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SEAMAP ENVIRONMENTAL AND BIOLOGICAL ATLAS OF THE GULF OF MEXICO, 2010

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GULF STATES MARINE FISHERIES COMMISSION

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INTRODUCTION

The Southeast Area Monitoring and Assessment Program (SEAMAP) is a State/Federal/university program for the collection, management, and dissemination of fishery-independent data (information collected without direct reliance on statistics reported by commercial or recreational fishermen) in United States waters of the Gulf of Mexico (Eldridge 1988). A major SEAMAP objective is to provide a large, standardized database needed by management agencies, industry, and scientists to make sound management decisions and further develop fishery resources in a cost-efficient manner. 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, Gulf Coast Research Laboratory (USM/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 2009 (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); 2003 (Rester et al. 2009); 2004 (Rester 2009); 2005 (Rester 2010); 2006 (Rester 2010); 2007 (Rester 2010); 2008 (Rester 2011); and 2009 (Rester 2011). Environmental assessment activities that occurred with each of the surveys can be found in Table 1. All data are available to researchers or interested individuals. Details about how to obtain SEAMAP data can be found in the Data Request section of this document.

In early 2010, 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 database, it was decided to continue the same types of survey activities conducted in 1982 through 2009. Overall survey objectives in 1982 to 2010 were to assess the distribution and abundance of recreational and commercial organisms collected by plankton, trap/video, bottom longlines, hook and line, 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 database 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-eighth in a series of SEAMAP environmental and biological atlases presents such data, in a summarized form, collected during the 2010 SEAMAP surveys.

MATERIALS AND METHODS

Methodology for the 2010 SEAMAP surveys is similar to that of the 1982 through 2009 surveys. Sampling was conducted within the U.S. Exclusive Economic Zone (EEZ) and state territorial waters. The Alabama vessel DISCOVERY (February 20), the Louisiana vessel PELICAN (February 25-28), and Texas vessels SAN JACINTO, SABINE, MATAGORDA BAY, NUECES BAY and R.J. KEMP (February 1-17) sampled waters off Alabama, Louisiana, and Texas as part of the Winter Shrimp/Groundfish Survey.

The NOAA Ship GORDON GUNTER collected plankton and environmental data during the Spring Plankton Survey from April 7 to May 22. Vessels that participated in collecting plankton and environmental data during the Fall Plankton Survey included the NOAA Ship GORDON GUNTER (August 25 - September 28) and USM/GCRL vessel TOMMY MUNRO (September 17-20).

The Louisiana vessel PELICAN sampled waters off Louisiana from April 16-19 during the Spring Shrimp/Groundfish Survey. Vessels that participated in the Summer Shrimp/Groundfish Survey and concurrently sampled plankton and environmental data included the USM/GCRL vessel TOMMY MUNRO (May 31 - August 26), the Louisiana vessel PELICAN (June 8-11), and the NOAA Ship OREGON II (June 26 - August 2). The Alabama vessel DISCOVERY (June 2-8), Texas vessels SAN JACINTO, SABINE, MATAGORDA BAY, NUECES BAY and R.J. KEMP (June 1-21), and Florida using the TOMMY MUNRO (June 25 - July 17) did not sample plankton in conjunction with the summer survey.

The NOAA Ship PISCES participated in the Reef Fish Survey from June 17 - July 11, while the NOAA Ship GANDY participated in the Reef Fish Survey from March 17 - September 5. Florida sampled from August 22-30 aboard the WEATHERBIRD II.

Vessels that participated in the Fall Shrimp/Groundfish Survey and concurrently sampled plankton and environmental data included the NOAA Ships OREGON II (October 9 - November 18); the USM/GCRL vessel TOMMY MUNRO (October 6-8); and the Louisiana vessel PELICAN (September 22-24). The Alabama vessel DISCOVERY (October 17-18), Florida using the TOMMY MUNRO (October 14-22), and Texas vessels SAN JACINTO, SABINE, MATAGORDA BAY, NUECES BAY and R.J. KEMP (November 1-19) did not sample plankton in conjunction with the fall survey.

Mississippi conducted bottom longline sampling monthly from March to October as part of the Inshore Bottom Longline Survey. Alabama conducted bottom longline sampling monthly from May to October, while Texas conducted bottom longline sampling March through September.

Alabama began a new Vertical Line Survey for reef fish over artificial and natural reefs. Alabama conducted sampling in April, May, June, November, and December.

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 or 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 m³, but is typically 30 to 40 m³ at the shallowest stations and 300 to 400 m³ 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 95% ethanol and later transferred to fresh ethanol.

Initial processing of one bongo sample and one neuston sample 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. 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 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 2009 are available for loan to researchers throughout the country. The alternate bongo and neuston samples from each station are retained at USM/GCRL as a backup for those samples transshipped to ZSIOP in case of loss or damage during transit. These

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.

backup unsorted plankton samples are curated and housed at the SEAMAP Invertebrate Plankton Archiving Center, managed in conjunction with USM/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 2010.

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 MgCO₃ was added, of up to 3 liters of water from the 9 liter sample were filtered through GF/C filters. The three filters were placed individually in Petri dishes, wrapped in opaque material and

frozen until analysis. Each of the three samples was analyzed separately in the laboratory. Values in the tables that follow are the mean of the three samples.

Laboratory analyses for chlorophyll a and phaeophytin a (chlorophyll degradation product) were conducted by fluorometry and spectrophotometry. The general extraction procedures prior to measurement were similar. Samples analyzed by spectrophotometer included other chlorophyllous products, but these have not been included as data in this report. The methodology used is described in Strickland and Parsons (1972) and Jeffrey and Humphrey (1975). Some of the values have been deleted from the database 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

In the fall of 2008, NMFS changed their method of selecting sampling sites. The states adopted this change beginning in 2010. Diurnal stratifications were dropped in the selection process, and geographic strata (which were mostly 2 to 3 statistical zone groupings) were changed to single zones (Figure 1). Both station selection methods, the old and the new, are probability based designs. With probability sampling, each unit in the survey population has a known, positive probability of selection. This property of probability sampling avoids selection bias and enables one to use statistical theory to make valid inferences from the sample to the survey population. More specifically, the new method employs probability proportional to size sampling. In this type of sampling, a unit's selection probability is proportional to its size measure which in this case is geographical surface area. For example, if Unit A has twice the surface area of Unit B, then Unit A will have twice the probability of having a sample selected from it than B. The end result is that Unit A will have about twice the number of samples as B. Even though diurnal strata were dropped in the sampling site selection process, this information is not lost since samples can be post-stratified. Following is an example of how sampling sites are now selected.

Bathymetry data were downloaded from the National Geophysical Data Center (NGDC) web site (Divins, D.L., and D. Metzger, NGDC Coastal Relief Model, <http://www.ngdc.noaa.gov/mgg/coastal/coastal.html>). Because of the magnitude of data, they were downloaded by single NMFS Shrimp Statistical Zones (Figure 1). The download process allows for the definition of a desired data block through user supplied latitude and longitude boundaries. Since the data definition process is controlled by latitude and longitude only, some undesired depths were included in downloads (i.e., for NMFS, depths less than five or greater than sixty fathoms). These records were deleted later through a Statistical Analysis System (SAS) program. Each bathymetric

record represents a 3 arc-second element of data (≈ 0.05 -by- 0.05 minutes of latitude and longitude); therefore, the number of data records was used as a measure of size for each respective statistical zone. The bathymetry data were then used as input to a SAS program which performed three functions; defined the sampling universe, determined the sampling proportions according to sizes of statistical zones, and randomly selected the sample sites according to the defined proportions.

Thirty minutes was selected as a tow time standard that was long enough to obtain a good sample, but short enough to maintain the efficiency of the surveys. Therefore all SEAMAP vessels now use a standard tow time of 30 minutes except the Texas vessels. The Texas vessels towed 10 minutes parallel to the depth stratum.

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 4 through 21 (Figure 1). 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 and Texas measure a minimum of 50 shrimp.

Winter Shrimp/Groundfish Survey

The design of the Winter Shrimp/Groundfish Survey was similar to the other Shrimp/Groundfish Surveys. The Winter Shrimp/Groundfish Survey sampled waters off Alabama in NMFS statistical zone 11, off Louisiana in NMFS statistical zones 13-15, and off Texas in NMFS statistical zones 17-21 (Figure 1).

Spring Shrimp/Groundfish Survey

The design of the Spring Shrimp/Groundfish Survey was similar to the other Shrimp/Groundfish Surveys. During the Spring Shrimp/Groundfish Survey, Louisiana completed trawl stations off the coast of Louisiana in NMFS shrimp statistical zones 13 through 15 (Figure 1). Catch rates were treated in the same manner as the other Shrimp/Groundfish Survey, with the exception to shrimp catches, where 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 fish 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 fish 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-m², 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 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.

INSHORE BOTTOM LONGLINE SURVEY

This nearshore survey complements an existing long-term fisheries independent survey currently being conducted by NMFS offshore, by targeting shark and finfish species within the shallow waters of the north central Gulf of Mexico. The objectives of the survey were to collect information on coastal shark and finfish abundances and distribution with a 1-mile longline and to collect environmental data. During the 2010 Inshore Bottom Longline Survey, the survey design included several sampling regions: Mississippi Sound, south of the Mississippi and Alabama Barrier Islands, northern Chandeleur Sound, Galveston Bay, Corpus Christi Bay, and Aransas Bay.

Stations were chosen randomly within each area and were stratified by depth (0-5m, 5-10m, and 10-20m). The stations were sampled over a four-day period between the hours of 7:30 a.m. and 7:30 p.m. each month. The sampling protocol follows the procedures established by the NMFS bottom longline survey. All equipment used in this inshore shark survey is identical to the equipment used by NMFS. The longline gear consisted of a 1.6 km (426 kg test monofilament) mainline with 100 gangions (3.66 m, 332 kg test monofilament) containing #15/0 circle hooks (0 offset) and baited with Atlantic mackerel, *Scomber scomber*. The mainline was weighted down with a midpoint and endpoint weight. Radar high-flyers with strobe bullet buoys were used to mark the longline

locations. A hydraulic longline reel was used for setting and retrieving the mainline. The longline was fished for 1-hr and then retrieved.

VERTICAL LINE SURVEY

In 2010, Alabama started a new vertical line survey to sample reef fish over artificial reefs and other areas. The sampling gear used a typical commercial bandit rig that holds approximately 500 feet of clear 300 lb test mainline. A 24-ft. backbone (leader) was attached to the terminal end of the mainline. An approximately ten pound weight was attached to the terminal end of the backbone. The backbone was rigged with ten 18-inch long gangions at intervals of two feet. A total of 12 grids were fished per survey. Two structure and two non-structure areas were randomly chosen and equally allocated across three depth strata. Vertical line reels were randomly baited with either Atlantic mackerel or squid. Soak time was five minutes. Fish were retained and processed for age and fecundity. All fish were sacrificed for otoliths at stations deeper than 60 m. In water depth less than 60 m, stations were assigned as tag and release or collection sites.

RESULTS

PLANKTON SURVEYS

The SEAMAP Archiving Center received 28,116 identified ichthyoplankton lots in 2010. 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 are shown in Figure 2. Plankton stations for the Fall Plankton Survey are shown in Figure 3.

TRAWL SURVEYS

Winter Shrimp/Groundfish Survey

Alabama, Louisiana, and Texas completed the Winter Shrimp/Groundfish Survey in January and February. A plot of station locations is presented in Figure 4. A species composition list is presented in Table 2 ranked in order of abundance, within the categories of finfish, crustaceans, and other invertebrates.

Spring Shrimp/Groundfish Survey

Louisiana completed the Spring Shrimp/Groundfish Survey in April. It has always been a goal of SEAMAP to conduct seasonal trawl surveys, but funding limitations have prevented all SEAMAP partners from participating. A plot of station locations is presented in Figure 5 while a species composition list is listed in Table 3.

Summer Shrimp/Groundfish Survey

Shrimp and groundfish sampling was conducted during May through August from south Florida to Brownsville, Texas. Figure 6 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 4, ranked in order of abundance, within the categories of finfish, crustaceans, and other invertebrates.

Fall Shrimp/Groundfish Survey

Shrimp and groundfish sampling was conducted from September through November from south Florida to Brownsville, Texas. Figure 7 shows the station locations. The Fall Shrimp/Groundfish Survey consisted of biological trawl data, concomitant environmental, and plankton data. A species composition listing from the 40-ft and 20-ft trawls is presented in Table 5, ranked in order of abundance, within the categories of finfish, crustaceans, and other invertebrates.

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. Summarized data were distributed weekly to approximately 100 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 March through September by NMFS personnel and during August by Florida personnel. Station locations are plotted in Figure 8. Video tapes from all sources were analyzed using NMFS standardized protocols.

INSHORE BOTTOM LONGLINE SURVEY

Station locations for the Inshore Bottom Longline Survey are plotted in Figure 9. A species composition list is presented in Table 6. The species list is ranked in order of abundance.

VERTICAL LINE SURVEY

Station locations for the Vertical Line Survey are plotted in Figure 10. A species composition list, ranked in order of abundance, is presented in Table 7.

DISCUSSION

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

distributions within the Gulf of Mexico can be analyzed with respect to environmental data to assess population abundance as a function of environmental change.

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

Much use has already been made of SEAMAP data. For example, during the past SEAMAP surveys an area of very low dissolved bottom oxygen was found off Louisiana in the summers of 1982, 1985-2009. 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 January 2010. This report contained the results and an overview of the effect of the 2009 Texas Closure. After review of these data and other information, the GMFMC voted to continue the Texas Closure for 2010.

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: 2011-2015 (ASMFC 2011).

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 39564; (228) 875-5912 or via e-mail at jrester@gsmfc.org.

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Table 1. List of SEAMAP survey activities from 1982 to 2010.

SEAMAP SURVEY ACTIVITIES						
YEAR	WINTER SHRIMP/GROUNDFISH	SPRING PLANKTON	SPRING SHRIMP/GROUNDFISH	SUMMER SHRIMP/GROUNDFISH	BUTTERFISH	FALL PLANKTON
1982		APRIL-MAY		JUNE-JULY	--	--
1983		APRIL-MAY		JUNE-JULY	--	--
1984		APRIL-MAY		JUNE-JULY	--	AUGUST
1985		--		JUNE-JULY	JULY-AUGUST	SEPTEMBER
1986		APRIL-MAY		JUNE-JULY	MAY-JUNE	SEPTEMBER
1987		APRIL-MAY		JUNE-JULY	--	SEPTEMBER
1988		MARCH-MAY		JUNE-JULY	--	SEPTEMBER-OCTOBER
1989		APRIL-MAY		JUNE-JULY	--	SEPTEMBER-OCTOBER
1990		APRIL-MAY		JUNE-JULY	--	SEPTEMBER-OCTOBER
1991		APRIL-MAY		JUNE-JULY	--	AUGUST-SEPTEMBER
1992		APRIL-MAY		JUNE-JULY	--	AUGUST-OCTOBER
1993		APRIL-MAY		JUNE-JULY	--	SEPTEMBER-OCTOBER
1994		APRIL-MAY		JUNE-JULY	--	SEPTEMBER-OCTOBER
1995		APRIL-JUNE		JUNE-JULY	--	SEPTEMBER
1996		APRIL-JUNE		JUNE-JULY	--	SEPTEMBER-OCTOBER
1997		APRIL-JUNE		JUNE-JULY	--	SEPTEMBER-OCTOBER
1998		APRIL-JUNE		JUNE-JULY	--	SEPTEMBER-OCTOBER
1999		APRIL-MAY		JUNE-JULY	--	SEPTEMBER-OCTOBER
2000		APRIL-MAY		JUNE-JULY	--	SEPTEMBER-OCTOBER
2001		APRIL-MAY		JUNE-JULY	--	AUGUST-OCTOBER
2002		APRIL-MAY		JUNE-JULY	--	AUGUST-OCTOBER
2003		MAY		JUNE-JULY	--	AUGUST-OCTOBER
2004		APRIL-JUNE		JUNE-JULY	--	SEPTEMBER
2005		APRIL-MAY		JUNE-AUGUST	--	--
2006		APRIL-MAY		JUNE-JULY	--	AUGUST-SEPTEMBER
2007		MARCH-JUNE		JUNE-AUGUST	--	AUGUST-SEPTEMBER
2008		APRIL-JUNE	APRIL	JUNE-AUGUST	--	SEPTEMBER
2009	JANUARY-FEBRUARY	APRIL-JUNE	MARCH	JUNE-JULY	--	AUGUST-SEPTEMBER
2010	FEBRUARY	APRIL-MAY	APRIL	JUNE-AUGUST	--	AUGUST-SEPTEMBER

Table 1. List of SEAMAP survey activities from 1982 to 2010 (continued).

SEAMAP SURVEY ACTIVITIES					
YEAR	FALL SHRIMP/GROUNDFISH	WINTER PLANKTON	INSHORE BOTTOM LONGLINE	VERTICAL LINE	REEF FISH
1982	--	--	--	--	--
1983	--	DECEMBER	--	--	--
1984	--	DECEMBER	--	--	--
1985	SEPTEMBER-DECEMBER	--	--	--	--
1986	OCTOBER-DECEMBER	--	--	--	--
1987	SEPTEMBER-DECEMBER	--	--	--	--
1988	OCTOBER-DECEMBER	--	--	--	--
1989	OCTOBER-DECEMBER	--	--	--	--
1990	OCTOBER-DECEMBER	--	--	--	--
1991	SEPTEMBER-DECEMBER	--	--	--	--
1992	OCTOBER-DECEMBER	--	--	--	MAY-JUNE
1993	OCTOBER-DECEMBER	JAN.-FEB.	--	--	MAY-JULY, SEPT., NOV.
1994	OCTOBER-NOVEMBER	--	--	--	MAY-JULY, AUG.-OCT., DEC.
1995	OCTOBER-DECEMBER	--	--	--	JAN., JUNE-AUG., DEC.
1996	OCTOBER-DECEMBER	DECEMBER	--	--	JULY, AUGUST, NOVEMBER
1997	OCTOBER-DECEMBER	--	--	--	JUNE, JULY, AUG., NOV.
1998	OCTOBER-NOVEMBER	--	--	--	MAY, JULY, AUGUST
1999	OCTOBER-NOVEMBER	--	--	--	JAN., AUG., OCT., DEC.
2000	OCTOBER-DECEMBER	--	--	--	OCTOBER, NOVEMBER
2001	OCTOBER-DECEMBER	--	--	--	MAY, JUNE, OCTOBER
2002	OCTOBER-DECEMBER	--	--	--	FEBRUARY-MAY, OCTOBER
2003	OCTOBER-DECEMBER	--	--	--	OCTOBER-NOVEMBER
2004	OCTOBER-DECEMBER	JANUARY	--	--	FEBRUARY-MARCH
2005	OCTOBER-NOVEMBER	--	--	--	FEBRUARY-JULY, OCTOBER
2006	OCTOBER-DECEMBER	--	--	--	FEBRUARY-AUGUST
2007	OCTOBER-DECEMBER	--	--	--	FEBRUARY-MAY
2008	SEPTEMBER-NOVEMBER	FEB.-MAR.	MARCH-OCTOBER	--	FEBRUARY-AUGUST
2009	SEPTEMBER-NOVEMBER	FEB.-MAR.	MARCH-OCTOBER	--	APRIL-AUGUST
2010	SEPTEMBER-NOVEMBER	FEB.-MAR.	MARCH-OCTOBER	APRIL-DECEMBER	MARCH-SEPTEMBER

Table 2. 2010 Winter Shrimp/Groundfish Survey species composition list, 119 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
<u>Finfishes</u>					
Micropogonias undulatus	Atlantic croaker	11694	505.3	67	56.3
Cynoscion nothus	silver seatrout	5267	72.7	68	57.1
Leiostomus xanthurus	spot	1979	127.2	61	51.3
Ariopsis felis	hardhead catfish	1943	156.2	31	26.1
Stellifer lanceolatus	star drum	1509	20.5	66	55.5
Cynoscion arenarius	sand seatrout	760	55.3	55	46.2
Trichiurus lepturus	Atlantic cutlassfish	669	13.1	34	28.6
Selene setapinnis	Atlantic moonfish	639	10.1	15	12.6
Sphoeroides parvus	least puffer	498	2.9	38	31.9
Etropus crossotus	fringed flounder	333	4.8	53	44.5
Syacium gunteri	shoal flounder	299	5.1	44	37.0
Bairdiella chrysoura	silver perch	286	8.5	18	15.1
Peprilus burti	gulf butterfish	239	2.1	44	37.0
Prionotus roseus	bluespotted searobin	209	5.2	23	19.3
Citharichthys spilopterus	bay whiff	184	2.2	30	25.2
Stenotomus caprinus	longspine porgy	180	6.5	3	2.5
Bagre marinus	gafftopsail catfish	171	46.9	14	11.8
Anchoa hepsetus	striped anchovy	159	3.3	11	9.2
Prionotus rubio	blackwing searobin	153	6.9	8	6.7
Peprilus paru	harvestfish	141	3.9	51	42.9
Diplectrum bivittatum	dwarf sand perch	136	2.2	10	8.4
Larimus fasciatus	banded drum	109	2.1	27	22.7
Chaetodipterus faber	Atlantic spadefish	100	1.9	15	12.6
Peprilus triacanthus	butterfish	99	1.6	5	4.2
Prionotus tribulus	bighead searobin	94	0.8	16	13.4
Menticirrhus americanus	southern kingfish	90	9.0	37	31.1

