

#16531

Progress Report—C13401
Biscayne Bay Coastal and Nearshore Community Baseline Study to Develop
Biological Performance Measures
Quarters 8 and 9
April 1-September 30, 2004

Part I

Faunal Density and Community Composition of the Nearshore Zone

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Part II

Spatial and Temporal Patterns in the Coastal Creek/Open Wetland Flats
Community

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Summary of Work Completed

Part I. Faunal Density and Community Composition of the Nearshore Zone

Part I, Element A. Throw-trap sampling in the nearshore zone.

Throw-trap field sampling, sample processing, data entry, and data summarization have been the principal project activities during the ninth sampling quarter. Routine bi-monthly sampling with the throw-trap is on schedule. Sorting and identification of samples has been completed through the May 2004 collection. Laboratory processing of the June 2004 collection is underway near completion. All data thru May 2004 have been entered into the project database.

Figure 1 shows the study site and sampling zones. Figure 2 illustrates salinity and temperature conditions observed during each bi-monthly collection through June 2004. Figure 3 shows the mean relative abundance of fish, crabs, caridean shrimp, and pink shrimp, observed between October 2002 and June 2004. Density (mean catch per square meter by zone and species) for the February, April, and June collections have been added (as Tables 9_11 of Appendix A). Appendix A provides summary statistics of bi-monthly throw trap collections from October 2002 through May 2004. Figure 4 shows the relative abundance of fish, pink shrimp, caridean shrimp, and crabs among zones over the sampling period. Figure 5 shows density of the four taxa over time. Densities in the nearshore zone south of Black Creek Jetty (1S) were comparable to, or greater than, densities in the nearshore zone north of the jetty (2N). Zone 3S has consistently low densities of most fauna, probably because it is characterized by hard bottom (shallow sediment depths) and very sparse vegetation. Generally, throughout the study, the rainwater killifish, *Lucania parva*, and the caridean shrimps, *Thor manningi* and *Hippolyte zostericola*, were numerically dominant in western nearshore South Biscayne Bay (Appendix A). The spotted dragonet, *Diplogrammus pauciradiatus*, is most abundant over hardbottom habitats (3S). The pink shrimp, *Farfantepenaeus duorarum*, follows the same pattern of abundance among zones as the dominant species and was substantially more abundant from August 2003 through May 2004 than during the previous sampling period (October 2002 through June 2003).

Recent summarization and analysis effort has been directed at developing techniques for representing project data spatially using ArcGIS. The distribution of selected animal, habitat and environmental data from our October 2003 is displayed in Figures 6 through 14. A base map of southern Biscayne Bay has been developed with the assistance of the Everglades National Park GIS Group. A map of benthic communities in Biscayne Bay in 1992, originally developed by the Florida Marine Research Institute, provides an estimate of the distribution of seagrass and hardbottom habitat in the study area for reference. The distributions of turtle grass, shoal grass and *Laurencia* spp. (drift algae) correspond reasonably well with the 1992 benthic map (Figures 6-8, respectively). Similarly, measures of sediment depth associated with throw-trap collections correspond well with seagrass/hardbottom habitat (Figure 9). The pattern of surface salinities in the

study area is as expected with lowest salinities observed nearshore and south of Black Point (Figure 10). The importance of seagrass and algal habitat to epibenthic fauna in southern Biscayne Bay observed to date in this study is clearly evident in Figures 11 through 14. The rainwater killifish, the caridean shrimp, grass shrimp, and the pink shrimp are all strongly associated with vegetated bottom. In contrast, the spotted dragonet, *Diplogrammus pauciradiatus*, is a species found in shallow sediment/hardbottom habitats.

Part I, Element B. Nearshore sampling with commercial trawls and pull-nets.

Trawl-net sampling.

Sorting, measurement, and identification of fish from trawl-net samples has been completed through February 2004, the last month of trawl-net collections. Identification, measurement, and sexing of penaeid shrimp from samples from both nets have been completed through December 2003. Processing of penaeid shrimp from the February 2004 sample was interrupted in order to complete the pull-net samples. The number of shrimp collected in the trawl net in October, December, and February 2004 was very large, requiring an exceptional amount of processing time. Summary tables showing overall mean density and mean density by zone for the trawl bi-monthly data (August 2002-February 2004) are in Appendix B. Although the February pink shrimp samples have not been completed, it already is obvious that mean density of pink shrimp was substantially higher from August 2003 through February 2004 than in the previous year.

Pull-net sampling.

The purpose of pull-net sampling was to focus on the very shallow area nearest to shore that could not be sampled by the commercial trawl. This meant zones 1S, 2N, and the innermost part of 3N. The same random sampling scheme used in throw-trap and commercial trawl sampling was used except that no sampling was conducted in zone 3S, and no samples were collected beyond the 1-meter depth contour line. Sampling with the pull-net was conducted monthly with one interruption (December 2003) from July 2003, through August 2004 and also in early October 2004 (instead of September). Summer collection trips (May-July) were affected by poor weather, resulting in fewer samples collected for those months. The schedule of pull-net sampling is included as part of Appendix C. Sorting and identification of pull-net samples has been completed for all months except October 2004, and summary statistics are provided in Appendix C.

Five taxa were caught in highest number and frequency in the pull-net samples as a whole. These were rainwater killifish (*Lucania parva*), pink shrimp (*Farfantepenaeus duorarum*), silver jenny (*Eucinostomus gula*), pinfish (*Lagodon rhomboides*), and hermit crabs (*Clibonarius* sp.). These five taxa accounted for 91.15% of the total organisms caught. The rainwater killifish made up 44.5% of the catch of 8,286 organisms. Densities of these and other selected species in zone 1S are shown in Figure 15.

The preceding summary excluded carideans, which were enumerated separately. The carideans were the most numerically abundant taxa in our samples, but were not distinguished to taxa because of the handling time involved. Their total number and mean density will be recounted separately in another report.

Our working hypothesis was that densities differed north and south of the Black Creek Jetty, and the pull-net sampling allowed this comparison to be made. A corollary hypothesis was that densities would be lower in the zone of low salinity and high variability (1S) than in the zones of higher salinity and lower variation (2N and 3N). Figure 16 shows the mean density of several taxa (pink shrimp, rainwater killifish, total crabs, and total fish) in the north and south strata. Data on the north strata were missing from the May collection and the last of the two June 2004 collections, so comparisons are not possible for those dates. As Figure 16 indicates, there may be differences, but they are not as great or as consistent as anticipated. There were many months when pink shrimp densities in the southern zone were as great as, or greater than, those in the north. On the other hand, rainwater killifish densities were greater in the northern zone than in the southern zone in every month but two. Statistical analyses to test for significant differences between geographic zones will be conducted when collections are completed. Analysis of faunal densities in relation to salinity at the site and time of sampling also will be conducted when the collections are completed.

Zone 1S, the nearshore area immediately south of the Black Creek Jetty, was sampled consistently in every month and so plots of mean density in 1S provide the best view of seasonal variation in the densities of various taxa (Figure 17). Pink shrimp densities in 1S were highest in August and September of 2003 and July of 2004 and were extremely low in the summer of 2004. The density of rainwater killifish in zone 1S was greatest in April 2004. Crab density was greatest in August 2004, contrasting sharply with August 2003. Fish density reflected the dominance of rainwater killifish by following its seasonal pattern.

Part II. Spatial and Temporal Patterns in the Coastal Creek/Open Wetland Flats Community

This project has two elements. Element A involves sampling at fixed locations using a unique protocol developed specifically for coastal wetlands that periodically wet and dry and contain deeper areas (i.e., ponds or tidal creeks) where fish concentrate during the dry down. Element B involves the use of various traditional fish sampling techniques in an exploratory and general survey mode over a broad area of dysfunctional wetlands where the above protocol cannot presently be applied because they do not periodically wet and dry. Each part will be reported independently

Part II, Element A: Fixed Locations

Fish collections were made at the permanent sites of Manatee Bay (MB: N25° 16.402' W 80° 25.502'), Card Sound (CS: N25° 18.956' W 80° 22.743') and Turkey Point (TP N25° 22.400' W 80° 19.633') in eight months between September and June

2004, as per contractual specifications. The method for sampling these locations was the 9-m² drop net method described by Lorenz et al (1997). This design was developed specifically for sampling in the coastal creek/open wetland flats type of habitat and collects small demersal fish effectively and with very limited bias (Lorenz et al. 1997). Each net surrounds an individual dwarf mangrove tree, thereby sampling both prop-root habitat and the open area between trees. Individual trees were selected so that each site has a similar array of tree sizes with roughly equivalent prop-root density sampled between sites. Each site has six nets, three in each habitat type (creek and flats). As previously reported, CS and MB were established during the first year of the project and TP was added this year. Physical data (water level, conductivity, salinity, temperature and dissolved oxygen) were collected continuously at these sites using a Hydrolab Quanta sensor. Data were collected hourly and stored on a Campbell Scientific CR510 datalogger. Data were downloaded daily to a base computer at Audubon's Tavernier Science Center using GSM cellular phone technology. Routine scheduled maintenance and calibration were performed on the hydrostations monthly from January to March. The hydrostations at CS and MB were established last year and continue to perform well.

Part II, Element B: General Survey

In a separate sampling initiative, collections were made at several sites within the coastal wetlands of western Biscayne Bay. The goal was to assess the composition of demersal fish community on these dysfunctional wetlands during periods when they are flooded. Our primary method was to use a 1m² throw-trap. In other wetland habitats in southern Florida, this method has been demonstrated to be a reliable method for making per-unit-area estimates of fish density. Unfortunately, the method does not work as well in dwarf mangroves because the fish perceive the projectile and dart into the cover of the mangrove prop roots, thereby biasing the estimates for some species. To augment this method, minnow traps were placed at the sites overnight and collections made the following day. Although this method does not sample per unit area, it did result in the collection of some of species that were not collected using the throw trap.

Once TP was added as a third fixed location site, only two sites were scheduled to be sampled using the throw trap and minnow trap protocol (Figure 1: C1, and C2). These sites were part of the Coastal Restoration Demonstration Project sites located between Mowry and Military canals (Ross et al. 1996). Although these methods may yield some useful information, the data will not be comparable to data collected at the other sites for reasons discussed above. We attempted to sample the same experimental and control sites as the Ross and Meeder team. However, Cell 4 (Figure 1: C4) proved totally unsuitable for our activities. We therefore opted to use Cell 2 (Figure 1: C2) as our control site. Twelve throw trap samples and 18 minnow trap samples were collected at the sites in August 2004.

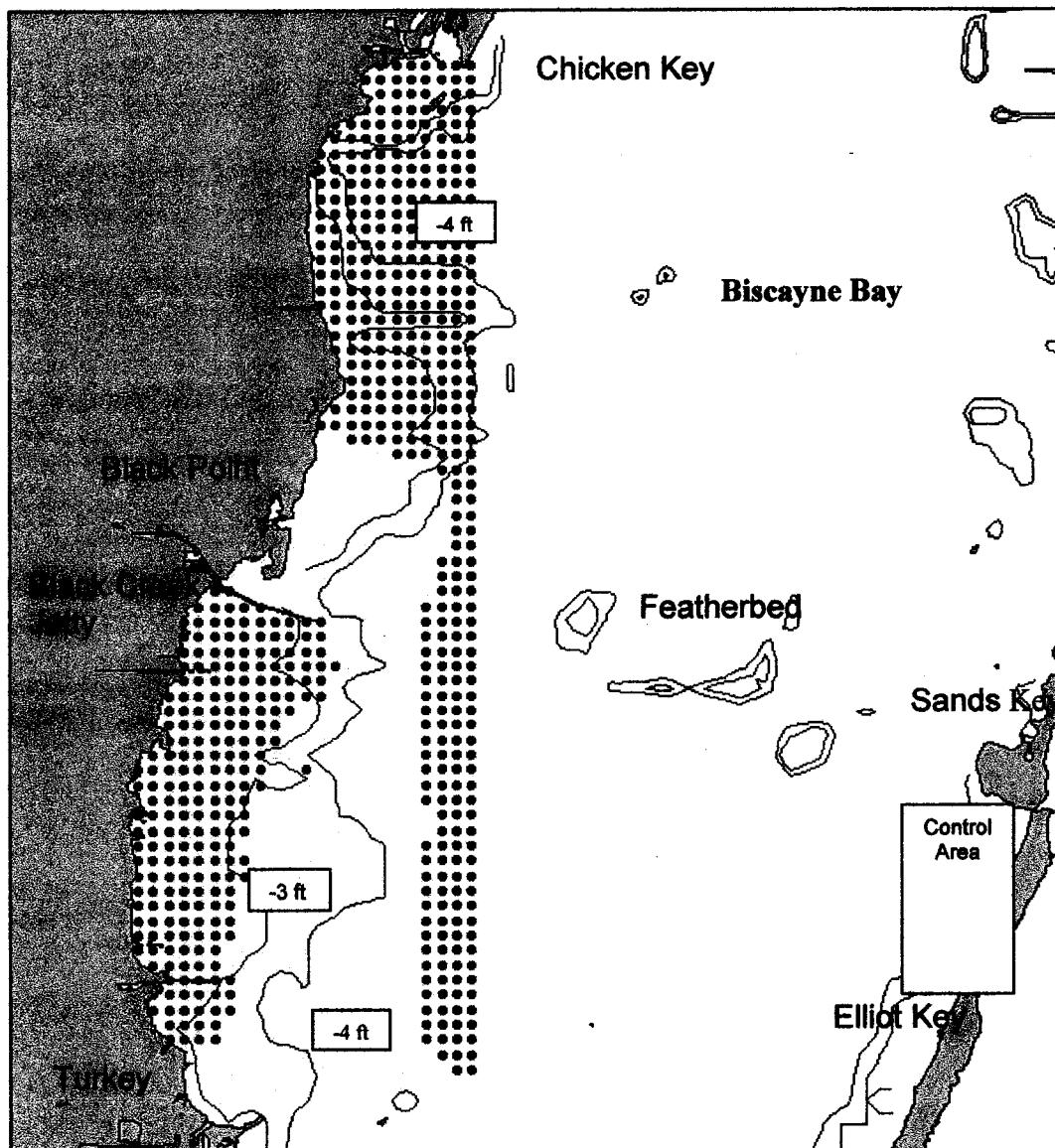
Ideally this habitat should be sampled with a block net and rotenone design as at the permanent locations, and this was our initial plan. The National Park Services requested that we develop an Environmental Assessment (EA) before they would permit the use of rotenone within Biscayne National Park. We submitted the EA to the NPS Wilderness

Committee in January, but the BNP has elected not to allow rotenone use at this time. As a result of this decision, Element B will be discontinued, and the focus will be on the three fixed sampling sites added with this Project.

Figure list

1. Map of study area showing the five sampling zones in western nearshore South Biscayne Bay.
2. Average salinity and temperature conditions observed during throw-trap sampling in the study area during each bi-monthly collection from October 2002 to June 2004.
3. Trend in abundance of fish, crabs and shrimp, including the pink shrimp, observed in throw-trap sampling from October 2002 to June 2004.
4. Relative density of fish, pink shrimp, caridean shrimp, and crabs among the five zones from October 2002 to June 2004, based on throw-trap sampling.
5. Mean density of fish, pink shrimp, caridean shrimp, and crabs among the five zones from October 2002 to June 2004, based on throw trap sampling.
6. Distribution of turtle grass standing crop (g dry wt/.01 m²) associated with October 2003 throw-trap collections in relation to 1992 benthic habitat.
7. Distribution of shoal grass standing crop (g dry wt/.01 m²) associated with October 2003 throw-trap collections in relation to 1992 benthic habitat.
8. Distribution of drift algae (*Laurenceia* spp.) standing crop (g dry wt/.01 m²) associated with October 2003 throw-trap collections in relation to 1992 benthic habitat.
9. Distribution of sediment depth (cm) associated with October 2003 throw-trap collections in relation to 1992 benthic habitat.
10. Salinity pattern in the study area in October 2003 based on measurements associated with throw-trap collections.
11. October 2003 distribution of the rainwater killifish, *Lucania parva*, in relation to benthic habitat in the study area.
12. October 2003 distribution of the pink shrimp, *Farfantepenaeus duorarum*, in relation to benthic habitat in the study area.
13. October 2003 distribution of the caridean shrimp, *Thor manningi*, in relation to benthic habitat in the study area.
14. October 2003 distribution of the spotted dragonet, *Diplogrammus pauciradiatus*, in relation to benthic habitat in the study area.
15. Mean density of selected species of fish and macroinvertebrates in zone 1S (area of lowest, most variable salinities and south of the Black Creek Jetty), by pull-net collection, July 2003-August 2004.
16. Density (no./m²) of pink shrimp, rainwater killifish, crabs, and total fish, by geographic zone, from pull-net sampling, July 2003-August 2004.
- Figure 17. Mean density of pink shrimp, rainwater killifish, crabs, and fish in zone 1S, by month, and one-standard-error bars (from pull-net sampling, July 2003-August 2004).
- Figure 18. Topographical map of coastal southeastern Florida indicating the locations of the oligohaline fish sampling sites of this project (Part II, Element A) in relation to other sampling sites where the same method is being applied. The approximate locations of Part II, Element B, sites are also indicated.

Figure 1. South Biscayne Bay study area. Salinity strata 1, 2 and 3 are depicted in red, yellow and Blue, respectively. The Black Creek Jetty divides north and south strata.



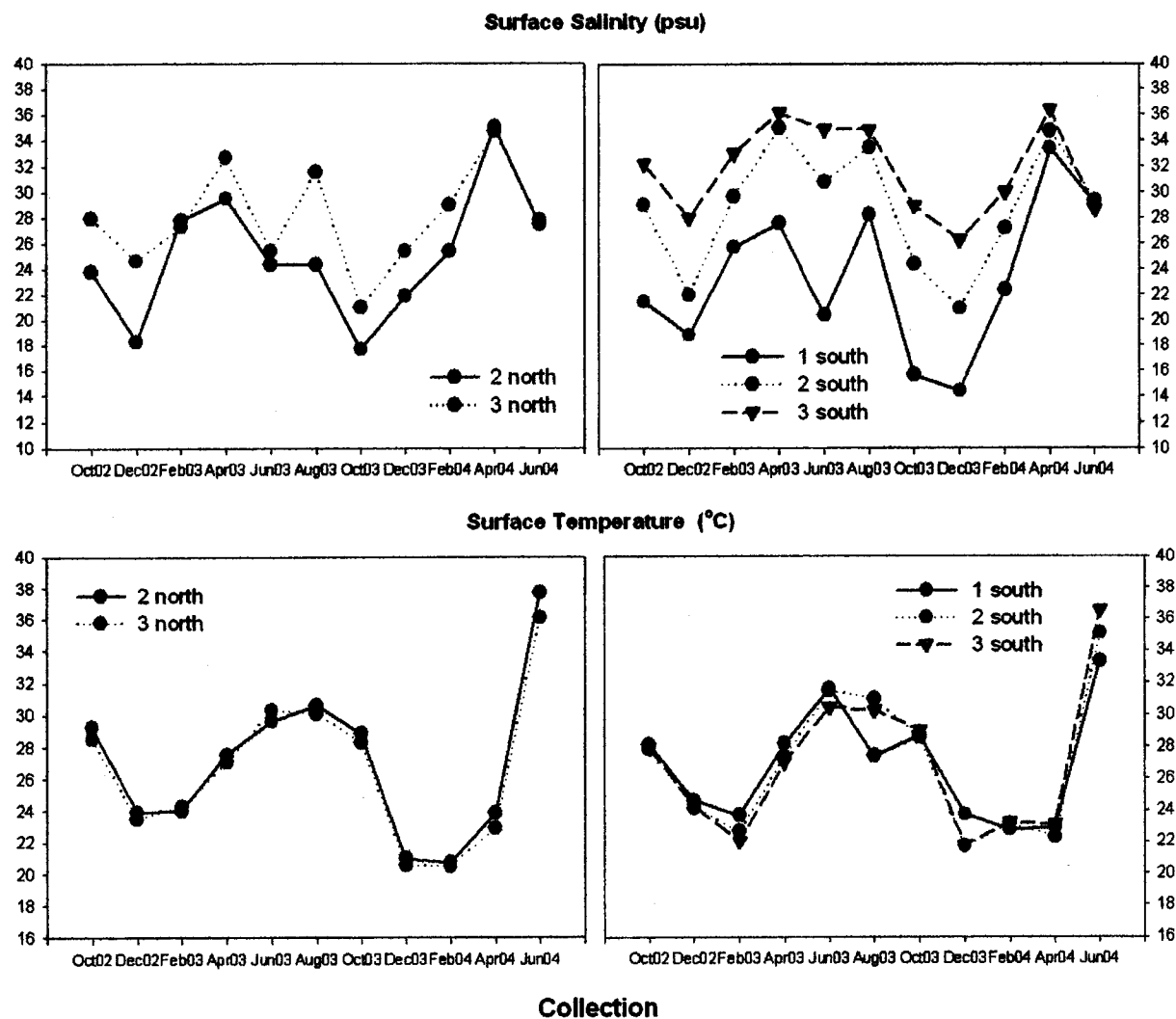


Figure 2. Average surface salinity and temperature in the five zones measured during collection periods.

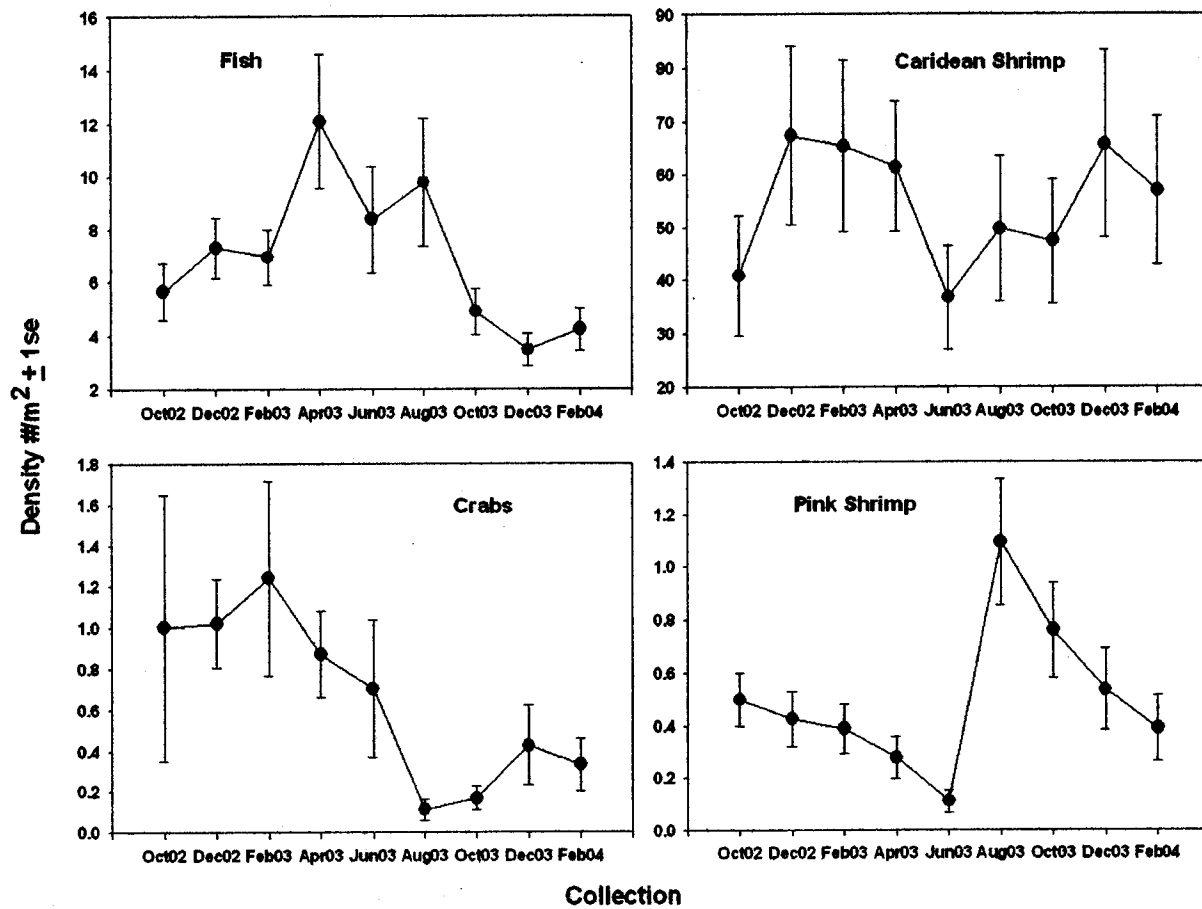


Figure 3. Trends in density of fish, crabs, and shrimp observed in throw-trap sampling from October 2002 to June 2004.

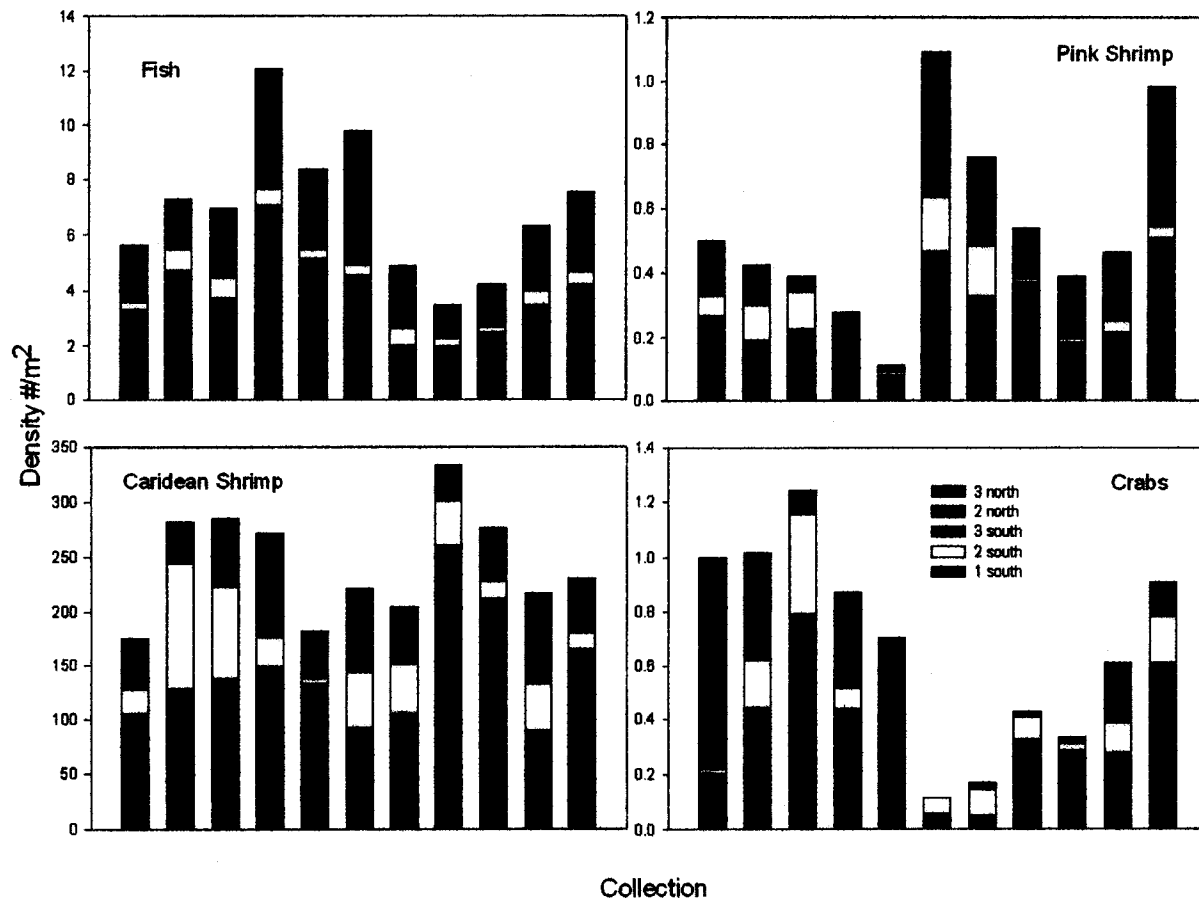


Figure 4. Relative density of fish, pink shrimp, caridean shrimp, and crabs among the five zones in throw-trap sampling from October 2002 to June 2004.

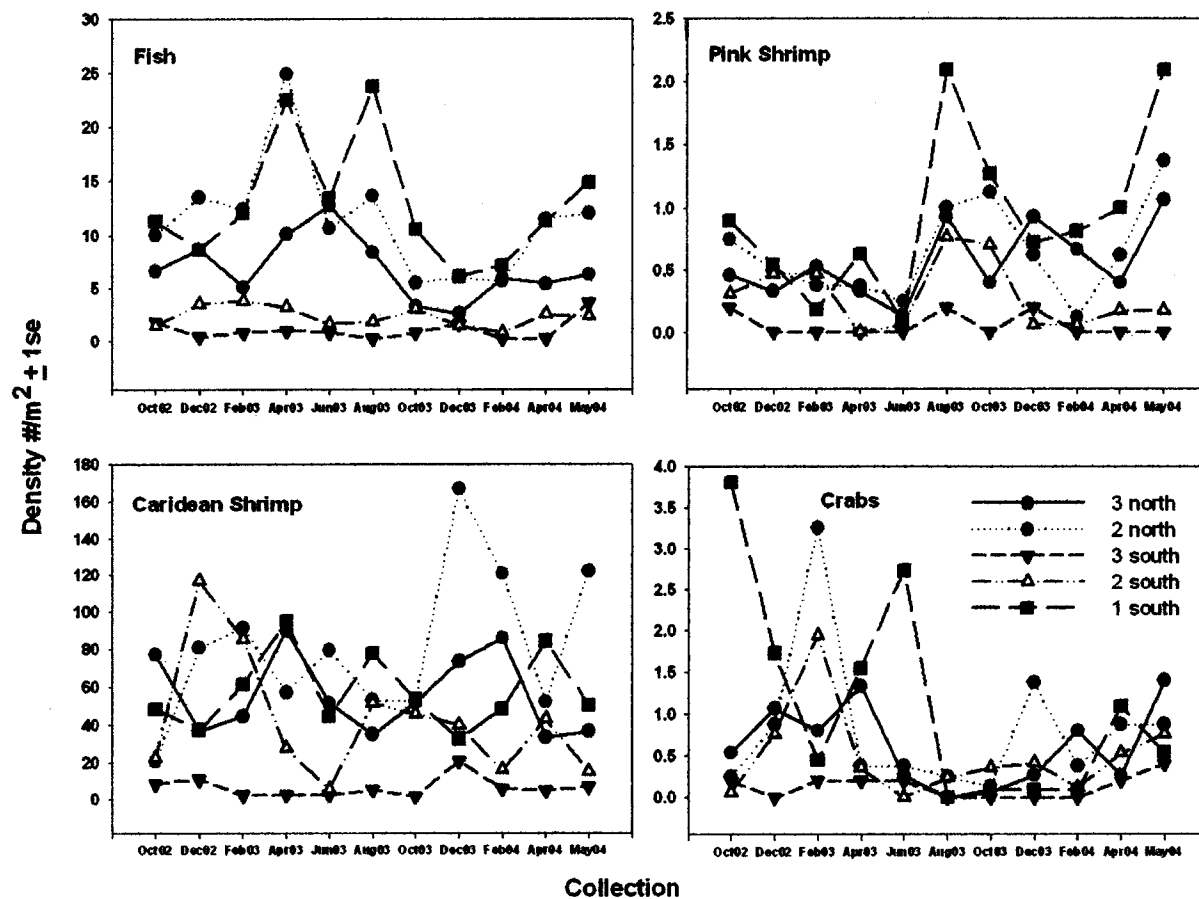
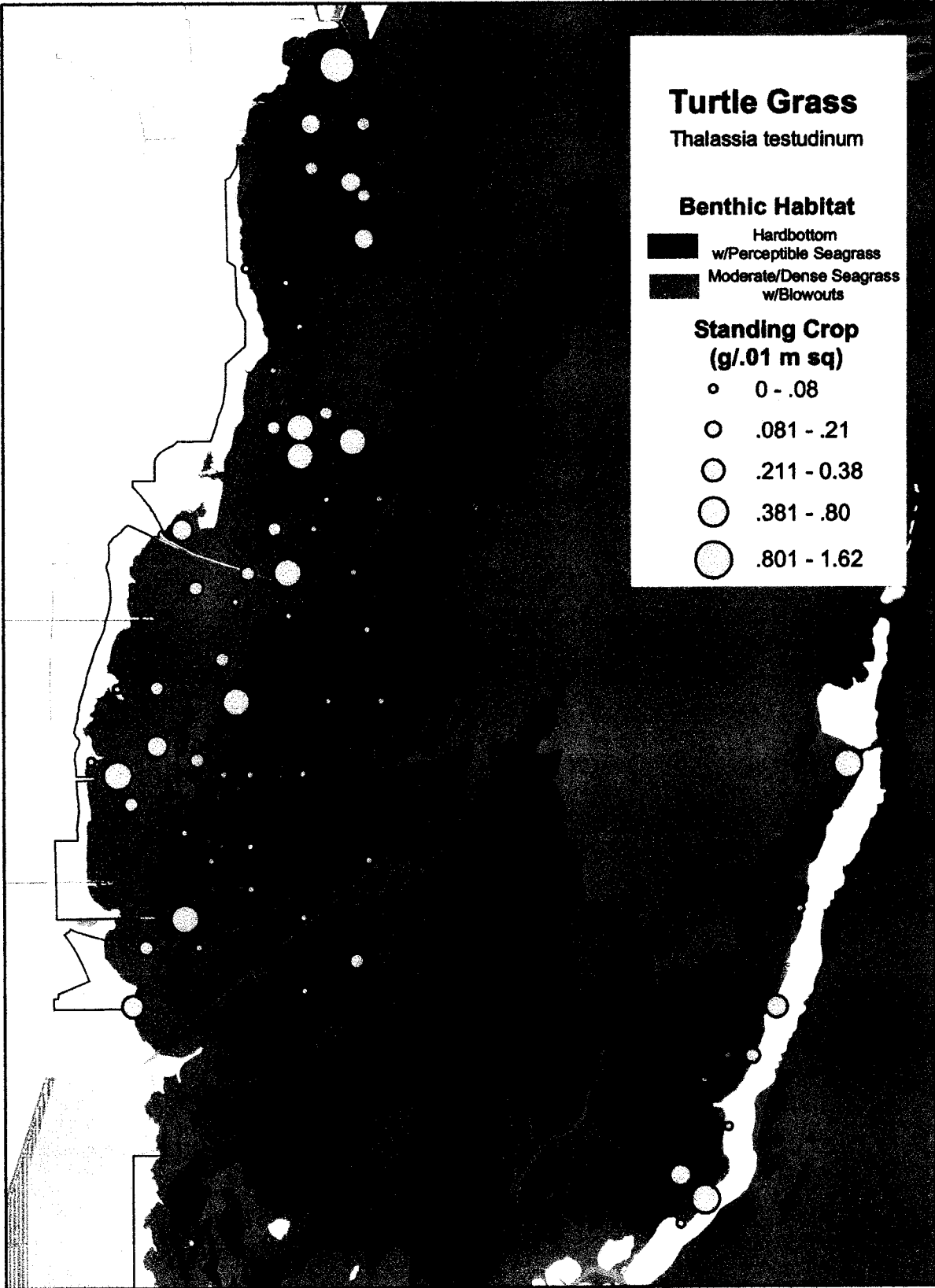
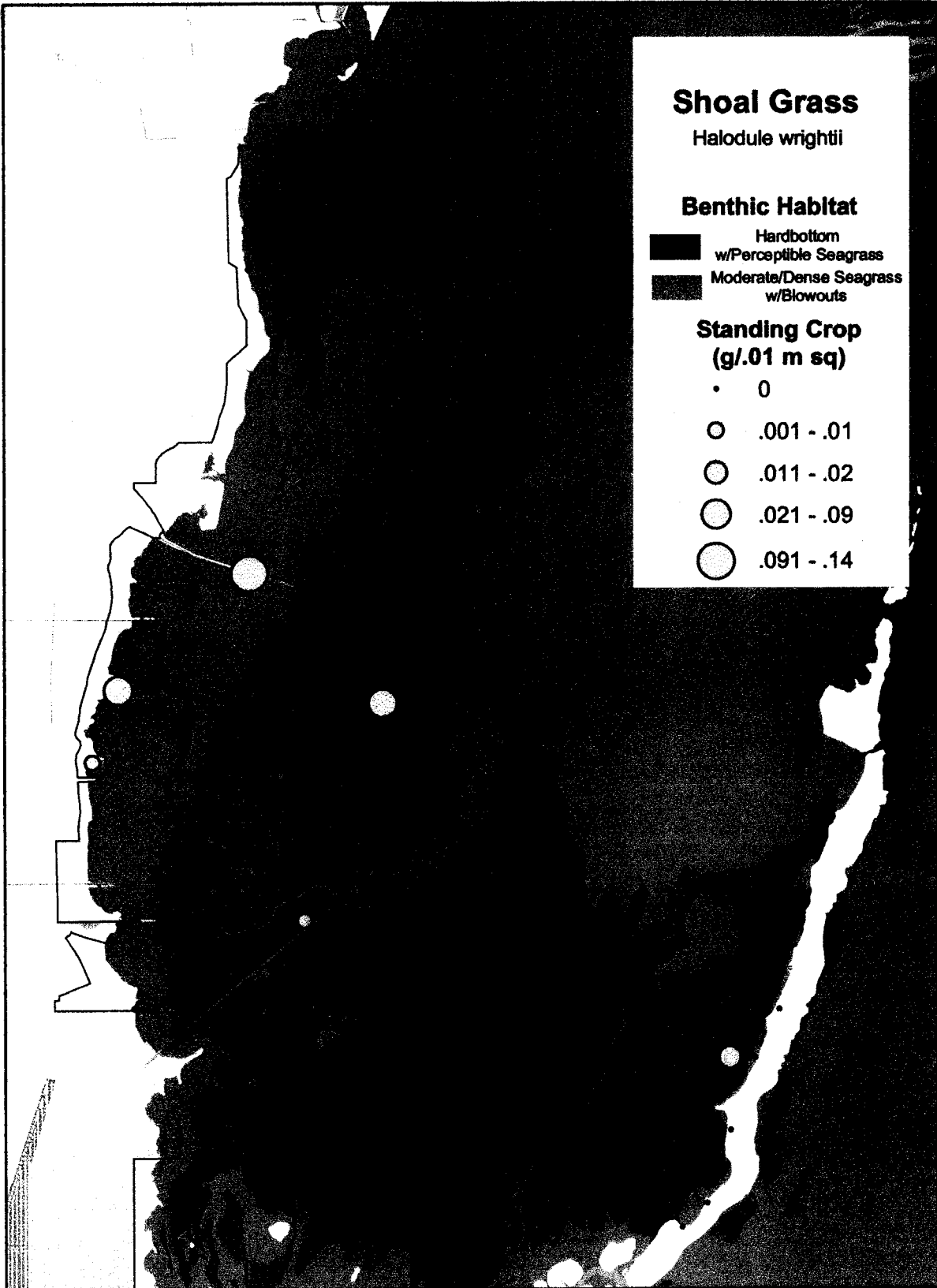
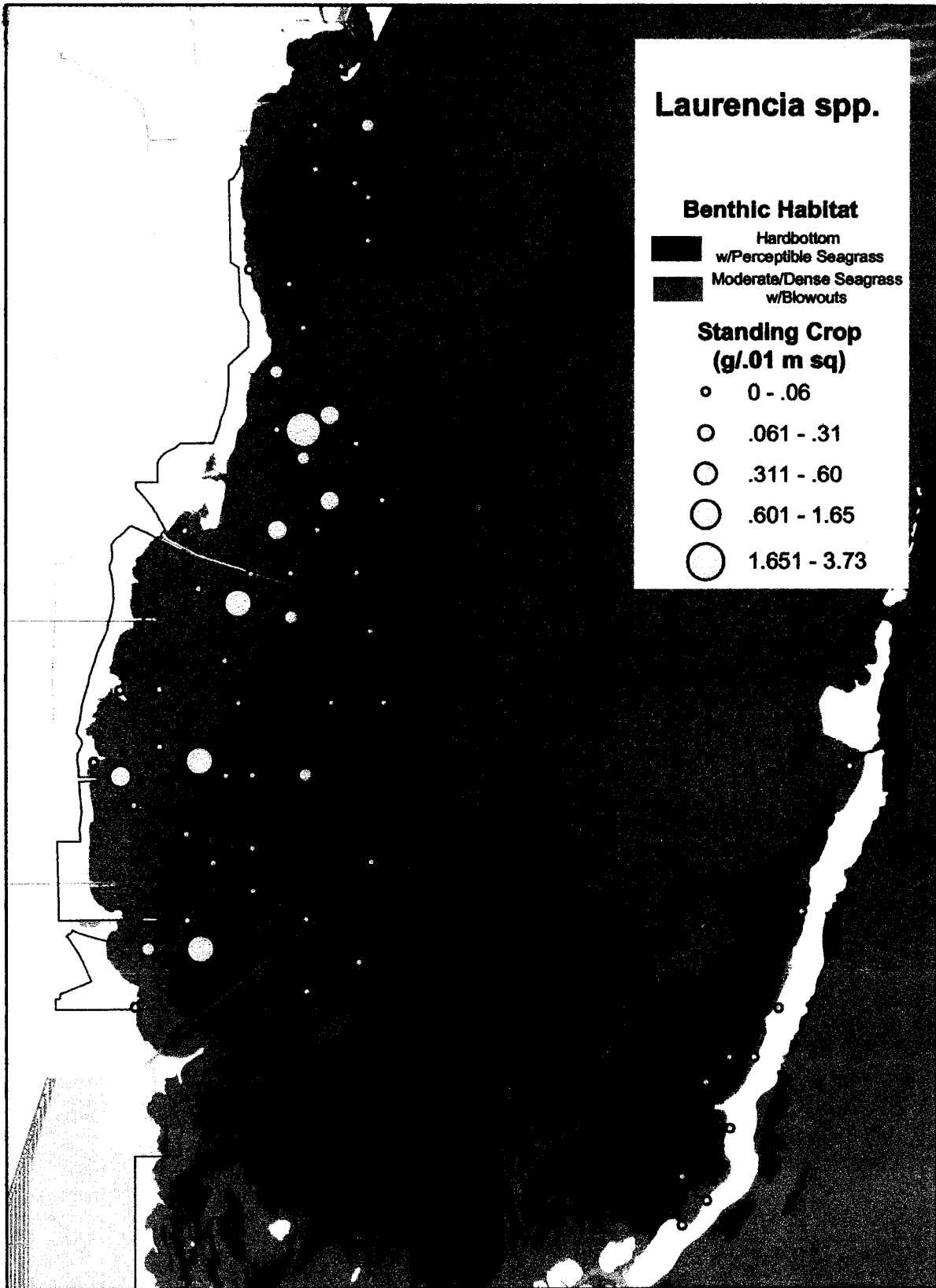
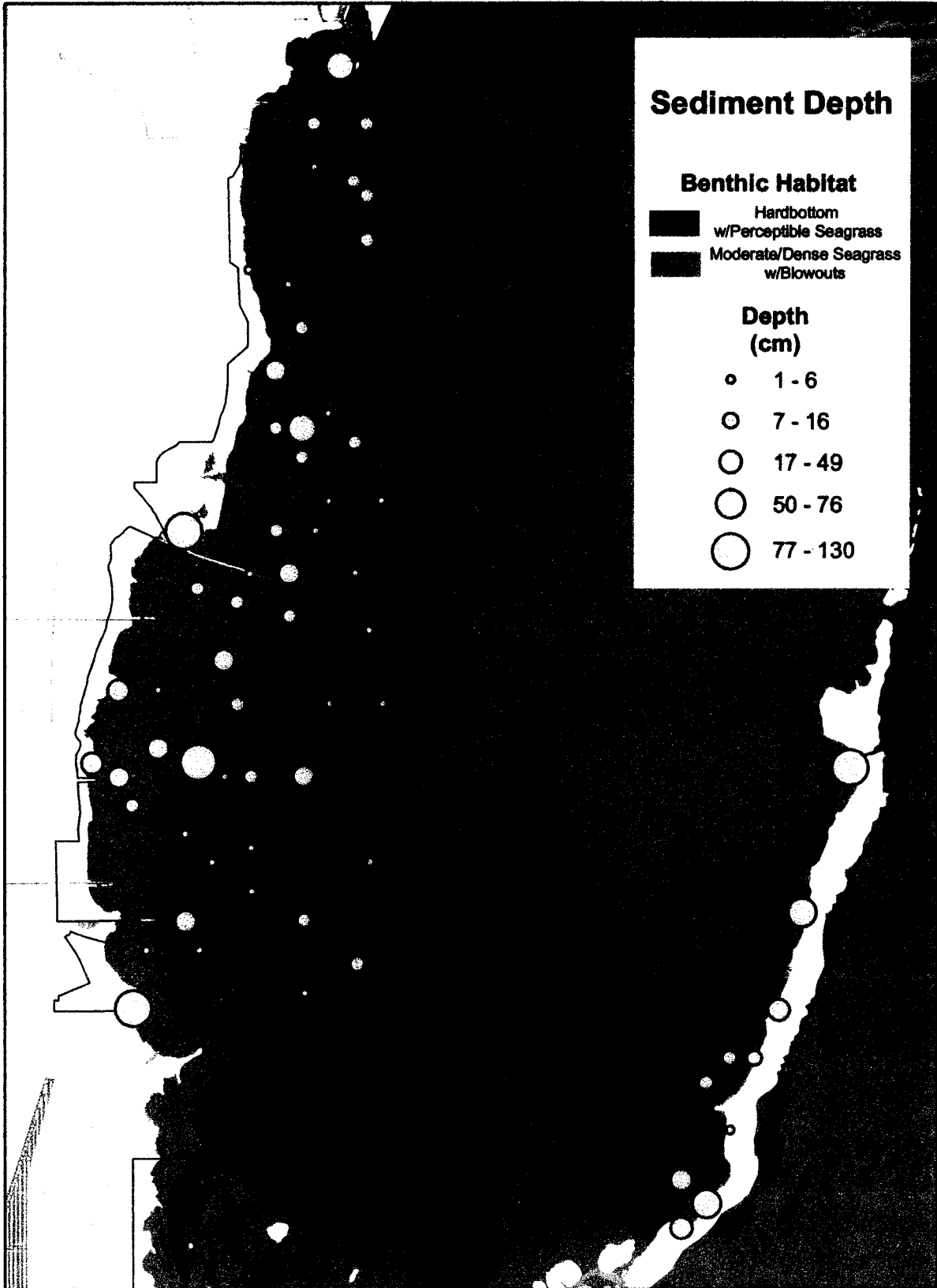


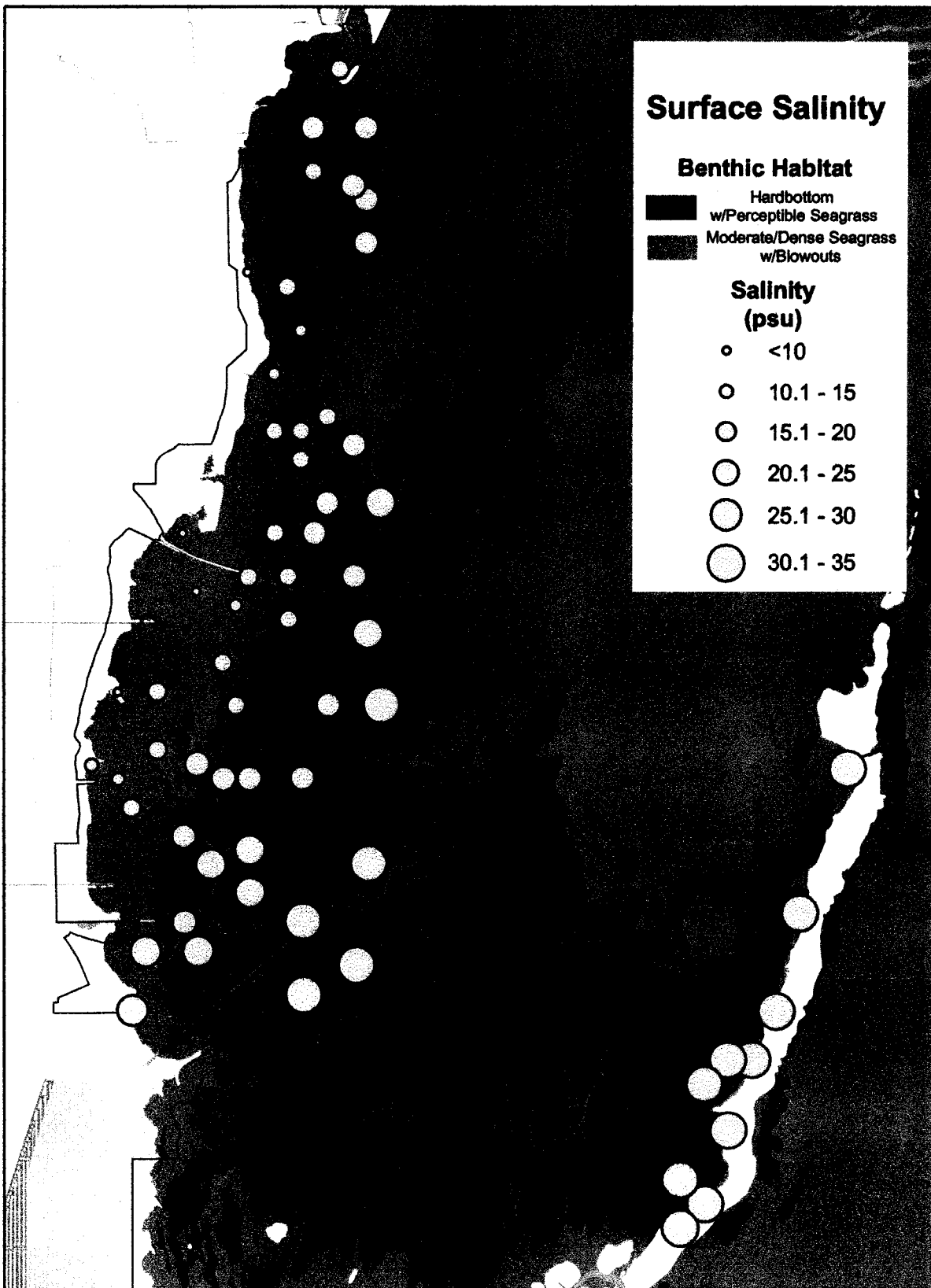
Figure 5. Mean faunal density of four taxa, by zone and month, from throw-trap sampling.

