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Coral Reef Monitoring in St. Croix and St. Thomas, United States Virgin Islands

Year Three Final Report
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Executive Summary

Coral reefs in the Caribbean are facing a dramatic decline. To effectively manage and maintain these important ecosystems, the government of the Virgin Islands, in coordination with federal agencies and the University of the Virgin Islands, has implemented a long-term coral reef monitoring and assessment program. This program will help establish a baseline condition of coral reefs and fish populations for determining the effectiveness of various management initiatives on the sustainability of these important resources. This program will also allow natural resource managers to gauge the impacts of natural disturbances and human activities on coastal habitats and their rates of recovery. This report presents results from the third year of monitoring in St. Croix, with comparisons to data obtained in years one and two, and the first year of monitoring in St. Thomas. St. Thomas monitoring and assessment employed a stratified design based upon the position of reefs along the insular platform (near-shore, mid-shelf, and shelf-edge) to facilitate a systematic evaluation of the effects of natural and human-induced stresses, as well as factors influencing the decline or recovery of Caribbean coral reef systems.

Digital video and diver surveys were used to quantify coral diversity and the percent cover of corals, algae and other organisms, incidence of coral bleaching and disease, sea urchin density, and fish community structure at eight permanent sites surrounding the island of St. Croix and six permanent sites surrounding the island of St. Thomas. Sedimentation rates, current speed and direction, and temperature were assessed at two St. Thomas sites using sediment traps and data recorders. In addition, digital video and diver surveys were performed at six St. Thomas *Acropora* reefs to quantify percent cover, size distribution, tissue mortality, predation, disease, and recruitment for all *Acropora* species at these reefs. Assessment of these reefs provides a baseline to measure the recovery of *Acropora* corals, which were once abundant, but have been decimated by disease and storm damage.

In St. Croix, turf algae covering dead coral was the predominant benthic cover at most sites. Percent cover of living coral and other benthic organisms changed little over the three years of monitoring. However, the relative abundance of stress tolerant coral species increased at several sites, indicating a decrease in reef quality. Coral disease and bleaching were variable between sites and years. Sea urchin densities were low and showed little change between years. In 2003, fish diversity ranged from 47 to 61 species, while fish abundance averaged 200 to 500 fish per census. The majority of observed fish were small ($\leq$5 cm). Commercially important large groupers, snappers, and angelfishes were uncommon to absent at all sites. Due to differing sampling methods between years, annual comparisons of fish communities in St. Croix were not possible. Methodology is now standardized.

In St. Thomas, turf algae covering dead coral was the predominant substrate type at three sites, macroalgae was predominant at two sites, and living coral had the highest percent cover at one site. Near-shore reefs tended to have lower percent cover living coral and higher percent cover dead coral covered with turf algae than mid-shelf and shelf-edge reefs. Near-shore sites also tended to have higher relative abundances of stress tolerant corals than the other reef systems. Coral disease and bleaching varied between sites. Sea urchins were observed only at the two near-shore sites. Current patterns, temperature, and sedimentation differed between the mid-shelf and shelf-edge sites. At the St. Thomas *Acropora* reefs, all measured parameters varied between species and sites. No significant differences were found between near-shore and mid-shelf *Acropora* reefs. St. Thomas fish diversity ranged from 36 to 54 species, while fish abundance averaged 70 to 120 fish per census. The majority of observed fish were small (5 – 10 cm). Commercially important large groupers, snappers, angelfishes, and triggerfishes were observed at low densities, but were more frequently observed at the mid-shelf and shelf-edge sites. Butterflyfish densities indicated higher levels of reef health for mid-shelf and shelf-edge reef systems.

Introduction:

The U.S. Virgin Islands consists of three large islands, St. Thomas, St. John and St. Croix, and numerous smaller islands surrounded by a diverse, tropical marine environment that includes coral reefs, seagrass beds, and mangrove forests. The islands of St. Thomas and St John are joined by an extensive shallow water platform that connects them to Puerto Rico and the British Virgin Islands. Twenty-five kilometers to the south of St. Thomas and St. John, St. Croix lies on a separate platform. St. Croix is separated from St. Thomas and St. John by the Virgin Islands Trough (over 7,300 m deep).

Tourism drives the Virgin Islands economy. The marine environment with its clean, clear water and fringing sandy beaches is our major tourist attraction. The waters of the Virgin Islands are ideal for sailing because of the persistent trade winds and the numerous bays that provide protected anchorages. The diverse marine life in the coral reefs and other habitats attracts thousands of skin and scuba divers each year. Sport fishing also makes an important contribution to the economy, especially on St. Thomas.

In addition to their tourist appeal, the coral reefs and other habitats in the Virgin Islands are essential to the lives of hundreds of thousands of species including the economically important queen conch, whelk, snapper and grouper. Over three hundred full-time or part-time commercial fishermen fish in territorial and federal waters on all three islands. In tough economic times, fishing is an important means of supplemental income for many people.

Over the past 20 years, eight major hurricanes, numerous outbreaks of disease and sporadic bleaching events have caused extensive coral mortality to the coral reefs surrounding the Virgin Islands (Gladfelter, 1982: Edmunds and Witman, 1991; Rogers *et al.*, 1991; Causey *et al.*, 2000). Recovery from these natural disturbances is hindered by a multitude of human impacts that affect coral reefs such as overfishing, ship groundings, anchor damage, and non-point source pollution (Roberts, 1993; Sebens, 1994; Rogers and Garrison, 2001). Moreover, rapid development of inland and coastal areas has dramatically increased soil erosion and sedimentation onto many of these coral reefs (Rogers, 1990; MacDonald *et al.*, 1997; Anderson and MacDonald, 1998). Chronic sedimentation may affect the abundance and diversity of corals and other reef organisms, increase coral stress and susceptibility to diseases and bleaching, and reduce the ability of corals and other reef organisms to recover and regenerate after natural disturbances such as hurricanes (Acevedo and Morelock, 1988; Rogers, 1990; Rice and Hunter, 1992). The cumulative effects of these human impacts reduce coral abundance and larval recruitment and may make corals more susceptible to disease and bleaching (Nemeth and Sladek Nowlis, 2001).

Most research around the Virgin Islands has focused on fringing reefs (5 – 30 m depth) located along the shoreline of the three main islands, St. Thomas, St. John, and St. Croix. In contrast, very little information exists for other reef systems, which can be quite extensive. Surrounding St. Thomas and St. John, these other reef systems include the shallow water *Acropora palmata* reefs (<5 m depth), mid-shelf reefs (5 – 30 m depth) located 2 to 10 km from the shore of the main islands, and deep reefs (>30 m depth) located 10 to 15 km offshore along the edge of the insular platform. A more systematic approach to investigating these cross-shelf coral reef systems will allow us to evaluate the variable impacts and synergistic effects of natural impacts and human-induced stress as well as factors influencing the decline or recovery of Caribbean coral reef systems. The first two years of this project (2001 and 2002) concentrated on the fringing reefs surrounding St. Croix (Nemeth *et al.*, 2002; Nemeth *et al.*, 2003). In 2003, monitoring continued at St. Croix reefs and began at reef systems distributed across the insular platform surrounding St. Thomas.

The St. Thomas cross-shelf reef systems, with the exception of the shallow *Acropora* reefs, are very similar in composition (i.e. dominated by the genus *Montastraea*) but differ in a number of important ways. Because of the close proximity of near-shore fringing reefs to human populations and their relatively shallow depths, these reefs are susceptible to both harmful human activities (overfishing, sedimentation, nutrient enrichment, and physical damage) and the effects of natural disturbances (storm wave damage, high sea surface temperatures, high irradiance). The mid-shelf coral reefs, either fringing reefs associated with offshore cays or non-emergent linear reefs on the insular platform, are less susceptible to human induced stresses as described above, but are exposed to similar levels of natural impacts. Thus, the mid-shelf reefs provide an ideal control for measuring the effects of anthropogenic stresses on near-shore reefs due to their comparable depth but greater distance from land-based sediments and pollutants. The deep reefs located along the edge of the insular platform are largely free from human induced stresses (excluding fishing and anchoring) and natural impacts due to their greater distance from human populations and their greater depth, respectively. Since the shelf-edge deep reefs are quite extensive, but largely unknown, studying these systems will greatly contribute to our understanding of the coral reef resources in the Virgin Islands.

Acropora reefs occur in shallow waters adjacent to areas of high human population density and on uninhabited off-shore cays in the Virgin Islands. *Acropora palmata* once dominated the shallow water areas in the Virgin Islands and the Caribbean prior to the devastating effects of white band disease (Gladfelter, 1982) and severe hurricanes (Woodley *et al.*, 1981; Rogers *et al.*, 1982; Edmunds and Whitman, 1991; Hubbard *et al.*, 1991; Rogers *et al.*, 1991; Bythell *et al.* 1993). However, recent observations indicate that this species may be showing signs of recovery (C. Rogers personal communication; R. Nemeth, S. Herzlieb personal observation). Monitoring stands of this major reef building species close to and far from centers of human activity will allow us to determine the factors facilitating or hindering its recovery.

Objectives for Monitoring Coral Reefs

In order to maintain the marine resources of the Virgin Islands in an ecologically and economically sustainable manner, the territorial and federal waters of the Virgin Islands must be effectively managed. By providing managers with fundamental information with which to make and enforce decisions, monitoring programs are essential for successful management. Monitoring establishes baseline data against which standards for resource protection can be measured. Also, monitoring provides the means to assess the status and trends of ecological resources, allowing managers to determine the effectiveness of current management plans and to develop effective management for the future. The intent of this project is to monitor the condition of coral reefs throughout the U.S. Virgin Islands to better manage these ecosystems. This will be accomplished by continuing to monitor previously established reef sites surrounding St. Croix and to begin monitoring reefs surrounding St. Thomas, comparing biotic and abiotic parameters among the near-shore, mid-shelf, and shelf-edge *Montastraea* reefs and biotic parameters among the near-shore and mid-shelf *Acropora* reefs.

Section I: St. Croix

Methods

Benthic Assessments:

In April 2001 (year one), the University of the Virgin Islands established permanent video transects at eight long-term sites for annual monitoring (Nemeth *et al.* 2002). In 2002 (year two), two more long-term sites were added (Nemeth *et al.* 2003). To make more efficient use of time and resources in 2003 (year three), monitoring was discontinued at two of the long-term sites established in year one (Lang Bank and Salt River East Wall), bringing the total number of long term monitoring sites in St. Croix to eight, two of which (Great Pond and Jacks Bay) are within the East End Marine Park Boundary (Figure 1, Table 1). Monitoring of Lang Bank was discontinued due do the low percent coral cover found in years one and two and the logistic difficulty involved with reaching the site. Monitoring at Salt River East Wall was discontinued due to the close geographic proximity to Salt River West Wall and the similar benthic composition between the two sites (Nemeth *et al.*, 2003).

Table 1. St. Croix site location information and number of benthic transects at each site.

Site	Date Sampled Yr. 1	Yr. 2	Yr. 3	GPS Coordinates	Depth (ft.)	No. of Transects Yr. 1	Yr. 2	Yr. 3
Buck Island	8/10/01	1/14/02	3/29, 5/2, 5/4, & 5/21/03	N 17° 47.122, W 64° 36.550	35	3	3	6
Cane Bay	4/25/01	5/29/02	4/21/03	N 17° 46.433, W 64° 48.810	30	6	6	6
Great Pond	-	3/24/03	7/31/03	N 17° 42.668, W 64° 39.148	14	-	6	6
Jacks/Isaac Bay	8/02/01	6/11/02	09/05/03	N 17° 44.588, W 64° 34.309	35	6	6	6
Lang Bank	8/01/01	5/29/02	-	N 17° 44.443, W 64° 32.209	50	6	5	-
Long Reef/Eagle Ray	7/26/01	5/30/02	3/28/03	N 17° 45.688, W 64° 41.929	30	6	6	6
Mutton Snapper	-	1/17/03	5/19/03	N 17° 38.217, W 64° 51.683	75	-	5	6
Salt River East Wall	10/12/01	5/23/02	-	N 17° 47.221, W 64° 45.445	40	6	6	-
Salt River West Wall	8/23/01 10/12/01	5/22/02	4/08/03	N 17° 47.116, W 64° 45.564	20	6	6	6
Sprat Hole	9/25/01	6/14/02	4/13/03	N 17° 44.038, W 64° 53.722	40	6	5	6

At all sites except Buck Island and Mutton Snapper, all video, coral disease and bleaching, and sea urchin density data were collected along six 10 m permanent transects established in previous years. In years one and two, only three transects were sampled at Buck Island. In year three, three more transects were established here by driving stakes 10 m apart into non-living areas of the reef near the three existing transects. When sampling the permanent sites, transect lines were stretched between the stakes, then removed after sampling. For Mutton Snapper, transects were marked in year two and year three by haphazardly laying 10 m transect lines on areas judged to be representative of the reef. Since permanent transects were not established at this site, data from year three and year two do not represent the exact same area of reef, but do correspond to the same general area. Video, disease, bleaching, and urchin samplings for all sites except Buck Island were performed on the same day. At Buck Island, video samplings for transects 1 – 3 and transects 4 – 6 were

performed on 3/29/03 and 5/04/03, respectively. Urchin/disease/bleaching transects were performed for transects 1 – 3 and transects 4 – 6 on 5/21/03 and 5/2/03, respectively.

To video sample, one diver swam along each transect videotaping the benthic cover using a Sony TRV-950 digital camcorder in a Light and Motion Stingray II underwater housing. The diver swam at a uniform speed, pointing the camera down and keeping the lens approximately 0.4 m above the substrate at all times. A guide wand attached to the camera housing was used to help the diver maintain the camera a constant distance above the reef. After taping, approximately 20 - 30 non-overlapping images per transect were captured and saved as JPEG files on a computer using a Sony video capture card. Captured images represented an area of reef approximately 0.31 m^2 (0.64 m x 0.48 m). Microsoft Excel and Adobe Photoshop were used to superimpose ten randomly located dots on each captured image. The substrate type located under each of the dots was then identified to the most descriptive level possible and entered into a database. For each transect, the percent cover of coral, dead coral with turf algae, macroalgae, sponges, gorgonians, and sand/sediment were calculated by dividing the number of random dots falling on that substrate type by the total number of dots for that transect. Mean values for percent cover were calculated for each site and coral diversity was measured by using the Shannon-Weaver diversity index.
Paired *t*-tests were performed to determine if there were significant differences in the percent cover of these benthic categories at each site between years one, two and three. Since three transects were added at Buck Island in year three (transects 4 – 6), significant differences at Buck Island between years were tested using data from all sampled transects in year three as well as means determined from transects 1 – 3, which were sampled in all years. This was done to ensure that any differences found between years at Buck Island reflected temporal changes in benthic composition at the site and were not the result of increasing the number of sampled transects.

At all sites all coral colonies $\geq$0.1 m in diameter or height that were located directly under the transect lines were measured for maximum width and height and assessed for signs of disease or bleaching. Assessments of each coral colony were done by estimating the percent surface area (planar view) appearing bleached and diseased for each colony. For each site, the mean percent of coral colonies with disease was calculated by dividing the number of colonies with disease by the total number of colonies assessed on each transect, then determining the mean value among all six transects. The mean percent of bleached colonies for each site was calculated in the same fashion. Paired *t*-tests were used to determine if there were significant differences in the percent of diseased and bleached colonies between years two and three. Since bleaching and disease data were collected by a different method in year one, comparisons to year one were not possible.

Divers also counted the number of *Diadema antillarum* sea urchins within 1 m on either side of each transect at all long-term sites. The mean number of sea urchins per 10 m^2 was calculated for each site and paired *t*-tests were performed to determine if there were differences in the mean density of sea urchins at each site between years one, two, and three.

Fish Census:

For all years in St. Croix, fish surveys were performed at the same sites as the benthic assessments (Figure 1). In 2003, methods for surveying fish communities on St. Croix were modified from the previous year. In 2002, fish surveys were conducted using the stationary point-count method (Bohnsack and Bannerot 1986). In 2003, belt transects were used instead

of point counts (except where noted) in order to maximize data compatibility with concurrent studies in the USVI and elsewhere. This methodological change affects time-series comparisons of St. Croix data sets but not those of St. Thomas, where surveys were being conducted for the first time in 2003.

Belt transects 30 x 2 m (60 m^2) followed the method of Brock (1954). In brief, each diver affixed a transect tape to the seafloor at haphazardly chosen positions that were sufficiently separated from other transects (>5 m) and slowly swam a straight distance parallel to the reef profile. All fish observed within this swath or passing in front of (but not behind) the diver were identified to species. Fish size (fork length) was estimated to the nearest cm, and number of individuals was recorded into the following size categories: ≤5 cm; 5-10 cm; 10-20 cm; 20-30 cm; 30-40 cm, and >40 cm. On St. Croix, diminutive/cryptic fish species (gobies, blennies, apogonids) were excluded from fish counts. At each site, ten replicate belt transects were conducted with the exception of Mutton Snapper site (7 transects). An attempt was made to standardize the duration of each belt transect to 20 minutes on St. Croix.

In 2003 roving diver surveys (RDS) were used in conjunction with belt transects. In this method, divers swam a haphazard circuit in the immediate vicinity of the survey site while listing all observed fish species into abundance categories as follows: 1 fish; 2-10 fish, 10-100 fish; 101-1000 fish; and >1000 fish. Observations were recorded onto pre-printed forms (species lists). On St. Croix, one RDS was conducted at each site for 30 minutes.

Survey information and observations were recorded onto underwater data forms. In the laboratory, data were entered into Microsoft Excel spreadsheets and analyzed for descriptive statistics of reef fish community structure (average density, species richness, Shannon - Weaver Diversity (H'), etc). Jaccard's coefficient of similarity, based upon species presence or absence, was calculated for all intra-island site comparisons. A summary of fish census effort for St. Croix is presented in Table 2.

Table 2. Summary of fish census effort, St. Croix.

Survey Method	Site	Survey Date	Total No. of Replicates	Total Survey Time (min)	Avg. Time per Transect (min)
Belt Transect	Buck Island	9/16/03	10	198	19.8
	Cane Bay	8/28/03	10	331	33.1
	Great Pond	9/19/03	10	190	19.0
	Jacks Bay	9/5/03	10	214	21.4
	Long Reef	9/8/03	10	221	22.1
	Mutton Snapper	9/23/03	7	137	19.6
	Sprat Hole	9/10/03	10	195	19.5
	Salt River	8/26/03	10	251	25.1
Roving Diver	Buck Island	5/4/03	1	30	na
	Cane Bay	5/29/03	1	30	na
	Great Pond	c.5/22/03	1	30	na
	Jacks Bay	9/5/03	1	30	na
	Long Reef	06/03	1	30	na
	Mutton Snapper	5/21/03	1	30	na
	Sprat Hole	9/10/03	3	90	30.0
	Salt River	c.5/22/03	1	30	na
Point	Sprat Hole	9/10/03	6	232	38.7

of point counts (except where noted) in order to maximize data compatibility with concurrent studies in the USVI and elsewhere. This methodological change affects time-series comparisons of St. Croix data sets but not those of St. Thomas, where surveys were being conducted for the first time in 2003.

Belt transects 30 x 2 m (60 m^2) followed the method of Brock (1954). In brief, each diver affixed a transect tape to the seafloor at haphazardly chosen positions that were sufficiently separated from other transects (>5 m) and slowly swam a straight distance parallel to the reef profile. All fish observed within this swath or passing in front of (but not behind) the diver were identified to species. Fish size (fork length) was estimated to the nearest cm, and number of individuals was recorded into the following size categories: ≤5 cm; 5-10 cm; 10-20 cm; 20-30 cm; 30-40 cm, and >40 cm. On St. Croix, diminutive/cryptic fish species (gobies, blennies, apogonids) were excluded from fish counts. At each site, ten replicate belt transects were conducted with the exception of Mutton Snapper site (7 transects). An attempt was made to standardize the duration of each belt transect to 20 minutes on St. Croix.

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	Salt River	8/26/03	10	251	25.1
Roving Diver	Buck Island	5/4/03	1	30	na
	Cane Bay	5/29/03	1	30	na
	Great Pond	c.5/22/03	1	30	na
	Jacks Bay	9/5/03	1	30	na
	Long Reef	06/03	1	30	na
	Mutton Snapper	5/21/03	1	30	na
	Sprat Hole	9/10/03	3	90	30.0
	Salt River	c.5/22/03	1	30	na
Point	Sprat Hole	9/10/03	6	232	38.7

Results and Recommendations

Benthic Assessments:

For year three, the percent cover of living coral at the St. Croix sites ranged from a low of 6.6% at Long Reef/Eagle Ray to a high of 35.9% at Mutton Snapper. The percent cover of living coral remained fairly constant at each site from year one to year three, with no significant differences between years at any site (Figure 2A). For year three, turf algae covering dead coral was the most dominant substrate type at all eight sites except for Jacks Bay and Mutton Snapper, where macroalgae was the most abundant substrate type. Dead coral with turf algae ranged from a low of 21.7% at the Mutton Snapper site to a high of 81.2% at Salt River. At most sites, dead coral covered with turf algae varied between years, with significant differences at Buck Island for years one and two, Great Pond and Long Reef/Eagle Ray for years two and three, and Sprat Hole for years one and two and two and three (Figure 2B). In year three, macroalgae ranged from a low of 0.45% at Great Pond to a high of 47.0% at Jacks Bay. Macroalgae varied between years with significant differences at Buck Island between years one, two, and three, and Long Reef and Sprat Hole for years one and two and two and three (Figure 2C). Since macroalgae can overgrow dead coral with turf algae and macroalgal cover can vary seasonally, comparisons of algal cover between years are difficult, as all sites with significant differences were sampled at different times of year. We recommend future samplings be performed consistently in late spring/early summer each year, when macroalgal cover is highest (R. Nemeth, unpublished data). Sponges and gorgonians each comprised less than 10% of the benthic cover at all sites, with sponge cover varying significantly at Buck Island between year three and years one and two (Figure 2D, E). Sand/sediment was the only non-living substrate type found at the sites, ranging from 0% at Great Pond to 6.2% at Buck Island. No significant differences were found for percent cover of sand/sediment between years (Figure 2F). For all benthic categories, temporal comparisons at Buck Island utilizing means from transects 1 – 6, as well as transects 1 – 3 in year three produced similar results, indicating that differences (or lack of) between year three and previous years were the result of temporal changes at the site and not from the addition of transects.

The coral reefs of St. Croix were generally dominated by coral species in the genus *Montastraea*. For analysis purposes, corals within the *Montastraea annularis* complex (*M. annularis*, *M. faveolata*, and *M. franksii*) were grouped into a single MACX category (Figure 3, Figure 4A-H). In 2003, *Montastraea* corals were the most abundant corals at five of the eight sites. *Millepora alcicornis* was most abundant at Great Pond and Jacks Bay and *Porites astreoides* was most abundant at Long Reef. At all sites, species composition tended to differ between years (Figure 4A-H). Buck Island, Cane Bay, and Salt River tended to show decreases in the percent composition for corals in the *M. annularis* complex with increases in the percent composition for *P. astreoides* and *Siderastrea siderea.* As was the case with the percent cover, the addition of three transects at Buck Island had no effect on patterns of species composition. Cane Bay showed increases in *Diploria strigosa* and *D. labyrinthiformis* as well. Similarly, Sprat Hole showed a decrease from year one to three for the *M. annularis* complex with an increase in the percent composition by *P. astreoides*. These trends warrant special attention, as *P. astreoides* and *S. siderea* are especially stress tolerant corals (Acevedo *et al.*, 1989; Torres and Morelock, 2002). Increases in the relative abundance of these stress tolerant species and decreases in the relative abundance of less

tolerant corals such as those within the *M. annularis* complex may indicate an overall decrease of reef quality. At Jacks Bay, *P. astreoides* and *S. siderea* as well as the *M. annularis* complex tended to increase from year one to year three and the relative abundance of *M. cavernosa* and *P. porites* tended to decrease. Long Reef showed an increase of the *M. annularis* complex, *P. astreoides*, and *D. labyrinthiformis*, with decreases of *M. cavernosa*, *S. siderea*, and *Agaricia agaricites*. Great Pond showed dramatic differences in relative abundance of *M. cavernosa*, *P. astreoides*, *Millepora alcicornis*, and *Millepora complanata* between 2002 and 2003. These differences may be a reflection of the sites shallow depth (~ 3.5 m) and low percent coral cover. On shallow reefs, strong surge can move the transect line marking the video transects, resulting in variation in the exact coral colonies videotaped with each sampling. In cases of low percent total coral cover, small variations in the percent cover of each species captured in the video transects can result in large differences the relative abundance of each species. The Mutton Snapper site showed an increase in the relative abundance of corals in the *M. annularis* complex and decreases for *M. cavernosa*, *P. astreoides*, and *S. siderea*. A decrease in the relative abundance of stress tolerant species and an increase in the relative abundance of less stress tolerant species may reflect an improvement of reef quality at this site, which is the deepest of the sampled St. Croix sites (75 ft. depth).

For 2003, the Shannon – Weaver Diversity Index (H') for coral ranged from a high of 2.28 at Long Reef to a low of 0.52 at Mutton Snapper. Coral diversity increased at most sites from year one to year three, with the exceptions being Great Pond (decreasing slightly) and Mutton Snapper (Figure 5). This is consistent with the increase of stress tolerant species at most sites. The decrease of coral diversity at Mutton Snapper can be attributed to the decrease in the relative abundance of stress tolerant species and the increase of the relative abundance of the *M. annularis* complex.

In 2003, Salt River showed the highest incidence of both diseased and bleached coral colonies, with diseased corals comprising 7.6% of the sampled colonies and bleached corals comprising 14.0% of the colonies. Mutton Snapper and Sprat Hole were the only other sites with disease, with 5.5% and 0.9%, respectively. Jacks Bay and Great Pond were the only sites without bleaching in 2003. Sprat Hole had significantly less disease in 2003 than 2002 ($P<0.01$, Figure 6). In 2003, *M. franksii* was the most common coral with disease, while *S. siderea* was the most common with bleaching (Figure 7). Divers observed white plague, dark spots disease, and yellow blotch disease. In some instances, corals appeared diseased, but could not be categorized as a specific disease. These were classified as 'unknown' and included in counts of total disease. Since bleaching and disease vary seasonally in the Virgin Islands (S. Herzlieb, unpublished data), and the sites were sampled at different times of year in 2002 and 2003, comparisons between years are difficult. We recommend that future samplings for disease and bleaching be performed at the same time of year.

No *Diadema antillarum* sea urchins were present at most sites in 2003, the exceptions being Cane Bay (1.3 urchins/10 m^2), Great Pond (6.5 urchins/10 m^2), and Jacks Bay (0.2 urchins/10 m^2). No significant differences in urchin density were found between years.

Detailed summaries of the benthic data from each St. Croix site are included in Appendix I: Summary of Coral Video Data, Appendix II: Summary of Non-coral Video data, and Appendix III: Summary of Urchin, Bleaching, and Disease Data.
These data are also made available on the University of the Virgin Islands web site http://rps.uvi.edu/VIMAS/reefs.htm.

Fish Census:

On St. Croix, a total of 25,473 fish representing 101 species were observed in 77 belt transects at eight survey sites. Abundance was highly variable within and among sites (Figure 8A). The highest densities were observed at CB, MS, and SR. Species richness was also variable (Figure 8B), but generally high with between 19 species (at GP) and 30 species (at CB) observed per transect. The greatest number of fish species was observed at CB (61 species) and the fewest at GP (47 species). Reef fish diversity (Shannon - Weaver H') was less variable within and among sites (Figure 8C).

A comparison of belt transect data to Roving Diver Survey (RDS) data indicated that the level of RDS replication on St. Croix (one per site) was insufficient to adequately characterize the fish communities. Community richness as determined by RDS was, on average, only 74% of estimates derived from belt transects (10 replicates per site). For comparison, in St. Thomas where RDS was replicated 3 times per site, richness from RDS was on average 165% of belt transect estimates. Therefore, in the following discussion, data from belt transects are emphasized, although RDS data are available on the web at http://rps.uvi.edu/VIMAS/reefs.htm. We recommend increasing the number of RDS replicates to three or more in future St. Croix surveys to adequately characterize fish communities.

Reef fish communities were compared among sites based upon taxonomic composition (species presence or absence) using Jacaard's index of similarity (Figure 9). Fish communities at CB, SR and SH shared relatively high similarity (0.65 to 0.67) and LR was similar to JB (0.67). The fish community at GP was least similar to all other sites (0.38 to 0.51).

The majority of fish observed in 2003 were small, with most fish (12,909 fish or 50.7%) falling into the smallest size category (≤5 cm). An additional 7,012 fish (27.5%) fell into the next smallest size category (≤10 cm long). Intermediate size fish (10-20 cm and 20-30 cm) were less abundant, comprising 17.3% and 4.1% of observations, respectively. Indeed, relatively few large fish (30-40 cm) were observed (67 fish or 0.3%) and fewer very large fish (>40 cm) were observed (40 fish or 0.2%). Complete data for the size distribution of fish observed on St. Croix is given in Appendix VI.

Reef fish communities among sites were compared based upon ten families (Figure 10A-J). Planktivorous labrids and pomacentrids predominated at all sites, with five species accounting for 63% of all fish observed in belt transects: bluehead wrasse, *Thalassoma bifasciatum* (19.5%); blue chromis, *Chromis cyanea* (18.2%); bicolor damselfish, *Stegastes partitus* (10.4%); creole wrasse, *Clepticus parrae* (8.1%); and brown chromis, *Chromis multilineata* (7.0%). Parrotfishes (Scaridae) and surgeonfishes (Acanthuridae), which represent the most prominent group of herbivores, were the next most abundant families.

Scarids reached their highest densities at BI whereas acanthurids were most abundant at JB and GP. Among acanthurids, the ocean surgeon (*Acanthurus bahianus*) was very common, the blue tang (*A. coeruleus*) was common, and the doctorfish (*A. chirurgus*) least common. Among scarids, the redband (*Sparisoma aurofrenatum*), stoplight (*Sp. viride*), striped (*Scarus croicensis*), and princess (*Sc. taeniopterus*) parrotfishes were very common. The herbivorous pomacentrid, yellowtail damselfish (*Microspathodon chrysurus*), was exceptionally abundant at GP, where it was observed at densities over 10-fold greater than all other sites (see Appendix V).

The remaining families (Figure 10E-J) were observed at much lower densities at most sites. Small serranids, such as hamletfish (*Hypoplectrus* sp.) and harlequin bass (*Serranus tigrinus*) were relatively common, as were two small groupers, coney (*Cephalopholis fulvus*) and graysby (*C. cruentatus*). Larger groupers were either rare (red hind, *Ephinephelus gattatus*, and rock hind, *E. adcensionis*) or absent. Similarly, lutjanids were only observed at low densities, with mahogany snapper (*Lutjanus mahogani*) and schoolmaster (*L. apodus*) encountered frequently, yellowtail snapper (*Ocyurus chrysurus*) observed infrequently, and mutton snapper (*L. analis*) observed rarely. Haemulids were observed at all reef sites, with the French grunt (*Haemulon flavolineatum*) the most abundant and most common. Butterflyfish were common at most sites, especially the foureye butterflyfish (*Chaetodon capistratus*) and banded butterflyfish (*C. striatus*). Angelfishes were uncommon (SR,CB, JB, LR, SH, MS) or absent (BI, GP) and represented primarily by a single species, the rock beauty (*Holacanthus tricolor*) although one queen angelfish (*H. ciliaris*) was observed at JB, LR and MS. The family Balistidae (triggerfishes) was moderately abundant but represented by a single species, black durgon (*Melichthys niger*) at all but one site (MS) where two queen triggerfish (*Balistes vetula*) were seen.

In order to compare St. Croix fish census results from this year (using belt transects) to the previous year (using stationary point counts), both methods were used at one reef site (SH) on the same day. We used the same methods with the same level of replication and the same observers as described here and previously in 2002. Under these conditions, the point count and belt transect methods gave very similar results for most fish species in terms of rank order of abundance and rank frequency of observation (see Appendix XI). Results from the methods differed primarily in that belt transects identified a greater number of species (55 vs. 41) and more individuals were observed per replicate (typically 1 - 4 times more). For the latter, scaling of results to total area surveyed (dividing belt transect data by 2.93) did not substantially improve agreement between methods. Many of the discrepancies appear to be species-specific. In some cases, fish movement during the observation period may inflate density estimates by belt transects (e.g. small scarids, acanthurids), while in other cases topographic complexity may obstruct observation and therefore deflate density estimates by point counts (e.g. fairy basslets, various recruits).

