2859.7	8659.7		744	102	208	26.9	19.1	16.3	36.3	36.6	36.2	0.150	6.5	5.1	5.0	PN
35	5/20/2003	2316	2829.9	8659.7		875	101	202	28.3	24.2	17.9	36.1	36.8	36.4	0.170	6.3	5.4	4.8	NN
36	5/21/2003	250	2759.5	8700.1		2884	99	201	28.6	26.6	21.6	36.2	36.3	36.9	0.050	6.3	6.1	5.1	PN
37	5/21/2003	608	2730.1	8660.0		3070	100	202	28.5	26.3	22.7	36.2	36.2	36.9	0.030	6.3	6.4	5.2	NN
38	5/21/2003	929	2658.8	8700.2		3070	100	202	28.4	26.6	22.1	36.2	36.3	36.9	0.030	6.3	6.1	5.2	PN
39	5/21/2003	1230	2630.0	8700.3		3051	101	202	28.1	25.7	19.6	36.2	36.6	36.7	0.050	6.3	5.8	5.1	NN
40	5/21/2003	1417	2617.1	8659.9		3144	100	202	28.2	24.2	18.9	36.2	36.7	36.6	0.030	6.3	5.7	5.2	PN
41	5/21/2003	1722	2600.7	8728.8		3200	100	201	28.7	26.9	21.4	36.2	36.3	36.8	-0.030	6.3	6.2	5.2	NN
42	5/21/2003	2031	2600.3	8800.9		3033													PN
43	5/21/2003	2346	2628.7	8800.1		2754			28.9			36.3			0.030	6.3	6.3		NN
44	5/22/2003	327	2660.0	8801.0		2800	99	201	28.8	26.3	24.4	36.3	36.2	36.8	0.030	6.2	6.4	5.4	PN
45	5/22/2003	649	2700.2	8829.8		2512	100	201	28.6	26.1	21.2	36.2	36.2	36.8	0.030	6.3	6.3	5.1	NN
46	5/22/2003	1045	2659.8	8859.7		2307	100	199	28.3	21.2	17.3	36.3	36.6	36.3	0.070	6.3	5.1	4.6	PN
47	5/22/2003	1608	2630.1	8900.0		2921	100	199	28.7	25.3	18.4	36.2	36.7	36.5	0.050	6.2	5.5	5.3	NN
48	5/22/2003	2100	2601.8	8900.7		3111	100	200	29.0	24.9	18.7	36.3	36.8	36.6	-0.010	6.3	5.3	5.2	PN
49	5/23/2003	17	2600.3	8929.8		3423	100	201	27.2	19.0	15.3	36.3	36.4	36.0	0.070	6.5	4.8	4.6	NN
50	5/23/2003	354	2600.4	8959.6		2940	100	200	27.2	17.5	13.7	36.5	36.3	35.8	0.070	6.4	4.4	4.3	PN
51	5/23/2003	743	2629.8	8959.9		2419	100	200	26.9	17.2	13.4	36.3	36.3	35.7	0.110	6.5	4.5	4.4	NN
52	5/23/2003	1144	2700.4	8959.6		2493	98	202	26.8	17.6	13.7	36.4	36.3	35.8	0.170	6.3	4.4	4.5	PN
53	5/23/2003	1542	2700.1	9031.3		1767	100	201	26.8	18.2	14.2	35.8	36.5	35.8	0.510	5.5	4.8	4.3	NN
54	5/23/2003	1926	2700.3	9058.8		1674	100	200	27.0	18.3	14.3	36.4	36.4	35.9	0.010	6.5	4.4	4.6	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	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
55	5/23/2003	2339	2630.2	9059.8		2140	101	201	27.1	17.4	13.7	36.2	36.3	35.8	0.150	6.5	4.8	4.5	NN
56	5/24/2003	405	2600.0	9059.3		2791	101	201	27.1	17.5	14.2	36.4	36.4	35.9	0.090	6.4	4.8	4.1	PN
57	5/24/2003	808	2600.0	9129.6		2195	100	200	27.0	18.1	14.1	36.3	36.4	35.8	0.010	6.4	4.8	4.6	NN
58	5/24/2003	1204	2600.6	9159.5		2233	100	201	27.2	20.3	15.7	36.1	36.3	36.1	0.090	6.4	6.4	4.3	PN
59	5/24/2003	1627	2630.0	9159.8		1861	99	202	27.4	20.0	16.2	36.2	36.3	36.2	-0.010	6.4	6.7	4.3	NN
60	5/24/2003	2239	2700.1	9159.2		1581	100	202	27.7	19.8	15.5	36.2	36.4	36.1	0.290	6.4	5.2	4.3	PN
61	5/25/2003	237	2660.0	9230.1		1470	100	201	27.5	20.0	16.2	36.6	36.3	36.2	0.030	6.4	6.7	4.5	NN
62	5/25/2003	625	2659.7	9300.6		1209	100	201	27.2	18.8	14.2	35.9	36.5	35.8	0.070	6.4	4.2	4.0	PN
63	5/25/2003	1048	2630.0	9300.1		1656	100	200	27.2	19.5	14.9	36.6	36.5	36.0	0.030	6.4	4.3	4.0	NN
64	5/25/2003	1308	2617.9	9300.1		1918	100	200	27.3	19.9	15.1	36.2	36.4	36.0	0.030	6.4	4.3	4.0	PN
65	5/25/2003	1753	2602.1	9329.9		2326	100	200	27.6	21.5	16.6	36.6	36.5	36.2	-0.010	6.3	6.0	4.2	NN
66	5/25/2003	2204	2603.1	9400.2		2344	100	201	27.2	19.3	14.5	35.6	36.5	35.9	0.030	6.5	4.3	4.0	PN
67	5/26/2003	142	2630.0	9359.7		1605	100	200	27.6	19.4	14.6	36.2	36.5	35.9	0.030	6.3	4.3	4.2	NN
68	5/26/2003	632	2660.0	9359.9		1023	99	200	26.5	19.5	14.5	33.3	36.4	35.9	0.090	6.6	4.5	4.0	PN
69	5/26/2003	1014	2659.8	9429.7		1302	100	201	27.0	19.8	14.9	32.6	36.4	36.0	0.390	7.1	4.8	4.0	NN
70	5/26/2003	1415	2659.3	9500.5		1526	100	201	27.0	20.6	16.6	35.8	36.3	36.2	0.310	6.4	6.7	4.2	PN
71	5/26/2003	1837	2630.2	9500.1		1693	100	201	27.1	20.4	15.7	32.9	36.4	36.1	0.090	6.6	6.4	4.1	NN
72	5/26/2003	2237	2601.8	9459.3		2512	100	201	27.4	20.5	13.5	35.4	36.4	35.7	0.070	6.5	4.0	3.9	PN
73	5/27/2003	226	2601.7	9529.9		2419	100	201	27.5	19.7	14.4	34.7	36.4	35.9	0.110	6.5	5.0	4.0	NN
74	5/27/2003	624	2602.5	9601.7		1005	100	202	27.4	20.0	14.8	35.5	36.3	35.9	0.030	6.4	6.2	4.0	PN
75	5/27/2003	1015	2629.8	9559.8		1079	99	201	27.2	20.3	15.6	35.6	36.4	36.1	0.070	6.4	6.3	4.1	NN
76	5/27/2003	1425	2659.7	9600.7		837	100	200	27.3	20.8	16.5	35.4	36.4	36.2	0.010	6.4	6.6	4.1	PN
77	5/27/2003	1828	2729.9	9559.8		222	101	202	27.0	20.5	15.7	35.7	36.3	36.1	0.070	6.5	6.6	4.1	NN
78	5/27/2003	2254	2759.7	9559.5	20	47	23	45	27.7	21.4	20.0	29.4	34.0	36.3	0.610	6.6	5.2	4.9	PN
79	5/28/2003	344	2760.0	9529.9		55	26	52	27.3	20.6	19.8	31.0	34.8	36.2	0.330	6.6	6.3	5.5	NN
80	5/28/2003	905	2759.7	9500.2		84	40	79	26.8	21.1	19.4	31.2	36.2	36.4	0.230	6.6	7.0	5.2	PN
81	5/28/2003	1315	2800.0	9430.1	18	72	34	70	26.4	20.8	19.3	32.4	36.1	36.3	0.170	6.6	6.9	4.8	NN

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	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
82	5/28/2003	1723	2759.7	9359.7		84	40	81	27.0	21.6	18.6	32.5	36.3	36.4	0.150	6.6	7.0	4.2	PN
83	5/28/2003	2100	2759.9	9330.2		97	47	97	26.6	21.3	18.7	33.7	36.3	36.4	0.170	6.6	7.0	4.7	NN
84	5/29/2003	44	2800.0	9259.5	16	109	52	105	26.4	21.3	18.7	34.7	36.2	36.4	0.150	6.5	7.3	4.6	PN
85	5/29/2003	416	2800.4	9230.5	16	108	51	103	26.9	21.1	19.1	35.7	36.2	36.3	0.070	6.5	7.3	5.3	NN
86	5/29/2003	820	2800.4	9159.7	15	120	57	115	26.6	20.3	17.9	34.7	36.1	36.3	0.150	6.6	7.2	4.1	PN
87	5/29/2003	1150	2800.0	9130.5	15	175	79	158	26.6	19.9	16.0	35.5	36.3	36.1	0.150	6.6	5.8	4.1	NN
88	5/29/2003	1618	2800.0	9059.0	14	158	72	150	27.1	20.3	16.5	35.9	36.3	36.1	0.090	6.4	6.8	4.1	PN
89	5/29/2003	2107	2805.0	9030.0	14	149	72	149	27.1	19.5	15.7	36.1	36.1	36.1	0.070	6.6	6.1	4.1	NN
90	5/30/2003	103	2800.0	8959.1		550	100	200	26.9	18.0	14.9	36.2	36.4	36.0	0.130	6.5	4.9	4.7	PN
91	5/30/2003	431	2800.1	8930.3		983	100	200	27.1	18.4	14.4	36.4	36.4	35.9	0.050	6.5	4.6	4.7	NN
92	5/30/2003	815	2800.8	8900.2		1302	99	200	26.9	18.5	15.3	36.4	36.4	36.0	0.090	6.5	4.7	4.8	PN
93	5/30/2003	1139	2800.2	8830.4		2233	100	200	27.1	19.4	15.3	36.4	36.4	36.0	0.130	6.4	4.9	4.6	NN
94	5/30/2003	1444	2800.7	8758.9		2475	100	200	28.0	22.7	17.0		36.4	36.3	0.010	6.3	6.9	4.6	PN
95	5/30/2003	1837	2830.2	8759.9		2344	100	201	27.4	18.9	12.5	36.5	36.5	35.6	0.010	6.4	4.8	4.4	NN
96	5/30/2003	2239	2900.2	8800.8	11	1395	100	201	26.7	17.7	14.3	34.2	36.4	35.9	0.310	6.6	4.6	4.6	PN
97	5/31/2003	240	2930.0	8800.3	11	45	21	42	26.5	23.3	20.4	25.6	36.1	36.2	5.200	7.0	6.4	5.9	NN
98	5/31/2003	656	2904.9	8758.8		1116	250	501	26.4	12.8	8.3	34.4	35.6	35.0		6.5	4.2	4.0	PN

Table 2. Selected environmental parameters (continued)

TOMMY MUNRO, 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	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
17001	5/13/2003	1000	2601.0	8756.9		3111	100	200	28.5	26.2	23.2	36.2	36.2	36.9		8.3			PN
17002	5/13/2003	1300	2556.7	8803.7		3111	100	200	28.9	27.0	22.4	36.2	36.3	36.9		8.4			PN
17003	5/13/2003	1600	2557.9	8825.3		3020	100	199	29.3	26.0	19.9	36.2	36.5	36.7		8.6			PN
17004	5/13/2003	1930	2548.4	8841.9		3294	100	193	27.9	20.5	13.0	36.5	36.3	35.6		8.8			PN
17005	5/14/2003	810	2554.5	8856.4		3294	100	182	26.8	17.4	13.4	36.4	36.3	35.7		8.8			PN
17006	5/14/2003	2000	2554.4	8838.2		3111	100	202	28.6	23.3	16.7	36.2	36.8	36.2		8.7			PN
17007	5/15/2003	800	2600.4	8759.8		3020	100	202	28.4	26.2	22.1	36.2	36.1	36.9		8.4			PN
17008	5/15/2003	2100	2538.5	8852.6		3294	100	202	27.3	19.1	14.6	36.3	36.5	35.9		9			PN
17009	5/16/2003	1015	2541.0	8903.2		3294	100	202	26.9	19.0	14.4	36.2	36.5	35.9		8.8			PN
17010	5/16/2003	1720	2541.6	8847.8		3294	100	200	27.8	20.9	15.5	36.4	36.5	36.0		8.8			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	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
1	6/11/2003	26	3000.4	8829.2	11	48	13	23	28.7	20.2	20.1	26.5	35.7	35.7	12.980	6.9	4.4	4.5	PN
2	6/11/2003	411	2959.8	8757.0	10	44	11	22	27.5	22.5	20.5	31.1	34.4	35.5	11.340	7.1	5.4	4.6	PN
3	6/11/2003	807	2930.6	8802.9	11	78	24	40	26.9	24.6	20.2	36.0	36.4	36.2	7.566	6.1	6.4	3.4	PN
4	6/11/2003	1108	2915.6	8759.7	10	421	100	200	28.4	17.7	13.4	25.3	36.3	35.7	45.750	6.0	4.4	4.3	PN
5	6/11/2003	1329	2921.4	8802.3	11	92	42	83	28.8	21.3	18.5	23.5	36.2	36.3	4.118	7.0	6.1	4.3	ST
6	6/17/2003	235	2626.7	9629.4	21	74	38	74	28.2	23.1	19.6	36.5	36.5	35.8	0.881	6.4	7.0	4.1	ST
7	6/17/2003	352	2625.4	9632.0	21	65													ST
8	6/17/2003	717	2612.6	9622.4	21	90	40	80	28.3	21.5	19.2	36.5	36.5	36.4	1.182	6.4	7.1	4.3	ST
9	6/17/2003	1002	2604.6	9623.3	21	99	61	99	25.3	20.5	18.4	36.5	36.5	36.4	1.129	7.3	5.8	4.0	ST
10	6/17/2003	1149	2602.4	9630.2	21	113	31	61	28.4	23.0	20.2	36.5	36.5	36.5	1.111	6.3	7.0	4.9	PN
11	6/17/2003	1541	2600.2	9659.5	21	50	13	25	27.8	26.7	21.8	36.5	36.5	36.5	0.882	6.4	6.6	5.8	PN
12	6/17/2003	1710	2601.3	9707.0	21	17	8	17	25.5	24.6	22.7	36.3	36.3	36.4	5.470	6.8	6.2	6.0	ST
13	6/17/2003	1947	2609.0	9655.8	21	33	16	31	27.8	22.5	21.6	36.5	36.5	36.4	81.840	6.5	6.8	6.6	ST
14	6/18/2003	130	2602.5	9701.8	21	24	10	21	26.6	24.5	22.4	36.3	36.3	36.4	75.340	6.8	6.7	6.0	ST
15	6/18/2003	347	2609.3	9702.3	21	23	11	20	26.3	22.9	22.1	36.4	36.4	36.4	2.440	6.8	6.5	6.3	ST
16	6/18/2003	654	2630.0	9700.0	21	63	17	34	27.5	36.5	36.4	36.4	36.5	36.4	1.600	6.5	6.5	6.1	PN
17	6/18/2003	1131	2630.3	9631.3	21	147	41	82	28.1	23.4	19.6	36.1	36.5	36.4	0.630	6.4	7.1	4.3	PN
18	6/18/2003	1252	2630.1	9626.8		91	45	90	28.2	23.2	19.4	36.3	36.5	36.4	84.690	6.4	6.8	4.4	ST
19	6/18/2003	1550	2632.2	9635.6	21	73	33	67	28.3	23.4	19.9	36.5	36.5	36.4	0.960	6.3	6.9	4.9	ST
20	6/18/2003	1708	2632.6	9633.1	21	82													ST
21	6/18/2003	1833	2632.5	9630.4	21	91	45	91	28.8	23.2	19.3	36.2	36.5	36.4	84.060	6.3	6.7	4.2	ST
22	6/18/2003	2125	2634.8	9640.9	21	64	33	64	28.3	24.1	20.3	36.5	36.5	36.4	0.650	6.4	7.2	5.3	ST
23	6/18/2003	2243	2635.2	9643.8	21	58													ST
24	6/19/2003	6	2639.6	9648.3	21	55	24	48	28.5	26.4	20.6	36.5	36.5	36.3	0.920	6.3	6.8	5.9	ST
25	6/19/2003	300	2646.8	9651.5	21	55	27	55	28.7	24.4	20.7	36.3	36.5	36.4	1.060	6.3	6.9	6.2	ST
26	6/19/2003	420	2646.4	9654.4	21	48													ST
27	6/19/2003	731	2643.1	9717.5	21	15	7	15	27.1	27.1	26.5	35.9	35.9	35.8	1.210	6.6	6.6	6.8	ST

Table 2. Selected environmental parameters (continued)

OREGON II, SUMMER SHRIMP/GROUNDFISH SURVEY

STA#	DATE MM/DD/YY	TIME	POSITION LAT	POSITION LONG	STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M) MID	SAMPLE DEPTHS (M) MAX	TEMPERATURE, C SUR	TEMPERATURE, C MID	TEMPERATURE, C MAX	SALINITY, PPT SUR	SALINITY, PPT MID	SALINITY, PPT MAX	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
28	6/19/2003	904	2637.2	9715.3	21	14	7	14	26.7	26.7	25.5	35.9	35.9	35.7	83.140	6.6	6.7	7.1	ST
29	6/19/2003	1022	2634.5	9711.4	21	18	9	18	26.2	25.3	23.3	36.0	36.0	35.8	1.680	6.6	6.7	6.6	ST
30	6/19/2003	1143	2633.2	9712.5	21	17	8	16	26.0	35.9	23.8	35.8	35.9	35.8	1.970	6.6	6.6	6.7	ST
31	6/19/2003	1319	2639.3	9707.9	21	26	12	23	26.3	24.3	21.7	36.3	36.2	36.1	1.510	6.5	5.8	6.1	ST
32	6/19/2003	1502	2640.4	9653.5	21	46													ST
33	6/19/2003	1822	2655.4	9649.2	21	64	32	64	28.7	22.9	20.2	36.3	36.3	36.4	0.330	6.3	7.0	5.7	ST
34	6/19/2003	1940	2654.8	9646.6	21	70													ST
35	6/19/2003	2214	2659.9	9630.1	21	245	66	134	28.7	20.7	17.3	36.6	36.2	36.3	0.410	6.4	6.8	4.0	PN
36	6/20/2003	138	2657.9	9642.1	21	84	42	84	28.6	22.0	18.7	36.4	36.3	36.4	0.860	6.4	6.9	4.3	ST
37	6/20/2003	433	2658.7	9649.3	21	64	29	57	28.6	24.5	20.7	36.3	36.5	36.4	0.840	6.3	6.9	6.3	ST
38	6/20/2003	550	2658.6	9652.1	21	57													ST
39	6/20/2003	718	2655.0	9657.5	21	45	23	45	28.5	24.9	21.7	36.3	36.5	36.4	0.670	6.3	7.2	7.0	ST
40	6/20/2003	836	2653.2	9659.4	21	42													ST
41	6/20/2003	1110	2701.9	9715.8	20	22	10	20	27.5	26.0	23.4	35.8	35.9	36.1	1.990	6.5	6.3	7.3	ST
42	6/20/2003	1240	2702.3	9716.9	20	20	9	20	27.4	26.0	23.4	35.9	35.9	36.1	1.700	6.5	6.4	7.2	ST
43	6/20/2003	1447	2712.0	9720.8	20	12	7	12	29.1	27.5	27.1	34.7	35.8	35.9	1.880	6.3	6.4	6.5	ST
44	6/20/2003	1628	2714.3	9713.8	20	22	11	22	28.8	27.1	23.2	35.1	36.3	36.2	83.960	6.3	6.5	5.8	ST
45	6/20/2003	1725	2714.5	9712.0	20	26	12	26	26.6	25.9	22.0	36.1	36.1	36.3	0.670	6.6	6.7	6.5	ST
46	6/20/2003	1916	2714.6	9706.1	20	30	15	30	26.7	26.0	22.2	36.0	36.2	36.3	0.860	6.6	6.7	6.8	ST
47	6/20/2003	2031	2711.7	9705.1	20	31	16	31	27.9	26.5	22.2	36.4	36.3	36.4	0.670	6.4	6.6	7.0	ST
48	6/21/2003	129	2658.4	9721.8	21	11	5	11	29.7	29.7	29.8	34.9	34.9	35.1	3.127	6.4	6.4	6.4	ST
49	6/21/2003	540	2719.9	9658.9	20	35	17	34	28.4	27.5	23.1	36.5	36.5	36.4	0.684	6.3	6.5	7.0	ST
50	6/21/2003	736	2724.9	9657.7	20	33	16	32	28.6	27.3	23.6	36.4	36.4	36.3	85.180	6.3	6.5	6.8	ST
51	6/21/2003	920	2729.6	9659.9	20	28	14	27	27.7	27.6	23.5	36.5	36.4	36.3	84.780	6.4	6.5	6.5	ST
52	6/21/2003	1147	2730.4	9659.7	20	28	13	27	27.6	27.3	23.7	36.4	36.4	36.3	0.864	6.4	6.5	6.6	ST
53	6/21/2003	1405	2734.5	9650.3	20	34	16	32	28.2	28.2	23.1	36.5	36.5	36.2	0.814	6.3	6.4	7.1	ST
54	6/21/2003	1521	2736.2	9647.0	20	37	17	35	28.3	27.9	22.1	36.2	36.2	36.3	0.482	6.3	6.4	7.3	ST

Table 2. Selected environmental parameters (continued)

OREGON II, SUMMER SHRIMP/GOUNDFISH 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	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
55	6/21/2003	1824	2740.6	9701.1	20	20	10	20	28.9	28.5	24.9	34.6	35.6	33.6	1.383	6.4	6.4	6.5	ST
56	6/21/2003	1954	2747.6	9701.8	20	13	6	13	30.5	29.0	28.3	33.8	34.5	35.0	3.503	6.4	6.5	7.0	ST
57	6/22/2003	134	2742.1	9707.5	20	12	5	9	30.3	30.3	29.5	33.9	33.9	34.1	4.300	6.4	6.4	6.7	ST
58	6/22/2003	416	2737.1	9653.1	20	29	14	27	28.7	27.7	24.5	36.5	36.5	36.2	0.935	6.3	6.4	6.9	ST
59	6/22/2003	650	2742.6	9641.0	20	37	18	36	28.6	27.7	21.9	36.2	36.3	36.3	86.140	6.3	6.7	7.7	ST
60	6/22/2003	1011	2749.9	9644.2	20	26	13	25	28.8	28.8	24.0	35.0	35.1	36.1	85.410	6.3	6.5	5.9	ST
61	6/22/2003	1218	2744.9	9635.6	20	41	20	40	28.5	27.1	21.6	36.2	36.4	36.3	86.370	6.3	6.7	7.3	ST
62	6/22/2003	1525	2730.1	9629.9	20	135	37	72	28.7	24.5	19.4	36.5	36.5	36.4	0.160	6.3	7.2	4.7	PN
63	6/22/2003	1958	2758.6	9650.1	20	14	7	14	29.7	29.4	29.4	33.4	33.5	34.1	81.810	5.8	6.6	6.7	ST
64	6/22/2003	2255	2759.9	9630.5	20	48	13	24	29.3	28.9	24.5	34.3	35.9	35.6	1.580	6.0	5.9	6.3	PN
65	6/23/2003	129	2758.0	9637.1	19	24	10	21	29.3	28.0	26.4	35.5	35.7	36.2	1.350	6.3	6.3	6.3	ST
66	6/25/2003	1753	2812.2	9635.4	19	12	6	12	30.3	30.2	30.1	33.1	33.1	33.2	22.960	6.0	5.9	5.8	ST
67	6/25/2003	2123	2825.0	9614.7	19	13	5	10	30.8	30.7	29.7	32.8	32.8	33.0	12.010	6.4	6.3	6.1	ST
68	6/26/2003	130	2807.6	9634.9	19	16	6	13	29.7	39.7	29.6	33.9	33.9	33.9	2.640	6.3	6.4	6.4	ST
69	6/26/2003	334	2805.5	9645.0	19	12	5	9	30.2	30.2	30.2	33.5	33.5	33.5	5.120	6.3	6.3	6.3	ST
70	6/26/2003	503	2758.8	9647.7	20	16	8	13	29.9	29.9	29.2	33.8	33.8	34.6	1.860	6.3	6.2	6.3	ST
71	6/26/2003	800	2757.0	9628.3	20	31	15	30	29.1	28.9	22.4	35.8	36.2	36.3	0.940	6.3	6.3	7.1	ST
72	6/26/2003	942	2801.7	9625.9	19	28	13	25	29.6	29.5	25.1	33.8	33.8	35.3	1.310	6.2	6.4	5.8	ST
73	6/26/2003	1326	2759.8	9600.1	20	84	22	43	28.8	26.7	20.7	36.1	36.1	36.4	0.820	6.3	6.6	6.4	PN
74	6/26/2003	1554	2809.5	9551.5	19	35	15	33	29.0	27.4	21.8	34.7	35.5	36.2	0.780	6.2	5.7	6.1	ST
75	6/26/2003	1932	2829.7	9559.9	19	27	7	14	30.3	29.8	29.1	32.7	32.9	33.6	4.020	6.3	5.8	3.9	PN
76	6/27/2003	133	2811.4	9614.3	19	24	11	22	29.9	29.4	24.4	33.8	34.6	35.7	1.060	6.3	6.3	5.8	ST
77	6/27/2003	426	2803.3	9619.6	19	29	12	26	29.8	29.2	24.1	33.9	34.5	35.9	1.430	6.3	6.4	6.2	ST
78	6/27/2003	550	2802.8	9615.1	19	33	16	33	29.6	28.8	21.8	34.0	36.2	36.3	1.250	6.3	6.3	6.3	ST
79	6/27/2003	759	2804.5	9603.0	19	37	18	36	29.3	28.0	21.2	34.8	35.7	36.3	1.190	6.0	5.8	5.7	ST
80	6/27/2003	1033	2809.3	9548.3	19	40	20	40	29.1	24.4	21.2	34.4	36.1	36.3	1.370	6.3	7.0	6.2	ST
81	6/28/2003	1	2834.7	9540.0	19	16	7	14	29.8	29.8	27.4	31.9	32.3	33.4	7.500	6.3	5.8	4.9	ST

Table 2. Selected environmental parameters (continued)

OREGON II, SUMMER SHRIMP/GOUNDFISH 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	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
82	6/28/2003	242	2829.0	9529.7	19	48	13	24	29.5	28.3	24.9	32.0	34.7	35.5	2.420	6.3	6.5	6.5	PN
83	6/28/2003	454	2821.6	9526.4	19	31	15	28	29.1	27.8	23.3	33.2	34.3	35.5	1.700	6.3	6.5	6.7	ST
84	6/28/2003	1010	2747.0	9540.5	19	84	42	84	29.2	23.5	21.0	35.9	36.3	36.4	85.650	6.2	7.4	6.6	ST
85	6/28/2003	1347	2800.4	9530.0	19	100	27	53	28.9	28.2	20.6	36.3	36.3	36.3	0.980	6.3	6.5	5.9	PN
86	6/28/2003	1602	2812.2	9528.1	19	40	19	39	29.1	25.5	21.0	35.0	36.0	36.3	0.530	6.2	6.7	6.5	ST
87	6/28/2003	2036	2754.6	9514.5	19	92	46	92	29.5	22.5	19.4	36.2	36.2	36.4	0.450	6.2	6.8	5.0	ST
88	6/29/2003	36	2804.3	9459.9	18	63	31	60	29.9	26.8	20.3	34.3	36.4	36.2	0.960	6.3	6.9	4.9	ST
89	6/29/2003	528	2830.1	9500.2	19	61	17	33	29.1	28.8	20.3	33.7	36.2	35.9	1.080	6.3	6.3	5.4	PN
90	6/29/2003	929	2847.5	9529.3	19	11	6	11	29.9	29.9	29.9	29.5	29.6	29.6	7.110	6.2	6.3	6.2	ST
91	6/29/2003	1219	2833.7	9531.2	19	22	11	22	29.1	28.9	26.0	32.0	33.2	34.5	1.950	6.0	6.2	5.6	ST
92	6/29/2003	1457	2828.8	9519.9	19	31	16	29	29.1	26.6	21.5	31.1	34.2	35.7	0.800	6.2	6.2	5.7	ST
93	7/3/2003	131	2858.6	9431.3	18	35	10	18	29.7	29.5	27.9	30.1	30.6	32.4	4.033	6.1	6.2	4.9	PN
94	7/3/2003	509	2840.3	9445.6	18	27	15	27	29.2	25.1	22.8	31.1	33.9	34.6	2.796	6.3	5.8	4.6	ST
95	7/3/2003	854	2850.7	9505.1	19	20	9	18	29.8	29.5	26.4	25.9	30.8	32.3	7.630	6.0	5.4	1.8	ST
96	7/3/2003	1009	2853.0	9506.5	19	19													ST
97	7/3/2003	1245	2859.8	9500.5	19	30	9	15	29.7	29.4	28.9	23.0	30.3	30.8	12.436	6.0	5.9	4.3	PN
98	7/3/2003	1423	2859.4	9511.4	19	12	7	12	30.1	29.7	29.1	21.3	27.4	30.5	13.395	6.0	5.7	2.9	ST
99	7/3/2003	1616	2854.1	9507.2	19	18	10	18	29.7	29.5	26.2	27.7	31.1	32.5	7.749	6.1	5.6	1.6	ST
100	7/3/2003	2025	2844.0	9436.0	18	27	14	27	29.4	27.5	21.7	30.4	32.5	34.9	2.520	6.0	4.5	4.7	ST
101	7/3/2003	2152	2839.3	9437.9	18	31	16	31	29.2	23.6	20.8	30.3	34.6	35.4	3.810	6.4	5.4	4.2	ST
102	7/4/2003	44	2840.0	9452.7	18	29	14	29	29.4	23.5	22.2	29.8	33.8	35.4	5.450	6.2	3.9	3.6	ST
103	7/4/2003	426	2830.6	9432.9	18	66	18	33	29.3	24.3	20.3	29.9	34.3	35.9	4.410	6.3	5.9	5.2	PN
104	7/4/2003	909	2806.9	9456.7	18	55	26	51	28.8	29.0	20.9	32.7	36.3	36.2	1.430	6.3	6.3	6.0	ST
105	7/4/2003	1258	2813.5	9514.0	19	46	23	44	28.9	27.5	21.4	34.8	36.1	36.3	1.430	6.2	6.5	6.4	ST
106	7/4/2003	1416	2810.7	9514.3	19	47													ST
107	7/4/2003	1534	2808.4	9513.6	19	50													ST
108	7/4/2003	1929	2828.5	9504.3	19	35													ST

Table 2. Selected environmental parameters (continued)

OREGON II, SUMMER SHRIMP/GOUNDFISH 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	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
109	7/5/2003	323	2758.6	9441.3	18	83	38	79	29.0	23.7	19.8	33.0	36.2	36.3	1.370	6.4	7.0	4.9	ST
110	7/5/2003	810	2757.8	9416.2	18	93	45	89	29.2	23.7	18.5	36.0	36.5	36.4	0.940	6.2	7.2	4.3	ST
111	7/5/2003	1030	2802.9	9406.1	18	72	34	65	29.2	25.7	20.0	35.7	35.9	36.3	1.007	6.2	6.7	5.3	ST
112	7/5/2003	1524	2829.6	9406.7	18	40	21	40	28.7	28.4	20.4	33.5	36.0	36.0	0.788	6.3	6.4	5.6	ST
113	7/5/2003	1645	2832.2	9407.2	18	38													ST
114	7/5/2003	1951	2849.4	9422.6	18	25	13	22	29.2	29.1	23.6	30.8	30.9	34.4	1.326	6.5	6.5	5.9	ST
115	7/5/2003	2321	2855.4	9408.7	18	20	11	20	29.6	28.8	23.8	29.8	31.1	34.3	4.063	6.5	6.4	4.6	ST
116	7/6/2003	131	2855.3	9408.7	18	20	10	20	29.4	29.1	23.7	29.8	30.8	34.3	3.850	6.4	6.0	4.9	ST
117	7/6/2003	542	2913.8	9404.4	18	16	8	14	29.5	29.3	29.2	29.7	30.1	31.0	7.650	6.5	6.3	5.5	ST
118	7/6/2003	917	2924.3	9423.0	18	14	8	14	29.1	29.2	29.1	23.5	24.1	29.1	9.563	5.6	5.6	5.0	ST
119	7/6/2003	1341	2914.5	9403.6	18	15	7	13	29.3	29.3	29.3	29.4	29.5	29.5	5.732	6.2	6.2	6.2	ST
120	7/6/2003	1912	2911.9	9326.2	17	16	9	16	29.2	28.9	26.7	29.4	30.1	32.4	2.896	6.4	6.3	2.0	ST
121	7/6/2003	2106	2908.9	9332.9	17	19	9	16	29.2	29.0	28.9	31.3	31.3	31.3	1.270	6.4	6.4	6.4	ST
122	7/7/2003	103	2855.3	9314.3	17	25	13	25	29.0	28.5	23.0	30.1	30.7	34.6	9.120	6.3	5.5	4.2	ST
123	7/7/2003	534	2859.2	9342.2	17	20	10	20	29.1	29.1	24.8	31.0	31.0	34.1	1.560	6.4	6.3	5.0	ST
124	7/7/2003	818	2846.4	9348.9	17	25	12	22	28.8	28.9	25.2	32.7	34.1	34.9	0.980	6.4	6.3	6.6	ST
125	7/7/2003	2346	2833.9	9352.6	17	37	17	35	29.5	29.2	24.8	31.2	34.4	36.0	1.560	6.4	6.3	6.8	ST
126	7/8/2003	303	2829.8	9402.1	18	40	20	40	29.2	29.1	21.6	32.5	34.7	35.9	1.100	6.4	6.3	6.5	ST
127	7/8/2003	423	2827.2	9401.6	18	43													ST
128	7/8/2003	514	2825.7	9401.4	18	46													ST
129	7/8/2003	632	2823.3	9400.7	18	52	26	52	29.2	22.1	20.2	31.1	35.0	36.1	1.530	6.3	5.9	4.7	ST
130	7/8/2003	1130	2805.7	9419.6	18	58	29	58	29.0	23.3	20.2	31.9	36.4	36.3	1.560	6.3	7.1	5.5	ST
131	7/8/2003	1430	2801.6	9404.6	18	74	36	72	29.3	27.7	20.0	35.8	36.4	36.3	0.760	6.2	6.8	5.3	ST
132	7/8/2003	1521	2800.6	9404.4	18	83													ST
133	7/8/2003	1625	2757.4	9404.2	18	94	47	94	29.3	23.7	18.3	36.1	36.4	36.4	0.390	6.1	7.0	4.2	ST
134	7/8/2003	1955	2758.3	9355.3	17	84	42	80	29.4	24.6	19.9	36.1	36.5	36.3	0.240	6.2	7.3	5.5	ST
135	7/8/2003	2347	2807.9	9327.8	17	82	42	82	29.3	22.1	19.2	35.3	36.2	36.4	0.840	6.2	7.2	4.6	ST

Table 2. Selected environmental parameters (continued)

OREGON II, SUMMER SHRIMP/GOUNDFISH 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	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
136	7/9/2003	519	2758.1	9351.4	17	92	45	90	29.3	24.1	18.3	36.0	36.5	36.3	0.710	6.2	7.2	4.1	ST
137	7/9/2003	936	2813.1	9339.4	17	64	31	62	28.7	22.6	20.6	33.5	36.2	36.3	1.310	6.3	7.2	6.3	ST
138	7/9/2003	1059	2815.7	9339.0	17	62													ST
139	7/9/2003	1415	2827.8	9322.6	17	46	22	44	29.2	21.7	20.3	30.3	35.4	35.9	1.470	6.4	6.8	6.0	ST
140	7/9/2003	1535	2825.1	9322.5	17	51													ST
141	7/9/2003	1833	2830.4	9322.1	17	45	23	45	29.5	21.8	20.2	30.2	35.3	36.1	1.000	6.4	7.1	36.0	ST
142	7/9/2003	2159	2837.0	9335.3	17	36	18	36	29.7	28.9	20.8	30.7	33.6	35.6	1.410	6.4	6.4	4.9	ST
143	7/10/2003	125	2836.9	9335.3	17	35	17	34	29.7	29.1	21.5	30.9	33.7	35.4	1.410	6.4	6.3	5.4	ST
144	7/10/2003	559	2841.7	9302.1	17	33	16	31	29.1	28.0	21.4	32.4	33.5	35.6	1.330	6.3	6.6	6.6	ST
145	7/10/2003	929	2851.6	9305.3	17	26	11	23	29.1	27.4	22.7	30.6	32.7	35.0	2.660	6.4	6.2	4.4	ST
146	7/10/2003	1138	2849.3	9306.9	17	27	14	25	29.1	28.5	22.3	31.2	33.7	35.2	1.720	6.3	6.4	4.9	ST
147	7/10/2003	1413	2844.4	9257.0	16	31	15	30	28.9	27.9	22.4	32.4	33.9	35.2	1.020	6.3	6.5	5.9	ST
148	7/10/2003	1838	2907.2	9252.2	16	22	11	20	29.7	29.0	23.5	29.2	30.3	34.5	2.810	6.7	6.1	1.1	ST
149	7/11/2003	1414	2908.1	8944.3	13	20	10	20	28.4	27.8	25.8	18.4	30.1	34.9	76.200	9.4	2.7	2.0	ST
150	7/11/2003	1553	2900.2	8935.8	13	42	21	42	28.8	25.9	21.6	20.2	35.3	36.0	28.560	8.9	5.7	5.5	ST
151	7/11/2003	2112	2859.6	8858.8	11	150	42	82	29.0	21.2	17.0	25.7	36.1	36.2	57.190	7.3	6.1	3.9	PN
152	7/12/2003	210	2918.2	8854.1	11	34	16	32	31.1	27.1	21.0	19.2	32.2	36.0	61.800	10.9	3.1	3.3	ST
153	7/12/2003	535	2917.6	8837.7	11	64	31	61	28.7	22.3	20.1	25.3	35.8	36.3	12.980	7.5	5.1	2.8	ST
154	7/12/2003	658	2915.0	8837.3	11	69													ST
155	7/12/2003	1017	2916.8	8850.5	11	56	27	54	30.9	20.8	18.3	18.2	36.1	36.4	34.350	10.3	3.5	4.1	ST
156	7/12/2003	1421	2930.3	8830.1	11	92	25	51	29.2	20.9	20.3	25.5	36.0	35.2	5.490	6.5	3.4	2.5	PN
157	7/12/2003	1757	2931.2	8803.8	11	45	25	45	29.9	24.6	21.0	28.1	36.1	36.1	4.060	6.5	5.9	4.2	ST
158	7/12/2003	2209	2947.2	8812.1	11	35	17	34	29.7	24.9	20.9	25.5	35.7	36.0	11.620	6.7	4.2	3.5	ST
159	7/13/2003	42	2950.9	8830.2	11	30	14	28	29.9	28.0	20.9	23.1	29.8	35.8	9.350	6.6	3.6	2.5	ST
160	7/13/2003	251	2947.7	8824.5	11	35	17	34	29.1	23.0	21.0	22.0	35.1	36.2	11.790	6.8	2.5	3.8	ST
161	7/13/2003	458	2944.4	8817.2	11	36	16	34	29.4	25.5	21.0	26.6	35.3	36.2	5.960	6.5	5.4	4.0	ST
162	7/13/2003	723	2935.8	8813.1	11	40	19	39	29.1	24.9	21.2	27.0	36.1	36.2	5.060	6.5	6.6	4.0	ST

Table 2. Selected environmental parameters (continued)

OREGON II, SUMMER SHRIMP/GOUNDFISH 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	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
167	7/13/2003	2004	2919.1	8822.4	11	64	31	60	29.0	23.0	20.3	25.0	35.7	36.2	12.420	6.9	4.8	3.3	ST
168	7/13/2003	2340	2916.2	8821.7	11	85	43	85	28.2	22.2	20.1	29.1	36.1	36.2	10.350	6.4	6.6	3.2	ST
169	7/14/2003	122	2916.2	8821.6	11	83	34	68	28.0	22.4	20.3	29.8	35.9	36.2	6.250	6.3	5.6	3.1	ST
170	7/14/2003	530	2926.7	8847.4	11	20	9	18	28.8	27.7	24.0	22.1	29.7	35.1	10.540	7.2	4.5	3.1	ST
171	7/14/2003	1023	2905.1	8854.2	11	76	34	64	28.7	21.4	18.8	21.4	36.3	36.3	37.440	5.8	6.7	3.5	ST
172	7/15/2003	58	3002.1	8819.1	11	22	10	20	29.1	28.4	23.3	23.7	28.4	35.1	9.590	6.5	3.4	1.7	ST
173	7/15/2003	142	3001.5	8820.8	11	26	14	26	29.0	28.1	22.5	23.1	29.6	35.4	9.800	6.6	4.7	2.0	ST
174	7/15/2003	957	2914.0	8817.2	11	92	47	90	28.2	21.5	17.6	34.8	36.2	36.3	2.930	6.2	6.1	4.2	ST
175	7/15/2003	1147	2915.8	8821.5	11	87	41	79	28.1	22.7	18.7	34.5	36.1	36.5	3.300	6.2	5.5	4.1	ST
176	7/16/2003	12	2855.6	8951.8	13	40	19	38	29.1	28.0	21.7	25.4	35.8	36.0	71.400	7.3	6.3	4.5	ST
177	7/16/2003	303	2854.4	8943.1	13	55	27	54	28.8	27.7	20.3	19.8	35.5	36.2	30.410	6.9	6.3	4.0	ST
178	7/16/2003	604	2902.2	8945.6	13	35	15	32	28.7	27.7	22.3	17.4	33.9	35.9	24.580	7.3	5.7	2.9	ST
179	7/16/2003	756	2908.2	8944.8	13	20	8	18	28.7	28.0	26.1	18.4	20.6	34.6	30.670	7.4	6.1	0.6	ST
180	7/16/2003	955	2911.4	8950.3	13	15	8	15	28.5	28.4	26.5	18.7	20.4	33.8	21.120	7.0	6.8	0.3	ST
181	7/16/2003	1306	2900.0	9001.7	14	43	12	20	28.3	28.0	25.1	28.1	32.4	35.4	20.280	6.8	6.3	4.6	ST
182	7/16/2003	1526	2857.8	9016.0	14	17	8	16	28.5	27.8	26.2	23.9	29.1	33.7	41.950	6.8	5.7	0.2	ST
183	7/16/2003	1750	2847.6	9005.1	14	37	18	36	28.4	24.2	21.2	26.2	35.7	36.1	12.610	6.8	5.5	4.7	ST
184	7/16/2003	2033	2843.6	9016.1	14	28	14	26	29.8	27.6	22.8	26.0	32.0	35.7	16.300	7.0	4.7	2.8	ST
185	7/16/2003	2218	2844.4	9020.6	14	25	12	23	30.4	28.1	23.9	25.2	27.4	35.4	12.610	7.1	5.9	0.8	ST
186	7/17/2003	138	2841.1	8956.0	13	65	29	58	28.1	23.4	20.4	32.2	36.0	36.3	3.630	6.5	7.1	6.0	ST

Table 2. Selected environmental parameters (continued)

CARETTA, SUMMER SHRIMP/GOUNDFISH 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	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
1	7/24/2003	800	2903.8	8958.2	13	20													ST
2	7/25/2003	152	2843.4	9014.4	14	32	16	32	29.2	28.4	22.5	24.2	35.9	35.0		8.4	6.2	4.4	ST
3	7/25/2003	434	2838.8	9022.2	14	27	14	27	28.9	27.9	22.6	22.0	33.7	35.8		7.4	5.9	2.8	ST
4	7/25/2003	835	2828.0	9028.2	14	40	20	40	28.7	27.8	21.5	20.3	35.0	36.1		5.1	4.5	5.7	ST
5	7/25/2003	2337	2832.5	9056.4	14	29	15	29	29.3	28.6	22.2	29.2	34.7	26.7		6.3	6.7	4.1	ST
6	7/26/2003	214	2831.5	9110.6	15	36	18	36	29.4	27.9	20.8	29.2	34.5	35.5		6.1	4.9	2.9	ST
7	7/26/2003	537	2828.6	9134.6	15	52	26	52	30.0	27.5	20.2	28.4	35.9	27.4		5.6	6.4	5.1	ST
8	7/26/2003	928	2840.0	9146.4	15	36	18	36	29.3	27.8	20.9	25.0	33.2	35.7		7.0	6.0	3.6	ST
9	7/26/2003	2235	2844.2	9154.3	15	32	16	32	29.7	28.5	22.2	29.0	32.2	34.1		6.4	6.2	0.6	ST
10	7/27/2003	114	2849.8	9147.0	15	25	13	25	29.5	28.6	23.6	27.9	29.4	35.6		4.2	4.1	3.8	ST
11	7/27/2003	532	2851.9	9121.3	15	16	8	16	30.3	27.7	28.2	29.8	32.3	32.5		5.2	5.1	4.1	ST
12	7/27/2003	840	2847.6	9102.9	15	30	6	30	30.0	28.6	28.1	29.0	32.4	32.8		6.7	5.4	4.0	ST
13	7/27/2003	2159	2845.9	9105.4	15	32	16	32	29.2	28.4	22.5	24.2	35.3	35.9		8.4	6.2	4.4	ST
14	7/28/2003	111	2845.2	9046.9	14	19	10	19	30.2	27.1	25.5	29.2	34.0	35.3		6.7	5.8	2.3	ST
15	7/28/2003	500	2857.8	9024.1	14	15	8	15	30.1	27.9	25.9	26.5	33.2	35.2		7.0	6.2	2.3	ST

Table 2. Selected environmental parameters (continued)

TOMMY MUNRO, SUMMER SHRIMP/GOUNDFISH 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	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
17001	7/3/2003	854	2919.0	8853.0	11	33	17	33	27.7	25.7	22.6	22.4	34.3	35.9		5.9	4.0	4.1	ST
17002	7/3/2003	1132	2923.0	8850.0	11	25	13	25	27.9	26.9	23.5	24.6	32.4	35.5		8.2	4.9	4.3	ST
17003	7/3/2003	1328	2928.4	8841.3	11	29	15	29	27.6	25.3	22.5	26.4	33.7	36.3		5.7	3.8	4.0	ST
17004	7/3/2003	1539	2928.1	8840.2	11	37	18	34	28.1	25.7	21.8	25.9	33.8	36.3		6.6	4.4	4.5	ST
17005	7/3/2003	1826	2929.3	8835.6	11	46	23	44	28.1	22.8	21.6	24.5	36.2	36.1		7.1	4.7	4.3	ST
17006	7/4/2003	509	2917.3	8855.4	11	31	16	29	27.2	24.7	23.4	18.2	34.4	36.1		8.3	4.2	4.4	ST
17007	7/4/2003	827	2925.5	8829.5	11	55	28	55	27.4	21.5	21.0	26.1	36.2	36.6		6.2	4.0	4.2	ST
17008	7/4/2003	1208	2942.8	8839.2	11	20	11	19	27.6	28.1	25.6	23.2	29.1	34.4		7.7	5.6	3.6	ST
17009	7/4/2003	1409	2952.5	8832.4	11	27	13	26	27.7	27.9	23.0	23.5	30.3	35.9		6.7	5.5	4.3	ST
17010	7/5/2003	43	3000.6	8826.3	11	27	13	25	27.5	27.5	22.9	23.9	30.3	35.8		6.8	5.3	4.0	ST
17011	7/5/2003	328	3006.1	8831.3	11	16	8	14	27.1	28.1	27.6	21.0	27.5	30.5		6.7	5.3	5.1	ST
17012	7/5/2003	545	3010.6	8830.9	11	13	7	11	27.3	27.9	27.7	21.9	24.6	28.7		6.4	5.6	4.5	ST
17013	7/5/2003	922	2954.4	8839.0	11	18	10	18	27.3	28.2	26.6	24.2	30.2	32.8		6.4	5.4	4.6	ST
17014	7/5/2003	2027	3013.5	8848.2	11	6	4	6	26.9	27.3	27.3	18.5	18.5	20.4		6.5	6.5	6.1	ST
17015	7/5/2003	2207	3013.1	8851.2	11	8	4	8	27.3	27.3	27.4	17.4	19.7	21.6		4.1	4.0	3.8	ST
17016	7/6/2003	4	3003.6	8854.9	11	9	3	5	26.7	27.2	27.2	17.4	17.9	18.1		6.1	5.3	4.9	ST
17017	7/6/2003	726	3003.6	8859.6	11	6	3	6	27.0	27.2	27.2	18.3	18.2	18.9		6.1	6.4	5.8	ST
17018	7/6/2003	1010	3002.0	8848.1	11	9	5	8	27.5	27.9	27.9	22.6	24.5	24.9		6.7	6.0	5.9	ST
17019	7/6/2003	1058	3000.3	8847.2	11	11	5	9	27.5	28.0	28.1	21.2	24.3	26.0		7.0	6.0	5.2	ST

Table 2. Selected environmental parameters (continued)

PELICAN, SUMMER SHRIMP/GOUNDFISH 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	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
35001	7/8/2003	1601	2860.0	9029.9	14	11	5	10	28.4	28.2	27.8	21.2	24.1	26.4	4.120	8.7	7.9	4.2	PN
35002	7/8/2003	2139	2853.0	9013.7	14	22	11	22	28.1	28.4	24.8	26.7	32.6	35.2	13.870	9.8	6.5	2.5	ST
35003	7/9/2003	2	2851.3	9014.2	14	24	11	23	28.4	28.4	24.4	27.7	32.8	35.3	7.527	10.1	6.5	3.2	ST
35004	7/9/2003	233	2859.6	9006.4	14	21	11	21	28.5	27.9	25.8	21.4	30.5	34.5	12.909	10.1	4.5	0.7	ST
35005	7/9/2003	359	2902.4	9003.8	14	18	9	18	28.2	27.9	26.0	19.2	25.8	34.3	4.202	10.7	8.6	0.8	ST
35006	7/9/2003	451	2904.5	9003.2	14	16	7	16	28.0	27.8	26.6	19.1	23.3	33.4	10.258	9.9	8.4	0.8	ST
35007	7/9/2003	711	2900.2	8959.9	13	25	12	25	28.4	28.2	24.3	16.7	31.5	35.6	19.828	10.0	6.2	2.3	PN
35008	7/9/2003	839	2904.1	9003.3	14	16	7	16	28.2	27.7	26.2	19.7	23.4	34.1	13.012	10.3	7.4	0.4	ST
35009	7/9/2003	946	2901.9	9004.0	14	18	8	18	28.5	28.0	25.9	18.8	25.6	34.3	25.976	10.6	8.4	0.8	ST
35010	7/9/2003	1111	2858.1	9007.2	14	22	11	20	28.5	27.9	25.9	23.0	30.8	34.3	12.987	10.0	5.5	0.7	ST
35011	7/9/2003	1238	2853.2	9013.6	14	23	12	23	28.7	28.4	25.0	27.6	32.2	35.0	3.824	10.0	6.8	1.9	ST
35012	7/9/2003	1337	2851.1	9014.3	14	24	12	24	28.5	28.3	24.9	27.4	32.9	35.0	2.924	10.1	6.6	2.4	ST
35013	7/9/2003	1725	2911.2	8954.6	13	13	6	13	29.7	28.2	26.5	15.0	21.8	34.1	10.337	10.1	0.2	0.6	ST
35014	7/9/2003	1828	2912.5	8952.5	13	13	6	12	29.6	28.2	26.8	14.4	21.6	33.4	20.493	10.1	0.1	0.6	ST
35015	7/9/2003	2058	2911.5	8953.6	13	13	7	13	29.7	28.0	26.4	13.1	22.2	34.3	12.771	10.5	9.4	0.2	ST
35016	7/9/2003	2204	2912.3	8952.2	13	13	6	12	29.1	28.2	26.5	12.7	21.8	34.1	11.475	10.8	0.6	0.2	ST
35017	7/10/2003	4	2911.3	8938.9	13	11	6	11	28.9	28.1	26.9	18.9	22.1	33.4	11.738	10.5	9.4	0.5	ST
35018	7/10/2003	106	2910.2	8940.0	13	13	7	13	29.0	27.7	26.6	19.4	22.8	33.9	4.681	10.5	8.1	1.2	ST
35019	7/10/2003	717	2900.0	8930.1	13	16	8	15	28.4	27.6	26.5	17.7	29.5	34.2	13.425	10.4	1.4	4.5	PN
35020	7/10/2003	941	2910.1	8939.3	13	15	6	13	28.8	28.4	26.9	19.5	22.3	33.4	5.180	10.0	9.2	1.1	ST
35021	7/10/2003	1058	2911.5	8939.0	13	11	6	11	29.1	28.1	27.2	14.6	22.0	32.6	13.537	10.3	9.0	1.5	ST
35022	7/10/2003	1745	2836.7	9031.4	14	24	12	24	29.1	26.9	24.4	30.0	32.7	35.0	0.311	7.2	3.9	3.0	ST
35023	7/10/2003	1841	2829.9	9030.0	14	39	20	39	29.1	27.0	21.5	29.8	34.2	35.9	0.565	7.7	6.7	5.0	PN
35024	7/10/2003	2108	2837.9	9031.5	14	24	11	24	29.0	27.3	24.6	28.1	32.4	35.0	0.995	8.0	5.1	2.6	ST
35025	7/10/2003	2224	2833.8	9037.6	14	28	14	28	28.9	27.8	24.5	30.1	32.0	35.0	0.353	7.5	7.0	3.4	ST
35026	7/11/2003	116	2831.3	9059.5	14	31	15	31	28.2	28.0	22.7	33.0	34.4	35.7	0.142	7.0	6.9	1.8	ST
35027	7/11/2003	654	2833.3	9037.4	14	28	15	28	28.6	26.2	23.3	29.8	33.8	35.5	0.470	7.3	4.5	3.3	ST

Table 2. Selected environmental parameters (continued)

PELICAN, SUMMER SHRIMP/GOUNDFISH 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	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
35028	7/11/2003	940	2831.5	9059.6	14	30	15	30	28.1	28.2	22.8	33.0	34.4	35.6	0.053	7.1	7.1	2.1	ST
35029	7/11/2003	1025	2830.0	9059.9	14	35	16	34	28.9	28.5	22.2	33.9	35.1	35.8	0.122	7.0	7.0	2.0	PN
35030	7/11/2003	1505	2860.0	9130.0	15	11	5	10	29.9	29.5	28.0	27.7	27.7	32.5	0.673	7.4	7.3	5.1	PN
35031	7/11/2003	1832	2900.0	9100.0	15	27	5	7	29.9	29.2	28.7	22.1	24.8	25.9	4.116	8.6	7.7	5.5	PN

Table 2. Selected environmental parameters (continued)

A.E. VERRILL, SUMMER SHRIMP/GOUNDFISH 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	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
23001	6/10/2003	856	3008.2	8803.3	11	16	8	16	28.3	22.8	20.8	20.8	34.2	35.2		7.7	3.4	2.3	ST
23002	6/10/2003	1114	3011.2	8818.1	11	13	7	13	29.0	22.2	20.5	18.5	33.9	35.3		7.2	6.9	1.4	ST
23003	6/10/2003	1220	3009.5	8824.2	11	15	8	15	29.1	21.1	20.5	21.6	35.2	35.5		7.2	7.8	2.7	ST
23004	6/10/2003	1349	3000.9	8822.0	11	26	13	26	28.4	23.1	20.5	26.6	36.2	35.7		7.5	7.2	4.8	ST
23005	6/10/2003	1510	3000.5	8814.4	11	25	13	25	29.6	23.4	20.3	24.8	36.1	35.6		7.6	6.9	4.4	ST
23006	6/10/2003	1650	2954.7	8808.6	11	34	17	34	29.7	22.8	19.2	24.2	36.3			7.5	6.6		ST
23007	6/10/2003	2000	2956.0	8808.1	11	31	17	31	29.9	23.6	19.4	23.6	36.3	36.3		7.7	6.7	4.3	ST
23008	6/10/2003	2054	2958.0	8808.5	11	28	14	28	29.3	21.2	20.1	23.9	35.3	35.7		7.4	6.1	4.4	ST
23009	6/10/2003	2205	3006.0	8807.1	11	20	10	20	28.6	21.1	20.6	16.3	35.2	35.4		8.3	4.9	3.4	ST
23010	7/2/2003	2000	3013.3	8811.2	11	11	5	10	28.3	28.2	28.0	25.2	28.0	29.6		6.3	6.3	4.5	ST
23011	7/2/2003	2153	3010.0	8821.3	11	15	7	14	27.1	28.1	27.9	14.3	27.2	29.1		6.9	5.7	4.5	ST

Table 2. Selected environmental parameters (continued)

R.J. KEMP, SUMMER SHRIMP/GOUNDFISH 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	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
31001	6/2/2003	846	2603.0	9705.6	21	19	9	19	26.8	26.8	26.2	36.4	36.4	36.6		6.3	6.1	6.3	ST
31002	6/2/2003	928	2601.2	9708.5	21	7	4	7	26.6	26.7	26.6	36.4	36.0	36.4		6.0	6.1	6.0	ST
31003	6/2/2003	1026	2600.9	9701.4	21	25	12	25	27.4	27.7	27.3	36.4	36.4	36.5		5.9	6.1	6.1	ST
31004	6/2/2003	1112	2604.4	9703.5	21	22	11	22	27.4	27.3	25.9	34.4	36.4	36.3		6.1	6.0	6.3	ST
31005	6/2/2003	1144	2605.8	9702.5	21	22	11	22	27.6	27.4	27.1	34.4	36.4	36.5		5.8	6.1	6.3	ST
31006	6/2/2003	1230	2609.5	9701.5	21	24	12	24	27.4	27.6	27.4	36.6	36.4	36.4		6.1	6.3	6.1	ST
31007	6/2/2003	1300	2610.8	9701.5	21	10	5	10	27.0	26.9	26.8	36.1	36.0	36.1		6.2	6.3	6.2	ST
31008	6/2/2003	1401	2610.3	9709.5	21	10	5	10	27.0	26.9	26.8	36.1	36.0	36.1		6.2	6.3	6.2	ST
31009	6/17/2003	850	2613.2	9707.5	21	15	8	15	21.3	20.6	20.3	35.2	35.3	35.2		6.7	6.8	6.8	ST
31010	6/17/2003	926	2613.6	9705.4	21	19	9	19	21.5	20.1	18.6	35.4	35.1	35.6		6.6	6.6	6.2	ST
31011	6/17/2003	1014	2612.2	9703.4	21	16	8	16	22.1	21.3	18.4	35.1	36.1	35.1		7.1	6.9	6.6	ST
31012	6/17/2003	1052	2613.5	9701.4	21	25	12	25	22.2	20.2	18.3	35.6	35.0	35.2		6.9	7.8	7.1	ST
31013	6/17/2003	1135	2615.2	9702.5	21	21	11	21	22.5	20.7	18.3	35.2	35.1	35.1		6.6	7.3	6.9	ST
31014	6/17/2003	1231	2620.6	9702.5	21	24	12	24	22.4	20.7	18.2	35.3	35.2	35.1		6.7	7.2	6.3	ST
31015	6/17/2003	1312	2621.2	9704.5	21	21	11	21	22.5	21.2	18.5	35.1	35.2	35.2		7.3	6.9	6.5	ST
31016	6/17/2003	1410	2616.6	9709.6	21	15	7	15	22.6	21.1	20.8	35.3	34.9	35.0		6.7	7.1	6.8	ST

Table 2. Selected environmental parameters (continued)

MATAGORDA BAY, SUMMER SHRIMP/GOUNDFISH 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	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
32001	6/2/2003	712	2826.5	9617.5	19	5	2	5	27.4	27.4	26.9	32.5	32.8	33.1		6.2	6.2	5.1	ST
32002	6/2/2003	757	2827.5	9613.5	19	11	6	11	26.5	26.4	24.0	33.3	33.4	35.1		5.8	5.7	4.6	ST
32003	6/2/2003	849	2824.5	9613.5	19	15	8	15	27.4	27.3	22.0	32.9	32.9	36.1		6.0	6.0	3.9	ST
32004	6/2/2003	939	2823.5	9608.5	19	18	9	18	27.6	27.3	21.7	33.2	33.4	36.4		6.1	6.1	4.2	ST
32005	6/2/2003	1048	2819.5	9615.5	19	19	10	19	28.0	26.4	21.3	33.2	32.9	36.7		6.2	5.9	4.3	ST
32006	6/2/2003	1122	2819.5	9617.5	19	18	9	18	27.9	24.6	21.4	33.1	33.5	36.8		6.1	5.0	4.2	ST
32007	6/2/2003	1208	2822.5	9621.5	19	8	4	8	27.9	25.3	24.1	33.3	34.1	35.0		6.0	4.8	4.3	ST
32008	6/2/2003	1250	2823.5	9618.5	19	9	5	9	27.8	27.0	25.2	33.3	33.2	34.5		6.0	6.0	5.4	ST
32009	6/16/2003	738	2818.5	9617.5	19	20	10	20	28.0	28.2	25.2	34.0	35.6	36.7		7.2	7.4	5.9	ST
32010	6/16/2003	815	2816.5	9618.5	19	21	10	21	28.0	28.1	24.4	34.0	35.8	37.0		7.2	7.1	4.9	ST
32011	6/16/2003	858	2814.5	9619.5	19	22	11	22	28.0	28.2	23.9	35.1	35.5	37.1		7.1	7.1	4.6	ST
32012	6/16/2003	939	2815.5	9622.5	19	19	10	19	27.7	28.0	24.7	33.0	32.0	33.7		7.3	7.1	4.5	ST
32013	6/16/2003	1028	2816.5	9623.6	19	17	8	17	28.1	28.1	27.1	31.5	34.4	35.3		7.2	7.0	6.0	ST
32014	6/16/2003	1104	2814.5	9624.5	19	19	9	19	28.3	28.2	27.3	34.6	35.0	35.8		7.2	7.4	6.2	ST
32015	6/16/2003	1151	2816.5	9627.6	19	10	5	10	28.7	28.3	28.3	34.6	34.7	34.7		7.1	7.5	7.5	ST
32016	6/16/2003	1223	2816.5	9630.5	19	8	4	8	28.8	28.1	28.1	33.2	33.8	33.7		7.3	7.3	7.2	ST

Table 2. Selected environmental parameters (continued)

LAGUNA MADRE, SUMMER SHRIMP/GOUNDFISH 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	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
33001	6/4/2003	845	2939.5	9403.8	18	4	2	4	27.0	27.0	27.1	30.8	30.9	30.8		4.8	4.8	4.7	ST
33002	6/4/2003	923	2938.5	9402.3	18	6	3	6	27.1	27.2	27.2	30.9	30.9	30.8		5.1	5.1	5.2	ST
33003	6/4/2003	955	2938.5	9401.8	18	6	3	6	27.1	27.2	27.2	30.8	30.8	30.8		5.2	5.2	5.2	ST
33004	6/4/2003	1247	2934.5	9355.2	17	9	5	9	27.8	27.6	27.5	30.0	30.2	30.8		5.6	5.4	4.7	ST
33005	6/4/2003	1349	2932.5	9355.8	17	12	6	12	27.7	27.7	27.4	30.3	30.6	31.5		6.2	5.8	5.0	ST
33006	6/4/2003	1706	2935.5	9352.3	17	8	4	8	27.8	27.8	27.7	30.6	30.5	30.6		5.4	5.4	5.1	ST
33007	6/4/2003	1804	2933.6	9347.9	17	12	6	12	27.8	27.7	27.4	30.2	30.1	31.6		6.0	6.1	3.9	ST
33008	6/4/2003	1848	2933.5	9345.1	17	12	6	12	27.8	27.8	27.5	29.3	30.2	30.3		6.1	6.1	5.3	ST
33009	6/18/2003	820	2938.5	9346.8	17	9	4	9	28.3	28.5	28.6	21.9	22.0	23.7		6.0	6.1	6.2	ST
33010	6/18/2003	906	2940.5	9345.1	17	8	4	8	28.7	28.6	28.8	21.3	21.0	21.5		6.1	6.3	5.2	ST
33011	6/18/2003	1007	2940.5	9341.9	17	9	4	9	28.8	28.5	28.8	20.6	20.9	26.8		5.9	5.8	6.0	ST
33012	6/18/2003	1107	2944.3	9339.2	17	5	2	5	30.0	29.2	29.0	20.4	20.5	20.6		7.4	6.9	6.2	ST
33013	6/18/2003	1151	2944.6	9338.0	17	4	2	4	30.3	29.1	28.9	20.3	20.3	20.4		7.3	6.9	6.1	ST
33014	6/18/2003	1223	2944.6	9336.3	17	5	2	5	30.0	29.1	29.0	19.9	19.8	19.9		7.0	6.4	6.3	ST
33015	6/18/2003	1335	2937.6	9337.0	17	11	5	11	30.1	29.0	28.7	21.4	29.6	29.9		7.5	6.2	6.0	ST
33016	6/18/2003	1454	2936.5	9341.4	17	11	5	11	30.2	29.2	28.8	24.2	29.3	30.1		6.9	6.1	4.3	ST

Table 2. Selected environmental parameters (continued)

NUECES, SUMMER SHRIMP/GOUNDFISH 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	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
67001	6/2/2003	758	2744.9	9703.3	20	13	7	13	27.1	27.1	27.1	34.7	36.0	37.3		5.4	5.4	5.4	ST
67002	6/2/2003	839	2740.1	9705.8	20	15	7	15	27.1	27.1	26.5	36.4	36.2	37.4		5.4	5.5	5.6	ST
67003	6/2/2003	909	2740.9	9708.4	20	11	6	11	27.1	27.1	26.4	36.1	36.1	37.2		5.4	5.5	5.5	ST
67004	6/2/2003	952	2737.3	9706.5	20	17	8	17	27.2	27.2	27.1	36.4	36.6	37.4		5.2	5.5	5.6	ST
67005	6/2/2003	1026	2739.8	9703.7	20	18	9	18	27.2	27.2	27.0	36.5	36.7	37.9		5.4	5.5	5.6	ST
67006	6/2/2003	1102	2740.2	9700.4	20	22	11	22	27.6	27.5	27.5	36.0	36.6	37.5		5.5	5.4	5.5	ST
67007	6/2/2003	1139	2741.8	9702.5	20	18	9	18	27.4	27.3	27.1	36.5	36.5	38.2		5.5	5.6	5.7	ST
67008	6/2/2003	1207	2742.2	9701.4	20	19	9	19	27.4	27.4	27.0	36.7	36.6	37.8		5.5	5.6	5.7	ST
67009	6/16/2003	801	2755.1	9658.7	20	7	4	7	28.5	28.5	28.3	36.2	36.8	36.8		5.0	5.0	4.9	ST
67010	6/16/2003	843	2758.9	9654.0	20	11	6	11	28.5	28.4	28.1	36.0	37.0	37.5		5.1	5.1	5.2	ST
67011	6/16/2003	919	2754.1	9655.9	20	13	7	13	28.0	28.0	27.8	37.0	38.2	38.0		5.0	5.2	5.3	ST
67012	6/16/2003	1001	2752.9	9649.5	20	20	10	20	27.9	28.0	28.0	37.9	38.4	38.3		5.0	5.1	5.2	ST
67013	6/16/2003	1103	2746.1	9653.6	20	22	10	22	27.8	27.6	28.0	38.2	38.6	38.6		5.2	5.1	5.2	ST
67014	6/16/2003	1204	2750.9	9657.2	20	14	7	14	27.9	27.6	27.8	37.9	38.2	38.0		5.1	5.2	5.3	ST
67015	6/16/2003	1250	2752.2	9657.8	20	13	7	13	28.6	28.2	27.8	37.0	37.8	37.7		5.1	5.2	5.5	ST
67016	6/16/2003	1311	2752.9	9658.3	20	12	6	12	28.8	28.6	26.8	36.8	37.5	37.5		5.1	5.3	5.4	ST

Table 2. Selected environmental parameters (continued)

SAN JACINTO, SUMMER SHRIMP/GOUNDFISH 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	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
69001	6/3/2003	835	2925.4	9436.0	18	9	4	9	26.4	26.2	26.1	33.3	33.6	33.6		5.7	5.3	5.5	ST
69002	6/3/2003	900	2922.9	9433.1	18	11	5	11	27.3	26.5	26.2	31.8	33.1	32.9		6.1	5.4	5.5	ST
69003	6/3/2003	921	2921.8	9433.3	18	12	5	12	26.8	26.3	25.9	33.2	33.3	33.6		6.1	5.8	4.7	ST
69004	6/3/2003	944	2919.7	9435.7	18	13	6	13	27.0	26.5	26.1	33.3	33.3	33.5		6.3	6.0	5.3	ST
69005	6/3/2003	1011	2920.1	9436.7	18	12	6	12	27.1	26.7	26.3	32.2	33.2	33.5		5.9	6.1	5.9	ST
69006	6/3/2003	1044	2919.9	9440.2	18	10	4	10	27.2	26.5	26.2	15.9	33.4	33.3		6.0	5.9	5.4	ST
69007	6/3/2003	1059	2918.1	9439.9	18	10	5	10	27.2	26.8	26.4	33.3	33.4	33.3		5.8	5.9	6.0	ST
69008	6/3/2003	1120	2917.3	9441.0	18	9	4	9	27.9	27.6	26.9	33.3	33.7	33.3		5.8	5.7	5.7	ST
69009	6/23/2003	1103	2916.1	9446.4	18	6	3	6	30.2	30.4	30.3	24.3	24.3	30.5		6.4	6.1	6.2	ST
69010	6/23/2003	1137	2913.2	9453.1	18	5	2	5	30.5	30.5	30.4	24.3	24.1	24.3		6.3	6.1	6.3	ST
69011	6/23/2003	1213	2911.9	9447.2	18	14	7	14	30.6	30.5	30.4	24.2	24.8	26.4		6.3	6.3	6.3	ST
69012	6/24/2003	700	2908.9	9445.8	18	16	8	16	30.1	30.2	30.3	24.6	24.5	27.6		6.2	6.2	6.1	ST
69013	6/24/2003	718	2908.6	9447.9	18	16	8	16	30.1	30.1	30.3	24.6	25.1	24.4		6.1	6.2	6.0	ST
69014	6/24/2003	744	2910.2	9442.8	18	16	8	16	30.1	30.2	30.4	23.7	23.7	23.7		6.1	6.2	6.0	ST
69015	6/24/2003	810	2914.0	9442.9	18	13	6	13	30.1	30.2	30.3	23.5	23.7	23.8		6.1	6.2	6.1	ST
69016	6/24/2003	845	2915.2	9436.8	18	16	8	16	30.1	30.1	30.2	23.5	23.6	23.8		6.1	6.2	6.3	ST

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	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
23001	9/9/2003	906	3012.8	8802.3	11	16	8	16	28.5	29.0	29.3	25.7	28.0	29.3		6.7	6.7	6.2	NN
23002	9/9/2003	1004	3011.0	8760.0	10	12	6	12	29.0	29.0	29.2	28.1	28.1	30.0		6.6	6.6	5.6	NN
23003	9/9/2003	1038	3008.0	8800.4	11	18	9	18	29.2	29.3	29.1	29.5	30.4	30.5		6.9	6.8	5.9	NN
23004	9/9/2003	1110	3008.3	8803.8	11	16	8	16	29.1	29.0	29.1	28.5	29.0	30.5		7.0	6.9	6.1	NN
23005	9/9/2003	1143	3008.6	8807.3	11	15	8	15	28.9	29.2	29.2	26.0	28.0	30.3		7.0	6.8	5.8	NN
23006	9/9/2003	1232	3013.5	8808.0	11	9	5	9	28.7	28.7	29.6	24.9	25.4	29.2		7.2	7.2	3.3	NN
23007	9/9/2003	1407	3016.5	8808.1	11	5	2	5	28.3	28.6	29.1	17.4	20.1	26.6		8.4	8.4	6.7	NN
23008	9/9/2003	1432	3016.4	8806.2	11	15	8	15	28.7	29.1	29.1	19.1	27.3	27.7		7.9	6.6	6.4	NN
23009	9/9/2003	1457	3016.6	8804.3	11	5	2	5	28.8	28.8	29.3	19.6	19.6	27.7		7.5	7.5	7.0	NN

Table 2. Selected environmental parameters (continued)

GORDON GUNTER, FALL PLANKTON SURVEY

STA#	DATE MM/DD/YY	TIME	POSITION LAT	POSITION LONG	STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M) MID	SAMPLE DEPTHS (M) MAX	TEMPERATURE, C SUR	TEMPERATURE, C MID	TEMPERATURE, C MAX	SALINITY, PPT SUR	SALINITY, PPT MID	SALINITY, PPT MAX	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
1	8/29/2003	520	2860.0	8900.0		70	30	57	30.2	27.3	19.6	25.5	35.0	36.4		6.3	4.3	3.0	PN
2	8/29/2003	916	2830.8	8859.6		824	102	201	29.4	19.9	14.4	32.7	36.6	35.9		6.2	4.8	4.3	PN
3	8/29/2003	1425	2830.1	8930.1	13	462	128	254	30.1	16.7	13.6	36.3	36.2	35.7		6.1	4.6	4.2	PN
4	8/29/2003	2109	2759.7	9000.3		534	130	256	29.5	20.9	18.2	36.1	36.8	36.5		6.1	5.0	5.1	PN
5	8/30/2003	323	2730.1	9029.9		1025	130	258	29.2	17.3	14.4	35.8	36.4	35.8		6.2	4.4	4.2	PN
6	8/30/2003	941	2729.6	9130.1		528													PN
7	8/31/2003	1735	2830.1	8958.9	13	259	44	89	29.2	23.9	17.5	35.6	36.4	36.3		6.2	5.7	4.1	PN
8	8/31/2003	2222	2805.8	9029.9	14	137	68	137	28.3	20.2	16.6	36.3	36.6	36.2		6.3	4.9	4.7	PN
9	9/1/2003	202	2760.0	9100.3		160	81	160	28.4	18.3	16.1	36.3	36.5	36.1		6.2	4.9	4.5	PN
10	9/1/2003	542	2800.6	9130.3	15	196	99	196	28.7	18.6	14.9	33.4	36.5	35.9		6.3	4.6	4.2	PN
11	9/1/2003	918	2800.7	9160.0	15	115	57	114	28.8	22.9	28.8	34.3	36.7	36.5		6.2	5.7	4.3	PN
12	9/1/2003	1247	2801.1	9230.7	16	106	51	106	29.3	23.8	19.5	34.4	36.4	36.4		6.2	6.9	4.4	PN
13	9/1/2003	1646	2730.8	9230.0		467	101	201	28.7	19.8	15.6	36.1	36.6	36.1		6.2	4.8	4.0	PN
14	9/1/2003	2258	2730.5	9329.8		541	100	201	29.4	21.0	14.9	35.4	36.6	35.9		6.2	5.2	4.1	PN
15	9/2/2003	527	2730.1	9429.3		658	101	201	29.3	20.2	15.7	35.9	36.7	36.1		6.2	4.8	4.2	PN
16	9/2/2003	1120	2730.5	9530.2	20	680	100	200	29.7	19.7	15.2	36.1	36.4	36.0		6.1	4.7	4.0	PN
17	9/2/2003	1614	2659.9	9559.9		433	101	200	29.9	19.5	15.1	35.6	36.4	36.0		6.1	4.5	4.2	PN
18	9/2/2003	2321	2602.7	9600.2		548	99	200	30.2	21.4	15.5	36.3	36.4	36.0		6.2	6.1	3.9	PN
19	9/3/2003	327	2602.3	9630.3	21	61	30	61	30.1	28.2	22.8	36.3	36.2	36.4		6.1	6.5	5.0	PN
20	9/3/2003	656	2600.5	9700.1	21	27	12	26	29.2	29.2	28.6	36.5	36.5	36.5		6.2	6.2	6.1	PN
21	9/3/2003	1038	2630.1	9659.8	21	35	16	32	29.6	29.5	29.1	36.5	36.5	36.5		6.2	6.2	5.9	PN
22	9/3/2003	1412	2629.9	9629.9	21	85	43	85	29.3	25.5	20.8	36.3	36.4	36.4		6.2	6.3	4.8	PN
23	9/3/2003	1751	2700.7	9640.4	20	85	43	85	29.7	25.0	21.0	36.3	36.5	36.4		6.1	6.7	4.8	PN
24	9/3/2003	2150	2700.3	9711.8	20	26	12	26	30.4	29.8	29.8	36.3	36.3	36.4		6.1	6.2	5.7	PN
25	9/4/2003	144	2729.8	9700.5	20	27	13	27	30.3	29.9	29.7	35.8	35.8	36.1		5.9	5.6	5.5	PN
26	9/4/2003	457	2730.9	9630.0	20	72	36	72	29.8	26.9	21.3	36.5	36.4	36.4		6.2	6.8	5.3	PN
27	9/4/2003	825	2733.8	9559.6	20	158	77	156	29.1	20.8	17.0	36.5	36.4	36.2		6.2	5.8	3.9	PN
28	9/4/2003	1215	2758.0	9602.3	20	48	22	46	29.5	29.4	22.6	35.0	35.9	36.4		6.1	5.9	5.5	PN

Table 2. Selected environmental parameters (continued)

GORDON GUNTER, FALL PLANKTON SURVEY

STA#	DATE MM/DD/YY	TIME	POSITION LAT	POSITION LONG	STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M) MID	SAMPLE DEPTHS (M) MAX	TEMPERATURE, C SUR	TEMPERATURE, C MID	TEMPERATURE, C MAX	SALINITY, PPT SUR	SALINITY, PPT MID	SALINITY, PPT MAX	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
29	9/4/2003	1523	2759.3	9630.1	20	27	12	25	30.3	29.7	29.7	35.3	35.3	35.4		6.1	6.2	6.0	PN
30	9/4/2003	1820	2817.3	9619.5	19	19	10	19	29.9	29.9	29.7	33.2	33.5	33.7		6.2	6.3	5.6	PN
31	9/4/2003	2143	2828.8	9600.4	19	15	6	13	30.0	29.6	29.3	31.8	31.8	31.9		7.1	6.1	5.4	PN
32	9/5/2003	119	2828.6	9529.8	19	27	12	25	29.6	29.4	29.5	33.2	33.4	34.6		6.4	5.6	5.9	PN
33	9/5/2003	434	2800.1	9530.4	19	54	26	54	29.4	28.9	22.4	36.4	36.4	36.4		6.2	6.3	5.9	PN
34	9/5/2003	641	2745.0	9530.9	20	108													PN
35	9/5/2003	1320	2829.8	9459.7	18	34	15	31	29.3	29.2	29.5	6.9	5.1	0.9		3.3	3.6	3.7	PN
36	9/5/2003	1704	2859.6	9500.8	19	16	7	14	29.3	29.8	29.4	28.0	30.5	31.8		6.2	6.3	4.2	PN
37	9/5/2003	2202	2925.1	9430.5	18	11	5	8	29.2	29.2	28.9	22.2	22.2	26.4		8.4	8.0	3.4	PN
38	9/6/2003	118	2859.6	9430.6	18	18	7	14	29.4	29.4	29.6	32.6	32.6	33.1		6.4	6.4	6.2	PN
39	9/6/2003	443	2830.2	9430.8	18	36	16	35	29.4	29.4	25.9	34.7	35.1	36.3		6.2	6.2	3.9	PN
40	9/6/2003	913	2759.8	9459.9		81	38	77	29.4	26.6	21.1	35.6	36.4	36.4		6.1	6.5	5.8	PN
41	9/6/2003	1226	2800.6	9429.7	18	69	32	65	29.5	28.7	23.6	35.4	36.2	36.4		6.1	6.5	6.6	PN
42	9/6/2003	1542	2759.6	9401.1		81	38	80	29.5	28.7	20.4	35.8	36.5	36.4		6.2	6.4	5.2	PN
43	9/6/2003	1852	2759.6	9330.4		95	42	82	29.6	28.4	20.3	35.2	36.4	36.4		6.1	6.4	4.8	PN
44	9/6/2003	2250	2829.8	9331.9	17	42	21	40	29.1	29.4	22.7	33.4	35.0	36.0		6.3	6.2	4.3	PN
45	9/7/2003	200	2831.5	9400.6	18	38	18	37	29.0	29.5	27.0	33.5	35.1	36.1		6.2	6.2	5.6	PN
46	9/7/2003	643	2860.0	9400.8	18	21	9	19	28.9	29.0	29.2	32.8	32.8	33.3		6.3	6.3	6.1	PN
47	9/7/2003	1209	2929.4	9400.2	18	13	6	11	28.2	28.8	29.1	27.6	30.2	30.5		6.2	5.3	3.9	PN
48	9/7/2003	1511	2932.0	9332.3	17	12	5	10	28.5	28.5	29.0	27.9	28.0	28.9		6.4	6.3	4.9	PN
49	9/7/2003	1835	2930.1	9300.7	17	14	5	12	28.6	28.6	29.5	27.2	27.3	29.7		6.5	6.4	4.1	PN
50	9/7/2003	2201	2919.7	9230.2	16	12	6	11	29.4	29.2	29.8	24.8	27.2	29.2		6.8	5.7	4.7	PN
51	9/8/2003	58	2900.5	9233.0	16	25	11	23	29.3	29.5	29.2	28.6	32.8	35.1		6.6	6.3	1.6	PN
52	9/8/2003	353	2900.2	9259.9	16	24	11	22	29.2	29.5	29.3	31.1	31.9	32.9		6.3	6.3	6.1	PN
53	9/8/2003	706	2901.9	9329.7	17	22	10	21	29.3	29.2	29.2	32.5	32.5	32.7		6.1	6.2	5.5	PN
54	9/8/2003	1150	2830.4	9259.7	16	45	22	44	28.9	26.4	22.5	34.5	35.9	36.2		6.1	6.2	5.0	PN
55	9/8/2003	1528	2801.4	9300.1	17	100	50	99	29.3	24.2	18.9	34.7	36.3	36.4		6.1	6.6	4.1	PN
56	9/8/2003	1955	2830.4	9231.4	16	49	25	49	29.0	29.4	24.0	32.9	35.1	36.0		6.3	6.3	4.5	PN

Table 2. Selected environmental parameters (continued)

GORDON GUNTER, FALL PLANKTON SURVEY

STA#	DATE MM/DD/YY	TIME	POSITION LAT	POSITION LONG	STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M) MID	SAMPLE DEPTHS (M) MAX	TEMPERATURE, C SUR	TEMPERATURE, C MID	TEMPERATURE, C MAX	SALINITY, PPT SUR	SALINITY, PPT MID	SALINITY, PPT MAX	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
57	9/8/2003	2338	2830.6	9200.3	16	48	24	48	29.4	28.1	25.4	31.0	35.3	35.8		5.5	5.8	4.3	PN
58	9/9/2003	342	2901.4	9159.1	15	18	8	16	29.6	29.5	29.7	27.2	27.9	30.9		6.4	6.3	4.6	PN
59	9/9/2003	907	2828.7	9130.8	15	49	24	47	28.7	28.1	24.4	34.3	36.2	36.2		6.2	6.5	4.6	PN
60	9/9/2003	1345	2857.8	9125.7	15	11	5	9	29.2	29.2	29.2	28.3	28.3	28.3		6.3	6.2	6.1	PN
61	9/9/2003	1802	2845.6	9054.8	14	17	8	16	29.2	29.3	29.6	29.6	29.6	31.1		6.2	6.2	4.7	PN
62	9/9/2003	2034	2829.2	9059.2	14	35	18	34	29.1	29.2	28.9	31.6	34.7	36.0		6.2	5.6	5.5	PN
63	9/10/2003	140	2830.3	9028.9	14	38	18	37	28.9	29.5	28.3	29.4	35.8	36.1		6.4	6.1	5.2	PN
64	9/10/2003	445	2853.4	9033.4	14	17	7	15	29.1	29.4	29.7	27.2	27.7	30.1		6.6	6.0	4.9	PN
65	9/10/2003	1357	2858.2	8933.6	13	46	23	46	28.8	29.2	24.3	24.4	32.6	35.9		6.9	4.5	3.1	PN
66	9/10/2003	1627	2857.8	8953.3	13	36	16	33	28.9	29.7	28.5	24.9	29.0	34.8		7.2	4.3	3.4	PN
67	9/11/2003	103	2900.6	8830.3	11	650	100	201	29.0	18.3	14.6	31.6	36.4	35.9		6.3	4.4	4.3	PN
68	9/11/2003	407	2920.7	8830.0	11	60	29	59	28.8	26.5	22.0	31.8	35.9	36.1		6.3	5.2	3.1	PN
69	9/16/2003	2052	3000.3	8830.2	11	26	14	25	29.1	28.8	28.2	30.0	30.2	33.9		6.1	6.0	2.1	PN
70	9/17/2003	205	2914.6	8830.9	11	95	49	95	28.8	23.8	16.4	31.5	36.3	36.1		6.3	6.0	3.9	PN
71	9/17/2003	528	2915.8	8759.9		214	101	201	28.7	18.2	13.3	33.1	36.4	35.7		6.2	4.3	3.9	PN
72	9/17/2003	831	2930.3	8800.6	11	44	24	44	28.3	26.5	22.8	32.2	35.4	36.2		6.3	4.7	4.2	PN
73	9/17/2003	1301	2959.4	8800.3	11	27	13	24	28.5	28.5	27.9	31.0	31.0	34.2		6.3	6.3	3.3	PN
74	9/17/2003	1648	3014.9	8730.1	10	10	6	10	28.3	28.3	28.7	29.5	29.5	30.7		6.7	6.7	6.4	PN
75	9/17/2003	1847	3000.8	8730.2	10	25	13	23	28.5	28.4	29.0	31.8	31.9	33.0		6.3	6.3	6.0	PN
76	9/17/2003	2217	2930.8	8730.0	10	68	35	67	28.9	27.2	20.8	32.5	35.9	36.3		6.3	5.6	4.2	PN
77	9/18/2003	157	2947.4	8659.8	9	191	94	186	28.6	16.7	13.7	32.3	36.2	35.7		6.3	4.3	4.0	PN
78	9/18/2003	457	3000.8	8700.2	10	71	37	71	28.5	23.9	17.3	31.3	36.0	36.3		6.4	4.5	3.7	PN
79	9/18/2003	744	3019.9	8700.1	10	20	11	19	28.4	28.5	29.0	30.7	30.7	33.3		6.5	6.5	4.4	PN
80	9/18/2003	1118	3018.6	8628.5	9	23	13	23	28.4	28.4	29.6	31.7	31.7	34.6		6.3	6.3	6.2	PN
81	9/18/2003	1342	3000.5	8630.5	9	54	26	50	28.4	28.1	22.0	31.7	35.4	36.1		6.3	6.1	4.6	PN
82	9/18/2003	1726	2930.7	8630.7	9	207	105	207	28.6	17.3	13.7	31.8	36.3	35.7		6.3	4.3	3.9	PN
83	9/18/2003	2149	2912.5	8600.9		191	94	185	29.0	17.0	13.8	32.1	36.3	35.8		6.0	4.4	3.8	PN
84	9/19/2003	42	2929.6	8600.0	9	59	27	51	28.7	29.3	19.8	30.8	34.9	36.4		6.4	5.3	4.3	PN

Table 2. Selected environmental parameters (continued)

GORDON GUNTER, FALL PLANKTON SURVEY

STA#	DATE MM/DD/YY	TIME	POSITION LAT	POSITION LONG	STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M) MID	SAMPLE DEPTHS (M) MAX	TEMPERATURE, C SUR	TEMPERATURE, C MID	TEMPERATURE, C MAX	SALINITY, PPT SUR	SALINITY, PPT MID	SALINITY, PPT MAX	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
85	9/19/2003	439	2947.8	8530.5	8	21	10	16	28.2	28.8	28.7	31.1	32.5	34.6		6.5	4.5	4.2	PN
86	9/19/2003	703	2930.3	8530.8	8	17	6	10	28.3	28.3	28.7	31.5	31.5	32.4		5.6	5.7	4.6	PN
87	9/19/2003	1106	2926.0	8458.2	7	18	10	18	27.9	28.8	28.6	31.5	33.4	33.8		6.4	5.7	5.8	PN
88	9/19/2003	1405	2929.8	8430.5	7	24	11	20	28.8	28.8	28.8	34.5	34.5	34.7		5.8	5.8	5.7	PN
89	9/19/2003	1711	2930.1	8400.9	7	20	10	18	28.7	28.6	28.6	34.7	34.8	34.8		6.3	6.1	6.1	PN
90	9/19/2003	1909	2939.8	8400.3	7	15	7	13	28.4	28.2	28.6	33.1	33.2	33.9		6.9	6.2	4.9	PN
91	9/19/2003	2140	2930.5	8340.2	7	11	6	9	28.1	27.9	28.2	32.9	33.1	33.5		5.8	5.6	4.9	PN
92	9/20/2003	305	2853.4	8308.2	6	12	5	9	27.9	27.9	27.9	33.1	33.2	33.4		6.3	6.3	6.1	PN
93	9/20/2003	556	2901.0	8330.3	7	16	9	15	28.3	28.3	28.7	34.1	34.1	34.9		5.8	5.8	5.7	PN
94	9/20/2003	909	2900.4	8400.3	7	28	15	27	28.7	28.7	28.7	35.3	35.3	35.3		6.1	6.1	6.1	PN
95	9/20/2003	1229	2900.1	8430.5	7	34													PN
96	9/20/2003	1540	2900.3	8500.6	8	40	22	40	28.6	29.0	20.2	33.5	34.8	36.2		6.1	5.5	4.3	PN
97	9/20/2003	1842	2901.0	8530.4	8	69	35	67	28.5	28.5	18.6	32.8	35.1	36.3		6.3	6.1	4.3	PN
98	9/20/2003	2230	2830.6	8530.5	8	197	97	193	28.6	18.3	13.9	33.1	36.4	35.8		6.3	4.3	3.7	PN
99	9/21/2003	201	2830.2	8500.9	8	104	51	99	28.4	20.9	15.4	34.9	36.2	36.0		6.2	4.9	3.9	PN
100	9/21/2003	556	2828.5	8430.1	6	54	28	54	28.4	26.2	21.6	34.9	35.9	36.1		6.2	6.9	5.2	PN
101	9/21/2003	939	2832.4	8359.9	6	35	18	33	28.6	28.6	27.6	35.1	35.1	35.7		6.1	6.1	5.7	PN
102	9/21/2003	1254	2830.4	8330.6	6	24	11	22	28.6	28.6	28.6	2.7	0.5	0.3		3.6	3.8	3.0	PN
103	9/21/2003	1536	2829.2	8306.6	6	13	6	10	28.3	28.3	28.2	34.2	34.2	34.2		6.0	6.0	5.9	PN
104	9/21/2003	1858	2800.8	8300.0	6	25	7	11	28.6	28.6	28.6	33.7	34.5	34.5		6.0	5.3	5.3	PN
105	9/21/2003	2206	2759.5	8329.9	5	55	16	29	29.0	28.9	28.8	35.2	35.2	35.3		6.1	6.2	6.1	PN
106	9/22/2003	135	2759.9	8400.3	5	48	24	45	28.7	28.9	22.6	34.5	34.8	36.1		6.2	6.2	6.1	PN
107	9/22/2003	457	2800.4	8429.4	6	79	41	79	28.3	22.2	16.9	34.5	36.2	36.1		6.2	6.7	3.8	PN
108	9/22/2003	833	2810.8	8459.6	6	176	90	176	28.6	18.2	13.3	33.7	36.4	35.7		6.2	4.2	4.0	PN
109	9/22/2003	1413	2730.7	8430.1	5	132	65	127	28.6	20.4	14.5	33.9	36.3	35.9		6.2	5.2	4.1	PN
110	9/22/2003	1740	2730.8	8359.7	5	60	31	59	28.9	26.3	21.1	34.7	36.0	36.2		6.2	7.1	5.5	PN
111	9/22/2003	2103	2730.5	8329.7	5	41	22	40	29.0	29.0	24.5	35.2	35.2	36.1		6.2	6.2	6.0	PN
112	9/23/2003	9	2730.2	8259.9	5	18	9	17	29.0	29.0	28.9	34.8	34.8	35.0		6.2	6.2	6.3	PN

