seamap

# environmental and biological atlas of the gulf of mexico 2012

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# SEAMAP ENVIRONMENTAL AND BIOLOGICAL ATLAS OF THE GULF OF MEXICO, 2012

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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 2012 (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); 2009 (Rester 2011); 2010 (Rester 2012); and 2011 (Rester 2014). 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 2012, 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 2011. Overall survey objectives in 1982 to 2012 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 thirtieth in a series of SEAMAP environmental and biological atlases presents such data, in a summarized form, collected during the 2012 SEAMAP surveys.

## MATERIALS AND METHODS

Methodology for the 2012 SEAMAP surveys is similar to that of the 1982 through 2011 surveys. Sampling was conducted within the U.S. Exclusive Economic Zone (EEZ) and state territorial waters. The NOAA Ship OREGON II collected plankton and environmental data during the Winter Plankton Survey from January 29 to February 27. The NOAA Ship GORDON GUNTER collected plankton and environmental data during the Spring Plankton Survey from April 2 to May 27, while the USM/GCRL vessel TOMMY MUNRO sampled on May 4 and May 16, and the Louisiana vessel BLAZING SEVEN sampled from May 8-10. Vessels that participated in collecting plankton and environmental data during the Fall Plankton Survey included the NOAA Ship GORDON GUNTER (August 25 - September 28), the Alabama vessel DISCOVERY (September 4), the Louisiana vessel BLAZING SEVEN (September 10-12), and USM/GCRL vessel TOMMY MUNRO (September 11-12 and September 21).

Vessels that participated in the Summer Shrimp/Groundfish Survey and concurrently sampled plankton and environmental data included the USM/GCRL vessel TOMMY MUNRO (May 29 – May 31), the Louisiana vessel PELICAN (June 5-8), and the NOAA Ship OREGON II (June 7 – July 15). The Alabama vessel DISCOVERY (June 29-30), Texas vessels SAN JACINTO, MATAGORDA BAY, R.J. KEMP, and SAN ANTONIO BAY (June 5 – July 3), and Florida using the TOMMY MUNRO (June 7 - July 4) did not sample plankton in conjunction with the summer survey.

The NOAA Ship CARETTA participated in the Reef Fish Survey from January 29 – March 17, with the PISCES sampling from April 6 – May 7, and the NOAA Ship GANDY sampling from June 30 – August 25. Florida sampled from July 6-14 aboard the R/V Weatherbird II and from July 24 – August 15 aboard the R/V BELLOWS.

Vessels that participated in the Fall Shrimp/Groundfish Survey and concurrently sampled plankton and environmental data included the NOAA Ships OREGON II (October 11 – November 17); the USM/GCRL vessel TOMMY MUNRO (October 3-4); and the Louisiana vessel PELICAN (October 30 – November 2). The Alabama vessel DISCOVERY (October 9-10) and Texas vessels SAN JACINTO, SABINE LAKE, MATAGORDA BAY, SAN ANTONIO BAY, and R.J. KEMP (November 1-26) did not sample plankton in conjunction with the fall survey.

Louisiana, Mississippi, and Alabama conducted bottom longline sampling monthly from March to October as part of the Bottom Longline Survey. Texas conducted bottom longline sampling from June through October.

Alabama sampled reef fish over artificial and natural reefs during the Vertical Line Survey. Alabama conducted sampling in March, May, and August. Louisiana sampled in July, September, and October.

## 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 $m^3$, but is typically 30 to 40 $m^3$ at the shallowest stations and 300 to 400 $m^3$ at the deepest stations. A single or double 2x1 m pipe frame neuston net fitted with 0.947 (0.950)[1] mm mesh netting is towed at the surface with the frame half-submerged for 10 minutes. Samples are taken upon arrival on station regardless of time of day. At each station either a bongo and/or neuston tow are made depending on the specific survey. Samples are routinely preserved in 5 to 10% formalin and later transferred after 48 hours to 95% ethanol for long-term storage. During some surveys, selected samples are preserved initially in 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 2010 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

[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 for those samples transshipped to ZSIOP in case of loss or damage during transit. These backup unsorted plankton samples are curated and housed at the SEAMAP Invertebrate Plankton Archiving Center, managed in conjunction with USM/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 2012.

**ENVIRONMENTAL DATA**

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

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

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

Water temperature: Temperatures were measured by a hand-held thermometer or by in situ electronic sensors onboard ship. No attempt was made to intercalibrate the various instruments used on individual vessels although several vessels did sample together to calibrate other sampling gear. Some error can be expected.
Salinity: Salinity samples were collected by Niskin bottles and stored for laboratory analysis with a salinometer. Conductivity probes or refractometers were used on some vessels. Salinity samples were also measured with in situ electronic sensors.
Chlorophyll: Chlorophyll samples were collected and frozen for later laboratory analysis. The general procedure for shipboard collection of chlorophyll was to collect more than 9 liters of water from the surface. This was kept stirred by bubbling air through it while filtration was being done. Three samples, to each of which a 1 ml, 1% (W/V), suspension of $MgCO_3$ was added, of up to 3 liters of water from the 9 liter sample were filtered through GF/C filters.

The three filters were placed individually in Petri dishes, wrapped in opaque material and frozen until analysis. Each of the three samples was analyzed separately in the laboratory.

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).

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 statistical 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 ($\approx 0.05$-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 tow 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 3 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.

## 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-$m^2$, secondary sample units that were numbered and initially classified as being “reef” or “nonreef” and then entered into a database. Prior to the survey, blocks are selected from this database in the eastern and western Gulf with probability proportional to the number of “reef” sample units within a block. Within each selected block, 100 sample sites are randomly selected. During the survey each selected block is occupied for one 24-h period, where

night hours are devoted to ship's echo sounder surveys of up to 100 sites and daytime hours to trap/video sampling. Each potential sample site surveyed at night is given a final determination as being either a reef site or not based on echo patterns, vertical relief and other characteristics. Up to 8 actual "reef" sites are then randomly selected for sampling during that day (Russell, unpublished report). Trap/video sampling begins one hour after sunrise and ends one hour before sunset. Trap soak time is one hour.

Associated environmental data collected at each site usually includes profiles of salinity, temperature, and surface chlorophyll; and may 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.

**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 2012 Bottom Longline Survey, the survey design included several sampling regions off Alabama, Mississippi, Louisiana, and Texas.

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 bottom longline 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 natural and 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 baited with Atlantic mackerel. 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.

Louisiana started vertical line sampling in 2011. In Louisiana, the sampling frame is subdivided into 3 sampling blocks based on depth between 89 degrees longitude and 91 degrees longitude, with the

water depth ranging from 60 to 360 feet. Each block is sampled quarterly in a rotation. Within these sampling blocks there is a possibility of randomly selecting 40 different corridors within the block. The actual sites are randomly selected within the corridor boundary and sampled at the chief scientist's discretion. The sites roughly consist of artificial reefs, natural bottom, and petroleum production platforms.

# RESULTS

## PLANKTON SURVEYS

Plankton stations for the Winter Plankton Survey are shown in Figure 2. Plankton stations for the Spring Plankton Survey are shown in Figure 3. Plankton stations for the Fall Plankton Survey are shown in Figure 4.

## TRAWL SURVEYS

### *Summer Shrimp/Groundfish Survey*

Shrimp and groundfish sampling was conducted May through July from south Florida to Brownsville, Texas. Figure 5 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 2, ranked in order of abundance, within the categories of finfish, crustaceans, and other invertebrates.

### *Fall Shrimp/Groundfish Survey*

Shrimp and groundfish sampling was conducted during October and November from Florida to Brownsville, Texas. Figure 6 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 3, 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 January through August by NMFS personnel and during July and August by Florida personnel. Station locations are plotted in Figure 7. Video tapes from all sources were analyzed using NMFS standardized protocols.

### BOTTOM LONGLINE SURVEY

Station locations for the Bottom Longline Survey are plotted in Figure 8. A species composition list is presented in Table 4. The species list is ranked in order of abundance.

### VERTICAL LINE SURVEY

Station locations for the Vertical Line Survey are plotted in Figure 9. A species composition list, ranked in order of abundance, is presented in Table 5.

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

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

Much use has already been made of SEAMAP data. For example, during the past SEAMAP surveys an area of very low dissolved bottom oxygen was found off Louisiana in the summers of 1982, 1985-2012. 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 2012. This report contained the results and an overview of the effect of the 2011 Texas Closure. After review of these data and other information, the GMFMC voted to continue the Texas Closure for 2012.

Data from all SEAMAP surveys have been used in the SouthEast Data, Assessment, and Review (SEDAR) process. SEDAR is a cooperative Fishery Management Council process initiated in 2002 to improve the quality and reliability of fishery stock assessments. SEDAR seeks improvements in the scientific quality of stock assessments and greater relevance of quantities information available to address existing and emerging fishery management issues. SEAMAP data have been used in stock assessments for king mackerel, red snapper, gray triggerfish, gag grouper, red grouper, mutton snapper, blacknose sharks, and blacktip sharks.

## 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. 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 2012.

| 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 |
| 2011 | FEBRUARY | MAY | | JUNE-JULY | -- | AUGUST-SEPTEMBER |
| 2012 | | APRIL-MAY | | MAY-JULY | -- | AUGUST-SEPTEMBER |

Table 1. List of SEAMAP survey activities from 1982 to 2012 (continued).

| SEAMAP SURVEY ACTIVITIES | | | | | |
|---|---|---|---|---|---|
| YEAR | FALL SHRIMP/GROUNDFISH | WINTER PLANKTON | 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 |
| 2011 | OCTOBER-NOVEMBER | | MARCH-OCTOBER | MAY-DECEMBER | APRIL-JULY |
| 2012 | OCTOBER-NOVEMBER | JANUARY-FEBRURY | MARCH-OCTOBER | MARCH-OCTOBER | JANUARY-AUGUST |

Table 2. 2012 Summer Shrimp/Groundfish Survey species composition list, 493 trawl stations, for those vessels that used either a 40-ft or 20-ft trawl. Species with a total weight of less than 0.0227 kg (0.05 lb) are indicated on the table as 0.0 kg.

| GENUS/SPECIES | COMMON NAME | TOTAL NUMBER CAUGHT | TOTAL WEIGHT CAUGHT (KG) | NUMBER OF TOWS WHERE CAUGHT | % FREQUENCY OCCURRENCE |
|---|---|---|---|---|---|
| Finfishes | | | | | |
| Micropogonias undulatus | Atlantic croaker | 111400 | 3450.9 | 186 | 37.7 |
| Stenotomus caprinus | longspine porgy | 21372 | 712.2 | 186 | 37.7 |
| Lagodon rhomboides | pinfish | 18504 | 1194.3 | 199 | 40.4 |
| Trachurus lathami | rough scad | 17480 | 404.5 | 121 | 24.5 |
| Chloroscombrus chrysurus | Atlantic bumper | 15714 | 488.1 | 118 | 23.9 |
| Leiostomus xanthurus | spot | 14359 | 1061 | 121 | 24.5 |
| Haemulon aurolineatum | tomtate | 5544 | 427 | 148 | 30 |
| Peprilus burti | gulf butterfish | 5121 | 331.3 | 139 | 28.2 |
| Lutjanus synagris | lane snapper | 4745 | 557.3 | 102 | 20.7 |
| Cynoscion nothus | silver seatrout | 4460 | 193.3 | 106 | 21.5 |
| Prionotus longispinosus | bigeye searobin | 4050 | 103.2 | 129 | 26.2 |
| Saurida brasiliensis | largescale lizardfish | 3756 | 17.7 | 101 | 20.5 |
| Syacium papillosum | dusky flounder | 3491 | 191.2 | 145 | 29.4 |
| Serranus atrobranchus | blackear bass | 2698 | 32.1 | 86 | 17.4 |
| Polydactylus octonemus | Atlantic threadfin | 2690 | 92.1 | 69 | 14 |
| Prionotus roseus | bluespotted searobin | 2676 | 42.6 | 90 | 18.3 |
| Larimus fasciatus | banded drum | 2487 | 108.3 | 73 | 14.8 |
| Synodus foetens | inshore lizardfish | 2469 | 342.4 | 280 | 56.8 |
| Cynoscion arenarius | sand seatrout | 2386 | 150.1 | 109 | 22.1 |
| Orthopristis chrysoptera | pigfish | 2368 | 197 | 67 | 13.6 |
| Trichiurus lepturus | Atlantic cutlassfish | 2349 | 72.9 | 90 | 18.3 |
| Rhomboplites aurorubens | vermilion snapper | 2306 | 109.7 | 89 | 18.1 |
| Upeneus parvus | dwarf goatfish | 2207 | 39 | 109 | 22.1 |
| Syacium gunteri | shoal flounder | 2188 | 49.9 | 136 | 27.6 |
| Calamus proridens | littlehead porgy | 2167 | 458.5 | 96 | 19.5 |
| Steindachneria argentea | luminous hake | 2148 | 14.6 | 3 | 0.6 |
| Pristipomoides aquilonaris | wenchman | 2089 | 106.8 | 96 | 19.5 |

Table 2. Species composition list (continued)

| GENUS/SPECIES | COMMON NAME | TOTAL NUMBER CAUGHT | TOTAL WEIGHT CAUGHT (KG) | NUMBER OF TOWS WHERE CAUGHT | % FREQUENCY OCCURRENCE |
|---|---|---|---|---|---|
| Diplectrum formosum | sand perch | 2001 | 158.4 | 163 | 33.1 |
| Eucinostomus gula | silver jenny | 1999 | 79.3 | 51 | 10.3 |
| Synodus poeyi | offshore lizardfish | 1805 | 11.4 | 88 | 17.8 |
| Haemulon plumierii | white grunt | 1691 | 260.1 | 51 | 10.3 |
| Scorpaena calcarata | smoothhead scorpionfish | 1639 | 26.1 | 57 | 11.6 |
| Centropristis philadelphica | rock sea bass | 1469 | 74.2 | 122 | 24.7 |
| Decapterus punctatus | round scad | 1309 | 22.1 | 60 | 12.2 |
| Calamus arctifrons | grass porgy | 1256 | 88.4 | 24 | 4.9 |
| Trichopsetta ventralis | sash flounder | 1207 | 29 | 49 | 9.9 |
| Brevoortia patronus | gulf menhaden | 1160 | 71.2 | 38 | 7.7 |
| Synodus intermedius | sand diver | 1076 | 73.7 | 124 | 25.2 |
| Halieutichthys aculeatus | pancake batfish | 1040 | 7 | 93 | 18.9 |
| Selene setapinnis | Atlantic moonfish | 1016 | 80.5 | 101 | 20.5 |
| Stephanolepis hispida | | 1004 | 40.1 | 99 | 20.1 |
| Prionotus stearnsi | shortwing searobin | 885 | 8.5 | 60 | 12.2 |
| Scorpaena brasiliensis | barbfish | 883 | 43.2 | 88 | 17.8 |
| Centropristis ocyurus | bank sea bass | 842 | 34.9 | 87 | 17.6 |
| Opisthonema oglinum | Atlantic thread herring | 786 | 59 | 45 | 9.1 |
| Lutjanus campechanus | red snapper | 688 | 193.7 | 134 | 27.2 |
| Anchoa hepsetus | striped anchovy | 681 | 11.9 | 36 | 7.3 |
| Stellifer lanceolatus | star drum | 648 | 13.3 | 36 | 7.3 |
| Prionotus paralatus | Mexican searobin | 635 | 18 | 48 | 9.7 |
| Trachinocephalus myops | snakefish | 607 | 37.3 | 81 | 16.4 |
| Stephanolepis hispida | planehead filefish | 557 | 13 | 85 | 17.2 |
| Harengula jaguana | scaled sardine | 511 | 27.1 | 46 | 9.3 |
| Equetus lanceolatus | jackknife fish | 509 | 43.2 | 81 | 16.4 |
| Nicholsina usta | emerald parrotfish | 491 | 27 | 63 | 12.8 |
| Eucinostomus | mojarras | 437 | 16.3 | 7 | 1.4 |
| Eucinostomus argenteus | spotfin mojarra | 432 | 15.2 | 18 | 3.7 |
| Acanthostracion quadricornis | | 427 | 66 | 77 | 15.6 |

Table 2. Species composition list (continued)

| GENUS/SPECIES | COMMON NAME | TOTAL NUMBER CAUGHT | TOTAL WEIGHT CAUGHT (KG) | NUMBER OF TOWS WHERE CAUGHT | % FREQUENCY OCCURRENCE |
|---|---|---|---|---|---|
| Monacanthus ciliatus | fringed filefish | 381 | 5.7 | 69 | 14 |
| Citharichthys spilopterus | bay whiff | 380 | 4.3 | 39 | 7.9 |
| Chaetodipterus faber | Atlantic spadefish | 357 | 14.6 | 35 | 7.1 |
| Serranus notospilus | saddle bass | 356 | 0.8 | 18 | 3.7 |
| Sphoeroides spengleri | bandtail puffer | 350 | 12 | 61 | 12.4 |
| Mullus auratus | red goatfish | 338 | 18.6 | 51 | 10.3 |
| Etropus crossotus | fringed flounder | 328 | 4.7 | 55 | 11.2 |
| Serranus phoebe | tattler | 324 | 8.7 | 40 | 8.1 |
| Sphoeroides dorsalis | marbled puffer | 304 | 8.3 | 58 | 11.8 |
| Ophidion holbrookii | bank cusk-eel | 294 | 22.7 | 46 | 9.3 |
| Bellator militaris | horned searobin | 292 | 4.7 | 29 | 5.9 |
| Bothus robinsi | twospot flounder | 285 | 6.8 | 57 | 11.6 |
| Sardinella aurita | Spanish sardine | 278 | 15.7 | 26 | 5.3 |
| Porichthys plectrodon | Atlantic midshipman | 277 | 6.6 | 65 | 13.2 |
| Diplectrum bivittatum | dwarf sand perch | 254 | 5.3 | 44 | 8.9 |
| Pagrus pagrus | red porgy | 252 | 44.4 | 32 | 6.5 |
| Cyclopsetta chittendeni | Mexican flounder | 251 | 38.6 | 66 | 13.4 |
| Lepophidium brevibarbe | blackedge cusk-eel | 244 | 10.9 | 41 | 8.3 |
| Lepophidium jeannae | mottled cusk-eel | 239 | 10.6 | 29 | 5.9 |
| Prionotus scitulus | leopard searobin | 225 | 10.1 | 26 | 5.3 |
| Eucinostomus harengulus | tidewater mojarra | 224 | 10.7 | 28 | 5.7 |
| Lagocephalus laevigatus | smooth puffer | 220 | 12.1 | 64 | 13 |
| Ariopsis felis | hardhead catfish | 212 | 26.4 | 38 | 7.7 |
| Sphoeroides parvus | least puffer | 201 | 1.6 | 41 | 8.3 |
| Menticirrhus americanus | southern kingfish | 171 | 30.4 | 30 | 6.1 |
| Aluterus schoepfii | orange filefish | 170 | 87 | 61 | 12.4 |
| Lutjanus griseus | grey snapper | 164 | 58.4 | 37 | 7.5 |
| Prionotus rubio | blackwing searobin | 162 | 28.9 | 25 | 5.1 |
| Hemipteronotus novacula | pearly razorfish | 160 | 9.3 | 30 | 6.1 |
| Hemanthias vivanus | red barbier | 143 | 2.9 | 1 | 0.2 |
| Epinephelus morio | red grouper | 142 | 112.1 | 56 | 11.4 |