In the previous year (Toller 2002) it was noted that many of the larger, long-lived resident reef fish were absent from St. Croix surveys. We combined results from RDS and belt transects in an attempt to quantify the abundance of 12 commercially important, rare, and/or vulnerable species (Table 3). From this list, only red hind (*Epinephelus guttatus*) and mutton snapper (*Lutjanus analis*) were observed. Although the level of replication for roving diver surveys was inadequate, the results nonetheless support direct observations of fish communities at these reef sites, with the exception of the cubera snapper (*L. cyanopterus*), which was occasionally encountered (Toller, personal observation).

Table 3. Abundance of 12 commercially important, rare and/or vulnerable fish species on St. Croix.

			Relative Fish Abundance*											
Site	Method	Total Survey Time (min)	Nassau grouper	yellowfin grouper	yellowmouth grouper	tiger grouper	red hind	cubera snapper	mutton snapper	dog snapper	hogfish	rainbow parrotfish	blue parrotfish	midnight parrotfish
Salt River	belt	251	-	-	-	-	-	-	-	-	-	-	-	-
	RDS	30	-	-	-	-	2	-	-	-	-	-	-	-
Cane Bay	belt	331	-	-	-	-	-	-	1	-	-	-	-	-
	RDS	30	-	-	-	-	-	-	-	-	-	-	-	-
Isaac's Bay	belt	214	-	-	-	-	4	-	-	-	-	-	-	-
	RDS	30	-	-	-	-	2	-	2	-	-	-	-	-
Eagle Ray	belt	221	-	-	-	-	4	-	-	-	-	-	-	-
	RDS	30	-	-	-	-	2	-	-	-	-	-	-	-
Sprat Hole	belt	195	-	-	-	-	2	-	-	-	-	-	-	-
	RDS-1	110	-	-	-	-	0.3(1,0)	-	2	-	-	-	-	-
	RDS-2	30	-	-	-	-	2	-	2	-	-	-	-	-
	point	232	-	-	-	-	-	-	-	-	-	-	-	-
Buck Island	belt	198	-	-	-	-	6	-	-	-	-	-	-	-
	RDS	30	-	-	-	-	1	-	-	-	-	-	-	-
Great Pond	belt	190	-	-	-	-	-	-	-	-	-	-	-	-
	RDS	30	-	-	-	-	-	-	-	-	-	-	-	-
Mutton Snapper	belt	137	-	-	-	-	-	-	-	-	-	-	-	-

* For belt transects, fish abundance is reported as the total number of individuals observed in ten transects. For RDS, abundance is reported as the mean abundance index (maximum and minimum indices in parentheses) for 3 replicate surveys. Abundance indices were as follows: 0 = no fish, 1 = 1 fish, 2 = 2-10 fish, 3 = 11-100 fish.

Section II: St. Thomas

Methods

Benthic Assessments and Abiotic Parameters:

Between August 2002 and September 2003, the University of the Virgin Islands assessed twelve sites in St. Thomas, USVI. Of these sites, six were reefs dominated by corals in the genus *Montastraea* and six were reefs dominated by corals in the genus *Acropora*. The *Montastraea* reefs were categorized into three reef types based upon their location along the insular platform off the coast of St. Thomas: near-shore reefs (5 – 30 m deep) located along the shoreline of St. Thomas, mid-shelf reefs (5 – 30 m deep) located 2 to 10 km offshore of St. Thomas, and shelf-edge reefs (>30 m deep) located 10 to 15 km offshore St. Thomas along the edge of the insular platform. Since there are no shelf-edge *Acropora* reefs, only near-shore and mid-shelf *Acropora* sites were sampled. Two *Montastraea* and three *Acropora* sites were included in each category (Figure 11, Table 4). Since most research and monitoring in the Virgin Islands in general has been concentrated on near-shore fringing reefs along the three main islands of St. Thomas, St. John, and St. Croix, these sites were chosen to fill gaps in the knowledge of other reef systems, as well as to establish an experimental design to test hypotheses involving differences in biotic and abiotic parameters of reefs located at different points along the insular platform off the coast of St. Thomas.

Table 4. St. Thomas site location information.

Site	Date Sampled				GPS Coordinates	Depth (ft.)
	Video	Disease, Bleaching, Urchins	Predation, Disease, Size Distribution	Fish Surveys		
Montastraea reefs:						
Benner Bay[1]	5/20/03	5/20/03	-	8/05/03	N 18° 18.754, W 64° 51.635	15 - 26
Black Point[1]	9/09/03	09/09 & 9/22/03	-	10/02/03	N 18° 20.670, W 64° 59.157	23 - 36
Flat Cay[2]	6/04/03	6/04/03	-	6/4/03	N 18° 19.093, W 64° 59.462	40 - 56
Seahorse Cottage Shoal[2]	6/12/03	6/12/03 6/18/03	-	6/12/03	N 18° 17.680, W 64° 52.050	61 - 80
Grammanik Bank[3]	4/03/03	7/29/03	-	6/17/03	N 18° 11.468, W 64° 57.019	126
Red Hind Bank[3]	1/13/03 1/15/03	8/06/03 8/13/03	-	6/16/03	N 18° 12.130, W 65° 00.095	128 - 131
Acropora reefs:						
Botany Bay[1]	6/25/03	-	7/09/03	-	N 18° 21.507, W 65° 01.998	3 - 12
Caret Bay[1]	9/04/02	-	8/12/03	-	N 18° 22.318, W 64° 59.320	8 - 20
Coculus Point[1]	7/01/03	-	8/05/03	-	N 18° 18.554, W 64° 53.951	3 - 8
Flat Cay[2]	8/01/02	-	7/10/03	-	N 18° 19.028, W 64° 59.328	3 - 25
Hans Lollik[2]	8/07/03	-	8/07/03	-	N 18° 24.278, W 64° 54.182	8 – 20
Inner Brass[2]	9/09/02	-	8/11/03	-	N 18° 22.650, W 64° 57.859	6 - 10

[1] near-shore sites
[2] mid-shelf sites
[3] shelf-edge sites

Montastraea reefs:

Video transects, coral disease and bleaching assessments, and sea urchin counts were all performed using the same methodology as previously described for the St. Croix sites. At all St. Thomas sites except Black Point, Seahorse Cottage Shoal, the Grammanik Bank and the Red Hind Bank, video, disease and bleaching, and urchin samplings were performed on the same day. The greater depths of Seahorse Cottage Shoal and the shelf-edge sites limited the amount of time the divers could safely stay at depth. Therefore, data collection at these sites was performed over the course of several days. For the near-shore sites, permanent transects were established by driving stakes 10 m apart into non-living areas of the reef. The transects were placed in a linear fashion with a randomly generated distance between each transect. For Flat Cay, non-permanent transects were marked by a diver haphazardly picking a starting point, stretching a transect tape for 10 m in a randomly generated compass direction, marking the end of the transect, then swimming a random distance in a random direction to determine the starting point off the next transect and repeating the process. For Seahorse Cottage Shoal and the shelf-edge sites, transects were marked by haphazardly laying transect line on areas judged to be representative of the reef. For the sites sampled over the course of several days, transect lines were laid each day. Thus, on occasions when the disease, bleaching, and urchin surveys were not completed on the same day as the video sampling, these data were not collected at the exact same locations sampled by video, but in the same general area of the reef. After sampling, video, bleaching and disease, and sea urchin data were analyzed using the same methodology as previously described for the St. Croix sites. Significant differences in percent cover of the previously described benthic categories, coral disease and bleaching, and sea urchin density between near-shore, mid-shelf, and shelf-edge sites were determined by *t*-tests. At depths greater than 25 m (i.e. the shelf-edge sites), coral species within the *M. annularis* complex appear very similar, making identification to species difficult, especially from video images. In instances where corals could not be reliably identified to species, they were classified as MACX, unidentified coral within the *M. annularis* complex.

To measure abiotic factors, two sediment traps and one Aanderaa RCM 9 MkII data recorder were installed at the Flat Cay and Red Hind Bank sites, respectively (Table 5). This mid-shelf and shelf-edge site were chosen as abiotic stations to complement oceanographic data that will be collected by the NOAA CREWS station to be placed at the near-shore reef in Brewer's Bay. The data recorders were installed according to the manufacturer's instructions in small sand patches within the reef in the same general area where the benthic transects were assessed. The data recorders were set to record temperature and current speed and direction at hourly intervals. The sediment traps were constructed of PVC tubing 20 cm long and 5 cm internal diameter. At each site, the traps were mounted 10 m apart on stakes driven into non-living areas of the reef with the top of each trap 0.5 m above the substrate. The traps were placed such that one trap was within 2 m of the data recorder at each site.

Table 5. Dates Aanderaa data recorders and sediment traps deployed and retrieved.

	Set 1		Set 2		Set 3		Set 4	
Data recorders:	Deployed	Retrieved	Deployed	Retrieved	Deployed	Retrieved	Deployed	Retrieved
Flat Cay	4/8/03	7/25/03	7/29/03	10/29/03	11/4/03	2/12/04	-	-
Red Hind Bank	4/10/03	8/13/03	8/15/03	10/28/03	10/31/03	2/27/04	-	-
Sediment traps:								
Flat Cay	7/08/03	8/15/03	8/15/03	9/10/03	9/10/03	10/29/03	10/29/03	11/20/03
Red Hind Bank	7/15/03	8/15/03	8/15/03	9/10/03	9/10/03	10/28/03	10/29/03	11/26/03

After retrieval, data from the data recorders were downloaded into a personal computer according to the manufacturer's instructions using software supplied by Aandera instruments. Since there were small amounts of sediment in all the traps (i.e. the total sediment did not completely cover the bottom of the trap), glass fiber filters were used to process the sediment. The glass fiber filters were first rinsed with distilled water while installed in a vacuum pump manifold, then oven dried, placed in a desiccator for 15 minutes, then weighed. After filter preparation, the filters were placed on the vacuum pump manifold and the contents of the sediment trap were poured onto the filter, using distilled water to rinse all sediment from the trap. The vacuum pump was then turned on and the samples were rinsed with distilled water. The sediment and filters where then placed in a drying oven for 1 hr. at 100° C. Finally, the weight of the sediment sample was determined by weighing the dried sediment and glass filter and subtracting the filter weight. In all cases, the rate of sediment accumulation ($g/cm^2/d$) was determined by dividing the weight of the dried sediment by the area of the cross section of the sediment trap, then by the number of days the traps were on the reef (soak time).

Acropora reefs:

Digital video transects and diver surveys were used to assess all *Acropora* sites. Due to the nature of the structure of *Acropora* reefs, video transect methodology differed from that used at the *Montastraea* sites. At each *Acropora* site, five 30 m transect lines were haphazardly laid on areas judged to be representative of the reef. A diver videotaped the benthic cover along each transect in the same fashion used on the *Montastraea* reefs. We determined that video images recorded at a distance of 0.4 m are 0.64 m in width. Therefore, a 30 m video transect defines an area of 19.2 m^2. After taping, video images containing *Acropora* colonies were captured as still images to a personal computer. For each image, an analyst measured the surface area of living *Acropora* colonies using ImagePro image analysis software. The percent cover of live coral for each transect was then determined by dividing the digitally measured areas by 19.2 m^2, and the mean percent cover was calculated for each site. Percent cover was determined for each *Acropora* species: *A. palmata*, *A. cervicornis*, and *A. prolifera*. Significant differences in percent cover of *Acropora* between near-shore and mid-shelf reefs were determined by *t*-tests. During the diver surveys, each diver chose a species to sample (*A. palmata*, *A. cervicornis*, or *A. prolifera*) then swam (snorkel or SCUBA) in a randomly determined direction over the reef. The divers assessed every colony of their chosen species that they came across while swimming along this line until they assessed 25 colonies of their chosen species, or until they reached the end of the reef. In cases where divers failed to see 25 colonies before reaching the end of the reef, the divers swam in another randomly chosen direction until they assessed 25 colonies, or until it became apparent that the diver would be unable to locate any more colonies of the given species. For each colony, divers measured the maximum length, width, and height, estimated percent tissue mortality (planar view - total dead and recent dead), and noted the presence of *Coralliophila* snails (predators of *Acropora* corals) and white band disease. The length, width, and height were then multiplied together to determine a representative volume for each colony and the colonies were categorized into the following size classes (cm^3): <1000; $>1000 \leq 15{,}625$; $>15{,}625 \leq 125{,}000$; $>125{,}000 \leq 1 \times 10^6$; and $>1 \times 10^6$. Divers also counted the number of *Acropora* sexual recruits in each of 10 haphazardly placed 1 m^2 quadrats at each site. Recruits were defined as colonies <10 cm in maximum dimension that appeared to be established from settled larvae, as opposed to fragmentation. Typically, these recruits were too small and amorphic to be reliably identified to species. Significant differences

between near-shore and mid-shelf reefs for tissue mortality, number of coral colonies infested with *Coralliophila* snails, incidence of white band disease, and recruitment were determined by *t*-tests. At all sites except Hans Lollik, video samplings and diver surveys took place on separate occasions.

Fish Census:

On St. Thomas, fish surveys were conducted on the six *Montastraea* dominated reefs where video benthic assessments were performed. No fish surveys were conducted on the *Acropora* dominated reefs. Methods used to survey fish communities were similar to those for St. Croix with the following modifications: on each site, ten replicate belt transects were completed with the exception of Seahorse Cottage Shoal, where 7 were completed. No attempt was made to standardize the duration of the belt transects, but transect times averaged 7.5 minutes. Three roving diver survey (RDS) replicates were completed at each site except on the two shelf-edge sites, where 4 replicates per site were completed. Roving diver surveys were 60 minutes in duration or the highest quarter hour of that time possible within time limitations imposed by depth. On the inshore sites (Benner Bay and Black Point), RDS replicates lasted the entire 60 minutes, on mid-shelf sites (Seahorse Cottage Shoal and Flat Cay) they were 45 minutes, and on shelf-edge sites (Grammanik Bank and Red Hind Bank) survey replicates were 15 minutes. All species of fish observed were recorded during both survey types (belt transect and RDS) with the exception of the glass goby (*Coryphopterus personatus*). Survey data were recorded, managed and analyzed using the same software and descriptive statistics as that for St Croix.

Results and Recommendations

Benthic Assessments and Abiotic Parameters:

Montastraea reefs:

For the St. Thomas sites, percent cover of living coral ranged from a low of 8.3% at Benner Bay to a high of 42.0% at the Grammanik Bank. The percent cover of dead coral covered with turf algae ranged from 15.0% at Seahorse Cottage Shoal to 45.6% at Benner Bay. The percent cover of macroalgae ranged from 13.8% at Black Point to 42.7% at Seahorse Cottage Shoal (Figure 12A-C). Sponges and gorgonians each comprised less than 10% of the benthic cover at all sites. No gorgonians were observed on the shelf-edge sites. The percent cover of sand/sediment ranged from 3.0% at the Grammanik Bank to 28.0% at Black Point. For this category, Black Point was predominately sediment covering the entire substrate, while the other sights were predominately sandy areas in between vertical reef structures (Figure 12D-F). Near-shore reefs tended to have lower percent cover of living coral and higher percent cover of dead coral covered with turf algae than mid-shelf and shelf-edge reefs, but there were no significant differences in percent cover of any benthic category between near-shore, mid-shelf, and shelf-edge sites. Given the small sample size of $n = 2$ for each reef type and the high variation between reefs within each category, comparisons between reef types are difficult. We recommend sampling a greater number of reefs of each type to make comparisons more statistically robust. We also recommend further stratifying site selection for the mid-shelf reef systems, distinguishing between shallower mid-shelf reefs associated with small islands or cays and the deeper mid-shelf reefs that are not. In this study, we found the reefs at the two mid-shelf sites to differ dramatically.

Seahorse Cottage Shoal had significantly higher percent cover of living coral and significantly lower percent cover of dead coral covered with turf algae and percent cover sponges than Flat Cay (*t*-tests, P = 0.003, P = 0.006, and P = 0.002, respectively). It is difficult to attribute these differences to a specific cause. The reef at Flat Cay is associated with a small island, while Seahorse Cottage Shoal is not and Seahorse Cottage Shoal is at a greater depth than Flat Cay (Table 4). Also, Flat Cay is frequently visited by recreational divers, while Seahorse Cottage Shoal is not. Finally, current direction data collected at Flat Cay indicate that despite this reef's location on the insular platform, this site may still be considerably impacted by terrigenous stresses from St. Thomas (see subsequent paragraph regarding abiotic parameters). Sampling a greater number of mid-shelf reefs both associated and unassociated with cays will help to elucidate the effects of natural and anthropogenic stresses on these as well as near-shore reef systems.

The coral reefs of St. Thomas were generally dominated by coral species in the genus *Montastraea*. Near-shore sites tended to have lower percent composition of corals within the *M. annularis* complex and higher percent composition of the stress tolerant corals *P. astreoides* and *S. siderea* than mid-shelf and shelf-edge sites (Figure 13). Corals within the *M. annularis* complex were the most abundant corals at all sites except Benner Bay, where *M. cavernosa* was most abundant (Figure 14A-F).

The Shannon – Weaver Diversity Index (H') for coral ranged from a high of 2.26 at Flat Cay to a low of 1.20 at the Grammanik Bank. In general, the deeper sites (SC, GB, RH) had lower diversity than the shallow sites (Figure 15). This supports the recommendation of stratifying the mid-shelf sites into shallower sites associated with cays and deeper mid-shelf reefs not associated with cays or islands.

Benner Bay showed the highest incidence of both diseased and bleached coral colonies, with diseased corals comprising 17.4% of the sampled colonies and bleached corals comprising 47.8% of the sampled colonies. The Red Hind Bank showed the lowest incidence of diseased corals (1.4%) and Flat Cay showed the lowest incidence of bleached corals (0%). Near-shore sites tended to have a higher incidence of bleaching than mid-shelf and shelf-edge sites, but there were no significant differences in incidence of disease or bleaching between near-shore, mid-shelf, and shelf-edge sites (Figure 16). Once again, the small sample size of n = 2 for each reef type and the high variation within each category made comparisons between reef types difficult. *M. cavernosa* and *S. siderea* were the most common corals with disease, while *S. siderea* was the most common coral with bleaching (Figure 17). Divers observed black band disease, dark spots disease, yellow blotch disease and white plague. In some instances, corals appeared diseased, but could not be categorized as a specific disease. These were classified as 'unknown' and included in counts of total disease.

D. antillarum sea urchins were observed only at the two near-shore sites, with 0.5 urchins/10 m^2 at Benner Bay and 0.3 urchins/10 m^2 at Black Point. No significant differences in sea urchin density were found between near-shore, mid-shelf, and shelf-edge sites.

Detailed summaries of the benthic data from each St. Thomas site are included in Appendix I: Summary of Coral Video Data, Appendix II: Summary of Non-coral Video data, and Appendix III: Summary of Urchin, Bleaching, and Disease Data. These data will be posted on the University of the Virgin Islands website in the near future.

Abiotic Parameters:

At Flat Cay, current direction headed just west of south throughout the course of the deployment of the data recorder (Figure 18). Given the position of Flat Cay southwest of heavily developed and industrial areas of St. Thomas (Charlotte Amalie, Krum Bay, Lindbergh Bay, and the Cyril E. King Airport) and differences in percent coral and algal cover between Flat Cay and Seahorse Cottage Shoal, Flat Cay may still be considerably impacted by terrigenous stresses despite the reef's mid-shelf location. This supports the recommendation of further data collection at mid-shelf reefs to elucidate the relative effects of terrigenous stresses. Current at the Red Hind Bank headed predominantly both north and south with higher current speeds occurring from late summer to early winter (Figure 19). Daily mean temperature at Flat Cay tended to be higher than the Red Hind Bank, with the highest temperatures in September and October at both sites (Figure 20, Figure 21). Sedimentation rates were higher at Flat Cay than the Red Hind Bank for all periods of deployment except Set 4 (Table 6).

Table 6. Sedimentation rates ($g/cm^2/day \times 10^{-4}$) at Flat Cay and the Red Hind Bank.

Flat Cay	**Set 1** (Jul. – Aug.)	**Set 2** (Aug. – Sep.)	**Set 3** (Sep. – Oct.)	**Set 4** (Oct. – Nov.)
Trap 1	7.55	6.76	6.35	1.07
Trap 2	5.94	5.88	2.88	3.45
Mean ± SD	6.74 ± 1.14	6.32 ± 0.62	4.62 ± 2.46	2.26 ± 1.69
Red Hind Bank				
Trap 1	0.30	4.06	1.42	4.06
Trap 2	2.83	7.82	0.86	1.36
Mean ± SD	1.56 ± 1.79	5.94 ± 2.66	1.14 ± 0.40	2.71 ± 1.90

Acropora reefs:

Average percent cover of all *Acropora* species combined (*A. cervicornis*, *A. palmata*, and *A. prolifera*) for the sampled St. Thomas sites ranged from a low of 5.8% at Caret Bay to a high of 13.0% at Hans Lollik. Percent cover of *Acropora* was not significantly different between near-shore and mid-shelf sites (Figure 22). Percent cover of *A. cervicornis* ranged from a low of 0.3% at Hans Lollik to a high of 6.1% at Botany Bay. Percent cover of *A. palmata* ranged from a low of 1.6% at Botany Bay to a high of 12.6% at Hans Lollik. Percent cover of *A. prolifera* ranged from 0% at Botany Bay, Caret Bay, and Inner Brass Island to 6.4% at Coculus Point. No significant differences were found between near-shore and mid-shelf reefs for percent cover of any *Acropora* species (Figure 23). For *A. cervicornis*, colonies with an estimated volume between 15,626 cm^3 and 125,000 cm^3 were the most common size class at all sites. Caret Bay had the greatest number of colonies with an estimated volume <1000 cm^3 and Flat Cay was the only site that had colonies with an estimated volume >1 x 10^6 cm^3 (Figure 24). For *A. palmata*, colonies with an estimated volume between 125,000 cm^3 and 1 x 10^6 cm^3 were the most common size class at all sites, except for Coculus Point, where colonies with an estimated volume between 1,000 cm^3 and 15,626 cm^3 were the most common size class and Inner Brass Island, where colonies with an estimated volume between 15,626 cm^3 and 125,000 cm^3 were the most common size class. Inner Brass Island was the only site with colonies with an estimated volume <1000 cm^3 and Coculus Point and Inner Brass Island were the only sites without colonies with an estimated volume >1 x 10^6 cm^3 (Figure 25). *A. prolifera* was the least abundant of the *Acropora* species at all sites. No colonies were observed at Caret Bay, and only five colonies were

observed at Inner Brass Island. Divers were able to find and assess 25 colonies at all other sites, but this required more time and effort than for the other *Acropora* species. Colonies with an estimated volume between 15,626 cm^3 and 125,000 cm^3 were the most common size class at most sites with *A. prolifera*, the exceptions being Hans Lollik, where colonies with an estimated volume between 1,000 cm^3 and 15,626 cm^3 were the most common and Inner Brass Island, where colonies <1,000 cm^3 and between 1,000 cm^3 and 15,626 cm^3 were the most common size classes. No *A. prolifera* colonies with an estimated volume >1 x 10^6 cm^3 were observed at any of the sites (Figure 26).

Inner Brass Island had the lowest *A. cervicornis* tissue mortality of all the sites, with a mean of 8.4% surface area of each colony comprised of dead coral skeleton. Hans Lollik had the highest *A. cervicornis* tissue mortality, with a mean of 30.4% of the surface area of each colony comprised of dead coral skeleton (Figure 27). *A. palmata* tissue mortality ranged from a low of 11.0% at Inner Brass Island to a high of 37.0% at Caret Bay (Figure 28). *A. prolifera* tissue mortality ranged from a low of 8.4% at Inner Brass Island to a high of 19.2% at Hans Lollik (Figure 29). No significant differences were found for both total and recent tissue mortality for any *Acropora* species between near-shore and mid-shelf sites. *Coralliophila* snail infestation was most common on *A. palmata* at Caret Bay, where snails were observed on 72.0% of the sampled colonies. Snail infestation was lowest on *A. cervicornis* and *A. palmata* at Botany Bay, where no snails were observed on assessed corals (Figure 30). No significant differences in snail infestation were found for any *Acropora* species or all species combined between near-shore and mid-shelf sites. Incidence of white band disease was highest on *A. palmata* at Caret Bay, where 28.0% of the assessed colonies were infected. No white band disease was observed on any *Acropora* species at Botany Bay and no white band disease was observed on *A. cervicornis* and *A. prolifera* at Coculus Point and *A. cervicornis* and *A. palmata* at Flat Cay (Figure 31). No significant differences in the percent of colonies infected with white band disease were found for any *Acropora* species or all species combined between near-shore and mid-shelf sites.

Recruitment density ranged from 0.1 recruits/m^2 at Caret Bay to 1.3 recruits/m^2 at Coculus Point (Table 7). No significant differences in density of *Acropora* recruits were found between near-shore and mid-shelf sites.

Table 7. *Acropora* recruits at St. Thomas sites (n = 10 quadrats for each site).

Site	No. of Recruits/m^2 ± SD
Botany Bay	0.5 ± 0.71
Caret Bay	0.1 ± 0.32
Coculus Point	0.9 ± 1.29
Flat Cay	0.1 ± 0.32
Hans Lollik	0.6 ± 0.52
Inner Brass	0.4 ± 0.70

Detailed summaries of the *Acropora* reef data from each St. Thomas site are included in Appendix IV: Summary of St. Thomas *Acropora* reef data. These data will be posted on the University of the Virgin Islands website in the near future.

Fish Census:

A summary of fish survey effort is presented in Table 8 for St. Thomas. Because no attempt was made to standardize or record belt transect duration, effort by survey type can only be estimated. We recommend that belt transect duration be recorded and standardized when possible in future St. Thomas samplings. Due to the time constraints imposed by the depths of the mid-shelf and shelf-edge sites in St. Thomas, RDS duration cannot be standardized for all sites, but only for sites of similar depths. Therefore, the resulting species richness values can only be compared between sites within the same depth ranges.

Table 8. Summary of fish census effort on St. Thomas.

Survey Method	Site	Survey Date	Total No. of Replicates	Total Survey Time (min)	Ave. Time per Replicate (min)
Belt Transect	Benner Bay	8/5/03	10	NR	~ 7.5
	Black Point	10/2/03	10	NR	~ 7.5
	Seahorse Cottage Shoal	6/12/03	7	NR	~ 7.5
	Flat Cay	6/4/03	10	NR	~ 7.5
	Grammanik Bank	6/17/03	10	NR	~ 7.5
	Red Hind Bank	6/16/03	10	NR	~ 7.5
Roving Diver	Benner Bay	8/5/03	3	180	60
	Black Point	9/11/03	3	180	60
	Seahorse Cottage Shoal	6/18/03	3	135	45
	Flat Cay	6/4/03	3	135	45
	Grammanik Bank	6/18/3	4	60	15
	Red Hind Bank	6/16/03	4	60	15

A total of 5,117 fish representing 87 species and 22 families were observed in 67 belt transects. Fish abundance was variable within and between sites (Figure 32A). The highest densities of fish were observed at FC and SC, both mid-shelf reef sites. Species richness was variable within and between sites, but was again highest on the mid-shelf reefs (Figure 32B). The site with the greatest number of fish species observed on belt transects was FC (54 species) and the site with the fewest was BP (36 species). Community diversity was less variable between sites, but was slightly lower on the shelf-edge sites, GB and RH (Figure 32C).

On roving diver surveys a total of 125 species representing 35 families were observed. Table 9 presents a summary of the total number of species observed and species richness values for each site, using both belt transects and RDS. Species richness values were higher on RDS than belt transects at all sites. Values for RDS were not comparable across reef sites due to differences in the duration of the surveys.

Table 9. Comparison of Species Richness across sites off St. Thomas, using belt transect data and roving diver survey (RDS) data.

Site	Belt Transects			RDS		
	Total Survey Time (min)	Total No. Species	Ave. Species Richness (St. Dev.)	Total Survey Time (min)	Total No. Species	Ave. Species Richness (St. Dev.)
BB	~75	38	16.3 (1.9)	180	83	59.7 (2.9)
BP	~75	36	15.6 (3.3)	180	64	47.3 (4.0)
SC	~75	49	18.0 (5.6)	135	72	57.7 (2.1)
FC	~75	54	22.7 (3.2)	135	84	60.7 (1.5)
GB	~75	43	15.4 (3.2)	45	58	36.8 (2.5)
RH	~75	42	13.6 (2.9)	45	68	39.5 (6.4)

Reef fish communities were compared among sites based on taxonomic composition (species presence or absence) using Jaccard's index of similarity. This was done separately for belt transects and RDS (Figure 33). Jaccard's indices computed with data from belt transects indicated that fish communities at BP, SC and FC shared relatively high similarity (0.47 to 0.56) and GB was similar to RH (0.50). The fish community at the two shelf-edge sites, GB and RH, were most dissimilar to the two near-shore sites, BB and BP (0.31 to 0.40). Similarity indices for roving dives were highest between the near-shore and mid-shelf sites (0.51 to 0.64), and between shelf-edge sites (0.58). The most dissimilar site was GB, which produced relatively low similarity indices (0.35 to 0.44) when compared to all sites except RH.

The majority of fish observed in 2003 were small or intermediate in size, with most (2,748 fish or 54.1%) falling into the second smallest size category (5-10 cm). Fish in the next larger size category (10-20 cm) made up an additional 22.8% (1159 fish) of the individuals seen. Very small fish (<5 cm) were recorded in less abundance (716 fish or 14.1%) and individuals in the largest size categories (20-30 cm, 30-40 cm and >40 cm) were less abundant still, comprising 5.2%, 3.1% and 0.7% of the observations respectively. Complete data for the size distribution of fish observed on St. Thomas is given in Appendix IX.

Reef fish communities among sites were compared based upon ten families (Figure 34). Planktivorous pomacentrids predominated at all sites except BB and RH, which were dominated by invertebrate-feeding labrids and planktivorous labrids respectively. Labrids were fairly evenly distributed on BB between yellowhead wrasse (*Halichoeres garnoti*), clown wrasse (*H. maculipinna*) and slippery dicks (*H. bivittatus*). On RH, labrids were almost exclusively represented by the creole wrasse (*Clepicus parrae*). The highest densities of pomacentrids were observed on FC, where blue chromis (*Chromis cyanea*) and brown chromis (*Chromis multilineata*) represented 78% of that family observed. Parrotfishes (Scaridae), which represent the most prominent group of herbivores, had the highest densities at BP, SC and FC. They were most commonly represented by the princess parrotfish (*Scarus taeniopterus*) and striped parrotfish (*Sc. iserti*). Stoplight parrotfish (*Sparisoma viride*) and redband parrotfish (*Sp. aurofrenatum*) were also relatively common on the near-shore sites, BB and BP. The more rare scarid species observed on some sites were the redtail parrotfish (*Sp. chrysopterum*), the yellowtail parrotfish (*Sp. rupripinne*) and the queen parrotfish

(*Sc. vetula*). Acanthurids (tangs) were observed most frequently at BB. Among acanthurids, blue tangs (*Acanthurus coeruleus*) and the ocean surgeons (*A. bahianus*) were the most common. Acanthurid and scarid relative densities were reciprocal on sites BB, BP and SC (Figure 34C and 34D). This pattern is found in fish surveys off St. Croix as well, both in the present study, and in 2002 (Toller).