Table 2. Selected environmental parameters (continued)

GORDON GUNTER, FALL PLANKTON SURVEY

STA#	DATE MM/DD/YY	TIME	POSITION LAT	POSITION LONG	STAT ZONE	DEPTH (M)	SAMPLE DEPTHS (M) MID	SAMPLE DEPTHS (M) MAX	TEMPERATURE, C SUR	TEMPERATURE, C MID	TEMPERATURE, C MAX	SALINITY, PPT SUR	SALINITY, PPT MID	SALINITY, PPT MAX	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
113	9/23/2003	439	2659.5	8232.2	4	13	7	11	29.2	29.2	29.2	34.7	34.7	34.7		6.3	6.3	6.3	PN
114	9/23/2003	726	2700.8	8259.6	5	33	17	32	29.1	29.1	27.5	35.2	35.2	36.0		6.1	6.1	5.5	PN
115	9/23/2003	1034	2700.4	8330.0	5	51	27	51	29.0	28.9	22.8	34.9	35.7	36.1		6.2	6.3	6.5	PN
116	9/23/2003	1346	2700.5	8359.7	5	83	42	82	28.9	23.7	19.8	34.9	36.2	36.3		6.1	6.6	4.6	PN
117	9/23/2003	1656	2700.3	8428.8	5	170	86	170	28.8	21.8	14.9	36.0	36.4	35.9		6.1	5.8	4.3	PN
118	9/23/2003	2019	2628.9	8429.9		196	97	193	29.1	24.8	14.9	36.1	36.7	35.9		6.1	5.4	4.2	PN
119	9/24/2003	17	2630.6	8359.3	4	120	62	120	29.0	21.0	16.4	34.4	36.3	36.2		6.2	5.7	4.2	PN
120	9/24/2003	350	2630.3	8329.4	4	58	30	58	29.3	29.4	22.3	35.5	35.6	36.2		6.1	6.1	6.7	PN
121	9/24/2003	706	2630.1	8301.0	4	40	19	37	29.2	29.2	26.3	35.6	35.6	36.1		6.1	6.1	5.9	PN
122	9/24/2003	1021	2630.0	8230.5	4	21	11	19	29.3	29.3	29.6	34.9	35.0	35.6		5.6	5.5	3.5	PN
123	9/24/2003	1517	2600.6	8200.2	4	14	7	12	29.6	29.6	29.6	35.3	35.3	35.3		5.7	5.8	5.7	PN
124	9/24/2003	1821	2600.7	8229.7	4	29	15	27	29.7	29.6	29.5	35.9	35.9	35.9		6.0	6.0	5.9	PN
125	9/24/2003	2120	2600.5	8259.9	4	44	22	42	29.5	29.3	25.2	35.8	35.8	36.2		6.1	6.1	6.2	PN
126	9/25/2003	36	2600.5	8330.1	4	64	31	61	29.3	26.2	21.6	35.1	36.1	36.3		6.1	6.9	5.9	PN
127	9/25/2003	406	2600.6	8359.7	4	136	69	136	29.2	19.8	16.1	34.4	36.3	36.1		6.2	4.9	4.0	PN
128	9/25/2003	733	2600.6	8430.2		213	102	200	29.1	24.9	15.2	36.0	36.6	36.0		6.1	5.9	4.3	PN
129	9/25/2003	1126	2530.6	8430.3		428	97	191	28.8	20.2	15.1	35.9	36.2	36.0		6.1	5.1	4.4	PN
130	9/25/2003	1600	2530.4	8359.9	3	136	69	135	29.1	21.5	16.5	35.4	36.6	36.2		6.1	5.5	4.2	PN
131	9/25/2003	1940	2530.5	8329.8	3	70	35	68	29.6	27.0	21.2	35.4	36.3	36.4		6.1	6.5	5.1	PN
132	9/25/2003	2308	2530.5	8300.1	3	51	26	50	29.5	29.5	23.9	35.5	35.7	36.3		6.1	6.2	6.4	PN
133	9/26/2003	221	2530.5	8230.0	3	33	17	32	29.6	29.6	29.5	36.0	36.0	36.0		5.9	5.9	5.9	PN
134	9/26/2003	544	2530.4	8200.0	3	20	11	19	29.6	29.6	29.6	36.2	36.2	36.2		5.9	5.9	5.9	PN
135	9/26/2003	755	2530.5	8143.5	3	11	7	11	29.5	29.5	29.5	36.1	36.1	36.1		5.7	5.7	5.7	PN
136	9/26/2003	1135	2500.6	8133.1	3	10	5	9	29.7	29.7	29.7	36.7	36.7	36.7		5.7	5.7	5.7	PN
137	9/26/2003	1521	2500.4	8200.4	3	22	11	19	29.5	29.8	29.8	35.7	36.0	36.0		5.9	5.8	5.8	PN
138	9/26/2003	1835	2500.1	8229.0	3	32	16	30	29.6	29.3	27.4	35.5	35.5	36.2		6.1	6.1	6.6	PN
139	9/26/2003	2141	2459.9	8259.6		50	25	49	29.6	28.8	24.2	35.5	36.1	36.3		6.1	6.4	5.8	PN
140	9/27/2003	47	2500.4	8329.6	3	69	35	68	29.4	27.5	21.2	35.2	36.2	36.4		6.1	6.6	4.5	PN

Table 2. Selected environmental parameters (continued)

GORDON GUNTER, FALL PLANKTON SURVEY

	DATE		POSITION		STAT	DEPTH	SAMPLE DEPTHS (M)		TEMPERATURE, C			SALINITY, PPT			FL	DISSOLVED OXYGEN, PPM			
STA#	MM/DD/YY	TIME	LAT	LONG	ZONE	(M)	MID	MAX	SUR	MID	MAX	SUR	MID	MAX	SUR	SUR	MID	MAX	GEAR
141	9/27/2003	408	2500.3	8360.0	3	124	63	123	29.4	20.2	17.5	35.0	36.5	36.3		6.1	4.9	4.5	PN
142	9/27/2003	737	2500.7	8429.2		201	101	201	28.8	18.0	14.2	34.5	36.4	35.8		6.2	4.5	4.3	PN
143	9/28/2003	1033	2859.5	8429.6	6	34	17	32	28.4	28.4	28.4	35.1	35.1	35.1		6.1	6.1	6.0	PN

Table 2. Selected environmental parameters (continued)

OREGON II, FALL SHRIMP/GOUNDFISH 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	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
1	10/11/2003	249	2629.7	9630.3	21	147	41	82	27.6	27.1	21.0	34.4	36.1	36.4	1.900	5.7	5.3	4.4	PN
2	10/11/2003	619	2602.9	9628.3	21	119	32	65	27.6	27.6	24.1	32.0	36.0	36.4	2.420	5.7	5.4	4.9	PN
3	10/11/2003	1029	2559.3	9659.1	22	52	12	28	27.3	27.1	27.2	30.3	32.7	34.3	3.630	5.7	5.5	4.4	PN
4	10/11/2003	1337	2605.2	9705.6	21	20	10	20	27.3	27.0	27.0	30.2	31.3	32.6	3.360	5.6	5.3	4.1	ST
5	10/11/2003	1519	2607.3	9708.4	21	16	8	16	27.3	26.7	26.8	30.4	31.1	31.7	3.220	5.6	4.6	4.2	ST
6	10/11/2003	1659	2613.3	9709.3	21	15	8	15	27.4	27.2	26.7	29.9	30.2	30.9	3.420	5.6	5.3	4.6	ST
7	10/11/2003	1925	2606.8	9654.4	21	35	16	34	27.8	27.4	27.6	29.7	34.2	35.8	3.110	5.8	5.5	4.6	ST
8	10/11/2003	2205	2617.7	9701.8	21	25	11	22	27.7	27.0		27.8	32.2		4.860	6.0	5.9		ST
9	10/11/2003	2317	2621.1	9657.9	21	35	17	35	27.8	27.2	27.4	28.1	34.0	35.6	4.510	6.0	5.4	4.6	ST
10	10/12/2003	148	2625.2	9712.3	21	14	7	14	27.5	27.5	27.3	28.8	28.9	30.1	4.590	5.8	5.8	5.8	ST
11	10/12/2003	324	2629.3	9711.9	21	16	8	15	27.3	27.5	26.8	28.6	29.1	31.2	4.100	5.8	5.7	5.3	ST
12	10/12/2003	454	2629.1	9705.4	21	26	13	26	27.2	27.0	27.0	27.1	32.6	33.4	3.360	6.0	5.7	5.2	ST
13	10/12/2003	622	2624.3	9702.8	21	27	14	27	27.6	26.9	27.0	27.4	32.6	33.6	3.830	5.9	5.7	5.1	ST
14	10/12/2003	845	2623.7	9700.6	21	31	16	30	27.2	26.9	27.2	28.3	32.9	34.6	3.710	5.7	5.6	4.6	ST
15	10/12/2003	1737	2632.8	9712.3	21	16	8	16	27.2	27.2	26.8	28.8	28.8	31.3	6.090	5.8	5.8	4.8	ST
16	10/12/2003	2011	2645.1	9705.4	21	33	16	32	27.2	26.6	27.0	29.5	32.2	33.8	6.540	5.8	5.6	5.0	ST
17	10/12/2003	2147	2644.8	9711.9	21	25	12	23	26.8	26.6	26.6	27.7	30.6	31.5	8.300	5.9	4.6	4.3	ST
18	10/12/2003	2343	2653.8	9720.2	21	16	8	16	26.8	26.8	26.5	27.5	28.9	30.3	14.560	5.9	5.5	5.4	ST
19	10/13/2003	113	2646.3	9719.3	21	15	8	15	27.1	27.2	27.3	28.1	28.2	28.5	12.850	5.8	5.8	5.8	ST
20	10/13/2003	413	2652.1	9704.2	21	35	17	34	27.0	26.8	27.4	29.5	32.9	35.7	6.230	5.8	4.6	4.5	ST
21	10/13/2003	725	2638.8	9652.2	21	46	23	46	27.2	27.5	27.0	32.7	35.9	36.1	4.280	5.6	5.6	5.4	ST
22	10/13/2003	853	2639.0	9649.3	21	52													ST
23	10/13/2003	1036	2635.3	9644.7	21	56	27	54	27.0	27.3	26.3	33.0	36.1	36.3	2.620	5.6	5.6	5.3	ST
24	10/13/2003	1345	2645.4	9655.5	21	46	22	44	26.8	27.6	27.4	31.9	35.2	36.0	5.020	5.6	5.5	5.3	ST
25	10/13/2003	1503	2647.0	9652.9	21	52													ST
26	10/13/2003	1758	2649.9	9638.9	21	92	45	92	27.3	26.7	20.4	33.7	36.3	36.4	1.990	5.6	5.8	4.1	ST
27	10/13/2003	1927	2650.5	9635.8	21	101													ST
28	10/13/2003	2245	2659.2	9638.5	21	92	46	91	27.3	27.6	21.2	34.6	36.4	36.4	2.270	5.6	5.6	4.2	ST

Table 2. Selected environmental parameters (continued)

OREGON II, FALL SHRIMP/GOUNDFISH 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	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
29	10/14/2003	58	2651.6	9644.9	21	84	42	84	27.4	27.5	21.3	34.5	36.3	36.4	1.780	5.6	5.7	4.5	ST
30	10/14/2003	358	2644.3	9637.4	21	92	46	92	27.3	24.8	20.3	34.6	36.4	36.4	2.030	5.6	6.0	4.3	ST
31	10/14/2003	526	2645.6	9634.6	21	102													ST
32	10/14/2003	917	2707.9	9635.8	20	93	44	90	27.2	27.4	20.2	34.1	36.3	36.4	2.830	5.6	5.6	4.1	ST
33	10/14/2003	1032	2707.7	9638.7	20	86													ST
34	10/14/2003	1126	2708.0	9643.6	20	73	34	66	26.7	27.5	23.8	30.2	35.9	36.4	3.540	5.8	5.2	4.3	ST
35	10/14/2003	1316	2708.3	9649.2	20	65	32	65	26.9	27.5	23.7	31.6	35.9	36.4	6.620	5.7	5.3	4.4	ST
36	10/14/2003	1520	2703.1	9648.2	20	65	31	62	26.7	27.5	24.8	30.2	35.6	36.4	3.440	5.8	5.5	5.2	ST
37	10/14/2003	1915	2703.2	9659.8	20	41	20	39	26.4	27.5	27.4	27.9	35.6	35.9	14.520	6.0	5.2	5.1	ST
38	10/14/2003	2302	2714.3	9719.7	20	13	6	13	26.7	26.7	26.5	27.5	27.6	29.8	14.130	6.0	5.4	5.8	ST
39	10/15/2003	13	2708.6	9720.6	20	15	8	15	26.8	26.8	26.7	27.5	27.5	27.8	11.710	6.0	5.9	6.0	ST
40	10/15/2003	255	2716.9	9715.7	20	19	9	18	26.5	26.5	26.7	27.7	27.9	32.5	12.530	5.8	5.5	5.2	ST
41	10/15/2003	456	2721.3	9716.4	20	14	7	14	26.2	26.2	26.2	27.9	27.9	28.1	13.570	5.8	5.8	5.9	ST
42	10/15/2003	541	2721.1	9713.4	20	22	11	19	26.4	26.4	26.6	32.3	32.3	32.8	8.710	5.6	5.6	5.4	ST
43	10/15/2003	655	2720.9	9710.0	20	24	12	24	26.6	26.6	27.0	33.0	33.0	33.8	7.420	5.6	5.7	5.5	ST
44	10/15/2003	1036	2711.2	9703.8	20	34	18	33	26.7	27.0	27.1	32.8	34.4	34.9	3.180	5.7	4.6	4.3	ST
45	10/15/2003	1528	2727.1	9709.6	20	21	10	20	26.0	26.0	26.2	31.4	31.5	32.1	11.520	5.6	5.6	5.6	ST
46	10/15/2003	1853	2732.5	9656.8	20	29	14	29	26.4	26.4	26.5	33.0	33.1	33.5	5.510	5.7	5.7	5.6	ST
47	10/15/2003	2059	2724.5	9652.8	20	41	19	39	26.7	26.7	27.2	34.1	34.2	35.9	5.660	5.6	5.6	4.9	ST
48	10/15/2003	2358	2719.2	9657.9	20	37	18	35	26.6	26.6	27.2	34.1	34.4	35.5	6.740	5.6	5.5	4.7	ST
49	10/16/2003	336	2735.9	9656.0	20	27	14	27	26.3	26.3	26.3	32.6	32.6	32.7	5.390	5.8	5.8	5.8	ST
50	10/16/2003	650	2744.0	9636.6	20	41													ST
51	10/16/2003	807	2744.7	9633.6	20	44	22	44	26.7	27.0	27.2	35.1	35.5	36.2	2.600	5.6	5.5	4.6	ST
52	10/16/2003	1027	2748.3	9639.9	20	31	13	29	26.1	26.9	26.9	32.4	35.0	35.0	4.200	5.6	5.2	5.2	ST
53	10/16/2003	1247	2750.2	9646.6	20	24	11	22	25.6	25.8	26.4	30.0	31.0	33.4	6.560	5.8	5.7	5.6	ST
54	10/16/2003	1629	2736.8	9623.5	20	84	42	84	27.2	27.2	21.2	35.8	36.0	36.4	1.450	5.5	5.5	4.2	ST
55	10/16/2003	2052	2738.8	9600.7	20	209	59	117	27.7	24.0	18.8	36.3	36.4	36.4	0.940	5.4	5.9	3.8	PN
56	10/16/2003	2306	2743.9	9555.6	19	84	39	78	27.7	27.7	22.3	36.3	36.3	36.5	1.120	5.4	5.5	5.6	ST

Table 2. Selected environmental parameters (continued)

OREGON II, FALL SHRIMP/GOUNDFISH 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	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
57	10/17/2003	338	2801.4	9615.5	19	35	17	34	26.5	26.7	26.8	33.9	34.6	35.2	3.610	5.6	5.5	5.5	ST
58	10/17/2003	501	2805.1	9614.0	19	32	16	32	26.4	26.9	26.9	33.6	35.3	35.4	3.810	5.6	5.5	5.6	ST
59	10/17/2003	847	2809.3	9640.9	19	12	6	12	25.3	25.4	25.4	27.5	27.6	27.8	11.520	5.9	5.9	5.9	ST
60	10/17/2003	1232	2758.4	9631.0	20	28	13	27	26.5	26.5	26.7	33.7	33.7	34.7	5.410	5.5	5.6	5.6	ST
61	10/17/2003	1717	2806.8	9607.4	19	31	15	30	26.8	26.8	26.7	34.6	35.0	35.0	2.010	5.6	5.6	5.6	ST
62	10/17/2003	1806	2808.0	9607.3	19	30	13	24	26.6	26.7	26.6	34.0	34.6	34.6	2.500	5.6	5.6	5.6	ST
63	10/17/2003	2212	2813.3	9548.8	19	31	14	29	26.7	26.6	26.7	32.7	34.7	35.0	3.710	5.8	5.6	5.6	ST
64	10/17/2003	2320	2816.6	9547.8	19	28	13	26	26.5	26.5	26.6	33.4	34.1	34.7	4.060	5.6	5.7	5.6	ST
65	10/18/2003	135	2814.3	9554.0	19	28	14	27	26.3	26.3	26.6	32.6	33.1	34.6	5.740	5.8	5.7	5.5	ST
66	10/18/2003	552	2812.5	9527.0	19	40	21	39	27.0	27.0	27.0	35.5	35.6	35.8	1.840	5.5	5.5	5.5	ST
67	10/18/2003	1011	2828.3	9538.4	19	24	12	24	26.4	26.4	26.4	33.7	33.7	34.0	1.920	5.6	5.7	5.6	ST
68	10/18/2003	1348	2818.9	9555.8	19	24	12	23	25.9	26.1	26.3	32.2	32.4	33.2	4.470	5.7	5.8	5.5	ST
69	10/18/2003	1810	2837.7	9548.2	19	12	6	12	25.2	25.2	25.2	27.8	27.9	28.3	13.020	6.1	5.9	5.7	ST
70	10/18/2003	2001	2832.1	9542.4	19	18	8	17	25.9	25.9	26.1	31.1	31.3	32.1	8.320	5.9	5.7	5.2	ST
71	10/18/2003	2150	2835.6	9537.4	19	17	8	17	25.7	25.7	25.7	31.0	31.1	31.2	8.160	5.9	5.8	5.9	ST
72	10/18/2003	2332	2844.3	9535.1	19	11	6	11	24.9	25.4	25.4	27.2	28.0	28.3	15.520	5.7	5.8	5.8	ST
73	10/19/2003	405	2840.2	9506.5	19	26	12	25	25.9	26.2	26.2	32.6	33.2	33.3	4.510	5.7	5.6	5.5	ST
74	10/19/2003	723	2854.6	9511.5	19	17	8	15	24.9	25.0	25.1	28.5	28.6	29.3	7.340	5.8	5.8	5.8	ST
75	10/19/2003	933	2848.5	9523.9	19	12	6	12	24.8	24.9	25.3	27.3	27.5	29.1	11.320	5.8	5.8	5.9	ST
76	10/19/2003	1229	2842.9	9530.6	19	14	7	14	24.8	24.8	25.3	27.9	27.9	29.4	9.350	5.8	5.8	5.7	ST
77	10/19/2003	1508	2828.7	9529.9	19	50	13	24	25.5	25.9	26.0	32.4	32.9	33.0	3.980	5.7	5.7	5.8	PN
78	10/19/2003	1700	2818.6	9525.0	19	35	18	34	26.0	26.3	26.8	33.5	34.4	35.3	1.740	5.7	5.6	5.3	ST
79	10/19/2003	2021	2800.3	9529.2	19	54	27	53	26.8	27.0	24.8	35.5	36.0	36.4	2.110	5.5	5.5	4.9	ST
80	10/19/2003	2135	2758.3	9528.2	19	59													ST
81	10/19/2003	2353	2757.0	9523.6	19	65	31	61	26.9	27.3	23.9	35.8	36.1	36.4	2.700	5.5	5.6	5.3	ST
82	10/20/2003	446	2805.6	9450.4	18	55	27	52	26.8	26.9	26.9	35.7	35.8	36.4	2.310	5.5	5.6	5.4	ST
83	10/20/2003	923	2820.4	9506.0	19	37	19	35	26.4	26.5	26.5	35.1	35.1	35.2	3.790	5.5	5.5	5.7	ST
84	10/20/2003	1237	2816.3	9513.4	19	42	18	39	26.4	26.4	26.9	35.2	35.2	35.5	1.840	5.5	5.6	5.5	ST

Table 2. Selected environmental parameters (continued)

OREGON II, FALL SHRIMP/GOUNDFISH 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	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
85	10/20/2003	1517	2801.6	9510.0	19	66	30	59	26.9	27.2	27.3	35.9	36.1	36.4	1.190	5.5	5.5	5.6	ST
86	10/20/2003	2121	2830.2	9448.8	18	35	17	34	26.2	26.1	26.6	33.9	34.1	34.7	1.660	5.7	5.7	5.5	ST
87	10/21/2003	14	2833.8	9437.8	18	33	17	32	26.2	26.2	26.4	34.2	34.3	34.4	2.640	5.7	5.7	5.6	ST
88	10/21/2003	316	2835.7	9428.2	18	33	16	32	25.9	26.2	26.5	33.8	34.1	35.0	3.790	5.7	5.5	4.9	ST
89	10/21/2003	541	2844.2	9434.7	18	26	12	25	25.9	25.9	26.2	33.4	33.4	34.0	4.650	5.7	5.7	5.5	ST
90	10/21/2003	800	2847.7	9435.0	18	22	11	21	25.9	25.9	26.1	33.6	33.6	33.7	4.710	5.7	5.7	5.7	ST
91	10/21/2003	1229	2853.4	9423.4	18	22	11	22	25.7	25.7	25.7	32.5	32.5	32.6	3.850	5.8	5.8	5.9	ST
92	10/21/2003	1555	2832.0	9420.6	18	37	13	34	25.8	26.1	26.5	33.2	33.8	35.0	2.870	5.7	5.7	5.6	ST
93	10/21/2003	1714	2829.3	9420.3	18	38													ST
94	10/22/2003	2	2853.9	9446.8	18	18	9	16	26.0	25.3	25.8	31.1	31.3	32.3	3.050	6.2	6.1	5.9	ST
95	10/22/2003	327	2901.4	9457.9	18	17	8	15	24.5	24.9	25.3	24.9	27.1	30.8	14.930	6.3	5.9	5.8	ST
96	10/22/2003	530	2908.3	9452.5	18	14	6	12	24.6	24.6	25.0	25.1	25.1	18.6	9.350	6.8	6.6	5.6	ST
97	10/24/2003	547	2821.9	9418.6	18	46	22	45	25.6	26.2	45.2	17.6	25.6	25.3	5.080	8.0	5.3	4.3	ST
98	10/24/2003	705	2819.3	9419.1	18	47													ST
99	10/24/2003	823	2816.8	9420.4	18	48													ST
100	10/24/2003	942	2814.0	9420.8	18	50													ST
101	10/24/2003	1111	2811.3	9421.6	18	54													ST
102	10/24/2003	1303	2820.2	9421.2	18	46	23	46	25.4	26.5	36.2	32.8	35.0	36.2	4.360	5.9	4.8	4.4	ST
103	10/24/2003	1419	2817.4	9421.5	18	48													ST
104	10/24/2003	1537	2814.4	9421.5	18	50													ST
105	10/24/2003	1653	2811.8	9422.2	18	53													ST
106	10/24/2003	1920	2759.6	9429.1	18	75	37	75	24.1	22.1	23.0	37.2	40.1	33.6	3.130	5.7	5.6	3.8	ST
107	10/24/2003	2234	2755.1	9406.8	18	92	46	90	26.6	24.0	18.4	35.8	36.4	36.4	3.070	5.6	5.1	3.7	ST
108	10/25/2003	24	2752.0	9409.6	18	109													ST
109	10/25/2003	150	2754.7	9410.2	18	93	44	87	26.5	24.1	18.5	35.9	36.3	36.4	3.610	5.6	5.0	3.8	ST
110	10/25/2003	419	2757.9	9403.9	18	82	40	80	26.6	26.9	19.1	35.9	36.1	36.4	3.070	5.5	4.8	4.0	PN
111	10/25/2003	810	2759.7	9418.5	18	82	38	80	26.5	27.0	18.9	35.8	36.1	36.4	2.660	5.5	5.0	4.0	PN
112	10/25/2003	1347	2835.1	9353.0	17	35	15	29	25.3	25.7	26.4	31.7	32.8	34.9	4.000	5.8	5.7	5.4	ST

Table 2. Selected environmental parameters (continued)

OREGON II, FALL SHRIMP/GOUNDFISH 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	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
113	10/25/2003	1828	2855.7	9408.2	18	20	8	19	24.8	25.2	26.1	29.1	31.0	33.9	6.090	6.7	5.6	5.3	ST
114	10/25/2003	1941	2859.5	9406.3	18	17	9	16	24.9	25.4	26.2	28.5	31.7	34.1	5.470	6.0	5.7	5.1	ST
115	10/25/2003	2139	2857.0	9352.7	17	23	11	22	25.3	25.9	26.0	31.8	33.5	33.7	5.940	5.9	5.8	5.7	ST
116	10/26/2003	13	2857.4	9356.5	17	20	10	20	25.0	25.8	26.1	30.5	32.8	33.8	5.430	6.0	5.8	5.6	ST
117	10/26/2003	359	2839.7	9342.9	17	30	14	27	25.3	25.8	26.2	32.0	33.1	34.7	4.710	5.8	5.7	5.4	ST
118	10/26/2003	635	2849.3	9330.6	17	24	11	23	25.3	25.3	26.1	31.6	31.6	34.2	4.710	5.9	5.8	5.6	ST
119	10/26/2003	1236	2859.9	9350.0	17	20	8	19	25.2	25.3	26.2	31.8	31.9	33.8	4.840	5.8	5.8	5.2	ST
120	10/26/2003	1355	2902.5	9349.5	17	19													ST
121	10/26/2003	1537	2906.9	9355.6	17	18	9	17	24.6	25.1	25.7	29.0	30.8	32.0	6.270	6.0	5.6	5.6	ST
122	10/26/2003	1651	2909.6	9356.2	17	17													ST
123	10/26/2003	1821	2914.5	9359.5	17	25	7	14	24.5	25.1	25.3	26.7	5.4	5.3	9.660	6.2	5.4	5.3	PN
124	10/26/2003	2247	2919.4	9326.3	17	17	6	14	24.2	24.3	25.5	27.7	27.7	33.2	11.030	6.2	5.5	5.6	ST
125	10/27/2003	104	2915.2	9332.6	17	15	7	13	24.4	25.1	25.4	28.4	31.1	31.8	9.610	5.9	4.2	4.4	ST
126	10/27/2003	340	2912.5	9323.6	17	17	7	17	24.5	24.5	25.7	29.7	29.7	33.5	7.010	6.0	5.5	5.0	BG
127	10/27/2003	631	2901.6	9329.1	17	41	10	23	24.7	24.8	26.1	31.2	31.3	33.8	6.740	5.8	5.1	4.9	PN
128	10/27/2003	951	2839.2	9323.7	17	33	15	31	25.2	25.6	26.7	33.6	34.0	35.9	5.430	5.6	5.3	4.9	ST
129	10/27/2003	1237	2838.6	9324.7	17	33	15	31	25.4	25.7	26.7	33.9	34.1	36.0	5.080	5.5	5.3	4.1	ST
130	10/27/2003	1306	2839.9	9324.6	17	31	15	28	25.1	25.8	26.7	33.5	34.2	35.9	5.080	5.6	5.1	4.6	ST
131	10/27/2003	1616	2822.1	9325.3	17	54													ST
132	10/27/2003	1736	2824.9	9324.2	17	51	21	44	25.3	26.4	24.8	34.1	35.3	36.2	7.050	5.5	5.4	3.8	ST
133	10/27/2003	2138	2830.4	9337.8	17	40	18	38	24.9	26.4	26.6	32.8	34.9	36.0	8.960	5.8	5.2	4.2	ST
134	10/27/2003	2344	2831.1	9341.8	17	40	20	38	24.8	25.9	26.3	33.0	34.5	36.1	8.710	5.8	5.3	4.0	BG
135	10/28/2003	305	2813.3	9343.2	17	65	30	61	25.8	26.1	21.4	35.5	35.6	36.4	6.810	5.6	5.2	3.7	ST
136	10/28/2003	429	2810.5	9343.7	17	68													ST
137	10/28/2003	552	2808.0	9345.2	17	71													ST
138	10/28/2003	716	2805.4	9345.7	17	71													ST
139	10/28/2003	1305	2821.4	9332.2	17	55	27	54	25.4	26.3	23.1	34.3	35.3	36.2	6.810	5.6	5.5	3.5	ST
140	10/28/2003	1424	2818.4	9331.0	17	58													ST

Table 2. Selected environmental parameters (continued)

OREGON II, FALL SHRIMP/GOUNDFISH 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	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
141	10/28/2003	1544	2815.9	9329.7	17	61													ST
142	10/28/2003	1704	2813.0	9328.5	17	59													ST
143	10/28/2003	1827	2810.5	9327.6	17	61													ST
144	10/28/2003	2049	2802.3	9324.5	17	91	45	90	26.0	26.2	18.0	35.6	36.0	36.3	4.530	5.5	5.9	2.6	ST
145	10/28/2003	2358	2809.7	9311.7	17	73	36	71	25.8	26.4	19.9	35.2	36.1	36.4	7.400	5.5	4.7	4.0	ST
146	10/29/2003	305	2800.6	9258.4	16	193	54	106	26.3	23.1	18.4	35.9	36.3	36.4	5.900	5.5	4.4	3.8	PN
147	10/29/2003	702	2803.8	9230.8	16	92	45	89	26.1	25.1	18.9	36.0	36.2	36.4	5.470	5.6	4.8	3.8	ST
148	10/29/2003	829	2801.1	9231.3	16	106													ST
149	10/29/2003	1103	2805.7	9217.6	16	95	47	95	26.3	26.2	18.1	36.2	36.1	36.4	4.650	4.5	4.1	3.0	BG
150	10/29/2003	1423	2805.9	9203.9	16	92	44	89	26.7	26.5	18.3	36.3	36.3	36.4	4.470	4.5	4.4	3.1	ST
151	10/29/2003	1546	2803.1	9204.2	16	102													ST
152	10/29/2003	1952	2807.8	9232.1	16	83	40	81	26.1	26.2	18.6	35.9	36.1	36.4	3.980	4.5	4.8	2.1	ST
153	10/29/2003	2111	2810.6	9232.0	16	73													ST
154	10/29/2003	2237	2813.4	9232.6	16	67	29	63	26.1	26.1	21.5	35.9	35.9	36.4	7.630	4.5	4.5	3.4	ST
155	10/30/2003	101	2815.3	9238.4	16	63	31	62	26.2	26.2	21.3	36.0	36.0	36.3	6.090	4.5	4.5	3.6	ST
156	10/30/2003	219	2818.1	9240.2	16	59													ST
157	10/30/2003	332	2821.8	9240.0	16	58													ST
158	10/30/2003	831	2836.2	9305.8	17	38	17	36	25.3	25.3	26.5	35.0	35.0	35.8	6.190	4.6	4.6	4.1	ST
159	10/30/2003	1228	2854.7	9310.8	17	25	8	19	24.6	24.6	24.6	33.6	33.6	33.6	8.300	4.7	4.7	4.4	ST
160	10/30/2003	1610	2909.4	9248.0	16	20	10	18	23.6	24.8	25.4	30.9	32.5	33.3	7.380	4.9	4.2	4.3	ST
161	10/30/2003	1919	2928.9	9242.8	16	13	6	10	24.0	24.0	24.1	29.6	29.6	29.5	32.600	1.2	0.8	0.2	BG
162	10/30/2003	2119	2935.1	9252.1	16	10	4	8	23.7	23.5	23.6	30.2	29.9	30.6	36.830	4.9	5.4	4.5	ST
163	10/31/2003	114	2910.9	9257.6	16	18	8	17	24.2	24.1	25.3	32.1	32.3	33.3	8.810	4.7	4.4	4.4	ST
164	10/31/2003	430	2855.6	9254.2	16	24	12	21	24.2	26.2	26.2	32.1	34.9	34.9	8.490	4.6	3.8	3.8	ST
165	10/31/2003	716	2839.8	9250.2	16	36	16	34	25.3	25.3	26.5	35.0	35.0	35.9	9.020	4.5	4.4	3.5	ST
166	10/31/2003	1034	2832.2	9226.3	16	53	26	53	26.0	26.1	25.6	35.9	36.0	36.1	8.770	4.4	4.4	4.2	ST
167	10/31/2003	1146	2829.5	9225.7	16	53													ST
168	10/31/2003	1425	2834.5	9222.8	16	41	20	38	25.7	25.7	26.6	35.4	35.4	36.0	7.710	4.4	4.3	3.9	BG

Table 2. Selected environmental parameters (continued)

OREGON II, FALL SHRIMP/GOUNDFISH 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	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
169	10/31/2003	1803	2853.1	9224.6	16	29	14	26	25.0	25.0	26.4	33.4	33.4	35.1	6.780	4.7	4.6	3.8	ST
170	10/31/2003	1913	2855.0	9225.3	16	27	12	22	24.6	24.2	26.4	32.3	32.4	35.0	7.750	4.8	4.2	3.1	ST
171	10/31/2003	2300	2907.9	9212.3	16	13	6	10	24.5	24.4	24.4	31.8	31.8	31.8	13.240	4.8	4.8	4.8	ST
172	11/1/2003	7	2908.9	9206.4	16	12	6	12	24.0	24.0	24.1	31.3	31.3	31.4	17.800	4.8	4.7	4.7	ST
173	11/1/2003	144	2909.2	9215.4	16	10	6	10	24.4	24.4	24.4	31.9	31.9	31.9	11.990	4.8	4.8	4.7	ST
174	11/1/2003	301	2910.5	9224.3	16	16	8	16	24.0	24.0	24.0	31.5	31.5	31.5	14.310	4.7	4.7	4.7	ST
175	11/1/2003	629	2856.5	9230.5	16	28	13	28	25.5	26.0	26.2	35.0	34.7	34.5	8.530	2.2	2.1	2.2	ST
176	11/1/2003	813	2848.2	9228.1	16	34	15	34	25.5	25.5	26.5	34.6	34.7	35.9	8.840	4.4	4.3	3.5	ST
177	11/1/2003	1114	2853.7	9215.5	16	28	11	20	24.5	24.5	24.6	32.6	32.6	33.1	9.180	4.6	4.6	4.6	ST
178	11/1/2003	1410	2845.9	9216.0	16	35	15	32	24.8	25.2	26.6	33.3	34.0	35.8	10.130	4.5	4.2	3.6	ST
179	11/1/2003	1720	2837.2	9201.2	16	74	20	40	26.1	26.0	26.0	35.6	35.8	35.9	9.960	4.3	4.3	4.3	PN
180	11/1/2003	1944	2844.8	9149.7	15	29	13	27	24.7	24.6	26.6	31.6	31.9	65.7	10.130	4.6	3.9	3.2	ST
181	11/1/2003	2214	2839.6	9142.5	15	33	15	30	25.0	25.6	26.8	32.5	24.1	36.1	11.600	4.5	3.9	2.8	ST
182	11/2/2003	134	2833.3	9124.3	15	40	20	40	25.8	26.9	26.3	34.4	35.9	36.3	11.190	4.3	3.4	3.1	ST
183	11/2/2003	549	2820.9	9109.8	15	59	28	53	25.7	25.8	24.7	35.0	35.5	36.3	9.490	4.4	4.4	4.2	ST
184	11/2/2003	818	2814.8	9101.3	15	75	40	72	25.4	25.7	19.7	35.5	36.1	36.5	8.940	4.5	4.4	2.8	ST
185	11/2/2003	1004	2810.0	9105.3	15	95													ST
186	11/2/2003	1133	2807.2	9106.3	15	107	52	107	25.6	22.1	17.6	35.6	36.4	36.3	9.590	4.4	3.5	3.0	ST
187	11/2/2003	1612	2812.2	9126.7	15	82	39	80	25.9	26.4	19.4	35.3	36.1	36.5	10.290	4.3	4.1	2.8	ST
188	11/2/2003	1724	2809.5	9124.2	15	95													ST
189	11/2/2003	1846	2807.3	9123.8	15	104	52	104	25.8	23.5	17.6	35.1	36.5	36.3	9.570	4.4	3.8	3.0	ST
190	11/2/2003	2213	2824.7	9125.0	15	55	24	49	25.9	26.1	25.8	34.9	35.2	36.4	13.590	4.3	4.2	3.3	ST
191	11/3/2003	201	2831.5	9108.1	15	33	15	28	25.1	25.4	26.7	33.5	33.9	35.8	15.810	4.3	3.8	2.7	ST
192	11/3/2003	351	2835.6	9103.1	15	24	12	22	25.0	25.1	25.2	33.6	33.6	33.7	13.490	4.3	4.3	4.3	ST
193	11/3/2003	543	2839.4	9117.1	15	24	11	21	25.0	25.0	25.0	33.3	33.3	33.3	13.980	4.4	4.4	4.4	ST
194	11/3/2003	801	2854.0	9119.4	15	10	4	10	24.3	24.3	24.3	31.3	31.3	31.3	23.740	4.5	4.6	4.6	ST
195	11/3/2003	955	2853.3	9130.2	15	31	7	14	24.4	24.4	24.4	31.3	31.3	31.3	15.990	4.4	4.4	4.4	PN
196	11/3/2003	1147	2859.0	9145.5	15	16	7	16	24.6	24.6	24.6	31.8	31.8	31.8	18.640	4.2	4.2	4.2	PN

Table 2. Selected environmental parameters (continued)

OREGON II, FALL SHRIMP/GOUNDFISH 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	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
197	11/3/2003	1359	2859.9	9138.7	15	13	6	12	24.2	24.3	24.3	31.2		31.3	21.650	4.4		4.4	ST
198	11/3/2003	1750	2847.7	9111.3	15	12	6	12	24.7	24.5	24.6	32.7	32.7	32.8	19.250	4.4	4.4	4.3	ST
199	11/3/2003	1933	2841.7	9114.9	15	19	8	16	24.7	24.7	24.9	32.8	32.9	33.2	18.600	4.4	4.3	4.3	ST
200	11/3/2003	2203	2821.6	9107.1	15	62	32	62	25.8	25.9	21.6	35.8	36.0	36.5	11.480	4.3	4.3	3.2	ST
201	11/4/2003	55	2814.6	9053.5	14	73	31	58	25.8	25.9	20.6	35.3	35.8	36.5	11.520	4.3	4.3	3.0	ST
202	11/4/2003	352	2822.6	9043.3	14	45	22	44	25.3	25.6	23.2	34.0	34.3	36.4	13.000	4.4	4.3	3.5	ST
203	11/4/2003	637	2829.2	9055.6	14	35	16	32	25.5	25.6	26.7	34.8	34.8	36.2	12.690	4.3	4.0	2.8	ST
204	11/4/2003	842	2832.5	9101.7	15	30	14	28	25.6	25.7	26.7	34.5	34.5	35.5	15.190	4.3	4.1	3.6	ST
205	11/4/2003	1009	2837.5	9055.8	14	18	9	18	25.0	25.1	25.3	32.7	32.9	33.2	15.990	4.4	4.2	4.1	ST
206	11/4/2003	1231	2839.8	9051.6	14	17	7	15	24.7	24.7	25.0	32.1	32.1	32.9	14.760	4.5	4.4	4.1	ST
207	11/4/2003	1503	2841.0	9103.9	15	15	7	12	25.0	25.0	25.1	33.0	33.0	33.2	18.170	4.3	4.3	4.3	BG
208	11/4/2003	1614	2836.7	9105.8	15	23	11	21	25.2	25.2	25.1	33.3	33.4	33.5	17.860	4.3	4.2	4.2	BG
209	11/4/2003	1924	2830.8	9047.7	14	31	15	30	25.1	25.5	26.6	32.6	33.8	35.9	18.100	4.4	4.2	3.2	ST
210	11/4/2003	2004	2829.1	9047.3	14	35	18	35	25.5	25.6	26.6	33.7	34.4	36.2	16.010	4.3	4.3	3.4	ST
211	11/4/2003	2121	2827.8	9045.3	14	39	21	39	25.4	25.7	25.0	33.3	34.7	36.3	22.100	4.3	4.0	3.5	ST
212	11/5/2003	146	2838.2	9028.4	14	22	10	20	25.2	25.2	26.1	33.3	33.4	34.6	14.520	4.5	4.3	4.3	ST
213	11/5/2003	426	2853.6	9039.0	14	14	8	13	24.6	24.7	24.7	31.1	32.0	32.3	22.900	4.6	4.4	4.5	ST
214	11/5/2003	517	2853.2	9038.8	14	16	9	16	24.8	24.7	24.7	31.4	32.0	32.5	16.890	4.6	4.5	4.5	ST
215	11/5/2003	1005	2859.3	9026.9	14	12	6	12	24.6	24.8	25.5	31.9	32.2	33.4	14.910	4.5	3.6	3.9	ST
216	11/5/2003	1345	2907.3	9004.2	14	12	6	12	24.5	24.5	26.1	28.6	30.4	34.7	26.290	4.3	3.2	3.8	ST
217	11/5/2003	1702	2846.5	9015.1	14	27	15	27	25.2	25.4	25.8	32.1	34.1	36.0	20.650	4.4	4.0	3.5	ST
218	11/5/2003	1858	2844.8	9005.6	14	40	20	39	25.3	26.0	25.7	32.6	35.8	36.1	22.450	4.4	4.3	3.9	ST
219	11/5/2003	2209	2846.9	8949.7	13	63	30	61	24.9	26.0	22.4	28.3	35.8	36.4	45.500	5.5	4.1	3.0	BG
220	11/6/2003	21	2841.1	8959.4	13	130	66	130	25.1	22.2	18.8	28.6	36.4	36.4	52.720	5.0	3.2	2.8	ST
221	11/6/2003	316	2845.0	9013.8	14	31	15	30	25.2	25.9	25.6	31.4	35.1	36.1	22.120	4.6	4.1	3.8	ST
222	11/6/2003	758	2903.0	8952.6	13	28	12	25	24.6	25.2	25.5	30.7	33.1	35.6	22.720	4.6	4.0	2.6	ST
223	11/6/2003	1221	2903.1	8952.4	13	28	14	28	24.6	25.0	25.4	29.6	32.7	35.9	20.890	4.1	4.0	3.0	ST
224	11/6/2003	1347	2905.6	8948.2	13	26	13	26	24.7	25.1	25.7	30.0	32.7	33.8	25.180	4.8	4.3	2.9	ST

Table 2. Selected environmental parameters (continued)

OREGON II, FALL SHRIMP/GOUNDFISH 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	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
225	11/6/2003	1449	2908.0	8950.0	13	20	8	18	25.0	25.1	25.6	31.7	32.9	34.2	22.450	4.5	3.9	4.0	ST
226	11/6/2003	1829	2850.1	8937.2	13	73	35	70	25.0	26.1	21.1	31.5	35.9	36.5	22.100	3.9	3.9	3.3	ST
227	11/6/2003	1954	2847.3	8937.6	13	80													ST
228	11/6/2003	2250	2900.3	8929.8	13	27	8	14	24.8	25.0	25.9	29.0	32.6	35.4	28.300	4.3	3.0	3.2	PN
229	11/6/2003	2328	2858.6	8933.2	13	43	22	43	25.2	26.0	25.9	29.8	35.6	36.0	19.720	4.6	3.9	3.7	ST
230	11/7/2003	23	2858.3	8935.2	13	45	23	44	25.2	26.1	25.9	29.9	35.8	36.0	18.840	4.6	3.9	3.8	ST
231	11/12/2003	2344	3011.1	8829.7	11	12	5	10	23.1	23.2	23.5	31.1	31.6	32.4	20.500	4.7	4.5	4.5	ST
232	11/13/2003	225	3001.2	8825.9	11	26	13	26	24.3	24.3	24.4	34.2	34.5	34.7	14.390	4.2	4.3	4.3	ST
233	11/13/2003	433	3006.1	8824.9	11	17	8	16	24.0	23.9	23.9	33.5	33.5	33.7	29.830	4.4	4.4	4.4	ST
234	11/13/2003	837	3008.8	8759.3	10	14	6	12	23.6	23.6	23.7	33.2	33.5	33.6	20.520	4.4	4.3	4.3	ST
235	11/13/2003	1231	3009.3	8813.5	11	16	6	14	23.3	23.3	24.1	32.8	32.8	33.8	29.900	4.3	4.3	4.2	ST
236	11/13/2003	1429	3003.2	8819.0	11	20	9	19	23.9	23.9	24.4	33.5	33.5	34.4	23.760	4.2	4.2	4.1	ST
237	11/13/2003	1904	3008.5	8838.6	11	14	6	13	23.1	23.1	23.2	31.9	31.9	32.0	33.460	4.5	4.5	4.5	ST
238	11/13/2003	2039	3007.3	8841.1	11	16	7	15	23.3	23.3	23.5	32.4	32.4	32.8	26.410	4.5	4.5	4.5	ST
239	11/13/2003	2334	2953.9	8845.2	11	13	6	12	23.2	23.2	23.2	32.9	32.9	32.9	25.200	4.5	4.5	4.5	ST
240	11/14/2003	349	2959.8	8827.6	11	28	13	26	24.0	24.0	24.2	34.4	34.4	34.5	18.250	4.3	4.3	4.3	ST
241	11/14/2003	843	2959.8	8759.6	10	44	10	21	23.7	23.8	23.7	34.5	34.5	34.5	16.890	4.4	4.4	4.4	PN
242	11/14/2003	1316	2957.8	8840.9	11	18	6	16	23.4	23.4	23.5	34.4	34.4	34.4	20.420	4.3	4.4	4.4	ST
243	11/14/2003	1536	2955.0	8833.3	11	26	11	23	23.7	23.8	23.8	34.7	34.7	34.7	68.660	4.3	4.3	4.3	ST
244	11/14/2003	1754	2958.8	8824.6	11	30	14	27	23.8	23.8	23.8	34.6	34.6	34.8	20.260	4.3	4.3	4.2	ST
245	11/14/2003	2032	2959.1	8813.8	11	29	13	27	23.8	23.8	23.8	34.6	34.6	34.6	19.440	4.3	4.3	4.3	ST
246	11/14/2003	2126	3001.0	8809.3	11	25	12	24	23.6	23.7	23.6	34.5	34.5	34.6	20.480	4.3	4.4	4.4	ST
247	11/14/2003	2354	2955.1	8805.4	11	32	16	32	24.1	24.1	24.1	35.0	35.0	35.0	15.660	4.3	4.3	4.3	ST
248	11/15/2003	352	2929.4	8802.0	11	83	22	44	25.6	25.6	25.6	36.2	36.2	36.2	15.290	4.1	4.1	4.1	PN
249	11/15/2003	458	2925.9	8803.3	11	72	36	72	25.5	25.6	21.6	36.2	36.2	36.4	13.630	4.1	4.1	3.2	ST
250	11/15/2003	1229	2926.0	8803.5	11	54	25	51	25.3	25.3	25.2	36.2	36.2	36.2	13.720	4.1	4.2	4.2	ST
251	11/15/2003	1436	2919.8	8804.7	11	92	45	87	25.4	25.4	19.8	36.2	36.2	36.4	13.260	4.1	4.1	3.0	ST
252	11/15/2003	1833	2915.4	8828.8	11	98	48	98	25.2	25.3	19.9	36.0	36.1	36.4	13.590	4.2	4.0	3.0	ST

Table 2. Selected environmental parameters (continued)

OREGON II, FALL SHRIMP/GOUNDFISH 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	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
253	11/15/2003	2257	2917.1	8821.7	11	72	34	68	25.4	25.4	21.3	36.1	36.1	36.5	14.350	4.1	4.1	3.3	ST
254	11/16/2003	28	2915.4	8828.8	11	102	52	102	25.4	25.1	19.8	36.1	36.2	36.4	13.780	4.1	3.5	3.0	ST
255	11/16/2003	228	2917.4	8833.1	11	65	33	64	24.8	24.8	22.7	35.6	35.7	36.5	16.180	4.2	4.1	3.6	ST
256	11/16/2003	622	2905.7	8846.3	11	156	78	156	24.6	21.1	17.1	35.5	36.5	36.3	15.750	4.2	3.1	2.9	ST
257	11/16/2003	1235	2905.4	8855.5	11	70	35	70	24.2	24.7	21.6	35.1	35.6	36.5	19.480	4.2	4.1	3.0	ST
258	11/16/2003	1443	2906.2	8857.2	11	39	19	39	22.0	24.5	24.8	32.2	35.1	35.7	20.590	4.3	3.9	3.7	ST
259	11/16/2003	1554	2908.0	8855.7	11	53	26	53	22.5	24.6	24.8	32.7	35.5	35.7	21.780	4.3	4.1	4.0	ST
260	11/16/2003	1808	2908.8	8851.6	11	75	34	69	24.5	25.0	22.8	35.4	35.8	36.3	17.860	4.1	4.0	2.4	ST
261	11/16/2003	2102	2921.6	8853.0	11	25	9	23	23.0	23.0	23.3	34.0	34.1	34.4	22.680	4.4	4.4	4.4	ST
262	11/16/2003	2309	2919.7	8850.9	11	40	17	36	23.0	24.1	24.3	33.9	35.2	35.5	17.260	4.3	4.1	4.1	ST
263	11/17/2003	24	2921.9	8849.9	11	31	14	29	23.4	23.9	24.2	33.9	35.2	35.4	17.840	4.4	4.3	4.2	ST
264	11/17/2003	122	2923.6	8846.4	11	36	16	31	24.5	24.5	24.4	35.5	35.5	35.5	17.260	4.2	4.2	4.2	ST
265	11/17/2003	246	2928.0	8847.1	11	18	8	16	23.9	23.9	23.9	35.2	35.2	35.2	18.490	4.3	4.3	4.3	ST
266	11/17/2003	441	2929.3	8838.9	11	35	15	29	24.2	24.2	24.5	35.3	35.3	35.6	17.160	4.3	4.2	4.2	ST
267	11/17/2003	653	2930.5	8830.4	11	47	22	44	24.5	24.5	24.7	35.5	35.5	35.7	15.520	4.1	4.0	4.1	ST
268	11/17/2003	812	2930.8	8830.3	11	50													ST
269	11/17/2003	932	2928.3	8831.1	11	52													ST
270	11/17/2003	1159	2936.7	8835.8	11	24	12	24	24.0	24.0	24.0	35.2	35.2	35.2	18.860	4.2	4.2	4.2	ST
271	11/17/2003	1328	2932.2	8836.7	11	31	14	29	23.9	24.0	24.0	35.2	35.2	35.2	18.970	4.2	4.2	4.1	ST
272	11/17/2003	1534	2923.5	8843.2	11	46	20	42	24.2	24.3	24.4	35.3	35.4	35.5	17.100	4.1	4.1	4.1	ST
273	11/17/2003	1739	2924.2	8845.7	11	35	15	32	24.4	24.2	24.2	35.3	35.4	35.4	17.530	4.2	4.1	4.1	ST
274	11/17/2003	2044	2941.8	8848.6	11	12	5	12	23.2	23.0	23.0	33.7	33.9	34.0	21.240	4.5	4.4	4.4	ST
275	11/17/2003	2304	2945.5	8847.0	11	12	6	12	23.1	23.0	23.1	33.7	34.0	34.1	21.980	4.5	4.5	4.5	ST
276	11/18/2003	42	2946.1	8838.6	11	20	9	18	23.7	23.7	23.6	34.7	34.7	34.8	15.580	4.3	4.4	4.3	ST
277	11/18/2003	118	2946.6	8837.7	11	22	10	21	23.8	23.8	23.6	34.8	34.8	34.8	14.800	4.3	4.3	4.3	ST
278	11/18/2003	351	2944.8	8833.3	11	29	13	27	23.8	23.9	23.8	35.0	35.0	35.0	17.610	4.3	4.2	4.2	ST
279	11/18/2003	1204	2947.0	8829.2	11	61	11	24	23.9	23.9	23.9	35.0	35.0	35.0	19.290	4.1	4.1	4.1	BG

Table 2. Selected environmental parameters (continued)

TOMMY MUNRO, FALL SHRIMP/GOUNDFISH 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	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
17001	10/9/2003	725	2921.0	8855.0	11	22	11	22	27.4	27.5	27.6	31.5	31.4	31.4		6.4	6.5	5.8	ST
17002	10/9/2003	1130	2924.2	8845.7	11	35	17	34	27.8	27.9	28.3	32.9	33.5	34.9		6.1	6.1	5.9	ST
17003	10/9/2003	1648	2923.4	8843.3	11	46	23	46	27.8	27.4	24.9	32.6	35.5	36.1		6.3	5.8	3.7	ST
17004	10/9/2003	1927	2918.9	8851.3	11	41	21	41	27.1	27.3	26.8	31.8	33.9	35.4		6.6	6.2	4.2	ST
17005	10/9/2003	2135	2920.4	8851.6	11	33	16	32	27.0	27.3	27.0	33.4	33.7	35.0		5.5	4.5	4.1	ST
17006	10/9/2003	2310	2923.6	8846.4	11	38	19	38	27.4	27.2	27.6	33.0	34.3	35.7		5.9	5.6	5.0	ST
17007	10/10/2003	157	2928.0	8847.5	11	18	9	18	26.9	27.3	27.1	32.8	32.7	32.9		6.2	6.2	6.2	ST
17008	10/10/2003	400	2928.1	8840.2	11	35	18	35	26.4	26.8	27.1	32.7	32.6	34.2		6.2	6.2	6.0	ST
17009	10/10/2003	625	2932.8	8831.9	11	46	23	46	27.0	27.4	26.9	32.4	34.7	35.0		6.1	6.0	5.0	ST
17010	10/10/2003	841	2931.2	8837.6	11	31	16	31	26.3	27.1	27.2	32.8	34.4	35.0		5.0	5.2	5.2	ST
17011	10/10/2003	1115	2938.6	8855.1	11	9	4	7	26.0	26.4	26.1	31.2	31.0	31.1		6.5	6.5	6.4	ST
17012	10/13/2003	949	2957.9	8841.0	11	18	9	18	27.4	27.1	27.3	30.4	31.4	31.5		6.2	6.1	6.1	ST
17013	10/13/2003	1205	2950.4	8848.7	11	7	4	7	26.9	26.6	26.4	28.8	29.2	29.3		6.4	6.5	6.4	ST
17014	10/13/2003	1403	2947.0	8847.7	11	11	6	11	27.9	26.8	26.5	29.4	29.8	29.9		6.1	6.3	6.3	ST
17015	10/13/2003	1655	2945.2	8828.4	11	33	17	33	27.7	28.0	27.9	33.7	33.7	33.8		6.1	5.9	5.9	ST
17016	10/13/2003	1912	2941.7	8832.2	11	30	15	30	27.6	27.6	27.6	33.2	33.3	33.5		6.1	6.0	5.9	ST
17017	10/13/2003	2033	2944.4	8836.9	11	23	12	23	27.1	27.4	27.5	32.2	32.9	33.1		6.2	6.1	6.0	ST
17018	10/13/2003	2148	2946.6	8837.8	11	21	11	21	27.4	27.8	28.1	33.0	32.9	32.9		6.2	6.0	5.9	ST
17019	10/13/2003	2336	2945.5	8849.3	11	9	5	9	26.7	26.8	27.1	29.4	29.7	29.5		6.3	6.2	6.2	ST
17020	10/14/2003	129	2954.4	8845.2	11	13	6	12	25.9	26.7	26.7	29.8	31.0	31.5		6.5	6.4	6.3	ST
17021	10/14/2003	929	3009.1	8839.8	11	15	7	14	28.3	27.9	29.4	27.8	28.5	28.9		5.8	6.1	5.5	ST
17022	10/14/2003	1046	3009.9	8834.7	11	13	6	12	27.4	27.2	27.4	27.4	29.0	29.7		6.4	6.0	5.6	ST
17023	10/14/2003	1311	2955.0	8832.5	11	26	13	25	27.8	28.5	28.5	30.7	32.0	32.7		6.1	6.0	5.8	ST
17024	10/14/2003	1907	2956.2	8827.7	11	28	14	28	27.9	27.9	28.2	31.6	32.6	33.0		6.1	6.1	5.9	ST
17025	10/14/2003	2154	3010.9	8829.3	11	11	5	9	26.8	27.0	27.4	30.1	30.6	30.6		5.9	6.1	6.3	ST

Table 2. Selected environmental parameters (continued)

A.E. VERRILL, FALL SHRIMP/GOUNDFISH 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	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
23001	10/21/2003	851	3013.0	8806.5	11	6	3	6	23.8	23.8	24.7	30.3	30.4	31.7		6.3	6.2	5.2	ST
23002	10/21/2003	934	3014.6	8809.2	11	6	3	6	23.5	23.9	24.2	29.2	30.3	31.5		6.6	6.5	6.1	ST
23003	10/21/2003	1043	3009.9	8814.3	11	17	9	17	23.9	23.9	25.3	31.1	31.1	33.1		6.9	6.2	5.0	ST
23004	10/21/2003	1151	3004.4	8817.5	11	20	10	20	24.2	24.5	25.0	31.7	32.8	33.2		6.3	6.2	6.1	ST
23005	10/21/2003	1323	2959.7	8815.3	11	28	14	28	25.1	25.0	25.8	33.4	33.8	34.4		6.2	6.1	5.8	ST
23006	10/21/2003	1426	3000.8	8811.6	11	26	13	26	24.7	25.0	25.4	32.2	33.8	33.9		6.7	6.4	6.4	ST
23007	10/21/2003	1815	2954.7	8806.9	11	34	17	34	24.9	25.6	25.8	33.1	34.7	34.9		6.4	6.1	5.8	ST
23008	10/21/2003	2016	3008.2	8802.9	11	17	9	17	23.7	24.9	25.5	26.0	32.2	33.2		7.1	6.4	5.7	ST
23009	10/21/2003	2123	3010.6	8804.3	11	7	4	7	23.9	24.1	24.7	28.7	29.6	31.6		7.0	6.9	6.4	ST
23010	11/11/2003	1614	2957.0	8823.5	11	32	16	32	24.6	24.4	24.1	34.6	34.8	35.0		6.1	6.0	5.3	ST
23011	11/11/2003	1727	3000.5	8826.1	11	28	14	28	24.4	24.5	24.5	34.5	34.6	34.8		6.2	6.2	6.0	ST
23012	11/11/2003	1848	3007.1	8822.6	11	16	8	16	23.9	23.9	24.0	33.5	33.5	33.5		6.4	6.4	6.3	ST
23013	11/11/2003	2003	3012.3	8819.2	11	9	5	9	22.9	23.0	23.7	31.3	31.4	32.6		6.6	6.6	6.3	ST

Table 2. Selected environmental parameters (continued)

PELICAN, FALL SHRIMP/GOUNDFISH 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	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
35001	9/29/2003	841	2860.0	9030.0	14	13	5	8	26.8	26.9	26.8	26.6	26.6	26.6	2.881	6.5	6.4	6.5	PN
35002	9/29/2003	1250	2900.8	9014.4	14	11	7	11	27.3	27.4	27.4	30.0	30.2	30.2	2.325	6.8	6.8	6.8	ST
35003	9/29/2003	1511	2900.1	9000.7	14	26	10	20	27.3	27.4	27.5	28.1	28.9	31.4	7.244	7.8	7.2	6.6	PN
35004	9/29/2003	1653	2903.4	8954.7	13	24	11	20	27.2	27.3	27.5	27.6	28.1	30.2	4.796	7.7	7.2	6.9	ST
35005	9/29/2003	2024	2859.9	8930.6	13	18	8	15	26.5	27.0	28.5	27.1	28.1	32.7	2.943	6.5	6.5	4.6	ST
35006	9/29/2003	2348	2859.6	8950.6	13	35	19	35	26.7	27.6	28.3	28.2	29.6	35.9	3.081	6.9	6.9	5.1	ST
35007	9/30/2003	614	2900.3	9014.9	14	11	6	11	26.6	26.6	26.6	29.9	29.9	30.0	2.383	7.0	7.0	6.9	ST
35008	9/30/2003	950	2856.4	8957.7	13	33	15	31	26.7	27.1	28.5	29.9	30.7	35.2	2.732	6.6	6.6	5.2	ST
35009	9/30/2003	1114	2857.8	8956.9	13	31	14	28	26.9	26.9	28.4	30.0	30.2	34.1	2.223	6.7	6.6	5.1	ST
35010	9/30/2003	1305	2859.6	8950.0	13	35	15	29	26.8	26.9	28.5	28.9	29.3	33.8	3.975	6.9	6.8	5.7	ST
35011	9/30/2003	1452	2904.7	8946.8	13	29	15	26	26.7	26.9	28.3	28.3	28.7	33.5	5.428	7.3	6.9	4.1	ST
35012	9/30/2003	1750	2859.6	8930.7	13	18	8	17	26.3	26.4	28.5	28.2	28.2	33.8	3.790	6.7	6.7	4.4	ST
35013	9/30/2003	2107	2905.0	8947.0	13	29	15	26	26.6	26.6	28.3	28.5	28.5	33.5	5.050	7.4	7.3	4.1	ST
35014	9/30/2003	2340	2857.8	8957.1	13	31	16	29	26.9	27.1	27.6	29.8	30.3	32.0	2.754	6.6	6.6	5.6	ST
35015	10/1/2003	155	2855.9	8957.1	13	33	16	30	26.9	27.1	27.7	29.8	30.2	32.8	2.176	6.5	6.5	6.0	ST
35016	10/1/2003	458	2846.6	9013.6	14	27	14	27	27.0	27.4	27.5	31.6	32.4	33.3	0.960	6.4	6.4	5.8	ST
35017	10/1/2003	824	2846.5	9014.0	14	27	13	27	27.0	27.4	27.5	31.8	32.3	33.4	1.396	6.4	6.3	5.5	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	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
35001	12/16/2003	905	2860.0	9029.9	14	9	5	9	18.2	18.2	18.4	32.7	32.8	32.9	1.504	7.5	7.5	7.5	PN
35002	12/16/2003	948	2859.3	9030.3	14	10	6	10	18.2	18.3	18.5	32.7	32.8	33.1	0.917	7.5	7.5	7.5	ST
35003	12/16/2003	1130	2855.6	9024.1	14	15	8	15	19.9	19.8	19.7	34.0	34.0	34.1	0.580	7.3	7.3	7.3	ST
35004	12/16/2003	1439	2860.0	8960.0	13	26	12	24	19.4	19.2	23.1	33.1	33.1	35.6	0.874	7.4	7.3	5.0	PN
35005	12/16/2003	1625	2906.5	8954.5	13	20	10	20	18.7	18.7	22.5	32.1	32.1	35.2	2.957	8.2	8.1	4.5	ST
35006	12/16/2003	2209	2859.7	9030.5	14	10	6	10	18.3	18.3	18.3	33.0	33.0	33.0	1.528	7.4	7.4	7.3	ST
35007	12/17/2003	23	2856.1	9023.8	14	15	8	15	19.4	19.4	19.4	34.1	34.1	34.1	0.931	7.2	7.2	7.1	ST
35008	12/17/2003	420	2906.2	8955.0	13	20	10	19	18.5	18.6	23.1	32.5	32.6	35.5	1.794	7.2	7.2	4.8	ST
35009	12/17/2003	530	2911.2	8956.6	13	11	6	10	17.7	17.7	17.7	32.2	32.2	32.2	2.310	6.7	6.7	6.7	ST
35010	12/17/2003	819	2911.4	8956.5	13	11	6	11	17.3	17.3	17.4	32.1	32.1	32.1	3.139	7.1	7.1	7.0	ST
35011	12/17/2003	954	2910.9	8949.5	13	16	9	15	17.1	17.9	23.1	31.1	32.0	35.7	2.352	7.2	6.8	4.3	ST
35012	12/17/2003	1120	2908.9	8946.1	13	18	9	18	19.5	19.6	23.3	33.5	33.5	36.1	4.104	6.7	6.6	4.1	ST
35013	12/17/2003	1232	2904.1	8946.0	13	29	15	29	20.2	20.8	23.3	33.7	34.1	36.4	2.376	6.8	6.2	4.7	ST
35014	12/17/2003	1415	2903.3	8942.4	13	31	13	25	20.9	21.5	23.2	34.4	34.7	36.4	2.250	6.6	6.2	5.5	ST
35015	12/17/2003	1552	2859.9	8930.0	13	16	7	15	17.7	18.1	22.8	30.4	31.5	35.8	1.670	7.3	6.9	5.7	PN
35016	12/17/2003	1848	2902.8	8942.0	13	31	15	31	20.5	20.6	23.1	34.1	34.1	36.4	2.471	7.1	7.0	5.6	ST
35017	12/17/2003	2003	2904.2	8945.9	13	29	14	28	19.5	19.6	23.3	33.3	33.3	36.4	3.272	7.4	7.3	4.9	ST
35018	12/17/2003	2128	2909.3	8947.1	13	18	9	18	18.8	18.7	23.2	33.0	33.0	36.0	2.297	7.2	7.2	4.1	ST
35019	12/17/2003	2232	2910.5	8949.4	13	16	8	15	16.6	18.8	22.7	31.4	32.9	35.5	1.698	6.8	6.9	4.7	ST
35020	12/18/2003	504	2837.5	9032.2	14	22	10	20	19.7	20.2	20.5	34.4	34.8	35.0	1.332	7.4	6.9	6.5	ST
35021	12/18/2003	802	2837.4	9032.0	14	22	11	20	19.7	19.8	20.3	34.2	34.3	35.0	1.341	7.6	7.5	6.7	ST
35022	12/18/2003	912	2830.0	9030.0	14	40	19	38	19.5	20.3	21.4	33.7	34.8	35.6	4.205	7.8	6.9	5.3	PN
35023	12/18/2003	1102	2833.9	9039.8	14	24	12	22	17.8	17.9	18.4	34.0	34.1	34.5	1.137	7.6	7.6	7.4	ST
35024	12/18/2003	1344	2830.0	9060.0	14	37	17	33	16.2	21.6	22.2	28.1	35.3	35.7	3.552	8.6	6.3	6.2	PN
35025	12/18/2003	1502	2832.9	9102.6	15	28	14	28	15.8	18.3	22.4	27.9	32.3	35.6	2.067	8.8	7.1	5.9	ST
35026	12/18/2003	1911	2833.6	9039.2	14	24	11	22	18.2	18.2	18.4	33.5	33.6	34.4	0.823	7.4	7.4	7.3	ST
35027	12/18/2003	2240	2832.1	9102.2	15	28	15	28	15.8	18.2	22.3	28.5	32.2	35.6	3.053	8.6	7.3	6.0	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	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
35028	12/19/2003	346	2856.5	9129.7	15	13	7	12	14.7	16.1	17.7	28.7	30.7	33.2	2.305	8.4	7.9	7.3	ST
35029	12/19/2003	754	2856.8	9129.6	15	13	7	13	15.0	15.7	18.1	29.7	30.6	33.6	2.573	8.2	8.0	7.2	ST
35030	12/19/2003	906	2860.0	9130.0	15	11	5	10	15.4	16.8	17.9	29.9	31.8	33.3	2.726	8.2	7.7	7.3	PN
35031	12/19/2003	1219	2859.7	9059.9	14	7	3	7	13.5	13.4	15.3	21.2	21.1	28.8	2.850	9.5	9.5	7.8	PN

Table 2. Selected environmental parameters (continued)

R.J. KEMP, FALL SHRIMP/GOUNDFISH 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	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
31001	11/3/2003	946	2558.7	9704.5	22	21	11	21	21.3	21.3	21.6	35.5	35.7	36.5		5.3	5.6	5.4	ST
31002	11/3/2003	1026	2558.3	9702.5	22	24	12	24	21.4	21.4	22.0	35.3	35.2	37.0		5.8	5.4	5.2	ST
31003	11/3/2003	1134	2606.8	9704.5	21	20	10	20	21.6	21.6	21.5	35.7	35.7	36.3		5.5	5.6	5.6	ST
31004	11/3/2003	1215	2607.4	9702.5	21	24	12	24	21.7	21.6	22.0	35.7	35.7	37.0		5.7	5.6	4.8	ST
31005	11/3/2003	1311	2612.7	9706.5	21	18	9	18	21.5	21.6	22.0	35.7	35.7	36.8		5.7	5.4	4.1	ST
31006	11/3/2003	1343	2614.5	9706.5	21	18	9	18	21.7	21.7	21.6	35.8	35.8	36.8		5.4	5.5	5.4	ST
31007	11/3/2003	1426	2611.8	9709.5	21	12	6	12	21.8	21.7	21.5	35.8	35.8	35.7		5.6	5.4	5.6	ST
31008	11/3/2003	1513	2607.3	9708.5	21	13	6	13	21.9	21.7	21.5	35.5	35.5	36.4		5.4	5.4	4.8	ST
31009	11/25/2003	916	2615.5	9702.4	21	21	11	21	19.6	19.6	19.9	37.1	37.4	37.6		7.8	9.5	8.3	ST
31010	11/25/2003	1001	2616.7	9701.5	21	25	12	25	20.3	20.3	20.2	37.7	37.7	37.7		16.1	6.1	9.6	ST
31011	11/25/2003	1058	2618.6	9707.4	21	17	9	17	19.4	19.4	19.5	36.9	36.9	37.1		15.7	3.7	7.7	ST
31012	11/25/2003	1134	2619.6	9707.6	21	17	8	17	19.5	19.5	19.5	37.1	37.1	37.1		6.4	6.4	6.4	ST
31013	11/25/2003	1211	2620.5	9706.5	21	17	9	17	19.7	19.6	19.6	37.3	37.4	37.3		7.5	7.4	6.4	ST
31014	11/25/2003	1247	2621.8	9705.4	21	19	10	19	19.8	19.8	19.6	37.4	37.4	37.4		9.0	8.2	7.1	ST
31015	11/25/2003	1338	2621.5	9710.5	21	15	8	15	19.1	19.1	19.0	36.2	36.6	36.6		6.7	6.6	6.3	ST
31016	11/25/2003	1441	2617.6	9710.5	21	12	6	12	18.6	18.6	18.4	36.4	36.4	36.5		6.3	6.5	6.2	ST

Table 2. Selected environmental parameters (continued)

MATAGORDA BAY, FALL SHRIMP/GOUNDFISH 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	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
32001	11/4/2003	924	2823.5	9619.5	19	7	4	7	25.1	25.1	25.3	33.3	33.5	33.5		7.0	7.0	7.0	ST
32002	11/4/2003	1104	2821.5	9620.5	19	11	6	11	25.2	24.9	25.0	33.3	33.4	33.6		7.3	7.1	6.8	ST
32003	11/5/2003	730	2823.5	9615.5	19	15	7	15	25.0	25.0	24.9	33.2	33.9	33.9		6.7	6.3	6.1	ST
32004	11/5/2003	815	2823.6	9610.5	19	17	8	17	24.6	24.6	24.6	34.0	33.9	34.0		6.3	6.4	6.0	ST
32005	11/5/2003	859	2822.5	9607.5	19	19	10	19	24.7	24.6	24.5	34.0	34.0	34.5		6.5	6.5	5.5	ST
32006	11/5/2003	943	2825.5	9605.5	19	17	8	17	24.7	24.6	24.6	33.6	33.7	39.9		6.4	6.5	6.3	ST
32007	11/5/2003	1040	2826.5	9608.5	19	15	8	15	24.8	24.6	24.7	33.9	33.5	33.7		6.4	6.5	6.5	ST
32008	11/5/2003	1116	2829.5	9608.5	19	12	6	12	25.1	24.7	24.7	33.2	33.1	33.1		6.6	6.6	6.4	ST
32009	11/20/2003	716	2822.5	9621.5	19	8	4	8	20.8	21.7	24.0	33.6	34.0	35.7		8.8	6.6	5.8	ST
32010	11/20/2003	759	2817.5	9620.5	19	18	9	18	23.1	24.4	24.7	35.2	36.9	37.2		6.5	6.0	5.8	ST
32011	11/20/2003	836	2816.5	9622.5	19	17	8	17	22.7	24.5	24.7	36.5	35.2	37.1		6.6	5.9	5.6	ST
32012	11/20/2003	914	2817.5	9625.5	19	10	5	10	22.4	23.7	23.8	34.8	35.7	35.9		6.1	5.9	5.7	ST
32013	11/20/2003	946	2816.5	9627.5	19	9	5	9	22.8	22.9	23.5	35.5	35.6	35.9		6.3	6.1	6.0	ST
32014	11/20/2003	1020	2813.5	9627.5	19	16	8	16	24.4	24.4	24.4	36.6	36.6	36.7		6.0	5.8	5.8	ST
32015	11/20/2003	1056	2811.6	9626.5	19	20	10	20	22.9	24.1	24.8	34.2	34.6	37.3		6.9	6.0	5.7	ST
32016	11/20/2003	1421	2812.5	9622.5	19	18	9	18	23.5	24.7	25.0	32.9	36.5	37.5		7.0	5.7	5.6	ST

Table 2. Selected environmental parameters (continued)

SABINE, FALL SHRIMP/GOUNDFISH 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	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
40001	11/4/2003	738	2939.5	9345.8	17	8	4	8	23.8	23.8	23.8	30.4	30.4	30.8		6.5	6.6	6.2	ST
40002	11/4/2003	828	2938.5	9351.1	17	5	2	5	23.8	24.0	24.0	29.2	29.1	29.6		6.9	7.0	6.7	ST
40003	11/4/2003	925	2940.3	9357.8	17	2	1	2	24.6	24.5	24.3	29.8	29.8	29.8		7.1	7.0	6.9	ST
40004	11/4/2003	1001	2937.5	9359.2	17	6	3	6	24.4	24.2	24.0	29.9	30.0	29.9		6.4	6.8	6.7	ST
40005	11/4/2003	1040	2936.6	9356.6	17	6	3	6	24.6	24.1	23.9	29.9	29.9	29.9		6.7	6.6	6.5	ST
40006	11/4/2003	1128	2936.5	9351.2	17	7	3	7	24.4	24.3	24.1	28.8	29.4	29.9		7.4	7.5	6.5	ST
40007	11/4/2003	1210	2934.6	9348.9	17	12	6	12	24.5	24.0	23.9	28.8	30.2	30.4		7.5	6.1	6.1	ST
40008	11/4/2003	1315	2934.5	9345.2	17	12	6	12	24.7	24.2	24.3	30.4	30.8	31.1		6.8	6.4	6.6	ST
40009	11/20/2003	821	2942.4	9346.9	17	4	2	4	19.7	19.8	19.9	29.8	29.8	30.0		7.0	6.8	6.9	ST
40010	11/20/2003	859	2940.3	9344.2	17	8	4	8	19.8	19.9	20.8	30.2	30.5	31.9		6.7	6.9	6.6	ST
40011	11/20/2003	942	2938.5	9341.8	17	9	5	9	19.7	20.9	21.5	30.1	32.1	32.7		7.1	6.7	6.3	ST
40012	11/20/2003	1024	2941.6	9339.3	17	8	4	8	20.4	20.3	21.0	30.7	30.6	31.6		7.3	7.0	6.5	ST
40013	11/20/2003	1105	2944.6	9337.8	17	4	2	4	20.8	20.6	20.4	29.9	29.7	30.0		7.0	7.1	6.8	ST
40014	11/20/2003	1133	2944.5	9336.2	17	5	2	5	20.4	20.2	20.8	29.6	29.5	30.0		7.0	7.1	6.4	ST
40015	11/20/2003	1226	2939.6	9335.8	17	10	5	10	20.6	20.3	20.8	30.7	30.9	32.1		7.4	7.0	6.9	ST
40016	11/20/2003	1302	2938.5	9335.3	17	10	5	10	20.7	20.3	21.0	30.6	31.3	32.3		7.4	6.8	6.6	ST

Table 2. Selected environmental parameters (continued)

NUECES, FALL SHRIMP/GOUNDFISH 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	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
67001	11/5/2003	729	2750.9	9700.4	20	11	6	11	25.3	25.3	25.1	33.7	34.6	34.7		6.1	6.1	6.2	ST
67002	11/5/2003	806	2748.2	9701.8	20	10	5	10	25.3	25.3	25.3	34.4	34.5	34.4		6.0	6.1	6.5	ST
67003	11/5/2003	843	2746.8	9701.3	20	13	7	13	25.2	25.2	25.1	34.4	34.4	34.6		6.0	6.1	6.2	ST
67004	11/5/2003	916	2745.2	9702.6	20	14	7	14	25.2	25.2	24.9	34.4	34.7	34.8		6.1	6.2	6.1	ST
67005	11/5/2003	946	2744.9	9703.5	20	13	6	13	25.2	25.2	25.2	34.5	34.5	34.8		6.1	6.2	6.4	ST
67006	11/5/2003	1023	2742.1	9704.6	20	14	7	14	25.1	25.1	25.0	34.5	34.9	35.0		6.1	6.2	6.3	ST
67007	11/5/2003	1111	2738.9	9701.6	20	20	10	20	25.3	25.2	25.3	34.8	35.8	36.1		6.1	6.2	5.6	ST
67008	11/5/2003	1213	2746.2	9655.5	20	21	10	21	25.2	25.2	25.7	34.9	36.1	36.2		6.1	6.2	6.0	ST
67009	11/20/2003	737	2751.1	9700.4	20	10	5	10	22.7	24.1	24.6	34.2	35.9	34.5		6.6	5.7	5.8	ST
67010	11/20/2003	809	2753.9	9659.2	20	9	4	9	23.1	24.2	24.5	34.9	35.4	36.0		6.4	6.1	5.1	ST
67011	11/20/2003	838	2754.2	9659.5	20	7	3	7	23.3	24.2	24.4	34.1	36.0	35.6		6.4	6.0	5.2	ST
67012	11/20/2003	909	2753.9	9656.0	20	12	6	12	22.2	24.2	24.6	33.0	35.9	36.3		6.4	6.8	6.1	ST
67013	11/20/2003	949	2755.2	9652.1	20	15	8	15	21.5	24.6	24.8	31.0	36.2	36.7		7.4	6.2	6.1	ST
67014	11/20/2003	1014	2754.7	9651.5	20	17	8	17	21.5	23.6	24.6	30.9	36.2	36.7		7.2	6.6	6.1	ST
67015	11/20/2003	1045	2753.2	9653.5	20	16	8	16	21.7	24.4	24.7	31.0	35.4	36.8		7.5	6.1	5.9	ST
67016	11/20/2003	1119	2750.8	9654.5	20	18	9	18	22.0	23.2	24.9	32.7	35.8	37.0		7.3	6.9	5.8	ST

Table 2. Selected environmental parameters (continued)

SAN JACINTO, FALL SHRIMP/GOUNDFISH 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	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
69001	11/10/2003	844	2927.4	9436.0	18	4	2	4	21.8	21.7	21.7	30.1	30.2	30.2		7.1	6.9	6.8	ST
69002	11/10/2003	924	2927.6	9432.8	18	7	4	7	22.3	22.3	22.2	30.4	30.4	30.4		6.5	6.4	6.6	ST
69003	11/10/2003	1013	2927.4	9431.7	18	7	4	7	22.4	22.4	22.3	30.4	30.5	19.3		6.7	6.6	6.6	ST
69004	11/10/2003	1046	2924.6	9430.2	18	10	5	10	22.8	22.8	22.7	31.0	31.0	31.0		6.6	6.6	6.4	ST
69005	11/10/2003	1117	2924.6	9428.7	18	11	6	11	23.0	23.0	22.9	31.2	31.2	31.3		6.8	6.7	6.6	ST
69006	11/10/2003	1155	2921.8	9429.4	18	12	6	12	23.2	23.2	23.1	31.6	31.7	31.7		6.6	6.7	6.3	ST
69007	11/10/2003	1223	2920.5	9430.9	18	12	6	12	23.2	23.2	23.2	31.8	31.8	31.9		6.6	6.6	6.6	ST
69008	11/10/2003	1308	2919.5	9432.6	18	13	7	13	23.3	23.2	23.2	31.9	31.9	31.9		6.6	6.7	6.6	ST
69009	11/19/2003	1136	2919.0	9439.1	18	10	5	10	19.8	20.0	20.3	21.4	22.9	24.7		7.8	7.7	7.6	ST
69010	11/19/2003	1252	2913.0	9451.9	18	7	4	7	22.0	22.2	22.2	30.5	30.7	30.7		6.9	6.6	5.5	ST
69011	11/19/2003	1348	2907.0	9449.1	18	15	7	15	22.9	22.7	23.2	32.9	33.2	33.5		7.0	6.9	6.9	ST
69012	11/19/2003	1430	2908.1	9445.0	18	15	7	15	22.7	22.7	22.8	32.8	32.7	32.9		7.5	7.1	7.1	ST
69013	11/19/2003	1503	2912.1	9443.0	18	14	7	14	22.6	22.6	22.7	32.4	32.2	32.6		7.2	7.3	7.3	ST
69014	11/19/2003	1525	2912.1	9439.9	18	16	8	16	22.5	22.6	22.7	19.6	32.4	32.8		7.5	7.4	7.2	ST
69015	11/19/2003	1608	2922.1	9434.9	18	12	6	12	22.3	22.4	22.8	31.8	31.8	32.0		7.0	7.0	6.8	ST
69016	11/19/2003	1637	2923.0	9442.9	18	3	2	3	22.1	22.0	22.0	31.2	31.1	31.2		6.8	7.0	6.7	ST

Table 2. Selected environmental parameters (continued)

GANDY, TRAP VIDEO 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	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
1	10/22/2003	1637	2429.6	8307.1	2	48	24	48	27.922	25.184	24.423	35.692	36.291	36.427	0	5.7171	5.964	5.888	TV
2	10/22/2003	1855	2436.0	8302.9	2	26	13	26	27.593	27.586	26.397	35.786	35.786	35.974	0	5.975	6.299	6.208	TV
3	10/22/2003	2013	2436.3	8301.1	2	32	16	32	27.806	27.591	22.756	35.797	35.836	36.407	0	5.4086	6.291	5.244	TV
4	10/23/2003	1215	2436.4	8305.9	2	32	16	32	27.455	27.463	22.362	35.625	35.633	36.471	0	6.1239	6.172	5.233	TV
5	10/23/2003	1331	2437.1	8303.1	2	18	9	18	27.349	27.353	27.346	35.646	35.646	35.648	0	6.1488	6.205	6.191	TV
6	10/23/2003	1454	2437.3	8300.5	2	31	16	31	27.556	27.267	23.966	35.662	35.729	36.373	0	6.3239	6.271	5.678	TV
7	10/23/2003	1609	2437.5	8303.7	2	12	6	12	27.518	27.508	27.503	35.641	35.641	35.64	0	5.4227	6.053	6.167	TV
8	10/23/2003	1726	2437.3	8302.4	2	18	9	18	27.57	27.56	27.565	35.683	35.682	35.68	0	5.6806	6.192	6.312	TV
9	10/23/2003	1817	2437.9	8301.9	2	14	7	14	27.448	27.452	27.444	35.705	35.704	35.705	0	6.4168	6.426	6.438	TV
10	10/23/2003	1918	2438.0	8302.5	2	15	8	15	27.487	27.489	27.489	35.69	35.69	35.69	0	6.3998	6.438	6.415	TV
11	10/23/2003	2025	2439.7	8303.2	2	14	7	14	27.508	27.51	27.512	35.661	35.662	35.664	0	5.8521	6.3	6.331	TV
12	10/24/2003	1243	2430.4	8252.8	2	20	10	20	27.045	27.046	27.044	35.432	35.432	35.432	0	6.1955	6.219	6.15	TV
13	10/24/2003	1347	2431.5	8256.2	2	25	12	25	27.441	27.412	27.365	35.609	35.603	35.595	0	6.2276	6.21	6.167	TV
14	10/24/2003	1504	2431.9	8256.3	2	17	8	17	27.524	27.432	27.443	35.597	35.639	35.646	0	6.1891	6.229	6.211	TV
15	10/24/2003	1628	2435.0	8260.0	2	23	12	23	27.394	27.181	24.849	35.481	35.659	36.089	0	6.3859	6.236	5.861	TV
16	10/28/2003	1449	2440.2	8246.3	2	24	12	24	26.824	26.827	26.787	35.416	35.419	35.455	0	5.8748	5.872	6.018	TV
17	10/28/2003	1631	2440.3	8246.0	2	24	12	24	26.901	26.875	26.81	35.418	35.433	35.476	0	6.2182	6.187	6.322	TV
18	10/28/2003	1738	2441.4	8246.0	2	24	12	24	26.896	26.899	26.587	35.454	35.453	35.595	0	6.3718	6.361	6.459	TV
19	10/28/2003	1853	2442.6	8246.9	2	15	8	15	26.879	26.889	26.894	35.474	35.474	35.473	0	6.3061	6.312	6.325	TV
20	10/28/2003	1945	2443.0	8246.4	2	25	12	25	26.965	26.944	26.927	35.475	35.487	35.49	0	6.4698	6.502	6.457	TV
21	11/6/2003	1412	2805.2	8439.5	6	81	40	81	27.058	26.901	22.913	36.221	36.259	36.463	0	6.5777	6.612	5.999	TV
22	11/6/2003	1511	2806.4	8440.7	6	79	40	79	27.158	26.582	22.942	36.247	36.186	36.458	0	6.6238	6.663	5.992	TV
23	11/6/2003	1609	2808.4	8442.1	6	79	40	79	27.001	26.541	23.052	36.264	36.194	36.459	0	6.6017	6.629	6.016	TV
24	11/6/2003	1708	2809.3	8443.0	6	78	39	78	26.661	26.56	23.05	36.152	36.202	36.443	0	6.6004	6.636	5.97	TV
25	11/6/2003	1809	2807.1	8444.3	6	89	44	89	27.221	26.54	22.631	36.003	36.231	36.499	0	6.5837	6.648	5.955	TV
26	11/6/2003	1918	2809.9	8447.3	6	92	46	92	27.098	26.548	22.051	35.953	36.213	36.448	0	6.622	6.676	5.707	TV
27		.			0	79	40	79	26.831	26.555	22.727	36.139	36.187	36.435	0	6.6506	6.688	5.831	TV
28	11/7/2003	1306	2814.1	8444.7	6	76	38	76	25.472	26.517	23.011	35.221	36.134	36.412	0	6.8697	6.719	5.955	TV

Table 2. Selected environmental parameters (continued)

GANDY, TRAP VIDEO 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	FL SUR	DISSOLVED OXYGEN, PPM SUR	DISSOLVED OXYGEN, PPM MID	DISSOLVED OXYGEN, PPM MAX	GEAR
29	11/7/2003	1403	2813.8	8444.3	6	68	34	68	25.623	26.569	23.216	35.259	36.122	36.373	0	6.8188	6.689	5.939	TV
30	11/7/2003	1458	2813.7	8444.3	6	69	34	69	25.525	26.518	23.479	35.087	36.116	36.344	0	6.7934	6.639	5.97	TV
31	11/7/2003	1555	2813.6	8444.5	6	74	37	74	25.885	26.496	23.206	35.411	36.152	36.377	0	6.736	6.628	5.906	TV
32	11/7/2003	1702	2813.3	8443.6	6	71	36	71	25.972	26.486	23.033	35.529	36.122	36.376	0	6.7812	6.681	5.829	TV
33	11/7/2003	1809	2812.6	8443.6	6	71	36	71	25.91	26.483	23.072	35.422	36.137	36.359	0	6.7776	6.636	5.832	TV
34	11/7/2003	1906	2812.0	8442.9	6	70	35	70	25.401	26.519	22.975	34.677	36.135	36.403	0	6.8715	6.661	5.859	TV
35	11/7/2003	2004	2812.4	8443.0	6	70	35	70	25.556	26.586	22.93	34.869	36.198	36.383	0	6.8587	6.615	5.82	TV
36	11/7/2003	2102	2813.4	8441.6	6	70	35	70	25.733	26.764	22.74	34.699	36.262	36.375	0	6.8895	6.689	5.715	TV
37	11/15/2003	1224	2917.9	8546.7	8	61	30	61	23.793	24.437	21.047	34.764	35.264	36.456	0	7.061	6.97	5.282	TV
38	11/15/2003	1324	2917.7	8546.0	8	62	31	62	23.672	24.468	21.016	34.628	35.278	36.451	0	7.1155	6.952	5.237	TV
39	11/15/2003	1422	2917.5	8545.7	8	68	34	68	23.711	24.644	21.018	34.635	35.389	36.45	0	7.0818	6.911	5.196	TV
40	11/15/2003	1516	2917.4	8544.9	8	63	32	63	23.686	24.467	21.015	34.541	35.256	36.434	0	7.0257	6.904	5.13	TV
41	11/15/2003	1615	2917.3	8544.4	8	63	32	63	23.688	24.505	21.058	34.514	35.307	36.436	0	7.0366	6.866	5.12	TV
42	11/15/2003	1711	2916.9	8543.6	8	60	30	60	23.756	24.573	21.125	34.5	35.284	36.438	0	7.0647	6.692	5.15	TV
43	11/15/2003	1813	2916.7	8543.1	8	62	31	62	23.841	24.403	20.824	34.505	35.253	36.499	0	7.0887	6.544	5.173	TV
44	11/15/2003	1911	2916.5	8542.9	8	69	34	69	23.791	24.496	21.046	34.501	35.489	36.454	0	7.0805	6.324	5.179	TV
45	11/15/2003	2010	2916.0	8542.0	8	58	29	58	23.739	24.234	21.301	34.455	35.047	36.44	0	7.0724	6.792	5.381	TV
46	11/15/2003	2114	2915.3	8541.5	8	68	34	68	23.735	24.774	20.934	34.489	35.6	36.441	0	7.1266	6.466	5.158	TV
47	11/15/2003	2152	2915.3	8541.4	8														TV
48	11/16/2003	1224	2916.1	8539.0	8	57	28	57	23.571	23.825	21.608	34.533	34.721	36.433	0	7.0635	7.001	5.365	TV
49	11/16/2003	1331	2915.0	8540.2	8	63	32	63	24.466	24.685	21.526	35.24	35.377	36.42	0	6.9468	6.89	5.26	TV
50	11/16/2003	1446	2914.4	8537.9	8	64	32	64	23.715	24.646	21.654	34.644	35.447	36.411	0	7.0095	6.531	5.267	TV
51	11/16/2003	1614	2911.6	8540.5	8	78	39	78	25.282	25.274	21.516	35.815	35.829	36.401	0	6.767	6.794	5.224	TV
52	11/16/2003	1723	2911.5	8541.2	8	84	42	84	25.353	25.361	21.542	35.868	35.888	36.418	0	6.7925	6.799	5.314	TV
53	11/16/2003	1830	2911.3	8541.2	8	80	40	80	25.43	25.392	21.52	35.903	35.908	36.415	0	6.8015	6.786	5.274	TV
54	11/16/2003	2003	2908.6	8546.3	8	105	52	105	25.83	25.836	20.425	36.189	36.209	36.494	0	6.7757	6.736	5.15	TV
55	11/22/2003	1244	2813.8	8437.2	6	71	36	71	23.905	24.337	22.397	35.455	35.677	36.358	0	6.981	6.905	5.128	TV
56	11/22/2003	1425	2813.4	8438.9	6	69	34	69	23.813	24.194	22.543	35.353	35.539	36.357	0	6.9565	6.85	5.638	TV

Table 2. Selected environmental parameters (continued)

GANDY, TRAP VIDEO SURVEY																			
							SAMPLE DEPTHS (M)		TEMPERATURE, C			SALINITY, PPT			FL	DISSOLVED OXYGEN, PPM			
STA#	DATE MM/DD/YY	TIME	POSITION LAT	POSITION LONG	STAT ZONE	DEPTH (M)	MID	MAX	SUR	MID	MAX	SUR	MID	MAX	SUR	SUR	MID	MAX	GEAR
57	11/22/2003	1528	2812.1	8438.2	6	70	35	70	23.938	24.385	22.493	35.415	35.708	36.365	0	6.9784	6.898	5.272	TV
58	11/22/2003	1640	2808.8	8437.3	6	72	36	72	24.759	24.7	21.983	35.811	35.849	36.344	0	6.794	6.829	5.005	TV
59	11/22/2003	1745	2809.2	8441.8	6	80	40	80	24.028	24.248	21.997	35.443	35.64	36.379	0	6.899	6.908	5.116	TV
60	11/22/2003	1847	2808.9	8446.5	6	91	46	91	24.846	24.756	22.007	35.891	35.9	36.376	0	6.8636	6.855	5.242	TV
61	11/22/2003	1956	2812.5	8443.4	6	70	35	70	24.25	24.327	22.488	35.53	35.657	36.389	0	6.9648	6.93	5.368	TV
62	11/23/2003	1233	2908.3	8547.4	8	97	48	97	24.813	24.897	21.126	36.142	36.187	36.476	0	6.8501	6.87	5.619	TV
63	11/23/2003	1357	2910.4	8547.0	8	96	48	96	24.709	24.718	20.68	36.106	36.109	36.509	0	6.8266	6.85	5.42	TV
64	11/23/2003	1516	2911.4	8544.3	8	90	45	90	24.792	24.71	20.1	36.116	36.087	36.583	0	6.803	6.788	5.394	TV
65	11/23/2003	1622	2913.2	8546.1	8	96	48	96	24.842	24.832	20.482	36.17	36.17	36.5	0	6.8193	6.794	5.174	TV
66	11/23/2003	1737	2913.9	8545.3	8	92	46	92	24.748	24.819	20.641	36.077	36.148	36.497	0	6.8478	6.803	5.164	TV

Table 3. 2003 Summer Shrimp/Groundfish Survey species composition list, 310 trawl stations, for those vessels that used either a 40-ft or 20-ft trawl. Species with a total weight of less than 0.0227 kg (0.05 lb) are indicated on the table as 0.0 kg.