Table 2. Species composition list (continued)

| GENUS/SPECIES | COMMON NAME | TOTAL NUMBER CAUGHT | TOTAL WEIGHT CAUGHT (KG) | NUMBER OF TOWS WHERE CAUGHT | % FREQUENCY OCCURRENCE |
|---|---|---|---|---|---|
| Scorpaena agassizii | longfin scorpionfish | 140 | 4.1 | 8 | 1.6 |
| Prionotus martis | barred searobin | 138 | 5 | 26 | 5.3 |
| Lachnolaimus maximus | hogfish | 136 | 35.8 | 29 | 5.9 |
| Pareques umbrosus | cubbyu | 132 | 8.5 | 40 | 8.1 |
| Balistes capriscus | gray triggerfish | 127 | 29.5 | 57 | 11.6 |
| Calamus nodosus | knobbed porgy | 125 | 25 | 22 | 4.5 |
| Chromis enchrysura | yellowtail reeffish | 124 | 2.4 | 14 | 2.8 |
| Dorosoma petenense | threadfin shad | 120 | 11.6 | 9 | 1.8 |
| Neomerinthe hemingwayi | spinycheek scorpionfish | 119 | 12.7 | 11 | 2.2 |
| Ancylopsetta dilecta | three-eye flounder | 119 | 5.5 | 37 | 7.5 |
| Ogcocephalus parvus | roughback batfish | 115 | 2.9 | 48 | 9.7 |
| Ogcocephalus declivirostris | slantbrow batfish | 105 | 1.4 | 30 | 6.1 |
| Acanthostracion quadricornis | scrawled cowfish | 104 | 18.9 | 28 | 5.7 |
| Urophycis floridana | southern hake | 98 | 6.8 | 20 | 4.1 |
| Chaetodon ocellatus | spotfin butterflyfish | 96 | 7.6 | 34 | 6.9 |
| Ancylopsetta ommata | ocellated flounder | 96 | 14.8 | 45 | 9.1 |
| Apogon pseudomaculatus | twospot cardinalfish | 95 | 0.7 | 24 | 4.9 |
| Kathetostoma albigutta | lancer stargazer | 89 | 3.5 | 29 | 5.9 |
| Anchoa mitchilli | bay anchovy | 88 | 0.2 | 10 | 2 |
| Prionotus ophryas | bandtail searobin | 84 | 3.6 | 34 | 6.9 |
| Prionotus tribulus | bighead searobin | 81 | 4.1 | 22 | 4.5 |
| Cynoscion spp. | seatrouts | 78 | 0 | 4 | 0.8 |
| Chilomycterus schoepfii | striped burrfish | 77 | 22.2 | 34 | 6.9 |
| Rhizoprionodon terraenovae | Atlantic sharpnose shark | 76 | 55.2 | 36 | 7.3 |
| Antennarius radiosus | singlespot frogfish | 75 | 0.9 | 29 | 5.9 |
| Symphurus plagiusa | blackcheek tonguefish | 75 | 1.8 | 30 | 6.1 |
| Haemulon striatum | striped grunt | 69 | 2.7 | 5 | 1 |
| Astrapogon alutus | bronze cardinalfish | 65 | 0.2 | 17 | 3.4 |
| Selene vomer | lookdown | 64 | 2.1 | 20 | 4.1 |
| Apogon affinis | bigtooth cardinalfish | 64 | 0.4 | 12 | 2.4 |
| Seriola dumerili | greater amberjack | 63 | 9.5 | 14 | 2.8 |

Table 2. Species composition list (continued)

| GENUS/SPECIES | COMMON NAME | TOTAL NUMBER CAUGHT | TOTAL WEIGHT CAUGHT (KG) | NUMBER OF TOWS WHERE CAUGHT | % FREQUENCY OCCURRENCE |
|---|---|---|---|---|---|
| Selar crumenophthalmus | bigeye scad | 62 | 3.5 | 17 | 3.4 |
| Prionotus alatus | spiny searobin | 61 | 2.3 | 17 | 3.4 |
| Peprilus paru | harvestfish | 61 | 5.4 | 11 | 2.2 |
| Paralichthys lethostigma | southern flounder | 59 | 21.1 | 22 | 4.5 |
| Apogon aurolineatus | bridle cardinalfish | 59 | 0.1 | 14 | 2.8 |
| Ocyurus chrysurus | yellowtail snapper | 58 | 7.7 | 12 | 2.4 |
| Bollmannia communis | ragged goby | 55 | 0.2 | 9 | 1.8 |
| Calamus leucosteus | whitebone porgy | 54 | 23.5 | 11 | 2.2 |
| Ophidion beani | longnose cusk-eel | 51 | 2.8 | 14 | 2.8 |
| Raja eglanteria | clearnose skate | 51 | 23.1 | 23 | 4.7 |
| Pterois volitans | lion fish | 50 | 6.2 | 25 | 5.1 |
| Scorpaena spp. | scorpionfishes | 48 | 2 | 1 | 0.2 |
| Raja texana | roundel skate | 44 | 18.2 | 32 | 6.5 |
| Caulolatilus intermedius | anchor tilefish | 44 | 6 | 13 | 2.6 |
| Paralichthys albigutta | gulf flounder | 44 | 15 | 27 | 5.5 |
| Gymnothorax saxicola | honeycomb moray | 44 | 3.5 | 27 | 5.5 |
| Symphurus diomedeanus | spottedfin tonguefish | 43 | 1.3 | 17 | 3.4 |
| Citharichthys macrops | spotted whiff | 42 | 1.5 | 14 | 2.8 |
| Rhynchoconger flavus | yellow conger | 41 | 2.8 | 14 | 2.8 |
| Syacium micrurum | channel flounder | 41 | 2 | 6 | 1.2 |
| Etropus rimosus | gray flounder | 38 | 0.6 | 8 | 1.6 |
| Cyclopsetta fimbriata | spotfin flounder | 37 | 4.2 | 25 | 5.1 |
| Centropristis striatus | black sea bass | 37 | 6 | 10 | 2 |
| Decapterus macarellus | mackeral scad | 37 | 2.2 | 3 | 0.6 |
| Apogon quadrisquamatus | sawcheek cardinalfish | 36 | 0.1 | 11 | 2.2 |
| Mycteroperca phenax | scamp | 35 | 8.4 | 18 | 3.7 |
| Opsanus pardus | leopard toadfish | 34 | 0.6 | 16 | 3.2 |
| Chaetodon sedentarius | reef butterflyfish | 34 | 2.2 | 10 | 2 |
| Rypticus maculatus | whitespotted soapfish | 33 | 1.2 | 18 | 3.7 |
| Hippocampus erectus | lined seahorse | 33 | 0.3 | 26 | 5.3 |
| Bregmaceros atlanticus | antenna codlet | 33 | 0 | 8 | 1.6 |

Table 2. Species composition list (continued)

| GENUS/SPECIES | COMMON NAME | TOTAL NUMBER CAUGHT | TOTAL WEIGHT CAUGHT (KG) | NUMBER OF TOWS WHERE CAUGHT | % FREQUENCY OCCURRENCE |
|---|---|---|---|---|---|
| Holacanthus bermudensis | blue angelfish | 33 | 12.6 | 12 | 2.4 |
| Seriola rivoliana | almaco jack | 32 | 4.2 | 3 | 0.6 |
| Ophidion josephi | crested cusk-eel | 31 | 1.4 | 6 | 1.2 |
| Gastropsetta frontalis | shrimp flounder | 31 | 2 | 15 | 3 |
| Mustelus canis | smooth dogfish | 30 | 52 | 19 | 3.9 |
| Pareques iwamotoi | blackbar drum | 30 | 1.8 | 9 | 1.8 |
| Priacanthus arenatus | bigeye | 28 | 4.1 | 12 | 2.4 |
| Echeneis neucratoides | whitefin sharksucker | 28 | 11.5 | 20 | 4.1 |
| Ogcocephalus pantostictus | spotted batfish | 28 | 5.3 | 9 | 1.8 |
| Hoplunnis macrura | freckled pike-conger | 28 | 0.2 | 12 | 2.4 |
| Hypoplectrus | | 27 | 0.3 | 10 | 2 |
| Brotula barbata | bearded brotula | 27 | 1.4 | 14 | 2.8 |
| Sphyraena guachancho | guaguanche | 25 | 3.9 | 10 | 2 |
| Xyrichtys martinicensis | rosy razorfish | 24 | 1.1 | 7 | 1.4 |
| Bairdiella chrysoura | silver perch | 24 | 1.2 | 9 | 1.8 |
| Sphyraena borealis | northern sennet | 23 | 2.8 | 7 | 1.4 |
| Engyophrys senta | spiny flounder | 23 | 0.1 | 13 | 2.6 |
| Antennarius ocellatus | ocellated frogfish | 22 | 3.5 | 18 | 3.7 |
| Phaeoptyx xenus | sponge cardinalfish | 22 | 0.1 | 5 | 1 |
| Symphurus urospilus | spottail tonguefish | 22 | 0.6 | 5 | 1 |
| Pristigenys alta | short bigeye | 21 | 3.5 | 14 | 2.8 |
| Symphurus civitatium | offshore tonguefish | 21 | 0.7 | 5 | 1 |
| Etrumeus teres | round herring | 21 | 0.3 | 4 | 0.8 |
| Phaeoptyx pigmentaria | dusky cardinalfish | 20 | 0.2 | 7 | 1.4 |
| Serranus tortugarum | chalk bass | 19 | 0.1 | 2 | 0.4 |
| Urophycis cirrata | gulf hake | 19 | 0.4 | 9 | 1.8 |
| Ogcocephalus corniger | longnose batfish | 19 | 0.5 | 12 | 2.4 |
| Diplodus holbrooki | spottail pinfish | 19 | 1.6 | 2 | 0.4 |
| Carcharhinus acronotus | blacknose shark | 19 | 45.5 | 15 | 3 |
| Echeneis naucrates | sharksucker | 18 | 9 | 6 | 1.2 |
| Narcine brasiliensis | lesser electric ray | 18 | 7.3 | 10 | 2 |

Table 2. Species composition list (continued)

| GENUS/SPECIES | COMMON NAME | TOTAL NUMBER CAUGHT | TOTAL WEIGHT CAUGHT (KG) | NUMBER OF TOWS WHERE CAUGHT | % FREQUENCY OCCURRENCE |
|---|---|---|---|---|---|
| Citharichthys gymnorhinus | anglefin whiff | 17 | 0 | 4 | 0.8 |
| Paralichthys squamilentus | broad flounder | 16 | 5 | 9 | 1.8 |
| Aluterus heudelotii | dotterel filefish | 16 | 3.4 | 11 | 2.2 |
| Gymnachirus texae | fringed sole | 15 | 0.3 | 8 | 1.6 |
| Ophidion selenops | mooneye cusk-eel | 15 | 0 | 9 | 1.8 |
| Calamus penna | sheepshead porgy | 15 | 2.8 | 5 | 1 |
| Scomber japonicus | chub mackerel | 15 | 0.3 | 4 | 0.8 |
| Ophidion grayi | blotched cusk-eel | 14 | 0.8 | 6 | 1.2 |
| Pseudupeneus maculatus | spotted goatfish | 14 | 0.3 | 9 | 1.8 |
| Etropus cyclosquamus | shelf flounder | 14 | 0.2 | 4 | 0.8 |
| Bellator egretta | streamer searobin | 14 | 0.1 | 2 | 0.4 |
| Caranx crysos | blue runner | 13 | 1.9 | 8 | 1.6 |
| Pontinus longispinis | longspine scorpionfish | 13 | 0.1 | 4 | 0.8 |
| Rypticus bistrispinus | freckled soapfish | 13 | 0.1 | 5 | 1 |
| Pomatomus saltatrix | bluefish | 12 | 1.5 | 4 | 0.8 |
| Otophidium omostigmum | polka-dot cusk-eel | 12 | 0.1 | 4 | 0.8 |
| Ogcocephalus cubifrons | | 12 | 4.3 | 12 | 2.4 |
| Halichoeres bivittatus | slippery dick | 11 | 0.6 | 1 | 0.2 |
| Microspathodon chrysurus | yellowtail damselfish | 11 | 0.2 | 2 | 0.4 |
| Calamus bajonado | jolthead porgy | 10 | 8.4 | 7 | 1.4 |
| Physiculus fulvus | metallic codling | 10 | 0.1 | 5 | 1 |
| Pomacanthus arcuatus | gray angelfish | 10 | 4 | 6 | 1.2 |
| Paralichthys dentatus | fluke | 10 | 3.2 | 4 | 0.8 |
| Rhinobatos lentiginosus | Atlantic guitarfish | 10 | 4.3 | 6 | 1.2 |
| Trachinotus carolinus | Florida pompano | 9 | 3.2 | 3 | 0.6 |
| Gymnachirus melas | naked sole | 9 | 0.3 | 6 | 1.2 |
| Bagre marinus | gafftopsail catfish | 9 | 2.6 | 6 | 1.2 |
| Serranus subligarius | belted sandfish | 8 | 0 | 6 | 1.2 |
| Antennarius striatus | striated frogfish | 8 | 0.1 | 4 | 0.8 |
| Saurida normani | shortjaw lizardfish | 8 | 0.5 | 4 | 0.8 |
| Urophycis regia | spotted hake | 8 | 0.5 | 2 | 0.4 |

Table 2. Species composition list (continued)

| GENUS/SPECIES | COMMON NAME | TOTAL NUMBER CAUGHT | TOTAL WEIGHT CAUGHT (KG) | NUMBER OF TOWS WHERE CAUGHT | % FREQUENCY OCCURRENCE |
|---|---|---|---|---|---|
| Bairdiella batabana | blue croaker | 8 | 0.5 | 3 | 0.6 |
| Holocentrus bullisi | deepwater squirrelfish | 8 | 0.3 | 3 | 0.6 |
| Ophichthus gomesii | shrimp eel | 8 | 0.7 | 5 | 1 |
| Squatina dumeril | Atlantic angel shark | 8 | 13.5 | 6 | 1.2 |
| Gobiesox strumosus | skilletfish | 8 | 0 | 5 | 1 |
| Seriola zonata | banded rudderfish | 7 | 0.3 | 3 | 0.6 |
| Caranx hippos | crevalle jack | 7 | 1.5 | 2 | 0.4 |
| Peristedion gracile | slender searobin | 7 | 0 | 2 | 0.4 |
| Aluterus scriptus | scrawled filefish | 7 | 2.1 | 4 | 0.8 |
| Schultzea beta | school bass | 7 | 0.1 | 2 | 0.4 |
| Calamus calamus | saucereye porgy | 6 | 3.2 | 2 | 0.4 |
| Pomacentrus variabilis | cocoa damselfish | 6 | 0.1 | 5 | 1 |
| Microgobius thalassiunus | | 6 | 0 | 1 | 0.2 |
| Gymnura micrura | smooth butterfly ray | 6 | 10 | 6 | 1.2 |
| Sphoeroides nephelus | southern puffer | 6 | 0.5 | 4 | 0.8 |
| Urolophus jamaicencis | | 6 | 2.5 | 2 | 0.4 |
| Dasyatis americana | southern stingray | 6 | 5.2 | 5 | 1 |
| Hoplunnis diomedianus | blacktail pike-conger | 5 | 0 | 4 | 0.8 |
| Echiophis intertinctus | spotted spoon-nose eel | 5 | 1 | 5 | 1 |
| Scomberomorus cavalla | king mackerel | 5 | 1.8 | 5 | 1 |
| Mycteroperca microlepis | gag | 5 | 6.4 | 4 | 0.8 |
| Neobythites gilli | cusk-eel | 5 | 0 | 4 | 0.8 |
| Parablennius marmoreus | seaweed blenny | 5 | 0 | 3 | 0.6 |
| Gymnothorax kolpos | blacktail moray | 5 | 2.3 | 5 | 1 |
| Mustelus norrisi | Florida smoothhound | 5 | 2.5 | 5 | 1 |
| Serraniculus pumilio | pygmy sea bass | 5 | 0 | 4 | 0.8 |
| Canthigaster rostratus | | 5 | 0 | 3 | 0.6 |
| Bathyanthias mexicanus | yellowtail bass | 5 | 0.1 | 2 | 0.4 |
| Caranx ruber | bar jack | 5 | 0.1 | 2 | 0.4 |
| Scomberomorus maculatus | Spanish mackerel | 5 | 0.9 | 3 | 0.6 |
| Bothus ocellatus | eyed flounder | 5 | 0.1 | 2 | 0.4 |

Table 2. Species composition list (continued)

| GENUS/SPECIES | COMMON NAME | TOTAL NUMBER CAUGHT | TOTAL WEIGHT CAUGHT (KG) | NUMBER OF TOWS WHERE CAUGHT | % FREQUENCY OCCURRENCE |
|---|---|---|---|---|---|
| Ogcocephalus cubifrons | polka-dot batfish | 4 | 0.9 | 3 | 0.6 |
| Hemicaranx amblyrhynchus | bluntnose jack | 4 | 0.5 | 2 | 0.4 |
| Peprilus paru | harvestfish | 4 | 0.7 | 3 | 0.6 |
| Sphoeroides | common puffers | 4 | 0.4 | 1 | 0.2 |
| Sphyrna tiburo | bonnethead | 4 | 6.5 | 4 | 0.8 |
| Diplectrum | perch | 4 | 0 | 3 | 0.6 |
| Pagrus spp. | pagrus spp. | 4 | 0 | 1 | 0.2 |
| Oligoplites saurus | leatherjack | 4 | 0.2 | 1 | 0.2 |
| Anisotremus virginicus | porkfish | 3 | 0.4 | 1 | 0.2 |
| Apsilus dentatus | black snapper | 3 | 0.9 | 1 | 0.2 |
| Evermannichthys spongicola | sponge goby | 3 | 0 | 2 | 0.4 |
| Pareques | | 3 | 0.1 | 2 | 0.4 |
| Lonchopisthus micrognathus | swordtail jawfish | 3 | 0 | 2 | 0.4 |
| Caranx bartholomaei | yellow jack | 3 | 0.1 | 2 | 0.4 |
| Conodon nobilis | barred grunt | 3 | 0.1 | 1 | 0.2 |
| Mulloidichthys martinicus | yellow goatfish | 3 | 0.1 | 2 | 0.4 |
| Aluterus monoceros | unicorn filefish | 3 | 5.8 | 2 | 0.4 |
| Prognathodes aya | bank butterflyfish | 3 | 0.1 | 1 | 0.2 |
| Acanthostracion polygonius | honeycomb cowfish | 3 | 1.6 | 3 | 0.6 |
| Decodon puellaris | red hogfish | 3 | 0.2 | 2 | 0.4 |
| Urophycis spp. | hakes | 3 | 0 | 1 | 0.2 |
| Gymnothorax nigromarginatus | blackedge moray | 2 | 0.2 | 2 | 0.4 |
| Caulolatilus microps | blueline tilefish | 2 | 0.3 | 1 | 0.2 |
| Mustelus | smooth hound sharks | 2 | 1.1 | 1 | 0.2 |
| Hemanthias leptus | longtail bass | 2 | 0 | 1 | 0.2 |
| Oxyporhamphus micropterus | smallwing flyingfish | 2 | 0 | 1 | 0.2 |
| Decapterus tabl | redtail scad | 2 | 0 | 1 | 0.2 |
| Seriola fasciata | lesser amberjack | 2 | 0.1 | 1 | 0.2 |
| Acanthurus chirurgus | doctorfish | 2 | 0.6 | 2 | 0.4 |
| Echiophis punctifer | snapper eel | 2 | 0 | 1 | 0.2 |
| Rhinoptera bonasus | cownose ray | 2 | 16.3 | 2 | 0.4 |