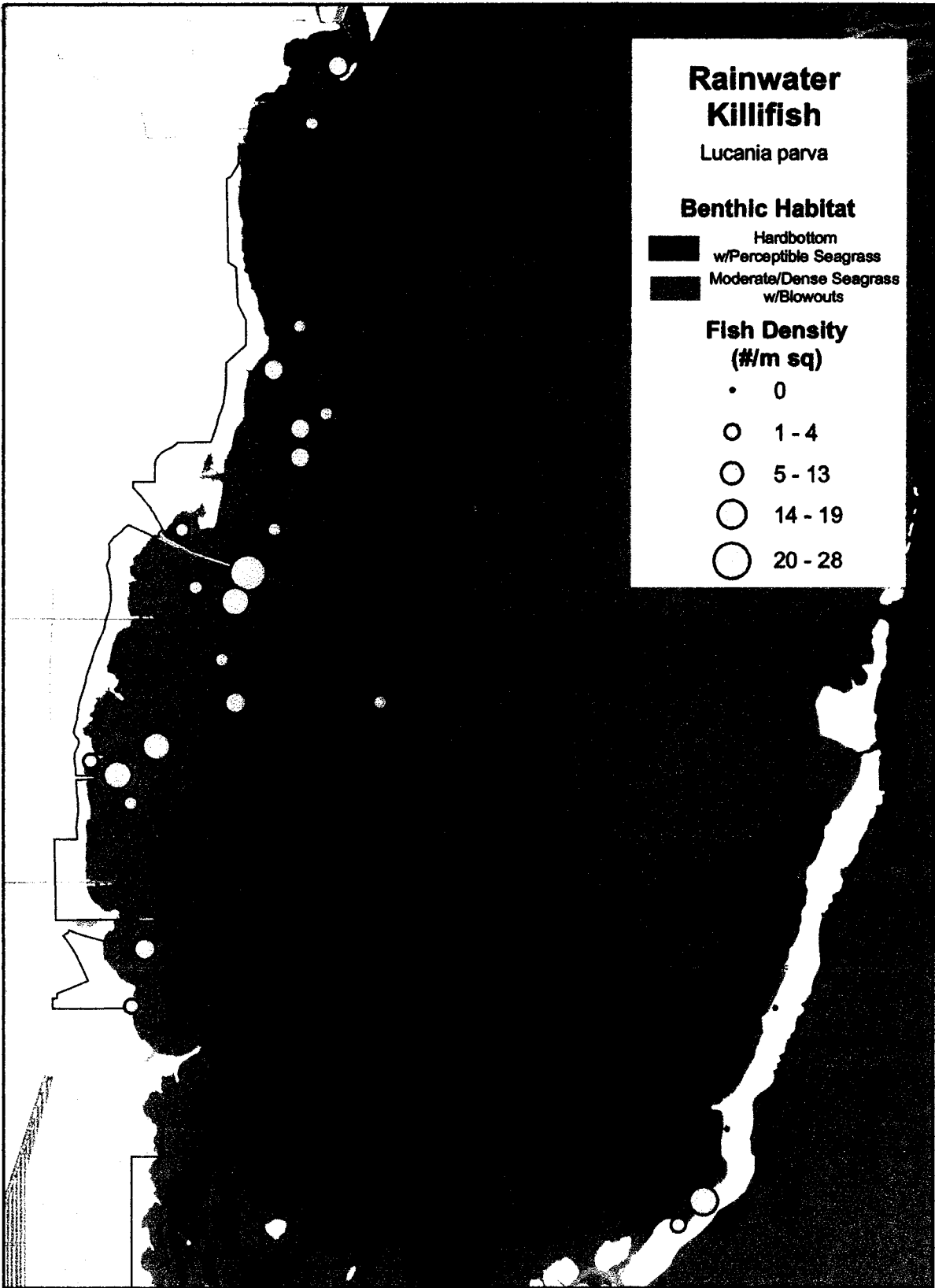


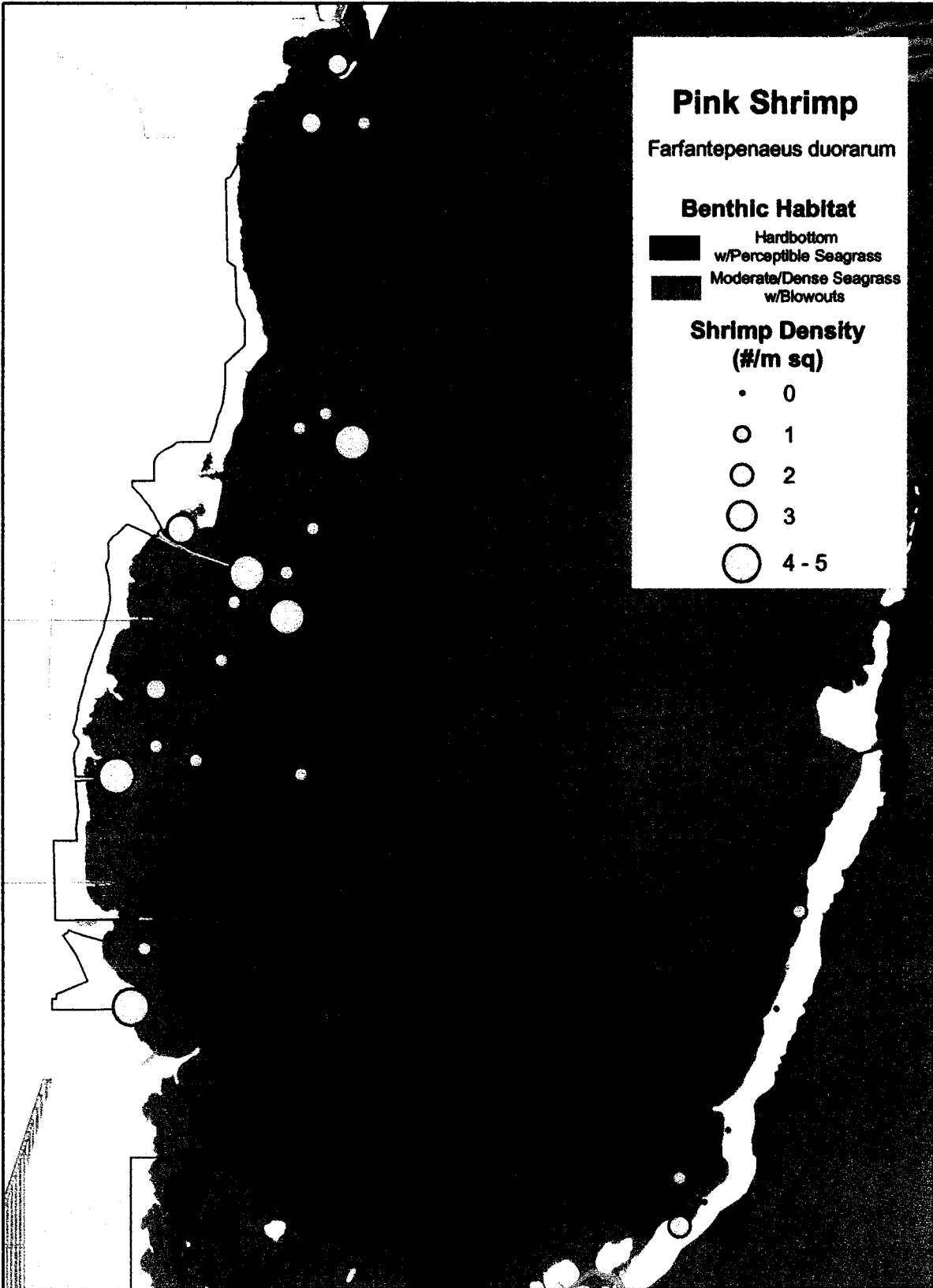


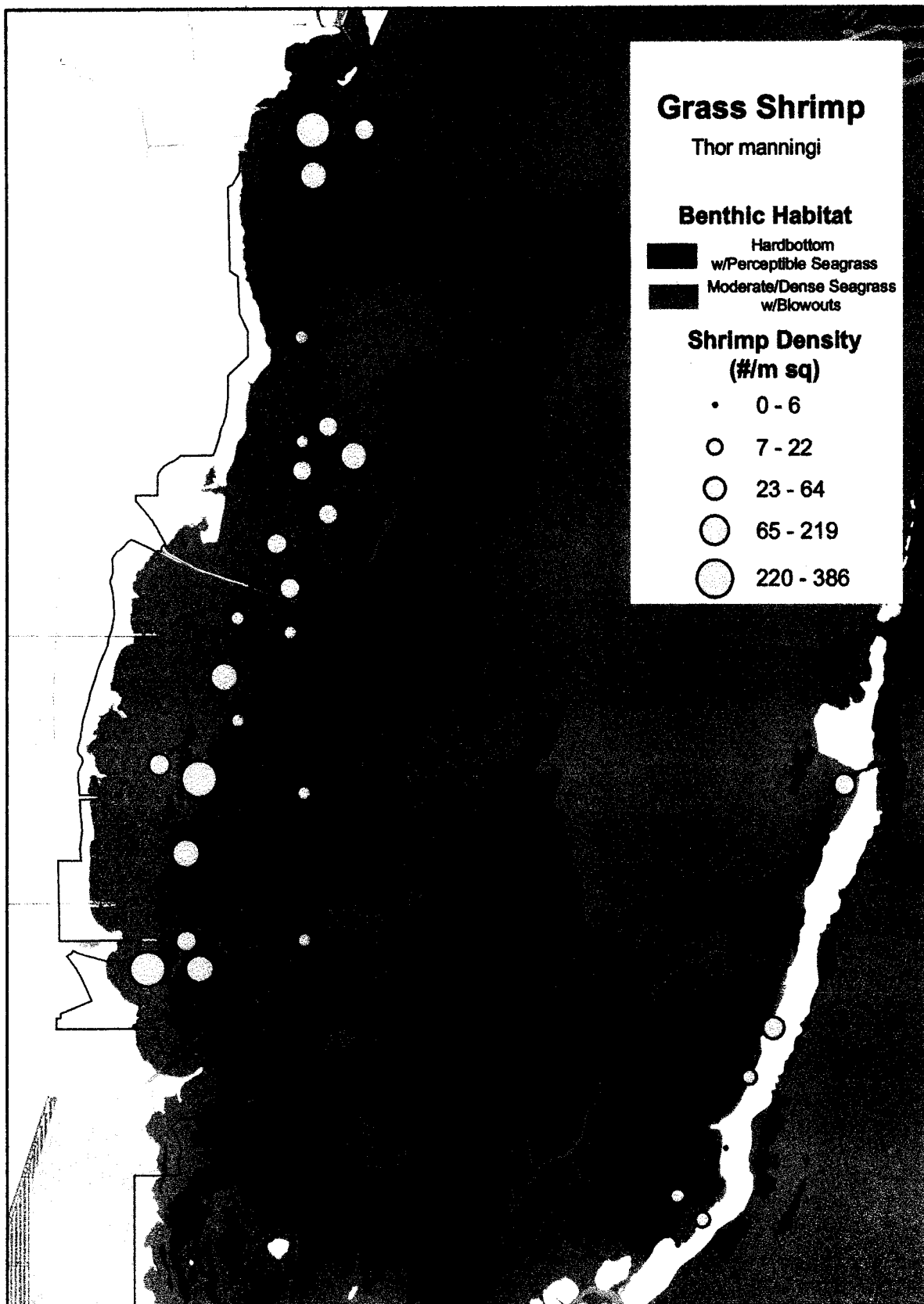


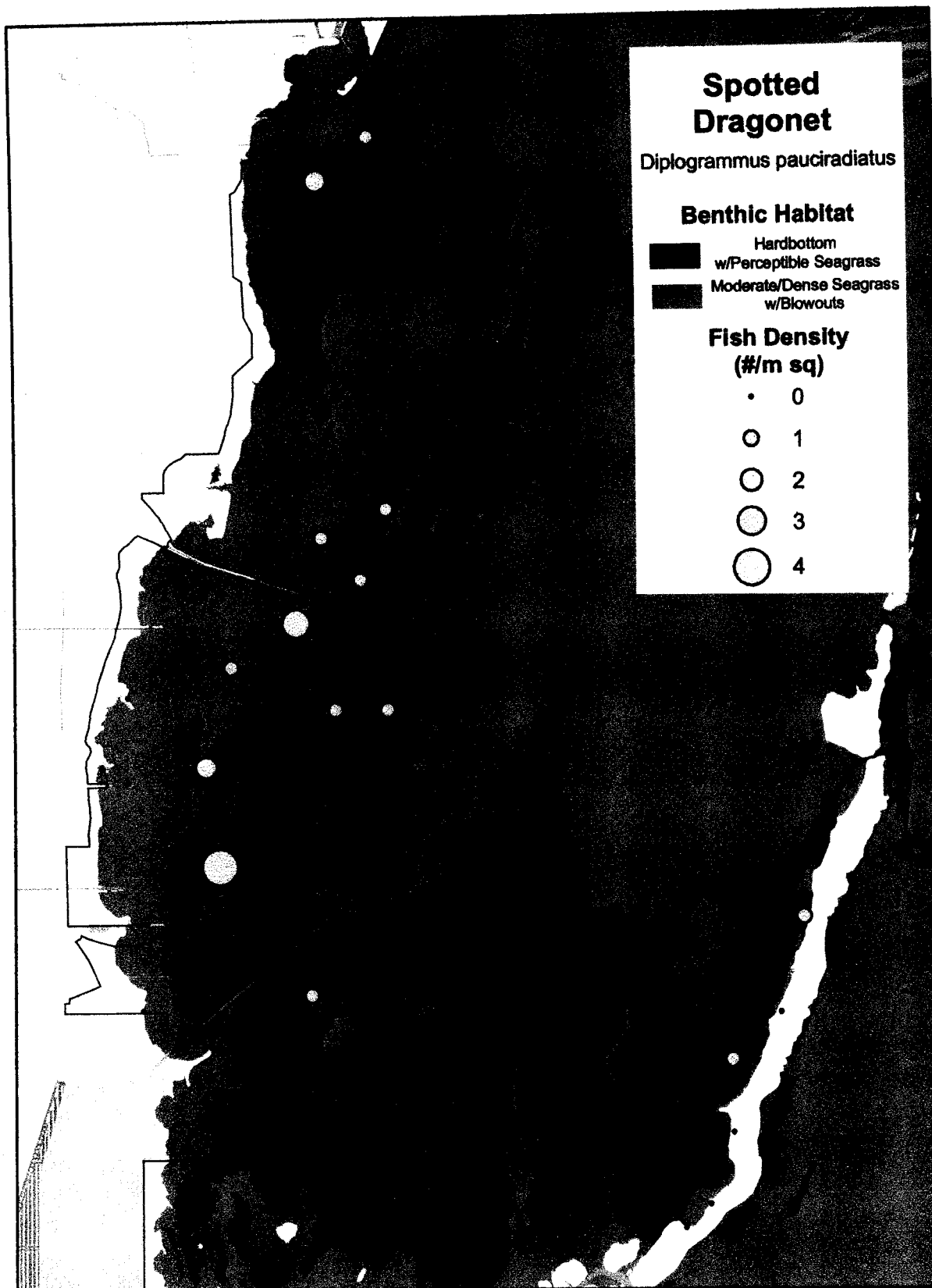












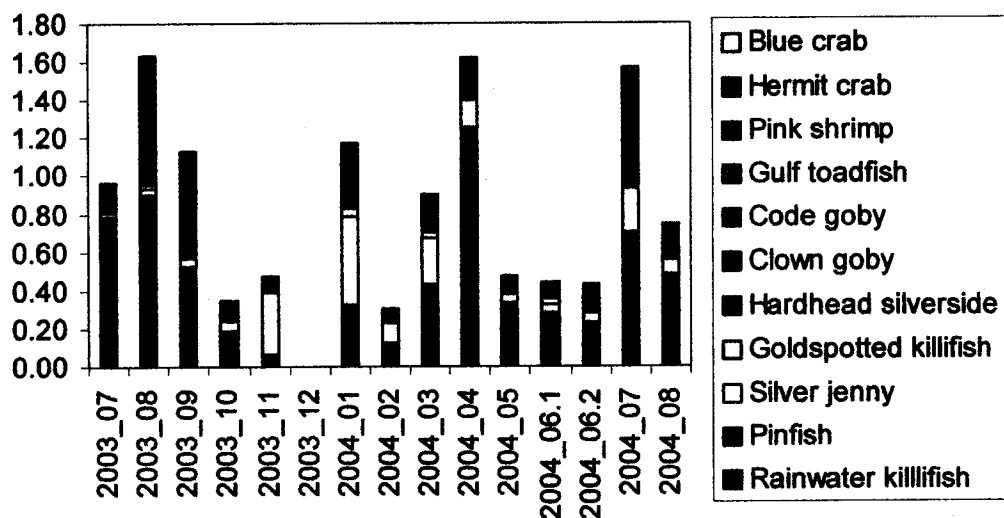
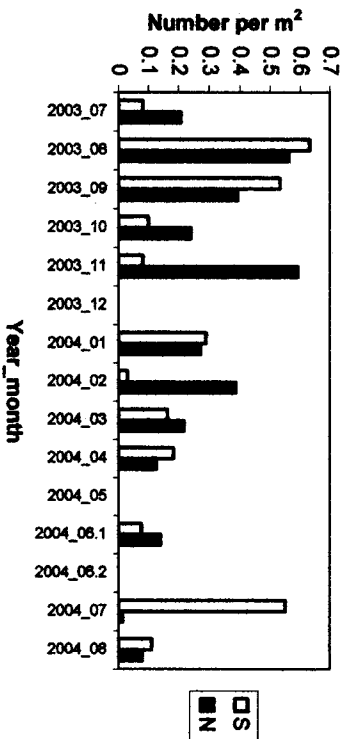
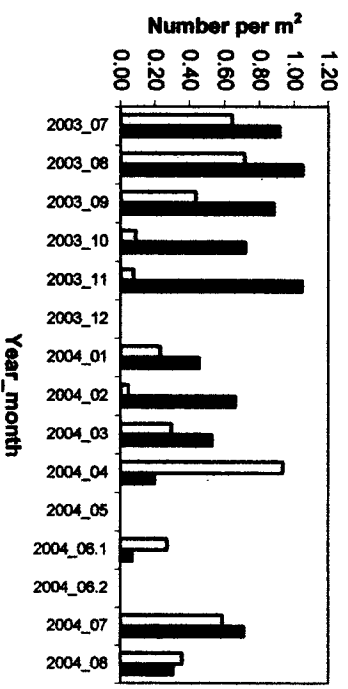


Figure 15. Mean density of selected species of fish and macroinvertebrates in zone 1S (area of lowest, most variable salinities and south of the Black Creek Jetty), by pull-net collection, from July 2003 through August 2004.

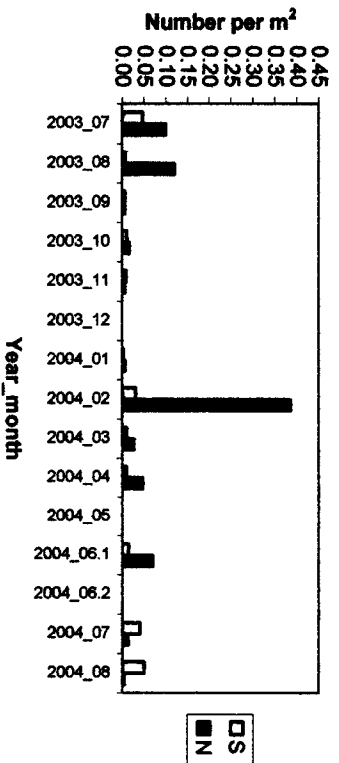
Pink shrimp density in pulldnet



Rainwater killifish density in pulldnet



Crab density by geographic zone



Fish density by geographic zone

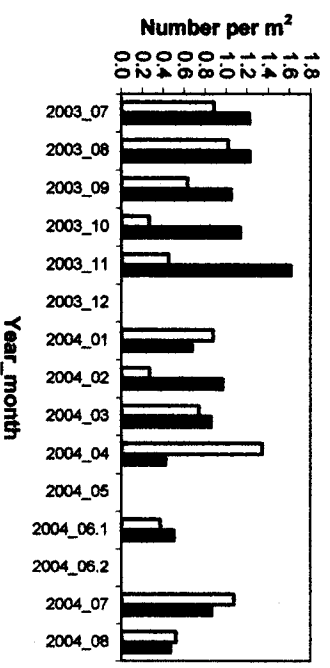


Figure 16. Density (no./m²) of pink shrimp, rainwater killifish, crabs, and total fish, by geographic zone, from pull-net sampling.

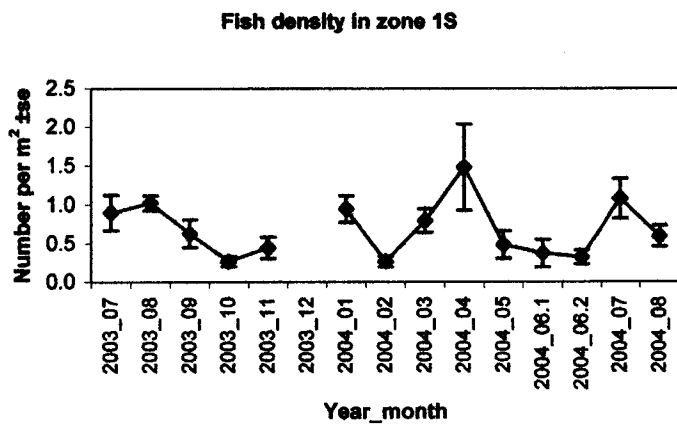
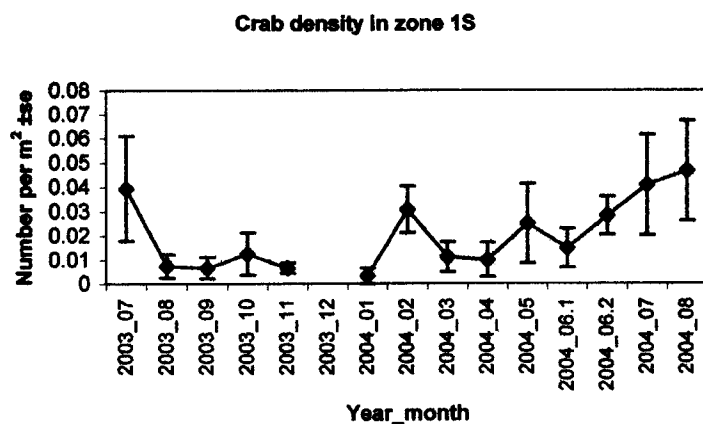
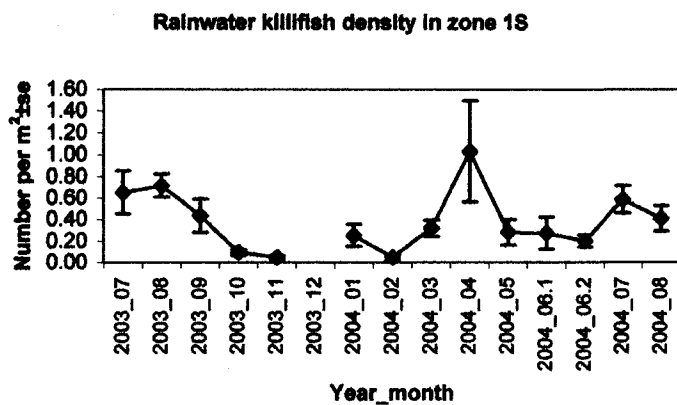
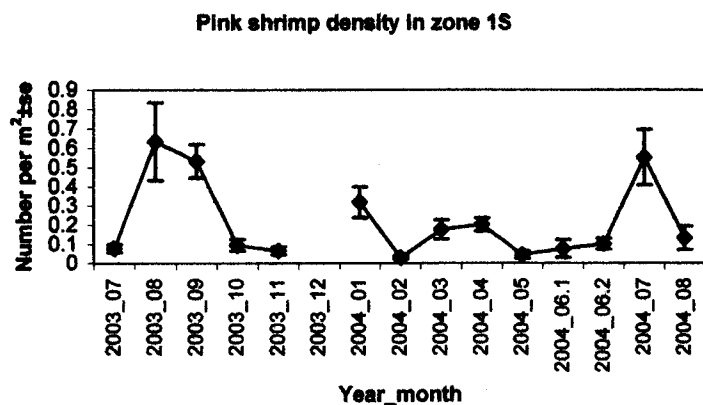
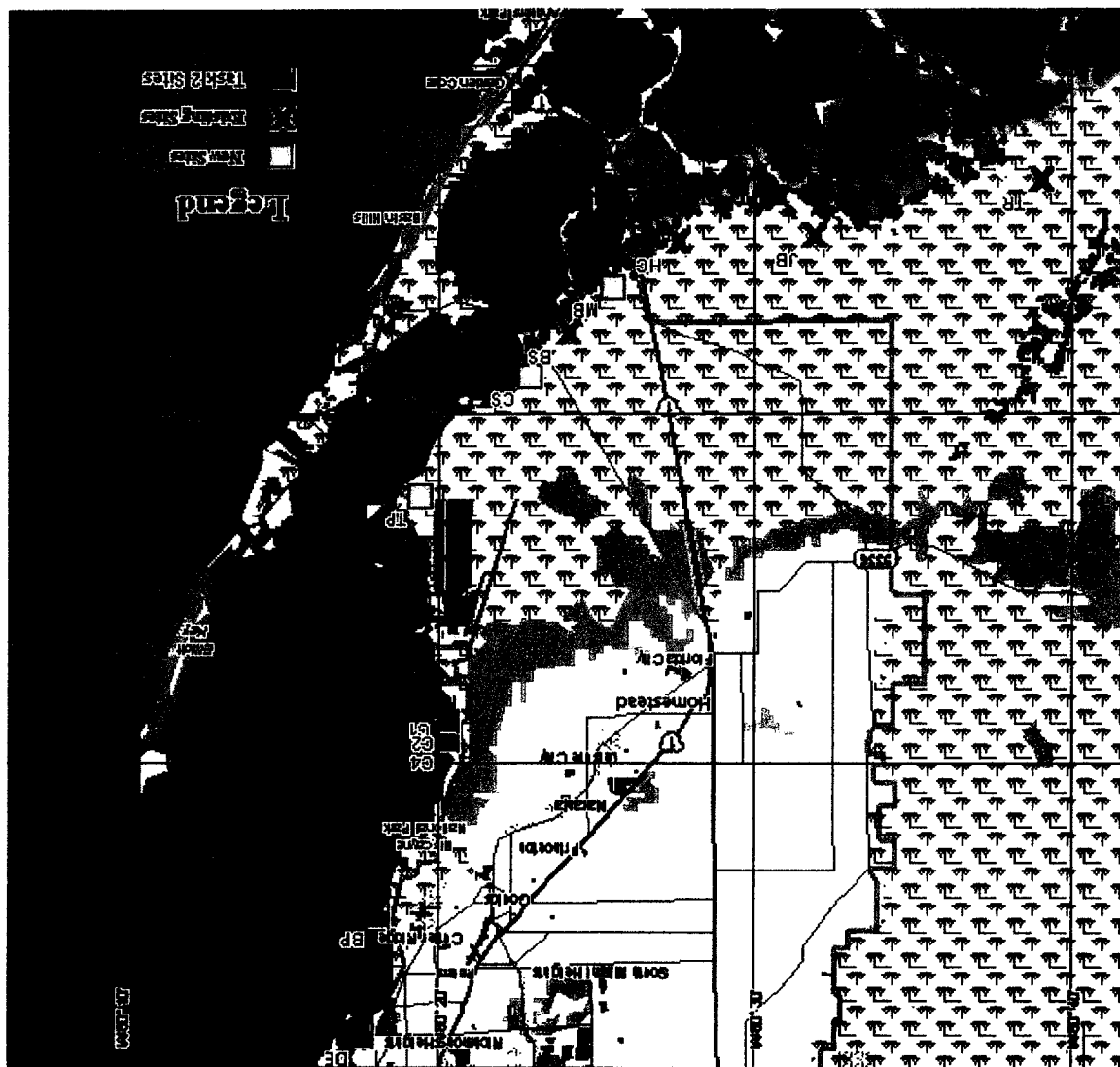


Figure 17. Mean density of pink shrimp, rainwater killifish, crabs, and fish in zone 1S, by month, and one-standard- error error bars (from pull-net sampling).

Figure 18. Topographical map of coastal southeastern Florida indicating the location of the fish sampling sites of this project in relation to other sites.



Appendix A, Table 1. Abundance and variability of fish, shrimp and crabs collected in southern Biscayne Bay with the throw-trap in October 2002. Sample size: overall=48, 1s=10, 2n=4, 2s=16, 3n=13, 3s=5, zones=5, Elliot=10.

FISH	Scientific Name	Mean								Standard Error of Mean							
		overall	1s	2n	2s	3n	3s	zones	Elliot	overall	1s	2n	2s	3n	3s	zones	Elliot
Banded blenny	<i>Paraclinus fasciatus</i>	0.04167	0	0	0.4	0	0	0.08	0	0.28868	0	0	0.4	0	0	0.08	0
Bank cusk-eel	<i>Ophidion holbrooki</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Banner goby	<i>Microgobius microlepis</i>	0.02083	0	0	0.2	0	0	0.04	0	0.14434	0	0	0.2	0	0	0.04	0
Barbfish	<i>Scorpeena brasiliensis</i>	0.02083	0	0.0625	0	0	0	0.0125	0	0.14434	0	0.0625	0	0	0	0.0125	0
Bay anchovy	<i>Anchoa mitchilli</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bearded goby	<i>Barbulifer ceuthoeus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bigeye mojarra	<i>Eucinostomus havana</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bigeye stargazer	<i>Dactyloscopus crossotus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Blackcheek tonguefish	<i>Symphurus plagiosa</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Blue angelfish	<i>Holocanthus bermudensis</i>	0.02083	0	0	0	0	0.07692	0.01538	0	0.14434	0	0	0	0	0.07692	0.01538	0
Bluelip parrotfish	<i>Cryptotomus roseus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bluethroat pikeblenny	<i>Chaenopsis ocellata</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bluestriped grunt	<i>Haemulon sciurus</i>	0.02083	0	0.0625	0	0	0	0.0125	0.1	0.14434	0	0.0625	0	0	0	0.0125	0.1
Chain pipefish	<i>Syngnathus louisianae</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Clown goby	<i>Microgobius gulosus</i>	0.25	1	0.0625	0	0	0.07692	0.22768	0	1.04168	0.68313	0.0625	0	0	0.07692	0.13061	0
Code goby	<i>Gobiosoma robustum</i>	1	1.3	0.375	0.2	0.75	1.92308	0.90962	0.9	1.54369	0.44845	0.1797	0.2	0.47871	0.62493	0.08568	0.40689
Crested goby	<i>Lophogobius cyprinoides</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dusky cusk	<i>Parophidion schmidtii</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dusky pipefish	<i>Syngnathus floridae</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dwarf pipefish	<i>Cosmocampus hildebrandi</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dwarf seahorse	<i>Hippocampus zosterae</i>	0.16667	0.2	0.0625	0	0.25	0.30769	0.16404	0.3	0.55862	0.2	0.0625	0	0.25	0.23709	0.05012	0.21344
Frillfin goby	<i>Bethygodius soporator</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fringed pipefish	<i>Anarchopterus criniger</i>	0.10417	0.2	0.125	0	0	0.07692	0.08038	0.4	0.30871	0.13333	0.08539	0	0	0.07692	0.02599	0.26867
Gold brotula	<i>Gunterichthys longipennis</i>	0.02083	0	0	0	0	0.07692	0.01538	0	0.14434	0	0	0	0	0.07692	0.01538	0
Goldspot goby	<i>Gnatholepis thompsoni</i>	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0.1
Goldspotted killifish	<i>Floridichthys carpio</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Great barracuda	<i>Sphyræna barracuda</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gulf pipefish	<i>Syngnathus scovelli</i>	0.08333	0	0	0	0.75	0.07692	0.16538	0	0.34723	0	0	0	0.47871	0.07692	0.0931	0
Gulf toadfish	<i>Opsanus beta</i>	0.1675	0.7	0	0	0.5	0	0.24	0.3	0.53221	0.26034	0	0	0.5	0	0.10054	0.21344
Hardhead silverside	<i>Atherinomorus stipes</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

FISH	Scientific Name	overall	1s	2n	2s	3n	3s	zones	Elliot	overall	1s	2n	2s	3n	3s	zones	Elliot
Key brotula	<i>Ogilbia cayorum</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lined seahorse	<i>Hippocampus erectus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lined sole	<i>Achirus lineatus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Marbled blenny	<i>Paraclinus marmoratus</i>	0.02083	0	0.0625	0	0	0	0.0125	0.1	0.14434	0	0.0625	0	0	0	0.0125	0.1
Mummichog	<i>Fundulus heteroclitus</i>	0.04167	0	0	0	0	0.15385	0.03077	0	0.20194	0	0	0	0	0.10415	0.02083	0
Northern pipefish	<i>Syngnathus fuscus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pigfish	<i>Orthoprists chrysoptera</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pinfish	<i>Lagodon rhomboidalis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Planehead filefish	<i>Monocanthus hispidus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pugnose pipefish	<i>Bryx dunckeri</i>	0.125	0	0	0	0.5	0.30769	0.18154	0	0.44363	0	0	0	0.5	0.17485	0.09734	0
Rainwater killifish	<i>Lucania parva</i>	3.08333	7.8	0	0	7	3.23077	3.80615	4.2	6.54878	3.2311	0	0	3.80789	1.63752	0.79263	3.98274
Redfin brotula	<i>Petrotyx sanguineus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sargassumfish	<i>Histrio histrio</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sargassum pipefish	<i>Syngnathus pelagicus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scrawled cowfish	<i>Lactophrys quadricornis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sheepshead porgy	<i>Archosargus probatocephalus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Silver jenny	<i>Eucinostomus gula</i>	0.02083	0	0	0	0.25	0	0.05	0.1	0.14434	0	0	0	0.25	0	0.05	0.1
Spotfin jawfish	<i>Oplotognathus robbinsi</i>	0.41667	0.1	0.625	1	0	0.30769	0.40654	0.7	1.16388	0.1	0.43661	0.63248	0	0.17485	0.11618	0.42295
Spotted dragonet	<i>Diplogrammus pauciradatus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spotted whiff	<i>Citharichthys macrops</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Striped cusk-eel	<i>Ophidion marginatum</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tomtate	<i>Haemulon aurolineatum</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
unidentified fish		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Fish		5.84583	11.3	1.4375	1.8	10	6.61538	6.23058	7.2	7.89152	3.81823	0.63225	1.11355	4.45346	1.77424	0.75468	3.95193

SHRIMP	Scientific Name	overall	1s	2n	2s	3n	3s	zones	Elliot	overall	1s	2n	2s	3n	3s	zones	Elliot
Pink Shrimp	<i>Farfantepenaeus duorarum</i>	0.5	0.9	0.3125	0.2	0.75	0.46154	0.52481	0.4	0.74377	0.27689	0.1983	0.2	0.25	0.18311	0.01782	0.30551
	<i>Alpheus heterochaelis</i>	0.02083	0	0	0	0	0.07692	0.01538	1.5	0.14434	0	0	0	0	0.07692	0.01538	1.39244
	<i>Alpheus normanni</i>	0.02083	0	0.0625	0	0	0	0.0125	0	0.14434	0	0.0625	0	0	0	0.0125	0
	<i>Brachycarpus blunquiculatus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Hippolyte pleuracanthus</i>	0.16667	0	0.0625	0.2	0	0.46154	0.14481	0	0.66311	0	0.0625	0.2	0	0.33235	0.08465	0
	<i>Hippolyte zostericola</i>	8.60417	6.5	2.5625	0.6	20	17.2308	9.37865	1.2	13.155	2.99722	1.36005	0.4	11.083	4.36207	1.88715	0.78599
	<i>Latreutes fucorum</i>	0	0	0	0	0	0	0	0.2	0	0	0	0	0	0	0	0.2
	<i>Leander tenuicornis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Lysmata rathbunae</i>	0.0625	0	0	0.6	0	0	0.12	0	0.43301	0	0	0.6	0	0	0.12	0
	<i>Palaeomonetes intermedius</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

SHRIMP		overall	1s	2n	2s	3n	3s	zones	Elliot	overall	1s	2n	2s	3n	3s	zones	Elliot
	<i>Palaeomonetes pugio</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Palaeomonetes vulgaris</i>	0.89583	3.9	0	0	0	0.30769	0.84154	0.1	5.84646	3.9	0	0	0	0.30769	0.76693	0.1
	<i>Periclimenes americanus</i>	0	0	0	0	0	0	0	3.5	0	0	0	0	0	0	0	2.86065
	<i>Periclimenes longicaudatus</i>	0.14583	0	0.3125	0.4	0	0	0.1425	3.3	0.50485	0	0.1983	0.24495	0	0	0.05479	1.95533
	<i>Processa bermudensis</i>	0.04167	0	0.0625	0.2	0	0	0.0525	0.1	0.20194	0	0.0625	0.2	0	0	0.03881	0.1
	<i>Processa fimbriata</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Thor floridanus</i>	9.79187	9	13.3125	2.4	0	11.9231	7.32712	24.3	30.0305	8.45905	9.75992	1.50333	0	8.81393	2.04809	16.1693
	<i>Thor manningi</i>	21.0208	28.7	5.8875	4	0.25	48.9231	17.1121	92.5	57.4736	28.7486	4.01115	4	0.25	21.249	5.32018	36.051
unidentified shrimp		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Carideans		40.7708	48.1	22.0625	8.4	20.25	76.9231	35.1471	126.7	82.9545	37.1682	11.9337	6.07947	10.9421	29.1645	5.97992	43.0573
CRABS		overall	1s	2n	2s	3n	3s	zones	Elliot	overall	1s	2n	2s	3n	3s	zones	Elliot
Blue Crab	<i>Callinectes sapidus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Callinectes similis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Callinectes sp.</i>	0.125	0.1	0.0625	0	0	0.30769	0.09404	0	0.39275	0.1	0.0625	0	0	0.17485	0.03295	0
	<i>Epiplatys dilatatus</i>	0.02083	0	0	0.2	0	0	0.04	0	0.14434	0	0	0.2	0	0	0.04	0
	<i>Eurypanopeus sp</i>	0.85417	3.7	0	0	0.25	0.23077	0.83615	0.4	4.77132	3.26958	0	0	0.25	0.16617	0.63495	0.30551
	<i>Libinia sp.</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Panopeus sp.</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Pitho lherminieri</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Pitho sp.</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
unidentified crabs		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Crabs		1	3.8	0.0625	0.2	0.25	0.53846	0.97019	0.7	4.77137	3.25849	0.0625	0.2	0.25	0.26831	0.61372	0.47258

APPENDIX A, Table 2. Abundance and variability of fish and shrimp collected in southern Biscayne Bay with the throw-trap in December 2002. Sample size: overall=54, 1s=11, 2n=8, 2s=17, 3n=13, 3s=5, zones=5, Elliot=10.

December 2022 Sample Size Overall 0.1, 1s, 2n, 2s, 3n, 3s, zones, Elliott										Standard Error of Mean							
FISH	Scientific Name	overall	1s	2n	2s	3n	3s	zones	Elliott	overall	1s	2n	2s	3n	3s	zones	Elliott
Banded blenny	<i>Paraclinus fasciatus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bank cusk-eel	<i>Ophidion holbrooki</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Banner goby	<i>Microgobius microlepis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Barbfish	<i>Scorpaena brasiliensis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bay anchovy	<i>Anchoa mitchilli</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bearded goby	<i>Barbulifer ceuthoëus</i>	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0.1
Bigeye mojarra	<i>Eucinostomus havana</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bigeye stargazer	<i>Dactyloscopus crossotus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Blackcheek tonguefish	<i>Symphurus plagiosa</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Blue angelfish	<i>Holocanthus bermudensis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bluelip parrotfish	<i>Cryptotomus roseus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bluethroat pikeblenny	<i>Chaenopsis ocellata</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bluestriped grunt	<i>Haemulon sclurus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chain pipefish	<i>Syngnathus louisianae</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Clown goby	<i>Microgobius gulosus</i>	0.24074	1	0	0	0	0.13333	0.22667	0	0.1266	0.55566	0	0	0	0.15385	0.1077	0
Code goby	<i>Gobiosoma robustum</i>	1.22222	2.36364	0.88235	0	1.375	0.93333	1.11086	1.4	0.18251	0.50942	0.23191	0	0.3239	0.36623	0.08441	0.4761
Crested goby	<i>Lophogobius cyprinoides</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dusky cusk	<i>Paraphidion schmidtii</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dusky pipefish	<i>Syngnathus floridae</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dwarf pipefish	<i>Cosmocampus hildebrandti</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dwarf seahorse	<i>Hippocampus zosterae</i>	0.12963	0.18182	0.17647	0	0.25	0	0.12166	0.1	0.05938	0.12197	0.13072	0	0.25	0	0.04686	0.1
Fritfin goby	<i>Bathygobius soporator</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fringed pipefish	<i>Anarchopterus criniger</i>	0.27778	0.09091	0.52941	0	0.125	0.26667	0.2024	0.1	0.11345	0.09091	0.30265	0	0.125	0.13323	0.04913	0.1
Gold brotula	<i>Gunterichthys longipenis</i>	0.05556	0.09091	0	0	0.25	0	0.06618	0.4	0.04109	0.09091	0	0	0.25	0	0.04874	0.26667
Goldspot goby	<i>Gnatholepis thompsoni</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Goldspotted killifish	<i>Floridichthys carpio</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Great barracuda	<i>Sphyraena barracuda</i>	0	0	0	0	0	0	0	0.1	0	0	0.07295	0	0	0	0.01459	0.1
Gulf pipefish	<i>Syngnathus scovelli</i>	0.2037	0.90909	0.05882	0	0	0	0.19358	0.2	0.08517	0.34257	0.15156	0	0	0	0.08764	0.2
Gulf toadfish	<i>Opsanus beta</i>	0.40741	0.63636	0.05882	0	1.25	0.26667	0.44237	0.3	0.13613	0.38783	0.05293	0	0.55902	0.23708	0.10391	0.21344
Hardhead silverside	<i>Atherinomorus stipes</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

[illegible]

December 2002

SHRIMP		overall	1s	2n	2s	3n	3s	zones	Elliot	overall	1s	2n	2s	3n	3s	zones	Elliot
	<i>Palaemonetes pugio</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Palaemonetes vulgaris</i>	0.11111	0.18182	0	0	0	0.26667	0.0897	0	0.07782	0.12197	0	0	0	0.30769	0.08026	0
	<i>Periclimenes americanus</i>	0.03704	0	0.11765	0	0	0	0.02353	4.8	0.03704	0	0.10585	0	0	0	0.02117	3.37244
	<i>Periclimenes longicaudatus</i>	0.25926	0.27273	0.58824	0.2	0	0	0.21219	6.9	0.09956	0.27273	0.22517	0.2	0	0	0.05817	3.92273
	<i>Processa bermudensis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Processa fimbriata</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Thor floridanus</i>	26.8148	14.8182	48.5294	0.4	39.25	9.6	22.5195	37.4	8.15152	10.1085	18.9948	0.24495	25.5208	6.51671	4.48993	10.448
	<i>Thor manningi</i>	18.2983	10	45.6471	3	0.875	5.6	13.0244	93.5	7.41189	5.60844	21.0902	0.54772	0.875	3.21424	3.81617	46.7999
unidentified shrimp		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Carideans		67.3519	37.2727	116.647	10.8	80.825	36.8667	56.4423	154.8	16.8343	16.9008	43.1819	4.37493	38.4052	11.8816	7.59055	50.8815
CRABS		overall	1s	2n	2s	3n	3s	zones	Elliot	overall	1s	2n	2s	3n	3s	zones	Elliot
Blue Crab	<i>Callinectes sapidus</i>	0.03704	0.18182	0	0	0	0	0.03636	0.1	0.02594	0.12197	0	0	0	0	0.02439	0.1
	<i>Callinectes similis</i>	0.25926	0.63636	0.11765	0	0.25	0.2	0.2406	0.1	0.07086	0.24393	0.07295	0	0.16366	0.12163	0.04116	0.1
	<i>Callinectes sp.</i>	0	0	0	0	0	0	0	0.3	0	0	0	0	0	0	0	0.21344
	<i>Epiplatys dilatatus</i>	0.09259	0.09091	0.23529	0	0	0	0.06524	0	0.03982	0.09091	0.09759	0	0	0	0.02311	0
	<i>Eurypanopeus sp</i>	0.5	0.45455	0.41176	0	0.5	0.73333	0.41993	0.7	0.14419	0.31228	0.15966	0	0.26726	0.48473	0.07763	0.51747
	<i>Libinia sp.</i>	0.01852	0	0	0	0.125	0	0.025	0	0.01852	0	0	0	0.125	0	0.025	0
	<i>Panopeus sp.</i>	0.11111	0.36364	0	0	0	0.13333	0.09939	0	0.06219	0.36364	0	0	0	0.15385	0.07153	0
	<i>Pitho therminieri</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Pitho sp.</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
unidentified crabs		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Crabs		1.01852	1.72727	0.76471	0	0.875	1.06667	0.88873	1.3	0.21393	0.58916	0.24824	0	0.22658	0.61137	0.11672	0.57831

APPENDIX A, Table 3. Abundance and variability of fish and shrimp collected in southern Biscayne Bay with the throw-trap in February 2003. Sample size: overall=54, 1s=11, 2n=8, 2s=17, 3n=13, 3s=5, zones=5, Elliot=10.