The remaining families (Figure 34E-J) were observed at much lower densities at most sites. Figure 34E represents the commercially important serranids, the groupers. These were uncommon at all sites but were most frequently encountered on the shelf-edge sites, GB and RH. Graysby (*Cephalopholis cruentatus*), the smallest and most common grouper, were observed on all sites. Red hind (*Epinephelus guttatus*) and Nassau grouper (*E. striatus*) were uncommon to rare, but were observed on nearshore (BP) mid-shelf (FC) and shelf-edge sites (GB, HB). Yellowfin (*Mycteroperca venenosa*) and tiger groupers (*M. tigris*) in contrast, were only observed on the offshore sites, GB and RH. Lutjanids (snappers) were also observed at low densities. Only the yellowtail snapper (*Ocyurus chrysurus*) was encountered relatively frequently and on all sites. Schoolmaster snapper (*Lutjanus apodus*) were observed infrequently on mid-shelf (SC) and shelf-edge reefs (GB, HB). Mutton snapper (*L. analis*), cubera snapper (*L. cyanopterus*), gray snapper (*L. griseus*), dog snapper (*L. jocu*), mahogany snapper (*L. mahogoni*) and lane snapper (*L. synagris*) were observed rarely. The greatest number and variety of snappers was seen at SC, with six species observed. Fish surveys at Seahorse Cottage Shoal took place two days prior to the full moon in June. During the full moon in May, large numbers of Lane and Gray snappers were observed during a concurrent UVI study. Collected snappers possessed hydrated oocytes, indicating imminent spawning and confirming Seahorse Cottage Shoal as a snapper spawning aggregation site. Continued monitoring at this site is essential, especially as Seahorse Cottage Shoal is under no fisheries protection. We recommend future samplings at Seahorse Cottage Shoal be performed near the full moon in May during snapper spawning aggregations. Relatively high snapper densities at BP represented only one species, the yellowtail snapper (*O. chrysurus*). Haemulids (grunts) were again most common and most diverse at the mid-shelf site, SC, followed by one of the shelf-edge sites, RH. The French grunt (*Haemulon flavolineatum*) was the most abundant of the family and occurred at all six reef sites. Chaetodontids (butterflyfish) were common on the mid-shelf reef sites (SC, FC) and the shelf-edge sites (GB, RH). Foureye butterflyfish (*Chaetodon capistratus*) were by far the most common of the chaetodontids and occurred on all reef sites. Banded butterflyfish (*C. striatus*) were less common, but were observed on five of six sites. Longsnout butterflyfish were observed only on the shelf-edge sites (GB, RH). Chaetodontid densities have been suggested to indicate levels of reef health (Crosby and Reese, 1996). In our study, on both belt transects and RDS, chaetodontid observations were highest on mid-shelf and shelf-edge reef sites. The increased distance from shore and decreased effects of land based runoff and pollution may be reflected in densities of these fish. The commercially exploited angelfishes were very uncommon but were present on all sites. They were most common and most diverse on HB (5 species) and FC (4 species). The rock beauty (*Holacanthus tricolor*) occurred on all sites and was the only representative of the family on BB and GB. The family Balistidae (triggerfishes) was rare to absent on all sites except GB. Balistids were represented by a single species, the black durgon (*Melichthys niger*) at GB, by queen triggerfish (*Balistes vetula*) at FC and SC, and by one orangespotted filefish (*Catherines pullus*) at BP.

As with the St. Croix fish data, results from RDS and belt transects were combined in an attempt to quantify the relative abundance of 12 commercially important, rare and/or vulnerable species on the St. Thomas reef sites (Table 10). Of those species, the red hind (*E. guttatus*) was seen on all sites, and the three largest groupers, the Nassau (*E. striatus*), yellowfin (*M. venenosa*) and tiger (*M. tigris*) were observed on both shelf-edge reefs (GB and HB). The most rare snappers, dog (*L. jocu*) and cubera (*L. cyanopterus*) were observed on the shelf-edge sites as well, and the mutton snapper (*L. analis*) was seen on one near-shore site (BB), one mid-shelf site (SC) and one shelf-edge site (RH). Hogfish (*Lachnolaimus maximus*) were observed on only one site (SC) and the rainbow parrotfish (*Scarus guacamacia*) on another (BB).

Table 10. Abundance of 12 commercially important, rare and/or vulnerable fish species on St. Thomas.

			Relative Fish Abundance*											
Site	Method	Total Survey Time (min)	Nassau grouper	yellowfin grouper	yellowmouth grouper	tiger grouper	red hind	cubera snapper	mutton snapper	dog snapper	hogfish	rainbow parrotfish	blue parrotfish	midnight parrotfish
Benner Bay	belt*	75**	-	-	-	-	-	-	-	-	-	-	-	-
	RDS***	60	-	-	-	-	1.7(2,1)	-	0.7(2,0)	-	-	1.3(2,0)	-	-
Black Point	belt	75	1	-	-	-	4	-	-	-	-	-	-	-
	RDS	60	2.0(2,2)	-	-	-	0.7(1,0)	-	-	-	-	-	-	-
Seahorse Cottage	belt	53	-	-	-	-	-	-	-	-	-	-	-	-
	RDS	45	-	-	-	-	0.7(1,0)	-	2.7(3,2)	-	1.0(2,1)	-	-	-
Flat Cay	belt	75	1	-	-	-	2	-	-	-	-	-	-	-
	RDS	45	0.3(1,0)	-	-	-	0.7(1,0)	-	-	-	-	-	-	-
Grammanik Bank	belt	75	1	-	-	3	5	4	-	-	-	-	-	-
	RDS	15	0.5(2,0)	1.0(2,0)	-	0.5(2,0)	1.0(2,0)	3.0(3,3)	-	-	-	-	-	-
Red Hind Bank	belt	75	-	1	-	3	5	-	3	-	-	-	-	-
	RDS	15	0.5(2,0)	0.8(3,0)	-	0.5(2,0)	1.0(2,0)	-	0.8(2,0)	0.8(2,0)	-	-	-	-

* belt transect occurence reported as total number of fish observed over 10 repetitive surveys (except SC with 7 repetitive surveys).
**Belt transect survey time was estimated to average 7.5 minutes/survey
***RDS occurances reported as mean Abundance Index (AI) over 3 or 4 repetitive surveys with maximum and minimum AI in parentheses.
AI: 0=no fish, 1=1fish, 2=2-10 fish, 3=11-100 fish, 4=101-1000 fish

Summary and Discussion

St. Croix

On St. Croix, turf algae covering dead coral was the dominant substrate at most sampled sites, comprising greater than 50% of the substrata at six of the eight sites. The percent cover of other benthic organisms ranged from 6.6% to 35.9% for living hard coral, 0.45% to 47.0% for macroalgae, 0.22% to 3.63% for sponges, and 0% to 5.62% for gorgonians. Coral species composition was similar between most sites, with twelve coral species representing 98% of the coral community. Coral diversity (H') varied between 0.52 and 2.28 between sites. Coral condition varied between sites with incidence of coral disease and bleaching ranging from 0% to 7.6% and 0% to 14.0%, respectively. *Diadema* sea urchins were uncommon and observed on transects at only three of the eight sites.

Annual comparisons showed little change in percent cover of live coral. However, species composition tended to differ between years at all sites. Half of the sampled sites showed increases in the relative abundance of stress tolerant coral species and decreases in the relative abundance of less stress tolerant species, indicating a possible decrease in overall reef quality at these sites. One site (Mutton Snapper) showed a decrease in stress tolerant species and an increase in less stress tolerant species, indicating a possible increase in reef quality at this site. Coral diversity increased at most sites from year one to year three. Percent cover of sponges, gorgonians and sand remained fairly constant between years, with only one site (Buck Island) showing significant changes in percent sponge cover in year three. Due to variations in sampling time, annual comparisons of percent cover turf algae, macroalgae, and disease and bleaching are difficult due to seasonal fluctuations in macroalgal cover and levels of coral disease and bleaching. Percent cover dead coral covered with turf algae showed significant changes in 2003 at three sites (Great Pond, Long Reef, and Sprat Hole) and percent cover of macroalgae also showed significant changes in 2003 at three sites (Buck Island, Long Reef, and Sprat Hole). Sprat Hole showed a significantly lower incidence of disease in year three than in year two. No significant annual differences in bleaching were found. Based upon recommendations from year two, efforts were made to sample all St. Croix sites within the same time period in late spring and early summer. This goal was partially met in year three. Five of the sites were sampled in April and May, while the remaining three sites were sampled in March, July, and September, respectively. Future monitoring efforts will attempt to refine sampling effort further and sample all sites in late May and early June, making temporal comparisons for percent cover turf and macroalgae and disease and bleaching assessments more robust. No significant annual differences in sea urchin density were found.

Fish abundance averaged from approximately 200 to 500 fish per census. The number of fish species observed at the St. Croix sites ranged from 47 to 61 species. The St. Croix fish fauna was numerically dominated by planktivorous wrasses and damselfishes. Parrotfishes and surgeonfishes were the next most abundant families. The commercially important large groupers, snappers, and angelfishes were uncommon to absent at all sites. Triggerfishes were moderately abundant, but dominated by a singe species, the black durgon. The commercially important queen triggerfish was absent at most sites, with only two queen triggerfish observed at Mutton Snapper. The majority of fish observed in year three were small, with most fish $\leq$5 cm. Relatively few large fish (30 – 40 cm) and very few larger fish ($\geq$40 cm) were observed.

Due to differing methods utilized for fish censuses between years (point counts and belt transects), annual comparisons of fish surveys are difficult. Also, previous surveys utilizing point counts and belt transects determined that accurate assessments of commercially important fish species, such as groupers and snappers, are difficult because these fish are typically rare at monitoring sites. In year three, Roving Diver Surveys (RDS) were performed to attempt to more accurately characterize fish communities, but it was determined that the level of RDS replication was insufficient. To better facilitate annual comparisons and characterize St. Croix fish communities, future monitoring efforts will consistently utilize belt transects and increased replication of RDS at all sites.

While no attempt was made to stratify the St. Croix sites based upon depth or distance from shore, the deepest of the sites, Mutton Snapper had the highest fish abundance of all the St. Croix sampled sites. In addition, Mutton Snapper had the highest percent living coral cover and the lowest percent cover of dead coral with turf algae. This site was also the only site that showed decreases in the relative abundance of stress tolerant coral species and an increase in the relative abundance of less stress tolerant corals (i.e. corals within the *Montastraea annularis* complex). While continued monitoring of the established St. Croix sites is vital (especially Jacks Bay and Great Pond, which are within the East End Marine Park) stratification of St. Croix sites based upon such factors as distance from shore and fishing pressure would facilitate the attribution of causal factors to observed changes in reef communities.

St. Thomas

On St. Thomas *Montastraea* reefs, turf algae covering dead coral was the predominant substrate type at three of the six sites, ranging from a percent cover of 15.0% to 45.6% across all sites. Macroalgae was the predominant substrate at two of the sites, ranging from 13.8% to 42.7% across all sites, and living coral was the predominant substrate at one site ranging from 8.3% to 42.0% across all sites. The percent cover of sponges ranged from 2.8% to 9.9% and the percent cover of gorgonians ranged from 0% to 4.0%. There were no significant differences in percent cover for any benthic category between near-shore, mid-shelf, and shelf-edge reefs, but near-shore reefs tended to have lower percent cover of living coral and higher percent cover of dead coral covered with turf algae than both mid-shelf and shelf-edge reefs. The coral reefs of St. Thomas were generally dominated by coral species in the genus *Montastraea*. Near-shore sites tended to have higher percent composition of stress tolerant corals and lower percent composition of less stress tolerant species than the mid-shelf and shelf-edge sites. Coral diversity (H') ranged between 1.20 and 2.26, with deeper sites tending to have lower diversity than shallow sites. Coral condition varied between sites, with incidence of coral disease and bleaching ranging from 1.39% to 17.36% and 0% to 47.78%, respectively. *Diadema* sea urchins were uncommon and observed only at the two near-shore sites. No significant differences in incidence of disease or bleaching and sea urchin density were found between reef systems.

Abiotic factors at the St. Thomas *Montastraea* reefs tended to differ between the sampled mid-shelf site (Flat Cay) and the shelf-edge site (the Red Hind Bank). Current headed predominantly just west of south at Flat Cay and predominantly both north and south at the Red Hind Bank. Current direction at Flat Cay indicated that this reef may be significantly affected by terrigenous stresses, despite the reef's mid-shelf location. Daily

mean temperature at Flat Cay tended to be higher than the Red Hind Bank. Higher current speeds occurred from late summer to early winter at both sites and the highest temperatures occurred in September and October at both sites. Sedimentation rates were higher at Flat Cay than the Red Hind Bank for the majority of the study. Abiotic data collected in this study can be used to complement data from the NOAA CREWS station, to be placed at the near-shore reef in Brewer's Bay, St. Thomas.

At the St. Thomas *Acropora* reefs, percent cover of all *Acropora* species combined ranged from 5.8% to 13.0%. Percent cover of *A. cervicornis* ranged from 0.3% to 6.1%, percent cover of *A. palmata* ranged from 1.6% to 12.6%, and percent cover of *A. prolifera* ranged from 0% to 6.4%. Size distribution of colonies of all *Acropora* species varied within and between sites. Tissue mortality ranged from 8.4% to 30.4% of the surface area of each colony comprised of dead coral skeleton for *A. cervicornis*, 11.0% to 37.0% for *A. palmata*, and 8.4% to 19.2% for *A. prolifera* across all sites. *Coralliophila* snail infestation varied within and between *Acropora* species and sites. For *A. cervicornis*, occurrence of white band disease ranged from 0% at Botany Bay, Coculus Point, and Flat Cay to 28.0% at Caret Bay and Inner Brass Island. White band disease on *A. palmata* ranged from 0% at Botany Bay and Flat Cay to 28% at Caret Bay. White band disease on *A. prolifera* ranged from 0% at Coculus Point to 20% at Inner Brass Island. Recruitment density ranged from 0.1 recruits/m^2 to 1.3 recruits/m^2. No significant differences for percent cover, tissue mortality, snail infestation, white band disease, and recruitment density were found between near-shore and mid-shelf *Acropora* reefs.

Fish surveys concentrated on *Montastraea* reefs. No censuses were performed at *Acropora* reefs. Fish abundance averaged from approximately 70 to 120 fish per census. The number of fish species observed at the St. Thomas sites ranged from 36 to 54 species. The St. Thomas fish fauna was numerically dominated by planktivorous damselfishes at all sites except Benner Bay and the Red Hind Bank, which were dominated by wrasses. Parrotfishes and surgeonfishes were also abundant on the sampled St. Thomas reefs. The commercially important large groupers, snappers, angelfishes, and triggerfishes were observed at much lower densities at all sites, but were most frequently encountered on the mid-shelf and shelf-edge sites. Butterflyfish densities were higher at mid-shelf and shelf-edge reefs than at near-shore reefs, indicating higher levels of reef health for mid-shelf and shelf-edge reef systems. The majority of fish observed in 2003 were small or intermediate in size, with most falling into the 5 – 10 cm size category. Relatively few large fish were observed, but were most common at the mid-shelf and shelf-edge sites. Three of the St. Thomas sites monitored in this study have been determined as spawning aggregation areas for grouper (Red Hind Bank, Grammanik Bank) and snapper (Seahorse Cottage Shoal, Grammanik Bank). The Red Hind Bank is within a marine protected area (Red Hind Bank Marine Conservation District), while Seahorse Cottage Shoal and the Grammanik Bank are currently unprotected. Continued monitoring at these sites is vital to detect changes in these ecologically important areas.

Since only two *Montastraea* reefs of each type were sampled in this study, comparisons between near-shore, mid-shelf, and shelf-edge reefs are difficult. We recommend that future monitoring efforts incorporate more replicates of each reef system as resources become available. Also, characteristics of the two sampled mid-shelf reefs (Flat Cay and Seahorse Cottage Shoal) varied significantly, supporting the recommendation that mid-shelf reefs be stratified into two types: shallow mid-shelf reefs associated with cays, and deep mid-shelf reefs not associated with cays. Since other monitoring efforts performed by the University of the Virgin Islands are concentrating on shallow mid-shelf reefs associated with cays, we recommend that future monitoring efforts for this study concentrate on deep mid-shelf reefs not associated with cays. This will allow concurrent monitoring efforts to complement each other to provide a greater understanding of Virgin Islands reef systems.

Acknowledgments

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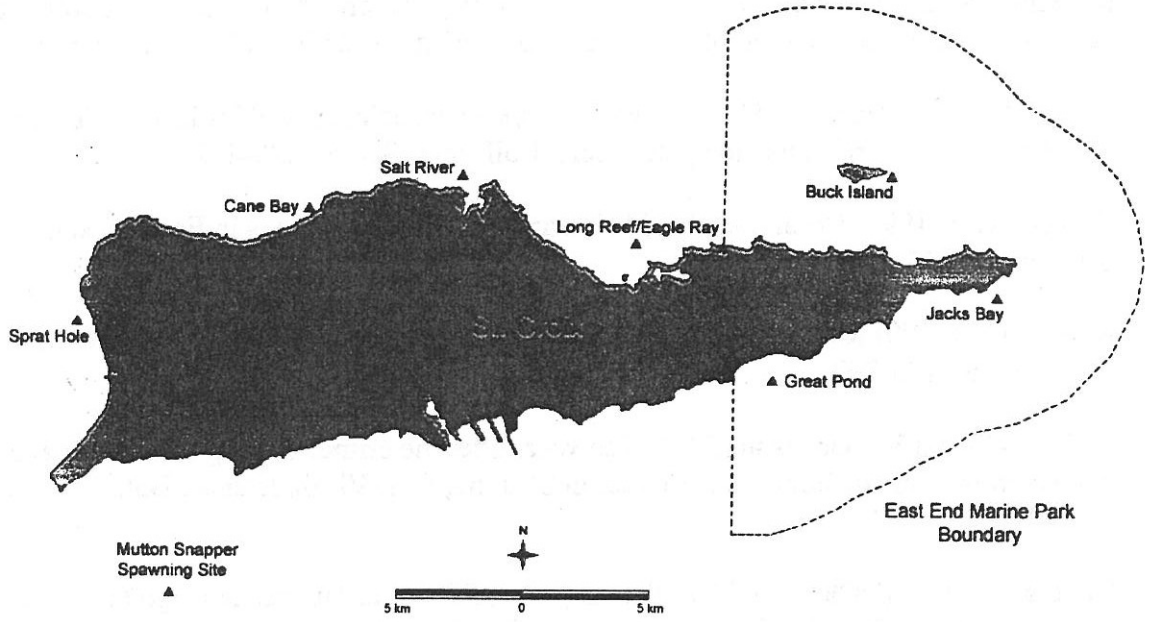


Fig. 1 Locations of monitoring sites in St. Croix, USVI. Great Pond and Jacks Bay are located within the East End Marine Park. Buck Island is located within the Buck Island Reef National Monument.

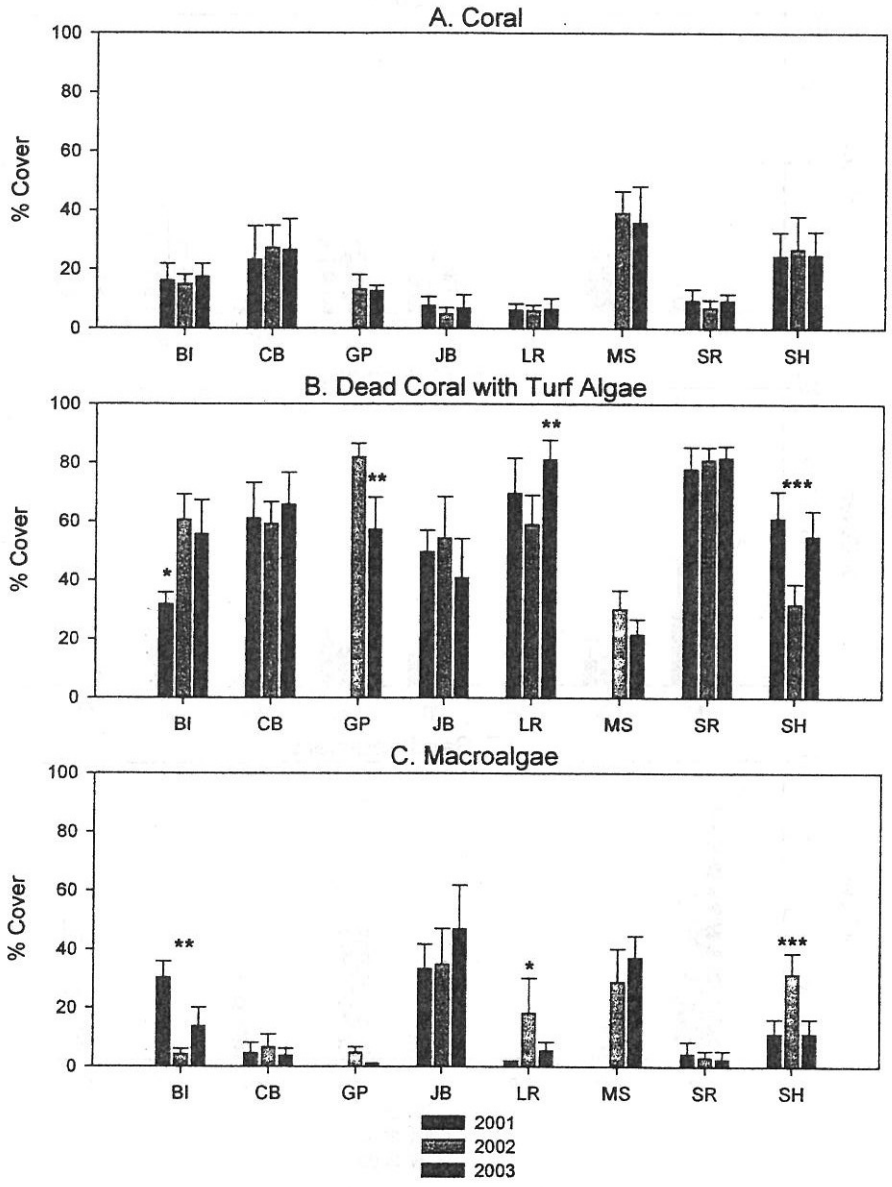


Fig. 2A, B, C Mean percent cover of A. Scleractinian corals, B. Dead coral with turf algae, and C. Macroalgae for the year one, year two, and year three sampling periods at eight monitored sites:
BI Buck Island; CB Cane Bay; GP Great Pond; JB Jacks Bay; LR Long Reef/Eagle Ray;
MS Mutton Snapper; SR Salt River; SH Sprat Hole.
GP and MS sampling began in 2002. n = 6 transects for all sites, except for n = 3 transects for BI in 2001 and 2002 and n = 5 transects for MS and SH in 2002.
Error bars represent standard deviation. Asterisks denote significant differences:
* = $P < 0.05$; ** = $P < 0.01$; *** = $P < 0.001$

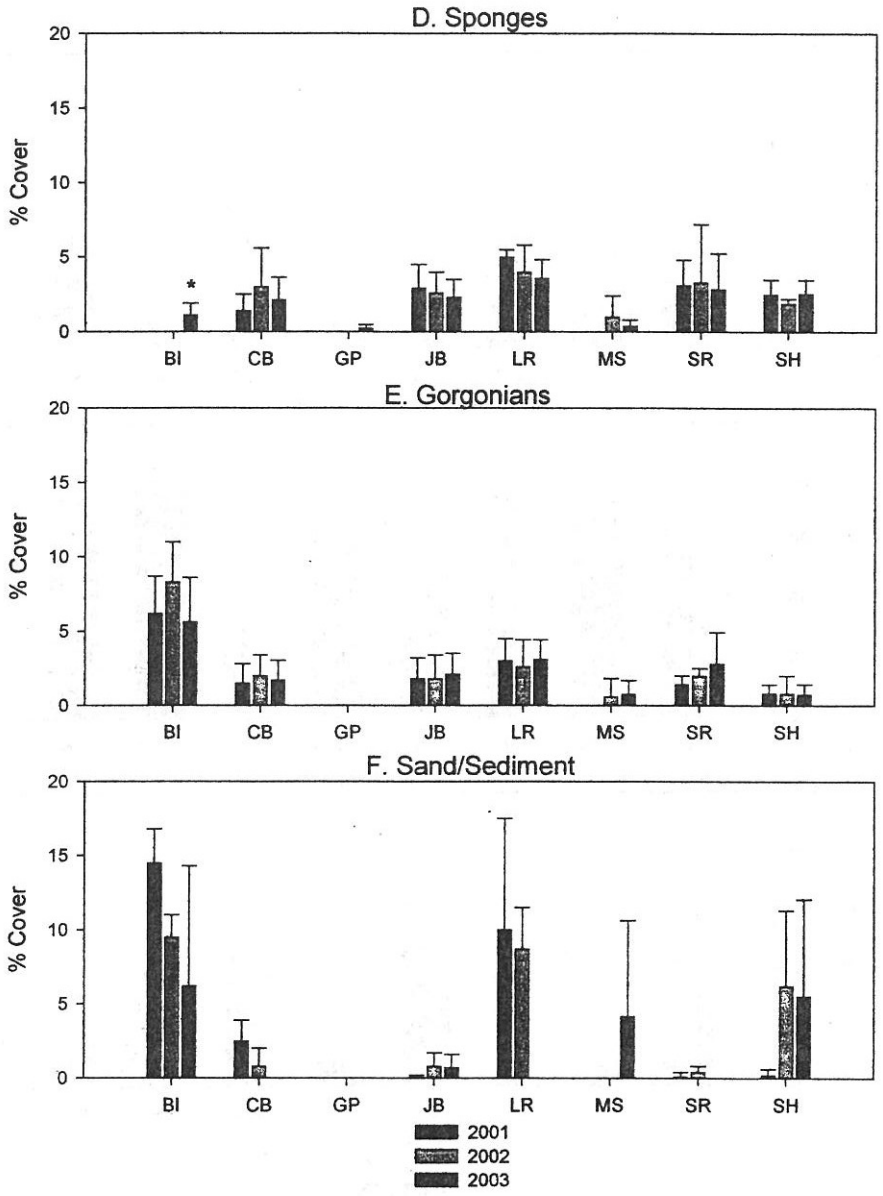


Fig. 2D, E, F Mean percent cover of D. Sponges, E. Gorgonians, and F. Sand/Sediment for the year one, year two, and year three sampling periods at eight monitored sites: BI Buck Island; CB Cane Bay; GP Great Pond; JB Jacks Bay; LR Long Reef/Eagle Ray; MS Mutton Snapper; SRW Salt River; SH Sprat Hole.
GP and MS sampling began in 2002. n = 6 transects for all sites, except for n = 3 transects for BI in 2001 and 2002 and n = 5 transects for MS and SH in 2002.
Error bars represent standard deviation. Asterisk denotes significant difference: * = $P < 0.05$

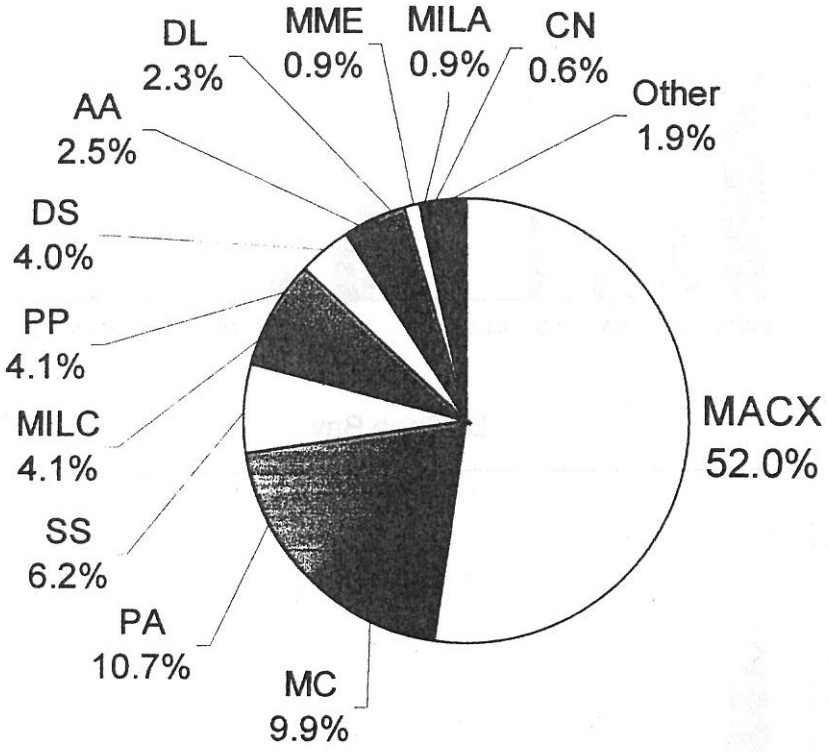


Fig. 3 Percentage coral species composition at all sampled sites in St. Croix, USVI. MACX *Montastraea annularis* complex; MC *Montastraea cavernosa*; PA *Porites astreoides*; SS *Siderastea siderea*; MILC *Millepora complanata*; PP *Porites porites*; DS *Diploria strigosa*; AA *Agaricia agaricites*; DL *Diploria labyrinthiformes*; MME *Meandrina meandrites*; MILA *Millepora Alcicornis*; CN *Colpophyllia natans*. Other denotes percent of all other coral species combined and includes: *Acropora palmata, Agaricia fragilis, Agaricia lamarcki, Eusmilia fastigiata, Madracis mirabilis, Mycetophyllia ferox, Mycetophyllia lamarckiana*, and *Stephanocoenia michelinii*.

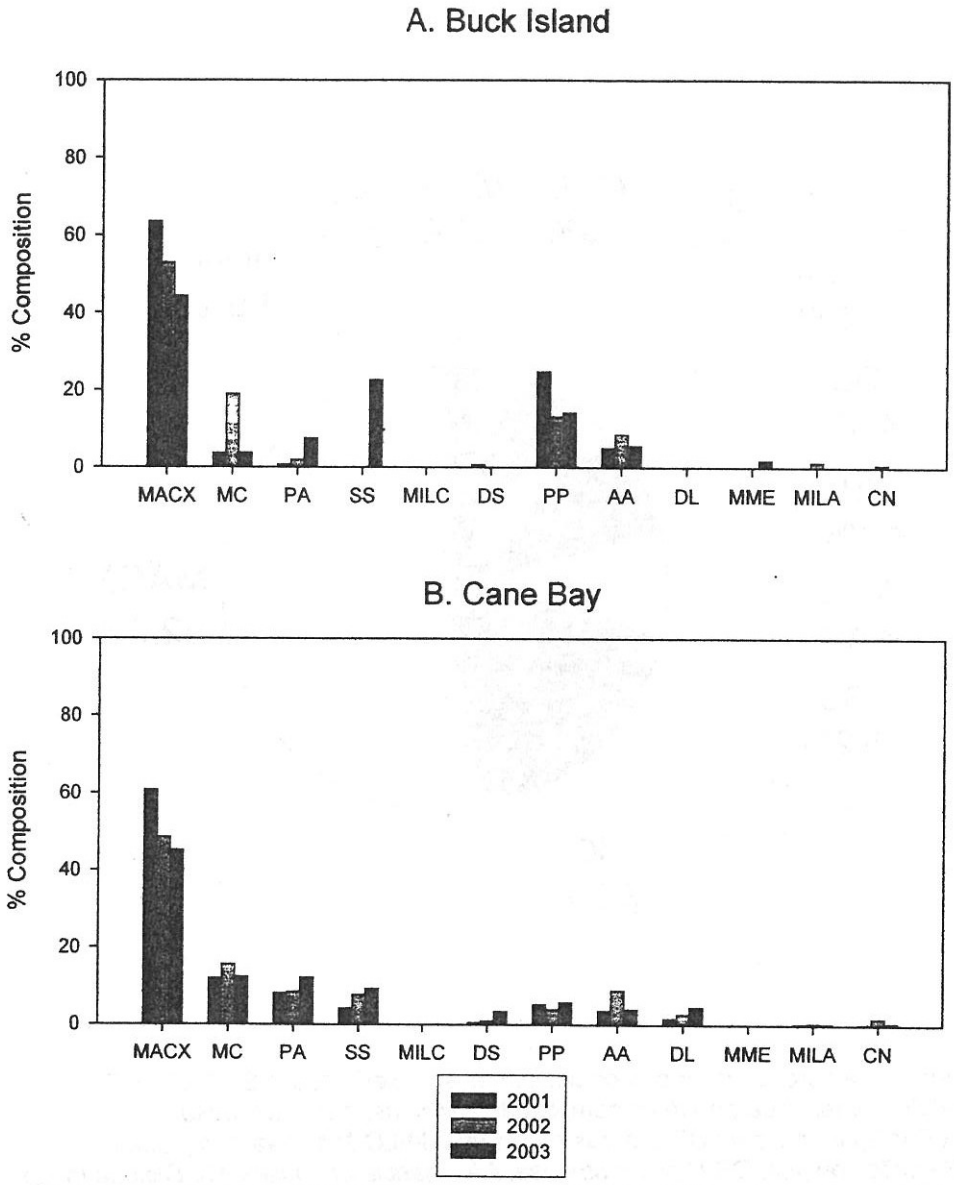


Fig. 4A, B Percent of species composition of living coral cover of the most common coral species at A. Buck Island and B. Cane Bay for years 2001, 2002, and 2003.
Percent composition calculated by dividing the number of random dots falling on each coral species by the total number of dots on all living coral at each site.
MACX *Montastraea annularis* complex; MC *M. cavernosa*; PA *Porites astreoides*; SS *Siderastrea siderea*; MILC *Millepora complanata*; DS *Diploria strigosa*; PP *P. porites*; AA *Agaricia agaricites*; DL *D. labyrinthiformis*; MME *Meandrina meandrites*; MILA *Millepora alcicornis*; CN *Colpophylia natans*.
n = 6 transects for all samplings, except n = 3 transects for Buck Island in 2001 and 2002.