Table 2. Species composition list (continued)

| GENUS/SPECIES | COMMON NAME | TOTAL NUMBER CAUGHT | TOTAL WEIGHT CAUGHT (KG) | NUMBER OF TOWS WHERE CAUGHT | % FREQUENCY OCCURRENCE |
|---|---|---|---|---|---|
| Pomacanthus paru | French angelfish | 2 | 0 | 1 | 0.2 |
| Hypoplectrus unicolor | butter hamlet | 2 | 0 | 1 | 0.2 |
| Chaenopsis ocellata | bluethroat pikeblenny | 2 | 0.1 | 1 | 0.2 |
| Hemipteronotus splendens | green razorfish | 2 | 0 | 1 | 0.2 |
| Conger oceanicus | conger eel | 2 | 0.1 | 1 | 0.2 |
| Citharichthys dinoceros | spined whiff | 2 | 0 | 1 | 0.2 |
| Caulolatilus cyanops | blackline tilefish | 2 | 0.1 | 2 | 0.4 |
| Dactylopterus volitans | flying gurnard | 2 | 1.1 | 1 | 0.2 |
| Calamus | | 2 | 0 | 1 | 0.2 |
| Carcharhinus limbatus | blacktip shark | 2 | 2.1 | 2 | 0.4 |
| Halichoeres bathyphilus | greenband wrasse | 2 | 0 | 2 | 0.4 |
| Gobiosoma xanthiprora | yellowprow goby | 2 | 0 | 2 | 0.4 |
| Epinephelus niveatus | snowy grouper | 2 | 0.1 | 2 | 0.4 |
| Ariomma regulus | spotted driftfish | 2 | 0.4 | 2 | 0.4 |
| Cryptotomus roseus | bluelip parrotfish | 2 | 0 | 2 | 0.4 |
| Menticirrhus littoralis | gulf kingfish | 2 | 0.3 | 1 | 0.2 |
| Urophycis earlli | Carolina hake | 2 | 0.1 | 1 | 0.2 |
| Myliobatis freminvillii | Bullnose ray | 2 | 21.1 | 2 | 0.4 |
| Dipturus olseni | spreadfin skate | 2 | 1.3 | 1 | 0.2 |
| Starksia ocellata | checkered blenny | 2 | 0 | 2 | 0.4 |
| Hippocampus reidi | longsnout seahorse | 1 | 0 | 1 | 0.2 |
| Corythoichthys albirostris | | 1 | 0 | 1 | 0.2 |
| Canthigaster jamestyleri | | 1 | 0 | 1 | 0.2 |
| Pomacentrus leucostictus | beaugregory | 1 | 0 | 1 | 0.2 |
| Stephanolepis setifer | pygmy filefish | 1 | 0.1 | 1 | 0.2 |
| Paraconger caudilimbatus | margintail conger | 1 | 0.2 | 1 | 0.2 |
| Epinephelus flavolimbatus | yellowedge grouper | 1 | 0 | 1 | 0.2 |
| Citharichthys cornutus | horned whiff | 1 | 0.1 | 1 | 0.2 |
| Lutjanus analis | mutton snapper | 1 | 8.8 | 1 | 0.2 |
| Syngnathus louisianae | chain pipefish | 1 | 0 | 1 | 0.2 |
| Xyrichtys | | 1 | 0.1 | 1 | 0.2 |

Table 2. Species composition list (continued)

| GENUS/SPECIES | COMMON NAME | TOTAL NUMBER CAUGHT | TOTAL WEIGHT CAUGHT (KG) | NUMBER OF TOWS WHERE CAUGHT | % FREQUENCY OCCURRENCE |
|---|---|---|---|---|---|
| Gobiidae | gobies | 1 | 0 | 1 | 0.2 |
| Blenniidae | blennies | 1 | 0 | 1 | 0.2 |
| Trinectes maculatus | hogchoker | 1 | 0 | 1 | 0.2 |
| Cypselurus heterurus | | 1 | 0 | 1 | 0.2 |
| Achirus lineatus | lined sole | 1 | 0 | 1 | 0.2 |
| Ophichthus puncticeps | palespotted eel | 1 | 0.1 | 1 | 0.2 |
| Umbrina coroides | sand drum | 1 | 0.1 | 1 | 0.2 |
| Histrio histrio | sargassum frogfish | 1 | 0 | 1 | 0.2 |
| Anchoa lyolepis | dusky anchovy | 1 | 0 | 1 | 0.2 |
| Ioglossus calliurus | blue goby | 1 | 0 | 1 | 0.2 |
| Paraclinus marmoratus | marbled blenny | 1 | 0 | 1 | 0.2 |
| Dasyatis centroura | clam cracker | 1 | 250 | 1 | 0.2 |
| Aluterus | filefishes | 1 | 0 | 1 | 0.2 |
| Hyporthodus flavolimbatus | | 1 | 0.1 | 1 | 0.2 |
| Rachycentron canadum | cobia | 1 | 1.8 | 1 | 0.2 |
| Opsanus beta | gulf toadfish | 1 | 0 | 1 | 0.2 |
| Cephalopholis cruentata | graysby | 1 | 0.1 | 1 | 0.2 |
| Alosa chrysochloris | blue herring | 1 | 0.1 | 1 | 0.2 |
| Apogon spp. | cardinalfishes | 1 | 0 | 1 | 0.2 |
| Sargocentron | | 1 | 0 | 1 | 0.2 |
| Archosargus probatocephalus | sheepshead | 1 | 0.7 | 1 | 0.2 |
| Symphurus spp. | tonguefishes | 1 | 0 | 1 | 0.2 |
| Holocentrus adscensionis | squirrelfish | 1 | 0.5 | 1 | 0.2 |
| Scorpaena plumieri | spotted scorpionfish | 1 | 0.2 | 1 | 0.2 |
| Lepophidium spp. | cusk-eels | 1 | 0 | 1 | 0.2 |
| Ioglossus | | 1 | 0 | 1 | 0.2 |
| Synagrops spinosa | | 1 | 0 | 1 | 0.2 |
| Ophichthus rex | king snake eel | 1 | 0.8 | 1 | 0.2 |
| Stephanolepis setifer | pygmy filefish | 1 | 0 | 1 | 0.2 |
| Lactophrys trigonus | trunkfish | 1 | 0.6 | 1 | 0.2 |
| Unid.fish | fishes | 1 | 0 | 1 | 0.2 |

Table 2. Species composition list (continued)

| GENUS/SPECIES | COMMON NAME | TOTAL NUMBER CAUGHT | TOTAL WEIGHT CAUGHT (KG) | NUMBER OF TOWS WHERE CAUGHT | % FREQUENCY OCCURRENCE |
|---|---|---|---|---|---|
| Gymnura altavela | spiny butterfly ray | 1 | 2.7 | 1 | 0.2 |
| Hemiramphus balao | balao | 1 | 0 | 1 | 0.2 |
| Odontoscion dentex | reef croaker | 1 | 0.1 | 1 | 0.2 |
| Gordiichthys | | 1 | 0 | 1 | 0.2 |
| Crustaceans | | | | | |
| Farfantepenaeus aztecus | brown shrimp | 42506 | 672.9 | 224 | 45.4 |
| Callinectes similis | lesser blue crab | 12678 | 128.9 | 159 | 32.3 |
| Rimapenaeus similis | roughback shrimp | 7368 | 39 | 85 | 17.2 |
| Squilla empusa | mantis shrimp | 4469 | 48.4 | 111 | 22.5 |
| Litopenaeus setiferus | white shrimp | 2782 | 114.1 | 80 | 16.2 |
| Portunus spinicarpus | longspine swimming crab | 2464 | 11 | 135 | 27.4 |
| Farfantepenaeus duorarum | pink shrimp | 2136 | 38 | 85 | 17.2 |
| Sicyonia brevirostris | brown rock shrimp | 2068 | 25 | 102 | 20.7 |
| Solenocera vioscai | humpback shrimp | 1695 | 7.4 | 44 | 8.9 |
| Squilla chydaea | mantis shrimp | 1045 | 6.5 | 54 | 11 |
| Xiphopenaeus kroyeri | seabob | 688 | 5.1 | 21 | 4.3 |
| Portunus gibbesii | irridescent swimming crab | 596 | 3.4 | 93 | 18.9 |
| Anasimus latus | stilt spider crab | 530 | 2.5 | 68 | 13.8 |
| Sicyonia dorsalis | lesser rock shrimp | 530 | 0.9 | 29 | 5.9 |
| Rimapenaeus constrictus | roughneck shrimp | 470 | 1.2 | 19 | 3.9 |
| Solenocera atlantidis | dwarf humpback shrimp | 402 | 0.6 | 32 | 6.5 |
| Leiolambrus nitidus | white elbow crab | 368 | 0.7 | 32 | 6.5 |
| Metapenaeopsis goodei | Caribbean velvet shrimp | 358 | 0.5 | 37 | 7.5 |
| Parapenaeus politus | deepwater rose shrimp | 265 | 0.4 | 11 | 2.2 |
| Portunus spinimanus | blotched swimming crab | 258 | 6 | 70 | 14.2 |
| Stenorhynchus seticornis | yellowline arrow crab | 247 | 0.5 | 77 | 15.6 |
| Calappa sulcata | yellow box crab | 172 | 33.5 | 56 | 11.4 |
| Callinectes sapidus | blue crab | 158 | 30.8 | 47 | 9.5 |
| Mithrax hispidus | coral clinging crab | 145 | 0.6 | 21 | 4.3 |

Table 2. Species composition list (continued)

| GENUS/SPECIES | COMMON NAME | TOTAL NUMBER CAUGHT | TOTAL WEIGHT CAUGHT (KG) | NUMBER OF TOWS WHERE CAUGHT | % FREQUENCY OCCURRENCE |
|---|---|---|---|---|---|
| Cryptodromiopsis antillensis | hairy sponge crab | 136 | 0.5 | 52 | 10.5 |
| Scyllarus chacei | chace slipper lobster | 120 | 0.5 | 32 | 6.5 |
| Plesionika longicauda | pandalid shrimp | 109 | 0.3 | 9 | 1.8 |
| Munida | | 103 | 0 | 5 | 1 |
| Stenocionops furcatus furcatus | furcate crab | 98 | 2.7 | 37 | 7.5 |
| Raninoides louisianensis | gulf frog crab | 97 | 0.8 | 29 | 5.9 |
| Portunus ordwayii | | 87 | 0.5 | 23 | 4.7 |
| Scyllarides nodifer | ridged slipper lobster | 73 | 24.4 | 34 | 6.9 |
| Mithrax pleuracanthus | shaggy clinging crab | 55 | 0.1 | 18 | 3.7 |
| Euphrosynoplax clausa | craggy bathyal crab | 55 | 0.3 | 18 | 3.7 |
| Portunus sayi | sargassum swimming crab | 52 | 0.2 | 18 | 3.7 |
| Synalpheus | | 51 | 0 | 16 | 3.2 |
| Platylambrus granulata | bladetooth elbow crab | 50 | 0.1 | 28 | 5.7 |
| Macrocoeloma trispinosum | spongy decorator crab | 48 | 0.4 | 24 | 4.9 |
| Pseudorhombila quadridentata | flecked squareback crab | 47 | 0.5 | 16 | 3.2 |
| Pilumnus sayi | spineback hairy crab | 45 | 0.1 | 15 | 3 |
| Hepatus epheliticus | calico crab | 40 | 1.1 | 16 | 3.2 |
| Libinia emarginata | portly spider crab | 38 | 1.9 | 11 | 2.2 |
| Munida irrasa | | 32 | 0 | 11 | 2.2 |
| Podochela sidneyi | shortfinger neck crab | 29 | 0.1 | 21 | 4.3 |
| Porcellana sayana | spotted porcelain crab | 25 | 0 | 6 | 1.2 |
| Arenaeus cribrarius | speckled swimming crab | 24 | 0.8 | 3 | 0.6 |
| Mithrax forceps | red-ridged clinging crab | 23 | 0 | 14 | 2.8 |
| Persephona crinita | pink purse crab | 23 | 0.1 | 17 | 3.4 |
| Metoporhaphis calcarata | false arrow crab | 22 | 0 | 11 | 2.2 |
| Lysmata | | 21 | 0 | 10 | 2 |
| Paguristes spp. | hermit crabs | 21 | 0 | 14 | 2.8 |
| Paguristes tortugae | bandeye hermit | 21 | 0 | 9 | 1.8 |
| Ovalipes floridanus | Florida lady crab | 20 | 0.4 | 8 | 1.6 |
| Paguristes sericeus | blue-eyed hermit | 19 | 0 | 14 | 2.8 |
| Stenocionops furcatus coelatus | spider crab | 19 | 0.1 | 7 | 1.4 |

Table 2. Species composition list (continued)

| GENUS/SPECIES | COMMON NAME | TOTAL NUMBER CAUGHT | TOTAL WEIGHT CAUGHT (KG) | NUMBER OF TOWS WHERE CAUGHT | % FREQUENCY OCCURRENCE |
|---|---|---|---|---|---|
| Sicyonia burkenroadi | spiny rock shrimp | 18 | 0 | 6 | 1.2 |
| Myropsis quinquespinosa | fivespine purse crab | 18 | 0.1 | 5 | 1 |
| Pagurus bullisi | hermit crab | 18 | 0.1 | 7 | 1.4 |
| Libinia dubia | longnose spider crab | 18 | 0.1 | 15 | 3 |
| Pseudomedaeus agassizii | rough rubble crab | 17 | 0.1 | 3 | 0.6 |
| Petrolisthes galathinus | banded porcelain crab | 17 | 0 | 5 | 1 |
| Synalpheus longicarpus | | 17 | 0 | 4 | 0.8 |
| Squilla rugosa | | 14 | 0.1 | 10 | 2 |
| Parthenope agonus | | 14 | 0 | 10 | 2 |
| Scyllarus depressus | scaled slipper lobster | 13 | 0 | 8 | 1.6 |
| Calappa flammea | flame box crab | 13 | 3.1 | 9 | 1.8 |
| Pagurus pollicaris | flatclaw hermit crab | 12 | 0.1 | 7 | 1.4 |
| Collodes robustus | spider crab | 12 | 0.1 | 3 | 0.6 |
| Paguristes triangulatus | hermit crab | 12 | 0 | 6 | 1.2 |
| Acanthocarpus alexandri | gladiator box crab | 11 | 0.1 | 3 | 0.6 |
| Persephona mediterranea | mottled purse crab | 11 | 0.1 | 10 | 2 |
| Alpheus floridanus | sand snapping shrimp | 10 | 0 | 5 | 1 |
| Megalobrachium | | 10 | 0 | 3 | 0.6 |
| Leiolambrus nitidus | white elbow crab | 9 | 0 | 4 | 0.8 |
| Dardanus fucosus | bareye hermit | 9 | 0 | 5 | 1 |
| Mesopenaeus tropicalis | salmon shrimp | 9 | 0 | 3 | 0.6 |
| Alpheidae | snapping shrimps | 8 | 0 | 4 | 0.8 |
| Palicus alternata | | 8 | 0 | 6 | 1.2 |
| Stenocionops spinimanus | prickly spider crab | 8 | 0.2 | 4 | 0.8 |
| Gonodactylidae | gonodactylid mantis shrimps | 8 | 0 | 7 | 1.4 |
| Porcellana sigsbeiana | striped porcelain crab | 8 | 0 | 3 | 0.6 |
| Dardanus insignis | red brocade hermit | 8 | 0 | 6 | 1.2 |
| Petrochirus diogenes | giant hermit crab | 7 | 0.2 | 5 | 1 |
| Iliacantha subglobosa | longfinger purse crab | 7 | 0 | 6 | 1.2 |
| Sicyonia typica | kinglet rock shrimp | 7 | 0 | 6 | 1.2 |
| Plesionika | | 7 | 0 | 1 | 0.2 |

Table 2. Species composition list (continued)

| GENUS/SPECIES | COMMON NAME | TOTAL NUMBER CAUGHT | TOTAL WEIGHT CAUGHT (KG) | NUMBER OF TOWS WHERE CAUGHT | % FREQUENCY OCCURRENCE |
|---|---|---|---|---|---|
| Macrocoeloma camptocerum | Florida decorator crab | 6 | 0 | 4 | 0.8 |
| Sicyonia spp. | rock shrimps | 6 | 0 | 1 | 0.2 |
| Hypoconcha arcuata | granulate shellback crab | 5 | 0 | 4 | 0.8 |
| Ethusa microphthalma | broadback sumo crab | 5 | 0 | 3 | 0.6 |
| Hypoconcha spinosissima | spiny shellback crab | 4 | 0 | 3 | 0.6 |
| Stenocionops | | 4 | 0 | 1 | 0.2 |
| Tozeuma serratum | serrate arrow shrimp | 4 | 0 | 4 | 0.8 |
| Macrocoeloma eutheca | | 4 | 0 | 2 | 0.4 |
| Persephona | | 4 | 0 | 1 | 0.2 |
| Lobopilumnus agassizii | areolated hairy crab | 4 | 0 | 4 | 0.8 |
| Iliacantha liodactylus | purse crab | 3 | 0 | 2 | 0.4 |
| Speocarcinus lobatus | gulf squareback crab | 3 | 0 | 3 | 0.6 |
| Manucomplanus ungulatus | | 3 | 0 | 3 | 0.6 |
| Lironeca redmanni | | 3 | 0 | 2 | 0.4 |
| Danielum ixbauchac | red sea crab | 3 | 0 | 2 | 0.4 |
| Alpheus | snapping shirmps | 3 | 0 | 3 | 0.6 |
| Pagurus longicarpus | long-armed hermit crab | 3 | 0 | 2 | 0.4 |
| Anchistioides antiguensis | | 3 | 0 | 2 | 0.4 |
| Majidae | spider crabs | 3 | 0 | 2 | 0.4 |
| Podochela riisei | longfinger neck crab | 3 | 0 | 2 | 0.4 |
| Acanthilia intermedia | granulose purse crab | 3 | 0 | 3 | 0.6 |
| Gonodactylus bredini | | 3 | 0 | 3 | 0.6 |
| Squilla deceptrix | | 3 | 0 | 2 | 0.4 |
| Parthenope pourtalesii | spinous elbow crab | 3 | 0 | 3 | 0.6 |
| Pilumnus floridanus | plumed hairy crab | 3 | 0 | 3 | 0.6 |
| Palaemonetes | | 2 | 0 | 2 | 0.4 |
| Galathea rostrata | | 2 | 0 | 2 | 0.4 |
| Synalpheus minus | minor snapping shrimp | 2 | 0 | 2 | 0.4 |
| Aega | | 2 | 0 | 2 | 0.4 |
| Lysiosquilla scabricauda | mantis shrimp | 2 | 0 | 1 | 0.2 |
| Glyptoxanthus erosus | eroded mud crab | 2 | 0.1 | 2 | 0.4 |