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Finfishes					
Micropogonias undulatus	atlantic croaker	51188	1676.0	136	44.3
Stenotomus caprinus	longspine porgy	44267	653.2	188	61.2
Peprilus burti	gulf butterfish	13269	394.7	164	53.4
Chloroscombrus chrysurus	atlantic bumper	11294	328.2	113	36.8
Cynoscion nothus	silver seatrout	7689	258.0	90	29.3
Prionotus longispinosus	bigeye searobin	6493	82.6	95	30.9
Leiostomus xanthurus	spot	5782	414.3	103	33.6
Serranus atrobranchus	blackear bass	4084	41.9	82	26.7
Trichiurus lepturus	atlantic cutlassfish	3981	137.5	95	30.9
Anchoa mitchilli	bay anchovy	3058	6.1	42	13.7
Saurida brasiliensis	largescale lizardfish	3017	18.9	116	37.8
Trachurus lathami	rough scad	2769	80.2	70	22.8
Centropristis philadelphica	rock sea bass	2514	49.4	128	41.7
Prionotus stearnsi	shortwing searobin	2361	22.3	73	23.8
Prionotus paralatus	mexican searobin	2340	35.8	61	19.9
Upeneus parvus	dwarf goatfish	2260	42.6	97	31.6
Syacium gunteri	shoal flounder	2250	42.6	131	42.7
Synodus foetens	inshore lizardfish	1816	176.0	137	44.6
Pristipomoides aquilonaris	wenchman	1807	99.9	72	23.5
Lagodon rhomboides	pinfish	1755	67.5	130	42.3
Cynoscion arenarius	sand seatrout	1552	127.5	80	26.1
Prionotus tribulus	bighead searobin	1363	16.1	28	9.1
Anchoa hepsetus	striped anchovy	1125	19.1	50	16.3
Larimus fasciatus	banded drum	1042	42.9	41	13.4
Diplectrum bivittatum	dwarf sand perch	969	19.8	80	26.1
Steindachneria argentea	luminous hake	946	5.0	4	1.3
Halieutichthys aculeatus	pancake batfish	888	5.7	69	22.5

Table 3. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Harengula jaguana	scaled sardine	881	31.0	61	19.9
Etrumeus teres	round herring	850	7.5	28	9.1
Stellifer lanceolatus	star drum	781	15.4	44	14.3
Etropus crossotus	fringed flounder	745	11.3	57	18.6
Prionotus roseus	bluespotted searobin	706	9.4	19	6.2
Prionotus rubio	blackwing searobin	677	38.4	48	15.6
Sphoeroides parvus	least puffer	649	2.7	65	21.2
Sardinella aurita	spanish sardine	645	14.5	20	6.5
Bollmannia communis	ragged goby	644	2.2	30	9.8
Trichopsetta ventralis	sash flounder	635	14.0	33	10.7
Citharichthys spilopterus	bay whiff	572	7.7	41	13.4
Lepophidium brevibarbe	blackedge cusk-eel	532	16.2	54	17.6
Cynoscion spp.	seatrouts	489	1.3	13	4.2
Syacium papillosum	dusky flounder	465	28.2	30	9.8
Eucinostomus gula	silver jenny	463	21.1	34	11.1
Scorpaena calcarata	smoothhead scorpionfish	433	5.7	26	8.5
Brevoortia tyrannus	atlantic menhaden	432	25.8	42	13.7
Prionotus alatus	spiny searobin	409	2.4	17	5.5
Porichthys plectrodon	atlantic midshipman	323	5.5	52	16.9
Lutjanus campechanus	red snapper	322	38.8	73	23.8
Ancylopsetta dilecta	three-eye flounder	305	3.0	25	8.1
Urophycis floridana	southern hake	302	26.3	34	11.1
Syacium micrurum	channel flounder	294	6.9	15	4.9
Symphurus plagiusa	blackcheek tonguefish	258	5.0	30	9.8
Opisthonema oglinum	atlantic thread herring	236	18.4	30	9.8
Selene vomer	lookdown	227	12.6	36	11.7
Engyophrys senta	spiny flounder	199	2.4	26	8.5
Synodus poeyi	offshore lizardfish	196	1.4	35	11.4
Cyclopsetta chittendeni	mexican flounder	190	20.7	49	16.0
Antennarius radiosus	singlespot frogfish	183	2.3	29	9.4

Table 3. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Antennarius radiosus	singlespot frogfish	183	2.3	29	9.4
Ogcocephalus declivirostris	slantbrow batfish	183	5.4	39	12.7
Menticirrhus americanus	southern kingfish	182	23.9	26	8.5
Hoplunnis macrurus	freckled pike-conger	158	1.8	28	9.1
Mullus auratus	red goatfish	140	9.2	10	3.3
Ancylopsetta quadrocellata	ocellated flounder	131	12.4	43	14.0
Bregmaceros atlanticus	antenna codlet	124	0.1	22	7.2
Etropus cyclosquamus	shelf flounder	113	0.8	9	2.9
Monacanthus hispidus	planehead filefish	106	1.4	40	13.0
Lutjanus synagris	lane snapper	105	12.7	25	8.1
Selene setapinnis	atlantic moonfish	102	4.3	24	7.8
Symphurus civitatus	offshore tonguefish	93	1.5	5	1.6
Hildebrandia flava	yellow conger	91	3.2	18	5.9
Brotula barbata	bearded brotula	84	4.4	20	6.5
Dorosoma petenense	threadfin shad	83	2.1	11	3.6
Lagocephalus laevigatus	smooth puffer	83	3.3	39	12.7
Arius felis	hardhead catfish	82	21.6	18	5.9
Bairdiella chrysoura	silver perch	81	1.9	11	3.6
Peprilus alepidotus	harvestfish	81	3.8	16	5.2
Equetus wamotoi	blackbar drum	75	7.8	4	1.3
Caulolatilus intermedius	anchor tilefish	74	4.0	21	6.8
Ogcocephalus parvus	roughback batfish	74	2.2	5	1.6
Citharichthys cornutus	horned whiff	73	0.4	7	2.3
Decapterus punctatus	round scad	73	3.8	14	4.6
Gymnachirus texae	fringed sole	70	0.6	16	5.2
Polydactylus octonemus	atlantic threadfin	70	3.1	9	2.9
Anchoa nasus	longnose anchovy	63	0.1	6	2.0
Kathetostoma albigutta	lancer stargazer	61	2.7	18	5.9
Anchoa lyolepis	dusky anchovy	57	0.1	6	2.0
Anchoviella perfasciata	poey's anchovy	57	1.0	2	0.7

Table 3. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Urophycis cirrata	gulf hake	54	1.5	10	3.3
Equetus umbrosus	cubbyu	51	3.2	9	2.9
Ophidion holbrooki	bank cusk-eel	51	4.8	4	1.3
Peristedion gracile	slender searobin	48	0.2	3	1.0
Hemicaranx amblyrhynchus	bluntnose jack	45	3.8	10	3.3
Selar crumenophthalmus	bigeye scad	45	3.8	14	4.6
Bellator militaris	horned searobin	43	0.3	12	3.9
Haemulon aurolineatum	tomtate	43	2.5	4	1.3
Paralichthys lethostigma	southern flounder	42	12.3	13	4.2
Orthopristis chrysoptera	pigfish	39	2.6	9	2.9
Syacium spp.	lefteye flounders	38	0.2	7	2.3
Balistes capriscus	gray triggerfish	35	6.0	21	6.8
Pontinus longispinis	longspine scorpionfish	34	1.2	5	1.6
Caranx crysos	blue runner	33	4.3	12	3.9
Neomerinthe hemingwayi	spinycheek scorpionfish	33	10.2	7	2.3
Diplectrum formosum	sand perch	31	2.0	8	2.6
Raja texana	roundel skate	30	7.1	19	6.2
Rhizoprionodon terraenovae	atlantic sharpnose shark	29	13.2	12	3.9
Centropristis ocyura	bank sea bass	25	1.1	3	1.0
Bathyanthias mexicanus	yellowtail bass	23	0.7	3	1.0
Lepophidium jeannae	mottled cusk-eel	21	0.8	8	2.6
Prionotus ophryas	bandtail searobin	21	0.4	5	1.6
Trachinocephalus myops	snakefish	21	1.4	6	2.0
Hippocampus erectus	lined seahorse	20	0.1	8	2.6
Chaetodipterus faber	atlantic spadefish	19	1.6	6	2.0
Gobionellus oceanicus	highfin goby	19	0.0	2	0.7
Trinectes maculatus	hogchoker	19	0.2	5	1.6
Citharichthys macrops	spotted whiff	18	0.3	5	1.6
Scomberomorus maculatus	spanish mackerel	18	1.9	7	2.3
Sphoeroides dorsalis	marbled puffer	17	0.4	6	2.0

Table 3. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Ophidion welshi	crested cusk-eel	16	0.3	6	2.0
Squatina dumeril	atlantic angel shark	15	40.1	8	2.6
Gymnothorax saxicola	honeycomb moray	14	1.2	8	2.6
Hemanthias aureorubens	streamer bass	14	0.2	2	0.7
Paralichthys squamilentus	broad flounder	14	4.3	9	2.9
Symphurus urospilus	spottail tonguefish	14	0.3	1	0.3
Conodon nobilis	barred grunt	13	0.9	1	0.3
Priacanthus arenatus	bigeye	13	1.3	8	2.6
Mustelus canis	smooth dogfish	12	15.1	8	2.6
Pisces	fishes	12	1.4	5	1.6
Rhinoptera bonasus	cownose ray	12	84.2	6	2.0
Sphyraena guachancho	guaguanche	11	1.8	7	2.3
Symphurus diomedianus	spottedfin tonguefish	11	0.2	5	1.6
Gymnothorax nigromarginatus	blackedge moray	10	1.3	6	2.0
Oligoplites saurus	leatherjack	10	0.5	2	0.7
Fistularia petimba	red cornetfish	9	0.2	6	2.0
Lophius americanus	goosefish	9	0.6	3	1.0
Scorpaena agassizii	longfin scorpionfish	9	0.4	1	0.3
Ophidion selenops	mooneye cusk-eel	8	0.1	3	1.0
Dasyatis sabina	atlantic stingray	7	1.3	2	0.7
Epinephelus flavolimbatus	yellowedge grouper	7	7.8	4	1.3
Myctophidae	lanternfishes	7	0.0	1	0.3
Scomber japonicus	chub mackerel	7	0.3	3	1.0
Aluterus heudeloti	dotterel filefish	6	0.0	4	1.3
Decodon puellaris	red hogfish	6	0.5	3	1.0
Hemipteronotus novacula	pearly razorfish	6	0.5	2	0.7
Parahollardia lineata	jambeau	6	0.0	1	0.3
Sardinella brasiliensis	orangespot sardine	6	0.0	1	0.3
Scomberomorus cavalla	king mackerel	6	0.6	3	1.0
Calamus arctifrons	grass porgy	5	1.4	2	0.7

Table 3. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Dasyatis say	bluntnose stingray	5	0.9	1	0.3
Gobiidae	gobies	5	0.0	1	0.3
Gobionellus hastatus	darter gobies	5	0.0	2	0.7
Zenopsis conchifera	buckler dory	5	0.2	1	0.3
Bagre marinus	gafftopsail catfish	4	1.8	2	0.7
Chilomycterus schoepfi	striped burrfish	4	0.8	4	1.3
Epigonus pandionis	deepwater cardinalfishes	4	0.1	1	0.3
Mulloidichthys martinicus	yellow goatfish	4	0.1	1	0.3
Ophichthus gomesi	shrimp eel	4	0.4	4	1.3
Paraconger caudilimbatus	margintail conger	4	0.2	1	0.3
Pomatomus saltatrix	bluefish	4	0.7	3	1.0
Pristigenys alta	short bigeye	4	0.0	1	0.3
Rhomboplites aurorubens	vermilion snapper	4	0.4	3	1.0
Serranus notospilus	saddle bass	4	0.0	1	0.3
Aluterus schoepfi	orange filefish	3	0.1	2	0.7
Carcharhinus acronotus	blacknose shark	3	9.2	3	1.0
Carcharhinus limbatus	blacktip shark	3	4.6	2	0.7
Lactophrys quadricornis	scrawled cowfish	3	0.7	2	0.7
Neobythites gillii	cusk-eel	3	0.0	1	0.3
Raja eglanteria	clearnose skate	3	2.3	1	0.3
Rypticus maculatus	whitespotted soapfish	3	0.1	3	1.0
Serraniculus pumilio	pygmy sea bass	3	0.0	2	0.7
Sphoeroides spengleri	bandtail puffer	3	0.0	2	0.7
Synodus intermedius	sand diver	3	0.2	2	0.7
Bellator brachychir	shortfin searobin	2	0.0	2	0.7
Calamus leucosteus	whitebone porgy	2	1.5	1	0.3
Echeneis naucrates	sharksucker	2	0.6	2	0.7
Exocoetidae	flyingfishes	2	0.0	2	0.7
Pagrus pagrus	red porgy	2	1.1	1	0.3
Physiculus fulvus	metallic codling	2	0.0	1	0.3

Table 3. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Seriola dumerili	greater amberjack	2	0.5	2	0.7
Sphyraena picudilla	southern sennet	2	0.2	1	0.3
Achirus lineatus	lined sole	1	0.0	1	0.3
Ariomma bondi	silver-rag	1	0.0	1	0.3
Bothus robinsi	twospot flounder	1	0.0	1	0.3
Calamus nodosus	knobbed porgy	1	1.1	1	0.3
Eucinostomus argenteus	spotfin mojarra	1	0.0	1	0.3
Euthynnus alletteratus	little tunny	1	4.2	1	0.3
Foetorepus agassizii	spotfin dragonet	1	0.0	1	0.3
Hippocampus zosterae	pygmy seahorse	1	0.0	1	0.3
Holocentrus adscensionis	squirrelfish	1	0.0	1	0.3
Myliobatis freminvillii	bullnose ray	1	1.9	1	0.3
Ogcocephalus corniger	longnose batfish	1	0.0	1	0.3
Opsanus pardus	leopard toadfish	1	0.1	1	0.3
Pomacentrus variabilis	cocoa damselfish	1	0.0	1	0.3
Prionotus martis	barred searobin	1	0.0	1	0.3
Rachycentron canadum	cobia	1	9.7	1	0.3
Raja olseni	spreadfin skate	1	0.2	1	0.3
Rhinobatos lentiginosus	atlantic guitarfish	1	0.5	1	0.3
Saurida caribbaea	smallscale lizardfish	1	0.0	1	0.3
Sciaenops ocellatus	red drum	1	5.0	1	0.3
Sphyrna lewini	scalloped hammerhead	1	0.7	1	0.3
Sphyrna tiburo	bonnethead	1	0.7	1	0.3
Crustaceans					
Farfantepenaeus aztecus	brown shrimp	46766	503.9	257	83.7
Trachypenaeus similis	roughback shrimp	20801	91.4	102	33.2
Callinectes similis	lesser blue crab	12238	126.3	183	59.6
Squilla empusa	mantis shrimp	10875	88.5	152	49.5

Table 3. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Portunus spinicarpus	longspine swimming crab	7206	47.9	80	26.1
Trachypenaeus constrictus	roughneck shrimp	7164	33.6	41	13.4
Farfantepenaeus duorarum	pink shrimp	4637	43.0	41	13.4
Sicyonia brevirostris	brown rock shrimp	3664	40.1	59	19.2
Squilla chydaea	mantis shrimp	3595	24.4	87	28.3
Portunus gibbesii	irridescent swimming crab	2721	10.5	87	28.3
Solenocera vioscai	humpback shrimp	2118	11.6	35	11.4
Sicyonia dorsalis	lesser rock shrimp	1482	5.0	79	25.7
Litopenaeus setiferus	white shrimp	1189	49.3	76	24.8
Parapenaeus politus	deepwater rose shrimp	1007	1.5	19	6.2
Callinectes sapidus	blue crab	588	91.1	84	27.4
Calappa sulcata	yellow box crab	323	44.3	57	18.6
Anasimus latus	stilt spider crab	308	1.6	36	11.7
Sicyonia burkenroadi	spiny rock shrimp	211	0.3	20	6.5
Portunus spinimanus	blotched swimming crab	199	3.8	47	15.3
Raninoides louisianensis	gulf frog crab	88	1.9	20	6.5
Hepatus epheliticus	calico crab	70	1.5	12	3.9
Ovalipes floridanus	florida lady crab	63	0.6	20	6.5
Persephona mediterranea	mottled purse crab	44	0.3	4	1.3
Lysmata wurdemanni	peppermint shrimp	35	0.0	3	1.0
Squilla neglecta	mantis shrimp	34	0.3	8	2.6
Leiolambrus nitidus	white elbow crab	33	0.0	14	4.6
Pseudorhombila quadridentata	flecked squareback crab	31	0.3	9	2.9
Parthenope granulata	bladetooth elbow crab	29	0.1	11	3.6
Myropsis quinquespinosa	fivespine purse crab	28	1.3	7	2.3
Xiphopenaeus kroyeri	seabob	26	0.1	13	4.2
Pagurus bullisi	hermit crab	25	0.1	5	1.6
Porcellana sayana	spotted porcelain crab	24	0.0	3	1.0
Dardanus insignis	red brocade hermit	23	4.2	2	0.7
Stenorhynchus seticornis	yellowline arrow crab	19	0.0	6	2.0

Table 3. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Persephona crinita	pink purse crab	17	0.1	10	3.3
Petrochirus diogenes	giant hermit crab	16	1.8	5	1.6
Portunus sayi	sargassum swimming crab	14	0.1	7	2.3
Acanthocarpus alexandri	gladiator box crab	13	0.1	3	1.0
Collodes robustus	spider crab	13	0.0	4	1.3
Metoporhaphis calcarata	false arrow crab	13	0.0	6	2.0
Menippe adina	gulf stone crab	11	0.1	4	1.3
Paguristes triangulatus	hermit crab	10	0.0	1	0.3
Libinia emarginata	portly spider crab	9	0.3	4	1.3
Stenocionops coelata	spider crab	9	0.3	4	1.3
Menippe spp.	stone crabs	8	0.3	2	0.7
Munida forceps	squat lobster	8	0.0	2	0.7
Parthenope serrata	sawtooth elbow crab	8	0.0	7	2.3
Stenocionops furcata	furcate crab	8	0.6	6	2.0
Libinia dubia	longnose spider crab	7	0.0	6	2.0
Arenaeus cribrarius	speckled swimming crab	6	0.2	4	1.3
Dromidia antillensis	hairy sponge crab	6	0.0	3	1.0
Nanoplax xanthiformis	rough squareback crab	6	0.0	1	0.3
Pagurus pollicaris	flatclaw hermit crab	6	0.0	4	1.3
Diogenidae	left-handed hermit crabs	5	0.0	3	1.0
Scyllarides nodifer	ridged slipper lobster	5	1.5	5	1.6
Porcellana sigsbeiana	striped porcelain crab	4	0.0	2	0.7
Axiopsis	lobster shrimp genus	3	0.0	1	0.3
Hypoconcha spinosissima	spiny shellback crab	3	0.0	1	0.3
Podochela sidneyi	shortfinger neck crab	2	0.0	1	0.3
Speocarcinus lobatus	gulf squareback crab	2	0.0	1	0.3
Danielum ixbauchac	red sea crab	1	0.0	1	0.3
Euphrosynoplax clausa	craggy bathyal crab	1	0.0	1	0.3
Latreutes parvulus	sargassum shirmp	1	0.0	1	0.3
Leander tenuicornis	brown glass shrimp	1	0.0	1	0.3

Table 3. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Ocypode quadrata	atlantic ghost crab	1	0.0	1	0.3
Pagurus longicarpus	long-armed hermit crab	1	0.0	1	0.3
Plesionika longicauda	pandalid shrimp	1	0.0	1	0.3
Stenocionops spinimanus	prickly spider crab	1	0.1	1	0.3
Synalpheus fritzmuelleri	speckled snapping shrimp	1	0.0	1	0.3
Others					
Loligo pleii	arrow squid	11950	152.8	106	34.5
Loligo pealeii	longfin squid	9289	122.4	97	31.6
Amusium papyraceum	paper scallop	2784	26.4	57	18.6
Renilla mulleri	short-stemmed sea pansy	2030	11.6	85	27.7
Lolliguncula brevis	atlantic brief squid	1273	12.2	96	31.3
Chrysaora quinquecirrha	sea nettle	786	15.5	53	17.3
Astropecten duplicatus	spiny beaded sea star	455	0.6	51	16.6
Mnemiopsis mccradyi	comb jelly	228	3.2	8	2.6
Encope aberrans	sand dollar	204	0.7	5	1.6
Tethyaster grandis	starfish	183	11.1	12	3.9
Astropecten cingulatus	starfish	164	3.0	30	9.8
Luidia clathrata	sea star	146	1.9	38	12.4
Styela plicata	tunicate	116	4.8	11	3.6
Moira atropos	mud heart-urchin	97	0.2	1	0.3
Polystira albida	white giant turris	79	0.6	10	3.3
Ophiolepis elegans	brittle star	76	0.1	19	6.2
Polystira tellea	delicate giant turret	76	0.7	4	1.3
Beroe ovata	comb jelly	55	0.6	2	0.7
Calliactis spp.	anemone	54	0.4	17	5.5
Semirossia equalis	greater shining bobtail	44	0.1	6	2.0
Aurelia aurita	moon jellyfish	43	1.3	10	3.3
Pitar cordatus	schwengel's pitar	43	0.8	11	3.6

Table 3. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Actinidae	sea anemones	33	0.1	7	2.3
Cnidaria	coelenterates	33	0.5	2	0.7
Chione clenchi	clench venus	31	0.3	8	2.6
Anadara baughmani	baughman's ark	30	0.5	5	1.6
Sconsia striata	royal bonnet	30	0.4	5	1.6
Luidia alternata	banded luidia	29	1.3	6	2.0
Conus austini	cone shell	26	0.4	5	1.6
Astropecten articulatus	plated-margined sea star	23	0.1	3	1.0
Macoma brevifrons	short macoma	20	0.2	3	1.0
Aplysia brasiliana	mottled seahare	18	1.3	8	2.6
Clypeaster ravenelii	cake urchin	17	1.7	5	1.6
Rossia bullisi	gulf bobtail squid	15	0.0	9	2.9
Muricanthus fulvescens	giant eastern murex	13	1.0	2	0.7
Anthenoides piercei	starfish	10	0.3	3	1.0
Blob	blob	10	0.3	3	1.0
Distorsio clathrata	atlantic distorsio	8	0.1	4	1.3
Gorgonidae	gorgonians	8	0.1	5	1.6
Asteroporpa annulata	starfish	7	0.1	3	1.0
Porifera	sponges	7	2.1	3	1.0
Anadara ovalis	blood ark	6	0.0	1	0.3
Calliactris tricolor	common sea anemone	6	0.0	3	1.0
Cantharus cancellarius	cancellate cantharus	5	0.0	5	1.6
Molpadia spp.	sea cucumber	5	0.1	4	1.3
Octopus vulgaris	common atlantic octopus	5	0.7	4	1.3
Hydrozoa	hydralike animals	4	0.1	3	1.0
Molpadia barbouri	sea cucumber	4	0.1	1	0.3
Thais haemastoma	rocksnail	3	0.0	1	0.3
Argopecten gibbus	calico scallop	2	0.0	2	0.7
Bursatella leachii	ragged seahare	2	0.0	2	0.7
Cerianthus	tube dwelling anemones	2	0.0	1	0.3
Fusinus couei	yucatan spindle	2	0.0	1	0.3

Table 3. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Mellita quinquiesperforata	five-slotted sand dollar	2	0.0	2	0.7
Strombus alatus	florida fighting conch	2	0.2	2	0.7
Arcinella cornuta	florida spiny jewelbox	1	0.0	1	0.3
Bryozoa	moss animals	1	0.0	1	0.3
Busycon sinistrum	lightning whelk	1	0.5	1	0.3
Busycotypus spiratus	pearwhelk	1	0.0	1	0.3
Caretta caretta	loggerhead turtle	1	25.0	1	0.3
Echinaster spp.	thorny sea stars	1	0.0	1	0.3
Geodia gibberosa	sponge	1	0.2	1	0.3
Laevicardium laevigatum	egg cockle	1	0.1	1	0.3
Loligo spp.	squids	1	0.1	1	0.3
Neverita duplicata	shark eye	1	0.0	1	0.3
Oliva sayana	lettered olive	1	0.0	1	0.3
Paranthus rapiformis	onion anemone	1	0.0	1	0.3
Sinum perspectivum	white baby-ear	1	0.0	1	0.3
Tonna galea	giant tun	1	0.3	1	0.3
Tonna maculosa	atlantic partridge tun	1	0.4	1	0.3
Tunicata	sea squirts	1	0.0	1	0.3

Table 4a

Statistical Zone 10

Only two stations were conducted in Zone 10 during the 2003 Summer Shrimp/Groundfish Survey. Both of these stations were plankton stations, so no dominant organisms were recorded.

Table 4b

Statistical Zone 10

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 2003 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	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0
Total finfish	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0
Total crustacean	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0
Total other	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0
Surface temperature	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	28.4	0	1
Midwater temperature	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	17.7	0	1
Bottom temperature	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	13.4	0	1
Surface salinity	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	25.3	0	1
Midwater salinity	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	36.3	0	1
Bottom salinity	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	35.7	0	1
Surface chlorophyll	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	45.8	0	1
Surface fluorescence	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0
Surface oxygen	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	6.0	0	1
Midwater oxygen	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	4.4	0	1
Bottom oxygen	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	4.3	0	1

Table 5a

Statistical Zone 11

Summary of dominant organisms taken in statistical zone 11 during the 2003 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
Farfantepenaeus aztecus	1010.3	565.05	9.0	5.16	5	209.8	107.93	2.1	1.21	9	411.9	110.44	6.2	1.60	22
Trachypenaeus similis	12.2	10.80	0.0	0.01	5	424.9	210.71	1.2	0.64	9	473.5	141.72	1.7	0.51	22
Portunus spinicarpus	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	9	32.5	15.44	0.1	0.07	22
Squilla spp	19.2	8.00	0.2	0.07	5	63.8	32.87	0.3	0.13	9	290.4	96.18	2.7	0.85	22
Callinectes similis	2.9	2.88	0.0	0.01	5	158.1	74.59	1.0	0.43	9	295.6	173.73	2.4	1.33	22
Portunus gibbesii	48.6	27.63	0.1	0.05	5	13.3	7.63	0.0	0.02	9	267.9	139.11	0.9	0.42	22
Micropogonias undulatus	5953.8	3010.20	153.9	74.15	5	901.5	589.79	22.3	14.37	9	2.5	1.24	0.2	0.08	22
Stenotomus caprinus	0.0	0.00	0.0	0.00	5	221.4	156.88	1.3	0.87	9	357.3	142.40	2.8	1.26	22
Leiostomus xanthurus	83.1	48.41	3.0	1.32	5	5.3	3.71	0.4	0.29	9	0.6	0.32	0.1	0.04	22
Peprilus burti	25.4	22.00	1.2	1.09	5	42.5	22.84	0.9	0.45	9	95.9	48.87	3.0	1.54	22
Steindachneria argentea	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	9	0.0	0.00	0.0	0.00	22
Serranus atrobranchus	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	9	120.7	66.72	0.5	0.26	22
Prionotus longispinosus	61.4	41.21	0.2	0.13	5	121.2	39.87	0.8	0.23	9	39.3	12.73	0.5	0.20	22
Cynoscion arenarius	116.1	90.46	5.8	4.88	5	75.1	43.34	1.3	0.66	9	7.5	3.54	1.0	0.45	22
Squid spp	22.6	16.34	0.2	0.11	5	240.5	72.97	1.8	0.62	9	323.7	78.43	3.6	1.07	22

Table 5a (continued)

Statistical Zone 11

Summary of dominant organisms taken in statistical zone 11 during the 2003 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
Farfantepenaeus aztecus	57.0	32.04	1.5	0.74	7	100.2	6.42	4.1	0.50	2	27.4	11.78	1.5	0.62	5
Trachypenaeus similis	54.9	54.86	0.3	0.33	7	1.1	1.09	0.0	0.01	2	30.0	30.00	0.1	0.14	5
Portunus spinicarpus	282.0	133.49	1.5	0.68	7	583.0	56.30	5.3	0.33	2	911.5	883.26	7.3	6.56	5
Squilla spp	223.0	176.54	1.6	1.27	7	81.6	43.84	0.4	0.21	2	143.0	135.80	1.8	1.33	5
Callinectes similis	72.1	34.38	1.0	0.46	7	12.7	7.27	0.2	0.20	2	2.6	2.57	0.0	0.04	5
Portunus gibbesii	8.9	8.86	0.0	0.04	7	4.9	2.71	0.0	0.01	2	6.0	6.00	0.0	0.04	5
Micropogonias undulatus	22.0	22.00	1.3	1.28	7	5.5	3.35	0.4	0.33	2	3045.8	1584.20	193.8	82.38	5
Stenotomus caprinus	25.1	21.36	1.7	1.43	7	133.1	102.51	7.8	6.05	2	890.2	494.12	56.7	29.06	5
Leiostomus xanthurus	0.0	0.00	0.0	0.00	7	1.1	1.09	0.1	0.10	2	988.1	363.33	98.6	36.31	5
Peprilus burti	56.7	46.91	1.6	1.29	7	1.1	1.09	0.0	0.03	2	130.6	100.97	4.6	3.00	5
Steindachneria argentea	169.0	169.01	0.9	0.88	7	0.0	0.00	0.0	0.00	2	18.9	18.86	0.2	0.21	5
Serranus atrobranchus	24.9	14.61	0.2	0.14	7	108.5	10.35	1.5	0.24	2	76.8	30.76	1.4	0.47	5
Prionotus longispinosus	21.1	16.09	1.1	1.01	7	0.0	0.00	0.0	0.00	2	12.1	9.24	1.5	1.04	5
Cynoscion arenarius	2.1	1.50	0.4	0.29	7	2.7	2.73	0.3	0.34	2	95.3	59.66	17.4	12.32	5
Squid spp	175.1	87.65	1.8	0.84	7	34.6	10.14	0.6	0.10	2	81.3	35.16	1.5	0.63	5

Table 5b

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 2003 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	190.0	86.94	5	39.9	14.8	9	44.6	6.51	22	0.0	0	0	37.1	4.47	2	446.0	116.4	5
Total finfish	175.0	83.05	5	35.5	15.97	8	24.5	5.77	22	0.0	0	0	23.1	4.12	2	429.0	122.7	5
Total crustacean	12.1	5.79	4	7.2	2.18	8	18.8	3.57	19	0.0	0	0	13.2	0.4	2	14.2	9.36	5
Total other	6.6	1.87	4	2.5	0.72	7	4.1	1.15	21	0.0	0	0	0.8	0.05	2	2.9	0.56	5
Surface temperature	27.1	0.14	5	27.9	0.27	9	28.8	0.22	22	0.0	0	0	28.8	0.12	3	28.4	0.21	10
Midwater temperature	27.4	0.13	5	26.1	1.02	9	25.4	0.49	22	0.0	0	0	23.5	0.92	3	21.9	0.38	10
Bottom temperature	27.4	0.13	5	25.3	1.18	9	21.8	0.35	22	0.0	0	0	20.2	0.09	3	18.7	0.52	10
Surface salinity	18.8	0.97	5	21.0	1.05	9	23.3	0.56	22	0.0	0	0	28.3	3.13	3	29.4	1.65	10
Midwater salinity	19.8	1.22	5	29.5	1.38	9	33.2	0.59	22	0.0	0	0	36.0	0.18	3	36.2	0.05	10
Bottom salinity	20.8	1.19	5	31.4	1.15	9	35.7	0.1	21	0.0	0	0	36.2	0.01	3	36.1	0.11	10
Surface chlorophyll	0.0	0	0	0.0	0	0	16.3	6.53	8	0.0	0	0	10.8	1.91	3	14.0	5.79	10
Surface fluorescence	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0
Surface oxygen	5.9	0.46	5	6.9	0.15	9	7.3	0.23	22	0.0	0	0	6.9	0.35	3	6.4	0.14	10
Midwater oxygen	5.6	0.46	5	5.8	0.4	9	4.9	0.27	22	0.0	0	0	5.5	0.56	3	5.7	0.34	10
Bottom oxygen	5.3	0.43	5	3.9	0.46	9	3.7	0.18	21	0.0	0	0	3.1	0.15	3	3.6	0.19	10

Table 6a

Statistical Zone 13

Summary of dominant organisms taken in statistical zone 13 during the 2003 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 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	0	147.5	135.11	0.5	0.49	10	415.4	411.56	2.0	1.93	4
Squilla spp	0.0	0.00	0.0	0.00	0	26.5	15.19	0.1	0.03	10	561.1	355.42	3.5	3.10	4
Farfantepenaeus aztecus	0.0	0.00	0.0	0.00	0	64.0	59.99	0.7	0.66	10	498.2	284.04	5.2	2.46	4
Callinectes similis	0.0	0.00	0.0	0.00	0	29.2	28.03	0.3	0.34	10	430.0	383.25	3.3	3.05	4
Solenocera vioscai	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	10	0.0	0.00	0.0	0.00	4
Callinectes sapidus	0.0	0.00	0.0	0.00	0	9.7	5.23	1.1	0.72	10	42.2	25.46	6.7	3.95	4
Micropogonias undulatus	0.0	0.00	0.0	0.00	0	116.3	68.10	2.8	1.58	10	471.1	459.66	13.1	12.65	4
Prionotus longispinosus	0.0	0.00	0.0	0.00	0	60.7	58.97	0.6	0.61	10	382.7	358.88	5.7	5.53	4
Trichiurus lepturus	0.0	0.00	0.0	0.00	0	8.9	4.32	0.1	0.04	10	264.4	200.91	4.7	4.28	4
Centropristis philadelphica	0.0	0.00	0.0	0.00	0	5.4	5.22	0.0	0.03	10	63.5	53.94	0.6	0.53	4
Bollmannia communis	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	10	20.3	18.30	0.1	0.04	4
Anchoa mitchilli	0.0	0.00	0.0	0.00	0	36.9	16.59	0.0	0.02	10	26.9	15.72	0.0	0.02	4
Cynoscion arenarius	0.0	0.00	0.0	0.00	0	6.4	5.35	0.2	0.12	10	72.4	52.10	10.6	7.29	4
Diplectrum bivittatum	0.0	0.00	0.0	0.00	0	30.0	30.00	0.1	0.08	10	0.0	0.00	0.0	0.00	4
Squid spp	0.0	0.00	0.0	0.00	0	13.6	12.08	0.1	0.04	10	43.1	36.02	0.4	0.22	4

Table 6a (continued)

Statistical Zone 13

Summary of dominant organisms taken in statistical zone 13 during the 2003 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 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	935.6	736.40	4.9	3.76	2	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0
Squilla spp	589.0	433.00	8.4	6.73	2	120.0	0.00	0.9	0.00	1	0.0	0.00	0.0	0.00	0
Farfantepenaeus aztecus	364.9	95.90	7.2	1.16	2	54.5	0.00	2.0	0.00	1	0.0	0.00	0.0	0.00	0
Callinectes similis	431.4	240.60	8.1	4.37	2	10.9	0.00	0.3	0.00	1	0.0	0.00	0.0	0.00	0
Solenocera vioscai	254.0	254.00	1.6	1.56	2	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0
Callinectes sapidus	3.2	0.80	0.8	0.13	2	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0
Micropogonias undulatus	6.0	6.00	0.4	0.41	2	916.4	0.00	49.6	0.00	1	0.0	0.00	0.0	0.00	0
Prionotus longispinosus	36.4	1.60	1.0	0.05	2	141.8	0.00	4.2	0.00	1	0.0	0.00	0.0	0.00	0
Trichiurus lepturus	210.7	205.70	13.3	13.22	2	16.4	0.00	2.8	0.00	1	0.0	0.00	0.0	0.00	0
Centropristis philadelphica	85.6	12.40	2.2	0.01	2	10.9	0.00	1.1	0.00	1	0.0	0.00	0.0	0.00	0
Bollmannia communis	106.5	106.50	0.3	0.28	2	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0
Anchoa mitchilli	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0
Cynoscion arenarius	30.2	8.20	5.0	1.36	2	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0
Diplectrum bivittatum	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0
Squid spp	39.0	39.00	0.4	0.40	2	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0

Table 6b

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 2003 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 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	0.0	0	0	13.8	5.26	10	63.2	30.57	4	0.0	0	0	75.3	0	1	0.0	0	0
Total finfish	0.0	0	0	12.0	4.62	9	41.5	24.6	4	0.0	0	0	71.5	0	1	0.0	0	0
Total crustacean	0.0	0	0	4.0	3.17	7	21.2	13.04	4	0.0	0	0	3.8	0	1	0.0	0	0
Total other	0.0	0	0	0.1	0.13	3	0.4	0.24	4	0.0	0	0	0.0	0	1	0.0	0	0
Surface temperature	0.0	0	0	29.1	0.15	10	28.6	0.09	5	0.0	0	0	28.1	0	1	0.0	0	0
Midwater temperature	0.0	0	0	28.1	0.08	10	27.5	0.42	5	0.0	0	0	23.4	0	1	0.0	0	0
Bottom temperature	0.0	0	0	26.7	0.08	10	24.0	0.92	5	0.0	0	0	20.4	0	1	0.0	0	0
Surface salinity	0.0	0	0	16.4	0.85	10	18.2	0.59	5	0.0	0	0	32.2	0	1	0.0	0	0
Midwater salinity	0.0	0	0	22.6	0.79	10	30.3	2.59	5	0.0	0	0	36.0	0	1	0.0	0	0
Bottom salinity	0.0	0	0	33.7	0.17	10	35.4	0.28	5	0.0	0	0	36.3	0	1	0.0	0	0
Surface chlorophyll	0.0	0	0	12.5	1.7	10	36.0	10.23	5	0.0	0	0	3.6	0	1	0.0	0	0
Surface fluorescence	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0
Surface oxygen	0.0	0	0	10.0	0.34	10	8.6	0.54	5	0.0	0	0	6.5	0	1	0.0	0	0
Midwater oxygen	0.0	0	0	8.4	0.85	10	5.3	0.65	5	0.0	0	0	7.1	0	1	0.0	0	0
Bottom oxygen	0.0	0	0	1.1	0.41	10	2.7	0.8	5	0.0	0	0	6.0	0	1	0.0	0	0

Table 7a

Statistical Zone 14

Summary of dominant organisms taken in statistical zone 14 during the 2003 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
Farfantepenaeus aztecus	0.0	0.00	0.0	0.00	0	36.9	26.63	0.3	0.16	8	837.5	180.66	9.0	2.02	17
Trachypenaeus similis	0.0	0.00	0.0	0.00	0	125.5	84.96	0.2	0.14	8	406.8	152.38	1.7	0.68	17
Squilla spp	0.0	0.00	0.0	0.00	0	347.9	231.17	0.6	0.41	8	204.2	81.11	1.4	0.61	17
Callinectes similis	0.0	0.00	0.0	0.00	0	28.4	15.13	0.2	0.14	8	256.1	110.99	3.1	1.43	17
Portunus gibbesii	0.0	0.00	0.0	0.00	0	77.1	64.13	0.2	0.20	8	42.5	17.59	0.3	0.15	17
Litopenaeus setiferus	0.0	0.00	0.0	0.00	0	36.8	35.74	1.5	1.46	8	5.1	2.16	0.3	0.12	17
Micropogonias undulatus	0.0	0.00	0.0	0.00	0	106.8	102.76	4.1	3.95	8	1140.6	355.47	55.1	17.27	17
Prionotus longispinosus	0.0	0.00	0.0	0.00	0	99.2	73.93	0.7	0.48	8	294.8	132.54	4.2	2.12	17
Anchoa mitchilli	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	8	339.7	212.27	1.0	0.54	17
Leiostomus xanthurus	0.0	0.00	0.0	0.00	0	85.1	81.99	4.0	3.84	8	151.7	61.15	12.8	5.44	17
Trichiurus lepturus	0.0	0.00	0.0	0.00	0	5.5	4.95	0.0	0.04	8	245.0	83.10	5.2	1.79	17
Prionotus tribulus	0.0	0.00	0.0	0.00	0	45.2	43.55	0.3	0.24	8	136.0	118.14	1.6	1.33	17
Stenotomus caprinus	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	8	184.4	94.45	0.9	0.35	17
Syacium gunteri	0.0	0.00	0.0	0.00	0	3.0	3.00	0.0	0.04	8	114.9	78.36	2.5	1.88	17
Squid spp	0.0	0.00	0.0	0.00	0	7.0	7.00	0.0	0.02	8	41.6	19.05	0.5	0.23	17

Table 7a (continued)

Statistical Zone 14

Summary of dominant organisms taken in statistical zone 14 during the 2003 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
Farfantepenaeus aztecus	841.1	0.00	12.0	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Trachypenaeus similis	883.6	0.00	5.1	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Squilla spp	229.1	0.00	3.3	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Callinectes similis	600.0	0.00	7.5	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Portunus gibbesii	25.1	0.00	0.2	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Litopenaeus setiferus	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Micropogonias undulatus	57.8	0.00	3.0	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Prionotus longispinosus	171.3	0.00	4.2	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Anchoa mitchilli	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Leiostomus xanthurus	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Trichiurus lepturus	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Prionotus tribulus	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Stenotomus caprinus	25.1	0.00	0.1	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Syacium gunteri	133.1	0.00	2.5	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Squid spp	8.7	0.00	0.7	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0

Table 7b

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 2003 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	0.0	0	0	24.4	14.6	8	127.0	20.72	17	0.0	0	0	0.0	0	0	0.0	0	0
Total finfish	0.0	0	0	33.7	19.07	5	107.0	19.75	17	0.0	0	0	0.0	0	0	0.0	0	0
Total crustacean	0.0	0	0	4.4	2.48	6	17.9	4.17	17	0.0	0	0	0.0	0	0	0.0	0	0
Total other	0.0	0	0	0.1	0.05	4	2.9	2.14	13	0.0	0	0	0.0	0	0	0.0	0	0
Surface temperature	0.0	0	0	28.7	0.28	9	28.8	0.13	19	0.0	0	0	0.0	0	0	0.0	0	0
Midwater temperature	0.0	0	0	27.8	0.1	9	27.7	0.24	19	0.0	0	0	0.0	0	0	0.0	0	0
Bottom temperature	0.0	0	0	26.2	0.22	9	23.5	0.31	19	0.0	0	0	0.0	0	0	0.0	0	0
Surface salinity	0.0	0	0	22.1	1.23	9	28.0	0.75	19	0.0	0	0	0.0	0	0	0.0	0	0
Midwater salinity	0.0	0	0	27.7	1.39	9	33.1	0.45	19	0.0	0	0	0.0	0	0	0.0	0	0
Bottom salinity	0.0	0	0	33.5	0.91	9	34.9	0.47	19	0.0	0	0	0.0	0	0	0.0	0	0
Surface chlorophyll	0.0	0	0	16.1	5.13	7	5.4	1.54	16	0.0	0	0	0.0	0	0	0.0	0	0
Surface fluorescence	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0
Surface oxygen	0.0	0	0	9.0	0.57	9	8.0	0.3	19	0.0	0	0	0.0	0	0	0.0	0	0
Midwater oxygen	0.0	0	0	7.0	0.49	9	6.1	0.22	19	0.0	0	0	0.0	0	0	0.0	0	0
Bottom oxygen	0.0	0	0	1.4	0.43	9	2.8	0.27	19	0.0	0	0	0.0	0	0	0.0	0	0

Table 8a

Statistical Zone 15

Summary of dominant organisms taken in statistical zone 15 during the 2003 Summer Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight (WT) in kg per hour, the SEM for weight and the number (N) of samples taken. No trawl samples were taken in depths greater than 30 fm.

	0-5 fm					6-10 fm					11-20 fm				
SPECIES	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Trachypenaeus similis	0.0	0.00	0.0	0.00	2	16.4	0.00	0.1	0.00	1	694.1	475.20	3.6	2.48	4
Farfantepenaeus aztecus	42.8	41.67	0.4	0.41	2	374.2	0.00	4.2	0.00	1	358.3	277.91	5.4	4.21	4
Squilla spp	0.0	0.00	0.0	0.00	2	26.2	0.00	0.1	0.00	1	287.7	129.93	2.0	1.08	4
Callinectes similis	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1	189.5	101.67	2.9	1.79	4
Sicyonia dorsalis	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1	41.6	39.11	0.1	0.12	4
Portunus gibbesii	17.2	7.22	0.1	0.03	2	137.5	0.00	0.6	0.00	1	84.1	32.68	0.3	0.13	4
Stenotomus caprinus	3.9	3.89	0.0	0.01	2	492.0	0.00	2.4	0.00	1	637.6	343.51	2.8	1.52	4
Chloroscombrus chrysurus	1032.2	844.44	27.8	22.26	2	48.0	0.00	1.5	0.00	1	2.5	2.45	0.1	0.08	4
Micropogonias undulatus	119.4	119.44	3.9	3.95	2	925.1	0.00	24.0	0.00	1	8.6	8.61	0.4	0.39	4
Serranus atrobranchus	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1	73.3	56.07	0.3	0.24	4
Centropristis philadelphica	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1	79.5	36.99	0.8	0.44	4
Prionotus paralatus	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	4
Ancylopsetta dilecta	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1	53.9	53.89	0.0	0.03	4
Syacium micrurum	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1	42.7	35.34	0.8	0.72	4
Squid spp	8.3	8.33	0.2	0.16	2	20.7	0.00	0.3	0.00	1	6.1	3.52	0.1	0.07	4

Table 8a (continued)

Statistical Zone 15

Summary of dominant organisms taken in statistical zone 15 during the 2003 Summer Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight (WT) in kg per hour, the SEM for weight and the number (N) of samples taken. No trawl samples were taken in depths greater than 30 fm.

	21-30 fm					31-40 fm					>40 fm				
SPECIES	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Trachypenaeus similis	135.6	0.00	1.1	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Farfantepenaeus aztecus	342.2	0.00	6.8	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Squilla spp	231.1	0.00	2.4	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Callinectes similis	374.4	0.00	4.4	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Sicyonia dorsalis	430.0	0.00	2.6	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Portunus gibbesii	3.3	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Stenotomus caprinus	112.2	0.00	1.2	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Chloroscombrus chrysurus	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Micropogonias undulatus	6.7	0.00	0.4	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Serranus atrobranchus	480.0	0.00	2.5	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Centropristis philadelphica	125.6	0.00	2.3	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Prionotus paralatus	426.7	0.00	3.2	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Ancylopsetta dilecta	3.3	0.00	0.1	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Syacium micrurum	36.7	0.00	0.4	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Squid spp	23.3	0.00	0.7	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0

Table 8b

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 2003 Summer Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m³, and oxygen in ppm. No trawl samples were taken in depths greater than 30 fm.

	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			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	49.0	5.44	2	55.2	0	1	23.3	13.74	4	0.0	0	0	0.0	0	0	0.0	0	0
Total finfish	38.6	14.39	2	33.7	0	1	8.1	4.74	4	0.0	0	0	0.0	0	0	0.0	0	0
Total crustacean	10.2	8.78	2	21.3	0	1	15.1	9.06	4	0.0	0	0	0.0	0	0	0.0	0	0
Total other	0.2	0.11	2	0.2	0	1	0.2	0.07	4	0.0	0	0	0.0	0	0	0.0	0	0
Surface temperature	29.6	0.38	2	30.1	0.21	2	29.6	0.11	5	0.0	0	0	0.0	0	0	0.0	0	0
Midwater temperature	28.5	0.12	2	28.6	0.91	2	28.4	0.26	5	0.0	0	0	0.0	0	0	0.0	0	0
Bottom temperature	25.3	2.8	2	28.1	0.08	2	23.3	1.45	5	0.0	0	0	0.0	0	0	0.0	0	0
Surface salinity	26.6	2.45	2	28.7	1.03	2	26.6	1.35	5	0.0	0	0	0.0	0	0	0.0	0	0
Midwater salinity	33.8	1.44	2	30.0	2.32	2	30.8	1.72	5	0.0	0	0	0.0	0	0	0.0	0	0
Bottom salinity	34.3	1.54	2	32.5	0.01	2	33.4	1.9	5	0.0	0	0	0.0	0	0	0.0	0	0
Surface chlorophyll	0.0	0	0	0.7	0	1	4.1	0	1	0.0	0	0	0.0	0	0	0.0	0	0
Surface fluorescence	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0
Surface oxygen	7.6	0.85	2	6.3	1.1	2	6.5	0.71	5	0.0	0	0	0.0	0	0	0.0	0	0
Midwater oxygen	5.8	0.4	2	6.2	1.1	2	5.8	0.61	5	0.0	0	0	0.0	0	0	0.0	0	0
Bottom oxygen	4.2	0.2	2	4.6	0.5	2	3.3	0.79	5	0.0	0	0	0.0	0	0	0.0	0	0

Table 9a

Statistical Zone 16

Summary of dominant organisms taken in statistical zone 16 during the 2003 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 11 fm or greater than 20 fm.

	0-5 fm					6-10 fm					11-20 fm				
SPECIES	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Portunus gibbesii	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	9.2	9.23	0.0	0.02	2
Callinectes similis	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	7.7	7.71	0.1	0.06	2
Sicyonia brevirostris	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	6.9	6.86	0.0	0.05	2
Parthenope granulata	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	4.3	0.84	0.0	0.00	2
Squilla spp	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	2.6	0.87	0.0	0.00	2
Stenotomus caprinus	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	81.4	81.43	0.3	0.34	2
Saurida brasiliensis	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	35.1	35.14	0.3	0.31	2
Synodus foetens	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	10.3	10.29	1.0	1.03	2
Centropristis philadelphica	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	5.2	5.19	0.0	0.02	2
Upeneus parvus	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	4.3	4.29	0.0	0.02	2
Ancylopsetta quadrocellata	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	2.6	2.57	0.2	0.18	2
Etropus crossotus	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	1.7	1.71	0.0	0.05	2
Prionotus paralatus	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	1.7	1.71	0.0	0.03	2
Prionotus roseus	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	1.2	1.15	0.0	0.00	2
Squid spp	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	6.9	6.86	0.1	0.06	2

Table 9b

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 2003 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 11 fm or greater than 20 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	0.0	0	0	0.0	0	0	2.5	2.43	2	0.0	0	0	0.0	0	0	0.0	0	0
Total finfish	0.0	0	0	0.0	0	0	2.1	2.14	2	0.0	0	0	0.0	0	0	0.0	0	0
Total crustacean	0.0	0	0	0.0	0	0	0.2	0.11	2	0.0	0	0	0.0	0	0	0.0	0	0
Total other	0.0	0	0	0.0	0	0	0.2	0.17	2	0.0	0	0	0.0	0	0	0.0	0	0
Surface temperature	0.0	0	0	0.0	0	0	29.3	0.36	2	0.0	0	0	0.0	0	0	0.0	0	0
Midwater temperature	0.0	0	0	0.0	0	0	28.5	0.57	2	0.0	0	0	0.0	0	0	0.0	0	0
Bottom temperature	0.0	0	0	0.0	0	0	22.9	0.59	2	0.0	0	0	0.0	0	0	0.0	0	0
Surface salinity	0.0	0	0	0.0	0	0	30.8	1.63	2	0.0	0	0	0.0	0	0	0.0	0	0
Midwater salinity	0.0	0	0	0.0	0	0	32.1	1.8	2	0.0	0	0	0.0	0	0	0.0	0	0
Bottom salinity	0.0	0	0	0.0	0	0	34.9	0.36	2	0.0	0	0	0.0	0	0	0.0	0	0
Surface chlorophyll	0.0	0	0	0.0	0	0	1.9	0.9	2	0.0	0	0	0.0	0	0	0.0	0	0
Surface fluorescence	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0
Surface oxygen	0.0	0	0	0.0	0	0	6.5	0.2	2	0.0	0	0	0.0	0	0	0.0	0	0
Midwater oxygen	0.0	0	0	0.0	0	0	6.3	0.2	2	0.0	0	0	0.0	0	0	0.0	0	0
Bottom oxygen	0.0	0	0	0.0	0	0	3.5	2.4	2	0.0	0	0	0.0	0	0	0.0	0	0

Table 10a

Statistical Zone 17

Summary of dominant organisms taken in statistical zone 17 during the 2003 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	10	33.3	32.69	0.3	0.31	6	202.5	111.28	2.0	1.13	8
Farfantepenaeus aztecus	42.6	9.10	0.3	0.06	10	43.9	11.96	0.6	0.19	6	122.8	54.97	2.7	1.05	8
Trachypenaeus constrictus	0.0	0.00	0.0	0.00	10	172.5	172.50	0.8	0.84	6	46.8	25.58	0.3	0.16	8
Portunus spinicarpus	0.0	0.00	0.0	0.00	10	0.0	0.00	0.0	0.00	6	8.0	4.75	0.0	0.02	8
Callinectes similis	3.0	1.84	0.0	0.00	10	13.0	3.61	0.1	0.04	6	97.1	36.80	1.0	0.41	8
Squilla spp	1.2	0.80	0.0	0.00	10	16.0	11.49	0.1	0.10	6	52.5	28.86	0.6	0.30	8
Stenotomus caprinus	0.0	0.00	0.0	0.00	10	397.2	209.28	3.7	2.06	6	960.7	241.08	9.7	3.32	8
Micropogonias undulatus	507.6	188.43	8.3	3.33	10	238.3	216.71	3.8	3.35	6	157.9	153.67	8.3	7.94	8
Chloroscombrus chrysurus	13.2	5.99	0.2	0.10	10	532.5	311.77	15.0	9.06	6	144.9	85.83	4.7	2.05	8
Trachurus lathami	0.0	0.00	0.0	0.00	10	0.0	0.00	0.0	0.00	6	255.8	225.44	4.3	3.84	8
Peprilus burti	2.4	0.98	0.1	0.02	10	16.3	7.61	0.5	0.29	6	50.0	40.12	1.0	0.51	8
Upeneus parvus	0.0	0.00	0.0	0.00	10	0.0	0.00	0.0	0.00	6	89.5	31.93	1.3	0.64	8
Synodus foetens	0.0	0.00	0.0	0.00	10	5.3	3.36	0.2	0.16	6	35.5	11.30	3.5	1.36	8
Leiostomus xanthurus	28.8	22.50	0.6	0.45	10	28.4	15.38	1.3	0.94	6	25.8	25.83	2.0	2.03	8
Squid spp	13.2	5.20	0.2	0.06	10	106.5	82.59	1.5	1.17	6	301.5	142.08	3.5	1.94	8

Table 10a (continued)

Statistical Zone 17

Summary of dominant organisms taken in statistical zone 17 during the 2003 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	47.9	5.89	0.6	0.11	3	46.8	40.07	0.6	0.50	3	0.0	0.00	0.0	0.00	2
Farfantepenaeus aztecus	6.3	1.37	0.3	0.09	3	32.3	8.66	1.5	0.41	3	18.4	15.41	1.0	0.83	2
Trachypenaeus constrictus	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	2
Portunus spinicarpus	70.8	35.71	0.6	0.36	3	169.6	92.79	1.2	0.65	3	43.1	43.09	0.4	0.41	2
Callinectes similis	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	2
Squilla spp	0.0	0.00	0.0	0.00	3	9.2	8.12	0.1	0.09	3	8.2	8.18	0.1	0.10	2
Stenotomus caprinus	901.5	390.14	43.7	19.93	3	311.0	57.49	14.9	2.08	3	94.1	7.91	5.1	0.74	2
Micropogonias undulatus	86.6	46.68	5.8	3.22	3	8.2	4.44	0.6	0.36	3	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	3	0.0	0.00	0.0	0.00	2
Trachurus lathami	283.0	269.83	6.6	6.30	3	15.6	11.04	0.5	0.31	3	70.2	16.77	4.2	0.85	2
Peprilus burti	126.1	27.92	10.3	2.56	3	172.3	128.45	13.6	10.14	3	11.5	11.45	0.9	0.88	2
Upeneus parvus	4.2	2.76	0.1	0.04	3	22.7	15.52	0.9	0.82	3	57.5	20.45	2.2	0.85	2
Synodus foetens	36.3	6.38	4.7	1.18	3	18.5	3.87	2.3	0.51	3	10.1	7.91	1.1	0.91	2
Leiostomus xanthurus	1.6	1.57	0.2	0.16	3	1.5	1.45	0.1	0.12	3	0.0	0.00	0.0	0.00	2
Squid spp	111.7	28.36	1.7	0.53	3	132.2	82.60	1.9	0.84	3	42.7	26.32	1.0	0.18	2

Table 10b

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 2003 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	16.8	4.14	10	34.2	10.24	6	60.7	12.23	8	0.0	0	0	46.2	13.32	3	30.5	1.91	2
Total finfish	13.1	4.28	10	29.5	10.59	6	47.7	12.31	8	0.0	0	0	39.7	12.36	3	27.9	2.96	2
Total crustacean	1.1	0.35	5	2.6	1.53	6	7.9	2.23	8	0.0	0	0	3.9	1.15	3	1.4	1.42	2
Total other	3.3	0.83	9	3.0	1.79	4	5.2	1.87	8	0.0	0	0	2.5	1.04	3	1.1	0.37	2
Surface temperature	29.2	0.32	10	28.5	0.32	6	29.3	0.12	8	0.0	0	0	29.0	0.29	2	29.3	0.03	2
Midwater temperature	28.7	0.18	10	28.4	0.29	6	28.5	0.22	8	0.0	0	0	22.4	0.24	2	24.3	0.23	2
Bottom temperature	28.6	0.17	10	27.1	0.54	6	22.7	0.56	8	0.0	0	0	19.9	0.7	2	19.1	0.79	2
Surface salinity	23.0	1.26	10	30.2	0.33	6	31.2	0.31	8	0.0	0	0	34.4	0.91	2	36.0	0.05	2
Midwater salinity	24.4	1.5	10	30.5	0.2	6	33.3	0.41	8	0.0	0	0	36.2	0.03	2	36.5	0	2
Bottom salinity	25.4	1.48	10	31.9	0.51	6	35.3	0.16	8	0.0	0	0	36.3	0.06	2	36.3	0.02	2
Surface chlorophyll	0.0	0	0	1.9	0.5	3	2.5	0.96	8	0.0	0	0	1.1	0.24	2	0.5	0.24	2
Surface fluorescence	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0
Surface oxygen	6.5	0.25	10	6.3	0.07	6	6.4	0.02	8	0.0	0	0	6.3	0.05	2	6.2	0	2
Midwater oxygen	6.2	0.17	10	6.2	0.09	6	6.3	0.11	8	0.0	0	0	7.2	0	2	7.3	0.05	2
Bottom oxygen	5.6	0.23	10	4.6	0.61	6	5.5	0.37	8	0.0	0	0	5.5	0.85	2	4.8	0.7	2

Table 11a

Statistical Zone 18

Summary of dominant organisms taken in statistical zone 18 during the 2003 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
Farfantepenaeus aztecus	70.7	30.26	0.3	0.04	9	157.4	95.89	0.9	0.53	13	208.2	102.94	3.3	1.70	8
Trachypenaeus constrictus	0.0	0.00	0.0	0.00	9	26.5	26.45	0.1	0.10	13	337.5	230.88	1.8	1.25	8
Sicyonia brevirostris	0.0	0.00	0.0	0.00	9	0.0	0.00	0.0	0.00	13	20.1	17.91	0.2	0.16	8
Squilla spp	0.0	0.00	0.0	0.00	9	64.3	60.79	0.5	0.46	13	116.7	81.19	1.4	0.99	8
Callinectes similis	2.7	2.03	0.0	0.01	9	59.0	51.79	0.6	0.52	13	81.2	37.86	0.9	0.41	8
Portunus spinicarpus	0.0	0.00	0.0	0.00	9	0.0	0.00	0.0	0.00	13	0.4	0.39	0.0	0.00	8
Micropogonias undulatus	206.7	72.84	3.2	1.10	9	977.8	561.67	22.0	14.22	13	0.0	0.00	0.0	0.00	8
Stenotomus caprinus	0.0	0.00	0.0	0.00	9	11.3	8.15	0.1	0.08	13	1686.2	823.41	14.6	7.86	8
Chloroscombrus chrysurus	72.0	24.78	1.2	0.38	9	64.6	38.89	2.0	1.49	13	364.4	156.83	12.9	5.21	8
Leiostomus xanthurus	16.7	6.62	0.5	0.16	9	105.3	45.08	5.3	2.83	13	0.0	0.00	0.0	0.00	8
Prionotus paralatus	0.0	0.00	0.0	0.00	9	0.0	0.00	0.0	0.00	13	1.6	1.28	0.0	0.01	8
Peprilus burti	2.0	1.41	0.1	0.05	9	3.9	3.94	0.1	0.08	13	40.6	19.51	1.4	0.74	8
Upeneus parvus	0.0	0.00	0.0	0.00	9	0.0	0.00	0.0	0.00	13	63.1	11.63	0.6	0.08	8
Synodus foetens	0.0	0.00	0.0	0.00	9	0.0	0.00	0.0	0.00	13	35.9	7.98	2.7	0.78	8
Squid spp	23.3	9.92	0.4	0.18	9	19.5	8.26	0.3	0.14	13	600.7	106.06	7.2	1.30	8

Table 11a (continued)

Statistical Zone 18

Summary of dominant organisms taken in statistical zone 18 during the 2003 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
Farfantepenaeus aztecus	49.9	12.46	2.0	0.47	6	15.9	13.51	0.7	0.64	4	8.8	8.78	0.5	0.51	2
Trachypenaeus constrictus	2.6	1.35	0.0	0.01	6	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	2
Sicyonia brevirostris	324.2	93.60	3.6	0.92	6	0.8	0.75	0.0	0.01	4	0.0	0.00	0.0	0.00	2
Squilla spp	6.1	2.95	0.0	0.02	6	1.5	1.50	0.0	0.01	4	2.2	2.20	0.0	0.03	2
Callinectes similis	48.5	16.25	0.7	0.25	6	0.8	0.75	0.0	0.01	4	0.0	0.00	0.0	0.00	2
Portunus spinicarpus	111.6	72.93	0.5	0.38	6	5.1	3.54	0.0	0.02	4	8.7	5.98	0.1	0.05	2
Micropogonias undulatus	0.0	0.00	0.0	0.00	6	1.9	1.42	0.3	0.21	4	1.5	1.46	0.1	0.10	2
Stenotomus caprinus	402.8	108.31	11.9	3.09	6	347.7	101.89	15.8	2.94	4	112.9	71.53	7.1	4.55	2
Chloroscombrus chrysurus	5.6	5.64	0.3	0.30	6	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	2
Leiostomus xanthurus	1.5	1.45	0.1	0.12	6	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	2
Prionotus paralatus	55.9	18.20	0.4	0.15	6	80.3	68.50	2.7	2.55	4	163.9	163.90	3.6	3.60	2
Peprilus burti	1.1	0.75	0.1	0.06	6	149.8	65.66	9.5	3.82	4	4.9	0.47	0.4	0.01	2
Upeneus parvus	14.4	5.90	0.1	0.04	6	89.8	56.82	3.8	2.75	4	9.1	0.28	0.4	0.01	2
Synodus foetens	30.2	9.86	3.1	1.00	6	31.1	15.24	3.3	1.42	4	20.8	12.83	3.0	2.09	2
Squid spp	79.8	40.31	1.0	0.43	6	129.1	36.46	2.7	0.88	4	56.1	53.20	1.1	0.84	2

Table 11b

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 2003 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	13.5	5.02	9	38.7	18.29	13	56.4	13.9	8	0.0	0	0	63.1	14.99	4	32.3	23.9	2
Total finfish	11.9	5.05	9	38.0	18.21	12	40.3	11.41	8	0.0	0	0	54.9	12.87	4	30.5	24.09	2
Total crustacean	0.9	0.26	7	4.0	1.97	10	8.4	4.61	8	0.0	0	0	3.7	1.68	4	0.6	0.59	2
Total other	1.2	0.13	7	0.9	0.24	10	7.7	1.18	8	0.0	0	0	4.6	1.12	4	1.2	0.71	2
Surface temperature	27.8	0.49	9	29.0	0.39	13	29.4	0.07	8	0.0	0	0	29.3	0.14	5	29.2	0.1	3
Midwater temperature	27.7	0.54	9	28.8	0.47	13	27.0	0.91	8	0.0	0	0	25.5	0.81	5	23.7	0.02	3
Bottom temperature	27.5	0.55	9	28.8	0.53	13	23.3	0.76	8	0.0	0	0	20.2	0.07	5	18.9	0.46	3
Surface salinity	28.5	1.97	9	27.5	1.15	13	30.3	0.18	8	0.0	0	0	33.5	1.15	5	35.0	1.03	3
Midwater salinity	30.6	1.27	9	27.8	1.18	13	32.3	0.58	8	0.0	0	0	35.9	0.41	5	36.4	0.07	3
Bottom salinity	31.2	0.97	9	28.7	1.11	13	34.5	0.33	8	0.0	0	0	36.2	0.09	5	36.4	0.02	3
Surface chlorophyll	0.0	0	0	7.6	1.11	3	3.5	0.44	8	0.0	0	0	1.7	0.68	5	0.9	0.28	3
Surface fluorescence	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0
Surface oxygen	5.7	0.18	9	6.1	0.06	13	6.3	0.07	8	0.0	0	0	6.3	0.02	5	6.2	0.09	3
Midwater oxygen	5.6	0.16	9	6.1	0.08	13	5.6	0.33	8	0.0	0	0	6.7	0.21	5	7.1	0.07	3
Bottom oxygen	5.6	0.17	9	5.8	0.14	13	4.7	0.23	8	0.0	0	0	5.2	0.1	5	4.5	0.22	3

Table 12a

Statistical Zone 19

Summary of dominant organisms taken in statistical zone 19 during the 2003 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
Farfantepenaeus aztecus	21.8	9.65	0.1	0.05	7	373.9	136.18	3.2	1.06	17	1792.3	606.99	14.1	4.04	14
Trachypenaeus similis	0.0	0.00	0.0	0.00	7	22.2	8.14	0.0	0.02	17	557.3	214.31	2.5	0.99	14
Callinectes similis	23.2	8.63	0.2	0.05	7	124.3	56.46	1.0	0.48	17	189.1	67.65	0.9	0.34	14
Squilla spp	131.0	128.19	0.3	0.29	7	135.1	85.48	0.7	0.32	17	102.9	35.21	0.8	0.28	14
Portunus spinicarpus	0.0	0.00	0.0	0.00	7	0.0	0.00	0.0	0.00	17	0.6	0.61	0.0	0.00	14
Trachypenaeus constrictus	0.0	0.00	0.0	0.00	7	26.9	18.68	0.1	0.05	17	14.6	12.74	0.0	0.04	14
Stenotomus caprinus	0.0	0.00	0.0	0.00	7	120.6	68.24	1.0	0.54	17	647.0	134.99	3.3	0.70	14
Cynoscion nothus	268.1	162.11	8.6	5.39	7	500.1	197.87	14.9	6.48	17	35.9	24.48	0.9	0.59	14
Micropogonias undulatus	488.3	174.08	8.9	3.32	7	622.3	238.35	12.8	5.00	17	1.7	1.71	0.0	0.04	14
Chloroscombrus chrysurus	208.7	185.05	3.8	3.34	7	166.7	66.04	4.3	1.69	17	15.3	7.87	0.4	0.22	14
Peprilus burti	11.9	9.17	0.5	0.32	7	62.8	41.58	1.8	1.27	17	111.7	35.42	1.8	0.49	14
Prionotus longispinosus	5.1	5.14	0.0	0.03	7	115.9	74.00	0.7	0.45	17	2.0	1.10	0.0	0.01	14
Saurida brasiliensis	0.0	0.00	0.0	0.00	7	0.3	0.26	0.0	0.00	17	72.8	23.07	0.4	0.13	14
Trichiurus lepturus	7.7	3.64	0.3	0.17	7	62.2	30.81	2.9	1.39	17	0.9	0.56	0.0	0.02	14
Squid spp	23.9	6.17	0.3	0.12	7	70.8	20.68	0.9	0.19	17	261.0	50.16	2.3	0.47	14

Table 12a (continued)

Statistical Zone 19

Summary of dominant organisms taken in statistical zone 19 during the 2003 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
Farfantepenaeus aztecus	2.9	0.76	0.1	0.02	4	44.7	0.00	1.9	0.00	1	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	1	0.0	0.00	0.0	0.00	1
Callinectes similis	1.1	0.63	0.0	0.01	4	0.0	0.00	0.0	0.00	1	3.5	0.00	0.0	0.00	1
Squilla spp	0.0	0.00	0.0	0.00	4	2.2	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
Portunus spinicarpus	50.4	14.95	0.3	0.07	4	488.7	0.00	2.9	0.00	1	0.0	0.00	0.0	0.00	1
Trachypenaeus constrictus	0.0	0.00	0.0	0.00	4	1.1	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
Stenotomus caprinus	84.0	41.24	1.5	0.76	4	10.9	0.00	0.8	0.00	1	165.9	0.00	9.7	0.00	1
Cynoscion nothus	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
Micropogonias undulatus	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
Chloroscombrus chrysurus	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
Peprilus burti	1.3	1.01	0.1	0.08	4	0.0	0.00	0.0	0.00	1	20.0	0.00	1.4	0.00	1
Prionotus longispinosus	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
Saurida brasiliensis	90.5	27.10	0.5	0.16	4	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
Trichiurus lepturus	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	1
Squid spp	54.8	44.98	0.4	0.28	4	21.8	0.00	0.1	0.00	1	7.1	0.00	0.2	0.00	1

Table 12b

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 2003 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	31.5	11.47	7	58.6	14.87	17	33.4	5.36	14	0.0	0	0	20.7	0	1	44.8	0	1
Total finfish	28.4	11.28	7	48.5	13.83	17	11.2	1.06	14	0.0	0	0	14.6	0	1	43.9	0	1
Total crustacean	2.5	0.16	4	9.4	1.9	14	19.4	5.19	14	0.0	0	0	4.9	0	1	0.4	0	1
Total other	2.1	0.57	5	2.4	0.39	17	2.7	0.48	14	0.0	0	0	1.3	0	1	0.7	0	1
Surface temperature	28.7	0.39	7	28.7	0.32	16	29.3	0.16	15	0.0	0	0	29.2	0.05	2	29.2	0.32	2
Midwater temperature	28.0	0.6	7	29.0	0.82	16	28.2	0.36	15	0.0	0	0	26.1	2.65	2	25.4	2.84	2
Bottom temperature	27.4	0.79	7	25.9	0.79	16	24.2	0.66	15	0.0	0	0	20.7	0.37	2	20.0	0.63	2
Surface salinity	31.1	1.75	7	32.4	0.58	16	33.1	0.78	15	0.0	0	0	34.8	1.12	2	36.3	0.04	2
Midwater salinity	32.2	1.02	7	33.2	0.32	16	34.6	0.41	15	0.0	0	0	36.3	0.06	2	36.2	0.04	2
Bottom salinity	33.0	0.8	7	34.7	0.41	16	35.5	0.4	15	0.0	0	0	36.1	0.21	2	36.3	0.05	2
Surface chlorophyll	10.3	3.14	2	9.4	2.51	7	2.4	0.87	13	0.0	0	0	43.4	42.29	2	0.7	0.27	2
Surface fluorescence	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0
Surface oxygen	6.4	0.21	7	6.4	0.13	16	6.3	0.09	15	0.0	0	0	6.3	0.05	2	6.3	0.05	2
Midwater oxygen	6.3	0.35	7	6.2	0.18	16	6.3	0.12	15	0.0	0	0	6.9	0.55	2	6.7	0.15	2
Bottom oxygen	5.5	0.61	7	4.8	0.37	16	5.6	0.21	15	0.0	0	0	6.0	0.6	2	5.5	0.45	2

Table 13a

Statistical Zone 20

Summary of dominant organisms taken in statistical zone 20 during the 2003 Summer Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight (WT) in kg per hour, the SEM for weight and the number (N) of samples taken. No trawl samples were taken in depths greater than 30 fm.

	0-5 fm					6-10 fm					11-20 fm				
SPECIES	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Farfantepenaeus aztecus	16.0	8.72	0.1	0.08	3	35.4	19.70	0.3	0.21	17	798.7	333.03	7.5	3.02	18
Trachypenaeus constrictus	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	17	295.2	138.44	1.3	0.55	18
Callinectes similis	38.0	35.04	0.3	0.29	3	70.1	54.63	0.7	0.49	17	81.2	24.59	0.5	0.13	18
Trachypenaeus similis	0.0	0.00	0.0	0.00	3	3.6	2.34	0.0	0.00	17	112.2	72.18	0.5	0.35	18
Squilla spp	2.0	2.00	0.0	0.03	3	31.2	27.00	0.3	0.22	17	55.9	23.24	0.4	0.16	18
Litopenaeus setiferus	38.0	19.08	1.5	0.81	3	35.4	24.09	1.4	0.94	17	0.3	0.23	0.0	0.01	18
Stenotomus caprinus	0.0	0.00	0.0	0.00	3	11.2	5.60	0.1	0.05	17	433.4	105.02	2.0	0.49	18
Micropogonias undulatus	234.0	122.52	5.1	2.65	3	885.0	763.28	20.1	17.67	17	0.5	0.38	0.0	0.02	18
Cynoscion nothus	206.0	147.55	5.6	4.14	3	512.1	319.16	14.5	9.86	17	1.9	1.25	0.1	0.07	18
Chloroscombrus chrysurus	228.0	222.03	6.5	6.37	3	275.2	161.31	7.0	4.08	17	26.9	14.15	1.0	0.54	18
Peprilus burti	4.0	4.00	0.0	0.02	3	17.9	14.27	0.6	0.52	17	101.1	47.76	1.3	0.72	18
Sardinella aurita	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	17	37.7	35.02	0.2	0.22	18
Etrumeus teres	0.0	0.00	0.0	0.00	3	16.3	16.32	0.1	0.10	17	11.4	6.71	0.1	0.05	18
Lagodon rhomboides	22.0	16.37	0.5	0.39	3	63.3	31.59	1.6	0.82	17	5.1	3.83	0.2	0.13	18
Squid spp	16.0	7.21	0.2	0.09	3	146.5	49.70	1.6	0.57	17	200.4	43.31	2.5	0.61	18

Table 13a (continued)

Statistical Zone 20

Summary of dominant organisms taken in statistical zone 20 during the 2003 Summer Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. The mean number (NUM) of organisms per hour, the standard error of the mean (SEM) for numbers, the mean weight (WT) in kg per hour, the SEM for weight and the number (N) of samples taken. No trawl samples were taken in depths greater than 30 fm.

	21-30 fm					31-40 fm					>40 fm				
SPECIES	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Farfantepenaeus aztecus	12.9	0.00	0.2	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Trachypenaeus constrictus	10.6	0.00	0.1	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Callinectes similis	12.9	0.00	0.1	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Trachypenaeus similis	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Squilla spp	11.8	0.00	0.1	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Litopenaeus setiferus	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Stenotomus caprinus	29.4	0.00	0.3	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Micropogonias undulatus	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Cynoscion nothus	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Chloroscombrus chrysurus	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Peprilus burti	9.4	0.00	0.2	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Sardinella aurita	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Etrumeus teres	194.1	0.00	1.6	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Lagodon rhomboides	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0
Squid spp	504.7	0.00	5.4	0.00	1	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0

Table 13b

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 2003 Summer Shrimp/Groundfish Survey by depth stratum, collected with either a 40-ft or 20-ft trawl. Catch values in kg per hour, temperature in °C, salinity in ppt, chlorophyll in mg/m³, and oxygen in ppm. No trawl samples were taken in depths greater than 30 fm.

	0-5 fm			6-10 fm			11-20 fm			21-30 fm			31-40 fm			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	24.2	1.91	3	60.7	39.55	17	22.4	4.56	18	0.0	0	0	0.0	0	0	0.0	0	0
Total finfish	21.4	1.06	3	73.1	49.82	13	9.0	1.42	17	0.0	0	0	0.0	0	0	0.0	0	0
Total crustacean	2.4	1.39	3	4.4	2.44	11	11.8	4.05	17	0.0	0	0	0.0	0	0	0.0	0	0
Total other	0.6	0	2	2.1	0.56	16	2.8	0.59	18	0.0	0	0	0.0	0	0	0.0	0	0
Surface temperature	28.7	0.21	3	28.3	0.29	17	28.0	0.17	18	0.0	0	0	0.0	0	0	28.7	0.07	2
Midwater temperature	28.1	0.31	3	28.1	0.25	17	27.3	0.22	18	0.0	0	0	0.0	0	0	25.6	1.08	2
Bottom temperature	27.8	0.37	3	27.5	0.29	17	23.5	0.4	18	0.0	0	0	0.0	0	0	20.1	0.64	2
Surface salinity	35.6	0.47	3	35.8	0.36	17	36.2	0.16	18	0.0	0	0	0.0	0	0	36.3	0.2	2
Midwater salinity	36.5	0.38	3	36.2	0.38	17	36.4	0.15	18	0.0	0	0	0.0	0	0	36.3	0.19	2
Bottom salinity	36.7	0.47	3	36.7	0.4	17	36.5	0.15	18	0.0	0	0	0.0	0	0	36.4	0.03	2
Surface chlorophyll	1.9	0	1	18.6	15.82	5	27.3	10.07	16	0.0	0	0	0.0	0	0	0.5	0.33	2
Surface fluorescence	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0
Surface oxygen	5.5	0.42	3	5.6	0.12	17	6.3	0.08	18	0.0	0	0	0.0	0	0	6.3	0	2
Midwater oxygen	5.5	0.45	3	5.7	0.12	17	6.4	0.1	18	0.0	0	0	0.0	0	0	6.9	0.3	2
Bottom oxygen	5.5	0.49	3	5.8	0.14	17	6.7	0.16	18	0.0	0	0	0.0	0	0	5.6	0.85	2

Table 14a

Statistical Zone 21

Summary of dominant organisms taken in statistical zone 21 during the 2003 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
Farfantepenaeus duorarum	0.0	0.00	0.0	0.00	4	14.5	7.39	0.2	0.14	11	1351.9	1325.80	10.6	10.32	11
Farfantepenaeus aztecus	0.0	0.00	0.0	0.00	4	33.2	17.65	0.2	0.09	11	759.6	592.06	5.3	4.11	11
Portunus spinicarpus	0.0	0.00	0.0	0.00	4	0.5	0.50	0.0	0.00	11	1.4	1.36	0.0	0.00	11
Solenocera vioscai	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	11	0.0	0.00	0.0	0.00	11
Trachypenaeus similis	0.0	0.00	0.0	0.00	4	0.5	0.50	0.0	0.00	11	5.8	4.54	0.0	0.02	11
Squilla spp	1.5	1.50	0.0	0.00	4	10.3	5.40	0.1	0.05	11	30.4	24.79	0.4	0.36	11
Stenotomus caprinus	22.5	20.55	0.1	0.10	4	573.0	182.02	3.3	1.12	11	1077.1	376.55	8.1	3.43	11
Peprilus burti	1.5	1.50	0.0	0.00	4	14.7	7.32	0.2	0.08	11	23.0	9.90	0.1	0.06	11
Serranus atrobranchus	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	11	0.0	0.00	0.0	0.00	11
Prionotus stearnsi	1.5	1.50	0.0	0.01	4	0.0	0.00	0.0	0.00	11	3.9	2.66	0.0	0.02	11
Pristipomoides aquilonaris	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	11	0.9	0.91	0.0	0.02	11
Saurida brasiliensis	0.0	0.00	0.0	0.00	4	10.1	5.45	0.1	0.04	11	7.6	4.14	0.1	0.03	11
Chloroscombrus chrysurus	330.0	330.00	14.5	14.53	4	83.0	45.25	2.0	0.95	11	2.2	1.24	0.1	0.04	11
Upeneus parvus	0.0	0.00	0.0	0.00	4	23.1	11.30	0.2	0.10	11	37.3	16.31	0.4	0.22	11
Squid spp	7.5	3.77	0.1	0.05	4	383.1	159.72	5.4	2.10	11	345.6	153.58	3.8	1.70	11

Table 14a (continued)

Statistical Zone 21

Summary of dominant organisms taken in statistical zone 21 during the 2003 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
Farfantepenaeus duorarum	0.2	0.22	0.0	0.01	6	0.0	0.00	0.0	0.00	9	0.0	0.00	0.0	0.00	5
Farfantepenaeus aztecus	26.7	6.98	1.0	0.25	6	15.0	3.57	0.6	0.15	9	16.5	7.08	0.8	0.33	5
Portunus spinicarpus	302.1	160.83	1.6	0.75	6	78.5	35.34	0.5	0.23	9	15.4	10.20	0.1	0.10	5
Solenocera vioscai	118.9	57.64	0.7	0.31	6	113.8	54.30	0.5	0.24	9	18.4	10.48	0.1	0.06	5
Trachypenaeus similis	244.7	122.42	1.2	0.61	6	5.3	4.62	0.0	0.01	9	10.1	10.08	0.0	0.02	5
Squilla spp	57.5	27.18	0.3	0.16	6	65.1	35.36	0.4	0.21	9	13.2	4.65	0.2	0.08	5
Stenotomus caprinus	114.2	60.12	0.5	0.16	6	63.7	24.65	2.6	1.10	9	43.2	12.42	2.4	0.73	5
Peprilus burti	27.0	26.02	1.3	1.28	6	242.6	119.97	6.5	3.01	9	1713.4	1051.30	42.4	27.15	5
Serranus atrobranchus	143.0	48.26	2.3	0.81	6	179.2	61.76	2.5	0.83	9	70.9	13.03	1.2	0.20	5
Prionotus stearnsi	97.6	47.20	0.9	0.38	6	99.7	20.72	0.9	0.19	9	66.3	29.47	0.7	0.36	5
Pristipomoides aquilonaris	37.4	13.35	0.6	0.27	6	63.5	29.13	2.4	1.13	9	64.0	26.35	6.8	3.04	5
Saurida brasiliensis	20.8	6.96	0.1	0.04	6	44.6	31.32	0.1	0.06	9	8.4	5.16	0.0	0.01	5
Chloroscombrus chrysurus	0.0	0.00	0.0	0.00	6	0.0	0.00	0.0	0.00	9	0.0	0.00	0.0	0.00	5
Upeneus parvus	0.2	0.18	0.0	0.00	6	5.1	2.37	0.2	0.10	9	28.6	10.10	0.8	0.28	5
Squid spp	231.7	113.99	2.7	1.18	6	400.0	144.11	6.4	2.20	9	296.8	130.80	5.9	2.42	5

Table 14b

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 2003 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	18.3	14.96	4	19.9	7.13	11	33.8	19.48	11	0.0	0	0	38.3	6.64	9	90.5	26.4	5
Total finfish	17.4	15.04	4	13.8	6.26	10	11.6	4.66	11	0.0	0	0	28.2	6.63	9	76.8	26.07	5
Total crustacean	0.0	0	2	1.6	0.47	6	21.5	18.82	9	0.0	0	0	2.7	0.93	9	3.0	0.95	5
Total other	0.9	0.39	4	8.0	2.28	9	6.5	2.14	8	0.0	0	0	7.4	2.19	9	10.7	2.3	5
Surface temperature	27.6	0.7	4	24.4	0.71	11	25.8	0.68	11	0.0	0	0	28.3	0.17	6	28.0	0.47	7
Midwater temperature	27.5	0.71	4	24.6	1.4	11	24.2	0.9	11	0.0	0	0	25.7	2.15	6	22.0	0.45	7
Bottom temperature	27.5	0.76	4	22.2	0.93	11	22.8	1.11	11	0.0	0	0	22.9	2.71	6	19.0	0.36	7
Surface salinity	35.9	0.32	4	35.7	0.14	11	35.8	0.25	11	0.0	0	0	36.4	0.04	6	36.4	0.06	7
Midwater salinity	35.7	0.26	4	35.7	0.15	11	36.0	0.18	11	0.0	0	0	36.5	0.04	6	36.4	0.04	7
Bottom salinity	35.9	0.29	4	35.7	0.16	11	36.0	0.18	11	0.0	0	0	36.3	0.1	6	36.4	0.02	7
Surface chlorophyll	3.1	0	1	18.7	16.13	5	40.3	22.16	4	0.0	0	0	0.9	0.17	6	12.8	11.88	7
Surface fluorescence	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0
Surface oxygen	6.2	0.08	4	6.7	0.08	11	6.4	0.12	11	0.0	0	0	6.4	0.03	6	6.5	0.13	7
Midwater oxygen	6.3	0.06	4	6.7	0.09	11	6.6	0.19	11	0.0	0	0	6.9	0.09	6	6.8	0.17	7
Bottom oxygen	6.2	0.08	4	6.6	0.1	11	6.4	0.11	11	0.0	0	0	5.4	0.33	6	4.3	0.11	7

Table 15. 2003 Fall Shrimp/Groundfish Survey species composition list, 412 trawl stations, for those vessels that used either a 40-ft or 20-ft trawl. Species with a total weight of less than 0.0227 kg (0.05 lb) are indicated on the table as 0.0 kg.