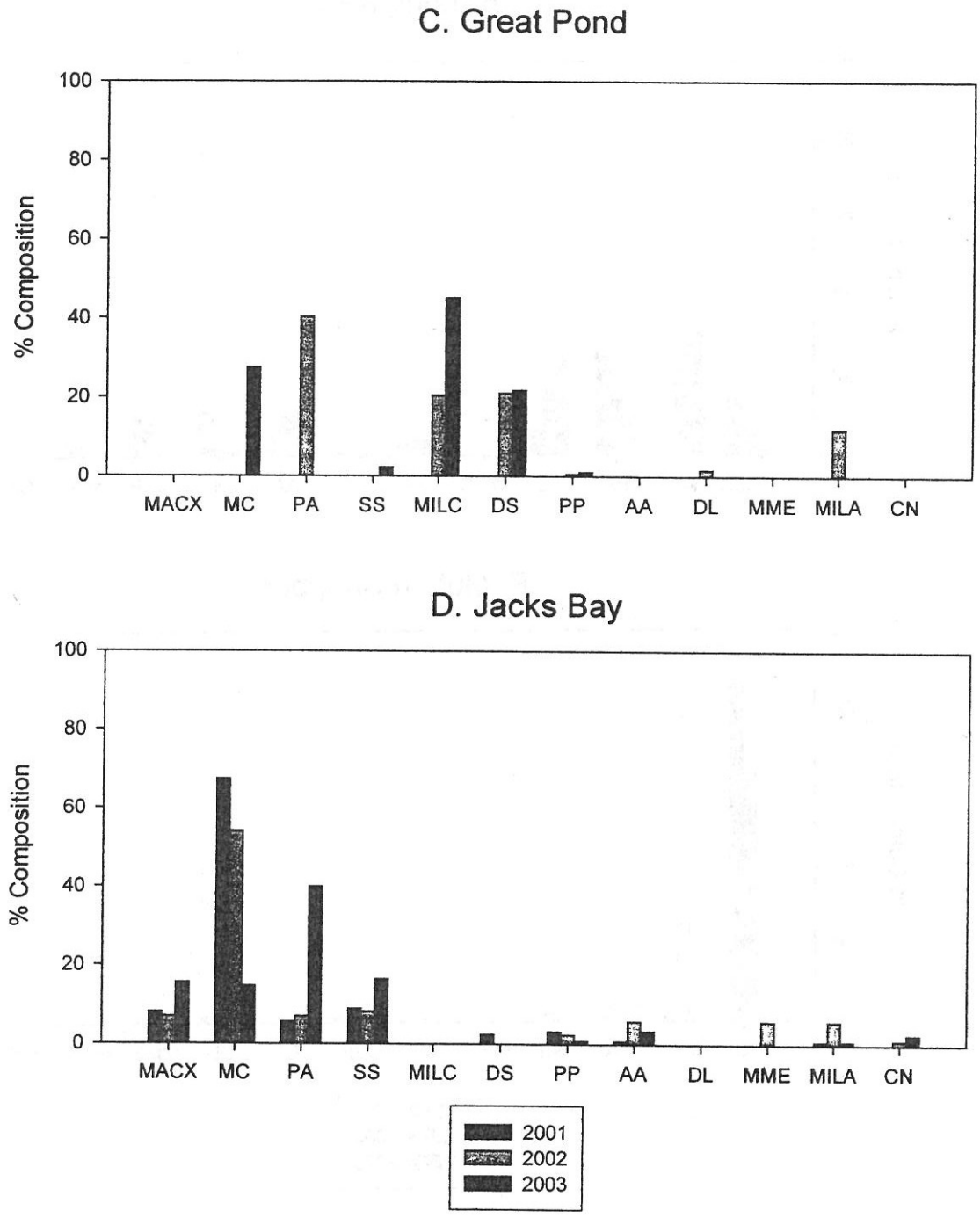


Fig. 4C, D Percent of species composition of living coral cover of the most common coral species at C. Great Pond and D. Jacks Bay for years 2001, 2002, and 2003.
MACX *Montastraea annularis* complex; MC *Montastraea cavernosa*; PA *Porites astreoides*; SS *Siderastrea siderea*; MILC *Millepora complanata*; DS *Diploria strigosa*; PP *Porites porites*; AA *Agaricia agaricites*; DL *Diploria labyrinthiformis*; MME *Meandrina meandrites*; MILA *Millepora alcicornis*; CN *Colpophylia natans*.
n = 6 transects for all samplings. Sampling of GP began in 2002.

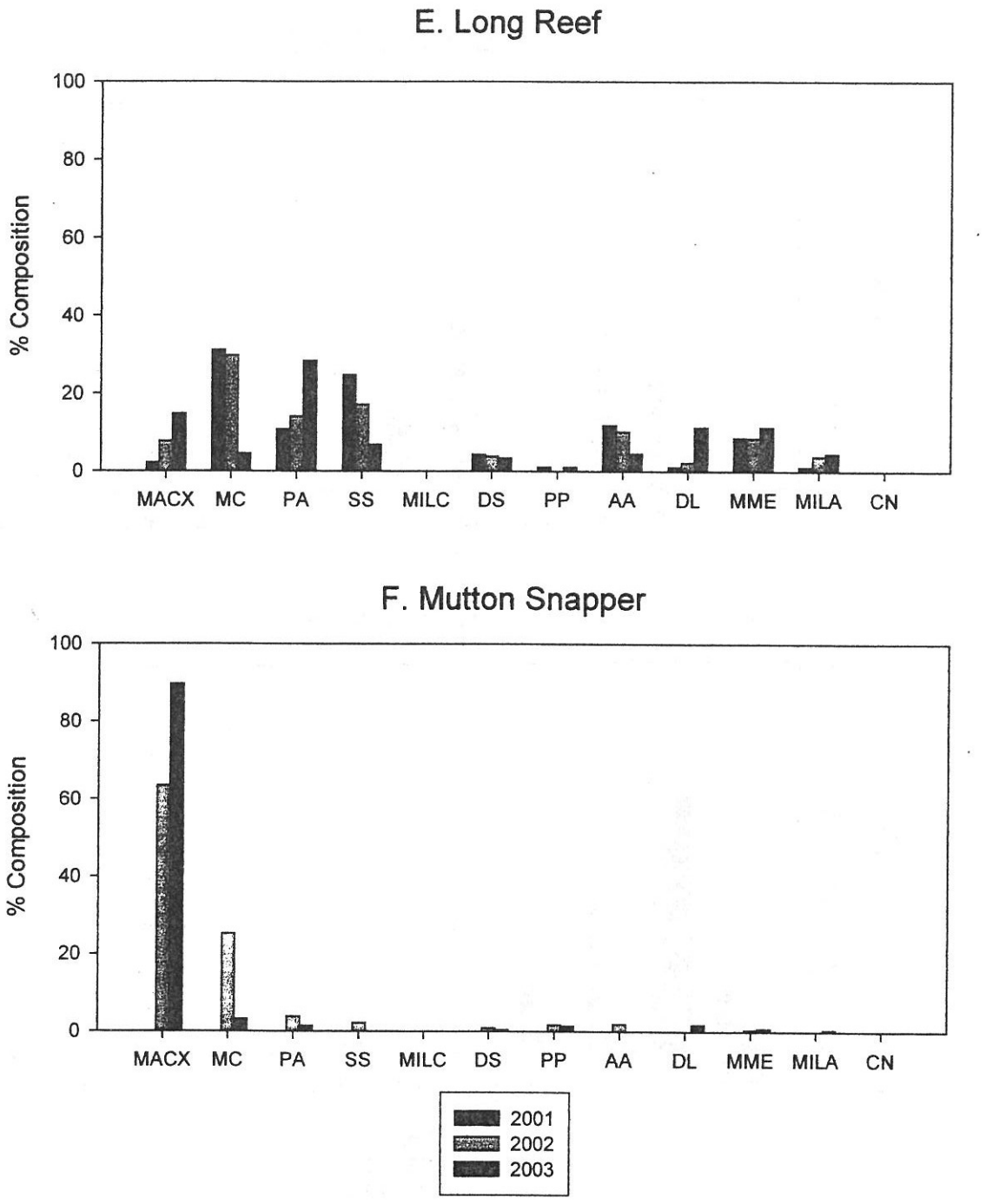


Fig. 4E, F Percent of species composition of living coral cover of the most common coral species at E. Long Reef and F. Mutton Snapper for years 2001, 2002, and 2003.
MACX *Montastraea annularis* complex; MC *Montastraea cavernosa*; PA *Porites astreoides*; SS *Siderastrea siderea*; MILC *Millepora complanata*; DS *Diploria strigosa*; PP *Porites porites*; AA *Agaricia agaricites*; DL *Diploria labyrinthiformis*; MME *Meandrina meandrites*; MILA *Millepora alcicornis*; CN *Colpophylia natans*.
Sampling of MS began in 2002.
n = 6 transects, except for n = 5 transects at MS in 2002.

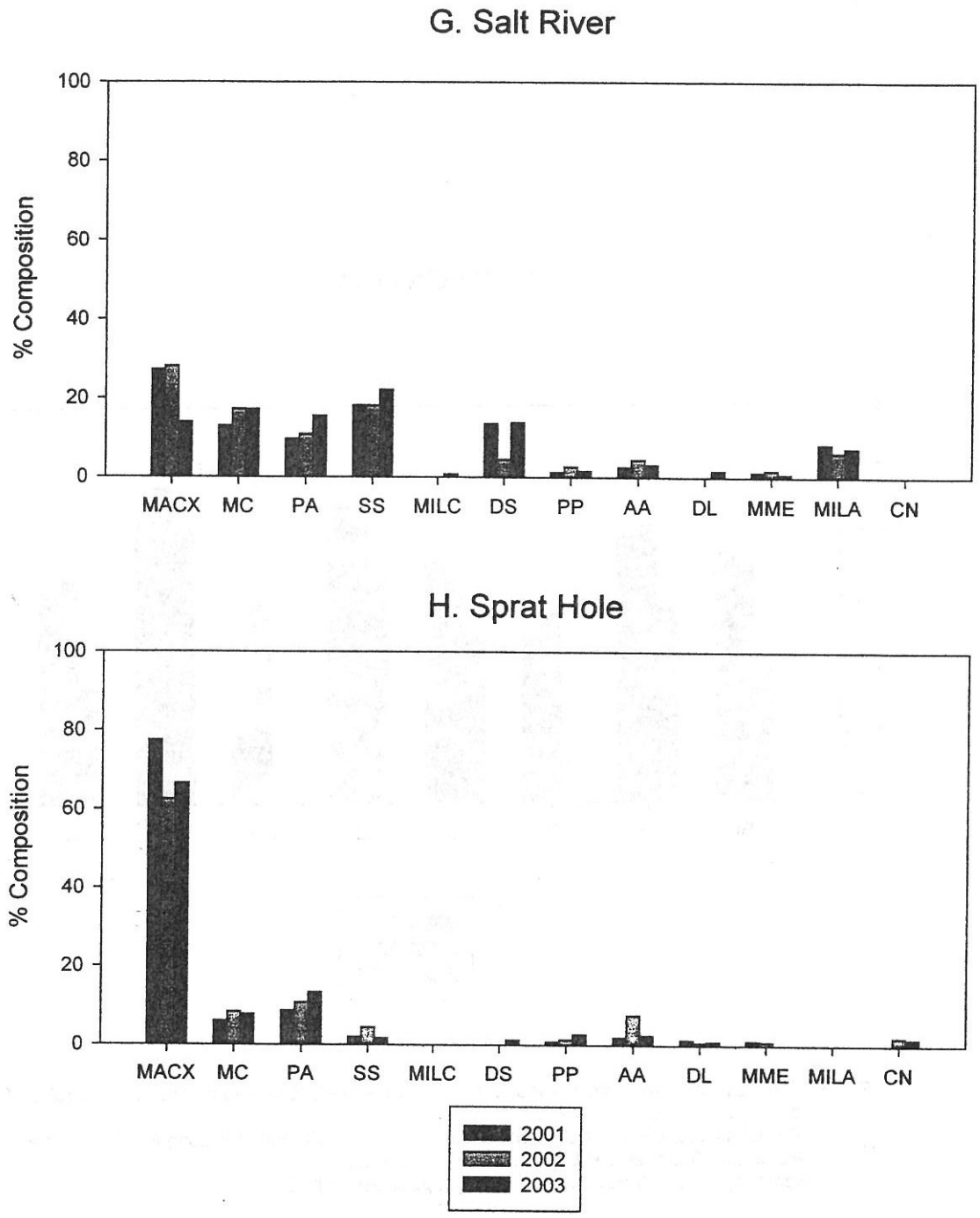


Fig. 4G, H Percent of species composition of living coral cover of the most common coral species at G. Salt River and H. Sprat Hole for years 2001, 2002, and 2003.
MACX *Montastraea annularis* complex; MC *Montastraea cavernosa*; PA *Porites astreoides*; SS *Siderastrea siderea*; MILC *Millepora complanata*; DS *Diploria strigosa*; PP *Porites porites*; AA *Agaricia agaricites*; DL *Diploria labyrinthiformis*; MME *Meandrina meandrites*; MILA *Millepora alcicornis*; CN *Colpophylia natans*.
n = 6 transects for all samplings, except n = 5 transects for SH in 2002.

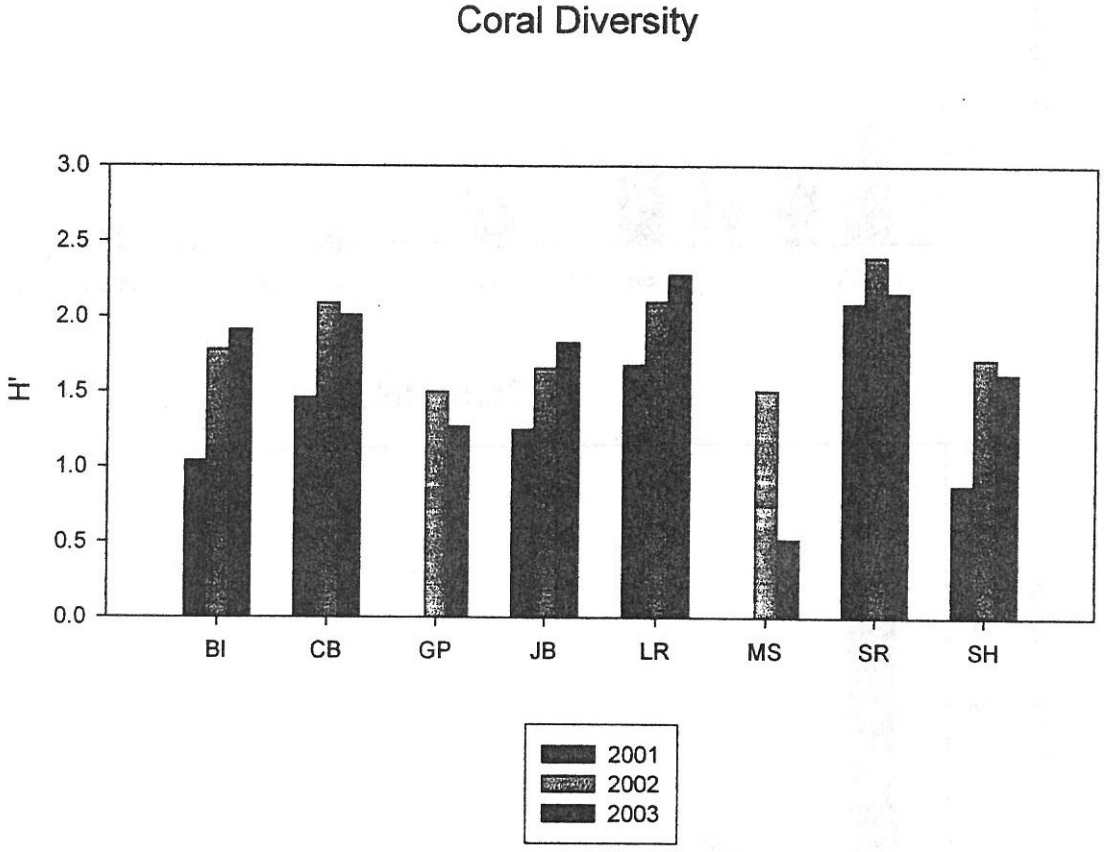


Fig. 5 Shannon - Weaver Diversity Index (H') for corals at eight monitored sites in St. Croix, USVI for years 2001, 2002, and 2003.
BI Buck Island; CB Cane Bay; GP Great Pond; JB Jacks Bay; LR Long Reef/Eagle Ray; MS Mutton Snapper; SR Salt River; SH Sprat Hole
Sampling for Great Pond and Mutton Snapper began in 2002.

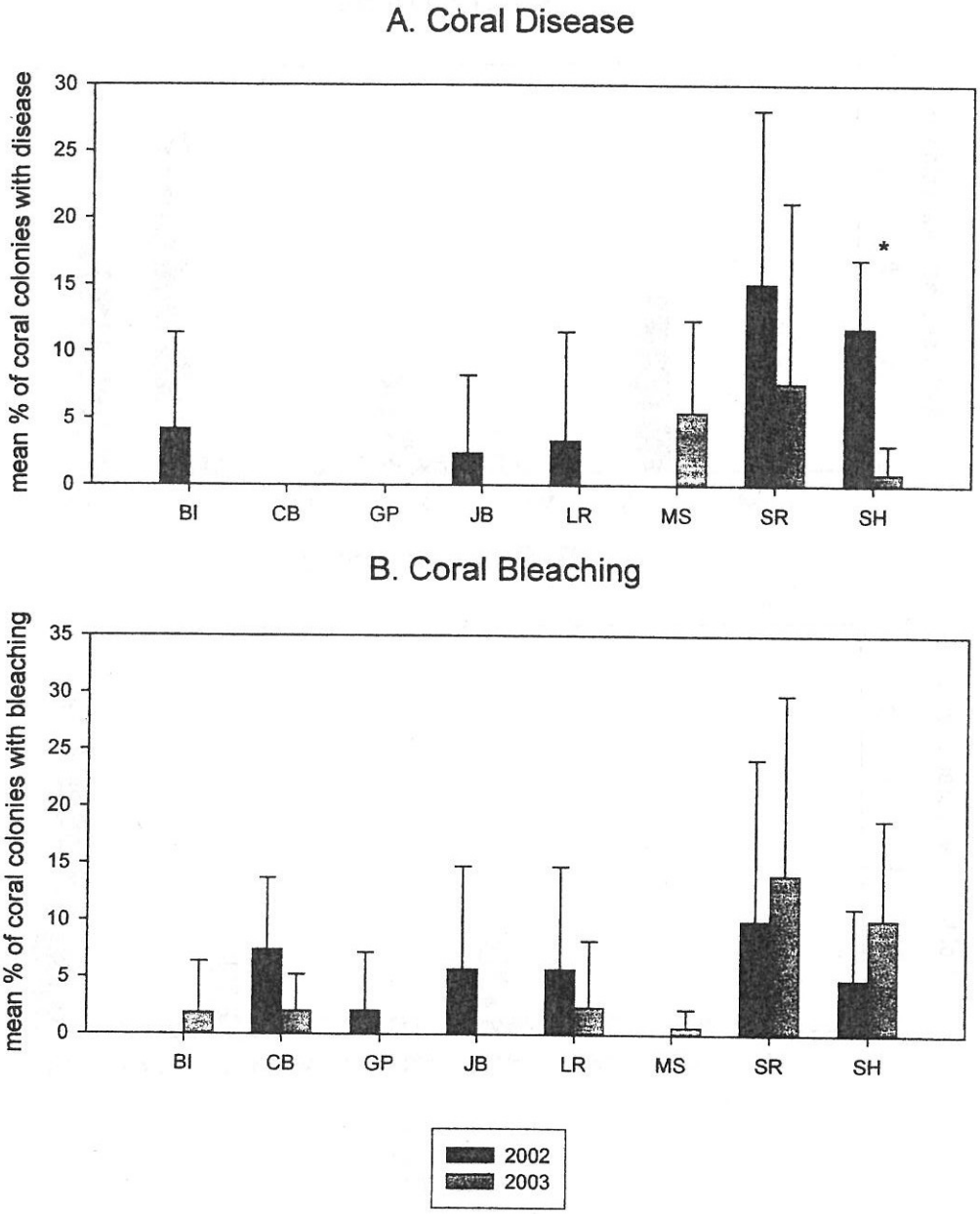


Fig. 6 Mean percentage of A. colonies with disease and B. colonies with bleaching of all coral colonies sampled at each monitoring site. Percentage calculated by dividing the number of diseased and bleached colonies on each transect by the total number of colonies sampled on each transect for each site. BI Buck Island; CB Cane Bay; GP Great Pond; JB Jacks Bay; LR Long Reef/Eagle Ray; MS Mutton Snapper; SR Salt River; SH Sprat Hole
n = 6 transects for all sites, except for n = 3 transects for BI in 2001 and 2002 and n = 5 transects for MS in 2002. Asterisk denotes significant difference: * = $P < 0.01$

Percent Cover by Transect

Coral Species	T1	T2	T3	T4	T5	T 6	Mean % Cover
Acropora cervicornis (AC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acropora palmata (AP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acropora prolifera (APR) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia agaricites (AA) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia fragilis (AF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia grahamae (AG) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia humilis (AH) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia lamarcki (AL) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia tenuifolia (AT) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia undata (AU) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia species (AGSP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Colpophyllia natans (CN) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dendrogyra cylindrus (DCY) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diploria clivosa (DC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diploria labyrinthiformis (DL) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diploria strigosa (DS) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dichocoenia stokesii (DSO) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Eusmilia fastigiata (EF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Favia fragum (FF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Isophyllia sinuosa (IS) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Isopyhyllastrea rigida (IR) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Leptoseris cucullata (LC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manicina areolata (MAR) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis decactis (MD) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis formosa (MAFO) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis mirabilis (MM) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Meandrina meandrites (MME) - coral	0.83	0.91	0.87	0.91	0.95	0.87	0.89
Montastraea annularis (MA) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Montastraea annularis complex (MACX)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Montastraea cavernosa (MC) - coral	1.25	1.36	1.30	1.36	1.43	1.30	1.34
Montastraea faveolata (MFAV) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Montastraea franksi (MFRA) - coral	37.92	41.36	39.57	41.36	43.33	39.57	40.52
Montastraea species (MSPP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mussa angulosa (MAN) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia aliciae (MAL) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia danaana (MDA) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia lamarckiana (ML) - coral	0.42	0.45	0.43	0.45	0.48	0.43	0.45
Mycetophyllia ferox (MF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia species (MYSP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Oculina diffusa (OD) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites astreoides (PA) - coral	0.83	0.91	0.87	0.91	0.95	0.87	0.89
Porites branneri (PB) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites divaricata (PD) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites furcata (PF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites porites (PP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites branching species (PBSP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scolymia cubensis (SC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scolymia lacera (SL) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scolymia species (SCSP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Siderastrea radians (SR) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Siderastrea siderea (SS) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Siderastrea species (SSPP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Solenastrea bournoni (SB) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Solenastrea hyades (SH) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stephanocoenia michelinii (SM) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tubastraea aurea (TA) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Millepora alcicornis (MILA) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Millepora complanata (MILC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Millepora squarrosa (MILS) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coral juvenile (CORJU) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hard Coral, unknown spp. (CORAL) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Percent Cover by Transect

Coral Species	T1	T2	T3	T4	T5	T 6	Mean % Cover
Acropora cervicornis (AC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acropora palmata (AP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acropora prolifera (APR) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia agaricites (AA) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia fragilis (AF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia grahamae (AG) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia humilis (AH) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia lamarcki (AL) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia tenuifolia (AT) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia undata (AU) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia species (AGSP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Colpophyllia natans (CN) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dendrogyra cylindrus (DCY) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diploria clivosa (DC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diploria labyrinthiformis (DL) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diploria strigosa (DS) - coral	0.91	1.02	0.91	0.89	0.87	0.95	0.92
Dichocoenia stokesii (DSO) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Eusmilia fastigiata (EF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Favia fragum (FF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Isophyllia sinuosa (IS) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Isopyhyllastrea rigida (IR) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Leptoseris cucullata (LC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manicina areolata (MAR) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis decactis (MD) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis formosa (MAFO) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis mirabilis (MM) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Meandrina meandrites (MME) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Montastraea annularis (MA) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Montastraea annularis complex (MACX)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Montastraea cavernosa (MC) - coral	0.91	1.02	0.91	0.89	0.87	0.95	0.92
Montastraea faveolata (MFAV) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Montastraea franksi (MFRA) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Montastraea species (MSPP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mussa angulosa (MAN) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia aliciae (MAL) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia danaana (MDA) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia lamarckiana (ML) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia ferox (MF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia species (MYSP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Oculina diffusa (OD) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites astreoides (PA) - coral	4.55	5.08	4.55	4.44	4.35	4.76	4.62
Porites branneri (PB) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites divaricata (PD) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites furcata (PF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites porites (PP) - coral	0.91	1.02	0.91	0.89	0.87	0.95	0.92
Porites branching species (PBSP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scolymia cubensis (SC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scolymia lacera (SL) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scolymia species (SCSP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Siderastrea radians (SR) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Siderastrea siderea (SS) - coral	1.82	2.03	1.82	1.78	1.74	1.90	1.85
Siderastrea species (SSPP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Solenastrea bournoni (SB) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Solenastrea hyades (SH) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stephanocoenia michelinii (SM) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tubastraea aurea (TA) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Millepora alcicornis (MILA) - coral	0.45	0.51	0.45	0.44	0.43	0.48	0.46
Millepora complanata (MILC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Millepora squarrosa (MILS) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coral juvenile (CORJU) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hard Coral, unknown spp. (CORAL) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Percent Cover by Transect

Coral Species	T1	T2	T3	T4	T5	T 6	Mean % Cover
Acropora cervicornis (AC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acropora palmata (AP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acropora prolifera (APR) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia agaricites (AA) - coral	2.61	2.73	2.50	2.87	2.86	2.86	2.74
Agaricia fragilis (AF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia grahamae (AG) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia humilis (AH) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia lamarcki (AL) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia tenuifolia (AT) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia undata (AU) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia species (AGSP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Colpophyllia natans (CN) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dendrogyra cylindrus (DCY) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diploria clivosa (DC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diploria labyrinthiformis (DL) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diploria strigosa (DS) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dichocoenia stokesii (DSO) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Eusmilia fastigiata (EF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Favia fragum (FF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Isophyllia sinuosa (IS) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Isopyhyllastrea rigida (IR) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Leptoseris cucullata (LC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manicina areolata (MAR) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis decactis (MD) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis formosa (MAFO) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis mirabilis (MM) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Meandrina meandrites (MME) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Montastraea annularis (MA) - coral	16.09	16.82	15.42	17.70	17.62	17.62	16.88
Montastraea annularis complex (MACX)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Montastraea cavernosa (MC) - coral	2.17	2.27	2.08	2.39	2.38	2.38	2.28
Montastraea faveolata (MFAV) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Montastraea franksi (MFRA) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Montastraea species (MSPP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mussa angulosa (MAN) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia aliciae (MAL) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia danaana (MDA) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia lamarckiana (ML) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia ferox (MF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia species (MYSP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Oculina diffusa (OD) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites astreoides (PA) - coral	3.91	4.09	3.75	4.31	4.29	4.29	4.11
Porites branneri (PB) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites divaricata (PD) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites furcata (PF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites porites (PP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites branching species (PBSP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scolymia cubensis (SC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scolymia lacera (SL) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scolymia species (SCSP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Siderastrea radians (SR) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Siderastrea siderea (SS) - coral	2.17	2.27	2.08	2.39	2.38	2.38	2.28
Siderastrea species (SSPP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Solenastrea bournoni (SB) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Solenastrea hyades (SH) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stephanocoenia michelinii (SM) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tubastraea aurea (TA) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Millepora alcicornis (MILA) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Millepora complanata (MILC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Millepora squarrosa (MILS) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coral juvenile (CORJU) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hard Coral, unknown spp. (CORAL) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Percent Cover by Transect

Coral Species	T1	T2	T3	T4	T5	T 6	Mean % Cover
Acropora cervicornis (AC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acropora palmata (AP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acropora prolifera (APR) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia agaricites (AA) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia fragilis (AF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia grahamae (AG) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia humilis (AH) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia lamarcki (AL) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia tenuifolia (AT) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia undata (AU) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia species (AGSP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Colpophyllia natans (CN) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dendrogyra cylindrus (DCY) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diploria clivosa (DC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diploria labyrinthiformis (DL) - coral	0.51	0.43	0.44	0.46	0.46	0.53	0.47
Diploria strigosa (DS) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dichocoenia stokesii (DSO) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Eusmilia fastigiata (EF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Favia fragum (FF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Isophyllia sinuosa (IS) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Isopyhyllastrea rigida (IR) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Leptoseris cucullata (LC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manicina areolata (MAR) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis decactis (MD) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis formosa (MAFO) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis mirabilis (MM) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Meandrina meandrites (MME) - coral	1.01	0.85	0.88	0.91	0.91	1.05	0.94
Montastraea annularis (MA) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Montastraea annularis complex (MACX)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Montastraea cavernosa (MC) - coral	0.51	0.43	0.44	0.46	0.46	0.53	0.47
Montastraea faveolata (MFAV) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Montastraea franksi (MFRA) - coral	1.01	0.85	0.88	0.91	0.91	1.05	0.94
Montastraea species (MSPP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mussa angulosa (MAN) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia aliciae (MAL) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia danaana (MDA) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia lamarckiana (ML) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia ferox (MF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia species (MYSP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Oculina diffusa (OD) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites astreoides (PA) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites branneri (PB) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites divaricata (PD) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites furcata (PF) - coral	1.01	0.85	0.88	0.91	0.91	1.05	0.94
Porites porites (PP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites branching species (PBSP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scolymia cubensis (SC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scolymia lacera (SL) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scolymia species (SCSP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Siderastrea radians (SR) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Siderastrea siderea (SS) - coral	1.52	1.28	1.33	1.37	1.37	1.58	1.41
Siderastrea species (SSPP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Solenastrea bournoni (SB) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Solenastrea hyades (SH) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stephanocoenia michelinii (SM) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tubastraea aurea (TA) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Millepora alcicornis (MILA) - coral	0.51	0.43	0.44	0.46	0.46	0.53	0.47
Millepora complanata (MILC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Millepora squarrosa (MILS) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coral juvenile (CORJU) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hard Coral, unknown spp. (CORAL) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Percent Cover by Transect

Coral Species	T1	T2	T3	T4	T5	T 6	Mean % Cover
Acropora cervicornis (AC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acropora palmata (AP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acropora prolifera (APR) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia agaricites (AA) - coral	0.70	0.65	0.72	0.78	0.73	0.68	0.71
Agaricia fragilis (AF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia grahamae (AG) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia humilis (AH) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia lamarcki (AL) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia tenuifolia (AT) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia undata (AU) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia species (AGSP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Colpophyllia natans (CN) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dendrogyra cylindrus (DCY) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diploria clivosa (DC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diploria labyrinthiformis (DL) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diploria strigosa (DS) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dichocoenia stokesii (DSO) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Eusmilia fastigiata (EF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Favia fragum (FF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Isophyllia sinuosa (IS) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Isopyhyllastrea rigida (IR) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Leptoseris cucullata (LC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manicina areolata (MAR) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis decactis (MD) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis formosa (MAFO) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis mirabilis (MM) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Meandrina meandrites (MME) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Montastraea annularis (MA) - coral	3.48	3.26	3.60	3.92	3.64	3.40	3.55
Montastraea annularis complex (MACX)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Montastraea cavernosa (MC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Montastraea faveolata (MFAV) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Montastraea franksi (MFRA) - coral	0.35	0.33	0.36	0.39	0.36	0.34	0.35
Montastraea species (MSPP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mussa angulosa (MAN) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia aliciae (MAL) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia danaana (MDA) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia lamarckiana (ML) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia ferox (MF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia species (MYSP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Oculina diffusa (OD) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites astreoides (PA) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites branneri (PB) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites divaricata (PD) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites furcata (PF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites porites (PP) - coral	0.35	0.33	0.36	0.39	0.36	0.34	0.35
Porites branching species (PBSP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scolymia cubensis (SC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scolymia lacera (SL) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scolymia species (SCSP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Siderastrea radians (SR) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Siderastrea siderea (SS) - coral	1.05	0.98	1.08	1.18	1.09	1.02	1.06
Siderastrea species (SSPP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Solenastrea bournoni (SB) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Solenastrea hyades (SH) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stephanocoenia michelinii (SM) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tubastraea aurea (TA) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Millepora alcicornis (MILA) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Millepora complanata (MILC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Millepora squarrosa (MILS) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coral juvenile (CORJU) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hard Coral, unknown spp. (CORAL) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Percent Cover by Transect