Table 2. Species composition list (continued)

| GENUS/SPECIES | COMMON NAME | TOTAL NUMBER CAUGHT | TOTAL WEIGHT CAUGHT (KG) | NUMBER OF TOWS WHERE CAUGHT | % FREQUENCY OCCURRENCE |
|---|---|---|---|---|---|
| Pyromaia cuspidata | dartnose pear crab | 2 | 0 | 1 | 0.2 |
| Palicus faxoni | finned stilt crab | 2 | 0 | 1 | 0.2 |
| Phimochirus holthuisi | red-striped hermit | 2 | 0 | 2 | 0.4 |
| Cymothoidae | | 2 | 0 | 1 | 0.2 |
| Tyche emarginata | fourhorn crab | 2 | 0 | 2 | 0.4 |
| Osachila semilevis | thinlip jewelbox crab | 2 | 0 | 1 | 0.2 |
| Palicus | | 2 | 0 | 1 | 0.2 |
| Porcellanidae | porcelain crabs | 2 | 0 | 1 | 0.2 |
| Mithrax acuticornis | sharphorn clinging crab | 2 | 0 | 2 | 0.4 |
| Menippe mercenaria | Florida stone crab | 2 | 0.7 | 2 | 0.4 |
| Gibbesia neglecta | mantis shrimp | 2 | 0 | 2 | 0.4 |
| Mithrax | | 2 | 0 | 2 | 0.4 |
| Squilla spp. | mantis shrimps | 2 | 0 | 1 | 0.2 |
| Munida forceps | squat lobster | 1 | 0 | 1 | 0.2 |
| Plesionika acanthonotus | lesser striped shrimp | 1 | 0 | 1 | 0.2 |
| Sicyonia laevigata | rock shrimp | 1 | 0 | 1 | 0.2 |
| Speocarcinus carolinensis | Carolinian squareback crab | 1 | 0 | 1 | 0.2 |
| Axiopsis hirsutimana | lobster shrimps | 1 | 0 | 1 | 0.2 |
| Parthenope serrata | sawtooth elbow crab | 1 | 0 | 1 | 0.2 |
| Pseudorhombila | | 1 | 0 | 1 | 0.2 |
| Calocaris hirsutimana | | 1 | 0 | 1 | 0.2 |
| Gnathophyllidae | bumblebee shrimps | 1 | 0 | 1 | 0.2 |
| Paguridae | right-handed hermit crabs | 1 | 0 | 1 | 0.2 |
| Diogenidae | left-handed hermit crabs | 1 | 0 | 1 | 0.2 |
| Stenopus scutellatus | golden coral shrimp | 1 | 0 | 1 | 0.2 |
| Periclimenes americanus | American grass shrimp | 1 | 0 | 1 | 0.2 |
| Cronius ruber | blackpoint sculling crab | 1 | 0 | 1 | 0.2 |
| Ethusa | | 1 | 0 | 1 | 0.2 |
| Ranilia | | 1 | 0 | 1 | 0.2 |
| Albunea gibbesii | surf mole crab | 1 | 0 | 1 | 0.2 |
| Gonodactylus torus | | 1 | 0 | 1 | 0.2 |

Table 2. Species composition list (continued)

| GENUS/SPECIES | COMMON NAME | TOTAL NUMBER CAUGHT | TOTAL WEIGHT CAUGHT (KG) | NUMBER OF TOWS WHERE CAUGHT | % FREQUENCY OCCURRENCE |
|---|---|---|---|---|---|
| Collodes trispinosus | | 1 | 0 | 1 | 0.2 |
| Sicyonia stimpsoni | eyespot rock shrimp | 1 | 0 | 1 | 0.2 |
| Stenopus | | 1 | 0 | 1 | 0.2 |
| Xanthidae | mud crabs | 1 | 0 | 1 | 0.2 |
| Munida pusilla | | 1 | 0 | 1 | 0.2 |
| Alpheus armatus | brown snapping shrimp | 1 | 0 | 1 | 0.2 |
| Macrocoeloma | | 1 | 0 | 1 | 0.2 |
| Isopoda | isopods | 1 | 0 | 1 | 0.2 |
| Inachidae | | 1 | 0 | 1 | 0.2 |
| Synalpheus townsendi | Townsend snapping shrimp | 1 | 0 | 1 | 0.2 |
| Alpheus formosus | striped snapping shrimp | 1 | 0 | 1 | 0.2 |
| Parthenope fraterculus | rough elbow crab | 1 | 0 | 1 | 0.2 |
| Synalpheus fritzmuelleri | speckled snapping shrimp | 1 | 0 | 1 | 0.2 |
| Tumidotheres maculatus | squatter pea crab | 1 | 0 | 1 | 0.2 |
| Pilumnus dasypodus | shortspine hairy crab | 1 | 0 | 1 | 0.2 |
| Stomatopoda | mantis shrimps | 1 | 0 | 1 | 0.2 |
| Hippolytidae | | 1 | 0 | 1 | 0.2 |
| Leucosiidae | purse crabs | 1 | 0 | 1 | 0.2 |
| Podochela lamelligera | neck crab | 1 | 0 | 1 | 0.2 |
| Scalpellum | | 1 | 0 | 1 | 0.2 |
| Thor | | 1 | 0 | 1 | 0.2 |
| Nibilia antilocapra | shorthorn spiny crab | 1 | 0 | 1 | 0.2 |
| Others | | | | | |
| Loligo plei | arrow squid | 13006 | 165.6 | 240 | 48.7 |
| Amusium papyraceum | paper scallop | 9238 | 90.1 | 80 | 16.2 |
| Loligo pealeii | longfin squid | 4011 | 50.1 | 80 | 16.2 |
| Lolliguncula brevis | Atlantic brief squid | 858 | 10.3 | 87 | 17.6 |
| Loligo spp. | squids | 664 | 7.4 | 22 | 4.5 |
| Argopecten gibbus | calico scallop | 409 | 4.2 | 24 | 4.9 |

Table 2. Species composition list (continued)

| GENUS/SPECIES | COMMON NAME | TOTAL NUMBER CAUGHT | TOTAL WEIGHT CAUGHT (KG) | NUMBER OF TOWS WHERE CAUGHT | % FREQUENCY OCCURRENCE |
|---|---|---|---|---|---|
| Pitar cordatus | Schwengel's pitar | 194 | 4.7 | 23 | 4.7 |
| Polystira albida | white giant turris | 158 | 1.5 | 22 | 4.5 |
| Evola | bivalves | 111 | 2 | 4 | 0.8 |
| Euvola raveneli | Ravenel's scallop | 94 | 0.3 | 21 | 4.3 |
| Sconsia striata | royal bonnet | 43 | 0.8 | 8 | 1.6 |
| Anadara baughmani | Baughman's ark | 36 | 0.5 | 6 | 1.2 |
| Aequipecten glyptus | red-ribbed scallop | 34 | 0.7 | 3 | 0.6 |
| Octopus vulgaris | common Atlantic octopus | 32 | 2.6 | 16 | 3.2 |
| Lirophora clenchi | Clench venus | 24 | 0.2 | 2 | 0.4 |
| Cantharus cancellarius | cancellate cantharus | 24 | 0.1 | 13 | 2.6 |
| Astrea americana | | 22 | 0.2 | 11 | 2.2 |
| Pteria colymbus | Atlantic wing-oyster | 15 | 0.3 | 7 | 1.4 |
| Anadara ovalis | blood ark | 14 | 0.1 | 9 | 1.8 |
| Murex cabritti | | 14 | 0.1 | 4 | 0.8 |
| Octopus joubini | Atlantic pygmy octopus | 12 | 0 | 4 | 0.8 |
| Conus austini | cone shell | 11 | 0.1 | 5 | 1 |
| Tonna galea | giant tun | 10 | 1.6 | 3 | 0.6 |
| Arca zebra | turkey wing | 9 | 0.2 | 7 | 1.4 |
| Turbo castaneus | | 9 | 0 | 2 | 0.4 |
| Bulla striata | striate bubble | 8 | 0 | 3 | 0.6 |
| Aplysia morio | sooty seahare | 8 | 1.2 | 5 | 1 |
| Ficus communis | Atlantic figsnail | 8 | 0.3 | 4 | 0.8 |
| Anadara transversa | transverse ark | 8 | 0.1 | 4 | 0.8 |
| Distorsio clathrata | Atlantic distorsio | 7 | 0.1 | 5 | 1 |
| Nodipecten | | 7 | 0.5 | 7 | 1.4 |
| Macoma pulleyi | delta macoma | 6 | 0 | 2 | 0.4 |
| Hexaplex fulvescens | giant eastern murex | 6 | 0.4 | 3 | 0.6 |
| Dendostrea | | 6 | 0 | 5 | 1 |
| Semirossia tenera | lesser shining bobtail | 6 | 0 | 5 | 1 |
| Atrina rigida | stiff penshell | 6 | 1.9 | 5 | 1 |
| Strombus alatus | Florida fighting conch | 5 | 0.3 | 4 | 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 |
|---|---|---|---|---|---|
| Pinctada | | 5 | 0.2 | 4 | 0.8 |
| Laevicardium mortoni | yellow eggcockle | 4 | 0 | 2 | 0.4 |
| Chama macerophylla | leafy jewelbox | 4 | 0.5 | 4 | 0.8 |
| Fasciolaria tulipa | true tulip | 4 | 0.4 | 2 | 0.4 |
| Busycon plagosus | | 4 | 0.3 | 1 | 0.2 |
| Polystira tellea | delicate giant turret | 4 | 0 | 1 | 0.2 |
| Diodora cayenensis | Cayenne keyhole limpet | 4 | 0 | 4 | 0.8 |
| Calliostoma euglyptum | sculptured topsnail | 3 | 0 | 2 | 0.4 |
| Astrea phoebia | | 3 | 0 | 2 | 0.4 |
| Ficus | fig | 3 | 0.1 | 2 | 0.4 |
| Neverita | | 3 | 0 | 1 | 0.2 |
| Arcinella cornuta | Florida spiny jewelbox | 3 | 0.1 | 3 | 0.6 |
| Busycotypus spiratus | pearwhelk | 3 | 0.1 | 2 | 0.4 |
| Hypselodoris edenticulata | florida regal doris | 3 | 0 | 2 | 0.4 |
| Xenophora | | 2 | 0 | 1 | 0.2 |
| Neverita duplicata | shark eye | 2 | 0 | 2 | 0.4 |
| Aequipecten | | 2 | 0 | 1 | 0.2 |
| Spondylus americanus | Atlantic thorny oyster | 2 | 0.4 | 2 | 0.4 |
| Conus | cones | 2 | 0 | 1 | 0.2 |
| Cypraea cervus | atlantic deer cowrie | 2 | 0.3 | 2 | 0.4 |
| Pododesmus rudis | Atlantic falsejingle | 2 | 0 | 2 | 0.4 |
| Aequipecten muscosus | rough scallop | 2 | 0 | 2 | 0.4 |
| Chama | | 2 | 0.4 | 1 | 0.2 |
| Laevicardium | | 2 | 0 | 2 | 0.4 |
| Fasciolaria spp. | tulip shells | 2 | 0 | 2 | 0.4 |
| Busycon sinistrum | lightning whelk | 2 | 0.1 | 2 | 0.4 |
| Semirossia equalis | greater shining bobtail | 2 | 0 | 1 | 0.2 |
| Conus daucus | carrot cone | 2 | 0 | 2 | 0.4 |
| Felimare | | 2 | 0.1 | 2 | 0.4 |
| Calliostoma jujubinum | mottled topsnail | 2 | 0 | 2 | 0.4 |
| Aplysia brasiliana | mottled seahare | 2 | 0 | 2 | 0.4 |

Table 2. Species composition list (continued)

| GENUS/SPECIES | COMMON NAME | TOTAL NUMBER CAUGHT | TOTAL WEIGHT CAUGHT (KG) | NUMBER OF TOWS WHERE CAUGHT | % FREQUENCY OCCURRENCE |
|---|---|---|---|---|---|
| Cassis tuberosa | Caribbean helmet | 2 | 3 | 2 | 0.4 |
| Strombus costatus | milk conch | 2 | 0.1 | 2 | 0.4 |
| Chlamys benedicti | Benedict scallop | 2 | 0 | 2 | 0.4 |
| Calyptraeidae | | 2 | 0.2 | 2 | 0.4 |
| Macoma brevifrons | short macoma | 2 | 0.2 | 1 | 0.2 |
| Neogastropoda | | 1 | 0 | 1 | 0.2 |
| Chiton | | 1 | 0 | 1 | 0.2 |
| Lithophaga aristata | scissor datemussel | 1 | 0 | 1 | 0.2 |
| Crucibulum auricula | West Indian cup-and-saucer | 1 | 0 | 1 | 0.2 |
| Octopus | | 1 | 0 | 1 | 0.2 |
| Abra | | 1 | 0 | 1 | 0.2 |
| Atrina serrata | sawtooth penshell | 1 | 0.2 | 1 | 0.2 |
| Eucrassatella speciosa | beautiful crassatella | 1 | 0 | 1 | 0.2 |
| Strombus raninus | hawkwing conch | 1 | 1.6 | 1 | 0.2 |
| Fasciolariidae | | 1 | 0 | 1 | 0.2 |
| Crucibulum striatum | striate cup-and-saucer | 1 | 0 | 1 | 0.2 |
| Phyllonotus | | 1 | 0 | 1 | 0.2 |
| Pleurobranchus | slugs | 1 | 0 | 1 | 0.2 |
| Cypraea spurca | | 1 | 0 | 1 | 0.2 |
| Scaphella junonia | junonia | 1 | 0.1 | 1 | 0.2 |
| Octopus briareus | Caribbean reef octopus | 1 | 0 | 1 | 0.2 |
| Modiolus americanus | American horsemussel | 1 | 0 | 1 | 0.2 |
| Anadara notabilis | eared ark | 1 | 0 | 1 | 0.2 |
| Pleurobranchus | | 1 | 0.1 | 1 | 0.2 |
| Distorsio mcgintyi | | 1 | 0 | 1 | 0.2 |
| Oliva sayana | lettered olive | 1 | 0 | 1 | 0.2 |
| Haminoea antillarum | Antilles glassy-bubble | 1 | 0 | 1 | 0.2 |
| Agriopoma texasianum | Texas venus | 1 | 0 | 1 | 0.2 |
| Anomia simplex | common jingle | 1 | 0 | 1 | 0.2 |
| Opisthobranchia | opisthobranchs | 1 | 0 | 1 | 0.2 |
| Tellina listeri | speckled tellin | 1 | 0 | 1 | 0.2 |

Table 2. Species composition list (continued)

| GENUS/SPECIES | COMMON NAME | TOTAL NUMBER CAUGHT | TOTAL WEIGHT CAUGHT (KG) | NUMBER OF TOWS WHERE CAUGHT | % FREQUENCY OCCURRENCE |
|---|---|---|---|---|---|
| Turritella exoleta | eastern turretsnail | 1 | 0 | 1 | 0.2 |
| Cerodrillia | | 1 | 0 | 1 | 0.2 |
| Chicoreus pomum | apple murex | 1 | 0 | 1 | 0.2 |
| Cassis madagascariensis | cameo helmet | 1 | 3 | 1 | 0.2 |
| Chama congregata | corrugate jewelbox | 1 | 0.2 | 1 | 0.2 |
| Cephalopoda | octopuses | 1 | 0 | 1 | 0.2 |
| Turbo | | 1 | 0 | 1 | 0.2 |
| Conus amphiurgus | | 1 | 0 | 1 | 0.2 |
| Callista eucymata | glory-of-the-seas venus | 1 | 0 | 1 | 0.2 |
| Cerithium atratum | dark cerith | 1 | 0 | 1 | 0.2 |
| Narcissia trigonaria | | 1 | 0 | 1 | 0.2 |
| Buccinidae | | 1 | 0 | 1 | 0.2 |
| Cassididae | | 1 | 0 | 1 | 0.2 |
| Chicoreus | | 1 | 0 | 1 | 0.2 |
| Aplysia | opistobranchs | 1 | 0.2 | 1 | 0.2 |

Table 3. 2012 Fall Shrimp/Groundfish Survey species composition list, 280 trawl stations, for those vessels that used either a 40-ft or 20-ft trawl. Species with a total weight of less than 0.0227 kg (0.05 lb) are indicated on the table as 0.0 kg.

| GENUS/SPECIES | COMMON NAME | TOTAL NUMBER CAUGHT | TOTAL WEIGHT CAUGHT (KG) | NUMBER OF TOWS WHERE CAUGHT | % FREQUENCY OCCURRENCE |
|---|---|---|---|---|---|
| Finfishes | | | | | |
| Micropogonias undulatus | Atlantic croaker | 70576 | 3132.7 | 159 | 56.8 |
| Chloroscombrus chrysurus | Atlantic bumper | 14841 | 446.7 | 111 | 39.6 |
| Stenotomus caprinus | longspine porgy | 12168 | 468.2 | 123 | 43.9 |
| Leiostomus xanthurus | spot | 10582 | 1138.8 | 94 | 33.6 |
| Lagodon rhomboides | pinfish | 4253 | 330.7 | 109 | 38.9 |
| Trachurus lathami | rough scad | 3803 | 123.1 | 67 | 23.9 |
| Serranus atrobranchus | blackear bass | 3212 | 35.8 | 61 | 21.8 |
| Lutjanus campechanus | red snapper | 2770 | 148.6 | 146 | 52.1 |
| Synodus foetens | inshore lizardfish | 2760 | 317.2 | 162 | 57.9 |
| Syacium papillosum | dusky flounder | 2604 | 104 | 73 | 26.1 |
| Prionotus roseus | bluespotted searobin | 2584 | 25.5 | 35 | 12.5 |
| Cynoscion nothus | silver seatrout | 2174 | 128.9 | 90 | 32.1 |
| Peprilus burti | gulf butterfish | 1897 | 138.3 | 70 | 25 |
| Upeneus parvus | dwarf goatfish | 1841 | 52.1 | 62 | 22.1 |
| Syacium gunteri | shoal flounder | 1784 | 39 | 107 | 38.2 |
| Haemulon aurolineatum | tomtate | 1487 | 102.7 | 40 | 14.3 |
| Stephanolepis hispida | | 1424 | 47.5 | 45 | 16.1 |
| Diplectrum bivittatum | dwarf sand perch | 1196 | 21.6 | 49 | 17.5 |
| Centropristis philadelphica | rock sea bass | 1144 | 52.1 | 97 | 34.6 |
| Pristipomoides aquilonaris | wenchman | 1126 | 65.6 | 34 | 12.1 |
| Ariopsis felis | hardhead catfish | 1097 | 221.9 | 48 | 17.1 |
| Prionotus longispinosus | bigeye searobin | 1085 | 53.3 | 91 | 32.5 |
| Larimus fasciatus | banded drum | 1028 | 57.6 | 44 | 15.7 |
| Eucinostomus gula | silver jenny | 889 | 40.4 | 47 | 16.8 |
| Orthopristis chrysoptera | pigfish | 849 | 74.5 | 37 | 13.2 |
| Decapterus punctatus | round scad | 842 | 4.2 | 4 | 1.4 |
| Cynoscion arenarius | sand seatrout | 826 | 78.1 | 76 | 27.1 |
| Polydactylus octonemus | Atlantic threadfin | 823 | 55 | 17 | 6.1 |

Table 3. Species composition list (continued)

| GENUS/SPECIES | COMMON NAME | TOTAL NUMBER CAUGHT | TOTAL WEIGHT CAUGHT (KG) | NUMBER OF TOWS WHERE CAUGHT | % FREQUENCY OCCURRENCE |
|---|---|---|---|---|---|
| Diplectrum formosum | sand perch | 748 | 67 | 52 | 18.6 |
| Neomerinthe hemingwayi | spinycheek scorpionfish | 704 | 25.4 | 45 | 16.1 |
| Lutjanus synagris | lane snapper | 631 | 49.9 | 100 | 35.7 |
| Trichopsetta ventralis | sash flounder | 605 | 12.5 | 15 | 5.4 |
| Harengula jaguana | scaled sardine | 581 | 23.7 | 50 | 17.9 |
| Sphoeroides parvus | least puffer | 575 | 3.9 | 59 | 21.1 |
| Selene setapinnis | Atlantic moonfish | 554 | 37.2 | 71 | 25.4 |
| Saurida brasiliensis | largescale lizardfish | 545 | 2.1 | 46 | 16.4 |
| Trichiurus lepturus | Atlantic cutlassfish | 528 | 25.3 | 33 | 11.8 |
| Cyclopsetta chittendeni | Mexican flounder | 507 | 40.4 | 87 | 31.1 |
| Prionotus stearnsi | shortwing searobin | 503 | 5.6 | 18 | 6.4 |
| Citharichthys spilopterus | bay whiff | 490 | 7.9 | 43 | 15.4 |
| Anchoa hepsetus | striped anchovy | 481 | 6.8 | 37 | 13.2 |
| Scorpaena brasiliensis | barbfish | 420 | 10.5 | 20 | 7.1 |
| Calamus proridens | littlehead porgy | 419 | 87.7 | 22 | 7.9 |
| Mullus auratus | red goatfish | 392 | 19 | 21 | 7.5 |
| Stellifer lanceolatus | star drum | 385 | 5.4 | 26 | 9.3 |
| Etropus crossotus | fringed flounder | 379 | 6.5 | 65 | 23.2 |
| Ophidion holbrookii | bank cusk-eel | 367 | 26.1 | 22 | 7.9 |
| Synodus poeyi | offshore lizardfish | 358 | 2.1 | 33 | 11.8 |
| Halieutichthys aculeatus | pancake batfish | 339 | 2 | 50 | 17.9 |
| Chaetodipterus faber | Atlantic spadefish | 318 | 17.1 | 75 | 26.8 |
| Balistes capriscus | gray triggerfish | 312 | 17.8 | 67 | 23.9 |
| Haemulon plumierii | white grunt | 268 | 51.8 | 23 | 8.2 |
| Synodus intermedius | sand diver | 267 | 24.7 | 33 | 11.8 |
| Acanthostracion quadricornis | | 260 | 48 | 36 | 12.9 |
| Brevoortia patronus | gulf menhaden | 258 | 25.4 | 15 | 5.4 |
| Bellator militaris | horned searobin | 249 | 3.2 | 9 | 3.2 |
| Lepophidium brevibarbe | blackedge cusk-eel | 206 | 6.6 | 27 | 9.6 |
| Centropristis ocyurus | bank sea bass | 206 | 9.5 | 25 | 8.9 |
| Prionotus scitulus | leopard searobin | 202 | 9.4 | 23 | 8.2 |