		Mean								Standard Error of Mean							
FISH	Scientific Name	overall	1s	2n	2s	3n	3s	zones	Elliott	overall	1s	2n	2s	3n	3s	zones	Elliott
Banded blenny	<i>Paraclinus fasciatus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bank cusk-eel	<i>Ophidion holbrooki</i>	0.01652	0	0	0	0.125	0	0.025	0	0.01652	0	0	0	0.125	0	0.025	0
Banner goby	<i>Microgobius microlepis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Barbfish	<i>Scorpeena brasiliensis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bay anchovy	<i>Anchoa mitchilli</i>	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0.1
Bearded goby	<i>Barbulifer ceuthoeus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bigeye mojarra	<i>Eucinostomus havana</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bigeye stargazer	<i>Dactyloscopus crossotus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Blackcheek tonguefish	<i>Symphurus plagiosa</i>	0	0	0	0	0	0	0	0.2	0	0	0.07295	0	0	0	0.01459	0.13333
Blue angelfish	<i>Holocanthus bermudensis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bluelip parrotfish	<i>Cryptotomus roseus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bluethroat pikeblenny	<i>Cheenopsis ocellata</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bluestriped grunt	<i>Haemulon sclurus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chain pipefish	<i>Syngnathus louisianae</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Clown goby	<i>Microgobius guicosus</i>	0.16667	0.81618	0	0	0	0	0.16364	0.2	0.11447	0.53629	0	0	0	0	0.10726	0.13333
Code goby	<i>Gobiosoma robustum</i>	1.22222	2.36384	0.58824	0	1.875	1	1.16537	0.8	0.26915	0.63636	0.28599	0	0.9717	0.62886	0.16634	0.61101
Crested goby	<i>Lophogobius cyprinoides</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dusky cusk	<i>Paropheidon schmidti</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dusky pipefish	<i>Syngnathus floridae</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dwarf pipefish	<i>Cosmocampus hildebrandi</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dwarf seahorse	<i>Hippocampus zosterae</i>	0.12963	0.09091	0	0	0.375	0.2	0.13318	0.2	0.05938	0.09091	0	0	0.26305	0.16617	0.05048	0.13333
Frlifin goby	<i>Bathygobius soporator</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fringed pipefish	<i>Anerchopterus criniger</i>	0.24074	0.18182	0.23529	0	0.625	0.13333	0.23509	0	0.10216	0.12197	0.2117	0	0.41993	0.10415	0.07062	0
Gold brotula	<i>Gunterichthys longipennis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Goldspot goby	<i>Gnatholepis thompsoni</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Goldspotted killifish	<i>Flordichthys carpio</i>	0.03704	0.18182	0	0	0	0	0.03636	0	0.02594	0.12197	0	0	0	0	0.02439	0
Great barracuda	<i>Sphyraena barracuda</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gulf pipefish	<i>Syngnathus scovelli</i>	0.2963	0.90909	0	0	0.125	0.33333	0.27348	0	0.15999	0.71927	0	0	0.125	0.24122	0.13332	0
Gulf toadfish	<i>Opsanus beta</i>	0.61111	1.09091	0.23529	0	1.25	0.46667	0.60857	0.1	0.14817	0.34257	0.17393	0	0.49099	0.33235	0.0637	0.1
Hardhead silverside	<i>Atherinomorus stipes</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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FISH	Scientific Name	overall	1s	2n	2s	3n	3s	zones	Elliot	overall	1s	2n	2s	3n	3s	zones	Elliot	
Key brotula	<i>Ogilbia cayorum</i>	0.01852	0	0	0	0	0	0.06867	0.01333	0	0.01852	0	0	0	0	0.07692	0.01538	0
Lined seahorse	<i>Hippocampus erectus</i>	0.03704	0	0	0	0	0.25	0	0.05	0	0.02594	0	0	0	0.16366	0	0.03273	0
Lined sole	<i>Achirus lineatus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Marbled blenny	<i>Paraclinus marmoratus</i>	0.05558	0	0.11765	0.2	0	0	0.06353	0.2	0.03146	0	0.09759	0.2	0	0	0.03988	0.13333	
Mummichog	<i>Fundulus heteroclitus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Northern pipefish	<i>Syngnathus fuscus</i>	0.01852	0	0	0	0	0.125	0	0.025	0.1	0.01852	0	0	0	0.125	0	0.025	0.1
Pigfish	<i>Orthopristis chryoptera</i>	0	0	0	0	0	0	0	0	0.2	0	0	0	0	0	0	0	0.2
Pinfish	<i>Lagodon rhomboidalis</i>	0.07407	0.09091	0.17647	0	0	0	0.05348	0	0.04464	0.09091	0.11595	0	0	0	0.02584	0	0
Planehead filefish	<i>Monocanthus hispidus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pugnose pipefish	<i>Bryx dunckeri</i>	0.01852	0	0.05882	0	0	0	0.01178	0.2	0.01852	0	0.05293	0	0	0	0.01059	0.2	
Rainwater killifish	<i>Lucania parva</i>	3.38889	6.09091	1.76471	0	7.25	1.86667	3.39446	0.6	0.70904	1.38469	1.1978	0	2.20996	1.04909	0.35439	0.6	
Redfin brotula	<i>Petrotyx sanguineus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sargassumfish	<i>Histrio histrio</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sargassum pipefish	<i>Syngnathus pelagicus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scrawled cowfish	<i>Lactophrys quadricornis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sheepshead porgy	<i>Archosargus probatocephalus</i>	0.03704	0	0.11765	0	0	0	0.02353	0	0.03704	0	0.10585	0	0	0	0.02117	0	
Silver jenny	<i>Eucinostomus gula</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spotfin jawfish	<i>Opistognathus robbinsi</i>	0.48148	0	0.41176	0.6	0.375	0.86667	0.45069	0.4	0.12039	0	0.16398	0.4	0.26305	0.35806	0.0719	0.1633	
Spotted dragonet	<i>Diplogrammus pauciradiatus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spotted whiff	<i>Citharichthys macrops</i>	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0.1
Striped cusk-eel	<i>Ophidion marginatum</i>	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0.1
Tomtate	<i>Haemulon aurolineatum</i>	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0.1
unidentified fish		0.09259	0.16182	0.05882	0	0	0.13333	0.0748	0.1	0.04779	0.18182	0.05293	0	0	0.10415	0.03445	0.1	
Total Fish		6.94444	12	3.76471	0.8	12.375	5.06667	6.80127	3.7	1.04089	2.24418	1.58971	0.37417	3.08763	1.54773	0.44872	1.33375	

[illegible]

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SHRIMP	Scientific Name	overall	1s	2n	2s	3n	3s	zones	Elliot	overall	1s	2n	2s	3n	3s	zones	Elliot	
	<i>Palaeomonetes pugio</i>	0.01852		0	0	0	0.125	0	0.025	0	0.01852	0	0	0	0.125	0	0.025	0
	<i>Palaeomonetes vulgaris</i>	0		0	0	0	0	0	0	0.7	0	0	0	0	0	0	0	0.3
	<i>Periclimenes americanus</i>	0.03704		0	0.11785	0	0	0	0.02353	1.3	0.02594	0	0.07295	0	0	0	0.01459	0.55877
	<i>Periclimenes longicaudatus</i>	0.18519	0.09091	0.35294		0	0.125	0.13333	0.14044	2.5	0.07511	0.09091	0.31931	0	0.125	0.15385	0.05223	0.63683
	<i>Processa bermudensis</i>	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Processa fimbriata</i>	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Thor floridanus</i>	10.7593	13.9091	15.5882		0.2	11.25	4.8	9.14947	5.3	3.35891	8.09091	10.6435	0.2	8.00167	3.19578	1.88998	3.90171
	<i>Thor manningi</i>	29.8519	28.2727	40.7647		1	36	21.1333	25.4342	29.6	9.16379	14.5509	31.5151	0.44721	24.1158	12.7285	5.28688	21.2841
unidentified shrimp		0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Carideans		65.3704	61.2727	85.2941		2.2	91.5	44.3333	56.92	46.8	16.1647	27.3828	52.376	1.2	36.0867	22.3607	8.39653	26.9769

CRABS	Scientific Name	overall	1s	2n	2s	3n	3s	zones	Elliot	overall	1s	2n	2s	3n	3s	zones	Elliot	
Blue Crab	<i>Callinectes sapidus</i>	0.01852		0	0	0	0	0.06667	0.01333	0.1	0.01852	0	0	0	0	0.07692	0.01538	0.1
	<i>Callinectes similis</i>	0.03704	0.09091	0.05882		0	0	0	0.02995	0	0.02594	0.09091	0.05293	0	0	0	0.01861	0
	<i>Callinectes sp.</i>	0.05556	0.09091		0	0.2		0.2	0.09818	0.1	0.03146	0.09091	0.07295	0.2		0.07692	0.03213	0.1
	<i>Epiplatys dilatatus</i>	0.03704		0	0.11785	0	0	0	0.02353	0.1	0.03704	0	0.10585	0	0	0	0.02117	0.1
	<i>Eurypanopeus sp</i>	1.2037	0.27273	1.64706		0	3.25	0.53333	1.14062	0.7	0.47317	0.14084	1.21867	0	1.14564	0.26647	0.26001	0.42295
	<i>Libinia sp.</i>	0.03704		0	0.11785	0	0	0	0.02353	0	0.02594	0	0.07295	0	0	0	0.01459	0
	<i>Panopeus sp.</i>	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Pitho therminieri</i>	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Pitho sp.</i>	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
unidentified crabs		0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Crabs		1.24074	0.27273	1.76471		0	3.25	0.53333	1.16415	0.7	0.47358	0.14084	1.21786	0	1.14564	0.26647	0.25991	0.42295

APPENDIX A, Table 4. Abundance and variability of fish and shrimp collected in southern Biscayne Bay with the throw-trap in April 2003. Sample size: overall=54, 1s=11, 2n=8, 2s=17, 3n=13, 3s=5, zones=5, Elliot=10.

FISH	Scientific Name	Mean								Standard Error of Mean							
		overall	1s	2n	2s	3n	3s	zones	Elliot	overall	1s	2n	2s	3n	3s	zones	Elliot
Banded blenny	<i>Paraclinus fasciatus</i>	0.0625	0	0.125	0.05882	0.07692	0	0.05215	0.1	0.03146	0	0.125	0.05882	0.07692	0	0.02388	0.1
Bank cusk-eel	<i>Ophidion holbrooki</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Banner goby	<i>Microgobius microlepis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Barbfish	<i>Scorpaena brasiliensis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bay anchovy	<i>Anchoa mitchilli</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bearded goby	<i>Barbulfur ceuthoeus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bigeye mojarra	<i>Eucinostomus havana</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bigeye stargazer	<i>Dactyloscopus crossotus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Blackcheek tonguefish	<i>Symphurus plagiusa</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Blue angelfish	<i>Holecanthus bermudensis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bluelip parrotfish	<i>Cryptotomus roseus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bluethroat pikeblenny	<i>Cheenopsis ocellata</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bluestriped grunt	<i>Haemulon sciurus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chain pipefish	<i>Syngnathus louisianae</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Clown goby	<i>Microgobius gulosus</i>	0.17188	0.63636	0.125	0.11765	0.07692	0	0.19119	0	0.07181	0.27872	0.125	0.08055	0.07692	0	0.11349	0
Code goby	<i>Gobiosoma robustum</i>	0.92188	1.45455	1	0.29412	1.38462	0	0.82866	1.2	0.18729	0.48293	0.37796	0.20588	0.33088	0	0.29177	0.99778
Crested goby	<i>Lophogobius cyprinoides</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dusky cusk	<i>Parophidion schmidti</i>	0.03125	0	0	0	0.15385	0	0.03077	0	0.03704	0	0	0	0.15385	0	0.03077	0
Dusky pipefish	<i>Syngnathus floridae</i>	0.01563	0	0	0	0.07692	0	0.01538	0	0.01852	0	0	0	0.07692	0	0.01538	0
Dwarf pipefish	<i>Cosmocampus hildebrandi</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dwarf seahorse	<i>Hippocampus zosterae</i>	0.10938	0.18182	0.125	0.11765	0.15385	0	0.11566	0	0.05318	0.18182	0.125	0.08055	0.10415	0	0.03107	0
Driflin goby	<i>Bathygobius soporator</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fringed pipefish	<i>Anarchopterus criniger</i>	0.29688	0.45455	0.125	0.29412	0.53846	0	0.28242	0.1	0.12114	0.31228	0.125	0.29412	0.18311	0	0.09997	0.1
Gold brotia	<i>Gunterichthys longipenis</i>	0.01563	0	0	0.05882	0	0	0.01176	0	0.01852	0	0	0.05882	0	0	0.01176	0
Goldspot goby	<i>Gnatholepis thompsoni</i>	0.01563	0	0	0	0.07692	0	0.01538	0	0.01852	0	0	0	0.07692	0	0.01538	0
Goldspotted killifish	<i>Floridichthys carpio</i>	0.08375	0.45455	0.125	0	0	0	0.11591	0	0.09408	0.45455	0.125	0	0	0	0.08805	0
Great barracuda	<i>Sphyræna barracuda</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gulf pipefish	<i>Syngnathus scovelli</i>	0.25	0.81818	0	0.35294	0.07692	0	0.24981	0	0.08619	0.18182	0	0.20901	0.07692	0	0.15627	0
Gulf toadfish	<i>Opsanus beta</i>	0.70313	0.90909	2.25	0.23529	0.84615	0	0.84811	0.2	0.22334	0.39207	1.11403	0.13638	0.40583	0	0.3914	0.2
Hardhead silverside	<i>Atherinomorus stipes</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

April 2003

FISH	Scientific Name	overall	1s	2n	2s	3n	3s	zones	Elliot	overall	1s	2n	2s	3n	3s	zones	Elliot	
Key brotula	<i>Ogilbia cayorum</i>	0.01583	0.09091	0	0	0	0	0	0.018	0.000	0.01852	0.09091	0	0	0	0	0.01818	0.000
Lined seahorse	<i>Hippocampus erectus</i>	0.0625	0.09091	0.25	0	0.07692	0	0.08357	0	0.03597	0.09091	0.16366	0	0.07692	0	0.0457	0	
Lined sole	<i>Achirus lineatus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Marbled blenny	<i>Paraclinus marmoratus</i>	0.03125	0	0	0.11785	0	0	0.02353	0	0.03704	0	0	0.11785	0	0	0.02353	0	
Mummichog	<i>Fundulus heteroclitus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Northern pipefish	<i>Syngnathus fuscus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pigfish	<i>Orthopristis chrysoptera</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pinfish	<i>Lagodon rhomboidalis</i>	0.32813	0.54545	0.875	0.23529	0.30769	0	0.39269	0	0.11345	0.31228	0.3981	0.1825	0.17485	0	0.14869	0	
Planehead filefish	<i>Monocanthus hispidus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pugnose pipefish	<i>Bryx dunckeri</i>	0.01583	0.09091	0	0	0	0	0.01818	0	0.01852	0.09091	0	0	0	0	0.01818	0	
Rainwater killifish	<i>Lucania parva</i>	6.57813	18.3636	19.625	0.11785	6.30769	0	6.4828	0	2.32454	5.92878	11.0145	0.11785	3.14089	0	4.07996	0	
Redfin brotula	<i>Petrotyx sanguineus</i>	0.04888	0.09091	0	0	0.15385	0	0.04895	0	0.04109	0.09091	0	0	0.15385	0	0.03158	0	
Sargassumfish	<i>Histrio histrio</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Sargassum pipefish	<i>Syngnathus pelagicus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Scrawled cowfish	<i>Lactophrys quadricornis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Sheepshead porgy	<i>Archosargus probatocephalus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Silver jenny	<i>Eucinostomus gula</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Spotfin jawfish	<i>Opistognathus robbinsi</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Spotted dragonet	<i>Diplogrammus pauciradiatus</i>	0.73438	0.27273	0.25	1.17647	1	1	0.73984	0.4	0.17808	0.19498	0.25	0.40434	0.40825	0.44721	0.19801	0.28667	
Spotted whiff	<i>Citharichthys macrops</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Striped cusk-eel	<i>Ophidion marginatum</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Tomtate	<i>Haemulon aurolineatum</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
unidentified fish		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Fish		10.5156	22.4545	24.875	3.17647	11.3077	1	12.563	2.100	2.51562	6.10866	12.0607	0.82353	2.75352	0.44721	4.86217	1.048	
SHRIMP	Scientific Name	overall	1s	2n	2s	3n	3s	zones	Elliot	overall	1s	2n	2s	3n	3s	zones	Elliot	
Pink Shrimp	<i>Farfantepenaeus duorarum</i>	0.27778	0.09091	0.25	0.17847	0.48154	0.8	0.31578	0	0.08037	0.09091	0.16366	0.1282	0.21529	0.4	0.10735	0	
	<i>Alpheus heterochaelis</i>	0.07407	0.09091	0.125	0.11785	0	0	0.06671	0.3	0.03564	0.09091	0.125	0.08055	0	0	0.08103	0.21344	
	<i>Alpheus normanni</i>	0.18519	0.18182	0.125	0.05882	0.48154	0	0.16544	1	0.06454	0.18182	0.125	0.05882	0.18311	0	0.12082	1	
	<i>Brachycarpus biunguiculatus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Hippolyte pleuracanthus</i>	1.22222	0.90909	1.625	1.41178	0	3.8	1.54817	0	0.41793	0.4946	1.08459	0.95509	0	2.37487	0.91795	0	
	<i>Hippolyte zostericola</i>	29.7593	31.5455	28	20	23.6923	80.8	36.4076	2.6	5.89756	11.9083	16.0401	7.52466	8.95205	35.5604	8.63782	1.03484	
	<i>Latreutes fucorum</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Leander tenuicorris</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Lysmata rathbunae</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Palaemonetes intermedius</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

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SHRIMP		overall	1s	2n	2s	3n	3s	zones	Elliot	overall	1s	2n	2s	3n	3s	zones	Elliot
	<i>Palaemonetes pugio</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Palaemonetes vulgaris</i>	0.24074	0	0	0.64706	0.15385	0	0.16018	0.6	0.20444	0	0	0.64706	0.15385	0	0.51712	0.49889
	<i>Periclimenes americanus</i>	0.12963	0.09091	0	0	0.46154	0	0.11049	3.4	0.07877	0.09091	0	0	0.31246	0	0.2162	2.41845
	<i>Periclimenes longicaudatus</i>	0.42593	0.45455	0.5	0.78471	0.07692	0	0.35923	0.7	0.12723	0.2073	0.37798	0.32685	0.07692	0	0.24715	0.49554
	<i>Processa bermudensis</i>	0.09259	0	0	0.29412	0	0	0.05882	0	0.05411	0	0	0.16638	0	0	0.1372	0
	<i>Processa fimbriata</i>	0.01852	0	0.125	0	0	0	0.025	0	0.01835	0	0.125	0	0	0	0.07071	0
	<i>Thor floridanus</i>	3.58259	5.72727	5	3.41176	1.61538	2.4	3.63088	0.2	1.04511	3.80213	3.53048	1.53407	0.675	1.74929	1.85706	0.2
	<i>Thor manningi</i>	25.7222	22.5455	43.625	34.2941	13.6154	6.4	24.096	1.7	7.56596	10.7267	32.9918	16.857	7.16521	3.96989	15.3013	1.0116
unidentified shrimp		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Carideans		61.5	61.5455	77.125	61	40.1538	93.6	66.685	10.500	12.2101	24.3734	46.0002	24.8729	14.4439	43.0321	12.6436	4.911
CRABS		overall	1s	2n	2s	3n	3s	zones	Elliot	overall	1s	2n	2s	3n	3s	zones	Elliot
Blue Crab	<i>Callinectes sapidus</i>	0.11111	0.09091	0	0.11765	0.23077	0	0.08787	0.3	0.06234	0.09091	0	0.08055	0.23077	0.000	0.13109	0.21344
	<i>Callinectes similis</i>	0.05556	0	0	0.05882	0.15385	0	0.04253	0.2	0.04071	0	0	0.05882	0.15385	0	0.07131	0.2
	<i>Callinectes sp.</i>	0.03704	0	0.125	0	0.07692	0	0.04038	0	0.0257	0	0.125	0	0.07692	0.000	0.05643	0
	<i>Epiplatys dilatatus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Eurypanopeus sp</i>	0.64815	0.81818	0.875	0.11765	0.84815	1.2	0.7714	0	0.17984	0.40041	0.81055	0.08055	0.46473	0.8	0.61282	0
	<i>Libinia sp.</i>	0.01852	0	0	0.05882	0	0	0.01176	0	0.01835	0	0	0.05882	0	0	0.02169	0
	<i>Panopeus sp.</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Pitho lherminieri</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Pitho sp.</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
unidentified crabs		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Crabs		0.87037	0.90909	1	0.35294	1.30769	1.2	0.95394	0.5	0.20795	0.47586	0.62678	0.14706	0.5816	0.8	0.70152	0.26874

Appendix A, Table 5. Abundance and variability of fish, shrimp and crabs collected in southern Biscayne Bay with the throw-trap in June 2003. Sample size: overall=54, 1s=11, 2n=8, 2s=17, 3n=13, 3s=5, zones=5, Elliot=10.

FISH	Scientific Name	Mean								Standard Error of Mean							
		overall	1s	2n	2s	3n	3s	zones	Elliot	overall	1s	2n	2s	3n	3s	zones	Elliot
Banded blenny	<i>Paraclinus fasciatus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bank cusk-eel	<i>Ophidion holbrooki</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Banner goby	<i>Microgobius microlepis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Barbfish	<i>Scorpaena brasiliensis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bay anchovy	<i>Anchoa mitchilli</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bearded goby	<i>Barbulifer ceuthoeus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bigeye mojarra	<i>Eucinostomus havana</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bigeye stargazer	<i>Dactyloscopus crossotus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Blackcheek tonguefish	<i>Symphurus plagiosa</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Blue angelfish	<i>Holocanthus bermudensis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bluelip parrotfish	<i>Cryptotomus roseus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bluethroat pikeblenny	<i>Chaenopsis ocellata</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bluestriped grunt	<i>Haemulon sciurus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chain pipefish	<i>Syngnathus louisianae</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Clown goby	<i>Microgobius gulosus</i>	0.33333	0.9091	0	0	0	0.6154	0.3049	0.1	0.1374	0.4759	0	0	0	0.5927	0.3579	0.1
Code goby	<i>Gobiosoma robustum</i>	0.55556	0.6364	0.0588	0	0.75	1.2308	0.53519	0.5	0.1534	0.2439	0.0588	0	0.491	0.7562	0.3231	0.3073
Crested goby	<i>Lophogobius cyprinoides</i>	0.01852	0.0909	0	0	0	0	0.01818	0	0.0185	0.0909	0	0	0	0	0.0603	0
Dusky cusk	<i>Parophidion schmidt</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dusky pipefish	<i>Syngnathus floridae</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dwarf pipefish	<i>Cosmocampus hildebrandi</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dwarf seahorse	<i>Hippocampus zosterae</i>	0.05556	0	0	0	0	0.2308	0.04615	0.2	0.0411	0	0	0	0	0.2679	0.1198	0.1333
Fritfin goby	<i>Bathygobius soporator</i>	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0.1
Fringed pipefish	<i>Anarchopterus criniger</i>	0.12963	0.1818	0.0588	0	0.25	0.1538	0.1289	0	0.0532	0.1818	0.0588	0	0.1637	0.1679	0.1026	0
Gold brotula	<i>Gunterichthys longipennis</i>	0.03704	0	0	0	0.125	0.0769	0.04038	0	0.0259	0	0	0	0.125	0.124	0.0762	0
Goldspot goby	<i>Gnathalepis thompsoni</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Goldspotted killifish	<i>Floridichthys carpio</i>	0.11111	0.0909	0.0588	0	0	0.3077	0.09148	0.3	0.0778	0.0909	0.0588	0	0	0.4961	0.2042	0.3
Great barracuda	<i>Sphyræna barracuda</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gulf pipefish	<i>Syngnathus scovelli</i>	0.12963	0.5455	0	0	0	0.0769	0.12448	0	0.0532	0.2073	0	0	0	0.124	0.1348	0
Gulf toadfish	<i>Opsanus beta</i>	0.57407	0.8182	0	0	1.375	0.8462	0.80787	0.1	0.1705	0.553	0	0	0.5324	0.5729	0.3874	0.1
Hardhead silverside	<i>Atherinomorus stipes</i>	0	0	0	0	0	0	0	0.9	0	0	0	0	0	0	0	0.9

June 2003

FISH	Scientific Name	overall	1s	2n	2s	3n	3s	zones	Elliot	overall	1s	2n	2s	3n	3s	zones	Elliot
Key brotula	<i>Ogilbia caryorum</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lined seahorse	<i>Hippocampus erectus</i>	0.03704	0	0	0	0	0.1538	0.03077	0	0.0259	0	0	0	0	0.1679	0.0751	0
Lined sole	<i>Achirus lineatus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Marbled blenny	<i>Paraclinus marmoratus</i>	0.01852	0	0	0.2	0	0	0.04	0.1	0.0185	0	0	0.124	0	0	0.0894	0.1
Mummichog	<i>Fundulus heteroclitus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Northern pipefish	<i>Syngnathus fuscus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pigfish	<i>Orthopristis chrysoptera</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pinfish	<i>Lagodon rhomboidalis</i>	0.12963	0.0909	0	0	0.25	0.3077	0.12972	0	0.065	0.0909	0	0	0.25	0.3359	0.1637	0
Planehead filefish	<i>Monocanthus hispidus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pugnose pipefish	<i>Bryx dunckeri</i>	0.03704	0	0.1176	0	0	0	0.02353	0	0.037	0	0.1176	0	0	0	0.097	0
Rainwater killifish	<i>Lucania parva</i>	5.35185	9.7273	0.2353	0	7.375	9.1538	5.29828	0	1.9444	5.9484	0.2353	0	5.3283	8.4893	4.3437	0
Redfin brotula	<i>Petrotyx sanguineus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sargassumfish	<i>Histrio histrio</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sargassum pipefish	<i>Syngnathus pelagicus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scrawled cowfish	<i>Lactophrys quadricornis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sheepshead porgy	<i>Archosargus probatocephalus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Silver jenny	<i>Eucinostomus gula</i>	0.01852	0.0909	0	0	0	0	0.01818	0	0.0185	0.0909	0	0	0	0	0.0603	0
Spotfin jawfish	<i>Opistognathus robindi</i>	0.81481	0.1818	1	0.8	0.5	1.3848	0.73329	0.2	0.1982	0.1818	0.2844	0.2481	0.378	1.0253	0.2882	0.1333
Spotted dragonet	<i>Diplogrammus pauciradiatus</i>	0.01852	0	0.0588	0	0	0	0.01176	0	0.0185	0	0.0588	0	0	0	0.0485	0
Spotted whiff	<i>Citharichthys macrops</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Striped cusk-eel	<i>Ophidion marginatum</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tomtate	<i>Haemulon aurolineatum</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
unidentified fish		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Fish		8.37037	13.364	1.5882	0.8	10.625	14.538	8.18307	2.5	2.0206	6.0906	0.4118	0.232	5.3115	8.2636	4.181	1.424
SHRIMP	Scientific Name	overall	1s	2n	2s	3n	3s	zones	Elliot	overall	1s	2n	2s	3n	3s	zones	Elliot
Pink Shrimp	<i>Farfantepenaeus duorarum</i>	0.11111	0.0909	0.0588	0	0.25	0.1538	0.11072	0.1	0.0432	0.0909	0.0588	0	0.1637	0.1679	0.0784	0.1
	<i>Alpheus heterochaelis</i>	0.01852	0.0909	0	0	0	0	0.01818	0.4	0.0185	0.0909	0	0	0	0	0.0603	0.3055
	<i>Alpheus normanni</i>	0.07407	0.1818	0.0588	0	0.125	0	0.07313	1.7	0.0446	0.1818	0.0588	0	0.125	0	0.114	1.193
	<i>Brachycarpus biunguiculatus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Hippolyte pleuracanthus</i>	0.61111	1.0909	0	0.2	0.75	1.0769	0.62357	0	0.2622	1.0909	0	0.124	0.491	0.8054	0.6299	0
	<i>Hippolyte zostericola</i>	10.5926	6.5455	0.8824	0.4	26.5	20.846	11.0348	1.8	2.4875	4.4972	0.4362	0.2481	7.9462	10.185	4.7915	1.2693
	<i>Latreutes fucorum</i>	0	0	0	0	0	0	0	0.2	0	0	0	0	0	0	0	0.2
	<i>Leander tenuicornis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Lysmata rathbunae</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Palaemonetes intermedius</i>	0.24074	1.0909	0	0	0	0.0769	0.23357	0.4	0.2226	1.0909	0	0	0	0.124	0.7118	0.4

June 2003

SHRIMP		overall	1s	2n	2s	3n	3s	zones	Elliot	overall	1s	2n	2s	3n	3s	zones	Elliot
	<i>Palaemonetes pugio</i>	0.12963	0.5455	0	0	0	0.0789	0.12448	0.6	0.0795	0.3659	0	0	0	0.124	0.2351	0.4269
	<i>Palaemonetes vulgaris</i>	0.03704	0.1818	0	0	0	0	0.03638	1.5	0.037	0.1818	0	0	0	0	0.1206	1.2042
	<i>Periclimenes americanus</i>	0	0	0	0	0	0	0	2.2	0	0	0	0	0	0	0	2.2
	<i>Periclimenes longicaudatus</i>	0.18519	0	0.4706	0	0	0.1538	0.12489	0.7	0.0839	0	0.2288	0	0	0.2481	0.1935	0.423
	<i>Processa bermudensis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Processa fimbriata</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Thor floridanus</i>	2.07407	2.1818	0.2353	0.8	2.75	4.4815	2.08573	0.2	0.7038	1.8114	0.1811	0.4961	1.7398	3.8497	1.3385	0.2
	<i>Thor manningi</i>	22.7222	32.273	3.4118	1	49.25	31.923	23.5715	19	8.1516	27.979	1.3587	0.4804	30.24	24.484	19.233	10.492
unidentified shrimp		0.01852	0.0909	0	0	0	0	0.01818	0	0.0185	0.0909	0	0	0	0	0.0603	0
Total Carideans		36.6852	44.182	5.0588	2.4	79.375	58.615	37.9262	28.7	9.7514	29.556	1.852	0.9923	34.92	32.263	21.146	13.112
CRABS		overall	1s	2n	2s	3n	3s	zones	Elliot	overall	1s	2n	2s	3n	3s	zones	Elliot
Blue Crab	<i>Callinectes sapidus</i>	0.01852	0.0909	0	0	0	0	0.01818	0	0.0185	0.0909	0	0	0	0	0.0603	0
	<i>Callinectes similis</i>	0.03704	0.0909	0	0.2	0	0	0.05818	0	0.0259	0.0909	0	0.124	0	0	0.0945	0
	<i>Callinectes sp.</i>	0.01852	0.0909	0	0	0	0	0.01818	0	0.0185	0.0909	0	0	0	0	0.0603	0
	<i>Epiplatys dilatatus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Eurypanopeus sp</i>	0.62963	2.4545	0	0	0.375	0.3077	0.62745	0	0.3186	1.4545	0	0	0.2631	0.3359	0.9056	0
	<i>Libinia sp.</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Panopeus sp.</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Pitho therminieri</i>	0	0	0	0	0	0	0	0.2	0	0	0	0	0	0	0	0.2
	<i>Pitho sp.</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
unidentified crabs		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Crabs		0.7037	2.7273	0	0.2	0.375	0.3077	0.72199	0.2	0.335	1.5141	0	0.124	0.2631	0.3359	0.9175	0.2

Appendix A, Table 6. Abundance and variability of fish, shrimp and crabs collected in southern Biscayne Bay with the throw-trap in August 2003. Sample size: overall=54, 1s=11, 2n=8, 2s=17, 3n=13, 3s=5, zones=5, Elliot=10.

FISH	Scientific Name	Mean								Standard Error of Mean							
		overall	1s	2n	2s	3n	3s	zones	Elliot	overall	1s	2n	2s	3n	3s	zones	Elliot
Banded blenny	<i>Paraclinus fasciatus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bank cusk-eel	<i>Ophidion holbrooki</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Banner goby	<i>Microgobius microlepis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Barbfish	<i>Scorpaena brasiliensis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bay anchovy	<i>Anchoa mitchilli</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bearded goby	<i>Barbulifer ceuthoeus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bigeye mojarra	<i>Eucinostomus havana</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bigeye stargazer	<i>Dactyloscopus crossotus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Blackcheek tonguefish	<i>Symphurus plagiusa</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Blue angelfish	<i>Holocanthus bermudensis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bluelip parrotfish	<i>Cryptotomus roseus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bluethroat pikeblenny	<i>Chaenopsis ocellata</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bluestriped grunt	<i>Haemulon sciurus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chain pipefish	<i>Syngnathus louisianae</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Clown goby	<i>Microgobius gulosus</i>	0.03704	0.0909	0	0	0.125	0	0.04318	0	0.0259	0.0909	0	0	0.125	0	0.0806	0
Code goby	<i>Gobiosoma robustum</i>	0.59259	1.3636	0.4118	0	0.25	0.8154	0.52818	0.1	0.2073	0.845	0.1728	0	0.1637	0.6485	0.489	0.1
Crested goby	<i>Lophogobius cyprinoides</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dusky cusk	<i>Parophidion schmidt</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dusky pipefish	<i>Syngnathus floridae</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dwarf pipefish	<i>Cosmocampus hildebrandi</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dwarf seahorse	<i>Hippocampus zosterae</i>	0.12963	0.0909	0.1765	0.2	0.125	0.0769	0.13386	0	0.0532	0.0909	0.1282	0.124	0.125	0.124	0.0469	0
Fringfin goby	<i>Bathygobius soporator</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fringed pipefish	<i>Anarchopterus criniger</i>	0.2037	0.3636	0.1765	0	0.375	0.0769	0.19841	0	0.1002	0.3636	0.1282	0	0.375	0.124	0.2289	0
Gold brotula	<i>Gunterichthys longipenis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Goldspot goby	<i>Gnatholepis thompsoni</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Goldspotted killifish	<i>Floridichthys carpio</i>	0.03704	0	0	0	0	0.1538	0.03077	0	0.037	0	0	0	0	0.2481	0.1109	0
Great barracuda	<i>Sphyræna barracuda</i>	0.01852	0.0909	0	0	0	0	0.01818	0	0.0185	0.0909	0	0	0	0	0.0603	0
Gulf pipefish	<i>Syngnathus scovelli</i>	0.05556	0.0909	0	0	0.25	0	0.06818	0	0.0411	0.0909	0	0	0.25	0	0.1392	0
Gulf toadfish	<i>Opsanus beta</i>	0.31461	0.4545	0.1765	0	0.25	0.5385	0.2839	0	0.0947	0.2817	0.0953	0	0.1637	0.4326	0.1812	0
Hardhead silverside	<i>Atherinomorus stipes</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix A, Table 6. Abundance and variability of fish, shrimp and crabs collected in southern Biscayne Bay with the throw-trap in August 2003. Sample size: overall=54, 1s=11, 2n=8, 2s=17, 3n=13, 3s=5, zones=5, Elliot=10.

FISH	Scientific Name	Mean								Standard Error of Mean							
		overall	1s	2n	2s	3n	3s	zones	Elliot	overall	1s	2n	2s	3n	3s	zones	Elliot
Banded blenny	<i>Paraclinus fasciatus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bank cusk-eel	<i>Ophdion holbrooki</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Banner goby	<i>Microgobius microlepis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Barbfish	<i>Scorpaena brasiliensis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bay anchovy	<i>Anchoa mitchilli</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bearded goby	<i>Barbulfier ceuthoëus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bigeye mojarra	<i>Eucinostomus havana</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bigeye stargazer	<i>Dactyloscopus crossotus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Blackcheek tonguefish	<i>Symphurus plegiusa</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Blue angelfish	<i>Holacanthus bermudensis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bluelip parrotfish	<i>Cryptotomus roseus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bluethroat pikeblenny	<i>Chaenopsis ocellata</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bluestriped grunt	<i>Haemulon sciurus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chain pipefish	<i>Syngnathus louisianae</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Clown goby	<i>Microgobius gulosus</i>	0.03704	0.0909	0	0	0.125	0	0.04318	0	0.0259	0.0909	0	0	0.125	0	0.0806	0
Code goby	<i>Gobiosoma robustum</i>	0.59259	1.3638	0.4118	0	0.25	0.8154	0.52816	0.1	0.2073	0.845	0.1728	0	0.1637	0.6465	0.489	0.1
Crested goby	<i>Lophogobius cyprinoides</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dusky cusk	<i>Parophidion schmidtii</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dusky pipefish	<i>Syngnathus floridae</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dwarf pipefish	<i>Cosmocampus hildebrandi</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dwarf seahorse	<i>Hippocampus zosterae</i>	0.12963	0.0909	0.1765	0.2	0.125	0.0769	0.13386	0	0.0532	0.0909	0.1282	0.124	0.125	0.124	0.0469	0
Fringfin goby	<i>Bethyogobius soporator</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fringed pipefish	<i>Anarchopterus criniger</i>	0.2037	0.3638	0.1765	0	0.375	0.0769	0.19841	0	0.1002	0.3638	0.1282	0	0.375	0.124	0.2289	0
Gold brotula	<i>Gunterichthys longipenis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Goldspot goby	<i>Gnatholepis thompsoni</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Goldspotted killifish	<i>Floridichthys carpio</i>	0.03704	0	0	0	0	0.1538	0.03077	0	0.037	0	0	0	0	0.2481	0.1109	0
Great barracuda	<i>Sphyræna barracuda</i>	0.01852	0.0909	0	0	0	0	0.01818	0	0.0185	0.0909	0	0	0	0	0.0603	0
Gulf pipefish	<i>Syngnathus scovelli</i>	0.05556	0.0909	0	0	0.25	0	0.06818	0	0.0411	0.0909	0	0	0.25	0	0.1392	0
Gulf toadfish	<i>Opsanus beta</i>	0.31481	0.4545	0.1765	0	0.25	0.5385	0.2839	0	0.0947	0.2817	0.0953	0	0.1637	0.4326	0.1812	0
Hardhead silverside	<i>Atherinomorus stipes</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

FISH	Scientific Name	overall	1s	2n	2s	3n	3s	zones	Elliot	overall	1s	2n	2s	3n	3s	zones	Elliot
Key brotula	<i>Ogilbia corynor</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lined seahorse	<i>Hippocampus erectus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lined sole	<i>Achirus lineatus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Marbled blenny	<i>Paraclinus marmoratus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mummichog	<i>Fundulus heteroclitus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Northern pipefish	<i>Syngnathus fuscus</i>	0.01852	0	0	0	0	0.0769	0.01538	0	0.0185	0	0	0	0	0.124	0.0555	0
Pigfish	<i>Orthopristis chrysoptera</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pinfish	<i>Lagodon rhomboidalis</i>	0.07407	0.2727	0	0	0.125	0	0.07955	0	0.038	0.1408	0	0	0.125	0	0.1021	0
Planehead filefish	<i>Monocanthus hispidus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pugnose pipefish	<i>Bryx dunckeri</i>	0.03704	0	0.1176	0	0	0	0.02353	0	0.0259	0	0.0805	0	0	0	0.0664	0
Rainwater killifish	<i>Lucania parva</i>	8.11111	20.909	0.5294	0	12.125	7.8462	8.28193	0	2.3243	7.3255	0.3222	0	7.6566	7.0825	5.0749	0
Redfin brotula	<i>Petrotyx sanguineus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sargassumfish	<i>Histrio histrio</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sargassum pipefish	<i>Syngnathus pelagicus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scrawled cowfish	<i>Lactophrys quadricornis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sheepshead porgy	<i>Archosergus probatocephalus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Silver jenny	<i>Eucinostomus gula</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spotfin jawfish	<i>Opistognathus robbinsi</i>	0.12963	0	0.1765	0	0	0.3077	0.06683	0.1	0.065	0	0.0953	0	0	0.3823	0.1664	0.1
Spotted dragonet	<i>Diplogrammus peuciradatus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spotted whiff	<i>Citharichthys macrops</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Striped cusk-eel	<i>Ophidion marginatum</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tomtate	<i>Haemulon aurolineatum</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
unidentified fish		0.01852	0	0.0588	0	0	0	0.01176	0	0.0185	0	0.0588	0	0	0	0.0485	0
Total Fish		9.778	23.727	1.824	0.200	13.625	9.692	9.814	0.200	2.420	7.768	0.516	0.124	7.521	7.168	5.081	0.133
SHRIMP	Scientific Name	overall	1s	2n	2s	3n	3s	zones	Elliot	overall	1s	2n	2s	3n	3s	zones	Elliot
Pink Shrimp	<i>Farfantepenaeus duorarum</i>	1.09259	2.0909	0.7647	0.2	1	1.0769	1.02651	0.1	0.2412	0.7441	0.2647	0.124	0.3273	1.0241	0.3969	0.1
	<i>Alpheus heterochaelis</i>	0.01852	0.0909	0	0	0	0	0.01818	0	0.0185	0.0909	0	0	0	0	0.0603	0
	<i>Alpheus normanni</i>	0.05556	0	0.1765	0	0	0	0.03529	0.1	0.0411	0	0.1282	0	0	0	0.1057	0.1
	<i>Brachycarpus biunguiculatus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Hippolyte pleuracanthus</i>	0.07407	0	0	0	0	0.3077	0.06154	0	0.0741	0	0	0	0	0.4961	0.2219	0
	<i>Hippolyte zostericola</i>	4.75926	5.9091	2.8824	0.4	9.125	5.2308	4.70944	0.2	1.3723	4.8382	1.0775	0.2481	4.1552	4.4802	2.6838	0.1333
	<i>Latreutes fuorum</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Leander tenuicornis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Lysmata rathbunae</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Palaemonetes intermedius</i>	0.07407	0.3636	0	0	0	0	0.07273	0	0.0741	0.3636	0	0	0	0	0.2412	0

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SHRIMP		overall	1s	2n	2s	3n	3s	zones	Elliot	overall	1s	2n	2s	3n	3s	zones	Elliot
	<i>Palaemonetes pugio</i>	0.01852	0.0909	0	0	0	0	0.01818	0	0.0185	0.0909	0	0	0	0	0.0803	0
	<i>Palaemonetes vulgaris</i>	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0.1
	<i>Periclimenes americanus</i>	0.05556	0	0.1765	0	0	0	0.03529	0.5	0.0411	0	0.1282	0	0	0	0.1057	0.5
	<i>Periclimenes longicaudatus</i>	0.2037	0	0.5882	0	0.125	0	0.14285	0.2	0.093	0	0.272	0	0.125	0	0.2176	0.1333
	<i>Processa bermudensis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Processa fimbriata</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Thor floridanus</i>	2.48148	2	5.0588	0	2.125	0.6923	1.97523	0.1	0.969	1.2136	2.8652	0	1.109	0.7612	2.037	0.1
	<i>Thor manningi</i>	41.963	69	42.294	4.6	41.25	33.462	38.1211	3.7	12.062	45.413	18.728	1.8355	23.412	28.064	23.02	1.82
unidentified shrimp		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Carideans		49.7037	77.455	51.176	5	52.625	39.692	45.1897	4.9	13.763	50.993	22.595	2.0755	26.455	31.073	25.955	2.1677
CRABS		overall	1s	2n	2s	3n	3s	zones	Elliot	overall	1s	2n	2s	3n	3s	zones	Elliot
Blue Crab	<i>Callinectes sapidus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Callinectes similis</i>	0.01852	0	0.0588	0	0	0	0.01176	0	0.0025	0	0.0208	0	0	0.000	0.0053	0
	<i>Callinectes sp.</i>	0.03704	0	0.1176	0	0	0	0.02353	0	0.005	0	0.0416	0	0	0.000	0.0105	0
	<i>Epiplatys dilatatus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Eurypanopeus sp</i>	0.01852	0	0.0588	0	0	0	0.01176	0	0.0025	0	0.0208	0	0	0.000	0.0053	0
	<i>Libinia sp.</i>	0.01852	0	0	0	0.125	0	0.025	0	0.0025	0	0	0	0.0347	0	0.0112	0
	<i>Panopeus sp.</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Pitho lherminieri</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Pitho sp.</i>	0.01852	0	0	0	0.125	0	0.025	0	0.0025	0	0	0	0.0347	0	0.0112	0
unidentified crabs		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Crabs		0.111	0.182	0.059	0	0	0.231	0.094	0	0.0506	0	0.1364	0	0.1637	0	0.1265	0

Appendix A, Table 7. Abundance and variability of fish, shrimp and crabs collected in southern Biscayne Bay with the throw-trap in October 2003. Sample size: overall=54, 1s=11, 2n=8, 2s=17, 3n=13, 3s=5, zones=5, Elliot=10.

[illegible]

[illegible]

SHRIMP		overall	1s	2n	2s	3n	3s	zones	Elliot	overall	1s	2n	2s	3n	3s	zones	Elliot
	<i>Palaeomonetes pugio</i>	0	0	0	0	0	0	0	0.2	0	0	0	0	0	0	0	0.2
	<i>Palaeomonetes vulgaris</i>	0.01852	0.09091	0	0	0	0	0.01818	0.3	0.01852	0.09091	0	0	0	0	0.0603	0.3
	<i>Periclimenes americanus</i>	0.01852	0	0.05882	0	0	0	0.01178	9.7	0.01852	0	0.05882	0	0	0	0.04851	9.7
	<i>Periclimenes longicaudatus</i>	0.11111	0	0.23529	0	0.125	0.07692	0.08744	0.9	0.04317	0	0.10605	0	0.125	0.12403	0.09081	0.69041
	<i>Processa bermudensis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Processa fimbriata</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Thor floridanus</i>	0.81481	1	0.64708	0	0.5	1.38482	0.70833	0.8	0.28725	0.8202	0.24184	0	0.5	1.43223	0.58138	0.41633
	<i>Thor manningi</i>	40.9074	47.2727	42	1	42.375	48.5385	36.2372	13.8	11.0683	27.7941	18.3806	0.39223	21.2972	48.1327	18.3142	4.31226
unidentified shrimp		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Carideans		47.3333	53.0909	45.5882	1.8	52.825	59.0769	42.396	29.800	11.8064	29.4925	19.0122	0.50383	22.3502	52.2907	19.6588	18.574
CRABS		overall	1s	2n	2s	3n	3s	zones	Elliot	overall	1s	2n	2s	3n	3s	zones	Elliot
Blue Crab	<i>Callinectes sapidus</i>	0.01852	0	0.05882	0	0	0	0.01178	0	0.01852	0	0.05882	0	0	0.000	0.04851	0
	<i>Callinectes similis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Callinectes sp.</i>	0.01852	0.09091	0	0	0	0	0.01818	0.1	0.01852	0.09091	0	0	0	0.000	0.0603	0.1
	<i>Epiplatys dilatatus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Eurypanopeus sp</i>	0.11111	0	0.23529	0	0.125	0.07692	0.08744	0	0.04317	0	0.10605	0	0.125	0.12403	0.09081	0
	<i>Libinia sp.</i>	0.01852	0	0.05882	0	0	0	0.01178	0	0.01852	0	0.05882	0	0	0	0.04851	0
	<i>Panopeus sp.</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Pilitho theminieri</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Pilitho sp.</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
unidentified crabs		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Crabs		0.16687	0.09091	0.35294	0	0.125	0.07692	0.12915	0.1	0.05761	0.09091	0.14708	0	0.125	0.12403	0.09088	0.1

Appendix A, Table 8. Abundance and variability of fish, shrimp and crabs collected in southern Biscayne Bay with the throw-trap in December 2003. Sample size: overall=54, 1s=11, 2n=8, 2s=17, 3n=13, 3s=5, zones=5, Elliot=10.