Coral Species	T1	T2	T3	T4	T5	T 6	Mean % Cover
Acropora cervicornis (AC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acropora palmata (AP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acropora prolifera (APR) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia agaricites (AA) - coral	0.42	0.42	0.49	0.44	0.49	0.48	0.46
Agaricia fragilis (AF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia grahamae (AG) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia humilis (AH) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia lamarcki (AL) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia tenuifolia (AT) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia undata (AU) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia species (AGSP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Colpophyllia natans (CN) - coral	2.12	2.09	2.45	2.20	2.43	2.42	2.28
Dendrogyra cylindrus (DCY) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diploria clivosa (DC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diploria labyrinthiformis (DL) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diploria strigosa (DS) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dichocoenia stokesii (DSO) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Eusmilia fastigiata (EF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Favia fragum (FF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Isophyllia sinuosa (IS) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Isopyhyllastrea rigida (IR) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Leptoseris cucullata (LC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manicina areolata (MAR) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis decactis (MD) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis formosa (MAFO) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis mirabilis (MM) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Meandrina meandrites (MME) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Montastraea annularis (MA) - coral	2.12	2.09	2.45	2.20	2.43	2.42	2.28
Montastraea annularis complex (MACX)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Montastraea cavernosa (MC) - coral	1.69	1.67	1.96	1.76	1.94	1.93	1.83
Montastraea faveolata (MFAV) - coral	1.27	1.26	1.47	1.32	1.46	1.45	1.37
Montastraea franksi (MFRA) - coral	2.12	2.09	2.45	2.20	2.43	2.42	2.28
Montastraea species (MSPP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mussa angulosa (MAN) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia aliciae (MAL) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia danaana (MDA) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia lamarckiana (ML) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia ferox (MF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia species (MYSP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Oculina diffusa (OD) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites astreoides (PA) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites branneri (PB) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites divaricata (PD) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites furcata (PF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites porites (PP) - coral	1.27	1.26	1.47	1.32	1.46	1.45	1.37
Porites branching species (PBSP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scolymia cubensis (SC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scolymia lacera (SL) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scolymia species (SCSP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Siderastrea radians (SR) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Siderastrea siderea (SS) - coral	0.42	0.42	0.49	0.44	0.49	0.48	0.46
Siderastrea species (SSPP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Solenastrea bournoni (SB) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Solenastrea hyades (SH) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stephanocoenia michelinii (SM) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tubastraea aurea (TA) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Millepora alcicornis (MILA) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Millepora complanata (MILC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Millepora squarrosa (MILS) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coral juvenile (CORJU) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hard Coral, unknown spp. (CORAL) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Percent Cover by Transect

Coral Species	T1	T2	T3	T4	T5	T 6	Mean % Cover
Acropora cervicornis (AC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acropora palmata (AP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acropora prolifera (APR) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia agaricites (AA) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia fragilis (AF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia grahamae (AG) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia humilis (AH) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia lamarcki (AL) - coral	0.71	0.75	0.73	0.75	0.75	0.70	0.73
Agaricia tenuifolia (AT) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia undata (AU) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia species (AGSP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Colpophyllia natans (CN) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dendrogyra cylindrus (DCY) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diploria clivosa (DC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diploria labyrinthiformis (DL) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diploria strigosa (DS) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dichocoenia stokesii (DSO) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Eusmilia fastigiata (EF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Favia fragum (FF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Isophyllia sinuosa (IS) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Isopyhyllastrea rigida (IR) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Leptoseris cucullata (LC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manicina areolata (MAR) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis decactis (MD) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis formosa (MAFO) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis mirabilis (MM) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Meandrina meandrites (MME) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Montastraea annularis (MA) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Montastraea annularis complex (MACX)	0.71	0.75	0.73	0.75	0.75	0.70	0.73
Montastraea cavernosa (MC) - coral	4.29	4.48	4.36	4.49	4.48	4.23	4.39
Montastraea faveolata (MFAV) - coral	2.86	2.99	2.91	3.00	2.99	2.82	2.92
Montastraea franksi (MFRA) - coral	22.14	23.13	22.55	23.22	23.13	21.83	22.67
Montastraea species (MSPP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mussa angulosa (MAN) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia aliciae (MAL) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia danaana (MDA) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia lamarckiana (ML) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia ferox (MF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia species (MYSP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Oculina diffusa (OD) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites astreoides (PA) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites branneri (PB) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites divaricata (PD) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites furcata (PF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites porites (PP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites branching species (PBSP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scolymia cubensis (SC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scolymia lacera (SL) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scolymia species (SCSP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Siderastrea radians (SR) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Siderastrea siderea (SS) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Siderastrea species (SSPP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Solenastrea bournoni (SB) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Solenastrea hyades (SH) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stephanocoenia michelinii (SM) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tubastraea aurea (TA) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Millepora alcicornis (MILA) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Millepora complanata (MILC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Millepora squarrosa (MILS) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coral juvenile (CORJU) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hard Coral, unknown spp. (CORAL) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Percent Cover by Transect

Coral Species	T1	T2	T3	T4	T5	T 6	Mean % Cover
Acropora cervicornis (AC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acropora palmata (AP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acropora prolifera (APR) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia agaricites (AA) - coral	0.48	0.50	0.50	0.45	0.47	0.46	0.48
Agaricia fragilis (AF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia grahamae (AG) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia humilis (AH) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia lamarcki (AL) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia tenuifolia (AT) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia undata (AU) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia species (AGSP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Colpophyllia natans (CN) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dendrogyra cylindrus (DCY) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diploria clivosa (DC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diploria labyrinthiformis (DL) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diploria strigosa (DS) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dichocoenia stokesii (DSO) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Eusmilia fastigiata (EF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Favia fragum (FF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Isophyllia sinuosa (IS) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Isopyhyllastrea rigida (IR) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Leptoseris cucullata (LC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manicina areolata (MAR) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis decactis (MD) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis formosa (MAFO) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis mirabilis (MM) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Meandrina meandrites (MME) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Montastraea annularis (MA) - coral	1.44	1.51	1.51	1.35	1.40	1.38	1.43
Montastraea annularis complex (MACX)	0.96	1.01	1.01	0.90	0.93	0.92	0.95
Montastraea cavernosa (MC) - coral	2.39	2.51	2.51	2.25	2.33	2.29	2.38
Montastraea faveolata (MFAV) - coral	7.66	8.04	8.04	7.21	7.44	7.34	7.62
Montastraea franksi (MFRA) - coral	25.84	27.14	27.14	24.32	25.12	24.77	25.72
Montastraea species (MSPP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mussa angulosa (MAN) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia aliciae (MAL) - coral	1.44	1.51	1.51	1.35	1.40	1.38	1.43
Mycetophyllia danaana (MDA) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia lamarckiana (ML) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia ferox (MF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia species (MYSP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Oculina diffusa (OD) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites astreoides (PA) - coral	4.78	5.03	5.03	4.50	4.65	4.59	4.76
Porites branneri (PB) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites divaricata (PD) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites furcata (PF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites porites (PP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites branching species (PBSP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scolymia cubensis (SC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scolymia lacera (SL) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scolymia species (SCSP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Siderastrea radians (SR) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Siderastrea siderea (SS) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Siderastrea species (SSPP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Solenastrea bournoni (SB) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Solenastrea hyades (SH) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stephanocoenia michelinii (SM) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tubastraea aurea (TA) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Millepora alcicornis (MILA) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Millepora complanata (MILC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Millepora squarrosa (MILS) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coral juvenile (CORJU) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hard Coral, unknown spp. (CORAL) - coral	1.44	1.51	1.51	1.35	1.40	1.38	1.43

Percent Cover by Transect

Coral Species	T1	T2	T3	T4	T5	T 6	Mean % Cover
Acropora cervicornis (AC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acropora palmata (AP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acropora prolifera (APR) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia agaricites (AA) - coral	1.46	1.35	1.44	1.28	1.55	1.52	1.43
Agaricia fragilis (AF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia grahamae (AG) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia humilis (AH) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia lamarcki (AL) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia tenuifolia (AT) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia undata (AU) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia species (AGSP) - coral	1.95	1.79	1.91	1.70	2.06	2.02	1.91
Colpophyllia natans (CN) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dendrogyra cylindrus (DCY) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diploria clivosa (DC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diploria labyrinthiformis (DL) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diploria strigosa (DS) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dichocoenia stokesii (DSO) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Eusmilia fastigiata (EF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Favia fragum (FF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Isophyllia sinuosa (IS) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Isopyhyllastrea rigida (IR) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Leptoseris cucullata (LC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manicina areolata (MAR) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis decactis (MD) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis formosa (MAFO) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis mirabilis (MM) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Meandrina meandrites (MME) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Montastraea annularis (MA) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Montastraea annularis complex (MACX)	6.34	5.83	6.22	5.53	6.70	6.57	6.20
Montastraea cavernosa (MC) - coral	3.41	3.14	3.35	2.98	3.61	3.54	3.34
Montastraea faveolata (MFAV) - coral	5.37	4.93	5.26	4.68	5.67	5.56	5.24
Montastraea franksi (MFRA) - coral	7.80	7.17	7.66	6.81	8.25	8.08	7.63
Montastraea species (MSPP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mussa angulosa (MAN) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia aliciae (MAL) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia danaana (MDA) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia lamarckiana (ML) - coral	0.49	0.45	0.48	0.43	0.52	0.51	0.48
Mycetophyllia ferox (MF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia species (MYSP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Oculina diffusa (OD) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites astreoides (PA) - coral	0.98	0.90	0.96	0.85	1.03	1.01	0.95
Porites branneri (PB) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites divaricata (PD) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites furcata (PF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites porites (PP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites branching species (PBSP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scolymia cubensis (SC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scolymia lacera (SL) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scolymia species (SCSP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Siderastrea radians (SR) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Siderastrea siderea (SS) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Siderastrea species (SSPP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Solenastrea bournoni (SB) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Solenastrea hyades (SH) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stephanocoenia michelinii (SM) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tubastraea aurea (TA) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Millepora alcicornis (MILA) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Millepora complanata (MILC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Millepora squarrosa (MILS) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coral juvenile (CORJU) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hard Coral, unknown spp. (CORAL) - coral	0.98	0.90	0.96	0.85	1.03	1.01	0.95

Appendix II:
Summary of non-coral video data

St. Croix

Mean Percent Cover for all Sites

Categories	Buck Island	Cane Bay	Great Pond	Jacks Bay	Long Reef	Mutton Snapper	Salt River	Sprat Hole
Gorgonians (GO) - go	5.62	1.47	0.00	0.00	2.55	0.76	2.64	0.73
Briareum asbestinum (BRIA) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Erythropodium caribaeorum (ERYTH) - go	0.00	0.00	0.00	0.26	0.00	0.00	0.00	0.00
Encrusting Gorgonian (ENGO) - go	0.00	0.00	0.00	0.28	0.00	0.00	0.00	0.00
Soft Coral - Sea Fan (FAN) - go	0.00	0.22	0.00	0.00	0.52	0.00	0.15	0.00
Soft Coral - Plume form (PLUME) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Soft Coral - Rod form (ROD) - go	0.00	0.00	0.00	1.56	0.00	0.00	0.00	0.00
Soft Coral - Whip form (WHIP) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Clionia delitrix (CLIO) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ball Sponge (BALL) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrel/Vase Sponge (BASP) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Boring Sponge (BOSP) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Encrusting Sponge (ENSP) - spo	0.00	0.00	0.00	0.48	0.00	0.00	0.00	0.00
Rope Sponge (ROPE) - spo	0.00	0.00	0.00	0.17	0.00	0.00	0.00	0.00
Tube Sponge (TUBE) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sponge (SPO) - spo	1.14	2.12	0.22	1.68	3.63	0.36	2.84	2.54
Palythoa caribaeorum (PALY) - zo	0.00	0.00	0.15	0.05	0.00	0.00	0.60	0.00
Zoanthus sociatus (ZOSO) - zo	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zoanthids (ZO) - zo	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Anemone (ANEM) - other	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Corallimorpharians (CMOR) -other	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Macro Algae (MACA) - maca	12.51	3.72	0.29	13.10	5.46	1.75	2.56	11.27
Amphiroa spp. (AMPH) - maca[calc]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cladophora spp. (CLAD) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dictyota spp. (DICT) - maca	1.28	0.00	0.00	33.12	0.00	1.34	0.00	0.00
Halimeda spp. (HALI) - maca[calc]	0.00	0.00	0.16	0.83	0.00	0.00	0.00	0.00
Microdictyon spp. (MICRO) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Liagora spp. (LIAG) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lobophora variegata (LOBO) - maca	0.00	0.00	0.00	0.00	0.00	34.05	0.00	0.00
Sargassum spp. (SARG) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Schizothrix spp. (SCHIZ) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coralline Algae (CALG) - calg	0.00	0.00	27.59	0.00	0.00	0.00	0.00	0.00
Dead coral w/ turf algae (DCA) - dca	55.71	65.78	57.37	40.80	81.19	21.68	81.80	54.97
Boulder (B)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sand/Sediment (S)	6.24	0.00	0.00	0.69	0.00	4.15	0.00	5.49
Rubble (R)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pavement (P)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Organisms (O)	0.00	0.00	0.15	0.07	0.08	0.00	0.00	0.00
Unknown (UNK)	0.00	0.00	1.30	0.00	0.00	0.00	0.00	0.00

St. Thomas

Mean Percent Cover for all Sites

Categories	Benner Bay	Black Point	Flat Cay	Seahorse Cottage	Grammanik Bank	Red Hind Bank
Gorgonians (GO) - go	0.24	0.00	0.00	0.00	0.00	0.00
Briareum asbestinum (BRIA) - go	0.00	0.00	0.00	0.00	0.00	0.00
Erythropodium caribaeorum (ERYTH) - go	0.00	2.52	0.00	0.12	0.00	0.00
Encrusting Gorgonian (ENGO) - go	0.00	0.55	0.07	0.00	0.00	0.00
Soft Coral - Sea Fan (FAN) - go	0.32	0.00	0.00	0.30	0.00	0.00
Soft Coral - Plume form (PLUME) - go	0.08	0.19	0.00	0.00	0.00	0.00
Soft Coral - Rod form (ROD) - go	0.67	0.76	0.47	0.86	0.00	0.00
Soft Coral - Whip form (WHIP) - go	0.08	0.00	0.00	0.24	0.00	0.00
Clionia delitrix (CLIO) - spo	0.00	0.00	0.00	0.00	0.00	0.00
Ball Sponge (BALL) - spo	0.32	0.00	0.00	0.19	0.00	0.00
Barrel/Vase Sponge (BASP) - spo	0.18	0.00	0.24	0.25	0.00	0.09
Boring Sponge (BOSP) - spo	0.00	0.23	0.00	0.00	0.16	0.00
Encrusting Sponge (ENSP) - spo	5.27	3.08	0.57	0.12	1.43	1.52
Rope Sponge (ROPE) - spo	0.46	2.36	4.00	1.41	0.08	0.16
Tube Sponge (TUBE) - spo	0.08	2.49	1.93	0.73	0.55	0.55
Sponge (SPO) - spo	1.96	1.77	2.15	0.19	2.87	0.49
Palythoa caribaeorum (PALY) - zo	0.67	0.00	0.00	0.06	0.00	0.00
Zoanthus sociatus (ZOSO) - zo	0.00	0.00	0.00	0.00	0.00	0.00
Zoanthids (ZO) - zo	0.00	0.00	0.00	0.00	0.00	0.00
Anemone (ANEM) - other	0.00	0.00	0.00	0.00	0.00	0.00
Corallimorpharians (CMOR) -other	0.00	0.00	0.00	0.00	0.00	0.00
Macro Algae (MACA) - maca	3.86	0.98	11.90	5.38	2.83	5.83
Amphiroa spp. (AMPH) - maca[calc]	0.00	0.00	0.00	0.00	0.00	0.00
Cladophora spp. (CLAD) - maca	0.00	0.00	0.00	0.00	0.00	0.00
Dictyota spp. (DICT) - maca	26.70	10.98	13.03	23.89	0.25	0.91
Halimeda spp. (HALI) - maca[calc]	0.00	0.00	0.00	0.00	0.00	0.00
Microdictyon spp. (MICRO) - maca	0.00	0.00	0.00	0.00	0.00	0.00
Liagora spp. (LIAG) - maca	0.00	0.00	0.00	0.00	0.00	0.00
Lobophora variegata (LOBO) - maca	0.00	0.00	7.04	13.42	26.28	29.25
Sargassum spp. (SARG) - maca	0.00	0.00	0.00	0.00	0.00	0.00
Schizothrix spp. (SCHIZ) - maca	0.00	1.88	0.00	0.00	0.00	0.00
Coralline Algae (CALG) - calg	0.00	0.00	0.00	0.00	2.65	3.98
Dead coral w/ turf algae (DCA) - dca	45.64	27.23	33.98	15.01	16.47	21.03
Boulder (B)	0.00	0.00	0.00	0.00	0.00	0.00
Sand/Sediment (S)	4.20	28.04	7.89	4.35	3.03	6.72
Rubble (R)	0.00	0.00	0.00	0.00	0.00	0.00
Pavement (P)	0.00	0.00	0.00	0.00	0.00	0.00
Other Organisms (O)	0.00	0.65	0.00	0.00	0.00	0.00
Unknown (UNK)	0.97	1.34	0.70	1.10	1.41	1.27

Percent Cover by Transect

Categories	T1	T2	T3	T4	T5	T6	Mean % Cover
Gorgonians (GO) - go	7.89	5.45	6.50	9.17	1.00	3.68	5.62
Briareum asbestinum (BRIA) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Erythropodium caribaeorum (ERYTH) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Encrusting Gorgonian (ENGO) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Soft Coral - Sea Fan (FAN) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Soft Coral - Plume form (PLUME) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Soft Coral - Rod form (ROD) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Soft Coral - Whip form (WHIP) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Clionia delitrix (CLIO) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ball Sponge (BALL) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrel/Vase Sponge (BASP) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Boring Sponge (BOSP) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Encrusting Sponge (ENSP) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rope Sponge (ROPE) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tube Sponge (TUBE) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sponge (SPO) - spo	1.58	2.27	0.50	0.42	0.50	1.58	1.14
Palythoa caribaeorum (PALY) - zo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zoanthus sociatus (ZOSO) - zo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zoanthids (ZO) - zo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Anemone (ANEM) - other	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Corallimorpharians (CMOR) -other	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Macro Algae (MACA) - maca	11.58	14.09	2.00	15.83	20.00	11.58	12.51
Amphiroa spp. (AMPH) - maca[calc]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cladophora spp. (CLAD) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dictyota spp. (DICT) - maca	2.63	4.55	0.50	0.00	0.00	0.00	1.28
Halimeda spp. (HALI) - maca[calc]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Microdictyon spp. (MICRO) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Liagora spp. (LIAG) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lobophora variegata (LOBO) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sargassum spp. (SARG) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Schizothrix spp. (SCHIZ) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coralline Algae (CALG) - calg	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dead coral w/ turf algae (DCA) - dca	55.79	36.82	59.00	49.17	63.50	70.00	55.71
Boulder (B)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sand/Sediment (S)	4.21	18.18	14.50	0.00	0.00	0.53	6.24
Rubble (R)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pavement (P)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Organisms (O)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unknown (UNK)	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Percent Cover by Transect

Categories	T1	T2	T3	T4	T5	T6	Mean % Cover
Gorgonians (GO) - go	0.43	3.64	2.86	0.91	0.00	0.96	1.47
Briareum asbestinum (BRIA) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Erythropodium caribaeorum (ERYTH) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Encrusting Gorgonian (ENGO) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Soft Coral - Sea Fan (FAN) - go	1.30	0.00	0.00	0.00	0.00	0.00	0.22
Soft Coral - Plume form (PLUME) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Soft Coral - Rod form (ROD) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Soft Coral - Whip form (WHIP) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Clionia delitrix (CLIO) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ball Sponge (BALL) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrel/Vase Sponge (BASP) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Boring Sponge (BOSP) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Encrusting Sponge (ENSP) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rope Sponge (ROPE) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tube Sponge (TUBE) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sponge (SPO) - spo	4.78	0.45	1.90	2.74	1.85	0.96	2.12
Palythoa caribaeorum (PALY) - zo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zoanthus sociatus (ZOSO) - zo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zoanthids (ZO) - zo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Anemone (ANEM) - other	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Corallimorpharians (CMOR) -other	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Macro Algae (MACA) - maca	6.52	5.45	2.38	4.11	0.00	3.85	3.72
Amphiroa spp. (AMPH) - maca[calc]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cladophora spp. (CLAD) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dictyota spp. (DICT) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Halimeda spp. (HALI) - maca[calc]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Microdictyon spp. (MICRO) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Liagora spp. (LIAG) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lobophora variegata (LOBO) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sargassum spp. (SARG) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Schizothrix spp. (SCHIZ) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coralline Algae (CALG) - calg	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dead coral w/ turf algae (DCA) - dca	73.48	56.36	59.05	52.97	77.31	75.48	65.78
Boulder (B)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sand/Sediment (S)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rubble (R)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pavement (P)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Organisms (O)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unknown (UNK)	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Percent Cover by Transect

Categories	T1	T2	T3	T4	T5	T6	Mean % Cover
Gorgonians (GO) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Briareum asbestinum (BRIA) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Erythropodium caribaeorum (ERYTH) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Encrusting Gorgonian (ENGO) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Soft Coral - Sea Fan (FAN) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Soft Coral - Plume form (PLUME) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Soft Coral - Rod form (ROD) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Soft Coral - Whip form (WHIP) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Clionia delitrix (CLIO) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ball Sponge (BALL) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrel/Vase Sponge (BASP) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Boring Sponge (BOSP) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Encrusting Sponge (ENSP) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rope Sponge (ROPE) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tube Sponge (TUBE) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sponge (SPO) - spo	0.48	0.41	0.00	0.00	0.00	0.41	0.22
Palythoa caribaeorum (PALY) - zo	0.48	0.41	0.00	0.00	0.00	0.00	0.15
Zoanthus sociatus (ZOSO) - zo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zoanthids (ZO) - zo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Anemone (ANEM) - other	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Corallimorpharians (CMOR) -other	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Macro Algae (MACA) - maca	0.48	0.82	0.00	0.00	0.00	0.41	0.29
Amphiroa spp. (AMPH) - maca[calc]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cladophora spp. (CLAD) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dictyota spp. (DICT) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Halimeda spp. (HALI) - maca[calc]	0.97	0.00	0.00	0.00	0.00	0.00	0.16
Microdictyon spp. (MICRO) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Liagora spp. (LIAG) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lobophora variegata (LOBO) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sargassum spp. (SARG) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Schizothrix spp. (SCHIZ) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coralline Algae (CALG) - calg	36.71	24.59	43.75	18.57	29.08	12.81	27.59
Dead coral w/ turf algae (DCA) - dca	44.93	61.07	45.09	66.67	55.38	71.07	57.37
Boulder (B)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sand/Sediment (S)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rubble (R)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pavement (P)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Organisms (O)	0.00	0.00	0.00	0.48	0.00	0.41	0.15
Unknown (UNK)	1.93	0.82	1.34	0.48	2.39	0.83	1.30

Percent Cover by Transect

Categories	T1	T2	T3	T4	T5	T6	mean % cover
Gorgonians (GO) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Briareum asbestinum (BRIA) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Erythropodium caribaeorum (ERYTH) - go	0.00	0.00	0.00	1.56	0.00	0.00	0.26
Encrusting Gorgonian (ENGO) - go	0.00	1.67	0.00	0.00	0.00	0.00	0.28
Soft Coral - Sea Fan (FAN) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Soft Coral - Plume form (PLUME) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Soft Coral - Rod form (ROD) - go	0.69	2.08	3.06	0.00	3.10	0.40	1.56
Soft Coral - Whip form (WHIP) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Clionia delitrix (CLIO) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ball Sponge (BALL) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrel/Vase Sponge (BASP) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Boring Sponge (BOSP) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Encrusting Sponge (ENSP) - spo	0.00	0.00	1.67	0.00	0.00	1.20	0.48
Rope Sponge (ROPE) - spo	1.03	0.00	0.00	0.00	0.00	0.00	0.17
Tube Sponge (TUBE) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sponge (SPO) - spo	2.76	1.67	1.39	1.56	0.69	2.00	1.68
Palythoa caribaeorum (PALY) - zo	0.00	0.00	0.00	0.31	0.00	0.00	0.05
Zoanthus sociatus (ZOSO) - zo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zoanthids (ZO) - zo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Anemone (ANEM) - other	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Corallimorpharians (CMOR) -other	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Macro Algae (MACA) - maca	19.66	10.83	3.33	6.56	21.03	17.20	13.10
Amphiroa spp. (AMPH) - maca[calc]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cladophora spp. (CLAD) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dictyota spp. (DICT) - maca	9.31	23.75	38.61	38.13	36.90	52.00	33.12
Halimeda spp. (HALI) - maca[calc]	0.34	0.83	0.56	2.50	0.34	0.40	0.83
Microdictyon spp. (MICRO) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Liagora spp. (LIAG) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lobophora variegata (LOBO) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sargassum spp. (SARG) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Schizothrix spp. (SCHIZ) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coralline Algae (CALG) - calg	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dead coral w/ turf algae (DCA) - dca	50.34	50.83	47.78	45.31	34.14	16.40	40.80
Boulder (B)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sand/Sediment (S)	2.07	0.00	0.83	1.25	0.00	0.00	0.69
Rubble (R)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pavement (P)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Organisms (O)	0.00	0.00	0.00	0.00	0.00	0.40	0.07
Unknown (UNK)	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Percent Cover by Transect

Categories	T1	T2	T3	T4	T5	T6	Mean % Cover
Gorgonians (GO) - go	2.08	1.70	3.04	2.38	3.26	2.86	2.55
Briareum asbestinum (BRIA) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Erythropodium caribaeorum (ERYTH) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Encrusting Gorgonian (ENGO) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Soft Coral - Sea Fan (FAN) - go	0.00	0.00	1.74	0.00	1.40	0.00	0.52
Soft Coral - Plume form (PLUME) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Soft Coral - Rod form (ROD) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Soft Coral - Whip form (WHIP) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Clionia delitrix (CLIO) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ball Sponge (BALL) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrel/Vase Sponge (BASP) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Boring Sponge (BOSP) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Encrusting Sponge (ENSP) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rope Sponge (ROPE) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tube Sponge (TUBE) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sponge (SPO) - spo	2.92	1.70	3.48	4.76	4.19	4.76	3.63
Palythoa caribaeorum (PALY) - zo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zoanthus sociatus (ZOSO) - zo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zoanthids (ZO) - zo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Anemone (ANEM) - other	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Corallimorpharians (CMOR) -other	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Macro Algae (MACA) - maca	5.00	0.85	6.09	10.00	5.58	5.24	5.46
Amphiroa spp. (AMPH) - maca[calc]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cladophora spp. (CLAD) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dictyota spp. (DICT) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Halimeda spp. (HALI) - maca[calc]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Microdictyon spp. (MICRO) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Liagora spp. (LIAG) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lobophora variegata (LOBO) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sargassum spp. (SARG) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Schizothrix spp. (SCHIZ) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coralline Algae (CALG) - calg	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dead coral w/ turf algae (DCA) - dca	83.75	89.79	76.09	70.95	83.72	82.86	81.19
Boulder (B)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sand/Sediment (S)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rubble (R)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pavement (P)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Organisms (O)	0.00	0.00	0.00	0.48	0.00	0.00	0.08
Unknown (UNK)	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Percent Cover by Transect

Categories	T1	T2	T3	T4	T5	T6	Mean % Cover
Gorgonians (GO) - go	0.42	2.27	0.43	0.00	1.43	0.00	0.76
Briareum asbestinum (BRIA) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Erythropodium caribaeorum (ERYTH) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Encrusting Gorgonian (ENGO) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Soft Coral - Sea Fan (FAN) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Soft Coral - Plume form (PLUME) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Soft Coral - Rod form (ROD) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Soft Coral - Whip form (WHIP) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Clionia delitrix (CLIO) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ball Sponge (BALL) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrel/Vase Sponge (BASP) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Boring Sponge (BOSP) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Encrusting Sponge (ENSP) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rope Sponge (ROPE) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tube Sponge (TUBE) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sponge (SPO) - spo	0.83	0.45	0.87	0.00	0.00	0.00	0.36
Palythoa caribaeorum (PALY) - zo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zoanthus sociatus (ZOSO) - zo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zoanthids (ZO) - zo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Anemone (ANEM) - other	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Corallimorpharians (CMOR) -other	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Macro Algae (MACA) - maca	4.58	3.64	0.00	0.00	0.95	1.30	1.75
Amphiroa spp. (AMPH) - maca[calc]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cladophora spp. (CLAD) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dictyota spp. (DICT) - maca	0.00	0.91	1.30	0.91	1.43	3.48	1.34
Halimeda spp. (HALI) - maca[calc]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Microdictyon spp. (MICRO) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Liagora spp. (LIAG) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lobophora variegata (LOBO) - maca	35.00	41.36	35.65	25.00	29.05	38.26	34.05
Sargassum spp. (SARG) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Schizothrix spp. (SCHIZ) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coralline Algae (CALG) - calg	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dead coral w/ turf algae (DCA) - dca	17.92	21.36	24.35	17.73	30.48	18.26	21.68
Boulder (B)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sand/Sediment (S)	0.00	0.00	13.48	0.00	11.43	0.00	4.15
Rubble (R)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pavement (P)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Organisms (O)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unknown (UNK)	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Percent Cover by Transect

Categories	T1	T2	T3	T4	T5	T6	Mean % Cover
Gorgonians (GO) - go	0.00	2.03	3.64	2.67	1.30	6.19	2.64
Briareum asbestinum (BRIA) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Erythropodium caribaeorum (ERYTH) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Encrusting Gorgonian (ENGO) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Soft Coral - Sea Fan (FAN) - go	0.00	0.00	0.00	0.89	0.00	0.00	0.15
Soft Coral - Plume form (PLUME) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Soft Coral - Rod form (ROD) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Soft Coral - Whip form (WHIP) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Clionia delitrix (CLIO) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ball Sponge (BALL) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrel/Vase Sponge (BASP) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Boring Sponge (BOSP) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Encrusting Sponge (ENSP) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rope Sponge (ROPE) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tube Sponge (TUBE) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sponge (SPO) - spo	1.82	7.61	1.82	1.33	3.04	1.43	2.84
Palythoa caribaeorum (PALY) - zo	0.00	0.00	0.00	0.00	2.17	1.43	0.60
Zoanthus sociatus (ZOSO) - zo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zoanthids (ZO) - zo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Anemone (ANEM) - other	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Corallimorpharians (CMOR) -other	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Macro Algae (MACA) - maca	0.91	1.02	5.45	6.67	1.30	0.00	2.56
Amphiroa spp. (AMPH) - maca[calc]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cladophora spp. (CLAD) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dictyota spp. (DICT) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Halimeda spp. (HALI) - maca[calc]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Microdictyon spp. (MICRO) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Liagora spp. (LIAG) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lobophora variegata (LOBO) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sargassum spp. (SARG) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Schizothrix spp. (SCHIZ) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coralline Algae (CALG) - calg	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dead coral w/ turf algae (DCA) - dca	87.73	79.70	79.55	76.44	87.39	80.00	81.80
Boulder (B)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sand/Sediment (S)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rubble (R)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pavement (P)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Organisms (O)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unknown (UNK)	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Percent Cover by Transect