Table 3. Species composition list (continued)

| GENUS/SPECIES | COMMON NAME | TOTAL NUMBER CAUGHT | TOTAL WEIGHT CAUGHT (KG) | NUMBER OF TOWS WHERE CAUGHT | % FREQUENCY OCCURRENCE |
|---|---|---|---|---|---|
| Prionotus paralatus | Mexican searobin | 200 | 7.4 | 16 | 5.7 |
| Brevoortia tyrannus | Atlantic menhaden | 177 | 15.4 | 2 | 0.7 |
| Lepophidium jeannae | mottled cusk-eel | 175 | 8.7 | 11 | 3.9 |
| Eucinostomus argenteus | spotfin mojarra | 169 | 4.4 | 19 | 6.8 |
| Rhomboplites aurorubens | vermilion snapper | 164 | 11 | 20 | 7.1 |
| Equetus lanceolatus | jackknife fish | 163 | 17 | 18 | 6.4 |
| Prionotus rubio | blackwing searobin | 162 | 13.3 | 18 | 6.4 |
| Porichthys plectrodon | Atlantic midshipman | 153 | 3.1 | 39 | 13.9 |
| Opisthonema oglinum | Atlantic thread herring | 148 | 10.5 | 21 | 7.5 |
| Bagre marinus | gafftopsail catfish | 130 | 15.6 | 25 | 8.9 |
| Pagrus pagrus | red porgy | 116 | 11.1 | 10 | 3.6 |
| Menticirrhus americanus | southern kingfish | 114 | 16.8 | 20 | 7.1 |
| Caranx crysos | blue runner | 108 | 13.2 | 30 | 10.7 |
| Anchoa mitchilli | bay anchovy | 100 | 0.1 | 15 | 5.4 |
| Pareques umbrosus | cubbyu | 97 | 3.4 | 14 | 5 |
| Aluterus schoepfii | orange filefish | 90 | 44.1 | 22 | 7.9 |
| Sphoeroides spengleri | bandtail puffer | 90 | 3.8 | 18 | 6.4 |
| Calamus leucosteus | whitebone porgy | 86 | 17.4 | 12 | 4.3 |
| Prionotus ophryas | bandtail searobin | 85 | 2.2 | 16 | 5.7 |
| Peprilus paru | harvestfish | 84 | 6.8 | 12 | 4.3 |
| Bothus robinsi | twospot flounder | 79 | 1.7 | 16 | 5.7 |
| Trachinocephalus myops | snakefish | 70 | 4.4 | 22 | 7.9 |
| Paralichthys albigutta | gulf flounder | 70 | 20 | 13 | 4.6 |
| Hoplunnis macrura | freckled pike-conger | 69 | 0.5 | 16 | 5.7 |
| Ogcocephalus declivirostris | slantbrow batfish | 69 | 1.1 | 17 | 6.1 |
| Rhynchoconger flavus | yellow conger | 67 | 4.1 | 11 | 3.9 |
| Etrumeus teres | round herring | 66 | 1.9 | 4 | 1.4 |
| Decapterus macarellus | mackeral scad | 65 | 1.2 | 2 | 0.7 |
| Pontinus longispinis | longspine scorpionfish | 61 | 1.6 | 2 | 0.7 |
| Prionotus alatus | spiny searobin | 58 | 1 | 4 | 1.4 |
| Ancylopsetta ommata | ocellated flounder | 56 | 9.3 | 26 | 9.3 |

Table 3. Species composition list (continued)

| GENUS/SPECIES | COMMON NAME | TOTAL NUMBER CAUGHT | TOTAL WEIGHT CAUGHT (KG) | NUMBER OF TOWS WHERE CAUGHT | % FREQUENCY OCCURRENCE |
|---|---|---|---|---|---|
| Selar crumenophthalmus | bigeye scad | 55 | 3.3 | 16 | 5.7 |
| Ophidion josephi | crested cusk-eel | 50 | 2.5 | 13 | 4.6 |
| Paralichthys lethostigma | southern flounder | 49 | 16.5 | 25 | 8.9 |
| Citharichthys macrops | spotted whiff | 48 | 1.5 | 17 | 6.1 |
| Lagocephalus laevigatus | smooth puffer | 48 | 3 | 30 | 10.7 |
| Kathetostoma albigutta | lancer stargazer | 47 | 1.7 | 16 | 5.7 |
| Etropus cyclosquamus | shelf flounder | 45 | 0.6 | 4 | 1.4 |
| Prionotus martis | barred searobin | 45 | 1.7 | 1 | 0.4 |
| Sphyraena guachancho | guaguanche | 44 | 4 | 14 | 5 |
| Prionotus tribulus | bighead searobin | 44 | 2.3 | 18 | 6.4 |
| Chilomycterus schoepfii | striped burrfish | 42 | 12.9 | 20 | 7.1 |
| Ophidion grayi | blotched cusk-eel | 42 | 1.8 | 6 | 2.1 |
| Sphoeroides dorsalis | marbled puffer | 42 | 2.1 | 8 | 2.9 |
| Bellator brachychir | shortfin searobin | 40 | 0.2 | 4 | 1.4 |
| Raja texana | roundel skate | 35 | 17.7 | 23 | 8.2 |
| Syacium micrurum | channel flounder | 34 | 0.9 | 4 | 1.4 |
| Raja eglanteria | clearnose skate | 31 | 14.3 | 16 | 5.7 |
| Symphurus plagiusa | blackcheek tonguefish | 31 | 0.7 | 15 | 5.4 |
| Symphurus diomedeanus | spottedfin tonguefish | 30 | 0.9 | 12 | 4.3 |
| Bothus lunatus | peacock flounder | 29 | 1 | 5 | 1.8 |
| Sphyrna tiburo | bonnethead | 29 | 16.7 | 14 | 5 |
| Scomberomorus cavalla | king mackerel | 27 | 2.8 | 8 | 2.9 |
| Ogcocephalus corniger | longnose batfish | 27 | 0.7 | 4 | 1.4 |
| Ancylopsetta dilecta | three-eye flounder | 25 | 1.6 | 8 | 2.9 |
| Serranus phoebe | tattler | 25 | 0.9 | 3 | 1.1 |
| Acanthostracion quadricornis | scrawled cowfish | 24 | 3 | 5 | 1.8 |
| Cyclopsetta fimbriata | spotfin flounder | 24 | 1.4 | 11 | 3.9 |
| Pareques iwamotoi | blackbar drum | 24 | 2.5 | 5 | 1.8 |
| Caulolatilus intermedius | anchor tilefish | 23 | 3.2 | 7 | 2.5 |
| Apogon aurolineatus | bridle cardinalfish | 23 | 0.1 | 7 | 2.5 |
| Centropristis striatus | black sea bass | 23 | 3.7 | 5 | 1.8 |

Table 3. Species composition list (continued)

| GENUS/SPECIES | COMMON NAME | TOTAL NUMBER CAUGHT | TOTAL WEIGHT CAUGHT (KG) | NUMBER OF TOWS WHERE CAUGHT | % FREQUENCY OCCURRENCE |
|---|---|---|---|---|---|
| Pristigenys alta | short bigeye | 22 | 0.2 | 11 | 3.9 |
| Urophycis floridana | southern hake | 22 | 2.6 | 6 | 2.1 |
| Rhizoprionodon terraenovae | Atlantic sharpnose shark | 20 | 33.8 | 15 | 5.4 |
| Brotula barbata | bearded brotula | 20 | 1.7 | 10 | 3.6 |
| Gymnachirus texae | fringed sole | 19 | 0.3 | 9 | 3.2 |
| Ogcocephalus cubifrons | polka-dot batfish | 19 | 6.1 | 9 | 3.2 |
| Otophidium omostigmum | polka-dot cusk-eel | 18 | 0.2 | 5 | 1.8 |
| Urophycis cirrata | gulf hake | 18 | 0.7 | 3 | 1.1 |
| Lachnolaimus maximus | hogfish | 18 | 4.8 | 8 | 2.9 |
| Selene vomer | lookdown | 17 | 0.5 | 8 | 2.9 |
| Echeneis naucrates | sharksucker | 17 | 6.8 | 7 | 2.5 |
| Monacanthus ciliatus | fringed filefish | 16 | 0.3 | 3 | 1.1 |
| Dasyatis americana | southern stingray | 15 | 31.5 | 11 | 3.9 |
| Dorosoma petenense | threadfin shad | 15 | 0.7 | 6 | 2.1 |
| Lutjanus griseus | grey snapper | 13 | 4.9 | 8 | 2.9 |
| Symphurus urospilus | spottail tonguefish | 13 | 0.3 | 4 | 1.4 |
| Rhynchoconger gracilior | | 12 | 0.6 | 1 | 0.4 |
| Ogcocephalus parvus | roughback batfish | 12 | 0.1 | 5 | 1.8 |
| Peprilus paru | harvestfish | 12 | 1.2 | 5 | 1.8 |
| Gymnothorax saxicola | honeycomb moray | 12 | 1.3 | 10 | 3.6 |
| Scomberomorus maculatus | Spanish mackerel | 11 | 1.7 | 9 | 3.2 |
| Engyophrys senta | spiny flounder | 11 | 0 | 6 | 2.1 |
| Symphurus arawak | Caribbean tonguefish | 11 | 0.3 | 3 | 1.1 |
| Echeneis neucratoides | whitefin sharksucker | 11 | 5.6 | 5 | 1.8 |
| Epinephelus morio | red grouper | 11 | 7.3 | 6 | 2.1 |
| Ogcocephalus pantostictus | spotted batfish | 10 | 0.3 | 4 | 1.4 |
| Chaetodon ocellatus | spotfin butterflyfish | 10 | 0.6 | 5 | 1.8 |
| Antennarius radiosus | singlespot frogfish | 10 | 0.1 | 6 | 2.1 |
| Sardinella aurita | Spanish sardine | 10 | 0.2 | 3 | 1.1 |
| Neobythites gilli | cusk-eel | 9 | 0 | 1 | 0.4 |
| Gastropsetta frontalis | shrimp flounder | 9 | 0.8 | 5 | 1.8 |

Table 3. Species composition list (continued)

| GENUS/SPECIES | COMMON NAME | TOTAL NUMBER CAUGHT | TOTAL WEIGHT CAUGHT (KG) | NUMBER OF TOWS WHERE CAUGHT | % FREQUENCY OCCURRENCE |
|---|---|---|---|---|---|
| Aluterus scriptus | scrawled filefish | 9 | 1.9 | 6 | 2.1 |
| Paralichthys squamilentus | broad flounder | 9 | 2.4 | 7 | 2.5 |
| Caranx hippos | crevalle jack | 9 | 1.4 | 3 | 1.1 |
| Decodon puellaris | red hogfish | 9 | 0.3 | 4 | 1.4 |
| Apogon pseudomaculatus | twospot cardinalfish | 9 | 0.1 | 2 | 0.7 |
| Cynoscion spp. | seatrouts | 8 | 0 | 1 | 0.4 |
| Synagrops bellus | blackmouth bass | 8 | 0.1 | 1 | 0.4 |
| Sciaenops ocellatus | red drum | 8 | 40.6 | 3 | 1.1 |
| Pareques acuminatus | high-hat | 8 | 0.1 | 3 | 1.1 |
| Citharichthys cornutus | horned whiff | 8 | 0 | 1 | 0.4 |
| Calamus bajonado | jolthead porgy | 7 | 1.7 | 2 | 0.7 |
| Trachinotus carolinus | Florida pompano | 7 | 3.2 | 5 | 1.8 |
| Bollmannia communis | ragged goby | 7 | 0 | 6 | 2.1 |
| Narcine brasiliensis | lesser electric ray | 7 | 5.9 | 7 | 2.5 |
| Rypticus maculatus | whitespotted soapfish | 7 | 0.3 | 4 | 1.4 |
| Antennarius ocellatus | ocellated frogfish | 7 | 0.1 | 2 | 0.7 |
| Steindachneria argentea | luminous hake | 6 | 0.1 | 1 | 0.4 |
| Hippocampus erectus | lined seahorse | 6 | 0.1 | 6 | 2.1 |
| Nicholsina usta | emerald parrotfish | 6 | 1.3 | 2 | 0.7 |
| Ophidiidae | cusk-eels | 6 | 0 | 3 | 1.1 |
| Serranus subligarius | belted sandfish | 6 | 0 | 1 | 0.4 |
| Pterois | lion fishes | 6 | 1.1 | 4 | 1.4 |
| Clupea harengus | Atlantic herring | 6 | 0.6 | 1 | 0.4 |
| Hemipteronotus novacula | pearly razorfish | 6 | 0.4 | 4 | 1.4 |
| Unid.fish | fishes | 5 | 0 | 2 | 0.7 |
| Symphurus piger | deepwater tonguefish | 5 | 0.1 | 1 | 0.4 |
| Rhinobatos lentiginosus | Atlantic guitarfish | 5 | 3.6 | 3 | 1.1 |
| Ophidiiformes | ophidiiforms | 5 | 0 | 2 | 0.7 |
| Apogon spp. | cardinalfishes | 5 | 0 | 1 | 0.4 |
| Physiculus fulvus | metallic codling | 5 | 0 | 1 | 0.4 |
| Gobiidae | gobies | 5 | 0 | 3 | 1.1 |

Table 3. Species composition list (continued)

| GENUS/SPECIES | COMMON NAME | TOTAL NUMBER CAUGHT | TOTAL WEIGHT CAUGHT (KG) | NUMBER OF TOWS WHERE CAUGHT | % FREQUENCY OCCURRENCE |
|---|---|---|---|---|---|
| Gobionellus oceanicus | highfin goby | 5 | 0 | 2 | 0.7 |
| Rachycentron canadum | cobia | 4 | 1.4 | 4 | 1.4 |
| Fistularia petimba | red cornetfish | 4 | 0.3 | 3 | 1.1 |
| Rypticus subbifrenatus | spotted soapfish | 4 | 0.1 | 4 | 1.4 |
| Parexocoetus brachypterus | sailfin flyingfish | 4 | 0 | 1 | 0.4 |
| Hemicaranx amblyrhynchus | bluntnose jack | 4 | 0 | 2 | 0.7 |
| Seriola rivoliana | almaco jack | 4 | 1.8 | 1 | 0.4 |
| Hemanthias vivanus | red barbier | 4 | 0.1 | 2 | 0.7 |
| Carcharhinus acronotus | blacknose shark | 4 | 8.9 | 3 | 1.1 |
| Phaeoptyx conklini | freckled cardinalfish | 4 | 0 | 3 | 1.1 |
| Pomacanthus arcuatus | gray angelfish | 4 | 0.2 | 2 | 0.7 |
| Parexocoetus | | 4 | 0 | 1 | 0.4 |
| Alosa pseudoharengus | alewife | 4 | 0.2 | 1 | 0.4 |
| Dasyatis say | bluntnose stingray | 4 | 6.1 | 2 | 0.7 |
| Symphurus parvus | pygmy tonguefish | 4 | 0.1 | 1 | 0.4 |
| Urophycis regia | spotted hake | 4 | 0.2 | 1 | 0.4 |
| Holacanthus bermudensis | blue angelfish | 3 | 1 | 3 | 1.1 |
| Apogon affinis | bigtooth cardinalfish | 3 | 0 | 2 | 0.7 |
| Menticirrhus saxatilis | northern kingfish | 3 | 0.7 | 2 | 0.7 |
| Opsanus | | 3 | 0 | 1 | 0.4 |
| Apogon planifrons | pale cardinalfish | 3 | 0 | 1 | 0.4 |
| Diplodus holbrooki | spottail pinfish | 3 | 0.4 | 1 | 0.4 |
| Parablennius marmoreus | seaweed blenny | 3 | 0 | 1 | 0.4 |
| Apogon alutus | | 3 | 0 | 1 | 0.4 |
| Halieutichthys | | 3 | 0 | 2 | 0.7 |
| Symphurus pelicanus | longtail tonguefish | 3 | 0 | 1 | 0.4 |
| Mustelus | smooth hound sharks | 3 | 11.8 | 2 | 0.7 |
| Squatina dumeril | Atlantic angel shark | 3 | 1.6 | 2 | 0.7 |
| Pogonias cromis | black drum | 3 | 5.2 | 2 | 0.7 |
| Hirundichthys rondeletii | blackwing flyingfish | 3 | 0.2 | 1 | 0.4 |
| Bairdiella chrysoura | silver perch | 2 | 0 | 2 | 0.7 |

Table 3. Species composition list (continued)

| GENUS/SPECIES | COMMON NAME | TOTAL NUMBER CAUGHT | TOTAL WEIGHT CAUGHT (KG) | NUMBER OF TOWS WHERE CAUGHT | % FREQUENCY OCCURRENCE |
|---|---|---|---|---|---|
| Mustelus sinusmexicanus | Gulf smoothhound | 2 | 1.6 | 2 | 0.7 |
| Chaetodon sedentarius | reef butterflyfish | 2 | 0.1 | 2 | 0.7 |
| Hyporthodus flavolimbatus | | 2 | 0.2 | 2 | 0.7 |
| Symphurus civitatium | offshore tonguefish | 2 | 0 | 2 | 0.7 |
| Gymnachirus melas | naked sole | 2 | 0 | 1 | 0.4 |
| Pomatomus saltatrix | bluefish | 2 | 0.2 | 2 | 0.7 |
| Pomacentrus variabilis | cocoa damselfish | 2 | 0 | 2 | 0.7 |
| Opsanus beta | gulf toadfish | 2 | 0.2 | 2 | 0.7 |
| Halichoeres bathyphilus | greenband wrasse | 2 | 0 | 1 | 0.4 |
| Rhinoptera bonasus | cownose ray | 2 | 5.3 | 2 | 0.7 |
| Seriola dumerili | greater amberjack | 2 | 0.8 | 2 | 0.7 |
| Lobotes surinamensis | Atlantic tripletail | 2 | 0.2 | 1 | 0.4 |
| Rypticus bistrispinus | freckled soapfish | 2 | 0.1 | 2 | 0.7 |
| Ophidion beani | longnose cusk-eel | 2 | 0.2 | 1 | 0.4 |
| Estropus microstomus | smallmouth flounder | 2 | 0 | 1 | 0.4 |
| Stephanolepis hispida | planehead filefish | 2 | 0 | 1 | 0.4 |
| Anchoa lyolepis | dusky anchovy | 1 | 0 | 1 | 0.4 |
| Gobiesox punctulatus | stippled clingfish | 1 | 0 | 1 | 0.4 |
| Mycteroperca microlepis | gag | 1 | 0.5 | 1 | 0.4 |
| Elops saurus | ladyfish | 1 | 0.1 | 1 | 0.4 |
| Gobiesox strumosus | skilletfish | 1 | 0 | 1 | 0.4 |
| Engraulidae | anchovies | 1 | 0 | 1 | 0.4 |
| Epinephelus guttatus | red hind | 1 | 0 | 1 | 0.4 |
| Monacanthus tuckeri | slender filefish | 1 | 0 | 1 | 0.4 |
| Holacanthus ciliaris | queen angelfish | 1 | 0 | 1 | 0.4 |
| Pareques | | 1 | 0 | 1 | 0.4 |
| Monolene sessilicauda | deepwater flounder | 1 | 0 | 1 | 0.4 |
| Phaeoptyx | | 1 | 0 | 1 | 0.4 |
| Dasyatis sabina | Atlantic stingray | 1 | 0.1 | 1 | 0.4 |
| Mustelus norrisi | Florida smoothhound | 1 | 0.5 | 1 | 0.4 |
| Echiophis punctifer | snapper eel | 1 | 0.1 | 1 | 0.4 |