FISH	Scientific Name	Mean								Standard Error of Mean							
		overall	1s	2n	2s	3n	3s	zones	Elliot	overall	1s	2n	2s	3n	3s	zones	Elliot
Banded blenny	<i>Paraclinus fasciatus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bank cusk-eel	<i>Ophidion holbrookii</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Banner goby	<i>Microgobius microlepis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Barbfish	<i>Scorpaena brasiliensis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bay anchovy	<i>Anchoa mitchilli</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bearded goby	<i>Barbulifer ceuthoëus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bigeye mojarra	<i>Eucinostomus havana</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bigeye stargazer	<i>Dactyloscopus crossotus</i>	0.01852	0	0.05882	0	0	0	0.01176	0	0.01852	0	0.05293	0	0	0	0.01059	0
Blackcheek tonguefish	<i>Symphurus plagiosa</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Blue angelfish	<i>Holocanthus bermudensis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bluelip parrotfish	<i>Cryptotomus roseus</i>	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0.1
Bluethroat pikeblenny	<i>Chaenopsis ocellata</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bluestriped grunt	<i>Haemulon sciurus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chain pipefish	<i>Syngnathus louisianae</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Clown goby	<i>Microgobius gulosus</i>	0.05558	0.27273	0	0	0	0	0.05455	0.1	0.04109	0.19498	0	0	0	0	0.039	0.1
Code goby	<i>Gobiosoma robustum</i>	0.24074	0.83836	0.05882	0	0.25	0.2	0.22904	0.6	0.09133	0.36384	0.05293	0	0.25	0.12163	0.06636	0.49889
Crested goby	<i>Lophogobius cyprinoides</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dusky cusk	<i>Parophidion schmidtii</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dusky pipefish	<i>Syngnathus floridae</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dwarf pipefish	<i>Cosmocampus hildebrandi</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dwarf seahorse	<i>Hippocampus zosterae</i>	0.03704	0	0.05882	0	0	0.06667	0.0251	0.6	0.02594	0	0.15156	0	0	0.07692	0.03037	0.42687
Frillfin goby	<i>Bathygobius soporator</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fringed pipefish	<i>Anarchopterus criniger</i>	0.33333	0.09091	0.23529	0	1.375	0.13333	0.36691	0.3	0.17535	0.09091	0.13587	0	1.10093	0.15385	0.20291	0.3
Gold brotula	<i>Gunterichthys longipennis</i>	0.01852	0	0	0	0	0.06667	0.01333	0	0.01852	0	0	0	0	0.07692	0.01538	0
Goldspot goby	<i>Gnatholepis thompsoni</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Goldspotted killifish	<i>Floridichthys carpio</i>	0.03704	0.18182	0	0	0	0	0.03836	0	0.03704	0.18182	0	0	0	0	0.03836	0
Great barracuda	<i>Sphyræna barracuda</i>	0.01852	0	0.05882	0	0	0	0.01176	0	0.01852	0	0.05293	0	0	0	0.01059	0
Gulf pipefish	<i>Syngnathus scovelli</i>	0.09259	0.45455	0	0	0	0	0.09091	0.1	0.04779	0.2073	0	0	0	0	0.04146	0.1
Gulf toadfish	<i>Opsanus beta</i>	0.14815	0	0	0	0.25	0.4	0.13	0	0.07665	0	0	0	0.25	0.26831	0.06355	0
Hardhead silverside	<i>Atherinomorus stipes</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

December 2003

SHRIMP		overall	1s	2n	2s	3n	3s	zones	Elliot	overall	1s	2n	2s	3n	3s	zones	Elliot
	<i>Palaemonetes pugio</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Palaemonetes vulgaris</i>	0	0	0	0	0	0	0	0.6	0	0	0.29181	0	0	0	0.05836	0.4
	<i>Periclimenes americanus</i>	0	0	0	0	0	0	0	6.3	0	0	1.60486	0	0	0	0.32099	2.96292
	<i>Periclimenes longicaudatus</i>	0.87037	0	1.76471	2.2	0.5	0.26667	0.94627	5.6	0.42217	0	1.15446	0.96954	0.37796	0.10415	0.2311	2.09868
	<i>Processa bermudensis</i>	0	0	0	0	0	0	0	0.1	0	0	0.07295	0	0	0	0.01459	0.1
	<i>Processa fimbriata</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Thor floridanus</i>	4.44444	3.63636	2.88235	5	9.625	3.26667	4.86208	6.1	1.30544	3.63636	1.39848	3.19374	5.37168	2.09136	0.68419	4.36292
	<i>Thor manningi</i>	42.4074	18.5455	25.6471	6.6	120.875	44.8	43.2935	102.7	15.2912	13.3174	10.9412	2.31517	82.881	31.7884	14.478	42.3257
unidentified shrimp		0.01852	0	0	0.2	0	0	0.04	0	0.01852	0	0	0.2	0	0	0.04	0
Total Carideans		65.6481	32.4545	39.8235	20.6	166.75	73.3333	66.5923	137.4	17.6401	19.2195	14.5984	3.47275	88.5445	37.9449	15.0162	42.3651
CRABS		overall	1s	2n	2s	3n	3s	zones	Elliot	overall	1s	2n	2s	3n	3s	zones	Elliot
Blue Crab	<i>Callinectes sapidus</i>	0.01852	0	0.05882	0	0	0	0.01178	0.1	0.01852	0	0.05293	0	0	0	0.01059	0.1
	<i>Callinectes similis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Callinectes sp.</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Epletus dilatatus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Eurypanopeus sp</i>	0.22222	0.09091	0.11765	0	0.75	0.2	0.23171	0.1	0.11111	0.09091	0.07295	0	0.61962	0.23077	0.11069	0.1
	<i>Libinia sp.</i>	0.18519	0	0.23529	0	0.625	0.06667	0.18539	0.6	0.08767	0	0.13597	0	0.49776	0.07692	0.09251	0.33993
	<i>Panopeus sp.</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Pilitho lherminieri</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Pilitho sp.</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
unidentified crabs		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Crabs		0.42593	0.09091	0.41176	0	1.375	0.26667	0.42867	0.8	0.19712	0.09091	0.22454	0	1.11704	0.30769	0.19943	0.3266

Appendix A, Table 9. Abundance and variability of fish, shrimp and crabs collected in southern Biscayne Bay with the throw-trap in February 2004. Sample size: overall=54, 1s=11, 2n=8, 2s=17, 3n=13, 3s=5, zones=5, Elliot=10.

FISH	Scientific Name	Mean								Standard Error of Mean							
		overall	1s	2n	2s	3n	3s	zones	Elliott	overall	1s	2n	2s	3n	3s	zones	Elliott
Banded blenny	Paraclinus fasciatus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bank cusk-eel	Ophidion holbrooki	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Banner goby	Microgobius microlepis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Barbfish	Scorpaena brasiliensis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bay Anchovy	Anchoa mitchilli	0	0	0	0	0	0	0	0.6	0	0	0	0	0	0	0	0.6
Bearded goby	Barbulifer ceuthoeus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bigeye mojarra	Eucinostomus havana	0.03704	0.09091	0	0	0	0.08667	0.03152	0	0.02594	0.09091	0	0	0	0.07692	0.02067	0
Bigeye stargazer	Dactyloscopus crossotus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Blackcheek tonguefish	Symphurus plagiata	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Blue angelfish	Holocanthus bermudensis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bluelip parrotfish	Cryptotomus roseus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bluethroat pikeblenny	Chaenopsis ocellata	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bluestriped grunt	Haemulon sciurus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chain pipefish	Syngnathus louisianae	0	0	0	0	0	0	0	0.1	0	0	0.07295	0	0	0	0.01459	0.1
Clown goby	Microgobius gulosus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Code goby	Gobiosoma robustum	0.62963	1.81818	0.11765	0	0.625	0.46667	0.8055	1.2	0.16781	0.55298	0.07295	0	0.3239	0.33235	0.09942	0.78599
Crested goby	Lophogobius cyprinoides	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dusky cusk	Parophidion schmidti	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dusky pipefish	Syngnathus floridae	0.01852	0.09091	0	0	0	0	0.01818	0	0.01852	0.09091	0	0	0	0	0.01818	0
Dwarf pipefish	Cosmocampus hildebrandi	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dwarf seahorse	Hippocampus zosterae	0.07407	0	0	0	0.375	0.08667	0.08833	0	0.04464	0	0	0	0.26305	0.07692	0.05099	0
Frillfin goby	Bathygobius soporator	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fringed pipefish	Anarchopterus criniger	0.16667	0	0.05882	0	0.25	0.4	0.14176	0	0.07359	0	0.08697	0	0.16366	0.26831	0.05123	0
Gold brotula	Gunterichthys longipenis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Goldspot goby	Gnatholepis thompsoni	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Goldspotted killifish	Floridichthys carpio	0.09259	0.18182	0	0	0	0.2	0.07636	0	0.04779	0.12197	0	0	0	0.16617	0.03598	0
Great barracuda	Sphyræna barracuda	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gulf pipefish	Syngnathus scovelli	0.11111	0.18182	0	0	0	0.26667	0.0897	0.1	0.06293	0.12197	0	0	0	0.23709	0.04759	0.1
Gulf toadfish	Opsanus beta	0.11111	0.27273	0	0	0.25	0.06667	0.11788	0.1	0.04317	0.14084	0	0	0.16366	0.07692	0.03424	0.1
Hardhead silverside	Atherinomorus stipes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

February 2004

FISH	Scientific Name	overall	1s	2n	2s	3n	3s	zones	Elliot	overall	1s	2n	2s	3n	3s	zones	Elliot
Key brotula	Ogilbia cayorum	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lined seahorse	Hippocampus erectus	0.03704	0	0.05882	0	0.125	0	0.03678	0	0.02584	0	0.05293	0	0.125	0	0.02459	0
Lined sole	Achirus lineatus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Marbled blenny	Paraclinus marmoratus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mummichog	Fundulus heteroclitus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Northern pipefish	Syngnathus fuscus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pigfish	Orthopristis chrysoptera	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pinfish	Lagodon rhomboides	0.09259	0.18182	0.05882	0	0.25	0	0.09813	0	0.03982	0.12197	0.08697	0	0.16368	0	0.03276	0
Planehead filefish	Monocanthus hispidus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pugnose pipefish	Bryx dunckeri	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rainwater killifish	Lucania parva	2.44444	4.18182	0	0	3.625	3.8	2.32136	1.5	0.72764	1.72056	0	0	2.39745	2.03034	0.51332	1.20416
Redfin brotula	Petrotyx sanguineus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sargassumfish	Histrio histrio	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sargassum pipefish	Syngnathus pelagicus	0.01852	0	0	0	0	0.06667	0.01333	0	0.01852	0	0	0	0	0.07692	0.01538	0
Scrawled cowfish	Lactophrys quadricornis	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0.1
Sheepshead porgy	Archosargus probatocephalus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Silver jenny	Eucinostomus gula	0.01852	0.09091	0	0	0	0	0.01818	0	0.01852	0.09091	0	0	0	0	0.01818	0
Spotfin jawfish	Opistognathus robbinsi	0.27778	0.09091	0.23529	0.2	0.125	0.53333	0.23691	0.9	0.08532	0.09091	0.11227	0.2	0.125	0.28953	0.03646	0.52599
Spotted dragonet	Diplogrammus pauciradiatus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spotted whiff	Citharichthys macrops	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Striped cusk-eel	Ophidion marginatum	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tomtate	Haemulon aurolineatum	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
unidentified fish		0.09259	0	0.29412	0	0	0	0.05882	0	0.07601	0	0.2214	0	0	0	0.04428	0
Total Fish		4.22222	7.18182	0.82353	0.2	5.625	5.93333	3.95274	4.8	0.78226	1.93448	0.40063	0.2	2.2908	1.84268	0.42965	2.6875
SHRIMP	Scientific Name	overall	1s	2n	2s	3n	3s	zones	Elliot	overall	1s	2n	2s	3n	3s	zones	Elliot
Pink Shrimp	Farfantepenaeus duorarum	0.38889	0.81818	0.05882	0	0.125	0.66667	0.33373	0.5	0.12516	0.35209	0.05293	0	0.125	0.37815	0.0776	0.40139
	Alpheus heterochaelis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Alpheus normanni	0.05556	0	0	0	0.125	0.13333	0.05167	0	0.03146	0	0	0	0.125	0.10415	0.02826	0
	Brachycarpus biunguiculatus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Hippolyte pleuracanthus	2.53704	3.54545	2.70588	0.6	3.375	1.46667	2.3386	0	0.7214	1.77028	2.43659	0.6	1.77218	0.77942	0.34275	0
	Hippolyte zostericola	17.5556	25.1818	6	2.4	37.625	17.2	17.6814	6.3	3.06791	7.92329	3.6368	0.5099	7.6717	6.94335	1.43024	3.08058
	Latreutes fucorum	0.01852	0.09091	0	0	0	0	0.01818	0.6	0.01852	0.09091	0	0	0	0	0.01818	0.4

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SHRIMP		overall	1s	2n	2s	3n	3s	zones	Elliot	overall	1s	2n	2s	3n	3s	zones	Elliot
	Scientific Name																
	Leander tenuicornis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Lysmata rathbunae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Palaemonetes intermedius	0.01852	0	0	0	0	0.06667	0.01333	0	0.01852	0	0	0	0	0.07692	0.01538	0
	Palaemonetes pugio	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Palaemonetes vulgaris	0.07407	0	0	0.2	0.125	0.13333	0.09167	0.1	0.04464	0	0	0.2	0.125	0.15385	0.04089	0.1
	Periclimenes americanus	0.01852	0	0.05882	0	0	0	0.01178	0	0.01852	0	0.05293	0	0	0	0.01059	0
	Periclimenes longicaudatus	0.2037	0.09091	0.52941	0	0	0.06667	0.1374	3	0.06918	0.09091	0.23787	0	0	0.07692	0.0435	1.52753
	Processa bermudensis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Processa fimbriata	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Thor floridanus	9.84815	4.81818	2.41176	0.6	22.375	16.3333	9.30766	3.3	4.45257	4.04479	1.86528	0.24495	13.7541	15.9995	3.2185	3.08058
	Thor manningi	26.8148	14.6364	4	1.8	57.125	50.4667	25.8056	18.7	9.25888	10.1849	1.54222	0.4899	27.0637	31.9088	6.49376	16.7425
unidentified shrimp		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Carideans		56.9444	48.3636	15.7059	5.6	120.75	85.8667	55.2572	32	14.0282	19.2483	9.27073	1.07703	41.384	45.0082	8.6756	22.8954
CRABS		overall	1s	2n	2s	3n	3s	zones	Elliot	overall	1s	2n	2s	3n	3s	zones	Elliot
	Scientific Name																
Blue Crab	Callinectes sapidus	0.03704	0	0.05882	0	0	0.06667	0.0251	0	0.02594	0	0.05293	0	0	0.07692	0.01635	0
	Callinectes similis	0.05556	0.09091	0	0	0	0.13333	0.04485	0	0.04109	0.09091	0	0	0	0.15385	0.03158	0
	Callinectes sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Epiplatys dilatatus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Eurypanopeus sp	0.14815	0	0	0	0.25	0.4	0.13	0.2	0.10034	0	0	0	0.25	0.3859	0.08079	0.2
	Libinia sp.	0.05556	0	0	0	0	0.2	0.04	0	0.05556	0	0	0	0	0.23077	0.04615	0
	Panopeus sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Pitho therminieri	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Pitho sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
unidentified crab		0.03704	0	0.05882	0	0.125	0	0.03678	0	0.02594	0	0.05293	0	0.125	0	0.02459	0
Total Crabs		0.33333	0.09091	0.11765	0	0.375	0.8	0.27671	0.2	0.1295	0.09091	0.07295	0	0.26305	0.47314	0.08504	0.2

Appendix A, Table 10. Abundance and variability of fish, shrimp and crabs collected in southern Biscayne Bay with the throw-trap in April 2004. Sample size: overall=54, 1s=11, 2n=8, 2s=17, 3n=13, 3s=5, zones=5, Elliot=10.

FISH	Scientific Name	Mean								Standard Error of Mean							
		overall	1s	2n	2s	3n	3s	zones	Elliot	overall	1s	2n	2s	3n	3s	zones	Elliot
Banded blenny	Paraclinus fasciatus	0.03704	0.09091	0.05882	0	0	0	0.02995	0.1	0.02594	0.09091	0.05293	0	0	0	0.01881	0.1
Bank cusk-eel	Ophidion holbrooki	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Banner goby	Microgobius microlepis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Barbfish	Scorpaena brasiliensis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bay Anchovy	Anchoa mitchilli	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bearded goby	Barbulifer cauthoeus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bigeye mojarra	Eucinostomus havana	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bigeye stargazer	Dactyloscopus crossotus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Blackcheek tonguefish	Symphurus plagiusa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Blue angelfish	Holocacanthus bermudensis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bluelip parrotfish	Cryptotomus roseus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bluethroat pikeblenny	Chaenopsis ocellata	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bluestriped grunt	Haemulon sciurus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chain pipefish	Syngnathus louisianae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Clown goby	Microgobius gulosus	0.07407	0.27273	0	0	0	0.08687	0.06788	0	0.04464	0.19498	0	0	0	0.07892	0.03818	0
Code goby	Gobiosoma robustum	0.44444	1.36364	0.17847	0	0.25	0.26687	0.41135	0.3	0.1286	0.47238	0.17712	0	0.16366	0.17485	0.07637	0.21344
Crested goby	Lophogobius cyprinoides	0.01852	0.09091	0	0	0	0	0.01818	0	0.01852	0.09091	0	0	0	0	0.01818	0
Dusky cusk	Parophidion schmidti	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dusky pipefish	Syngnathus floridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dwarf pipefish	Cosmocampus hildebrandi	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dwarf seahorse	Hippocampus zosterae	0.11111	0.18182	0.17647	0	0	0.06687	0.08499	0	0.04317	0.12197	0.08697	0	0	0.07692	0.02451	0
Fritfin goby	Bathygobius soporator	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fringed pipefish	Anarchopterus criniger	0.24074	0.54545	0.41176	0	0	0	0.19144	0	0.10879	0.3659	0.29181	0	0	0	0.0814	0
Gold brotula	Gunterichthys longipenis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Goldspot goby	Gnatholepis thompsoni	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Goldspotted killifish	Floridichthys carpio	0.01852	0	0	0	0	0.06687	0.01333	0	0.01852	0	0	0	0	0.07692	0.01538	0
Great barracuda	Sphyræna barracuda	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gulf pipefish	Syngnathus scovelli	0.12963	0.36364	0	0	0.25	0.06687	0.13606	0.1	0.05938	0.20328	0	0	0.25	0.07692	0.05173	0.1
Gulf toadfish	Opsanus beta	0.24074	0	0.17647	0	0.25	0.53333	0.19196	0	0.06332	0	0.15678	0	0.16366	0.21299	0.04473	0
Hardhead silverside	Atherinomoris stipes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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FISH	Scientific Name	overall	1s	2n	2s	3n	3s	zones	Elliot	overall	1s	2n	2s	3n	3s	zones	Elliot
Key brotula	Ogilbia cayorum	0.01852	0	0	0	0.125	0	0.025	0	0.01852	0	0	0	0.125	0	0.025	0
Lined seahorse	Hippocampus erectus	0.11111	0.09091	0.23529	0	0	0.06667	0.07857	0	0.06293	0.09091	0.16484	0	0	0.07692	0.031	0
Lined sole	Achirus lineatus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Marbled blenny	Paraclinus marmoratus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mummichog	Fundulus heteroclitus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Northern pipefish	Syngnathus fuscus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pigfish	Orthopristis chrysoptera	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pinfish	Lagodon rhomboides	0.18519	0.18182	0.41176	0	0.125	0	0.14372	0.1	0.0639	0.18182	0.28155	0	0.125	0	0.05418	0.1
Planehead filefish	Monocanthus hispidus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pugnose pipefish	Bryx dunckeri	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rainwater killifish	Lucania parva	4.2963	8	0.47059	0	9.625	3.93333	4.40578	1.1	1.06649	2.62505	0.37161	0	4.63657	1.83839	0.83559	1.1
Redfin brotula	Petrotyx sanguineus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sargassumfish	Histrio histrio	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sargassum pipefish	Syngnathus pelagicus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scrawled cowfish	Lactophrys quadricornis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sheepshead porgy	Archosargus probatocephalus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Silver jenny	Eucinostomus gula	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0.1
Speckled worm eel	Myrophis punctatus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spotfin jawfish	Oplisognathus robbinsi	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spotted dragonet	Diplogrammus pauciradiatus	0.38889	0.09091	0.41176	0.2	0.875	0.33333	0.3822	0.4	0.10379	0.09091	0.19661	0.2	0.3981	0.1804	0.05033	0.4
Spotted whiff	Citharichthys macrops	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Striped cusk-eel	Ophidion marginatum	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tomtate	Haemulon aurolineatum	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
unidentified fish		0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0.1
Total Fish		6.31481	11.2727	2.52941	0.2	11.5	5.4	6.18043	2.3	1.16068	2.84474	0.82926	0.2	4.6059	2.06358	0.77653	1.04403

SHRIMP	Scientific Name	overall	1s	2n	2s	3n	3s	zones	Elliot	overall	1s	2n	2s	3n	3s	zones	Elliot
Pink Shrimp	Farfantepenaeus duorarum	0.48296	1	0.17647	0	0.625	0.4	0.44029	0.8	0.1014	0.33029	0.08697	0	0.26305	0.18311	0.05928	0.55377
	Alpheus heterochaelis	0.01852	0	0.05882	0	0	0	0.01176	1.3	0.01852	0	0.05293	0	0	0	0.01059	1.19304
	Alpheus normanni	0.14815	0.09091	0.23529	0	0.25	0.06667	0.12857	0.3	0.06147	0.09091	0.14591	0	0.16366	0.07692	0.02867	0.21344
	Brachycarpus biunguiculatus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Hippolyte pleuracanthus	0.40741	0.09091	0.47059	0.8	0.5	0.33333	0.43897	0.1	0.14841	0.09091	0.30033	0.8	0.5	0.31068	0.11904	0.1
	Hippolyte zostericola	26.7037	83.3836	18.2941	1.8	28.25	13.4	25.0216	4	5.57169	19.5133	8.63087	0.86023	8.86568	5.44481	3.07424	2.90593
	Latreutes fucorum	0.01852	0.09091	0	0	0	0	0.01818	0.1	0.01852	0.09091	0.07295	0	0	0	0.02027	0.1

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SHRIMP		overall	1s	2n	2s	3n	3s	zones	Elliot	overall	1s	2n	2s	3n	3s	zones	Elliot
	Scientific Name																
	<i>Leander tenuicornis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Lysmata rathbunae</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Palaemonetes intermedius</i>	0.16667	0.45455	0	0	0	0.26667	0.14424	0	0.11748	0.45455	0	0	0	0.30769	0.0962	0
	<i>Palaemonetes pugio</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Palaemonetes vulgaris</i>	0.03704	0	0	0.2	0	0.06667	0.05333	0.2	0.02594	0	0.07295	0.2	0	0.07692	0.03658	0.13333
	<i>Periclimenes americanus</i>	0	0	0	0	0	0	0	1.2	0	0	0	0	0	0	0	1.2
	<i>Periclimenes longicaudatus</i>	0.14815	0	0.23529	0.2	0.125	0.13333	0.13873	1.2	0.06691	0	0.17393	0.2	0.125	0.10415	0.03463	0.66332
	<i>Processa bermudensis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Processa fimbriata</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Thor floridanus</i>	0.66667	0.36364	1.05882	0	0.5	0.66667	0.51783	0	0.26829	0.36364	0.69411	0	0.5	0.41066	0.11352	0
	<i>Thor manningi</i>	19.6111	19.8182	22.4118	1.8	22.375	18.1333	16.9077	9.1	6.23141	13.8017	13.5636	1.35647	12.1728	11.672	2.32446	4.83839
	unidentified shrimp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total Carideans	47.9259	84.2727	42.7647	4.8	52	33.0667	43.3808	17.5	10.1609	27.0837	21.7165	3.1209	15.3542	16.1876	3.99658	8.11754
CRABS		overall	1s	2n	2s	3n	3s	zones	Elliot	overall	1s	2n	2s	3n	3s	zones	Elliot
	Scientific Name																
	<i>Callinectes sapidus</i>	0.03704	0	0.05882	0	0	0.06667	0.0251	0	0.02594	0	0.05293	0	0	0.07692	0.01635	0
	<i>Callinectes similis</i>	0.01852	0	0.05882	0	0	0	0.01176	0	0.01852	0	0.05293	0	0	0	0.01059	0
	<i>Callinectes sp.</i>	0.01852	0.09091	0	0	0	0	0.01818	0	0.01852	0.09091	0	0	0	0	0.01818	0
	<i>Epiplatys dilatatus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Eurypanopeus sp.</i>	0.31481	0.72727	0.05882	0	0.875	0.06667	0.34555	0.1	0.13691	0.55744	0.05293	0	0.44068	0.07692	0.11384	0.1
	<i>Libinia sp.</i>	0.16667	0.27273	0.29412	0	0	0.06667	0.1267	0	0.07359	0.14084	0.18637	0	0	0.07692	0.0373	0
	<i>Macrocoeloma sp.</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Panopeus sp.</i>	0.01852	0	0	0	0	0.06667	0.01333	0	0.01852	0	0	0	0	0.07692	0.01538	0
	<i>Pitho lherminieri</i>	0.01852	0	0.05882	0	0	0	0.01176	0	0.01852	0	0.06697	0	0	0	0.01739	0
	<i>Pitho sp.</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Portunus sp.</i>	0.019	0	0	0.2	0	0	0.04	0	0.019	0	0	0.2	0	0	0.04	0
	<i>Rithropanopeus sp.</i>	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0.1
	unidentified crab	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total Crabs	0.611	1.091	0.529	0.2	0.875	0.267	0.592	0.2	0.178	0.625	0.283	0.2	0.441	0.175	0.084	0.133

Appendix A, Table 10. Abundance and variability of fish, shrimp and crabs collected in southern Biscayne Bay with the throw-trap in April 2004. Sample size: overall=54, 1s=11, 2n=8, 2s=17, 3n=13, 3s=5, zones=5, Elliot=10.

[illegible]

May 2004

FISH	Scientific Name	overall	1s	2n	2s	3n	3s	zones	Elliot	overall	1s	2n	2s	3n	3s	zones	Elliot
Key brotula	Ogilbia cayorum	0.01852	0	0	0	0.125	0	0.025	0	0.01852	0	0	0	0.125	0	0.025	0
Lined seahorse	Hippocampus erectus	0.11111	0.09091	0.23529	0	0	0.08887	0.07857	0	0.08293	0.09091	0.18484	0	0	0.07692	0.031	0
Lined sole	Achirus lineatus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Marbled blenny	Paraclinus marmoratus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mummichog	Fundulus heteroclitus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Northern pipefish	Syngnathus fuscus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pigfish	Orthopristis chrysoptera	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pinfish	Lagodon rhomboides	0.18519	0.18182	0.41176	0	0.125	0	0.14372	0.1	0.0839	0.18182	0.28155	0	0.125	0	0.05418	0.1
Planehead filefish	Monocanthus hispidus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pugnose pipefish	Bryx dunckeri	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rainwater killifish	Lucania parva	4.2983	8	0.47059	0	9.625	3.83333	4.40578	1.1	1.06649	2.62505	0.37161	0	4.63657	1.83839	0.83559	1.1
Redfin brotula	Petrotyx sanguineus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sargassumfish	Histrio histrio	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sargassum pipefish	Syngnathus pelagicus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scrawled cowfish	Lactophrys quadricornis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sheepshead porgy	Archosargus probatocephalus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Silver jenny	Eucinostomus gula	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0.1
Speckled worm eel	Myrophis punctatus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spotfin jawfish	Opistognathus robinai	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spotted dragonet	Diplogrammus pauciradiatus	0.38889	0.09091	0.41176	0.2	0.875	0.33333	0.3822	0.4	0.10379	0.09091	0.19661	0.2	0.3981	0.1804	0.05033	0.4
Spotted whiff	Citharichthys macrops	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Striped cusk-eel	Ophidion marginatum	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tomtate	Haemulon aurolineatum	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
unidentified fish		0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0.1
Total Fish		6.31481	11.2727	2.52941	0.2	11.5	5.4	6.18043	2.3	1.16068	2.84474	0.82926	0.2	4.6059	2.06358	0.77853	1.04403
SHRIMP	Scientific Name	overall	1s	2n	2s	3n	3s	zones	Elliot	overall	1s	2n	2s	3n	3s	zones	Elliot
Pink Shrimp	Farfantepenaeus duorarum	0.46296	1	0.17647	0	0.625	0.4	0.44029	0.8	0.1014	0.33029	0.08697	0	0.26305	0.18311	0.05928	0.55377
	Alpheus heterochaelis	0.01852	0	0.05882	0	0	0	0.01176	1.3	0.01852	0	0.05283	0	0	0	0.01059	1.19304
	Alpheus normanni	0.14815	0.09091	0.23529	0	0.25	0.08887	0.12857	0.3	0.08147	0.09091	0.14591	0	0.16366	0.07692	0.02887	0.21344
	Brachycarpus biunguiculatus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Hippolyte pleuracanthus	0.40741	0.09091	0.47059	0.8	0.5	0.33333	0.43897	0.1	0.14841	0.09091	0.30033	0.8	0.5	0.31088	0.11904	0.1
	Hippolyte zostericola	26.7037	63.3636	18.2941	1.8	28.25	13.4	25.0216	4	5.57169	19.5133	8.63087	0.86023	8.88568	5.44481	3.07424	2.90593
	Latreutes fucorum	0.01852	0.09091	0	0	0	0	0.01818	0.1	0.01852	0.09091	0.07295	0	0	0	0.02027	0.1

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SHRIMP		Scientific Name	overall	1s	2n	2s	3n	3s	zones	Elliot	overall	1s	2n	2s	3n	3s	zones	Elliot
		Leander tenuicorris	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Lysmata rathbunae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Palaemonetes intermedius	0.16667	0.45455	0	0	0	0.26667	0.14424	0	0.11748	0.45455	0	0	0	0.30769	0.0962	0
		Palaemonetes pugio	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Palaemonetes vulgaris	0.03704	0	0	0.2	0	0.06667	0.05333	0.2	0.02594	0	0.07295	0.2	0	0.07692	0.03658	0.13333
		Periclimenes americanus	0	0	0	0	0	0	0	1.2	0	0	0	0	0	0	0	1.2
		Periclimenes longicaudatus	0.14815	0	0.23529	0.2	0.125	0.13333	0.13873	1.2	0.06691	0	0.17393	0.2	0.125	0.10415	0.03463	0.66332
		Processa bermudensis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Processa fimbriata	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Thor floridanus	0.66667	0.36364	1.05882	0	0.5	0.66667	0.51783	0	0.26829	0.36364	0.69411	0	0.5	0.41066	0.11352	0
		Thor manningi	19.6111	19.8182	22.4118	1.8	22.375	18.1333	16.9077	9.1	8.23141	13.8017	13.5636	1.35647	12.1728	11.672	2.32446	4.83639
	unidentified shrimp		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total Carideans		47.9259	84.2727	42.7647	4.8	52	33.0667	43.3808	17.5	10.1609	27.0837	21.7165	3.1209	15.3542	16.1876	3.99658	8.11754
CRABS		Scientific Name	overall	1s	2n	2s	3n	3s	zones	Elliot	overall	1s	2n	2s	3n	3s	zones	Elliot
	Blue Crab	Callinectes sapidus	0.03704	0	0.05882	0	0	0.06667	0.0251	0	0.02594	0	0.05293	0	0	0.07692	0.01635	0
		Callinectes similis	0.01852	0	0.05882	0	0	0	0.01176	0	0.01852	0	0.05293	0	0	0	0.01059	0
		Callinectes sp.	0.01852	0.09091	0	0	0	0	0.01818	0	0.01852	0.09091	0	0	0	0	0.01818	0
		Epiplatys dilatatus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Eurypanopeus sp.	0.31481	0.72727	0.05882	0	0.875	0.06667	0.34555	0.1	0.13691	0.55744	0.05293	0	0.44068	0.07692	0.11384	0.1
		Libinia sp.	0.16667	0.27273	0.29412	0	0	0.06667	0.1267	0	0.07359	0.14084	0.18637	0	0	0.07692	0.0373	0
		Macrocoeloma sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Panopeus sp.	0.01852	0	0	0	0	0.06667	0.01333	0	0.01852	0	0	0	0	0.07692	0.01538	0
		Pitho herminieri	0.01852	0	0.05882	0	0	0	0.01176	0	0.01852	0	0.06697	0	0	0	0.01739	0
		Pitho sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Portunus sp.	0.01852	0	0	0.2	0	0	0.04	0	0.01852	0	0	0.2	0	0	0.04	0
		Rithropanopeus sp.	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0.1
	unidentified crab		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total Crabs		0.61111	1.09091	0.52941	0.2	0.875	0.26667	0.5924	0.2	0.17815	0.62457	0.28304	0.2	0.44068	0.17485	0.084	0.13333

Appendix Table B 1. August 2002 trawl (with sock) mean catch (number) per square meter. Sample size: raw=21, 1S=1, 2N=2, 2S=10, 3N=5, 3S=3, zones=5.

Common name	Scientific name	Mean						zone	Standard deviation						zone
		raw	1S	2N	2S	3N	3S		raw	1S	2N	2S	3N	3S	
Fish															
Alewife	<i>Alosa pseudoharengus</i>	0	0	0	0	0	0	0	0	NA	0	0	0	0	0
Bandtail Puffer	<i>Sphoeroides spengleri</i>	0.00687	0	0.00044	0.00017	0.00017	0.00115	0.00039	0.00064	NA	0.00062	0.00035	0.00039	0.00134	0.00046
Blackcheek Tonguefish	<i>Symphurus plagiosa</i>	0	0	0	0	0	0	0	0	NA	0	0	0	0	0
Blackedge Cusk Eel	<i>Lepophidium brevibarbe</i>	0	0	0	0	0	0	0	0	NA	0	0	0	0	0
Blackfin Cardinalfish	<i>Astrapogon puncticulatus</i>	0	0	0	0	0	0	0	0	NA	0	0	0	0	0
Blenny ?		0	0	0	0	0	0	0	0	NA	0	0	0	0	0
Blenny		0	0	0	0	0	0	0	0	NA	0	0	0	0	0
Bluethroat pikeblenny	<i>Chaenopsis ocellata</i>														
BlueStriped Grunt	<i>Haemulon sciurus</i>	0.02132	0.00276	0	0.00053	0.0016	0.00175	0.00133	0.00134	NA	0	0.00075	0.00188	0.00175	0.00108
Bridled Cardinalfish	<i>Apogon aurolineatus</i>	0.00175	0	0	8.7E-05	0	0.00029	7.8E-05	0.00028	NA	0	0.00028	0	0.0005	0.00013
Bucktooth parrotfish	<i>Sparisoma radians</i>	0	0	0	0	0	0	0	0	NA	0	0	0	0	0
Clown Goby	<i>Microbly gulosus</i>	0	0	0	0	0	0	0	0	NA	0	0	0	0	0
Code Goby	<i>Gobiosoma robustum</i>	0	0	0	0	0	0	0	0	NA	0	0	0	0	0
Colon Goby	<i>Coryphopterus dicus</i>	0	0	0	0	0	0	0	0	NA	0	0	0	0	0
Crested Pipefish	<i>Cosmocampus brachycephalus</i>	0	0	0	0	0	0	0	0	NA	0	0	0	0	0
Dusky Pipefish	<i>Syngnathus floridae</i>	0.00166	0	0	8.3E-05	0	0.00028	7.2E-05	0.00025	NA	0	0.00028	0	0.00048	0.00012
Dwarf Goatfish	<i>Upeneus parvus</i>	0	0	0	0	0	0	0	0	NA	0	0	0	0	0
Dwarf Seahorse	<i>Hippocampus zosterae</i>	0	0	0	0	0	0	0	0	NA	0	0	0	0	0
Emerald Parrotfish	<i>Nicholsina usta</i>	0.00083	0	0	8.3E-05	0	0	1.7E-05	0.00018	NA	0	0.00026	0	0	3.7E-05
Flagfin Mojarra	<i>Eucinostomus melanopterus</i>	0.02947	0	0.00437	0.00051	0.00245	0.00112	0.00169	0.00318	NA	0.00618	0.00081	0.00547	0.00127	0.00175
French Angelfish (juvenile)	<i>Pomacanthus paru</i>	0	0	0	0	0	0	0	0	NA	0	0	0	0	0
French Grunt	<i>Haemulon flavolineatum</i>	0	0	0	0	0	0	0	0	NA	0	0	0	0	0
Fringed Pipefish	<i>Micrognathus criniger</i>	0	0	0	0	0	0	0	0	NA	0	0	0	0	0
Goby	<i>Gobionellus sp.</i>	0	0	0	0	0	0	0	0	NA	0	0	0	0	0
Gold Brotula	<i>Gunterichthys longipennis</i>	0	0	0	0	0	0	0	0	NA	0	0	0	0	0
Goldspotted Killifish	<i>Florkichthys carpio</i>	0.00087	0	0.00044	0	0	0	8.7E-05	0.00019	NA	0.00062	0	0	0	0.0002
Grass Porgy	<i>Calamus arcifrons</i>	0.00171	0	0	0	0	0.00057	0.00011	0.00028	NA	0	0	0	0.00049	0.00025
Gray Snapper	<i>Lutjanus griseus</i>	0.00536	0.00092	0	0.00017	0.00058	0	0.00033	0.00049	NA	0	0.00053	0.00051	0	0.0004
Gulf Flounder	<i>Paralichthys albigutta</i>	0.00195	0	0	9.2E-05	0.00021	0	8E-05	0.00029	NA	0	0.00029	0.00046	0	9.1E-05
Gulf Pipefish	<i>Syngnathus scovelli</i>	0.00179	0.00092	0	0	0.00017	0	0.00022	0.00027	NA	0	0	0.00039	0	0.0004
Gulf Toadfish	<i>Opsanus beta</i>	0.01732	0.00184	0.00044	0.00068	0.00122	0.00055	0.00095	0.00142	NA	0.00062	0.00129	0.00228	0.00096	0.00058
Haemulidae?		0.00262	0	0	0	0.00035	0.00029	0.00013	0.00031	NA	0	0	0.00048	0.0005	0.00018
Hardhead Silverside	<i>Atherinomorus stipes</i>	0	0	0	0	0	0	0	0	NA	0	0	0	0	0
Highhat (juvenile)	<i>Equetus acuminatus</i>	0	0	0	0	0	0	0	0	NA	0	0	0	0	0
Hogfish (juvenile)	<i>Lachnolaimus maximus</i>	0	0	0	0	0	0	0	0	NA	0	0	0	0	0
Inshore Lizardfish	<i>Synodus foetens</i>	0.00359	0.00092	0	0.00018	0.00017	0	0.00025	0.00038	NA	0	0.00038	0.00039	0	0.00038
Key Brotula	<i>Ogilbia ceyorum</i>	0.00087	0	0.00044	0	0	0	8.7E-05	0.00019	NA	0.00062	0	0	0	0.0002
Leopard Sea robin	<i>Prionotus roseus</i>	0	0	0	0	0	0	0	0	NA	0	0	0	0	0
Lined Seahorse	<i>Hippocampus erectus</i>	0.00103	0	0	0	0.00021	0	4.1E-05	0.00022	NA	0	0	0.00046	0	9.2E-05

Appendix Table B 1. August 2002 trawl (with sock) mean catch (number) per square meter. Sample size: raw=21, 1S=1, 2N=2, 2S=10, 3N=5, 3S=3, zones=5.

Common name	Scientific name	Mean							Standard deviation						
		raw	1S	2N	2S	3N	3S	zone	raw	1S	2N	2S	3N	3S	zone
Longsnout Seahorse	<i>Hippocampus reidi</i>	0.00087	0	0.00044	0	0	0	8.7E-05	0.00019	NA	0.00062	0	0	0	0.0002
Longsnout Seahorse?	<i>Hippocampus reidi</i>	0	0	0	0	0	0	0	0	NA	0	0	0	0	0
Marbled Blenny	<i>Paraclinus marmoratus</i>	0	0	0	0	0	0	0	0	NA	0	0	0	0	0
Mojarra sp.	Gerridae	0	0	0	0	0	0	0	0	NA	0	0	0	0	0
Mutton Snapper	<i>Lutjanus analis</i>	0	0	0	0	0	0	0	0	NA	0	0	0	0	0
Orange Filefish	<i>Aluterus schoepfi</i>	0	0	0	0	0	0	0	0	NA	0	0	0	0	0
Pigfish	<i>Orthopristis chrysoptera</i>	0	0	0	0	0	0	0	0	NA	0	0	0	0	0
Pikeblenny	<i>Chaenopsis</i> sp?	0	0	0	0	0	0	0	0	NA	0	0	0	0	0
Pinfish	<i>Lagodon rhomboidalis</i>	0.10186	0.02484	0.01005	0.00368	0.00353	0.00083	0.00858	0.00594	NA	0.00185	0.00348	0.00403	0.00144	0.0097
Planehead Filefish	<i>Monacanthus hispidus</i>	0.00258	0	0	8.3E-05	0	0.00058	0.00013	0.00041	NA	0	0.00026	0	0.00101	0.00025
Queen Parrotfish	<i>Scarus vetula</i>														
Rainwater Killifish	<i>Lucania parva</i>	0.02159	0.00828	0.0035	9.2E-05	0.00108	0	0.00259	0.00207	NA	0	0.00029	0.00143	0	0.00348
Redfin Parrotfish	<i>Sparisoma rubripinne</i>	0	0	0	0	0	0	0	0	NA	0	0	0	0	0
Redtail Parrotfish	<i>Sparisoma chrysoptera</i>	0.00087	0	0	0	0.00017	0	3.5E-05	0.00019	NA	0	0	0.00039	0	7.8E-05
Sailors Choice	<i>Haemulon parrai</i>	0	0	0	0	0	0	0	0	NA	0	0	0	0	0
Sand Perch	<i>Diplectrum formosum</i>	0.00087	0	0	0	0	0.00029	5.8E-05	0.00019	NA	0	0	0	0.0005	0.00013
Sand Stargazer	<i>Dactyloscopus crossotus</i>	0	0	0	0	0	0	0	0	NA	0	0	0	0	0
Sand Whiff	<i>Citharichthys arenaceus</i>	0.00087	0	0	8.7E-05	0	0	1.7E-05	0.00019	NA	0	0.00028	0	0	3.9E-05
Sargassumfish	<i>Histrio histrio</i>	0	0	0	0	0	0	0	0	NA	0	0	0	0	0
Sargassum Pipefish	<i>Syngnathus pelagicus</i>	0.00521	0.00092	0.00087	8.3E-05	0.00017	0.00028	0.00047	0.0004	NA	0	0.00026	0.00039	0.00048	0.0004
Schoolmaster	<i>Lutjanus apodus</i>	0	0	0	0	0	0	0	0	NA	0	0	0	0	0
Scrawled Cowfish	<i>Lactophrys quadricornis</i>	0.0104	0	0.00044	0.00034	0.00087	0.00058	0.00045	0.00093	NA	0.00062	0.00072	0.00151	0.00101	0.00032
Scrawled Filefish	<i>Aluterus scriptus</i>	0.00087	0	0	0	0.00017	0	3.5E-05	0.00019	NA	0	0	0.00039	0	7.8E-05
Seahorses unident	<i>Hippocampus</i> spp.	0.00345	0	0	0.00035	0	0	6.9E-05	0.00035	NA	0	0.00045	0	0	0.00015
Sharptail Goby	<i>Gobionellus hastatus</i>	0	0	0	0	0	0	0	0	NA	0	0	0	0	0
Sheepshead Porgy	<i>Archosargus probatocephalus</i>	0.00087	0	0.00044	0	0	0	8.7E-05	0.00019	NA	0.00062	0	0	0	0.0002
Shrimp eel	<i>Ophichthus gomesi</i>	0.00087	0	0	0	0.00017	0	3.5E-05	0.00019	NA	0	0	0.00039	0	7.8E-05
Silver Jenny	<i>Eucinostomus gula</i>	0.00293	0	0	0	0.00059	0	0.00012	0.00048	NA	0	0	0.0009	0	0.00026
Silverside	Atherinidae	0	0	0	0	0	0	0	0	NA	0	0	0	0	0
Slender Filefish	<i>Monacanthus tuckeri</i>	0.00822	0	0.00044	0.00044	0.00041	0.00029	0.00032	0.00063	NA	0.00062	0.00062	0.00092	0.0005	0.00019
Southern Puffer	<i>Sphoeroides nephelus</i>	0	0	0	0	0	0	0	0	NA	0	0	0	0	0
Speckled Stargazer	<i>Dactyloscopus moorei</i>	0.00087	0	0	0	0	0.00029	5.8E-05	0.00019	NA	0	0	0	0.0005	0.00013
Spottail Goby	<i>Gobionellus stigmaturus</i>	0	0	0	0	0	0	0	0	NA	0	0	0	0	0
Spotted Dragonet	<i>Diplogrammus pauciradiatus</i>	0	0	0	0	0	0	0	0	NA	0	0	0	0	0
Spotted Scorpionfish	<i>Scorpaena plumieri</i>	0.00087	0	0.00044	0	0	0	8.7E-05	0.00019	NA	0.00062	0	0	0	0.0002
Spotted Whiff	<i>Citharichthys macrops</i>	0	0	0	0	0	0	0	0	NA	0	0	0	0	0
Striped Burrfish	<i>Chilomycterus schoepfi</i>	0.00087	0	0.00044	0	0	0	8.7E-05	0.00019	NA	0.00062	0	0	0	0.0002
Striped Grunt	<i>Haemulon striatum</i>	0	0	0	0	0	0	0	0	NA	0	0	0	0	0
Tomtate	<i>Haemulon aurolineatum</i>	0.01054	0.00092	0.00087	0.00027	0.00052	0.00085	0.00089	0.00059	NA	0.00124	0.00044	0.00048	0.00083	0.00028
Trunkfish	<i>Lactophrys trigonus</i>	0.00179	0	0.00044	9.2E-05	0	0	0.00011	0.00027	NA	0.00062	0.00029	0	0	0.00019

Common name	Scientific name	Mean							Standard deviation						
		raw	1S	2N	2S	3N	3S	zone	raw	1S	2N	2S	3N	3S	zone
White Grunt	<i>Haemulon plumieri</i>	0.00087	0	0	8.7E-05	0	0	1.7E-05	0.00019	NA	0	0.00028	0	0	3.9E-05
Whitenose Pipefish?	<i>Cosmocampus albirostris</i>	0	0	0	0	0	0	0	0	NA	0	0	0	0	0
Yellowfin Mojarra	<i>Gerres cinereus</i>	0.12396	0.01932	0.00961	0.00481	0.00527	0.00363	0.00853	0.00724	NA	0.00371	0.00762	0.00755	0.00486	0.00644
Fish unidentified		0	0	0	0	0	0	0	0	NA	0	0	0	0	0
Total fish		0.40115	0.06163	0.03408	0.013	0.02009	0.01364	0.02849	0.01676	NA	0.00865	0.01177	0.01859	0.00968	0.02038
Invertebrate taxa															
Isopod		0.00521	0.00092	0	0.00034	0	0.00029	0.00031	0.00048	NA	0	0.00059	0	0.0005	0.00038
Starfish		0.00092	0	0	9.2E-05	0	0	1.8E-05	0.0002	NA	0	0.00029	0	0	4.1E-05
Red Sea Star		0	0	0	0	0	0	0	0	NA	0	0	0	0	0
Ruby Brittle Star		0	0	0	0	0	0	0	0	NA	0	0	0	0	0
Brittle stars unident		0	0	0	0	0	0	0	0	NA	0	0	0	0	0
Blue crab	<i>Callinectes sapidus</i>	0	0	0	0	0	0	0	0	NA	0	0	0	0	0
Lesser blue crab	<i>Callinectes similis</i>	0	0	0	0	0	0	0	0	NA	0	0	0	0	0
Callinectes sp.	<i>Callinectes spp.</i>	0.0531	0	0.00175	0.00182	0.00492	0.00225	0.00215	0.00335	NA	0	0.00157	0.00608	0.00253	0.00177
Common mud Crab		0	0	0	0	0	0	0	0	NA	0	0	0	0	0
Crabs unident		0	0	0	0	0	0	0	0	NA	0	0	0	0	0
Decorator Crab	<i>Stenocionops furcata</i>	0.00524	0	0.00044	0.00017	0.00035	0.00029	0.00025	0.0004	NA	0.00062	0.00037	0.00048	0.0005	0.00017
Gray Pittho Crab?		0.00083	0	0	8.3E-05	0	0	1.7E-05	0.00018	NA	0	0.00026	0	0	3.7E-05
Green porcelain crab		0.00429	0	0.00044	8.7E-05	0	0.00085	0.00027	0.00046	NA	0.00062	0.00028	0	0.00083	0.00037
Hermit crab		0.00087	0	0	8.7E-05	0	0	1.7E-05	0.00019	NA	0	0.00028	0	0	3.9E-05
Portunid crab sp.	<i>Portunus sp.</i>	0	0	0	0	0	0	0	0	NA	0	0	0	0	0
Sponge Spider Crab	<i>Macrocoeloma subparallelum</i>	0	0	0	0	0	0	0	0	NA	0	0	0	0	0
Pink Shrimp	<i>Farfantepenaeus duorarum</i>	0.03003	0.07175	0.06336	0.01762	0.0326	0.03102	0.04327	0.02527	NA	0.03893	0.01293	0.02546	0.02846	0.02311
Brazilian Shrimp	<i>F. arfantepenaeus brasiliensis</i>	0.00092	0.00552	0.00262	0.00026	0.00087	0.00055	0.00197	0.00186	NA	0.00371	0.00042	0.00124	0.00096	0.00219
Penaeid shrimp	<i>Farfantepenaeus spp.</i>	0.00798	0.03128	0.0166	0.00432	0.01049	0.0025	0.01304	0.01041	NA	0.01807	0.00644	0.01176	0.00432	0.01161
Caridean Shrimp	<i>Palaeomonetes, etc.</i>	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Spotted spiny lobster	<i>Panulirus guttatus</i>														
Mollusks (excluding cephalop)	Mollusca (other than cephalopoda)	0.01517	0.00092	0.00044	0.00052</										

Appendix Table B 2. October 2002 trawl (with sock) mean catch (number) per square meter. Sample size: raw=23, 2N=3, 2S=10, 3N=6, 3S=4, zones=4.