Categories	T1	T2	T3	T4	T5	T6	Mean % Cover
Gorgonians (GO) - go	1.30	0.00	1.67	0.00	0.95	0.48	0.73
Briareum asbestinum (BRIA) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Erythropodium caribaeorum (ERYTH) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Encrusting Gorgonian (ENGO) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Soft Coral - Sea Fan (FAN) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Soft Coral - Plume form (PLUME) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Soft Coral - Rod form (ROD) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Soft Coral - Whip form (WHIP) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Clionia delitrix (CLIO) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ball Sponge (BALL) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrel/Vase Sponge (BASP) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Boring Sponge (BOSP) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Encrusting Sponge (ENSP) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rope Sponge (ROPE) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tube Sponge (TUBE) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sponge (SPO) - spo	1.74	3.18	1.25	2.87	3.81	2.38	2.54
Palythoa caribaeorum (PALY) - zo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zoanthus sociatus (ZOSO) - zo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zoanthids (ZO) - zo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Anemone (ANEM) - other	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Corallimorpharians (CMOR) -other	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Macro Algae (MACA) - maca	16.96	10.91	15.42	5.26	5.71	13.33	11.27
Amphiroa spp. (AMPH) - maca[calc]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cladophora spp. (CLAD) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dictyota spp. (DICT) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Halimeda spp. (HALI) - maca[calc]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Microdictyon spp. (MICRO) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Liagora spp. (LIAG) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lobophora variegata (LOBO) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sargassum spp. (SARG) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Schizothrix spp. (SCHIZ) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coralline Algae (CALG) - calg	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dead coral w/ turf algae (DCA) - dca	53.04	48.18	48.75	71.77	56.19	51.90	54.97
Boulder (B)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sand/Sediment (S)	0.00	8.18	17.08	5.74	1.90	0.00	5.49
Rubble (R)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pavement (P)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Organisms (O)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unknown (UNK)	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Percent Cover by Transect

Categories	T1	T2	T3	T4	T5	T6	Mean % Cover
Gorgonians (GO) - go	0.00	0.00	0.00	0.46	0.46	0.53	0.24
Briareum asbestinum (BRIA) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Erythropodium caribaeorum (ERYTH) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Encrusting Gorgonian (ENGO) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Soft Coral - Sea Fan (FAN) - go	0.00	0.43	0.44	0.00	0.00	1.05	0.32
Soft Coral - Plume form (PLUME) - go	0.00	0.00	0.00	0.46	0.00	0.00	0.08
Soft Coral - Rod form (ROD) - go	0.51	2.14	0.00	0.00	1.37	0.00	0.67
Soft Coral - Whip form (WHIP) - go	0.00	0.00	0.00	0.46	0.00	0.00	0.08
Clionia delitrix (CLIO) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ball Sponge (BALL) - spo	0.51	0.00	0.00	0.91	0.00	0.53	0.32
Barrel/Vase Sponge (BASP) - spo	0.00	0.00	0.00	0.00	0.00	1.05	0.18
Boring Sponge (BOSP) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Encrusting Sponge (ENSP) - spo	3.03	2.56	6.19	3.65	7.76	8.42	5.27
Rope Sponge (ROPE) - spo	0.00	0.85	0.44	0.00	0.91	0.53	0.46
Tube Sponge (TUBE) - spo	0.00	0.00	0.00	0.46	0.00	0.00	0.08
Sponge (SPO) - spo	0.00	0.00	3.54	5.48	2.74	0.00	1.96
Palythoa caribaeorum (PALY) - zo	0.00	1.28	0.88	1.83	0.00	0.00	0.67
Zoanthus sociatus (ZOSO) - zo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zoanthids (ZO) - zo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Anemone (ANEM) - other	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Corallimorpharians (CMOR) -other	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Macro Algae (MACA) - maca	0.51	2.99	3.54	10.50	0.91	4.74	3.86
Amphiroa spp. (AMPH) - maca[calc]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cladophora spp. (CLAD) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dictyota spp. (DICT) - maca	31.82	30.34	34.51	25.11	17.35	21.05	26.70
Halimeda spp. (HALI) - maca[calc]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Microdictyon spp. (MICRO) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Liagora spp. (LIAG) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lobophora variegata (LOBO) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sargassum spp. (SARG) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Schizothrix spp. (SCHIZ) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coralline Algae (CALG) - calg	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dead coral w/ turf algae (DCA) - dca	52.53	44.44	32.74	37.90	59.36	46.84	45.64
Boulder (B)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sand/Sediment (S)	4.55	1.71	7.96	6.85	4.11	0.00	4.20
Rubble (R)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pavement (P)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Organisms (O)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unknown (UNK)	0.51	1.71	0.88	1.83	0.91	0.00	0.97

Percent Cover by Transect

Categories	T1	T2	T3	T4	T5	T6	Mean % Cover
Gorgonians (GO) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Briareum asbestinum (BRIA) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Erythropodium caribaeorum (ERYTH) - go	3.14	1.30	0.36	5.10	2.18	3.06	2.52
Encrusting Gorgonian (ENGO) - go	0.00	0.00	2.16	0.78	0.36	0.00	0.55
Soft Coral - Sea Fan (FAN) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Soft Coral - Plume form (PLUME) - go	0.00	0.00	0.36	0.78	0.00	0.00	0.19
Soft Coral - Rod form (ROD) - go	0.35	0.00	0.36	3.53	0.00	0.34	0.76
Soft Coral - Whip form (WHIP) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Clionia delitrix (CLIO) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ball Sponge (BALL) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrel/Vase Sponge (BASP) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Boring Sponge (BOSP) - spo	0.35	0.00	0.00	0.00	0.00	1.02	0.23
Encrusting Sponge (ENSP) - spo	2.44	4.56	6.12	1.57	1.09	2.72	3.08
Rope Sponge (ROPE) - spo	1.05	2.93	0.36	1.57	6.91	1.36	2.36
Tube Sponge (TUBE) - spo	6.97	1.63	0.00	2.35	3.64	0.34	2.49
Sponge (SPO) - spo	0.00	1.95	1.80	2.35	1.82	2.72	1.77
Palythoa caribaeorum (PALY) - zo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zoanthus sociatus (ZOSO) - zo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zoanthids (ZO) - zo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Anemone (ANEM) - other	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Corallimorpharians (CMOR) -other	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Macro Algae (MACA) - maca	4.53	0.65	0.36	0.00	0.00	0.34	0.98
Amphiroa spp. (AMPH) - maca[calc]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cladophora spp. (CLAD) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dictyota spp. (DICT) - maca	20.21	13.03	12.23	4.31	6.91	9.18	10.98
Halimeda spp. (HALI) - maca[calc]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Microdictyon spp. (MICRO) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Liagora spp. (LIAG) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lobophora variegata (LOBO) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sargassum spp. (SARG) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Schizothrix spp. (SCHIZ) - maca	2.09	1.95	0.36	1.57	2.91	2.38	1.88
Coralline Algae (CALG) - calg	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dead coral w/ turf algae (DCA) - dca	21.25	23.13	26.98	35.69	29.45	26.87	27.23
Boulder (B)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sand/Sediment (S)	29.97	32.90	11.87	29.41	34.18	29.93	28.04
Rubble (R)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pavement (P)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Organisms (O)	0.35	0.00	2.88	0.00	0.36	0.34	0.65
Unknown (UNK)	1.39	1.63	0.72	1.18	0.73	2.38	1.34

Percent Cover by Transect

Categories	T1	T2	T3	T4	T5	T6	Mean % Cover
Gorgonians (GO) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Briareum asbestinum (BRIA) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Erythropodium caribaeorum (ERYTH) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Encrusting Gorgonian (ENGO) - go	0.00	0.00	0.00	0.44	0.00	0.00	0.07
Soft Coral - Sea Fan (FAN) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Soft Coral - Plume form (PLUME) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Soft Coral - Rod form (ROD) - go	0.42	0.00	0.00	0.44	0.00	1.93	0.47
Soft Coral - Whip form (WHIP) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Clionia delitrix (CLIO) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ball Sponge (BALL) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrel/Vase Sponge (BASP) - spo	0.00	0.00	0.00	0.00	0.00	1.45	0.24
Boring Sponge (BOSP) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Encrusting Sponge (ENSP) - spo	0.00	0.00	0.98	0.00	0.97	1.45	0.57
Rope Sponge (ROPE) - spo	1.69	3.35	2.94	9.69	4.85	1.45	4.00
Tube Sponge (TUBE) - spo	0.00	0.00	0.98	0.44	0.97	9.18	1.93
Sponge (SPO) - spo	4.24	5.86	0.49	1.32	0.49	0.48	2.15
Palythoa caribaeorum (PALY) - zo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zoanthus sociatus (ZOSO) - zo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zoanthids (ZO) - zo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Anemone (ANEM) - other	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Corallimorpharians (CMOR) -other	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Macro Algae (MACA) - maca	9.32	23.01	9.80	7.49	12.14	9.66	11.90
Amphiroa spp. (AMPH) - maca[calc]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cladophora spp. (CLAD) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dictyota spp. (DICT) - maca	1.69	4.18	32.84	12.33	18.93	8.21	13.03
Halimeda spp. (HALI) - maca[calc]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Microdictyon spp. (MICRO) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Liagora spp. (LIAG) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lobophora variegata (LOBO) - maca	16.95	4.60	3.43	6.61	8.25	2.42	7.04
Sargassum spp. (SARG) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Schizothrix spp. (SCHIZ) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coralline Algae (CALG) - calg	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dead coral w/ turf algae (DCA) - dca	54.24	39.75	23.04	27.31	27.67	31.88	33.98
Boulder (B)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sand/Sediment (S)	0.00	0.42	11.27	16.30	10.19	9.18	7.89
Rubble (R)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pavement (P)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Organisms (O)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unknown (UNK)	0.00	0.00	0.49	1.76	1.46	0.48	0.70

Percent Cover by Transect

Categories	T1	T2	T3	T4	T5	T6	Mean % Cover
Gorgonians (GO) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Briareum asbestinum (BRIA) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Erythropodium caribaeorum (ERYTH) - go	0.71	0.00	0.00	0.00	0.00	0.00	0.12
Encrusting Gorgonian (ENGO) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Soft Coral - Sea Fan (FAN) - go	0.36	0.00	0.73	0.00	0.00	0.70	0.30
Soft Coral - Plume form (PLUME) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Soft Coral - Rod form (ROD) - go	0.36	2.24	1.09	1.50	0.00	0.00	0.86
Soft Coral - Whip form (WHIP) - go	0.00	0.00	1.45	0.00	0.00	0.00	0.24
Clionia delitrix (CLIO) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ball Sponge (BALL) - spo	0.00	0.00	0.00	1.12	0.00	0.00	0.19
Barrel/Vase Sponge (BASP) - spo	0.36	0.00	0.00	1.12	0.00	0.00	0.25
Boring Sponge (BOSP) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Encrusting Sponge (ENSP) - spo	0.00	0.00	0.00	0.00	0.00	0.70	0.12
Rope Sponge (ROPE) - spo	0.36	3.36	2.18	1.12	0.75	0.70	1.41
Tube Sponge (TUBE) - spo	1.07	0.00	0.73	1.12	0.37	1.06	0.73
Sponge (SPO) - spo	0.00	0.00	0.00	0.75	0.37	0.00	0.19
Palythoa caribaeorum (PALY) - zo	0.36	0.00	0.00	0.00	0.00	0.00	0.06
Zoanthus sociatus (ZOSO) - zo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zoanthids (ZO) - zo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Anemone (ANEM) - other	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Corallimorpharians (CMOR) -other	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Macro Algae (MACA) - maca	4.64	11.94	9.82	1.50	2.99	1.41	5.38
Amphiroa spp. (AMPH) - maca[calc]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cladophora spp. (CLAD) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dictyota spp. (DICT) - maca	38.93	13.06	22.91	24.34	26.87	17.25	23.89
Halimeda spp. (HALI) - maca[calc]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Microdictyon spp. (MICRO) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Liagora spp. (LIAG) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lobophora variegata (LOBO) - maca	10.36	9.33	9.45	21.35	14.18	15.85	13.42
Sargassum spp. (SARG) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Schizothrix spp. (SCHIZ) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coralline Algae (CALG) - calg	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dead coral w/ turf algae (DCA) - dca	7.86	12.69	18.55	11.24	11.94	27.82	15.01
Boulder (B)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sand/Sediment (S)	3.57	7.09	9.82	5.62	0.00	0.00	4.35
Rubble (R)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pavement (P)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Organisms (O)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unknown (UNK)	0.36	2.99	0.00	0.37	1.12	1.76	1.10

Percent Cover by Transect

Categories	T1	T2	T3	T4	T5	T6	Mean % Cover
Gorgonians (GO) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Briareum asbestinum (BRIA) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Erythropodium caribaeorum (ERYTH) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Encrusting Gorgonian (ENGO) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Soft Coral - Sea Fan (FAN) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Soft Coral - Plume form (PLUME) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Soft Coral - Rod form (ROD) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Soft Coral - Whip form (WHIP) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Clionia delitrix (CLIO) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ball Sponge (BALL) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrel/Vase Sponge (BASP) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Boring Sponge (BOSP) - spo	0.00	0.00	0.00	0.00	0.93	0.00	0.16
Encrusting Sponge (ENSP) - spo	1.44	1.51	1.51	1.35	2.33	0.46	1.43
Rope Sponge (ROPE) - spo	0.00	0.50	0.00	0.00	0.00	0.00	0.08
Tube Sponge (TUBE) - spo	0.00	0.50	0.00	0.00	1.40	1.38	0.55
Sponge (SPO) - spo	0.96	4.52	3.02	2.70	4.19	1.83	2.87
Palythoa caribaeorum (PALY) - zo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zoanthus sociatus (ZOSO) - zo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zoanthids (ZO) - zo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Anemone (ANEM) - other	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Corallimorpharians (CMOR) -other	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Macro Algae (MACA) - maca	3.83	3.52	5.53	1.80	1.86	0.46	2.83
Amphiroa spp. (AMPH) - maca[calc]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cladophora spp. (CLAD) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dictyota spp. (DICT) - maca	0.48	1.01	0.00	0.00	0.00	0.00	0.25
Halimeda spp. (HALI) - maca[calc]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Microdictyon spp. (MICRO) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Liagora spp. (LIAG) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lobophora variegata (LOBO) - maca	32.06	24.12	16.58	23.42	36.28	25.23	26.28
Sargassum spp. (SARG) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Schizothrix spp. (SCHIZ) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coralline Algae (CALG) - calg	1.91	1.01	7.04	1.35	1.86	2.75	2.65
Dead coral w/ turf algae (DCA) - dca	11.48	14.07	15.08	18.47	18.60	21.10	16.47
Boulder (B)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sand/Sediment (S)	0.00	13.07	1.01	0.90	0.00	3.21	3.03
Rubble (R)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pavement (P)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Organisms (O)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unknown (UNK)	1.44	2.01	0.50	3.60	0.47	0.46	1.41

Percent Cover by Transect

Categories	T1	T2	T3	T4	T5	T6	Mean % Cover
Gorgonians (GO) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Briareum asbestinum (BRIA) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Erythropodium caribaeorum (ERYTH) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Encrusting Gorgonian (ENGO) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Soft Coral - Sea Fan (FAN) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Soft Coral - Plume form (PLUME) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Soft Coral - Rod form (ROD) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Soft Coral - Whip form (WHIP) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Clionia delitrix (CLIO) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ball Sponge (BALL) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrel/Vase Sponge (BASP) - spo	0.00	0.00	0.00	0.00	0.52	0.00	0.09
Boring Sponge (BOSP) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Encrusting Sponge (ENSP) - spo	3.90	1.79	0.96	0.43	1.55	0.51	1.52
Rope Sponge (ROPE) - spo	0.00	0.45	0.00	0.00	0.52	0.00	0.16
Tube Sponge (TUBE) - spo	0.00	0.45	1.91	0.43	0.52	0.00	0.55
Sponge (SPO) - spo	0.00	0.90	0.00	0.00	1.03	1.01	0.49
Palythoa caribaeorum (PALY) - zo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zoanthus sociatus (ZOSO) - zo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zoanthids (ZO) - zo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Anemone (ANEM) - other	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Corallimorpharians (CMOR) -other	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Macro Algae (MACA) - maca	8.78	3.59	1.44	11.49	5.67	4.04	5.83
Amphiroa spp. (AMPH) - maca[calc]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cladophora spp. (CLAD) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dictyota spp. (DICT) - maca	1.46	0.45	0.00	0.00	1.55	2.02	0.91
Halimeda spp. (HALI) - maca[calc]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Microdictyon spp. (MICRO) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Liagora spp. (LIAG) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lobophora variegata (LOBO) - maca	26.83	29.15	37.32	36.17	27.32	18.69	29.25
Sargassum spp. (SARG) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Schizothrix spp. (SCHIZ) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coralline Algae (CALG) - calg	0.00	10.31	4.78	4.68	4.12	0.00	3.98
Dead coral w/ turf algae (DCA) - dca	19.02	16.14	15.79	10.21	17.53	47.47	21.03
Boulder (B)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sand/Sediment (S)	10.73	1.35	7.66	11.91	4.12	4.55	6.72
Rubble (R)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pavement (P)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Organisms (O)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unknown (UNK)	0.49	1.79	2.87	0.43	0.52	1.52	1.27

Appendix III:
Summary of Urchin, Bleaching, and Disease Data

	Mean % of Coral Colonies with Disease (±SD)	Mean % of Coral Colonies with Bleaching (±SD)	Mean Density of *Diadema* (/m^2) (± SD)
St. Croix:			
Buck Island	0	1.85 ± 4.54	0
Cane Bay	0	2.02 ± 3.21	0.13 ± 0.22
Great Pond	0	0	0.65 ± 0.85
Jacks/Isaac Bay	0	0	.02 ± .04
Long Reef/Eagle Ray	0	2.38 ± 5.83	0
Mutton Snapper	5.48 ± 6.89	0.64 ± 1.57	0
Salt River	7.64 ± 13.54	14.02 ± 15.76	0
Sprat Hole	0.88 ± 2.15	10.12 ± 8.73	0
St. Thomas:			
Benner Bay	17.36 ± 5.49	47.78 ± 29.78	0.05 ± 0.12
Black Point	5.00 ± 7.82	20.81 ± 14.14	0.03 ± 0.08
Flat Cay	7.68 ± 8.60	0	0
Seahorse Cottage Shoal	3.00 ± 3.42	7.59 ± 8.67	0
Grammanik Bank	12.08 ± 10.26	6.29 ± 9.84	0
Red Hind Bank	1.39 ± 3.40	6.55 ± 7.67	0

Transect 1
5/21/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 0

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
DS	25	20	0	0
MA	11	5	0	0
PA	28	5	0	0
MFRA	32	24	0	0
MA	25	12	0	0
AA	25	8	0	0
MFRA	45	48	0	0
MA	16	6	0	0
MA	18	10	0	0
PA	12	15	0	0

Transect 2
5/21/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 0

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
MFRA	30	25	0	0
PP	15	12	0	0
MFRA	40	48	0	0
MA	22	15	0	0
MFRA	24	14	0	0
MFRA	30	40	0	0
MFRA	45	40	0	0
PP	22	18	0	0
PP	24	22	0	0

Transect 3
5/21/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 11.11

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
AA	18	10	0	90 B
MA	12	6	0	0
PP	75	65	0	0
MFRA	22	12	0	0
MFRA	18	15	0	0
MFRA	25	25	0	0
MFRA	60	50	0	0
AA	11	11	0	0
AA	14	10	0	0

Transect 4
5/2/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 0

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
PA	15	15	0	0
AA	10	5	0	0
AA	12	5	0	0
AA	10	5	0	0
MFAV	40	48	0	0
MFAV	44	48	0	0
MA	15	10	0	0
MC	45	40	0	0
SS	15	10	0	0
MA	80	50	0	0
PP	50	50	0	0
PA	15	10	0	0
MACX	20	25	0	0
MFRA	85	30	0	0

Transect 5
5/2/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 0

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
MFAV	32	30	0	0
MFRA	30	15	0	0
DL	40	22	0	0
MFAV	15	20	0	0
DL	20	15	0	0
DS	15	5	0	0
PD	50	20	0	0
MA	15	25	0	0
PA	25	10	0	0
MA	25	20	0	0
MFRA	45	50	0	0

Transect 6
5/2/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 0

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
MACX	40	20	0	0
MACX	16	20	0	0
MACX	13	14	0	0
PP	35	20	0	0
MFRA	22	15	0	0
MFRA	18	22	0	0
MA	20	22	0	0
MA	35	20	0	0
MACX	15	10	0	0
PD	25	20	0	0
MACX	20	20	0	0
MFRA	20	20	0	0

Transect 1
4/21/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 0

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
PA	20	22	0	0
MC	12	12	0	0
PA	25	32	0	0
PA	12	12	0	0
PA	13	5	0	0
AA	12	5	0	0
PA	18	5	0	0
MFRA	30	35	0	0
MC	12	25	0	0
MC	12	15	0	0
MFRA	50	32	0	0
MFRA	42	10	0	0

Transect 2
4/21/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 5

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
DL	40	7	0	0
DL	70	20	0	0
AA	40	30	0	0
MACX	52	20	0	0
MC	15	7	0	0
PA	30	15	0	0
PA	15	15	0	0
PA	30	20	0	0
PA	15	10	0	5 B
MA	20	30	0	0
MACX	25	4	0	0
PP	10	10	0	0
CN	20	10	0	0
PA	15	12	0	0
MC	20	20	0	0
MA	30	20	0	0
PA	20	10	0	0
PP	20	15	0	0
MA	25	30	0	0
AA	20	5	0	0

Transect 3
4/21/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 0

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
PP	50	30	0	0
PA	15	10	0	0
PA	26	6	0	0
MA	25	20	0	0
MC	30	25	0	0
SS	50	60	0	0
MC	20	15	0	0
AA	30	20	0	0
MA	40	30	0	0
MA	20	20	0	0
MF	15	5	0	0
AA	25	25	0	0
MA	50	30	0	0
CN	25	15	0	0
MA	40	50	0	0
MA	80	30	0	0
MA	20	30	0	0
DS	20	10	0	0
DS	30	10	0	0

Transect 4
4/21/2003
No. of *Diadema*: 5
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 0

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
MFRA	20	25	0	0
MFAV	50	50	0	0
PP	20	20	0	0
MFAV	35	30	0	0
MC	20	40	0	0
MFAV	25	30	0	0
MFRA	90	70	0	0
PA	20	5	0	0
MFRA	25	20	0	0
MF	25	30	0	0
MA	40	50	0	0
MA	20	25	0	0
MA	50	30	0	0
MA	30	35	0	0
AA	18	15	0	0
PA	15	5	0	0
MC	20	35	0	0
MA	40	30	0	0

Transect 5
4/21/2003
No. of *Diadema*: 3
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 0

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
MACX	20	40	0	0
MFRA	20	30	0	0
MACX	17	20	0	0
MA	100	90	0	0
MA	70	50	0	0
MA	20	10	0	0
MA	30	25	0	0
MA	30	20	0	0
MA	30	15	0	0
AA	12	20	0	0
MA	40	35	0	0
MA	12	5	0	0
MA	30	35	0	0
MA	13	10	0	0

Transect 6
4/21/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 7.14

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
MFRA	50	60	0	0
PA	15	20	0	0
MACX	15	30	0	0
AA	13	30	0	0
PA	20	25	0	0
MA	20	10	0	0
MACX	15	10	0	0
MA	22	10	0	0
MA	100	150	0	0
MA	12	30	0	0
PA	13	10	0	0
MA	15	10	0	0
SS	20	10	0	20 B
MA	40	50	0	0

Transect 1
7/31/2003
No. of *Diadema*: 21
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 0

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
MILC	20	10	0	0
PA	22	7	0	0
PA	15	5	0	0
MILC	30	20	0	0
PA	10	10	0	0
PA	10	5	0	0
MILC	60	45	0	0
PA	25	4	0	0
MILC	20	15	0	0
MILC	25	10	0	0
PA	20	5	0	0
PA	20	7	0	0
PA	20	10	0	0
MILC	25	10	0	0
SS	10	5	0	0

Transect 2
7/31/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 0

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
PA	27	15	0	0
MILC	15	12	0	0
PA	10	2	0	0
MILC	25	7	0	0
SS	30	12	0	0
PA	10	2	0	0
PA	12	5	0	0
MILC	25	10	0	0

Transect 3
7/31/2003
No. of *Diadema*: 1
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 0

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
PP	15	5	0	0
MILC	40	17	0	0
PP	15	10	0	0
MILC	30	5	0	0
PA	15	5	0	0
MILC	20	10	0	0
PA	15	10	0	0
PA	12	2	0	0
MILC	40	25	0	0
DS	30	15	0	0
PA	20	17	0	0
PA	18	7	0	0
DS	15	15	0	0
PA	20	12	0	0
PA	22	10	0	0
PA	21	5	0	0
PA	27	7	0	0

Transect 4
7/31/2003
No. of *Diadema*: 2
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 0

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
PA	30	15	0	0
PA	13	2	0	0
DS	25	7	0	0
PA	12	3	0	0
DS	35	18	0	0
DS	55	12	0	0
MILC	35	30	0	0
PA	17	6	0	0

Transect 5
7/31/2003
No. of *Diadema*: 13
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 0

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
DS	48	50	0	0
PA	20	3	0	0
PA	10	4	0	0
DS	15	2	0	0
MILC	18	15	0	0
PA	15	5	0	0
PA	12	5	0	0
DS	55	23	0	0
PA	25	2	0	0
MILC	50	15	0	0
PA	20	5	0	0

Transect 6
7/31/2003
No. of *Diadema*: 2
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 0

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
PA	30	2	0	0
PA	12	5	0	0
MILC	25	10	0	0
PA	20	2	0	0
PA	22	3	0	0
MILC	45	20	0	0
PA	25	8	0	0
DS	23	5	0	0
DS	50	30	0	0
MILC	45	35	0	0
DS	20	5	0	0
MILC	20	15	0	0
PA	20	2	0	0
PA	32	2	0	0
DS	50	15	0	0
AP	25	20	0	0

Transect 1
9/5/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 0

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
PP	12	8	0	0
MA	38	15	0	0
MC	37	25	0	0
MC	18	7	0	0
MFAV	40	12	0	0
MFAV	35	22	0	0
MFAV	45	22	0	0
SS	48	15	0	0

Transect 2
9/5/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 0

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
MC	22	5	0	0
SS	24	5	0	0
PP	15	7	0	0
MC	40	22	0	0
SM	25	17	0	0

Transect 3
9/5/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 0

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
MC	13	3	0	0
PA	20	10	0	0

Transect 4
9/5/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 0

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
PA	12	5	0	0
MACX	15	7	0	0

Transect 5
9/5/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 0

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
MACX	32	20	0	0
MC	20	5	0	0
PA	15	5	0	0

Transect 6
9/5/2003
No. of *Diadema*: 1
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 0

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
MC	24	5	0	0
SS	28	10	0	0
MC	27	15	0	0
MC	20	17	0	0

Transect 1
3/28/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 0

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
MC	20	15	0	0
MC	15	2	0	0
SM	10	2	0	0

Transect 2
3/28/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 0

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
MA	17	9	0	0
DS	12	5	0	0
DS	15	5	0	0
MA	20	5	0	0
MA	15	5	0	0
DS	17	7	0	0
AA	15	5	0	0

Transect 3
3/28/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 14.29

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
MC	45	20	0	15 B
MA	20	5	0	0
MC	25	25	0	0
SS	20	30	0	0
PA	20	10	0	0
AA	15	10	0	0
MA	10	15	0	0

Transect 4
3/28/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 0

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
DL	15	5	0	0
MME	12	5	0	0
MME	11	3	0	0
MACX	23	10	0	0
MACX	10	2	0	0
MACX	10	7	0	0
MACX	10	4	0	0

Transect 5
3/28/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 0

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
MC	12	20	0	0
MC	18	10	0	0
MC	15	10	0	0
MC	13	5	0	0

Transect 6
3/28/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 0

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
AA	10	5	0	0
MME	10	5	0	0
AA	20	10	0	0
MC	14	10	0	0
MC	12	10	0	0

Transect 1
5/19/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 12.5
% of Coral Colonies with Bleaching: 0

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
MFAV	60	40	0	0
MFAV	70	25	0	0
MFAV	13	3	0	0
MFAV	70	20	0	0
MFRA	30	15	0	0
MFAV	20	7	0	0
MACX	37	13	2 WP	0
MFRA	33	12	0	0
MFRA	21	15	0	0
MFRA	75	35	0	0
MFAV	37	32	0	0
MFRA	30	21	0	0
MACX	19	12	0	0
MFRA	48	15	0	0
MFRA	32	18	0	0
MFRA	85	50	2 WP	0

Transect 2
5/19/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 0

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
MFAV	20	30	0	0
MFRA	45	20	0	0
MFRA	70	18	0	0
MFRA	17	10	0	0
MFAV	113	35	0	0
MFRA	20	10	0	0
MFRA	52	18	0	0
PA	22	19	0	0
MFRA	32	22	0	0
MFRA	68	32	0	0
MFRA	102	18	0	0
MFRA	19	8	0	0
MFRA	20	10	0	0

Transect 3
5/19/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 0

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
PA	22	12	0	0
MC	29	29	0	0
MFAV	33	20	0	0
MM	11	4	0	0
MFRA	16	3	0	0
MACX	15	2	0	0
MFRA	50	22	0	0
MFRA	33	24	0	0
MFRA	38	18	0	0
MFRA	40	30	0	0
MFAV	70	65	0	0
DS	40	30	0	0
MFRA	22	45	0	0

Transect 4
5/19/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 15.38
% of Coral Colonies with Bleaching: 3.85

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
MACX	15	5	0	0
MFRA	42	14	5 UNK	0
MFRA	18	6	UNK	0
MFRA	20	4	UNK	0
MFRA	25	4	UNK	0
MACX	14	5	0	0
MACX	10	5	0	0
MFRA	50	35	0	0
MFRA	20	5	0	5 B
MACX	25	2	0	0
MFRA	25	10	0	0
MFRA	20	6	0	0
MFRA	12	5	0	0
MFRA	22	6	0	0
MFRA	20	6	0	0
MFRA	22	10	0	0
MFRA	18	2	0	0
MFRA	34	10	0	0
MFRA	25	25	0	0
MFRA	25	25	0	0
MFRA	22	5	0	0
MFRA	22	5	0	0
MFRA	20	20	0	0
AA	14	5	0	0
CN	65	30	0	0
MFRA	30	10	0	0

Transect 5
5/19/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 0

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
MFRA	55	25	0	0
MFRA	32	12	0	0
MFRA	40	15	0	0
MFRA	30	42	0	0
MFRA	42	30	0	0
MFRA	22	18	0	0
MFRA	28	8	0	0
MFRA	20	5	0	0
MFRA	20	25	0	0
MFRA	28	2	0	0
MFRA	16	10	0	0
MACX	22	4	0	0
MFRA	16	2	0	0

Transect 6
5/19/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 5
% of Coral Colonies with Bleaching: 0

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
PP	25	10	0	0
MACX	12	4	0	0
MFRA	35	20	0	0
MFRA	14	12	0	0
MFRA	12	5	0	0
MFRA	30	12	0	0
MFRA	20	5	0	0
MFRA	25	25	0	0
MFRA	22	20	0	0
MACX	18	4	0	0
MFRA	25	6	0	0
MFRA	30	10	0	0
MFRA	14	10	0	0
MFRA	16	8	0	0
PA	25	15	0	0
MFRA	40	15	0	0
MFRA	30	10	0	0
MFRA	42	28	0	0
MFRA	30	10	0	0
MFRA	32	8	5 UNK	0

Transect 1
4/8/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 0

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
PA	10	3	0	0
DS	12	2	0	0
MACX	10	12	0	0
MA	30	10	0	0
PA	11	10	0	0
AA	12	3	0	0

Transect 2
4/8/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 33.33
% of Coral Colonies with Bleaching: 0

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
MC	25	8	15 DS	0
MD	20	15	0	0
MFRA	23	15	0	0

Transect 3
4/8/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 33.33

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
PA	10	4	0	15 B
MFRA	40	20	0	0
MACX	12	6	0	0
SS	40	40	0	10 B
DS	20	5	0	0
MC	35	28	0	0
MACX	20	25	0	0
MACX	15	15	0	0
SS	30	6	0	30 B