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Finfishes					
Micropogonias undulatus	atlantic croaker	53688	2520.0	314	74.6
Stenotomus caprinus	longspine porgy	40342	1100.0	254	60.3
Chloroscombrus chrysurus	atlantic bumper	30034	921.3	182	43.2
Peprilus burti	gulf butterfish	10187	555.8	189	44.9
Cynoscion nothus	silver seatrout	7581	276.4	197	46.8
Leiostomus xanthurus	spot	7483	654.9	168	39.9
Serranus atrobranchus	blackear bass	7023	91.9	117	27.8
Trichiurus lepturus	atlantic cutlassfish	5538	188.1	152	36.1
Anchoa hepsetus	striped anchovy	5452	70.5	93	22.1
Cynoscion spp.	seatrouts	4910	20.1	38	9.0
Upeneus parvus	dwarf goatfish	4133	127.4	130	30.9
Synodus foetens	inshore lizardfish	3667	342.4	250	59.4
Stellifer lanceolatus	star drum	3397	37.3	67	15.9
Lutjanus campechanus	red snapper	3396	88.8	208	49.4
Opisthonema oglinum	atlantic thread herring	3194	80.1	87	20.7
Harengula jaguana	scaled sardine	3153	88.1	120	28.5
Trachurus lathami	rough scad	3034	120.9	88	20.9
Pristipomoides aquilonaris	wenchman	2980	156.9	90	21.4
Prionotus paralatus	mexican searobin	2975	68.5	61	14.5
Syacium gunteri	shoal flounder	2848	52.5	192	45.6
Centropristis philadelphica	rock sea bass	2542	93.7	178	42.3
Cynoscion arenarius	sand seatrout	2476	186.4	164	39.0
Prionotus stearnsi	shortwing searobin	2403	24.7	53	12.6
Diplectrum bivittatum	dwarf sand perch	2384	38.8	127	30.2
Sphoeroides parvus	least puffer	1930	9.0	130	30.9

Table 15. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Lagodon rhomboides	pinfish	1924	125.3	151	35.9
Saurida brasiliensis	largescale lizardfish	1477	6.6	101	24.0
Arius felis	hardhead catfish	1472	162.4	86	20.4
Halieutichthys aculeatus	pancake batfish	1256	10.2	88	20.9
Prionotus rubio	blackwing searobin	1230	41.7	116	27.6
Selene setapinnis	atlantic moonfish	1203	29.2	100	23.8
Steindachneria argentea	luminous hake	1157	3.3	6	1.4
Etropus crossotus	fringed flounder	1151	15.5	129	30.6
Citharichthys spilopterus	bay whiff	1048	14.1	110	26.1
Prionotus longispinosus	bigeye searobin	997	43.2	89	21.1
Larimus fasciatus	banded drum	992	44.6	82	19.5
Prionotus roseus	bluespotted searobin	907	28.7	36	8.6
Lutjanus synagris	lane snapper	833	31.6	140	33.3
Mullus auratus	red goatfish	700	44.0	27	6.4
Lepophidium brevibarbe	blackedge cusk-eel	664	21.6	83	19.7
Cyclopsetta chittendeni	mexican flounder	619	30.8	90	21.4
Eucinostomus gula	silver jenny	601	14.8	94	22.3
Anchoa mitchilli	bay anchovy	579	0.9	34	8.1
Porichthys plectrodon	atlantic midshipman	534	8.1	99	23.5
Trichopsetta ventralis	sash flounder	522	12.4	23	5.5
Chaetodipterus faber	atlantic spadefish	459	22.3	109	25.9
Syacium papillosum	dusky flounder	457	26.0	42	10.0
Caranx crysos	blue runner	440	45.4	65	15.4
Peprilus alepidotus	harvestfish	335	10.7	63	15.0
Brevoortia tyrannus	atlantic menhaden	324	30.0	42	10.0
Scorpaena calcarata	smoothhead scorpionfish	306	4.1	42	10.0
Menticirrhus americanus	southern kingfish	292	27.7	47	11.2
Bairdiella chrysoura	silver perch	281	6.4	14	3.3
Bagre marinus	gafftopsail catfish	243	24.1	28	6.7
Lagocephalus laevigatus	smooth puffer	226	18.3	55	13.1

Table 15. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Balistes capriscus	gray triggerfish	225	20.3	48	11.4
Prionotus scitulus	leopard searobin	223	3.8	4	1.0
Sphyraena guachancho	guaguanche	223	15.3	45	10.7
Symphurus plagiusa	blackcheek tonguefish	199	4.1	67	15.9
Scomberomorus maculatus	spanish mackerel	192	23.4	31	7.4
Diplectrum formosum	sand perch	184	15.4	19	4.5
Synodus poeyi	offshore lizardfish	172	1.4	26	6.2
Microgobius microlepis	banner goby	169	0.4	5	1.2
Scomberomorus cavalla	king mackerel	160	18.9	38	9.0
Hildebrandia flava	yellow conger	156	10.0	23	5.5
Selene vomer	lookdown	152	2.5	46	10.9
Monacanthus hispidus	planehead filefish	143	2.7	32	7.6
Urophycis floridana	southern hake	135	20.9	24	5.7
Bollmannia communis	ragged goby	133	0.4	28	6.7
Orthopristis chrysoptera	pigfish	133	9.0	28	6.7
Peprilus triacanthus	butterfish	133	12.5	7	1.7
Ancylopsetta dilecta	three-eye flounder	132	7.3	26	6.2
Kathetostoma albigutta	lancer stargazer	117	6.0	24	5.7
Hoplunnis macrurus	freckled pike-conger	112	0.9	48	11.4
Rhomboplites aurorubens	vermilion snapper	109	40.0	10	2.4
Ogcocephalus declivirostris	slantbrow batfish	98	2.9	34	8.1
Ancylopsetta quadrocellata	ocellated flounder	89	12.4	27	6.4
Engyophrys senta	spiny flounder	88	1.2	7	1.7
Ophidion welshi	crested cusk-eel	78	3.4	23	5.5
Anchoa lyolepis	dusky anchovy	77	0.3	5	1.2
Equetus umbrosus	cubbyu	77	3.2	19	4.5
Gymnachirus texae	fringed sole	75	0.8	23	5.5
Paralichthys lethostigma	southern flounder	75	23.3	36	8.6
Bellator militaris	horned searobin	71	0.5	15	3.6
Selar crumenophthalmus	bigeye scad	67	4.6	26	6.2

Table 15. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Anchoa	anchovies	64	0.1	6	1.4
Caulolatilus intermedius	anchor tilefish	63	7.5	18	4.3
Bellator brachychir	shortfin searobin	60	0.6	4	1.0
Priacanthus arenatus	bigeye	59	12.1	12	2.9
Lepophidium jeannae	mottled cusk-eel	56	2.3	12	2.9
Pontinus longispinis	longspine scorpionfish	53	1.6	7	1.7
Prionotus tribulus	bighead searobin	52	0.8	12	2.9
Rhizoprionodon terraenovae	atlantic sharpnose shark	51	64.0	30	7.1
Prionotus ophryas	bandtail searobin	50	1.0	20	4.8
Centropristis ocyura	bank sea bass	47	3.1	6	1.4
Equetus wamotoi	blackbar drum	46	4.5	6	1.4
Hemicaranx amblyrhynchus	bluntnose jack	46	2.6	9	2.1
Citharichthys macrops	spotted whiff	45	0.9	15	3.6
Bellator egretta	streamer searobin	43	0.3	2	0.5
Haemulon aurolineatum	tomtate	43	3.9	6	1.4
Cyclopsetta fimbriata	spotfin flounder	41	2.9	12	2.9
Antennarius radiosus	singlespot frogfish	40	0.6	10	2.4
Citharichthys cornutus	horned whiff	40	0.1	15	3.6
Raja texana	roundel skate	39	14.7	23	5.5
Etrumeus teres	round herring	38	0.8	10	2.4
Eucinostomus argenteus	spotfin mojarra	36	0.4	18	4.3
Sardinella aurita	spanish sardine	34	1.2	7	1.7
Urophycis regia	spotted hake	34	1.8	5	1.2
Ogcocephalus pantostictus	spotted batfish	33	1.9	7	1.7
Peristedion gracile	slender searobin	32	0.8	4	1.0
Synodus intermedius	sand diver	31	2.3	6	1.4
Brotula barbata	bearded brotula	30	8.8	14	3.3
Anchoa nasus	longnose anchovy	29	0.0	3	0.7
Decapterus punctatus	round scad	29	1.0	5	1.2
Caranx hippos	crevalle jack	28	2.1	8	1.9

Table 15. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Haemulon parrai	sailors choice	28	0.4	1	0.2
Menticirrhus littoralis	gulf kingfish	28	2.2	7	1.7
Symphurus diomedianus	spottedfin tonguefish	27	0.6	7	1.7
Pomatomus saltatrix	bluefish	25	6.7	8	1.9
Alectis ciliaris	african pompano	23	1.6	10	2.4
Bregmaceros atlanticus	antenna codlet	23	0.0	10	2.4
Decodon puellaris	red hogfish	22	1.2	5	1.2
Sphoeroides dorsalis	marbled puffer	22	1.1	8	1.9
Sphyrna tiburo	bonnethead	19	8.2	9	2.1
Neomerinthe hemingwayi	spinycheek scorpionfish	18	5.6	6	1.4
Narcine brasiliensis	lesser electric ray	17	5.3	7	1.7
Paralichthys squamilentus	broad flounder	17	4.6	7	1.7
Rachycentron canadum	cobia	17	8.4	9	2.1
Bathyanthias mexicanus	yellowtail bass	15	0.2	4	1.0
Prionotus alatus	spiny searobin	15	0.1	2	0.5
Squatina dumeril	atlantic angel shark	14	17.5	9	2.1
Urophycis cirrata	gulf hake	14	0.7	3	0.7
Citharichthys	lefteye flounders	13	0.4	1	0.2
Gymnothorax nigromarginatus	blackedge moray	13	2.0	9	2.1
Pisces	fishes	13	0.6	8	1.9
Serranus notospilus	saddle bass	13	0.1	2	0.5
Calamus leucosteus	whitebone porgy	11	2.4	3	0.7
Echeneis naucrates	sharksucker	11	3.5	9	2.1
Ophidion grayi	blotched cusk-eel	11	0.4	5	1.2
Pristigenys alta	short bigeye	11	0.2	6	1.4
Ogcocephalus nasutus	shortnose batfish	10	0.2	3	0.7
Ogcocephalus parvus	roughback batfish	10	0.7	6	1.4
Pseudupeneus maculatus	spotted goatfish	10	0.6	3	0.7
Trachinocephalus myops	snakefish	10	0.9	5	1.2
Dorosoma petenense	threadfin shad	9	0.7	4	1.0

Table 15. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Lactophrys quadricornis	scrawled cowfish	9	1.0	5	1.2
Pagrus pagrus	red porgy	8	2.0	3	0.7
Paraconger caudilimbatus	margintail conger	8	0.3	2	0.5
Caranx bartholomaei	yellow jack	7	0.8	1	0.2
Carcharhinus acronotus	blacknose shark	7	12.3	4	1.0
Dasyatis americana	southern stingray	7	7.6	7	1.7
Elops saurus	ladyfish	7	0.8	6	1.4
Mustelus norrisi	florida smoothhound	7	13.8	4	1.0
Rypticus maculatus	whitespotted soapfish	7	0.3	2	0.5
Chilomycterus schoepfi	striped burrfish	6	1.1	4	1.0
Epinephelus flavolimbatus	yellowedge grouper	6	0.6	5	1.2
Etropus cyclosquamus	shelf flounder	6	0.1	3	0.7
Neobythites gillii	cusk-eel	6	0.0	1	0.2
Bothus robinsi	twospot flounder	5	0.1	1	0.2
Carcharhinus limbatus	blacktip shark	5	12.0	1	0.2
Dasyatis say	bluntnose stingray	5	4.1	5	1.2
Ophichthus gomesi	shrimp eel	5	0.9	3	0.7
Serranus phoebe	tattler	5	0.2	3	0.7
Syacium micrurum	channel flounder	5	0.0	1	0.2
Aluterus scriptus	scrawled filefish	4	0.2	2	0.5
Hippocampus erectus	lined seahorse	4	0.0	3	0.7
Lonchopisthus micrognathus	swordtail jawfish	4	0.0	4	1.0
Sciaenops ocellatus	red drum	4	22.8	4	1.0
Scomber japonicus	chub mackerel	4	0.3	1	0.2
Scorpaena plumieri	spotted scorpionfish	4	0.0	4	1.0
Serraniculus pumilio	pygmy sea bass	4	0.0	4	1.0
Sphoeroides spengleri	bandtail puffer	4	0.0	3	0.7
Achirus lineatus	lined sole	3	0.0	3	0.7
Bembrops anatirostris	longnose duckbill	3	0.1	1	0.2
Dasyatis sabina	atlantic stingray	3	1.3	1	0.2

Table 15. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Dorosoma cepedianum	gizzard shad	3	0.1	1	0.2
Echiophis punctifer	snapper eel	3	0.5	1	0.2
Myliobatis freminvillii	bullnose ray	3	29.8	2	0.5
Oligoplites saurus	leatherjack	3	0.1	2	0.5
Seriola dumerili	greater amberjack	3	1.6	1	0.2
Syngnathus louisianae	chain pipefish	3	0.0	3	0.7
Antennarius	anglerfishes	2	0.0	1	0.2
Apogon aurolineatus	bridle cardinalfish	2	0.0	1	0.2
Apogon spp.	cardinalfishes	2	0.0	1	0.2
Carcharhinus isodon	finetooth shark	2	7.6	2	0.5
Chromis enchrysura	yellowtail reeffish	2	0.0	1	0.2
Cypselurus	flyingfishes	2	0.2	1	0.2
Epinephelus niveatus	snowy grouper	2	0.1	2	0.5
Eucinostomus melanopterus	flagfin mojarra	2	0.0	2	0.5
Gymnachirus melas	naked sole	2	0.0	1	0.2
Gymnothorax saxicola	honeycomb moray	2	0.1	2	0.5
Gymnura altavela	spiny butterfly ray	2	0.9	1	0.2
Hirundichthys rondeleti	blackwing flyingfish	2	0.2	1	0.2
Lepophidium spp.	cusk-eels	2	0.0	1	0.2
Ophichthus spp.	snake eels	2	0.0	1	0.2
Ophidion holbrooki	bank cusk-eel	2	0.1	1	0.2
Pogonias cromis	black drum	2	4.3	2	0.5
Syngnathus	seahorses and pipefishes	2	0.0	1	0.2
Trinectes maculatus	hogchoker	2	0.0	2	0.5
Astroscopus y-graecum	southern stargazer	1	0.0	1	0.2
Calamus nodosus	knobbed porgy	1	0.8	1	0.2
Conodon nobilis	barred grunt	1	0.0	1	0.2
Coryphopterus punctipectophor	spotted goby	1	0.0	1	0.2
Dactylopterus volitans	flying gurnard	1	0.2	1	0.2
Gobionellus hastatus	darter gobies	1	0.0	1	0.2

Table 15. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Gymnothorax kolpos	blacktail moray	1	0.2	1	0.2
Hippocampus zosterae	pygmy seahorse	1	0.0	1	0.2
Mustelus canis	smooth dogfish	1	1.4	1	0.2
Mycteroperca phenax	scamp	1	0.1	1	0.2
Myrophis	worm eels	1	0.0	1	0.2
Opistognathus spp.	jawfishes	1	0.0	1	0.2
Opsanus pardus	leopard toadfish	1	0.8	1	0.2
Paralichthys albigutta	gulf flounder	1	0.7	1	0.2
Peprilus	butterfishes	1	0.0	1	0.2
Rhinobatos lentiginosus	atlantic guitarfish	1	0.5	1	0.2
Seriola fasciata	lesser amberjack	1	0.1	1	0.2
Seriola zonata	banded rudderfish	1	0.0	1	0.2
Sphyraena picudilla	southern sennet	1	0.0	1	0.2
Symphurus civitatus	offshore tonguefish	1	0.0	1	0.2
Torpedo nobiliana	atlantic torpedo	1	0.5	1	0.2
Trachinotus carolinus	florida pompano	1	0.6	1	0.2
Crustaceans					
Farfantepenaeus aztecus	brown shrimp	11683	281.2	285	67.7
Trachypenaeus similis	roughback shrimp	8556	26.5	149	35.4
Portunus spinicarpus	longspine swimming crab	7226	52.4	79	18.8
Callinectes similis	lesser blue crab	6865	114.7	249	59.1
Squilla empusa	mantis shrimp	3726	41.1	191	45.4
Sicyonia brevirostris	brown rock shrimp	3618	52.8	68	16.2
Litopenaeus setiferus	white shrimp	3197	51.6	152	36.1
Xiphopenaeus kroyeri	seabob	2071	8.4	29	6.9
Squilla chydaea	mantis shrimp	1652	9.6	78	18.5
Portunus gibbesii	irridescent swimming crab	1650	11.8	164	39.0
Solenocera vioscai	humpback shrimp	1081	6.0	43	10.2

Table 15. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Sicyonia dorsalis	lesser rock shrimp	972	3.7	52	12.4
Farfantepenaeus duorarum	pink shrimp	732	17.2	59	14.0
Trachypenaeus constrictus	roughneck shrimp	621	2.0	32	7.6
Anasimus latus	stilt spider crab	382	4.4	33	7.8
Portunus spinimanus	blotched swimming crab	320	8.0	62	14.7
Parapenaeus politus	deepwater rose shrimp	230	0.4	13	3.1
Calappa sulcata	yellow box crab	214	45.9	72	17.1
Callinectes sapidus	blue crab	174	8.4	33	7.8
Raninoides louisianensis	gulf frog crab	99	1.4	25	5.9
Sicyonia spp.	rock shrimps	67	0.1	9	2.1
Ovalipes floridanus	florida lady crab	47	0.6	12	2.9
Stenorhynchus seticornis	yellowline arrow crab	47	0.2	8	1.9
Persephona crinita	pink purse crab	43	0.1	18	4.3
Persephona mediterranea	mottled purse crab	40	0.1	13	3.1
Hepatus epheliticus	calico crab	28	2.3	10	2.4
Myropsis quinquespinosa	fivespine purse crab	26	0.2	7	1.7
Parthenope granulata	bladetooth elbow crab	25	0.1	12	2.9
Pagurus pollicaris	flatclaw hermit crab	21	0.2	11	2.6
Podochela sidneyi	shortfinger neck crab	18	0.1	8	1.9
Pagurus bullisi	hermit crab	16	0.1	7	1.7
Petrochirus diogenes	giant hermit crab	15	0.7	5	1.2
Acanthocarpus alexandri	gladiator box crab	13	0.1	3	0.7
Porcellana sayana	spotted porcelain crab	13	0.0	4	1.0
Pseudorhombila quadridentata	flecked squareback crab	13	0.1	5	1.2
Dyspanopeus texana	gulf grassflat crab	11	0.0	1	0.2
Squilla neglecta	mantis shrimp	11	0.1	6	1.4
Arenaeus cribrarius	speckled swimming crab	10	0.2	7	1.7
Plesionika longicauda	pandalid shrimp	9	0.0	3	0.7
Portunus sayi	sargassum swimming crab	9	0.1	4	1.0
Dardanus insignis	red brocade hermit	8	0.0	4	1.0

Table 15. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Euphrosynoplax clausa	craggy bathyal crab	8	0.1	3	0.7
Libinia emarginata	portly spider crab	8	0.8	5	1.2
Pilumnus sayi	spineback hairy crab	5	0.1	1	0.2
Alpheus	snapping shirmps	4	0.0	3	0.7
Scyllarides nodifer	ridged slipper lobster	4	0.9	3	0.7
Sicyonia burkenroadi	spiny rock shrimp	4	0.0	3	0.7
Porcellana sigsbeiana	striped porcelain crab	3	0.0	2	0.5
Alpheus floridanus	sand snapping shrimp	2	0.0	1	0.2
Menippe spp.	stone crabs	2	0.0	2	0.5
Metoporhaphis calcarata	false arrow crab	2	0.0	1	0.2
Munida forceps	squat lobster	2	0.0	1	0.2
Nibilia antilocapra	shorthorn spiny crab	2	0.2	1	0.2
Stenocionops furcata	furcate crab	2	0.0	1	0.2
Collodes robustus	spider crab	1	0.0	1	0.2
Libinia dubia	longnose spider crab	1	0.0	1	0.2
Lysmata wurdemanni	peppermint shrimp	1	0.0	1	0.2
Paguridae	right-handed hermit crabs	1	0.0	1	0.2
Paguristes hummi	left-handed hermit crabs	1	0.0	1	0.2
Paguristes triangulatus	hermit crab	1	0.0	1	0.2
Parthenope serrata	sawtooth elbow crab	1	0.0	1	0.2
Scyllarus depressus	scaled slipper lobster	1	0.0	1	0.2
Others					
Lolliguncula brevis	atlantic brief squid	4907	51.1	190	45.1
Argopecten gibbus	calico scallop	3397	65.9	5	1.2
Amusium papyraceum	paper scallop	2752	35.2	72	17.1
Loligo pleii	arrow squid	2462	26.2	113	26.8
Loligo pealeii	longfin squid	1960	73.1	83	19.7
Renilla mulleri	short-stemmed sea pansy	923	2.9	57	13.5

Table 15. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Astropecten duplicatus	spiny beaded sea star	384	0.6	29	6.9
Chrysaora quinquecirrha	sea nettle	379	6.2	23	5.5
Luidia clathrata	sea star	322	4.8	57	13.5
Astropecten cingulatus	starfish	274	4.4	35	8.3
Aurelia aurita	moon jellyfish	167	45.9	42	10.0
Clypeaster prostratus	sea biscuit	131	3.0	3	0.7
Styela plicata	tunicate	88	3.9	10	2.4
Loligo spp.	squids	84	1.4	12	2.9
Ophiolepis elegans	brittle star	78	0.1	18	4.3
Anadara baughmani	baughman's ark	59	0.7	7	1.7
Actinidae	sea anemones	51	0.1	15	3.6
Calliactis spp.	anemone	42	0.3	8	1.9
Clypeaster ravenelii	cake urchin	41	5.5	9	2.1
Encope aberrans	sand dollar	40	1.7	4	1.0
Tamoya haplonema	sea wasp	36	3.8	15	3.6
Polystira albida	white giant turris	34	0.5	8	1.9
Chione clenchi	clench venus	23	0.3	6	1.4
Brissopsis	heart urchins	17	0.5	1	0.2
Asteroporpa annulata	starfish	16	0.2	6	1.4
Gorgonidae	gorgonians	16	0.0	6	1.4
Beroe ovata	comb jelly	14	0.1	7	1.7
Macoma brevifrons	short macoma	12	0.2	3	0.7
Pecten raveneli	ravenel's scallop	12	0.1	2	0.5
Pitar cordatus	schwengel's pitar	12	0.2	3	0.7
Aequorea forskalea	hydromedusae	9	0.0	1	0.2
Distorsio clathrata	atlantic distorsio	9	0.1	2	0.5
Echinaster spp.	thorny sea stars	9	0.0	4	1.0
Conus austini	cone shell	8	0.1	2	0.5
Mnemiopsis mccradyi	comb jelly	8	0.0	5	1.2
Stomolophus meleagris	many-mouthed sea jelly	8	5.5	4	1.0

Table 15. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Porifera	sponges	7	8.3	4	1.0
Cnidaria	coelenterates	6	0.3	4	1.0
Hemipholis elongata	brittle star	6	0.0	2	0.5
Luidia alternata	banded luidia	6	0.2	3	0.7
Muricanthus fulvescens	giant eastern murex	5	0.0	1	0.2
Neverita duplicata	shark eye	5	0.1	4	1.0
Anachis avara	greedy dovesnail	4	0.0	1	0.2
Anthenoides piercei	starfish	4	0.3	2	0.5
Calliactris tricolor	common sea anemone	4	0.0	2	0.5
Fasciolhunter	mollusks	4	0.2	2	0.5
Stylocidaris affinis	sea urchin	4	0.0	2	0.5
Astropecten articulatus	plated-margined sea star	3	0.2	2	0.5
Astrophyton muricatum	basket star	3	0.5	2	0.5
Astrophyton muricatum	basket star	3	0.5	2	0.5
Bryozoa	moss animals	3	0.0	1	0.2
Busycon sinistrum	lightning whelk	3	0.1	2	0.5
Clione	opisthobranchs	3	0.0	1	0.2
Laevicardium sybariticum	delicate eggcockle	3	0.3	1	0.2
Anadara ovalis	blood ark	2	0.0	1	0.2
Astrocyclus caecilia	brittle stars	2	0.0	1	0.2
Centrostephanus longispinus	sea urchins	2	0.0	1	0.2
Comactinia meridionalis	feather star, sea lillie	2	0.1	1	0.2
Ctenophora	comb jellies	2	0.0	1	0.2
Molpadia spp.	sea cucumber	2	0.1	1	0.2
Polystira tellea	delicate giant turret	2	0.0	1	0.2
Sconsia striata	royal bonnet	2	0.0	1	0.2
Semirossia equalis	greater shining bobtail	2	0.0	1	0.2
Agriopuma texasianum	texas venus	1	0.0	1	0.2
Architectonica nobilis	common sundial	1	0.0	1	0.2
Atrina spp.	penshells	1	0.2	1	0.2

Table 15. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Busycon candelabrum	splendid whelk	1	0.1	1	0.2
Cantharus cancellarius	cancellate cantharus	1	0.0	1	0.2
Chelonia mydas	green sea turtle	1	4.9	1	0.2
Fusinus couei	yucatan spindle	1	0.0	1	0.2
Mellita quinquiesperforata	five-slotted sand dollar	1	0.0	1	0.2
Polystira	giant-turris	1	0.0	1	0.2
Sinum perspectivum	white baby-ear	1	0.0	1	0.2
Stramonita	rocksnails	1	0.0	1	0.2

Table 16a

Statistical Zone 10

Summary of dominant organisms taken in statistical zone 10 during the 2003 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
Farfantepenaeus aztecus	0.0	0.00	0.0	0.00	0	5.5	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0
Portunus gibbesii	0.0	0.00	0.0	0.00	0	5.5	0.00	0.1	0.00	1	0.0	0.00	0.0	0.00	0
Solenocera vioscai	0.0	0.00	0.0	0.00	0	5.5	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0
Trachypenaeus constrictus	0.0	0.00	0.0	0.00	0	5.5	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0
Saurida brasiliensis	0.0	0.00	0.0	0.00	0	54.5	0.00	0.3	0.00	1	0.0	0.00	0.0	0.00	0
Peprilus burti	0.0	0.00	0.0	0.00	0	32.7	0.00	1.4	0.00	1	0.0	0.00	0.0	0.00	0
Anchoa lyolepis	0.0	0.00	0.0	0.00	0	27.3	0.00	0.1	0.00	1	0.0	0.00	0.0	0.00	0
Citharichthys macrops	0.0	0.00	0.0	0.00	0	5.5	0.00	0.1	0.00	1	0.0	0.00	0.0	0.00	0
Etropus crossotus	0.0	0.00	0.0	0.00	0	5.5	0.00	0.1	0.00	1	0.0	0.00	0.0	0.00	0
Micropogonias undulatus	0.0	0.00	0.0	0.00	0	5.5	0.00	0.4	0.00	1	0.0	0.00	0.0	0.00	0
Synodus foetens	0.0	0.00	0.0	0.00	0	5.5	0.00	0.1	0.00	1	0.0	0.00	0.0	0.00	0
Squid spp	0.0	0.00	0.0	0.00	0	572.7	0.00	3.2	0.00	1	0.0	0.00	0.0	0.00	0

Table 16b

Statistical Zone 10

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 2003 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	0.0	0	0	6.5	0	1	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0
Total finfish	0.0	0	0	2.2	0	1	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0
Total crustacean	0.0	0	0	0.0	0	1	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0
Total other	0.0	0	0	4.4	0	1	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0
Surface temperature	0.0	0	0	23.6	0	1	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0
Midwater temperature	0.0	0	0	23.6	0	1	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0
Bottom temperature	0.0	0	0	23.7	0	1	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0
Surface salinity	0.0	0	0	33.2	0	1	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0
Midwater salinity	0.0	0	0	33.5	0	1	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0
Bottom salinity	0.0	0	0	33.6	0	1	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0
Surface chlorophyll	0.0	0	0	20.5	0	1	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0
Surface fluorescence	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0
Surface oxygen	0.0	0	0	4.4	0	1	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0
Midwater oxygen	0.0	0	0	4.3	0	1	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0
Bottom oxygen	0.0	0	0	4.3	0	1	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0

Table 17a

Statistical Zone 11

Summary of dominant organisms taken in statistical zone 11 during the 2003 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
Farfantepenaeus aztecus	1.8	1.33	0.0	0.02	7	26.4	8.97	0.4	0.13	20	31.7	7.44	0.8	0.19	36
Callinectes similis	0.0	0.00	0.0	0.00	7	14.7	7.69	0.1	0.04	20	12.5	3.76	0.2	0.07	36
Portunus spinicarpus	0.0	0.00	0.0	0.00	7	1.0	1.00	0.0	0.01	20	3.6	3.11	0.0	0.02	36
Squilla spp	1.5	0.99	0.0	0.02	7	12.4	9.69	0.1	0.10	20	4.8	1.12	0.0	0.01	36
Trachypenaeus similis	2.3	2.31	0.0	0.00	7	11.1	4.38	0.0	0.01	20	4.4	1.58	0.0	0.01	36
Farfantepenaeus duorarum	0.0	0.00	0.0	0.00	7	7.1	4.27	0.2	0.09	20	16.2	6.23	0.5	0.22	36
Micropogonias undulatus	285.6	156.99	12.3	7.14	7	202.5	64.02	8.9	2.74	20	92.7	23.33	4.6	1.03	36
Stenotomus caprinus	2.6	2.57	0.0	0.04	7	43.2	29.68	0.6	0.32	20	217.3	44.97	5.0	1.08	36
Anchoa hepsetus	113.9	88.50	1.4	1.08	7	369.4	138.70	4.9	2.14	20	4.7	3.31	0.1	0.05	36
Chloroscombrus chrysurus	429.3	381.37	19.9	18.23	7	97.5	39.04	2.0	0.79	20	76.4	37.13	3.4	1.64	36
Peprilus burti	4.4	2.34	0.2	0.10	7	73.1	45.05	2.9	1.72	20	15.9	6.64	0.7	0.27	36
Opisthonema oglinum	151.0	145.47	2.6	2.49	7	192.1	167.51	3.1	2.70	20	5.9	4.98	0.1	0.06	36
Leiostomus xanthurus	27.7	17.10	2.3	1.43	7	3.6	1.54	0.3	0.13	20	3.2	1.25	0.3	0.12	36
Harengula jaguana	23.1	19.39	0.4	0.39	7	82.7	25.49	1.3	0.37	20	3.7	1.61	0.1	0.04	36
Squid spp	76.0	69.43	0.2	0.19	7	44.0	14.51	0.5	0.15	20	5.8	1.31	0.1	0.05	36

Table 17a (continued)

Statistical Zone 11

Summary of dominant organisms taken in statistical zone 11 during the 2003 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
Farfantepenaeus aztecus	192.6	87.74	3.5	1.13	12	147.3	93.07	3.1	1.68	4	25.1	23.65	1.0	0.92	4
Callinectes similis	326.0	243.07	2.0	1.11	12	167.3	167.25	1.9	1.93	4	0.0	0.00	0.0	0.00	4
Portunus spinicarpus	4.1	2.42	0.0	0.02	12	147.2	82.87	1.1	0.56	4	439.7	271.81	3.6	2.20	4
Squilla spp	99.4	53.01	0.9	0.46	12	162.1	148.30	0.9	0.81	4	3.9	3.91	0.1	0.06	4
Trachypenaeus similis	20.8	13.55	0.1	0.03	12	131.3	131.25	0.5	0.51	4	0.0	0.00	0.0	0.00	4
Farfantepenaeus duorarum	0.0	0.00	0.0	0.00	12	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	4
Micropogonias undulatus	252.5	142.98	14.2	7.48	12	16.0	9.25	1.0	0.59	4	0.0	0.00	0.0	0.00	4
Stenotomus caprinus	187.1	83.39	5.0	1.92	12	29.9	19.69	1.6	0.91	4	52.6	22.26	4.3	1.90	4
Anchoa hepsetus	69.9	68.92	0.9	0.89	12	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	4
Chloroscombrus chrysurus	24.6	21.82	1.8	1.63	12	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	4
Peprilus burti	128.5	51.58	6.8	2.71	12	270.9	263.08	19.4	18.95	4	15.0	15.00	1.1	1.05	4
Opisthonema oglinum	0.0	0.00	0.0	0.00	12	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	4
Leiostomus xanthurus	313.9	228.42	21.2	12.50	12	232.4	122.58	27.7	14.57	4	10.4	10.43	1.5	1.48	4
Harengula jaguana	30.7	22.30	2.3	1.97	12	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	4
Squid spp	14.2	4.15	0.2	0.07	12	14.8	9.36	0.0	0.02	4	2.2	2.22	0.4	0.36	4

Table 17b

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 2003 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	52.9	17.57	7	35.2	7.78	20	25.5	2.9	36	0.0	0	0	88.0	18.55	4	59.1	30.13	4
Total finfish	50.2	16.96	7	31.7	7.42	20	22.8	2.66	36	0.0	0	0	77.7	14.49	4	51.7	28.4	4
Total crustacean	0.8	0.22	3	1.6	0.35	16	2.7	0.55	27	0.0	0	0	9.6	6.24	4	6.1	3.54	4
Total other	2.7	1.03	6	2.8	1.21	16	1.0	0.4	24	0.0	0	0	0.7	0.45	4	1.3	0.36	4
Surface temperature	24.8	0.63	7	24.8	0.43	20	25.2	0.27	36	0.0	0	0	24.6	0.26	5	25.2	0.18	5
Midwater temperature	24.9	0.61	7	24.8	0.41	20	25.3	0.29	36	0.0	0	0	24.8	0.25	5	24.5	0.86	5
Bottom temperature	25.3	0.48	7	25.1	0.43	20	25.4	0.29	36	0.0	0	0	22.4	0.47	5	20.4	1.4	5
Surface salinity	29.8	0.41	7	31.5	0.56	20	33.7	0.21	36	0.0	0	0	35.4	0.2	5	36.0	0.14	5
Midwater salinity	30.2	0.3	7	32.1	0.4	20	34.1	0.17	36	0.0	0	0	35.6	0.18	5	36.2	0.06	5
Bottom salinity	31.0	0.46	7	32.5	0.38	20	34.4	0.16	36	0.0	0	0	36.1	0.28	5	36.4	0.04	5
Surface chlorophyll	0.0	0	0	24.7	1.59	10	21.1	2.86	18	0.0	0	0	17.4	0.97	5	14.3	0.5	5
Surface fluorescence	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0
Surface oxygen	6.5	0.09	7	5.4	0.23	20	5.2	0.16	36	0.0	0	0	4.1	0.02	5	4.1	0.02	5
Midwater oxygen	6.5	0.09	7	5.3	0.21	20	5.1	0.15	36	0.0	0	0	4.1	0.02	5	3.8	0.2	5
Bottom oxygen	6.1	0.16	7	5.2	0.19	20	5.0	0.14	36	0.0	0	0	3.3	0.29	5	3.2	0.23	5

Table 18a

Statistical Zone 13

Summary of dominant organisms taken in statistical zone 13 during the 2003 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	396.8	112.69	0.9	0.23	8	218.5	106.54	0.5	0.27	20
Squilla spp	0.0	0.00	0.0	0.00	0	70.9	26.92	0.6	0.22	8	104.2	37.96	0.8	0.28	20
Xiphopenaeus kroyeri	0.0	0.00	0.0	0.00	0	504.2	384.30	1.9	1.46	8	0.1	0.10	0.0	0.00	20
Portunus spinicarpus	0.0	0.00	0.0	0.00	0	7.2	6.03	0.0	0.02	8	2.2	1.22	0.0	0.01	20
Callinectes similis	0.0	0.00	0.0	0.00	0	127.7	52.80	0.9	0.51	8	57.6	13.96	0.8	0.25	20
Litopenaeus setiferus	0.0	0.00	0.0	0.00	0	123.1	38.09	1.6	0.39	8	60.4	16.45	1.3	0.29	20
Micropogonias undulatus	0.0	0.00	0.0	0.00	0	207.0	102.58	10.2	4.95	8	340.6	85.65	20.2	5.47	20
Trichiurus lepturus	0.0	0.00	0.0	0.00	0	64.2	45.70	2.6	1.71	8	275.4	86.13	4.1	1.09	20
Chloroscombrus chrysurus	0.0	0.00	0.0	0.00	0	4.5	4.50	0.2	0.19	8	156.3	96.28	9.3	6.18	20
Stellifer lanceolatus	0.0	0.00	0.0	0.00	0	251.5	113.86	2.5	0.95	8	11.9	7.27	0.2	0.12	20
Cynoscion arenarius	0.0	0.00	0.0	0.00	0	47.7	19.26	1.6	0.57	8	72.9	22.78	3.9	1.51	20
Arius felis	0.0	0.00	0.0	0.00	0	219.6	184.90	3.1	2.30	8	0.0	0.00	0.0	0.00	20
Etropus crossotus	0.0	0.00	0.0	0.00	0	138.1	81.19	1.7	1.08	8	11.9	4.18	0.2	0.06	20
Sphoeroides parvus	0.0	0.00	0.0	0.00	0	95.6	32.83	0.5	0.17	8	44.5	23.98	0.2	0.10	20
Squid spp	0.0	0.00	0.0	0.00	0	43.0	21.12	0.6	0.32	8	56.7	17.84	0.6	0.21	20

Table 18a (continued)

Statistical Zone 13

Summary of dominant organisms taken in statistical zone 13 during the 2003 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	295.9	0.00	0.9	0.00	1	96.0	84.00	0.4	0.33	2	0.0	0.00	0.0	0.00	2
Squilla spp	492.4	0.00	3.8	0.00	1	285.1	274.22	2.1	2.03	2	83.1	47.81	0.7	0.43	2
Xiphopenaeus kroyeri	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	2
Portunus spinicarpus	0.0	0.00	0.0	0.00	1	1.1	1.09	0.0	0.02	2	3126.3	3119.20	24.9	24.84	2
Callinectes similis	322.8	0.00	6.8	0.00	1	118.9	86.22	2.8	1.96	2	17.6	17.65	0.4	0.37	2
Litopenaeus setiferus	29.0	0.00	0.9	0.00	1	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	2
Micropogonias undulatus	2.1	0.00	0.2	0.00	1	101.9	97.50	7.4	7.07	2	92.6	81.98	6.6	5.77	2
Trichiurus lepturus	2.1	0.00	0.0	0.00	1	382.8	345.98	10.6	9.56	2	294.7	294.71	7.2	7.25	2
Chloroscombrus chrysurus	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	2
Stellifer lanceolatus	0.0	0.00	0.0	0.00	1	1.9	1.94	0.0	0.03	2	0.0	0.00	0.0	0.00	2
Cynoscion arenarius	29.0	0.00	4.1	0.00	1	24.3	22.13	3.5	3.28	2	49.9	42.83	8.6	7.53	2
Arius felis	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	2
Etropus crossotus	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	2
Sphoeroides parvus	10.3	0.00	0.1	0.00	1	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	2
Squid spp	26.9	0.00	0.1	0.00	1	24.1	8.62	0.5	0.14	2	10.6	10.59	0.3	0.34	2

Table 18b

Statistical Zone 13

Summary of mean total catch and environmental data (X), the standard error of the mean (SEM) and the number (n) of samples taken during the 2003 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	0.0	0	0	43.0	9.81	8	55.9	10.95	20	0.0	0	0	64.1	19.09	2	99.2	9.9	2
Total finfish	0.0	0	0	36.0	9.51	8	51.2	11.26	20	0.0	0	0	51.4	11.49	2	70.1	16.06	2
Total crustacean	0.0	0	0	6.5	2.01	8	4.0	0.8	20	0.0	0	0	11.6	7.15	2	28.5	26.04	2
Total other	0.0	0	0	1.1	0.51	4	0.9	0.27	14	0.0	0	0	1.0	0.5	2	0.4	0.35	2
Surface temperature	0.0	0	0	19.7	1.3	9	24.0	0.68	22	0.0	0	0	24.9	0	2	25.1	0	1
Midwater temperature	0.0	0	0	20.2	1.25	9	24.3	0.69	22	0.0	0	0	26.0	0.06	2	22.2	0	1
Bottom temperature	0.0	0	0	23.0	1.3	9	25.8	0.47	22	0.0	0	0	21.8	0.63	2	18.8	0	1
Surface salinity	0.0	0	0	31.0	0.71	9	30.7	0.44	22	0.0	0	0	29.9	1.6	2	28.6	0	1
Midwater salinity	0.0	0	0	31.5	0.66	9	31.8	0.46	22	0.0	0	0	35.9	0.07	2	36.4	0	1
Bottom salinity	0.0	0	0	34.4	0.56	9	34.7	0.35	22	0.0	0	0	36.4	0.05	2	36.4	0	1
Surface chlorophyll	0.0	0	0	2.7	0.29	9	8.5	2	22	0.0	0	0	33.8	11.7	2	52.7	0	1
Surface fluorescence	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0
Surface oxygen	0.0	0	0	6.9	0.1	9	6.4	0.27	22	0.0	0	0	4.7	0.8	2	5.0	0	1
Midwater oxygen	0.0	0	0	6.8	0.08	9	6.1	0.31	22	0.0	0	0	4.0	0.1	2	3.2	0	1
Bottom oxygen	0.0	0	0	5.1	0.37	9	4.6	0.23	22	0.0	0	0	3.2	0.15	2	2.8	0	1

Table 19a

Statistical Zone 14

Summary of dominant organisms taken in statistical zone 14 during the 2003 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
Farfantepenaeus aztecus	1.6	1.62	0.0	0.01	2	19.5	8.73	0.3	0.12	10	56.6	27.37	1.1	0.61	13
Trachypenaeus similis	233.4	205.86	0.3	0.32	2	54.9	30.23	0.1	0.05	10	50.8	36.53	0.1	0.08	13
Litopenaeus setiferus	95.5	63.39	1.0	0.65	2	81.8	24.02	1.7	0.48	10	12.7	5.77	0.3	0.15	13
Callinectes similis	2.1	2.14	0.0	0.01	2	51.0	17.07	0.5	0.34	10	16.7	5.20	0.3	0.12	13
Squilla spp	6.2	4.55	0.0	0.04	2	63.0	24.23	0.6	0.23	10	13.2	6.87	0.2	0.11	13
Portunus gibbesii	25.0	7.15	0.1	0.04	2	34.2	7.95	0.2	0.05	10	31.3	15.39	0.2	0.07	13
Micropogonias undulatus	1.9	0.26	0.1	0.03	2	1428.2	459.94	65.0	20.19	10	1868.8	452.15	89.1	21.53	13
Leiostomus xanthurus	5.7	5.68	0.2	0.16	2	52.7	29.09	4.4	2.41	10	49.2	15.19	4.5	1.43	13
Stenotomus caprinus	0.0	0.00	0.0	0.00	2	7.1	5.98	0.1	0.12	10	67.6	25.05	1.2	0.39	13
Trichiurus lepturus	5.6	0.78	0.1	0.07	2	73.0	41.94	1.7	1.01	10	25.5	9.14	1.3	0.57	13
Cynoscion arenarius	68.6	68.57	0.6	0.57	2	61.1	21.49	4.2	1.51	10	34.5	17.85	2.8	0.99	13
Stellifer lanceolatus	37.4	9.58	0.4	0.10	2	75.6	49.42	1.0	0.55	10	0.2	0.15	0.0	0.01	13
Cynoscion nothus	60.8	60.81	0.5	0.49	2	16.9	9.92	0.7	0.31	10	28.6	11.02	2.5	1.06	13
Sphoeroides parvus	10.5	10.54	0.0	0.04	2	6.0	3.17	0.0	0.02	10	120.4	84.37	0.5	0.34	13
Squid spp	43.5	39.21	0.4	0.29	2	42.3	13.27	0.6	0.15	10	97.5	57.30	1.3	0.82	13

Table 19a (continued)

Statistical Zone 14

Summary of dominant organisms taken in statistical zone 14 during the 2003 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
Farfantepenaeus aztecus	126.4	122.53	3.9	3.82	2	132.0	0.00	4.9	0.00	1	0.0	0.00	0.0	0.00	0
Trachypenaeus similis	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0
Litopenaeus setiferus	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0
Callinectes similis	5.4	0.97	0.1	0.03	2	30.7	0.00	0.9	0.00	1	0.0	0.00	0.0	0.00	0
Squilla spp	7.3	6.03	0.1	0.08	2	1.3	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0
Portunus gibbesii	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0
Micropogonias undulatus	793.4	595.51	39.0	28.19	2	13.3	0.00	1.2	0.00	1	0.0	0.00	0.0	0.00	0
Leiostomus xanthurus	31.7	13.84	3.1	1.18	2	2.7	0.00	0.3	0.00	1	0.0	0.00	0.0	0.00	0
Stenotomus caprinus	23.1	18.00	0.5	0.34	2	102.7	0.00	5.6	0.00	1	0.0	0.00	0.0	0.00	0
Trichiurus lepturus	2.6	2.55	0.2	0.15	2	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0
Cynoscion arenarius	6.7	6.67	1.0	1.01	2	20.0	0.00	3.5	0.00	1	0.0	0.00	0.0	0.00	0
Stellifer lanceolatus	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0
Cynoscion nothus	6.4	2.53	0.8	0.37	2	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0
Sphoeroides parvus	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	0
Squid spp	8.3	8.30	0.0	0.02	2	1.3	0.00	0.2	0.00	1	0.0	0.00	0.0	0.00	0

Table 19b

Statistical Zone 14

Summary of mean total catch and environmental data (X), the standard error of the mean (SEM) and the number (n) of samples taken during the 2003 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	9.1	0.34	2	98.7	25.26	10	120.0	23.86	13	0.0	0	0	26.3	0	1	0.0	0	0
Total finfish	7.1	0.8	2	91.9	24.88	10	116.0	23.59	13	0.0	0	0	19.3	0	1	0.0	0	0
Total crustacean	1.6	0.14	2	3.4	0.59	10	2.9	0.85	12	0.0	0	0	6.1	0	1	0.0	0	0
Total other	0.6	0	1	4.0	3.09	9	1.5	0.95	11	0.0	0	0	0.8	0	1	0.0	0	0
Surface temperature	17.0	1.18	4	24.4	0.77	11	23.3	0.98	15	0.0	0	0	25.8	0	1	0.0	0	0
Midwater temperature	17.0	1.2	4	24.4	0.78	11	23.9	0.87	15	0.0	0	0	25.9	0	1	0.0	0	0
Bottom temperature	17.6	0.76	4	24.6	0.81	11	24.3	0.87	15	0.0	0	0	20.6	0	1	0.0	0	0
Surface salinity	29.9	2.9	4	31.1	0.68	11	32.5	0.53	15	0.0	0	0	35.3	0	1	0.0	0	0
Midwater salinity	29.9	2.95	4	31.5	0.64	11	33.7	0.41	15	0.0	0	0	35.8	0	1	0.0	0	0
Bottom salinity	32.0	1.04	4	32.2	0.71	11	34.9	0.36	15	0.0	0	0	36.5	0	1	0.0	0	0
Surface chlorophyll	1.7	0.41	4	11.0	2.84	11	9.6	2.24	15	0.0	0	0	11.5	0	1	0.0	0	0
Surface fluorescence	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0
Surface oxygen	8.0	0.51	4	5.6	0.4	11	6.0	0.42	15	0.0	0	0	4.3	0	1	0.0	0	0
Midwater oxygen	8.0	0.51	4	5.4	0.47	11	5.6	0.39	15	0.0	0	0	4.3	0	1	0.0	0	0
Bottom oxygen	7.5	0.1	4	5.4	0.44	11	5.1	0.43	15	0.0	0	0	3.0	0	1	0.0	0	0

Table 20a

Statistical Zone 15

Summary of dominant organisms taken in statistical zone 15 during the 2003 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
Farfantepenaeus aztecus	8.8	2.12	0.1	0.01	2	55.0	29.36	0.6	0.33	6	102.0	35.18	2.1	0.78	10
Trachypenaeus similis	10.0	10.00	0.0	0.02	2	216.4	153.45	0.4	0.26	6	29.4	25.06	0.1	0.08	10
Callinectes similis	6.1	0.61	0.1	0.01	2	27.9	10.76	0.2	0.11	6	113.6	42.75	1.9	0.80	10
Squilla spp	3.3	3.33	0.0	0.01	2	23.0	13.04	0.3	0.17	6	46.5	17.15	0.6	0.22	10
Portunus spinicarpus	0.0	0.00	0.0	0.00	2	1.3	1.33	0.0	0.00	6	0.6	0.60	0.0	0.00	10
Portunus gibbesii	0.0	0.00	0.0	0.00	2	16.8	12.56	0.1	0.07	6	23.1	9.81	0.1	0.05	10
Micropogonias undulatus	1704.7	951.97	68.3	34.27	2	1015.9	553.74	41.7	22.79	6	1670.2	363.96	73.6	16.18	10
Stenotomus caprinus	13.6	13.64	0.2	0.17	2	44.7	23.19	0.6	0.31	6	77.6	47.59	1.2	0.68	10
Trichiurus lepturus	32.7	32.73	0.3	0.31	2	50.8	30.29	2.9	1.66	6	12.5	5.98	0.7	0.37	10
Peprilus burti	27.3	27.27	1.7	1.67	2	36.2	24.69	2.0	1.37	6	16.9	7.70	0.7	0.40	10
Leiostomus xanthurus	162.0	45.30	11.9	3.30	2	54.1	27.12	4.0	2.05	6	35.3	10.95	2.9	0.91	10
Trachurus lathami	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	6	2.4	1.78	0.1	0.09	10
Prionotus roseus	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	6	78.2	45.53	2.5	1.40	10
Cynoscion arenarius	0.0	0.00	0.0	0.00	2	49.8	24.50	3.2	2.63	6	54.7	24.54	4.1	1.27	10
Squid spp	29.7	3.03	0.6	0.00	2	87.3	64.81	1.4	1.01	6	47.2	33.04	0.5	0.36	10

Table 20a (continued)

Statistical Zone 15

Summary of dominant organisms taken in statistical zone 15 during the 2003 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
Farfantepenaeus aztecus	37.1	4.36	1.4	0.32	2	186.7	17.83	3.3	1.22	2	3.9	1.75	0.2	0.10	5
Trachypenaeus similis	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	5
Callinectes similis	4.4	1.09	0.1	0.01	2	64.3	16.59	1.4	0.28	2	0.0	0.00	0.0	0.00	5
Squilla spp	0.0	0.00	0.0	0.00	2	22.3	22.33	0.4	0.38	2	0.0	0.00	0.0	0.00	5
Portunus spinicarpus	0.0	0.00	0.0	0.00	2	1.2	1.22	0.0	0.01	2	47.1	26.07	0.6	0.28	5
Portunus gibbesii	2.7	2.73	0.0	0.02	2	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	5
Micropogonias undulatus	83.5	56.18	5.5	3.61	2	8.4	8.37	0.8	0.83	2	0.0	0.00	0.0	0.00	5
Stenotomus caprinus	114.0	14.73	2.7	0.01	2	65.0	23.15	2.6	1.27	2	141.2	28.08	8.5	1.61	5
Trichiurus lepturus	202.4	27.82	13.3	1.68	2	0.0	0.00	0.0	0.00	2	12.1	4.63	0.7	0.21	5
Peprilus burti	63.8	2.73	4.1	0.24	2	0.0	0.00	0.0	0.00	2	64.2	30.03	4.0	1.80	5
Leiostomus xanthurus	75.8	28.91	7.1	2.79	2	45.3	44.04	4.5	4.29	2	0.0	0.00	0.0	0.00	5
Trachurus lathami	36.0	27.27	1.2	0.90	2	0.0	0.00	0.0	0.00	2	114.4	48.94	6.2	2.44	5
Prionotus roseus	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	2	2.4	1.65	0.1	0.10	5
Cynoscion arenarius	4.4	1.09	0.7	0.05	2	20.3	1.98	2.6	0.20	2	2.2	1.53	0.7	0.48	5
Squid spp	8.2	6.00	0.3	0.00	2	4.5	1.67	0.5	0.15	2	69.4	23.88	2.0	0.89	5

Table 20b

Statistical Zone 15

Summary of mean total catch and environmental data (X), the standard error of the mean (SEM) and the number (n) of samples taken during the 2003 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	108.0	26.59	2	74.0	27.63	6	111.0	19.49	10	0.0	0	0	27.6	4.21	2	42.8	6.45	5
Total finfish	107.0	25.97	2	69.7	27.74	6	105.0	19.83	10	0.0	0	0	20.3	3.41	2	36.3	5.33	5
Total crustacean	1.1	0.56	2	2.9	0.98	6	5.7	1.6	10	0.0	0	0	5.6	2.06	2	1.0	0.5	5
Total other	0.6	0.06	2	1.4	1.01	6	0.6	0.35	10	0.0	0	0	1.6	1.2	2	5.5	1.94	5
Surface temperature	24.5	0.17	2	20.5	1.94	7	23.4	1.14	11	0.0	0	0	25.5	0.13	2	25.8	0.08	3
Midwater temperature	24.4	0.1	2	21.0	1.72	7	24.0	0.88	11	0.0	0	0	25.8	0.02	2	24.0	1.27	3
Bottom temperature	24.4	0.11	2	21.8	1.38	7	25.2	0.5	11	0.0	0	0	22.2	2.48	2	18.2	0.6	3
Surface salinity	32.0	0.66	2	31.0	0.62	7	32.2	0.67	11	0.0	0	0	35.2	0.23	2	35.4	0.14	3
Midwater salinity	32.0	0.69	2	31.8	0.42	6	32.4	0.91	11	0.0	0	0	35.8	0.31	2	36.3	0.11	3
Bottom salinity	32.1	0.72	2	32.8	0.32	7	37.5	2.86	11	0.0	0	0	36.4	0.09	2	36.4	0.04	3
Surface chlorophyll	21.5	2.24	2	12.1	3.41	7	11.9	1.55	11	0.0	0	0	9.2	0.28	2	9.8	0.24	3
Surface fluorescence	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0
Surface oxygen	4.5	0.05	2	6.0	0.8	7	5.2	0.53	11	0.0	0	0	4.5	0.05	2	4.4	0.03	3
Midwater oxygen	4.5	0.1	2	6.1	0.81	6	4.6	0.4	11	0.0	0	0	4.4	0	2	3.8	0.17	3
Bottom oxygen	4.5	0.15	2	5.6	0.6	7	4.1	0.34	11	0.0	0	0	3.5	0.7	2	2.9	0.07	3

Table 21a

Statistical Zone 16

Summary of dominant organisms taken in statistical zone 16 during the 2003 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
Farfantepenaeus aztecus	21.0	21.00	0.2	0.17	2	64.9	16.18	0.6	0.22	5	126.5	53.94	2.5	0.91	9
Litopenaeus setiferus	90.0	90.00	1.1	1.13	2	177.1	163.42	1.0	0.54	5	0.4	0.38	0.0	0.02	9
Callinectes similis	41.0	11.00	0.2	0.06	2	55.8	16.04	0.3	0.07	5	40.7	20.66	0.9	0.45	9
Squilla spp	160.0	160.00	1.7	1.69	2	41.7	26.95	0.4	0.26	5	19.8	11.14	0.2	0.14	9
Sicyonia brevirostris	0.0	0.00	0.0	0.00	2	2.2	2.23	0.0	0.00	5	4.0	3.18	0.1	0.05	9
Portunus spinicarpus	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	9
Micropogonias undulatus	176.0	172.00	5.9	5.48	2	561.6	232.44	21.2	9.82	5	1306.3	193.95	51.1	8.68	9
Stenotomus caprinus	6.0	6.00	0.1	0.05	2	247.4	126.44	4.6	3.13	5	424.0	246.80	7.6	4.33	9
Peprilus burti	3.0	3.00	0.2	0.16	2	27.7	18.02	1.3	0.86	5	59.8	28.95	3.7	1.50	9
Leiostomus xanthurus	16.0	8.00	1.0	0.70	2	64.3	57.65	4.4	3.98	5	75.6	30.06	6.6	2.80	9
Trachurus lathami	0.0	0.00	0.0	0.00	2	0.0	0.00	0.0	0.00	5	5.9	3.13	0.2	0.11	9
Prionotus stearnsi	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	9
Prionotus rubio	6.0	6.00	0.0	0.01	2	23.3	14.51	0.5	0.41	5	46.8	15.87	1.5	0.57	9
Upeneus parvus	0.0	0.00	0.0	0.00	2	10.8	10.84	0.3	0.31	5	11.5	7.78	0.3	0.21	9
Squid spp	32.0	20.00	0.2	0.02	2	57.8	28.54	0.7	0.38	5	3.2	1.65	0.0	0.03	9

Table 21a (continued)

Statistical Zone 16

Summary of dominant organisms taken in statistical zone 16 during the 2003 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
Farfantepenaeus aztecus	226.3	123.21	5.6	3.07	3	78.3	26.04	2.6	0.67	5	11.6	6.07	0.7	0.33	6
Litopenaeus setiferus	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	6
Callinectes similis	32.8	22.81	0.6	0.41	3	37.9	20.12	0.7	0.30	5	0.0	0.00	0.0	0.00	6
Squilla spp	16.3	13.60	0.2	0.17	3	10.9	4.16	0.2	0.07	5	19.5	19.50	0.2	0.15	6
Sicyonia brevirostris	53.8	38.23	0.7	0.49	3	49.4	16.01	0.7	0.24	5	5.8	4.91	0.1	0.09	6
Portunus spinicarpus	0.0	0.00	0.0	0.00	3	31.0	18.36	0.3	0.18	5	40.9	16.67	0.4	0.19	6
Micropogonias undulatus	177.4	79.75	12.7	6.50	3	16.1	8.53	1.5	0.86	5	0.0	0.00	0.0	0.00	6
Stenotomus caprinus	273.5	58.04	8.0	1.21	3	95.6	57.06	5.4	3.39	5	270.5	113.64	14.4	6.26	6
Peprilus burti	62.7	57.78	3.5	3.20	3	34.5	21.38	2.1	1.32	5	208.9	134.41	13.5	8.57	6
Leiostomus xanthurus	45.1	20.70	4.4	2.04	3	82.5	47.73	8.5	4.83	5	0.0	0.00	0.0	0.00	6
Trachurus lathami	17.9	12.71	0.5	0.36	3	49.1	44.85	1.2	1.08	5	82.5	33.74	3.6	1.39	6
Prionotus stearnsi	0.0	0.00	0.0	0.00	3	1.2	1.20	0.0	0.01	5	111.7	81.90	1.2	0.84	6
Prionotus rubio	22.0	13.00	0.9	0.59	3	17.2	6.26	0.8	0.29	5	7.0	1.99	0.4	0.12	6
Upeneus parvus	11.9	5.62	0.3	0.15	3	48.1	17.23	1.7	0.80	5	23.4	2.89	0.9	0.09	6
Squid spp	0.0	0.00	0.0	0.00	3	2.4	2.40	0.1	0.09	5	46.0	8.02	3.3	0.78	6

Table 21b

Statistical Zone 16

Summary of mean total catch and environmental data (X), the standard error of the mean (SEM) and the number (n) of samples taken during the 2003 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	56.7	36.3	2	55.7	22.94	5	94.8	13.88	9	0.0	0	0	39.0	6.73	5	66.7	11.87	6
Total finfish	50.7	41.1	2	51.3	22.85	5	90.5	13.57	9	0.0	0	0	31.5	6.48	5	60.3	11.44	6
Total crustacean	5.7	5.1	2	3.7	0.8	5	4.3	1.22	9	0.0	0	0	6.1	0.27	5	1.5	0.77	6
Total other	0.2	0.2	2	0.6	0.37	5	0.0	0.03	9	0.0	0	0	1.4	0.44	5	4.9	0.98	6
Surface temperature	24.0	0.36	2	24.1	0.09	5	24.8	0.22	9	0.0	0	0	26.1	0.04	3	26.3	0.1	5
Midwater temperature	23.9	0.42	2	24.1	0.08	5	25.2	0.22	9	0.0	0	0	26.1	0.04	3	25.4	0.63	5
Bottom temperature	24.0	0.36	2	24.4	0.24	5	26.1	0.22	9	0.0	0	0	23.0	1.54	3	18.5	0.14	5
Surface salinity	31.1	0.82	2	31.2	0.44	5	33.2	0.47	9	0.0	0	0	35.9	0.12	3	36.0	0.08	5
Midwater salinity	30.9	0.97	2	31.3	0.47	5	33.8	0.36	9	0.0	0	0	35.9	0.07	3	36.2	0.03	5
Bottom salinity	31.3	0.63	2	31.5	0.6	5	34.8	0.35	9	0.0	0	0	36.2	0.15	3	36.4	0.01	5
Surface chlorophyll	24.4	12.42	2	17.4	4.07	5	8.5	0.34	9	0.0	0	0	7.9	1.12	3	4.9	0.35	5
Surface fluorescence	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0
Surface oxygen	4.9	0.05	2	4.0	0.71	5	4.4	0.27	9	0.0	0	0	4.4	0.07	3	4.9	0.26	5
Midwater oxygen	5.1	0.3	2	3.9	0.77	5	4.0	0.26	9	0.0	0	0	4.4	0.07	3	4.5	0.13	5
Bottom oxygen	4.6	0.1	2	3.8	0.89	5	3.6	0.23	9	0.0	0	0	3.8	0.27	3	3.2	0.31	5

Table 22a

Statistical Zone 17

Summary of dominant organisms taken in statistical zone 17 during the 2003 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	14	0.0	0.00	0.0	0.00	8	0.4	0.44	0.0	0.00	11
Sicyonia brevirostris	0.0	0.00	0.0	0.00	14	0.6	0.58	0.0	0.00	8	37.1	16.37	0.5	0.22	11
Farfantepenaeus aztecus	0.0	0.00	0.0	0.00	14	8.1	4.80	0.1	0.09	8	18.5	9.02	0.5	0.24	11
Xiphopenaeus kroyeri	195.9	93.92	0.6	0.32	14	0.0	0.00	0.0	0.00	8	0.0	0.00	0.0	0.00	11
Callinectes similis	3.9	1.85	0.0	0.01	14	3.7	1.73	0.0	0.03	8	19.8	9.22	0.4	0.19	11
Squilla spp	14.6	7.51	0.1	0.04	14	3.6	1.55	0.0	0.01	8	9.4	5.74	0.1	0.08	11
Stenotomus caprinus	0.0	0.00	0.0	0.00	14	306.7	84.61	7.3	2.63	8	658.0	211.76	20.1	4.64	11
Micropogonias undulatus	9.0	2.65	0.2	0.07	14	53.1	40.76	2.3	1.81	8	626.4	355.83	28.8	13.00	11
Chloroscombrus chrysurus	0.0	0.00	0.0	0.00	14	171.8	110.26	3.9	2.55	8	112.6	47.53	3.4	1.39	11
Leiostomus xanthurus	0.4	0.43	0.0	0.01	14	18.2	12.47	1.3	0.90	8	124.1	85.45	11.6	7.20	11
Peprilus burti	4.3	1.71	0.0	0.01	14	4.3	2.23	0.2	0.14	8	56.8	35.81	3.7	2.37	11
Upeneus parvus	0.0	0.00	0.0	0.00	14	2.3	1.63	0.1	0.05	8	35.7	10.40	1.4	0.46	11
Prionotus paralatus	0.0	0.00	0.0	0.00	14	0.0	0.00	0.0	0.00	8	0.4	0.44	0.0	0.00	11
Trachurus lathami	0.0	0.00	0.0	0.00	14	1.2	1.18	0.0	0.05	8	5.2	2.92	0.2	0.12	11
Squid spp	113.1	30.33	1.1	0.32	14	102.3	39.08	1.1	0.40	8	12.5	5.58	0.2	0.10	11

Table 22a (continued)

Statistical Zone 17

Summary of dominant organisms taken in statistical zone 17 during the 2003 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	8.7	6.36	0.0	0.03	5	260.2	143.10	1.4	0.67	9	33.8	0.00	0.4	0.00	1
Sicyonia brevirostris	40.8	17.06	0.6	0.21	5	174.4	80.66	2.8	1.24	9	0.0	0.00	0.0	0.00	1
Farfantepenaeus aztecus	77.4	37.75	2.6	1.31	5	34.8	12.15	1.6	0.57	9	21.8	0.00	1.0	0.00	1
Xiphopenaeus kroyeri	0.0	0.00	0.0	0.00	5	0.0	0.00	0.0	0.00	9	0.0	0.00	0.0	0.00	1
Callinectes similis	34.1	15.46	0.8	0.32	5	2.2	1.62	0.1	0.06	9	0.0	0.00	0.0	0.00	1
Squilla spp	3.2	1.76	0.1	0.05	5	4.5	2.13	0.0	0.02	9	16.4	0.00	0.2	0.00	1
Stenotomus caprinus	451.2	191.10	19.5	8.26	5	278.5	87.57	15.1	4.69	9	48.0	0.00	2.5	0.00	1
Micropogonias undulatus	263.1	146.24	16.3	8.75	5	8.2	4.64	0.9	0.48	9	0.0	0.00	0.0	0.00	1
Chloroscombrus chrysurus	108.7	49.82	4.5	1.85	5	2.5	1.97	0.1	0.12	9	0.0	0.00	0.0	0.00	1
Leiostomus xanthurus	100.1	76.00	10.1	7.76	5	2.8	1.86	0.3	0.21	9	0.0	0.00	0.0	0.00	1
Peprilus burti	187.1	51.66	12.8	3.51	5	38.5	19.45	2.7	1.35	9	14.2	0.00	1.1	0.00	1
Upeneus parvus	63.6	22.24	1.6	0.53	5	98.5	33.86	3.6	1.21	9	21.8	0.00	0.9	0.00	1
Prionotus paralatus	0.0	0.00	0.0	0.00	5	97.3	43.93	2.2	1.07	9	2.2	0.00	0.0	0.00	1
Trachurus lathami	62.4	27.98	2.3	0.82	5	35.1	23.75	1.2	0.77	9	72.0	0.00	3.3	0.00	1
Squid spp	7.5	4.59	0.2	0.23	5	21.5	9.50	0.2	0.07	9	26.2	0.00	1.5	0.00	1

Table 22b

Statistical Zone 17

Summary of mean total catch and environmental data (X), the standard error of the mean (SEM) and the number (n) of samples taken during the 2003 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	6.6	1.72	14	34.0	8.78	8	124.0	27.62	11	0.0	0	0	59.1	7.1	9	22.7	0	1
Total finfish	2.4	0.57	13	32.0	8.69	8	98.5	25.07	11	0.0	0	0	51.7	7.34	9	18.2	0	1
Total crustacean	1.8	0.72	7	0.6	0.35	8	2.7	0.88	11	0.0	0	0	6.3	2.06	9	1.5	0	1
Total other	3.9	1.48	12	1.4	0.41	8	22.6	13.42	11	0.0	0	0	1.0	0.19	9	2.8	0	1
Surface temperature	22.0	0.56	14	24.5	0.07	6	25.1	0.08	12	0.0	0	0	25.8	0.02	2	26.0	0	1
Midwater temperature	21.9	0.54	14	24.5	0.2	6	25.5	0.11	12	0.0	0	0	26.2	0.16	2	26.2	0	1
Bottom temperature	22.2	0.46	14	25.1	0.32	6	26.1	0.18	12	0.0	0	0	20.7	0.76	2	18.0	0	1
Surface salinity	30.0	0.15	14	29.0	0.39	6	32.1	0.62	12	0.0	0	0	35.4	0.13	2	35.6	0	1
Midwater salinity	30.2	0.22	14	30.0	0.51	6	31.0	2.34	12	0.0	0	0	35.9	0.23	2	36.0	0	1
Bottom salinity	30.7	0.3	14	32.0	0.49	6	32.3	2.47	12	0.0	0	0	36.4	0	2	36.3	0	1
Surface chlorophyll	0.0	0	0	8.5	1.11	4	5.8	0.47	12	0.0	0	0	7.1	0.3	2	4.5	0	1
Surface fluorescence	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0
Surface oxygen	7.0	0.09	14	6.4	0.26	6	5.6	0.14	12	0.0	0	0	5.6	0.05	2	5.5	0	1
Midwater oxygen	6.9	0.06	14	5.6	0.31	6	5.4	0.12	12	0.0	0	0	5.0	0.25	2	5.9	0	1
Bottom oxygen	6.6	0.06	14	5.6	0.32	6	5.0	0.17	12	0.0	0	0	3.9	0.15	2	2.6	0	1

Table 23a

Statistical Zone 18

Summary of dominant organisms taken in statistical zone 18 during the 2003 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	7	0.5	0.45	0.0	0.01	14	16.5	7.48	0.2	0.09	8
Portunus spinicarpus	0.0	0.00	0.0	0.00	7	0.0	0.00	0.0	0.00	14	0.0	0.00	0.0	0.00	8
Farfantepenaeus aztecus	0.0	0.00	0.0	0.00	7	28.0	22.48	0.2	0.15	14	39.5	17.86	1.1	0.51	8
Callinectes similis	10.3	5.51	0.0	0.01	7	3.3	1.41	0.0	0.02	14	50.3	23.27	1.3	0.59	8
Squilla spp	10.3	8.46	0.1	0.09	7	17.6	14.28	0.2	0.15	14	8.2	5.39	0.1	0.06	8
Trachypenaeus similis	5.1	3.32	0.0	0.01	7	10.7	8.94	0.0	0.02	14	3.2	1.65	0.0	0.03	8
Stenotomus caprinus	0.0	0.00	0.0	0.00	7	453.6	278.60	9.1	5.60	14	478.4	173.96	12.5	4.76	8
Upeneus parvus	0.0	0.00	0.0	0.00	7	14.4	13.42	0.4	0.36	14	48.2	18.23	1.2	0.45	8
Micropogonias undulatus	45.4	23.42	1.7	0.89	7	30.2	12.34	1.3	0.55	14	126.0	46.12	6.7	2.26	8
Chloroscombrus chrysurus	1.7	1.71	0.0	0.02	7	5.4	3.07	0.1	0.06	14	91.6	43.68	2.9	1.32	8
Cynoscion spp.	0.0	0.00	0.0	0.00	7	86.7	85.52	0.2	0.22	14	0.0	0.00	0.0	0.00	8
Trachurus lathami	0.0	0.00	0.0	0.00	7	0.0	0.00	0.0	0.00	14	33.0	27.70	1.6	1.37	8
Prionotus paralatus	0.0	0.00	0.0	0.00	7	0.0	0.00	0.0	0.00	14	2.2	2.16	0.0	0.03	8
Lutjanus campechanus	0.0	0.00	0.0	0.00	7	12.2	9.04	0.3	0.20	14	36.3	11.93	0.8	0.22	8
Squid spp	35.1	12.59	0.3	0.11	7	98.3	17.47	1.0	0.18	14	1.7	0.84	0.0	0.00	8

Table 23a (continued)

Statistical Zone 18

Summary of dominant organisms taken in statistical zone 18 during the 2003 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	160.0	59.85	2.1	0.79	10	13.3	0.00	0.2	0.00	1	29.0	29.02	0.4	0.44	5
Portunus spinicarpus	76.4	72.28	0.4	0.39	10	50.0	0.00	0.3	0.00	1	342.7	163.72	2.7	1.18	5
Farfantepenaeus aztecus	74.9	23.24	2.5	0.79	10	33.3	0.00	1.2	0.00	1	41.8	18.79	2.2	0.95	5
Callinectes similis	13.9	4.56	0.3	0.11	10	3.3	0.00	0.1	0.00	1	0.0	0.00	0.0	0.00	5
Squilla spp	19.2	7.51	0.3	0.12	10	0.0	0.00	0.0	0.00	1	1.8	1.19	0.0	0.02	5
Trachypenaeus similis	0.5	0.55	0.0	0.00	10	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	5
Stenotomus caprinus	126.9	32.95	5.6	1.27	10	253.3	0.00	16.1	0.00	1	237.4	71.67	12.5	3.20	5
Upeneus parvus	36.0	10.02	1.2	0.30	10	60.0	0.00	2.5	0.00	1	121.5	43.70	4.8	1.56	5
Micropogonias undulatus	16.4	4.82	1.4	0.49	10	3.3	0.00	0.2	0.00	1	0.0	0.00	0.0	0.00	5
Chloroscombrus chrysurus	46.0	21.04	2.3	0.99	10	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	5
Cynoscion spp.	0.0	0.00	0.0	0.00	10	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	5
Trachurus lathami	8.3	6.96	0.3	0.28	10	13.3	0.00	0.7	0.00	1	91.6	86.83	3.9	3.64	5
Prionotus paralatus	14.2	8.56	0.2	0.14	10	3.3	0.00	0.2	0.00	1	135.1	23.37	3.3	1.20	5
Lutjanus campechanus	19.7	5.94	0.5	0.16	10	0.0	0.00	0.0	0.00	1	0.8	0.84	3.3	3.27	5
Squid spp	4.0	1.74	0.1	0.05	10	3.3	0.00	0.0	0.00	1	47.4	28.12	4.9	2.73	5

Table 23b

Statistical Zone 18

Summary of mean total catch and environmental data (X), the standard error of the mean (SEM) and the number (n) of samples taken during the 2003 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	4.5	1.19	7	17.4	7.52	14	56.1	9.72	8	0.0	0	0	41.0	0	1	62.7	9.88	5
Total finfish	3.8	1.08	6	21.2	9.63	10	50.4	11.12	8	0.0	0	0	38.7	0	1	51.7	8.02	5
Total crustacean	1.1	0.24	6	2.7	0.89	6	4.7	1.44	8	0.0	0	0	1.7	0	1	5.5	2.46	5
Total other	0.6	0	4	1.0	0.19	14	1.0	0.55	8	0.0	0	0	0.7	0	1	5.4	3.03	5
Surface temperature	21.9	0.37	7	23.6	0.3	14	26.0	0.08	7	0.0	0	0	24.1	0	1	26.6	0.03	4
Midwater temperature	21.9	0.34	7	23.6	0.31	14	26.0	0.07	7	0.0	0	0	22.1	0	1	25.5	0.84	4
Bottom temperature	21.9	0.29	7	23.9	0.37	14	26.3	0.12	7	0.0	0	0	23.0	0	1	18.7	0.16	4
Surface salinity	29.3	1.32	7	29.6	1.04	14	33.5	0.21	7	0.0	0	0	37.2	0	1	35.8	0.03	4
Midwater salinity	29.5	1.11	7	31.1	0.6	14	33.7	0.23	7	0.0	0	0	40.1	0	1	36.2	0.07	4
Bottom salinity	28.2	1.71	7	31.4	1.02	14	34.2	0.33	7	0.0	0	0	33.6	0	1	36.4	0.01	4
Surface chlorophyll	0.0	0	0	7.8	2.05	5	3.5	0.42	7	0.0	0	0	3.1	0	1	3.1	0.19	4
Surface fluorescence	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0
Surface oxygen	6.9	0.17	7	6.8	0.12	14	5.7	0.01	7	0.0	0	0	5.7	0	1	5.6	0.03	4
Midwater oxygen	6.8	0.16	7	6.6	0.15	14	5.7	0.03	7	0.0	0	0	5.6	0	1	5.0	0.06	4
Bottom oxygen	6.6	0.23	7	6.4	0.19	14	5.5	0.12	7	0.0	0	0	3.8	0	1	3.9	0.08	4

Table 24a

Statistical Zone 19

Summary of dominant organisms taken in statistical zone 19 during the 2003 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	38.4	35.48	0.1	0.05	5	47.6	14.38	0.1	0.02	19	187.5	88.74	0.6	0.28	12
Farfantepenaeus aztecus	2.4	2.40	0.0	0.01	5	2.9	1.26	0.0	0.01	19	120.8	41.83	2.7	0.87	12
Litopenaeus setiferus	63.6	57.63	0.6	0.55	5	91.1	37.43	1.5	0.68	19	0.0	0.00	0.0	0.00	12
Squilla spp	15.6	14.15	0.2	0.14	5	39.8	12.40	0.2	0.06	19	33.3	15.55	0.3	0.13	12
Callinectes similis	2.4	2.40	0.0	0.01	5	4.4	1.80	0.0	0.02	19	11.1	5.50	0.2	0.12	12
Sicyonia dorsalis	0.0	0.00	0.0	0.00	5	2.8	2.22	0.0	0.00	19	25.8	9.71	0.1	0.03	12
Chloroscombrus chrysurus	7.2	7.20	0.0	0.04	5	10.4	7.74	0.3	0.24	19	669.5	268.76	19.7	7.92	12
Stenotomus caprinus	0.0	0.00	0.0	0.00	5	19.6	19.06	0.3	0.30	19	263.9	73.54	4.3	1.06	12
Cynoscion spp.	172.8	172.80	0.3	0.27	5	366.3	244.21	1.0	0.64	19	1.2	1.01	0.0	0.00	12
Stellifer lanceolatus	475.2	475.20	5.9	5.87	5	178.7	101.76	1.9	1.00	19	0.0	0.00	0.0	0.00	12
Peprilus burti	1.2	1.20	0.0	0.00	5	7.6	5.80	0.4	0.27	19	3.1	1.94	0.2	0.10	12
Cynoscion nothus	45.6	36.72	0.7	0.64	5	251.7	64.55	2.1	0.43	19	6.9	3.21	0.6	0.24	12
Lutjanus campechanus	0.0	0.00	0.0	0.00	5	1.3	0.98	0.0	0.01	19	117.1	26.56	1.4	0.27	12
Diplectrum bivittatum	0.0	0.00	0.0	0.00	5	0.1	0.08	0.0	0.00	19	118.5	39.75	1.5	0.50	12
Squid spp	459.6	112.48	4.4	1.13	5	207.5	41.85	1.7	0.29	19	27.4	7.84	0.4	0.17	12

Table 24a (continued)

Statistical Zone 19

Summary of dominant organisms taken in statistical zone 19 during the 2003 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	6.9	6.92	0.0	0.03	3	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	1
Farfantepenaeus aztecus	53.4	48.29	1.7	1.50	3	26.9	23.00	0.9	0.74	3	37.5	0.00	1.8	0.00	1
Litopenaeus setiferus	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	1
Squilla spp	35.0	35.00	0.3	0.32	3	0.5	0.53	0.0	0.01	3	0.0	0.00	0.0	0.00	1
Callinectes similis	71.4	56.06	1.4	1.12	3	23.3	10.25	0.5	0.22	3	0.0	0.00	0.0	0.00	1
Sicyonia dorsalis	15.3	14.27	0.1	0.05	3	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	1
Chloroscombrus chrysurus	142.9	113.29	6.2	4.50	3	15.3	10.72	0.7	0.52	3	0.0	0.00	0.0	0.00	1
Stenotomus caprinus	132.6	70.72	3.5	1.70	3	25.1	14.02	0.9	0.42	3	210.0	0.00	11.0	0.00	1
Cynoscion spp.	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	1
Stellifer lanceolatus	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	1
Peprilus burti	100.7	80.49	5.0	3.72	3	357.8	278.09	17.0	12.93	3	90.0	0.00	7.8	0.00	1
Cynoscion nothus	1.9	1.92	0.2	0.22	3	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	1
Lutjanus campechanus	37.1	18.94	0.5	0.12	3	2.6	1.65	0.0	0.03	3	0.0	0.00	0.0	0.00	1
Diplectrum bivittatum	4.6	3.52	0.1	0.05	3	0.0	0.00	0.0	0.00	3	0.0	0.00	0.0	0.00	1
Squid spp	2.8	1.43	0.1	0.07	3	25.9	14.28	0.3	0.27	3	65.0	0.00	4.4	0.00	1

Table 24b

Statistical Zone 19

Summary of mean total catch and environmental data (X), the standard error of the mean (SEM) and the number (n) of samples taken during the 2003 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	17.4	9.79	5	16.4	3.12	19	41.7	7.73	12	0.0	0	0	33.4	11.53	3	71.3	0	1
Total finfish	12.8	11.55	4	11.5	2.71	19	37.0	8.33	12	0.0	0	0	31.4	11.66	3	64.8	0	1
Total crustacean	4.2	0	1	2.2	0.73	17	4.3	1.29	12	0.0	0	0	1.7	0.92	3	2.0	0	1
Total other	6.1	1.11	5	3.0	0.71	19	0.4	0.17	12	0.0	0	0	0.4	0.29	3	4.5	0	1
Surface temperature	23.2	0.81	5	24.6	0.21	19	26.4	0.08	12	0.0	0	0	26.9	0.02	2	27.7	0	1
Midwater temperature	23.8	0.68	5	24.8	0.1	19	26.5	0.07	12	0.0	0	0	27.2	0.05	2	27.7	0	1
Bottom temperature	24.4	0.39	5	25.0	0.1	19	26.6	0.06	12	0.0	0	0	25.6	1.68	2	22.3	0	1
Surface salinity	32.9	1.48	5	32.2	0.7	19	33.5	0.25	12	0.0	0	0	35.8	0.09	2	36.3	0	1
Midwater salinity	33.3	1.42	5	32.5	0.73	19	34.2	0.26	12	0.0	0	0	36.1	0	2	36.3	0	1
Bottom salinity	33.9	1.46	5	33.4	0.82	19	34.6	0.21	12	0.0	0	0	36.4	0.02	2	36.5	0	1
Surface chlorophyll	15.5	0	1	9.9	0.8	7	3.5	0.35	12	0.0	0	0	1.9	0.76	2	1.1	0	1
Surface fluorescence	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0
Surface oxygen	6.8	0.55	5	6.3	0.1	19	5.7	0.03	12	0.0	0	0	5.5	0	2	5.4	0	1
Midwater oxygen	6.3	0.23	5	6.1	0.09	19	5.6	0.03	12	0.0	0	0	5.6	0.05	2	5.5	0	1
Bottom oxygen	6.1	0.24	5	5.9	0.09	19	5.6	0.03	12	0.0	0	0	5.5	0.15	2	5.6	0	1

Table 25a

Statistical Zone 20

Summary of dominant organisms taken in statistical zone 20 during the 2003 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
Farfantepenaeus aztecus	0.0	0.00	0.0	0.00	4	10.4	8.03	0.1	0.11	14	148.2	43.99	2.5	0.71	12
Trachypenaeus similis	3.0	3.00	0.0	0.00	4	6.9	3.66	0.0	0.00	14	137.0	59.66	0.5	0.21	12
Callinectes similis	0.0	0.00	0.0	0.00	4	3.8	1.60	0.0	0.02	14	102.9	49.72	1.7	0.90	12
Squilla spp	0.0	0.00	0.0	0.00	4	30.0	15.07	0.3	0.16	14	96.0	31.67	0.9	0.31	12
Portunus spinicarpus	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	14	0.0	0.00	0.0	0.00	12
Litopenaeus setiferus	18.0	18.00	0.2	0.17	4	30.7	10.12	0.3	0.10	14	26.6	15.77	0.7	0.38	12
Chloroscombrus chrysurus	51.0	45.00	0.6	0.53	4	493.6	347.05	13.3	10.27	14	349.0	221.14	7.3	4.56	12
Stenotomus caprinus	0.0	0.00	0.0	0.00	4	5.5	3.45	0.1	0.05	14	251.4	77.39	3.5	1.07	12
Peprilus burti	9.0	1.73	0.1	0.02	4	1.7	0.98	0.0	0.00	14	69.4	32.89	3.1	1.50	12
Serranus atrobranchus	0.0	0.00	0.0	0.00	4	1.3	1.29	0.0	0.01	14	4.2	3.38	0.0	0.03	12
Cynoscion nothus	144.0	76.49	1.1	0.64	4	287.8	95.19	2.1	0.67	14	70.5	45.62	4.2	3.34	12
Micropogonias undulatus	1.5	1.50	0.1	0.07	4	9.5	6.48	0.5	0.35	14	159.4	56.00	9.3	3.08	12
Cynoscion spp.	0.0	0.00	0.0	0.00	4	112.1	97.53	0.6	0.59	14	163.3	98.66	1.3	0.82	12
Harengula jaguana	7.5	3.77	0.1	0.06	4	55.8	31.05	1.2	0.66	14	94.6	62.69	2.0	1.32	12
Squid spp	63.0	13.53	0.7	0.18	4	221.8	53.67	2.0	0.47	14	103.5	27.98	1.0	0.22	12

Table 25a (continued)

Statistical Zone 20

Summary of dominant organisms taken in statistical zone 20 during the 2003 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
Farfantepenaeus aztecus	115.2	51.85	3.1	1.45	4	174.0	114.12	4.3	2.76	4	194.5	68.54	9.7	1.11	2
Trachypenaeus similis	245.8	141.96	1.0	0.59	4	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	2
Callinectes similis	96.5	39.94	1.7	0.70	4	51.5	20.08	1.0	0.40	4	2.3	2.31	0.0	0.04	2
Squilla spp	38.4	26.02	0.3	0.26	4	4.7	2.84	0.1	0.05	4	82.8	37.20	0.8	0.25	2
Portunus spinicarpus	1.0	1.00	0.0	0.00	4	2.1	0.79	0.1	0.08	4	224.4	72.05	1.5	0.53	2
Litopenaeus setiferus	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	2
Chloroscombrus chrysurus	434.0	249.96	13.3	7.68	4	33.6	12.96	1.6	0.60	4	0.0	0.00	0.0	0.00	2
Stenotomus caprinus	304.7	175.17	4.1	2.02	4	229.4	98.48	4.4	0.56	4	21.0	11.35	1.2	0.80	2
Peprilus burti	186.4	160.96	8.2	7.25	4	188.2	101.36	8.7	4.53	4	0.0	0.00	0.0	0.00	2
Serranus atrobranchus	237.1	135.58	2.4	1.34	4	78.5	33.59	0.8	0.27	4	694.7	269.91	9.1	2.72	2
Cynoscion nothus	10.2	1.06	1.1	0.28	4	0.6	0.61	0.0	0.03	4	0.0	0.00	0.0	0.00	2
Micropogonias undulatus	55.8	16.50	4.2	1.46	4	4.6	3.44	0.6	0.39	4	0.0	0.00	0.0	0.00	2
Cynoscion spp.	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	4	0.0	0.00	0.0	0.00	2
Harengula jaguana	80.7	80.70	1.6	1.60	4	1.8	1.82	0.1	0.09	4	0.0	0.00	0.0	0.00	2
Squid spp	46.9	26.98	0.7	0.44	4	72.2	19.46	1.8	0.33	4	9.9	3.92	0.6	0.08	2

Table 25b

Statistical Zone 20

Summary of mean total catch and environmental data (X), the standard error of the mean (SEM) and the number (n) of samples taken during the 2003 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	18.3	6.34	4	29.7	11.29	14	47.6	10.25	12	0.0	0	0	40.3	4.48	4	54.1	4.06	2
Total finfish	3.6	0.81	4	26.0	10.8	14	39.4	10.32	12	0.0	0	0	32.6	6.05	4	38.9	3.06	2
Total crustacean	0.6	0	1	1.8	0.58	8	7.2	1.59	11	0.0	0	0	5.7	2.87	4	13.8	1.44	2
Total other	14.7	6.73	4	2.7	0.47	14	1.4	0.22	12	0.0	0	0	2.0	0.34	4	1.4	0.44	2
Surface temperature	23.6	0.58	4	24.4	0.56	14	26.1	0.15	12	0.0	0	0	26.9	0.12	4	27.4	0.26	2
Midwater temperature	24.5	0.28	4	25.2	0.3	14	26.2	0.17	12	0.0	0	0	27.4	0.07	4	25.7	1.72	2
Bottom temperature	24.7	0.2	4	25.4	0.21	14	26.5	0.16	12	0.0	0	0	23.4	0.77	4	19.5	0.72	2
Surface salinity	34.4	0.18	4	31.5	0.75	14	32.9	0.4	12	0.0	0	0	32.0	1.34	4	35.2	1.08	2
Midwater salinity	35.4	0.35	4	33.1	0.96	14	33.6	0.47	12	0.0	0	0	35.8	0.09	4	36.3	0.08	2
Bottom salinity	35.1	0.4	4	34.0	0.85	14	34.2	0.4	12	0.0	0	0	36.4	0.02	4	36.4	0	2
Surface chlorophyll	0.0	0	0	13.0	0.54	4	6.5	0.75	10	0.0	0	0	3.8	1.07	4	1.9	0.95	2
Surface fluorescence	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0
Surface oxygen	6.4	0.13	4	6.4	0.17	14	5.7	0.06	12	0.0	0	0	5.7	0.07	4	5.5	0.1	2
Midwater oxygen	6.0	0.09	4	6.1	0.11	14	5.6	0.12	12	0.0	0	0	5.4	0.08	4	5.8	0.15	2
Bottom oxygen	5.7	0.32	4	6.0	0.08	14	5.4	0.14	12	0.0	0	0	4.5	0.23	4	4.0	0.15	2

Table 26a

Statistical Zone 21

Summary of dominant organisms taken in statistical zone 21 during the 2003 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
Farfantepenaeus aztecus	0.0	0.00	0.0	0.00	0	11.9	4.53	0.2	0.05	18	152.1	64.91	2.3	0.89	12
Trachypenaeus similis	0.0	0.00	0.0	0.00	0	1.7	1.67	0.0	0.00	18	104.5	88.70	0.4	0.33	12
Portunus spinicarpus	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	18	0.0	0.00	0.0	0.00	12
Callinectes similis	0.0	0.00	0.0	0.00	0	2.6	1.39	0.1	0.04	18	64.2	38.41	1.3	0.72	12
Sicyonia dorsalis	0.0	0.00	0.0	0.00	0	0.3	0.33	0.0	0.00	18	0.0	0.00	0.0	0.00	12
Solenocera vioscai	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	18	0.0	0.00	0.0	0.00	12
Chloroscombrus chrysurus	0.0	0.00	0.0	0.00	0	870.6	365.68	22.4	9.35	18	1075.0	560.84	29.5	15.34	12
Stenotomus caprinus	0.0	0.00	0.0	0.00	0	168.4	99.04	2.4	1.40	18	373.8	103.14	6.3	1.80	12
Serranus atrobranchus	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	18	1.6	1.40	0.0	0.01	12
Cynoscion nothus	0.0	0.00	0.0	0.00	0	442.3	168.76	7.1	2.78	18	67.8	32.93	1.2	0.64	12
Pristipomoides aquilonaris	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	18	0.0	0.00	0.0	0.00	12
Leiostomus xanthurus	0.0	0.00	0.0	0.00	0	105.6	56.40	7.7	3.97	18	12.5	8.39	1.2	0.85	12
Syacium gunteri	0.0	0.00	0.0	0.00	0	20.5	5.62	0.3	0.08	18	138.2	38.27	2.3	0.60	12
Micropogonias undulatus	0.0	0.00	0.0	0.00	0	75.4	33.28	5.4	2.45	18	36.9	23.66	2.6	1.62	12
Squid spp	0.0	0.00	0.0	0.00	0	89.8	30.86	0.9	0.32	18	81.0	19.73	0.8	0.20	12

Table 26a (continued)

Statistical Zone 21

Summary of dominant organisms taken in statistical zone 21 during the 2003 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
Farfantepenaeus aztecus	182.4	66.94	4.1	1.50	5	69.1	0.00	3.4	0.00	1	18.4	7.22	1.0	0.34	5
Trachypenaeus similis	207.9	128.21	1.0	0.63	5	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	5
Portunus spinicarpus	0.4	0.40	0.0	0.00	5	0.0	0.00	0.0	0.00	1	263.9	157.94	2.1	1.27	5
Callinectes similis	134.5	32.84	3.8	1.06	5	33.9	0.00	0.8	0.00	1	0.0	0.00	0.0	0.00	5
Sicyonia dorsalis	176.5	54.36	0.7	0.21	5	0.0	0.00	0.0	0.00	1	0.4	0.44	0.0	0.00	5
Solenocera vioscai	60.7	28.08	0.3	0.13	5	60.0	0.00	0.6	0.00	1	37.3	27.15	0.1	0.11	5
Chloroscombrus chrysurus	103.1	57.86	3.6	2.05	5	0.0	0.00	0.0	0.00	1	1.1	1.09	0.0	0.03	5
Stenotomus caprinus	339.9	59.61	4.5	0.39	5	144.8	0.00	3.6	0.00	1	151.0	77.18	8.7	5.48	5
Serranus atrobranchus	727.7	454.22	7.6	4.53	5	450.0	0.00	5.6	0.00	1	240.3	130.87	3.9	2.15	5
Cynoscion nothus	1.0	1.02	0.1	0.12	5	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	5
Pristipomoides aquilonaris	83.8	22.87	0.4	0.13	5	73.0	0.00	3.0	0.00	1	170.7	85.16	15.7	8.33	5
Leiostomus xanthurus	2.5	1.19	0.3	0.14	5	0.0	0.00	0.0	0.00	1	0.0	0.00	0.0	0.00	5
Syacium gunteri	24.2	4.67	0.4	0.08	5	0.0	0.00	0.0	0.00	1	12.7	8.90	0.2	0.14	5
Micropogonias undulatus	11.3	6.69	1.3	0.83	5	9.1	0.00	1.2	0.00	1	0.0	0.00	0.0	0.00	5
Squid spp	83.3	29.79	0.5	0.11	5	17.0	0.00	1.0	0.00	1	141.2	77.52	4.6	1.67	5

Table 26b

Statistical Zone 21

Summary of mean total catch and environmental data (X), the standard error of the mean (SEM) and the number (n) of samples taken during the 2003 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	0.0	0	0	61.9	17.87	18	64.4	22.38	12	0.0	0	0	34.7	0	1	71.1	13.57	5
Total finfish	0.0	0	0	60.5	18.33	17	57.2	22.32	12	0.0	0	0	28.4	0	1	61.2	12.89	5
Total crustacean	0.0	0	0	2.5	0.62	15	6.3	1.88	12	0.0	0	0	5.3	0	1	4.4	1.19	5
Total other	0.0	0	0	5.1	3.07	10	1.4	0.17	8	0.0	0	0	1.0	0	1	5.6	1.79	5
Surface temperature	0.0	0	0	23.4	0.86	18	25.3	0.89	13	0.0	0	0	27.4	0	1	27.4	0.07	5
Midwater temperature	0.0	0	0	23.3	0.86	18	25.0	0.83	13	0.0	0	0	27.5	0	1	26.8	0.53	5
Bottom temperature	0.0	0	0	23.2	0.84	18	25.1	0.9	12	0.0	0	0	21.3	0	1	21.4	0.69	5
Surface salinity	0.0	0	0	33.1	0.91	18	30.9	1.13	13	0.0	0	0	34.5	0	1	33.8	0.5	5
Midwater salinity	0.0	0	0	33.4	0.86	18	33.9	0.6	13	0.0	0	0	36.3	0	1	36.3	0.08	5
Bottom salinity	0.0	0	0	34.1	0.75	18	35.2	0.54	12	0.0	0	0	36.4	0	1	36.4	0	5
Surface chlorophyll	0.0	0	0	6.5	1.61	8	4.9	0.58	9	0.0	0	0	1.8	0	1	2.1	0.1	5
Surface fluorescence	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0
Surface oxygen	0.0	0	0	6.6	0.57	18	6.8	0.79	13	0.0	0	0	5.6	0	1	5.6	0.02	5
Midwater oxygen	0.0	0	0	5.8	0.23	18	6.6	0.86	13	0.0	0	0	5.7	0	1	5.6	0.13	5
Bottom oxygen	0.0	0	0	5.6	0.24	18	5.1	0.61	13	0.0	0	0	4.5	0	1	4.4	0.14	5

Table 27a

Statistical Zone 22

Summary of dominant organisms taken in statistical zone 22 during the 2003 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 10 fm or greater than 20 fm.