Common name	Scientific name	Mean						Standard deviation					
		raw	2N	2S	3N	3S	zone	2N	2S	3N	3S	zone	
Fish													
Alewife	<i>Alosa pseudoharengus</i>	0.000121	0	8.64E-05	0.000322	0	0.000102	0	0.000273	0.000788	0	0.000102	
Bandtail Puffer	<i>Sphoeroides spengleri</i>	0.000362	0	0.000266	0.000782	0.000247	0.000324	0	0.00084	0.001088	0.000494	0.000324	
Blackcheek Tonguefish	<i>Symphurus plagiusa</i>	0	0	0	0	0	0	0	0	0	0	0	
Blackedge Cusk Eel	<i>Lepophidium brevibarbe</i>	0	0	0	0	0	0	0	0	0	0	0	
Blackfin Cardinalfish	<i>Astrapogon puncticulatus</i>	0	0	0	0	0	0	0	0	0	0	0	
Blenny?		0	0	0	0	0	0	0	0	0	0	0	
Blenny		0	0	0	0	0	0	0	0	0	0	0	
Bluethroat pikeblenny	<i>Chaenopsis ocellata</i>												
BlueStriped Grunt	<i>Haemulon sciurus</i>	0.000591	0.000771	0.000559	0.000947	0	0.000569	0.000682	0.000788	0.00084	0	0.000569	
Bridled Cardinalfish	<i>Apogon aurolineatus</i>	0	0	0	0	0	0	0	0	0	0	0	
Bucktooth Parrotfish	<i>Sparisoma radians</i>	0	0	0	0	0	0	0	0	0	0	0	
Clown Goby	<i>Microbius gulosus</i>	0	0	0	0	0	0	0	0	0	0	0	
Code Goby	<i>Gobiosoma robustum</i>	5.1E-05	0.000391	0	0	0	9.77E-05	0.000677	0	0	0	9.77E-05	
Colon Goby	<i>Coryphopterus dicrus</i>	8.21E-05	0	0.000189	0	0	4.72E-05	0	0.000398	0	0	4.72E-05	
Crested Pipefish	<i>Cosmocampus brachycephalus</i>	4.04E-05	0	0	0.000155	0	3.87E-05	0	0	0.000379	0	3.87E-05	
Dusky Pipefish	<i>Syngnathus floridae</i>	0.000867	0.000339	8.86E-05	0.003005	0	0.000858	0.000588	0.00028	0.002739	0	0.000858	
Dwarf Goatfish	<i>Upeneus parvus</i>	0	0	0	0	0	0	0	0	0	0	0	
Dwarf Seahorse	<i>Hippocampus zosterae</i>	0.000217	0	0	0.000832	0	0.000208	0	0	0.002039	0	0.000208	
Emerald Parrotfish	<i>Nicholsina usta</i>	0	0	0	0	0	0	0	0	0	0	0	
Flagfin Mojarra	<i>Eucinostomus melanopterus</i>	0.000542	0.000432	0.000365	0.001107	0.000219	0.000531	0.000748	0.000639	0.001534	0.000438	0.000531	
French Angelfish (juvenile)	<i>Pomacanthus paru</i>	0	0	0	0	0	0	0	0	0	0	0	
French Grunt	<i>Haemulon flavolineatum</i>	0	0	0	0	0	0	0	0	0	0	0	
Fringed Pipefish	<i>Micrognathus criniger</i>	0	0	0	0	0	0	0	0	0	0	0	
Goby	<i>Gobionellus</i> sp.	0	0	0	0	0	0	0	0	0	0	0	
Gold Brotula	<i>Gunterichthys longipennis</i>	0	0	0	0	0	0	0	0	0	0	0	
Goldspotted Killifish	<i>Floridichthys carpio</i>	5.1E-05	0.000391	0	0	0	9.77E-05	0.000677	0	0	0	9.77E-05	
Grass Porgy	<i>Calamus arctifrons</i>	0	0	0	0	0	0	0	0	0	0	0	
Gray Snapper	<i>Lutjanus griseus</i>	0.001283	0.001543	0.000276	0.003685	0	0.001376	0.001365	0.000446	0.002946	0	0.001376	
Gulf Flounder	<i>Paralichthys albigutta</i>	0	0	0	0	0	0	0	0	0	0	0	
Gulf Pipefish	<i>Syngnathus scovelli</i>	0	0	0	0	0	0	0	0	0	0	0	
Gulf Toadfish	<i>Opsanus beta</i>	0.000798	0.00073	0.000347	0.002114	0	0.000798	0.000637	0.000836	0.001842	0	0.000798	
Haemulidae		0	0	0	0	0	0	0	0	0	0	0	
Hardhead Silverside	<i>Atherinomorus stipes</i>	0	0	0	0	0	0	0	0	0	0	0	
Highhat (juvenile)	<i>Equetus acuminatus</i>	0	0	0	0	0	0	0	0	0	0	0	
Hogfish (juvenile)	<i>Lachnolaimus maximus</i>	4.29E-05	0	0	0	0.000247	6.17E-05	0	0	0	0.000494	6.17E-05	

Appendix Table B 2. October 2002 trawl (with sock) mean catch (number) per square meter. Sample size: raw=23, 2N=3, 2S=10, 3N=6, 3S=4, zones=4.

Common name	Scientific name	Mean						Standard deviation					
		raw	2N	2S	3N	3S	zone	2N	2S	3N	3S	zone	
Inshore Lizardfish	<i>Synodus foetens</i>	7.82E-05	0	8.64E-05	0.000158	0	6.06E-05	0	0.000273	0.000382	0	6.06E-05	
Key Brotulua	<i>Ogilbia cayorum</i>	0	0	0	0	0	0	0	0	0	0	0	
Leopard Sea robin	<i>Prionotus roseus</i>	0	0	0	0	0	0	0	0	0	0	0	
Lined Seahorse	<i>Hippocampus erectus</i>	0	0	0	0	0	0	0	0	0	0	0	
Longsnout Seahorse	<i>Hippocampus reidi</i>	0	0	0	0	0	0	0	0	0	0	0	
Longsnout Seahorse?	<i>Hippocampus reidi</i>	0	0	0	0	0	0	0	0	0	0	0	
Marbled Blenny	<i>Paraclinus marmoratus</i>	4.03E-05	0	9.26E-05	0	0	2.32E-05	0	0.000293	0	0	2.32E-05	
Mojarra sp.		4.43E-05	0.000339	0	0	0	8.48E-05	0.000588	0	0	0	8.48E-05	
Mutton Snapper	<i>Lutjanus analis</i>	0	0	0	0	0	0	0	0	0	0	0	
Orange Filefish	<i>Aluterus schoepfi</i>	4.04E-05	0	9.29E-05	0	0	2.32E-05	0	0.000294	0	0	2.32E-05	
Pigfish	<i>Orthopristis chrysoptera</i>	0	0	0	0	0	0	0	0	0	0	0	
Pikeblenny	<i>Chaenopsis sp?</i>	4.18E-05	0	0	0.00016	0	4.01E-05	0	0	0.000393	0	4.01E-05	
Pinfish	<i>Lagodon rhomboidalis</i>	0.002355	0.002931	0.001513	0.005041	0	0.002371	0.004226	0.002643	0.002296	0	0.002371	
Planehead Filefish	<i>Monacanthus hispidus</i>	0.000511	0.000339	0.000519	0.000632	0.000438	0.000482	0.000588	0.00057	0.001142	0.000506	0.000482	
Queen Parrotfish	<i>Scarus vetula</i>												
Rainwater Killifish	<i>Lucania parva</i>	0.000881	0.002951	9.61E-05	0.001742	0	0.001197	0.001983	0.000304	0.001759	0	0.001197	
Redfin Parrotfish	<i>Sparisoma rubripinne</i>	0.000132	0.000391	9.29E-05	0.000155	0	0.00016	0.000677	0.000294	0.000379	0	0.00016	
Redtail Parrotfish	<i>Sparisoma chrysoptera</i>	0	0	0	0	0	0	0	0	0	0	0	
Sailors Choice	<i>Haemulon parrai</i>	7.85E-05	0	8.64E-05	0.000157	0	6.08E-05	0	0.000273	0.000385	0	6.08E-05	
Sand Perch	<i>Diplectrum formosum</i>	0	0	0	0	0	0	0	0	0	0	0	
Sand Stargazer	<i>Dactyloscopus crossotus</i>	0	0	0	0	0	0	0	0	0	0	0	
Sand Whiff	<i>Citharichthys arenaceus</i>	0	0	0	0	0	0	0	0	0	0	0	
Sargassumfish	<i>Histrio histrio</i>	0	0	0	0	0	0	0	0	0	0	0	
Sargassum Pipefish	<i>Syngnathus pelagicus</i>	0.00018	0.000432	0.000188	0.00016	0	0.000195	0.000748	0.000396	0.000393	0	0.000195	
Schoolmaster	<i>Lutjanus apodus</i>	5.1E-05	0.000391	0	0	0	9.77E-05	0.000677	0	0	0	9.77E-05	
Scrawled Cowfish	<i>Lactophrys quadricornis</i>	0.000327	0	0.000385	0.000208	0.000658	0.000308	0	0.000882	0.00051	0.001315	0.000308	
Scrawled Filefish	<i>Aluterus scriptus</i>	0	0	0	0	0	0	0	0	0	0	0	
Seahorses unident.		0.000774	0.000823	0.000604	0.001258	0.000438	0.000781	0.000715	0.000547	0.000965	0.000506	0.000781	
Sharptail Goby	<i>Gobionellus hastatus</i>	0.000117	0	9.26E-05	0	0.000438	0.000133	0	0.000293	0	0.000877	0.000133	
Sheepshead Porgy	<i>Archosargus probatocephalus</i>	0	0	0	0	0	0	0	0	0	0	0	
Shrimp eel	<i>Ophichthus gomesi</i>	0.000164	0	9.05E-05	0.000477	0	0.000142	0	0.000286	0.000802	0	0.000142	
Silver Jenny	<i>Eucinostomus gula</i>	0.003849	0.008282	0.001405	0.00827	0	0.004489	0.010198	0.002526	0.005908	0	0.004489	
Silverside		0	0	0	0	0	0	0	0	0	0	0	
Slender Filefish	<i>Monacanthus tuckeri</i>	0.000159	0	0.000184	0.000157	0.000219	0.00014	0	0.000388	0.000385	0.000438	0.00014	
Southern Puffer	<i>Sphaeroides nephelus</i>	0	0	0	0	0	0	0	0	0	0	0	
Speckled Stargazer	<i>Dactyloscopus moorei</i>	0	0	0	0	0	0	0	0	0	0	0	

Appendix Table B 2. October 2002 trawl (with sock) mean catch (number) per square meter. Sample size: raw=23, 2N=3, 2S=10, 3N=6, 3S=4, zones=4.

		Mean						Standard deviation					
		raw	2N	2S	3N	3S	zone	2N	2S	3N	3S	zone	
Common name	Scientific name												
Spottail Goby	<i>Gobionellus stigmaturus</i>	8.39E-05	0	0	0.000322	0	8.04E-05	0	0	0.000788	0	8.04E-05	
Spotted Dragonet	<i>Diplogrammus pauciradiatus</i>	0	0	0	0	0	0	0	0	0	0	0	
Spotted Scorpionfish	<i>Scorpaena plumieri</i>	4.07E-05	0	0	0.000156	0	3.9E-05	0	0	0.000382	0	3.9E-05	
Spotted Whiff	<i>Citharichthys macrops</i>	0	0	0	0	0	0	0	0	0	0	0	
Striped Burrfish	<i>Chilomycterus schoepfi</i>	0.000136	0.000432	9.05E-05	0.000156	0	0.00017	0.000748	0.000286	0.000382	0	0.00017	
Striped Grunt	<i>Haemulon striatum</i>	0.000102	0.000782	0	0	0	0.000195	0.001354	0	0	0	0.000195	
Tomtate	<i>Haemulon aurolineatum</i>	0.001151	0.000391	0.001466	0.001007	0.001151	0.001004	0.000677	0.002171	0.001063	0.000902	0.001004	
Trunkfish	<i>Lactophrys trigonus</i>	8.03E-05	0	8.86E-05	0.00016	0	6.22E-05	0	0.00028	0.000393	0	6.22E-05	
White Grunt	<i>Haemulon plumieri</i>	5.43E-05	0	0	0.000208	0	5.2E-05	0	0	0.00051	0	5.2E-05	
Whitenose Pipefish?	<i>Cosmocampus albirostris</i>	4.07E-05	0	0	0.000156	0	3.9E-05	0	0	0.000382	0	3.9E-05	
Yellowfin Mojarra	<i>Gerrus cinereus</i>	0.00195	0.003765	0.000377	0.004818	0.000219	0.002295	0.003894	0.000669	0.007248	0.000438	0.002295	
Unidentified fish total		0	0	0	0	0	0	0	0	0	0	0	
Total fish		0.01851	0.026848	0.009707	0.038503	0.004275	0.019833	0.032448	0.018167	0.04104	0.006409	0.019833	
Invertebrate taxa													
Red Sea Star		4.1E-05	0	0	0.000157	0	3.92E-05	0	0	0.000385	0	3.92E-05	
Ruby Brittle Star		4.04E-05	0	0	0.000155	0	3.87E-05	0	0	0.000379	0	3.87E-05	
Brittle stars unident		0.001948	0	0.001054	0.005709	0	0.001691	0	0.001921	0.00926	0	0.001691	
Callinectes sp.	<i>Callinectes</i> spp.	0.014795	0.004465	0.009335	0.036074	0.004275	0.013537	0.004152	0.012623	0.030844	0.00259	0.013537	
Common mud Crab		4.43E-05	0.000339	0	0	0	8.48E-05	0.000588	0	0	0	8.48E-05	
Crab unident total		0.000555	0	0.000426	0.001417	0	0.000461	0	0.001115	0.003472	0	0.000461	
Decorator Crab	<i>Stenocionops furcata</i>	0.00013	0.000391	8.64E-05	0.000161	0	0.00016	0.000677	0.000273	0.000394	0	0.00016	
Gray Piho Crab?	<i>Piho</i> sp.	4.18E-05	0	9.61E-05	0	0	2.4E-05	0	0.000304	0	0	2.4E-05	
Hermit crabs unident		0.008786	0.005862	0.011558	0.009769	0.002577	0.007441	0.008452	0.008704	0.008096	0.003042	0.007441	
Portunid crab sp.	<i>Portunus</i> sp.	0	0	0	0	0	0	0	0	0	0	0	
Sponge Spider Crab	<i>Macrocoeloma subparallelum</i>	3.82E-05	0	8.8E-05	0	0	2.2E-05	0	0.000278	0	0	2.2E-05	
Pink Shrimp	<i>Farfantepenaeus duorarum</i>	0.052236	0.048145	0.026413	0.12171	0.01565	0.05298	0.043777	0.010963	0.064885	0.009571	0.047772	
Brazilian Shrimp		0	0	0	0	0	0	0	0	0	0	0	
Caridean Shrimp	<i>Palaemonetes</i> , etc.	0.861776	0.288248	0.218128	1.973126	0.084019	0.64088	0.248929	0.221164	1.735087	0.070397	0.892196	
Spotted spiny lobster	<i>Panulirus guttatus</i>												
Mollusk		0.000414	0	0.000189	0.001271	0	0.000385	0	0.000399	0.001673	0	0.000365	

Appendix Table B 3. December 2002 trawl (with sock) mean catch (number) per square meter. Sample size: raw=24, 1S=2, 2N=4, 2S=9, 3N=5, 3S=4, zone=5.

		Mean							Standard deviation						
		raw	1S	2N	2S	3N	3S	zone	1S	2N	2S	3N	3S	zone	
Common name	Scientific name														
Fish taxa															
Alewife	<i>Alosa pseudoharengus</i>	3.83E-05	0	0.00023	0	0	0	4.6E-05	0	0.00046	0	0	0	0.000103	
Bandtail Puffer	<i>Sphoeroides spengleri</i>	0.000196	0	0	0.000236	0.000519	0	0.000151	0	0	0.000468	0.000728	0	0.00023	
Blackcheek Tonguefish	<i>Symphurus plagiusa</i>	4.28E-05	0	0	0.000114	0	0	2.28E-05	0	0	0.000343	0	0	5.11E-05	
Blackedge Cusk Eel	<i>Lepophidium brevibarba</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	
Blackfin Cardinalfish	<i>Astrapogon puncticulatus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	
Blenny?	Blenniidae	0	0	0	0	0	0	0	0	0	0	0	0	0	
Blenny		0	0	0	0	0	0	0	0	0	0	0	0	0	
Bluethroat pikeblenny	<i>Chaenopsis ocellata</i>														
BlueStriped Grunt	<i>Haemulon sciurus</i>	0.000217	0	0.00092	0	0.000305	0	0.000245	0	0.001062	0	0.000682	0	0.0004	
Bridled Cardinalfish	<i>Apogon aurolineatus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bucktooth Parrotfith	<i>Sparisoma radians</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	
Clown Goby	<i>Microbius gulosus</i>	0.000164	0	0.000448	0	0.000428	0	0.000175	0	0.000518	0	0.000956	0	0.00024	
Code Goby	<i>Gobiosoma robustum</i>	0.000409	0.001639	0.00023	0.000248	0.000677	0	0.000559	0.002317	0.00046	0.000497	0.000979	0	0.000651	
Colon Goby	<i>Coryphopterus dicrus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	
Crested Pipefish	<i>Cosmocampus brachycephalus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	
Dusky Pipefish	<i>Syngnathus floridae</i>	0.000206	0	0.000521	9.68E-05	0.000214	0.00023	0.000212	0	0.00061	0.00029	0.000478	0.00046	0.000196	
Dwarf Goatfish	<i>Upeneus parvus</i>	4.85E-05	0	0.000291	0	0	0	5.83E-05	0	0.000583	0	0	0	0.00013	
Dwarf Seahorse	<i>Hippocampus zosterae</i>	0.000392	0.001092	0.00115	0.000293	0	0	0.000507	0.001545	0.0023	0.000614	0	0	0.000574	
Emerald Parrotfish	<i>Nicholsina usta</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	
Flagfin Mojarra	<i>Eucinostomus melanopterus</i>	0.000275	0.000546	0.00138	0	0	0	0.000385	0.000772	0.00219	0	0	0	0.000604	
French Angelfish (juvenile)	<i>Pomacanthus paru</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	
French Grunt	<i>Haemulon flavolineatum</i>	7.67E-05	0	0.00046	0	0	0	9.2E-05	0	0.000531	0	0	0	0.000206	
Fringed Pipefish	<i>Micrognathus criniger</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	
Goby	<i>Gobionellus</i> sp.	0.000359	0	0.000448	0.000219	0.00061	0.000448	0.000345	0	0.000518	0.000658	0.001364	0.000518	0.000238	
Gold Brotula	<i>Gunterichthys longipennis</i>	3.83E-05	0	0.00023	0	0	0	4.6E-05	0	0.00046	0	0	0	0.000103	
Goldspotted Killifish	<i>Floridichthys carpio</i>	0.000562	0.001639	0.00046	0.000139	0.001426	0	0.000733	0.002317	0.00092	0.000416	0.002199	0	0.000753	
Grass Porgy	<i>Calamus arctifrons</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	
Gray Snapper	<i>Lutjanus griseus</i>	0.001043	0.002419	0.002012	0.000399	0.00171	0	0.001308	0.001876	0.001323	0.000476	0.001887	0	0.001052	
Gulf Flounder	<i>Paralichthys albigutta</i>	6.35E-05	0	0	0	0.000305	0	6.1E-05	0	0	0	0.000682	0	0.000136	
Gulf Pipefish	<i>Syngnathus scovelli</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	
Gulf Toadfish	<i>Opsanus beta</i>	0.002852	0.013966	0.005354	0.000834	0.00197	0.000437	0.004512	0.01269	0.003811	0.001297	0.001527	0.000874	0.005628	
Haemulidae		0	0	0	0	0	0	0	0	0	0	0	0	0	
Hardhead Silverside	<i>Atherinomorus stipes</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	
Highhat (juvenile)	<i>Equetus acuminatus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	
Hogfish (juvenile)	<i>Lachnolaimus maximus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	
Inshore Lizardfish	<i>Synodus foetens</i>	3.83E-05	0	0.00023	0	0	0	4.6E-05	0	0.00046	0	0	0	0.000103	

Appendix Table B 3. December 2002 trawl (with sock) mean catch (number) per square meter. Sample size: raw=24, 1S=2, 2N=4, 2S=9, 3N=5, 3S=4, zone=5.

Common name	Scientific name	Mean							Standard deviation						
		raw	1S	2N	2S	3N	3S	zone	1S	2N	2S	3N	3S	zone	
Key Brotula	<i>Ogilbia ceyorum</i>	3.83E-05	0	0.00023	0	0	0	4.6E-05	0	0.00046	0	0	0	0.000103	
Leopard Sea robin	<i>Prionotus roseus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	
Lined Seahorse	<i>Hippocampus erectus</i>	7.4E-05	0	0	9.52E-05	0	0.00023	6.5E-05	0	0	0.000286	0	0.00046	0.000101	
Longsnout Seahorse?	<i>Hippocampus reidi</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	
Longsnout Seahorse	<i>Hippocampus reidi</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	
Marbled Blenny	<i>Paraclinus marmoratus</i>	3.83E-05	0	0	0	0	0.00023	4.6E-05	0	0	0	0	0.00046	0.000103	
Mojarra sp.	Gerridae	0.000268	0	0	0	0.001288	0	0.000258	0	0	0	0.00288	0	0.000578	
Mutton Snapper	<i>Lutjanus analis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	
Orange Filefish	<i>Aluterus schoepfi</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pigfish	<i>Orthopristis chrysoptera</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pikeblenny	<i>Chaenopsis</i> sp?	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pinfish	<i>Lagodon rhomboidalis</i>	0.002598	0.013732	0.006029	0.000672	0.000946	0	0.004276	0.005297	0.009481	0.000917	0.001426	0	0.005806	
Planehead Filefish	<i>Monacanthus hispidus</i>	0.000369	0.000624	0	0.00063	0	0.000487	0.000348	0.000883	0	0.000958	0	0.000974	0.000496	
Queen Parrotfish	<i>Scarus vetula</i>														
Rainwater Killifish	<i>Lucania parva</i>	0.007385	0.04229	0.011042	0.001178	0.00758	0	0.012418	0.017434	0.0132	0.002864	0.012786	0	0.017307	
Redfin Parrotfish	<i>Sparisoma rubripinne</i>	3.47E-05	0	0	9.25E-05	0	0	1.85E-05	0	0	0.000277	0	0	4.14E-05	
Redtail Parrotfish	<i>Sparisoma chrysoptera</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	
Sailors Choice	<i>Haemulon parrai</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	
Sand Perch	<i>Diplectrum formosum</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	
Sand Stargazer	<i>Dactyloscopus crossotus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	
Sand Whiff	<i>Citharichthys arenaceus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	
Sargassumfish	<i>Histrio histrio</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	
Sargassum Pipefish	<i>Syngnathus pelagicus</i>	0.000468	0	0.00023	0.000324	0.000915	0.000704	0.000434	0	0.00046	0.000651	0.002046	0.000922	0.00037	
Schoolmaster	<i>Lutjanus apodus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	
Scrawled Cowfish	<i>Lactophrys quadricornis</i>	0.000179	0	0	0.000121	0.000447	0.000243	0.000162	0	0	0.000364	0.000613	0.000485	0.000188	
Scrawled Filefish	<i>Aluterus scriptus</i>	3.83E-05	0	0	0.000102	0	0	2.04E-05	0	0	0.000307	0	0	4.57E-05	
Seahorses unident		0.000815	0	0	0.001855	0.000184	0.000485	0.000505	0	0	0.002395	0.000411	0.000971	0.00078	
Sharptail Goby	<i>Gobionellus hastatus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	
Sheepshead Porgy	<i>Archosargus probatocephalus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	
Shrimp eel	<i>Ophichthus gomesi</i>	9.71E-05	0	0.000583	0	0	0	0.000117	0	0.001165	0	0	0	0.000261	
Silver Jenny	<i>Eucinostomus gula</i>	0.007658	0.014435	0.010617	0.008712	0.005493	0.001842	0.00818	0.0096	0.004686	0.011738	0.003744	0.000837	0.004881	
Silverside		0	0	0	0	0	0	0	0	0	0	0	0	0	
Slender Filefish	<i>Monacanthus tuckeri</i>	0.000198	0	0.00046	0.000204	0.000214	0	0.000176	0	0.000531	0.000406	0.000478	0	0.00019	
Southern Puffer	<i>Sphoeroides nephelus</i>	6.35E-05	0	0	0	0.000305	0	6.1E-05	0	0	0	0.000682	0	0.000136	
Speckled Stargazer	<i>Dactyloscopus moorei</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	
Spottail Goby	<i>Gobionellus stigmaturus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	
Spotted Dragonet	<i>Diplogrammus pauciradiatus</i>	4.85E-05	0	0.000291	0	0	0	5.83E-05	0	0.000583	0	0	0	0.00013	

Appendix Table B 3. December 2002 trawl (with sock) mean catch (number) per square meter. Sample size: raw=24, 1S=2, 2N=4, 2S=9, 3N=5, 3S=4, zone=5.

		Mean						Standard deviation						
		raw	1S	2N	2S	3N	3S	zone	1S	2N	2S	3N	3S	zone
Common name	Scientific name													
Spotted Scorpionfish	<i>Scorpaena plumieri</i>	0	0	0	0	0	0	0	0	0	0	0	0	0
Spotted Whiff	<i>Citharichthys macrops</i>	0	0	0	0	0	0	0	0	0	0	0	0	0
Striped Burrfish	<i>Chilomycterus schoepfi</i>	0.00023	0	0.00046	0.000408	0	0	0.000174	0	0.000531	0.000487	0	0	0.000239
Striped Grunt	<i>Haemulon striatum</i>	3.47E-05	0	0	9.25E-05	0	0	1.85E-05	0	0	0.000277	0	0	4.14E-05
Tomtate	<i>Haemulon aurolineatum</i>	0.002136	0.001795	0.001748	0.002553	0.002976	0.000704	0.001955	0.000993	0.003496	0.003099	0.003722	0.000922	0.000871
Trunkfish	<i>Lactophrys trigonus</i>	0.000184	0.000624	0.000291	0	0	0.0005	0.000283	0.000883	0.000583	0	0	0.000578	0.000284
White Grunt	<i>Haemulon plumieri</i>	0	0	0	0	0	0	0	0	0	0	0	0	0
Whitenose Pipefish?	<i>Cosmocampus albirostris</i>	0	0	0	0	0	0	0	0	0	0	0	0	0
Yellowfin Mojarra	<i>Gerres cinereus</i>	0.010334	0.064059	0.007347	0.002215	0.014115	0	0.017547	0.049986	0.008409	0.00408	0.019182	0	0.026562
Unidentified fish taxa		0	0	0	0	0	0	0	0	0	0	0	0	0
Total fish taxa		0.040312	0.158859	0.053694	0.021833	0.042628	0.00634	0.056671	0.106592	0.059789	0.034165	0.05945	0.008462	0.070911
Invertebrate taxa														
Red Sea Star		0.000679	0.001717	0.00207	0.000114	0.000519	0.000243	0.000932	0.000662	0.004139	0.000343	0.000728	0.000485	0.000898
Ruby Brittle Star		0	0	0	0	0	0	0	0	0	0	0	0	0
Brittle stars unident		0.000759	0	0	0.000216	0	0.004066	0.000856	0	0	0.00043	0	0.003647	0.001797
Callinectes sp.	<i>Callinectes</i> spp.	0.015548	0.016229	0.021931	0.014664	0.021191	0.003758	0.015555	0.010593	0.009805	0.008717	0.012478	0.002142	0.007294
Common mudCrab		3.83E-05	0	0.00023	0	0	0	4.6E-05	0	0.00046	0	0	0	0.000103
Crabs unident		0.001072	0	0.001564	0.00108	0.001202	0.000935	0.000956	0	0.001831	0.001644	0.000911	0.000754	0.000583
Decorator Crab	<i>Stenocionops furcata</i>	8.67E-05	0.000624	0	9.25E-05	0	0	0.000143	0.000883	0	0.000277	0	0	0.000272
Gray Pittho Crab?	<i>Pittho</i> sp.	0	0	0	0	0	0	0	0	0	0	0	0	0
Hermit crabs unident		0.008615	0.004291	0.018087	0.007499	0.006476	0.006492	0.008569	0.004524	0.024837	0.00815	0.004888	0.003426	0.005448
Portunid crab sp.	<i>Portunus</i> sp.	0.000275	0	0.000448	0.000189	0.000233	0.000485	0.000271	0	0.000518	0.000376	0.000521	0.000971	0.000199
Sponge Spider Crab	<i>Macrocoeloma subparallelum</i>	0.000163	0	0.000521	0.000202	0	0	0.000145	0	0.00061	0.000403	0	0	0.000228
Pink Shrimp	<i>Farfantepenaeus duorarum</i>	0.064964	0.165761	0.128597	0.039182	0.051124	0.026243	0.082181	0.071289	0.178839	0.026001	0.035718	0.011572	0.061406
Brazilian shrimp	<i>Farfantepenaeus brasiliensis</i>	0.000864	0	0.003121	0	0.000691	0	0.000762	0	0.006242	0	0.000705	0	0.001352
Caridean Shrimp	<i>Palaemonetes</i> , etc.	0.826252	0.957681	1.39403	0.598903	1.201871	0.234769	0.877451	0.074021	1.517674	0.639107	0.903428	0.116355	0.466146
Spotted spiny lobster	<i>Panulirus guttatus</i>													
Mollusk		0.001082	0	0.003507	0.000102	0.001997	0.000257	0.001173	0	0.004627	0.000307	0.004466	0.000514	0.001557
Octopus		0.000234	0	0	0	0	0.001405	0.000281	0	0	0	0	0.001771	0.000628

Appendix Table B 4. February 2003 trawl (with sock) mean catch (number) per square meter. Sample size: raw=24, 1S=2, 2N=4, 2S=9, 3N=5, 3S=4, zone=5

Common name	Scientific name	Mean						Standard deviation							
		raw	1S	2N	2S	3N	3S	zone	raw	1S	2N	2S	3N	3S	zone
Fish															
Alewife	<i>Alosa pseudoharengus</i>														
Bandtail Puffer	<i>Sphoeroides spengleri</i>	0.000145	0	0.000623	0	0.000197	0	0.000164	0.319975	0	0.001245	0	0.000441	0	0.00027
Blackcheek Tonguefish	<i>Symphurus plagiusa</i>	3.48E-05	0	0	9.28E-05	0	0	1.86E-05	0.144335	0	0	0.000278	0	0	4.15E-05
Blackedge Cusk Eel	<i>Lepophidium brevibarbe</i>	4.32E-05	0	0	0.000115	0	0	2.31E-05	0.144334	0	0	0.000346	0	0	5.16E-05
Blackfin Cardinalfish	<i>Astrapogon puncticulatus</i>	3.52E-05	0	0	9.38E-05	0	0	1.88E-05	0.144335	0	0	0.000281	0	0	4.2E-05
Blenny ?		5.19E-05	0	0.000311	0	0	0	6.23E-05	0.144334	0	0.000623	0	0	0	0.000139
Blenny		0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bluethroat pikeblenny	<i>Chaenopsis ocellata</i>														
BlueStriped Grunt	<i>Haemulon sciurus</i>	0.000285	0	0.000311	0.000346	0.000494	0	0.00023	0.54533	0	0.000623	0.001038	0.000734	0	0.000221
Bridled Cardinalfish	<i>Apogon nurolineatus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bucktooth Parrotfish	<i>Sparisoma radians</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Clown Goby	<i>Microbius gulosus</i>	4.11E-05	0	0	0	0.000197	0	3.94E-05	0.144334	0	0	0	0.000441	0	8.82E-05
Code Goby	<i>Gobiosoma robustum</i>	0.000502	0.000413	0.000216	8.39E-05	0.002139	0.000324	0.000635	0.908908	0.000585	0.000433	0.000252	0.001553	0.000647	0.00085
Colon Goby	<i>Coryphopterus dicrus</i>	6.95E-05	0	0	0	0.000333	0	6.67E-05	0.28867	0	0	0	0.000746	0	0.000149
Crested Pipefish	<i>Cosmocampus brachycephalus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dusky Pipefish	<i>Syngnathus floridae</i>	0.000657	0.00124	0.000839	0.000196	0.00146	0.000215	0.00079	1.044109	0.001754	0.001174	0.00039	0.002002	0.000429	0.000578
Dwarf Goatfish	<i>Upeneus parvus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dwarf Seahorse	<i>Hippocampus zosterae</i>	0.003854	0.002109	0.003117	0.003434	0.007155	0.00228	0.003619	3.75745	0.000525	0.003116	0.002984	0.005343	0.001791	0.002053
Emerald Parrotfish	<i>Nicholsina usta</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Flagfin Mojarra	<i>Eucinostomus melanopterus</i>	0.000148	0	0	0	0.000489	0.000277	0.000153	0.347209	0	0	0	0.000723	0.000554	0.000223
French Angelfish (juvenile)	<i>Pomacanthus paru</i>	3.49E-05	0	0	9.31E-05	0	0	1.86E-05	0.144335	0	0	0.000279	0	0	4.16E-05
French Grunt	<i>Haemulon flavolineatum</i>	4.48E-05	0	0.000269	0	0	0	5.37E-05	0.144334	0	0.000537	0	0	0	0.00012
Fringed Pipefish	<i>Micrognathus criniger</i>	7.55E-05	0.000413	0	0	0.000197	0	0.000122	0.201933	0.000585	0	0	0.000441	0	0.000184
Goby	<i>Gobionellus sp.</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gold Brotula	<i>Gunterichthys longipennis</i>	3.52E-05	0	0	9.38E-05	0	0	1.88E-05	0.144335	0	0	0.000281	0	0	4.2E-05
Goldspotted Killifish	<i>Floridichthys carpio</i>	0.000182	0	0	0.000115	0.000667	0	0.000156	0.592115	0	0	0.000346	0.001491	0	0.00029
Grass Porgy	<i>Calamus arctifrons</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gray Snapper	<i>Lutjanus griseus</i>	0.000695	0.001653	0.000955	0.000773	0.000519	0	0.00078	1.066566	0.002338	0.000715	0.001573	0.000744	0	0.000606
Gulf Flounder	<i>Paralichthys albigutta</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gulf Pipefish	<i>Syngnathus scovelli</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gulf Toadfish	<i>Opsanus beta</i>	0.002575	0.000827	0.004512	0.001003	0.006356	0.000324	0.002604	3.109681	0.001169	0.004037	0.002379	0.005417	0.000647	0.002676
Haemulidae?		0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hardhead Silverside	<i>Atherinomorus stipes</i>	0.000141	0	0	9.94E-05	0.0005	0	0.00012	0.453499	0	0	0.000298	0.001118	0	0.000217
Highhat (juvenile)	<i>Equetus acuminatus</i>	3.73E-05	0	0	9.94E-05	0	0	1.99E-05	0.144335	0	0	0.000298	0	0	4.44E-05
Hogfish (juvenile)	<i>Lachnolaimus maximus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Inshore Lizardfish	<i>Synodus foetens</i>	0.000298	0	0.000254	0.000374	0.000333	0.000277	0.000247	0.429354	0	0.000507	0.000445	0.000746	0.000554	0.000146
Key Brotula	<i>Ogilbia ceyorum</i>	6.73E-05	0	0	0.00018	0	0	3.59E-05	0.201934	0	0	0.000359	0	0	8.03E-05
Leopard Sea robin	<i>Prionotus roseus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lined Seahorse	<i>Hippocampus erectus</i>	0.000252	0	0.000269	0.000177	0.000197	0.0006	0.000249	0.334169	0	0.000537	0.000352	0.000441	0.000698	0.00022

Appendix Table B 4. February 2003 trawl (with sock) mean catch (number) per square meter. Sample size: raw=24, 1S=2, 2N=4, 2S=9, 3N=5, 3S=4, zone=5

Common name	Scientific name	Mean							Standard deviation						
		raw	1S	2N	2S	3N	3S	zone	raw	1S	2N	2S	3N	3S	zone
Longsnout Seahorse?	<i>Hippocampus reidi</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Longsnout Seahorse	<i>Hippocampus reidi</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Marbled Blenny	<i>Paraclinus marmoratus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mojarra sp.	Gerridae	0.000208	0	0.001245	0	0	0	0.000249	0.577335	0	0.00249	0	0	0	0.000557
Mutton Snapper	<i>Lutjanus analis</i>	3.35E-05	0	0	0	0.000161	0	3.22E-05	0.144335	0	0	0	0.00036	0	7.2E-05
Orange Filefish	<i>Aluterus schoepfi</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pigfish	<i>Orthopristis chrysoptera</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pikeblenny	<i>Chaenopsis</i> sp?	0.000124	0	0.000311	0.000192	0	0	0.000101	0.244606	0	0.000623	0.000382	0	0	0.000144
Pinfish	<i>Lagodon rhomboidalis</i>	0.039221	0.06461	0.033925	0.024081	0.082741	0.01149	0.043369	41.14181	0.036427	0.036211	0.040472	0.075313	0.016688	0.029491
Planehead Filefish	<i>Monacanthus hispidus</i>	0.000708	0	0.000903	0.000694	0.000345	0.001353	0.000659	0.818213	0	0.001227	0.000883	0.000473	0.001088	0.000519
Queen Parrotfish	<i>Scarus vetula</i>														
Rainwater Killifish	<i>Lucania parva</i>	0.007773	0.005373	0.006065	0.003176	0.02459	0	0.007841	15.21522	0.007599	0.005952	0.008548	0.032896	0	0.009657
Redfin Parrotfish	<i>Sparisoma rubripinne</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Redtail Parrotfish	<i>Sparisoma chrysotermum</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sailors Choice	<i>Haemulon parrai</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sand Perch	<i>Diplacrum formosum</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sand Stargazer	<i>Dactyloscopus crossotus</i>	0.000115	0	0	0.000164	0	0.000324	9.76E-05	0.244607	0	0	0.000326	0	0.000647	0.000145
Sand Whiff	<i>Citharichthys arenaceus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sargassumfish	<i>Histrio histrio</i>	4.48E-05	0	0.000269	0	0	0	5.37E-05	0.144334	0	0.000537	0	0	0	0.00012
Sargassum Pipefish	<i>Syngnathus pelagicus</i>	0.000602	0	0.001413	0.000103	0.001572	0	0.000618	0.776012	0	0.001134	0.000309	0.001191	0	0.000802
Schoolmaster	<i>Lutjanus apodus</i>	3.47E-05	0	0	0	0.000167	0	3.33E-05	0.144335	0	0	0	0.000373	0	7.48E-05
Scrawled Cowfish	<i>Lactophrys quadricornis</i>	0.000266	0	0.000311	0.00029	0.000328	0.00022	0.00023	0.356616	0	0.000623	0.000436	0.000449	0.00044	0.000135
Scrawled Filefish	<i>Aluterus scriptus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Seahorses unident	<i>Hippocampus</i> spp.	0.000109	0	0.000433	9.94E-05	0	0	0.000106	0.319979	0	0.000866	0.000298	0	0	0.000188
Sharptail Goby	<i>Gobionellus hastatus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sheepshead Porgy	<i>Archosargus probatocephalus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Shrimp eel	<i>Ophichthus gomesi</i>	0.000106	0	0	0.000103	0.000322	0	8.5E-05	0.319979	0	0	0.000309	0.00072	0	0.00014
Silver Jenny	<i>Eucinostomus gula</i>	0.003074	0.004133	0.004476	0.001499	0.006823	0	0.003386	4.329515	0.005845	0.004212	0.004497	0.009126	0	0.002673
Silverside		0	0	0	0	0	0	0	0	0	0	0	0	0	0
Slender Filefish	<i>Monacanthus tuckeri</i>	0.000165	0	0	0.000199	0	0.000544	0.000148	0.347207	0	0	0.000596	0	0.00065	0.000237
Southern Puffer	<i>Sphaeroides nephelus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Speckled Stargazer	<i>Dactyloscopus moorei</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spottail Goby	<i>Gobionellus stigmaturus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spotted Dragonet	<i>Diplogrammus pauciradiatus</i>	0.000312	0.000434	0	0.000191	0.000722	0.000324	0.000334	0.411972	0.000614	0	0.00038	0.00081	0.000647	0.000271
Spotted Scorpionfish	<i>Scorpaena plumieri</i>	0.000237	0	0.000216	0.000291	0	0.000554	0.000212	0.392714	0	0.000433	0.000436	0	0.001107	0.000231
Spotted Whiff	<i>Citharichthys macrops</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Striped Buntfish	<i>Chilomycterus schoepfi</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Striped Grunt	<i>Haemulon striatum</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tomtate	<i>Haemulon aurolineatum</i>	0.002802	0.002067	0.006011	0.001894	0.002621	0.00103	0.002725	2.357865	0.002923	0.002649	0.001706	0.002554	0.000732	0.001924
Trunkfish	<i>Lactophrys trigonus</i>	9.66E-05	0	0.00058	0	0	0	0.000116	0.20193	0	0.000673	0	0	0	0.000259

Appendix Table B 4. February 2003 trawl (with sock) mean catch (number) per square meter. Sample size: raw=24, 1S=2, 2N=4, 2S=9, 3N=5, 3S=4, zone=5

Common name	Scientific name	Mean							Standard deviation						
		raw	1S	2N	2S	3N	3S	zone	raw	1S	2N	2S	3N	3S	zone
White Grunt	<i>Haemulon plumieri</i>	7.21E-05	0	0	0.000192	0	0	3.84E-05	0.201933	0	0	0.000382	0	0	8.59E-05
Whitenose Pipefish?	<i>Cosmocampus albirostris</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Yellowfin Mojarra	<i>Gerres cinereus</i>	0.004718	0.000869	0.009211	0.002642	0.010174	0	0.004579	6.837381	0.001229	0.016344	0.003759	0.011405	0	0.004776
Unidentified fish		0.000111	0	0.000216	0	0.000361	0	0.000116	0.000258	0	0.000433	0	0.000808	0	0.000258
Total fish		0.071137	0.084142	0.077262	0.04318	0.152161	0.020134	0.076376	90.42608	0.061591	0.087953	0.075898	0.158861	0.027301	0.062132
Invertebrates															
Red Sea Star		0.002012	0.002936	0.004785	0.000526	0.002935	0.000971	0.00243	2.182618	0.001694	0.004263	0.000722	0.002653	0.001942	0.001718
Ruby Brittle Star		0	0	0	0	0	0	0	0	0	0	0	0	0	0
Brittle stars unident		0.000297	0	0.000269	0.000296	0.000161	0.000647	0.000274	0.460735	0	0.000537	0.000626	0.00036	0.001295	0.000239
Callinectes sp.	<i>Callinectes spp.</i>	0.016526	0.007111	0.01135	0.008375	0.047335	0.006239	0.016082	20.85542	0.005141	0.004649	0.007118	0.044019	0.004079	0.017577
Common mud Crab		0.000798	0.001696	0.000254	0.000613	0.001586	0.000324	0.000894	0.961641	5.98E-05	0.000507	0.000839	0.001883	0.000647	0.000696
Crabs unident		0	0	0	0	0	0	0	0	0	0	0	0	0	0
Decorator Crab	<i>Stenocionops furcata</i>	4.32E-05	0	0	0.000115	0	0	2.31E-05	0.144334	0	0	0.000346	0	0	5.16E-05
Gray Plitho Crab?		0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hermit crabs		0.012714	0.013788	0.010645	0.014147	0.011095	0.013043	0.012544	10.60516	0.010897	0.005719	0.013483	0.009903	0.014307	0.001587
Portunid crab sp.	<i>Portunus sp.</i>	0.000487	0	0	0.000374	0.001267	0.000497	0.000427	0.64367	0	0	0.000612	0.001115	0.000581	0.000519
Sponge Spider Crab	<i>Macrocoeloma subparallelum</i>	0.000221	0	0.000216	0.000201	0	0.00066	0.000216	0.489216	0	0.000433	0.000399	0	0.00132	0.00027
Pink Shrimp	<i>Farfantepenaeus duorarum</i>	0.04707	0.058382	0.061466	0.028817	0.091017	0.013152	0.050567		0.028496	0.031142	0.030886	0.064362	0.008301	0.030369
		0.003728	0.002999	0.005239	0.001928	0.006601	0.003039	0.003981		0.001903	0.003684	0.001453	0.005895	0.004117	0.001905
Caridean Shrimp	<i>Palaeomonetes, etc.</i>	2.796718	3.384757	3.600801	1.079891	7.049902	0.244997	3.072069		2.18779	1.763848	1.178301	7.521725	0.185196	2.653375
Spotted spiny lobster	<i>Panulirus guttatus</i>														
Mollusks (excluding cephalopods)	Mollusca (other than cephalopoda)	0.000257	0	0.000254	0.000199	0.000494	0.00022	0.000233	0.411983	0	0.000507	0.000402	0.000742	0.00044	0.000176
Octopus	Cephalopoda: Octopodiformes	0.000687	0	0.000216	0.000934	0	0.001803	0.000591	1.044104	0	0.000433	0.001743	0	0.001068	0.000779
Squid	Cephalopoda: Decapodiformes	0.000212	0	0	0.000566	0	0	0.000113	0.53093	0	0	0.000941	0	0	0.000253