Table 2. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER	TOTAL WEIGHT	NUMBER OF	% FREQUENCY
		CAUGHT	CAUGHT (KG)	TOWS WHERE CAUGHT	OCCURRENCE
<i>Antennarius radiosus</i>	singlespot frogfish	81	0.2	15	12.6
<i>Symphurus plagiusa</i>	blackcheek tonguefish	77	1.4	27	22.7
<i>Diplectrum formosum</i>	sand perch	73	1.6	6	5.0
<i>Synodus foetens</i>	inshore lizardfish	57	2.6	14	11.8
<i>Lutjanus campechanus</i>	red snapper	54	1.7	9	7.6
<i>Lagodon rhomboides</i>	pinfish	48	1.4	10	8.4
<i>Brevoortia patronus</i>	gulf menhaden	43	2.9	8	6.7
<i>Calamus leucosteus</i>	whitebone porgy	39	3.2	2	1.7
<i>Orthopristis chrysoptera</i>	pigfish	38	3.2	6	5.0
<i>Eucinostomus argenteus</i>	spotfin mojarra	38	0.4	3	2.5
<i>Urophycis floridana</i>	southern hake	33	0.7	16	13.4
<i>Rhinoptera bonasus</i>	cownose ray	31	135.4	3	2.5
<i>Centropristis philadelphica</i>	rock sea bass	31	0.4	6	5.0
<i>Prionotus longispinosus</i>	bigeye searobin	26	0.7	5	4.2
<i>Bollmannia communis</i>	ragged goby	25	0.1	4	3.4
<i>Cyclopsetta fimbriata</i>	spotfin flounder	22	2.9	6	5.0
<i>Paralichthys lethostigma</i>	southern flounder	21	5.4	14	11.8
<i>Cynoscion nebulosus</i>	spotted seatrout	20	0.2	4	3.4
<i>Pogonias cromis</i>	black drum	19	109.8	8	6.7
<i>Chloroscombrus chrysurus</i>	Atlantic bumper	19	1.2	7	5.9
<i>Dorosoma petenense</i>	threadfin shad	18	0.4	6	5.0
<i>Prionotus scitulus</i>	leopard searobin	18	0.6	2	1.7
<i>Scorpaena brasiliensis</i>	barbfish	17	0.2	6	5.0
<i>Urophycis regia</i>	spotted hake	15	0.2	6	5.0
<i>Dasyatis sabina</i>	Atlantic stringray	14	4.9	12	10.1
<i>Anchoa mitchilli</i>	bay anchovy	13	0.0	8	6.7
<i>Porichthys plectrodon</i>	Atlantic midshipman	12	0.2	4	3.4
<i>Harengula jaguana</i>	scaled sardine	10	0.2	2	1.7
<i>Syacium papillosum</i>	dusky flounder	10	0.5	2	1.7
<i>Etropus cyclosquamus</i>	shelf flounder	9	0.1	1	0.8

Table 2. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF	
				TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
<i>Ophidion josephi</i>	crested cusk-eel	8	0.3	2	1.7
<i>Lagocephalus laevigatus</i>	smooth puffer	6	0.1	3	2.5
<i>Lepophidium brevibarbe</i>	blackedge cusk-eel	6	0.0	2	1.7
<i>Sciaenops ocellatus</i>	red drum	5	28.1	4	3.4
<i>Pomatomus saltatrix</i>	bluefish	5	0.4	3	2.5
<i>Dasyatis say</i>	bluntnose stingray	4	15.5	1	0.8
<i>Haliieutichthys aculeatus</i>	pancake batfish	4	0.0	4	3.4
<i>Ophidion grayi</i>	blotched cusk-eel	3	0.2	2	1.7
<i>Opisthonema oglinum</i>	Atlantic thread herring	3	0.1	1	0.8
<i>Narcine brasiliensis</i>	lesser electric ray	2	0.1	1	0.8
<i>Chilomycterus schoepfii</i>	striped burrfish	2	0.7	2	1.7
<i>Anchoa nasus</i>	longnose anchovy	2	0.0	1	0.8
<i>Menticirrhus littoralis</i>	gulf kingfish	2	0.2	2	1.7
<i>Selene vomer</i>	lookdown	2	0.0	1	0.8
<i>Neomerinthe hemingwayi</i>	spinycheek scorpionfish	2	0.0	1	0.8
<i>Trinectes maculatus</i>	hogchoker	2	0.0	2	1.7
<i>Centropristis ocyurus</i>	bank sea bass	2	0.4	1	0.8
<i>Caranx crysos</i>	blue runner	2	0.2	1	0.8
<i>Ophidion holbrookii</i>	bank cusk-eel	2	0.1	1	0.8
<i>Ancylopsetta ommata</i>	ocellated flounder	2	0.7	1	0.8
<i>Eucinostomus gula</i>	silver jenny	2	0.0	1	0.8
<i>Ogcocephalus corniger</i>	longnose batfish	1	0.0	1	0.8
<i>Raja texana</i>	roundel skate	1	0.6	1	0.8
<i>Trachurus lathami</i>	rough scad	1	0.0	1	0.8
<i>Ogcocephalus declivirostris</i>	slantbrow batfish	1	0.0	1	0.8
<i>Citharichthys macrops</i>	spotted whiff	1	0.0	1	0.8
<i>Trachinocephalus myops</i>	snakefish	1	0.0	1	0.8
<i>Sphyrna tiburo</i>	bonnethead	1	0.4	1	0.8
<i>Rachycentron canadum</i>	cobia	1	17.0	1	0.8
<i>Rhomboplites aurorubens</i>	vermillion snapper	1	0.0	1	0.8
<i>Haemulon aurolineatum</i>	tomtate	1	0.0	1	0.8

Table 2. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF	
				TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
<u>Crustaceans</u>					
Litopenaeus setiferus	white shrimp	2213	32.4	81	68.1
Rimapenaeus constrictus	roughneck shrimp	1669	5.3	41	34.5
Squilla empusa	mantis shrimp	235	2.8	40	33.6
Xiphopenaeus kroyeri	seabob	230	0.8	15	12.6
Callinectes similis	lesser blue crab	224	2.5	30	25.2
Portunus gibbesii	irridescent swimming crab	219	1.7	38	31.9
Rimapenaeus similis	roughback shrimp	176	0.5	37	31.1
Farfantepenaeus aztecus	brown shrimp	82	1.8	15	12.6
Squilla chydrea	mantis shrimp	57	0.4	7	5.9
Sicyonia dorsalis	lesser rock shrimp	44	0.1	11	9.2
Persephona crinita	pink purse crab	42	0.1	24	20.2
Farfantepenaeus duorarum	pink shrimp	41	0.8	15	12.6
Pagurus pollicaris	flatclaw hermit crab	28	0.2	15	12.6
Sicyonia brevirostris	brown rock shrimp	23	0.1	6	5.0
Libinia dubia	longnose spider crab	16	0.4	12	10.1
Portunus spinimanus	blotched swimming crab	15	0.1	8	6.7
Ovalipes floridanus	Florida lady crab	15	0.0	5	4.2
Livoneca redmanii	isopod	10	0.0	3	2.5
Hepatus epheliticus	calico crab	10	0.1	7	5.9
Callinectes sapidus	blue crab	9	0.3	6	5.0
Calappa sulcata	yellow box crab	8	2.1	6	5.0
Libinia emarginata	portly spider crab	8	0.2	6	5.0
Mesopenaeus tropicalis	salmon shrimp	6	0.0	1	0.8
Xanthidae	mud crabs	4	0.0	2	1.7
Anasimus latus	stilt spider crab	4	0.0	1	0.8
Nerocila acuminata		4	0.0	1	0.8
Speocarcinus lobatus	gulf squareback crab	4	0.0	3	2.5
Persephona mediterranea	mottled purse crab	3	0.0	3	2.5

Table 2. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER	TOTAL WEIGHT	NUMBER OF	% FREQUENCY
		CAUGHT	CAUGHT (KG)	TOWS WHERE CAUGHT	OCCURRENCE
<i>Dyspanopeus texanus</i>	gulf grassflat crab	3	0.0	3	2.5
<i>Podochela sidneyi</i>	shortfinger neck crab	3	0.0	3	2.5
<i>Pagurus longicarpus</i>	long-armed hermit crab	3	0.0	2	1.7
<i>Stenorhynchus seticornis</i>	yellowline arrow crab	2	0.0	2	1.7
<i>Metoporphaphis calcarata</i>	false arrow crab	2	0.0	2	1.7
<i>Gibbesia neglecta</i>	mantis shrimp	1	0.0	1	0.8
<i>Hexapanopeus angustifrons</i>	smooth mud crab	1	0.0	1	0.8
<i>Synalpheus fritzmuelleri</i>	speckled snapping shrimp	1	0.0	1	0.8
<i>Pyromaia cuspidata</i>	dartnose pear crab	1	0.0	1	0.8
<i>Alpheus formosus</i>	striped snapping shrimp	1	0.0	1	0.8
<i>Parthenope serrata</i>	sawtooth elbow crab	1	0.0	1	0.8
<i>Porcellana sigsbeiana</i>	striped porcelain crab	1	0.0	1	0.8
<i>Hypoconcha arcuata</i>	granulate shellback crab	1	0.0	1	0.8
<u>Others</u>					
<i>Lolliguncula brevis</i>	Atlantic brief squid	1649	13.9	82	68.9
<i>Cantharus cancellarius</i>	cancellate cantharus	34	0.1	9	7.6
<i>Loligo plei</i>	arrow squid	34	0.3	2	1.7
<i>Loligo spp.</i>	squids	30	1.5	9	7.6
<i>Neverita duplicata</i>	shark eye	10	0.2	7	5.9
<i>Loligo pealeii</i>	longfin squid	9	0.5	6	5.0
<i>Argopecten gibbus</i>	calico scallop	6	0.0	1	0.8
<i>Anadara ovalis</i>	blood ark	2	0.0	2	1.7
<i>Busycon sinistrum</i>	lightning whelk	2	0.3	2	1.7
<i>Pseudocyphoma intermedium</i>		2	0.0	2	1.7
<i>Nassarius acutus</i>	sharp nassa	1	0.0	1	0.8
<i>Anadara floridana</i>	cut-ribbed ark	1	0.0	1	0.8
<i>Armina</i>		1	0.0	1	0.8
<i>Lirophora clenchi</i>	Clench venus	1	0.0	1	0.8

Table 3. 2010 Spring Shrimp/Groundfish Survey species composition list, 33 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	TOTAL WEIGHT	NUMBER OF	% FREQUENCY
		CAUGHT	CAUGHT (KG)	TOWS WHERE CAUGHT	OCCURRENCE
<u>Finfishes</u>					
Micropogonias undulatus	Atlantic croaker	30435	1051.1	32	97.0
Anchoa hepsetus	striped anchovy	2762	70.7	18	54.5
Leiostomus xanthurus	spot	995	46.5	21	63.6
Cynoscion arenarius	sand seatrout	833	74.0	22	66.7
Cynoscion nothus	silver seatrout	593	34.8	22	66.7
Peprilus burti	gulf butterflyfish	548	4.7	18	54.5
Prionotus roseus	bluespotted searobin	513	11.3	23	69.7
Anchoa mitchilli	bay anchovy	502	1.8	7	21.2
Trichiurus lepturus	Atlantic cutlassfish	389	13.8	22	66.7
Urophycis floridana	southern hake	322	15.8	24	72.7
Syacium gunteri	shoal flounder	321	6.1	17	51.5
Caranx crysos	blue runner	288	3.0	9	27.3
Citharichthys spilopterus	bay whiff	171	1.5	10	30.3
Antennarius radiosus	singlespot frogfish	168	0.8	19	57.6
Etropus crossotus	fringed flounder	155	2.7	23	69.7
Lagodon rhomboides	pinfish	106	6.5	1	3.0
Stellifer lanceolatus	star drum	96	2.7	13	39.4
Prionotus tribulus	bighead searobin	86	0.2	7	21.2
Diplectrum bivittatum	dwarf sand perch	81	2.3	10	30.3
Sphoeroides parvus	least puffer	80	0.5	18	54.5
Lutjanus campechanus	red snapper	59	2.8	8	24.2
Eucinostomus argenteus	spotfin mojarra	47	1.1	4	12.1
Scomber japonicus	chub mackerel	36	0.2	2	6.1
Symphurus plagiusa	blackcheek tonguefish	27	0.5	12	36.4
Menticirrhus americanus	southern kingfish	26	3.1	6	18.2
Urophycis regia	spotted hake	24	0.2	3	9.1

Table 3. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF	
				TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
<i>Synodus foetens</i>	inshore lizardfish	24	1.1	7	21.2
<i>Larimus fasciatus</i>	banded drum	18	0.5	7	21.2
<i>Prionotus longispinosus</i>	bigeye searobin	15	0.4	4	12.1
<i>Brotula barbata</i>	bearded brotula	14	0.2	4	12.1
<i>Cyclopsetta chittendeni</i>	Mexican flounder	14	1.6	3	9.1
<i>Chloroscombrus chrysurus</i>	Atlantic bumper	13	0.3	4	12.1
<i>Chaetodipterus faber</i>	Atlantic spadefish	12	0.4	5	15.2
<i>Ariopsis felis</i>	hardhead catfish	11	3.0	5	15.2
<i>Lutjanus synagris</i>	lane snapper	8	0.3	1	3.0
<i>Paralichthys lethostigma</i>	southern flounder	8	1.9	4	12.1
<i>Rhizoprionodon terraenovae</i>	Atlantic sharpnose shark	8	18.0	4	12.1
<i>Pomatomus saltatrix</i>	bluefish	8	0.1	1	3.0
<i>Opisthonema oglinum</i>	Atlantic thread herring	7	0.4	4	12.1
<i>Peprilus paru</i>	harvestfish	7	0.4	5	15.2
<i>Cyclopsetta fimbriata</i>	spotfin flounder	6	1.0	3	9.1
<i>Centropristis philadelphica</i>	rock sea bass	6	0.1	3	9.1
<i>Selene setapinnis</i>	Atlantic moonfish	5	0.2	3	9.1
<i>Brevoortia patronus</i>	gulf menhaden	5	0.8	2	6.1
<i>Bairdiella chrysoura</i>	silver perch	5	0.2	3	9.1
<i>Trinectes maculatus</i>	hogchoker	4	0.0	1	3.0
<i>Orthopristis chrysoptera</i>	pigfish	3	0.3	2	6.1
<i>Ogcocephalus pantostictus</i>	spotted batfish	2	0.0	1	3.0
<i>Pristipomoides aquilonaris</i>	wenchman	2	0.0	2	6.1
<i>Trachinotus carolinus</i>	Florida pompano	2	0.2	1	3.0
<i>Halieutichthys aculeatus</i>	pancake batfish	2	0.0	2	6.1
<i>Centropristis ocyurus</i>	bank sea bass	2	0.1	1	3.0
<i>Symphurus civitatum</i>	offshore tonguefish	2	0.0	1	3.0
<i>Bollmannia communis</i>	ragged goby	2	0.0	2	6.1
<i>Scorpaena brasiliensis</i>	barbfish	2	0.0	1	3.0
<i>Scomberomorus maculatus</i>	Spanish mackerel	1	0.1	1	3.0

Table 3. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER	TOTAL WEIGHT	NUMBER OF	% FREQUENCY
		CAUGHT	CAUGHT (KG)	TOWS WHERE CAUGHT	OCCURRENCE
Sciaenops ocellatus	red drum	1	7.0	1	3.0
Lepophidium brevibarbe	blackedge cusk-eel	1	0.0	1	3.0
Gobionellus boleosoma	darer goby	1	0.0	1	3.0
Remora remora	remora	1	0.1	1	3.0
Gobiosoma bosc	naked goby	1	0.0	1	3.0
Sphyraena guachancho	guaguanche	1	0.1	1	3.0
Upeneus parvus	dwarf goatfish	1	0.0	1	3.0
Porichthys plectrodon	Atlantic midshipman	1	0.0	1	3.0
Ophidion josephi	crested cusk-eel	1	0.0	1	3.0
Rachycentron canadum	cobia	1	23.0	1	3.0
Gymnothorax nigromarginatus	blackedge moray	1	0.0	1	3.0
Oligoplites saurus	leatherjack	1	0.0	1	3.0
Aluterus monoceros	unicorn filefish	1	0.6	1	3.0
<u>Crustaceans</u>					
Rimapenaeus constrictus	roughneck shrimp	6412	18.0	29	87.9
Litopenaeus setiferus	white shrimp	356	15.9	31	93.9
Callinectes similis	lesser blue crab	153	1.0	14	42.4
Sicyonia dorsalis	lesser rock shrimp	79	0.1	11	33.3
Squilla empusa	mantis shrimp	75	1.0	17	51.5
Portunus gibbesii	iridescent swimming crab	55	0.4	12	36.4
Rimapenaeus similis	roughback shrimp	50	0.1	3	9.1
Ovalipes floridanus	Florida lady crab	40	0.2	8	24.2
Speocarcinus lobatus	gulf squareback crab	30	0.1	6	18.2
Portunus spinimanus	blotched swimming crab	26	0.4	4	12.1
Calappa sulcata	yellow box crab	24	2.9	5	15.2
Squilla chydrea	mantis shrimp	23	0.1	5	15.2
Farfantepenaeus aztecus	brown shrimp	18	0.5	6	18.2
Hepatus epheliticus	calico crab	8	0.2	3	9.1
Callinectes sapidus	blue crab	6	0.7	4	12.1

Table 3. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF	
				TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
Farfantepenaeus duorarum	pink shrimp	6	0.2	4	12.1
Persephona crinita	pink purse crab	5	0.0	4	12.1
Anasimus latus	stilt spider crab	4	0.0	1	3.0
Sicyonia brevirostris	brown rock shrimp	4	0.0	3	9.1
Alpheus floridanus	sand snapping shrimp	3	0.0	3	9.1
Neopanope		3	0.0	2	6.1
Porcellana sayana	spotted porcelain crab	2	0.0	1	3.0
Persephona mediterranea	mottled purse crab	1	0.0	1	3.0
Porcellana sigsbeiana	striped porcelain crab	1	0.0	1	3.0
Pagurus pollicaris	flatclaw hermit crab	1	0.0	1	3.0
Xanthidae	mud crabs	1	0.0	1	3.0
<u>Others</u>					
Lolliguncula brevis	Atlantic brief squid	806	8.8	20	60.6
Loligo spp.	squids	360	10.5	22	66.7

Table 4. 2010 Summer Shrimp/Groundfish Survey species composition list, 467 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
<u>Finfishes</u>					
Micropogonias undulatus	Atlantic croaker	265218	7225.2	188	40.3
Peprilus burti	gulf butterfish	140836	1954.2	216	46.3
Stenotomus caprinus	longspine porgy	46963	749.3	180	38.5
Trachurus lathami	rough scad	25151	420.5	129	27.6
Chloroscombrus chrysurus	Atlantic bumper	17067	370.3	145	31.0
Cynoscion nothus	silver seatrout	15910	576.5	128	27.4
Leiostomus xanthurus	spot	10738	508.6	109	23.3
Prionotus longispinosus	bigeye searobin	9228	150.5	152	32.5
Lagodon rhomboides	pinfish	9001	513.2	141	30.2
Prionotus roseus	bluespotted searobin	8154	42.5	57	12.2
Haemulon aurolineatum	tomtate	6067	266.7	100	21.4
Trichiurus lepturus	Atlantic cutlassfish	5500	220.2	131	28.1
Lutjanus synagris	lane snapper	3953	429.5	73	15.6
Syacium gunteri	shoal flounder	3946	71.8	131	28.1
Syacium papillosum	dusky flounder	3903	212.2	136	29.1
Synodus foetens	inshore lizardfish	3159	426.7	241	51.6
Anchoa hepsetus	striped anchovy	3136	69.4	50	10.7
Saurida brasiliensis	largescale lizardfish	3136	14.6	89	19.1
Cynoscion arenarius	sand seatrout	2859	205.8	126	27.0
Stellifer lanceolatus	star drum	2480	34.2	55	11.8
Decapterus punctatus	round scad	2312	26.0	43	9.2
Pristipomoides aquilonaris	wenchman	2069	111.7	77	16.5
Serranus atrobranchus	blackear bass	2001	26.2	61	13.1
Halieutichthys aculeatus	pancake batfish	1952	13.5	120	25.7
Eucinostomus	mojarras	1928	75.3	24	5.1
Centropristis philadelphica	rock sea bass	1900	75.0	120	25.7
Prionotus stearnsi	shortwing searobin	1696	17.5	74	15.8