Table 3. Species composition list (continued)

| GENUS/SPECIES | COMMON NAME | TOTAL NUMBER CAUGHT | TOTAL WEIGHT CAUGHT (KG) | NUMBER OF TOWS WHERE CAUGHT | % FREQUENCY OCCURRENCE |
|---|---|---|---|---|---|
| Acanthostracion polygonius | honeycomb cowfish | 1 | 0 | 1 | 0.4 |
| Ophichthus spp. | snake eels | 1 | 0.1 | 1 | 0.4 |
| Aluterus monoceros | unicorn filefish | 1 | 0.1 | 1 | 0.4 |
| Bregmacerotidae | bregmacerotid codfishes | 1 | 0 | 1 | 0.4 |
| Lutjanidae | snappers | 1 | 0 | 1 | 0.4 |
| Epinephelus | groupers | 1 | 0 | 1 | 0.4 |
| Trachinotus goodei | palometa | 1 | 0.2 | 1 | 0.4 |
| Selenaspis | | 1 | 0 | 1 | 0.4 |
| Echiophis intertinctus | spotted spoon-nose eel | 1 | 0.3 | 1 | 0.4 |
| Gymnura altavela | spiny butterfly ray | 1 | 0.9 | 1 | 0.4 |
| Labridae | wrasses | 1 | 0 | 1 | 0.4 |
| Phaeoptyx xenus | sponge cardinalfish | 1 | 0 | 1 | 0.4 |
| Priacanthus arenatus | bigeye | 1 | 0.2 | 1 | 0.4 |
| Scorpaena calcarata | smoothhead scorpionfish | 1 | 0 | 1 | 0.4 |
| Prognathodes aya | bank butterflyfish | 1 | 0 | 1 | 0.4 |
| Dasyatis centroura | clam cracker | 1 | 2.1 | 1 | 0.4 |
| Symphurus minor | largescale tonguefish | 1 | 0 | 1 | 0.4 |
| Epinephelus niveatus | snowy grouper | 1 | 0.1 | 1 | 0.4 |
| Chromis enchrysura | yellowtail reeffish | 1 | 0 | 1 | 0.4 |
| Calamus nodosus | knobbed porgy | 1 | 0.2 | 1 | 0.4 |
| <u>Crustaceans</u> | | | | | |
| Farfantepenaeus aztecus | brown shrimp | 12062 | 310.1 | 158 | 56.4 |
| Callinectes similis | lesser blue crab | 1569 | 32.7 | 105 | 37.5 |
| Farfantepenaeus duorarum | pink shrimp | 1278 | 30 | 46 | 16.4 |
| Squilla empusa | mantis shrimp | 1119 | 11.6 | 65 | 23.2 |
| Portunus gibbesii | irridescent swimming crab | 1026 | 8.8 | 75 | 26.8 |
| Portunus spinicarpus | longspine swimming crab | 928 | 5.8 | 54 | 19.3 |
| Litopenaeus setiferus | white shrimp | 909 | 26.3 | 61 | 21.8 |
| Sicyonia brevirostris | brown rock shrimp | 776 | 12 | 48 | 17.1 |

Table 3. Species composition list (continued)

| GENUS/SPECIES | COMMON NAME | TOTAL NUMBER CAUGHT | TOTAL WEIGHT CAUGHT (KG) | NUMBER OF TOWS WHERE CAUGHT | % FREQUENCY OCCURRENCE |
|---|---|---|---|---|---|
| Rimapenaeus constrictus | roughneck shrimp | 724 | 3.1 | 31 | 11.1 |
| Xiphopenaeus kroyeri | seabob | 414 | 1.4 | 4 | 1.4 |
| Squilla chydaea | mantis shrimp | 380 | 3 | 42 | 15 |
| Solenocera vioscai | humpback shrimp | 321 | 1.5 | 18 | 6.4 |
| Sicyonia dorsalis | lesser rock shrimp | 304 | 1.4 | 31 | 11.1 |
| Rimapenaeus similis | roughback shrimp | 203 | 0.4 | 46 | 16.4 |
| Raninoides louisianensis | gulf frog crab | 185 | 1.5 | 17 | 6.1 |
| Anasimus latus | stilt spider crab | 164 | 1.3 | 22 | 7.9 |
| Portunus sayi | sargassum swimming crab | 156 | 1.3 | 8 | 2.9 |
| Portunus spinimanus | blotched swimming crab | 131 | 3.3 | 29 | 10.4 |
| Calappa sulcata | yellow box crab | 118 | 22.4 | 44 | 15.7 |
| Metapenaeopsis goodei | Caribbean velvet shrimp | 110 | 0.1 | 8 | 2.9 |
| Stenorhynchus seticornis | yellowline arrow crab | 54 | 0.2 | 25 | 8.9 |
| Persephona mediterranea | mottled purse crab | 51 | 1.8 | 2 | 0.7 |
| Parapenaeus politus | deepwater rose shrimp | 43 | 0 | 6 | 2.1 |
| Pagurus annulipes | | 37 | 0 | 4 | 1.4 |
| Leiolambrus nitidus | white elbow crab | 36 | 0.1 | 12 | 4.3 |
| Callinectes sapidus | blue crab | 34 | 4.8 | 14 | 5 |
| Euphrosynoplax clausa | craggy bathyal crab | 30 | 0.4 | 7 | 2.5 |
| Scyllarides nodifer | ridged slipper lobster | 29 | 8.4 | 9 | 3.2 |
| Libinia dubia | longnose spider crab | 28 | 0.2 | 21 | 7.5 |
| Callinectes | swimming crabs | 28 | 0.3 | 1 | 0.4 |
| Pagurus pollicaris | flatclaw hermit crab | 26 | 0.3 | 14 | 5 |
| Myropsis quinquespinosa | fivespine purse crab | 22 | 0.1 | 4 | 1.4 |
| Acanthocarpus alexandri | gladiator box crab | 22 | 0.4 | 2 | 0.7 |
| Pseudorhombila quadridentata | flecked squareback crab | 20 | 0.1 | 3 | 1.1 |
| Pilumnus sayi | spineback hairy crab | 18 | 0.1 | 11 | 3.9 |
| Cryptodromiopsis antillensis | hairy sponge crab | 18 | 0.1 | 7 | 2.5 |
| Mysidae | shrimps | 17 | 0 | 1 | 0.4 |
| Acetes americanus | aviu shrimp | 16 | 0 | 4 | 1.4 |
| Calappa flammea | flame box crab | 16 | 1.5 | 9 | 3.2 |

Table 3. Species composition list (continued)

| GENUS/SPECIES | COMMON NAME | TOTAL NUMBER CAUGHT | TOTAL WEIGHT CAUGHT (KG) | NUMBER OF TOWS WHERE CAUGHT | % FREQUENCY OCCURRENCE |
|---|---|---|---|---|---|
| Metoporhaphis calcarata | false arrow crab | 16 | 0 | 10 | 3.6 |
| Libinia emarginata | portly spider crab | 15 | 0.1 | 5 | 1.8 |
| Pseudomedaeus agassizii | rough rubble crab | 15 | 0 | 3 | 1.1 |
| Majidae | spider crabs | 14 | 0.1 | 7 | 2.5 |
| Collodes robustus | spider crab | 14 | 0.1 | 9 | 3.2 |
| Panopeus simpsoni | oystershell mud crab | 12 | 0.1 | 1 | 0.4 |
| Podochela sidneyi | shortfinger neck crab | 11 | 0 | 5 | 1.8 |
| Ovalipes floridanus | Florida lady crab | 11 | 0.2 | 4 | 1.4 |
| Xanthidae | mud crabs | 9 | 0.1 | 4 | 1.4 |
| Scyllarus depressus | scaled slipper lobster | 9 | 0 | 4 | 1.4 |
| Petrochirus diogenes | giant hermit crab | 8 | 0.4 | 5 | 1.8 |
| Hepatus epheliticus | calico crab | 8 | 0.4 | 3 | 1.1 |
| Stenocionops furcatus furcatus | furcate crab | 8 | 0.9 | 4 | 1.4 |
| Pagurus bullisi | hermit crab | 8 | 0 | 4 | 1.4 |
| Munida forceps | squat lobster | 8 | 0 | 4 | 1.4 |
| Persephona crinita | pink purse crab | 7 | 0 | 6 | 2.1 |
| Sicyonia parri | rock shrimps | 7 | 0 | 3 | 1.1 |
| Paguristes triangulatus | hermit crab | 7 | 0.1 | 5 | 1.8 |
| Dardanus fucosus | bareye hermit | 7 | 0 | 3 | 1.1 |
| Scyllarus chacei | chace slipper lobster | 7 | 0 | 6 | 2.1 |
| Petrolisthes armatus | green porcelain crab | 7 | 0 | 1 | 0.4 |
| Solenocera atlantidis | dwarf humpback shrimp | 6 | 0 | 2 | 0.7 |
| Speocarcinus lobatus | gulf squareback crab | 6 | 0 | 3 | 1.1 |
| Stenocionops spinosissimus | tenspine spider crab | 5 | 0.1 | 1 | 0.4 |
| Dardanus insignis | red brocade hermit | 5 | 0 | 1 | 0.4 |
| Plagusia depressa | tidal spray crab | 4 | 0 | 4 | 1.4 |
| Sicyonia typica | kinglet rock shrimp | 4 | 0 | 1 | 0.4 |
| Alpheidae | snapping shrimps | 4 | 0 | 1 | 0.4 |
| Stenocionops spinimanus | prickly spider crab | 4 | 0.1 | 3 | 1.1 |
| Plesionika longicauda | pandalid shrimp | 4 | 0.1 | 2 | 0.7 |
| Mesopenaeus tropicalis | salmon shrimp | 4 | 0 | 1 | 0.4 |

Table 3. Species composition list (continued)

| GENUS/SPECIES | COMMON NAME | TOTAL NUMBER CAUGHT | TOTAL WEIGHT CAUGHT (KG) | NUMBER OF TOWS WHERE CAUGHT | % FREQUENCY OCCURRENCE |
|---|---|---|---|---|---|
| Platylambrus granulata | bladetooth elbow crab | 3 | 0 | 2 | 0.7 |
| Decapoda | crabs | 3 | 0 | 1 | 0.4 |
| Lironeca redmanni | | 3 | 0 | 1 | 0.4 |
| Squilla spp. | mantis shrimps | 3 | 0 | 2 | 0.7 |
| Scyllaridae | slipper lobsters | 3 | 0 | 1 | 0.4 |
| Portunidae | swimming crabs | 3 | 0 | 1 | 0.4 |
| Penaeidae | penaeid shrimps | 3 | 0 | 1 | 0.4 |
| Porcellana sayana | spotted porcelain crab | 2 | 0 | 1 | 0.4 |
| Paguristes sericeus | blue-eyed hermit | 2 | 0 | 1 | 0.4 |
| Calappa | | 2 | 0 | 1 | 0.4 |
| Porcellanidae | porcelain crabs | 2 | 0 | 2 | 0.7 |
| Lysmata wurdemanni | peppermint shrimp | 2 | 0 | 1 | 0.4 |
| Paguristes hummi | left-handed hermit crabs | 1 | 0 | 1 | 0.4 |
| Danielum ixbauchac | red sea crab | 1 | 0 | 1 | 0.4 |
| Mithrax acuticornis | sharphorn clinging crab | 1 | 0 | 1 | 0.4 |
| Plagusia | | 1 | 0 | 1 | 0.4 |
| Pachycheles ackleianus | red-reef porcelain crab | 1 | 0 | 1 | 0.4 |
| Acanthilia intermedia | granulose purse crab | 1 | 0 | 1 | 0.4 |
| Parthenope serrata | sawtooth elbow crab | 1 | 0 | 1 | 0.4 |
| Osachila semilevis | thinlip jewelbox crab | 1 | 0.1 | 1 | 0.4 |
| Arenaeus cribrarius | speckled swimming crab | 1 | 0 | 1 | 0.4 |
| Raninoides spp. | frog crabs | 1 | 0 | 1 | 0.4 |
| Menippe adina | Gulf stone crab | 1 | 0 | 1 | 0.4 |
| Leiolambrus nitidus | white elbow crab | 1 | 0 | 1 | 0.4 |
| Others | | | | | |
| Amusium papyraceum | paper scallop | 5330 | 69.2 | 49 | 17.5 |
| Loligo plei | arrow squid | 1250 | 19.8 | 89 | 31.8 |
| Lolliguncula brevis | Atlantic brief squid | 1060 | 6.7 | 69 | 24.6 |
| Loligo pealeii | longfin squid | 463 | 13.3 | 50 | 17.9 |

Table 3. Species composition list (continued)

| GENUS/SPECIES | COMMON NAME | TOTAL NUMBER CAUGHT | TOTAL WEIGHT CAUGHT (KG) | NUMBER OF TOWS WHERE CAUGHT | % FREQUENCY OCCURRENCE |
|---|---|---|---|---|---|
| Nassarius acutus | sharp nassa | 158 | 0 | 3 | 1.1 |
| Agriopoma texasianum | Texas venus | 150 | 3.2 | 2 | 0.7 |
| Pitar cordatus | Schwengel's pitar | 143 | 3.2 | 17 | 6.1 |
| Anadara baughmani | Baughman's ark | 139 | 1.9 | 10 | 3.6 |
| Polystira albida | white giant turris | 135 | 1 | 8 | 2.9 |
| Anadara ovalis | blood ark | 101 | 0.1 | 15 | 5.4 |
| Macoma brevifrons | short macoma | 45 | 0.3 | 4 | 1.4 |
| Loligo spp. | squids | 29 | 0.7 | 8 | 2.9 |
| Cantharus cancellarius | cancellate cantharus | 21 | 0.1 | 10 | 3.6 |
| Noetia ponderosa | ponderous ark | 16 | 0.3 | 2 | 0.7 |
| Neverita | | 15 | 0.1 | 10 | 3.6 |
| Stramonita haemastoma | rocksnail | 12 | 0 | 2 | 0.7 |
| Lirophora clenchi | Clench venus | 11 | 0.1 | 5 | 1.8 |
| Sconsia striata | royal bonnet | 10 | 0.2 | 6 | 2.1 |
| Tonna galea | giant tun | 10 | 1.1 | 3 | 1.1 |
| Aequipecten muscosus | rough scallop | 9 | 0 | 4 | 1.4 |
| Conus | cones | 7 | 0.2 | 2 | 0.7 |
| Anadara floridana | cut-ribbed ark | 7 | 0 | 1 | 0.4 |
| Pelecypoda | | 5 | 0.5 | 1 | 0.4 |
| Laevicardium laevigatum | egg cockle | 5 | 0.3 | 2 | 0.7 |
| Octopus vulgaris | common Atlantic octopus | 5 | 0.5 | 3 | 1.1 |
| Neverita duplicata | shark eye | 5 | 0 | 3 | 1.1 |
| Distorsio clathrata | Atlantic distorsio | 4 | 0 | 3 | 1.1 |
| Argopecten gibbus | calico scallop | 4 | 0.1 | 2 | 0.7 |
| Ostrea equestris | crested oyster | 3 | 0.1 | 1 | 0.4 |
| Octopus joubini | Atlantic pygmy octopus | 3 | 0 | 2 | 0.7 |
| Busycon sinistrum | lightning whelk | 3 | 0.1 | 3 | 1.1 |
| Atrina seminuda | half-naked penshell | 3 | 1.3 | 1 | 0.4 |
| Argopecten irradians | bay scallop | 3 | 0 | 1 | 0.4 |
| Solenidae | | 2 | 0 | 1 | 0.4 |
| Nudibranchia | nudibranchs | 2 | 0 | 1 | 0.4 |

Table 3. Species composition list (continued)

| GENUS/SPECIES | COMMON NAME | TOTAL NUMBER CAUGHT | TOTAL WEIGHT CAUGHT (KG) | NUMBER OF TOWS WHERE CAUGHT | % FREQUENCY OCCURRENCE |
|---|---|---|---|---|---|
| Busycon plagosus | | 2 | 0.1 | 2 | 0.7 |
| Macoma pulleyi | delta macoma | 2 | 0 | 1 | 0.4 |
| Corillidae | | 2 | 40.6 | 2 | 0.7 |
| Fusinus | | 1 | 0 | 1 | 0.4 |
| Nemocardium transversum | transverse micro-cockle | 1 | 0 | 1 | 0.4 |
| Fasciolaria lilium | banded tulip | 1 | 0 | 1 | 0.4 |
| Strombus gigas | queen conch | 1 | 4.6 | 1 | 0.4 |
| Abralia redfieldi | | 1 | 0 | 1 | 0.4 |
| Semirossia equalis | greater shining bobtail | 1 | 0 | 1 | 0.4 |
| Hexaplex fulvescens | giant eastern murex | 1 | 0 | 1 | 0.4 |
| Dinocardium robustum | Atlantic giant-cockle | 1 | 0 | 1 | 0.4 |
| Fasciolaria tulipa | true tulip | 1 | 0 | 1 | 0.4 |
| Rangia flexuosa | brown rangia | 1 | 0 | 1 | 0.4 |
| Gastropoda | snails | 1 | 0 | 1 | 0.4 |
| Stramonita | rocksnails | 1 | 0 | 1 | 0.4 |
| Cypraea cervus | atlantic deer cowrie | 1 | 0 | 1 | 0.4 |
| Pectinidae | bivalves | 1 | 0 | 1 | 0.4 |