Appendix Table B 5. April 2003 trawl (with sock) mean catch (number) per square meter. Sample size: raw=24, 1S=2, 2N=4, 2S=9, 3N=5, 3S=4, zone=5

Common name	Scientific name	Mean							Standard deviation						
		raw	1S	2N	2S	3N	3S	zone	raw	1S	2N	2S	3N	3S	zone
Fish															
Alewife	<i>Alosa pseudoharengus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bandtail Puffer	<i>Sphoeroides spengleri</i>	0.00033	0	0.00063	0.00031	0.00021	0.00038	0.00031	0.00044	0	0.00042	0.00046	0.00047	0.00044	0.00023
Blackcheek Tonguefish	<i>Symphurus plagiusa</i>	4.6E-05	0	0	0.00012	0	0	2.5E-05	0.00023	0	0	0.00037	0	0	5.5E-05
Blackedge Cusk Eel	<i>Lepophidium brevibarbe</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Blackfin Cardinalfish	<i>Astrapogon puncticulatus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Blenny ?		0	0	0	0	0	0	0	0	0	0	0	0	0	0
Blenny		3.2E-05	0	0.00019	0	0	0	3.9E-05	0.00016	0	0.00039	0	0	0	8.7E-05
Bluethroat pikeblenny	<i>Cheenopsis ocellata</i>														
BlueStriped Grunt	<i>Haemulon sciurus</i>	0.00086	0.00166	0.00203	0.00053	0.00074	0.00022	0.00103	0.00121	0.00235	0.00187	0.00084	0.00075	0.00044	0.00077
Bridled Cardinalfish	<i>Apogon aurolineatus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bucktooth parrotfish	<i>Sparisoma radians</i>	7.1E-05	0	0.00021	9.7E-05	0	0	6.1E-05	0.00024	0	0.00042	0.00029	0	0	9.3E-05
Clown Goby	<i>Microbius gulosus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Code Goby	<i>Gobiosoma robustum</i>	7.3E-05	0	0	9.7E-05	0.00017	0	5.4E-05	0.00025	0	0	0.00029	0.00039	0	7.9E-05
Colon Goby	<i>Coryphopterus dicrus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Crested Pipefish	<i>Cosmocampus brachycephalus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dusky Pipefish	<i>Syngnathus floridae</i>	0.00077	0.00092	0.00184	0.00011	0.00113	0.00063	0.00093	0.00106	0.0013	0.0017	0.00034	0.00089	0.00083	0.00064
Dwarf Goatfish	<i>Upeneus pavidus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dwarf Seahorse	<i>Hippocampus zosterae</i>	0.00198	0.00046	0.00223	0.00185	0.00324	0.00164	0.00184	0.00173	0.00065	0.00237	0.00163	0.00185	0.00094	0.00101
Emerald Parrotfish	<i>Nicholsina usta</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Flagfin Mojarra	<i>Eucinostomus melanopterus</i>	7.4E-05	0	0	0.0002	0	0	4E-05	0.00036	0	0	0.00059	0	0	8.9E-05
French Angelfish (juvenile)	<i>Pomacanthus paru</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
French Grunt	<i>Haemulon flavolineatum</i>	8.3E-05	0.00055	0	9.7E-05	0	0	0.00013	0.00028	0.00078	0	0.00029	0	0	0.00024
Fringed Pipefish	<i>Micrognathus criniger</i>	0.00012	0	0.00023	0	0.0004	0	0.00013	0.00033	0	0.00045	0	0.00056	0	0.00018
Goby	<i>Gobionellus sp.</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gold Brotula	<i>Gunterichthys longipennis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Goldspotted Killifish	<i>Floridichthys carpio</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grass Porgy	<i>Calamus arctifrons</i>	0.00022	0	0.00045	0	0.00034	0.00042	0.00024	0.00047	0	0.00091	0	0.00046	0.00049	0.00023
Gray Snapper	<i>Lutjanus griseus</i>	0.00058	0.00092	0.00019	0.00115	0.00017	0	0.00049	0.00097	0.0013	0.00039	0.00126	0.00039	0	0.00051
Gulf Flounder	<i>Paralichthys aibigutta</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gulf Pipefish	<i>Syngnathus scovelli</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gulf Toadfish	<i>Opsanus beta</i>	0.00151	0.0024	0.00451	0.00101	0.00087	0	0.00176	0.00245	0.00183	0.00384	0.00173	0.00194	0	0.00176
Haemulidae?		0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hardhead Silverside	<i>Atherinomorus stipes</i>	0.0011	0.00046	0.00073	0.00097	0.00068	0.00259	0.00109	0.00158	0.00065	0.00146	0.00105	0.00153	0.00265	0.00086
Highhat (juvenile)	<i>Equetus acuminatus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hogfish (juvenile)	<i>Lachnolaimus maximus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Inshore Lizardfish	<i>Synodus foetens</i>	0.0003	0	0.00021	0.00045	0	0.00057	0.00025	0.00049	0	0.00042	0.00054	0	0.00072	0.00026
Key Brotula	<i>Ogilbia cayorum</i>	0.00015	0	0	0.00041	0	0	8.2E-05	0.00044	0	0	0.00086	0	0	0.00018
Leopard Sea robin	<i>Prionotus roseus</i>	4.2E-05	0	0	0.00011	0	0	2.2E-05	0.00021	0	0	0.00034	0	0	5E-05
Lined Seahorse	<i>Hippocampus erectus</i>	0.00015	0	0	0.00011	0.00016	0.00045	0.00015	0.00044	0	0	0.00034	0.00036	0.00091	0.00019
Longsnout Seahorse	<i>Hippocampus reidi</i>	4E-05	0	0	0.00011	0	0	2.1E-05	0.0002	0	0	0.00032	0	0	4.8E-05

Appendix Table B 5. April 2003 trawl (with sock) mean catch (number) per square meter. Sample size: raw=24, 1S=2, 2N=4, 2S=9, 3N=5, 3S=4, zone=5

		Mean							Standard deviation						
		raw	1S	2N	2S	3N	3S	zone	raw	1S	2N	2S	3N	3S	zone
Common name	Scientific name														
Longsnout Seahorse?	<i>Hippocampus reidi</i>	7.3E-05	0	0	0	0.00017	0.00022	7.9E-05	0.00025	0	0	0	0.00039	0.00044	0.00011
Marbled Blenny	<i>Paracinus marmoratus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mojarra sp.	Gerridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mutton Snapper	<i>Lutjanus analis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Orange Filefish	<i>Aluterus schoepfi</i>	3.4E-05	0	0	0	0.00016	0	3.3E-05	0.00017	0	0	0	0.00036	0	7.3E-05
Pigfish	<i>Orthopristis chrysoptera</i>	0.00019	0.00185	0	0	0	0.00023	0.00041	0.00077	0.00261	0	0	0	0.00045	0.00081
Pike Blenny	<i>Cheenopsis</i> sp.	4.8E-05	0	0	0	0.00023	0	4.6E-05	0.00023	0	0	0	0.00051	0	0.0001
Pinfish	<i>Lagodon rhomboidalis</i>	0.05633	0.12164	0.17795	0.03442	0.01633	0.00136	0.07034	0.08418	0.03283	0.1413	0.03357	0.01462	0.00272	0.07612
Planehead Filefish	<i>Monacanthus hispidus</i>	0.00041	0.00055	0.00063	0	0.00039	0.00105	0.00052	0.00062	0.00078	0.00077	0	0.00055	0.0008	0.00038
Queen Parrotfish	<i>Scarus vetula</i>														
Rainwater Killifish	<i>Lucania parva</i>	0.00059	0.00055	0.00283	9.7E-05	0.00016	0	0.00073	0.00162	0.00078	0.00337	0.00029	0.00036	0	0.00119
Redfin Parrotfish	<i>Sparisoma rubripinne</i>	8.5E-05	0	0.00023	0	0.00023	0	9.1E-05	0.00029	0	0.00045	0	0.00051	0	0.00012
Redtail Parrotfish	<i>Sparisoma chrysopteron</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sailors Choice	<i>Haemulon parrai</i>	8.1E-05	0	0.00049	0	0	0	9.8E-05	0.0004	0	0.00098	0	0	0	0.00022
Sand Perch	<i>Diplectrum formosum</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sand Stargazer	<i>Dactyloscopus crossotus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sand Whiff	<i>Citharichthys arenaceus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sargassumfish	<i>Histrio histrio</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sargassum Pipefish	<i>Syngnathus pelagicus</i>	0.00038	0.00055	0.00085	0.00022	0.00051	0	0.00043	0.00058	0.00078	0.00069	0.00044	0.00077	0	0.00033
Schoolmaster	<i>Lutjanus apodus</i>	3.7E-05	0	0	9.7E-05	0	0	1.9E-05	0.00018	0	0	0.00029	0	0	4.4E-05
Scrawled Cowfish	<i>Lactophrys quadricornis</i>	0.00026	0	0	0.00053	0	0.00039	0.00018	0.00056	0	0	0.0007	0	0.00078	0.00026
Scrawled Filefish	<i>Aluterus scriptus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Seahorses unident	<i>Hippocampus</i> spp.	8.9E-05	0	0	0.00024	0	0	4.7E-05	0.00043	0	0	0.00071	0	0	0.00011
Sharptail Goby	<i>Gobionellus hastatus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sheepshead Porgy	<i>Archosargus probatocephalus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Shrimp eel	<i>Ophichthus gomesi</i>	0.00018	0	0.00064	0.0002	0	0	0.00017	0.00044	0	0.00081	0.00039	0	0	0.00028
Silver Jenny	<i>Eucinostomus gula</i>	0.00279	0.00932	0.00171	0.00404	0.00067	0.00044	0.00323	0.00353	0.00379	0.00165	0.00374	0.00072	0.00088	0.00368
Silverside	Atherinidae	4E-05	0	0	0.00011	0	0	2.1E-05	0.0002	0	0	0.00032	0	0	4.8E-05
Slender Filefish	<i>Monacanthus tuckeri</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Southern Puffer	<i>Sphoeroides nephelus</i>	0.00023	0.00101	0.00044	0.00021	0	0	0.00033	0.00042	0.00013	0.00051	0.00041	0	0	0.00042
Speckled Stargazer	<i>Dactyloscopus moorei</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spottail Goby	<i>Gobionellus stigmaturus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spotted Dragonet	<i>Diplogrammus pauciradiatus</i>	0.00014	0	0.00021	0.00011	0.00033	0	0.00013	0.00033	0	0.00042	0.00032	0.00045	0	0.00014
Spotted Scorpionfish	<i>Scorpaena plumieri</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spotted Whiff	<i>Citharichthys macrops</i>	3.2E-05	0	0	0	0	0.00019	3.9E-05	0.00016	0	0	0	0	0.00039	8.7E-05
Striped Burrfish	<i>Chilomycterus schoepfi</i>	0.00011	0.00046	0	9.7E-05	0.00017	0	0.00015	0.0003	0.00065	0	0.00029	0.00039	0	0.00019
Striped Grunt	<i>Haemulon striatum</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tomtate	<i>Haemulon aurolineatum</i>	0.00202	0.00138	0.00591	0.00051	0.00207	0.00179	0.00233	0.00302	0.00196	0.00553	0.00102	0.00197	0.0017	0.00209
Trunkfish	<i>Lactophrys trigonus</i>	0.00039	0.00055	0.00019	0.00045	0.00039	0.00037	0.00039	0.00053	0.00078	0.00039	0.00053	0.00055	0.00075	0.00013
White Grunt	<i>Haemulon plumieri</i>	0.00016	0.00046	0.00021	0.00023	0	0	0.00018	0.00037	0.00065	0.00042	0.00046	0	0	0.00019
Whitenose Pipefish?	<i>Cosmocampus albirostris</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix Table B 5. April 2003 trawl (with sock) mean catch (number) per square meter. Sample size: raw=24, 1S=2, 2N=4, 2S=9, 3N=5, 3S=4, zone=5

Common name	Scientific name	Mean							Standard deviation						
		raw	1S	2N	2S	3N	3S	zone	raw	1S	2N	2S	3N	3S	zone
Yellowfin Mojarra	<i>Genes cinereus</i>	0.00133	0.0071	0.0006	0.00152	0.00035	0	0.00191	0.00305	0.00692	0.00075	0.00317	0.00078	0	0.00298
Unident fish		0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total fish		0.07456	0.15282	0.20634	0.05058	0.03031	0.01293	0.09059	0.09427	0.04876	0.15729	0.04163	0.02277	0.00102	0.08446
Invertebrate taxa															
Red Sea Star		0.00054	0.00111	0.00023	0.001	0	0.00019	0.0005	0.00103	0.00158	0.00045	0.00142	0	0.00037	0.00051
Ruby Brittle Star															
Brittle stars unident		0.00095	0	0.00042	0.00136	0	0.00223	0.0008	0.00185	0	0.00049	0.00189	0	0.00337	0.00097
Blue crab	<i>Callinectes sapidus</i>	3.8E-05	0	0	0	0	0.00023	4.5E-05	0.00018	0	0	0	0	0.00045	0.0001
Lesser blue crab	<i>Callinectes similis</i>	0.01739	0.04299	0.01668	0.02137	0.00882	0.00709	0.01939	0.01895	0.03577	0.01839	0.02015	0.01074	0.00183	0.01441
Callinectes sp.	<i>Callinectes spp.</i>														
Common mud Crab		0.00042	0.00055	0.00087	0.00053	0	0.00019	0.00043	0.0006	0.00078	0.00101	0.00051	0	0.00037	0.00034
Crabs unident															
Decorator Crab	<i>Stenocionops furcata</i>	0.00012	0.00046	0	0.00022	0	0	0.00014	0.00033	0.00065	0	0.00044	0	0	0.00021
Gray Piltho Crab?	<i>Piltho sp.</i>	4.8E-05	0	0	0	0.00023	0	4.8E-05	0.00023	0	0	0	0.00051	0	0.0001
Hermit crab		0.01316	0.01595	0.01606	0.01529	0.00397	0.01556	0.01337	0.0122	0.00223	0.01101	0.01742	0.00395	0.00315	0.00526
Portunid crab sp.	<i>Portunus sp.</i>	0.00012	0	0	0.00012	0.00017	0.00022	0.0001	0.00032	0	0	0.00035	0.00039	0.00044	0.0001
Sponge Spider Crab	<i>Macrocoeloma subparallelum</i>	3.5E-05	0	0.00021	0	0	0	4.2E-05	0.00017	0	0.00042	0	0	0	9.3E-05
Pink Shrimp	<i>Farfantepenaeus duorarum</i>	0.06377	0.13499	0.07372	0.06025	0.03483	0.06233	0.07322	0.04023	0.0285	0.04518	0.02106	0.05026	0.02518	0.03734
Brazilian Shrimp	<i>F. arantepenaeus brasiliensis</i>	0.00074	0.00194	0.00087	0.00059	0.00035	0.00083	0.00091	0.00099	0.00118	0.00118	0.00116	0.00078	7.8E-05	0.00061
Caridean Shrimp	<i>Palaemonetes, etc.</i>	0.74381	1.95038	1.63227	0.55267	0.30202	0.23437	0.93434	0.94566	0.95629	1.79977	0.3331	0.39292	0.07981	0.7992
Spotted spiny lobster	<i>Panulirus guttatus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mollusks (excluding cephalopods)	Mollusca (other than cephalopoda)	0.00034	0	0	0.00032	0.00055	0.00061	0.0003	0.00058	0	0	0.00048	0.00078	0.00075	0.00029
Octopus	Cephalopoda: Octopodiformes	0.0014	0	0	0.00181	0.00103	0.00305	0.00118	0.00239	0	0	0.00347	0.00153	0.0005	0.00129
Squid	Cephalopoda: Decapodiformes	0.00011	0	0	0	0	0.00063	0.00013	0.00039	0	0	0	0	0.00083	0.00028

AppendixTable B 6. June 2003 trawl (with sock) mean catch (number) per square meter. Sample size: raw=24, 1s=2, 2n=2, 2s=9, 3n=5, 3s=4, zones:

Common name	Scientific name	Mean							Standard deviation						
		raw	1s	2n	2s	3n	3s	zonal	raw	1s	2n	2s	3n	3s	zonal
Fish															
Alewife	<i>Alosa pseudoharengus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bandtail Puffer	<i>Sphoeroides spengleri</i>	0.00022	0	0	0.00028	0.00053	0	0.00016	0.00039	0	0	0.00043	0.00049	0	0.00024
Blackcheek Tonguefish	<i>Symphurus plagiusa</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Blackedge Cusk Eel	<i>Lepophidium brevibarbe</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Blackfin Cardinalfish	<i>Astrapogon puncticulatus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Blenny ?		0	0	0	0	0	0	0	0	0	0	0	0	0	0
Blenny		0	0	0	0	0	0	0	0	0	0	0	0	0	0
BlueStriped Grunt	<i>Haemulon sciurus</i>	0.00077	0.0005	0.00161	0.00099	0.00021	0.00027	0.00072	0.00122	0.00071	0.0013	0.00161	0.00047	0.00053	0.00059
Bluethroat pikeblenny	<i>Chaenopsis ocellata</i>	8.4E-05	0	0	0	0	0.00051	0.0001	0.00029	0	0	0	0	0.00059	0.00023
Bridled Cardinalfish	<i>Apogon aurolineatus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bucktooth parrotfish	<i>Sparisoma radians</i>	0.00021	0	0.00068	8.6E-05	0.00033	0	0.00022	0.00065	0	0.00136	0.00026	0.00074	0	0.00029
Clown Goby	<i>Microbius gulosus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Code Goby	<i>Gobiosoma robustum</i>	4.4E-05	0	0	0	0.00021	0	4.2E-05	0.00021	0	0	0	0.00047	0	9.4E-05
Colon Goby	<i>Coryphopterus dicrus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Crested Pipefish	<i>Cosmocampus brachycephalus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dusky Pipefish	<i>Syngnathus floridae</i>	0.00101	0	0.003	0.00019	0.00149	0.00074	0.00108	0.00225	0	0.00528	0.00058	0.00096	0.0005	0.00121
Dwarf Goatfish	<i>Upeneus parvus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dwarf Seahorse	<i>Hippocampus zosterae</i>	0.00455	0.0005	0.00242	0.00176	0.01832	0.00028	0.00426	0.00794	0.00071	0.0018	0.00307	0.01093	0.00055	0.0068
Emerald Parrotfish	<i>Nicholsina usta</i>	1E-04	0	0.00023	0.00017	0	0	7.8E-05	0.00035	0	0.00045	0.0005	0	0	0.00011
Flagfin Mojarra	<i>Eucinostomus melanopterus</i>	7E-05	0	0	0.00019	0	0	3.7E-05	0.00024	0	0	0.00037	0	0	8.3E-05
French Angelfish (juvenile)	<i>Pomacanthus paru</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
French Grunt	<i>Haemulon flavolineatum</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fringed Pipefish	<i>Micrognathus criniger</i>	3.1E-05	0	0	8.3E-05	0	0	1.7E-05	0.00015	0	0	0.00025	0	0	3.7E-05
Goby	<i>Gobionellus sp.</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gold Brotula	<i>Gunterichthys longipennis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Goldspotted Killifish	<i>Fiordichthys carpio</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grass Porgy	<i>Calamus arctifrons</i>	0.0002	0	0	0.00032	0.00021	0.00024	0.00015	0.00041	0	0	0.00048	0.00047	0.00048	0.00015
Gray Snapper	<i>Lutjanus griseus</i>	7.4E-05	0.0005	0	8.6E-05	0	0	0.00012	0.00025	0.00071	0	0.00026	0	0	0.00022
Gulf Flounder	<i>Paralichthys albigutta</i>	3.2E-05	0	0	0	0.00015	0	3.1E-05	0.00016	0	0	0	0.00035	0	6.9E-05
Gulf Pipefish	<i>Syngnathus scovelli</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gulf Toadfish	<i>Opsanus beta</i>	0.00043	0.00151	0.00111	9.7E-05	0.00042	0	0.00063	0.00093	0.00214	0.00132	0.00029	0.00094	0	0.00066
Haemulidae?	Haemulidae?	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hardhead Silverside	<i>Atherinomorus stipes</i>	0.00699	0.00114	0	0.00773	0	0.02397	0.00657	0.01436	0.00161	0	0.01182	0	0.02458	0.01037
Highhat (juvenile)	<i>Equetus acuminatus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hogfish (juvenile)	<i>Lachnolaimus maximus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Inshore Lizardfish	<i>Synodus foetens</i>	0.00021	0	0.00045	0	0.00021	0.00052	0.00024	0.00049	0	0.00091	0	0.00047	0.0006	0.00024
Key Brotula	<i>Ogilbia ceyorum</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Leopard Sea robin	<i>Prionotus roseus</i>	7.5E-05	0	0	0	0.00017	0.00024	8.1E-05	0.00025	0	0	0	0.00037	0.00048	0.00011
Lined Seahorse	<i>Hippocampus erectus</i>	0.00087	0	0.00069	0.00082	0.00198	0.00022	0.00074	0.00099	0	0.00046	0.00106	0.00081	0.00044	0.00077

AppendixTable B 6. June 2003 trawl (with sock) mean catch (number) per square meter. Sample size: raw=24, 1s=2, 2n=2, 2s=8, 3n=5, 3s=4, zones:

		Mean							Standard deviation						
		raw	1s	2n	2s	3n	3s	zonal	raw	1s	2n	2s	3n	3s	zonal
Longsnout Seahorse	<i>Hippocampus reidi</i>	3.4E-05	0	0	0	0.00016	0	3.3E-05	0.00017	0	0	0	0.00037	0	7.4E-05
Longsnout Seahorse?	<i>Hippocampus reidi</i>	0.00011	0	0	0.00017	0	0.00028	9E-05	0.00038	0	0	0.00052	0	0.00055	0.00013
Marbled Blenny	<i>Paraclinus marmoratus</i>	7.6E-05	0	0	0.0002	0	0	4E-05	0.00037	0	0	0.0006	0	0	9E-05
Mojarra sp.	Gerridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mutton Snapper	<i>Lutjanus analis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Orange Filefish	<i>Aluterus schoepfi</i>	0.00015	0	0.00028	9.7E-05	0.00015	0.00024	0.00015	0.00036	0	0.00055	0.00029	0.00035	0.00048	0.00011
Pigfish	<i>Orthopristis chrysoptera</i>	3.2E-05	0	0	8.6E-05	0	0	1.7E-05	0.00016	0	0	0.00026	0	0	3.9E-05
Pike Blenny	<i>Chaenopsis sp.</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pinfish	<i>Lagodon rhomboidalis</i>	0.02743	0.10137	0.08785	0.00884	0.00491	0	0.04059	0.04449	0.07077	0.04449	0.00582	0.00544	0	0.04964
Planehead Filefish	<i>Monacanthus hispidus</i>	0.00013	0	0.00055	0	0	0.00022	0.00015	0.00048	0	0.00111	0	0	0.00044	0.00024
Queen Parrotfish	<i>Scarus vetula</i>	4.4E-05	0	0	0	0.00021	0	4.2E-05	0.00021	0	0	0	0.00047	0	9.4E-05
Rainwater Killifish	<i>Lucania parva</i>	0.00052	0.00303	0.00159	0	0	0	0.00092	0.00149	0.00428	0.0019	0	0	0	0.00138
Redfin Parrotfish	<i>Sparisoma rubripinne</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Redtail Parrotfish	<i>Sparisoma chrysopteron</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sailors Choice	<i>Haemulon parrai</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sand Perch	<i>Diplectrum formosum</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sand Stargazer	<i>Dactyloscopus crossotus</i>	4.4E-05	0	0	0	0	0.00027	5.3E-05	0.00022	0	0	0	0	0.00053	0.00012
Sand Whiff	<i>Citharichthys arenaceus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sargassumfish	<i>Histrio histrio</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sargassum Pipefish	<i>Syngnathus pelagicus</i>	0.00054	0.00151	0.00139	9.7E-05	0.00049	0.00028	0.00075	0.00091	0.00214	0.00114	0.00029	0.00073	0.00055	0.00065
Schoolmaster	<i>Lutjanus apodus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scrawled Cowfish	<i>Lactophrys quadricornis</i>	0.00014	0	0	9.7E-05	0.00033	0.00022	0.00013	0.00032	0	0	0.00029	0.00045	0.00044	0.00014
Scrawled Filefish	<i>Aluterus scriptus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Seahorses unident	<i>Hippocampus spp.</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sharptail Goby	<i>Gobionellus hastatus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sheepshead Porgy	<i>Archosargus probatocephalus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Shrimp eel	<i>Ophichthus gomesi</i>	0.00011	0	0	0.0002	0	0.00022	8.4E-05	0.0003	0	0	0.0004	0	0.00044	0.00012
Silver Jenny	<i>Eucinostomus gula</i>	0.00181	0.00555	0.00122	0.00195	0.00177	0.00028	0.00216	0.00257	0.00785	0.00099	0.0022	0.00146	0.00055	0.00201
Silverside	Atherinidae	0.00123	0	0	0.00081	0	0.00557	0.00128	0.00338	0	0	0.00207	0	0.0087	0.00243
Slender Filefish	<i>Monacanthus tuckeri</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Southern Puffer	<i>Sphoeroides nephelus</i>	0.00011	0	0.00022	9.9E-05	0	0.00024	0.00011	0.00031	0	0.00043	0.0003	0	0.00048	0.00011
Speckled Stargazer	<i>Dactyloscopus moorei</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spottail Goby	<i>Gobionellus stigmaturos</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spotted Dragonet	<i>Diplogrammus pauciradiatus</i>	0.00028	0	0.00045	0	0.00097	0	0.00028	0.00068	0	0.00091	0	0.00106	0	0.00043
Spotted Scorpionfish	<i>Scorpaena plumieri</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spotted Whiff	<i>Citharichthys macrops</i>	3.5E-05	0	0	0	0.00017	0	3.3E-05	0.00017	0	0	0	0.00037	0	7.5E-05
Striped Burrefish	<i>Chilomycterus schoepfi</i>	0.00011	0	0	0.00018	0	0.00022	8.1E-05	0.00029	0	0	0.00037	0	0.00044	0.00011
Striped Grunt	<i>Haemulon striatum</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tomtate	<i>Haemulon aurolineatum</i>	0.00027	0.0005	0.00071	0.00018	0.00021	0	0.00032	0.00052	0.00071	0.00093	0.00037	0.00047	0	0.00028
Trunkfish	<i>Lactophrys trigonus</i>	0.0004	0.0005	0.00028	0.00052	0.00021	0.00044	0.00039	0.00082	0.00071	0.00055	0.00068	0.00047	0.00088	0.00014
White Grunt	<i>Haemulon plumieri</i>	3.4E-05	0	0	0	0.00016	0	3.3E-05	0.00017	0	0	0	0.00037	0	7.4E-05

AppendixTable B 6. June 2003 trawl (with sock) mean catch (number) per square meter. Sample size: raw=24, 1s=2, 2n=2, 2s=9, 3n=5, 3s=4, zones:

		Mean							Standard deviation						
		raw	1s	2n	2s	3n	3s	zonal	raw	1s	2n	2s	3n	3s	zonal
Whitenose Pipefish?	<i>Cosmocampus albirostris</i>	0.00023	0	0.00023	0.00032	0.00033	0	0.00017	0.0004	0	0.00045	0.00048	0.00045	0	0.00016
Yellowfin Mojarra	<i>Gerres cinereus</i>	0.00144	0.00891	0.00223	0.00039	0.00087	0	0.00248	0.00292	0.00453	0.00328	0.00046	0.00143	0	0.00389
Unident fish															
Total fish		0.05128	0.12556	0.10718	0.02704	0.03319	0.03543	0.06568	0.04782	0.09367	0.0537	0.01251	0.00796	0.02703	0.04683
Invertebrate taxa															
Red Sea Star		3.6E-05	0	0.00022	0	0	0	4.3E-05	0.00018	0	0.00043	0	0	0	9.7E-05
Ruby Brittle Star		0	0	0	0	0	0	0	0	0	0	0	0	0	0
Brittle stars unident		0.00029	0	0	0.00057	0.00016	0.00024	0.00019	0.00048	0	0	0.00058	0.00036	0.00048	0.00023
Blue crab	<i>Callinectes sapidus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lesser blue crab	<i>Callinectes similis</i>	0.00532	0.00487	0.00258	0.01092	0.00054	0.00168	0.00411	0.00601	0.00118	0.00295	0.0063	0.00076	0.00075	0.00413
Callinectes sp.	<i>Callinectes spp.</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Common mud Crab		0.00016	0.0005	0.00022	0.00021	0	0	0.00019	0.00036	0.00071	0.00043	0.00041	0	0	0.00021
Crabs unident		3.2E-05	0	0	8.6E-05	0	0	1.7E-05	0.00016	0	0	0.00028	0	0	3.9E-05
Decorator Crab	<i>Stenocionops furcata</i>	3.4E-05	0	0	0	0.00016	0	3.3E-05	0.00017	0	0	0	0.00037	0	7.4E-05
Gray Pitho Crab		3.7E-05	0	0	9.9E-05	0	0	2E-05	0.00018	0	0	0.0003	0	0	4.4E-05
Hermit crabs unident		0.0132	0.03208	0.0117	0.00822	0.00398	0.02799	0.01679	0.01208	0.0111	0.01125	0.00515	0.00281	0.01099	0.01248
Portunid crab sp.	<i>Portunus sp.</i>	0.00115	0	0	0.00203	0.00016	0.00213	0.00087	0.002	0	0	0.00263	0.00037	0.00208	0.00111
Sponge Spider Crab		0.0001	0	0	0.00018	0	0.00022	8E-05	0.00028	0	0	0.00036	0	0.00044	0.00011
Pink Shrimp	<i>Farfantepenaeus duorarum</i>	0.01238	0.03392	0.00769	0.01809	0.00016	0.00871	0.01371	0.01247	0.02055	0.01198	0.00853	0.00036	0.00328	0.01297
Brazilian Shrimp	<i>F. arfantepenaeus brasiliensis</i>	6.2E-05	0	0	0.00017	0	0	3.3E-05	0.0003	0	0	0.0005	0	0	7.4E-05
Caridean Shrimp	<i>Palaemonetes, etc.</i>														
Spotted spiny lobster	<i>Panulirus guttatus</i>	4.2E-05	0.0005	0	0	0	0	0.0001	0.00021	0.00071	0	0	0	0	0.00023
Mollusks (excluding cephalopod)	Mollusca (other than cephalopoda)	0.00058	0.0005	0.00024	0.00042	0.00021	0.00176	0.00063	0.00117	0.00071	0.00049	0.00101	0.00047	0.00216	0.00065
Octopus	Cephalopoda: Octopodiformes	0.00188	0	0	0.00314	0	0.00423	0.00147	0.00338	0	0	0.00443	0	0.00315	0.00206
Squid	Cephalopoda: Decapodiformes	3.8E-05	0	0	0.0001	0	0	2E-05	0.00018	0	0	0.0003	0	0	4.5E-05

Common name	Scientific name	Mean							Standard deviation						
		raw	1s	2n	2s	3n	3s	zone	raw	1s	2n	2s	3n	3s	zone
Fish															
Alewife	<i>Alosa pseudoharengus</i>														
Bandtail Puffer	<i>Sphoeroides spengleri</i>	0.00033	0	0.000697	0.00035	0.000383	0	0.000285	0.00069	0	0.000697	0.000738	0.000855	0	0.000422
Blackcheek Tonguefish	<i>Symphurus plagiusa</i>	7.6E-05	0	0	0	0.000168	0.00024	8.24E-05	0.000257	0	0	0	0.000376	0.0004872	0.00024
Blackedge Cusk Eel	<i>Lepophidium brevibarbe</i>														
Blackfin Cardinalfish	<i>Astrapogon puncticulatus</i>														
Blenny ?															
Blenny															
BlueStriped Grunt	<i>Haemulon scirtus</i>	0.00063	0.00051	0.00212	0.00043	0.00035	0	0.000683	0.001089	0.000721	0.00212	0.000864	0.00048	0	0.000789
Bluethroat pikeblenny	<i>Chaenopsis ocellata</i>														
Bridled Cardinalfish	<i>Apogon aurolineatus</i>														
Bucktooth parrotfish	<i>Sparisoma radians</i>	0.00016	0	0.000489	0.0001	0.000182	0	0.000154	0.000359	0	0.000489	0.000301	0.000406	0	0.000228
Chain Pipefish		7.6E-05	0	0	9.7E-05	0.00019	0	5.75E-05	0.000258	0	0	0.000292	0.000425	0	0.000202
Clown Goby	<i>Microbatus gulosus</i>														
Code Goby	<i>Gobiosoma robustum</i>														
Colon Goby	<i>Coryphopterus dicrus</i>														
Crested Pipefish	<i>Cosmocampus brachycephalus</i>														
Dusky Pipefish	<i>Syngnathus floridae</i>	0.0017	0	0.002775	0.00148	0.003283	0	0.001507	0.001744	0	0.002775	0.001553	0.001853	0	0.001193
Dwarf Goatfish	<i>Upeneus parvus</i>														
Dwarf Seahorse	<i>Hippocampus zosterae</i>	0.00082	0.00051	0	0.00064	0.001862	0.00087	0.000776	0.001186	0.000721	0	0.000831	0.001909	0.0010186	0.000685
Emerald Parrotfish	<i>Nicholsina usta</i>														
Flagfin Mojarra	<i>Eucinostomus melanopterus</i>														
French Angelfish (juvenile)	<i>Pomacanthus paru</i>														
French Grunt	<i>Haemulon flavolineatum</i>														
Freckled cardinalfish		3.7E-05	0	0	0	0	0.00022	4.43E-05	0.000181	0	0	0	0	0.0004428	0.000196
Fringed Pipefish	<i>Micrognathus crinitiger</i>														
Goby	<i>Gobionellus sp.</i>														
Gold Brotula	<i>Gunterichthys longipenis</i>														
Goldspotted Killifish	<i>Floridichthys carpio</i>	0.00011	0	0	0.00029	0	0	5.85E-05	0.000537	0	0	0.000677	0	0	0.000382
Grass Porgy															
Gray Snapper	<i>Lutjanus griseus</i>	0.00011	0.00045	0.000238	0	0.000166	0	0.00017	0.000303	0.00063	0.000238	0	0.000376	0	0.000267
Great Barracuda		0.00012	0	0.000228	0	0.000383	0	0.000122	0.000425	0	0.000228	0	0.000855	0	0.00037
Gulf Flounder	<i>Paralichthys albigutta</i>	3.7E-05	0	0	0	0	0.00022	4.43E-05	0.000181	0	0	0	0	0.0004428	0.000196
Gulf Pipefish	<i>Syngnathus scovelli</i>														
Gulf Toadfish	<i>Opsanus beta</i>	0.00227	0												

Appendix Table B 7. August 2003 trawl (with sock) mean catch (number) per square meter (6/30/04) (sample size: raw=24, 1s=2, 2n=4, 2s=9, 3n=5, 3s=4, zone=5)

Common name	Scientific name	Mean							Standard deviation						
		raw	1s	2n	2s	3n	3s	zone	raw	1s	2n	2s	3n	3s	zone
Parrotfish sp		7E-05	0	0	0	0.000337	0	6.73E-05	0.000344	0	0	0	0.000753	0	0.000337
Pigfish	<i>Orthopristis chrysoptera</i>														
Pike Blenny	<i>Chaenopsis sp.</i>														
Pinfish	<i>Lagodon rhomboidalis</i>	0.04333	0.05056	0.11708	0.03346	0.032653	0.00153	0.047057	0.050252	0.057082	0.11708	0.045211	0.028644	0.0030586	0.042521
Planehead Filefish	<i>Monacanthus hispidus</i>	0.0005	0.00051	0.000933	9.7E-05	0.000925	0.00046	0.000584	0.000766	0.000721	0.000933	0.000292	0.0013	0.0005284	0.000386
Queen Parrotfish	<i>Scarus vetula</i>														
Rainwater Killifish	<i>Lucania parva</i>	0.0021	0.00089	0.009181	0.0005	0.001519	0	0.002414	0.00473	0.001281	0.009181	0.001494	0.002404	0	0.003823
Redfin Parrotfish	<i>Sparisoma rubripinne</i>	3.7E-05	0	0.000222	0	0	0	4.44E-05	0.000181	0	0.000222	0	0	0	9.93E-05
Redtail Parrotfish															
Reef silverside? Must change	<i>in earlier files to hardhead sil</i>														
Sailors Choice	<i>Haemulon parrai</i>														
Sand Perch	<i>Diplectrum formosum</i>														
Sand Stargazer	<i>Dactyloscopus crossotus</i>	7.4E-05	0	0	0.00011	0	0.00019	6.08E-05	0.000254	0	0	0.000339	0	0.0003823	0.000198
Sand Whiff	<i>Citharichthys arenaceus</i>														
Sargassumfish	<i>Histrio histrio</i>														
Sargassum Pipefish	<i>Syngnathus pelagicus</i>	0.00076	0	0.001407	0.00037	0.001831	0	0.000722	0.001301	0	0.001407	0.00112	0.001304	0	0.000707
Schoolmaster	<i>Lutjanus apodus</i>	0.00012	0.00045	0.000222	0.00012	0	0	0.000158	0.000329	0.00083	0.000222	0.000373	0	0	0.000267
Scrawled Cowfish	<i>Lactophrys quadricornis</i>	7.2E-05	0.00045	0	0	0	0.00021	0.000131	0.000245	0.00083	0	0	0	0.0004235	0.000298
Scrawled Filefish	<i>Aluterus scriptus</i>														
Seahorses unident	<i>Hippocampus spp.</i>														
Sharptail Goby	<i>Gobionellus hastatus</i>														
Sheepshead Porgy	<i>Archosargus probatocephalus</i>														
Shrimp eel	<i>Ophichthus gomezi</i>	4.4E-05	0	0	0.00012	0	0	2.33E-05	0.000214	0	0	0.00035	0	0	0.000157
Silver Jenny	<i>Eucinostomus gula</i>	0.04075	0.0302	0.09397	0.04146	0.031348	0.00296	0.039987	0.052193	0.01497	0.09397	0.058596	0.035328	0.0006722	0.036629
Silverside	<i>Atherinidae</i>														
Slender Filefish	<i>Monacanthus tockeri</i>														
Southern Puffer	<i>Sphaeroides nephelus</i>	0.00015	0	0	0.0002	0.000373	0	0.000115	0.000439	0	0	0.000802	0.000511	0	0.000306
Speckled Stargazer	<i>Dactyloscopus moorei</i>														
Spottail Goby	<i>Gobionellus stigmaturus</i>														
Spotted Dragonet	<i>Diplogrammus pauciradiatus</i>	0.00027	0	0.000713	0	0.000719	0	0.000286	0.000749	0	0.000713	0	0.000888	0	0.000476
Spotted Scorpionfish	<i>Scorpaena plumieri</i>	3.3E-05	0	0	0	0.000158	0	3.17E-05	0.000162	0	0	0	0.000354	0	0.000158
Spotted Whiff	<i>Citharichthys macrops</i>														
Striped Burrfish	<i>Chilomycterus schoepfi</i>	0.00016	0.00045	0	0.00033	0	0	0.000155	0.000474	0.00083	0	0.000708	0	0	0.000368
Striped Grunt	<i>Haemulon striatum</i>														
Tomtate	<i>Haemulon aurolineatum</i>	0.00015	0.00045	0.000238	9.7E-05	0.000182	0	0.000192	0.000345	0.00063	0.000238	0.000292	0.000406	0	0.000231
Trunkfish	<i>Lactophrys trigonus</i>	0.00019	0	0.000444	0.00021	0	0.00024	0.00018	0.000469	0	0.000444	0.000427	0	0.0004872	0.000249
White Grunt	<i>Haemulon plumieri</i>	7E-05	0	0	0	0.000337	0	6.73E-05	0.000344	0	0	0	0.000753	0	0.000337
Whitenose Pipefish?	<i>Cosmocampus albirostris</i>	7.7E-05	0	0	0	0.000372	0	7.43E-05	0.000262	0	0	0	0.000509	0	0.000228
Yellowfin Mojarra	<i>Gerres cinereus</i>	0.00496	0.00287	0.008173	0.00527	0.008728	0	0.004589	0.006286	0.003782	0.008173	0.008164	0.006517	0	0.003476
Unidentified fish															
Total fish		0.10178	0.0905	0.250259	0.08882	0.085698	0.00818	0.104691	0.108244	0.047242	0.250259	0.109443	0.052322	0.0037423	0.095806
Invertebrate taxa															
Red sea star		0.00044	0	0.002143	0.00012	0.00019	0	0.000491	0.001011	0	0.002143	0.000373	0.000425	0	0.000892
Blue crab	<i>Callinectes sapidus</i>	6.7E-05	0	0	0	0.000188	0.00019	7.19E-05	0.000227	0	0	0	0.000376	0.0003823	0.000208
Lesser blue crab	<i>Callinectes similis</i>	0.00851	0.00917	0.012108	0.01234	0.001342	0.00494	0.007981	0.007882	0.002888	0.012108	0.009975	0.001182	0.005179	0.004645
Callinectes sp.	<i>Callinectes spp.</i>														
Common mud crab		0.00029	0.00045	0.000694	0.00037	0	0	0.000303	0.000788	0.00083	0.000694	0.00112	0	0	0.000484

Appendix Table B 7. August 2003 trawl (with sock) mean catch (number) per square meter (6/30/04) (sample size: raw=24, 1s=2, 2n=4, 2s=9, 3n=5, 3s=4, zone=5)

Common name	Scientific name	Mean							Standard deviation						
		raw	1s	2n	2s	3n	3s	zone	raw	1s	2n	2s	3n	3s	zone
Decorator crab	<i>Stenocionops furcata</i>	3.8E-05	0	0	0.0001	0	0	2.05E-05	0.000188	0	0	0.000308	0	0	0.000138
Gray pitho		0.00023	0.00045	0.000489	0.00021	0.000158	0	0.000281	0.00041	0.00063	0.000489	0.000419	0.000354	0	0.000235
Hermit		0.03119	0.01866	0.057887	0.04289	0.010487	0.01031	0.028046	0.041423	0.017735	0.057887	0.046823	0.008025	0.0019252	0.024557
Portunus sp.	<i>Portunus sp.</i>	0.00037	0.00051	0.000703	0.00044	0	0.00024	0.00038	0.000559	0.000721	0.000703	0.000526	0	0.0004872	0.000292
Sponge spider crab		7.7E-05	0	0.000238	0	0	0.00022	9.18E-05	0.000259	0	0.000238	0	0	0.0004428	0.0002
Stone crab		3.3E-05	0	0	0	0.000158	0	3.17E-05	0.000162	0	0	0	0.000354	0	0.000158
Total crabs		0.04081	0.02923	0.072119	0.05636	0.012314	0.01591	0.037187	0.04449	0.015387	0.072119	0.049191	0.006708	0.0062486	0.029421
Pink Shrimp	<i>Farfantepenaeus duorarum</i>	0.09573	0.14445	0.18182	0.11767	0.018366	0.03261	0.096982	0.084764	0.052887	0.18182	0.095822	0.017648	0.0099748	0.070307
Brazilian Shrimp	<i>Farfantepenaeus brasiliensis</i>	0.00049	0	0.002109	0.00037	0	0	0.000496	0.001128	0	0.002109	0.00112	0	0	0.000951
Caridean Shrimp	<i>Palaemonetes, etc.</i>														
Spotted spiny lobster	<i>Panulirus guttatus</i>														
Mollusk	Mollusca (other than cephalopoda)	0.00056	0.00045	0.000238	0.00052	0.000363	0.00129	0.000572	0.000868	0.00063	0.000238	0.000665	0.000612	0.0015502	0.000481
Octopus	Cephalopoda: Octopodiformes	0.00044	0	0	0.00068	0	0.00043	0.000283	0.000921	0	0	0.001321	0	0.0005004	0.000577
Squid	Cephalopoda: Decapodiformes														
Total mollusks		0.001	0.00045	0.000238	0.00151	0.000363	0.00172	0.000855	0.001284	0.00063	0.000238	0.001249	0.000612	0.0019326	0.000648
Grand Total		0.14359	0.12018	0.322616	0.14689	0.098374	0.02581	0.142733	0.144985	0.063259	0.322616	0.154593	0.057557	0.009497	0.124084

Table 8. October 2003 trawl (with sock) mean catch (number) per square meter (6/30/04) (sample size: raw=24, 1s=2, 2n=4, 2s=9, 3s=5, 3s=4, zone=5)