Table 4. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER	TOTAL WEIGHT	NUMBER OF	% FREQUENCY
		CAUGHT	CAUGHT (KG)	TOWS WHERE CAUGHT	OCCURRENCE
<i>Trichopsetta ventralis</i>	sash flounder	1560	32.5	45	9.6
<i>Scorpaena calcarata</i>	smoothhead scorpionfish	1523	27.0	59	12.6
<i>Harengula jaguana</i>	scaled sardine	1522	62.0	48	10.3
<i>Upeneus parvus</i>	dwarf goatfish	1358	40.5	80	17.1
<i>Opisthonema oglinum</i>	Atlantic thread herring	1262	108.4	59	12.6
<i>Calamus arctifrons</i>	grass pogy	1069	84.2	16	3.4
<i>Synodus intermedius</i>	sand diver	1003	78.0	95	20.3
<i>Mullus auratus</i>	red goatfish	965	50.4	34	7.3
<i>Selene setapinnis</i>	Atlantic moonfish	964	65.1	80	17.1
<i>Haemulon plumierii</i>	white grunt	948	130.5	27	5.8
<i>Prionotus scitulus</i>	leopard searobin	919	14.9	16	3.4
<i>Larimus fasciatus</i>	banded drum	918	45.6	43	9.2
<i>Rhomboplites aurorubens</i>	vermilion snapper	859	78.0	55	11.8
<i>Calamus proridens</i>	littlehead pogy	839	164.2	63	13.5
<i>Prionotus paralatus</i>	Mexican searobin	768	8.3	42	9.0
<i>Lutjanus campechanus</i>	red snapper	754	166.9	119	25.5
<i>Anchoa mitchilli</i>	bay anchovy	739	1.2	18	3.9
<i>Sardinella aurita</i>	Spanish sardine	699	35.2	55	11.8
<i>Stephanolepis hispida</i>	planehead filefish	684	41.2	94	20.1
<i>Ariopsis felis</i>	hardhead catfish	678	108.3	50	10.7
<i>Diplectrum formosum</i>	sand perch	664	67.6	110	23.6
<i>Synodus poeyi</i>	offshore lizardfish	643	7.0	87	18.6
<i>Lepophidium brevibarbe</i>	blackedge cusk-eel	633	18.6	52	11.1
<i>Pagrus pagrus</i>	red pogy	629	13.4	34	7.3
<i>Trachinocephalus myops</i>	snakefish	606	40.1	80	17.1
<i>Porichthys plectrodon</i>	Atlantic midshipman	604	15.3	86	18.4
<i>Lagocephalus laevigatus</i>	smooth puffer	601	19.3	74	15.8
<i>Urophycis floridana</i>	southern hake	595	50.6	61	13.1
<i>Steindachneria argentea</i>	luminous hake	583	3.0	4	0.9
<i>Menticirrhus americanus</i>	southern kingfish	579	91.7	60	12.8

Table 4. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER	TOTAL WEIGHT	NUMBER OF	% FREQUENCY
		CAUGHT	CAUGHT (KG)	TOWS WHERE CAUGHT	OCCURRENCE
<i>Diplectrum bivittatum</i>	dwarf sand perch	557	17.3	52	11.1
<i>Etropus</i>		524	5.1	25	5.4
<i>Centropristis ocyurus</i>	bank sea bass	514	18.9	55	11.8
<i>Cyclopsetta chittendeni</i>	Mexican flounder	508	68.9	69	14.8
<i>Urophycis regia</i>	spotted hake	508	33.2	18	3.9
<i>Acanthostracion quadricornis</i>	scrawled cowfish	501	82.2	89	19.1
<i>Bellator militaris</i>	horned searobin	499	9.4	38	8.1
<i>Equetus lanceolatus</i>	jackknife fish	483	53.6	55	11.8
<i>Orthopristis chrysoptera</i>	pigfish	472	41.1	32	6.9
<i>Etropus crossotus</i>	fringed flounder	472	7.2	55	11.8
<i>Schultzea beta</i>	school bass	454	7.9	2	0.4
<i>Sphoeroides dorsalis</i>	marbled puffer	442	18.6	76	16.3
<i>Lepophidium jeannae</i>	mottled cusk-eel	422	20.6	25	5.4
<i>Sphoeroides parvus</i>	least puffer	405	3.3	51	10.9
<i>Pomacentrus variabilis</i>	cocoa damselfish	374	6.6	5	1.1
<i>Saurida normani</i>	shortjaw lizardfish	358	32.2	19	4.1
<i>Urophycis cirrata</i>	gulf hake	320	8.3	35	7.5
<i>Scorpaena agassizii</i>	longfin scorpionfish	307	10.5	20	4.3
<i>Chaetodipterus faber</i>	Atlantic spadefish	297	10.2	31	6.6
<i>Bothus robinsi</i>	twospot flounder	283	7.2	54	11.6
<i>Prionotus rubio</i>	blackwing searobin	279	13.7	39	8.4
<i>Scorpaena brasiliensis</i>	barbfish	277	17.7	52	11.1
<i>Symphurus plagiusa</i>	blackcheek tonguefish	270	5.1	28	6.0
<i>Antennarius radiosus</i>	singlespot frogfish	265	2.4	43	9.2
<i>Ancylopsetta dilecta</i>	three-eye flounder	262	5.2	38	8.1
<i>Anchoa lyolepis</i>	dusky anchovy	244	1.2	15	3.2
<i>Prionotus tribulus</i>	bighead searobin	221	6.0	28	6.0
<i>Bollmannia communis</i>	ragged goby	213	0.8	21	4.5
<i>Prionotus martis</i>	barred searobin	212	3.4	18	3.9
<i>Ogcocephalus declivirostris</i>	slantbrow batfish	208	4.7	36	7.7

Table 4. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER	TOTAL WEIGHT	NUMBER OF	% FREQUENCY
		CAUGHT	CAUGHT (KG)	TOWS WHERE CAUGHT	OCCURRENCE
<i>Bagre marinus</i>	gafftopsail catfish	205	19.8	18	3.9
<i>Ophidion holbrookii</i>	bank cusk-eel	202	15.6	34	7.3
<i>Raja texana</i>	roundel skate	200	34.8	54	11.6
<i>Brevoortia patronus</i>	gulf menhaden	183	8.2	19	4.1
<i>Aluterus schoepfii</i>	orange filefish	181	93.2	50	10.7
<i>Citharichthys spilopterus</i>	bay whiff	155	2.3	26	5.6
<i>Polydactylus octonemus</i>	Atlantic threadfin	153	6.3	27	5.8
<i>Ancylopsetta ommata</i>	ocellated flounder	147	14.7	32	6.9
<i>Prionotus alatus</i>	spiny searobin	144	2.2	28	6.0
<i>Serranus phoebe</i>	tattler	141	4.0	27	5.8
<i>Peristedion gracile</i>	slender searobin	141	0.3	7	1.5
<i>Epinephelus morio</i>	red grouper	120	64.7	42	9.0
<i>Lutjanus griseus</i>	grey snapper	115	33.2	34	7.3
<i>Synodus</i>	lizard fishes	109	1.0	20	4.3
<i>Monacanthus ciliatus</i>	fringed filefish	105	1.7	49	10.5
<i>Symphurus diomedeanus</i>	spottedfin tonguefish	105	2.8	30	6.4
<i>Sphaeroides spengleri</i>	bandtail puffer	104	4.8	34	7.3
<i>Haemulon striatum</i>	striped grunt	100	5.2	5	1.1
<i>Serranus notospilus</i>	saddle bass	100	0.4	17	3.6
<i>Ophidion beani</i>	longnose cusk-eel	99	5.1	17	3.6
<i>Prionotus ophryas</i>	bandtail searobin	97	4.6	36	7.7
<i>Peprilus paru</i>	harvestfish	97	3.2	14	3.0
<i>Etrumeus teres</i>	round herring	88	1.3	13	2.8
<i>Brotula barbata</i>	bearded brotula	87	6.8	20	4.3
<i>Engyophrys senta</i>	spiny flounder	87	0.4	16	3.4
<i>Sphyraena guachancho</i>	guaguanche	86	12.8	14	3.0
<i>Pareques umbrosus</i>	cubbyu	86	6.0	18	3.9
<i>Gymnachirus texae</i>	fringed sole	84	1.1	14	3.0
<i>Balistes capriscus</i>	gray triggerfish	80	14.7	32	6.9
<i>Pontinus longispinis</i>	longspine scorpionfish	79	1.8	5	1.1

Table 4. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER	TOTAL WEIGHT	NUMBER OF	% FREQUENCY
		CAUGHT	CAUGHT (KG)	TOWS WHERE CAUGHT	OCCURRENCE
<i>Lachnolaimus maximus</i>	hogfish	76	17.1	19	4.1
<i>Apogon pseudomaculatus</i>	twospot cardinalfish	70	0.5	12	2.6
<i>Diplodus holbrooki</i>	spottail pinfish	68	5.3	3	0.6
<i>Otophidium omostigmum</i>	polka-dot cusk-eel	68	0.5	9	1.9
<i>Ocyurus chrysurus</i>	yellowtail snapper	68	10.3	8	1.7
<i>Citharichthys macrops</i>	spotted whiff	67	2.2	26	5.6
<i>Chilomycterus schoepfii</i>	striped burrfish	67	6.0	19	4.1
<i>Eucinostomus gula</i>	silver jenny	65	2.3	13	2.8
<i>Rhynchoconger flavus</i>	yellow conger	65	4.8	16	3.4
<i>Scomber japonicus</i>	chub mackerel	65	1.8	6	1.3
<i>Chaetodon ocellatus</i>	spotfin butterflyfish	63	4.9	25	5.4
<i>Kathetostoma albigutta</i>	lancer stargazer	62	1.6	22	4.7
<i>Calamus nodosus</i>	knobbed porgy	61	11.8	16	3.4
<i>Ogcocephalus parvus</i>	roughback batfish	60	0.3	21	4.5
<i>Apogon affinis</i>	bigtooth cardinalfish	59	1.2	4	0.9
<i>Etropus cyclosquamus</i>	shelf flounder	59	0.2	4	0.9
<i>Nicholsina usta</i>	emerald parrotfish	55	3.7	23	4.9
<i>Caulolatilus intermedius</i>	anchor tilefish	53	3.9	14	3.0
<i>Paralichthys lethostigma</i>	southern flounder	52	9.5	16	3.4
<i>Hoplunnis macrura</i>	freckled pike-conger	47	0.4	18	3.9
<i>Holocentrus adscensionis</i>	squirrelfish	47	1.8	3	0.6
<i>Gymnothorax saxicola</i>	honeycomb moray	46	3.8	28	6.0
<i>Rhizoprionodon terraenovae</i>	Atlantic sharpnose shark	46	22.1	18	3.9
<i>Pareques iwamotoi</i>	blackbar drum	45	6.7	8	1.7
<i>Ophidion josephi</i>	crested cusk-eel	45	3.0	10	2.1
<i>Oligoplites saurus</i>	leatherjack	43	0.6	5	1.1
<i>Dorosoma petenense</i>	threadfin shad	41	0.6	4	0.9
<i>Cyclopsetta fimbriata</i>	spotfin flounder	41	3.1	19	4.1
<i>Cynoscion</i> spp.	seatrouts	39	0.1	4	0.9
<i>Calamus</i>		37	13.1	5	1.1

Table 4. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER	TOTAL WEIGHT	NUMBER OF	% FREQUENCY
		CAUGHT	CAUGHT (KG)	TOWS WHERE CAUGHT	OCCURRENCE
<i>Ogcocephalus cubifrons</i>	polka-dot batfish	37	6.7	19	4.1
<i>Ophidion grayi</i>	blotched cusk-eel	36	2.7	12	2.6
<i>Echeneis neucratoides</i>	whitefin sharksucker	35	10.0	13	2.8
<i>Calamus bajonado</i>	jolthead porgy	35	12.0	7	1.5
<i>Scomberomorus cavalla</i>	king mackerel	34	2.5	8	1.7
<i>Calamus leucosteus</i>	whitebone porgy	33	11.1	6	1.3
<i>Neomerinthe hemingwayi</i>	spinycheek scorpionfish	31	5.2	7	1.5
<i>Paralichthys albigutta</i>	gulf flounder	27	10.5	14	3.0
<i>Rhinoptera bonasus</i>	cownose ray	27	195.8	10	2.1
<i>Selar crumenophthalmus</i>	bigeye scad	27	3.0	8	1.7
<i>Dasyatis sabina</i>	Atlantic stringray	26	2.0	1	0.2
<i>Hemipteronotus novacula</i>	pearly razorfish	26	1.2	10	2.1
<i>Caranx hippos</i>	crevalle jack	26	12.5	3	0.6
<i>Hippocampus erectus</i>	lined seahorse	25	0.2	14	3.0
<i>Scomberomorus maculatus</i>	Spanish mackerel	24	5.0	9	1.9
<i>Menticirrhus littoralis</i>	gulf kingfish	24	3.9	5	1.1
<i>Holacanthus bermudensis</i>	blue angelfish	24	9.0	10	2.1
<i>Prionotus beanii</i>		23	0.2	2	0.4
<i>Pomacanthus arcuatus</i>	gray angelfish	23	10.5	13	2.8
<i>Conodon nobilis</i>	barred grunt	23	3.0	1	0.2
<i>Antennarius striatus</i>	striated frogfish	22	0.3	3	0.6
<i>Paralichthys squamilentus</i>	broad flounder	22	9.8	9	1.9
<i>Narcine brasiliensis</i>	lesser electric ray	22	17.7	4	0.9
<i>Gymnothorax nigromarginatus</i>	blackedge moray	21	1.5	4	0.9
<i>Ogcocephalus corniger</i>	longnose batfish	21	0.2	11	2.4
<i>Citharichthys gymnorhinus</i>	anglefin whiff	20	0.0	13	2.8
<i>Bairdiella chrysoura</i>	silver perch	19	1.0	6	1.3
<i>Centropristis striatus</i>	black sea bass	19	2.9	6	1.3
<i>Rypticus maculatus</i>	whitespotted soapfish	19	0.7	10	2.1
<i>Aluterus heudelotii</i>	dotterel filefish	19	2.2	10	2.1

Table 4. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER	TOTAL WEIGHT	NUMBER OF	% FREQUENCY
		CAUGHT	CAUGHT (KG)	TOWS WHERE CAUGHT	OCCURRENCE
<i>Lonchopisthus micrognathus</i>	swordtail jawfish	18	0.1	4	0.9
<i>Estropus microstomus</i>	smallmouth flounder	18	0.1	2	0.4
<i>Scorpaena</i> spp.	scorpionfishes	17	0.3	7	1.5
<i>Ophidion</i>	cusks-eels	17	0.6	9	1.9
<i>Mustelus canis</i>	smooth dogfish	16	27.9	12	2.6
<i>Apogon aurolineatus</i>	bridle cardinalfish	16	0.2	3	0.6
<i>Ogcocephalus pantostictus</i>	spotted batfish	16	1.9	3	0.6
<i>Ophichthus gomesii</i>	shrimp eel	15	0.2	3	0.6
<i>Opsanus pardus</i>	leopard toadfish	15	0.3	9	1.9
<i>Caranx crysos</i>	blue runner	15	2.8	6	1.3
<i>Brevoortia gunteri</i>	finescale menhaden	14	1.1	1	0.2
<i>Bathyanthias mexicanus</i>	yellowtail bass	14	0.4	5	1.1
<i>Sphoeroides pachygaster</i>	blunthead puffer	14	0.1	2	0.4
<i>Priacanthus arenatus</i>	bigeye	14	0.4	8	1.7
<i>Rhinobatos lentiginosus</i>	Atlantic guitarfish	14	8.1	8	1.7
<i>Squatina dumeril</i>	Atlantic angel shark	14	16.0	7	1.5
<i>Pseudupeneus maculatus</i>	spotted goatfish	14	2.3	7	1.5
<i>Decodon puellaris</i>	red hogfish	14	0.7	7	1.5
<i>Symphurus urospilus</i>	spottail tonguefish	13	0.4	8	1.7
<i>Urophycis</i> spp.	hakes	13	0.3	2	0.4
<i>Epigonus macrops</i>	bigeye cardinal	12	0.1	1	0.2
<i>Sphoeroides nephelus</i>	southern puffer	12	1.1	5	1.1
<i>Pristigenys alta</i>	short bigeye	12	1.0	11	2.4
<i>Gymnachirus melas</i>	naked sole	12	0.4	6	1.3
<i>Chaetodon sedentarius</i>	reef butterflyfish	11	0.6	4	0.9
<i>Seriola dumerili</i>	greater amberjack	11	1.2	4	0.9
<i>Dasyatis americana</i>	southern stingray	11	9.2	6	1.3
<i>Echeneis naucrates</i>	sharksucker	10	3.4	7	1.5
<i>Bregmaceros atlanticus</i>	antenna codlet	10	0.0	4	0.9
<i>Pomacanthus paru</i>	French angelfish	10	6.2	1	0.2

Table 4. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER	TOTAL WEIGHT	NUMBER OF	% FREQUENCY
		CAUGHT	CAUGHT (KG)	TOWS WHERE CAUGHT	OCCURRENCE
Raja eglanteria	clearnose skate	10	7.0	10	2.1
Phaeoptyx xenus	sponge cardinalfish	10	0.0	3	0.6
Plectrypops retrospinus		10	0.1	1	0.2
Gastropsetta frontalis	shrimp flounder	9	0.7	9	1.9
Pomatomus saltatrix	bluefish	9	1.4	2	0.4
Apogon spp.	cardinalfishes	9	0.0	2	0.4
Sphyrna tiburo	bonnethead	9	16.5	5	1.1
Symphurus civitatum	offshore tonguefish	8	0.1	3	0.6
Astroscopus y-graecum	southern stargazer	8	0.2	2	0.4
Paraconger caudilimbatus	margintail conger	8	0.4	4	0.9
Hemicaranx amblyrhynchus	bluntnose jack	8	1.5	3	0.6
Calamus penna	sheepshead porgy	8	2.6	5	1.1
Selene vomer	lookdown	8	1.7	4	0.9
Carcharhinus limbatus	blacktip shark	8	0.9	1	0.2
Chromis enchrysur	yellowtail reeffish	8	0.2	2	0.4
Perciformes	perch-like fishes	8	0.0	1	0.2
Astrapogon puncticulatus	blackfin cardinalfish	8	0.0	7	1.5
Urophycis earlli	Carolina hake	7	0.4	5	1.1
Acanthostracion polygonius	honeycomb cowfish	7	4.8	6	1.3
Echiophis intertinctus	spotted spoon-nose eel	6	0.9	5	1.1
Neobythites gilli	cusk-eel	6	0.0	2	0.4
Mycteroperca microlepis	gag	6	3.5	5	1.1
Carcharhinus acronotus	blacknose shark	6	19.1	5	1.1
Bothus lunatus	peacock flounder	6	0.1	1	0.2
Pomacentrus partitus	bicolor damselfish	6	0.1	1	0.2
Hypoplectrus puella	barred hamlet	6	0.3	4	0.9
Lophius gastrophysus	blackfin goosefish	6	0.2	1	0.2
Antennarius ocellatus	ocellated frogfish	6	0.2	5	1.1
Menticirrhus saxatilis	northern kingfish	5	0.7	3	0.6
Prognathodes aya	bank butterflyfish	5	0.1	3	0.6

Table 4. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER	TOTAL WEIGHT	NUMBER OF	% FREQUENCY
		CAUGHT	CAUGHT (KG)	TOWS WHERE CAUGHT	OCCURRENCE
Hemanthias vivanus	red barbier	5	0.0	2	0.4
Aluterus scriptus	scrawled filefish	5	1.4	2	0.4
Unid.fish	fishes	5	1.0	5	1.1
Serraniculus pumilio	pygmy sea bass	5	0.0	4	0.9
Mycteroperca phenax	scamp	5	1.1	4	0.9
Epinephelus flavolimbatus	yellowedge grouper	4	0.4	4	0.9
Serranus subligarius	belted sandfish	4	0.0	2	0.4
Phaeoptyx pigmentaria	dusky cardinalfish	4	0.0	3	0.6
Caulolatilus cyanops	blackline tilefish	4	0.3	3	0.6
Dasyatis say	bluntnose stingray	4	0.6	4	0.9
Raja ackley	ocellate skate	4	1.4	3	0.6
Eucinostomus argenteus	spotfin mojarra	4	0.1	1	0.2
Phaeoptyx conklini	freckled cardinalfish	4	0.0	1	0.2
Ariosoma selenops		4	0.3	1	0.2
Hemilepidotus hemilepidotus	red Irish lord	4	0.2	1	0.2
Trinectes maculatus	hogchoker	4	0.1	3	0.6
Anisotremus virginicus	porkfish	4	0.5	1	0.2
Dipturus olsenii	spreadfin skate	4	8.2	2	0.4
Lophius americanus	goosefish	3	0.2	2	0.4
Peprilus paru	harvestfish	3	0.0	1	0.2
Bothidae	lefteye flounders	3	0.0	1	0.2
Trachinotus carolinus	Florida pompano	3	0.2	1	0.2
Synagrops bellus	blackmouth bass	3	0.0	1	0.2
Scorpaena dispar	hunchback scorpionfish	3	0.3	2	0.4
Alosa chrysochloris	blue herring	3	0.2	1	0.2
Bothus ocellatus	eyed flounder	3	0.1	1	0.2
Astrapogon alutus	bronze cardinalfish	3	0.0	3	0.6
Bairdiella batavana	blue croaker	3	0.2	1	0.2
Opistognathus lonchurus	moustache jawfish	3	0.0	2	0.4
Gobiesox strumosus	skilletfish	3	0.0	3	0.6