Transect 4
4/8/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 28.57

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
SS	18	5	0	5 B
PA	13	12	0	0
PA	11	5	0	0
SM	13	2	0	0
DS	20	5	0	0
DS	15	5	0	0
SS	20	20	0	2 B

Transect 5
4/8/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 12.5
% of Coral Colonies with Bleaching: 0

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
PA	15	10	0	0
SM	10	3	0	0
AA	11	3	0	0
MC	18	12	0	0
MC	20	11	0	0
SM	13	3	0	0
MFAV	45	40	0	0
MC	25	15	30 DS	0

Transect 6
4/8/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 22.22

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
PP	25	20	0	0
SS	25	12	0	10 B
PP	12	10	0	0
AA	25	20	0	0
MC	15	10	0	0
MC	12	12	0	0
SS	30	25	0	5 B
PA	11	5	0	0
MC	15	15	0	0

Transect 1
5/14/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 8

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
MA	20	30	0	0
MA	12	14	0	0
PA	15	26	0	0
AA	15	24	0	0
MA	12	14	0	0
MFRA	15	22	0	0
MFRA	40	55	0	0
MFRA	40	60	0	0
MC	30	32	0	0
MA	15	30	0	5 B
MA	12	20	0	0
MA	40	30	0	0
MA	20	40	0	0
MA	25	35	0	0
MA	30	40	0	0
MA	20	15	0	0
MA	25	35	0	0
PA	22	7	0	0
MA	24	20	0	0
SS	25	10	0	2 B
MA	15	30	0	0
MA	30	45	0	0
MA	30	35	0	0
MA	20	15	0	0
MC	30	45	0	0

Transect 2
5/14/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 0

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
PA	12	20	0	0
PA	15	35	0	0
MA	25	40	0	0
MFRA	25	5	0	0
PA	18	10	0	0
MA	35	38	0	0
PA	25	20	0	0
MA	20	15	0	0
MFRA	15	20	0	0
MA	22	20	0	0
MC	30	50	0	0
MC	15	30	0	0
MC	20	40	0	0
MFRA	30	55	0	0
MA	25	30	0	0
MFRA	32	30	0	0
MFRA	25	20	0	0
SS	40	35	0	0
DL	35	25	0	0
MA	30	40	0	0
PA	20	5	0	0
SS	20	15	0	0
SS	35	40	0	0

Transect 3
5/14/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 18.75

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
PA	30	15	0	0
MFRA	25	25	0	0
MA	11	4	0	0
MA	20	20	0	5 B
AA	12	5	0	0
PA	22	4	0	0
MFRA	16	5	0	2 B
AA	20	35	0	0
PA	22	10	0	0
MA	25	20	0	0
AA	15	30	0	0
PA	15	20	0	0
PD	12	10	0	0
PA	22	25	0	0
MA	17	12	0	30 B
AA	14	20	0	0

Transect 4
5/14/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 18.18

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
MA	70	85	0	0
MA	30	60	0	0
PA	25	30	0	0
MFRA	20	35	0	0
MFRA	30	50	0	25 B
MACX	10	20	0	0
MA	30	30	0	0
AA	12	10	0	0
MA	20	20	0	60 B
MA	16	10	0	0
MA	25	30	0	0

Transect 5
5/14/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 0

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
MA	100	80	0	0
MA	50	8	0	0
MA	60	80	0	0
MA	55	70	0	0
MA	80	80	0	0
MA	50	70	0	0
MFAV	60	65	0	0
MA	45	55	0	0
PA	20	30	0	0
MA	25	40	0	0
MA	12	20	0	0
MFRA	32	40	0	0
SS	30	25	0	0
AA	18	13	0	0

Transect 6
5/14/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 5.26
% of Coral Colonies with Bleaching: 15.8

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
MA	12	20	0	0
MA	25	25	0	0
CN	45	45	0	0
MFRA	50	55	0	5 B
MA	50	50	0	0
MFRA	45	50	25 UNK	0
PA	30	25	0	0
PA	30	42	0	0
MA	20	45	0	0
AA	12	5	0	0
PA	20	15	0	0
MA	12	34	0	0
MFAV	20	45	0	0
MA	40	17	0	10 B
MFAV	15	5	0	20 B
MA	20	20	0	0
MFAV	20	12	0	0
MA	20	40	0	0
MFRA	28	22	0	0

Transect 1
5/20/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 25
% of Coral Colonies with Bleaching: 25

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
DL	15	15	0	60 PB
SS	20	10	10 DS	0
MFRA	20	25	0	0
MME	20	20	0	0

Transect 2
5/20/2003
No. of *Diadema*: 3
% of Coral Colonies with Disease: 12.5
% of Coral Colonies with Bleaching: 25

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
SS	30	25	10 DS	0
MC	70	50	0	100 PB
PP	30	15	0	0
MC	60	45	0	10 PB
PP	20	20	0	0
DC	30	40	0	0
PP	25	30	0	0
SM	15	10	0	0

Transect 3
5/20/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 20
% of Coral Colonies with Bleaching: 60

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
DC	50	45	0	0
MC	15	10	0	0
MC	25	20	0	100 PB
SS	35	25	2 DS	90 PB
DS	20	10	0	40 PB
MC	30	15	0	0
SS	20	15	0	100 B
PA	20	25	0	100 PB
SS	20	15	5 DS	100 B
PP	25	10	0	0

Transect 4
5/20/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 10
% of Coral Colonies with Bleaching: 70

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
PP	30	20	0	0
DS	20	10	0	80 PB
SS	15	10	0	80 PB
SS	20	10	5 DS	80 PB
MILA	40	10	0	0
DL	20	10	0	90 PB
MC	50	60	0	40 PB
MA	15	10	0	0
PA	15	5	0	15 B
DS	30	30	0	40 PB

Transect 5
5/20/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 16.67
% of Coral Colonies with Bleaching: 16.67

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
PA	15	15	0	0
PP	20	10	0	0
MC	55	35	0	100 PB
PP	15	10	0	0
SM	25	15	0	0
SS	20	5	5 DS	0

Transect 6
5/20/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 20
% of Coral Colonies with Bleaching: 90

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
DL	15	20	0	50 PB
DS	12	5	0	40 PB
SS	15	10	2 DS	80 PB
MC	70	40	0	80 PB
DL	15	10	0	0
MC	15	15	0	25 PB
SS	25	25	3 DS	80 PB
MC	40	10	0	100 PB
MC	60	50	0	10 PB
DS	20	15	0	100 PB

Transect 1
9/9/2003 (bleaching/disease) **09/22/03** (*Diadema*)
No. of *Diadema*: 2
% of Coral Colonies with Disease: 16.67
% of Coral Colonies with Bleaching: 16.67

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
PP	10	5	0	0
DS	10	10	0	0
SS	40	35	DS	0
MA	60	40	0	0
MA	25	30	0	0
SS	30	25	0	PB

Transect 2
9/9/2003 (bleaching/disease) **09/22/03** (*Diadema*)
No. of *Diadema*: 0
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 18.18

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
PP	15	20	0	0
MA	40	30	0	PB
PP	30	25	0	0
MME	25	20	0	0
PA	35	35	0	0
AA	10	10	0	PB
MC	30	40	0	0
MC	20	10	0	0
MA	25	20	0	0
MFRA	40	40	0	0
MA	50	40	0	0

Transect 3
9/9/2003 (bleaching/disease) **09/22/03** (*Diadema*)
No. of *Diadema*: 0
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 0

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
MFRA	30	30	0	0
MA	10	15	0	0
MA	50	45	0	0
PA	25	10	0	0
MA	40	35	0	0
PP	25	25	0	0
MA	60	100	0	0
PA	10	10	0	0
MA	45	20	0	0
MFAV	20	45	0	0
DS	40	25	0	0
MFRA	20	35	0	0
DS	20	10	0	0
MFRA	25	25	0	0

Transect 4
9/9/2003 (bleaching/disease) **09/22/03** (*Diadema*)
No. of *Diadema*: 0
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 16.67

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
MME	10	5	0	0
DL	10	5	0	0
SS	30	35	0	B
MFRA	20	25	0	0
MME	15	20	0	0
MA	30	15	0	0

Transect 5
9/9/2003 (bleaching/disease) **09/22/03** (*Diadema*)
No. of *Diadema*: 0
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 40

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
SS	25	25	0	PB
AA	20	15	0	0
MA	30	25	0	0
MA	30	35	0	PB
DS	30	10	0	0
DL	25	20	0	0
MA	20	15	0	PB
PA	25	15	0	0
MFRA	25	20	0	0
SS	40	25	0	PB

Transect 6
9/9/2003 (bleaching/disease) **09/22/03** (*Diadema*)
No. of *Diadema*: 0
% of Coral Colonies with Disease: 13.33
% of Coral Colonies with Bleaching: 33.33

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
PA	20	10	0	50 B
MFRA	20	20	0	0
PA	30	15	0	0
MA	15	15	0	0
AA	30	15	0	25 B
MFRA	20	20	YB	0
SS	30	30	0	90 B
PP	20	20	0	0
MA	15	15	0	0
MC	18	10	0	0
MC	20	20	0	0
PA	20	30	0	0
MFAV	20	30	0	15 PB
PA	20	30	0	0
SS	35	30	DS	100 B

Transect 1
6/4/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 0

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
MME	12	9	0	0
MACX	21	28	0	0
MC	20	18	0	0
MACX	34	40	0	0
CN	33	5	0	0
PP	50	25	0	0
MME	10	2	0	0
MC	18	20	0	0
DS	15	4	0	0
MACX	17	12	0	0
MACX	17	10	0	0

Transect 2
6/4/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 0

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
MACX	60	35	0	0
AGSP	12	10	0	0
MC	18	15	0	0
MACX	55	40	0	0
MACX	17	25	0	0
MACX	15	15	0	0
MC	30	20	0	0
PP	10	10	0	0
MC	22	25	0	0
AGSP	10	12	0	0
AGSP	12	2	0	0

Transect 3
6/4/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 0

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
MACX	20	28	0	0
AGSP	18	7	0	0
MACX	25	20	0	0
MME	12	4	0	0
MME	25	25	0	0
UNK	11	8	0	0
MACX	30	35	0	0
MC	25	22	0	0
AGSP	18	13	0	0
MACX	14	7	0	0

Transect 4
6/4/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 12.5
% of Coral Colonies with Bleaching: 0

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
MC	21	17	0	0
SS	10	2	10 DS	0
MC	12	30	0	0
SS	30	10	0	0
PP	30	15	0	0
MACX	14	8	0	0
DL	18	10	0	0
MACX	22	7	0	0

Transect 5
6/4/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 15.38
% of Coral Colonies with Bleaching: 0

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
MACX	12	5	0	0
MACX	24	22	0	0
MC	28	37	0	0
UNK	35	18	0	0
SS	45	20	15 DS	0
MC	31	18	0	0
MC	11	10	0	0
MACX	18	19	0	0
PP	15	12	0	0
SS	22	5	5 DS	0
MC	12	18	0	0
MC	28	28	0	0
SS	18	10	0	0

Transect 6
6/4/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 18.18
% of Coral Colonies with Bleaching: 0

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
PP	30	12	0	0
MACX	12	15	0	0
MACX	22	22	0	0
MACX	15	18	0	0
SS	15	10	DS 5	0
MACX	19	22	0	0
MACX	12	26	0	0
SS	21	5	0	0
MACX	30	40	0	0
MACX	20	10	YB	0
MC	22	18	0	0

Transect 1
6/12/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 5.56
% of Coral Colonies with Bleaching: 11.11

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
MFRA	35	25	0	0
MFRA	50	25	0	0
MC	25	35	BB	0
MC	22	20	0	100 B
MFRA	20	20	0	0
MFRA	40	30	0	0
MC	25	25	0	0
MFRA	20	15	0	0
MFRA	30	30	0	0
MFRA	45	35	0	0
PA	20	15	0	0
MFRA	30	45	0	0
MFRA	50	30	0	0
MFRA	55	45	0	0
MFAV	60	40	0	0
MC	40	25	0	30 PB
MFRA	40	30	0	0
MFRA	30	15	0	0

Transect 2
6/12/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 0

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
CN	10	10	0	0
MFRA	15	30	0	0
PA	10	5	0	0
AC	95	45	0	0
SS	25	20	0	0
MFRA	25	15	0	0
MFRA	20	30	0	0
MFRA	10	10	0	0
MFRA	35	35	0	0
MFRA	30	10	0	0
MFRA	50	30	0	0
MFRA	55	25	0	0
MC	20	25	0	0
MFRA	80	45	0	0
MFRA	25	45	0	0
MC	25	30	0	0
MFRA	30	30	0	0
SS	20	15	0	0

Transect 3
6/18/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 7.69
% of Coral Colonies with Bleaching: 15.38

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
MFAV	250	70	0	0
MFRA	25	25	0	0
MC	20	40	0	0
MC	30	30	0	0
MFRA	30	5	0	0
MFRA	25	15	0	0
MFRA	20	5	0	0
MFRA	30	15	0	0
EF	15	10	0	0
MFRA	15	35	0	0
MC	25	30	0	0
SS	20	15	2 DS	80 PB
MC	30	20	0	75 PB

Transect 4
6/18/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 4.76
% of Coral Colonies with Bleaching: 19.04

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
MC	2	25	0	80 PB
MC	30	25	0	0
MFRA	35	15	0	0
MC	35	35	0	0
MFRA	30	30	0	0
SS	45	40	10 DS	0
MFRA	20	25	0	0
SS	20	25	0	80 PB
AC	20	15	0	0
MFRA	40	35	0	0
MFRA	50	20	0	0
PA	15	15	0	0
MC	25	15	0	0
PA	20	10	0	2 B
MFRA	30	25	0	0
MFRA	30	10	0	0
MFRA	30	30	0	0
MFRA	42	30	0	5 PB
MFRA	20	10	0	0
MFRA	15	5	0	0
CN	30	5	0	0

Transect 5
6/18/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 0

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
PP	100	80	0	0
MC	35	50	0	0
MFRA	30	20	0	0
CN	25	45	0	0
MFRA	32	20	0	0
MFRA	45	30	0	0
MFRA	30	30	0	0
MFRA	30	30	0	0
MC	20	25	0	0
MC	15	25	0	0
MFRA	25	15	0	0
AGSP	12	20	0	0
MFRA	22	20	0	0
MFRA	30	30	0	0
PA	30	40	0	0
MFRA	35	28	0	0
MFRA	28	25	0	0
MFAV	45	30	0	0

Transect 6
6/18/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 0

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
MFRA	30	15	0	0
MFRA	30	30	0	0
MFRA	25	20	0	0
MFRA	22	8	0	0
MFRA	40	45	0	0
MFRA	22	10	0	0
MFRA	12	5	0	0
AGSP	12	10	0	0
MFRA	30	12	0	0
MFRA	33	30	0	0
MC	33	35	0	0
MFRA	22	40	0	0
MFRA	15	20	0	0
MFRA	25	30	0	0
MC	35	38	0	0
SS	35	no data	0	0

Transect 1
7/29/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 22.22
% of Coral Colonies with Bleaching: 0

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
PA	12	5	0	0
PA	25	25	0	0
MACX	35	30	0	0
MC	25	40	0	0
MC	45	30	0	0
MACX	40	15	0	0
MACX	70	5	YB	0
MACX	40	10	0	0
MACX	100	30	WP	0

Transect 2
7/29/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 26.67
% of Coral Colonies with Bleaching: 0

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
MACX	40	10	WP	0
PA	10	5	0	0
MACX	30	5	0	0
MACX	50	10	WP	0
MACX	100	20	WP	0
MACX	40	5	0	0
MACX	50	5	0	0
PA	25	5	0	0
MACX	25	5	0	0
MACX	30	5	0	0
MACX	35	5	0	0
MACX	40	5	YB	0
MACX	105	10	0	0
PA	15	5	0	0
PA	10	5	0	0

Transect 3
7/29/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 8.33
% of Coral Colonies with Bleaching: 16.67

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
MFRA	35	25	0	25 PB
AA	45	15	0	0
MFRA	25	5	0	0
MFRA	25	5	0	0
MFRA	30	15	0	0
MFRA	55	55	0	80 PB
MC	10	10	0	0
MFAV	35	20	0	0
PA	25	25	0	0
MFRA	60	30	0	0
SS	50	40	10 DS	0
MC	25	25	0	0

Transect 4
7/29/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 0

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
AL	50	50	0	0
PA	10	10	0	0
MFRA	50	45	0	0
MFRA	80	60	0	0
AL	40	20	0	0
DL	15	5	0	0
MFRA	50	60	0	0
MFRA	35	40	0	0
MFRA	55	20	0	0
MFRA	65	20	0	0
MFAV	45	30	0	0
MA	10	20	0	0
PA	15	10	0	0

Transect 5
7/29/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 10
% of Coral Colonies with Bleaching: 0

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
MACX	25	15	0	0
MACX	35	5	0	0
MACX	60	10	0	0
MACX	35	5	0	0
MACX	40	10	0	0
MACX	55	5	0	0
MACX	50	25	5 YB	0
MACX	30	5	0	0
CN	40	10	0	0
AGSP	20	15	0	0

Transect 6
7/29/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 5.26
% of Coral Colonies with Bleaching: 21.05

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
MACX	25	10	0	0
MACX	45	30	WP	0
MACX	30	5	0	0
PA	no data	5	0	0
MACX	50	5	0	0
MACX	15	2	0	0
MACX	50	5	0	0
AGSP	20	15	0	0
MACX	50	5	0	0
MACX	45	10	0	0
MACX	30	5	0	0
MFRA	50	10	0	20 PB
MFAV	15	5	0	10 PB
MFRA	40	15	0	0
MA	35	15	0	15 PB
MFRA	60	30	0	0
MACX	20	5	0	20 B
MFRA	20	5	0	0
MC	40	30	0	0

Transect 1
8/6/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 14.29

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
MFRA	60	15	0	10 PB
MFRA	25	5	0	0
MFRA	50	10	0	0
MFRA	30	15	0	0
MFRA	60	25	0	0
MFRA	45	40	0	0
DL	55	25	0	0
MFRA	50	15	0	0
MFAV	45	10	0	0
MFRA	40	20	0	0
MFAV	55	55	0	0
MFRA	35	15	0	0
MACX	20	10	0	5 PB
MACX	20	10	0	0

Transect 2
8/6/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 0

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
MFRA	80	5	0	0
MFRA	20	5	0	0
MFRA	35	10	0	0
MFRA	30	20	0	0
MA	35	10	0	0

Transect 3
8/6/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 0

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
MFRA	15	2	0	0
MC	10	5	0	0
MFRA	60	10	0	0
MFRA	85	20	0	0
MFRA	65	10	0	0
MC	25	10	0	0
DS	25	30	0	0

Transect 4
8/6/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 0

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
UNK	10	2	0	0
MACX	45	20	0	0
MACX	28	5	0	0
MACX	38	2	0	0
MACX	55	5	0	0
MACX	40	2	0	0
MACX	60	10	0	0
MACX	50	5	0	0
MACX	22	5	0	0
MACX	55	20	0	0

Transect 5
8/6/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 8.33
% of Coral Colonies with Bleaching: 16.67

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
AA	20	2	0	B
PA	15	5	0	B
MFRA	75	30	0	0
MC	10	2	0	0
MFRA	50	15	0	0
MACX	15	5	0	0
MACX	18	2	0	0
MFRA	32	25	0	0
MME	19	10	0	0
MACX	35	10	0	0
MACX	10	2	UNK	0
PA	10	2	0	0

Transect 6
8/13/2003
No. of *Diadema*: 0
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 8.33

Coral Species	Width (cm)	Height (cm)	% Diseased	% Bleached
PA	28	5	0	0
MACX	32	10	0	B
MACX	25	5	0	0
AL	20	2	0	0
AL	18	5	0	0
AL	15	2	0	0
MFRA	110	10	0	0
MFRA	20	10	0	0
MFRA	55	10	0	0
MFRA	15	10	0	0
MFRA	55	30	0	0
MDA	18	5	0	0

Appendix IV:
Summary of St. Thomas Acropora Reef Data

Percent Cover by Site

Botany Bay

Transect	*A. cervicornis*	*A. palmata*	*A. prolifera*
1	2.14	2.27	0
2	2.46	2.47	0
3	9.59	0.40	0
4	4.89	3.07	0
5	11.2	0.00	0
mean ± SD	6.06 ± 4.14	1.64 ± 1.36	0

Caret Bay

Transect	*A. cervicornis*	*A. palmata*	*A. prolifera*
1	0.80	9.77	0.00
2	0.00	8.44	0.00
3	0.41	0.69	0.00
4	4.23	3.39	0.00
5	0.11	1.98	0.00
mean ± SD	0.97 ± 1.83	4.85 ± 4.02	0.00

Coculus Point

Transect	*A. cervicornis*	*A. palmata*	*A. prolifera*
1	0.00	2.90	3.52
2	0.00	5.32	5.15
3	0.00	7.49	8.66
4	2.79	2.94	4.27
5	0.00	1.45	10.42
mean ± SD	0.56 ± 1.25	4.02 ± 2.39	6.40 ± 2.99

Flat Cay Transect	*A. cervicornis*	*A. palmata*	*A. prolifera*
1	0	7.11	0.11
2	0.06	9.48	0.33
3	0.53	4.56	0
4	19.33	0.01	0.63
5	5.52	10.9	0.02
mean ± SD	5.09 ± 8.29	6.41 ± 4.31	0.22 ± 0.26

Hans Lollik

Transect	*A. cervicornis*	*A. palmata*	*A. prolifera*
1	0	9.94	0
2	0	15.84	0
3	0	19.47	0
4	1.11	6.8	0
5	0.13	11.15	0.41
mean ± SD	0.25 ± 0.49	12.64 ± 5.01	0.08 ± 0.18

Inner Brass

Transect	*A. cervicornis*	*A. palmata*	*A. prolifera*
1	0	5.96	0
2	0	3.43	0
3	1.71	3.28	0
4	0	8.84	0
5	0	6.21	0
mean ± SD	0.34 ± 0.76	5.54 ± 2.30	0

Size Distribution, Tissue Mortality, Predation, White Band Disease

Botany Bay

A. cervicornis:

Colony No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Depth (ft)	10	10	10	10	10	10	10	10	10	10	10	5	7	6	8	8	8	8	8	8	8	5	5	5	5
Height (cm)	30	30	30	35	25	15	25	25	15	40	20	80	30	35	35	30	25	30	25	30	45	25	35	25	40
Width (cm)	30	25	30	35	40	10	35	15	15	25	20	100	30	25	45	85	25	20	25	30	80	30	40	45	50
Length (cm)	30	40	25	40	35	15	40	30	20	40	20	100	50	25	45	40	35	35	35	45	100	65	50	45	80
Total % Dead	20	0	0	5	0	60	2	10	20	0	0	60	10	0	2	2	5	10	0	0	10	5	15	20	10
Recent % Dead	0	0	0	5	0	0	2	0	0	0	0	2	0	0	0	0	2	10	0	0	0	0	5	5	0
Snails (P or A)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
WBD (P or A)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Volume (cm^3)	27000	30000	22500	49000	35000	2250	35000	11250	4500	40000	8000	800000	45000	21875	70875	102000	21875	21000	21875	40500	360000	48750	70000	50625	160000

A. palmata

Colony No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Depth (ft)	10	5	5	5	4	4	4	6	5	4	10	10	5	5	5	4	4	5	5	5	5	5	8	5	5
Height (cm)	45	60	25	25	50	85	40	30	55	80	40	40	35	50	60	70	50	70	60	140	25	45	60	30	100
Width (cm)	45	55	30	60	75	80	10	30	75	95	50	65	45	70	65	110	70	70	45	140	20	70	70	40	65
Length (cm)	25	75	40	85	120	135	40	50	220	130	60	85	80	120	155	215	160	80	70	110	40	70	50	40	100
Total % Dead	15	10	5	40	0	50	0	40	20	10	25	0	0	60	15	5	5	2	20	5	10	10	10	5	30
Recent % Dead	1	2	1	3	2	0	0	20	10	5	5	5	2	10	5	2	15	0	8	5	10	2	2	5	2
Snails (P or A)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
WBD (P or A)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Volume (cm^3)	50625	247500	30000	127500	450000	918000	16000	45000	907500	988000	120000	221000	128000	420000	604500	1655500	560000	392000	189000	2156000	20000	220500	210000	48000	650000

A. prolifera

Colony No.	1	2	3	4	5	6	7	8	9	10	11	12	6	14	15	16	17	18	19	20	21	22	23	24	25
Depth (ft)	6	6	6	6	7	7	3	5	5	5	8	7	6	6	10	10	6	6	7	8	8	8	8	8	9
Height (cm)	10	10	35	25	15	30	25	25	25	25	5	30	25	25	30	30	25	30	25	20	30	20	35	15	30
Width (cm)	10	5	15	20	10	20	40	20	15	20	10	35	20	25	25	35	20	30	30	15	30	25	45	20	45
Length (cm)	20	10	35	40	15	30	30	35	20	35	10	40	40	40	50	45	25	40	25	20	65	30	25	20	25
Total % Dead	5	0	20	5	75	50	40	30	2	10	5	10	2	5	0	5	10	0	0	5	20	5	10	0	0
Recent % Dead	5	0	0	5	0	0	10	0	2	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Snails (P or A)	A	A	P	A	P	A	A	P	A	A	A	A	A	A	A	A	A	P	A	P	A	P	A	P	A
WBD (P or A)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	P	A	P	A	P	A	P	A
Volume (cm^3)	2000	500	18375	20000	2250	18000	30000	17500	7500	17500	500	42000	20000	25000	37500	47250	12500	36000	18750	6000	58500	15000	39375	6000	33750

Caret Bay

A. cervicornis:

Colony No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Depth (ft)	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	13	13	13	13	16	16	16	16	16
Height (cm)	30	45	5	25	5	20	40	35	30	30	45	40	55	25	25	30	15	20	30	10	30	10	30	5	5
Width (cm)	40	45	5	20	10	20	40	45	50	30	40	40	40	35	20	25	15	35	20	10	40	10	35	10	5
Length (cm)	40	60	10	40	15	35	35	50	80	40	55	55	50	55	35	30	20	30	30	30	50	15	45	15	10
Total % Dead	0	75	50	50	0	0	20	10	80	75	15	40	15	20	40	15	0	5	2	90	10	0	10	0	0
Recent % Dead	0	5	0	0	0	0	5	0	5	10	0	10	10	0	0	5	0	5	2	0	2	0	0	0	0
Snails (P or A)	P	A	A	A	A	A	P	A	A	A	A	P	P	P	P	P	A	P	A	A	P	A	A	A	A
WBD (P or A)	A	A	A	A	A	A	A	A	A	A	A	P	P	A	A	A	A	P	P	A	A	A	A	A	A
Volume (cm^3)	48000	121500	250	20000	750	14000	56000	78750	120000	36000	99000	88000	110000	48125	17500	22500	4500	21000	18000	3000	60000	1500	47250	750	250

A. palmata

Colony No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Depth (ft)	(not recorded)																								
Height (cm)	85	100	120	85	100	120	160	60	80	150	120	100	45	40	180	60	60	60	45	110	45	50	25	30	110
Width (cm)	80	85	90	85	80	100	120	90	120	150	120	115	50	75	180	120	115	75	45	160	75	45	25	35	140
Length (cm)	90	150	90	85	85	130	180	140	75	150	200	140	80	80	200	120	120	75	60	210	75	75	25	65	145
Total % Dead	50	75	75	20	20	75	50	60	20	20	5	20	5	40	75	80	10	30	5	40	0	50	0	30	70
Recent % Dead	5	5	2	5	2	5	10	2	5	20	5	20	5	2	20	10	0	30	5	20	0	10	0	5	10
Snails (P or A)	P	P	P	P	P	P	P	P	P	P	P	P	A	A	P	P	A	P	A	P	A	P	A	A	P
WBD (P or A)	A	A	A	A	A	A	A	A	A	P	P	P	A	A	P	A	A	P	A	P	A	P	A	A	P
Volume (cm^3)	612000	1275000	972000	614125	680000	1560000	3456000	1008000	720000	3375000	2880000	1610000	135000	240000	6480000	864000	828000	337500	121500	3696000	253125	168750	15625	68250	2233000

A. prolifera (No colonies of *A. prolifera* observed at this site)

Coculus Point

A. cervicornis:

Colony No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Depth (ft)	4	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	10	8	8	6	7	7	8	20
Height (cm)	20	35	35	5	10	30	15	10	5	5	20	10	15	30	20	20	5	20	30	25	15	20	15	20	30
Width (cm)	30	40	60	10	20	30	20	20	5	10	20	10	15	40	25	25	20	20	30	30	15	35	20	30	45
Length (cm)	35	60	75	10	20	35	20	20	5	5	30	15	20	75	40	40	25	25	45	30	25	45	35	40	60
Total % Dead	20	40	60	0	0	60	40	20	0	0	70	10	40	20	10	10	0	50	10	0	30	10	10	10	40
Recent % Dead	20	20	30	0	0	10	30	0	0	0	10	10	20	10	10	10	0	5	10	0	0	0	0	10	10
Snails (P or A)	A	A	A	A	A	P	P	A	A	A	P	A	P	P	A	A	A	P	P	A	P	A	A	P	P
WBD (P or A)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Volume (cm^3)	21000	84000	157500	500	4000	31500	6000	4000	125	250	12000	1500	4500	90000	20000	20000	2500	10000	40500	22500	5625	31500	10500	24000	81000

A. palmata

Colony No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Depth (ft)	(not recorded)																								
Height (cm)	15	70	15	25	12	20	22	22	15	12	10	20	45	20	18	25	45	12	25	25	10	35	20	30	20
Width (cm)	20	50	55	55	22	95	65	30	25	28	30	35	70	35	35	30	60	20	50	40	42	60	12	25	35
Length (cm)	37	45	15	70	10	55	60	15	15	25	12	20	70	25	42	25	60	35	50	35	30	40	20	20	30
Total % Dead	2	5	0	5	0	60	10	0	0	2	10	0	0	70	25	0	0	80	0	0	50	0	5	0	40
Recent % Dead	2	0	0	0	0	5	0	0	0	0	0	0	0	0	5	0	0	15	0	0	0	0	0	0	0
Snails (P or A)	A	A	A	A	A	P	A	A	A	A	P	A	A	A	P	A	A	P	A	A	A	A	A	A	P
WBD (P or A)	A	A	A	A	A	P	A	A	A	A	P	A	A	P	P	A	A	P	A	A	A	A	A	A	P
Volume (cm^3)	11100	157500	12375	96250	2640	104500	85800	9900	5625	8400	3600	14000	220500	17500	26460	18750	162000	8400	62500	35000	12600	84000	4800	15000	21000

A. prolifera

Colony No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Depth (ft)	8	8	6	6	6	6	6	8	8	4	4	4	3	6	6	5	5	4	4	4	4	4	4	3	3
Height (cm)	5	8	30	10	15	20	10	5	5	30	5	25	25	15	20	25	20	20	25	15	20	20	5	10	20
Width (cm)	20	5	10	20	20	20	20	5	10	35	5	30	30	15	40	20	20	30	25	35	30	30	30	40	40
Length (cm)	32	8	20	40	35	55	20	10	10	50	5	35	50	15	50	25	30	30	35	50	35	40	35	30	70
Total % Dead	20	20	30	10	5	10	5	5	0	2	0	20	0	20	0	20	5	10	25	15	5	30	0	5	5
Recent % Dead	0	0	0	5	0	0	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	5
Snails (P or A)	A	A	A	A	A	P	A	A	A	A	A	P	A	P	A	A	A	A	P	P	A	P	A	A	A
WBD (P or A)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Volume (cm^3)	3200	320	6000	8000	10500	22000	4000	250	500	52500	125	26250	37500	3375	40000	12500	12000	18000	21875	26250	21000	24000	5250	12000	56000