Common Name	Scientific Name	Mean							Standard deviation						
		raw	1s	2n	2s	3n	3s	zone	raw	1s	2n	2s	3n	3s	zone
Alewife	<i>Alosa pseudoharengus</i>														
Bandtail Puffer	<i>Sphoeroides spengleri</i>	0.166667	0	0	0.111111	0.4	0.25	0.152222	0.38069	0	0	0.333333	0.54772	0.5	0.154377
Bigeye Mojarra	<i>Eucinostomus havana</i>														
Blackcheek Tonguefish	<i>Symphurus plagiusa</i>														
Blackedge Cusk Eel	<i>Lepophidium brevibarbe</i>														
Blackfin Cardinalfish	<i>Astrapogon puncticulatus</i>														
Blenny?		0.041667	0	0	0	0.2	0	0.04	0.20412	0	0	0	0.44721	0	0.080003
Bluestriped Grunt	<i>Haemulon sciurus</i>	0.541667	0.5	1.25	0.444444	0.6	0	0.558889	0.83297	0.70711	1.25831	0.728483	0.89443	0	0.402118
Bluethroat pikeblenny	<i>Chaenopsis ocellata</i>														
Bridled Cardinalfish	<i>Apogon aurolineatus</i>														
Bucktooth Parrotfish	<i>Sparisoma radians</i>	0.625	0.5	1.25	0.333333	0.8	0.5	0.876667	0.96965	0.70711	1.25831	1	1.09545	0.57735	0.324483
Chain Pipefish	<i>Syngnathus louisianae</i>	0.083333	0	0.25	0	0.2	0	0.09	0.28233	0	0.5	0	0.44721	0	0.111389
Clown Goby	<i>Microbius gulosus</i>														
Code Goby	<i>Gobiosoma robustum</i>														
Colon Goby	<i>Coryphopterus dicrus</i>														
Crested Pipefish	<i>Cosmocampus brachycephalus</i>														
Dusky pipefish	<i>Syngnathus floridae</i>	0.5	1.5	0.25	0.333333	0.8	0.25	0.826667	0.83406	0.70711	0.5	0.707107	1.30384	0.5	0.484959
Dwarf Gostfish	<i>Upeneus parvus</i>														
Dwarf Seahorse	<i>Hippocampus zosterae</i>	0.833333	0.5	0	0.888889	1.8	0.5	0.737778	1.30773	0.70711	0	1.384225	1.78885	1	0.802886
Emerald Parrotfish?	<i>Nicholsina usta</i>	0.041667	0	0	0	0.2	0	0.04	0.20412	0	0	0	0.44721	0	0.080003
Flagfin Mojarra	<i>Eucinostomus melanopterus</i>														
Freckled cardinalfish	<i>Phaeoptyx conklini</i>														
French Angelfish (juvenile)	<i>Pomacanthus paru</i>														
French Grunt	<i>Haemulon flavolineatum</i>														
Fringed Filefish	<i>Monacanthus ciliatus</i>	0.125	0	0	0	0.6	0	0.12	0.44843	0	0	0	0.89443	0	0.240009
Fringed Pipefish	<i>Micrognathus criniger</i>	0.125	0.5	0	0.222222	0	0	0.144444	0.44843	0.70711	0	0.888867	0	0	0.197675
Gobionellus sp.	<i>Gobionellus</i> sp.														
Gold Brotula	<i>Gunterichthys longipennis</i>														
Goldspotted Killifish	<i>Floridichthys carpio</i>	0.041667	0	0	0.111111	0	0	0.022222	0.20412	0	0	0.333333	0	0	0.045148
Grass Porgy	<i>Calamus arcifrons</i>														
Gray Snapper	<i>Lutjanus griseus</i>	1.125	1.5	4.5	0.444444	0.4	0	1.368889	1.87228	0.70711	1.91485	1.013794	0.89443	0	1.645467
Great Barracuda	<i>Sphyraena barracuda</i>														
Gulf Flounder	<i>Paralichthys albigutta</i>														
Gulf Pipefish	<i>Syngnathus scovelli</i>														
Gulf toadfish	<i>Opsanus beta</i>	1.208333	7	2.25	0.444444	0.4	0	2.018889	2.14637	1.41421	1.70783	1.013794	0.54772	0	2.630132
Haemulon species	<i>Haemulon</i> sp.														
Hardhead halfbeak	<i>Chriodorus atherinoides</i>														
Hardhead Silverside	<i>Atherinomorus stipes</i>	0.041667	0	0	0	0	0.25	0.05	0.20412	0	0	0	0	0.5	0.100058
High-hat (juvenile)	<i>Equetus acuminatus</i>														
Hogchoker	<i>Trinectes maculatus</i>														
Hogfish	<i>Lachnolaimus maximus</i>														
Honeycomb Cowfish	<i>Lactophrys polygonia</i>														
Inshore Lizardfish	<i>Synodus foetens</i>														
Key Brotula	<i>Ogilbia ceyorum</i>														
Lane Snapper	<i>Lutjanus synagris</i>														
Leopard Scarabin	<i>Prionotus roseus</i>														
Lined Seahorse	<i>Hippocampus erectus</i>	0.083333	0	0.25	0	0.2	0	0.09	0.28233	0	0.5	0	0.44721	0	0.111389

Table 8. October 2003 trawl (with sock) mean catch (number) per square meter (6/30/04) (sample size: raw=24, 1s=2, 2n=4, 2s=9, 3n=5, 3s=4, zone=5)

Common Name	Scientific Name	Mean							Standard deviation						
		raw	1s	2n	2s	3n	3s	zone	raw	1s	2n	2s	3n	3s	zone
Lined Sole	<i>Achirus lineatus</i>														
Longsnout Seahorse	<i>Hippocampus reidi</i>														
Mahogany Snapper	<i>Lutjanus mahogoni</i>														
Marbled blenny	<i>Paraclinus marmoratus</i>	0.166667	0	0.25	0.222222	0	0.25	0.144444	0.48154	0	0.5	0.666667	0	0.5	0.118721
Mojarra sp.	<i>Gerridae</i>														
Mutton Snapper	<i>Lutjanus analis</i>														
Orange Filefish	<i>Aluterus schoepfi</i>	0.041667	0	0	0	0.2	0	0.04	0.20412	0	0	0	0.44721	0	0.080003
Pigfish	<i>Orthopristis chrysoptera</i>														
Pinfish	<i>Lagodon rhomboidalis</i>	24.70833	80	77.25	7.555556	10.4	1	35.24111	36.8375	36.7696	41.0234	12.55101	10.8074	1.414214	35.8234
Planehead Filefish	<i>Monacanthus hispidus</i>	0.333333	0	0.5	0	0.8	0.75	0.37	0.63702	0	1	0	0.54772	0.957427	0.312768
Porkfish	<i>Anisotremus virginicus</i>														
Queen Parrotfish	<i>Scarus vetula</i>														
Rainwater Killifish	<i>Lucania parva</i>	1.083333	9	0	0.555556	0.6	0	2.031111	2.68517	1.41421	0	1.666667	0.89443	0	3.515399
Redfin Parrotfish	<i>Sparisoma rubripinne</i>	0.041667	0	0	0	0.2	0	0.04	0.20412	0	0	0	0.44721	0	0.080003
Redtail Parrotfish	<i>Sparisoma chrysopteron</i>														
Sailors Choice	<i>Haemulon parrai</i>														
Sand Perch	<i>Diplectrum formosum</i>														
Sand Stargazer	<i>Dactyloscopus crossotus</i>	0.041667	0	0	0	0	0.25	0.05	0.20412	0	0	0	0	0.5	0.100058
Sand Whiff	<i>Citharichthys arenaceus</i>														
Sargassum pipefish	<i>Syngnathus pelagicus</i>	0.708333	2	0.5	0.111111	2	0	0.922222	1.45898	2.82843	0.57735	0.333333	2.34521	0	0.899778
Sargassumfish	<i>Histrio histrio</i>														
Schoolmaster	<i>Lutjanus apodus</i>	0.125	0.5	0	0.111111	0.2	0	0.162222	0.33783	0.70711	0	0.333333	0.44721	0	0.185429
Scrawled Cowfish	<i>Lactophrys quadricornis</i>	0.041667	0	0	0	0	0.25	0.05	0.20412	0	0	0	0	0.5	0.100058
Scrawled Filefish	<i>Aluterus scriptus</i>														
Sea Bream	<i>Archosargus rhomboidalis</i>	0.041667	0	0.25	0	0	0	0.05	0.20412	0	0.5	0	0	0	0.100058
Seahorses unident	<i>Hippocampus spp.</i>														
Sharksucker	<i>Echeneis naucrates</i>	0.041667	0	0	0.111111	0	0	0.022222	0.20412	0	0	0.333333	0	0	0.045148
Sharptail Goby	<i>Gobionellus hastatus</i>														
Sheepshead Porgy	<i>Archosargus probatocephalus</i>														
Shrimp eel	<i>Ophichthus gomesi</i>	0.208333	0	0.5	0.333333	0	0	0.166667	0.50898	0	0.57735	0.707107	0	0	0.211504
Silver Jenny	<i>Eucinostomus gula</i>	15.625	55.5	20.5	12.22222	13.4	1.25	20.57444	21.0379	0.70711	18.4842	21.15288	18.2839	1.5	18.62729
Silverside	<i>Atherinidae</i>														
Slender Filefish	<i>Monacanthus tuckeri</i>	0.041667	0	0	0.111111	0	0	0.022222	0.20412	0	0	0.333333	0	0	0.045148
Southern Puffer	<i>Sphaeroides nephelus</i>	0.041667	0	0	0.111111	0	0	0.022222	0.20412	0	0	0.333333	0	0	0.045148
Speckled Stargazer	<i>Dactyloscopus moorei</i>														
Speckled Worm Eel	<i>Myrophis punctatus</i>														
Spotfin Mojarra	<i>Eucinostomus argenteus</i>														
Spottail Goby	<i>Gobionellus stigmaturus</i>														
Spotted Dragonet	<i>Diplogrammus pauciradiatus</i>	0.041667	0	0.25	0	0	0	0.05	0.20412	0	0.5	0	0	0	0.100058
Spotted Scorpionfish	<i>Scorpaena plumieri</i>	0.041667	0	0	0.111111	0	0	0.022222	0.20412	0	0	0.333333	0	0	0.045148
Spotted Wiff	<i>Citharichthys macrops</i>	0.083333	0	0.5	0	0	0	0.1	0.28233	0	0.57735	0	0	0	0.200116
Striped Burrfish	<i>Chilomycterus schoepfi</i>	0.083333	0	0	0.222222	0	0	0.044444	0.28233	0	0	0.440959	0	0	0.090296
Striped Grunt	<i>Haemulon striatum</i>														
Tomtate	<i>Haemulon aurolineatum</i>	0.75	1	0.75	0.444444	1.6	0.25	0.808889	1.07339	0	0.5	0.881917	1.81659	0.5	0.471999
Trunkfish	<i>Lactophrys trigonus</i>	0.333333	0	0	0.222222	1.2	0	0.284444	0.78139	0	0	0.440959	1.30384	0	0.466226
White Grunt	<i>Haemulon plumieri</i>	0.375	0	0	0	1.8	0	0.36	1.43898	0	0	0	2.94958	0	0.720026
Whitenose Pipefish	<i>Cosmocampus albirostris</i>	0.041667	0	0	0.111111	0	0	0.022222	0.20412	0	0	0.333333	0	0	0.045148

Table 8. October 2003 trawl (with sock) mean catch (number) per square meter (6/30/04) (sample size: raw=24, 1s=2, 2n=4, 2s=9, 3n=5, 3s=4, zone=5)

Common Name	Scientific Name	Mean							Standard deviation						
		raw	1s	2n	2s	3n	3s	zone	raw	1s	2n	2s	3n	3s	zone
Yellowfin Mojarra	<i>Gerres cinereus</i>	4.833333	30	3.25	1.111111	6.8	0	8.192222	10.2731	18.3848	5.18813	3.333333	10.1143	0	11.21781
		55.45833	190	114.5	27	45.4	5.75	78.53	63.039	12.7279	27.8867	40.6325	44.2809	3.095696	67.99894
Brittle Star	<i>Ophioderma sp.</i>														
Red Sea Star	<i>Formia milleporella</i>	0.083333	0	0.25	0.111111	0	0	0.072222	0.28233	0	0.5	0.333333	0	0	0.098862
Ruby Brittle Star	<i>Ophioderma rubicundum</i>														
Callinectes sapidus	<i>Callinectes sapidus</i>	0.083333	0	0.25	0.111111	0	0	0.072222	0.28233	0	0.5	0.333333	0	0	0.098862
Callinectes similis	<i>Callinectes similis</i>	4.541867	3	11.75	6	0	0.5	4.25	5.43722	2.82843	5.7373	4.809772	0	1	4.314415
Common mud crab	<i>Panopeus herbstii</i>	0.25	0	0.75	0.333333	0	0	0.218667	0.60792	0	0.95743	0.707107	0	0	0.296586
Decorator Crab	<i>Stenocionops furcata</i>														
Gray Piho	<i>Pitho aculeata</i>	0.083333	0.5	0	0.111111	0	0	0.122222	0.28233	0.70711	0	0.333333	0	0	0.194378
Hermit	<i>Clibanarius sp.</i>	16.20833	23	29.25	19	4	8.75	16.8	18.7036	15.5563	33.6588	17.181	2.34521	8.5	9.243557
Portunus sp.	<i>Portunus sp.</i>	0.25	0	0.25	0.444444	0.2	0	0.178889	0.53161	0	0.5	0.726483	0.44721	0	0.169846
Sponge spider crab	<i>Macrocoeloma subparallelum</i>	0.041867	0	0	0.111111	0	0	0.022222	0.20412	0	0	0.333333	0	0	0.045148
		21.45833	26.5	42.25	26.11111	4.2	9.25	21.66222	22.1496	19.0919	33.5696	20.2265	2.28035	7.847505	13.60941
Mollusk	Mollusca (other than cephalopoda)	0.166667	0	0	0.222222	0.4	0	0.124444	0.48154	0	0	0.440959	0.89443	0	0.163362
Octopus	Cephalopoda: Octopodiformes	0.166667	0	0	0.444444	0	0	0.088889	0.48154	0	0	0.726483	0	0	0.180591
		0	0	0	0	0	0	0.0019	0	0.00077	0	0	0.00158	0	0
Caribbean spiny lobster	<i>Panulirus argus</i>														
		77.33333	216.5	157	53.88889	50	15	98.47778	73.9028	31.8198	29.676	58.81647	43.3647	9.488833	76.20167
Pink Shrimp	<i>Farfantepenaeus duorarum</i>	0.078907	0.158528	0.176802	0.077291	0.007256	0.034402	0.090858	0.07444	0.03729	0.04578	0.064967	0.01431	0.013648	0.066823

Appendix Table B 9. December 2003 trawl (with sock) mean catch (number) per square meter (6/30/04) (sample size: raw=24, 1s=2, 2n=4, 2s=9, 3n=5, 3s=4, zone=5)

Common Name	Scientific Name	Mean								Standard deviation							
		raw	1s	2n	2s	3n	3s	zone	raw	1s	2n	2s	3n	3s	zone		
Alewife	<i>Alosa pseudoharengus</i>																
Bandtail Puffer	<i>Sphoeroides spengleri</i>	0.000253	0	0.000201	0.000203	0.000353	0.000421	0.000236	0.000481	0	0.0004	0.0004	0.00079	0.000488	0.000163		
Bigeye Mojarra	<i>Eucinostomus Havana</i>																
Blackcheek Tonguefish	<i>Symphurus plagiusa</i>																
Blackedge Cusk Eel	<i>Lepophidium brevibarbe</i>																
Blackfin Cardinalfish	<i>Astrapogon puncticulatus</i>	7.38E-05	0	0	0.000197	0	0	3.94E-05	0.000252	0	0	0.00039	0	0	8.8E-05		
Bluestriped Grunt	<i>Haemulon scirtus</i>	0.000289	0.000541	0.001276	8.47E-05	0	0	0.00038	0.000639	0.00077	0.00102	0.00025	0	0	0.000549		
Bluethroat pikeblenny	<i>Chaenopsis ocellata</i>																
Bridled Cardinalfish	<i>Apogon caeruleineatus</i>																
Bucktooth Parrotfish	<i>Sparisoma radians</i>	0.000162	0.000541	0.00044	0	0.000208	0	0.000238	0.000372	0.00077	0.00051	0	0.000486	0	0.000248		
Chain Pipefish	<i>Syngnathus louisianae</i>	3.18E-05	0	0	8.47E-05	0	0	1.69E-05	0.000156	0	0	0.00025	0	0	3.79E-05		
Clown Goby	<i>Microbius gulosus</i>																
Code Goby	<i>Gobiosoma robustum</i>	7.67E-05	0	0	9.31E-05	0.000201	0	5.88E-05	0.000261	0	0	0.00028	0.000449	0	8.9E-05		
Colon Goby	<i>Coryphopterus dicrus</i>																
Crested Pipefish	<i>Cosmocampus brachycephalus</i>																
Dusky Pipefish	<i>Syngnathus floridae</i>	0.000289	0	0.000201	0.000449	0.000417	0	0.000213	0.000583	0	0.0004	0.00061	0.000832	0	0.000217		
Dwarf Goatfish	<i>Upeneus parvus</i>																
Dwarf seahorse	<i>Hippocampus zosterae</i>	0.000131	0	0.000201	0.000259	0	0	9.21E-05	0.000299	0	0.0004	0.00039	0	0	0.000128		
Emerald Parrotfish	<i>Nicholsina usta</i>	7.04E-05	0	0	8.97E-05	0.000177	0	5.33E-05	0.000239	0	0	0.00027	0.000395	0	7.91E-05		
Flagfin Mojarra	<i>Eucinostomus melanopterus</i>	0.000122	0.000541	0	8.97E-05	0.000208	0	0.000168	0.000333	0.00077	0	0.00027	0.000466	0	0.000226		
Freckled cardinalfish	<i>Phaeoptyx conklini</i>																
French Angelfish (juvenile)	<i>Pomacanthus paru</i>																
French Grunt	<i>Haemulon flavolineatum</i>																
Fringed Filefish	<i>Monacanthus ciliatus</i>	0.000282	0	0	0.000275	0.000364	0.000621	0.000252	0.00048	0	0	0.00041	0.000507	0.000805	0.000263		
Fringed Pipefish	<i>Micrognathus criniger</i>	8.62E-05	0	0.000257	0	0.000208	0	9.3E-05	0.000292	0	0.00051	0	0.000466	0	0.000128		
Gobionellus sp.	<i>Gobionellus</i> sp.																
Gold Brotula	<i>Gunterichthys longipennis</i>																
Goldspotted Killifish	<i>Floridichthys carpio</i>	4.51E-05	0.000541	0	0	0	0	0.000108	0.000221	0.00077	0	0	0	0	0.000242		
Grass Porgy	<i>Calamus arctifrons</i>	0.000104	0	0	0.000167	0.000201	0	7.35E-05	0.000285	0	0	0.00033	0.000449	0	0.000101		
Gray Snapper	<i>Floridichthys carpio</i>	0.000759	0.001624	0.002027	0.000191	0.001028	0	0.000974	0.001181	0.0023	0.00092	0.00038	0.00146	0	0.00088		
Great Barracuda	<i>Sphyraena barracuda</i>																
Gulf Flounder	<i>Paralichthys albigutta</i>	6.58E-05	0	0	0.000175	0	0	3.51E-05	0.000223	0	0	0.00035	0	0	7.84E-05		
Gulf Pipefish	<i>Syngnathus scovelli</i>																
Gulf Toadfish	<i>Opsanus beta</i>	0.002788	0.000424	0.01348	0.00073	0.001114	0	0.00315	0.007684	0.0006	0.01805	0.00191	0.001026	0	0.005789		
Haemulon species	<i>Haemulon</i> sp.																
Hardhead halfbeak	<i>Chtridorus atherinoides</i>																
Hardhead Silverside	<i>Atherinomorus stipes</i>	0.000156	0	0	0.000322	0	0.000211	0.000107	0.000808	0	0	0.00096	0	0.000422	0.000151		
High-hat (juvenile)	<i>Equetus acuminatus</i>																
Hogchoker	<i>Trinectes maculatus</i>																
Hogfish	<i>Lachnolaimus maximus</i>	3.68E-05	0	0	0	0.000177	0	3.53E-05	0.00018	0	0	0	0.000395	0	7.9E-05		
Honeycomb Cowfish	<i>Lactophrys polygona</i>																
Inshore Lizardfish	<i>Synodus foetens</i>																
Key Brotula	<i>Ogilbia coryorum</i>	3.52E-05	0	0	0	0	0.000211	4.22E-05	0.000172	0	0	0	0	0.000422	9.44E-05		
Lane Snapper	<i>Lutjanus synagris</i>	6.71E-05	0	0.000402	0	0	0	8.05E-05	0.000329	0	0.0008	0	0	0	0.00018		
Leopard Seabobin	<i>Prionotus roseus</i>																
Lined Seahorse	<i>Hippocampus erectus</i>	7.14E-05	0	0.000208	0	0.000177	0	7.69E-05	0.000242	0	0.00042	0	0.000395	0	0.000106		
Lined Sole	<i>Achirus lineatus</i>																

Appendix Table B 9. December 2003 trawl (with sock) mean catch (number) per square meter (6/30/04) (sample size: raw=24, 1s=2, 2n=4, 2s=9, 3n=5, 3s=4, zone=5)

Common Name	Scientific Name	Mean							Standard deviation						
		raw	1s	2n	2s	3n	3s	zone	raw	1s	2n	2s	3n	3s	zone
Longanout Seahorse	<i>Hippocampus reidi</i>														
Mahogany Snapper	<i>Lutjanus mahogoni</i>	4.28E-05	0	0.000257	0	0	0	5.13E-05	0.000209	0	0.00051	0	0	0	0.000115
Marbled Blenny	<i>Paraclinus marmoratus</i>	0.00011	0	0.000458	8.97E-05	0	0	0.000109	0.000299	0	0.00054	0.00027	0	0	0.000199
Mojarra sp.	<i>Gerridae</i>														
Mutton Snapper	<i>Lutjanus analis</i>														
Orange Filefish	<i>Aluterus schoepfi</i>														
Pigfish	<i>Orthopristis chrysoptera</i>														
Pinfish	<i>Lagodon rhomboidalis</i>	0.018361	0.070257	0.062477	0.002946	0.004576	0.000214	0.028094	0.042322	0.09816	0.0672	0.00274	0.00968	0.000428	0.035081
Planehead Filefish	<i>Monacanthus hispidus</i>	0.000841	0.000541	0.000402	0.00101	0.001181	0.000651	0.000753	0.001035	0.00077	0.0008	0.00088	0.00173	0.000823	0.00032
Porkfish	<i>Anisotremus virginicus</i>	3.58E-05	0	0	0	0.000172	0	3.44E-05	0.000176	0	0	0	0.000385	0	7.7E-05
Queen Parrotfish	<i>Scarus vetula</i>														
Rainwater Killifish	<i>Lucania parva</i>	0.000305	0.002165	0.000257	0.000217	0	0	0.000528	0.00082	0.00306	0.00051	0.00043	0	0	0.000923
Redfin Parrotfish	<i>Sparisoma rubripinne</i>														
Redtail Parrotfish	<i>Sparisoma chrysopterum</i>	8.45E-05	0	0	0.00011	0.000208	0	6.36E-05	0.000286	0	0	0.00033	0.000466	0	9.38E-05
Sailors Choice	<i>Haemulon parrai</i>	7.86E-05	0.000541	0.000201	0	0	0	0.000149	0.00027	0.00077	0.0004	0	0	0	0.000236
Sand Perch	<i>Diplectrum formosum</i>														
Sand Stargazer	<i>Dactyloscopus crossotus</i>														
Sand Whiff	<i>Citharichthys arenaceus</i>														
Sargassum Anglerfish															
Sargassum Pipefish	<i>Syngnathus pelagicus</i>	0.000302	0.000541	0.000873	0	0	0.000667	0.000416	0.000678	0.00077	0.00069	0	0	0.001335	0.000398
Sargassumfish	<i>Histrio histrio</i>														
Schoolmaster	<i>Lutjanus apodus</i>	3.46E-05	0	0.000208	0	0	0	4.15E-05	0.00017	0	0.00042	0	0	0	9.29E-05
Scrawled Cowfish	<i>Lactophrys quadricornis</i>	0.000366	0.000424	0.000238	0.000363	0.000745	0	0.000354	0.000592	0.0006	0.00048	0.00043	0.001026	0	0.000272
Scrawled Filefish	<i>Aluterus scriptus</i>														
Sea Bream	<i>Archosargus rhomboidalis</i>														
Seahorses unident	<i>Hippocampus spp.</i>														
Sharksucker	<i>Echeneis naucrates</i>														
Sharptail Goby	<i>Gobionellus hastatus</i>														
Sheepshead Porgy	<i>Archosargus probatocephalus</i>														
Shrimp eel	<i>Ophichthus gomesi</i>	0.000502	0.000541	0.001247	0.000384	0.000327	0.000222	0.000544	0.000845	0.00077	0.00152	0.00077	0.000449	0.000445	0.000409
Silver Jenny	<i>Eucinostomus gula</i>	0.01034	0.037541	0.03038	0.004112	0.002741	0.000211	0.014997	0.02209	0.0495	0.03872	0.00348	0.003273	0.000422	0.017551
Silverside	<i>Atherinidae</i>														
Slender Filefish	<i>Monacanthus tockeri</i>														
Southern Puffer	<i>Sphoeroides nephelus</i>	4.18E-05	0	0	0	0.000201	0	4.01E-05	0.000205	0	0	0	0.000449	0	8.97E-05
Speckled Stargazer	<i>Dactyloscopus moorei</i>														
Speckled Worm Eel	<i>Myrophis punctatus</i>														
Spotfin Mojarras	<i>Eucinostomus argenteus</i>														
Spottail Goby	<i>Gobionellus stigmaturus</i>														
Spotted Dragonet	<i>Diplogrammus pauciradiatus</i>	3.49E-05	0	0	9.31E-05	0	0	1.86E-05	0.000171	0	0	0.00028	0	0	4.18E-05
Spotted Scorpionfish	<i>Scorpaena plumieri</i>														
Spotted Wiff	<i>Citharichthys macrops</i>	3.97E-05	0	0.000238	0	0	0	4.77E-05	0.000195	0	0.00048	0	0	0	0.000107
Striped Burrfish	<i>Chilomycterus schoepfi</i>	8.79E-05	0.000541	0.000257	0	0	0	0.00016	0.000298	0.00077	0.00051	0	0	0	0.000241
Striped Grunt	<i>Haemulon striatum</i>														
Tomtate	<i>Haemulon aurolineatum</i>	0.001484	0.001624	0.001375	0.00124	0.002811	0.000413	0.001492	0.002645	0.0023	0.00112	0.0015	0.005458	0.000477	0.000866
Trunkfish	<i>Lactophrys trigonus</i>	0.00021	0	0.000409	0.000379	0	0	0.000158	0.000439	0	0.00047	0.0006	0	0	0.000216
White Grunt	<i>Haemulon plumieri</i>	0.000614	0.002707	0.001026	0	0.001042	0	0.000955	0.001871	0.00383	0.00205	0	0.002329	0	0.001107
Whitenose Pipefish	<i>Cosmocampus albirostris</i>	3.08E-05	0	0	8.22E-05	0	0	1.84E-05	0.000151	0	0	0.00025	0	0	3.68E-05

Appendix Table B 9. December 2003 trawl (with sock) mean catch (number) per square meter (6/30/04) (sample size: raw=24, 1s=2, 2n=4, 2s=9, 3n=5, 3s=4, zone=5)

Common Name	Scientific Name	Mean							Standard deviation						
		raw	1s	2n	2s	3n	3s	zone	raw	1s	2n	2s	3n	3s	zone
Yellowfin Mojarra	<i>Gerres cinereus</i>	0.004003	0.022619	0.010812	0.000728	0.000208	0	0.006873	0.011183	0.03079	0.0182	0.00191	0.000466	0	0.00991
Total fish		0.043945	0.144256	0.129807	0.015162	0.019022	0.003843	0.062418	0.082724	0.19562	0.12773	0.01024	0.026134	0.00125	0.068531
Brittle star	<i>Ophioderma sp.</i>	0.000236	0.000541	0	0.000399	0.000201	0	0.000228	0.000494	0.00077	0	0.00065	0.000449	0	0.000241
Red sea star	<i>Formia milleporella</i>	0.000265	0.000541	0.000872	0.000287	0	0	0.0003	0.000491	0.00077	0.00082	0.00043	0	0	0.000307
Ruby Brittle Star	<i>Ophioderma rubicundum</i>	0.000501	0.001083	0.000872	0.000686	0.000201	0	0.000528	0.000769	0.00153	0.00082	0.00086	0.000449	0	0.00043
Callinectes sapidus	<i>Callinectes sapidus</i>	7.29E-05	0	0	0.000194	0	0	3.89E-05	0.000246	0	0	0.00039	0	0	8.69E-05
Callinectes similis	<i>Callinectes similis</i>	0.005478	0.002777	0.010436	0.006253	0.004595	0.001229	0.005058	0.005818	0.00087	0.00655	0.00685	0.004286	0.001421	0.003551
Common mud crab	<i>Panopeus herbstii</i>	0.000109	0	0.000458	8.71E-05	0	0	0.000109	0.000297	0	0.00054	0.00026	0	0	0.000199
Decorator Crab	<i>Stenocionops furcata</i>														
Gray pitho	<i>Pitho aculeata</i>	3.18E-05	0	0	8.47E-05	0	0	1.69E-05	0.000156	0	0	0.00025	0	0	3.79E-05
Hermit	<i>Clibanarius sp.</i>	0.005219	0.002118	0.006231	0.007538	0.001375	0.005344	0.004521	0.006454	0.003	0.00468	0.00891	0.001703	0.00549	0.002663
Portunus sp.	<i>Portunus sp.</i>	0.000386	0	0.000495	0.000284	0.000946	0	0.000345	0.00078	0	0.00057	0.0006	0.001373	0	0.000395
Sponge spider crab	<i>Macrocoeloma subparalleum</i>	0.000108	0	0.000238	8.47E-05	0.000177	0	9.99E-05	0.000294	0	0.00048	0.00025	0.000395	0	0.000106
Total crab		0.011405	0.004895	0.017858	0.014526	0.007092	0.006574	0.010189	0.011308	0.00386	0.01029	0.01513	0.008058	0.005902	0.005664
Mollusk	Mollusca (other than cephalopoda)	0.000343	0	0.001179	0	0.000545	0.000199	0.000384	0.00074	0	0.00132	0	0.000788	0.000397	0.000497
Octopus	Cephalopoda: Octopodiformes	0.000583	0	0	0.000711	0.00118	0.000422	0.000483	0.001311	0	0	0.00134	0.002178	0.000844	0.000501
Total Mollusk		0.000926	0	0.001179	0.000711	0.001725	0.000621	0.000847	0.001512	0	0.00132	0.00134	0.002505	0.000805	0.000646
Caribbean spiny lobster	<i>Panulirus argus</i>	3.35E-05	0	0.000201	0	0	0	4.02E-05	0.000164	0	0.0004	0	0	0	9E-05
Grand total		0.05681	0.150234	0.149717	0.031084	0.028039	0.011037	0.074022	0.08633	0.19329	0.13706	0.02402	0.025259	0.004859	0.069755
Caridean Shrimp	<i>Palaemonetes, etc.</i>														
Pink Shrimp	<i>Farfantepenaeus duorarum</i>	0.107915	0.103255	0.20506	0.098096	0.105412	0.038319	0.110029	0.080837	0.12805	0.1172	0.05939	0.034409	0.023632	0.047684

Appendix Table C 1. 2003 July 14, 15 mean density in pull net.

Per square meter

Common Name	Scientific Name	Sample size	mean	mean	mean	mean	mean	mean	mean	mean	sd	sd	sd	sd	sd	sd	sd	sd	sd
			raw	S	N	S&N	1S	2N	2S	3N	mean	raw	S	N	S&N	1S	2N	2S	3N
			21	12	9	2	11	5	1	4	4	21	12	9	2	11	5	1	4
Clown Goby	<i>Microbatus gulosus</i>		0.00952	0.01389	0.0037	0.0088	0.01515	0	0	0.00833	0.00587	0.01869	0.02229	0.01111	0.0079	0.02292	0	0.01687	0.00733
Code Goby	<i>Gobiosoma robustum</i>		0.00635	0.00556	0.00741	0.00648	0.00606	0	0	0.01667	0.00568	0.01706	0.01297	0.02222	0.00654	0.01348	0	0.03333	0.00786
Dusky Pipefish	<i>Syngnathus floridae</i>		0.00952	0.01111	0.00741	0.00926	0.01212	0.01333	0	0	0.00636	0.0239	0.02959	0.0147	0.01053	0.03081	0.01826	0	0.00736
Dwarf Seahorse	<i>Hippocampus zosterae</i>		0.00159	0	0.0037	0.00185	0	0	0	0.00833	0.00208	0.00727	0	0.01111	0.00786	0	0	0.01687	0.00417
Flagfin Mojarra	<i>Eucinostomus melanopterus</i>		0.00476	0.00556	0.0037	0.00463	0.00606	0	0	0.00833	0.0036	0.01594	0.01925	0.01111	0.00575	0.0201	0	0.01687	0.00426
Flat Needlefish	<i>Ablennes hians</i>		0.00159	0	0.0037	0.00185	0	0	0	0.00833	0.00208	0.00727	0	0.01111	0.00786	0	0	0.01687	0.00417
Fringed Pipefish	<i>Micrognathus crinitiger</i>		0.00159	0.00278	0	0.00139	0	0	0.03333	0	0.00833	0.00727	0.00962	0	0.0068	0	0	0	0.01687
Goldspotted Killifish	<i>Floridichthys carpio</i>		0.02381	0.00556	0.04815	0.02685	0.00606	0	0	0.10833	0.0286	0.07082	0.01925	0.10423	0.06009	0.0201	0	0.1424	0.06323
Great Barracuda	<i>Sphyrna barracuda</i>		0.00159	0.00278	0	0.00139	0.00303	0	0	0	0.00076	0.00727	0.00962	0	0.0068	0.01005	0	0	0.00152
Gulf Toadfish	<i>Opsanus beta</i>		0.0254	0.01389	0.04074	0.02731	0.00303	0.04687	0.13333	0.03333	0.05409	0.0446	0.03882	0.04938	0.00747	0.01005	0.03801	0.06887	0.05589
Hardhead silverside	<i>Atherinomorus stipes</i>		0.00476	0.00556	0.0037	0.00463	0.00606	0	0	0.00833	0.0036	0.01594	0.01925	0.01111	0.00575	0.0201	0	0.01687	0.00426
Pinfish	<i>Lagodon rhomboidalis</i>		0.12898	0.12222	0.13333	0.12778	0.1303	0.14	0.03333	0.125	0.10716	0.1555	0.16838	0.14625	0.01565	0.17414	0.18318	0.11013	0.04961
Rainwater Killifish	<i>Lucania parva</i>		0.75873	0.84167	0.91481	0.77824	0.85152	0.54	0.53333	1.38333	0.77705	0.85556	0.63216	1.11019	0.33802	0.66204	0.55045	1.5349	0.40781
Sargassum Pipefish	<i>Syngnathus pelagicus</i>		0.01587	0.00278	0.03333	0.01806	0.00303	0.01333	0	0.05833	0.01867	0.0403	0.00962	0.05774	0.03402	0.01005	0.02961	0.07876	0.02705
Silver Jenny	<i>Eucinostomus gula</i>		0.01429	0.025	0	0.0125	0.02727	0	0	0	0.00882	0.03261	0.04051	0	0.02665	0.04168	0	0	0.01364
Tomtate	<i>Haemulon aurolineatum</i>		0.00159	0.00278	0	0.00139	0.00303	0	0	0	0.00076	0.00727	0.00962	0	0.0068	0.01005	0	0	0.00152
Yellowfin Mojarra	<i>Gerres cinereus</i>		0.02063	0.02222	0.01852	0.02037	0.02424	0.02	0	0.01667	0.01523	0.06099	0.07698	0.03379	0.03054	0.0804	0.04472	0.01925	0.01061
Total fish			1.02857	0.88333	1.22222	1.05278	0.89697	0.77333	0.73333	1.78333	1.04674	0.9768	0.72565	1.25996	0.37782	0.75945	0.70808	1.67719	0.49598
Red Sea Star	<i>Formia milleporella</i>		0.00317	0.00556	0	0.00278	0	0	0.06667	0	0.01667	0.01455	0.01925	0	0.01381	0	0	0	0.03333
Blue crab	<i>Callinectes sapidus</i>		0.00159	0	0.0037	0.00185	0	0	0	0.00833	0.00208	0.00727	0	0.01111	0.00786	0	0	0.01687	0.00417
Lesser blue crab	<i>Callinectes similis</i>		0.00159	0.00278	0	0.00139	0	0	0.03333	0	0.00833	0.00727	0.00962	0	0.0068	0	0	0	0.01687
Hermit crab	<i>Clibanarius sp.</i>		0.06867	0.04444	0.0963	0.07037	0.03939	0.16667	0.1	0.00833	0.0786	0.17701	0.07011	0.26428	0.1373	0.07121	0.35434	0.01667	0.06897
Total crabs			0.06984	0.04722	0.1	0.07361	0.03939	0.16667	0.13333	0.01667	0.08902	0.17698	0.07311	0.263	0.13427	0.07121	0.35434	0.01925	0.07232
Spotted pink shrimp	<i>Farfantepenaeus brasiliensis</i>		0.00159	0	0.0037	0.00185	0	0	0	0.00833	0.00208	0.00727	0	0.01111	0.00786	0	0	#DIV/0!	0.01667
Pink shrimp	<i>Farfantepenaeus duorarum</i>		0.13492	0.08056	0.20741	0.14398	0.07879	0.08667	0.1	0.35833	0.15595	0.1815	0.06736	0.25646	0.13372	0.07035	0.1145	#DIV/0!	0.32131
Total shrimp			0.13651	0.08056	0.21111	0.14583	0.07879	0.08667	0.1	0.36667	0.15803	0.18586	0.06736	0.263	0.13834	0.07035	0.1145	#DIV/0!	0.32998
Grand total with shrimp			1.2381	1.01687	1.53333	1.275	1.01515	1.02667	1.03333	2.16667	1.31045	1.14256	0.80597	1.46392	0.46524	0.84501	0.74229	#DIV/0!	1.99509

Appendix Table C 2. 2003 August 14, 15, 18 mean density (number per square meter) from pull-net sampling.

Common Name	Scientific Name	mean	mean	mean	mean	mean	mean	mean	mean	mean	sd	sd	sd	sd	sd	sd	sd	sd	sd
		raw	S	N	S&N	1S	2N	2S	3N	zonal	raw	S	N	S&N	1S	2N	2S	3N	zonal
Sample size		19	9	10	2	9	4	0	6	3	19	9	10	2	9	4	0	6	3
Clown Goby	<i>Microbatus gulosus</i>	0.01228	0.02593	0	0.01296	0.02593	0		0	0.00864	0.0228	0.02778	0	0.01833	0.02778	0		0	0.01497
Code Goby	<i>Gobiosoma robustum</i>	0.00702	0.00741	0.00667	0.00704	0.00741	0		0.01111	0.00617	0.01784	0.02222	0.01405	0.00052	0.02222	0		0.01721	0.00566
Dusky Pipefish	<i>Syngnathus floridae</i>	0.00877	0.01852	0	0.00926	0.01852	0		0	0.00617	0.01873	0.02422	0	0.01309	0.02422	0		0	0.01069
Fringed Pipefish	<i>Micrognathus criniger</i>	0.00702	0	0.01333	0.00667	0	0.01667		0.01111	0.00926	0.01784	0	0.02331	0.00943	0	0.03333		0.01721	0.00849
Goldspotted Killifish	<i>Floridichthys carpio</i>	0.01754	0.01852	0.01667	0.01759	0.01852	0.00833		0.02222	0.01636	0.03214	0.01757	0.04231	0.00131	0.01757	0.01667		0.05443	0.00719
Great Barracuda	<i>Sphyrna barracuda</i>	0.00175	0	0.00333	0.00167	0	0.00833		0	0.00278	0.00765	0	0.01054	0.00236	0	0.01667		0	0.00481
Gulf toadfish	<i>Opsanus beta</i>	0.01228	0.00741	0.01667	0.01204	0.00741	0.01667		0.01667	0.01358	0.0228	0.02222	0.02357	0.00855	0.02222	0.01925		0.02789	0.00535
Hardhead Silverside	<i>Atherinomorus stipes</i>	0.00351	0	0.00667	0.00333	0	0		0.01111	0.0037	0.01051	0	0.01405	0.00471	0	0		0.01721	0.00642
Pinfish	<i>Lagodon rhomboidalis</i>	0.12456	0.18519	0.07	0.12759	0.18519	0.075		0.06667	0.10895	0.171	0.22243	0.08671	0.08145	0.22243	0.09574		0.08944	0.06615
Rainwater Killifish	<i>Lucania parva</i>	0.89123	0.71481	1.05	0.88241	0.71481	0.41667		1.47222	0.8679	1.47032	0.31977	2.04295	0.23701	0.31977	0.43928		2.61953	0.54417
Sargassum Pipefish	<i>Syngnathus pelagicus</i>	0.00702	0.01111	0.00333	0.00722	0.01111	0		0.00556	0.00556	0.02378	0.03333	0.01054	0.0055	0.03333	0		0.01361	0.00556
Silver Jenny	<i>Eucinostomus gula</i>	0.03333	0.03333	0.03333	0.03333	0.03333	0.06667		0.01111	0.03704	0.03685	0.03333	0.04157	0	0.03333	0.04714		0.01721	0.02796
Yellowfin Mojarra	<i>Gerres cinereus</i>	0.00526	0	0.01	0.005	0	0.025		0	0.00833	0.02294	0	0.03162	0.00707	0	0.05		0	0.01443
Total fish		1.13158	1.02222	1.23	1.12611	1.02222	0.63333		1.62778	1.09444	1.45532	0.28529	2.03491	0.14692	0.28529	0.49216		2.6141	0.50114
Common mud crab	<i>Panopeus herbstii</i>	0.00877	0.0037	0.01333	0.00852	0.0037	0.025		0.00556	0.01142	0.02445	0.01111	0.0322	0.00681	0.01111	0.05		0.01361	0.0118
Hermit crab	<i>Clibanarius sp.</i>	0.05789	0.0037	0.10667	0.05519	0.0037	0.15		0.07778	0.07716	0.15024	0.01111	0.19864	0.07281	0.01111	0.3		0.12049	0.07315
Total crabs		0.06667	0.00741	0.12	0.0637	0.00741	0.175		0.08333	0.08858	0.17285	0.0147	0.22998	0.07961	0.0147	0.35		0.13292	0.08392
Spotted pink shrimp	<i>Farfantepenaeus brasiliensis</i>	0	0	0	0	0	0		0	0	0	0	0	0	0	0		0	0
Pink shrimp	<i>Farfantepenaeus duorarum</i>	0.59649	0.63333	0.56333	0.59833	0.63333	0.49167		0.61111	0.5787	0.53332	0.59977	0.49652	0.0495	0.59977	0.45328		0.56003	0.07619
Grand total with shrimp		1.79474	1.66296	1.91333	1.78815	1.66296	1.3		2.32222	1.76173	1.97398	0.88914	2.50214	0.27603	0.88914	1.0572		3.13501	0.54672

Appendix Table C 3. Sept 9, 10, 2003 mean density (number per square meter) from pull-net sampling.

		mean raw	mean S	mean N	mean S&N	mean 1S	mean 2N	mean 2S	mean 3N	mean zonal	sd raw	sd S	sd N	sd S&N	sd 1S	sd 2N	sd 2S	sd 3N	sd zonal
Sample size		20	10	10	2	10	4	0	6	3	20	10	10	2	10	4	0	6	3
Common Name	Scientific Name																		
Chain Pipefish	<i>Syngnathus louisianae</i>	0.00167	0.00333	0	0.00167	0.00333	0	0	0.00111	0.00745	0.01054	0	0.00236	0.01054	0	0	0	0	0.00192
Code Goby	<i>Gobiosoma robustum</i>	0.005	0.00667	0.00333	0.005	0.00667	0	0.00556	0.00407	0.01221	0.01405	0.01054	0.00236	0.01405	0	0.01361	0.00357	0.00192	
Dusky Pipefish	<i>Syngnathus floridae</i>	0.01	0.01	0.01	0.01	0.01	0.00833	0.01111	0.00981	0.01904	0.0225	0.0161	0	0.0225	0.01667	0.01721	0.0014	0.00192	
Goldspotted Killifish	<i>Floridichthys carpio</i>	0.00667	0.01333	0	0.00667	0.01333	0	0	0.00444	0.01744	0.02331	0	0.00943	0.02331	0	0	0	0	0.0077
Graysnapper	<i>Lutjanus griseus</i>	0.00167	0.00333	0	0.00167	0.00333	0	0	0.00111	0.00745	0.01054	0	0.00236	0.01054	0	0	0	0	0.00192
Great Barracuda	<i>Sphyraena barracuda</i>	0.00333	0.00333	0.00333	0.00333	0.00333	0	0.00556	0.00296	0.01026	0.01054	0.01054	0	0.01054	0	0.01361	0.0028	0.00192	
Gulf toadfish	<i>Opsanus beta</i>	0.00167	0	0.00333	0.00167	0	0	0.00556	0.00185	0.00745	0	0.01054	0.00236	0	0	0.01361	0.00321	0.00192	
Hardhead Silverside	<i>Atherinomorpha stipes</i>	0.00333	0.00667	0	0.00333	0.00667	0	0	0.00222	0.01491	0.02108	0	0.00471	0.02108	0	0	0	0	0.00385
Pinfish	<i>Lagodon rhomboides</i>	0.075	0.08667	0.06333	0.075	0.08667	0.05	0.07222	0.06963	0.09726	0.12393	0.06564	0.0165	0.12393	0.04303	0.08005	0.01847	0.00192	
Rainwater Killifish	<i>Lucania parva</i>	0.66	0.43667	0.88333	0.66	0.43667	0.35	1.23889	0.67519	0.80478	0.48571	1.01023	0.31584	0.48571	0.16443	1.20063	0.4901	0.00192	
Sargassum Pipefish	<i>Syngnathus pelagicus</i>	0.01	0.01333	0.00667	0.01	0.01333	0	0.01111	0.00815	0.0219	0.02331	0.02108	0.00471	0.02331	0	0.02722	0.00714	0.00192	
Silver Jenny	<i>Eucinostomus gula</i>	0.04833	0.04333	0.05333	0.04833	0.04333	0.05833	0.05	0.05056	0.0524	0.06096	0.045	0.00707	0.06096	0.05	0.04595	0.00752	0.00192	
Tomtate	<i>Haemulon aurolineatum</i>	0.00167	0	0.00333	0.00167	0	0	0.00556	0.00185	0.00745	0	0.01054	0.00236	0	0	0.01361	0.00321	0.00192	
Yellowfin Mojarra	<i>Gerres cinereus</i>	0.01167	0.00333	0.02	0.01167	0.00333	0.04167	0.00556	0.01685	0.03789	0.01054	0.05259	0.01179	0.01054	0.08333	0.01361	0.02152	0.00192	
Total fish		0.84	0.63	1.05	0.84	0.63	0.50833	1.41111	0.84981	0.80732	0.56731	0.97781	0.29698	0.56731	0.22994	1.13933	0.48989	0.00192	
Lesser Blue Crab	<i>Callinectes similis</i>	0.00167	0.00333	0	0.00167	0.00333	0	0	0.00111	0.00745	0.01054	0	0.00236	0.01054	0	0	0	0	0.00192
Common Mud Crab	<i>Panopeus herbstii</i>	0.00167	0.00333	0	0.00167	0.00333	0	0	0.00111	0.00745	0.01054	0	0.00236	0.01054	0	0	0	0	0.00192
Hermit crab	<i>Clibanarius sp.</i>	0.00333	0	0.00667	0.00333	0	0	0.01111	0.0037	0.01491	0	0.02108	0.00471	0	0	0.02722	0.00642	0.00192	
Total crabs		0.00667	0.00667	0.00667	0.00667	0.00667	0	0.01111	0.00593	0.01744	0.01405	0.02108	0	0.01405	0	0.02722	0.00559	0.00192	
Pink shrimp	<i>Farfantepenaeus duorarum</i>	0.46333	0.53333	0.39333	0.46333	0.53333	0.19167	0.52778	0.41759	0.32189	0.27262	0.36542	0.09899	0.27262	0.18333	0.40739	0.19568	0.00192	
Grand total with shrimp		1.31	1.17	1.45	1.31	1.17	0.7	1.95	1.27333	1.13906	0.83993	1.36035	0.39598	0.83993	0.41327	1.56893	0.69044	0.00192	

Appendix Table C 4. 2003 October 8, 9 mean density (number per square meter) from pull-net sampling.

		mean	mean	mean	mean	mean	mean	mean	mean	sd	sd	sd	sd	sd	sd	sd	sd	sd	
		raw	S	N	S&N	1S	2N	2S	3N	zonal	raw	S	N	S&N	1S	2N	2S	3N	zonal
Sample size		17	9	8	2	8	3	1	5	4	17	9	8	2	8	3	1	5	4
Common Name	Scientific Name																		
Dusky Pipefish	<i>Syngnathus floridae</i>	0.0098	0.01111	0.00833	0.00972	0.0125	0	0	0.01333	0.00646	0.02287	0.02357	0.02357	0.00196	0.0248	0		0.02981	0.00747
Goldspotted Killifish	<i>Floridichthys carpio</i>	0.0451	0	0.09583	0.04792	0	0.01111	0	0.14667	0.03944	0.10733	0	0.14413	0.06776	0	0.01925		0.166	0.07167
Hardhead silverside	<i>Atherinomorus stipes</i>	0.03725	0.00741	0.07083	0.03912	0	0	0.06667	0.11333	0.045	0.12904	0.02222	0.18724	0.04485	0	0		0.23523	0.05534
Pinfish	<i>Lagodon rhomboidalis</i>	0.07451	0.08889	0.05833	0.07361	0.09187	0.13333	0.06667	0.01333	0.07625	0.09613	0.10408	0.09041	0.02161	0.11091	0.11547		0.02981	0.05015
Rainwater Killifish	<i>Lucania parva</i>	0.38627	0.08889	0.72083	0.40486	0.09583	0.36667	0.03333	0.93333	0.35729	0.9714	0.07454	1.38162	0.44685	0.07651	0.27285		1.77561	0.41037
Sand Stargazer	<i>Dactyloscopus crossotus</i>	0.00196	0.0037	0	0.00185	0.00417	0	0	0	0.00104	0.00808	0.01111	0	0.00262	0.01179	0	0	0	0.00208
Sargassum Pipefish	<i>Syngnathus pelagicus</i>	0.00196	0	0.00417	0.00208	0	0	0	0.00667	0.00167	0.00808	0	0.01179	0.00295	0	0		0.01491	0.00333
Schoolmaster	<i>Lutjanus apodus</i>	0.00196	0	0.00417	0.00208	0	0	0	0.00667	0.00167	0.00808	0	0.01179	0.00295	0	0		0.01491	0.00333
Silver Jenny	<i>Eucinostomus gula</i>	0.07059	0.04815	0.09583	0.07199	0.05417	0.11111	0	0.08667	0.06299	0.10922	0.058	0.14847	0.03372	0.05893	0.16443		0.15741	0.04803
Tomtate	<i>Haemulon aurolineatum</i>	0.00196	0	0.00417	0.00208	0	0	0	0.00667	0.00167	0.00808	0	0.01179	0.00295	0	0		0.01491	0.00333
Yellowfin Mojarra	<i>Gerres cinereus</i>	0.04314	0.01481	0.075	0.04491	0.00833	0.17778	0.06667	0.01333	0.06853	0.08879	0.0294	0.12182	0.04256	0.02357	0.15753		0.02981	0.07872
Total fish		0.67451	0.26296	1.1375	0.70023	0.26667	0.8	0.23333	1.34	0.66	1.0682	0.17195	1.45312	0.61839	0.18344	0.50442		1.85239	0.52242
Lesser Blue Crab	<i>Callinectes similis</i>	0.00588	0.0037	0.00833	0.00602	0.00417	0	0	0.01333	0.00438	0.01762	0.01111	0.02357	0.00327	0.01179	0		0.02981	0.00629
Hermit crab	<i>Clibanarius sp.</i>	0.00784	0.00741	0.00833	0.00787	0.00833	0	0	0.01333	0.00542	0.02214	0.02222	0.02357	0.00065	0.02357	0		0.02981	0.00658
Total crabs		0.01373	0.01111	0.01667	0.01389	0.0125	0	0	0.02667	0.00979	0.03547	0.02357	0.04714	0.00393	0.0248	0		0.05963	0.0127
Pink shrimp	<i>Farfantepenaeus duorarum</i>	0.16667	0.1	0.24167	0.17083	0.09583	0.11111	0.13333	0.32	0.16507	0.14434	0.08333	0.16595	0.10017	0.08808	0.09623		0.15202	0.10443
Grand total with shrimp		0.8549	0.37407	1.39583	0.88495	0.375	0.91111	0.36667	1.68667	0.83486	1.20983	0.24644	1.61366	0.72249	0.26168	0.60065		1.99322	0.63536

Appendix Table C 5. 2003 November 12, 13 mean density (number per square meter) from pull-net sampling.