Table 4. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER	TOTAL WEIGHT	NUMBER OF	% FREQUENCY
		CAUGHT	CAUGHT (KG)	TOWS WHERE CAUGHT	OCCURRENCE
Gobiidae	gobies	3	0.0	3	0.6
Decapterus macarellus	mackeral scad	3	0.1	2	0.4
Blenniidae	blennies	3	0.0	3	0.6
Seriola zonata	banded rudderfish	3	0.3	2	0.4
Pogonias cromis	black drum	2	12.3	2	0.4
Diplectrum	perch	2	0.0	2	0.4
Saurida		2	0.0	1	0.2
Gobionellus hastatus	darer gobies	2	0.0	1	0.2
Dasyatis centroura	clam cracker	2	261.5	2	0.4
Ophichthus puncticeps	palespotted eel	2	0.3	1	0.2
Ariosoma		2	0.2	2	0.4
Sphaeroides	common puffers	2	0.0	1	0.2
Bregmaceros cantori	striped codlet	2	0.0	1	0.2
Myliobatis freminvillei	Bullnose ray	2	22.5	2	0.4
Phtheirichthys lineatus	slender suckerfish	2	0.4	1	0.2
Sphyraena borealis	northern sennet	2	0.1	2	0.4
Halichoeres bivittatus	slippery dick	2	0.0	1	0.2
Rypticus bistrispinus	freckled soapfish	2	0.0	2	0.4
Ginglymostoma cirratum	nurse shark	2	0.3	2	0.4
Pomacentrus fuscus	dusky damselfish	2	0.0	2	0.4
Fistularia petimba	red cornetfish	2	0.0	2	0.4
Torpedo nobiliana	Atlantic torpedo	1	0.6	1	0.2
Anguilliformes	eels	1	0.0	1	0.2
Prionotus punctatus	bluewing searobin	1	0.0	1	0.2
Gymnura altavela	spiny butterfly ray	1	0.4	1	0.2
Seriola fasciata	lesser amberjack	1	0.2	1	0.2
Achirus lineatus	lined sole	1	0.0	1	0.2
Conger oceanicus	conger eel	1	0.0	1	0.2
Aluterus monoceros	unicorn filefish	1	3.4	1	0.2
Holocentrus bullisi	deepwater squirrelfish	1	0.0	1	0.2

Table 4. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER	TOTAL WEIGHT	NUMBER OF	% FREQUENCY
		CAUGHT	CAUGHT (KG)	TOWS WHERE CAUGHT	OCCURRENCE
Narcine	numbfishes	1	0.3	1	0.2
Scomber scombrus	Atlantic mackerel	1	0.0	1	0.2
Epinephelus nigritus	warsaw grouper	1	3.5	1	0.2
Diodon holocanthus	balloonfish	1	0.3	1	0.2
Gempylus serpens	snake mackerel	1	0.0	1	0.2
Epinephelus itajara	goliath grouper	1	60.0	1	0.2
Echiophis punctifer	snapper eel	1	0.5	1	0.2
Gymnothorax kolpos	blacktail moray	1	0.6	1	0.2
Apogon quadrisquamatus	sawcheek cardinalfish	1	0.0	1	0.2
Sparisoma chrysopterum	redtail parrotfish	1	0.3	1	0.2
Urolophus jamaicensis		1	0.4	1	0.2
Paralichthys dentatus	fluke	1	0.2	1	0.2
Chromis		1	0.0	1	0.2
Hypleurochilus geminatus	crested blenny	1	0.0	1	0.2
Enneanectes		1	0.0	1	0.2
Syngnathidae	pipefishes	1	0.0	1	0.2
Gymnura micrura	smooth butterfly ray	1	0.4	1	0.2
Parablennius marmoratus	seaweed blenny	1	0.0	1	0.2
Hippocampus reidi	longsnout seahorse	1	0.0	1	0.2
Hoplunnis diomedianus	blacktail pike-conger	1	0.0	1	0.2
Chromis scotti	purple reeffish	1	0.0	1	0.2
Monacanthus tuckeri	slender filefish	1	0.0	1	0.2
Rachycentron canadum	cobia	1	0.2	1	0.2
Dactylopterus volitans	flying gurnard	1	0.7	1	0.2
Rypticus	soapfishes	1	0.0	1	0.2
Microspathodon chrysurus	yellowtail damselfish	1	0.0	1	0.2
Trachinotus falcatus	permit	1	0.0	1	0.2
Ariomma bondi	silver-rag	1	0.0	1	0.2
Ophidion selenops	mooneye cusk-eel	1	0.0	1	0.2
Diplogrammus pauciradiatus	spotted dragonet	1	0.0	1	0.2

Table 4. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER	TOTAL WEIGHT	NUMBER OF	% FREQUENCY
		CAUGHT	CAUGHT (KG)	TOWS WHERE CAUGHT	OCCURRENCE
<i>Citharichthys cornutus</i>	horned whiff	1	0.0	1	0.2
<i>Mulloidichthys martinicus</i>	yellow goatfish	1	0.0	1	0.2
<i>Ophichthus rex</i>	king snake eel	1	0.1	1	0.2
<i>Haemulon</i>	grunts	1	0.0	1	0.2
<i>Mugil cephalus</i>	striped mullet	1	0.1	1	0.2
<i>Halichoeres caudalis</i>	painted wrasse	1	0.0	1	0.2
<i>Ophichthus</i> spp.	snake eels	1	0.1	1	0.2
<i>Peprilus triacanthus</i>	butterfish	1	0.1	1	0.2
<i>Caranx bartholomaei</i>	yellow jack	1	0.0	1	0.2
<i>Ariomma regulus</i>	spotted driftfish	1	0.2	1	0.2
<u>Crustaceans</u>					
<i>Farfantepenaeus aztecus</i>	brown shrimp	54641	749.6	245	52.5
<i>Callinectes similis</i>	lesser blue crab	26224	279.7	202	43.3
<i>Rimapenaeus constrictus</i>	roughneck shrimp	11658	44.2	16	3.4
<i>Rimapenaeus similis</i>	roughback shrimp	9608	40.8	87	18.6
<i>Portunus spinicarpus</i>	longspine swimming crab	8458	49.0	130	27.8
<i>Squilla empusa</i>	mantis shrimp	6278	57.7	133	28.5
<i>Litopenaeus setiferus</i>	white shrimp	5265	227.5	103	22.1
<i>Sicyonia brevirostris</i>	brown rock shrimp	5148	57.1	110	23.6
<i>Portunus gibbesii</i>	irridescent swimming crab	5082	22.3	131	28.1
<i>Munida</i>		4266	2.2	19	4.1
<i>Farfantepenaeus duorarum</i>	pink shrimp	4189	84.2	105	22.5
<i>Sicyonia dorsalis</i>	lesser rock shrimp	3143	7.5	53	11.3
<i>Parapenaeus politus</i>	deepwater rose shrimp	2881	6.9	12	2.6
<i>Solenocera vioscai</i>	humpback shrimp	1742	9.6	37	7.9
<i>Squilla chydrea</i>	mantis shrimp	1645	9.6	72	15.4
<i>Anasimus latus</i>	stilt spider crab	1009	8.3	41	8.8
<i>Xiphopenaeus kroyeri</i>	seabob	814	4.0	25	5.4

Table 4. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER	TOTAL WEIGHT	NUMBER OF	% FREQUENCY
		CAUGHT	CAUGHT (KG)	TOWS WHERE CAUGHT	OCCURRENCE
<i>Callinectes sapidus</i>	blue crab	667	100.8	90	19.3
<i>Solenocera atlantidis</i>	dwarf humpback shrimp	607	1.0	37	7.9
<i>Calappa sulcata</i>	yellow box crab	571	79.6	68	14.6
<i>Portunus spinimanus</i>	blotched swimming crab	385	9.3	53	11.3
<i>Metapenaeopsis goodei</i>	Caribbean velvet shrimp	262	0.5	25	5.4
<i>Raninoides louisianensis</i>	gulf frog crab	218	2.1	23	4.9
<i>Leiolambrus nitidus</i>	white elbow crab	158	0.4	24	5.1
<i>Scyllarides nodifer</i>	ridged slipper lobster	150	18.5	46	9.9
<i>Stenorhynchus seticornis</i>	yellowline arrow crab	145	0.3	55	11.8
<i>Alpheus floridanus</i>	sand snapping shrimp	131	0.1	5	1.1
<i>Platylambrus granulata</i>	bladetooth elbow crab	130	0.3	56	12.0
<i>Pseudorhombila quadridentata</i>	flecked squareback crab	129	1.7	15	3.2
<i>Ovalipes floridanus</i>	Florida lady crab	116	1.5	28	6.0
<i>Petrochirus diogenes</i>	giant hermit crab	101	7.8	21	4.5
<i>Hepatus epheliticus</i>	calico crab	101	4.9	26	5.6
<i>Persephona crinita</i>	pink purse crab	86	0.4	21	4.5
<i>Scyllarus chacei</i>	chace slipper lobster	83	0.2	16	3.4
<i>Portunus sayi</i>	sargassum swimming crab	81	0.4	19	4.1
<i>Porcellana sayana</i>	spotted porcelain crab	77	0.1	6	1.3
<i>Cryptodromiopsis antillensis</i>	hairy sponge crab	76	0.6	38	8.1
<i>Stenocionops furcatus furcatus</i>	furcate crab	75	2.2	43	9.2
<i>Dardanus insignis</i>	red brocade hermit	69	0.2	6	1.3
<i>Sicyonia laevigata</i>	rock shrimp	60	0.4	5	1.1
<i>Myropsis quinquespinosa</i>	fivespine purse crab	59	0.2	8	1.7
<i>Paguristes triangulatus</i>	hermit crab	46	0.1	5	1.1
<i>Podochela sidneyi</i>	shortfinger neck crab	43	0.1	24	5.1
<i>Pilumnus sayi</i>	spineback hairy crab	37	0.2	21	4.5
<i>Speocarcinus lobatus</i>	gulf squareback crab	35	0.1	11	2.4
<i>Portunus ordwayii</i>		33	0.5	6	1.3
<i>Mithrax forceps</i>	red-ridged clinging crab	31	0.1	11	2.4

Table 4. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER	TOTAL WEIGHT	NUMBER OF	% FREQUENCY
		CAUGHT	CAUGHT (KG)	TOWS WHERE CAUGHT	OCCURRENCE
<i>Acanthocarpus alexandri</i>	gladiator box crab	30	0.1	2	0.4
<i>Pseudomedeus agassizii</i>	rough rubble crab	27	0.1	8	1.7
<i>Mithrax hispidus</i>	coral clinging crab	26	0.1	14	3.0
<i>Libinia emarginata</i>	portly spider crab	24	3.7	10	2.1
<i>Gibbesia neglecta</i>	mantis shrimp	23	0.2	9	1.9
<i>Pagurus bullisi</i>	hermit crab	21	0.2	5	1.1
<i>Alpheus</i>	snapping shrimps	18	0.0	2	0.4
<i>Munida forceps</i>	squat lobster	18	0.0	4	0.9
<i>Sicyonia typica</i>	kinglet rock shrimp	18	0.1	6	1.3
<i>Macrocoeloma trispinosum</i>	spongy decorator crab	18	0.2	12	2.6
Alpheidae	snapping shrimps	17	0.0	12	2.6
<i>Pagurus pollicaris</i>	flatclaw hermit crab	16	0.2	10	2.1
<i>Libinia dubia</i>	longnose spider crab	16	0.1	9	1.9
<i>Paguristes sericeus</i>	blue-eyed hermit	16	0.0	12	2.6
<i>Euphosynoplax clausa</i>	craggy bathyal crab	16	0.1	5	1.1
<i>Sicyonia burkenroadi</i>	spiny rock shrimp	15	0.0	6	1.3
<i>Mithrax</i>		14	0.1	8	1.7
<i>Dardanus</i>		13	0.0	8	1.7
<i>Collodes robustus</i>	spider crab	12	0.0	5	1.1
<i>Parthenope</i>	elbow crabs	12	0.0	7	1.5
<i>Podochela lamelligera</i>	neck crab	10	0.0	2	0.4
<i>Persephona mediterranea</i>	mottled purse crab	9	0.1	7	1.5
<i>Ethusa microphthalma</i>	broadback sumo crab	9	0.0	4	0.9
Crustaceans	Unidentified crustacean	9	0.0	7	1.5
<i>Pyromaia cuspidata</i>	dartnose pear crab	9	0.0	4	0.9
<i>Squilla</i> spp.	mantis shrimps	8	0.1	5	1.1
<i>Stenocionops spinimanus</i>	prickly spider crab	8	0.5	2	0.4
Gonodactylidae	gonodactylid mantis shrimps	6	0.0	4	0.9
<i>Petrolisthes galathinus</i>	banded porcelain crab	6	0.0	5	1.1
Majidae	spider crabs	6	0.0	1	0.2

Table 4. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER	TOTAL WEIGHT	NUMBER OF	% FREQUENCY
		CAUGHT	CAUGHT (KG)	TOWS WHERE CAUGHT	OCCURRENCE
Porcellana sigsbeiana	striped porcelain crab	6	0.0	3	0.6
Isopoda	isopods	5	0.0	2	0.4
Manucomplanus corallinus		5	0.0	2	0.4
Porcellana spp.	porcelain crabs	5	0.0	2	0.4
Calappa flammea	flame box crab	5	0.7	5	1.1
Metoporphaphis calcarata	false arrow crab	5	0.0	5	1.1
Penaeopsis serrata	megalops shrimp	5	0.0	3	0.6
Parthenope serrata	sawtooth elbow crab	5	0.0	3	0.6
Plesionika edwardsii	soldier striped shrimp	4	0.0	1	0.2
Panulirus argus	Caribbean spiny lobster	4	2.7	2	0.4
Balamus		4	0.0	3	0.6
Arenaeus cribrarius	speckled swimming crab	4	0.1	4	0.9
Portunus spp.	swimming crabs	4	0.0	4	0.9
Speocarcinus carolinensis	Carolinian squareback crab	4	0.0	1	0.2
Squillidae	mantis shrimps	4	0.0	1	0.2
Glypturus		3	0.0	2	0.4
Solenocera spp.	humpback shrimps	3	0.0	2	0.4
Neopanope		3	0.0	1	0.2
Iliacantha liodactylus	purse crab	3	0.0	3	0.6
Munida pusilla		3	0.0	1	0.2
Hypoconcha arcuata	granulate shellback crab	3	0.1	3	0.6
Dardanus fucosus	bareye hermit	2	0.0	2	0.4
Podochela		2	0.0	1	0.2
Livoneca redmanii	isopod	2	0.0	1	0.2
Hypoconcha spinosissima	spiny shellback crab	2	0.0	2	0.4
Sicyonia parri	rock shrimps	2	0.0	2	0.4
Portunus depressifrons	flatface swimming crab	2	0.0	2	0.4
Paguridae	right-handed hermit crabs	2	0.0	1	0.2
Plesionika longicauda	pandalid shrimp	2	0.0	1	0.2
Stenopus		2	0.0	1	0.2

Table 4. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER	TOTAL WEIGHT	NUMBER OF	% FREQUENCY
		CAUGHT	CAUGHT (KG)	TOWS WHERE CAUGHT	OCCURRENCE
Portunidae	swimming crabs	2	0.0	1	0.2
Lysmata		2	0.0	1	0.2
Stenopus scutellatus	golden coral shrimp	2	0.0	1	0.2
Lysmata wurdemanni	peppermint shrimp	2	0.0	2	0.4
Phimochirus		1	0.0	1	0.2
Homola		1	0.0	1	0.2
Periclimenes		1	0.0	1	0.2
Decapoda	crabs	1	0.0	1	0.2
Manucomplanus ungulatus		1	0.0	1	0.2
Danielum ixbauchac	red sea crab	1	0.0	1	0.2
Albunea paretii	beach mole crab	1	0.0	1	0.2
Unid crusta		1	0.0	1	0.2
Menippe spp.	stone crabs	1	0.0	1	0.2
Pilumnus floridanus	plumed hairy crab	1	0.0	1	0.2
Penaeidae	penaeid shrimps	1	0.0	1	0.2
Rochinia crassa	inflated spiny crab	1	0.1	1	0.2
Scyllarus depressus	scaled slipper lobster	1	0.0	1	0.2
Scyllarus spp.	slipper lobsters	1	0.0	1	0.2
Hepatus pudibundus	flecked box crab	1	0.0	1	0.2
Dyspanopeus texanus	gulf grassflat crab	1	0.0	1	0.2
Leucosiidae	purse crabs	1	0.0	1	0.2
Dromiidae	sponge crabs	1	0.0	1	0.2
Heterocarpus ensifer	armed nylon shrimp	1	0.0	1	0.2
Parasquilla coccinea	mantis shrimp	1	0.0	1	0.2
Osachila antillensis		1	0.0	1	0.2
Palicus obesa		1	0.0	1	0.2
Homolidae	carrier crabs	1	0.0	1	0.2
Phimochirus holthuisi	red-striped hermit	1	0.0	1	0.2
Munida robusta		1	0.0	1	0.2
Sicyonia spp.	rock shrimps	1	0.0	1	0.2

Table 4. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER	TOTAL WEIGHT	NUMBER OF	% FREQUENCY
		CAUGHT	CAUGHT (KG)	TOWS WHERE CAUGHT	OCCURRENCE
Munida flinti		1	0.0	1	0.2
Iliacantha subglobosa	longfinger purse crab	1	0.0	1	0.2
Bathynomus giganteus		1	0.0	1	0.2
Cymothoidae		1	0.0	1	0.2
Acanthilia intermedia	granulose purse crab	1	0.0	1	0.2
Synalpheus fritzmuelleri	speckled snapping shrimp	1	0.0	1	0.2
Latreutes parvulus	sargassum shrimp	1	0.0	1	0.2
<u>Others</u>					
Loligo plei	arrow squid	15492	247.1	164	35.1
Loligo pealeii	longfin squid	13435	232.3	181	38.8
Argopecten gibbus	calico scallop	3735	16.3	22	4.7
Amusium papyraceum	paper scallop	2353	19.6	60	12.8
Lolliguncula brevis	Atlantic brief squid	1998	21.6	131	28.1
Polystira albida	white giant turriss	578	4.1	24	5.1
Anadara baughmani	Baughman's ark	557	9.8	10	2.1
Loligo spp.	squids	461	5.0	11	2.4
Unid other		374	130.7	52	11.1
Pitar cordatus	Schwengel's pitar	320	6.9	30	6.4
Mollusca	molluscs	157	399.6	32	6.9
Lirophora clenchi	Clench venus	123	1.7	14	3.0
Unid other		118	113.1	35	7.5
Distorsio clathrata	Atlantic distorsio	86	0.5	8	1.7
Aplysia brasiliana	mottled seahare	59	1.3	12	2.6
Conus austini	cone shell	55	0.6	10	2.1
Anadara ovalis	blood ark	44	0.5	9	1.9
Sconsia striata	royal bonnet	40	0.7	10	2.1
Octopus vulgaris	common Atlantic octopus	37	4.7	30	6.4
Cantharus cancellarius	cancellate cantharus	36	0.0	8	1.7

Table 4. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER	TOTAL WEIGHT	NUMBER OF	% FREQUENCY
		CAUGHT	CAUGHT (KG)	TOWS WHERE CAUGHT	OCCURRENCE
<i>Euvola raveneli</i>	Ravenel's scallop	25	0.1	17	3.6
<i>Semirossia equalis</i>	greater shining bobtail	24	0.1	10	2.1
<i>Tonna galea</i>	giant tun	18	2.7	3	0.6
Gastropoda	snails	18	0.1	5	1.1
<i>Eucrassatella speciosa</i>	beautiful crassatella	16	0.5	4	0.9
<i>Neverita duplicata</i>	shark eye	15	0.2	9	1.9
<i>Aplysia</i>	opisthobranchs	14	0.8	3	0.6
<i>Hexaplex fulvescens</i>	giant eastern murex	12	1.2	7	1.5
<i>Aplysia morio</i>	sooty seahare	12	1.2	8	1.7
<i>Aequipecten muscosus</i>	rough scallop	11	0.2	10	2.1
<i>Pteria colymbus</i>	Atlantic wing-oyster	8	0.1	6	1.3
<i>Agriopoma texasianum</i>	Texas venus	7	0.2	1	0.2
<i>Busycon perversum</i>	whelk	7	0.8	3	0.6
Turbinidae		6	0.0	5	1.1
<i>Architectonica nobilis</i>	common sundial	6	0.2	5	1.1
<i>Hypselodoris edenticulata</i>	florida regal doris	5	0.0	4	0.9
Octopus		5	0.2	3	0.6
<i>Arcinella cornuta</i>	Florida spiny jewelbox	5	0.4	2	0.4
Isognomonidae		4	0.4	2	0.4
<i>Stramonita</i>	rocksnails	4	0.1	3	0.6
<i>Laevicardium laevigatum</i>	egg cockle	4	0.2	2	0.4
<i>Laevicardium mortoni</i>	yellow eggcockle	4	0.2	1	0.2
<i>Cypraea cervus</i>	atlantic deer cowrie	3	0.2	2	0.4
<i>Narcissia trigonaria</i>		3	0.1	3	0.6
<i>Busycon pulleyi</i>	prickly whelk	3	0.3	3	0.6
<i>Chlamys imbricata</i>	knobby scallop	3	0.3	2	0.4
<i>Chicoreus</i>		3	0.0	2	0.4
Xenophora		3	0.0	2	0.4
<i>Phalium granulatum</i>	Scotch bonnet	2	0.0	2	0.4
<i>Chicoreus florifer-dilectus</i>		2	0.0	2	0.4