	0-5 fm					6-10 fm					11-20 fm				
SPECIES	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N	NUM	SEM	WT	SEM	N
Farfantepenaeus duorarum	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	66.0	60.00	1.1	1.10	2
Portunus gibbesii	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	39.0	9.00	0.2	0.07	2
Trachypenaeus constrictus	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	27.0	27.00	0.1	0.10	2
Litopenaeus setiferus	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	12.0	12.00	0.2	0.17	2
Persephona mediterranea	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	6.0	6.00	0.0	0.02	2
Cynoscion arenarius	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	159.0	75.00	4.1	1.34	2
Syacium gunteri	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	102.0	12.00	1.9	0.37	2
Micropogonias undulatus	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	51.0	21.00	3.2	1.23	2
Halieutichthys aculeatus	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	18.0	6.00	0.1	0.04	2
Lutjanus campechanus	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	12.0	12.00	0.1	0.08	2
Etropus crossotus	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	6.0	0.00	0.1	0.06	2
Larimus fasciatus	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	6.0	6.00	0.3	0.28	2
Squid spp	0.0	0.00	0.0	0.00	0	0.0	0.00	0.0	0.00	0	9.0	3.00	0.1	0.02	2

Table 27b

Statistical Zone 22

Summary of mean total catch and environmental data (X), the standard error of the mean (SEM) and the number (n) of samples taken during the 2003 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 10 fm or greater than 20 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	0.0	0	0	0.0	0	0	13.2	1.8	2	0.0	0	0	0.0	0	0	0.0	0	0
Total finfish	0.0	0	0	0.0	0	0	10.8	0.6	2	0.0	0	0	0.0	0	0	0.0	0	0
Total crustacean	0.0	0	0	0.0	0	0	1.8	1.2	2	0.0	0	0	0.0	0	0	0.0	0	0
Total other	0.0	0	0	0.0	0	0	0.6	0	2	0.0	0	0	0.0	0	0	0.0	0	0
Surface temperature	0.0	0	0	0.0	0	0	21.4	0.05	2	0.0	0	0	0.0	0	0	0.0	0	0
Midwater temperature	0.0	0	0	0.0	0	0	21.4	0.05	2	0.0	0	0	0.0	0	0	0.0	0	0
Bottom temperature	0.0	0	0	0.0	0	0	21.8	0.2	2	0.0	0	0	0.0	0	0	0.0	0	0
Surface salinity	0.0	0	0	0.0	0	0	35.4	0.08	2	0.0	0	0	0.0	0	0	0.0	0	0
Midwater salinity	0.0	0	0	0.0	0	0	35.4	0.26	2	0.0	0	0	0.0	0	0	0.0	0	0
Bottom salinity	0.0	0	0	0.0	0	0	36.8	0.22	2	0.0	0	0	0.0	0	0	0.0	0	0
Surface chlorophyll	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0
Surface fluorescence	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0
Surface oxygen	0.0	0	0	0.0	0	0	5.6	0.25	2	0.0	0	0	0.0	0	0	0.0	0	0
Midwater oxygen	0.0	0	0	0.0	0	0	5.5	0.1	2	0.0	0	0	0.0	0	0	0.0	0	0
Bottom oxygen	0.0	0	0	0.0	0	0	5.3	0.1	2	0.0	0	0	0.0	0	0	0.0	0	0

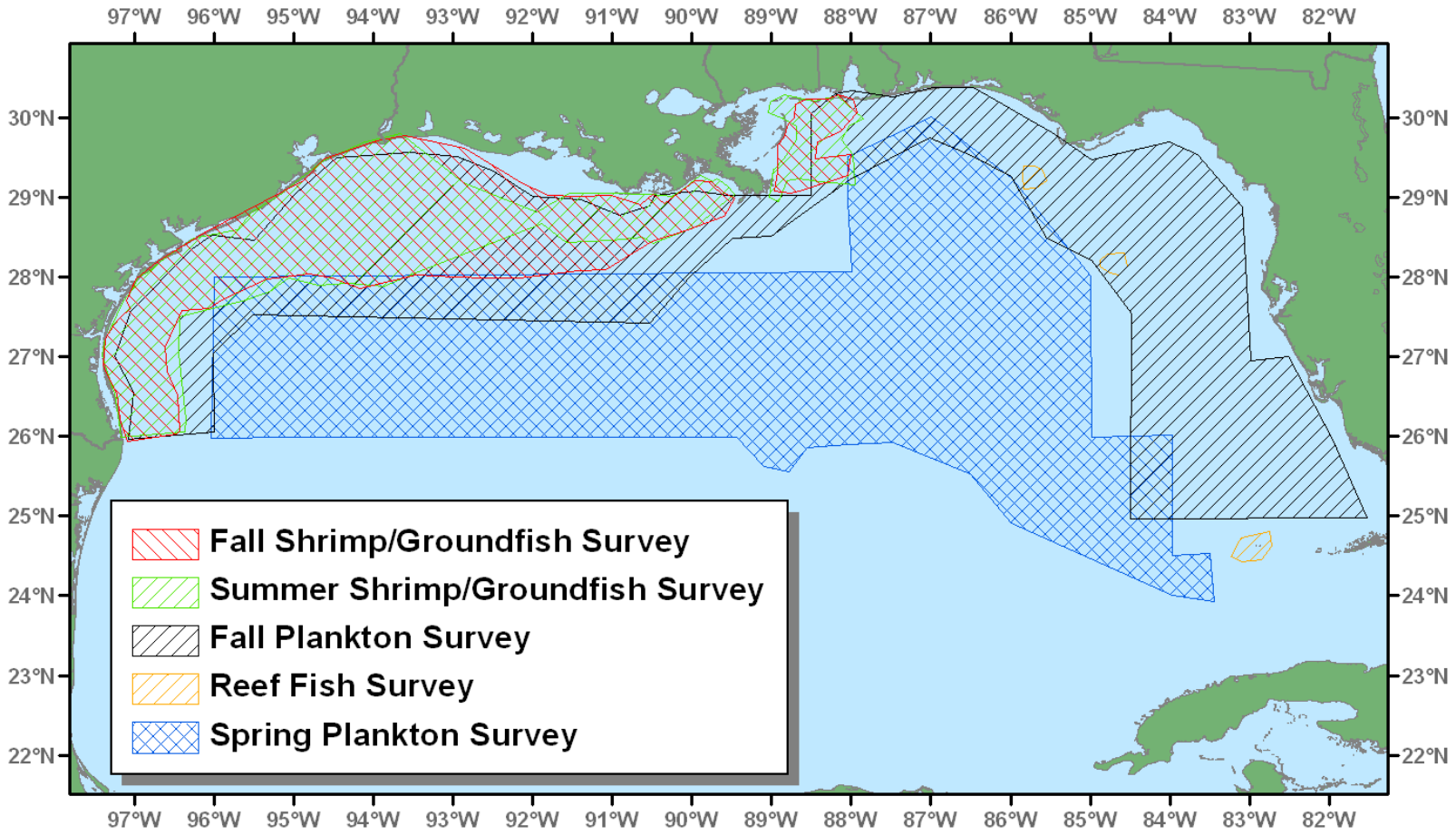


Figure 1. 2003 SEAMAP Surveys, Gulf of Mexico.

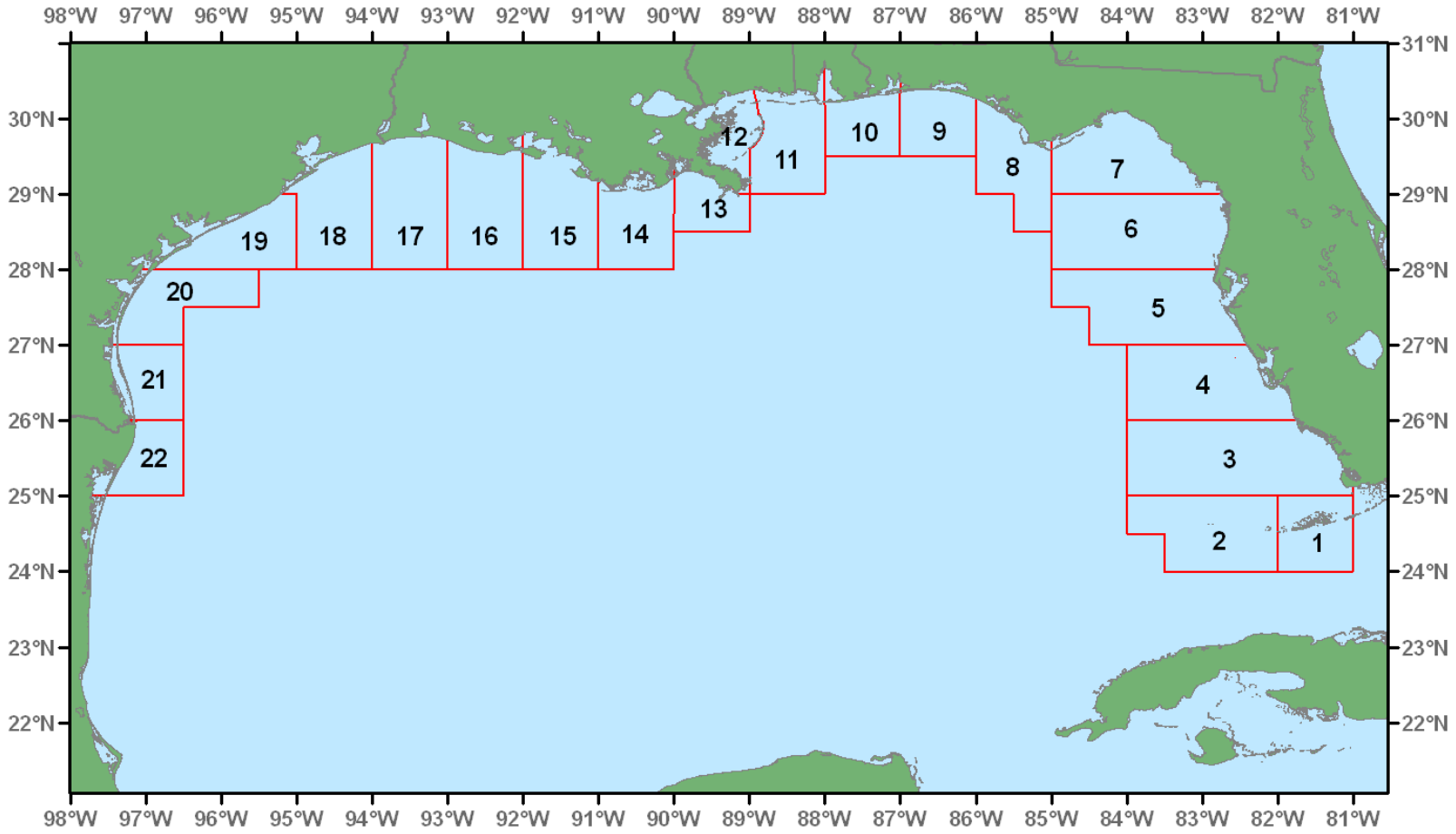


Figure 2. Statistical zones for shrimp in the Gulf of Mexico.

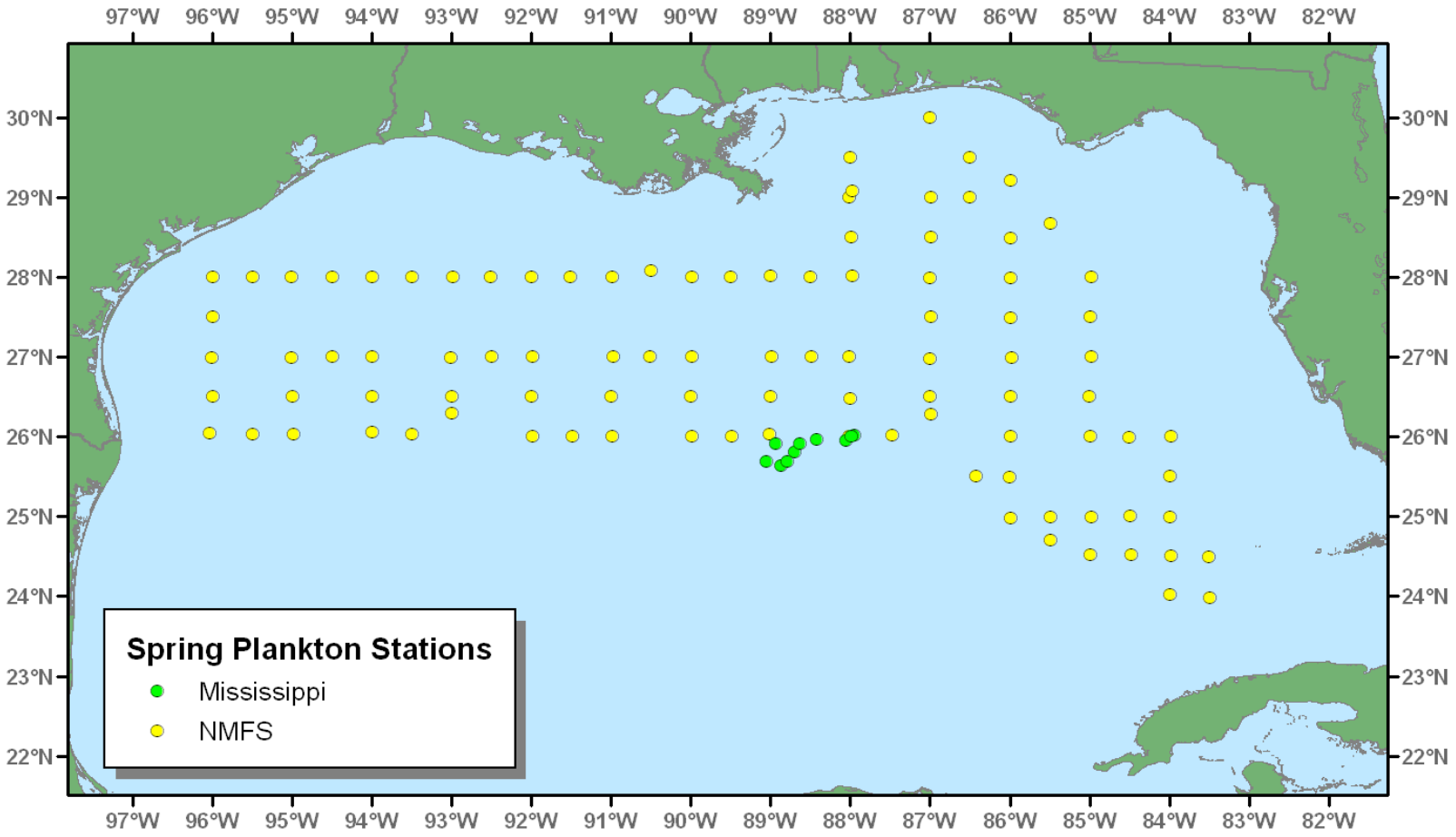


Figure 3. Locations of plankton and environmental stations during the 2003 Spring Plankton Survey.

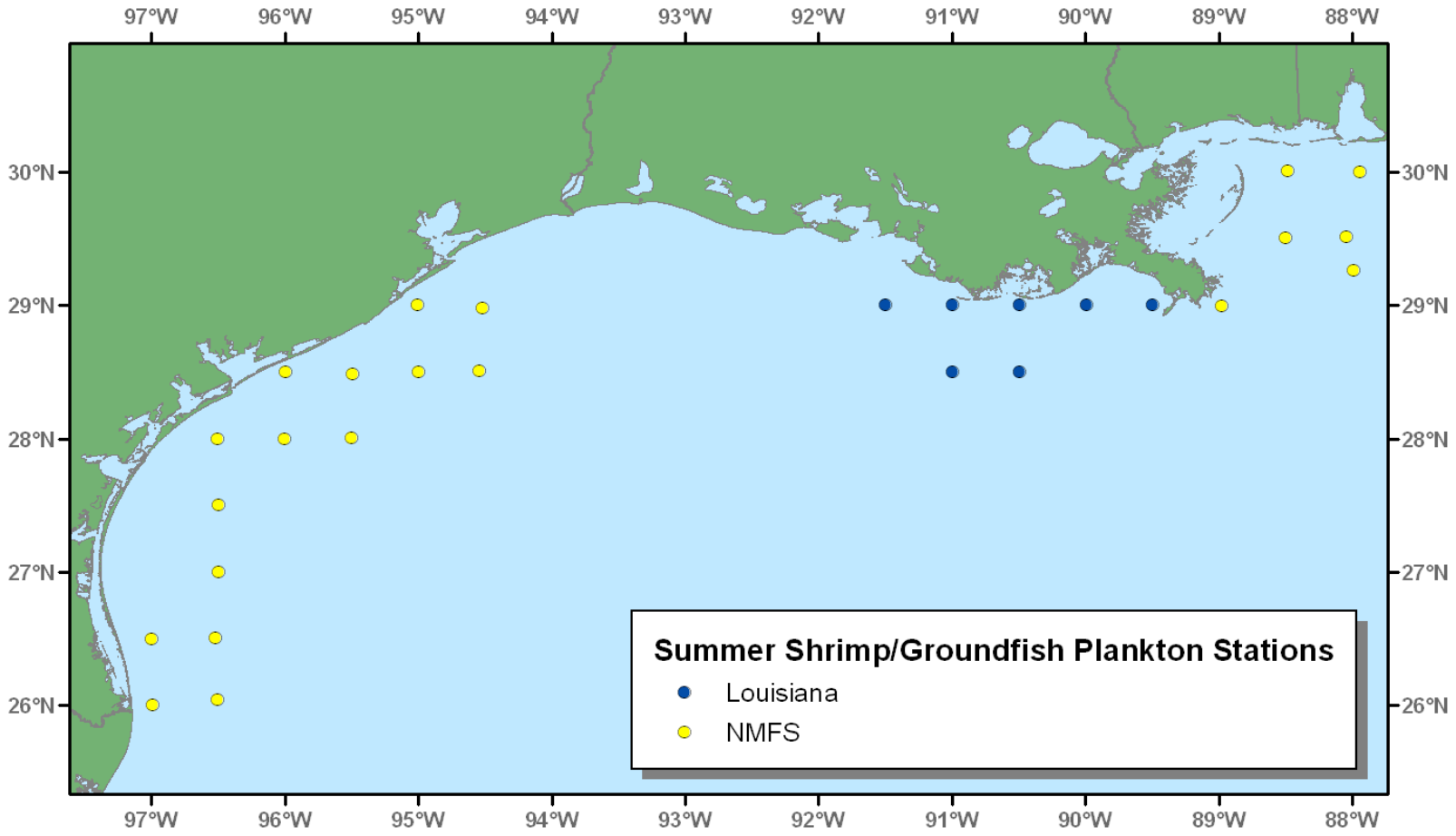


Figure 4. Locations of plankton stations during the 2003 Summer Shrimp/Groundfish Survey.

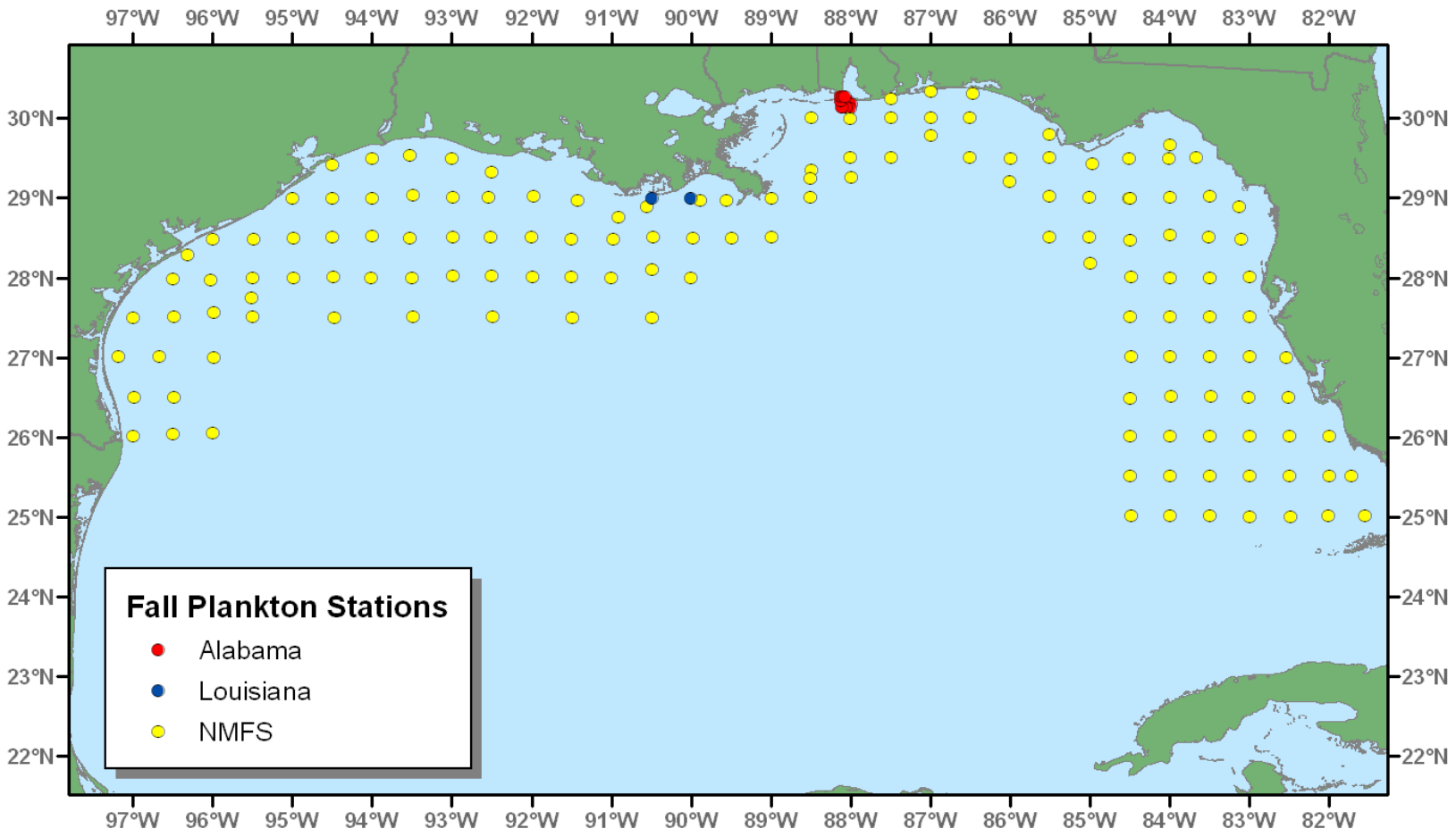


Figure 5. Locations of plankton and environmental stations during the 2003 Fall Plankton Survey.

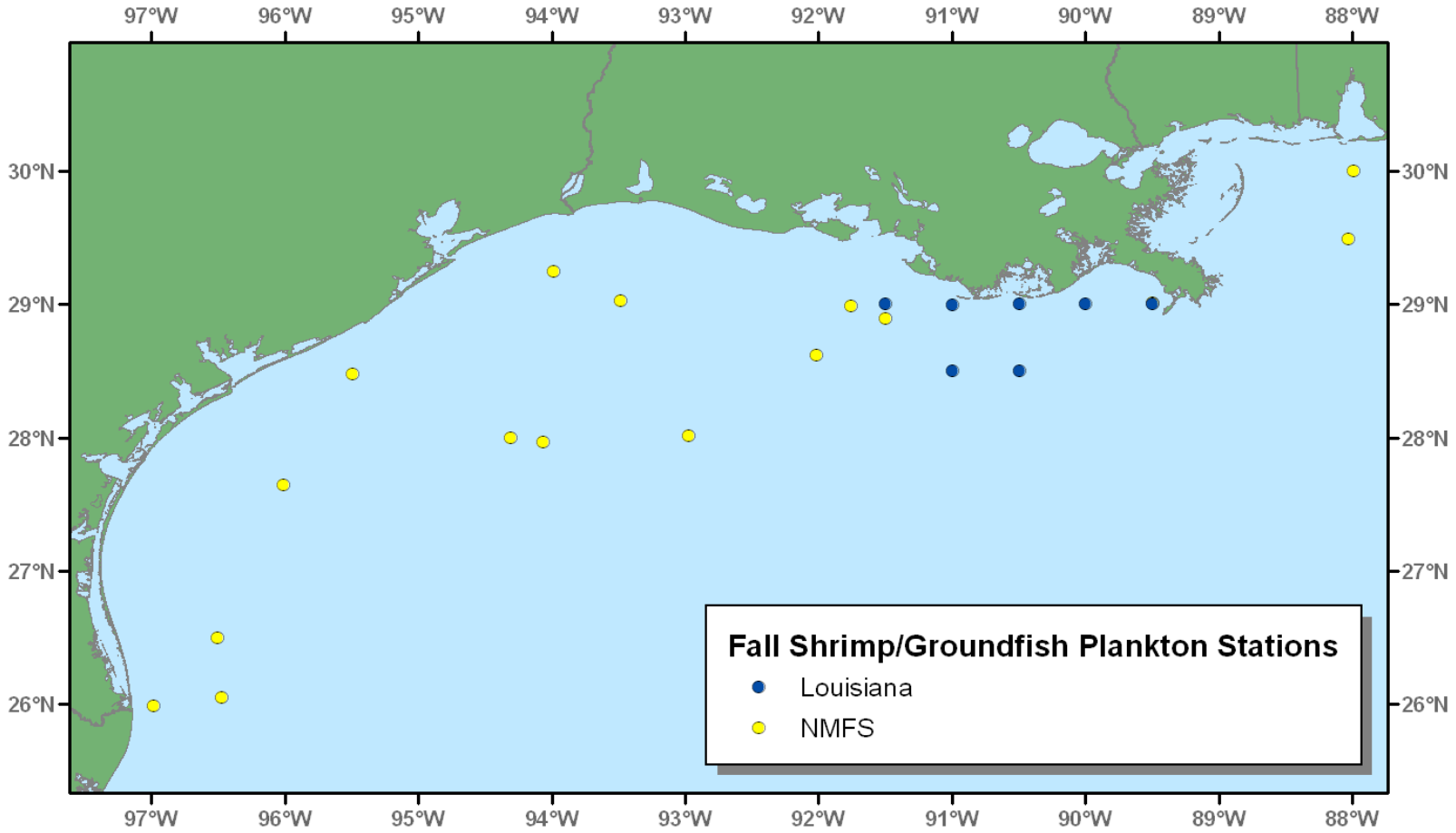


Figure 6. Locations of plankton stations during the 2003 Fall Shrimp/Groundfish Survey.

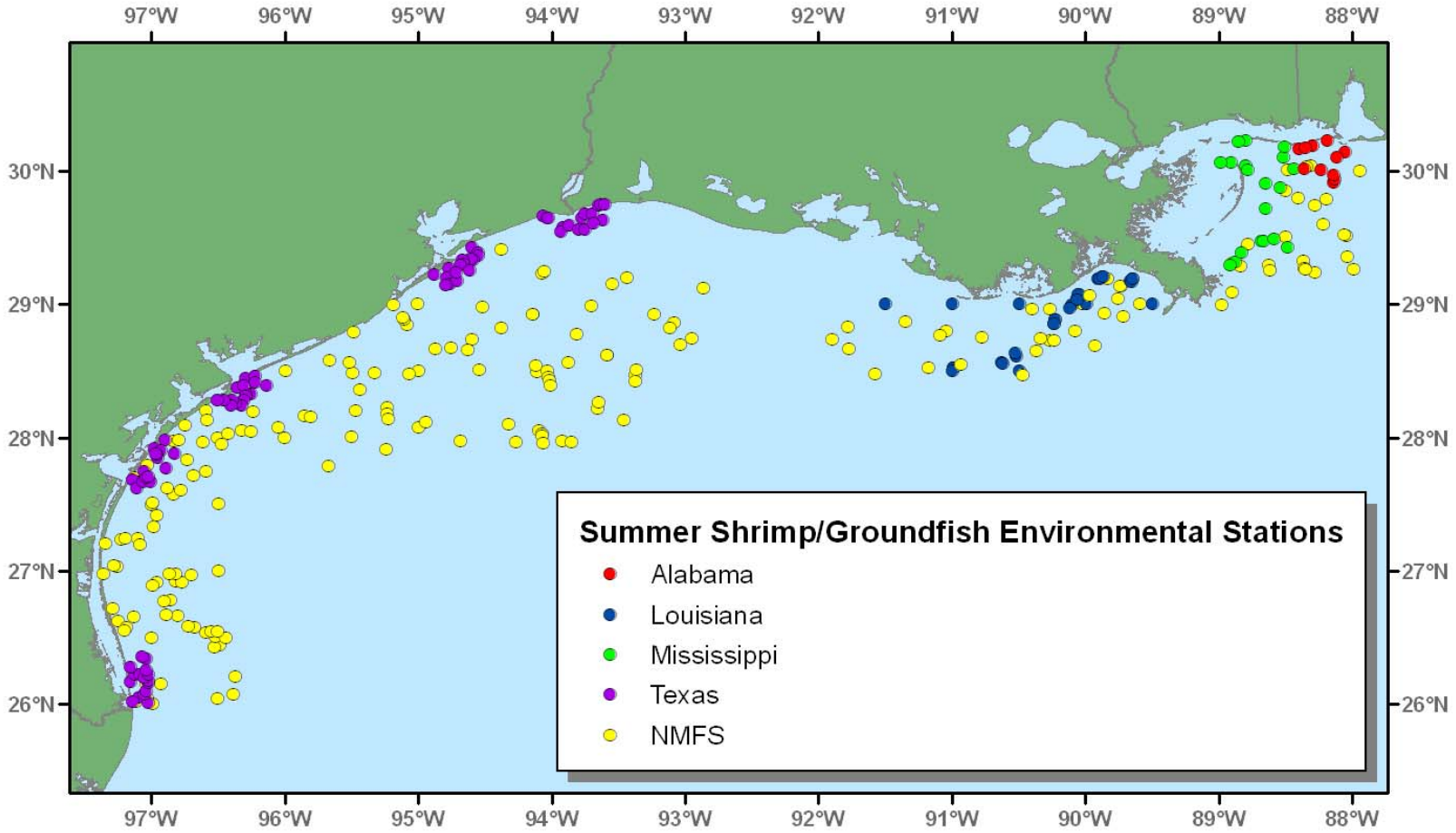


Figure 7. Locations of environmental stations during the 2003 Summer Shrimp/Groundfish Survey.

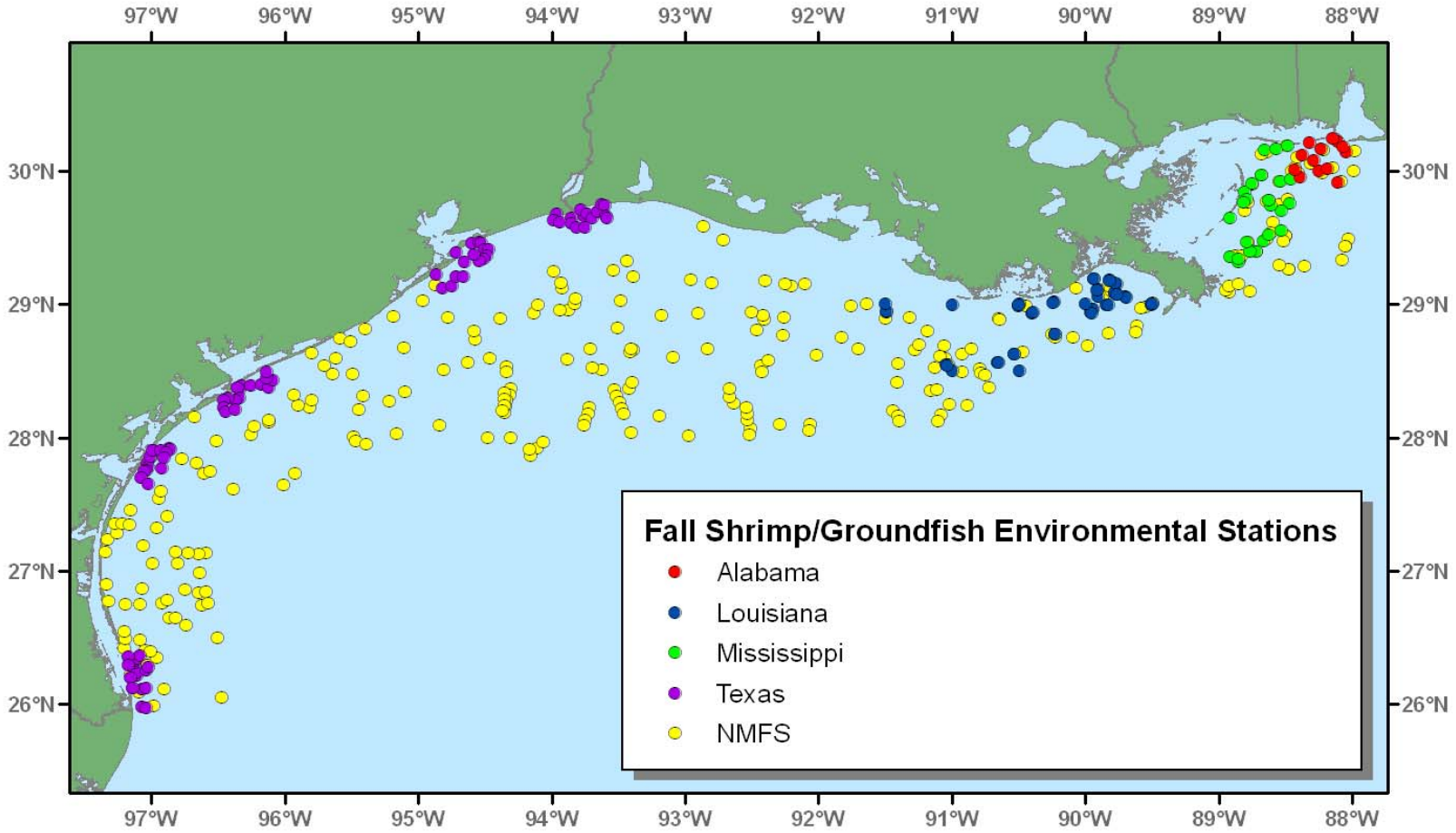


Figure 8. Locations of environmental stations during the 2003 Fall Shrimp/Groundfish Survey.

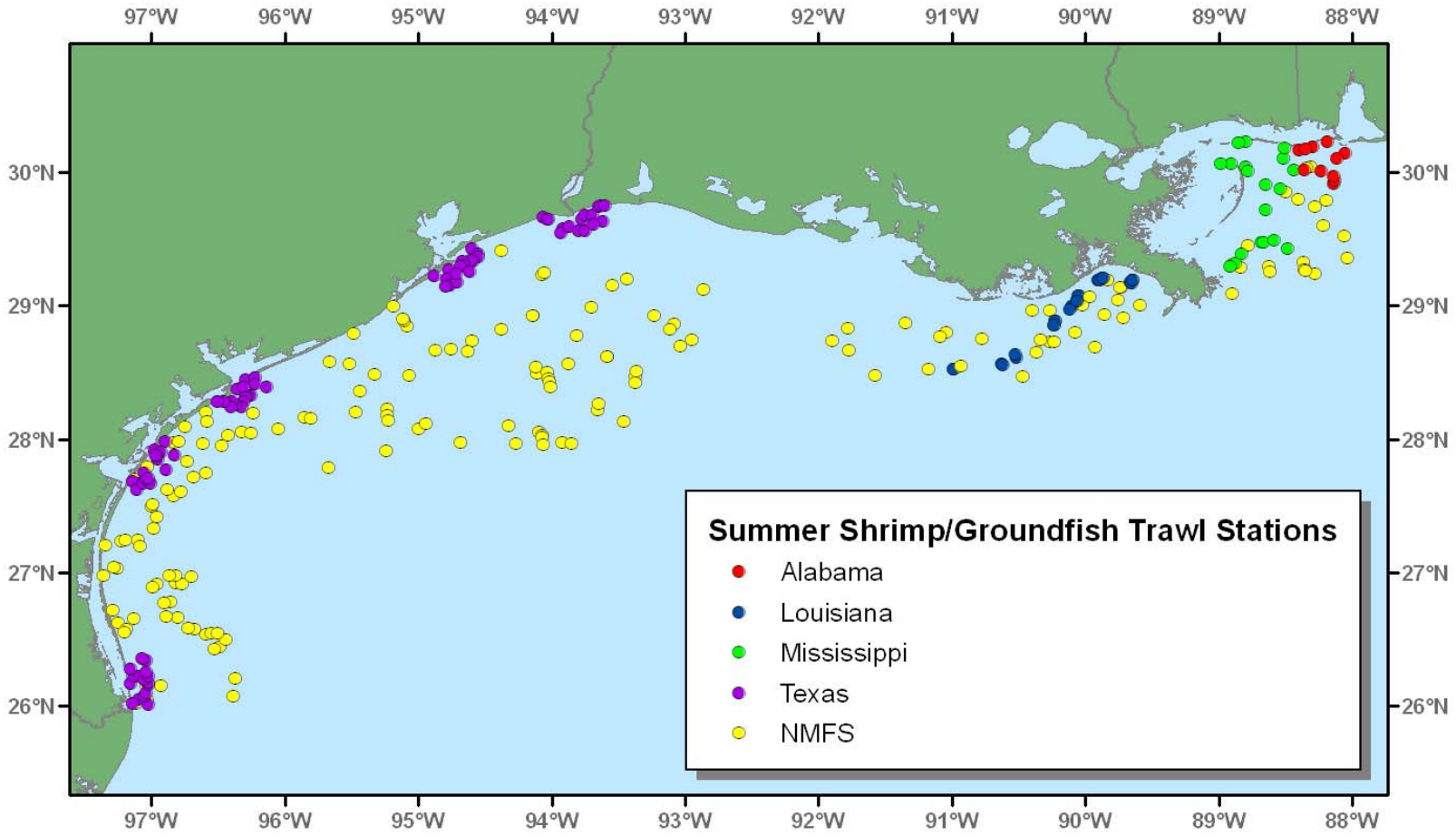
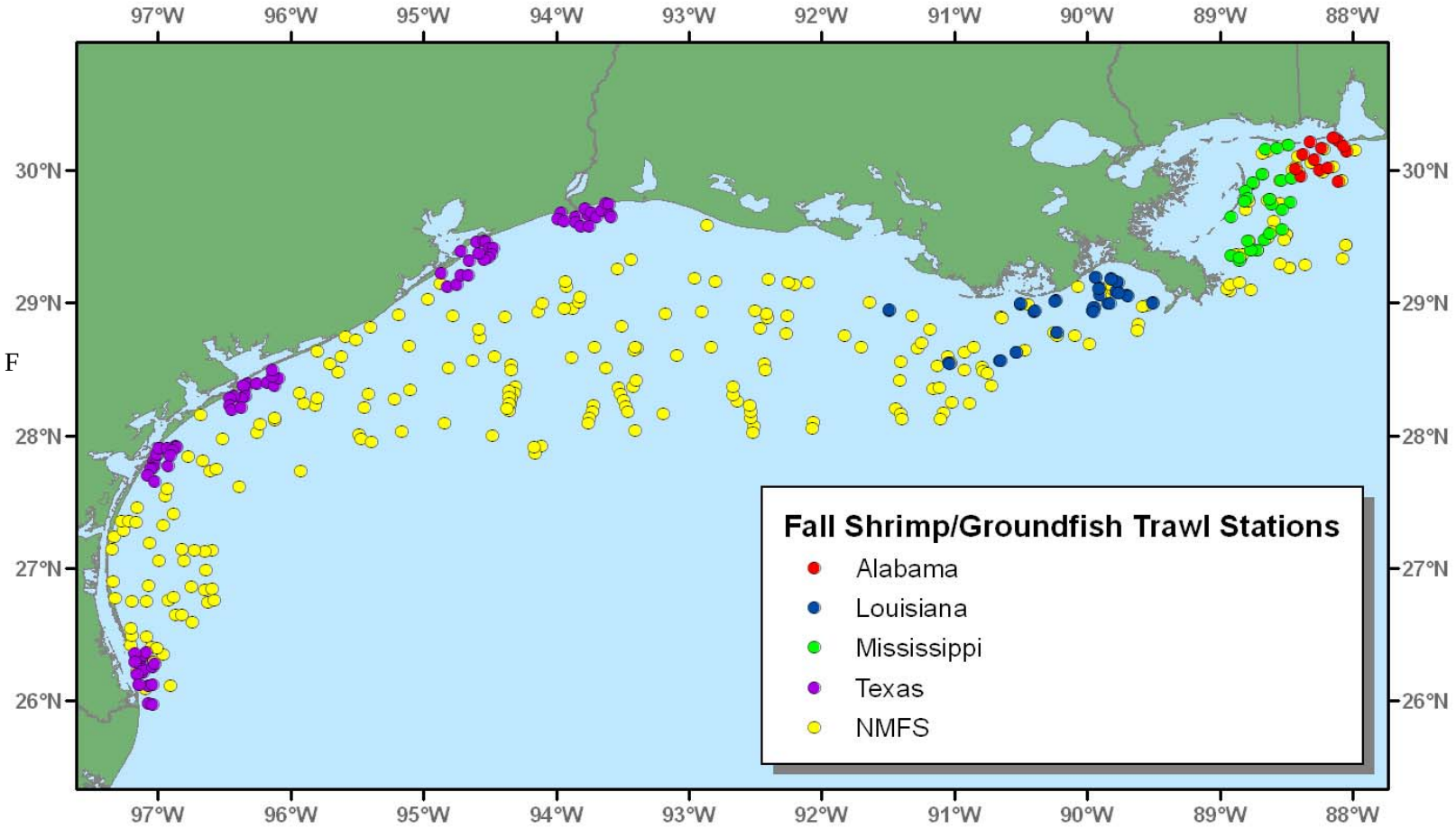


Figure 9. Locations of trawl stations during the 2003 Summer Shrimp/Groundfish Survey.



F

Figure 10. Locations of trawl stations during the 2003 Fall Shrimp/Groundfish Survey.

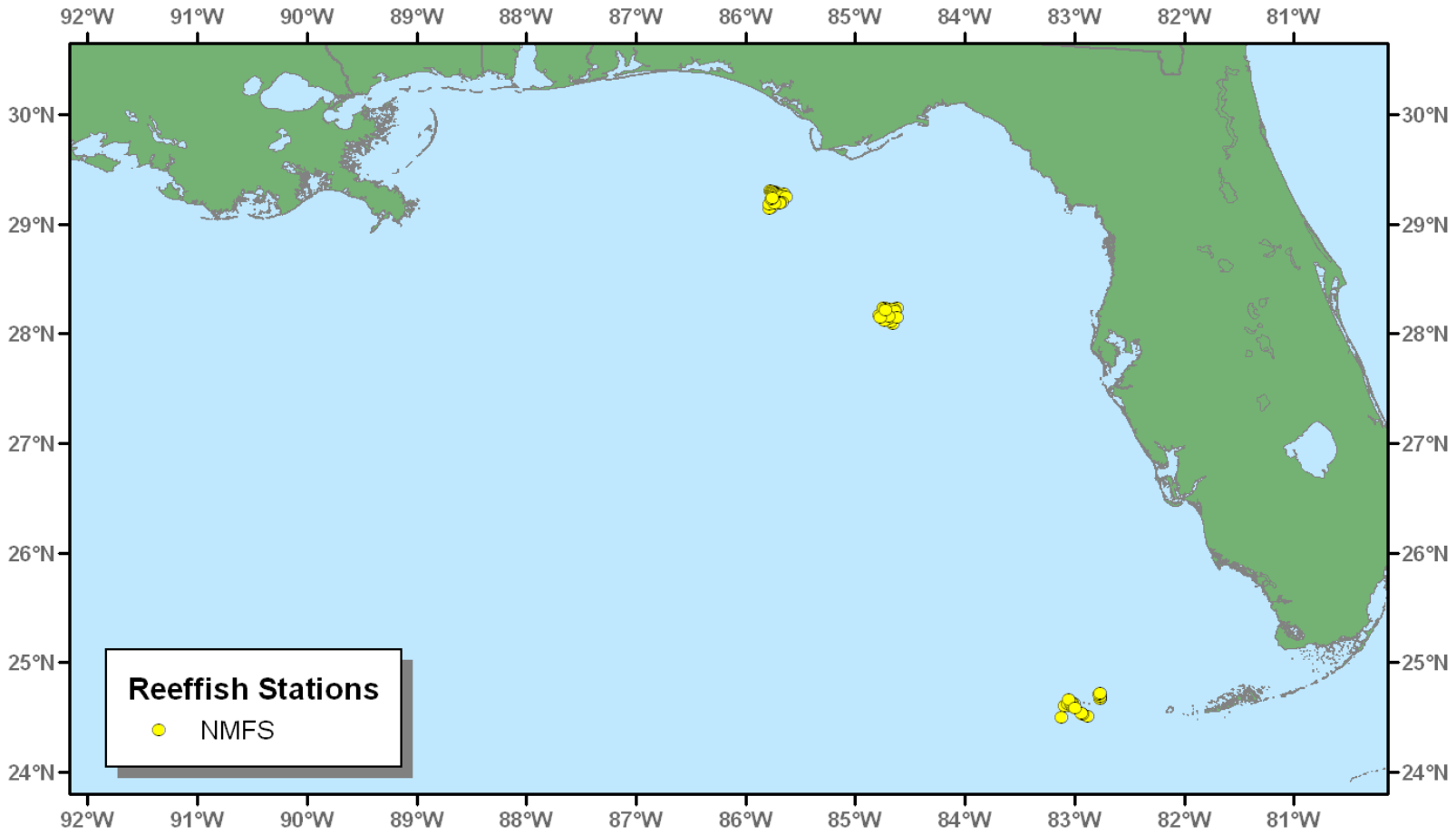


Figure 11. Locations of trap stations during the 2003 Reef Fish Survey.

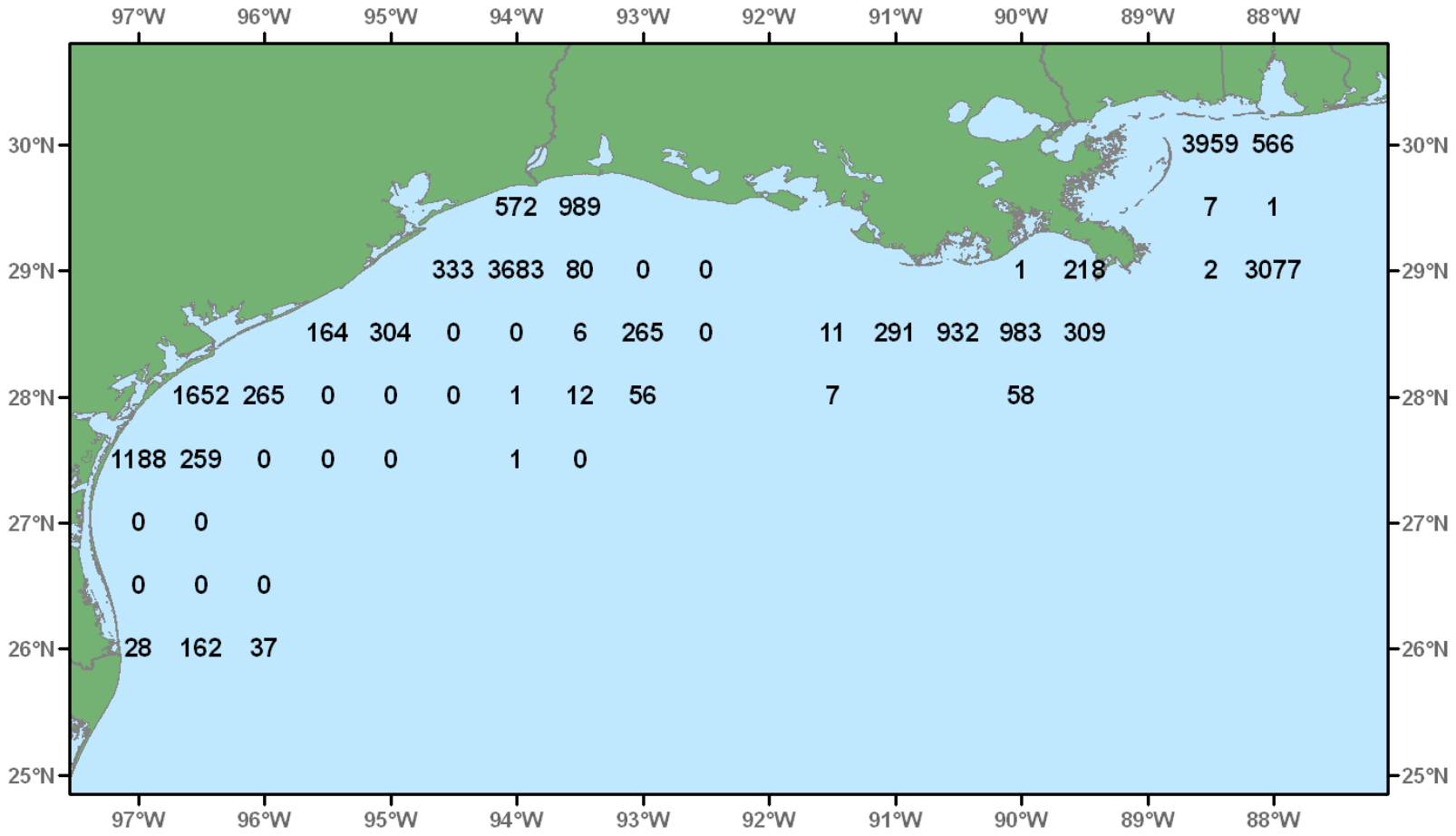


Figure 12. Atlantic croaker, Micropogonias undulatus, number/hour for June-July 2003.

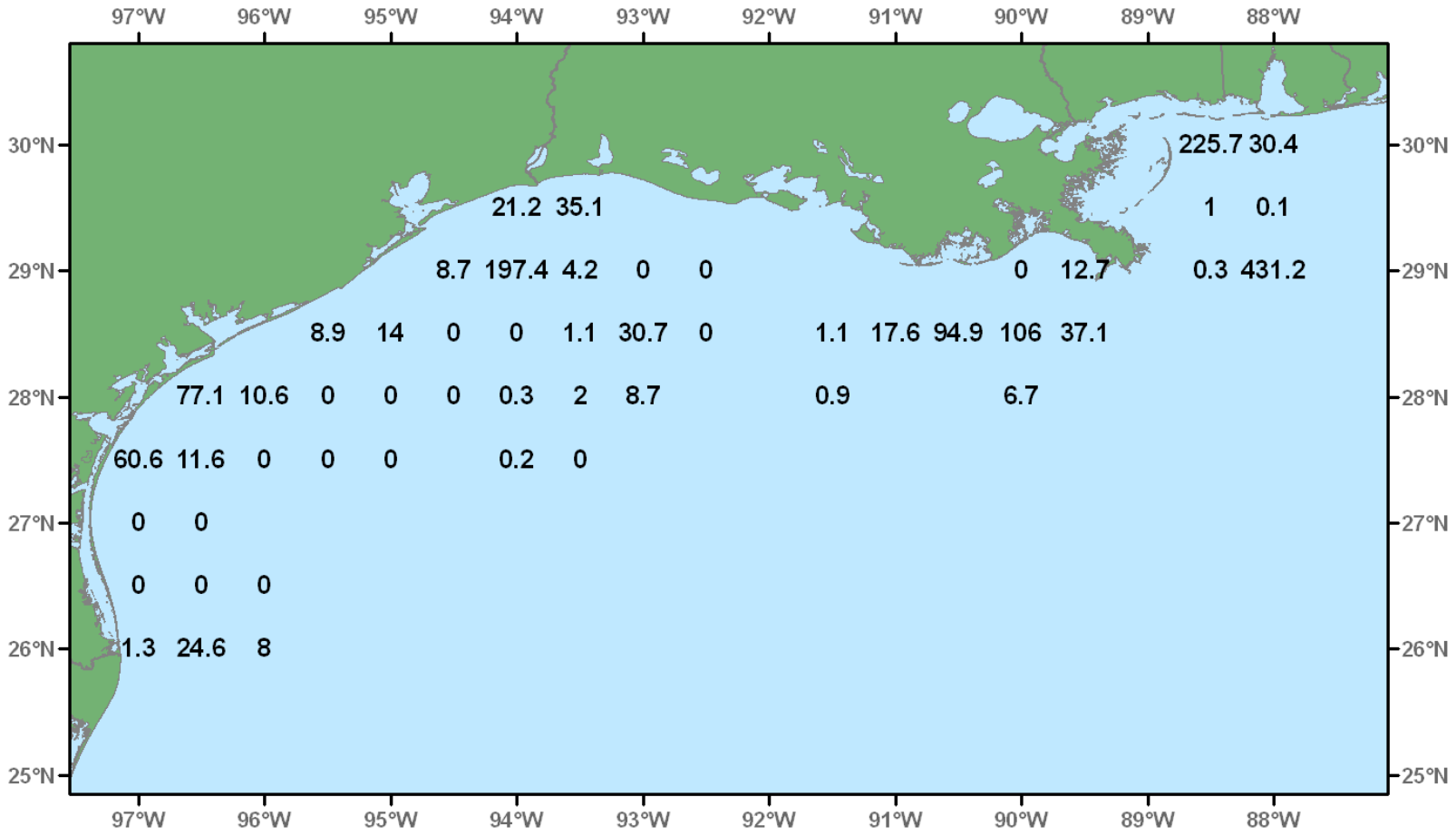


Figure 13. Atlantic croaker, Micropogonias undulatus, lb/hour for June-July 2003.

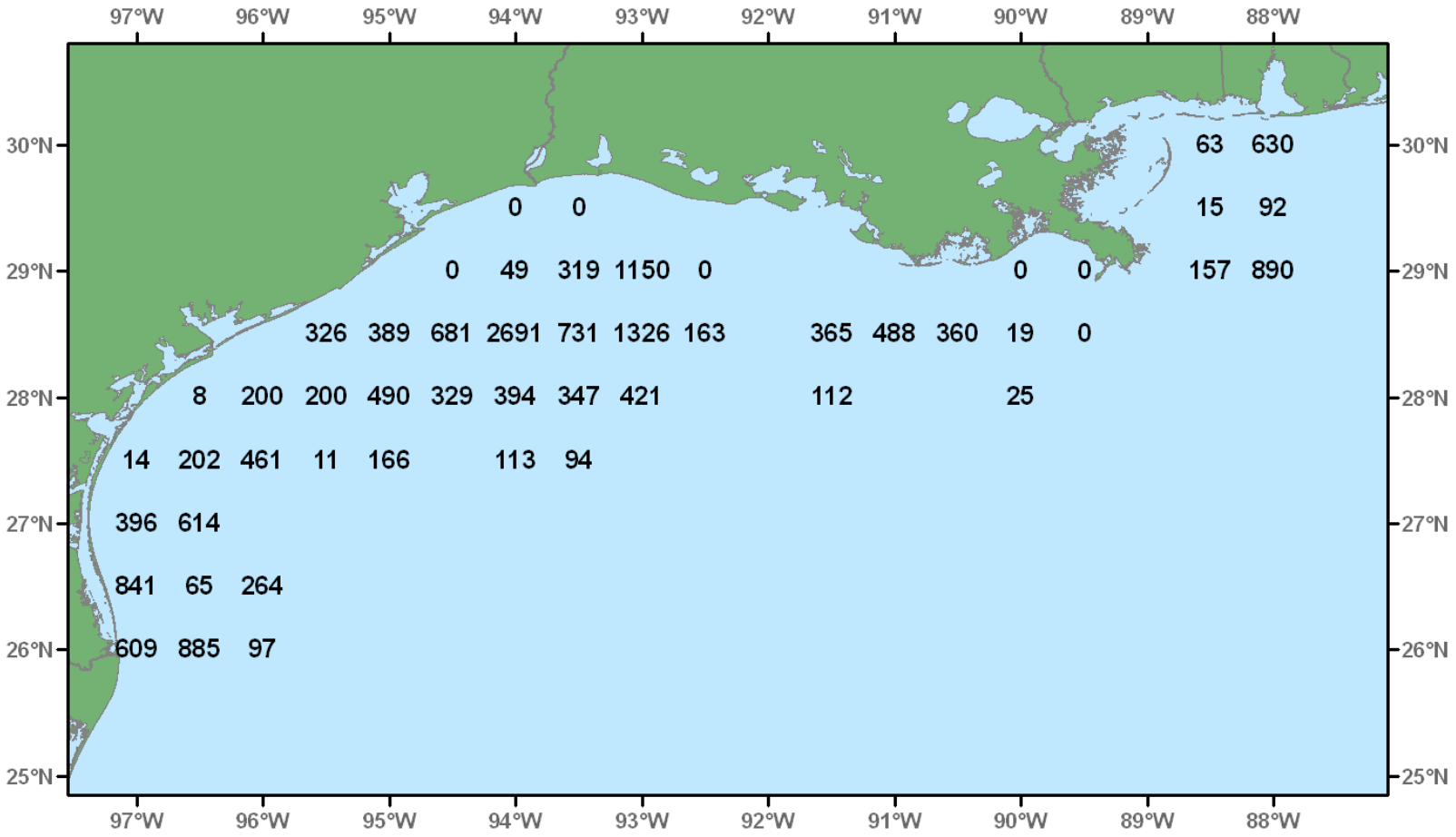


Figure 14. Longspine porgy, Stenotomus caprinus, number/hour for June-July 2003.

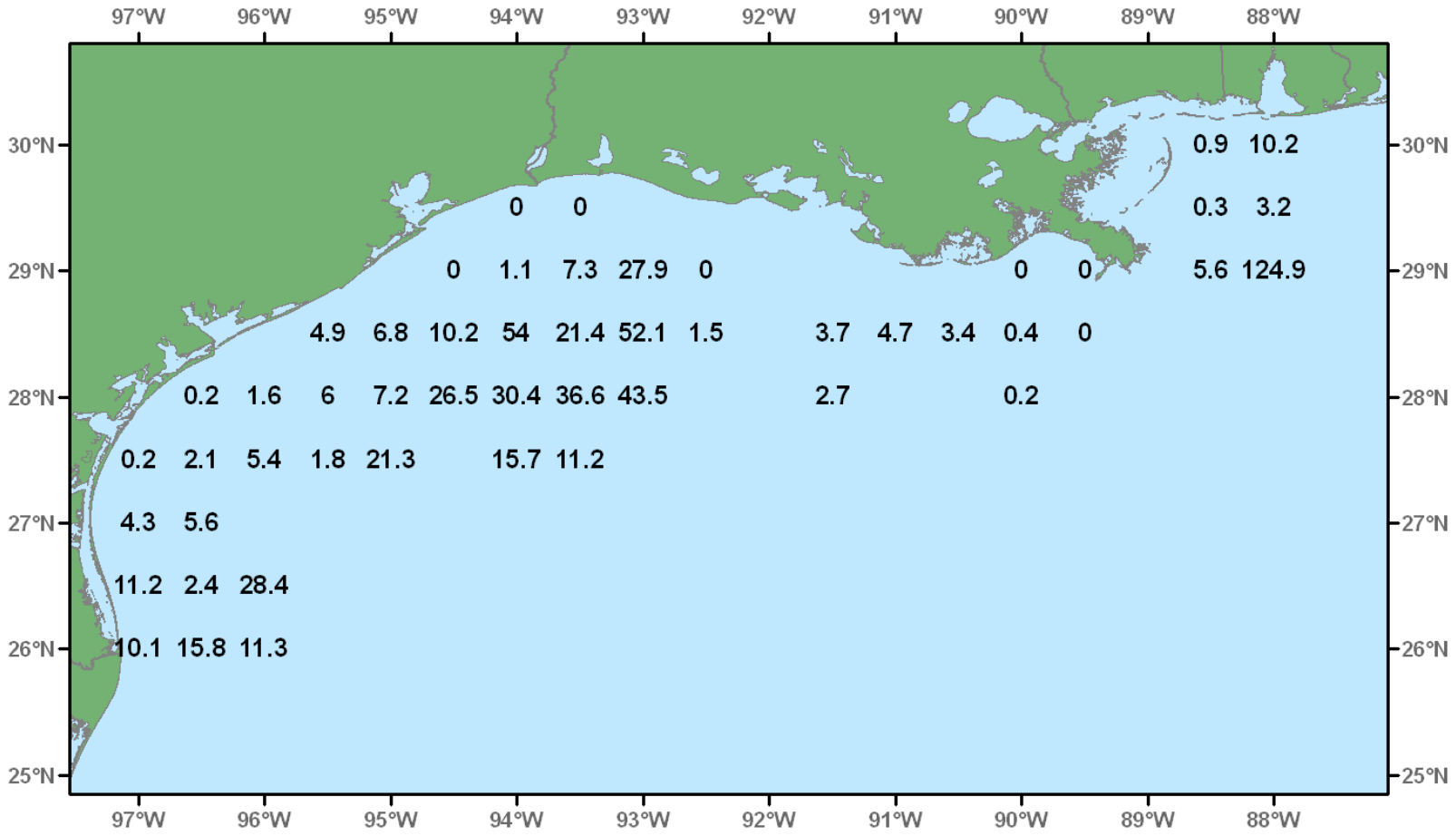


Figure 15. Longspine porgy, Stenotomus caprinus, lb/hour for June-July 2003.

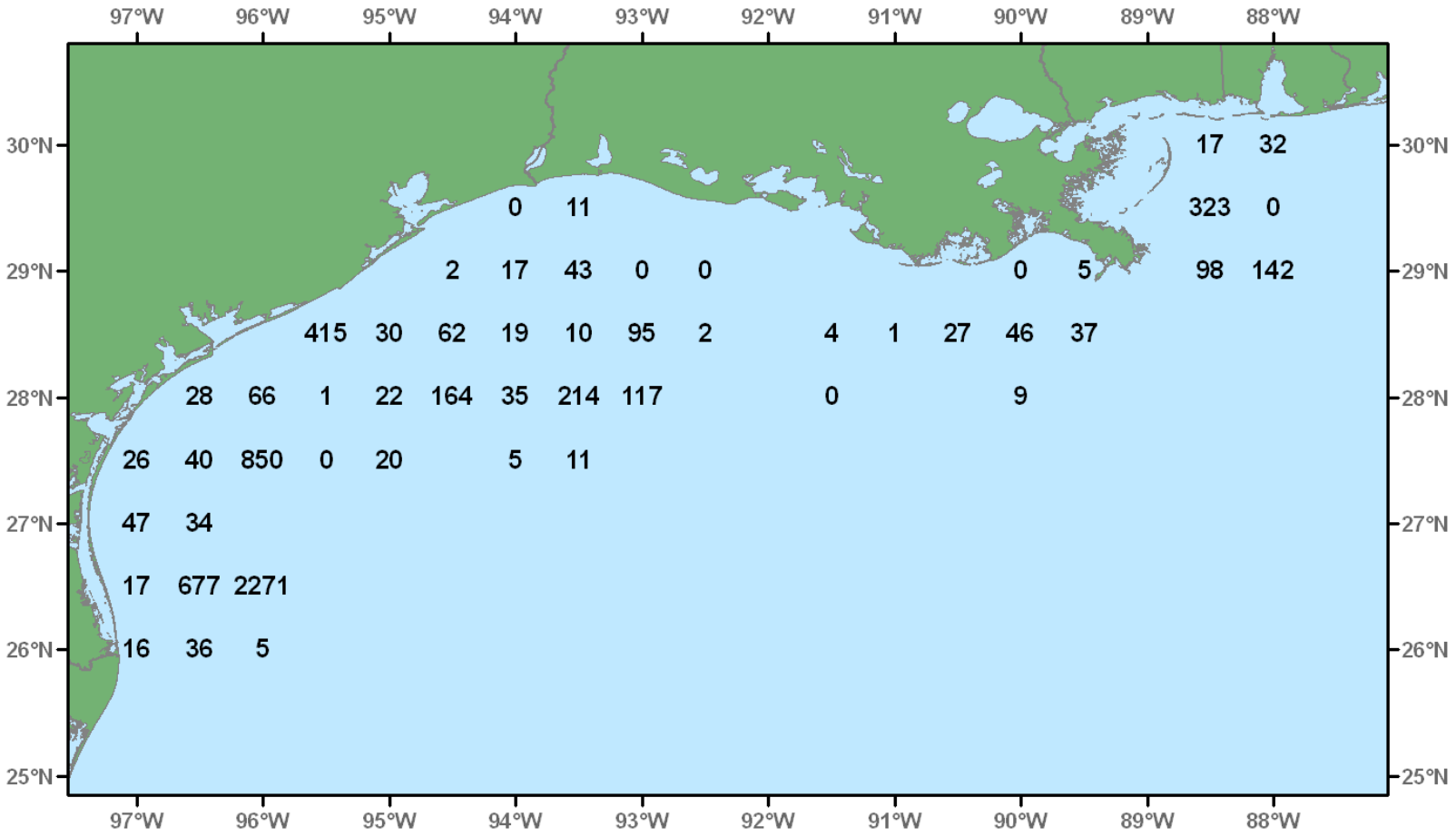


Figure 16. Gulf butterfish, Peprilus burti, number/hour for June-July 2003.

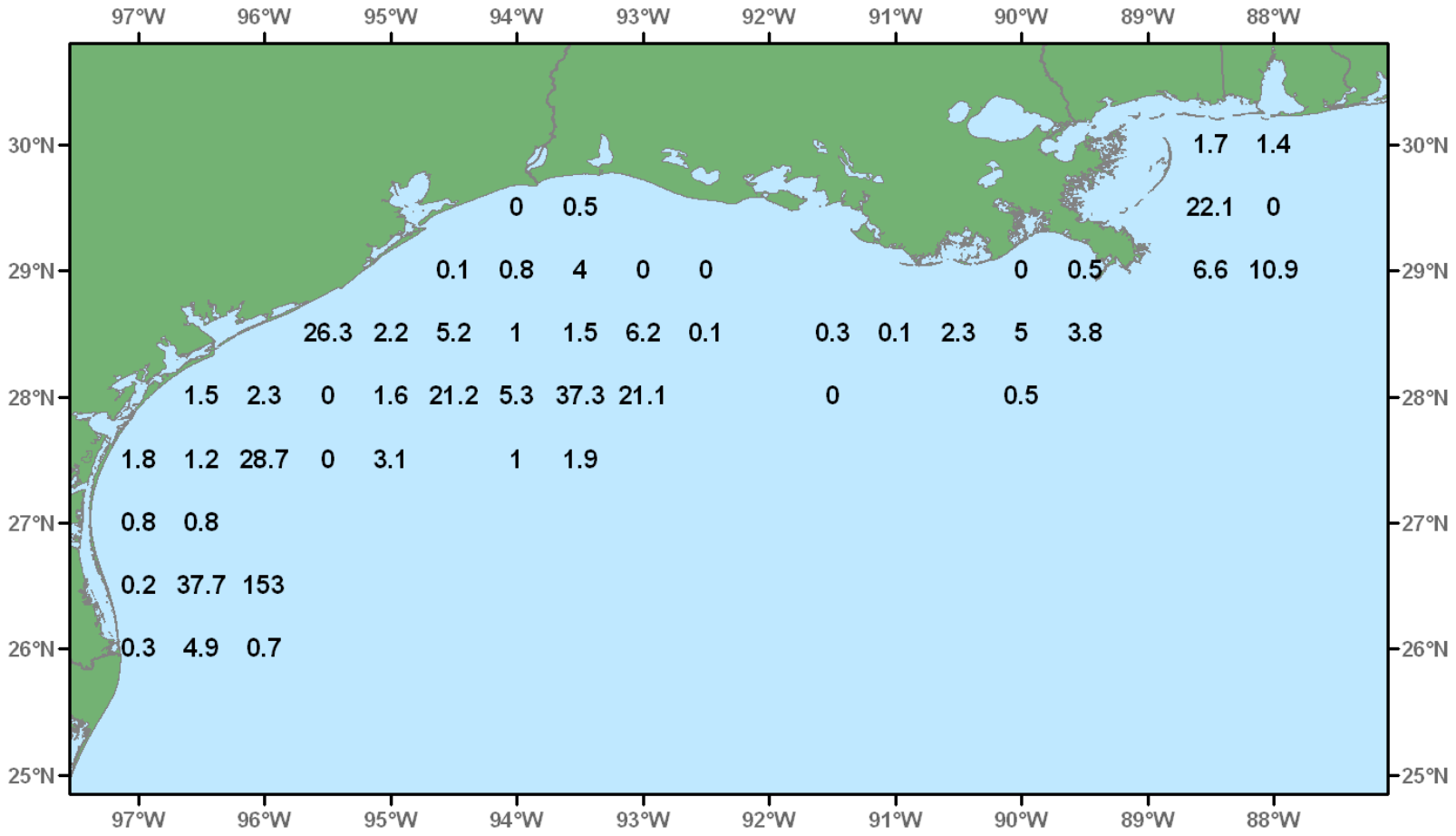


Figure 17. Gulf butterfish, Peprilus burti, lb/hour for June-July 2003.

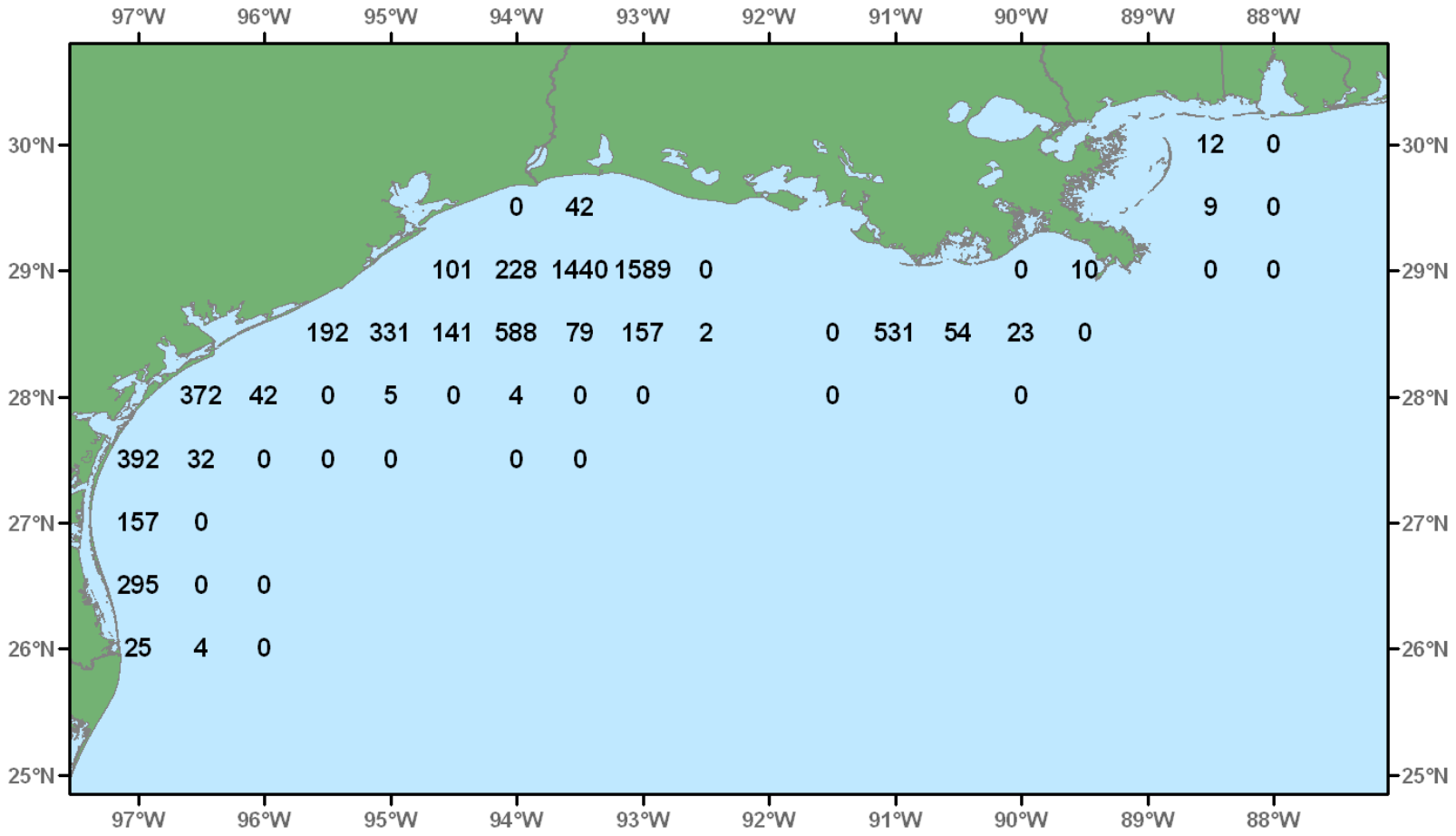


Figure 18. Atlantic bumper, Chloroscombrus chrysurus, number/hour for June-July 2003.

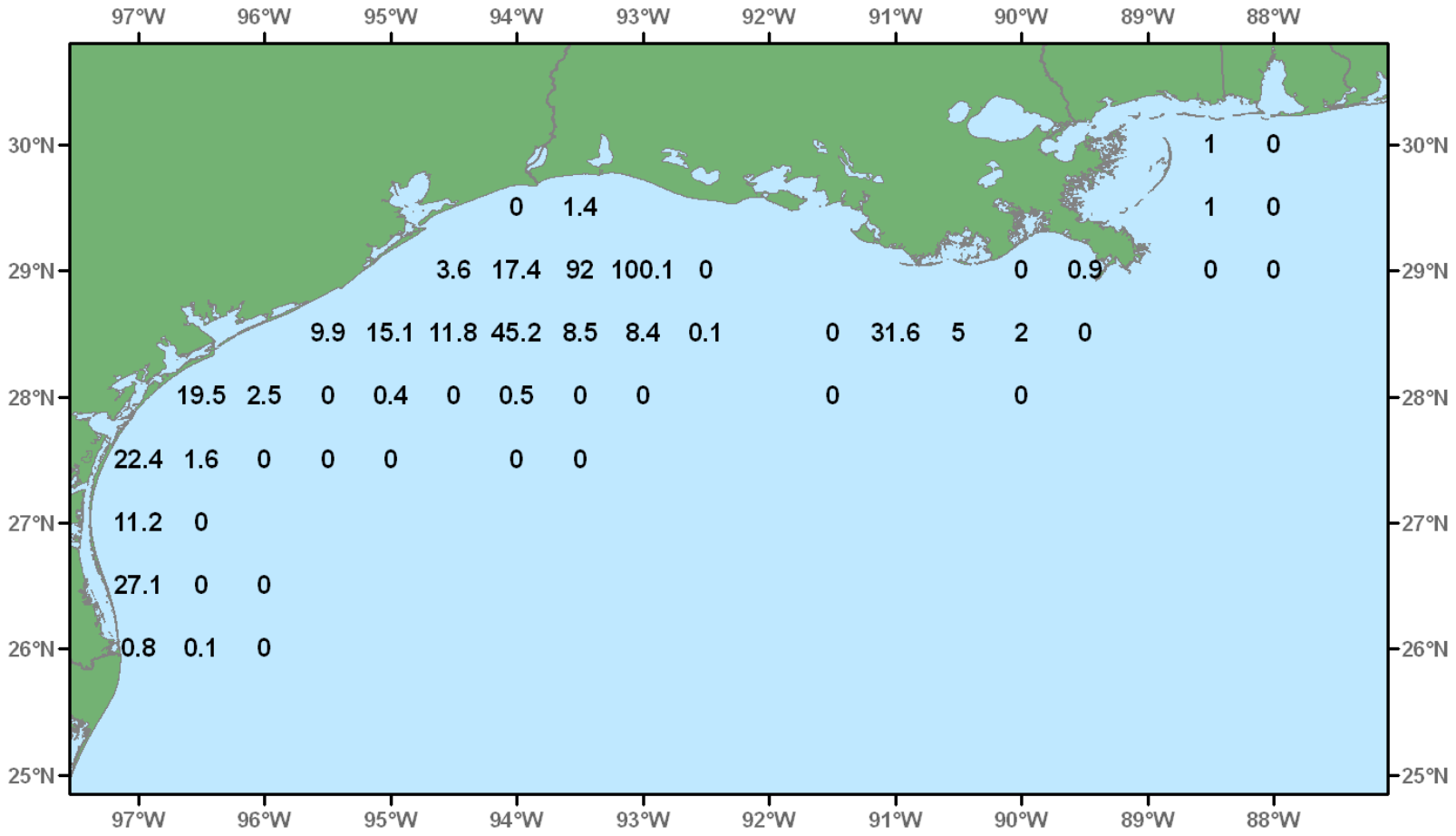


Figure 19. Atlantic bumper, Chloroscombrus chrysurus, lb/hour for June-July 2003.

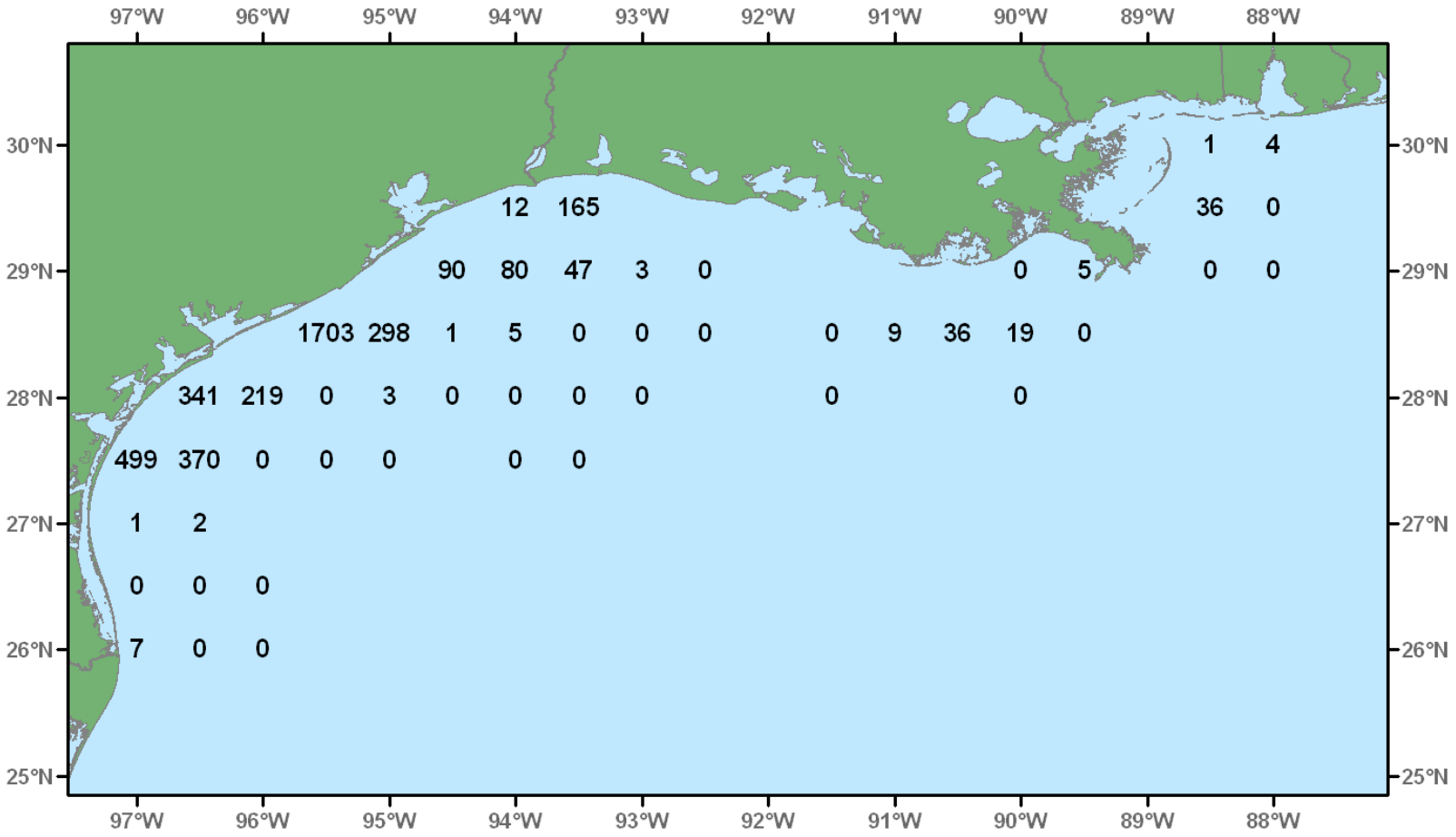


Figure 20. Silver seatrout, Cynoscion nothus, number/hour for June-July 2003.

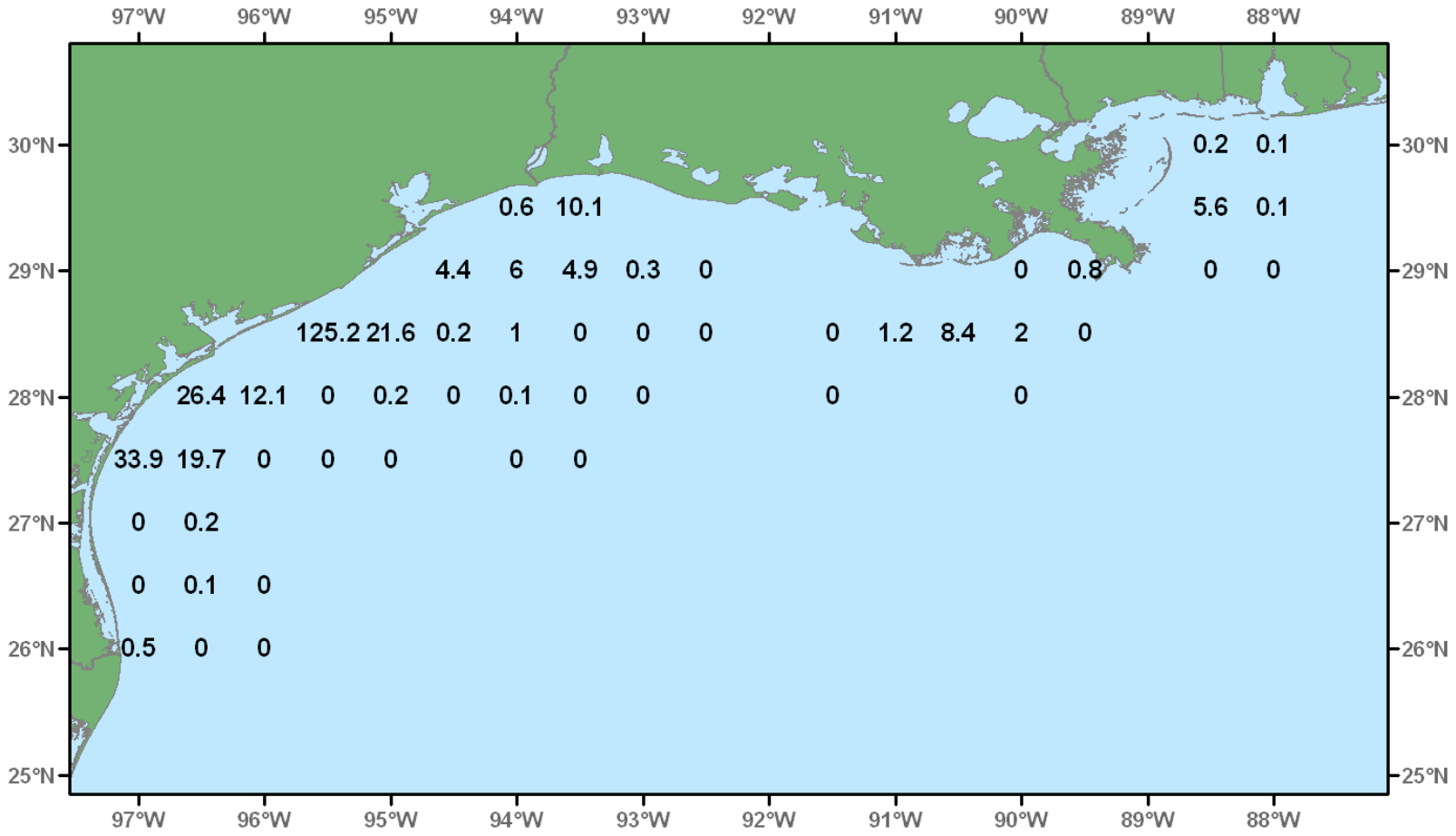


Figure 21. Silver seatrout, Cynoscion nothus, lb/hour for June-July 2003.

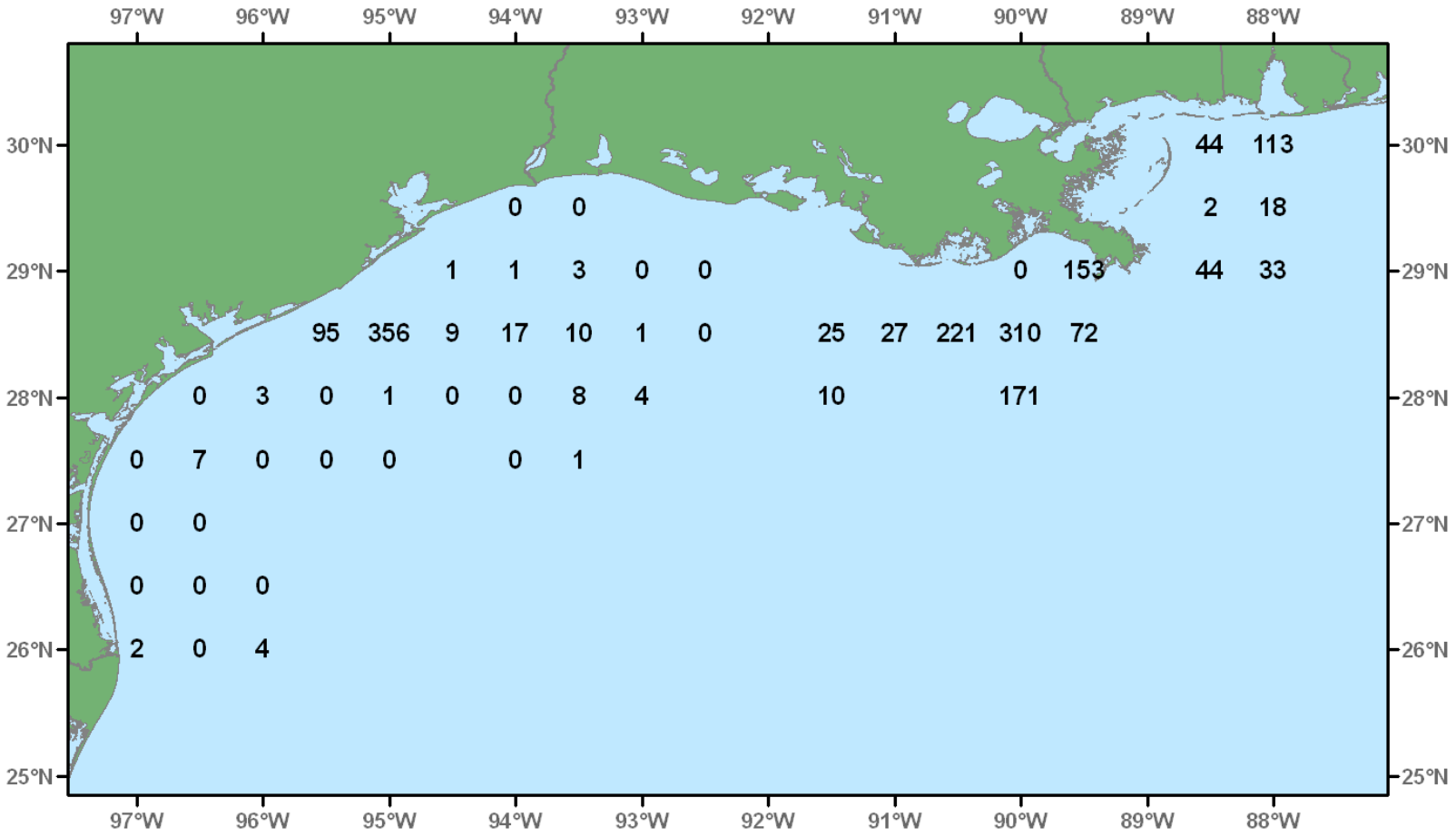


Figure 22. Bigeye searobin, Prionotus longispinosus, number/hour for June-July 2003.