Appendix Table C 5. 2003 November 12, 13 mean density (number per square meter) from pull-net sampling.																			
		mean	mean	mean	mean	mean	mean	mean	mean	mean	sd	sd	sd	sd	sd	sd	sd	sd	
		raw	S	N	S&N	1S	2N	2S	3N	zonal	raw	S	N	S&N	1S	2N	2S	3N	zonal
Sample size		21	11	11	2	10	2	1	8	4	21	11	11	2	10	2	1	8	4
Common Name	Scientific Name																		
Bluestriped Grunt		0.00317	0	0.00667	0.00333	0	0.03333	0	0	0.00833	0.01455	0	0.0201	0.00471	0	0.04714		0	0.01667
Clown Goby	<i>Microbatus gulosus</i>	0.00159	0.00303	0	0.00152	0.00333	0	0	0	0.00083	0.00727	0.01005	0	0.00214	0.01054	0		0	0.00167
Code Goby	<i>Gobiosoma robustum</i>	0.00159	0.00303	0	0.00152	0.00333	0	0	0	0.00083	0.00727	0.01005	0.01005	0.00214	0.01054	0		0	0.00167
Dusky Pipefish	<i>Syngnathus floridae</i>	0.02698	0.01818	0.03667	0.02742	0.01667	0.03333	0.03333	0.0375	0.03021	0.03095	0.02734	0.03333	0.01307	0.02833	0.04714		0.03303	0.00924
Goldspotted Killifish	<i>Floridichthys carpio</i>	0.00317	0.00303	0.00333	0.00318	0.00333	0	0	0.00417	0.00188	0.01003	0.01005	0.01005	0.00021	0.01054	0		0.01179	0.00219
Great Barracuda	<i>Sphyraena barracuda</i>	0.00159	0	0.00333	0.00167	0	0	0	0.00417	0.00104	0.00727	0	0.01005	0.00236	0	0		0.01179	0.00208
Gulf toadfish	<i>Opsanus beta</i>	0.00476	0	0.01	0.005	0	0	0	0.0125	0.00313	0.01594	0	0.02156	0.00707	0	0		0.0248	0.00625
Hardhead Silverside	<i>Atherinomorus stipes</i>	0.00317	0	0.00667	0.00333	0	0	0	0.00833	0.00208	0.01003	0	0.01348	0.00471	0	0		0.01543	0.00417
Pinfish	<i>Lagodon rhomboidalis</i>	0.06508	0.02424	0.11	0.06712	0.02	0.21667	0.06667	0.08333	0.09667	0.07708	0.03679	0.08819	0.06064	0.03583	0.07071		0.06901	0.08437
Rainwater Killifish	<i>Lucania parva</i>	0.5381	0.07576	1.04667	0.56121	0.04667	0.48333	0.36667	1.1875	0.52104	1.13892	0.12391	1.47809	0.68654	0.08195	0.58926		1.67805	0.48113
Redfin Needlefish	<i>Strongylura notata</i>	0.00159	0.00303	0	0.00152	0.00333	0	0	0	0.00083	0.00727	0.01005	0	0.00214	0.01054	0		0	0.00167
Sargassum Pipefish	<i>Syngnathus pelagicus</i>	0.0127	0.02121	0.00333	0.01227	0.02333	0	0	0.00417	0.00688	0.0387	0.05222	0.02156	0.01264	0.05455	0		0.01179	0.01115
Silver jenny	<i>Eucnemosoma gula</i>	0.29683	0.29394	0.3	0.29697	0.32	0.18333	0.03333	0.32917	0.21646	0.30748	0.24304	0.36056	0.00429	0.23944	0.07071		0.42443	0.13911
Tomtate	<i>Haemulon aurolineatum</i>	0.00159	0	0.00333	0.00167	0	0	0	0.00417	0.00104	0.00727	0	0.01005	0.00236	0	0		0.01179	0.00208
Yellowfin mojarra	<i>Gerres cinereus</i>	0.04286	0.00606	0.08333	0.0447	0.00667	0.08333	0	0.08333	0.04333	0.06595	0.01348	0.07759	0.05464	0.01405	0.07071		0.08357	0.04627
Total fish		1.00476	0.45152	1.61333	1.03242	0.44667	1.03333	0.5	1.75833	0.93458	1.43714	0.25049	1.86943	0.82153	0.2635	0.65997		2.14918	0.60971
Red Sea Star	<i>Formia milleporella</i>	0.00159	0	0.00333	0.00167	0	0	0	0.00417	0.00104	0.00727	0	0.01005	0.00236	0	0		0.01179	0.00208
Blue Crab	<i>Callinectes sapidus</i>	0.00159	0.00303	0	0.00152	0	0	0.03333	0	0.00833	0.00727	0.01005	0	0.00214	0	0		0	0.01667
Hermit crab	<i>Clibanarius sp.</i>	0.00635	0.00606	0.00667	0.00636	0.00667	0	0	0.00833	0.00375	0.02005	0.0201	0.0201	0.00043	0.02108	0		0.02357	0.00438
Total crabs		0.00794	0.00909	0.00667	0.00788	0.00667	0	0.03333	0.00833	0.01208	0.02083	0.02156	0.0201	0.00171	0.02108	0		0.02357	0.01462
Pink shrimp	<i>Farfantepenaeus duorarum</i>	0.3254	0.08182	0.59333	0.33758	0.06667	0.21667	0.23333	0.6875	0.30104	0.47057	0.15518	0.56012	0.3617	0.15476	0.11785		0.59146	0.26832
Grand total with shrimp		1.33968	0.54242	2.21667	1.37955	0.52	1.25	0.76667	2.45833	1.24875	1.9105	0.41287	2.43316	1.18387	0.4252	0.77782		2.74342	0.87412

Appendix Table C 6. 2004 January 8, 12 mean density (number per square meter) from pull-net sampling.

Common name	Scientific name	mean	mean	mean	mean	mean	mean	mean	mean	mean	sd	sd	sd	sd	sd	sd	sd	sd
		raw	S	N	S&N	1S	2N	2S	3N	zonal	raw	S	N	S&N	1S	2N	2S	3N
Sample size		21	11	10	2	10	4	1	6	4	21	11	10	2	10	4	1	6
Chain Pipefish	<i>Syngnathus louisianae</i>	0.00476	0.00909	0	0.00455	0.01	0	0	0	0.0025	0.01195	0.01557	0	0.00643	0.0161	0	0	0.005
Clown Goby	<i>Microbius gulosus</i>	0.00952	0.01515	0.00333	0.00924	0.01667	0	0	0.00556	0.00556	0.03008	0.04045	0.01054	0.00836	0.04231	0	0.01361	0.00786
Code Goby	<i>Gobiosoma robustum</i>	0.00159	0.00303	0	0.00152	0.00333	0	0	0	0.00083	0.00727	0.01005	0	0.00214	0.01054	0	0	0.00167
Dusky Pipefish	<i>Syngnathus floridae</i>	0.00635	0.01212	0	0.00606	0.01333	0	0	0	0.00333	0.02005	0.02697	0	0.00857	0.02811	0	0	0.00667
Fringed Filefish	<i>Monacanthus ciliatus</i>	0.00159	0.00303	0	0.00152	0.00333	0	0	0	0.00083	0.00727	0.01005	0	0.00214	0.01054	0	0	0.00167
Goldspotted Killifish	<i>Flotidichthys carpio</i>	0.02381	0.04545	0	0.02273	0.05	0	0	0	0.0125	0.05592	0.07191	0	0.03214	0.07412	0	0	0.025
Gulf Pipefish	<i>Syngnathus scovelli</i>	0.01746	0.02727	0.00667	0.01697	0.03	0	0	0.01111	0.01028	0.02499	0.02503	0.02108	0.01457	0.0246	0	0.02722	0.01415
Gulf Toadfish	<i>Opsanus beta</i>	0.00159	0.00303	0	0.00152	0.00333	0	0	0	0.00083	0.00727	0.01005	0	0.00214	0.01054	0	0	0.00167
Hardhead Silverside	<i>Atherinomorus stipes</i>	0.00159	0	0.00333	0.00167	0	0.00833	0	0	0.00208	0.00727	0	0.01054	0.00236	0	0.01667	0	0.00417
Pinfish	<i>Lagodon rhomboidalis</i>	0.05238	0.08485	0.01667	0.05076	0.07333	0.01667	0.2	0.01667	0.07667	0.10571	0.13933	0.02357	0.04821	0.14125	0.01925	0.02789	0.08645
Rainwater Killifish	<i>Lucania parva</i>	0.33968	0.23333	0.45667	0.345	0.25333	0.19167	0.03333	0.63333	0.27792	0.7849	0.31517	1.10889	0.15792	0.32478	0.04194	1.45556	0.25442
Sargassum Pipefish	<i>Syngnathus pelagicus</i>	0.00159	0.00303	0	0.00152	0.00333	0	0	0	0.00083	0.00727	0.01005	0	0.00214	0.01054	0	0	0.00167
Silver Jenny	<i>Eucinostomus gula</i>	0.3	0.41212	0.17667	0.29439	0.45333	0.14167	0	0.2	0.19875	0.2974	0.31703	0.22936	0.16649	0.30152	0.03191	0.30405	0.18936
Yellowfin Mojarra	<i>Gerres cinereus</i>	0.02063	0.02727	0.01333	0.0203	0.03	0	0	0.02222	0.01306	0.0387	0.03596	0.04216	0.00986	0.03668	0	0.05443	0.01541
Total fish		0.78254	0.87879	0.87667	0.77773	0.94333	0.35833	0.23333	0.88889	0.60597	0.96036	0.55383	1.29806	0.14292	0.53841	0.08333	1.70107	0.36242
Red Sea Star	<i>Formia milleporella</i>	0.0127	0	0.02667	0.01333	0	0	0	0.04444	0.01111	0.05107	0	0.07337	0.01886	0	0	0.09349	0.02222
Blue Crab	<i>Callinectes sapidus</i>	0.00159	0.00303	0	0.00152	0.00333	0	0	0	0.00083	0.00727	0.01005	0	0.00214	0.01054	0	0	0.00167
Hermit crab	<i>Clibanarius sp.</i>	0.00317	0	0.00667	0.00333	0	0.00833	0	0.00556	0.00347	0.01003	0	0.01405	0.00471	0	0.01667	0.01361	0.00417
Total crabs		0.00476	0.00303	0.00667	0.00485	0.00333	0.00833	0	0.00556	0.00431	0.01195	0.01005	0.01405	0.00257	0.01054	0.01667	0.01361	0.00352
Pink shrimp	<i>Farfantepenaeus duorarum</i>	0.28254	0.29091	0.27333	0.28212	0.32	0.18333	0	0.33333	0.20917	0.38073	0.26081	0.49636	0.01243	0.25541	0.1291	0.65013	0.15505
Grand total with shrimp		1.08254	1.17273	0.98333	1.07803	1.26667	0.55	0.23333	1.27222	0.83056	1.39063	0.81845	1.87611	0.13392	0.79774	0.19577	2.45757	0.53014

Appendix Table C 7. 2004 February 11, 12 mean density (number per square meter) from pull-net sampling.

Common Name	Scientific Name	mean	mean	mean	mean	mean	mean	mean	mean	mean	sd	sd	sd	sd	sd	sd	sd	sd	sd
		raw	S	N	S&N	1S	2N	2S	3N	zonal	raw	S	N	S&N	1S	2N	2S	3N	zonal
Sample size		23	13	10	2	13	5	1	5	4	23	13	10	2	13	5	1	5	4
Clown Goby	<i>Microbatus gulosus</i>	0.00145	0.00256	0	0.00128	0.00256	0	0	0	0.00064	0.00695	0.00925	0	0.00181	0.00925	0		0	0.00128
Code Goby	<i>Gobiosoma robustum</i>	0.00435	0.00769	0	0.00385	0.00769	0	0	0	0.00192	0.01526	0.01997	0	0.00544	0.01997	0		0	0.00385
Dusky Pipefish	<i>Syngnathus floridae</i>	0.00725	0.00256	0.01333	0.00795	0.00256	0	0	0.02667	0.00731	0.02835	0.00925	0.04216	0.00761	0.00925	0		0.05963	0.01296
Goldspotted Killifish	<i>Floridichthys carpio</i>	0.01159	0.01282	0.01	0.01141	0.01282	0.00667	0	0.01333	0.00821	0.01909	0.01688	0.0225	0.00199	0.01688	0.01491		0.02981	0.00625
Gulf Pipefish	<i>Syngnathus scovelli</i>	0.01594	0.01026	0.02333	0.01679	0.01026	0.02	0.03333	0.02667	0.02256	0.03157	0.01601	0.04458	0.00925	0.01601	0.02981		0.05963	0.00985
Gulf Toadfish	<i>Opsanus beta</i>	0.0058	0	0.01333	0.00667	0	0.02	0	0.00667	0.00667	0.01637	0	0.02331	0.00943	0	0.02981		0.01491	0.00943
Haemulon species	<i>Haemulon sp.</i>	0.0029	0.00513	0	0.00256	0.00513	0	0	0	0.00128	0.0096	0.01252	0	0.00363	0.01252	0		0	0.00256
Lined Seahorse	<i>Hippocampus erectus</i>	0.00145	0	0.00333	0.00167	0	0.00667	0	0	0.00167	0.00695	0	0.01054	0.00236	0	0.01491		0	0.00333
Pinfish	<i>Lagodon rhomboidalis</i>	0.07971	0.07949	0.08	0.07974	0.07949	0.11333	0	0.04667	0.05987	0.07897	0.07881	0.08344	0.00036	0.07881	0.09888		0.05578	0.04831
Rainwater Killifish	<i>Lucania parva</i>	0.31449	0.04615	0.66333	0.35474	0.04615	0.32	0	1.00667	0.34321	0.71822	0.10232	1.00388	0.43641	0.10232	0.30332		1.37141	0.46431
Silver Jenny	<i>Eucinostomus gula</i>	0.12464	0.1	0.15667	0.12833	0.1	0.08	0.06667	0.23333	0.12	0.17443	0.15215	0.2037	0.04007	0.15215	0.07674		0.26977	0.07679
Southern Puffer	<i>Sphoeroides nephelus</i>	0.00145	0	0.00333	0.00167	0	0	0	0.00667	0.00167	0.00695	0	0.01054	0.00236	0	0		0.01491	0.00333
Tomtate	<i>Haemulon aurolineatum</i>	0.00145	0	0.00333	0.00167	0	0	0	0.00667	0.00167	0.00695	0	0.01054	0.00236	0	0		0.01491	0.00333
Total fish		0.57246	0.26667	0.97	0.61833	0.26667	0.56667	0.1	1.37333	0.57667	0.84815	0.24152	1.17046	0.49733	0.24152	0.3283		1.6025	0.56512
Red Sea Star	<i>Formia milleporella</i>	0.0087	0.00513	0.01333	0.00923	0.00513	0.01333	0	0.01333	0.00795	0.02064	0.01849	0.02331	0.0058	0.01849	0.02981		0.01826	0.00656
Blue Crab	<i>Callinectes sapidus</i>	0.02029	0.00769	0.03667	0.02218	0.00769	0.03333	0	0.04	0.02026	0.03587	0.01997	0.04568	0.02049	0.01997	0.04082		0.05477	0.0194
Lesser Blue Crab	<i>Callinectes similis</i>	0.00145	0.00256	0	0.00128	0.00256	0	0	0	0.00064	0.00695	0.00925	0	0.00181	0.00925	0		0	0.00128
Hermit Crab	<i>Clibanarius sp.</i>	0.16232	0.02051	0.34667	0.18359	0.02051	0.11333	0	0.58	0.17846	0.39444	0.02899	0.55892	0.23063	0.02899	0.19944		0.72595	0.2722
Mud Crab	<i>Panopeus herbstii</i>	0.00145	0	0.00333	0.00167	0	0	0	0.00667	0.00167	0.00695	0	0.01054	0.00236	0	0		0.01491	0.00333
Total crabs		0.18551	0.03077	0.38667	0.20872	0.03077	0.14667	0	0.62667	0.20103	0.40174	0.03459	0.55981	0.25166	0.03459	0.20221		0.72126	0.2907
Pink shrimp	<i>Farfantepenaeus duorarum</i>	0.18551	0.03077	0.38667	0.20872	0.03077	0.14667	0	0.62667	0.20103	0.40174	0.03459	0.55981	0.25166	0.03459	0.20221		0.72126	0.2907
Grand total with shrimp		0.95217	0.33333	1.75667	1.045	0.33333	0.87333	0.1	2.64	0.98667	1.67227	0.3292	2.31338	1.00645	0.3292	0.76253		3.06328	1.15309

Appendix Table C 8. 2004 March 8, 9 mean density (number per square meter) from pull-net sampling

		mean	mean	mean	mean														
		raw	S	N	S&N	1S	2N	2S	3N	zonal	sd	sd	sd	sd	sd	sd	sd	sd	sd
Sample size		22	13	9	2	12	4	1	5	4	raw	S	N	S&N	1S	2N	2S	3N	zonal
22											22	13	9	2	12	4	1	5	4
Common Name	Scientific Name																		
Bandtail Puffer	<i>Sphoeroides spengleri</i>	0.00152	0.00256	0	0.00128	0.00278	0	0	0	0.00069	0.00711	0.00925	0	0.00181	0.00962	0		0	0.00139
Bluethroat Pikeblenny	<i>Chaenopsis ocellata</i>	0.00152	0.00256	0	0.00128	0.00278	0	0	0	0.00069	0.00711	0.00925	0	0.00181	0.00962	0		0	0.00139
Code Goby	<i>Gobiosoma robustum</i>	0.01061	0.01538	0.0037	0.00954	0.01667	0.00833	0	0	0.00625	0.02979	0.03755	0.01111	0.00826	0.03892	0.01667		0	0.00798
Dusky Pipefish	<i>Syngnathus floridae</i>	0.00758	0.01282	0	0.00641	0.01389	0	0	0	0.00347	0.02284	0.02899	0	0.00907	0.03001	0		0	0.00694
Goldspotted Killifish	<i>Floridichthys carpio</i>	0.01667	0.02821	0	0.0141	0.03056	0	0	0	0.00764	0.04572	0.05749	0	0.01994	0.05939	0		0	0.01528
Gulf Pipefish	<i>Syngnathus scovelli</i>	0.02273	0.03846	0	0.01923	0.03889	0	0.03333	0	0.01806	0.04645	0.05585	0	0.0272	0.05832	0		0	0.02097
Gulf Toadfish	<i>Opsanus beta</i>	0.00303	0	0.00741	0.0037	0	0.00833	0	0.00667	0.00375	0.00981	0	0.0147	0.00524	0	0.01667		0.01491	0.00438
Haemulon species	<i>Haemulon sp.</i>	0.00455	0.00256	0.00741	0.00499	0.00278	0.00833	0	0.00667	0.00444	0.01171	0.00925	0.0147	0.00342	0.00962	0.01667		0.01491	0.00377
Hardhead Silverside	<i>Atherinomorus stipes</i>	0.00606	0	0.01481	0.00741	0	0.03333	0	0	0.00833	0.02215	0	0.03379	0.01048	0	0.04714		0	0.01667
Marbled Blenny	<i>Paraclinus marmoratus</i>	0.00909	0.01538	0	0.00769	0.01667	0	0	0	0.00417	0.01835	0.02201	0	0.01088	0.02247	0		0	0.00833
Pinfish	<i>Lagodon rhomboidalis</i>	0.17727	0.11026	0.27407	0.19217	0.11389	0.18333	0.06667	0.34667	0.17784	0.17317	0.09943	0.21459	0.11584	0.10294	0.15516		0.24336	0.12245
Rainwater Killifish	<i>Lucania parva</i>	0.39242	0.29744	0.52963	0.41353	0.31944	0.60833	0.03333	0.46667	0.35694	0.48293	0.26263	0.68768	0.16419	0.26149	0.62086		0.80346	0.24588
Silver Jenny	<i>Eucinostomus gula</i>	0.13836	0.21795	0.01852	0.11823	0.23611	0.00833	0	0.02667	0.06778	0.18109	0.19796	0.0294	0.14102	0.19512	0.01667		0.03651	0.11277
Tomtate	<i>Haemulon aurolineatum</i>	0.00152	0	0.0037	0.00185	0	0	0	0.00667	0.00167	0.00711	0	0.01111	0.00262	0	0		0.01491	0.00333
Total fish		0.79091	0.74359	0.85926	0.80142	0.79444	0.85833	0.13333	0.86	0.66153	0.58375	0.53582	0.67449	0.08179	0.52586	0.73099		0.71352	0.35345
Blue Crab	<i>Callinectes sapidus</i>	0.00606	0.00769	0.0037	0.0057	0.00833	0	0	0.00667	0.00375	0.01316	0.01462	0.01111	0.00282	0.01508	0		0.01491	0.00438
Hermit Crab	<i>Clibanarius sp.</i>	0.00758	0	0.01852	0.00926	0	0.00833	0	0.02667	0.00875	0.01761	0	0.02422	0.01309	0	0.01667		0.02789	0.01257
Mud Crab	<i>Panopeus herbstii</i>	0.00152	0	0.0037	0.00185	0	0.00833	0	0	0.00208	0.00711	0	0.01111	0.00262	0	0.01667		0	0.00417
Portunus species	<i>Portunus sp.</i>	0.00152	0.00256	0	0.00128	0.00278	0	0	0	0.00069	0.00711	0.00925	0	0.00181	0.00962	0		0	0.00139
Total crabs		0.01667	0.01026	0.02593	0.01809	0.01111	0.01667	0	0.03333	0.01528	0.02242	0.02101	0.02222	0.01108	0.02171	0.01925		0.02357	0.01389
Mollusk	<i>Mollusca (non- cephalopoda)</i>	0.00455	0	0.01111	0.00556	0	0.025	0	0	0.00625	0.02132	0	0.03333	0.00786	0	0.05		0	0.0125
Pink shrimp	<i>Farfantepenaeus duorarum</i>	0.18636	0.1641	0.21852	0.19131	0.17778	0.1	0	0.31333	0.14778	0.19751	0.17345	0.23518	0.03848	0.17369	0.11863		0.27346	0.1322
Grand total with shrimp		0.99648	0.91795	1.11481	1.01638	0.98333	1	0.13333	1.20667	0.83083	0.78238	0.71223	0.90526	0.13921	0.70166	0.83923		0.98659	0.5012

Appendix Table C 9. 2004 April 5, 8 mean density (number per square meter) from, pull-net sampling.

Appendix Table C 9. 2004 April 5, 8 mean density (number per square meter) from, pull-net sampling.																										
Common Name	Scientific Name	mean	mean	mean	mean	mean	mean	mean	mean	mean	sd	sd	sd	sd	sd	sd	sd	sd	sd							
		raw	S	N	S&N	1S	2N	2S	3N	zonal	raw	S	N	S&N	1S	2N	2S	3N	zonal							
Sample size		21	11	11	2	10	6	1	4	4	21	11	11	2	10	6	1	4	4							
Bandtail Puffer	<i>Sphoeroides spengleri</i>	0.00159	0.00303	0	0.00152	0.00333	0	0	0	0.00083	0.00727	0.01005	0	0.00214	0.01054	0	0	0	0.00167							
Bucktooth Parrotfish	<i>Sparisoma radians</i>	0.00159	0	0.00333	0.00167	0	0	0	0.00833	0.00208	0.00727	0	0.00962	0.00236	0	0	0.01667	0.00417	0							
Crested Goby	<i>Logophogobius cyprinoides</i>	0.00476	0.00909	0	0.00455	0.01	0	0	0	0.0025	0.02182	0.03015	0	0.00643	0.03162	0	0	0	0.005							
Dusky Pipefish	<i>Syngnathus floridae</i>	0.00476	0.00909	0	0.00455	0.01	0	0	0	0.0025	0.01195	0.01557	0	0.00643	0.0161	0	0	0	0.005							
Goldspotted Killifish	<i>Floridichthys carpio</i>	0.01429	0.00606	0.02333	0.0147	0.00667	0	0	0.05833	0.01625	0.03261	0.0201	0.03882	0.01221	0.02108	0	0.05	0.02823	0							
Grass Porgy	<i>Calamus arctifrons</i>	0.00159	0	0.00333	0.00167	0	0	0	0.00833	0.00208	0.00727	0	0.00962	0.00236	0	0	0.01667	0.00417	0							
Gulf Pipefish	<i>Syngnathus scovelli</i>	0.00952	0.01515	0.00333	0.00924	0.01667	0	0	0.00833	0.00625	0.01543	0.01741	0.00962	0.00836	0.01757	0	0.01667	0.00798	0							
Gulf Toadfish	<i>Opsanus beta</i>	0.00159	0.00303	0	0.00152	0.00333	0	0	0	0.00083	0.00727	0.01005	0	0.00214	0.01054	0	0	0.00167	0							
Haemulon species	<i>Haemulon sp.</i>	0.00159	0.00303	0	0.00152	0.00333	0	0	0	0.00083	0.00727	0.01005	0	0.00214	0.01054	0	0	0.00167	0							
Hardhead Silverside	<i>Atherinomorus stipes</i>	0.03175	0	0.06667	0.03333	0	0.1	0	0.01667	0.02917	0.11666	0	0.15264	0.04714	0	0.21396	0.03333	0.04787	0							
Lined Seahorse	<i>Hippocampus erectus</i>	0.00635	0.00303	0.01	0.00652	0.00333	0.00556	0	0.01667	0.00639	0.01708	0.01005	0.02072	0.00493	0.01054	0.01361	0.03333	0.00722	0							
Marbled Blenny	<i>Paraclinus marmoratus</i>	0.00952	0.01818	0	0.00909	0.02	0	0	0	0.005	0.02146	0.02734	0	0.01286	0.02811	0	0	0	0.01							
Pinfish	<i>Lagodon rhomboidalis</i>	0.14921	0.20303	0.09	0.14652	0.22333	0.07778	0	0.10833	0.10236	0.1555	0.18163	0.09548	0.07992	0.17781	0.11287	0.08333	0.09265	0							
Rainwater Killifish	<i>Lucania parva</i>	0.58571	0.93636	0.2	0.56818	1.03	0.17222	0	0.24167	0.36097	1.08728	1.43376	0.16877	0.52069	1.47543	0.13567	0.21837	0.45744	0							
Silver Jenny	<i>Eucinostomus gula</i>	0.08254	0.13636	0.02333	0.07985	0.15	0.01111	0	0.04167	0.05069	0.1148	0.13618	0.03321	0.07992	0.1354	0.01721	0.05	0.06851	0							
Total fish		0.90635	1.34545	0.42333	0.88439	1.48	0.36667	0	0.50833	0.58875	1.31515	1.71634	0.2963	0.65204	1.74697	0.31482	0.21322	0.6316	0							
Red Sea Star	<i>Formia milleporella</i>	0.00476	0	0.01	0.005	0	0	0	0.025	0.00625	0.02182	0	0.02887	0.00707	0	0	0.05	0.0125	0							
Blue Crab	<i>Callinectes sapidus</i>	0.00476	0.00606	0.00333	0.0047	0.00667	0	0	0.00833	0.00375	0.01195	0.01348	0.00962	0.00193	0.01405	0	0.01667	0.00438	0							
Hermit Crab	<i>Clibanarius sp.</i>	0.01905	0.00303	0.03667	0.01985	0.00333	0.02222	0	0.05833	0.02097	0.03737	0.01005	0.04597	0.02378	0.01054	0.04037	0.05693	0.02676	0							
Mud Crab	<i>Panopeus herbstii</i>	0.00159	0	0.00333	0.00167	0	0	0	0.00833	0.00208	0.00727	0	0.00962	0.00236	0	0	0.01667	0.00417	0							
Portunus Crab	<i>Portunus sp.</i>	0.00159	0	0.00333	0.00167	0	0	0	0.00833	0.00208	0.00727	0	0.00962	0.00236	0	0	0.01667	0.00417	0							
Total crabs		0.02698	0.00909	0.04667	0.02788	0.01	0.02222	0	0.08333	0.02889	0.04166	0.02156	0.04889	0.02657	0.0225	0.04037	0.04303	0.03742	0							
Mollusk	<i>Mollusca (non-cephalopoda)</i>	0.00159	0	0.00333	0.00167	0	0	0	0.00833	0.00208	0.00727	0	0.00962	0.00236	0	0	0.01667	0.00417	0							
Pink shrimp	<i>Farfantepenaeus duorarum</i>	0.15714	0.18485	0.12667	0.15576	0.20333	0.00556	0	0.30833	0.12931	0.15991	0.12052	0.18227	0.04114	0.10938	0.01361	0.20616	0.15228	0							
Grand total with shrimp		2.03016	2.89394	1.08	1.98697	3.18333	0.78333		1.525	1.37292	2.77821	3.55774	0.80989	1.28265	3.60654	0.61533	0.6326	1.41446	0							

Appendix Table C 10. 2004 May 4 mean density (number per square meter) from pull-net sampling.

		mean	sd
		1S	1S
Sample size		8	8
Common Name	Scientific Name		
Code Goby	<i>Gobiosoma robustum</i>	0.00417	0.01179
Dusky Pipefish	<i>Syngnathus floridae</i>	0.0125	0.0248
Goldspotted Killifish	<i>Floridichthys carpio</i>	0.00417	0.01179
Gulf Pipefish	<i>Syngnathus scovelli</i>	0.02083	0.03538
Gulf Toadfish	<i>Opsanus beta</i>	0.01667	0.03086
Hardhead Silverside	<i>Atherinomorus stipes</i>	0.00833	0.02357
Lined Seahorse	<i>Hippocampus erectus</i>	0.00417	0.01179
Marbled Blenny	<i>Paraclinus marmoratus</i>	0.03333	0.06901
Pinfish	<i>Lagodon rhomboidalis</i>	0.05417	0.0502
Rainwater Killifish	<i>Lucania parva</i>	0.28333	0.33571
Silver Jenny	<i>Eucinostomus gula</i>	0.04167	0.09388
Total fish		0.48333	0.49825
Red Sea Star	<i>Formia milleporella</i>	0.00417	0.01179
Blue Crab	<i>Callinectes sapidus</i>	0.00417	0.01179
Hermit Crab	<i>Clibanarius sp.</i>	0.00833	0.01543
Mud Crab	<i>Panopeus herbstii</i>	0.0125	0.03538
Total crabs		0.025	0.04629
Pink shrimp	<i>Farfantepenaeus duorarum</i>	0.04583	0.05617
Grand total with shrimp		0.55833	0.5496

Appendix Table C 11. 2004 June 2, 3 mean density (number per square meter) from pull-net sampling.

Common Name	Scientific Name	mean	mean	mean	mean	mean	mean	mean	mean	mean	sd	sd	sd	sd	sd	sd	sd	sd	sd
		raw	S	N	S&N	1S	2N	2S	3N	zone	raw	S	N	S&N	1S	2N	2S	3N	zone
Sample size		18	9	9	2	9	4	0	5	3	18	9	9	2	9	4	0	5	3
Chain Pipefish	<i>Syngnathus louisianae</i>	0.00185	0	0.0037	0.00185	0	0	0.00667	0.00222	0.00786	0	0.01111	0.00262	0	0	0.01491	0.00385		
Goldspotted Killifish	<i>Floridichthys carpio</i>	0.01296	0.02593	0	0.01296	0.02593	0	0	0.00864	0.04733	0.0662	0	0.01833	0.0662	0	0	0	0.01497	
Gulf Pipefish	<i>Syngnathus scovelli</i>	0.02037	0.01481	0.02593	0.02037	0.01481	0.01667	0.03333	0.0216	0.03456	0.01757	0.04648	0.00786	0.01757	0.03333	0.05774	0.0102		
Gulf Toadfish	<i>Opsanus beta</i>	0.00926	0.0037	0.01481	0.00926	0.0037	0	0.02667	0.01012	0.03194	0.01111	0.04444	0.00786	0.01111	0	0.05963	0.01445		
Inshore Lizardfish	<i>Synodus foetens</i>	0.0037	0.0037	0.0037	0.0037	0.0037	0	0.00667	0.00346	0.01078	0.01111	0.01111	0	0.01111	0	0.01491	0.00334		
Pinfish	<i>Lagodon rhomboidalis</i>	0.02037	0.00741	0.03333	0.02037	0.00741	0.01667	0.04667	0.02358	0.02592	0.0147	0.02887	0.01833	0.0147	0.01925	0.02981	0.02052		
Rainwater Killifish	<i>Lucania parva</i>	0.17222	0.27407	0.07037	0.17222	0.27407	0.025	0.10667	0.13525	0.3457	0.45178	0.16283	0.14404	0.45178	0.03191	0.22035	0.12697		
Silver Jenny	<i>Eucinostomus gula</i>	0.1963	0.04444	0.34815	0.1963	0.04444	0.1	0.54667	0.23037	0.26269	0.04082	0.3051	0.21475	0.04082	0.1587	0.23758	0.27533		
Barracuda sp.	<i>Sphyræna sp.</i>	0.00185	0	0.0037	0.00185	0	0	0.00667	0.00222	0.00786	0	0.01111	0.00262	0	0	0.01491	0.00385		
Total fish		0.43889	0.37407	0.5037	0.43889	0.37407	0.15833	0.78	0.43747	0.47213	0.54103	0.41414	0.09166	0.54103	0.23154	0.29684	0.31564		
Red Sea Star	<i>Formia milleporella</i>	0.00556	0.0037	0.00741	0.00556	0.0037	0	0.01333	0.00568	0.01715	0.01111	0.02222	0.00262	0.01111	0	0.02981	0.00688		
Lesser Blue Crab	<i>Callinectes similis</i>	0.00185	0.0037	0	0.00185	0.0037	0	0	0.00123	0.00786	0.01111	0	0.00262	0.01111	0	0	0.00214		
Hermit Crab	<i>Clibanarius sp.</i>	0.04074	0.01111	0.07037	0.04074	0.01111	0.125	0.02667	0.05426	0.1088	0.02357	0.15041	0.0419	0.02357	0.22832	0.02789	0.06176		
Total crabs		0.04259	0.01481	0.07037	0.04259	0.01481	0.125	0.02667	0.05549	0.10835	0.02422	0.15041	0.03928	0.02422	0.22832	0.02789	0.06049		
Pink shrimp	<i>Farfantepenaeus duorarum</i>	0.10702	0.07667	0.14074	0.1087	0.07667	0	0.25333	0.11	0.19707	0.13971	0.25099	0.04531	0.13971	0	0.30056	0.12991		
Grand total with shrimp		0.59405	0.46926	0.72222	0.59574	0.46926	0.28333	1.07333	0.60864	0.66786	0.69443	0.62889	0.17887	0.69443	0.25166	0.58004	0.41353		

Appendix Table C 12. 2004 June 21 mean density (number per square meter) from pull-net sampling.

		mean	sd
		s1	s1
Sample size		13	13
Common Name	Scientific Name		
Bluethroat Pikeblenny	<i>Chaenopsis ocellata</i>	0.00256	0.00925
Code Goby	<i>Gobiosoma robustum</i>	0.00769	0.01462
Dusky Pipefish	<i>Syngnathus floridae</i>	0.00256	0.00925
Gulf Pipefish	<i>Syngnathus scovelli</i>	0.01026	0.02101
Gulf Toadfish	<i>Opsanus beta</i>	0.00769	0.01462
Lined Seahorse	<i>Hippocampus erectus</i>	0.01282	0.03736
Pinfish	<i>Lagodon rhomboidalis</i>	0.03077	0.04804
Rainwater Killifish	<i>Lucania parva</i>	0.20256	0.26263
Silver Jenny	<i>Eucinostomus gula</i>	0.04872	0.05202
Total fish		0.32584	0.28125
Red Sea Star	<i>Formia milleporella</i>	0.00256	0.00925
Hermit Crab	<i>Clibanarius sp.</i>	0.02821	0.05064
Total crabs		0.02821	0.05064
Pink Shrimp	<i>Farfantepenaeus duorarum</i>	0.10256	0.11899
Grand total with shrimp		0.45897	0.41445

Appendix Table C 13. 2004 July 26, 27 mean density (number per square meter) from pull-net sampling.

Appendix Table C 13. 2004 July 26, 27 mean density (number per square meter) from pull-net sampling.																		
		mean	mean	mean	mean	mean	mean	mean	mean	sd	sd	sd	sd	sd	sd	sd	sd	sd
		raw	S	N	S&N	1S	2N	3N	zonal	raw	S	N	S&N	1S	2N	3N	zonal	zonal
Sample size		14	9	5	2	9	3	2	3	14	9	5	2	9	3	2	3	3
Common Name	Scientific Name																	
Code Goby	<i>Gobiosoma robustum</i>	0.01429	0.02222	0	0.01111	0.02222	0	0	0.00741	0.03125	0.03727	0	0.01571	0.03727	0	0	0	0.01283
Dusky Pipefish	<i>Syngnathus floridae</i>	0.02619	0.02593	0.02667	0.0263	0.02593	0.04444	0	0.02346	0.04371	0.03643	0.05963	0.00052	0.03643	0.07698	0	0	0.02232
Goldspotted Killifish	<i>Floridichthys carpio</i>	0.00476	0.00741	0	0.0037	0.00741	0	0	0.00247	0.0121	0.0147	0	0.00524	0.0147	0	0	0	0.00428
Gulf Pipefish	<i>Syngnathus scovelli</i>	0.06905	0.07407	0.06	0.06704	0.07407	0.08889	0.01667	0.05988	0.11507	0.12108	0.11643	0.00995	0.12108	0.15396	0.02357	0.03815	
Gulf Toadfish	<i>Opsanus beta</i>	0.00952	0.01111	0.00667	0.00889	0.01111	0	0.01667	0.00926	0.01563	0.01667	0.01491	0.00314	0.01667	0	0.02357	0.00849	
Pinfish	<i>Lagodon rhomboidalis</i>	0.07857	0.11481	0.01333	0.06407	0.11481	0.02222	0	0.04568	0.14711	0.17568	0.01826	0.07176	0.17568	0.01925	0	0.0609	
Rainwater Killifish	<i>Lucania parva</i>	0.63333	0.58889	0.71333	0.65111	0.58889	1.01111	0.26667	0.62222	0.60497	0.3873	0.93648	0.088	0.3873	1.18806	0.14142	0.37334	
Silver Jenny	<i>Eucinostomus gula</i>	0.1619	0.22963	0.04	0.13481	0.22963	0.05556	0.01667	0.10062	0.25381	0.29601	0.07226	0.13409	0.29601	0.09623	0.02357	0.11341	
Sphyraena sp.	<i>Sphyraena sp.</i>	0.00476	0.0037	0.00667	0.00519	0.0037	0.01111	0	0.00494	0.0121	0.01111	0.01491	0.0021	0.01111	0.01925	0	0.00566	
Total fish		1.00238	1.07778	0.86667	0.97222	1.07778	1.23333	0.31667	0.87593	0.8999	0.77208	1.18486	0.14928	0.77208	1.51327	0.16499	0.49054	
Blue Crab	<i>Callinectes sapidus</i>	0.00952	0.01481	0	0.00741	0.01481	0	0	0.00494	0.02751	0.03379	0	0.01048	0.03379	0	0	0.00855	
Hermit crab	<i>Clibanarius sp.</i>	0.01905	0.02593	0.00667	0.0163	0.02593	0.01111	0	0.01235	0.0428	0.05212	0.01491	0.01362	0.05212	0.01925	0	0.01301	
Portunus sp.	<i>Portunus sp.</i>	0.00238	0	0.00667	0.00333	0	0	0.01667	0.00556	0.00891	0	0.01491	0.00471	0	0	0.02357	0.00962	
Total crabs		0.03095	0.04074	0.01333	0.02704	0.04074	0.01111	0.01667	0.02284	0.05141	0.06186	0.01826	0.01938	0.06186	0.01925	0.02357	0.01575	
Pink shrimp	<i>Farfantepenaeus duorarum</i>	0.35952	0.55185	0.01333	0.28259	0.55185	0.01111	0.01667	0.19321	0.4297	0.42821	0.01826	0.38079	0.42821	0.01925	0.02357	0.31061	
Grand total with shrimp		1.39286	1.67037	0.89333	1.28185	1.67037	1.25556	0.35	1.09198	1.34659	1.23187	1.19926	0.54945	1.23187	1.52713	0.21213	0.80432	

Appendix Table C 14. 2004 August 30, 31 mean density (number per square meter) from pull-net sampling.

Appendix Table C 14. 2004 August 30, 31 mean density (number per square meter) from pull-net sampling.																										
		mean	mean	mean	mean	mean	mean	mean	mean	mean	sd	sd	sd	sd	sd	sd	sd	sd	sd							
		raw	s	n	s&n	1s	2n	2s	3n	zone	raw	s	n	s&n	1s	2n	2s	3n	zone							
Sample size		20	12	8	2	10	2	2	6	4	20	12	8	2	10	2	2	6	4							
Common Name	Scientific Name																									
Code Goby	<i>Gobiosoma robustum</i>	0.005	0.00556	0.00417	0.00486	0.00667	0.01667	0	0	0.00583	0.01221	0.01297	0.01179	0.00098	0.01405	0.02357	0	0	0.00788							
Dusky Pipefish	<i>Syngnathus floridae</i>	0.00333	0.00278	0.00417	0.00347	0.00333	0.01667	0	0	0.005	0.01026	0.00962	0.01179	0.00098	0.01054	0.02357	0	0	0.00793							
Gulf Pipefish	<i>Syngnathus scovelli</i>	0.01667	0.02222	0.00833	0.01528	0.02333	0.03333	0.01667	0	0.01833	0.02536	0.02595	0.02357	0.00982	0.02744	0.04714	0.02357	0	0.01401							
Gulf Toadfish	<i>Opsanus beta</i>	0.00333	0.00278	0.00417	0.00347	0.00333	0	0	0.00556	0.00222	0.01026	0.00962	0.01179	0.00098	0.01054	0	0	0.01361	0.00272							
Hardhead Silverside	<i>Atherinomorus stipes</i>	0.005	0.00556	0.00417	0.00486	0.00667	0	0	0.00556	0.00306	0.01221	0.01297	0.01179	0.00098	0.01405	0	0	0.01361	0.00356							
Pinfish	<i>Lagodon rhomboidalis</i>	0.07167	0.05833	0.09167	0.075	0.07	0.01667	0	0.11667	0.05083	0.11959	0.07538	0.17067	0.02357	0.0777	0.02357	0	0.19408	0.05308							
Rainwater Killifish	<i>Lucania parva</i>	0.34	0.36111	0.30833	0.33472	0.41	0.75	0.11667	0.16111	0.35944	0.35237	0.35755	0.36634	0.03732	0.37054	0.44783	0.16499	0.20914	0.29061							
Silver Jenny	<i>Eucinostomus gula</i>	0.05667	0.06389	0.04583	0.05486	0.07333	0.16667	0.01667	0.00556	0.06556	0.08454	0.05939	0.11675	0.01277	0.06045	0.2357	0.02357	0.01361	0.07365							
Total fish		0.50167	0.52222	0.47083	0.49653	0.59667	1	0.15	0.29444	0.51028	0.46421	0.42931	0.54173	0.03634	0.42816	0.70711	0.21213	0.40189	0.3758							
Blue crab	<i>Callinectes sapidus</i>	0.00167	0.00278	0	0.00139	0.00333	0	0	0	0.00083	0.00745	0.00962	0	0.00196	0.01054	0	0	0	0.00167							
Hermit crab	<i>Clibanarius</i> sp.	0.02833	0.04444	0.00417	0.02431	0.04	0	0.06667	0.00556	0.02806	0.05544	0.06717	0.01179	0.02848	0.0663	0	0.09428	0.01361	0.03123							
Sponge Spider crab	<i>Macrocoeloma subparallelum</i>	0.00167	0.00278	0	0.00139	0.00333	0	0	0	0.00083	0.00745	0.00962	0	0.00196	0.01054	0	0	0	0.00167							
Total crabs		0.03167	0.05	0.00417	0.02708	0.04667	0	0.06667	0.00556	0.02972	0.05565	0.0659	0.01179	0.03241	0.06517	0	0.09428	0.01361	0.03225							
Pink shrimp	<i>Farfantepenaeus duorarum</i>	0.09833	0.11111	0.07917	0.09514	0.13333	0	0	0.10556	0.05972	0.16058	0.1822	0.13085	0.02259	0.19309	0	0	0.14363	0.06989							
Grand total with shrimp		0.63167	0.68333	0.55417	0.61875	0.77867	1	0.21667	0.40556	0.59972	0.62005	0.60043	0.67092	0.09133	0.60497	0.70711	0.30641	0.54529	0.42785							