Table 4. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER	TOTAL WEIGHT	NUMBER OF	% FREQUENCY
		CAUGHT	CAUGHT (KG)	TOWS WHERE CAUGHT	OCCURRENCE
Cardiidae	bivalves	2	0.0	2	0.4
Strombus alatus	Florida fighting conch	2	0.2	2	0.4
Chromodoridae		2	0.0	1	0.2
Chamidae		2	0.0	1	0.2
Sinum perspectivum	white baby-ear	2	0.1	2	0.4
Dendrodoris krebsii		2	0.6	2	0.4
Amaea mitchelli		1	0.0	1	0.2
Aequipecten		1	0.0	1	0.2
Scaphella dohrni		1	0.1	1	0.2
Melongenidae		1	0.1	1	0.2
Aequipecten glyptus	red-ribbed scallop	1	0.0	1	0.2
Muricidae		1	0.0	1	0.2
Atrina serrata	sawtooth penshell	1	0.0	1	0.2
Murex tyroni		1	0.0	1	0.2
Laevicardium		1	0.0	1	0.2
Spondylus americanus	Atlantic thorny oyster	1	0.2	1	0.2
Macoma brevifrons	short macoma	1	0.0	1	0.2
Anaspidea		1	0.2	1	0.2
Atrina seminuda	half-naked penshell	1	0.3	1	0.2
Pteriidae		1	0.1	1	0.2
Busycon plagosus		1	0.0	1	0.2
Lima pellucida	antillean fileclam	1	0.0	1	0.2
Fasciolaria liliium	banded tulip	1	0.0	1	0.2
Chicoreus pomum	apple murex	1	0.0	1	0.2
Conus	cones	1	0.0	1	0.2
Argopecten		1	0.2	1	0.2
Anadara floridana	cut-ribbed ark	1	0.0	1	0.2
Arcidae		1	0.1	1	0.2
Antillophos		1	0.0	1	0.2
Stramonita haemastoma	rocksnail	1	0.0	1	0.2

Table 4. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER	TOTAL WEIGHT	NUMBER OF	% FREQUENCY
		CAUGHT	CAUGHT (KG)	TOWS WHERE CAUGHT	OCCURRENCE
Armina		1	0.0	1	0.2
Mercenaria campechiensis	southern quahog	1	0.0	1	0.2
Antillophos candeanus	beaded phos	1	0.0	1	0.2
Modiolus americanus	American horse mussel	1	0.0	1	0.2

Table 5. 2010 Fall Shrimp/Groundfish Survey species composition list, 398 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	TOTAL WEIGHT	NUMBER OF	% FREQUENCY
		CAUGHT	CAUGHT (KG)	TOWS WHERE CAUGHT	OCCURRENCE
<u>Finfishes</u>					
Micropogonias undulatus	Atlantic croaker	244749	7299.7	231	58
Stenotomus caprinus	longspine porgy	38456	934.2	186	46.7
Chloroscombrus chrysurus	Atlantic bumper	34663	1057	131	32.9
Peprilus burti	gulf butterfish	15496	786.7	158	39.7
Leiostomus xanthurus	spot	11634	810.3	149	37.4
Cynoscion nothus	silver seatrout	9703	554.6	129	32.4
Syacium papillosum	dusky flounder	5727	301.5	119	29.9
Prionotus roseus	bluespotted searobin	5513	68.3	79	19.8
Serranus atrobranchus	blackear bass	5183	58.7	81	20.4
Trachurus lathami	rough scad	5050	138.5	120	30.2
Haemulon aurolineatum	tomtate	4627	203.1	78	19.6
Trichiurus lepturus	Atlantic cutlassfish	4434	395.8	103	25.9
Cynoscion arenarius	sand seatrout	4429	351.5	148	37.2
Prionotus longispinosus	bigeye searobin	4369	130.2	144	36.2
Lagodon rhomboides	pinfish	3319	233.1	119	29.9
Synodus foetens	inshore lizardfish	3053	422	227	57
Centropristis philadelphica	rock sea bass	2975	103.3	144	36.2
Prionotus stearnsi	shortwing searobin	2510	26.1	44	11.1
Larimus fasciatus	banded drum	2460	160.1	77	19.3
Ariopsis felis	hardhead catfish	2296	418	79	19.8
Syacium gunteri	shoal flounder	1939	41.3	110	27.6
Stellifer lanceolatus	star drum	1867	25.4	44	11.1
Lutjanus campechanus	red snapper	1805	97.9	159	39.9
Harengula jaguana	scaled sardine	1713	84.6	62	15.6
Pristipomoides aquilonaris	wenchman	1634	68.6	68	17.1
Rhomboplites aurorubens	vermillion snapper	1603	137.7	44	11.1

Table 5. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF	
				TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
<i>Upeneus parvus</i>	dwarf goatfish	1456	44.9	56	14.1
<i>Calamus proridens</i>	littlehead porgy	1402	207.1	69	17.3
<i>Selene setapinnis</i>	Atlantic moonfish	1313	66.9	124	31.2
<i>Scorpaena calcarata</i>	smoothhead scorpionfish	1296	22.6	60	15.1
<i>Centropristis ocyurus</i>	bank sea bass	1237	50.2	53	13.3
<i>Trichopsetta ventralis</i>	sash flounder	1235	28.6	44	11.1
<i>Mullus auratus</i>	red goatfish	1220	57.4	25	6.3
<i>Bagre marinus</i>	gafftopsail catfish	1179	82.6	58	14.6
<i>Anchoa hepsetus</i>	striped anchovy	1174	19.7	63	15.8
<i>Orthopristis chrysoptera</i>	pigfish	1123	111.8	40	10.1
<i>Synodus intermedius</i>	sand diver	1113	92	80	20.1
<i>Saurida brasiliensis</i>	largescale lizardfish	1092	4.1	70	17.6
<i>Diplectrum formosum</i>	sand perch	1053	85.8	86	21.6
<i>Sardinella aurita</i>	Spanish sardine	908	45.3	35	8.8
<i>Halieutichthys aculeatus</i>	pancake batfish	855	5.2	97	24.4
<i>Chaetodipterus faber</i>	Atlantic spadefish	773	35.2	93	23.4
<i>Lepophidium brevibarbe</i>	blackedge cusk-eel	743	25.5	56	14.1
<i>Pagrus pagrus</i>	red porgy	708	40.2	41	10.3
<i>Trachinocephalus myops</i>	snakefish	698	44.4	64	16.1
<i>Synodus poeyi</i>	offshore lizardfish	696	5.4	59	14.8
<i>Opisthonema oglinum</i>	Atlantic thread herring	644	46.6	54	13.6
<i>Haemulon plumieri</i>	white grunt	630	206.6	34	8.5
<i>Bellator militaris</i>	horned searobin	612	10.6	39	9.8
<i>Lutjanus synagris</i>	lane snapper	611	112.7	82	20.6
<i>Monacanthus ciliatus</i>	fringed filefish	548	5	53	13.3
<i>Prionotus paralatus</i>	Mexican searobin	541	10.8	32	8
<i>Cyclopsetta chittendeni</i>	Mexican flounder	538	44	79	19.8
<i>Serranus phoebe</i>	tattler	536	16.6	25	6.3
<i>Serranus notospilus</i>	saddle bass	483	1.2	13	3.3
<i>Sphoeroides dorsalis</i>	marbled puffer	472	17.6	55	13.8

Table 5. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF	
				TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
<i>Equetus lanceolatus</i>	jackknife fish	443	39.3	40	10.1
<i>Stephanolepis hispida</i>	planehead filefish	425	28.4	43	10.8
<i>Etropus crossotus</i>	fringed flounder	379	5.8	63	15.8
<i>Sphoeroides parvus</i>	least puffer	377	3.4	46	11.6
<i>Urophycis cirrata</i>	gulf hake	374	15.5	25	6.3
<i>Decapterus punctatus</i>	round scad	351	8.6	20	5
<i>Bothus robinsi</i>	twospot flounder	349	12.7	43	10.8
<i>Eucinostomus gula</i>	silver jenny	348	10.7	28	7
<i>Ophidion holbrookii</i>	bank cusk-eel	346	35	40	10.1
<i>Stephanolepis hispida</i>		337	16.8	36	9
<i>Caranx crysos</i>	blue runner	331	20.8	45	11.3
<i>Lagocephalus laevigatus</i>	smooth puffer	331	31	55	13.8
<i>Prionotus alatus</i>	spiny searobin	329	7.4	22	5.5
<i>Diplectrum bivittatum</i>	dwarf sand perch	325	7.5	41	10.3
<i>Peprilus paru</i>	harvestfish	318	14.6	52	13.1
<i>Scorpaena brasiliensis</i>	barbfish	311	21.3	47	11.8
<i>Apogon pseudomaculatus</i>	twospot cardinalfish	310	1.1	18	4.5
<i>Urophycis floridana</i>	southern hake	292	39.6	26	6.5
<i>Lepophidium jeannae</i>	mottled cusk-eel	259	15	15	3.8
<i>Etropus rimosus</i>	gray flounder	252	3	15	3.8
<i>Cynoscion</i> spp.	seatrouts	240	3.9	11	2.8
<i>Saurida normani</i>	shortjaw lizardfish	233	21.3	13	3.3
<i>Brevoortia patronus</i>	gulf menhaden	227	18.4	22	5.5
<i>Acanthostracion quadricornis</i>	scrawled cowfish	220	40.7	35	8.8
<i>Sphoeroides spengleri</i>	bandtail puffer	213	9.3	35	8.8
<i>Scorpaena agassizii</i>	longfin scorpionfish	203	3.1	12	3
<i>Balistes capriscus</i>	gray triggerfish	195	18.7	51	12.8
<i>Acanthostracion quadricornis</i>		186	33.5	36	9
<i>Aluterus schoepfii</i>	orange filefish	179	90.9	34	8.5
<i>Porichthys plectrodon</i>	Atlantic midshipman	178	3.8	47	11.8

Table 5. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF	
				TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
<i>Selene vomer</i>	lookdown	172	4.5	35	8.8
<i>Urophycis regia</i>	spotted hake	161	14.9	15	3.8
<i>Ophidion beani</i>	longnose cusk-eel	158	8.1	14	3.5
<i>Prionotus martis</i>	barred searobin	157	6.7	18	4.5
<i>Pristigenys alta</i>	short bigeye	147	2.9	33	8.3
<i>Rhynchoconger flavus</i>	yellow conger	145	8.6	20	5
<i>Menticirrhus americanus</i>	southern kingfish	139	16.9	26	6.5
<i>Prionotus rubio</i>	blackwing searobin	130	17.7	24	6
<i>Prionotus ophryas</i>	bandtail searobin	129	5.9	38	9.5
<i>Nicholsina usta</i>	emerald parrotfish	124	4.1	27	6.8
<i>Antennarius radiosus</i>	singlespot frogfish	123	1.7	25	6.3
<i>Steindachneria argentea</i>	luminous hake	112	0.7	2	0.5
<i>Scomberomorus cavalla</i>	king mackerel	110	16.8	20	5
<i>Ancylopsetta dilecta</i>	three-eye flounder	103	5.4	19	4.8
<i>Brotula barbata</i>	bearded brotula	101	8.4	27	6.8
<i>Epinephelus morio</i>	red grouper	96	84.5	32	8
<i>Symphurus diomedeanus</i>	spottedfin tonguefish	94	2.3	21	5.3
<i>Ogcocephalus declivirostris</i>	slantbrow batfish	94	2.6	24	6
<i>Scomberomorus maculatus</i>	Spanish mackerel	94	11.8	23	5.8
<i>Ancylopsetta ommata</i>	ocellated flounder	90	14	32	8
<i>Hoplunnis macrura</i>	freckled pike-conger	87	0.6	25	6.3
<i>Pareques umbrosus</i>	cubbyu	84	5.4	18	4.5
<i>Kathetostoma albigutta</i>	lancer stargazer	84	2.8	24	6
<i>Etrumeus teres</i>	round herring	82	1.4	5	1.3
<i>Caulolatilus intermedius</i>	anchor tilefish	80	7.2	16	4
<i>Sphyraena guachancho</i>	guaguanche	79	8.6	20	5
<i>Ophidion</i>	cusk-eels	79	4	12	3
<i>Otophidium omostigmum</i>	polka-dot cusk-eel	76	0.6	11	2.8
<i>Gymnachirus texae</i>	fringed sole	75	2.2	20	5
<i>Calamus arctifrons</i>	grass porgy	75	15.6	7	1.8

Table 5. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF	
				TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
<i>Symphurus plagiusa</i>	blackcheek tonguefish	73	1.5	18	4.5
<i>Chaetodon ocellatus</i>	spotfin butterflyfish	71	5.4	24	6
<i>Ogcocephalus parvus</i>	roughback batfish	70	0.5	24	6
<i>Paralichthys lethostigma</i>	southern flounder	67	19.3	21	5.3
<i>Ophidion josephi</i>	crested cusk-eel	67	3.1	13	3.3
<i>Cyclopsetta fimbriata</i>	spotfin flounder	66	5.4	28	7
<i>Citharichthys spilopterus</i>	bay whiff	65	1	24	6
<i>Citharichthys macrops</i>	spotted whiff	65	2.8	17	4.3
<i>Etropus cyclosquamus</i>	shelf flounder	61	0.5	12	3
<i>Raja texana</i>	roundel skate	57	21.2	29	7.3
<i>Elops saurus</i>	ladyfish	55	9.4	4	1
<i>Prionotus scitulus</i>	leopard searobin	54	2.3	15	3.8
<i>Gymnothorax saxicola</i>	honeycomb moray	53	4.1	23	5.8
<i>Etropus</i>		53	0.2	1	0.3
<i>Diplectrum</i>	perch	50	0.1	3	0.8
<i>Pomatomus saltatrix</i>	bluefish	49	17.5	4	1
<i>Eucinostomus argenteus</i>	spotfin mojarra	48	1.1	15	3.8
<i>Citharichthys gymnorhinus</i>	anglefin whiff	47	0.1	6	1.5
<i>Lutjanus griseus</i>	grey snapper	47	24	20	5
<i>Lachnolaimus maximus</i>	hogfish	47	22.9	11	2.8
<i>Hemipteronotus novacula</i>	pearly razorfish	47	2.8	16	4
<i>Engyophrys senta</i>	spiny flounder	46	0.2	12	3
<i>Chromis enchrysur</i>	yellowtail reef fish	41	0.6	6	1.5
<i>Estropus microstomus</i>	smallmouth flounder	41	0.9	11	2.8
<i>Paralichthys squamilentus</i>	broad flounder	41	10.9	15	3.8
<i>Anchoa mitchilli</i>	bay anchovy	40	0	9	2.3
<i>Rhizoprionodon terraenovae</i>	Atlantic sharpnose shark	38	28.9	18	4.5
<i>Chilomycterus schoepfii</i>	striped burrfish	36	11.1	20	5
<i>Paralichthys albigutta</i>	gulf flounder	36	18.3	15	3.8
<i>Priacanthus arenatus</i>	bigeye	34	6.3	12	3

Table 5. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF	
				TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
<i>Echeneis neucratoides</i>	whitefin sharksucker	32	18.3	11	2.8
<i>Eucinostomus harengulus</i>	tidewater mojarra	32	2	7	1.8
<i>Hippocampus erectus</i>	lined seahorse	29	0.3	16	4
<i>Hemicaranx amblyrhynchus</i>	bluntnose jack	28	2.7	8	2
<i>Aluterus heudelotii</i>	dotterel filefish	27	7	9	2.3
<i>Pareques iwamotoi</i>	blackbar drum	27	1.9	10	2.5
<i>Prionotus tribulus</i>	bighead searobin	25	2	8	2
<i>Chaetodon sedentarius</i>	reef butterflyfish	25	1.4	11	2.8
<i>Ogcocephalus cubifrons</i>	polka-dot batfish	23	9.3	17	4.3
<i>Astrapogon alutus</i>	bronze cardinalfish	23	0.1	7	1.8
<i>Holacanthus bermudensis</i>	blue angelfish	23	8.2	10	2.5
<i>Phaeoptyx xenus</i>	sponge cardinalfish	21	0.1	6	1.5
<i>Pontinus longispinis</i>	longspine scorpionfish	21	0.2	5	1.3
<i>Gastropsetta frontalis</i>	shrimp flounder	21	0.9	8	2
Unid.fish	fishes	21	0.2	6	1.5
<i>Apogon aurolineatus</i>	bridle cardinalfish	20	0	7	1.8
<i>Rachycentron canadum</i>	cobia	19	4.7	12	3
<i>Sphyrna tiburo</i>	bonnethead	19	12.5	12	3
<i>Dasyatis americana</i>	southern stingray	19	29.5	10	2.5
<i>Ophidion grayi</i>	blotched cusk-eel	18	1.3	5	1.3
<i>Decodon puellaris</i>	red hogfish	18	0.4	4	1
<i>Sphoeroides nephelus</i>	southern puffer	18	2.9	9	2.3
<i>Rhynchoconger gracilior</i>		18	0.7	1	0.3
<i>Ophidion selenops</i>	mooneye cusk-eel	18	0	1	0.3
<i>Peristedion gracile</i>	slender searobin	18	0.1	4	1
<i>Bathyanthias mexicanus</i>	yellowtail bass	17	0.2	4	1
<i>Raja eglanteria</i>	clearnose skate	17	7.9	12	3
<i>Calamus leucosteus</i>	whitebone porgy	16	6.9	3	0.8
<i>Echeneis naucrates</i>	sharksucker	16	8.7	14	3.5
<i>Ariomma regulus</i>	spotted driftfish	15	1.9	4	1

Table 5. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER	TOTAL WEIGHT	NUMBER OF	% FREQUENCY
		CAUGHT	CAUGHT (KG)	TOWS WHERE CAUGHT	OCCURRENCE
Ogcocephalus corniger	longnose batfish	15	0.2	5	1.3
Halichoeres bivittatus	slippery dick	14	0.3	4	1
Mustelus canis	smooth dogfish	14	12.5	9	2.3
Calamus nodosus	knobbed porgy	14	5.2	5	1.3
Paraconger caudilimbatus	margintail conger	13	0.6	7	1.8
Carcharhinus limbatus	blacktip shark	12	5.3	3	0.8
Gymnachirus melas	naked sole	11	0.4	6	1.5
Anchoa nasus	longnose anchovy	11	0	1	0.3
Selar crumenophthalmus	bigeye scad	10	0.9	6	1.5
Bollmannia communis	ragged goby	10	0	5	1.3
Rhinoptera bonasus	cownose ray	10	94.7	5	1.3
Rypticus maculatus	whitespotted soapfish	10	0.4	6	1.5
Mycteroperca interstitialis	yellowmouth grouper	10	3.6	3	0.8
Hoplunnis diomedianus	blacktail pike-conger	10	0.1	4	1
Squatina dumeril	Atlantic angel shark	9	16.3	6	1.5
Holocentrus bullisi	deepwater squirrelfish	9	0.1	4	1
Neomerinthe hemingwayi	spinycheek scorpionfish	9	0.9	4	1
Trachinotus carolinus	Florida pompano	9	1.8	5	1.3
Symphurus minor	largescale tonguefish	8	0	2	0.5
Dorosoma petenense	threadfin shad	8	0.3	5	1.3
Echiophis intertinctus	spotted spoon-nose eel	8	2.8	6	1.5
Symphurus urospilus	spottail tonguefish	8	0.2	4	1
Menticirrhus saxatilis	northern kingfish	8	0.8	2	0.5
Sphyraena borealis	northern sennet	8	1	5	1.3
Phenacoscorpius nebris		7	0	1	0.3
Apogon affinis	bigtooth cardinalfish	7	0.1	3	0.8
Pomacentrus variabilis	cocoa damselfish	7	0.1	2	0.5
Urophycis earlli	Carolina hake	7	0.6	7	1.8
Caranx hippos	crevalle jack	7	1.3	2	0.5
Pomacanthus arcuatus	gray angelfish	7	3.5	5	1.3

Table 5. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF	
				TOWNS WHERE CAUGHT	% FREQUENCY OCCURRENCE
<i>Prognathodes aya</i>	bank butterflyfish	6	0.2	3	0.8
<i>Antennarius striatus</i>	striated frogfish	6	0.2	6	1.5
<i>Physiculus fulvus</i>	metallic codling	6	0.1	2	0.5
<i>Calamus bajonado</i>	jolthead porgy	6	2.5	2	0.5
<i>Centropristis striatus</i>	black sea bass	6	1.1	5	1.3
<i>Bregmaceros cantori</i>	striped codlet	6	0	1	0.3
<i>Rhinobatos lentiginosus</i>	Atlantic guitarfish	6	5	5	1.3
<i>Hoplunnis tenuis</i>	spotted pike conger	6	0.1	1	0.3
<i>Foetorepus goodenbeani</i>	palefin dragonet	5	0.1	1	0.3
<i>Opsanus pardus</i>	leopard toadfish	5	0	3	0.8
<i>Halichoeres bathyphilus</i>	greenband wrasse	5	0.2	2	0.5
<i>Holocentrus adscensionis</i>	squirrelfish	5	2.2	3	0.8
<i>Symphurus civitatum</i>	offshore tonguefish	5	0.1	3	0.8
<i>Diplodus holbrooki</i>	spottail pinfish	5	0.6	2	0.5
<i>Gymnothorax nigromarginatus</i>	blackedge moray	5	1.2	3	0.8
<i>Syngnathus louisianae</i>	chain pipefish	5	0	2	0.5
<i>Synodus synodus</i>	red lizardfish	4	0.1	1	0.3
<i>Apogon quadrisquamatus</i>	sawcheek cardinalfish	4	0	1	0.3
<i>Epinephelus niveatus</i>	snowy grouper	4	0.1	2	0.5
<i>Bregmaceros atlanticus</i>	antenna codlet	4	0	2	0.5
<i>Cryptotomus roseus</i>	bluelip parrotfish	4	0	3	0.8
<i>Serraniculus pumilio</i>	pygmy sea bass	4	0	1	0.3
<i>Phaeoptyx pigmentaria</i>	dusky cardinalfish	4	0	3	0.8
<i>Antennarius ocellatus</i>	ocellated frogfish	4	0.1	4	1
<i>Lonchopisthus micrognathus</i>	swordtail jawfish	3	0	2	0.5
<i>Scorpaena</i> spp.	scorpionfishes	3	0	1	0.3
<i>Anchoa lyolepis</i>	dusky anchovy	3	0	2	0.5
<i>Pogonias cromis</i>	black drum	3	11.4	3	0.8
<i>Pseudupeneus maculatus</i>	spotted goatfish	3	0.4	2	0.5
<i>Anarchias yoshiae</i>	pygmy moray	3	0	2	0.5