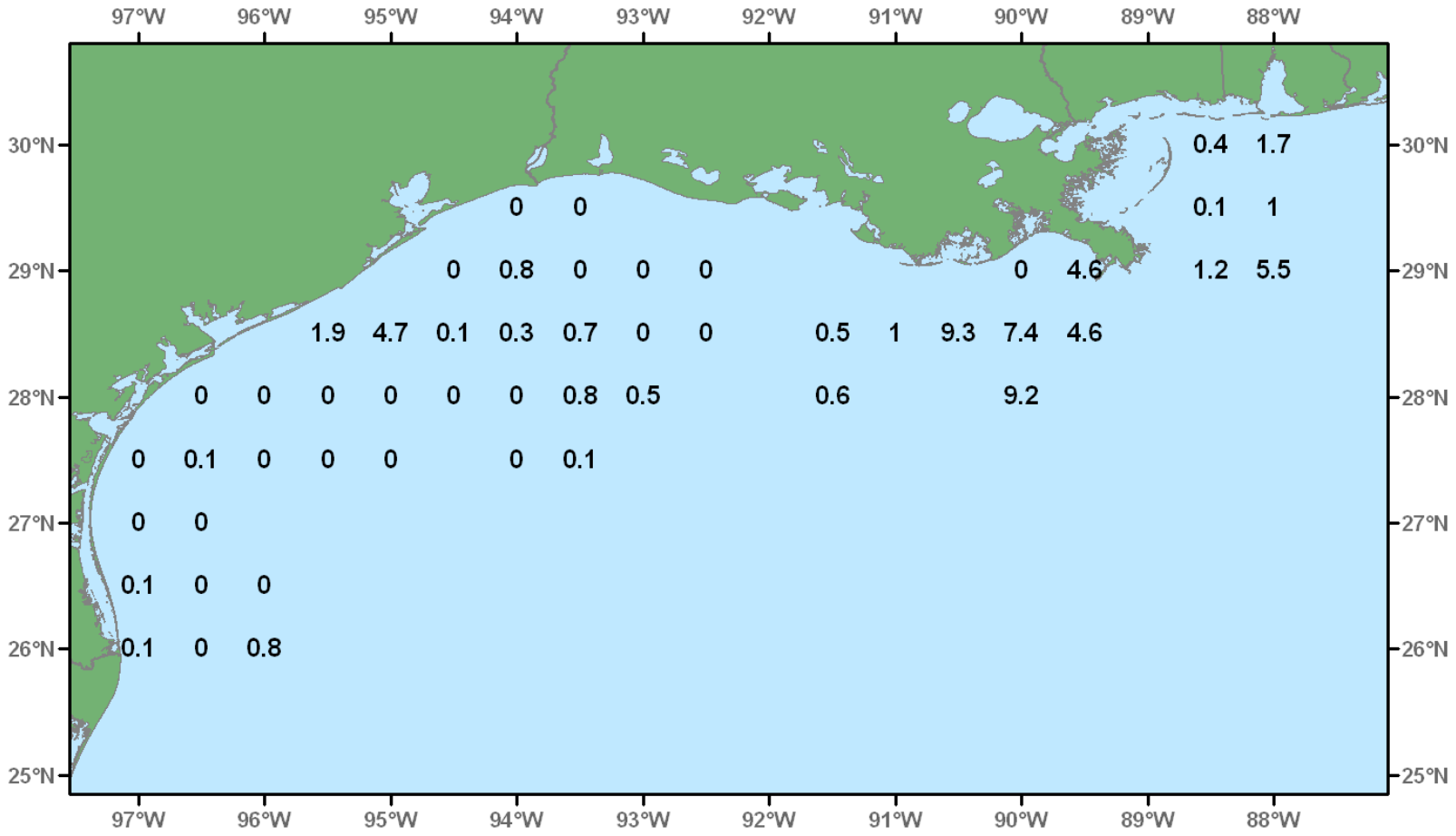


Figure 23. Bigeye searobin, Prionotus longispinosus, lb/hour for June-July 2003.

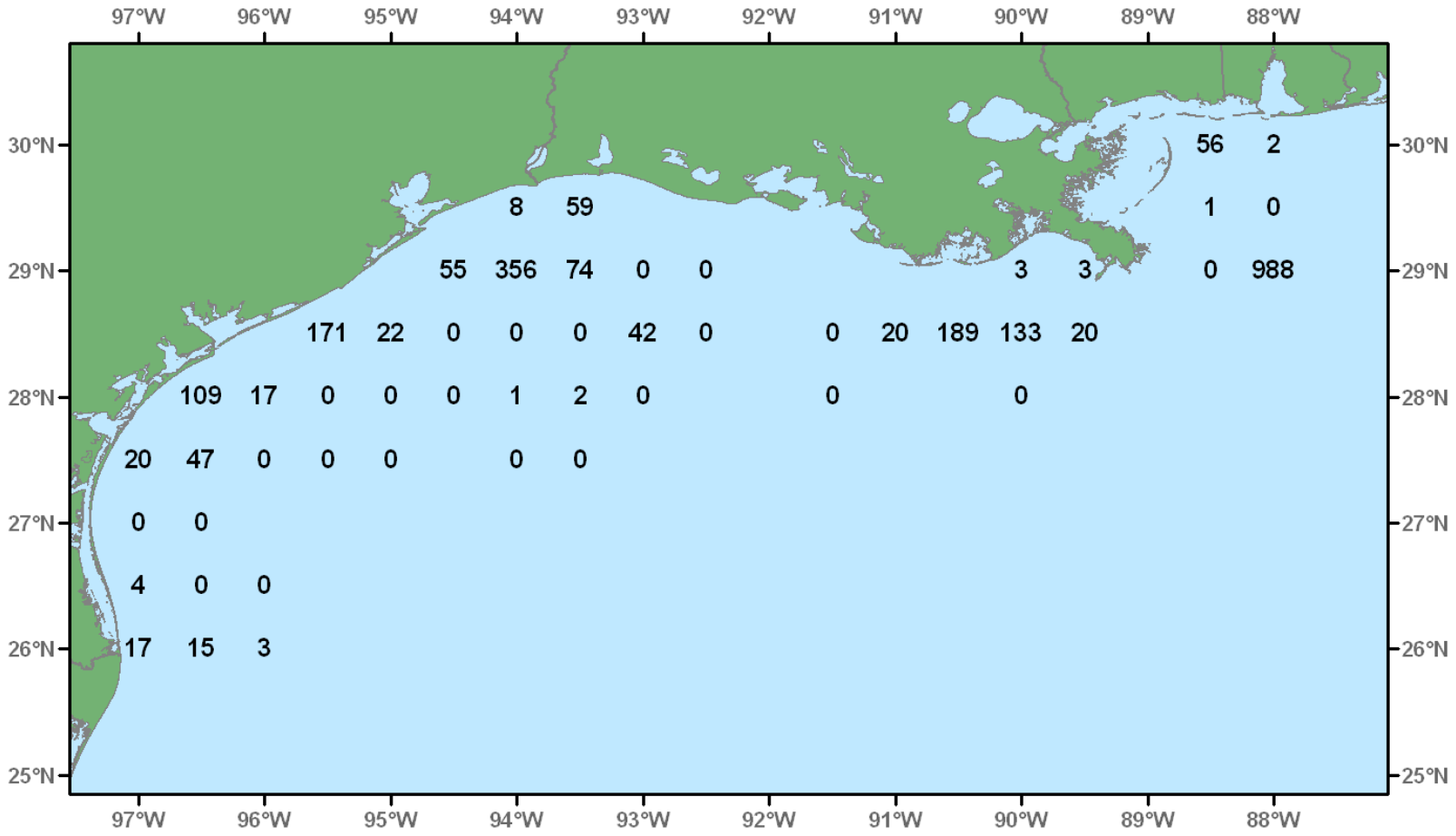


Figure 24. Spot, Leiostomus xanthurus, number/hour for June-July 2003.

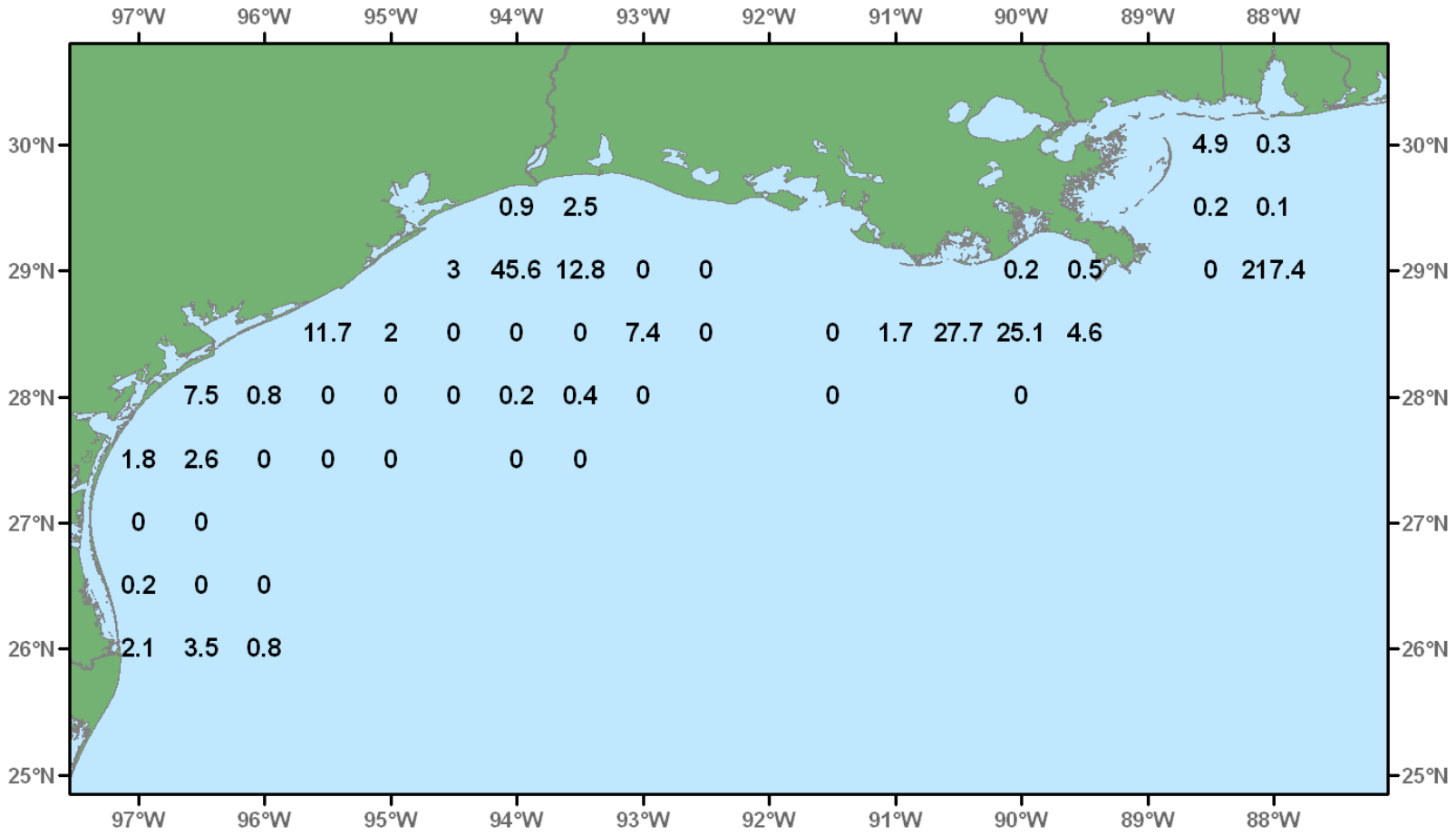


Figure 25. Spot, Leiostomus xanthurus, lb/hour for June-July 2003.

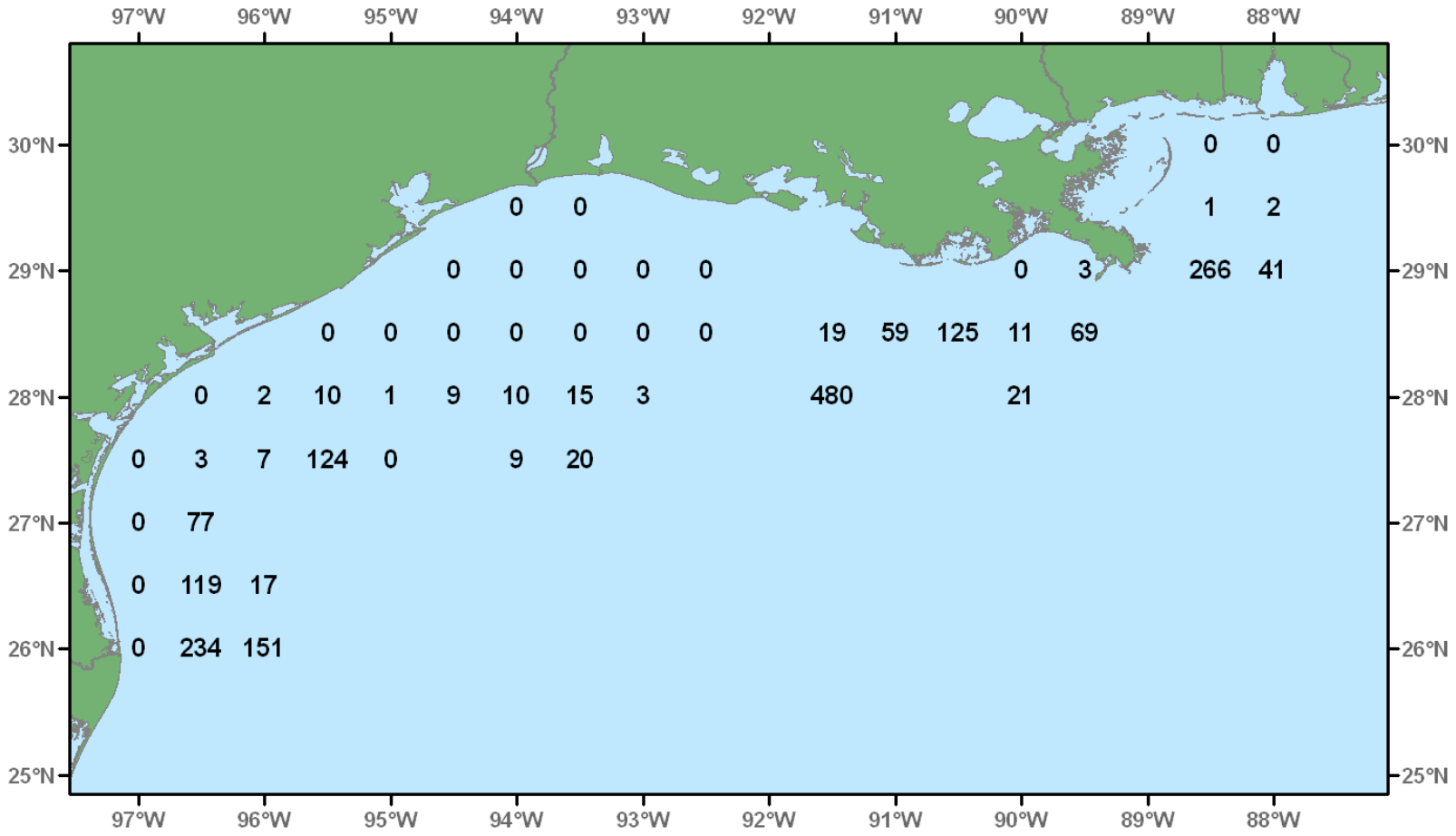


Figure 26. Blackear bass, Serranus atrobranchus, number/hour for June-July 2003.

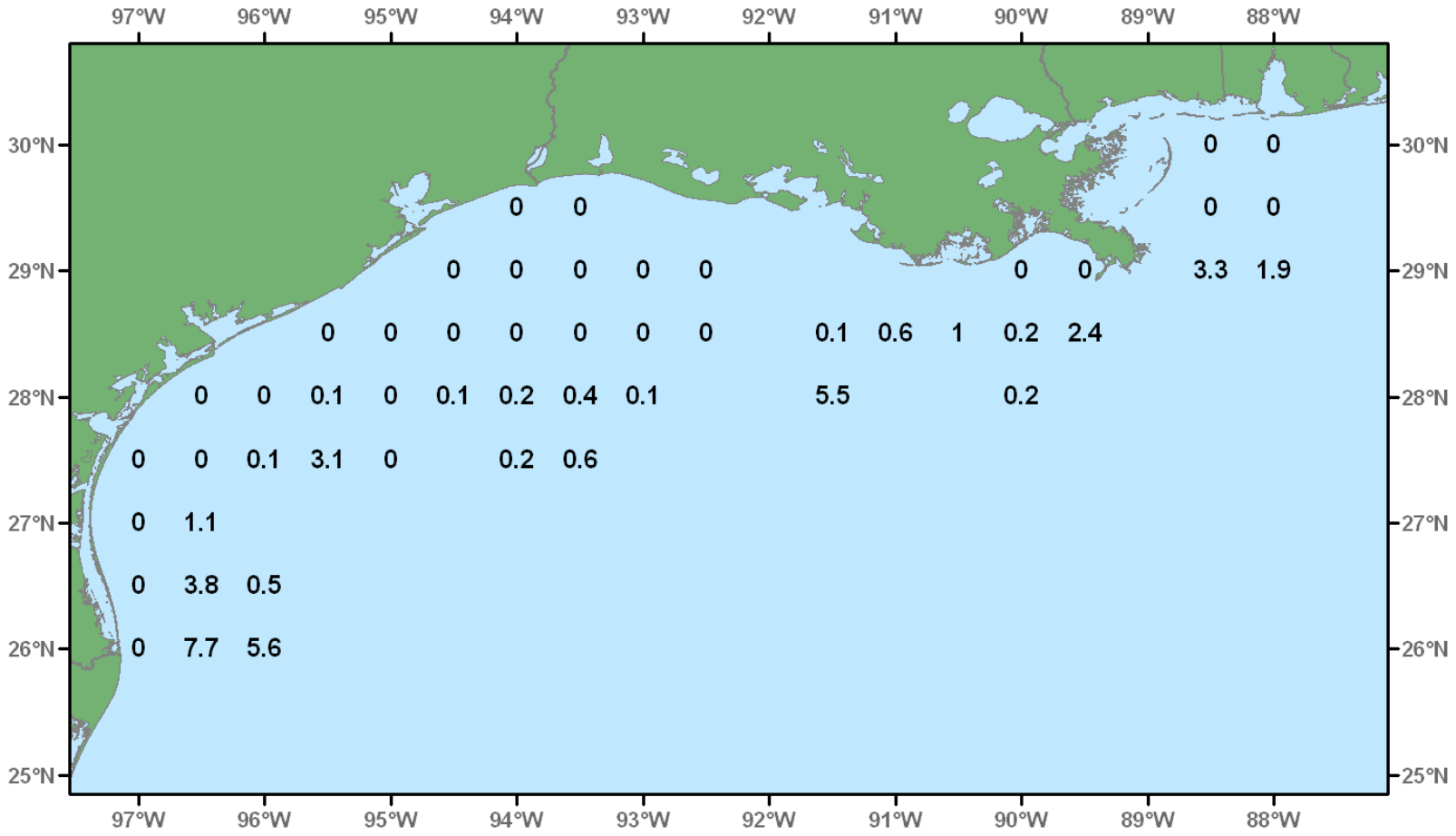


Figure 27. Blackear bass, Serranus atrobranchus, lb/hour for June-July 2003.

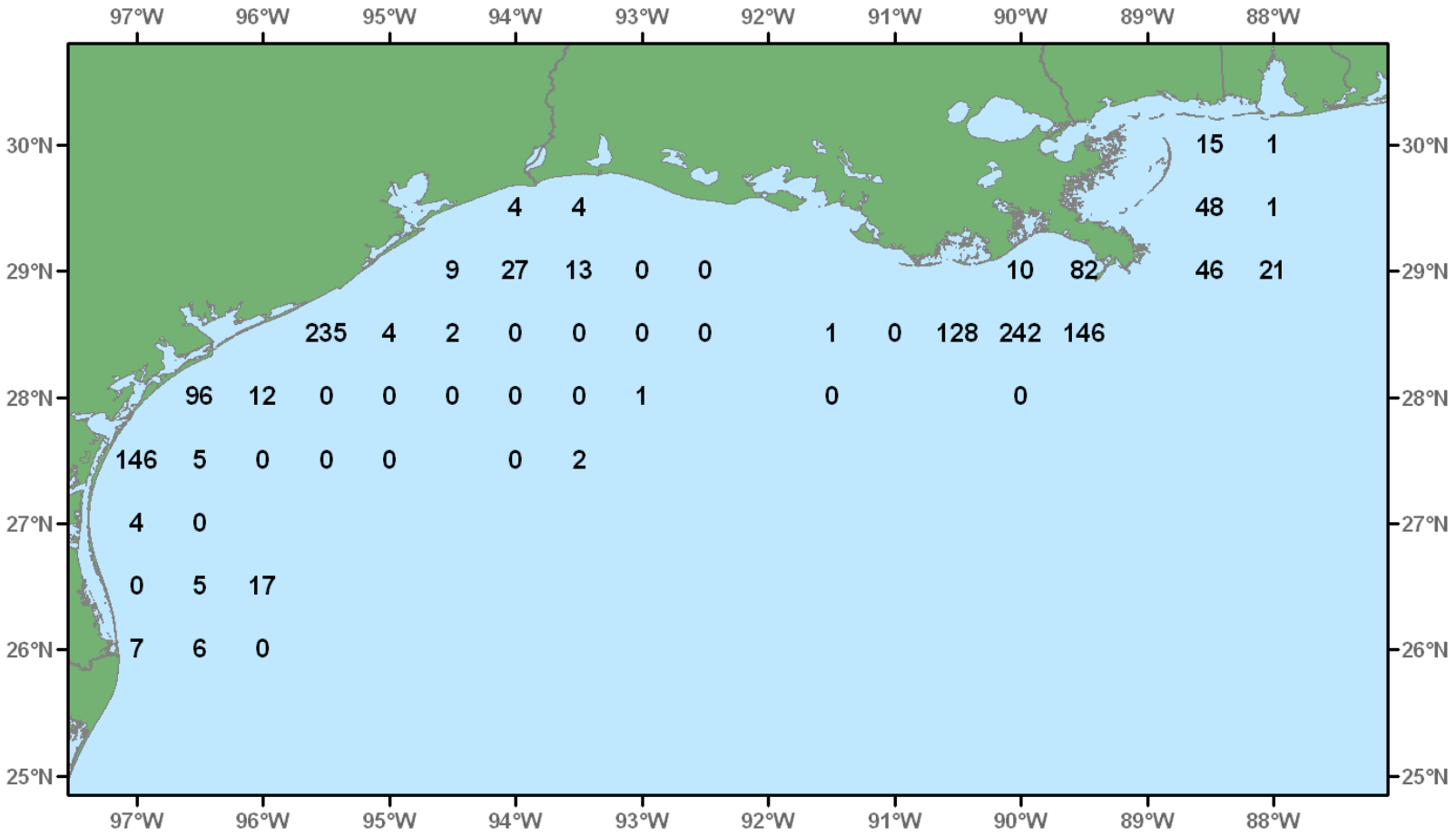


Figure 28. Atlantic cutlassfish, Trichiurus lepturus, number/hour for June-July 2003.

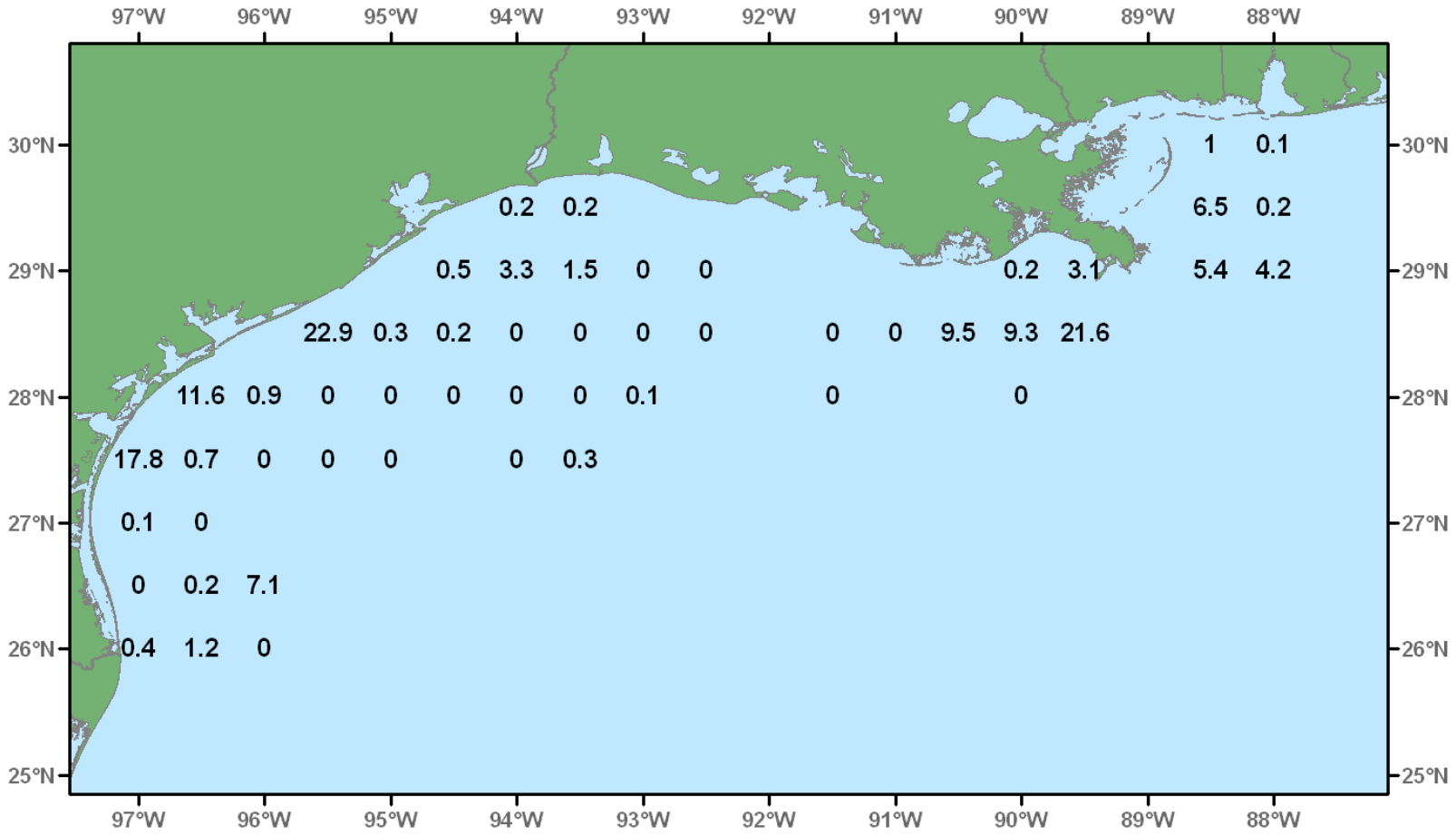


Figure 29. Atlantic cutlassfish, Trichiurus lepturus, lb/hour for June-July 2003.

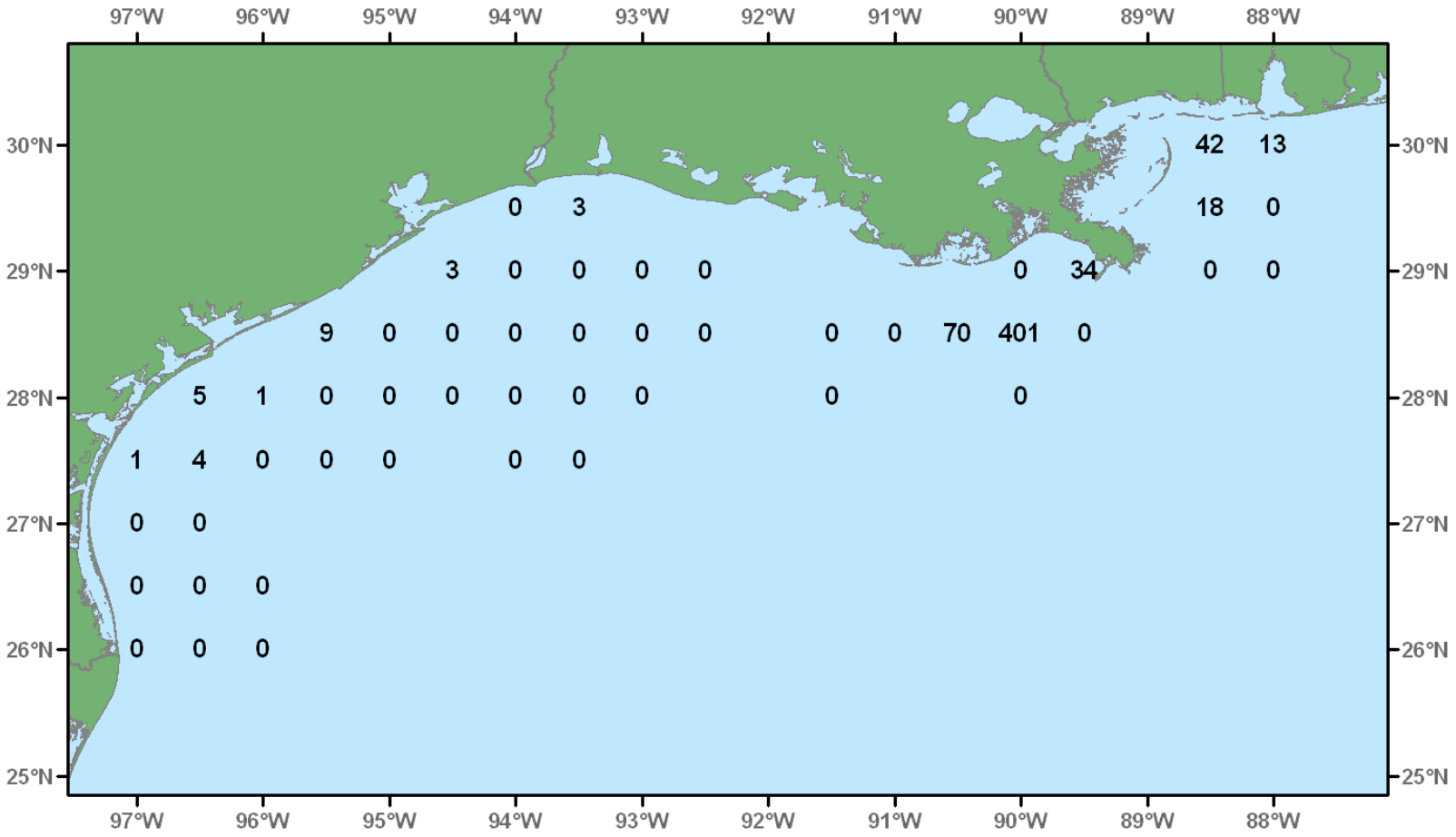


Figure 30. Bay anchovy, Anchoa mitchilli, number/hour for June-July 2003.

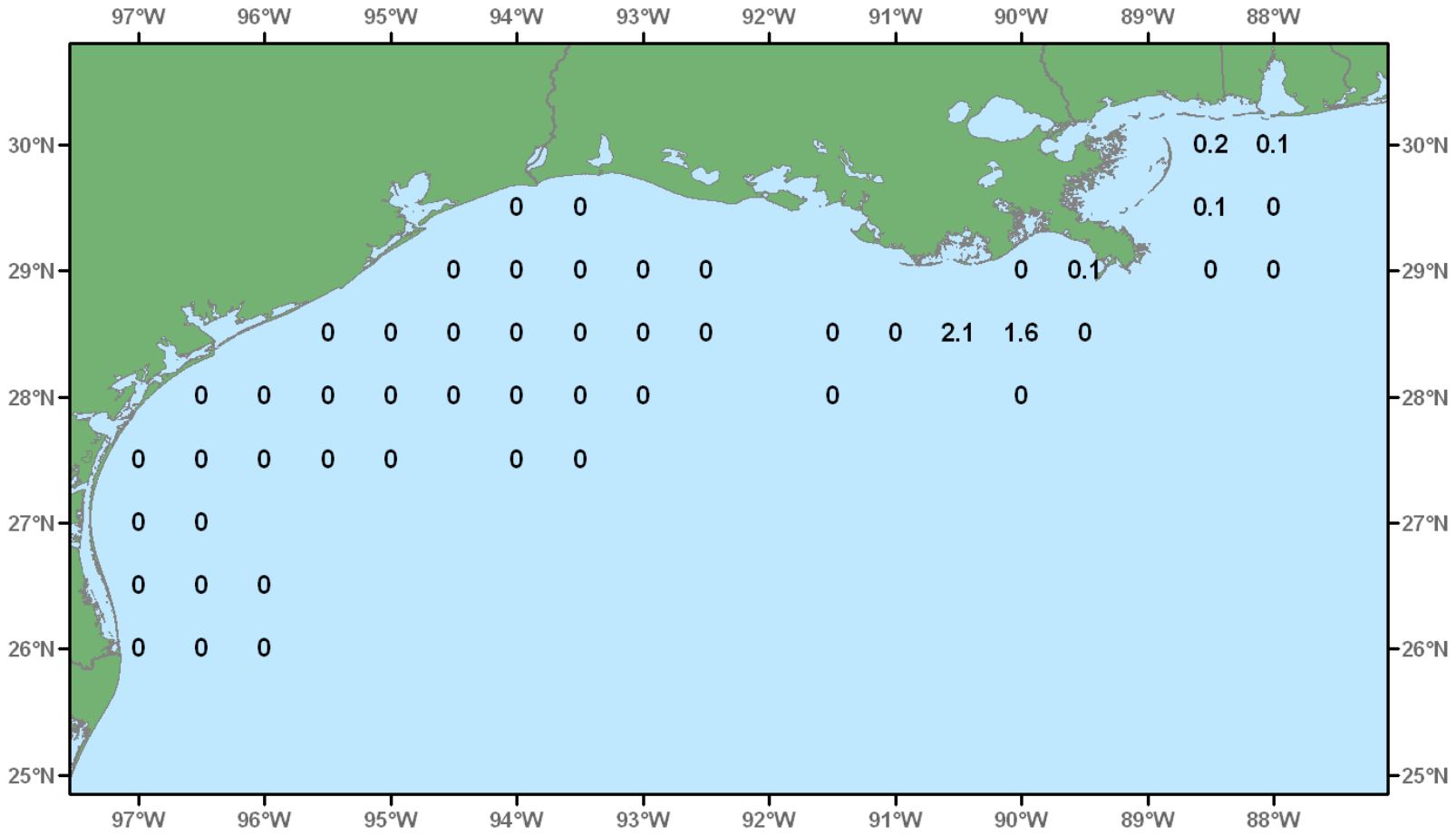


Figure 31. Bay anchovy, Anchoa mitchilli, lb/hour for June-July 2003.

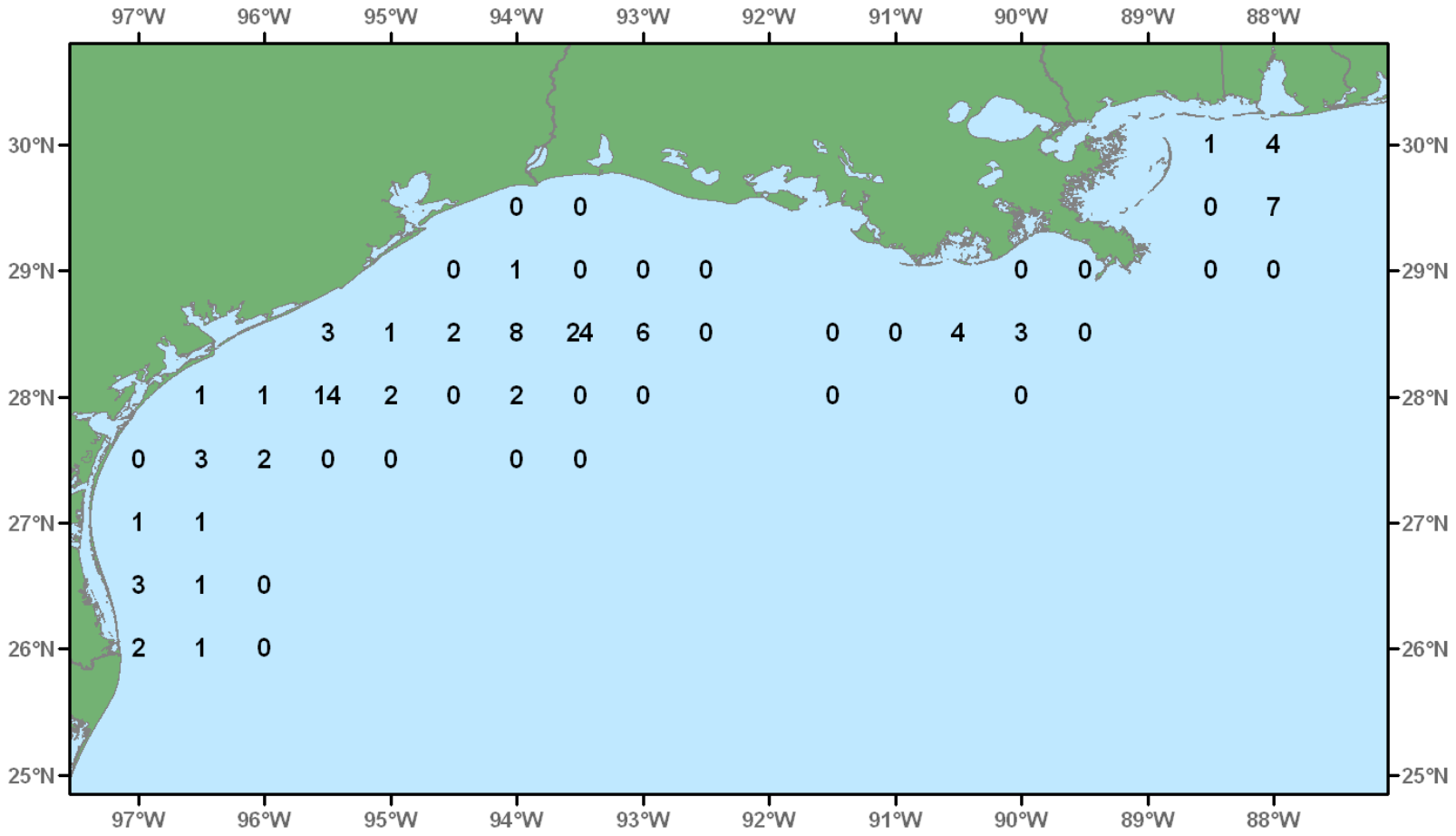


Figure 32. Red snapper, Lutjanus campechanus, number/hour for June-July 2003.

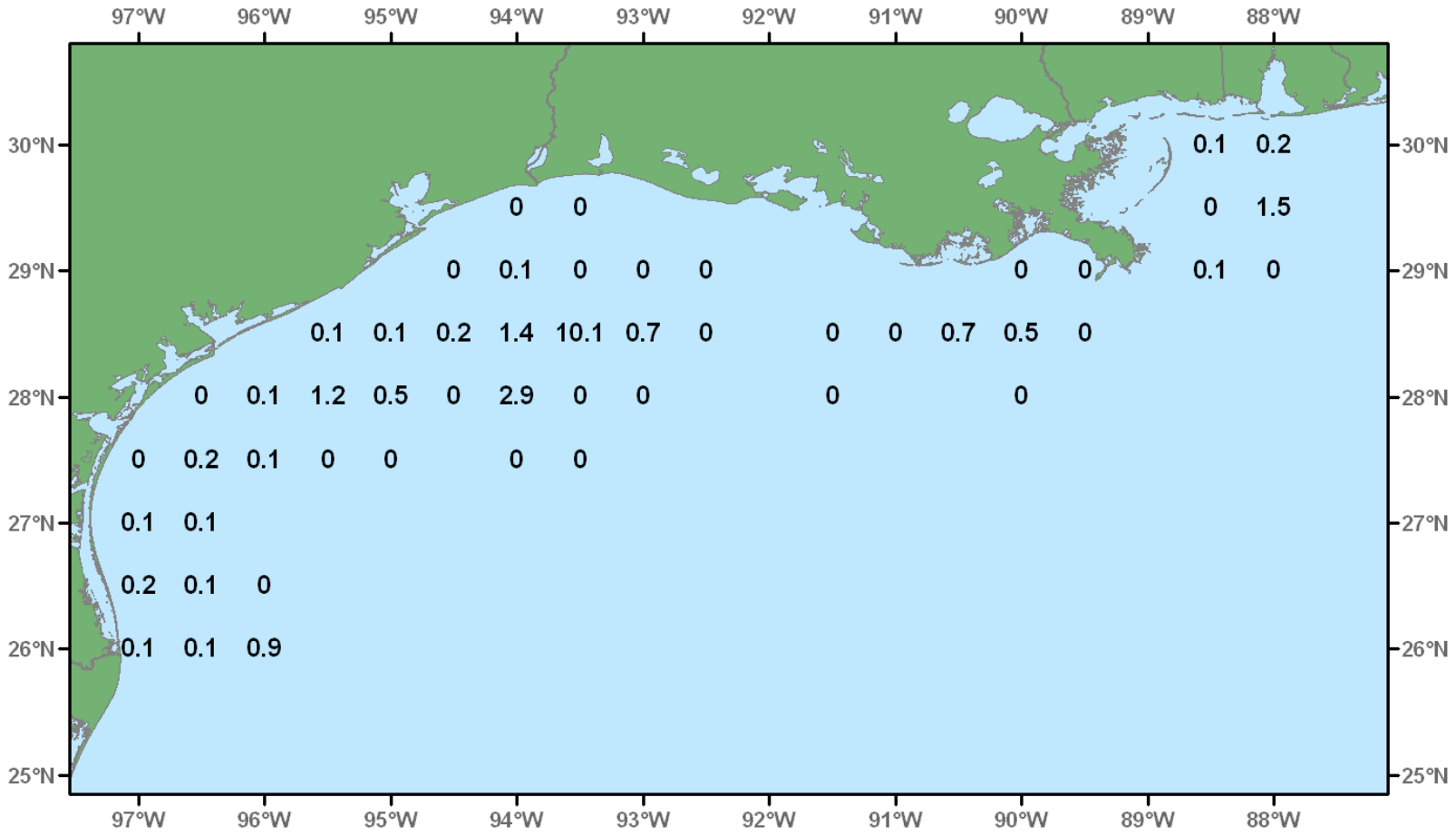


Figure 33. Red snapper, Lutjanus campechanus, lb/hour for June-July 2003.

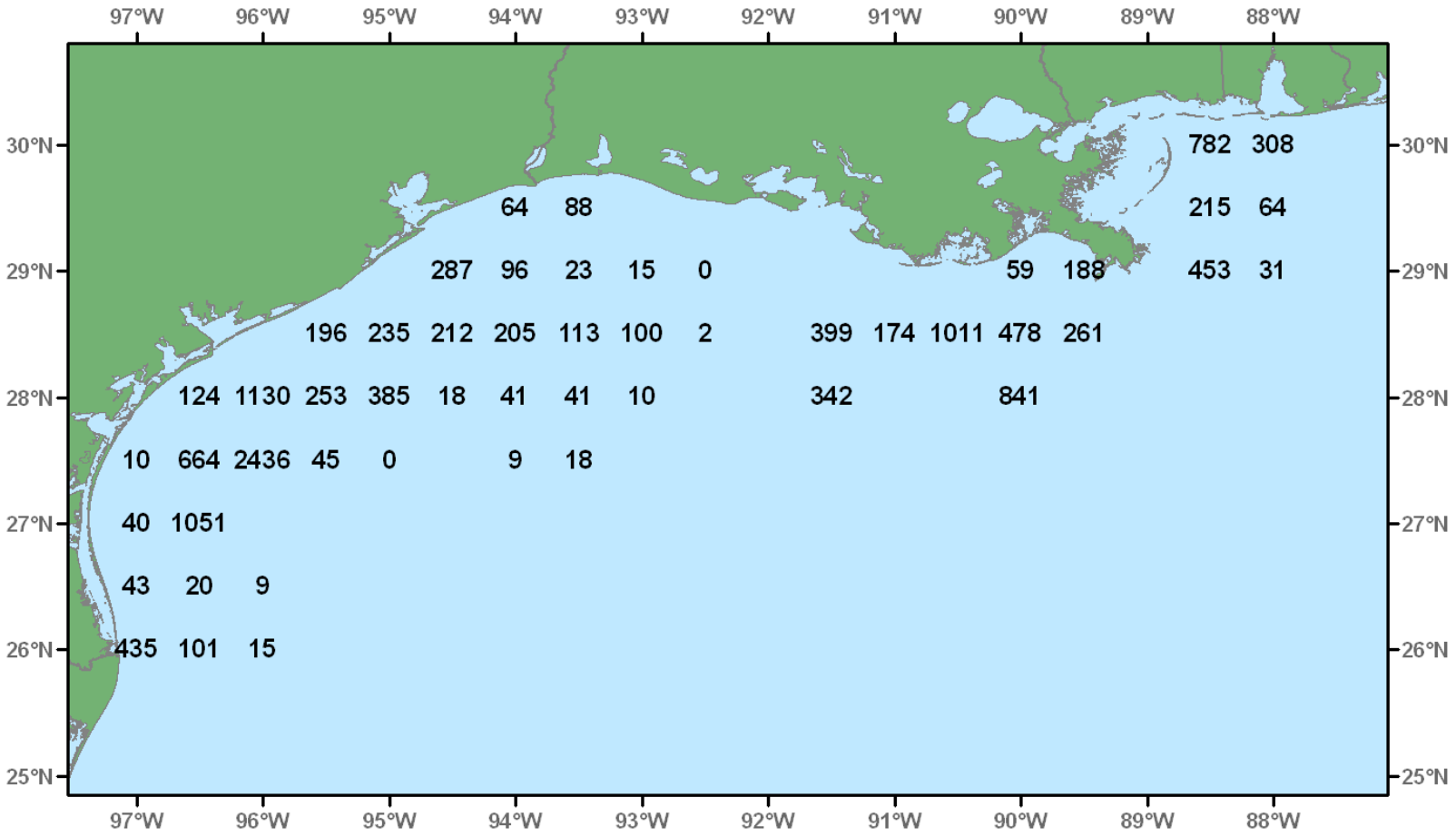


Figure 34. Brown shrimp, Farfantepenaeus aztecus, number/hour for June-July 2003.

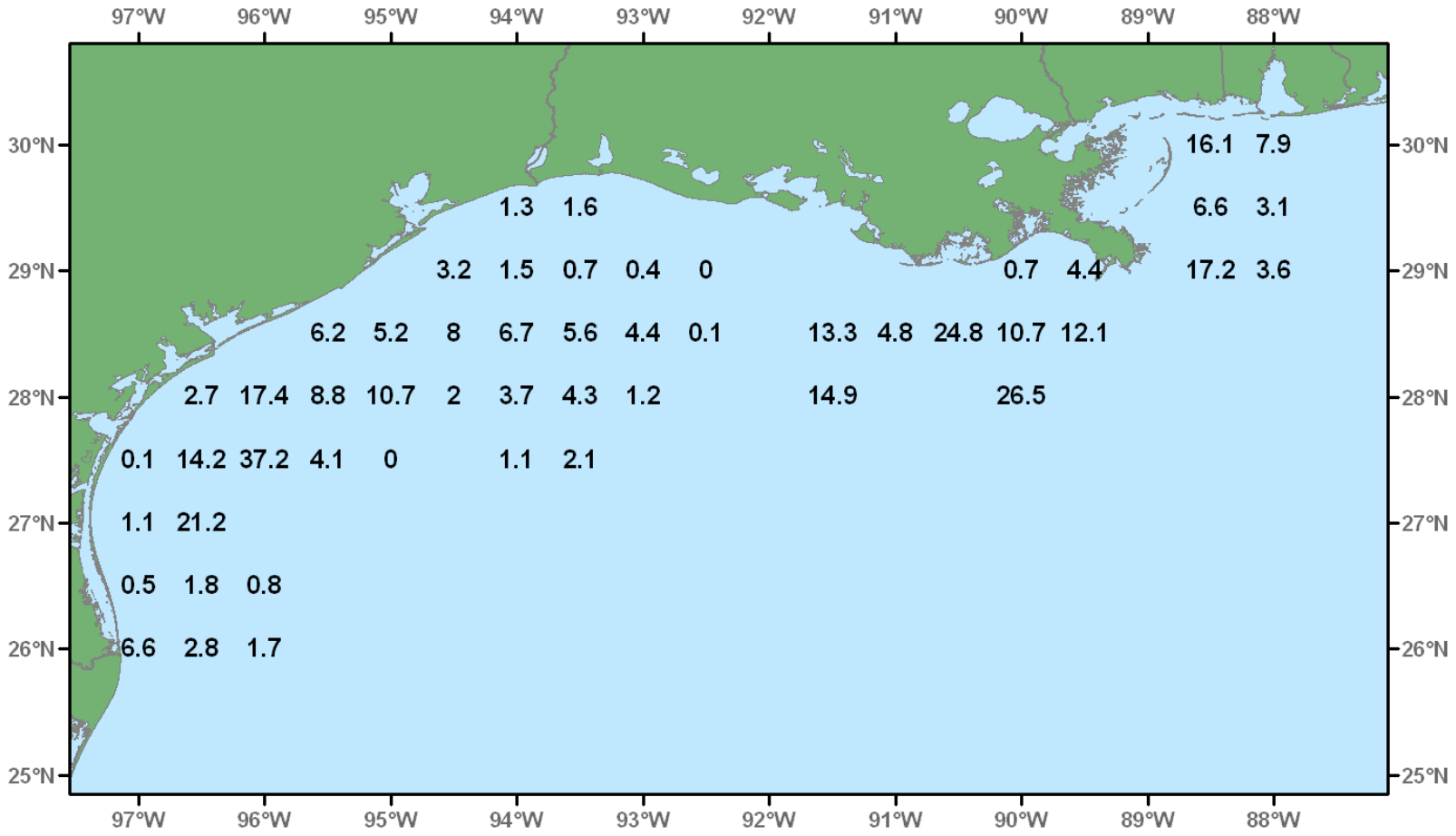


Figure 35. Brown shrimp, Farfantepenaeus aztecus, lb/hour for June-July 2003.

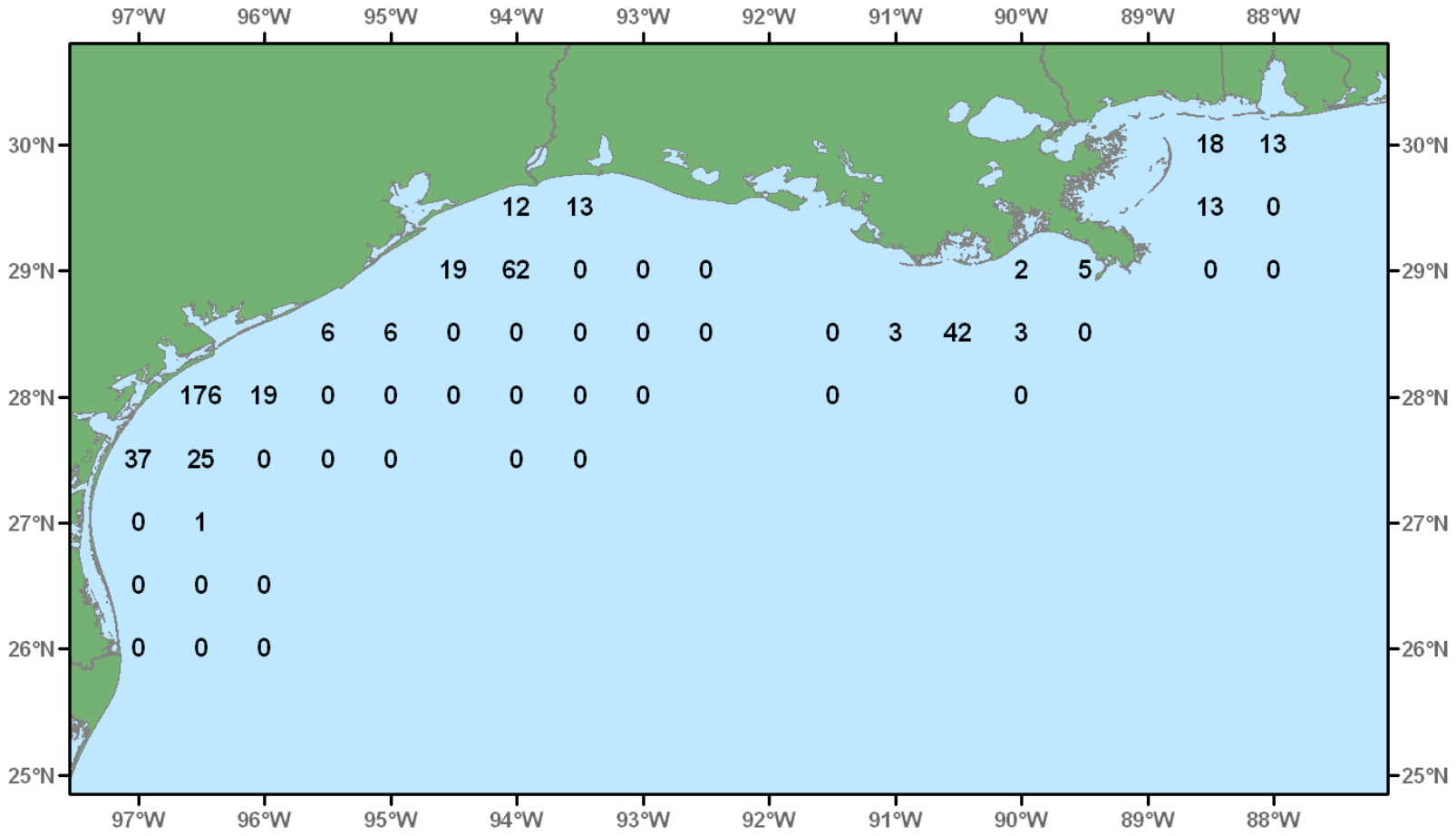


Figure 36. White shrimp, Litopenaeus setiferus, number/hour for June-July 2003.

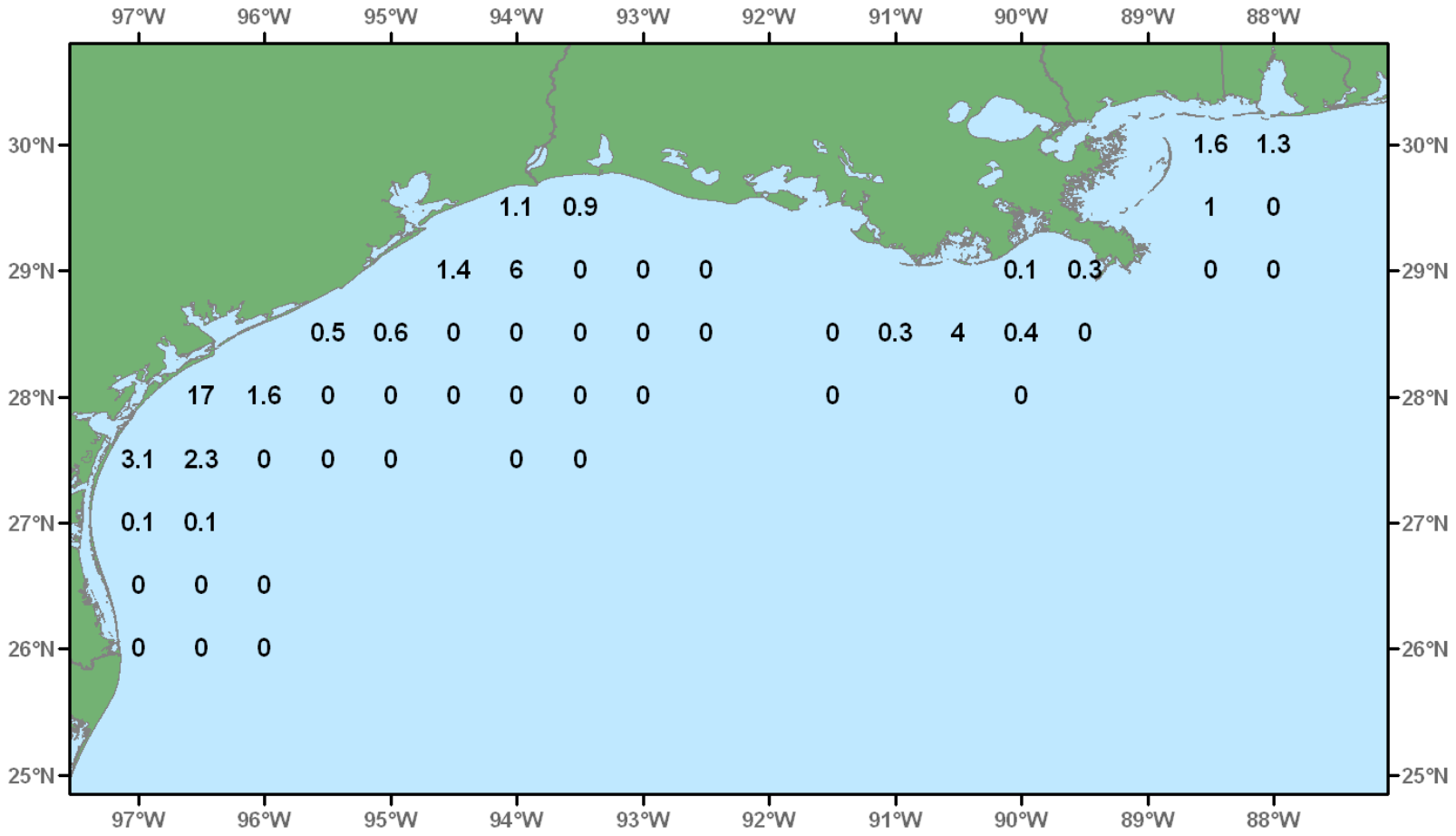


Figure 37. White shrimp, Litopenaeus setiferus, lb/hour for June-July 2003.

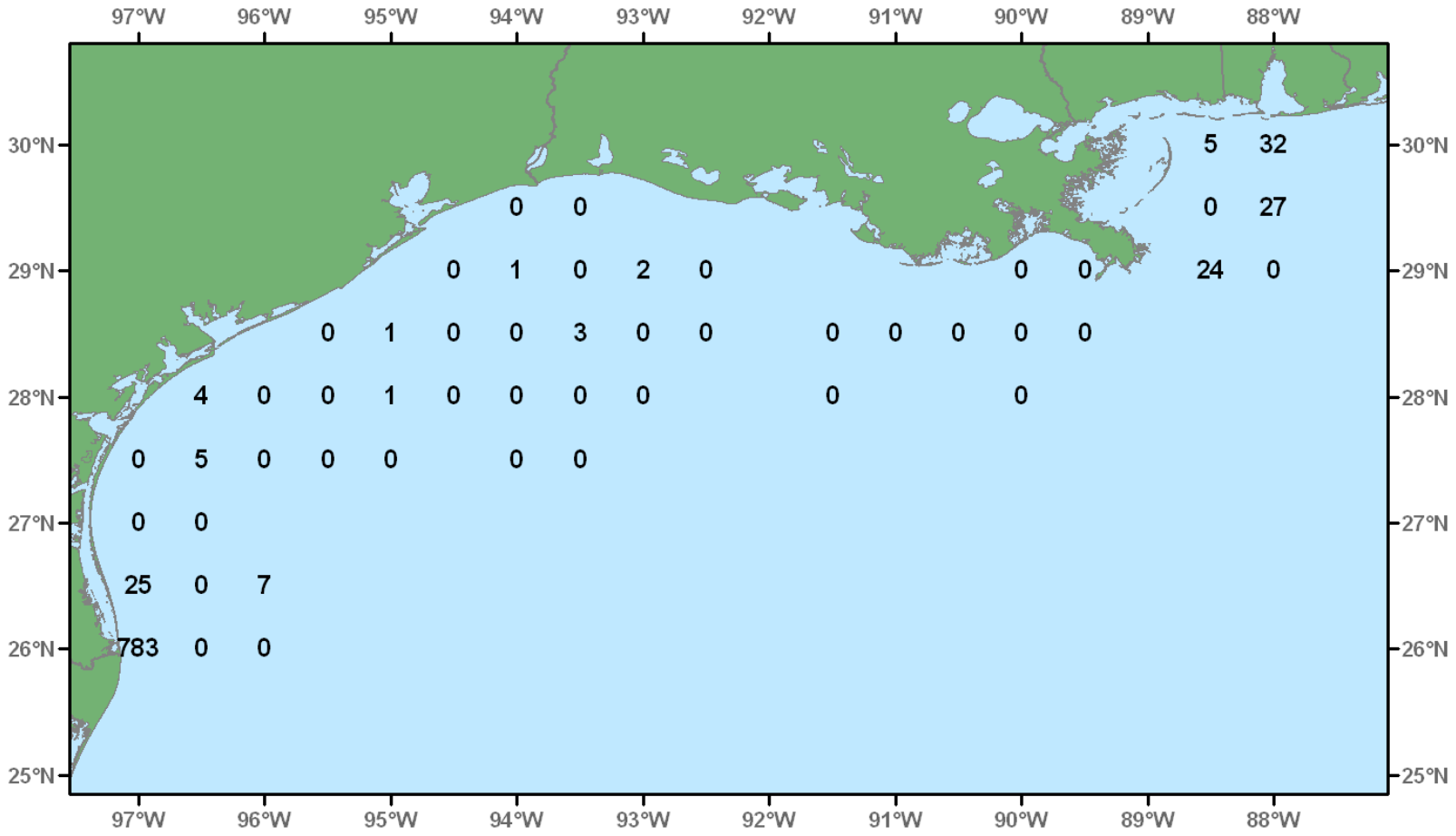


Figure 38. Pink shrimp, Farfantepenaeus duorarum, number/hour for June-July 2003.

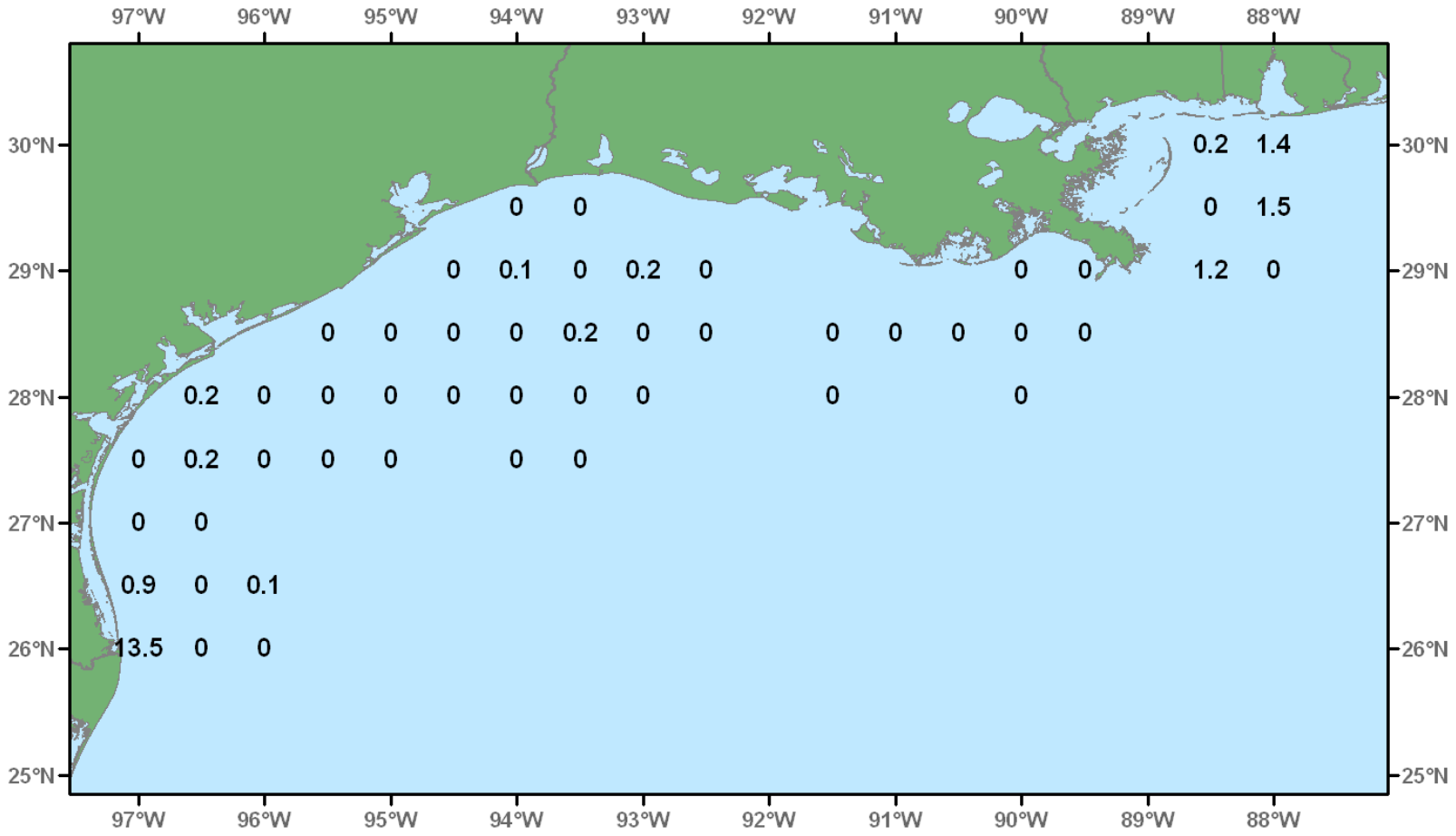


Figure 39. Pink shrimp, Farfantepenaeus duorarum, lb/hour for June-July 2003.

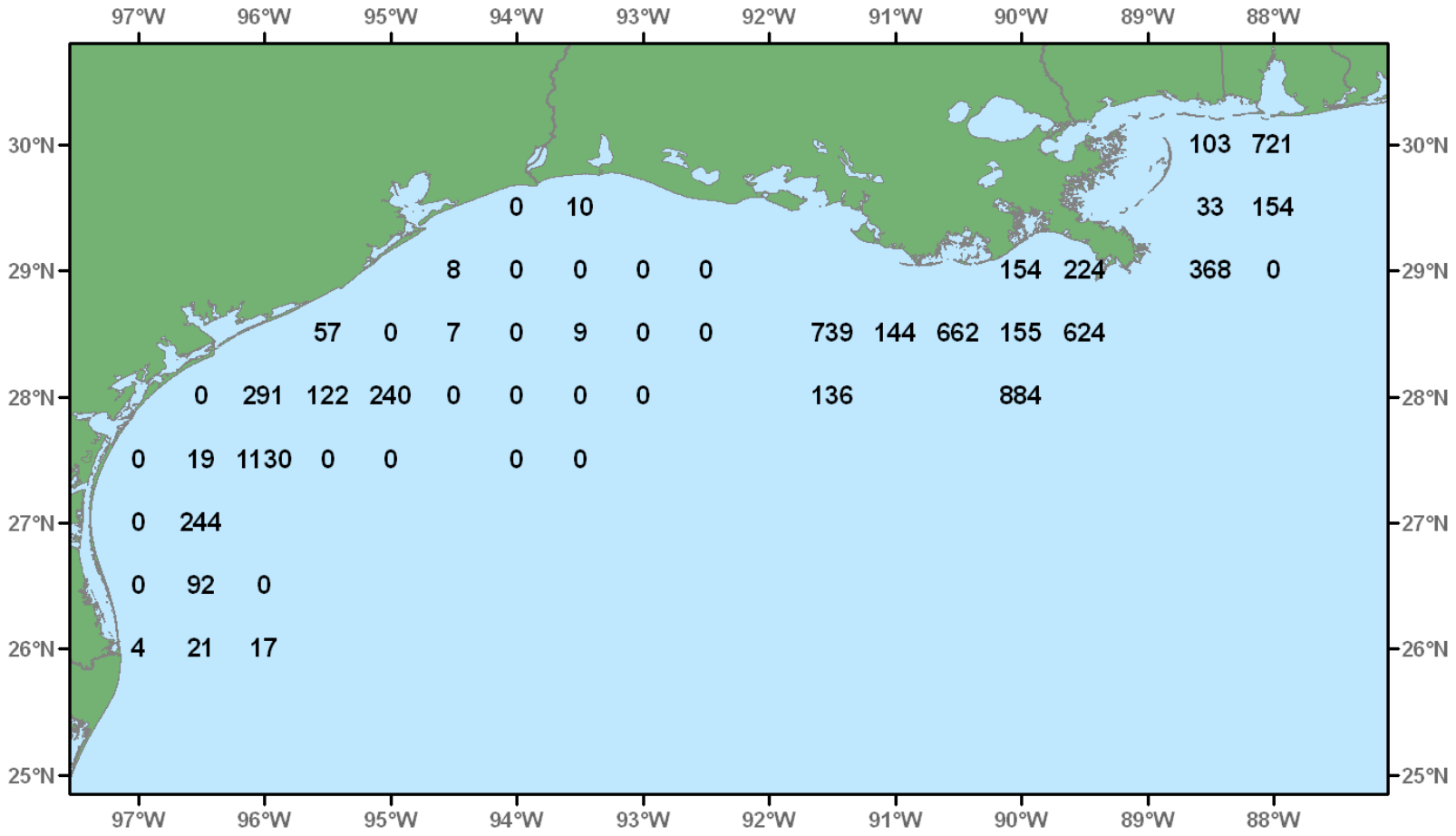


Figure 40. Roughback shrimp, Trachypenaeus similis, number/hour for June-July 2003.

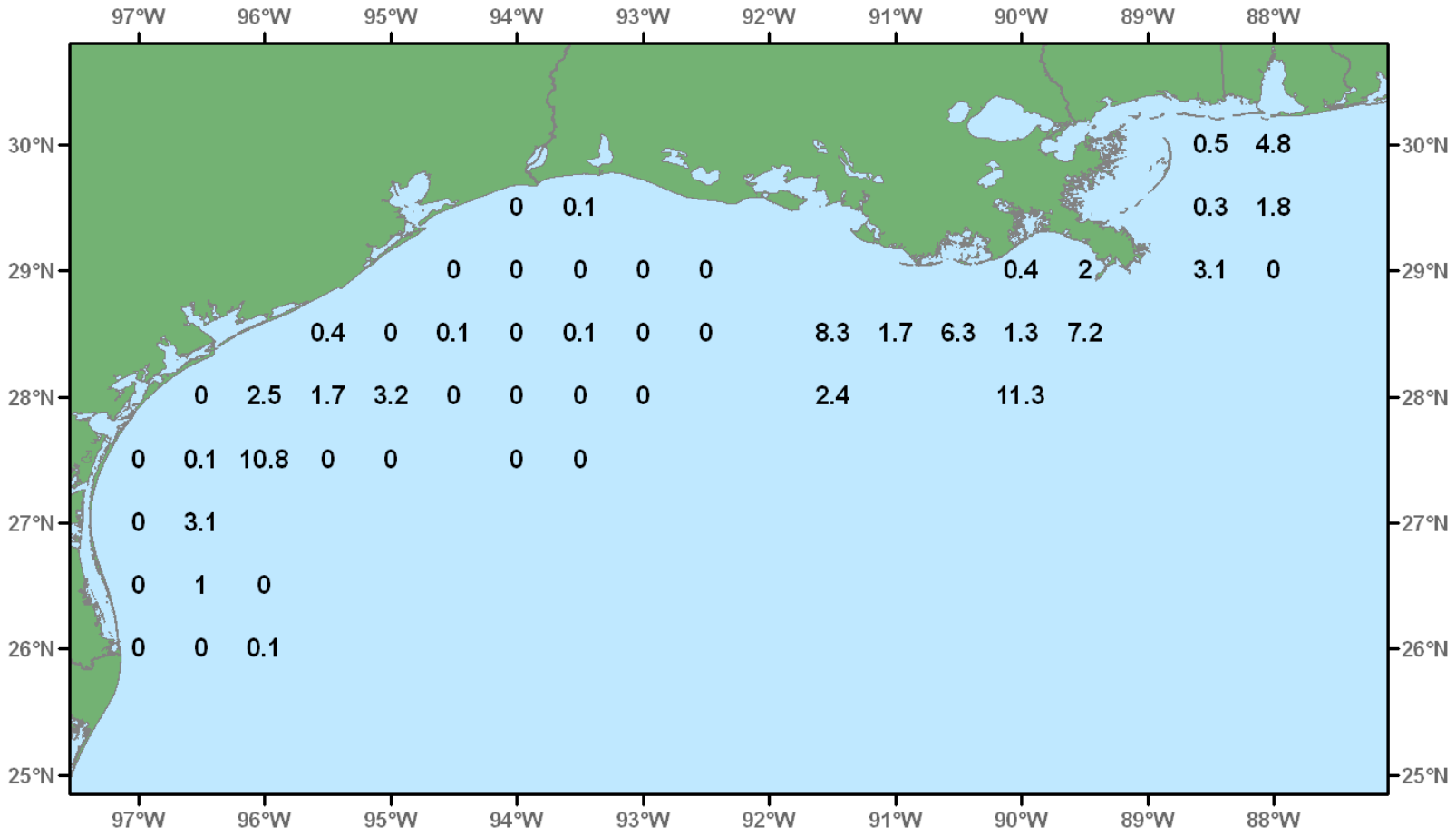


Figure 41. Roughback shrimp, Trachypenaeus similis, lb/hour for June-July 2003.

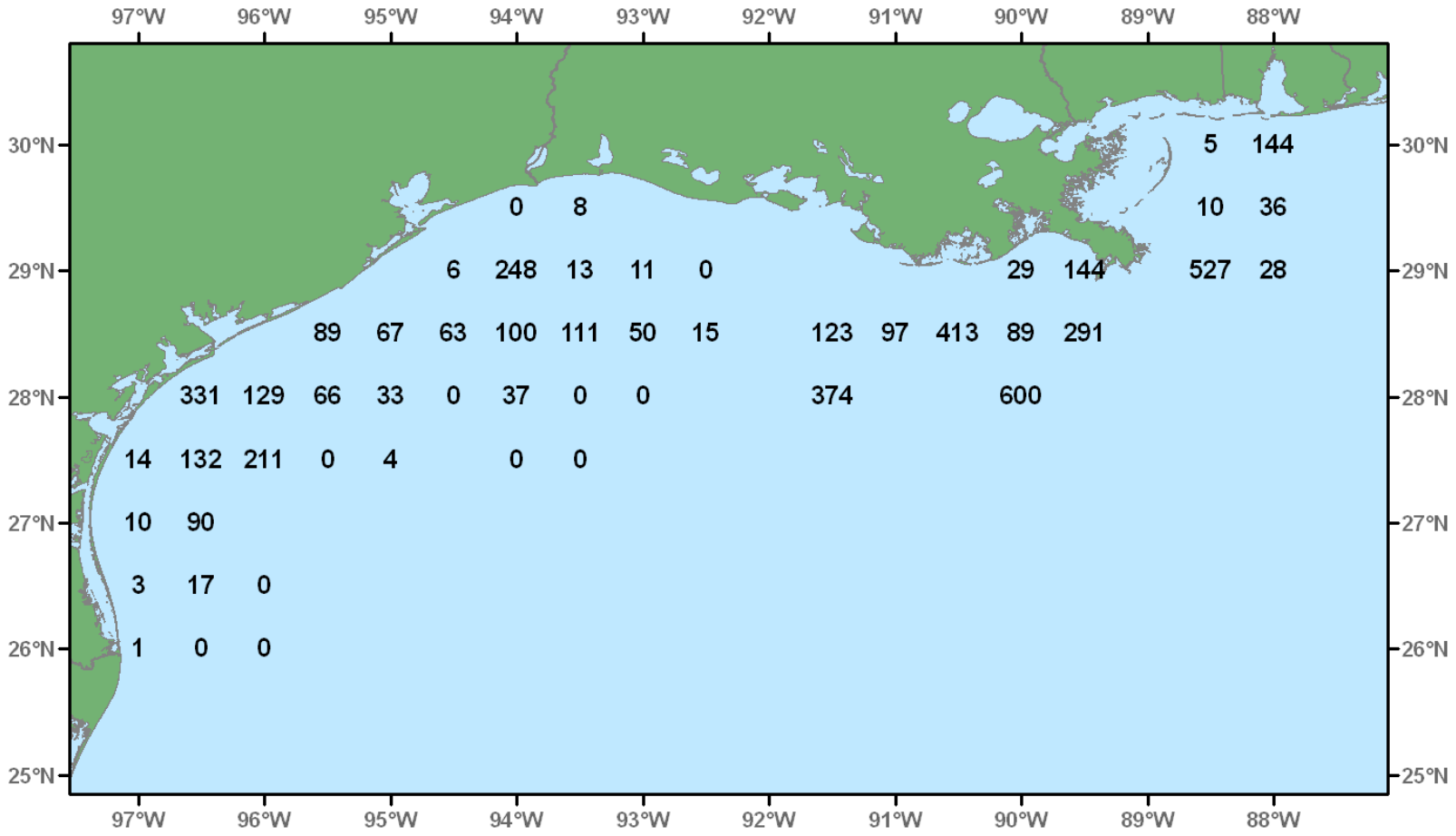


Figure 42. Lesser blue crab, Callinectes similis, number/hour for June-July 2003.

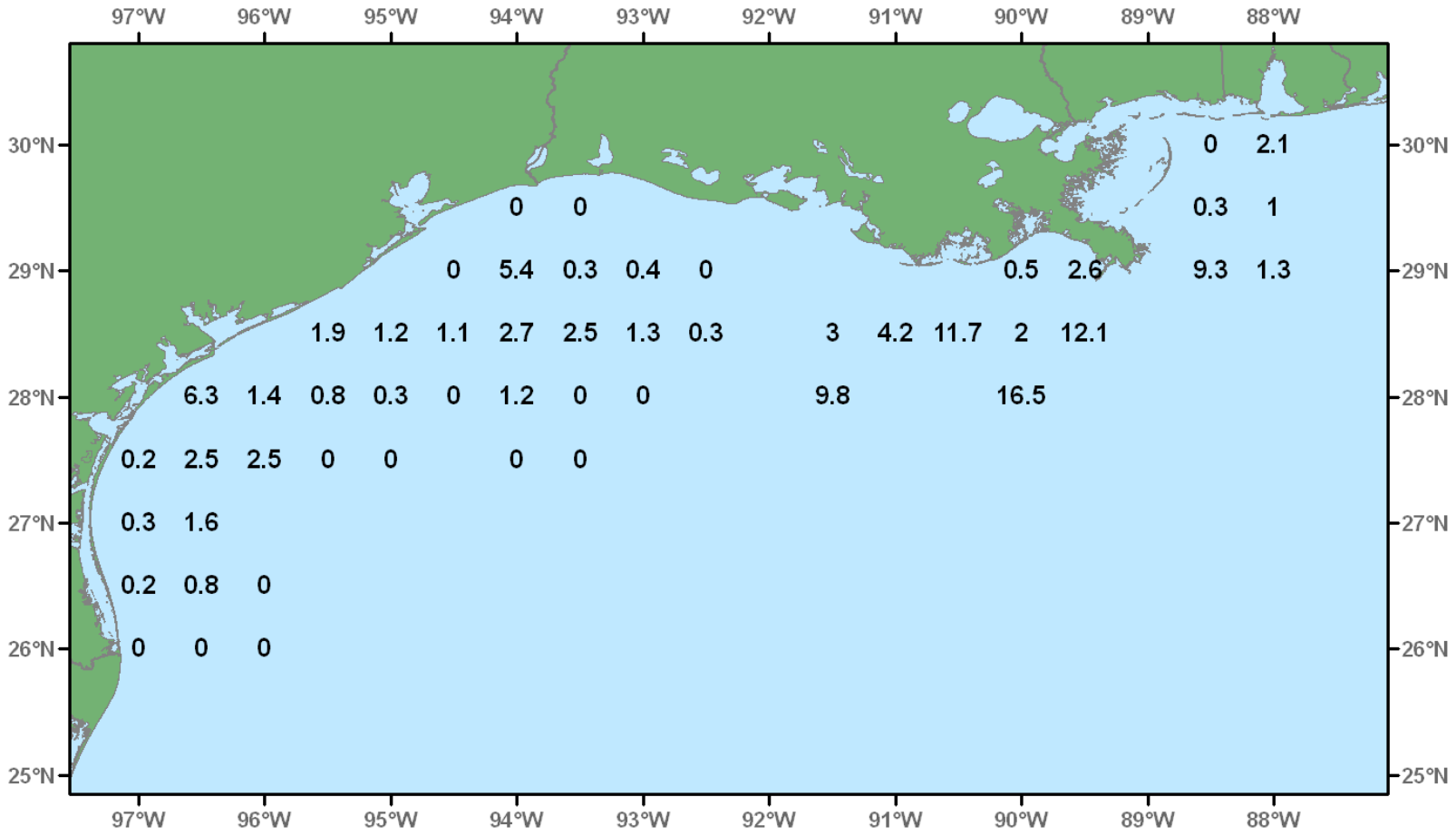


Figure 43. Lesser blue crab, Callinectes similis, lb/hour for June-July 2003.

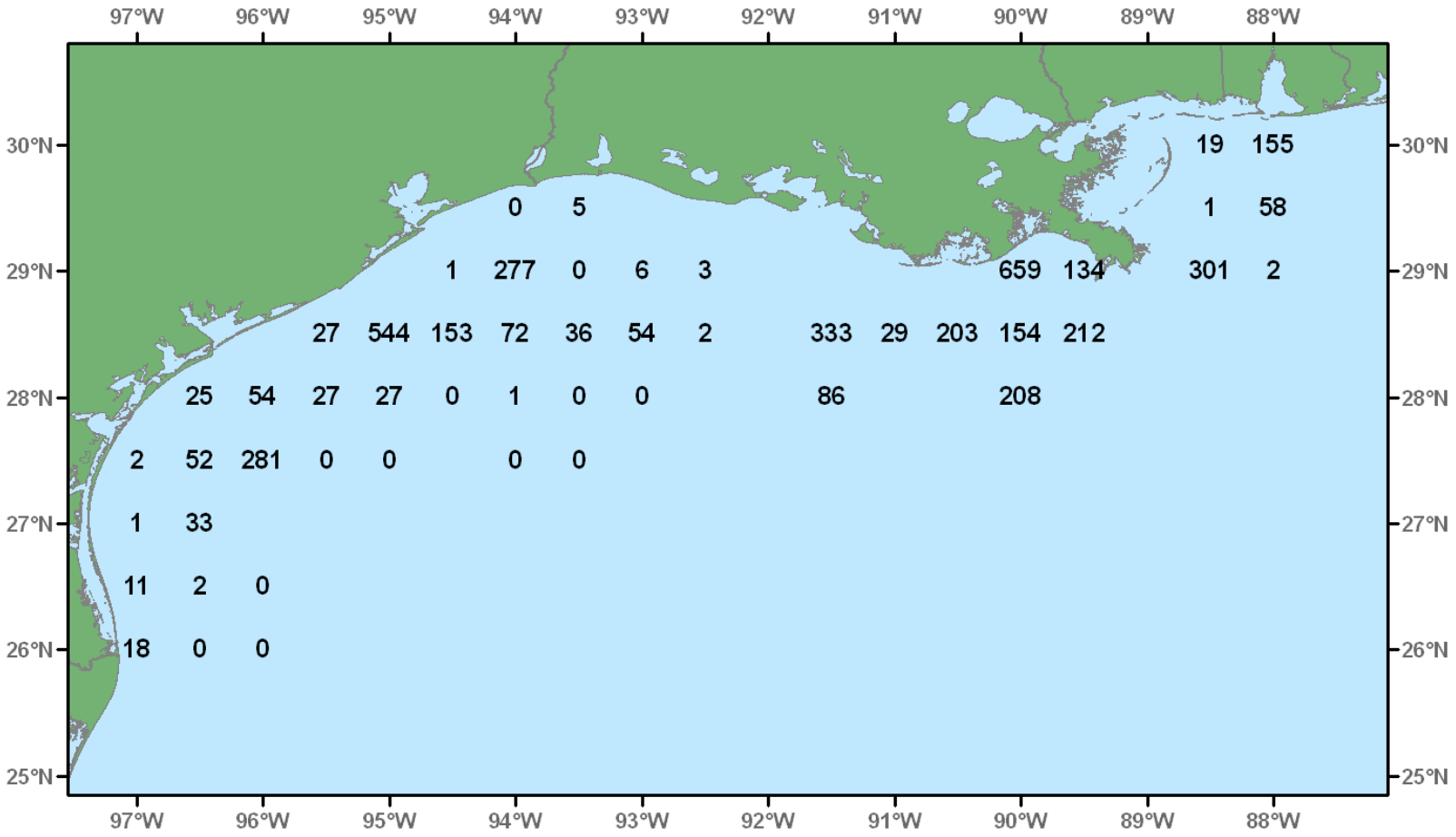


Figure 44. Mantis shrimp, Squilla empusa, number/hour for June-July 2003.

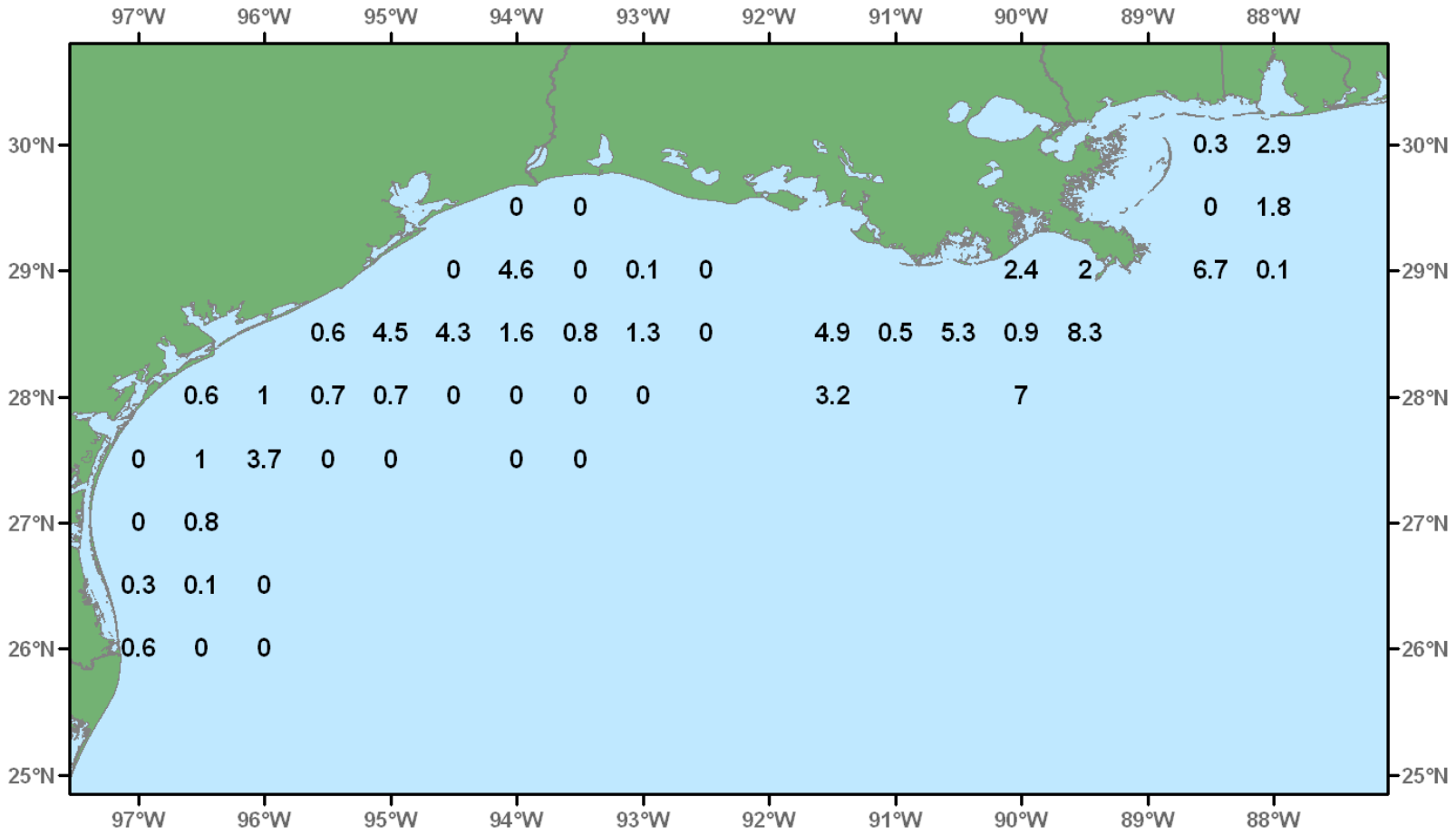


Figure 45. Mantis shrimp, Squilla empusa, lb/hour for June-July 2003.