Table 4. 2012 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 |
|---|---|---|---|---|
| Finfishes | | | | |
| Rhizoprionodon terraenovae | Atlantic sharpnose shark | 2298 | 2124 | 6501.7 |
| Mustelus canis | dusky smooth-hound | 490 | 479 | 2699.15 |
| Carcharhinus limbatus | blacktip shark | 386 | 294 | 3691.75 |
| Lutjanus campechanus | red snapper | 348 | 312 | 1297.5 |
| Bagre marinus | gafftopsail catfish | 221 | 204 | 267.3 |
| Ophichthus rex | king snake eel | 191 | 182 | 1157 |
| Carcharhinus brevipinna | spinner shark | 128 | 111 | 1033.61 |
| Sciaenops ocellatus | red drum | 98 | 87 | 730.8 |
| Carcharhinus leucas | bull shark | 94 | 26 | 286.39 |
| Carcharhinus acronotus | blacknose shark | 54 | 52 | 379.7 |
| Arius felis | hardhead catfish | 38 | 34 | 26.95 |
| Carcharhinus plumbeus | sandbar shark | 34 | 34 | 273.7 |
| Carcharhinus isodon | finetooth shark | 29 | 28 | 304.4 |
| Sphyrna lewini | scalloped hammerhead | 27 | 17 | 204 |
| Dasyatis americana | southern stingray | 25 | 9 | 81.74 |
| Carcharhinus falciformis | silky shark | 18 | 17 | 108.3 |
| Epinephelus flavolimbatus | yellowedge grouper | 17 | 17 | 115.3 |
| Brotula barbatum | bearded brotula | 10 | 10 | 45.5 |
| Galeocerdo cuvier | tiger shark | 9 | 3 | 19.8 |
| Echeneis naucrates | sharksucker | 9 | 8 | 11 |
| Sphyrna mokarran | great hammerhead | 7 | 1 | 0 |
| Pogonias cromis | black drum | 5 | 4 | 45 |
| Rhizoprionodon porosus | Caribbean sharpnose shark | 4 | 4 | 14.4 |
| Unid.fish | | 4 | 0 | |
| Euthynnus alletteratus | false albacore | 4 | 4 | 14.45 |
| Rachycentron canadum | cobia | 4 | 4 | 65 |
| Ginglymostoma cirratum | nurse shark | 4 | 0 | |
| Trichiurus lepturus | Atlantic cutlassfish | 4 | 0 | |

Table 4. 2012 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 |
|---|---|---|---|---|
| Rhinoptera bonasus | cownose ray | 4 | 2 | 20.96 |
| Manta birostris | Atlantic manta | 3 | 1 | 18 |
| Carcharhinus | gray sharks | 3 | 0 | |
| Gymnothorax saxicola | honeycomb moray | 3 | 3 | 4.1 |
| Carcharhinidae | requiem sharks | 3 | 0 | |
| Seriola dumerili | greater amberjack | 3 | 3 | 27.1 |
| Caranx hippos | crevalle jack | 3 | 3 | 31.8 |
| Scomberomorus cavalla | king mackerel | 2 | 1 | 2.2 |
| Dasyatis sabina | Atlantic stingray | 2 | 2 | 6.7 |
| Centropristis philadelphicus | Rock Sea bass | 2 | 2 | 0.45 |
| Cynoscion arenarius | sand seatrout | 2 | 2 | 0.55 |
| Raja eglanteria | clearnose skate | 1 | 1 | 1.2 |
| Scomberomorus maculatus | Atlantic Spanish mackerel | 1 | 1 | 1.2 |
| Unid other | | 1 | 0 | |
| Lopholatilus chamaeleonticeps | blue tilefish | 1 | 1 | 5.7 |
| Lutjanus synagris | lane snapper | 1 | 1 | 2 |
| Epinephelus nigritus | warsaw grouper | 1 | 1 | 14.1 |
| Sphyrna tiburo | bonnethead | 1 | 1 | 8 |
| Unid other | | 1 | 0 | |
| Neomerinthe hemingwayi | spinycheek scorpionfish | 1 | 1 | 1 |
| Dasyatis centroura | clam cracker | 1 | 1 | 19 |

Table 5. 2012 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 |
|---|---|---|---|---|
| Finfishes | | | | |
| Lutjanus campechanus | red snapper | 1199 | 1192 | 2498.739 |
| Pomatomus saltatrix | bluefish | 16 | 15 | 16.92 |
| Balistes capriscus | gray triggerfish | 15 | 14 | 26.07 |
| Carcharhinus falciformis | silky shark | 15 | 14 | 47.5 |
| Seriola rivoliana | almaco jack | 13 | 13 | 8.34 |
| Rhizoprionodon terraenovae | Atlantic sharpnose shark | 11 | 6 | 20.7 |
| Rhomboplites aurorubens | vermilion snapper | 7 | 7 | 8.24 |
| Pagrus pagrus | red porgy | 5 | 5 | 3.9 |
| Caranx crysos | blue runner | 5 | 5 | 4 |
| Sciaenops ocellatus | red drum | 4 | 4 | 14.25 |
| Cynoscion arenarius | sand seatrout | 4 | 4 | 2.15 |
| Mycteroperca phenax | scamp | 4 | 4 | 7.25 |
| Euthynnus alletteratus | false albacore | 3 | 1 | 3.85 |
| Echeneis naucrates | sharksucker | 3 | 3 | 3.65 |
| Epinephelus morio | red grouper | 2 | 2 | 9.2 |
| Lutjanus synagris | lane snapper | 2 | 2 | 1.78 |
| Lagodon rhomboides | pinfish | 2 | 2 | 1.3 |
| Haemulon aurolineatum | tomtate | 2 | 2 | 0.5 |
| Seriola dumerili | greater amberjack | 1 | 1 | 9.5 |
| Epinephelus niveatus | snowy grouper | 1 | 1 | 1.2 |
| Canthidermis sufflamen | ocean triggerfish | 1 | 1 | 1.33 |
| Carcharhinus limbatus | blacktip shark | 1 | 1 | 4.5 |
| Decapterus punctatus | round scad | 1 | 1 | 0.05 |
| Micropogonias undulatus | Atlantic croaker | 1 | 1 | 0.5 |
| Carcharhinus brevipinna | spinner shark | 1 | 0 | |
| Centropristis philadelphicus | Rock Sea bass | 1 | 1 | 0.1 |
| Centropristis ocyura | | 1 | 1 | 0.25 |

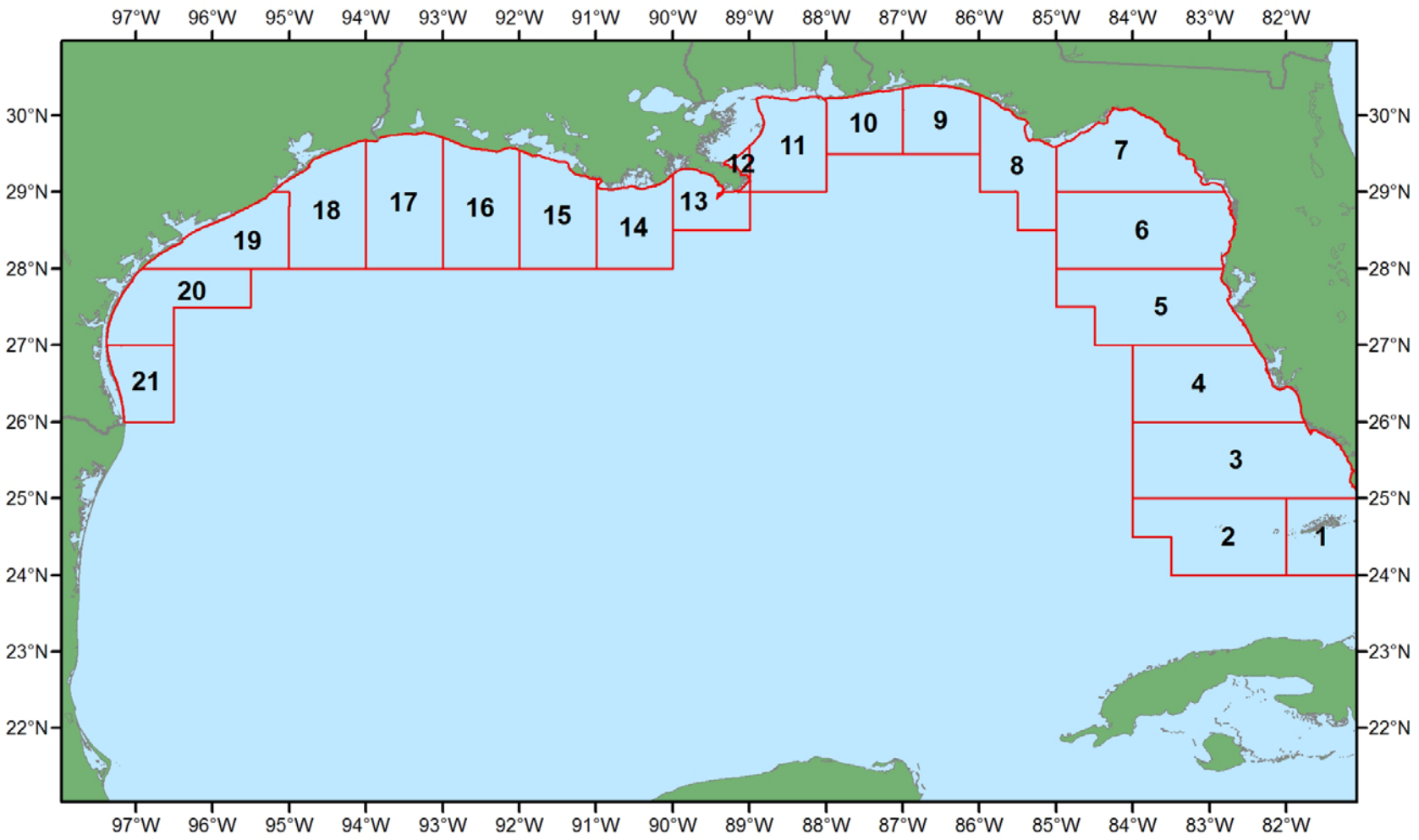


Figure 1. Statistical zones for shrimp in the Gulf of Mexico.

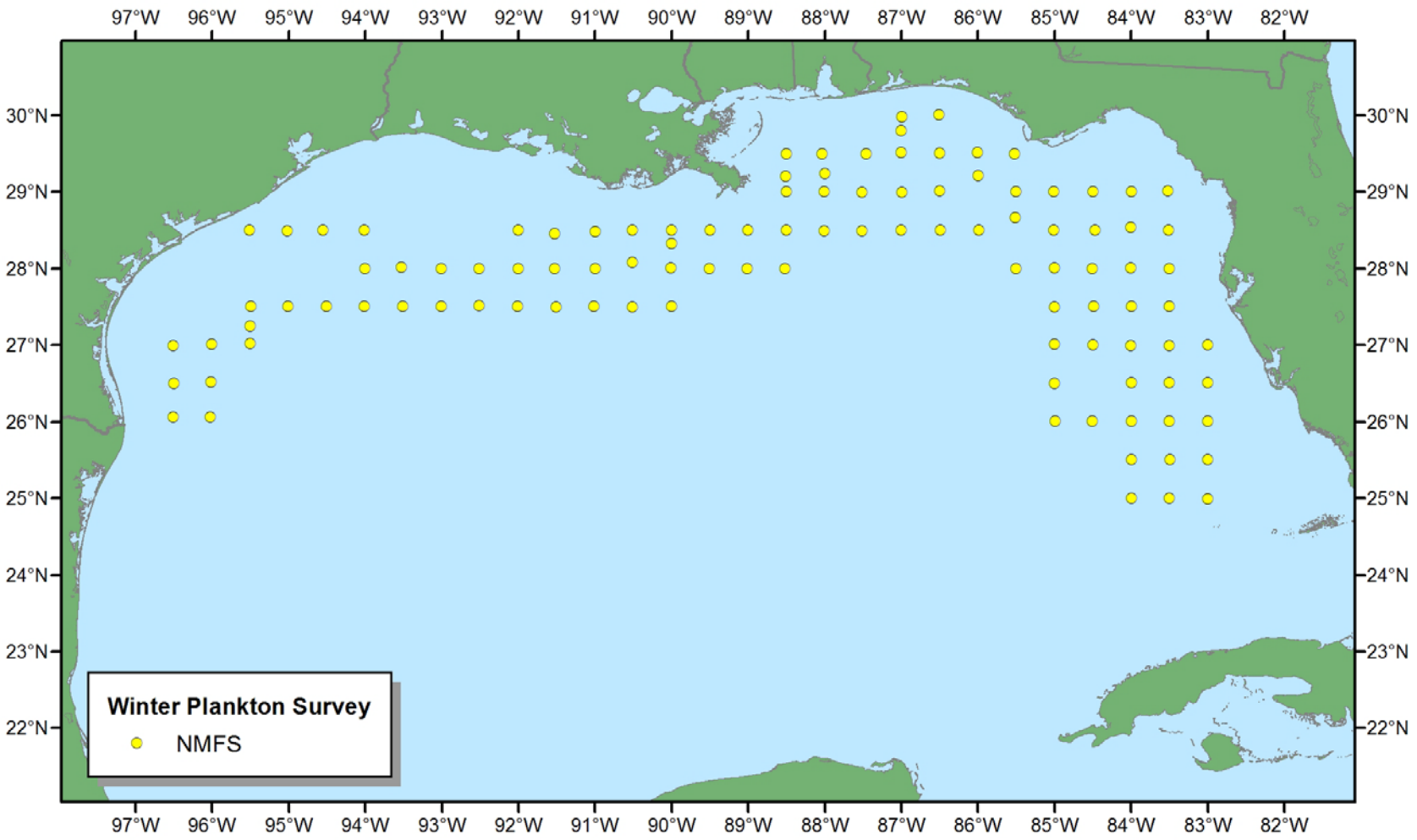


Figure 2. Locations of plankton and environmental stations during the 2012 Winter Plankton Survey.

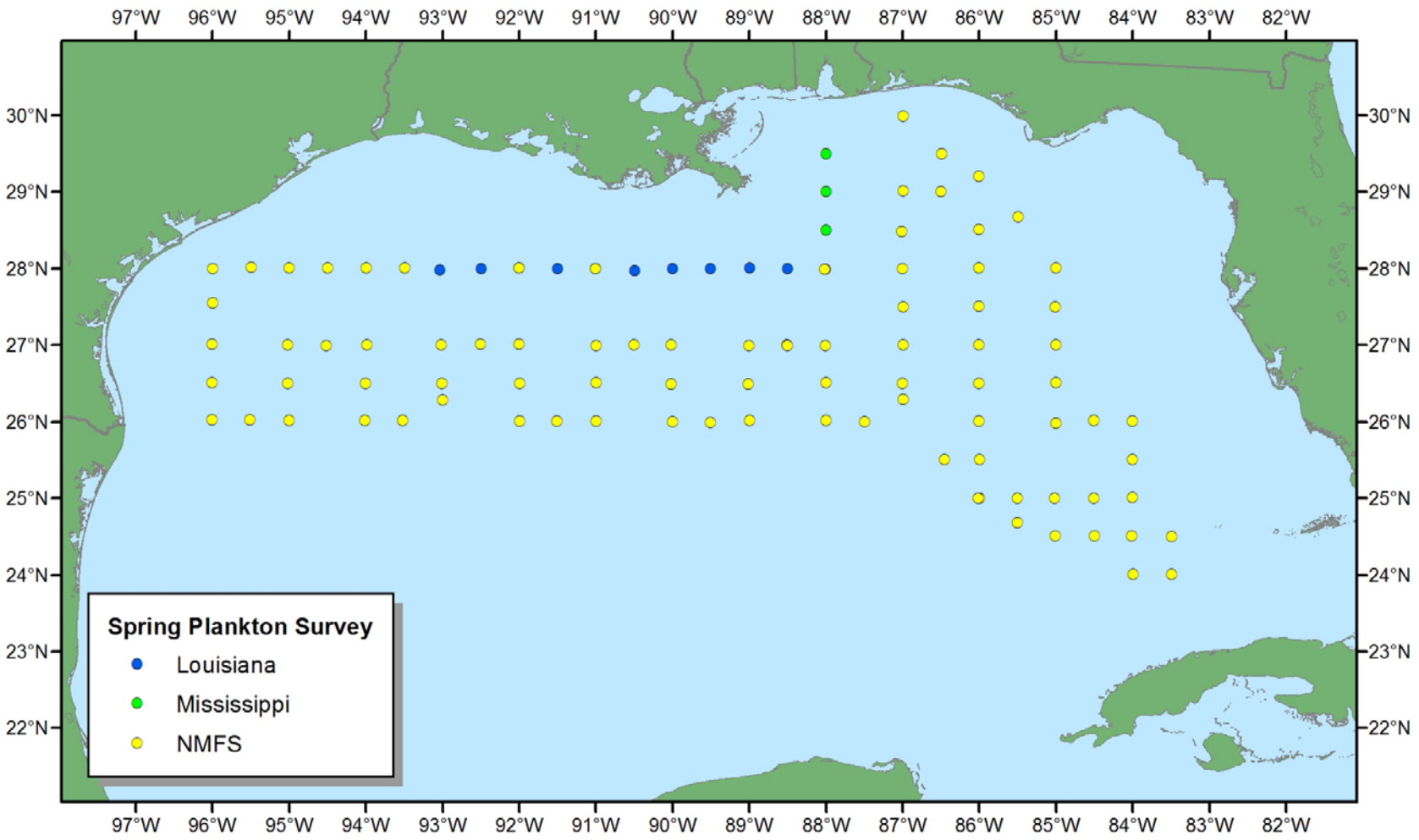


Figure 3. Locations of plankton and environmental stations during the 2012 Spring Plankton Survey.

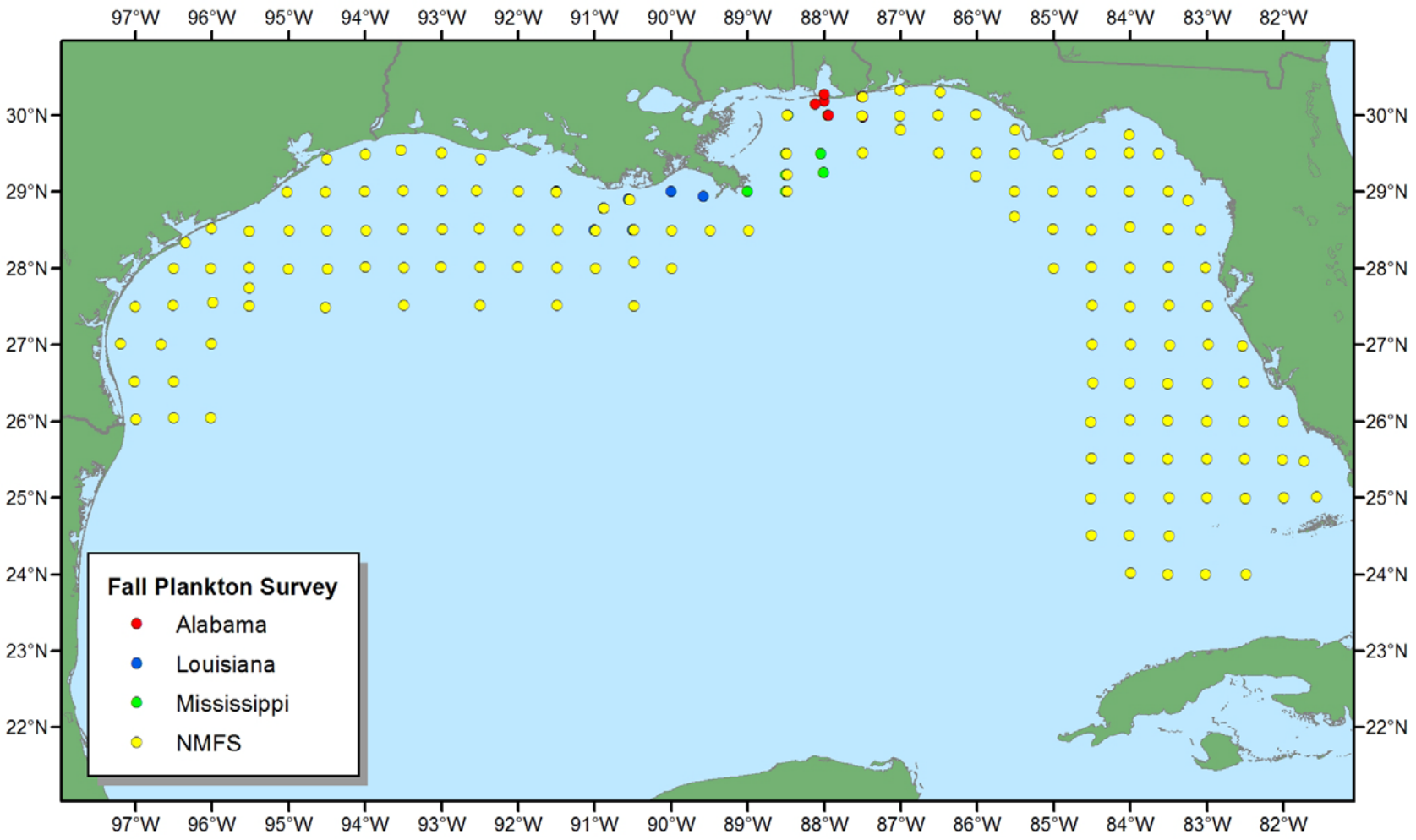


Figure 4. Locations of stations during the 2012 Fall Plankton Survey.