Table 5. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER	TOTAL WEIGHT	NUMBER OF	% FREQUENCY
		CAUGHT	CAUGHT (KG)	TOWS WHERE CAUGHT	OCCURRENCE
<i>Opsanus tau</i>	oyster toadfish	3	0.1	1	0.3
<i>Stephanolepis setifer</i>	pygmy filefish	3	0.1	1	0.3
<i>Sciaenops ocellatus</i>	red drum	2	6	2	0.5
<i>Uroconger syringinus</i>	threadtail conger	2	0.9	1	0.3
<i>Calamus penna</i>	sheepshead porgy	2	2.6	2	0.5
<i>Monacanthus</i>	filefishes	2	0	1	0.3
<i>Dipturus olsenii</i>	spreadfin skate	2	0.1	1	0.3
<i>Dasyatis say</i>	bluntnose stingray	2	8.7	2	0.5
<i>Seriola dumerili</i>	greater amberjack	2	0.4	2	0.5
<i>Bothus ocellatus</i>	eyed flounder	2	0	2	0.5
<i>Scorpaenodes caribbaeus</i>	reef scorpionfish	2	0	1	0.3
<i>Scomber scombrus</i>	Atlantic mackerel	2	0.2	1	0.3
<i>Canthigaster rostratus</i>		2	0	1	0.3
<i>Dasyatis sabina</i>	Atlantic stringray	2	1.5	2	0.5
<i>Opistognathus lonchurus</i>	moustache jawfish	2	0	1	0.3
<i>Parablennius marmoratus</i>	seaweed blenny	2	0	2	0.5
<i>Narcine brasiliensis</i>	lesser electric ray	2	1	2	0.5
<i>Neobythites gilli</i>	cusk-eel	2	0	2	0.5
<i>Mycteroperca microlepis</i>	gag	2	1.3	2	0.5
<i>Corythoichthys albirostris</i>		2	0	2	0.5
<i>Gymnothorax kolpos</i>	blacktail moray	2	0.7	2	0.5
<i>Labrisomus nuchipinnis</i>	hairy blenny	2	0	1	0.3
<i>Ophichthus puncticeps</i>	palespotted eel	2	0.2	2	0.5
<i>Apogon spp.</i>	cardinalfishes	2	0	2	0.5
<i>Epinephelus flavolimbatus</i>	yellowedge grouper	2	0.5	2	0.5
<i>Bairdiella chrysoura</i>	silver perch	1	0	1	0.3
<i>Seriola fasciata</i>	lesser amberjack	1	0.3	1	0.3
<i>Scorpaena grandicornis</i>	plumed scorpionfish	1	0	1	0.3
<i>Eucinostomus melanopterus</i>	flagfin mojarra	1	0	1	0.3
<i>Gymnothorax ocellatus</i>	Caribbean ocellated moray	1	0.1	1	0.3

Table 5. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER	TOTAL WEIGHT	NUMBER OF	% FREQUENCY
		CAUGHT	CAUGHT (KG)	TOWS WHERE CAUGHT	OCCURRENCE
Sciaenidae	croakers	1	0	1	0.3
Scomberomorus regalis	cero	1	0.1	1	0.3
Diplogrammus pauciradiatus	spotted dragonet	1	0	1	0.3
Alosa chrysochloris	blue herring	1	0.1	1	0.3
Alectis ciliaris	African pompano	1	0.1	1	0.3
Carcharhinus acronotus	blacknose shark	1	1.7	1	0.3
Halichoeres poeyi	blackear wrasse	1	0	1	0.3
Opistognathus robinsi	spotfin jawfish	1	0	1	0.3
Ariosoma balearicum	bandtooth conger	1	0	1	0.3
Conodon nobilis	barred grunt	1	0.2	1	0.3
Gobiidae	gobies	1	0	1	0.3
Opsanus beta	gulf toadfish	1	0.6	1	0.3
Remora remora	remora	1	0.9	1	0.3
Gobiesox strumosus	skilletfish	1	0	1	0.3
Hoplunnis		1	0	1	0.3
Acanthostracion polygonius	honeycomb cowfish	1	0.7	1	0.3
Carcharhinus brevipinna	spinner shark	1	15.2	1	0.3
Fistularia petimba	red cornetfish	1	0.6	1	0.3
<u>Crustaceans</u>					
Farfantepenaeus aztecus	brown shrimp	18551	445.7	193	48.5
Munida pusilla		7281	3.8	9	2.3
Portunus spinicarpus	longspine swimming crab	5644	39.5	93	23.4
Callinectes similis	lesser blue crab	4594	81	148	37.2
Sicyonia brevirostris	brown rock shrimp	3898	65.3	83	20.9
Litopenaeus setiferus	white shrimp	2643	73.6	99	24.9
Squilla chydrea	mantis shrimp	1317	7.4	58	14.6
Solenocera vioscai	humpback shrimp	1317	5.8	40	10.1
Squilla empusa	mantis shrimp	1301	16	104	26.1

Table 5. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER	TOTAL WEIGHT	NUMBER OF	% FREQUENCY
		CAUGHT	CAUGHT (KG)	TOWS WHERE CAUGHT	OCCURRENCE
<i>Metapenaeopsis goodei</i>	Caribbean velvet shrimp	1175	1.9	31	7.8
<i>Sicyonia dorsalis</i>	lesser rock shrimp	908	2.8	29	7.3
<i>Rimapenaeus similis</i>	roughback shrimp	825	4.2	38	9.5
<i>Anasimus latus</i>	stilt spider crab	810	8.6	38	9.5
<i>Portunus gibbesii</i>	iridescent swimming crab	666	4.4	94	23.6
<i>Xiphopenaeus kroyeri</i>	seabob	656	2.8	13	3.3
<i>Solenocera atlantidis</i>	dwarf humpback shrimp	594	0.6	23	5.8
<i>Parapenaeus politus</i>	deepwater rose shrimp	427	1.1	11	2.8
<i>Farfantepenaeus duorarum</i>	pink shrimp	355	7.9	31	7.8
<i>Rimapenaeus constrictus</i>	roughneck shrimp	279	1	21	5.3
<i>Stenorhynchus seticornis</i>	yellowline arrow crab	206	0.4	43	10.8
<i>Portunus spinimanus</i>	blotched swimming crab	183	9.6	46	11.6
<i>Mesopenaeus tropicalis</i>	salmon shrimp	179	0.6	9	2.3
<i>Scyllarides nodifer</i>	ridged slipper lobster	170	14.2	29	7.3
<i>Munida flinti</i>		148	0.1	3	0.8
<i>Callinectes sapidus</i>	blue crab	144	18.8	33	8.3
<i>Calappa sulcata</i>	yellow box crab	127	27.8	40	10.1
<i>Raninoides louisianensis</i>	gulf frog crab	100	0.9	30	7.5
<i>Portunus ordwayii</i>		100	0.7	21	5.3
<i>Myropsis quinquespinosa</i>	fivespine purse crab	76	0.4	13	3.3
<i>Stenocionops furcatus furcatus</i>	furcate crab	72	1.3	27	6.8
<i>Scyllarus chacei</i>	chace slipper lobster	70	0.2	12	3
<i>Pseudorhombila quadridentata</i>	flecked squareback crab	57	0.6	18	4.5
<i>Podochela sidneyi</i>	shortfinger neck crab	55	0.1	19	4.8
<i>Tozeuma serratum</i>	serrate arrow shrimp	45	0	2	0.5
<i>Platylambrus granulata</i>	bladetooth elbow crab	44	0.1	20	5
<i>Leiolambrus nitidus</i>	white elbow crab	43	0.1	10	2.5
<i>Mithrax forceps</i>	red-ridged clinging crab	41	0.1	8	2
<i>Cryptodromiopsis antillensis</i>	hairy sponge crab	38	0.1	25	6.3
<i>Parthenope agonus</i>		36	0	9	2.3

Table 5. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER	TOTAL WEIGHT	NUMBER OF	% FREQUENCY
		CAUGHT	CAUGHT (KG)	TOWS WHERE CAUGHT	OCCURRENCE
Processa		32	0	2	0.5
Macrocoeloma trispinosum	spongy decorator crab	29	0.3	9	2.3
Dardanus insignis	red brocade hermit	29	0.1	7	1.8
Pilumnus sayi	spineback hairy crab	27	0.1	7	1.8
Paguristes sericeus	blue-eyed hermit	21	0.1	15	3.8
Callinectes	swimming crabs	20	0.3	1	0.3
Manucomplanus ungulatus		19	0	10	2.5
Pagurus bullisi	hermit crab	18	0.1	4	1
Plesionika longicauda	pandalid shrimp	15	0	5	1.3
Calappa flammea	flame box crab	14	2.4	10	2.5
Acanthocarpus alexandri	gladiator box crab	13	0.1	4	1
Libinia emarginata	portly spider crab	13	2.2	5	1.3
Portunus depressifrons	flatface swimming crab	13	0.2	3	0.8
Pagurus pollicaris	flatclaw hermit crab	13	0.2	6	1.5
Alpheus	snapping shrimps	13	0	4	1
Mithrax pleuracanthus	shaggy clinging crab	12	0	8	2
Collodes robustus	spider crab	11	0	8	2
Pilumnus floridanus	plumed hairy crab	11	0	2	0.5
Ovalipes floridanus	Florida lady crab	11	0.3	6	1.5
Dardanus fucosus	bareye hermit	11	0	4	1
Munida forceps	squat lobster	10	0	2	0.5
Scyllarus depressus	scaled slipper lobster	10	1	5	1.3
Petrochirus diogenes	giant hermit crab	9	0.1	4	1
Petrolisthes armatus	green porcelain crab	9	0	4	1
Stenocionops spinimanus	prickly spider crab	8	1.6	4	1
Sicyonia burkenroadi	spiny rock shrimp	8	0	4	1
Lysmata		7	0	3	0.8
Persephona mediterranea	mottled purse crab	7	0	3	0.8
Synalpheus longicarpus		6	0	5	1.3
Rimapenaeus spp.	roughneck shrimps	6	0	1	0.3

Table 5. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF	
				TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
<i>Euphosynoplax clausa</i>	craggy bathyal crab	6	0	2	0.5
<i>Galathea rostrata</i>		5	0	2	0.5
<i>Menippe adina</i>	Gulf stone crab	5	0	2	0.5
<i>Euchirograpsus americanus</i>	American talon crab	5	0	2	0.5
<i>Persephona crinita</i>	pink purse crab	5	0	4	1
<i>Sicyonia parri</i>	rock shrimps	5	0	2	0.5
<i>Macrocoeloma camptocerum</i>	Florida decorator crab	4	0	4	1
<i>Penaeopsis serrata</i>	megalops shrimp	4	0	2	0.5
<i>Gonodactylus bredini</i>		4	0	2	0.5
<i>Podochela lamelligera</i>	neck crab	4	0	1	0.3
<i>Libinia dubia</i>	longnose spider crab	4	0.1	3	0.8
<i>Danielum ixbauchac</i>	red sea crab	4	0	2	0.5
<i>Squilla rugosa</i>		4	0	3	0.8
<i>Solenocera</i> spp.	humpback shrimps	4	0	2	0.5
<i>Lobopilumnus agassizii</i>	areolated hairy crab	4	0	2	0.5
<i>Synalpheus townsendi</i>	Townsend snapping shrimp	4	0	3	0.8
<i>Metoporphaphis calcarata</i>	false arrow crab	4	0	4	1
<i>Parthenope serrata</i>	sawtooth elbow crab	4	0	1	0.3
<i>Gonodactylus</i>		4	0	2	0.5
<i>Clibanarius vittatus</i>	thinstripe hermit crab	4	0	1	0.3
<i>Porcellana sayana</i>	spotted porcelain crab	4	0	3	0.8
<i>Pilumnus dasypodus</i>	shortspine hairy crab	4	0	2	0.5
<i>Hepatus epheliticus</i>	calico crab	3	0.1	3	0.8
<i>Raninoides loevis</i>	furrowed frog crab	3	0	2	0.5
<i>Ethusa microphthalma</i>	broadback sumo crab	3	0	1	0.3
<i>Speocarcinus lobatus</i>	gulf squareback crab	3	0	1	0.3
<i>Stomatopoda</i>	mantis shrimps	3	0	1	0.3
<i>Dromia</i>		2	0	1	0.3
<i>Palicus obesa</i>		2	0	1	0.3
Paguridae	right-handed hermit crabs	2	0	2	0.5

Table 5. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF	
				TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
<i>Podochela gracilipes</i>	unicorn neck crab	2	0	2	0.5
Munida		2	0	2	0.5
<i>Palicus faxoni</i>	finned stilt crab	2	0	2	0.5
<i>Podochela</i>		2	0	2	0.5
<i>Sicyonia</i> spp.	rock shrimps	2	0	1	0.3
<i>Sicyonia typica</i>	kinglet rock shrimp	2	0	1	0.3
Inachidae		2	0	1	0.3
<i>Mithrax acuticornis</i>	sharphorn clinging crab	2	0	2	0.5
<i>Synalpheus minus</i>	minor snapping shrimp	2	0	1	0.3
<i>Squilla edentata</i>		2	0.1	1	0.3
<i>Hemigrapsus</i>		1	0	1	0.3
<i>Paguristes triangulatus</i>	hermit crab	1	0	1	0.3
<i>Scyllarus</i> spp.	slipper lobsters	1	0	1	0.3
<i>Acetes americanus</i>	aviu shrimp	1	0	1	0.3
<i>Stenopus scutellatus</i>	golden coral shrimp	1	0	1	0.3
Goneplacidae		1	0	1	0.3
<i>Pseudomedeus agassizii</i>	rough rubble crab	1	0	1	0.3
<i>Glyptoxanthus erosus</i>	eroded mud crab	1	0	1	0.3
<i>Lysmata wurdemanni</i>	peppermint shrimp	1	0	1	0.3
<i>Homola barbata</i>		1	0	1	0.3
<i>Squilla</i> spp.	mantis shrimps	1	0	1	0.3
<i>Panopeus simpsoni</i>	oystershell mud crab	1	0	1	0.3
<i>Hypoconcha spinosissima</i>	spiny shellback crab	1	0	1	0.3
Isopoda	isopods	1	0	1	0.3
<i>Pitho anisodon</i>	oval urn crab	1	0	1	0.3
<i>Paguristes tortugae</i>	bandeye hermit	1	0	1	0.3
<i>Mithrax hispidus</i>	coral clinging crab	1	0	1	0.3
<i>Petrolisthes galathinus</i>	banded porcelain crab	1	0	1	0.3
Galathea		1	0	1	0.3
<i>Pagurus impressus</i>	dimpled hermit	1	0	1	0.3

Table 5. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER	TOTAL WEIGHT	NUMBER OF	% FREQUENCY
		CAUGHT	CAUGHT (KG)	TOWS WHERE CAUGHT	OCCURRENCE
Alpheidae	snapping shrimps	1	0	1	0.3
Phimochirus holthuisi	red-striped hermit	1	0	1	0.3
Xanthidae	mud crabs	1	0	1	0.3
Palicus		1	0	1	0.3
Parthenope pourtalesii	spinous elbow crab	1	0	1	0.3
Nikoides schmitti		1	0	1	0.3
Ranilia muricata	muricate frog crab	1	0	1	0.3
Diogenidae	left-handed hermit crabs	1	0	1	0.3
Menippe mercenaria	Florida stone crab	1	0	1	0.3
Manucomplanus corallinus		1	0	1	0.3
<u>Others</u>					
Amusium papyraceum	paper scallop	7737	71.2	63	15.8
Loligo plei	arrow squid	4443	82.2	163	41
Loligo pealeii	longfin squid	2002	64.2	84	21.1
Argopecten gibbus	calico scallop	1876	45.1	13	3.3
Lolliguncula brevis	Atlantic brief squid	882	10.9	86	21.6
Euvola raveneli	Ravenel's scallop	203	1.1	12	3
Anadara baughmani	Baughman's ark	144	1.9	14	3.5
Octopus vulgaris	common Atlantic octopus	83	17.1	34	8.5
Polystira albida	white giant turris	75	0.7	11	2.8
Sconsia striata	royal bonnet	54	0.8	10	2.5
Aplysia morio	sooty seahare	46	11	8	2
Pitar cordatus	Schwengel's pitar	39	0.7	15	3.8
Semirossia equalis	greater shining bobtail	38	0.1	8	2
Anadara transversa	transverse ark	23	0.7	3	0.8
Aplysia	opisthobranchs	19	3.7	7	1.8
Ficus communis	Atlantic figsnail	16	1	8	2
Distorsio clathrata	Atlantic distorsio	15	0.2	8	2

Table 5. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER	TOTAL WEIGHT	NUMBER OF	% FREQUENCY
		CAUGHT	CAUGHT (KG)	TOWS WHERE CAUGHT	OCCURRENCE
<i>Narcissia trigonaria</i>		14	1	4	1
<i>Dendostrea</i>		13	0	1	0.3
Sepiolidae		12	0	1	0.3
<i>Xenophora</i>		12	0.1	4	1
<i>Aequipecten muscosus</i>	rough scallop	10	0.1	6	1.5
Octopus		9	0	6	1.5
<i>Neverita duplicata</i>	shark eye	9	0.1	6	1.5
<i>Lirophora clenchi</i>	Clench venus	8	0.1	6	1.5
<i>Pteria colymbus</i>	Atlantic wing-oyster	7	0.2	3	0.8
<i>Busycon plagosus</i>		6	0.7	1	0.3
<i>Neverita</i>		6	0.1	5	1.3
<i>Cypraea cervus</i>	atlantic deer cowrie	5	0.9	2	0.5
<i>Polystira tellea</i>	delicate giant turret	5	0.1	3	0.8
Aplysiidae	opisthobranchs	5	0.2	1	0.3
<i>Conus austini</i>	cone shell	5	0.1	2	0.5
<i>Hiatella</i>		5	0.1	2	0.5
<i>Murex hidalgoi</i>		4	0	2	0.5
<i>Macoma brevifrons</i>	short macoma	4	0	1	0.3
<i>Buccinum</i>		4	0	3	0.8
<i>Turbo castaneus</i>		3	0	1	0.3
<i>Busycon</i>		3	0.6	1	0.3
<i>Aplysia brasiliana</i>	mottled seahare	3	0.3	3	0.8
<i>Solecurtus cumingianus</i>	corrugate solecurtus	3	0	1	0.3
<i>Octopus joubini</i>	Atlantic pygmy octopus	3	0	2	0.5
<i>Nodipecten</i>		3	0.1	2	0.5
<i>Dendrodoris</i>		3	0	2	0.5
<i>Laevicardium laevigatum</i>	egg cockle	3	0	2	0.5
<i>Tonna galea</i>	giant tun	3	0.7	3	0.8
<i>Busycon perversum</i>	whelk	3	0.6	2	0.5
<i>Atrina rigida</i>	stiff penshell	3	1.6	1	0.3

Table 5. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL WEIGHT CAUGHT (KG)	NUMBER OF	
				TOWS WHERE CAUGHT	% FREQUENCY OCCURRENCE
<i>Atrina serrata</i>	sawtooth penshell	3	0.4	1	0.3
<i>Macoma pulleyi</i>	delta macoma	2	0	1	0.3
Cardiidae	bivalves	2	0.1	1	0.3
<i>Arcinella cornuta</i>	Florida spiny jewelbox	2	0	1	0.3
<i>Busycon sinistrum</i>	lightning whelk	2	0.1	2	0.5
<i>Musculus lateralis</i>	lateral mussel	2	0	1	0.3
Turridae		2	0	1	0.3
<i>Phalium granulatum</i>	Scotch bonnet	2	0	2	0.5
Pectinidae	bivalves	2	0	2	0.5
<i>Macrocallista maculata</i>	calico clam	2	0	1	0.3
<i>Stramonita</i>	rocksnails	2	0	2	0.5
<i>Atrina seminuda</i>	half-naked penshell	2	0.7	1	0.3
<i>Conus daucus</i>	carrot cone	2	0	2	0.5
<i>Astrea americana</i>		2	0	2	0.5
<i>Rossia</i>		2	0	2	0.5
<i>Arca zebra</i>	turkey wing	2	0.2	2	0.5
Mytilidae		2	0	1	0.3
<i>Cantharus cancellarius</i>	cancellate cantharus	1	0	1	0.3
<i>Aequipecten glyptus</i>	red-ribbed scallop	1	0	1	0.3
<i>Astrea</i>		1	0.1	1	0.3
<i>Solecurtus</i>		1	0	1	0.3
<i>Armina</i>		1	0	1	0.3
<i>Chicoreus</i>		1	0	1	0.3
<i>Conus spurius</i>	alphabet cone	1	0	1	0.3
<i>Turritella exoleta</i>	eastern turretnail	1	0	1	0.3
<i>Conus sozoni</i>		1	0	1	0.3
<i>Spondylus americanus</i>	Atlantic thorny oyster	1	0.4	1	0.3
Pleurobranchus	slugs	1	0	1	0.3
<i>Murex cabritti</i>		1	0	1	0.3
<i>Laevicardium</i>		1	0.1	1	0.3

Table 5. Species composition list (continued)

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER	TOTAL WEIGHT	NUMBER OF	% FREQUENCY
		CAUGHT	CAUGHT (KG)	TOWS WHERE CAUGHT	OCCURRENCE
Fusinus eucosmius	apricot spindle	1	0	1	0.3
Oliva sayana	lettered olive	1	0	1	0.3
Calliostoma euglyptum	sculptured topsnail	1	0	1	0.3
Papyridea		1	0	1	0.3
Calotrophon ostrearum	mauve-mouth drill	1	0	1	0.3
Fasciolaria liliium	banded tulip	1	0	1	0.3
Astrea phoebia		1	0	1	0.3
Hexaplex fulvescens	giant eastern murex	1	0.1	1	0.3

Table 6. 2010 Bottom Longline Survey species composition list. Species with no weight recorded were too large to measure.