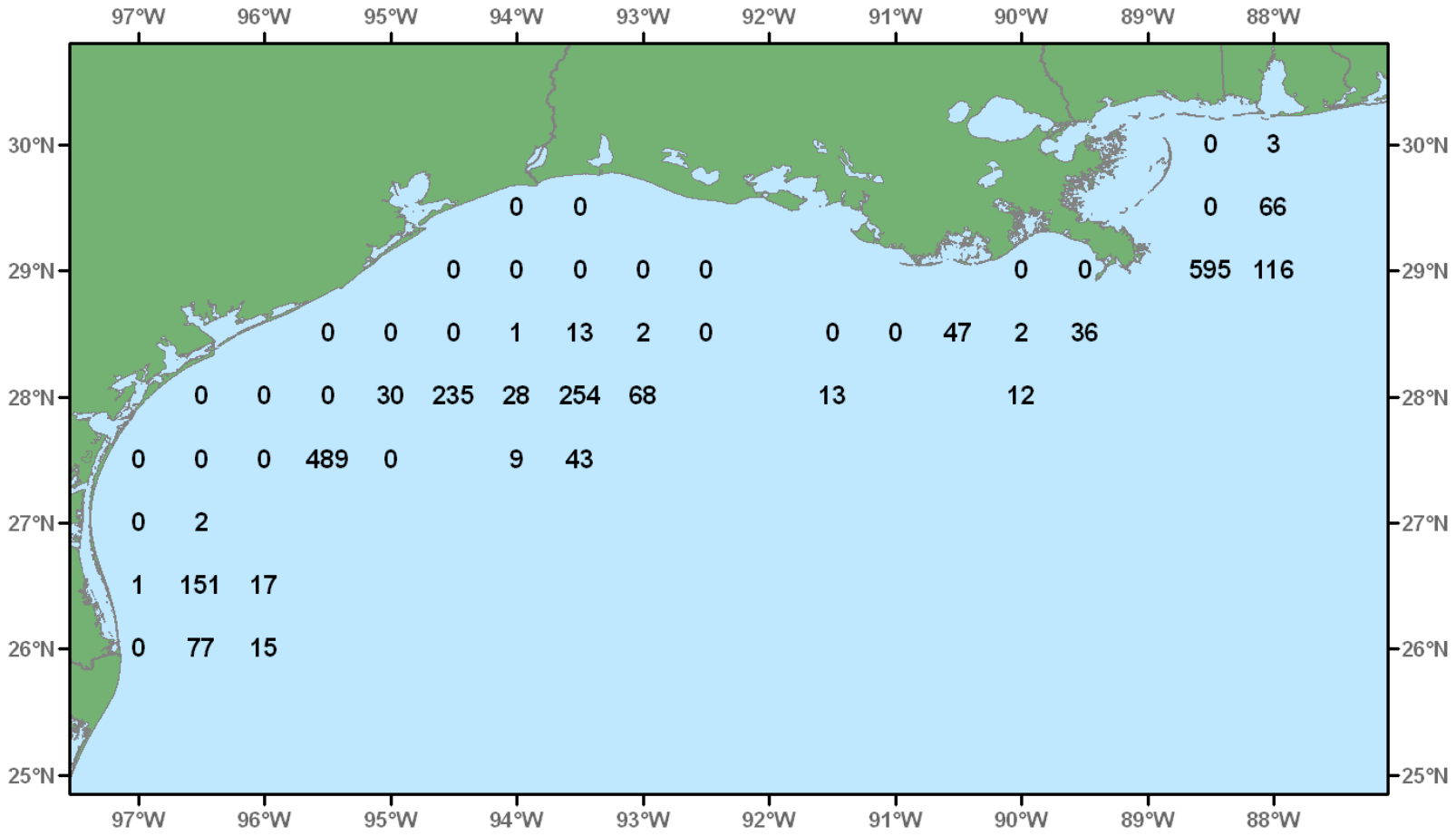


Figure 46. Longspine swimming crab, Portunis spinicarpus, number/hour for June-July 2003.

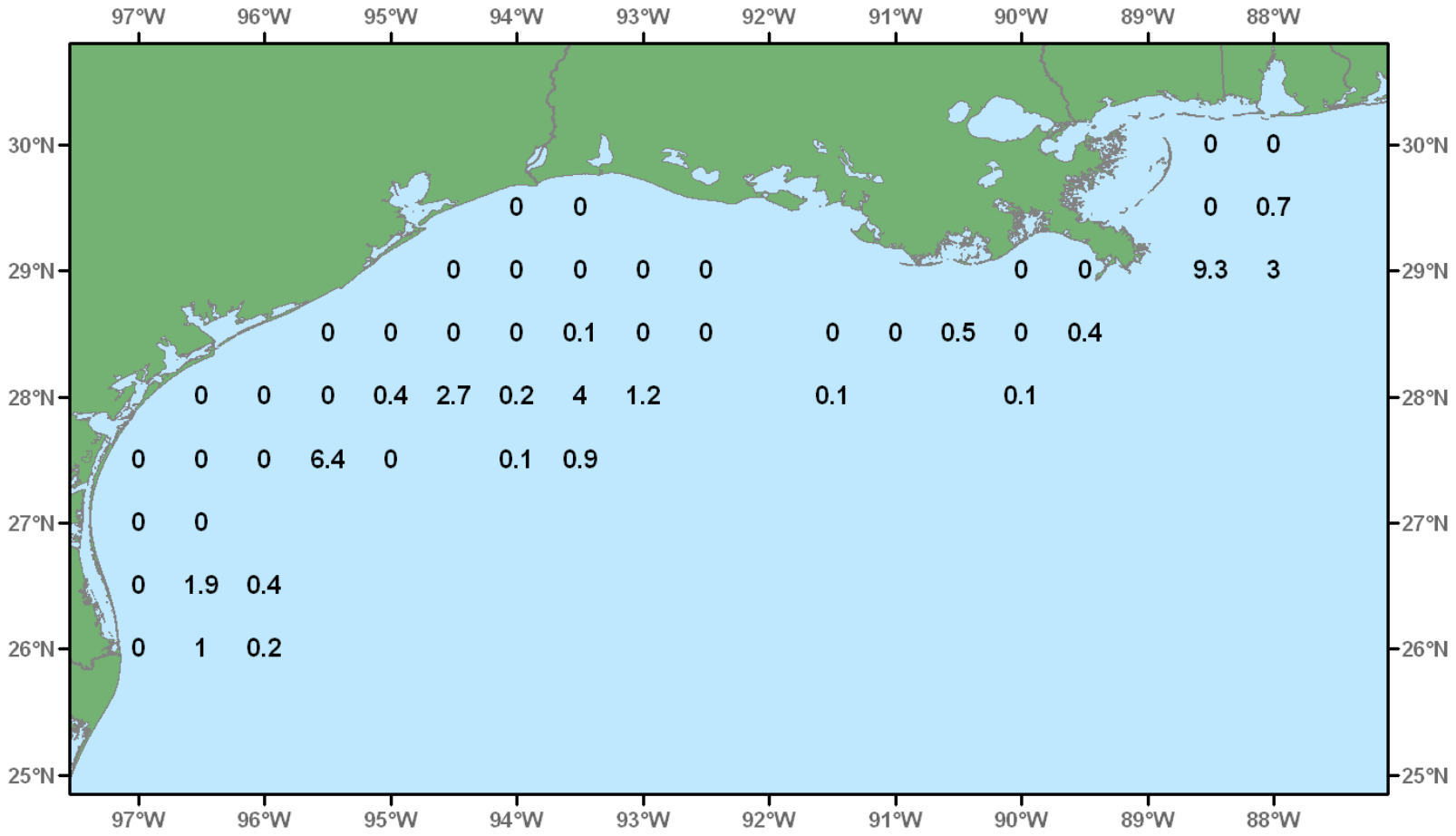


Figure 47. Longspine swimming crab, Portunis spinicarpus, lb/hour for June-July 2003.

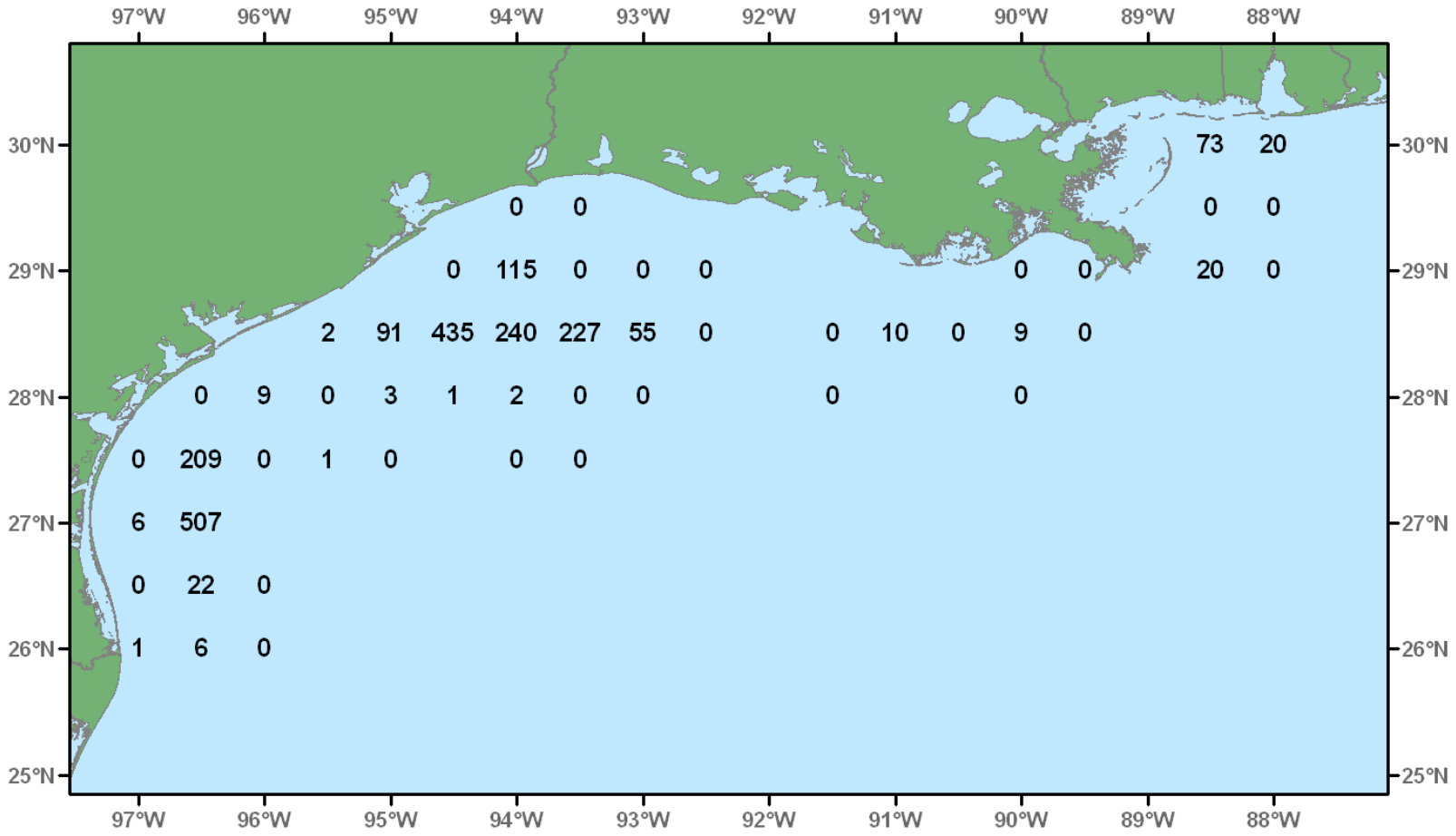


Figure 48. Roughneck shrimp, Trachypenaeus constrictus, number/hour for June-July 2003.

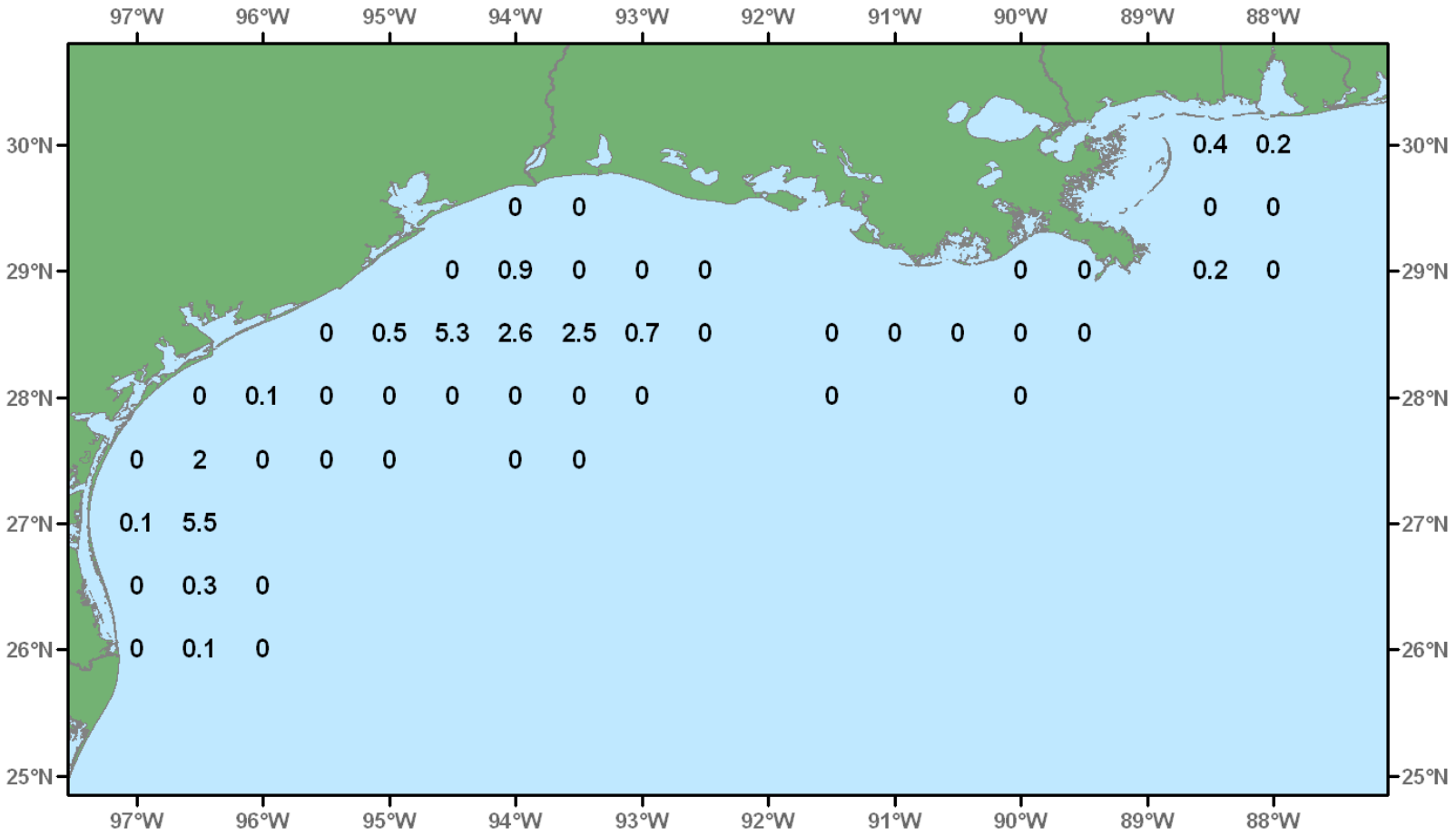


Figure 49. Roughneck shrimp, Trachypenaeus constrictus, lb/hour for June-July 2003.

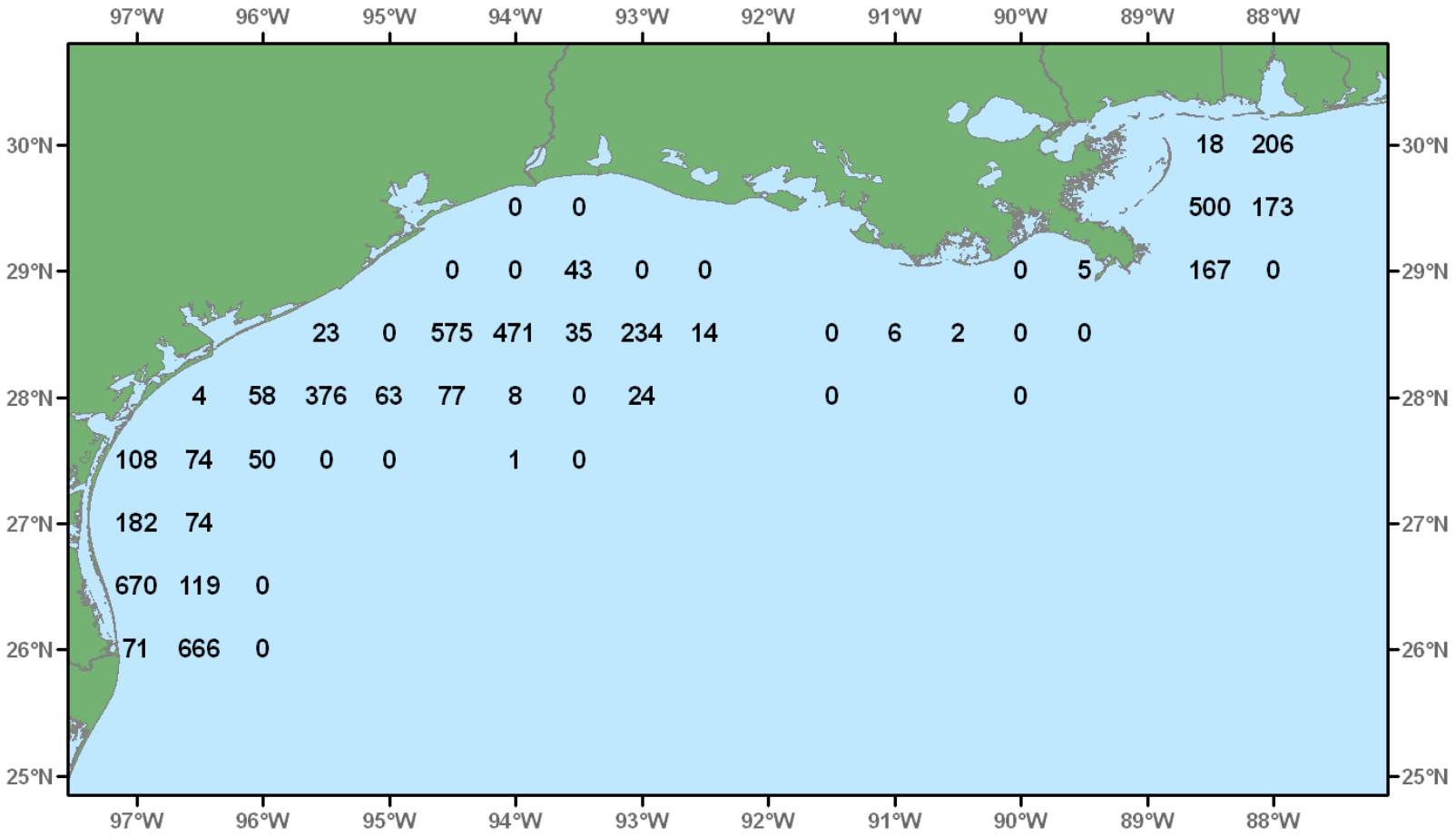


Figure 50. Arrow squid, Loligo pleii, number/hour for June-July 2003.

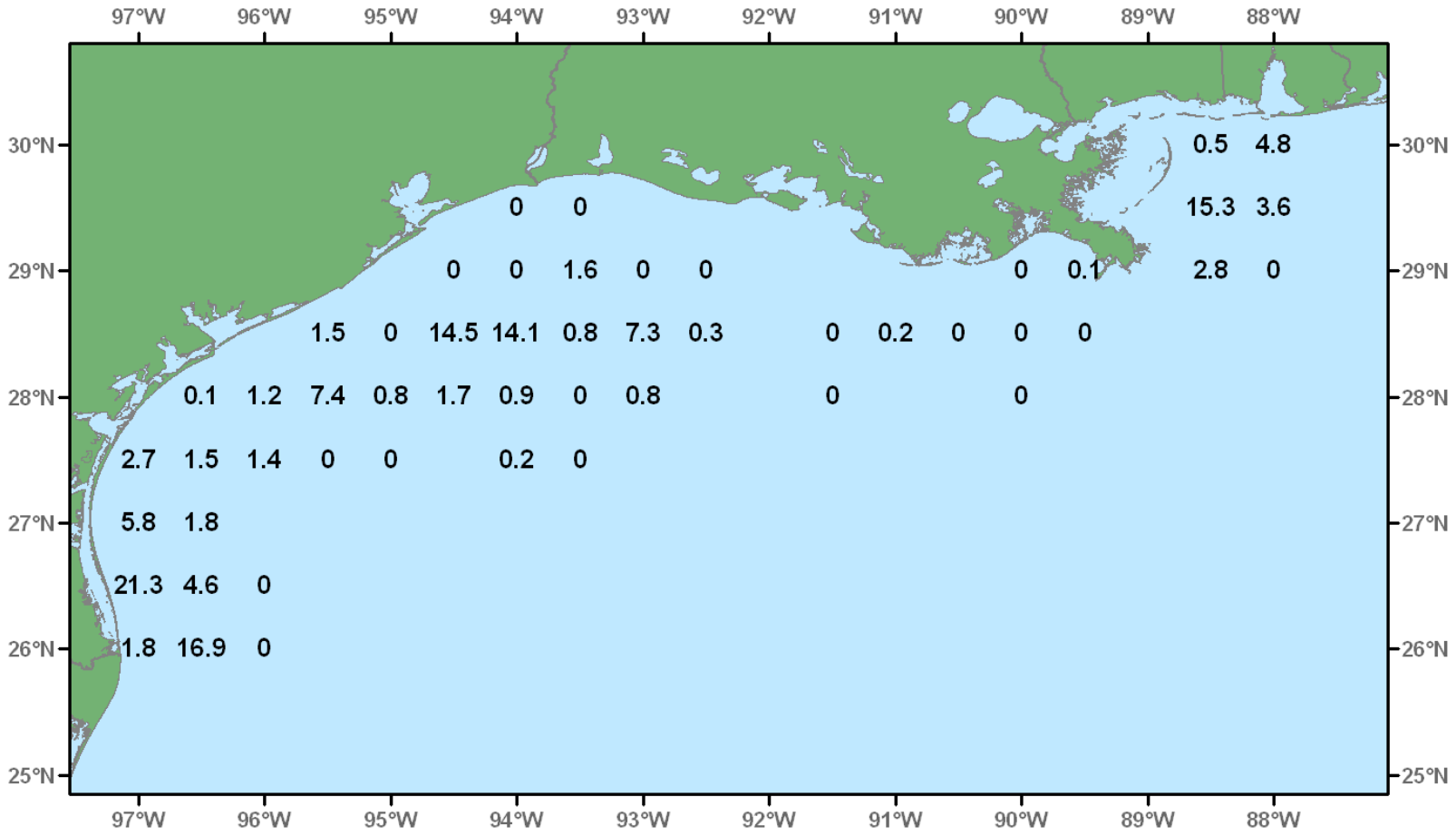


Figure 51. Arrow squid, Loligo pleii, lb/hour for June-July 2003.

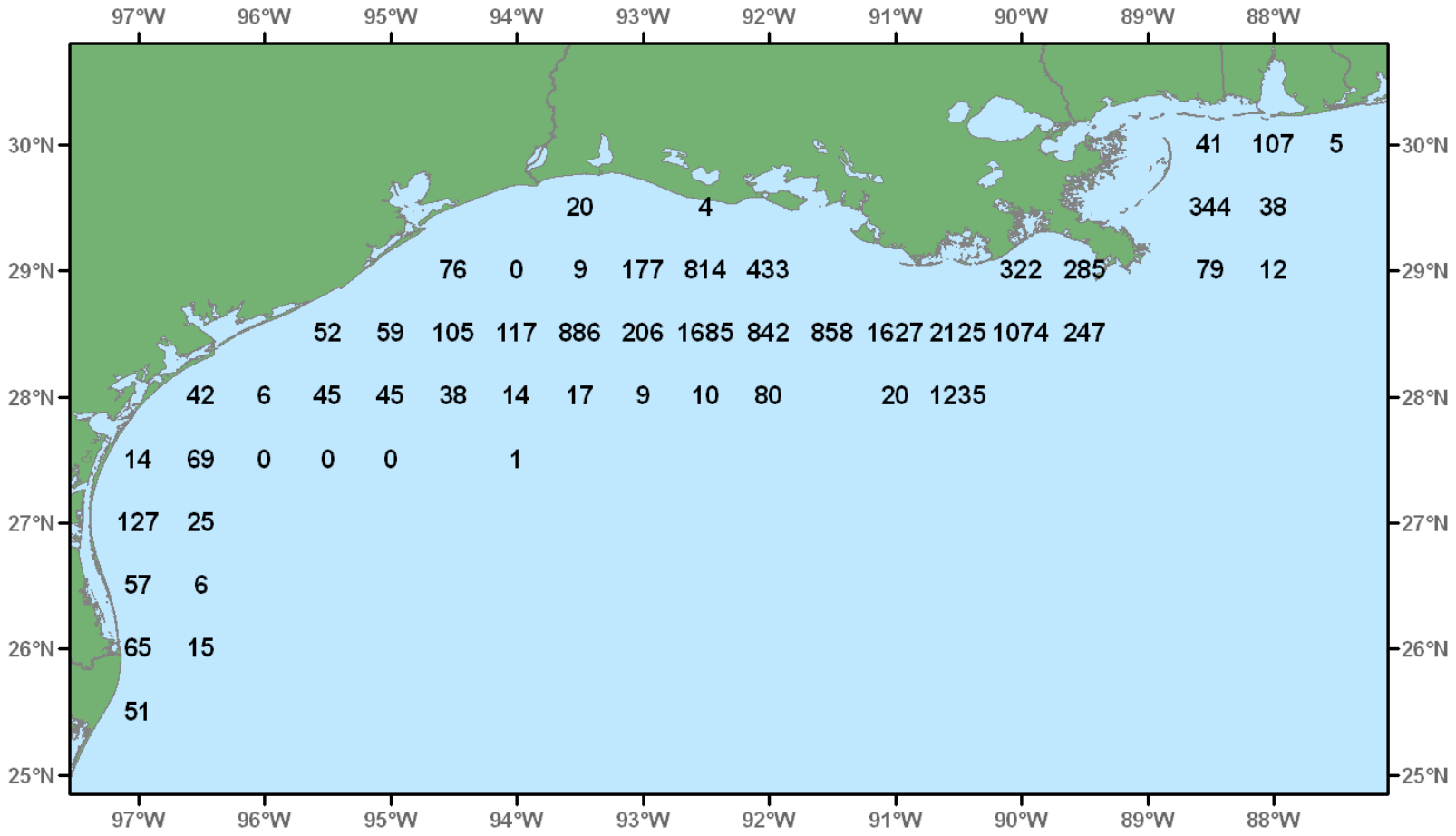


Figure 52. Atlantic croaker, Micropogonias undulatus, number/hour for October-December 2003.

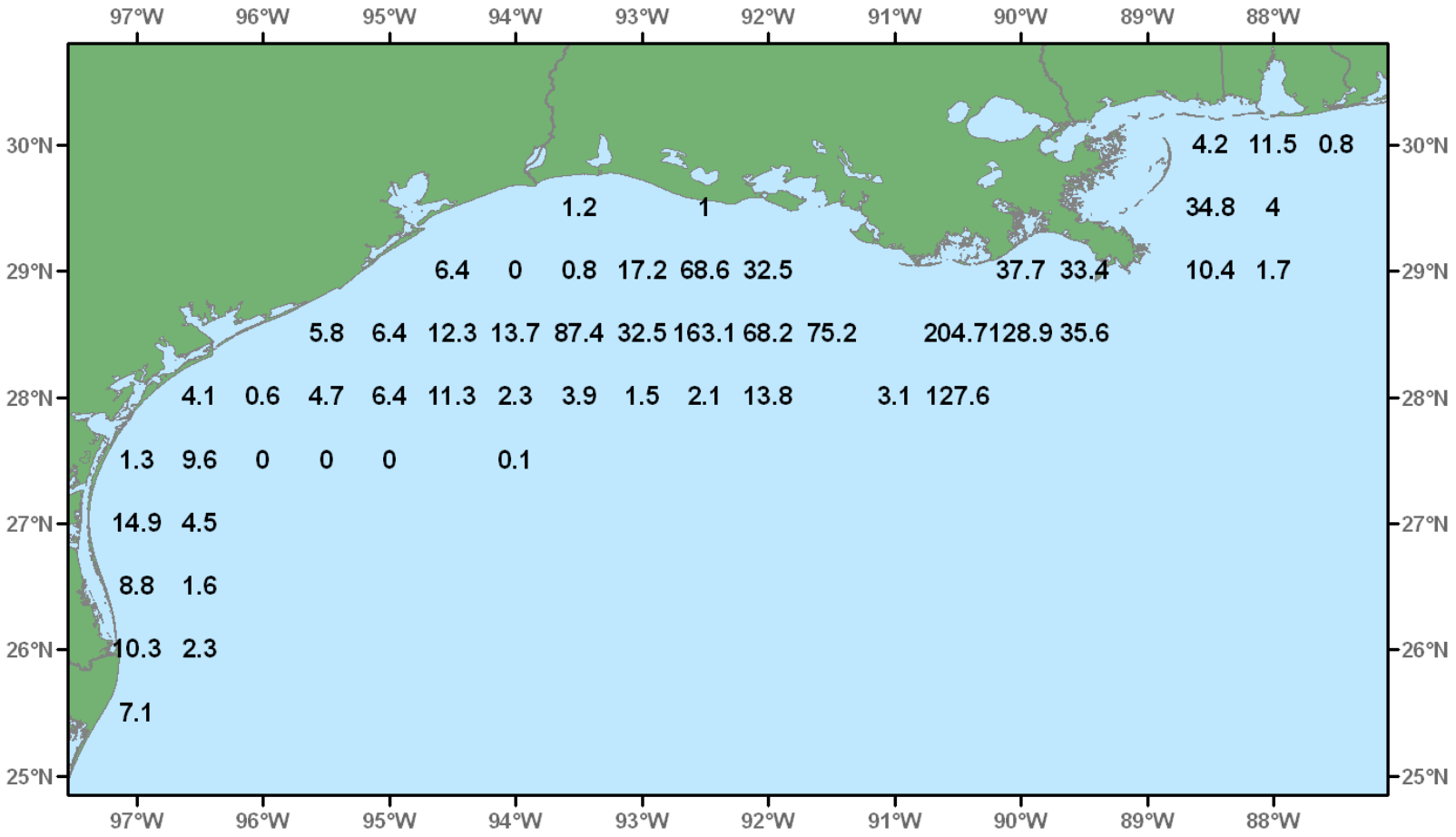


Figure 53. Atlantic croaker, Micropogonias undulatus, lb/hour for October-December 2003.

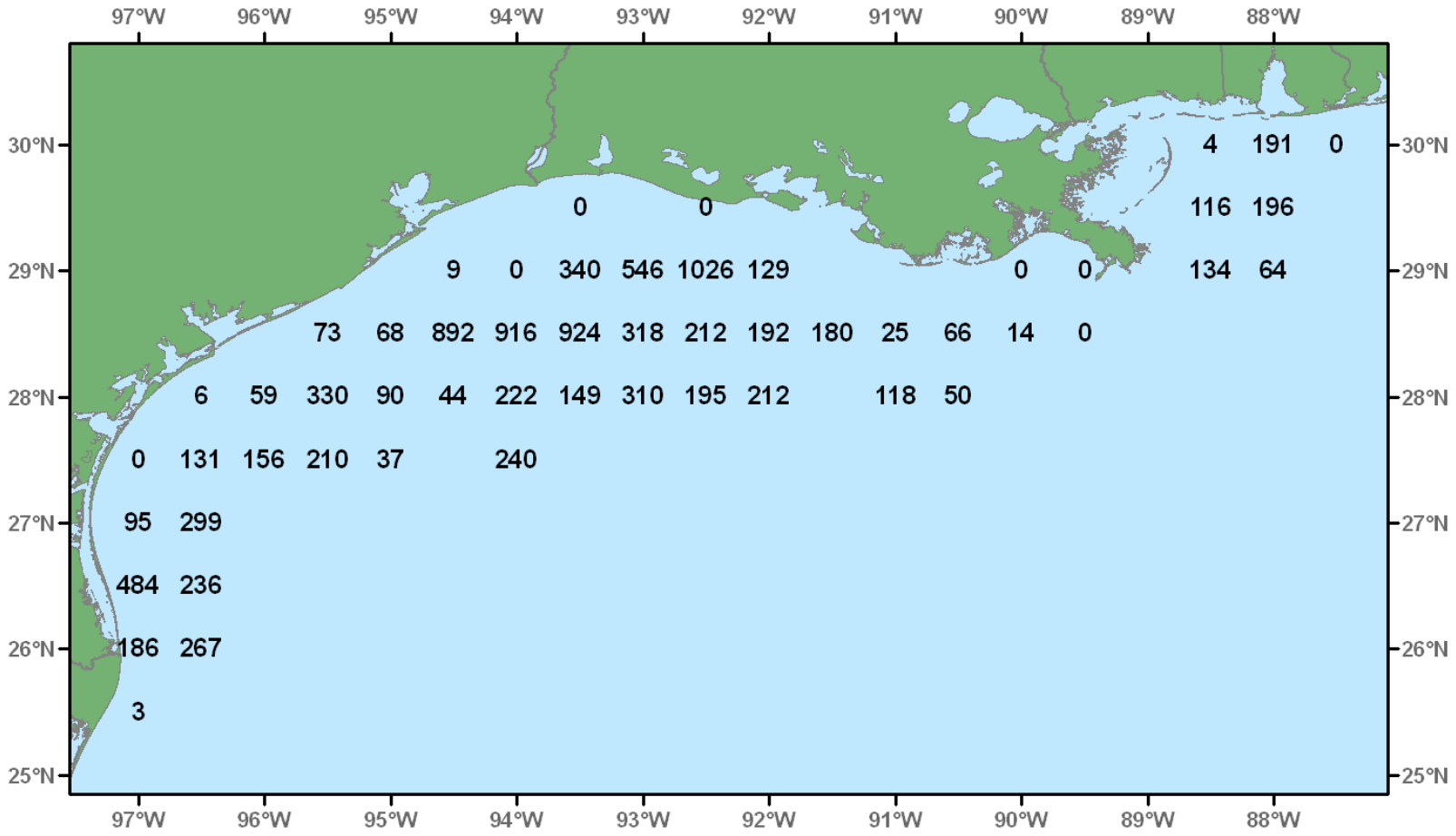


Figure 54. Longspine porgy, Stenotomus caprinus, number/hour for October-December 2003.

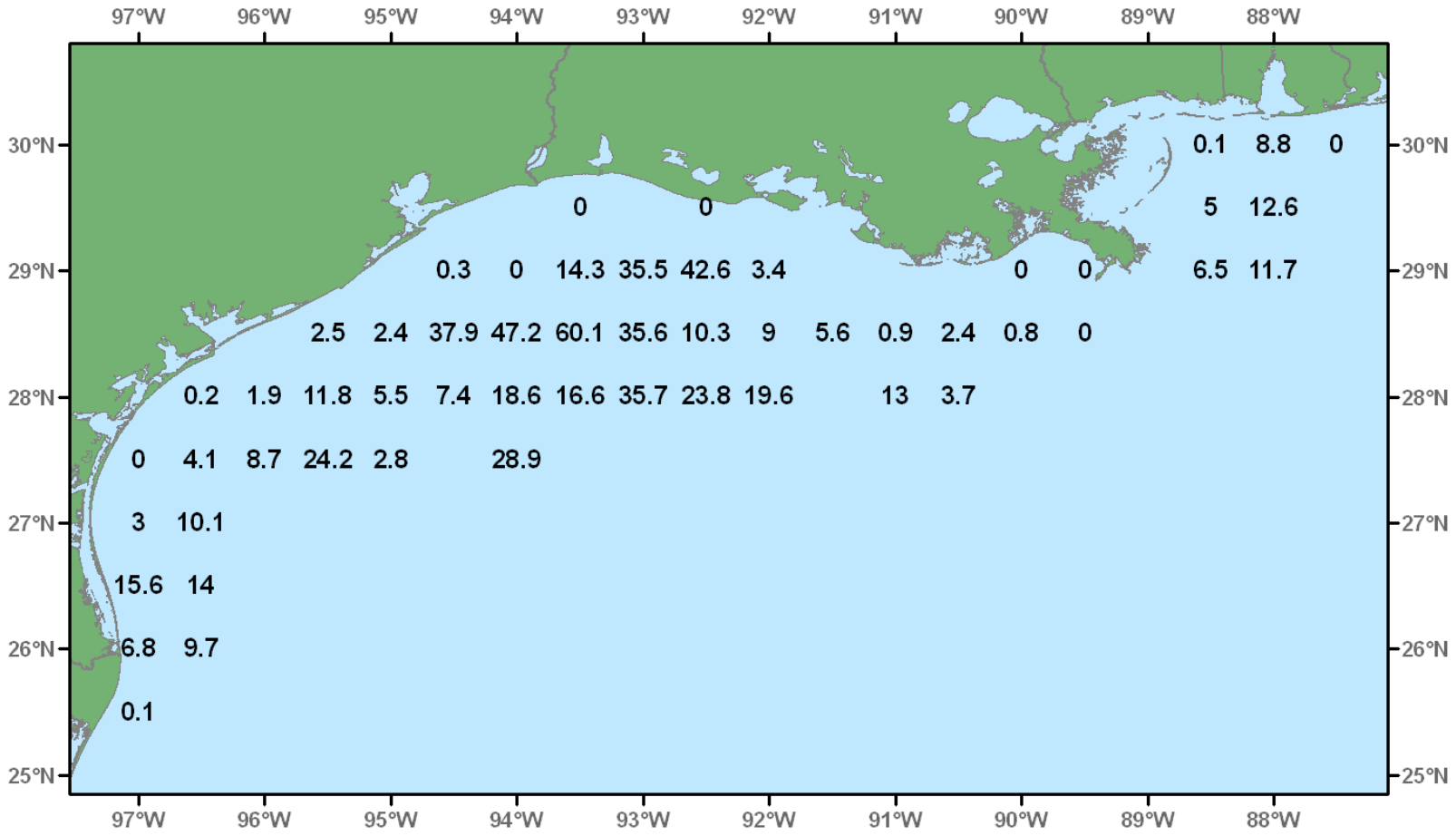


Figure 55. Longspine porgy, Stenotomus caprinus, lb/hour for October-December 2003.

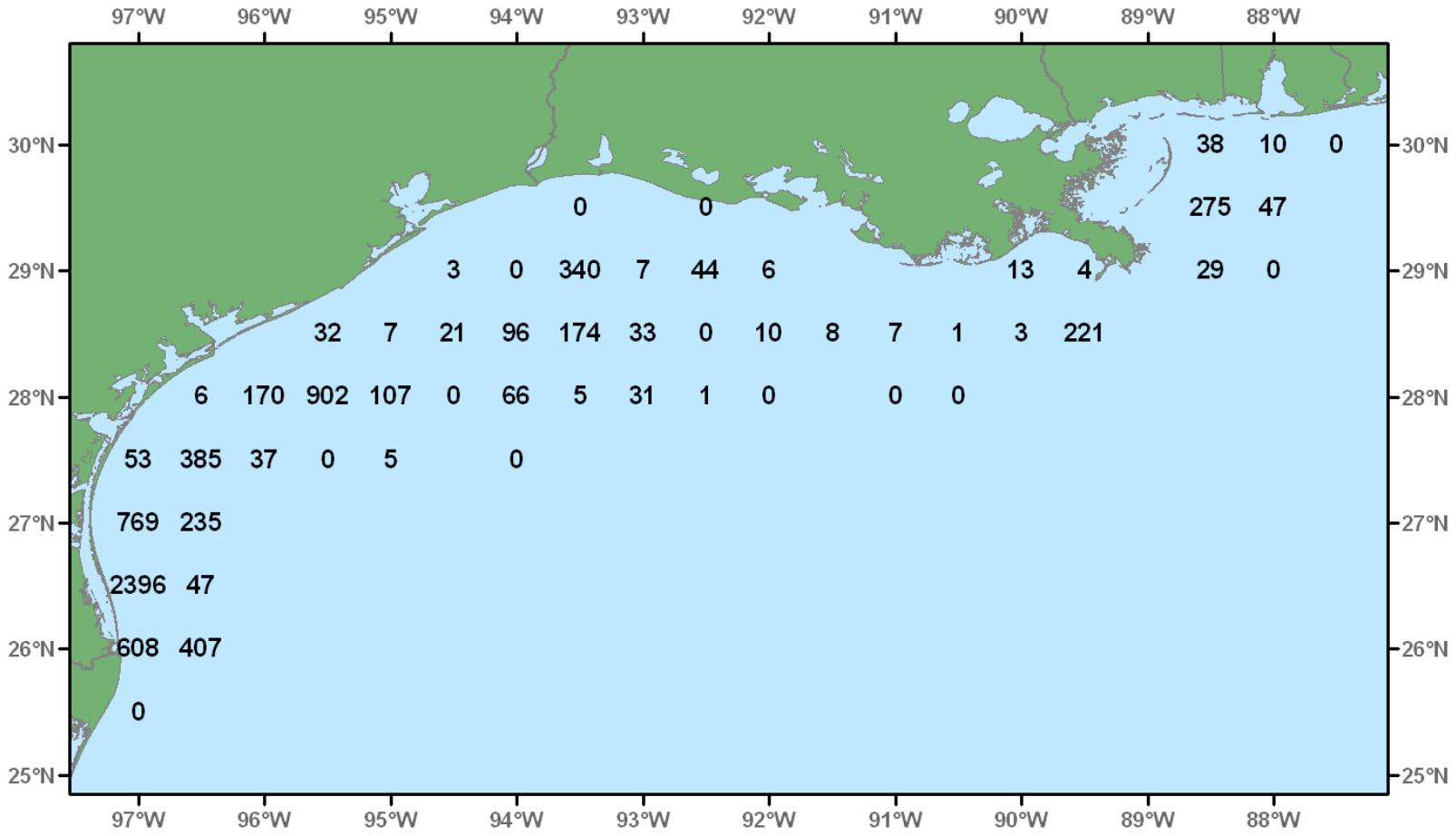


Figure 56. Atlantic bumper, Chloroscombrus chrysurus, number/hour for October-December 2003.

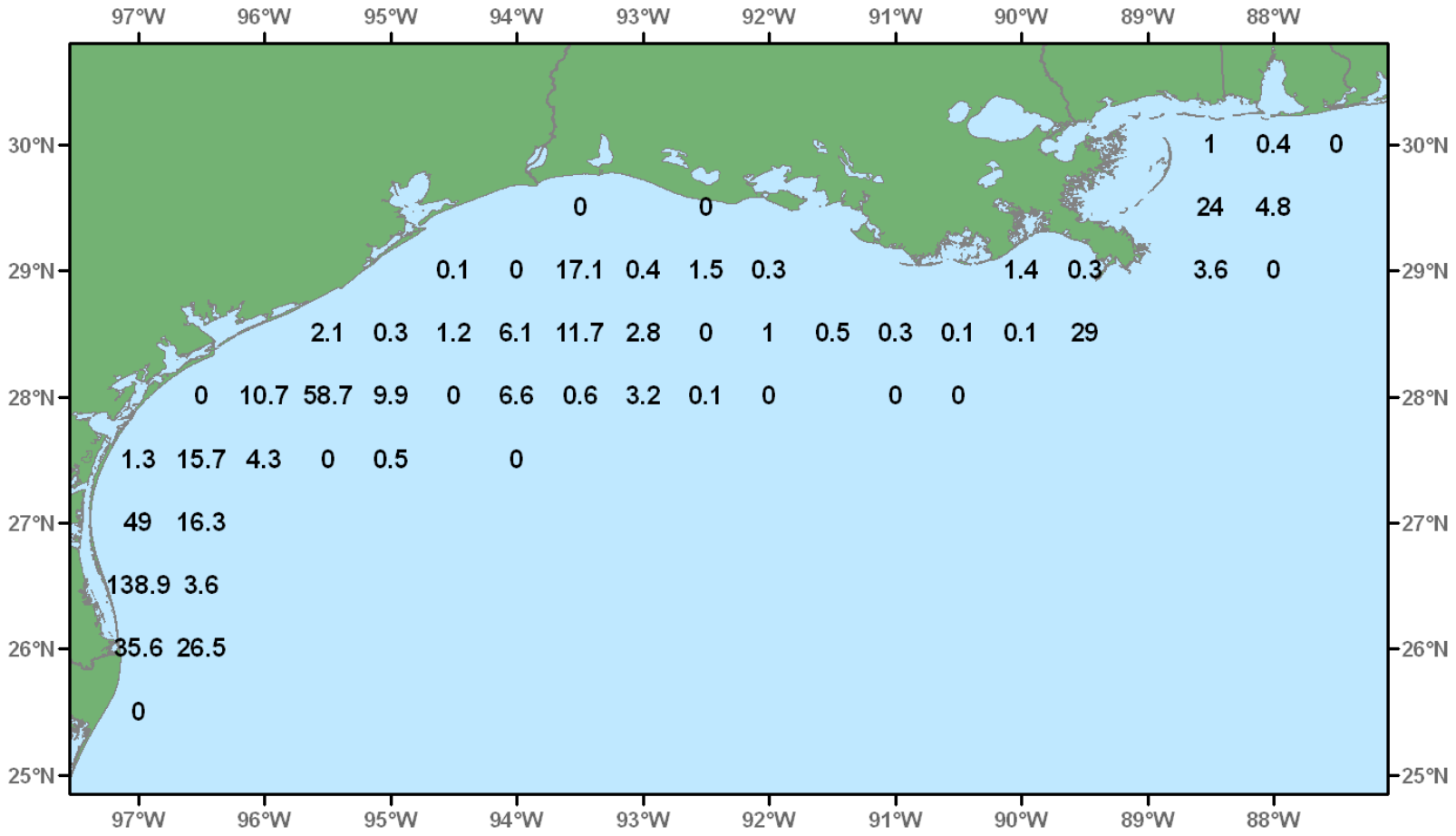


Figure 57. Atlantic bumper, Chloroscombrus chrysurus, lb/hour for October-December 2003.

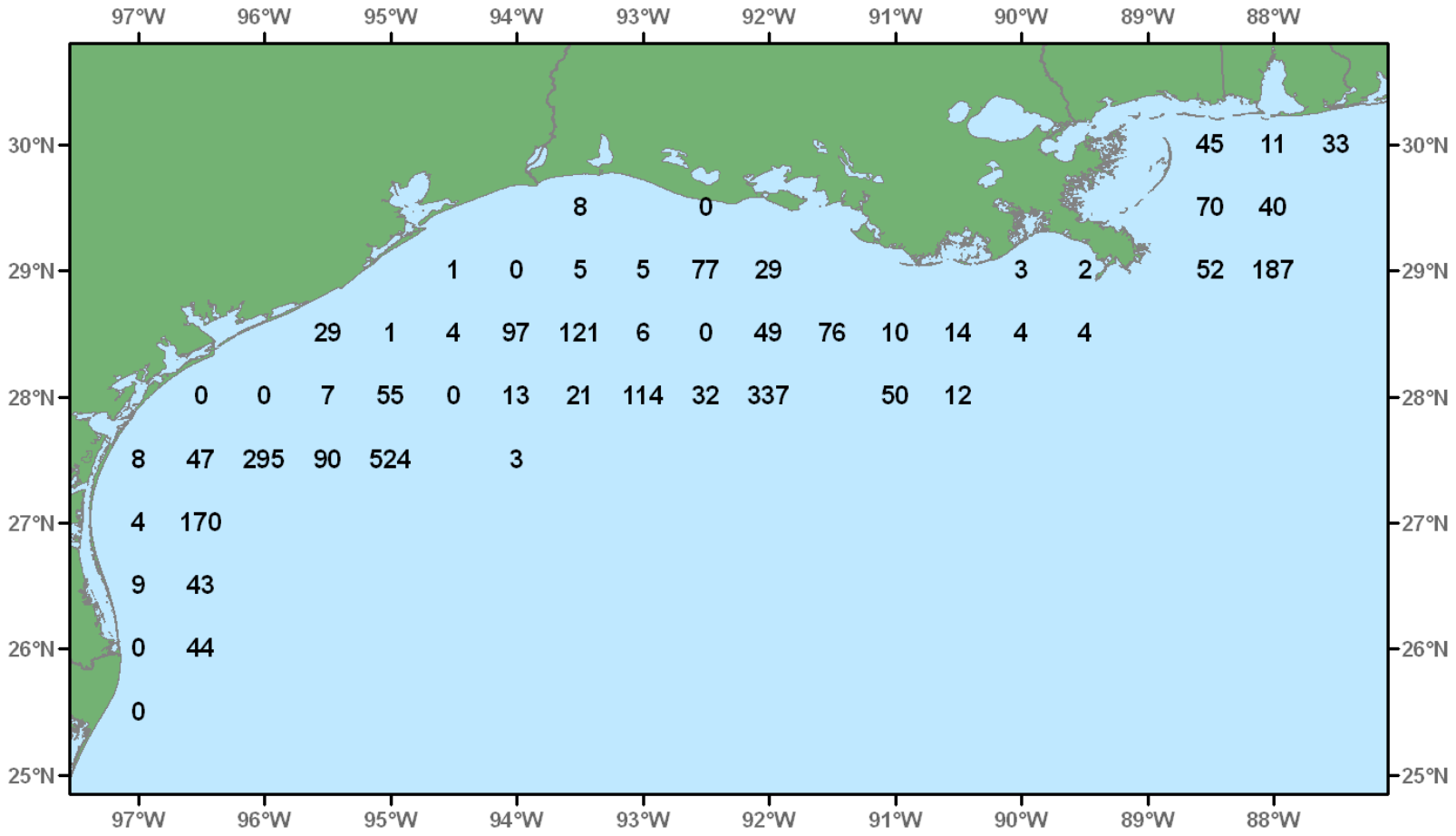


Figure 58. Gulf butterfish, Peprilus burti, number/hour for October-December 2003.

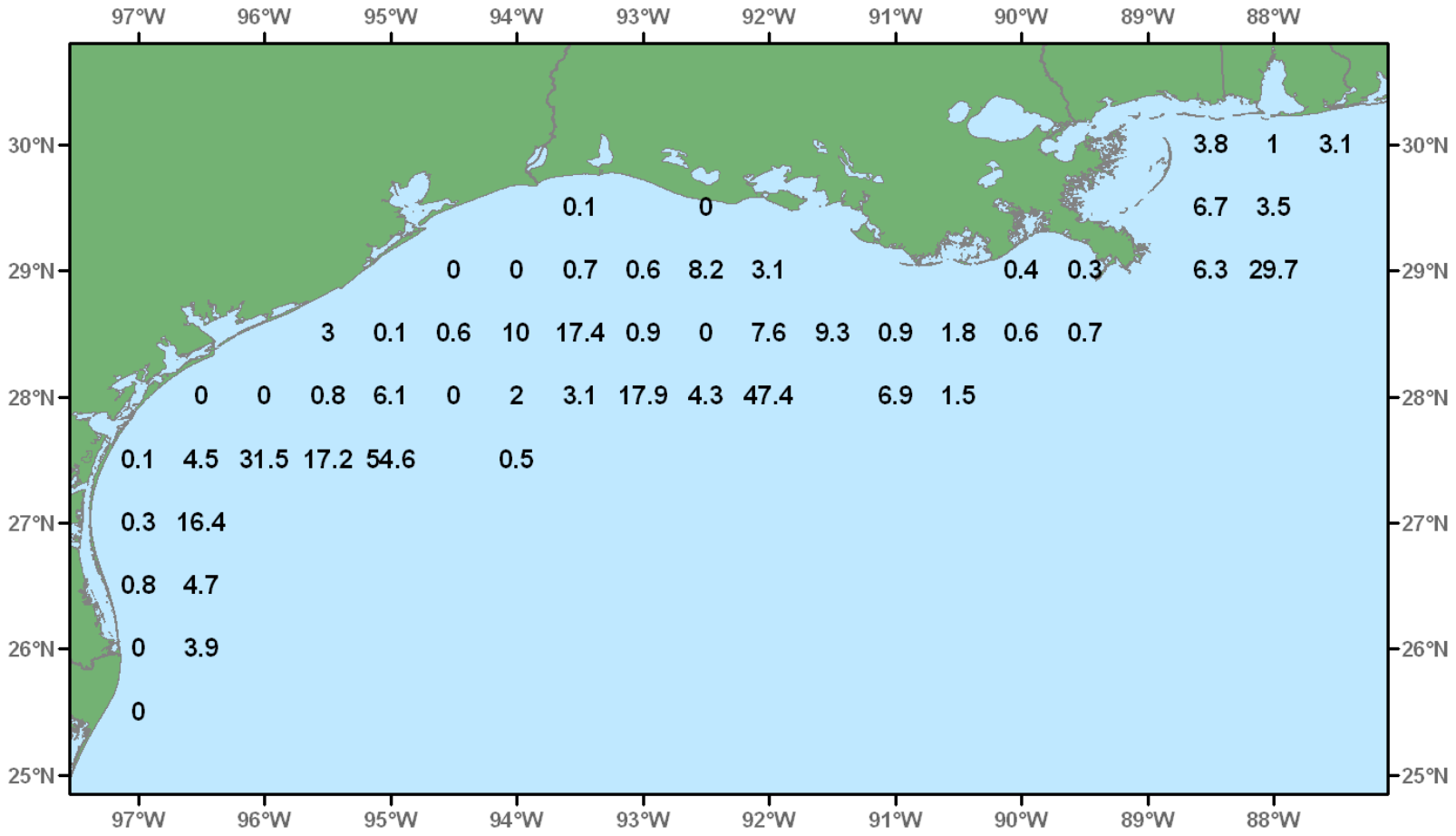


Figure 59. Gulf butterfish, Peprilus burti, lb/hour for October-December 2003.

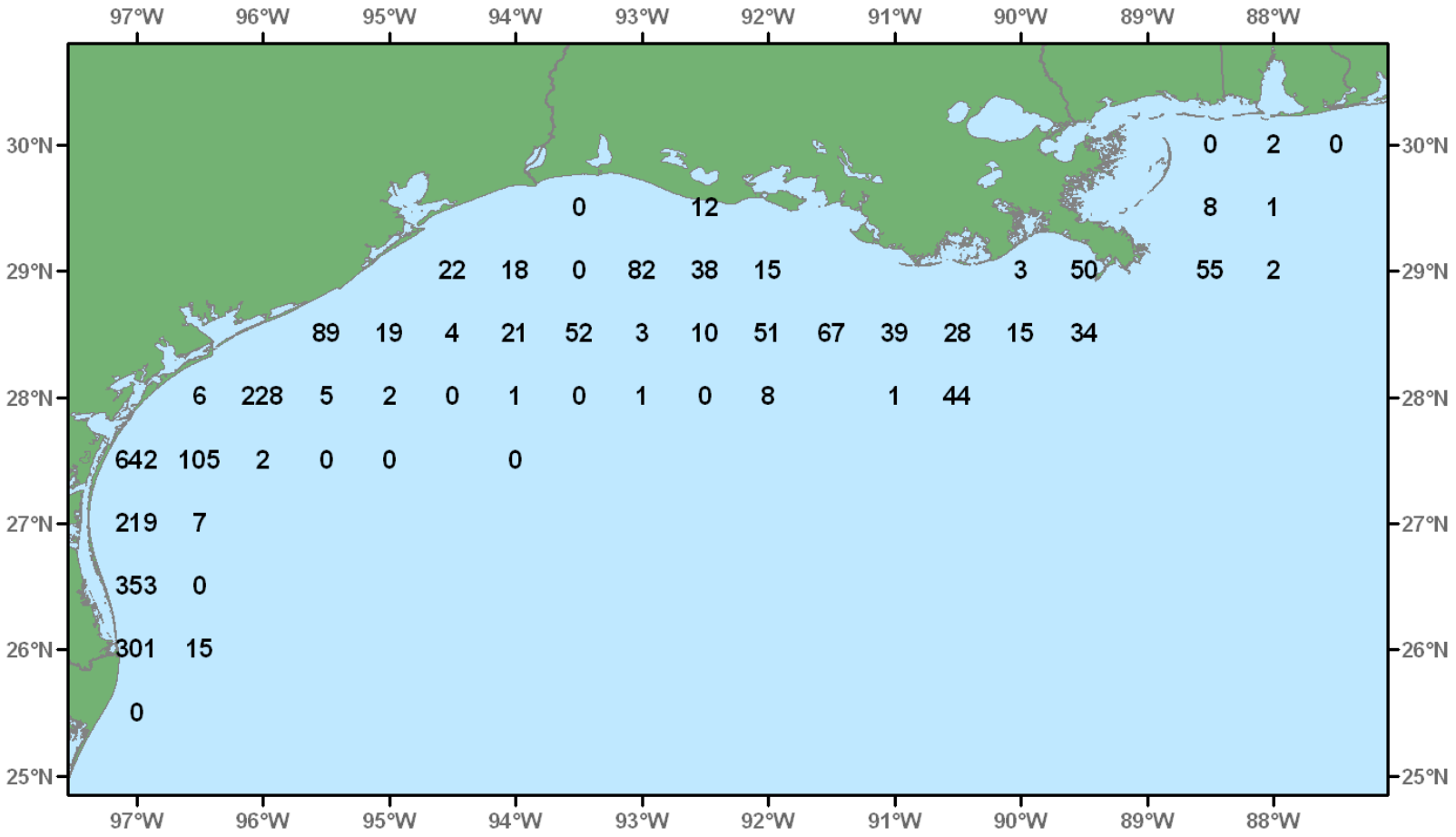


Figure 60. Silver seatrout, Cynoscion nothus, number/hour for October-December 2003.

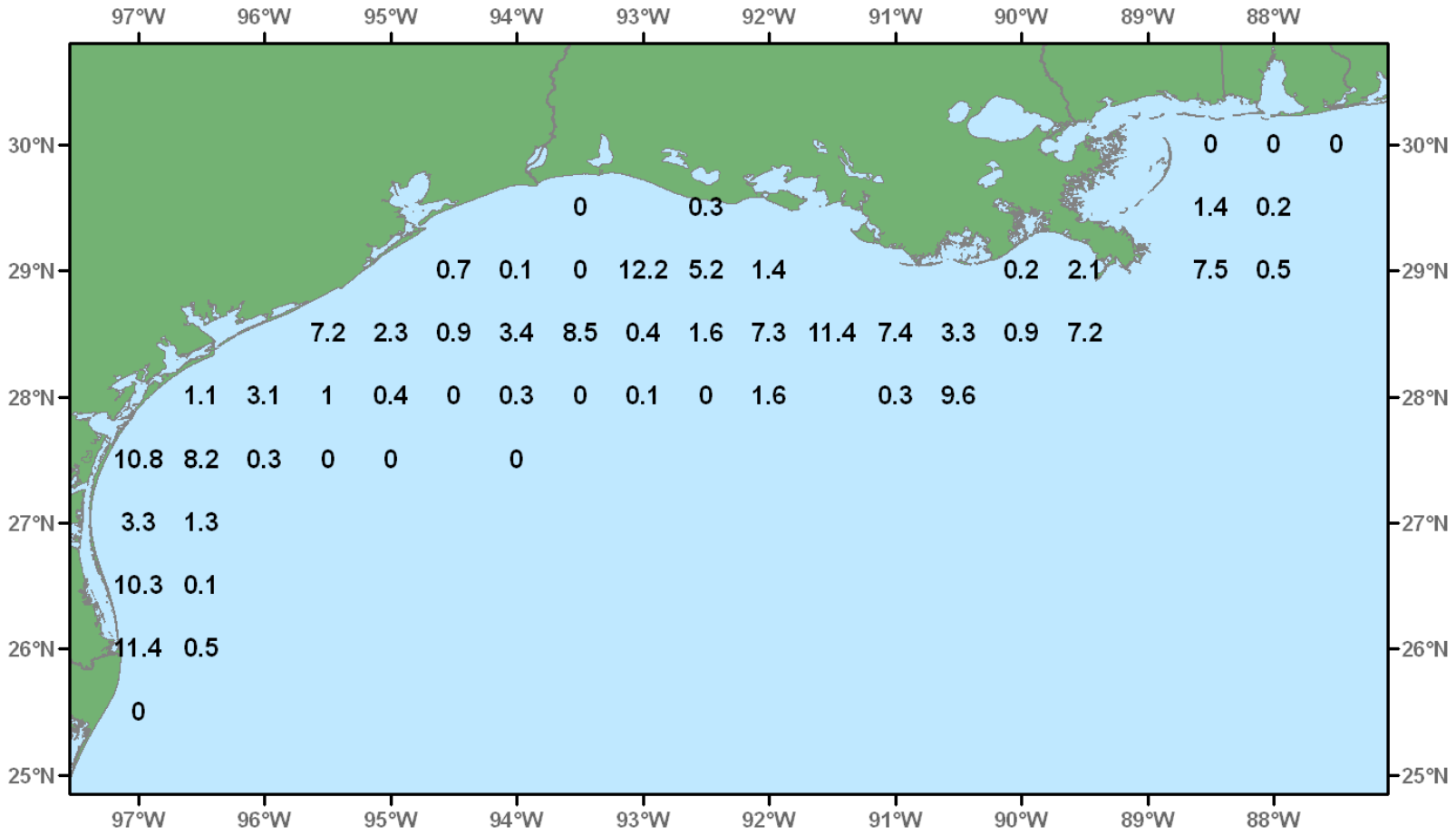


Figure 61. Silver seatrout, Cynoscion nothus, lb/hour for October-December 2003.

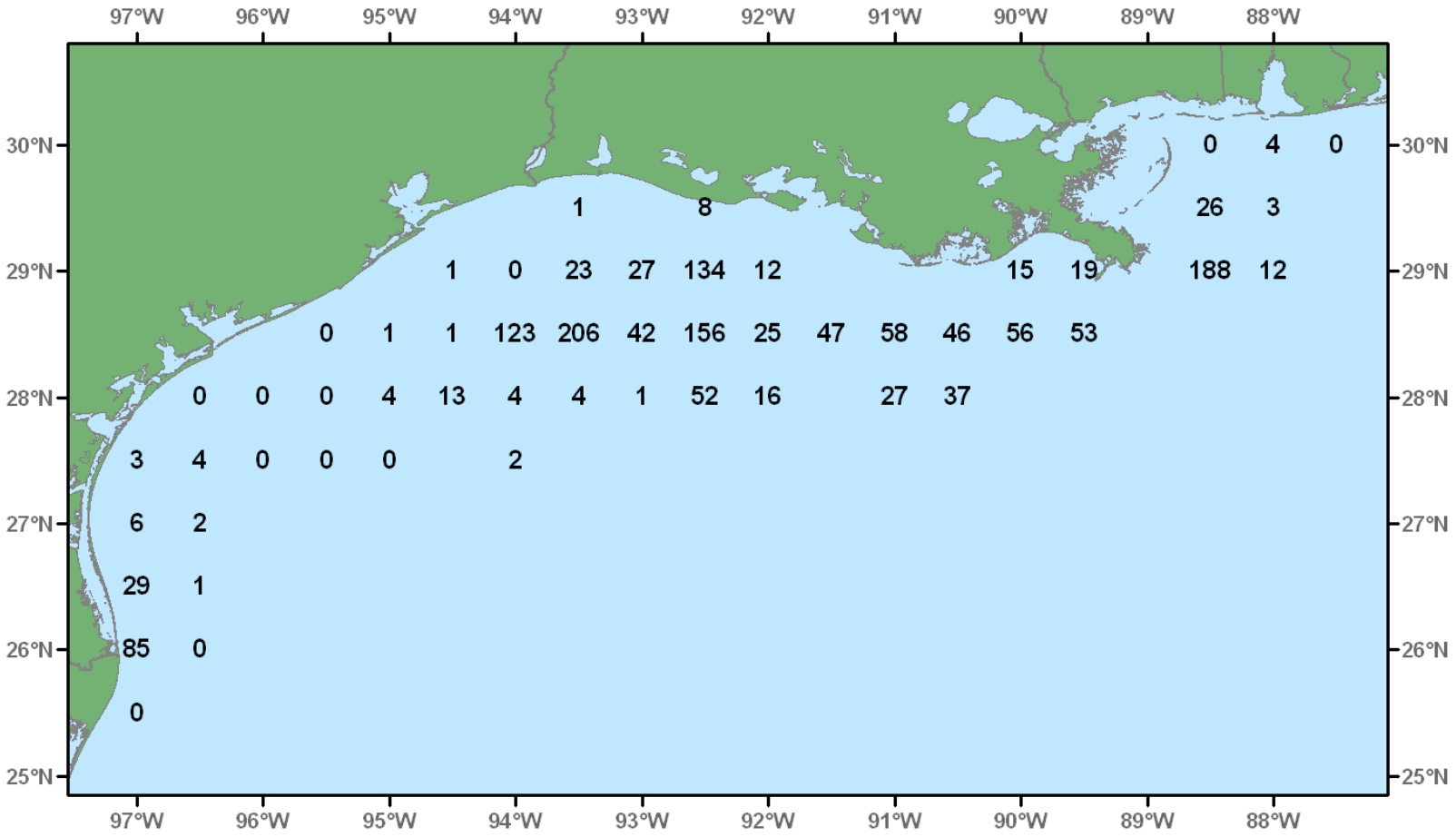


Figure 62. Spot, Leiostomus xanthurus, number/hour for October-December 2003.

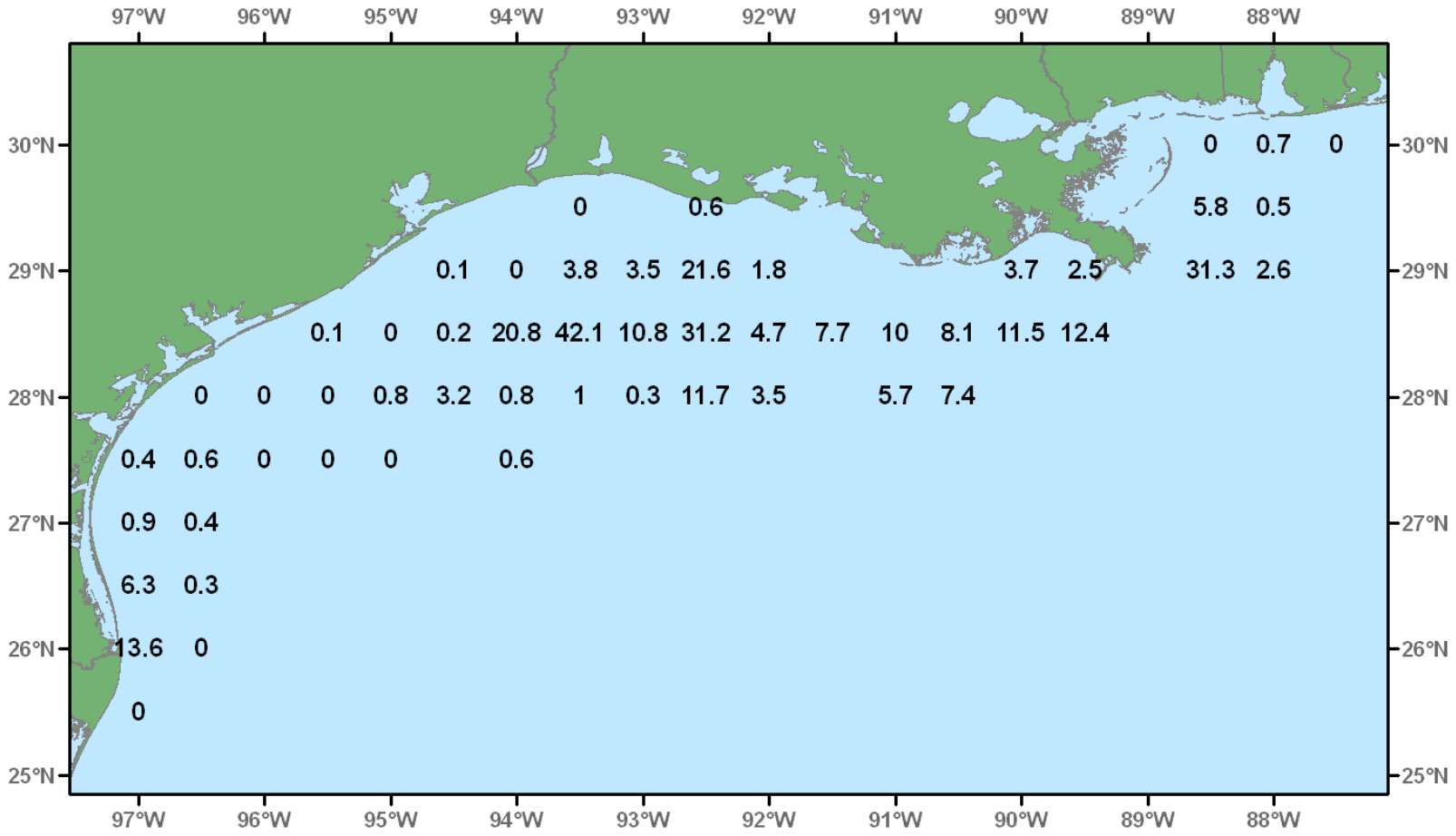


Figure 63. Spot, Leiostomus xanthurus, lb/hour for October-December 2003.

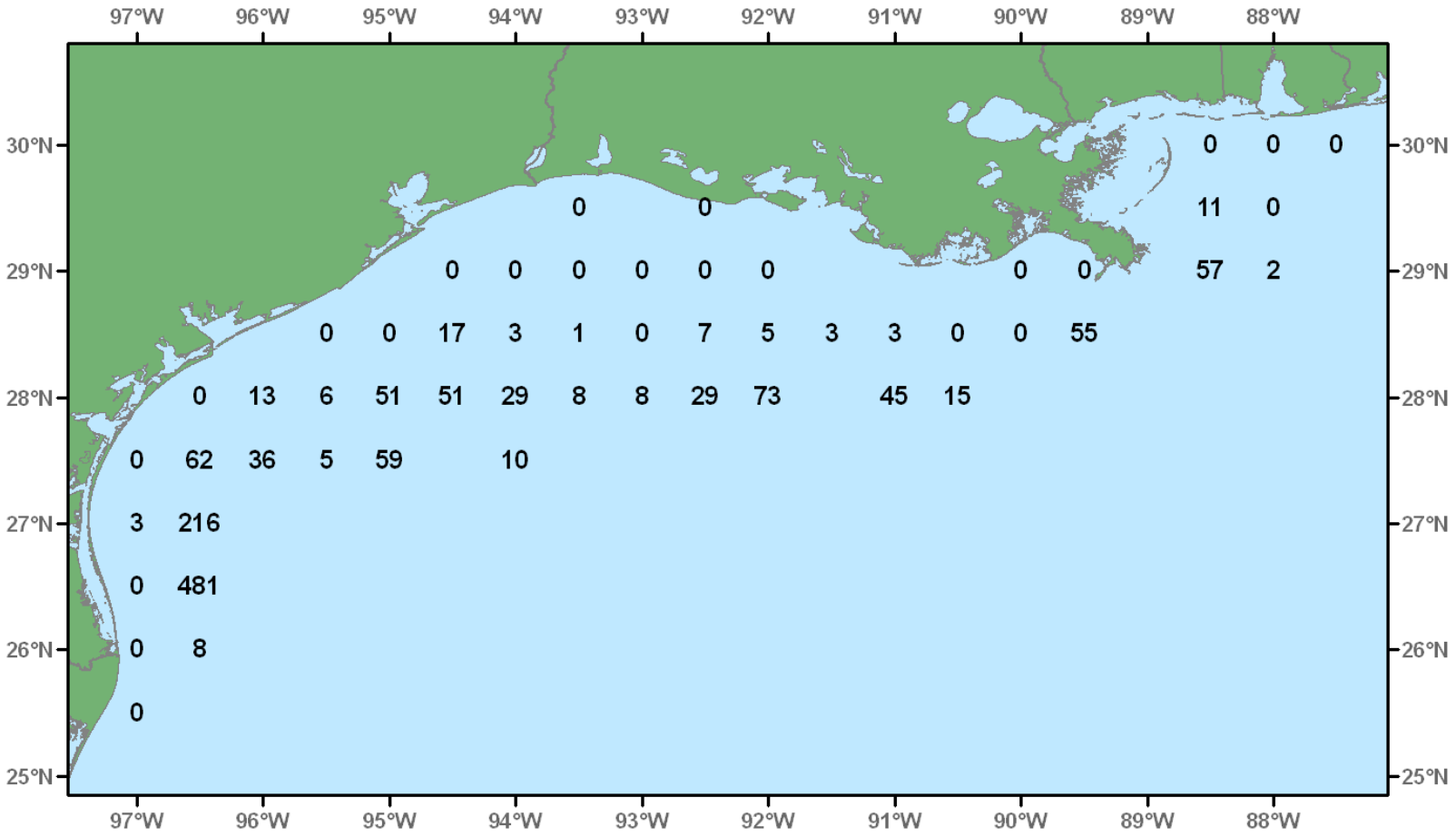


Figure 64. Blackear bass, Serranus atrobranchus, number/hour for October-December 2003.

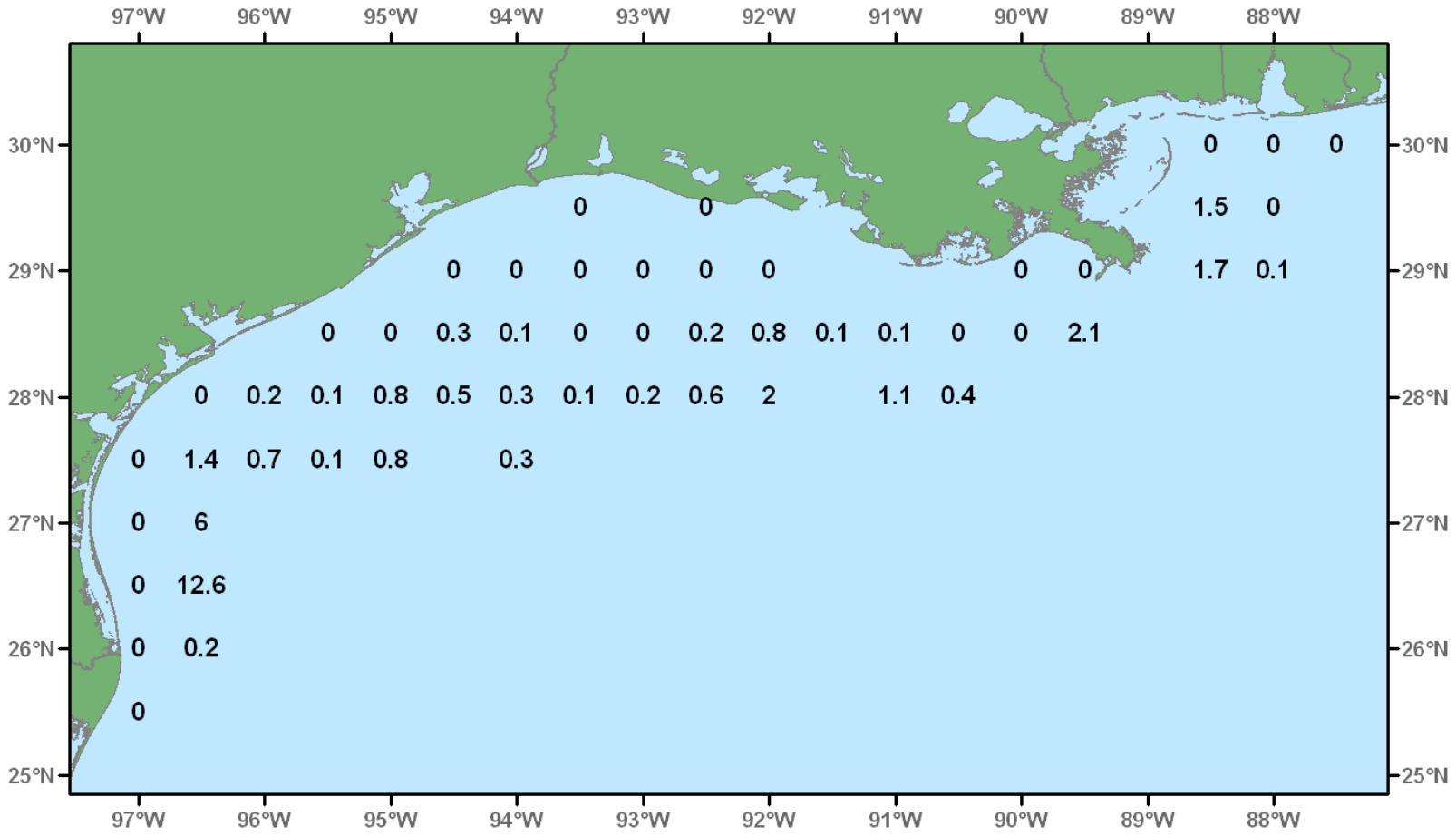


Figure 65. Blackear bass, Serranus atrobranchus, lb/hour for October-December 2003.

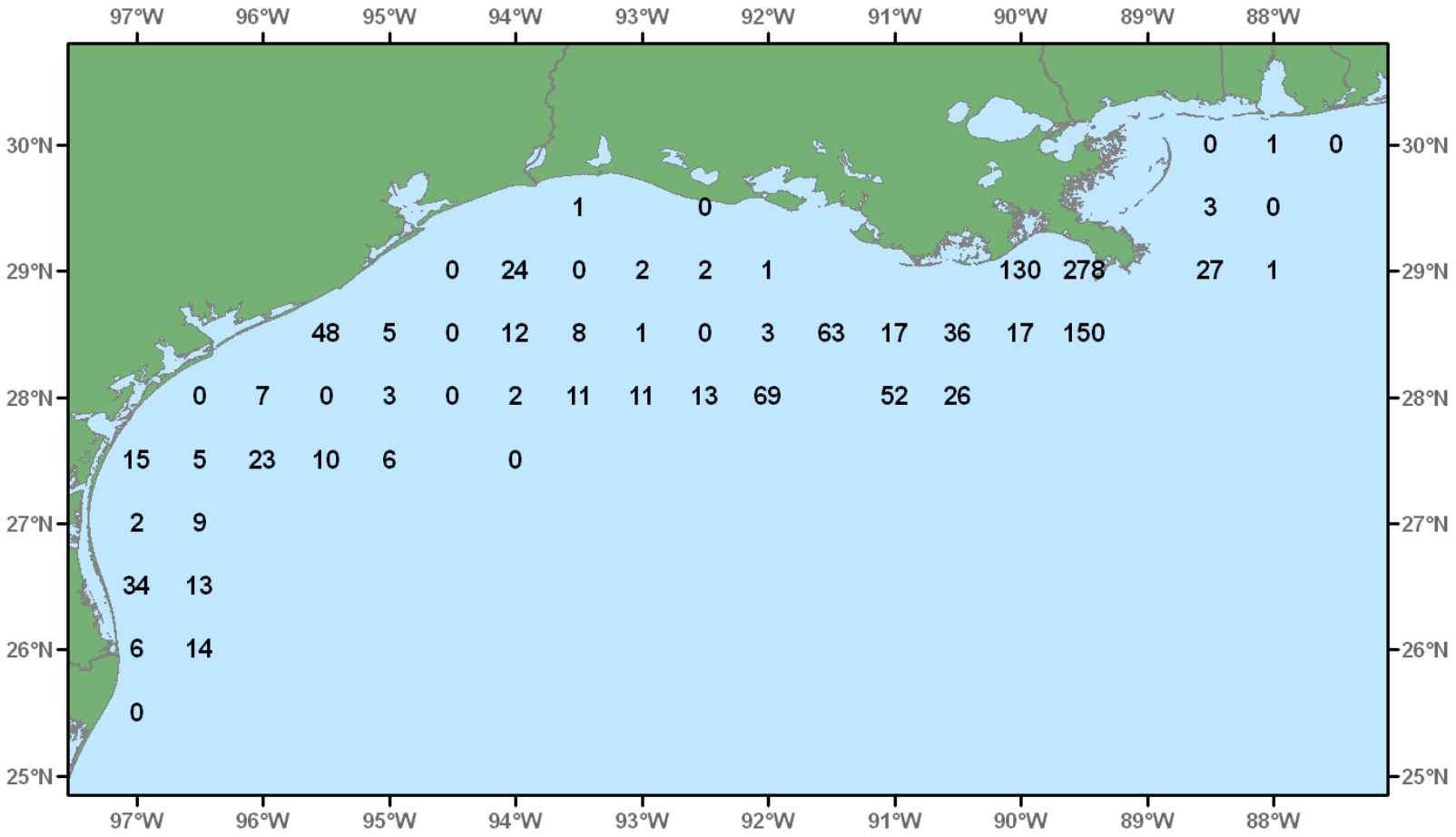


Figure 66. Atlantic cutlassfish, Trichiurus lepturus, number/hour for October-December 2003.

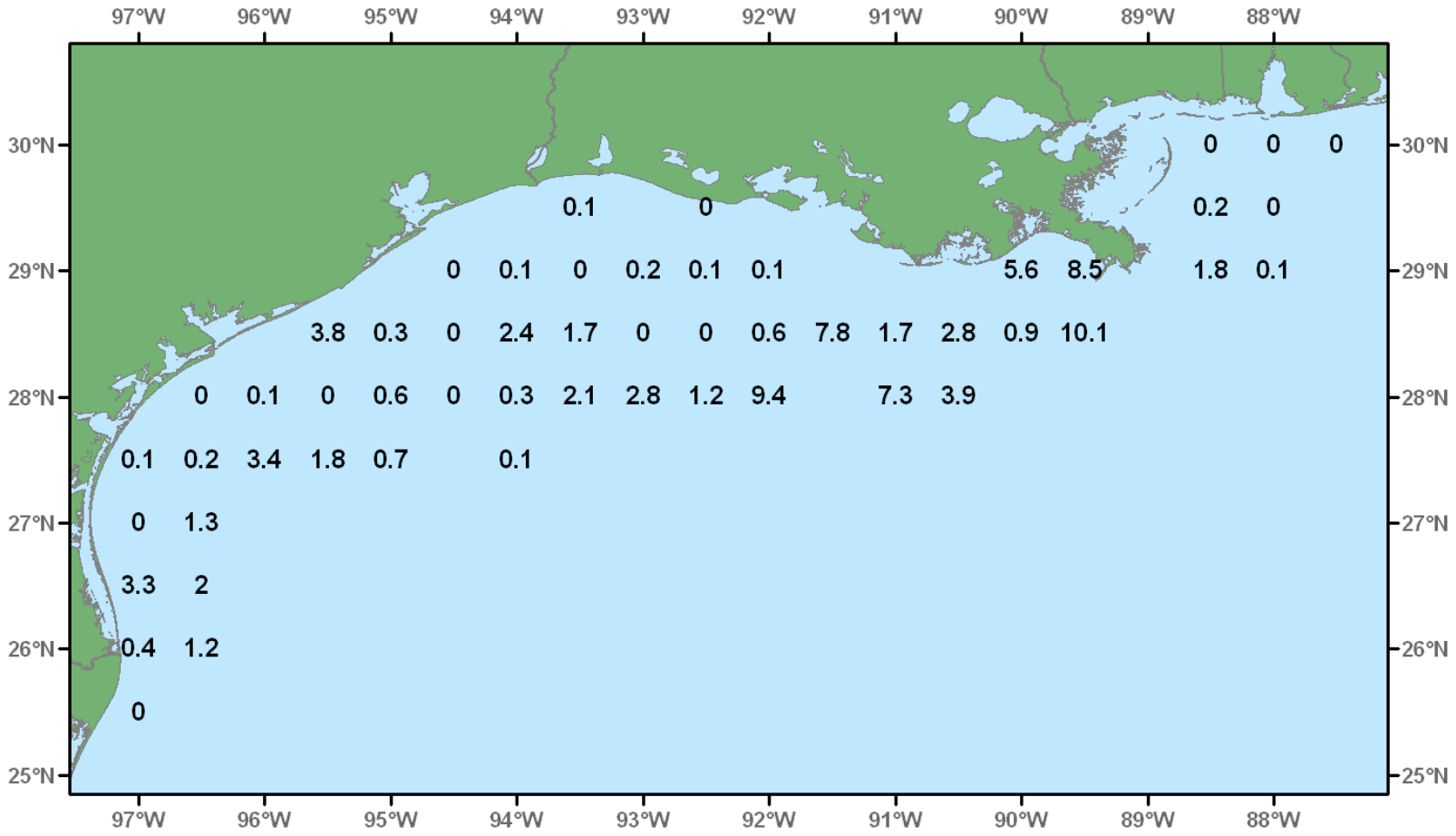


Figure 67. Atlantic cutlassfish, Trichiurus lepturus, lb /hour for October-December 2003.

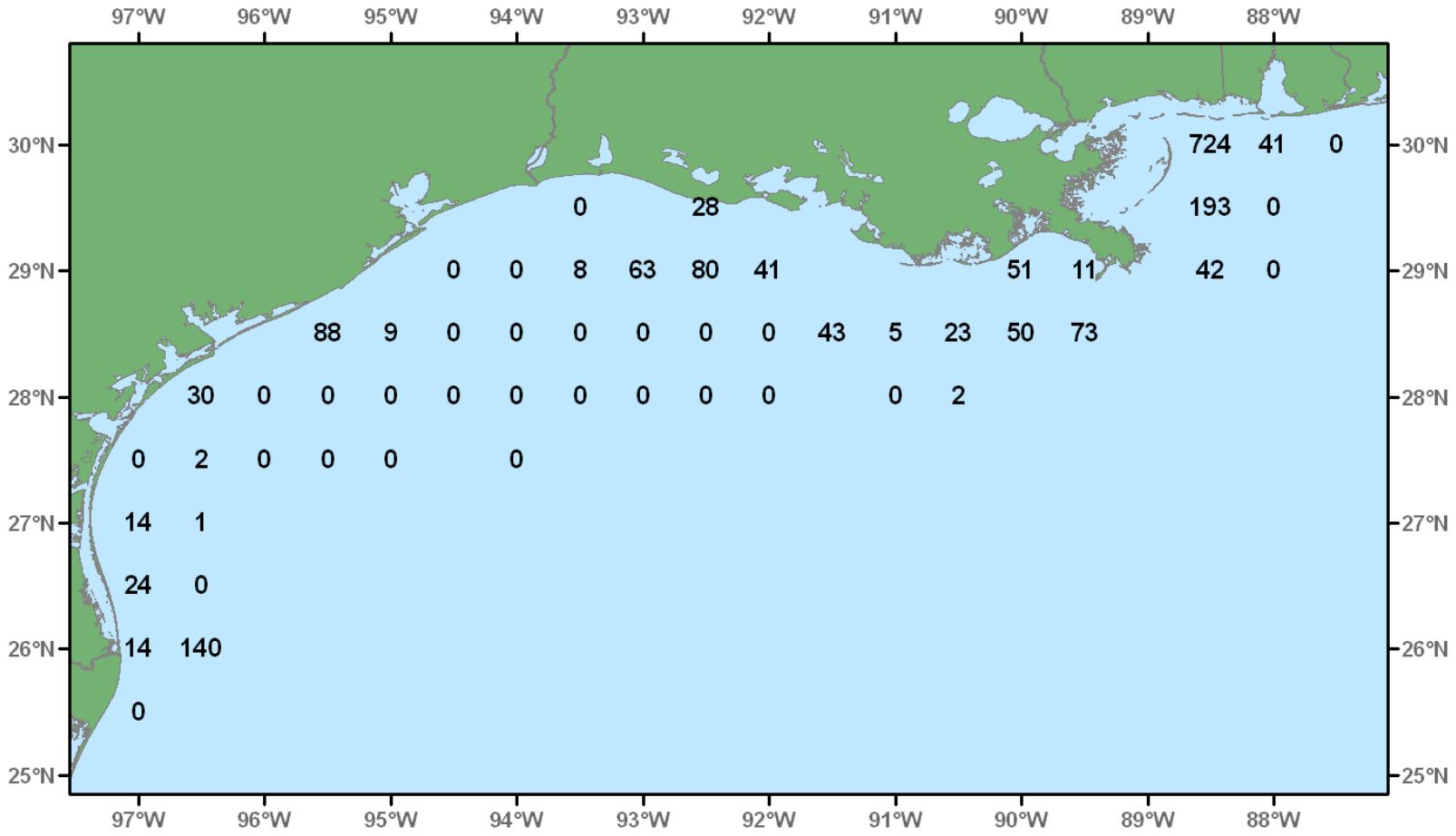


Figure 68. Striped anchovy, Anchoa hepsetus, number/hour for October-December 2003.

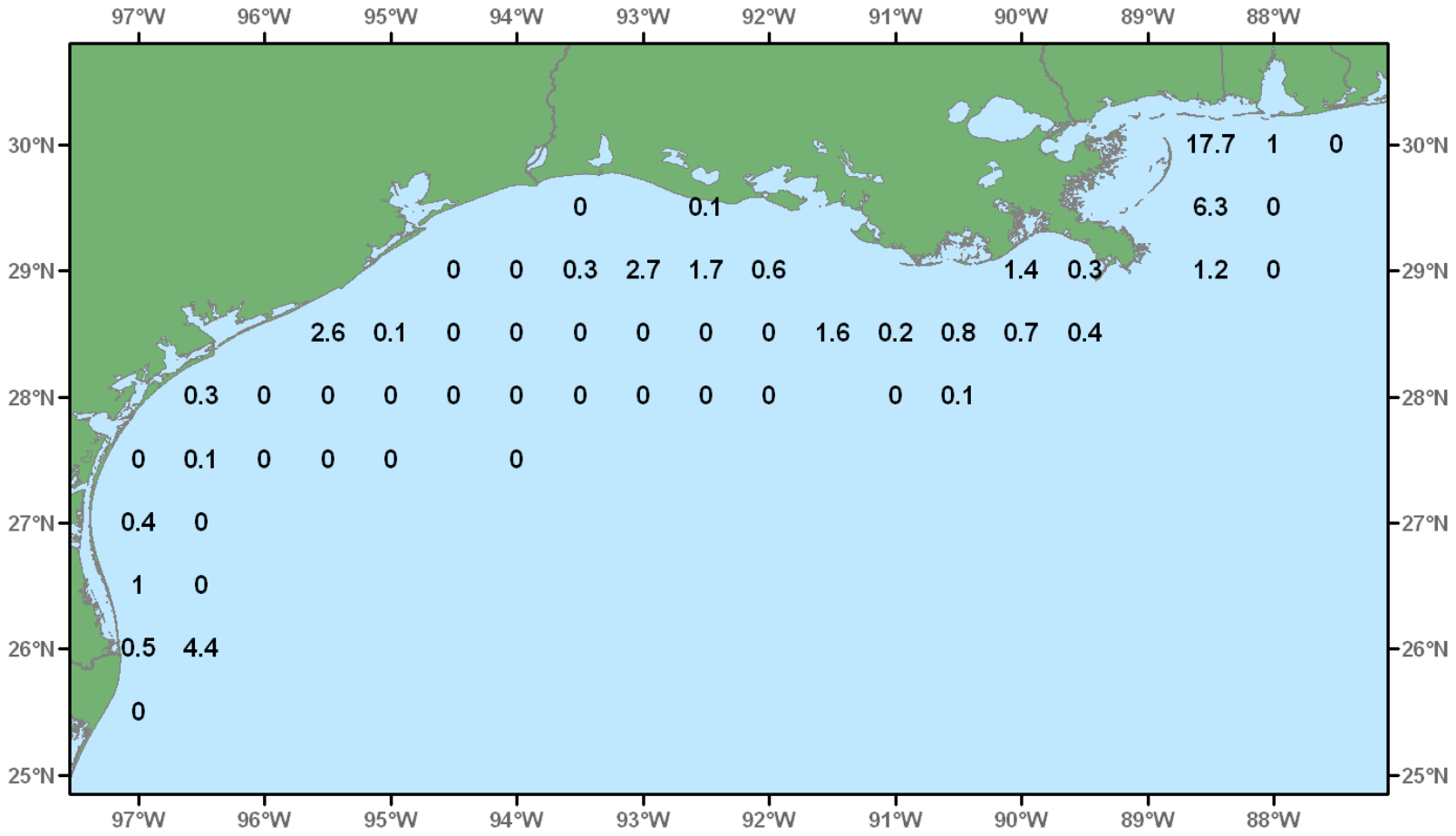


Figure 69. Striped anchovy, Anchoa hepsetus, lb/hour for October-December 2003.