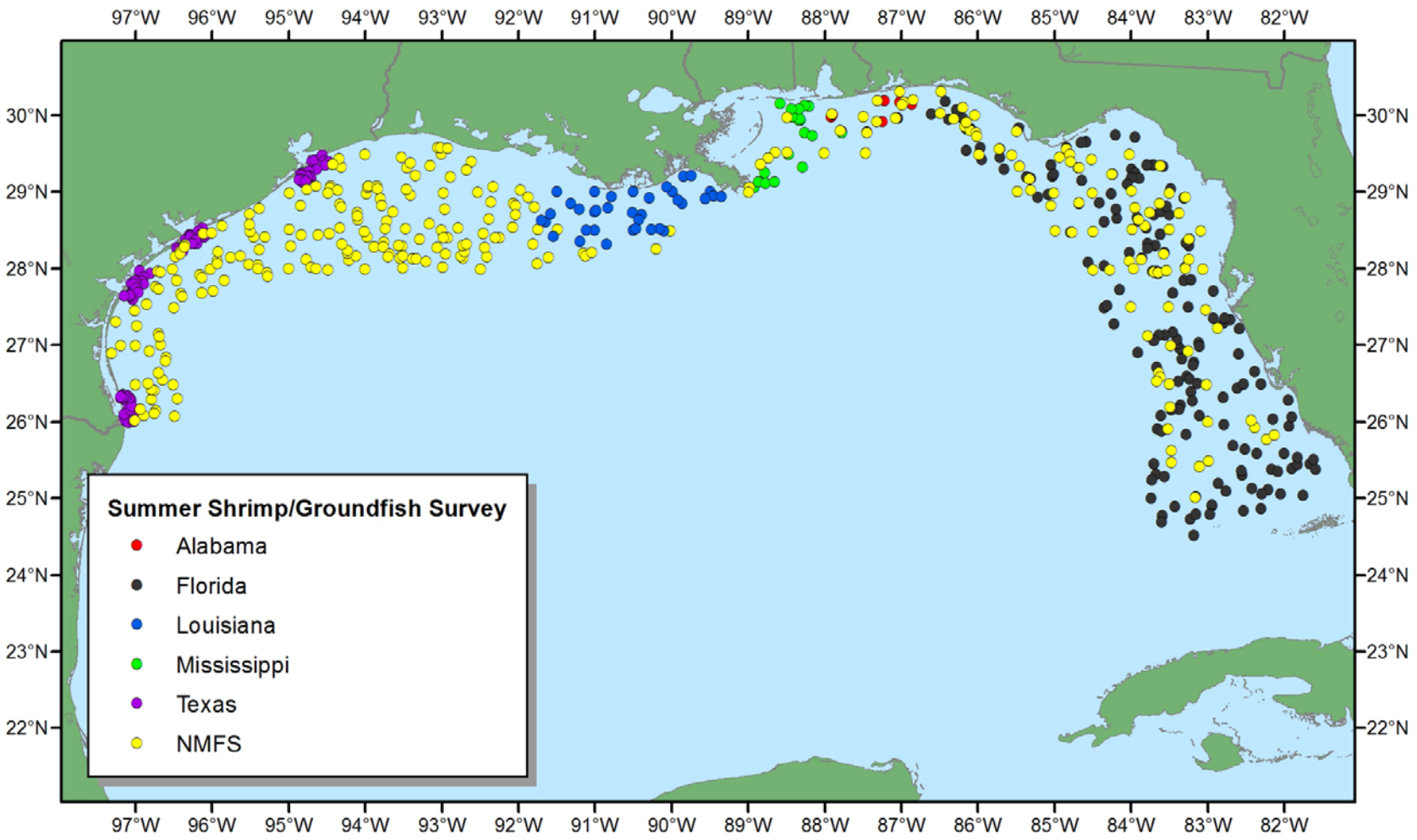


Figure 5. Locations of stations during the 2012 Summer Shrimp/Groundfish Survey.

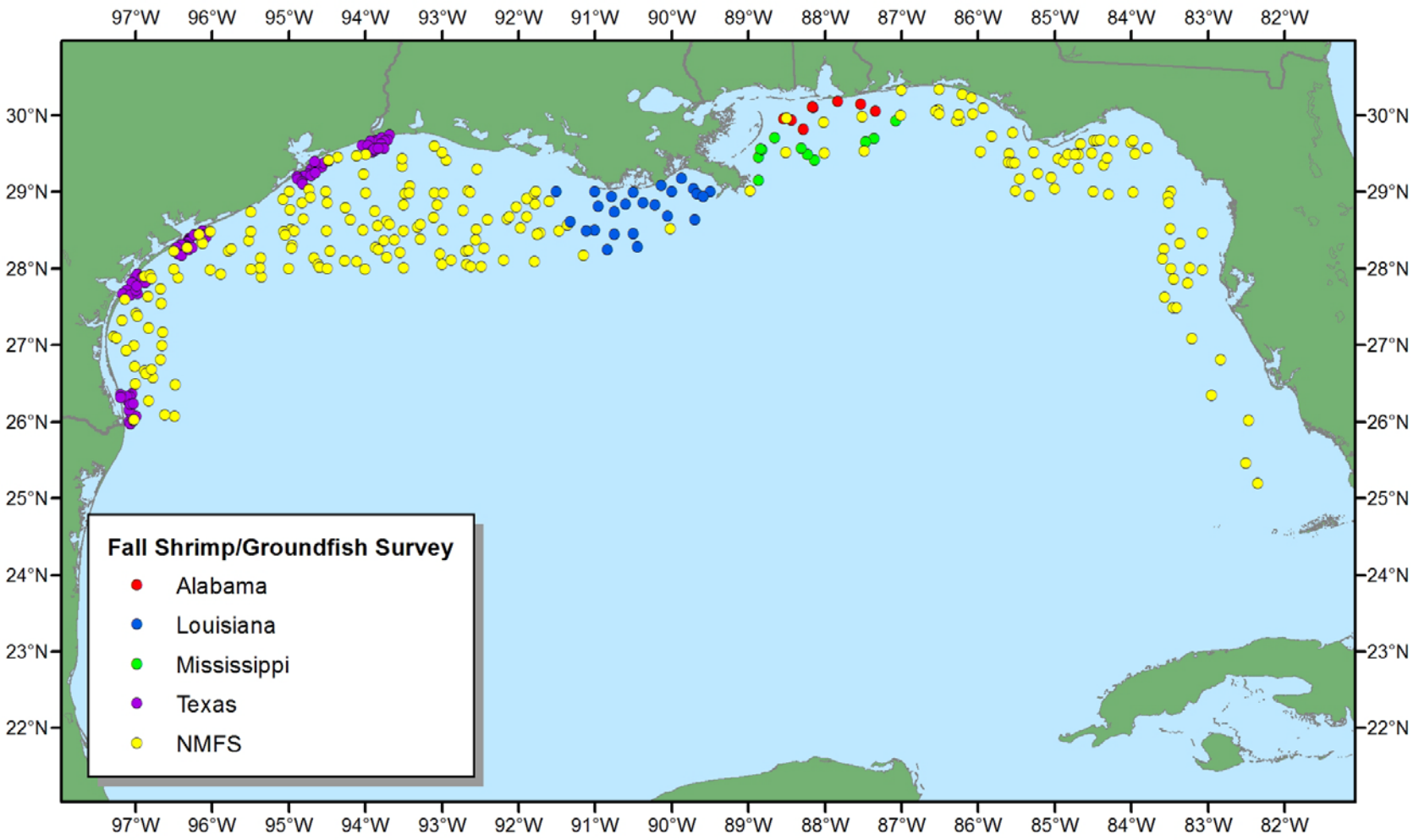


Figure 6. Locations of stations during the 2012 Fall Shrimp/Groundfish Survey.

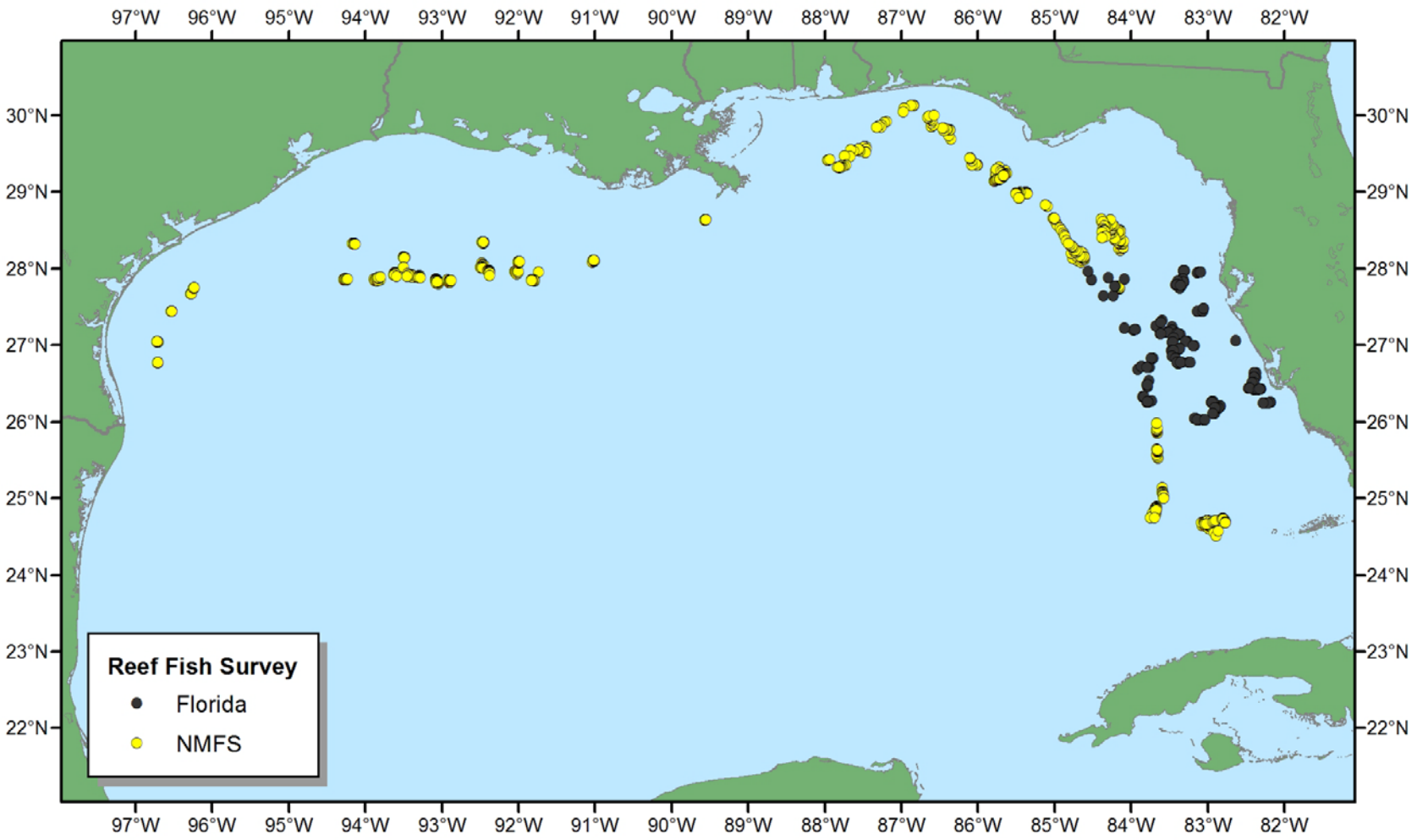


Figure 7. Locations of stations during the 2012 Reef Fish Survey.

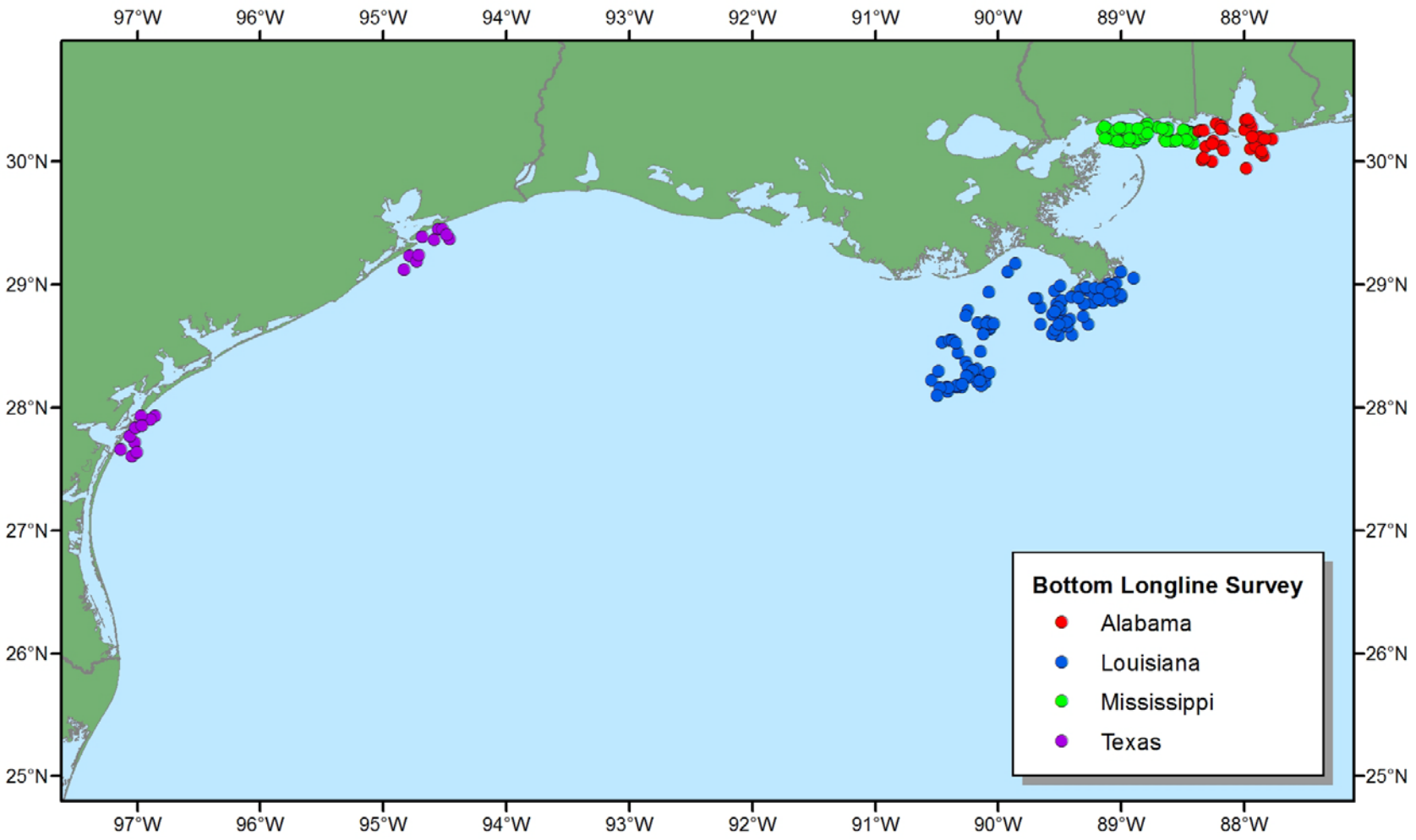


Figure 8. Locations of stations during the 2012 Inshore Bottom Longline Survey.

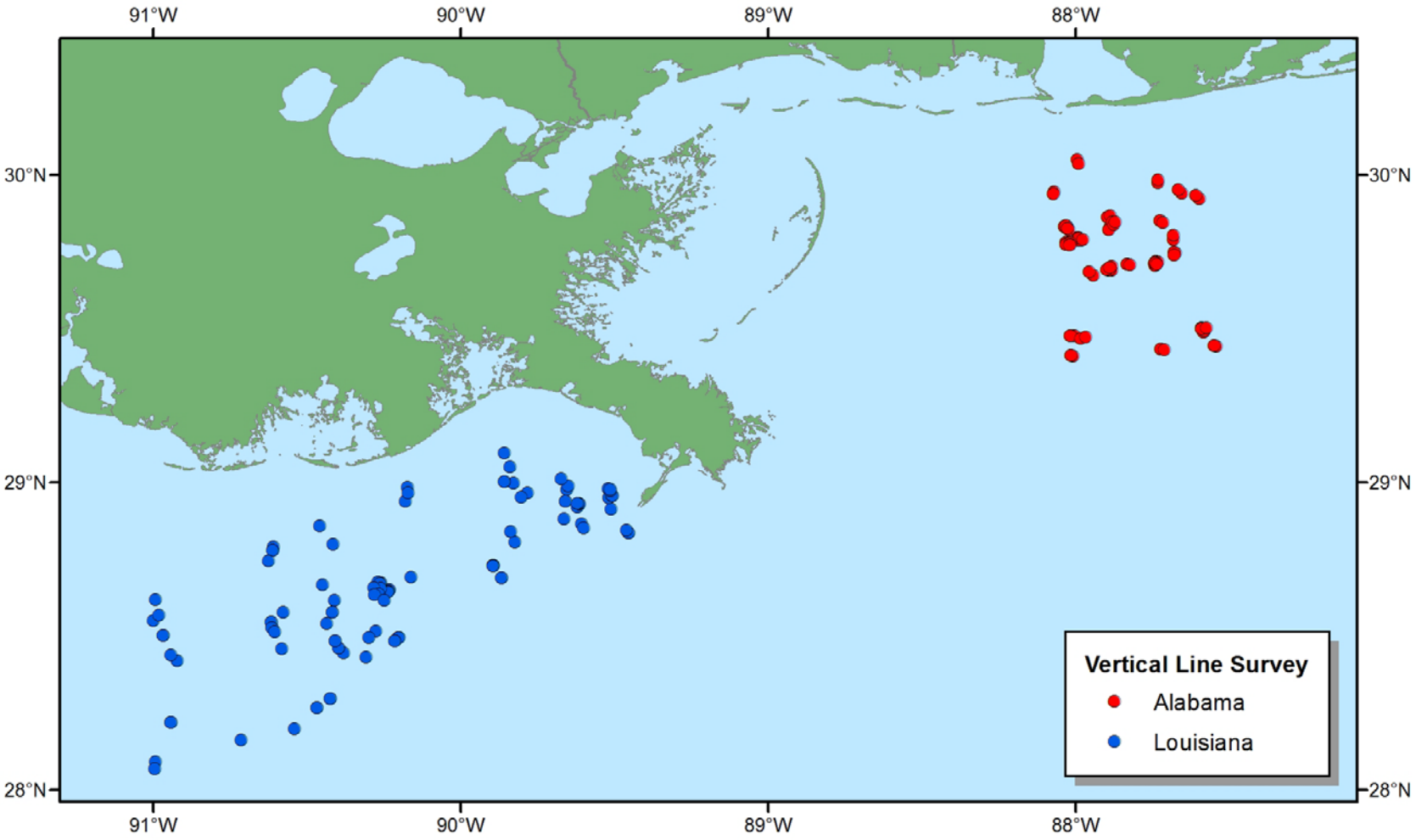


Figure 9. Locations of stations during the 2012 Vertical Line Survey.