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL NUMBER WEIGHED	TOTAL WEIGHT
<u>Finfishes</u>				
Rhizoprionodon terraenovae	Atlantic sharpnose shark	673	600	1483.4
Carcharhinus limbatus	blacktip shark	295	203	1412.8
Bagre marinus	gafftopsail catfish	250	167	245.2
Sciaenops ocellata	red drum	158	76	686.9
Carcharhinus acronotus	blacknose shark	72	59	486.6
Carcharhinus leucas	bull shark	72	14	160.8
Carcharhinus brevipinna	spinner shark	70	51	217.2
Carcharhinus isodon	finetooth shark	52	47	214.4
Arius felis	hardhead catfish	31	27	16.9
Dasyatis americana	southern stingray	30	8	97.7
Carcharhinus plumbeus	sandbar shark	24	22	176.2
Pogonias cromis	black drum	16	15	195.4
Galeocerdo cuvier	tiger shark	10	4	31.4
Sphyrna tiburo	bonnethead	5	4	9.2
Sphyrna mokarran	great hammerhead	4	2	30.7
Sphyrna lewini	scalloped hammerhead	3	1	78.6
Dasyatis sabina	Atlantic stingray	3	2	19.9
Rhinoptera bonasus	cownose ray	3	1	9.3
Rachycentron canadum	cobia	1	1	13.0
Cynoscion arenarius	sand seatrout	1	1	0.4
Scomberomorus maculatus	Spanish mackerel	1	1	1.2

Table 7. 2010 Vertical Line Survey species composition list. Species with no weight recorded were too large to measure.

GENUS/SPECIES	COMMON NAME	TOTAL NUMBER CAUGHT	TOTAL NUMBER WEIGHED	TOTAL WEIGHT
<u>Finfishes</u>				
Lutjanus campechanus	red snapper	597	595	694.4
Balistes capriscus	gray triggerfish	30	30	47.7
Echeneis naucrates	sharksucker	13	12	11.2
Rhomboplites aurorubens	vermilion snapper	7	7	3.6
Rhizoprionodon terraenovae	Atlantic sharpnose shark	5	4	18.4
Haemulon aurolineatum	tomtate	4	4	0.7
Centropristis philadelphicus	rock sea bass	3	3	0.3
Pagrus pagrus	red porgy	3	3	2.3
Mycteroperca phenax	scamp	2	2	1.1
Carcharhinus falciformis	silky shark	1	1	3.2
Epinephelus nigritus	warsaw grouper	1	1	4.2
Epinephelus morio	red grouper	1	1	1.8
Mycteroperca microlepis	gag	1	1	2.1
Seriola rivoliana	almaco jack	1	1	1.3
Lutjanus synagris	lane snapper	1	1	0.9
Sciaenops ocellata	red drum	1	1	2.4

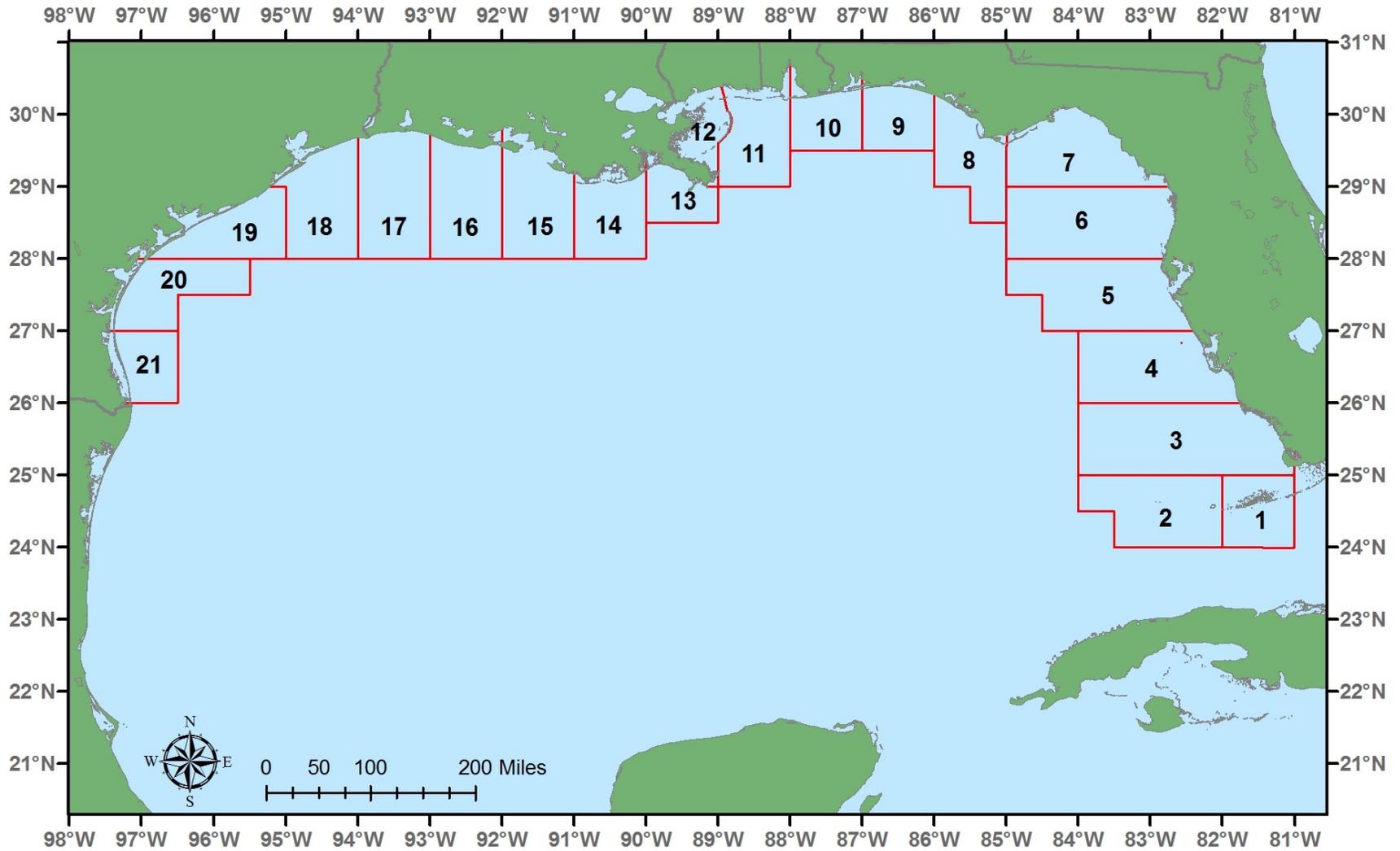


Figure 1. Statistical zones for shrimp in the Gulf of Mexico.

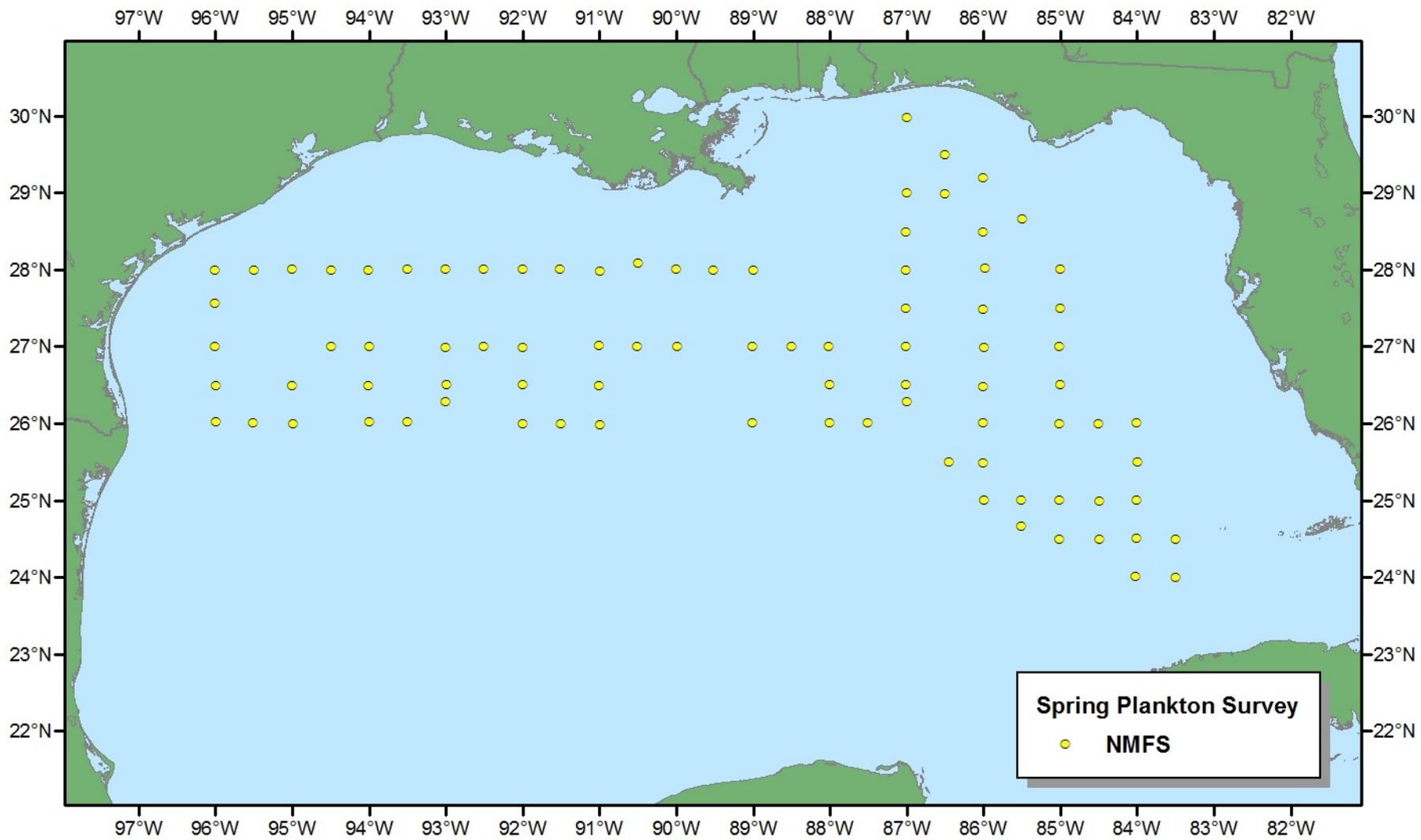


Figure 2. Locations of plankton and environmental stations during the 2010 Spring Plankton Survey.

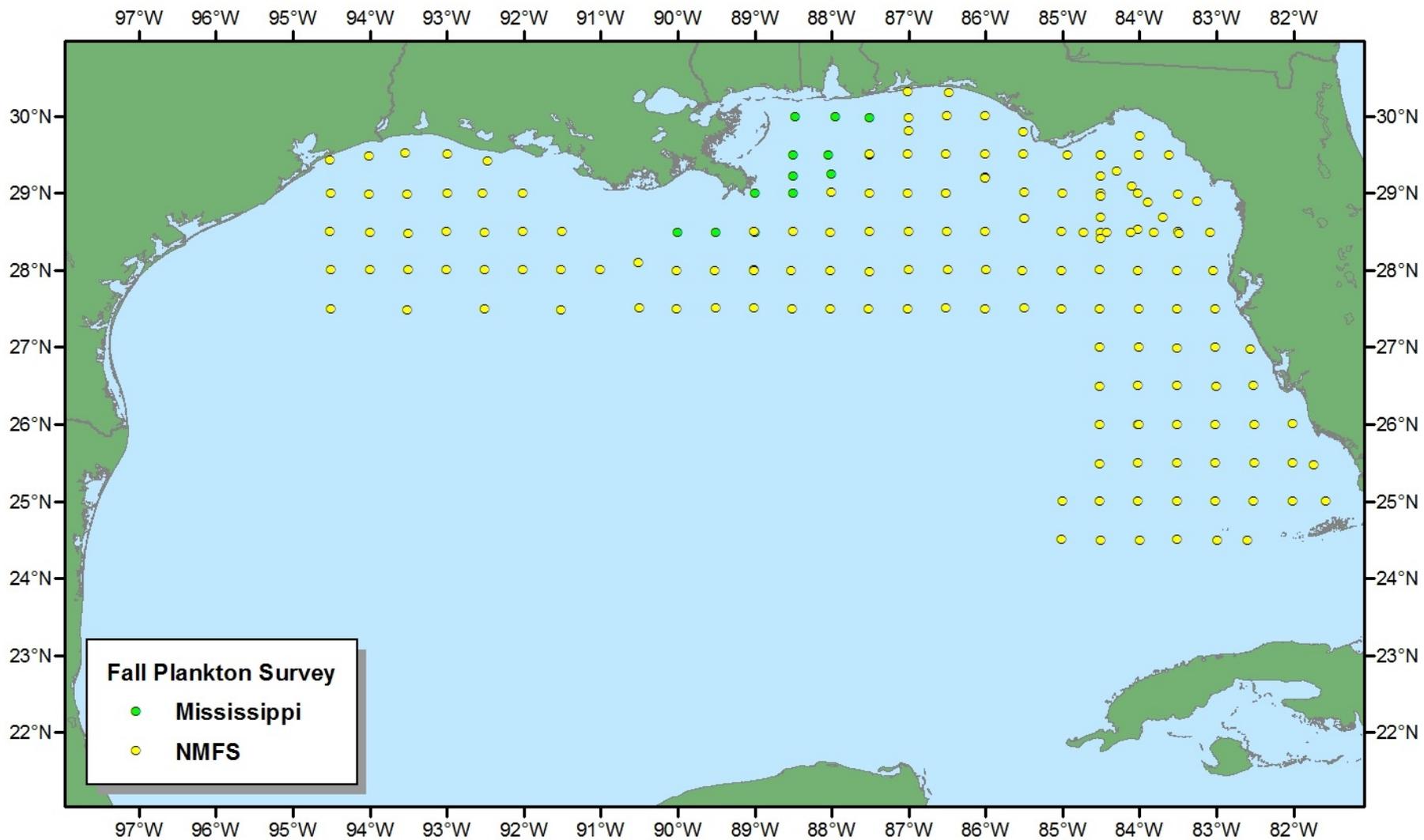


Figure 3. Locations of plankton and environmental stations during the 2010 Fall Plankton Survey.

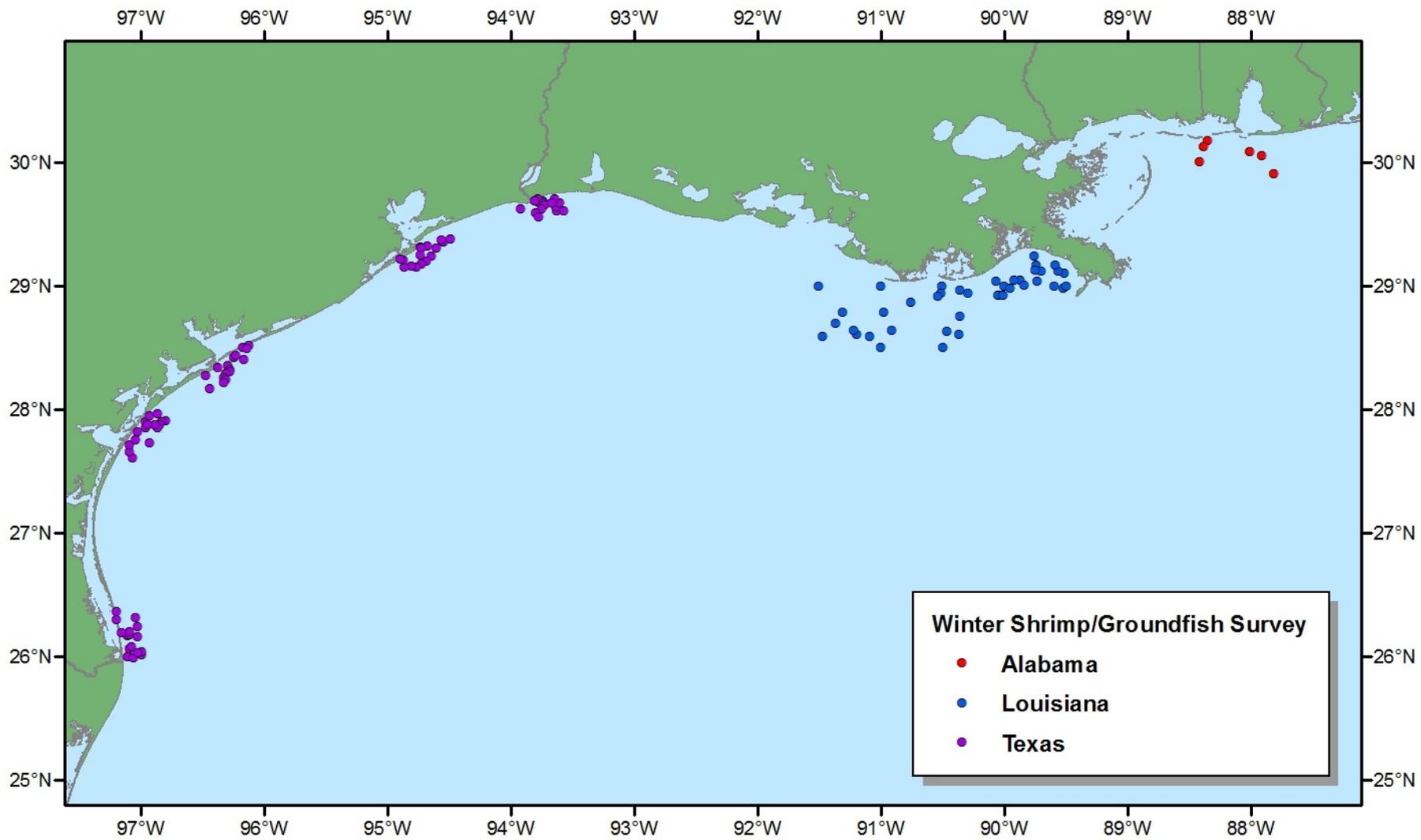


Figure 4. Locations of stations during the 2010 Winter Shrimp/Groundfish Survey.