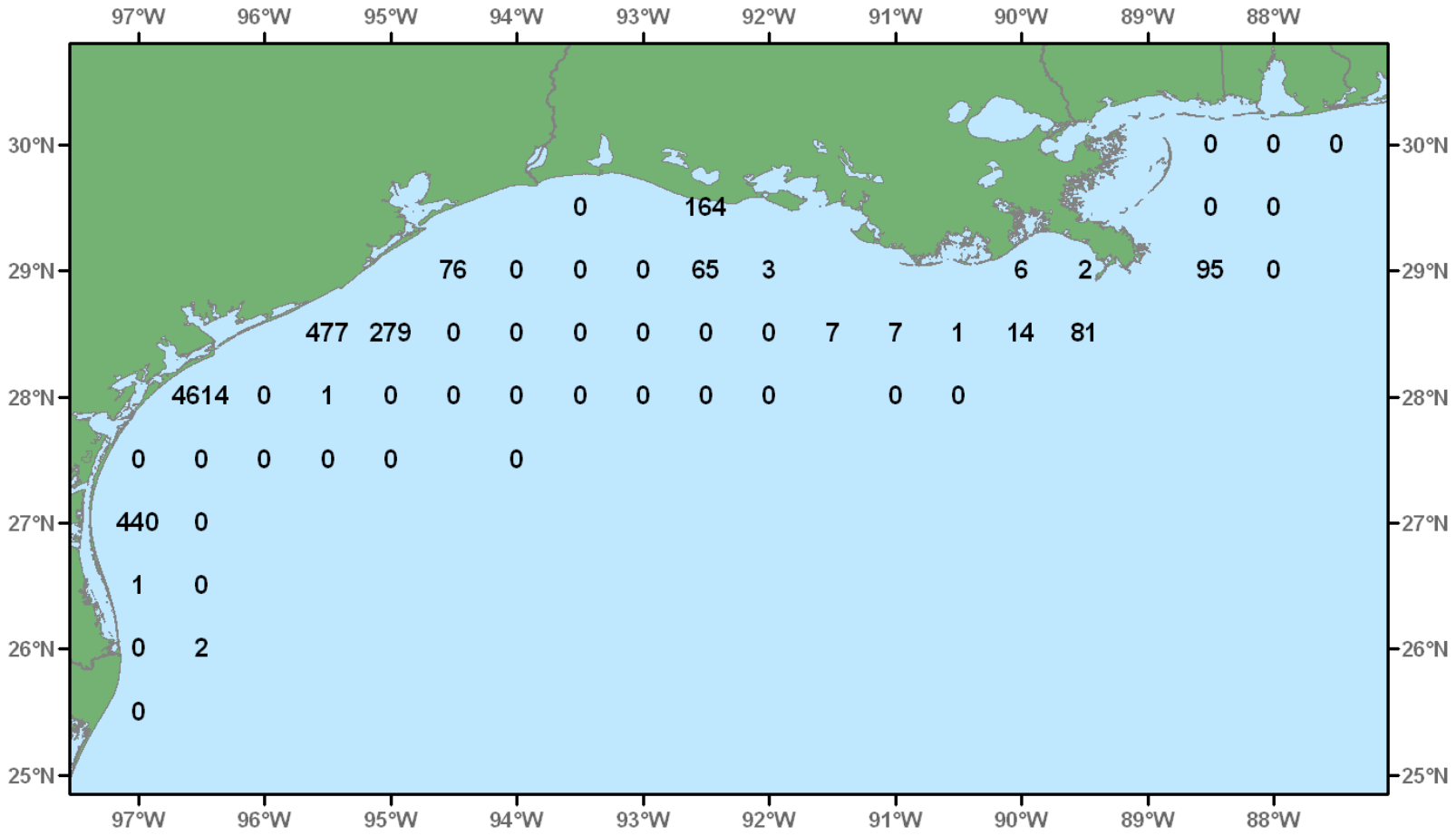


Figure 70. Seatrout, Cynoscion spp., number/hour for October-December 2003.

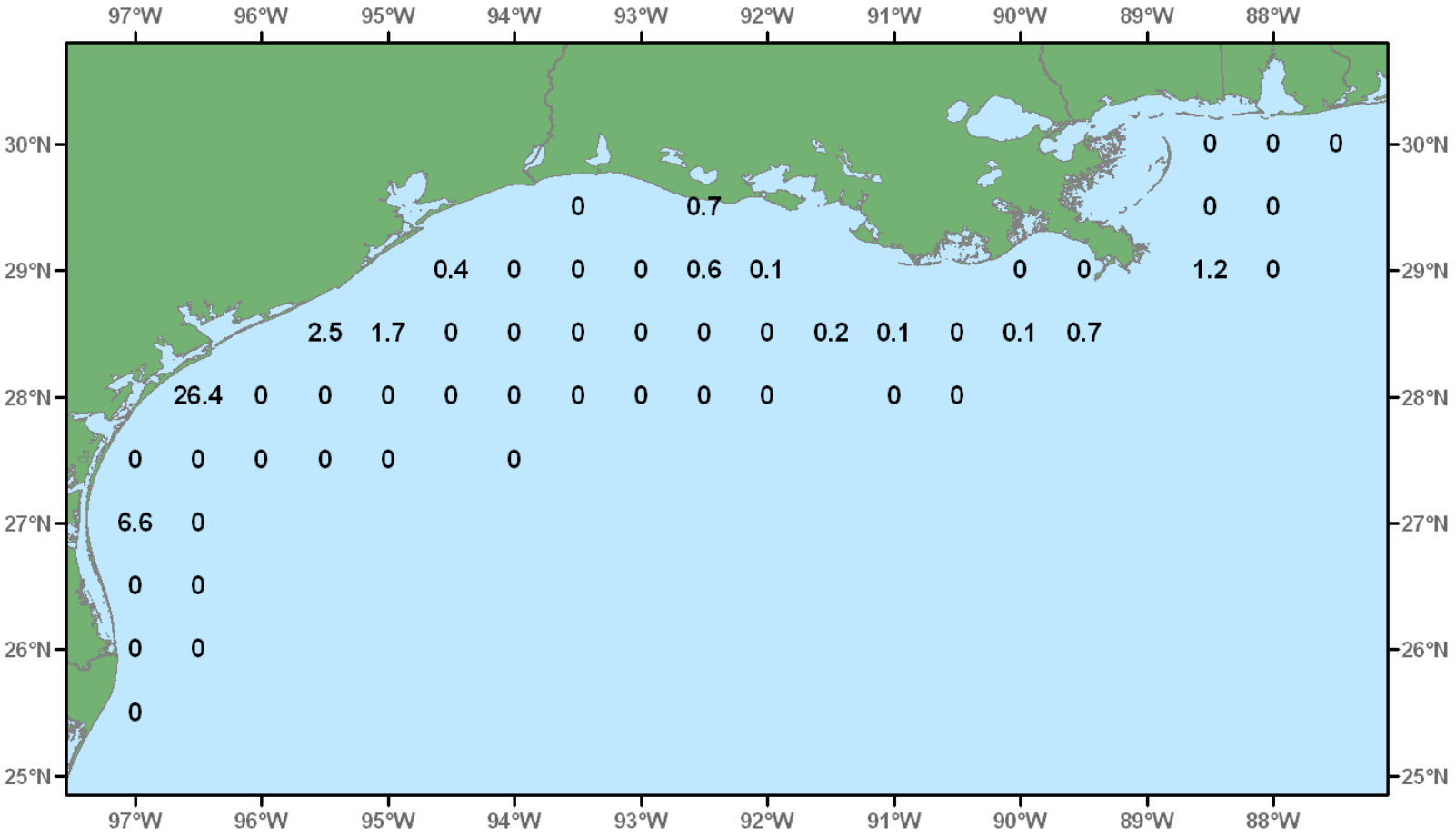


Figure 71. Seatrout, Cynoscion spp., lb/hour for October-December 2003.

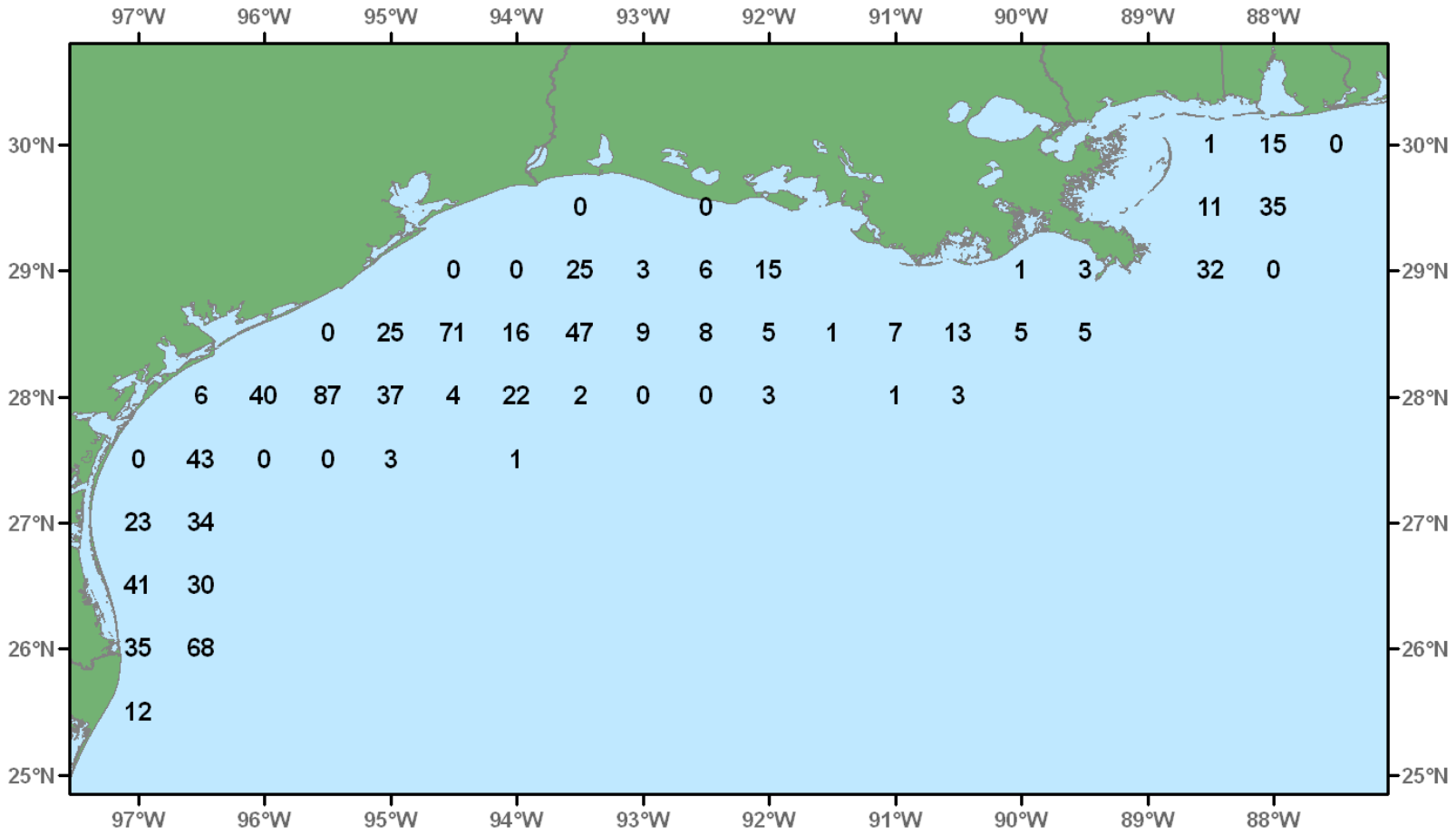


Figure 72. Red snapper, Lutjanus campechanus, number/hour for October-December 2003.

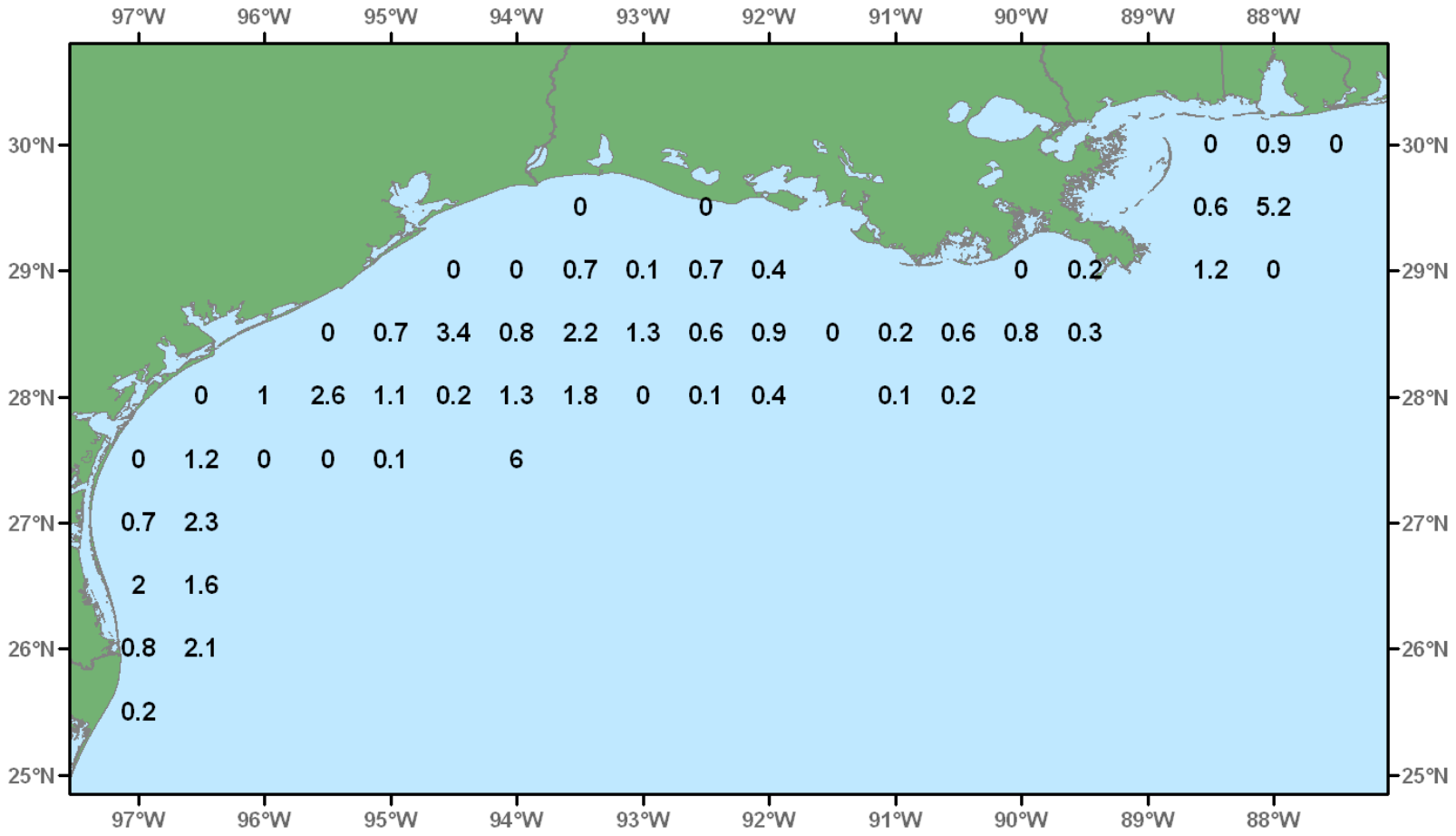


Figure 73. Red snapper, Lutjanus campechanus, lb/hour for October-December 2003.

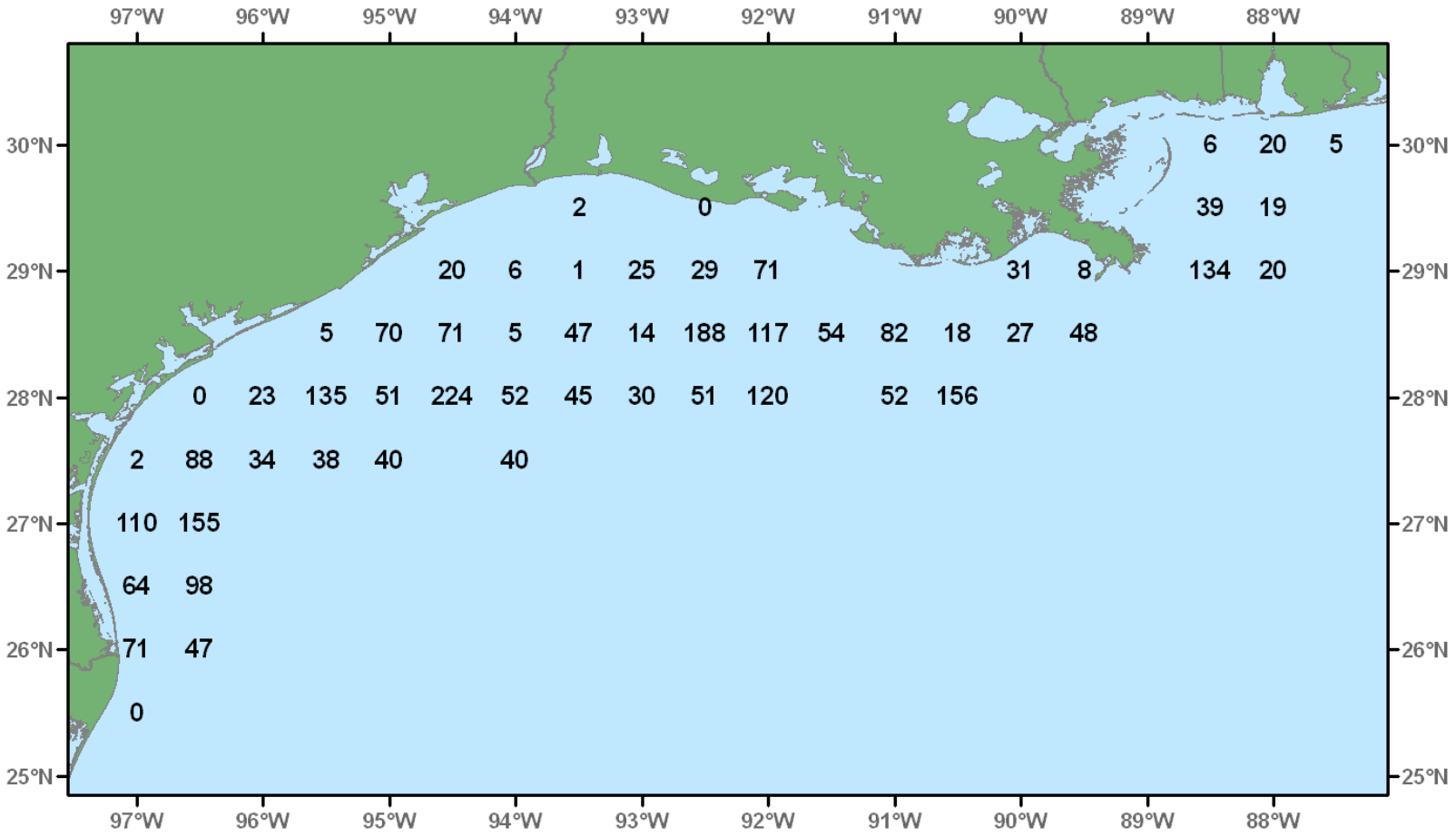


Figure 74. Brown shrimp, Farfantepenaeus aztecus, number/hour for October-December 2003.

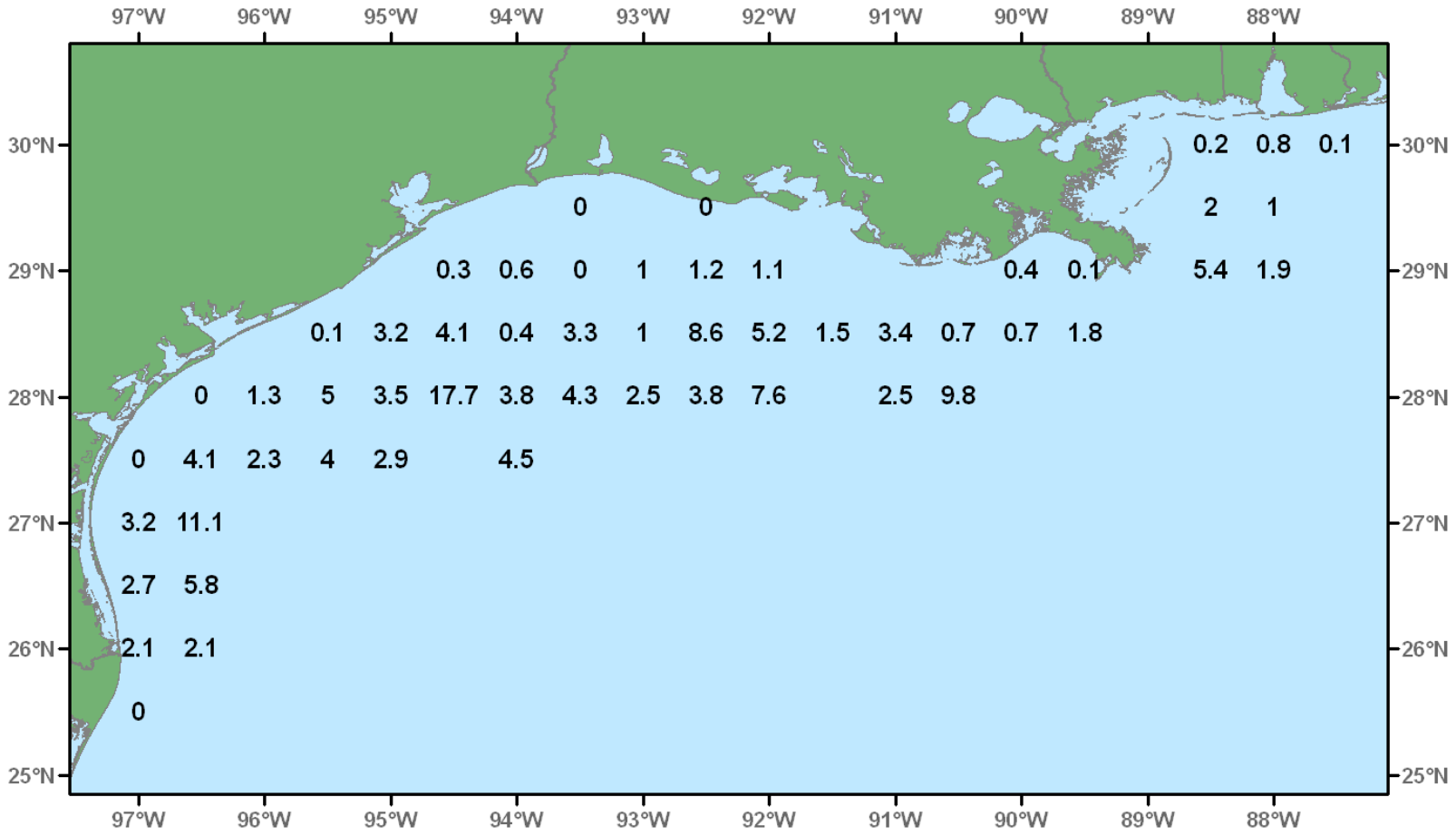


Figure 75. Brown shrimp, Farfantepenaeus aztecus, lb/hour for October-December 2003.

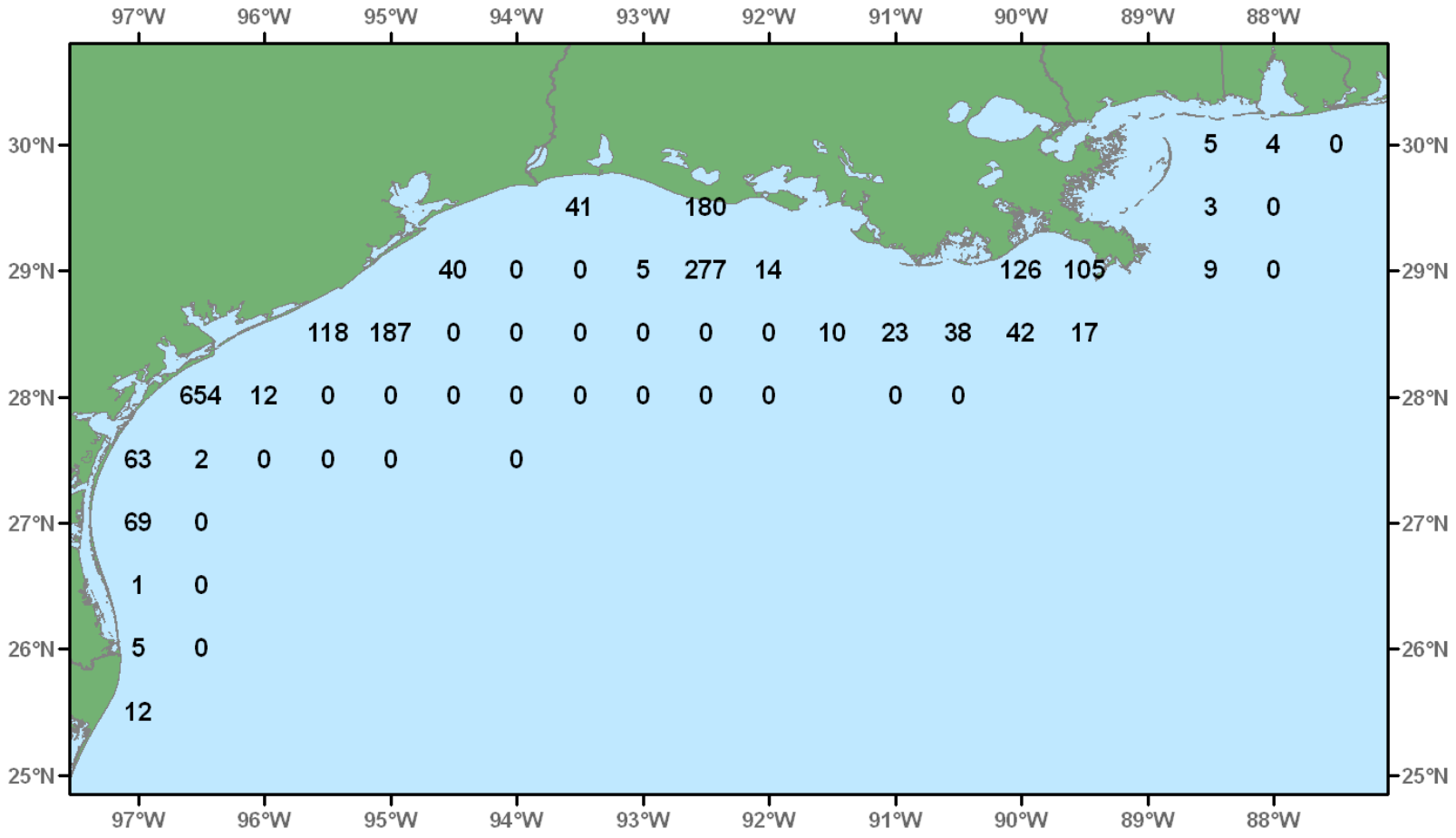


Figure 76. White shrimp, Litopenaeus setiferus, number/hour for October-December 2003.

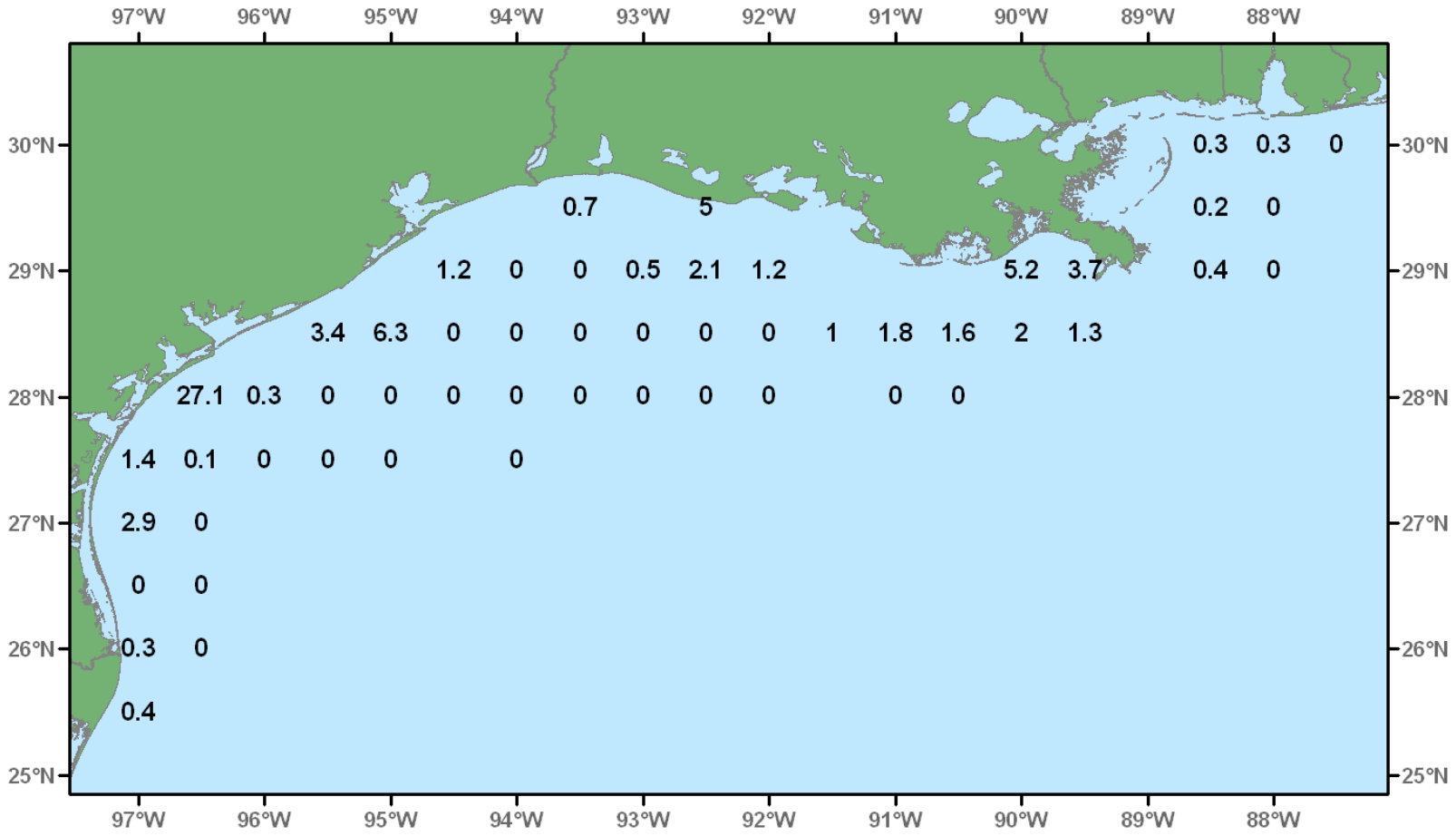


Figure 77. White shrimp, Litopenaeus setiferus, lb/hour for October-December 2003.

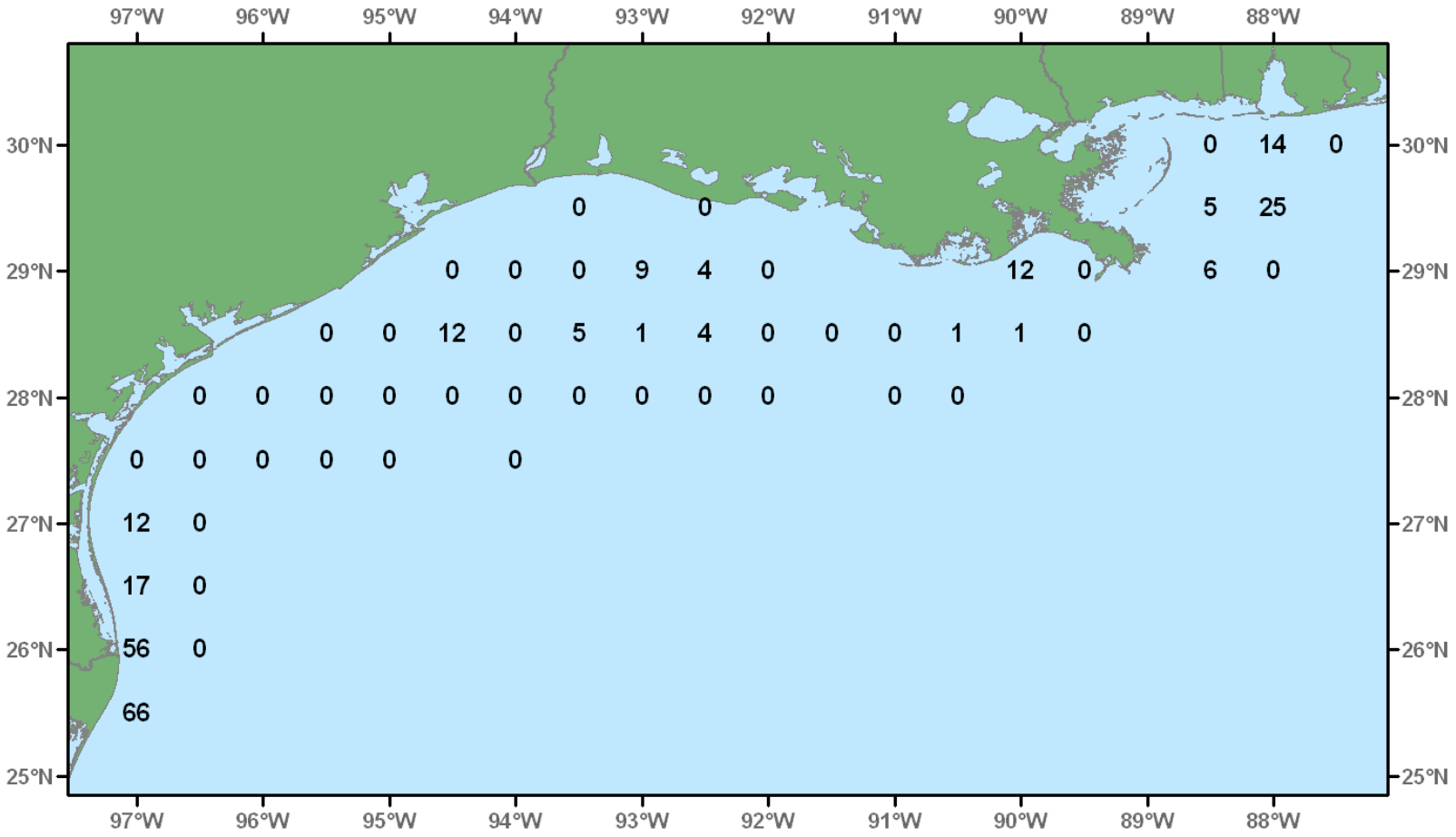


Figure 78. Pink shrimp, Farfantepenaeus duorarum, number/hour for October-December 2003.

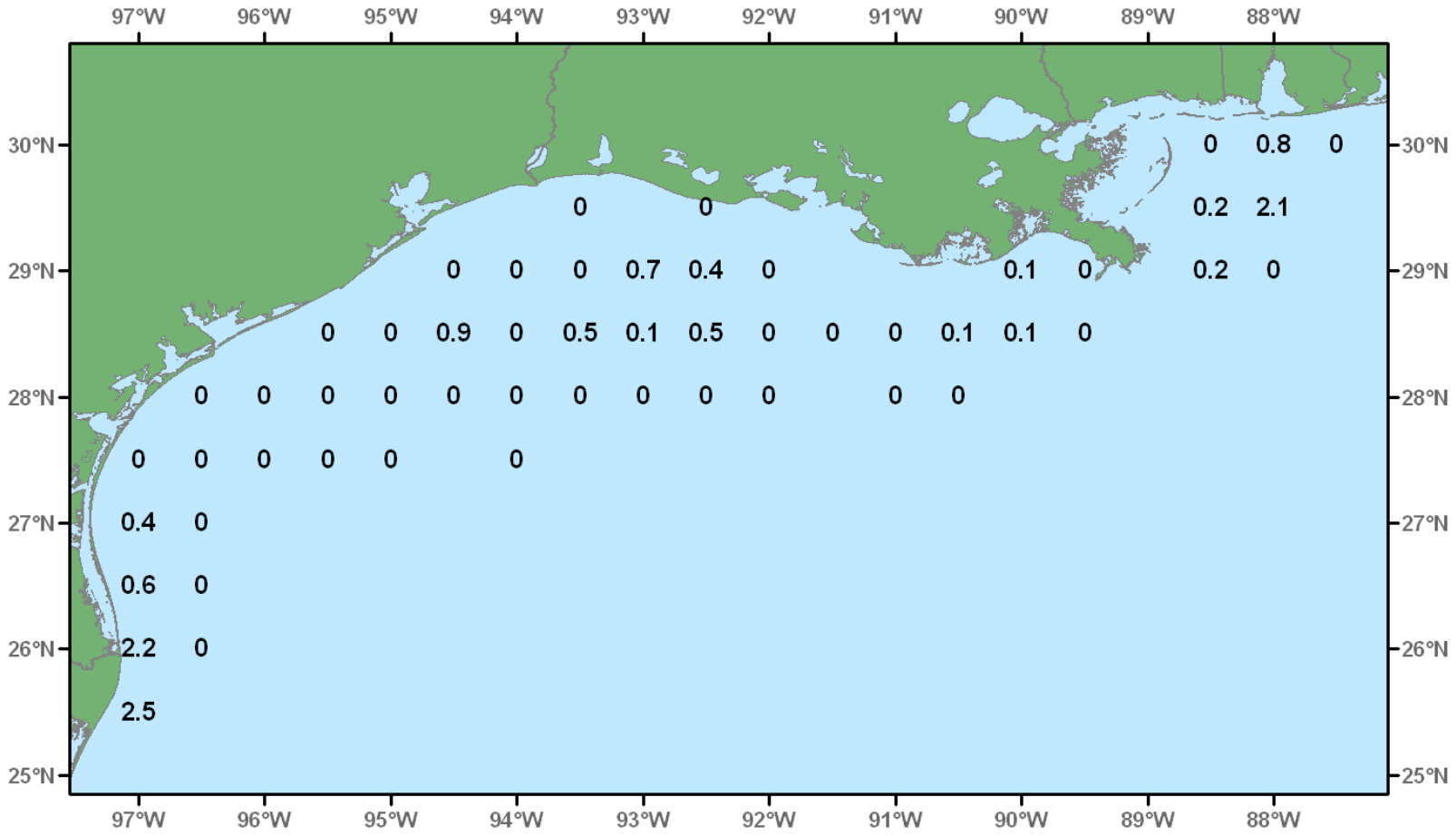


Figure 79. Pink shrimp, Farfantepenaeus duorarum, lb/hour for October-December 2003.

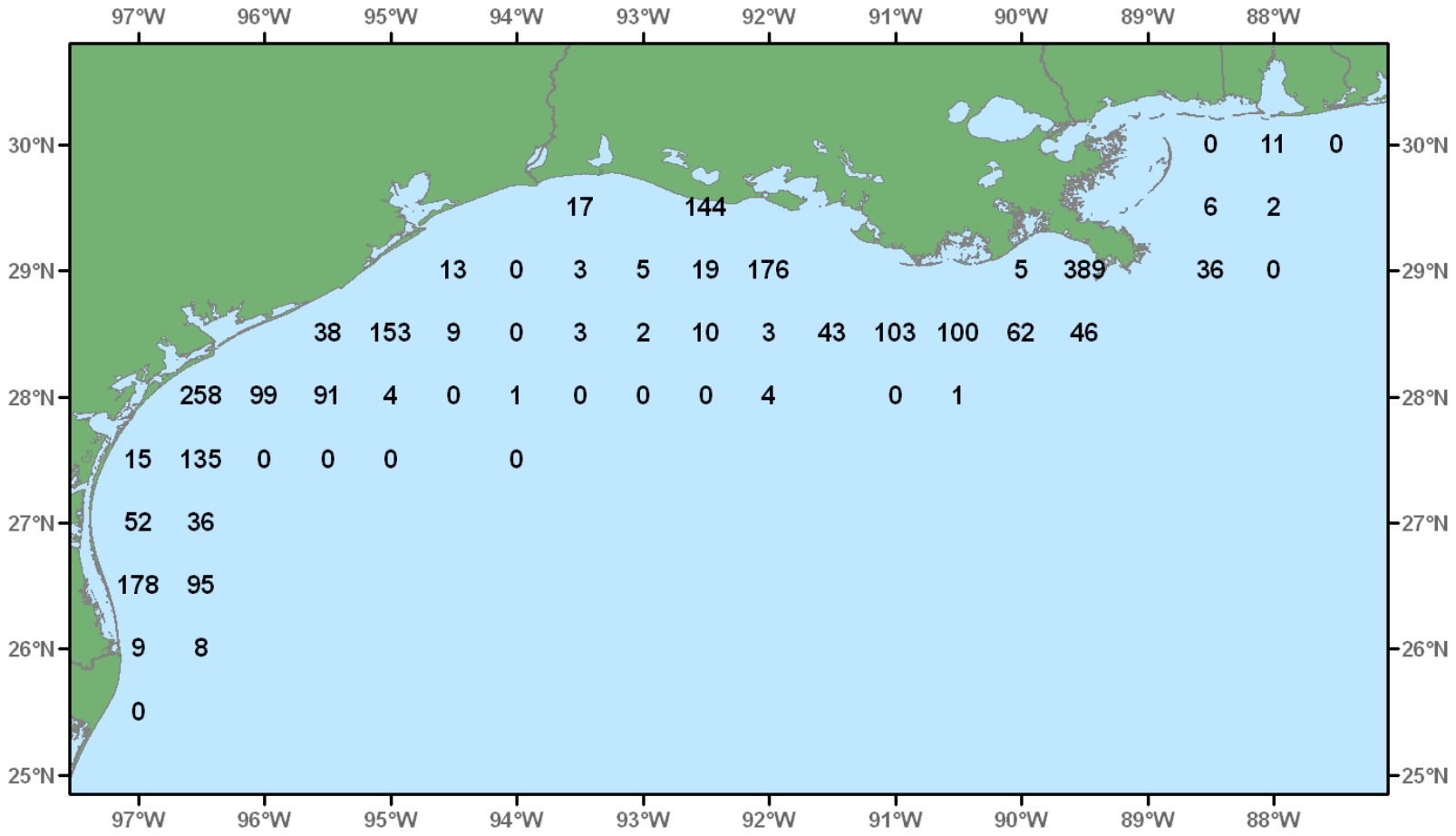


Figure 80. Roughback shrimp, Trachypenaeus similis, number/hour for October-December 2003.

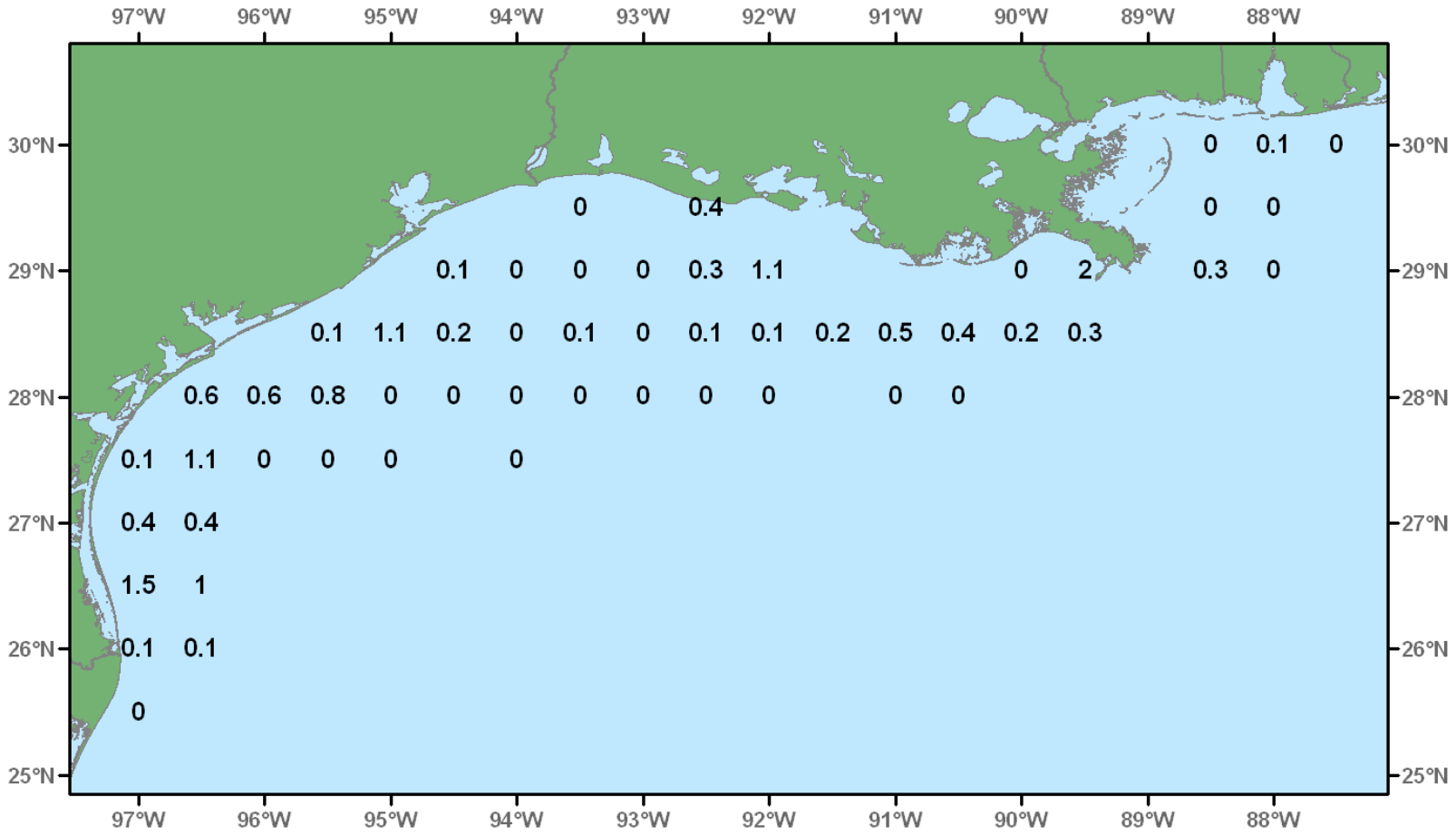


Figure 81. Roughback shrimp, Trachypenaeus similis, lb/hour for October-December 2003.

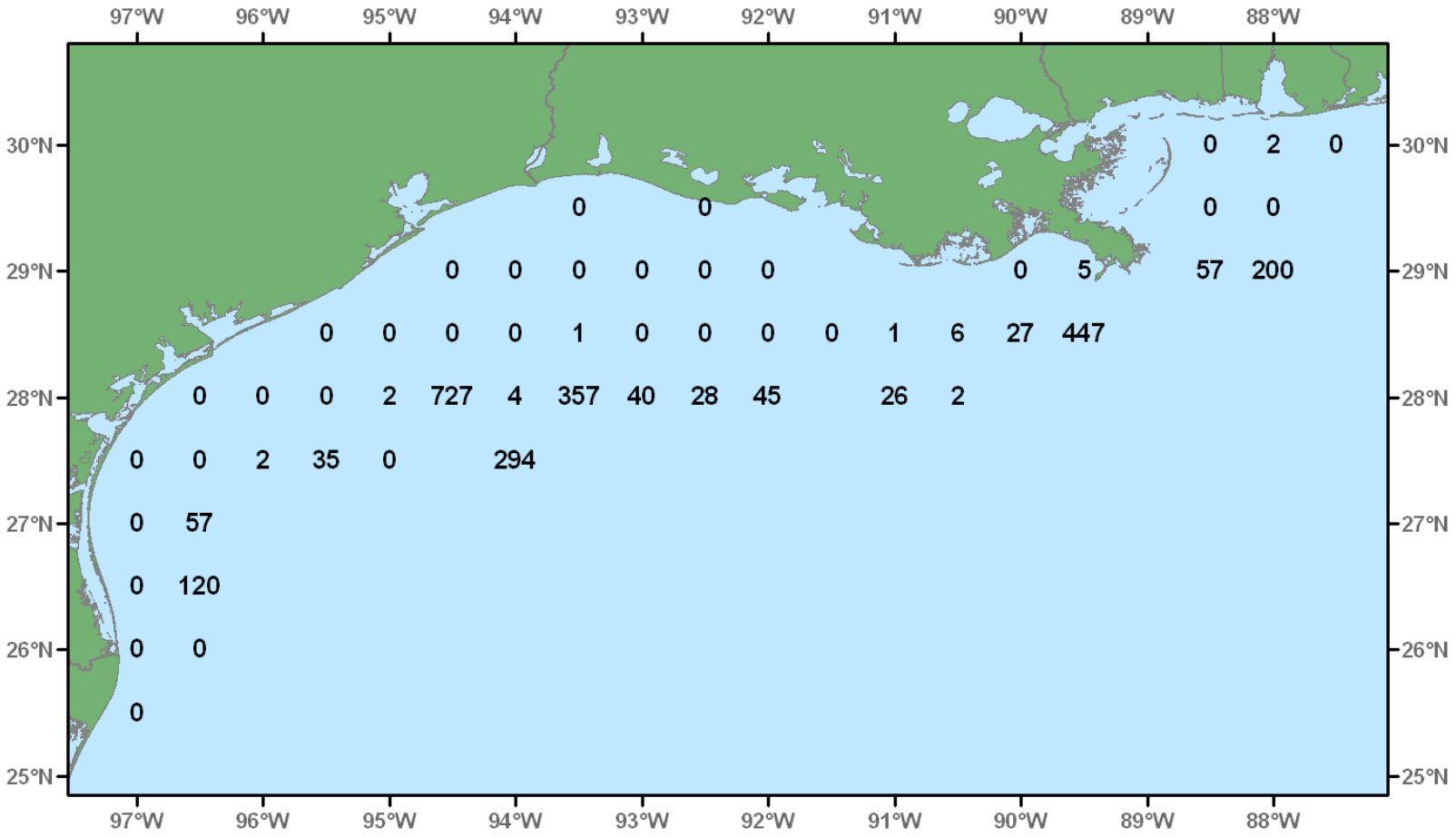


Figure 82. Longspine swimming crab, Portunis spinicarpus, number/hour for October-December 2003.

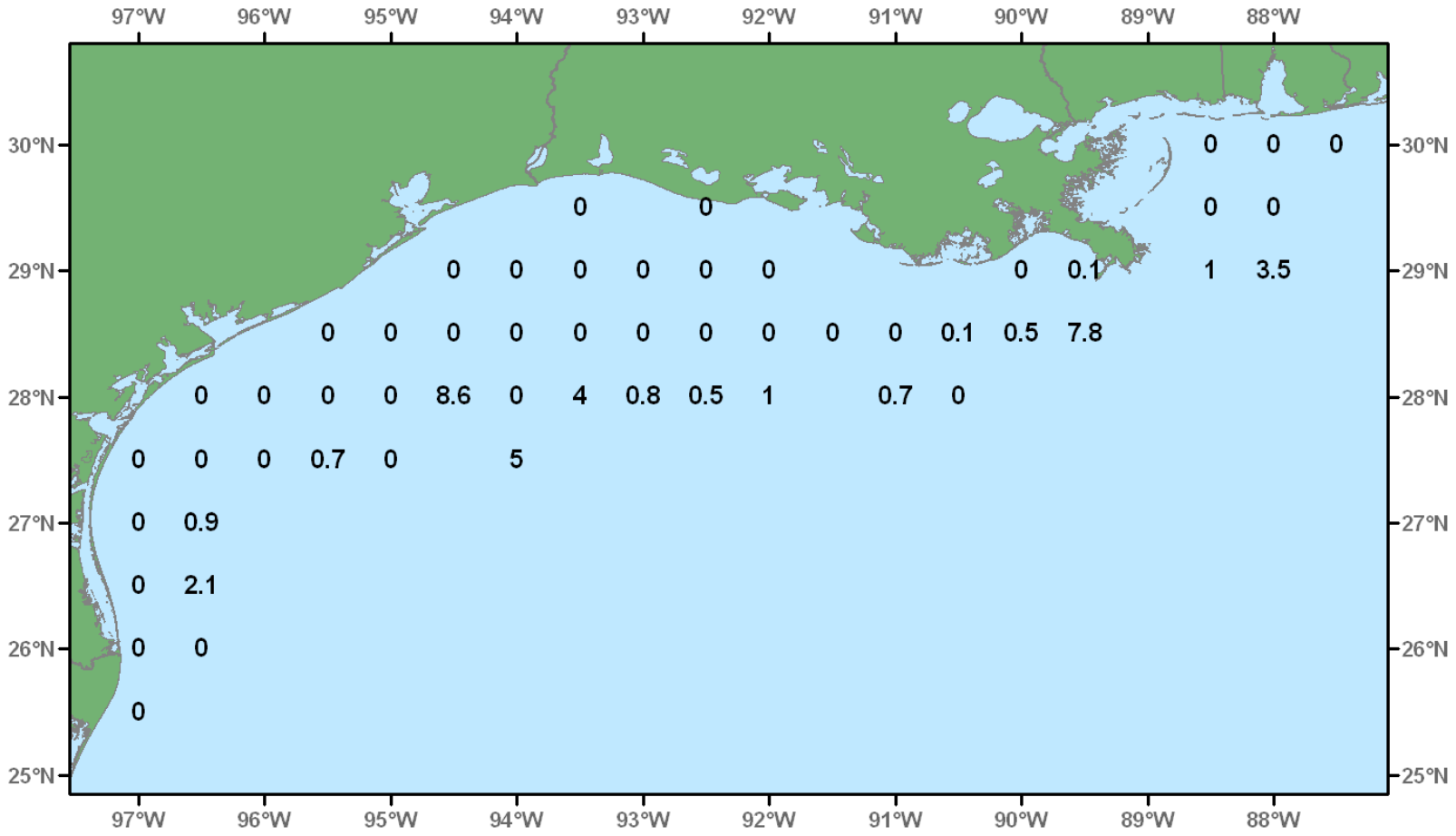


Figure 83. Longspine swimming crab, Portunis spinicarpus, lb/hour for October-December 2003.

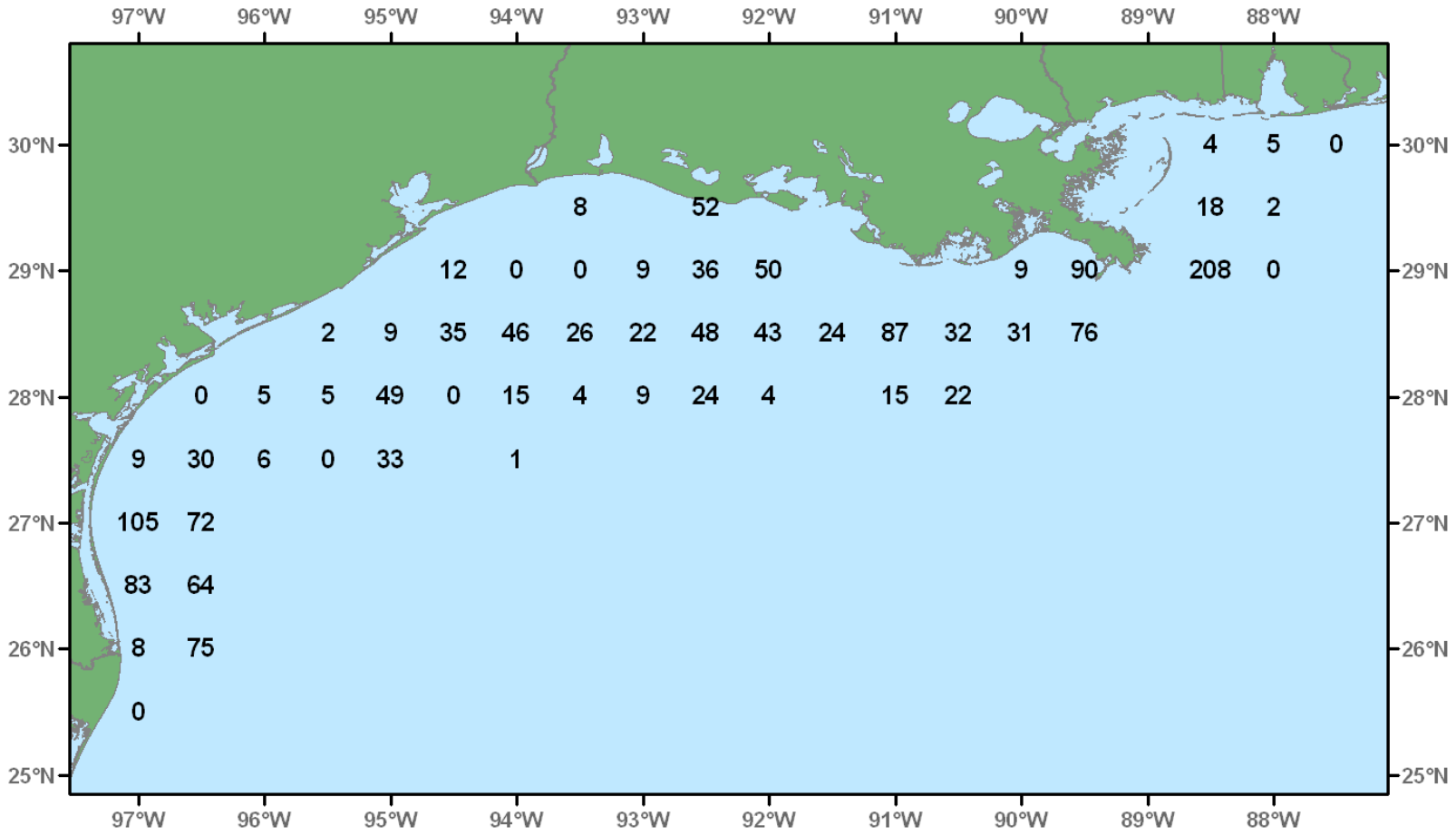


Figure 84. Lesser blue crab, Callinectes similis, number/hour for October-December 2003.

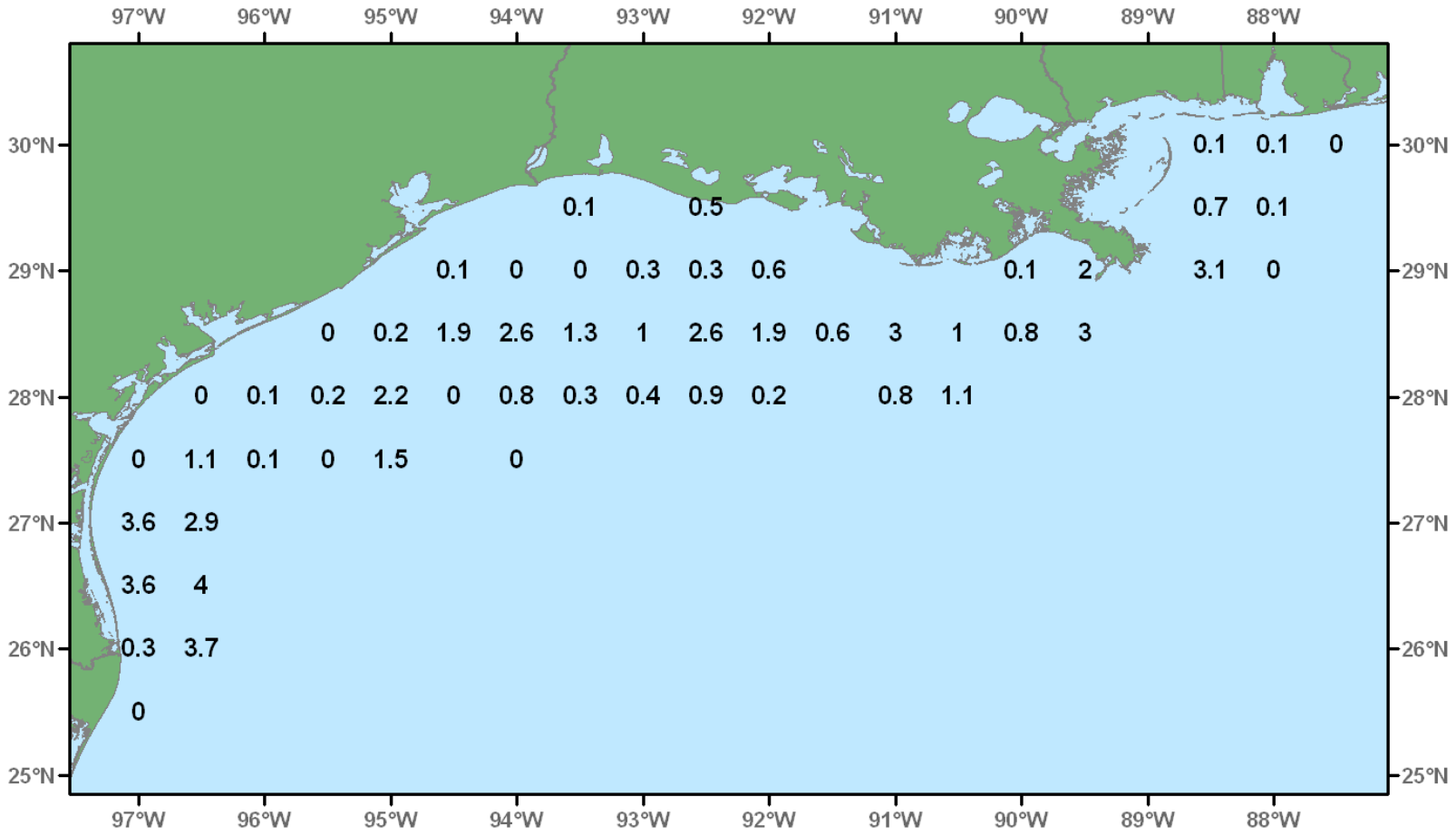


Figure 85. Lesser blue crab, Callinectes similis, lb/hour for October-December 2003.

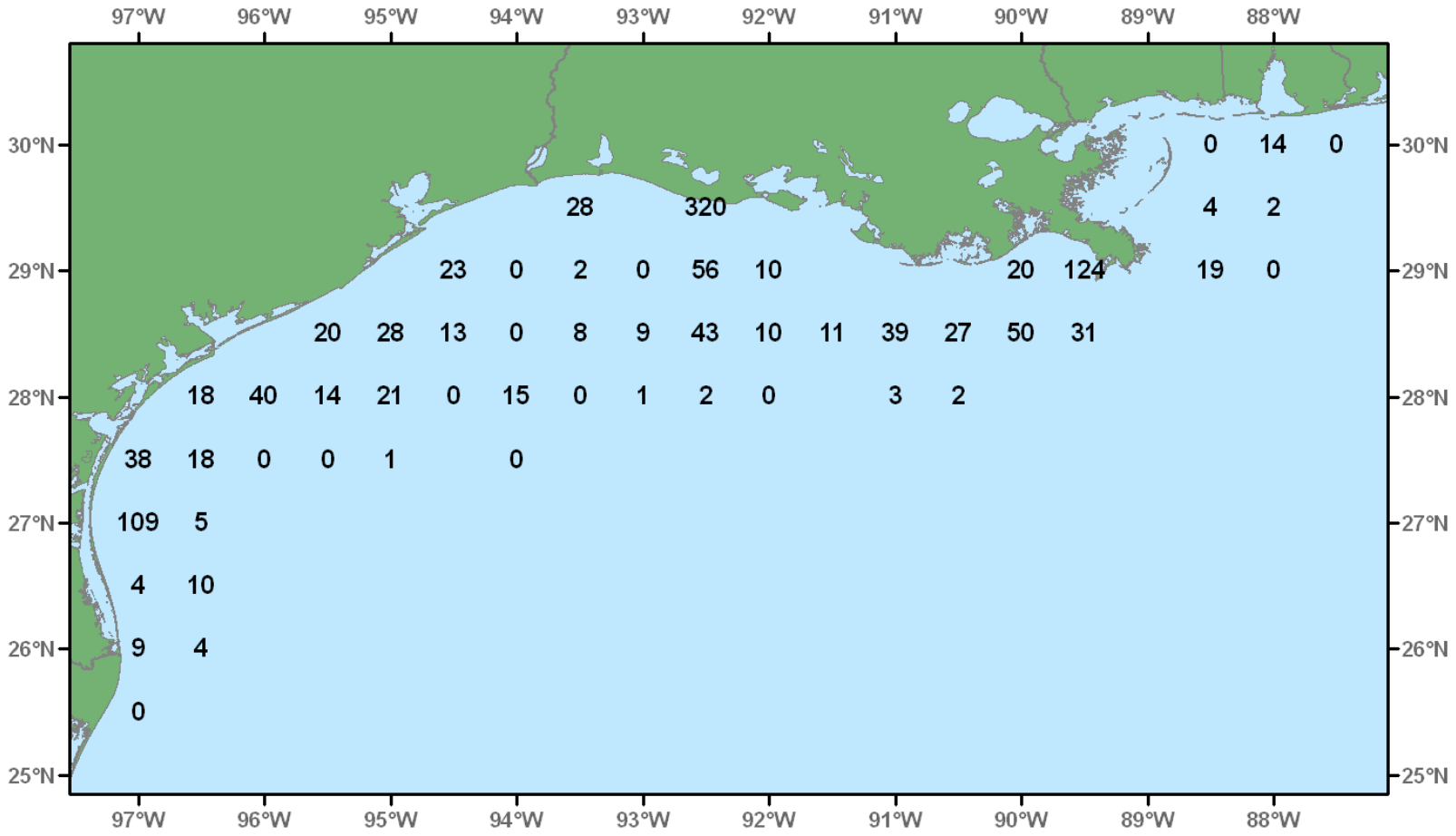


Figure 86. Mantis shrimp, Squilla empusa, number/hour for October-December 2003.

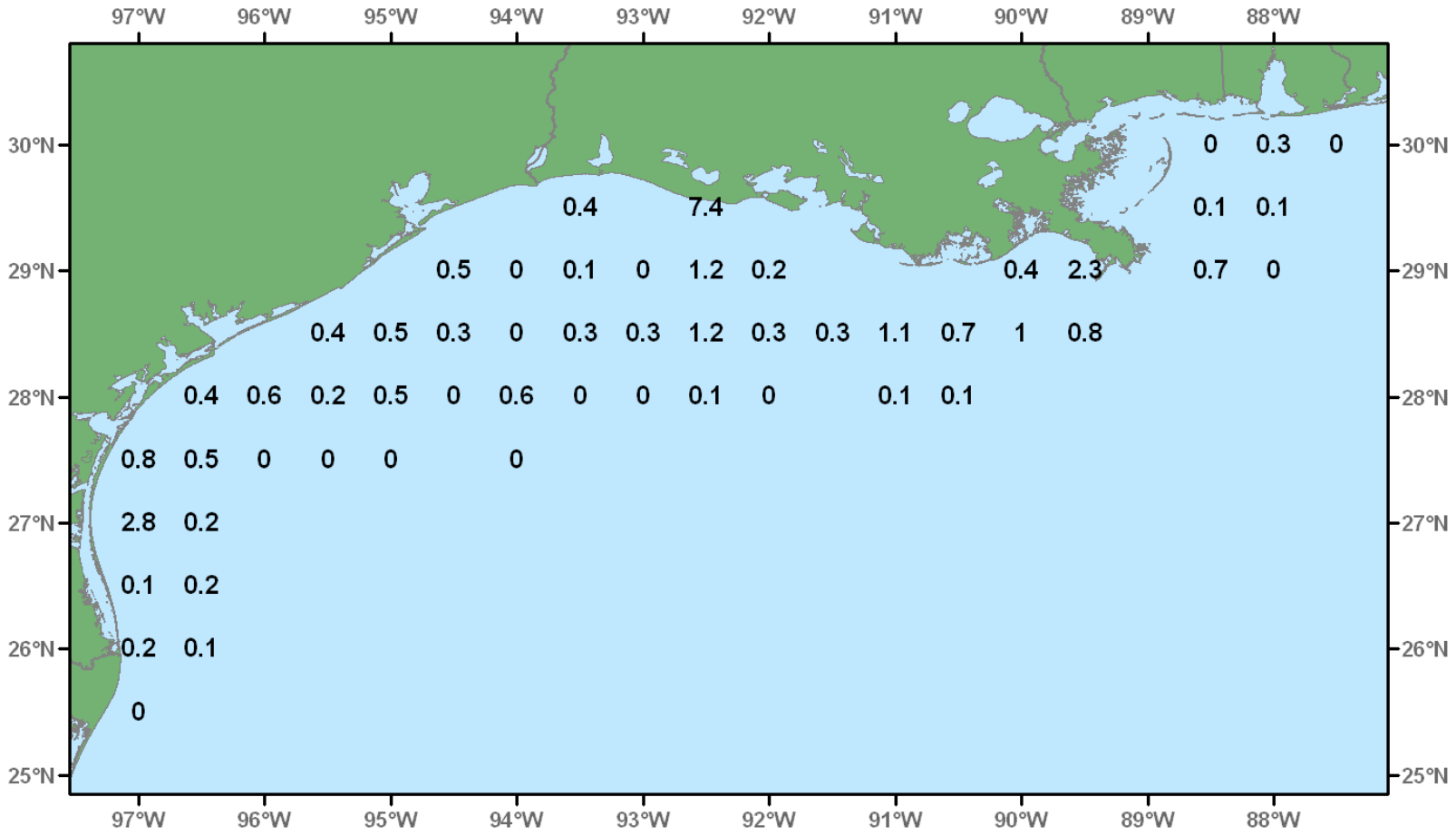


Figure 87. Mantis shrimp, Squilla empusa, lb/hour for October-December 2003.

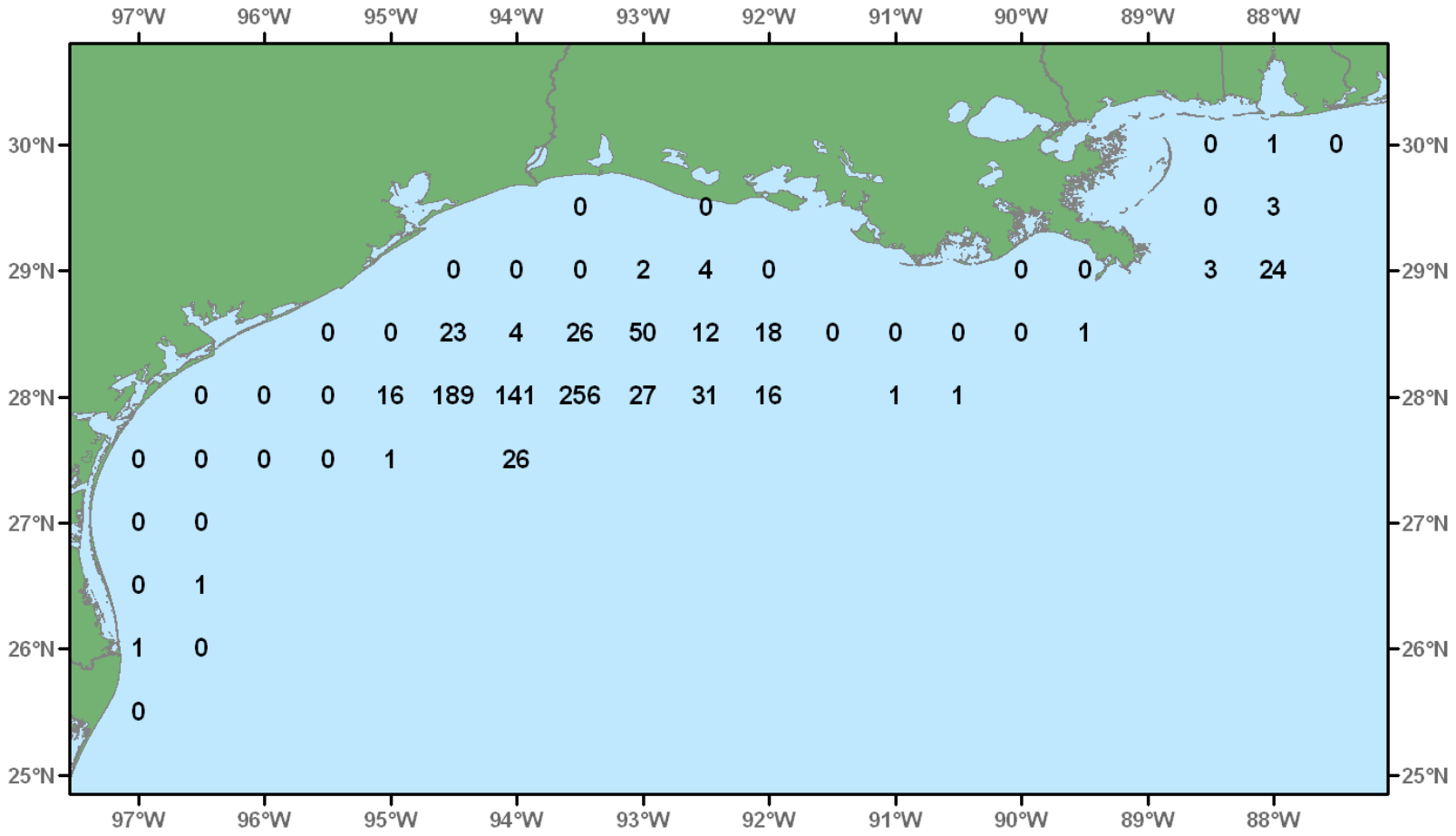


Figure 88. Brown rock shrimp, Sicyonia brevirostris, number/hour for October-December 2003.

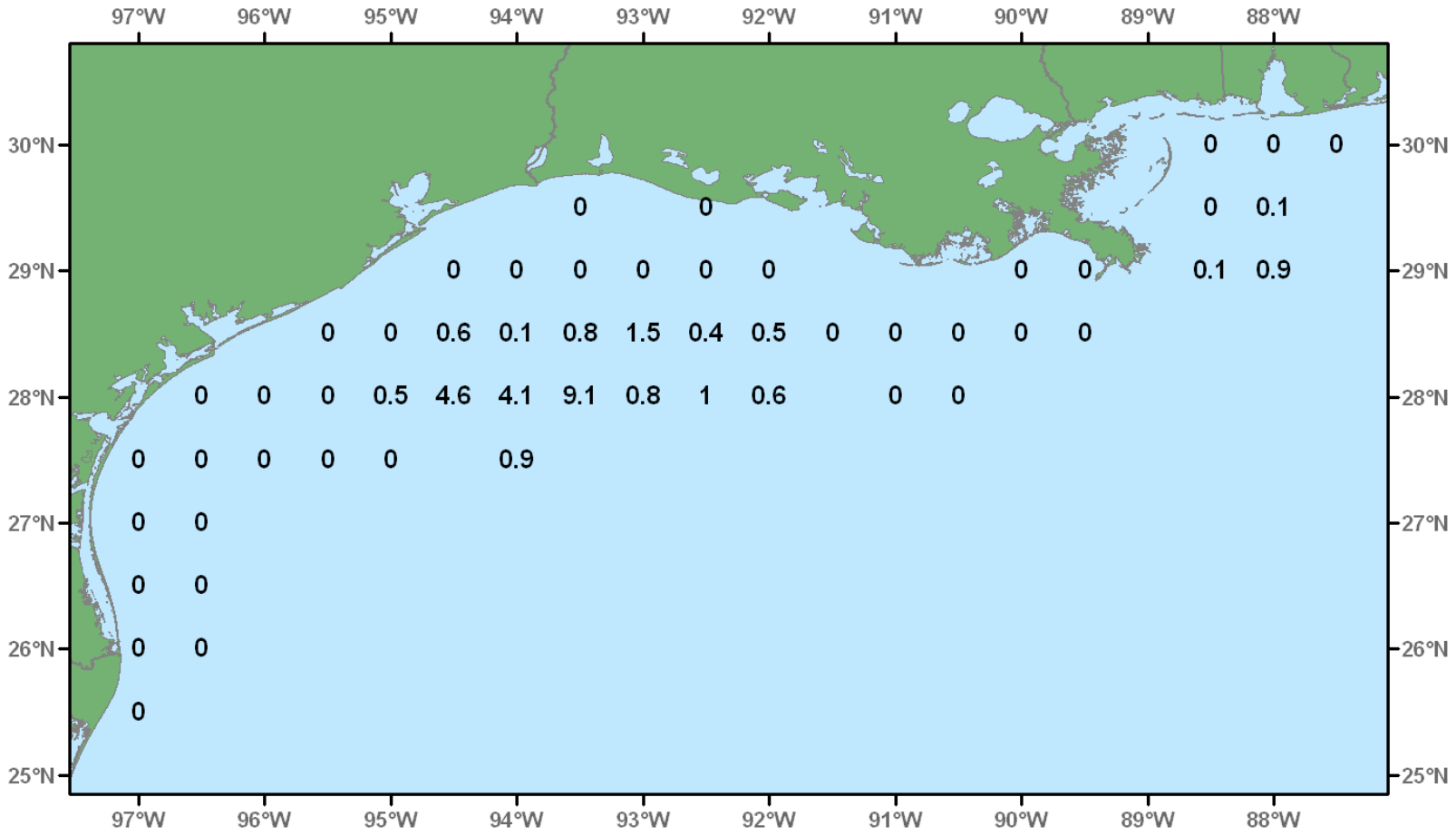


Figure 89. Brown rock shrimp, Sicyonia brevirostris, lb/hour for October-December 2003.

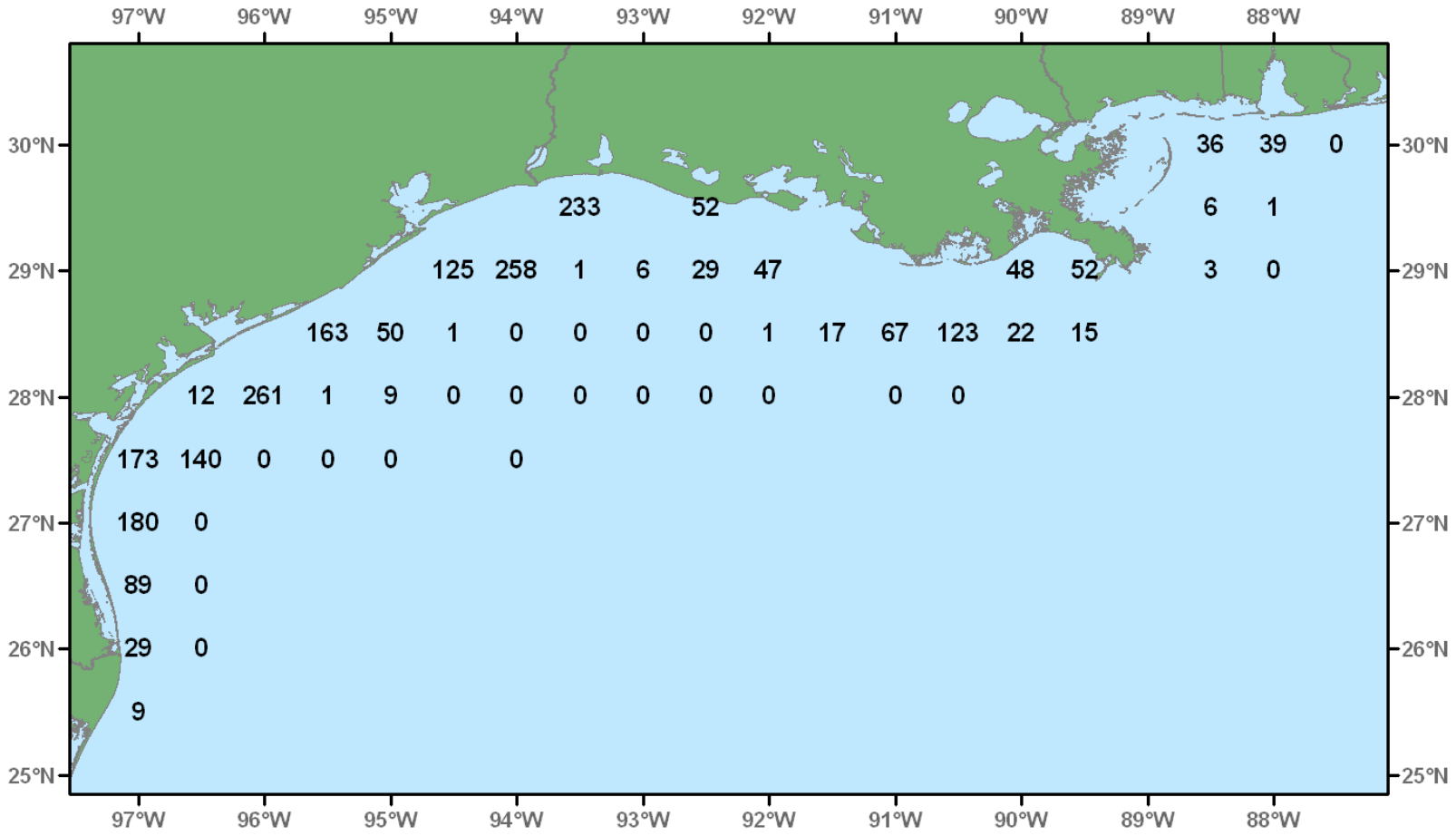


Figure 90. Atlantic brief squid, Lolliguncula brevis, number/hour for October-December 2003.

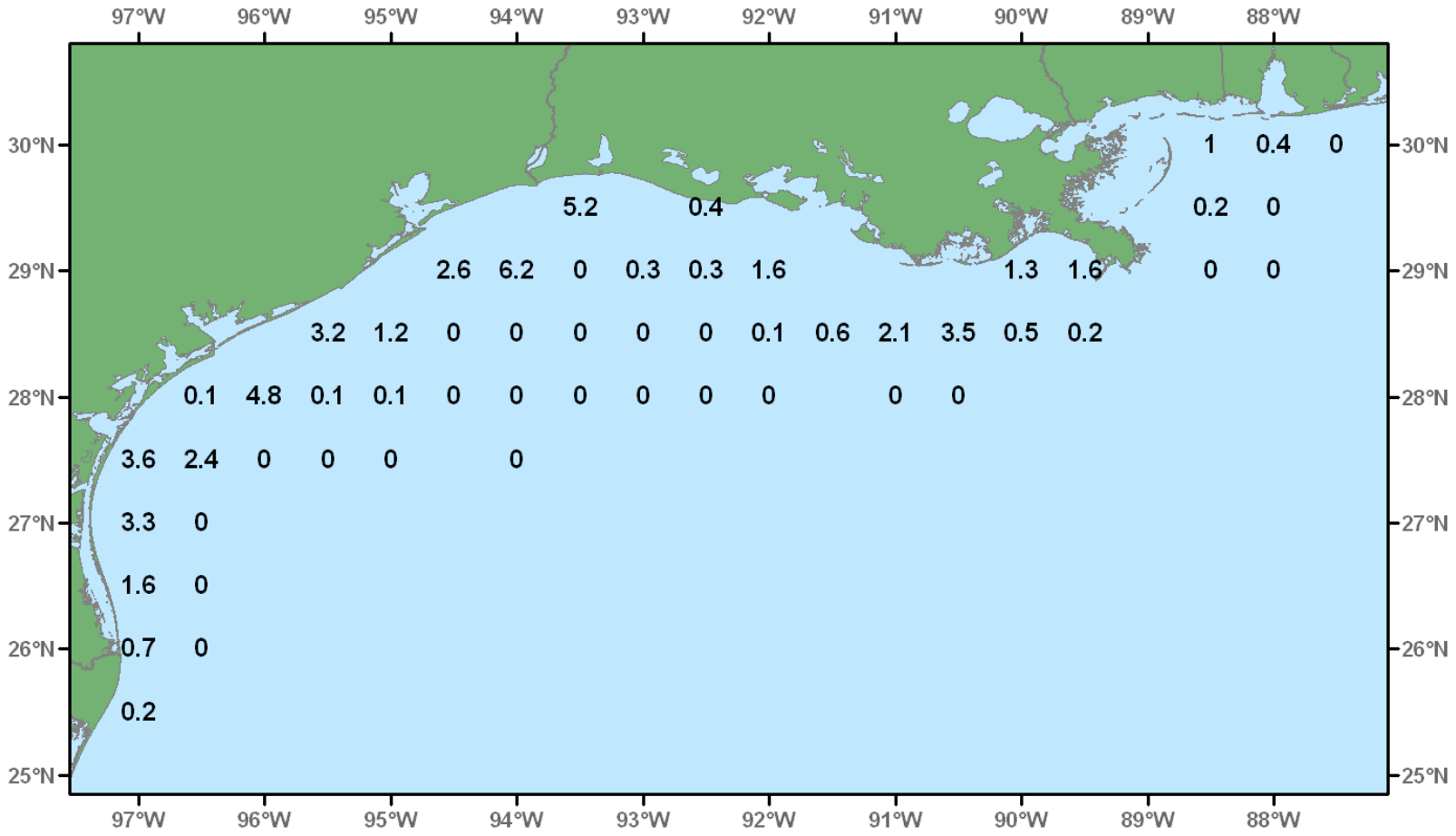


Figure 91. Atlantic brief squid, Lolliguncula brevis, lb/hour for October-December 2003.

LITERATURE CITED

Atlantic States Marine Fisheries Commission. 2006. SEAMAP Management Plan: 2006-2010. 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.

Ditty, J.G. and R.F. Shaw. 1992. Larval development, distribution, and ecology of cobia *Rachycentron canadum* (Family: Rachycentridae), in the northern Gulf of Mexico. Fishery Bulletin. Vol. 90:668-677.

Ditty, J.G. and R.F. Shaw. 1993. Larval development of tripletail, *Lobotes surinamensis* (Pisces: Lobotidae), and their spatial and temporal distribution in the northern Gulf of Mexico. Fishery Bulletin. Vol. 92:33-45.

Ditty, J.G., R.F. Shaw, C.B. Grimes, and J.S. Cope. 1994. Larval development, distribution, and abundance of common dolphin, *Coryphaena hippurus*, and pompano dolphin, *C. equiselis* (Family: Coryphaenidae), in the northern Gulf of Mexico. Fishery Bulletin. Vol. 94:275-291.

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.

Donaldson, D.M., N.J. Sanders, P.A. Thompson and D. Hanisko. 1998. SEAMAP environmental and biological atlas of the Gulf of Mexico, 1996. Gulf States Marine Fisheries Commission. No. 52. 263 p.

Drass, D.M., K.L. Bootes, J. Lyczkowski-Shultz, B.H. Comyns, G.J. Holt, C.M. Riley, and R.P. Phelps. 2000. Larval development of red snapper, *Lutjanus campechanus*, with comparisons to co-occurring snapper species. Fishery Bulletin. Vol. 98(3):507-527.

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.

Gledhill, C.T. and J. Lyczkowski-Shultz. 2000. Indices of larval king mackerel, *Scomberomorus cavalla*, for use in population assessment in the Gulf of Mexico. Fishery Bulletin. Vol. 98(4):684-691.

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. 14 p. + 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. 46 p.

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.

LITERATURE CITED

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.

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.

Kelley, S., J.V. Gartner, Jr., W.J. Richards and L. Ejsymont. 1990. 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. 1993. 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.

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.

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.

Lyczkowski-Shultz, J. and R. Brasher. 1996. Ichthyoplankton data summaries from SEAMAP Summer Shrimp/Groundfish Surveys. Pages 27-42 *in* Uses of Fishery-Independent Data. General Session Proceedings, Gulf States Marine Fisheries Commission. No. 35.

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.

Rester, J.K., N.J. Sanders, P.A. Thompson and D. Hanisko. 1999. SEAMAP environmental and biological atlas of the Gulf of Mexico, 1997. Gulf States Marine Fisheries Commission. No. 63. 254 p.

Rester, J.K., N.J. Sanders, G. Pellegrin, Jr. and D. Hanisko. 2000. SEAMAP environmental and biological atlas of the Gulf of Mexico, 1998. Gulf States Marine Fisheries Commission. No. 75. 243 p.

Rester, J.K., N.J. Sanders, G. Pellegrin, Jr. and D. Hanisko. 2001. SEAMAP environmental and biological atlas of the Gulf of Mexico, 1999. Gulf States Marine Fisheries Commission. No. 82. 247 p.

Rester, J.K., N.J. Sanders, G. Pellegrin, Jr. and D. Hanisko. 2002. SEAMAP environmental and biological atlas of the Gulf of Mexico, 2000. Gulf States Marine Fisheries Commission. No. 101. Available on CD-ROM only.

Rester, J.K., N.J. Sanders, G. Pellegrin, Jr., and D. Hanisko. 2004. SEAMAP environmental and biological atlas of the Gulf of Mexico, 2001. Gulf States Marine Fisheries Commission. No. 118. Available on CD-ROM only.

LITERATURE CITED

Rester, J.K., N.J. Sanders, and G. Pellegrin, Jr. 2008. SEAMAP environmental and biological atlas of the Gulf of Mexico, 2002. Gulf States Marine Fisheries Commission. No. 156.

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. 1993. Indices of larval bluefin tuna, *Thunnus thynnus*, abundance in the Gulf of Mexico: modeling variability in growth, mortality, and gear selectivity. Bulletin of Marine Science. Vol. 53(2):912-929.

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.