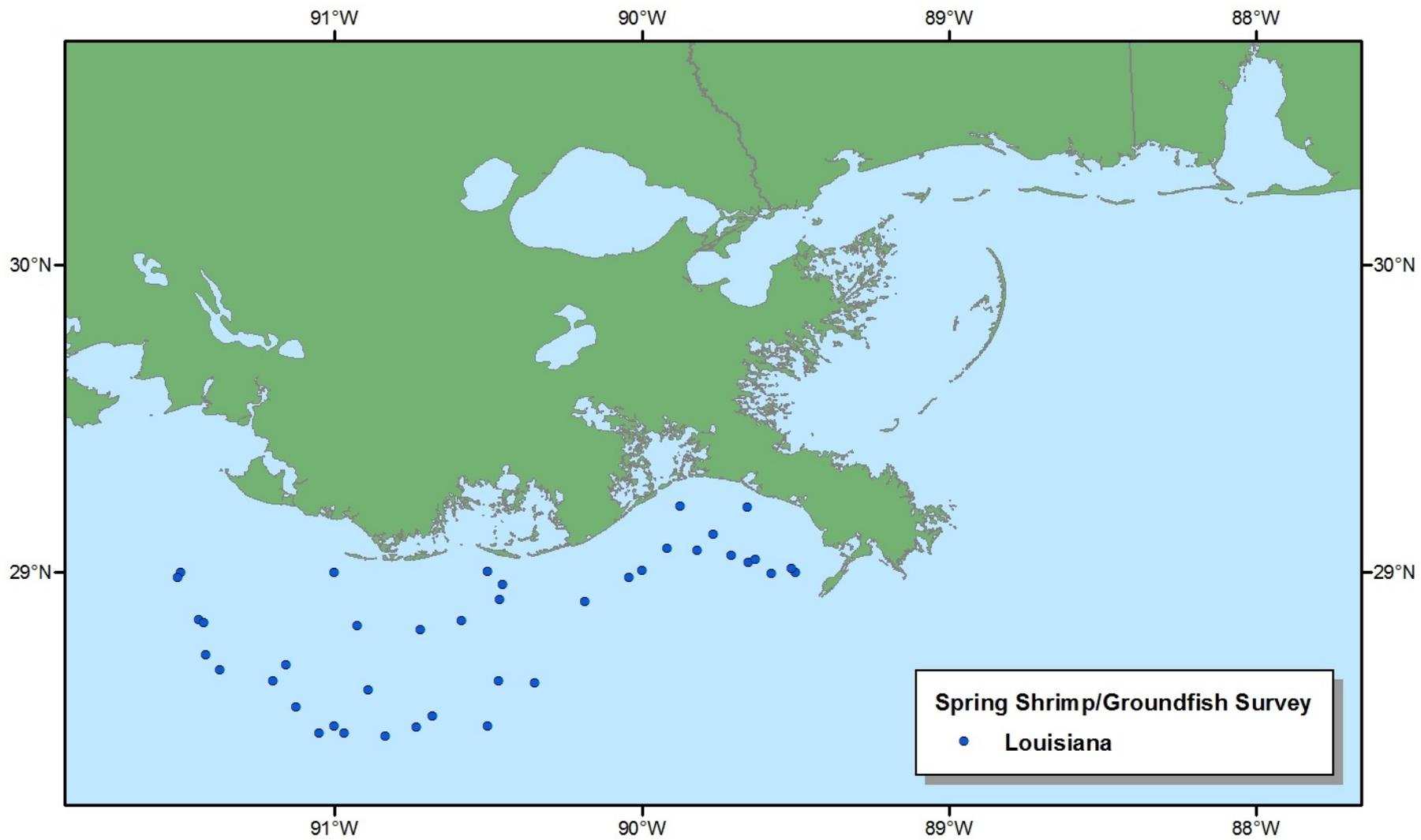


Figure 5. Locations of stations during the 2010 Spring Shrimp/Groundfish Survey.

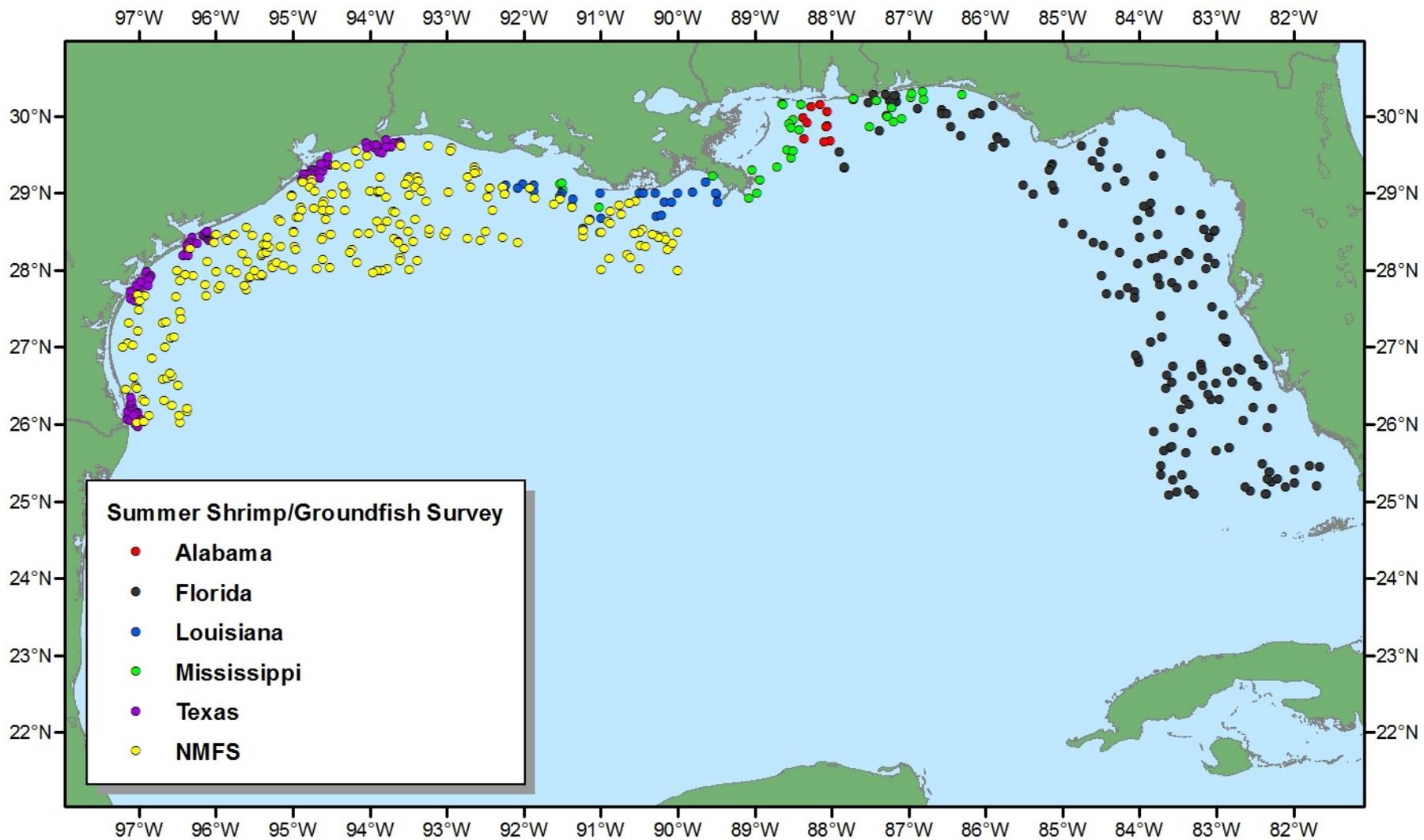


Figure 6. Locations of stations during the 2010 Summer Shrimp/Groundfish Survey.

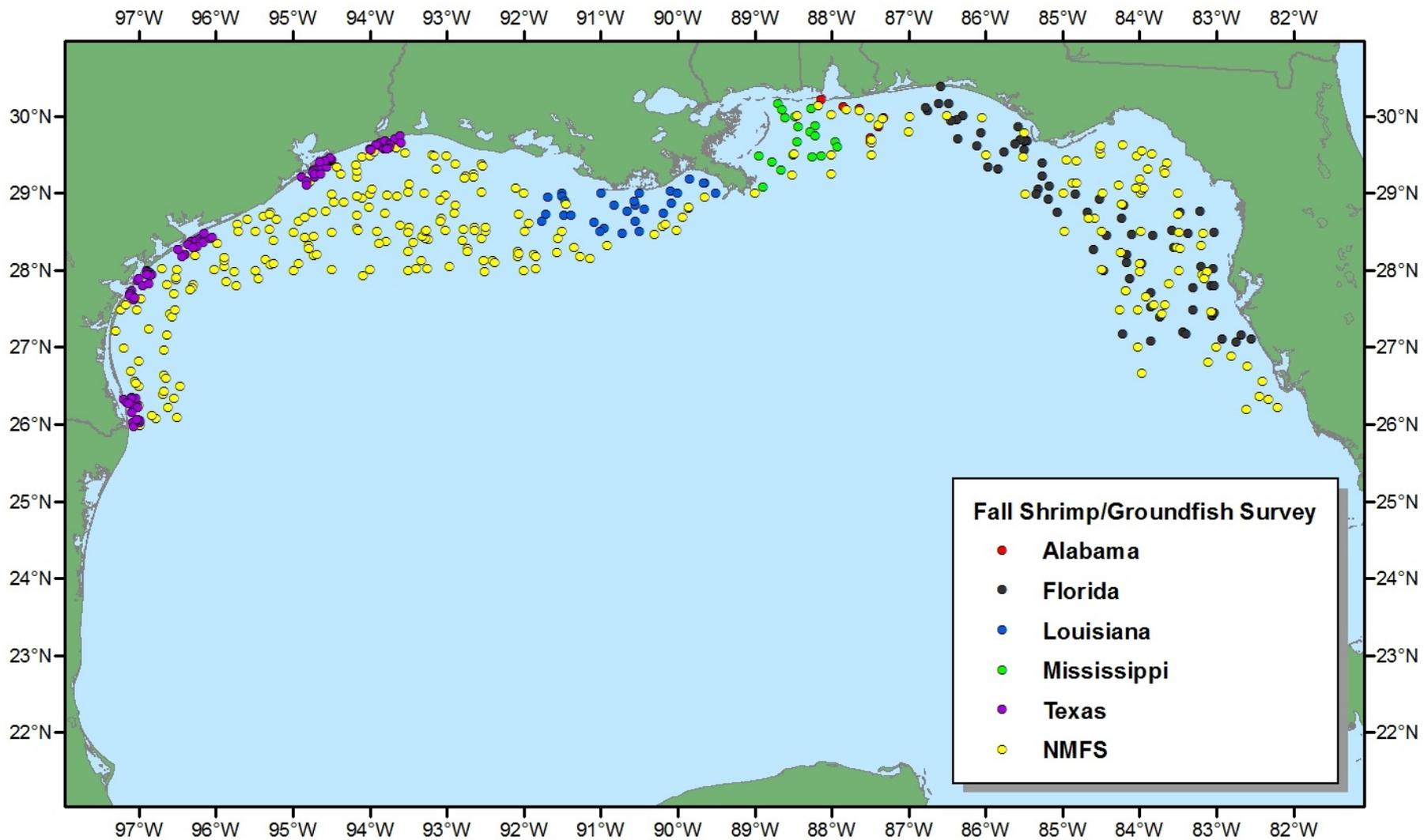


Figure 7. Locations of stations during the 2010 Fall Shrimp/Groundfish Survey.

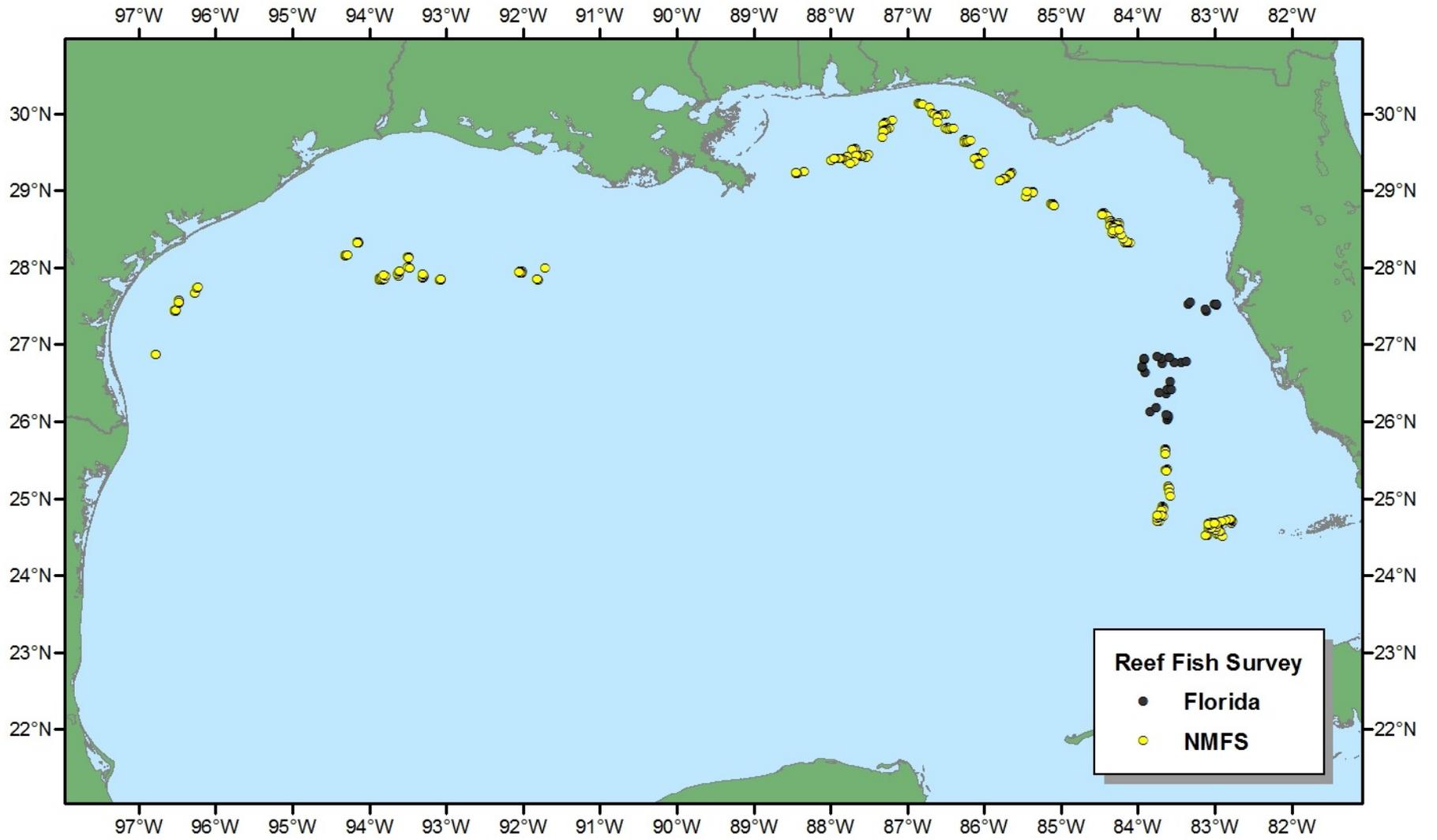


Figure 8. Locations of stations during the 2010 Reef Fish Survey.

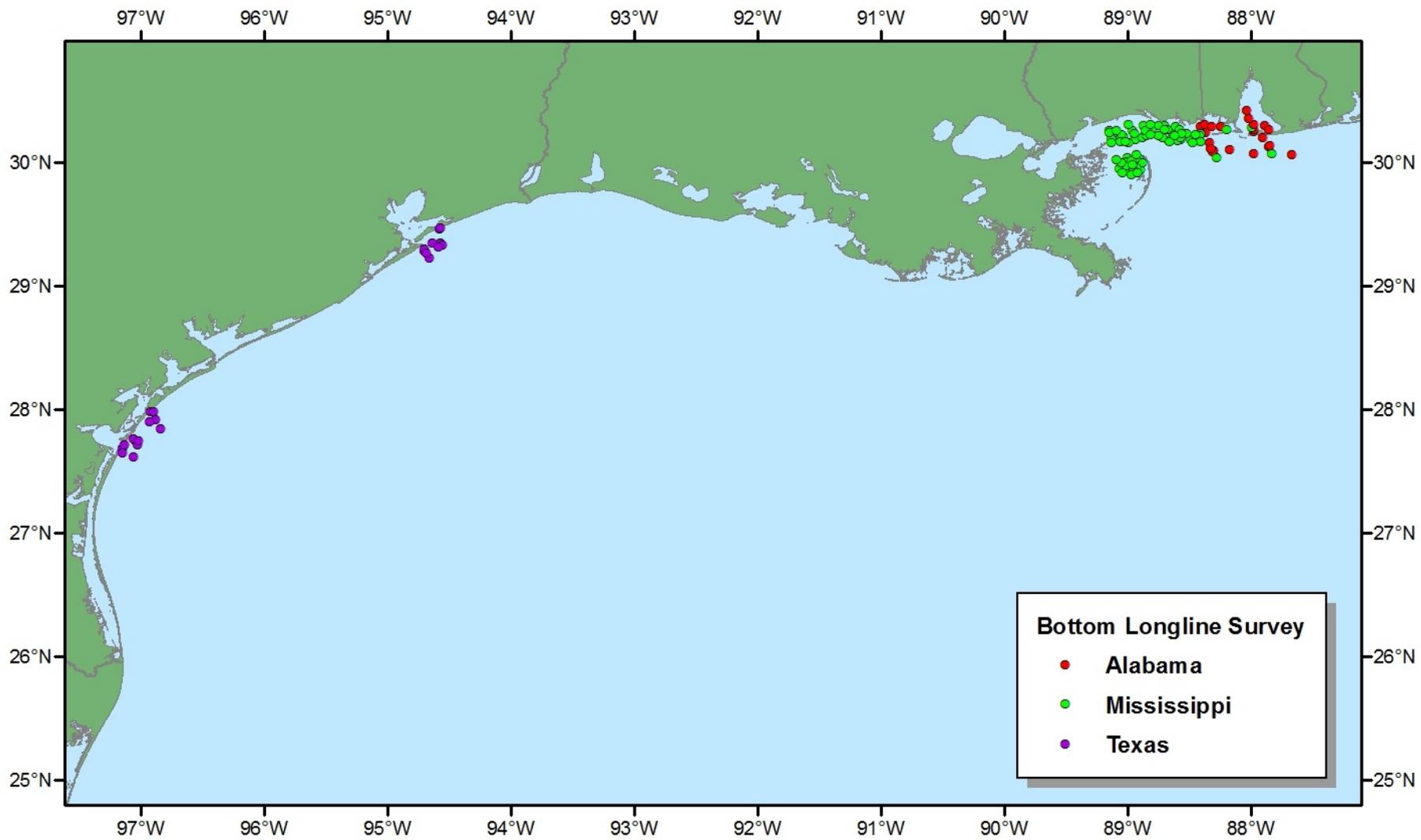


Figure 9. Locations of stations during the 2010 Inshore Bottom Longline Survey.

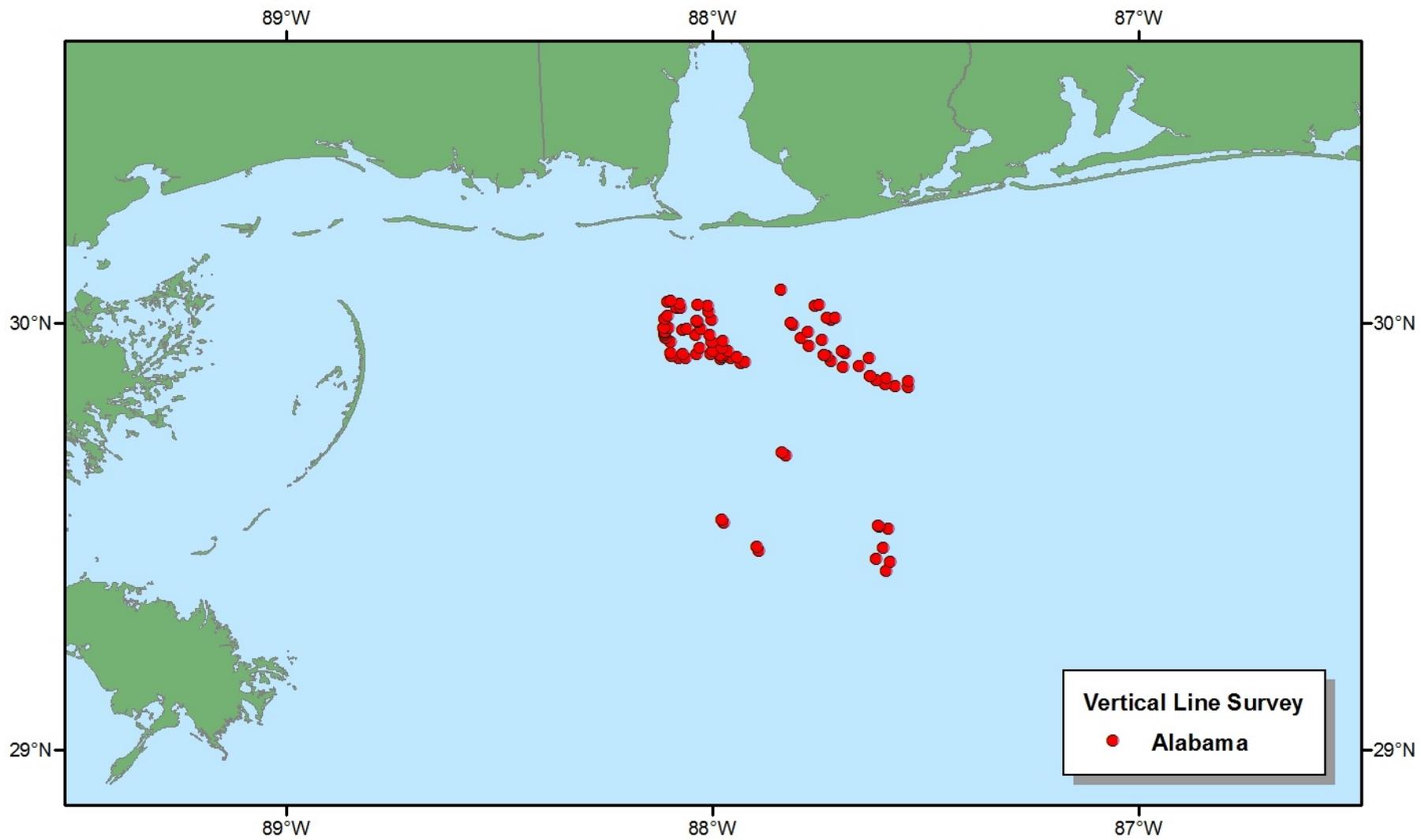


Figure 10. Locations of stations during the 2010 Vertical Line Survey.