Flat Cay

A. cervicornis:

Colony No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Depth (ft)	3	3	3	3	3	3	3	3	3	3	3	3	3	3	15	15	15	15	15	25	25	25	25	30	30
Height (cm)	40	40	40	30	45	25	30	45	60	40	35	45	40	30	55	50	70	55	25	35	40	25	25	60	85
Width (cm)	40	55	35	65	55	20	30	45	50	60	40	50	55	30	60	50	110	55	25	45	40	75	60	65	100
Length (cm)	40	60	50	100	100	25	35	60	100	50	85	65	70	50	30	50	200	70	30	50	55	80	65	70	120
Total % Dead	5	10	30	60	30	20	30	30	30	30	40	10	30	5	25	5	30	5	5	30	20	90	50	30	30
Recent % Dead	0	10	2	10	10	10	10	2	10	10	10	0	2	5	5	0	10	0	5	3	20	30	30	2	2
Snails (P or A)	A	A	A	A	A	P	P	P	P	P	P	A	A	A	P	A	P	A	A	P	P	P	P	A	A
WBD (P or A)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Volume (cm^3)	64000	132000	70000	195000	247500	12500	31500	121500	300000	120000	119000	146250	154000	45000	132000	125000	1540000	211750	18750	78750	88000	150000	97500	273000	1020000

A. palmata

Colony No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Depth (ft)	4	4	4	4	4	4	4	4	4	4	4	10	10	10	15	15	25	25	10	10	10	10	10	10	10
Height (cm)	100	40	40	40	40	40	35	40	50	70	60	35	30	40	60	120	65	55	40	25	25	40	60	50	85
Width (cm)	70	40	50	50	90	70	50	80	100	60	80	60	55	20	60	100	65	80	40	55	40	120	80	65	100
Length (cm)	90	50	60	50	100	70	50	90	100	100	100	60	65	65	100	120	70	80	65	55	60	150	70	70	180
Total % Dead	2	30	5	1	1	2	0	0	2	2	1	0	2	60	2	2	2	2	10	10	10	5	70	20	40
Recent % Dead	2	10	3	1	1	0	0	0	2	2	1	0	2	10	2	2	2	2	0	0	0	2	2	5	5
Snails (P or A)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	P	A	P	A
WBD (P or A)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Volume (cm^3)	630000	80000	120000	100000	360000	196000	87500	288000	500000	420000	480000	126000	107250	52000	360000	1440000	295750	352000	104000	75625	60000	720000	336000	227500	1530000

A. prolifera

Colony No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Depth (ft)	5	5	5	5	5	8	7	7	7	7	7	7	7	7	8	8	8	7	7	7	7	7	7	7	7
Height (cm)	20	30	35	15	30	25	10	35	10	5	30	30	55	25	10	15	15	30	30	25	10	10	50	35	20
Width (cm)	30	30	30	20	35	30	15	40	35	3	30	50	50	20	10	20	15	45	20	25	10	10	45	35	15
Length (cm)	50	55	55	30	45	40	25	70	40	5	40	60	90	25	20	25	20	50	30	35	15	15	70	65	30
Total % Dead	5	10	2	0	0	0	5	10	20	50	5	5	5	30	40	10	50	5	40	5	10	0	0	35	15
Recent % Dead	0	0	0	0	0	0	0	2	5	50	5	0	0	0	0	0	0	5	0	0	0	0	0	3	0
Snails (P or A)	A	P	A	A	A	A	A	A	P	A	A	P	A	P	A	A	A	A	A	A	A	A	A	P	A
WBD (P or A)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	P	A	A	A	A	A
Volume (cm^3)	30000	49500	57750	9000	47250	30000	3750	98000	14000	75	36000	90000	247500	12500	2000	7500	4500	67500	18000	21875	1500	1500	157500	79625	9000

Hans Lollik

A. cervicornis:

Colony No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Depth (ft)	(not recorded)													10	20	20	20	20	20	20	20	20	20	20	20
Height (cm)	30	20	25	40	25	25	10	35	15	30	20	20	12	20	20	20	10	10	40	30	50	40	45	25	15
Width (cm)	45	25	60	50	45	45	20	70	15	60	40	15	30	30	20	25	10	10	30	30	50	50	45	30	25
Length (cm)	35	12	20	40	30	45	20	40	15	30	10	30	20	50	25	40	10	20	35	35	50	80	60	45	25
Total % Dead	0	40	45	65	0	35	5	25	0	40	5	5	0	5	65	80	0	0	5	80	80	60	90	20	10
Recent % Dead	0	0	0	0	0	2	0	0	0	0	0	0	0	0	10	0	0	0	5	0	20	20	10	0	0
Snails (P or A)	A	P	P	A	P	P	A	A	A	P	A	P	A	P	P	P	A	A	A	A	P	P	P	P	A
WBD (P or A)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	P	A	A	A
Volume (cm^3)	47250	6000	30000	80000	33750	50625	4000	98000	3375	54000	8000	9000	7200	30000	10000	20000	1000	2000	42000	31500	125000	160000	121500	33750	9375

A. palmata

Colony No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Depth (ft)	(not recorded)																								
Height (cm)	25	40	10	50	95	80	40	105	25	45	20	40	75	90	50	80	15	25	65	110	45	40	80	25	60
Width (cm)	40	80	20	120	75	90	30	95	40	55	100	35	140	140	50	60	40	35	70	110	65	45	65	60	35
Length (cm)	35	50	20	40	40	120	75	180	80	130	145	65	100	210	65	110	65	50	140	200	110	75	110	20	85
Total % Dead	5	20	0	0	15	0	0	5	10	5	35	40	30	50	15	35	5	25	80	20	30	0	0	10	0
Recent % Dead	0	0	0	0	0	0	15	0	2	10	10	5	0	10	5	10	0	15	5	0	5	25	10	30	0
Snails (P or A)	A	A	A	A	P	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
WBD (P or A)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	P	A	A	A	A	A	A
Volume (cm^3)	35000	160000	4000	240000	285000	864000	90000	1795500	80000	321750	290000	91000	1050000	2646000	162500	528000	39000	43750	637000	2420000	321750	135000	572000	25000	178500

A. prolifera

Colony No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Depth (ft)	20	20	20	20	20	20	20	20	20	15	15	10	10	10	10	10	10	10	10	8	8	8	8	8	8
Height (cm)	10	10	15	40	40	20	40	30	10	20	20	20	30	30	30	50	15	10	25	20	30	20	10	25	20
Width (cm)	15	15	10	40	40	25	60	30	20	20	20	20	30	30	45	40	30	10	25	20	20	20	10	25	25
Length (cm)	25	15	25	40	45	25	80	40	20	30	30	30	40	40	50	40	30	10	30	30	30	30	15	25	30
Total % Dead	30	0	0	10	30	20	60	80	20	30	10	10	10	50	10	20	20	0	0	0	10	40	0	20	0
Recent % Dead	10	0	0	10	10	10	30	10	0	2	0	0	0	20	10	0	0	0	0	0	0	40	0	0	0
Snails (P or A)	P	A	A	A	A	A	P	P	A	P	P	P	P	P	P	P	P	A	A	A	A	P	A	A	A
WBD (P or A)	A	A	A	A	P	A	P	P	A	A	A	A	A	A	A	A	A	A	A	A	A	P	A	A	A
Volume (cm^3)	3750	2250	3750	64000	72000	12500	192000	36000	4000	12000	12000	12000	36000	36000	112500	24000	13500	1000	18750	12000	18000	12000	1500	15625	15000

Inner Brass

A. cervicornis:

Colony No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Depth (ft)	(not recorded)																								
Height (cm)	40	40	20	20	20	15	30	35	10	20	35	25	30	20	25	30	30	25	25	10	20	5	15	15	20
Width (cm)	40	40	30	30	20	20	30	35	10	25	30	20	60	20	30	30	40	25	20	20	20	15	40	35	35
Length (cm)	5	50	30	50	30	25	40	35	10	25	65	50	60	30	35	30	40	30	35	20	20	25	45	20	25
Total % Dead	50	10	50	40	0	20	0	20	0	0	60	30	30	20	0	0	60	40	20	10	10	0	60	90	10
Recent % Dead	5	0	0	20	0	20	0	0	0	0	30	0	10	0	0	0	30	10	0	0	0	0	20	30	0
Snails (P or A)	P	A	P	P	A	P	A	A	A	A	P	P	A	A	A	A	P	A	A	A	A	A	A	A	A
WBD (P or A)	A	A	A	P	A	A	A	A	A	A	P	A	A	A	A	A	P	A	A	A	A	A	A	A	A
Volume (cm^3)	8000	80000	18000	30000	12000	7500	36000	42875	1000	12500	68250	25000	108000	12000	26250	27000	48000	18750	17500	4000	8000	1875	27000	10500	17500

A. palmata

Colony No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Depth (ft)	8	8	8	8	8	8	8	8	8	8	8	8	8	epths for 14											
Height (cm)	40	20	5	45	20	40	20	40	55	45	40	20	35	10	10	30	35	15	15	30	30	15	10	25	20
Width (cm)	70	15	10	80	45	65	15	30	105	60	40	75	25	65	25	40	40	30	15	40	50	20	5	25	30
Length (cm)	90	20	15	130	60	95	5	50	110	70	50	90	40	65	30	55	70	50	30	70	50	30	20	40	30
Total % Dead	2	0	20	15	5	15	0	2	0	20	2	20	5	0	10	10	30	0	0	30	40	0	0	50	0
Recent % Dead	0	0	0	0	5	15	0	2	0	5	2	15	5	0	10	10	5	0	0	0	5	0	0	50	0
Snails (P or A)	A	A	A	P	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	P	A	A	A	A
WBD (P or A)	A	A	A	A	A	A	A	P	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Volume (cm^3)	252000	6000	750	468000	54000	247000	1500	60000	635250	189000	60000	135000	35000	42250	7500	66000	96000	22500	6750	84000	75000	9000	1000	25000	18000

A. prolifera

Colony No.	1	2	3	4	5
Depth (ft)	6	6	6	8	8
Height (cm)	5	5	15	15	25
Width (cm)	10	5	15	20	30
Length (cm)	15	10	25	30	45
Total % Dead	0	0	2	10	30
Recent % Dead	0	0	0	5	15
Snails (P or A)	0	0	0	0	0
WBD (P or A)	A	A	A	A	P
Volume (cm^3)	750	250	5625	9000	33750

Acropora Recruit Density

Botany Bay

Quadrat No.	No. of recruits
1	0
2	0
3	1
4	0
5	0
6	1
7	0
8	2
9	0
10	1
mean ± SD	0.5 ± 0.71

Caret Bay

Quadrat No.	No. of recruits
1	0
2	0
3	0
4	0
5	0
6	0
7	0
8	1
9	0
10	0
mean ± SD	0.1 ± 0.32

Coculus Point

Quadrat No.	No. of recruits
1	3
2	0
3	3
4	2
5	0
6	0
7	0
8	0
9	0
10	1
mean ± SD	0.9 ± 1.29

Flat Cay

Quadrat No.	No. of recruits
1	0
2	0
3	1
4	0
5	0
6	0
7	0
8	0
9	0
10	0
mean ± SD	0.1 ± 0.32

Hans Lollik

Quadrat No.	No. of recruits
1	1
2	1
3	0
4	1
5	0
6	1
7	0
8	0
9	1
10	1
mean ± SD	0.6 ± 0.52

Inner Brass

Quadrat No.	No. of recruits
1	1
2	0
3	1
4	0
5	0
6	0
7	0
8	2
9	0
10	0
mean ± SD	0.4 ± 0.70

Appendix V. Abundance of fish observed in belt transects, St. Croix, 2003

Family	Species	Common Name	Total No. of Fish Observed							
			SR	CB	IB	ER	SH	BI	GP	MS
Acanthuridae										
	Acanthurus bahianus	ocean surgeon	127	55	336	98	26	33	152	52
	Acanthurus chirurgus	doctorfish	1	3	3	2	-	5	4	1
	Acanthurus coeruleus	blue tang	45	34	71	25	26	32	188	15
Aulostomidae										
	Aulostomus maculatus	trumpetfish	8	6	1	3	2	8	-	-
Balistidae										
	Balistes vetula	queen triggerfish	-	-	-	-	-	-	-	2
	Melichthys niger	black durgon	80	73	15	-	9	-	17	66
Bothidae										
	Bothus lunatus	peacock flounder	-	1	1	-	1	1	-	-
Carangidae										
	Caranx fusus	blue runner	-	-	1	3	-	-	-	-
	Caranx latus	horse-eye jack	1	-	-	-	-	-	-	-
	Caranx ruber	bar jack	21	16	13	8	5	20	37	11
Chaetodontidae										
	Chaetodon aculeatus	longsnout butterflyfish	5	5	-	1	5	-	-	1
	Chaetodon capistratus	foureye butterflyfish	41	42	-	38	30	22	2	47
	Chaetodon ocellatus	spotfin butterflyfish	2	-	-	2	-	-	-	-
	Chaetodon sedentarius	reef butterflyfish	-	-	-	-	-	-	-	1
	Chaetodon striatus	banded butterflyfish	6	10	3	2	2	-	3	2
Cirrhitidae										
	Amblycirrhitus pinos	redspotted hawkfish	-	2	2	1	-	-	-	-
Congridae										
	Heteroconger longissimus	brown garden eel	-	-	-	-	30	-	-	-

Appendix V continued. Abundance of fish observed in belt transects, St. Croix, 2003

Family	Species	Common Name	Total No. of Fish Observed							
			SR	CB	IB	ER	SH	BI	GP	MS
Dasyatidae										
	Dasyatis americana	southern stingray	-	-	1	-	-	-	-	-
Exocoetidae										
	Hemiramphus brasiliensis	ballyhoo	-	-	-	-	-	500	-	-
Gerreidae										
	Eucinostomus jonesi	slender mojarra	-	-	-	-	-	-	6	-
	Gerres cinereus	yellowfin majorra	-	1	-	-	-	-	-	-
Grammatidae										
	Gramma loreto	fairy basslet	270	205	11	11	50	17	-	60
Haemulidae										
	Haemulon aurolineatum	tomtate	-	-	2	-	-	10	-	-
	Haemulon carbonarium	caesar grunt	-	-	1	2	-	-	-	-
	Haemulon chrysargyreum	smallmouth grunt	-	6	5	2	-	1	8	-
	Haemulon flavolineatum	french grunt	52	28	23	32	16	22	42	29
	Haemulon macrostomum	spanish grunt	-	1	-	-	-	-	-	-
	Haemulon plumieri	white grunt	4	1	-	2	1	3	-	-
	Haemulon sciurus	bluestriped grunt	2	3	-	1	2	7	2	3
Holocentridae										
	Holocentrus adcensionis	squirrelfish	-	-	22	-	1	-	3	1
	Holocentrus rufus	longspine squirrelfish	12	4	12	16	11	-	-	5
	Myripristis jacobus	blackbar soldierfish	8	20	26	42	10	-	4	34
	Neoniphon marianus	longjaw squirrelfish	1	3	-	-	-	4	-	1
	Sargocentron coruscum	reef squirrelfish	-	-	-	-	-	-	1	-
	Sargocentron vexillarium	dusky squirrelfish	-	-	-	-	-	-	2	-
Labridae										
	Bodianus rufus	spanish hogfish	6	11	24	1	10	-	52	8
	Clepticus parrae	creole wrasse	1090	448	21	40	194	171	-	100
	Halichoeres bivittatus	slippery dick	-	-	5	-	-	3	149	-

Appendix V continued. Abundance of fish observed in belt transects, St. Croix, 2003

Family	Species	Common Name	Total No. of Fish Observed							
			SR	CB	IB	ER	SH	BI	GP	MS
Labridae										
	Halichoeres cyanocephalus	yellowcheek wrasse	-	-	-	-	-	-	-	2
	Halichoeres garnoti	yellowhead wrasse	13	72	79	96	48	109	197	56
	Halichoeres maculipinna	clown wrasse	11	-	12	41	-	11	43	2
	Halichoeres poeyi	blackear wrasse	-	-	10	-	-	-	-	-
	Halichoeres radiatus	pudding wife	-	-	2	-	-	3	4	-
	Thalassoma bifasciatum	bluehead wrasse	903	602	742	676	221	93	976	746
Lutjanidae										
	Lutjanus analis	mutton snapper	-	1	-	-	-	-	-	-
	Lutjanus apodus	schoolmaster	6	-	4	6	5	-	6	-
	Lutjanus mahogoni	mahogany snapper	3	12	3	10	2	3	-	7
	Ocyurus chrysurus	yellowtail snapper	-	6	-	7	1	16	-	-
Malacanthidae										
	Malacanthus plumieri	sand tilefish	-	-	1	1	2	-	2	-
Monocanthidae										
	Cantherhines macrocerus	whitespotted filefish	-	1	-	-	-	1	-	-
	Cantherhines pullus	orangespotted filefish	7	3	-	1	-	-	-	-
	Monacanthus tuckeri	slender filefish	-	-	-	-	-	-	-	1
Mullidae										
	Mulloidichthys martinicus	yellow goatfish	12	37	15	8	16	9	1	40
	Psuedupeneus maculatus	spotted goatfish	10	1	4	16	2	11	-	17
Muraenidae										
	Enchelycore nigricans	viper moray	-	-	-	-	-	-	1	-
	Gymnothorax miliaris	goldentail moray	-	1	-	-	1	1	-	-
Ostraciidae										
	Acanthostracion ploygonia	honeycomb cowfish	2	-	-	-	1	-	-	1
	Acanthostracion quadricornis	scrawled cowfish	-	-	-	-	-	-	-	1
	Lactophrys bicaudalis	spotted trunkfish	1	3	-	-	1	-	1	2
	Lactophrys triqueter	smooth trunkfish	-	2	1	-	1	-	-	4

Appendix V continued. Abundance of fish observed in belt transects, St. Croix, 2003

Family	Species	Common Name	Total No. of Fish Observed							
			SR	CB	IB	ER	SH	BI	GP	MS
Pomacanthidae										
	Holacanthus ciliaris	queen angelfish	-	-	1	1	-	-	-	1
	Holacanthus tricolor	rock beauty	7	7	4	-	3	-	-	7
Pomacentridae										
	Abudefduf saxatilis	sergeant major	19	89	4	9	4	-	22	-
	Chromis cyanea	blue chromis	461	1456	243	161	1031	447	-	827
	Chromis multilineata	brown chromis	198	672	50	96	194	7	250	311
	Microspathodon chrysurus	yellowtail damselfish	25	15	18	12	2	2	189	14
	Stegastes diencaeus	longfin damselfish	-	-	-	-	-	1	5	-
	Stegastes fuscus	dusky damselfish	15	66	13	83	34	21	180	5
	Stegastes leucostictus	beaugregory	4	11	10	53	1	52	3	-
	Stegastes partitus	bicolor damselfish	399	270	534	219	224	53	173	787
	Stegastes planifrons	threespot damselfish	3	58	1	-	120	267	6	15
	Stegastes variabilis	cocoa damselfish	-	13	5	14	8	27	2	1
Priacanthidae										
	Heteropriacanthus cruentatus	glasseye snapper	-	-	-	-	-	-	1	-
	Priacanthus arenatus	bigeye	-	1	1	1	-	-	-	-
Scaridae										
	Scarus croicensis	striped parrotfish	-	15	44	60	38	149	63	32
	Scarus taeniopterus	princess parrotfish	50	101	12	46	110	128	11	44
	Scarus vetula	queen parrotfish	-	-	6	1	6	3	35	-
	Sparisoma atomarium	greenblotch parrotfish	-	-	-	-	2	29	4	1
	Sparisoma aurofrenatum	redband parrotfish	84	81	112	57	67	130	34	25
	Sparisoma chrysopterum	redtail parrotfish	-	-	32	1	-	-	-	-
	Sparisoma radians	bucktooth parrotfish	-	-	-	-	-	-	3	-
	Sparisoma rubripinne	yellowtail parrotfish	-	-	7	-	-	1	30	-
	Sparisoma viride	stoplight parrotfish	6	82	18	39	81	78	99	6
Sciaenidae										
	Equetus acuminatus	highhat	-	-	1	1	-	-	-	-
	Equetus punctatus	spotted drum	-	1	1	-	-	1	-	-

Appendix V continued. Abundance of fish observed in belt transects, St. Croix, 2003

Family	Species	Common Name	Total No. of Fish Observed							
			SR	CB	IB	ER	SH	BI	GP	MS
Scombridae										
	Scomberomorus regalis	cero mackerel	-	-	1	-	-	-	1	4
Serranidae										
	Cephalopholis cruentatus	graysby	8	27	5	18	17	12	-	18
	Cephalopholis fulvus	coney	59	29	43	22	5	11	15	4
	Epinephelus adcensionis	rock hind	-	1	-	-	-	-	-	-
	Epinephelus guttatus	red hind	-	-	4	4	2	6	-	-
	Hypoplectrus chlorurus	yellowtail hamlet	1	2	-	-	3	1	-	2
	Hypoplectrus guttavarius	shy hamlet	-	1	-	-	-	1	-	-
	Hypoplectrus nigricans	black hamlet	1	1	-	-	-	31	-	-
	Hypoplectrus puella	barred hamlet	9	5	-	2	8	9	-	2
	Hypoplectrus unicolor	butter hamlet	-	-	-	-	3	2	-	-
	Paranthias furcifer	creolefish	-	-	-	-	-	-	-	2
	Serranus tigrinius	harlequin bass	21	8	3	34	9	7	1	-
Sphyraenidae										
	Sphyraena barracuda	great barracuda	1	-	-	-	-	-	-	1
Synodontidae										
	Synodus intermedius	sand diver	1	3	-	-	-	-	-	-
Tetraodontidae										
	Canthigaster rostrata	sharpnose puffer	16	19	1	11	28	15	-	-
	Diodon holocanthus	balloonfish	-	-	-	-	-	-	-	1

Appendix VI. Size distribution of all fish observed in belt transects, St. Croix, 2003.

Species	Common Name	Total Length (cm) 0-5	5-10	10-20	20-30	30-40	> 40	Total No.
Acanthuridae								
Acanthurus bahianus	ocean surgeon	40	206	609	24	-	-	879
Acanthurus chirurgus	doctorfish	-	-	16	3	-	-	19
Acanthurus coeruleus	blue tang	42	158	215	21	-	-	436
Aulostomidae								
Aulostomus maculatus	trumpetfish	-	1	1	2	4	20	28
Balistidae								
Balistes vetula	queen triggerfish	-	-	-	2	-	-	2
Melichthys niger	black durgon	3	36	116	98	7	-	260
Bothidae								
Bothus lunatus	peacock flounder	-	-	-	3	1	-	4
Carangidae								
Caranx fusus	blue runner	-	-	3	1	-	-	4
Caranx latus	horse-eye jack	-	-	-	-	-	1	1
Caranx ruber	bar jack	-	5	87	32	5	2	131
Chaetodontidae								
Chaetodon aculeatus	longsnout butterflyfish	2	15	-	-	-	-	17
Chaetodon capistratus	foureye butterflyfish	6	152	64	-	-	-	222
Chaetodon ocellatus	spotfin butterflyfish	1	1	2	-	-	-	4
Chaetodon sedentarius	reef butterflyfish	-	1	-	-	-	-	1
Chaetodon striatus	banded butterflyfish	-	10	18	-	-	-	28
Cirrhitidae								
Amblycirrhitus pinos	redspotted hawkfish	3	2	-	-	-	-	5
Congridae								
Heteroconger longissimus	brown garden eel	-	-	-	15	15	-	30
Dasyatidae								
Dasyatis americana	southern stingray	-	-	-	-	-	1	1
Exocoetidae								
Hemiramphus brasiliensis	ballyhoo	-	-	-	500	-	-	500
Gerreidae								
Eucinostomus jonesi	slender mojarra	-	-	6	-	-	-	6
Gerres cinereus	yellowfin majorra	-	-	-	1	-	-	1
Grammatidae								
Gramma loreto	fairy basslet	612	12	-	-	-	-	624

Appendix VI continued. Size distribution of all fish observed in belt transects, St. Croix, 2003.

Species	Common Name	Total Length (cm) 0-5	5-10	10-20	20-30	30-40	> 40	Total No.
Haemulidae								
Haemulon aurolineatum	tomtate	-	-	12	-	-	-	12
Haemulon carbonarium	caesar grunt	-	-	3	-	-	-	3
Haemulon chrysargyreum	smallmouth grunt	-	-	22	-	-	-	22
Haemulon flavolineatum	french grunt	7	60	160	17	-	-	244
Haemulon macrostomum	spanish grunt	-	-	1	-	-	-	1
Haemulon plumieri	white grunt	-	-	6	3	1	-	10
Haemulon sciurus	bluestriped grunt	-	3	10	5	2	-	20
Holocentridae								
Holocentrus adcensionis	squirrelfish	-	2	19	6	-	-	27
Holocentrus rufus	longspine squirrelfish	-	3	54	7	-	-	64
Myripristis jacobus	blackbar soldierfish	1	19	122	2	-	-	144
Neoniphon marianus	longjaw squirrelfish	-	-	5	-	-	-	5
Sargocentron coruscum	reef squirrelfish	-	-	-	1	-	-	1
Sargocentron vexillarium	dusky squirrelfish	-	-	2	-	-	-	2
Labridae								
Bodianus rufus	spanish hogfish	27	14	63	6	2	-	112
Clepticus parrae	creole wrasse	743	242	1079	-	-	-	2064
Halichoeres bivittatus	slippery dick	35	87	35	-	-	-	157
Halichoeres cyanocephalus	yellowcheek wrasse	-	2	-	-	-	-	2
Halichoeres garnoti	yellowhead wrasse	318	246	106	-	-	-	670
Halichoeres maculipinna	clown wrasse	46	59	15	-	-	-	120
Halichoeres poeyi	blackear wrasse	-	8	2	-	-	-	10
Halichoeres radiatus	pudding wife	-	5	1	2	1	-	9
Thalassoma bifasciatum	bluehead wrasse	3572	1350	37	-	-	-	4959
Lutjanidae								
Lutjanus analis	mutton snapper	-	-	-	-	-	1	1
Lutjanus apodus	schoolmaster	-	2	15	6	2	2	27
Lutjanus mahogoni	mahogany snapper	-	7	26	7	-	-	40
Ocyurus chrysurus	yellowtail snapper	-	-	22	5	3	-	30
Malacanthidae								
Malacanthus plumieri	sand tilefish	-	1	-	1	1	3	6
Monocanthidae								
Cantherhines macrocerus	whitespotted filefish	-	-	12	1	1	-	14
Cantherhines pullus	orangespotted filefish	-	5	6	-	-	-	11
Monacanthus tuckeri	slender filefish	-	-	1	-	-	-	1
Mullidae								
Mulloidichthys martinicus	yellow goatfish	-	1	115	10	-	-	126
Psuedupeneus maculatus	spotted goatfish	-	9	38	14	-	-	61
Muraenidae								
Enchelycore nigricans	viper moray	-	-	-	1	1	-	2
Gymnothorax miliaris	goldentail moray	-	-	-	-	1	2	3

Appendix VI continued. Size distribution of all fish observed in belt transects, St. Croix, 2003.

Species	Common Name	Total Length (cm) 0-5	5-10	10-20	20-30	30-40	> 40	Total No.
Ostraciidae								
Acanthostracion ploygonia	honeycomb cowfish	-	-	1	2	1	-	4
Acanthostracion quadricornis	scrawled cowfish	-	-	-	1	-	-	1
Lactophrys bicaudalis	spotted trunkfish	-	2	5	1	-	-	8
Lactophrys triqueter	smooth trunkfish	-	3	5	-	-	-	8
Pomacanthidae								
Holacanthus ciliaris	queen angelfish	-	-	-	3	-	-	3
Holacanthus tricolor	rock beauty	8	3	14	3	-	-	28
Abudefduf saxatilis	sergeant major	-	34	113	-	-	-	147
Chromis cyanea	blue chromis	3544	1065	17	-	-	-	4626
Chromis multilineata	brown chromis	836	938	4	-	-	-	1778
Microspathodon chrysurus	yellowtail damselfish	34	105	138	-	-	-	277
Stegastes diencaeus	longfin damselfish	4	2	-	-	-	-	6
Stegastes fuscus	dusky damselfish	41	341	35	-	-	-	417
Stegastes leucostictus	beaugregory	44	86	4	-	-	-	134
Stegastes partitus	bicolor damselfish	2063	595	1	-	-	-	2659
Stegastes planifrons	threespot damselfish	136	316	18	-	-	-	470
Stegastes variabilis	cocoa damselfish	10	50	10	-	-	-	70
Priacanthidae								
Heteropriacanthus cruentatus	glasseye snapper	-	-	-	1	-	-	1
Priacanthus arenatus	bigeye	-	-	-	3	-	-	3
Scaridae								
Scarus croicensis	striped parrotfish	186	145	62	8	-	-	401
Scarus taeniopterus	princess parrotfish	145	125	166	60	6	-	502
Scarus vetula	queen parrotfish	-	4	35	10	2	-	51
Sparisoma atomarium	greenblotch parrotfish	9	25	2	-	-	-	36
Sparisoma aurofrenatum	redband parrotfish	167	128	256	39	-	-	590
Sparisoma chrysopterum	redtail parrotfish	-	4	14	15	-	-	33
Sparisoma radians	bucktooth parrotfish	3	-	-	-	-	-	3
Sparisoma rubripinne	yellowtail parrotfish	8	7	15	8	-	-	38
Sparisoma viride	stoplight parrotfish	146	116	102	35	8	2	409
Sciaenidae								
Equetus acuminatus	highhat	-	-	1	1	-	-	2
Equetus punctatus	spotted drum	-	-	2	1	-	-	3
Scombridae								
Scomberomorus regalis	cero mackerel	-	-	-	1	1	4	6
Serranidae								
Cephalopholis cruentatus	graysby	-	19	73	12	1	-	105
Cephalopholis fulvus	coney	2	38	128	20	-	-	188
Epinephelus adcensionis	rock hind	-	1	-	-	-	-	1
Epinephelus guttatus	red hind	-	-	7	8	1	-	16
Hypoplectrus chlorurus	yellowtail hamlet	-	3	6	-	-	-	9
Hypoplectrus guttavarius	shy hamlet	-	1	1	-	-	-	2

Appendix VI continued. Size distribution of all fish observed in belt transects, St. Croix, 2003.

Species	Common Name	Total Length (cm) 0-5	5-10	10-20	20-30	30-40	> 40	Total No.
Serranidae								
Hypoplectrus nigricans	black hamlet	-	14	19	-	-	-	33
Hypoplectrus puella	barred hamlet	1	13	21	-	-	-	35
Hypoplectrus unicolor	butter hamlet	-	-	5	-	-	-	5
Paranthias furcifer	creolefish	-	1	1	-	-	-	2
Serranus tigrinius	harlequin bass	21	59	3	-	-	-	83
Sphyraenidae								
Sphyraena barracuda	great barracuda	-	-	-	-	-	2	2
Synodontidae								
Synodus intermedius	sand diver	-	-	1	3	-	-	4
Tetraodontidae								
Canthigaster rostrata	sharpnose puffer	43	45	2	-	-	-	90
Diodon holocanthus	balloonfish	-	-	-	1	-	-	1
	Total =	12909	7012	4413	1032	67	40	25473
	% =	50.7	27.5	17.3	4.1	0.3	0.2	100.0

Appendix VII (a.) Salt River belt transect data, St. Croix

Species	Common Name	Transect No. 1	2	3	4	5	6	7	8	9	10	%Freq	Total	Avg	StDev
Thalassoma bifasciatum	bluehead wrasse	156	169	20	10	200	120	26	42	70	90	100	903	90.3	68.1
Stegastes partitus	bicolor damselfish	50	62	13	11	100	49	31	65	7	11	100	399	39.9	30.7
Acanthurus bahianus	ocean surgeon	21	11	3	8	34	10	20	5	4	11	100	127	12.7	9.7
Cephalopholis fulvus	coney	8	8	2	2	6	8	11	4	4	6	100	59	5.9	2.9
Haemulon flavolineatum	french grunt	4	4	3	3	15	8	6	4	2	3	100	52	5.2	3.9
Scarus taeniopterus	princess parrotfish	3	5	5	3	5	9	9	2	3	6	100	50	5.0	2.4
Chaetodon capistratus	foureye butterflyfish	3	4	6	3	6	7	3	4	3	2	100	41	4.1	1.7
Sparisoma aurofrenatum	redband parrotfish	11	14	7	10	15	8	10	9	0	0	90	84	8.4	5.1
Acanthurus coeruleus	blue tang	4	4	3	1	15	5	5	4	4	0	90	45	4.5	4.0
Microspathodon chrysurus	yellowtail damselfish	6	3	0	0	4	1	3	5	2	1	80	25	2.5	2.1
Serranus tigrinius	harlequin bass	3	2	2	0	2	1	0	3	2	6	80	21	2.1	1.7
Melichthys niger	black durgon	0	0	37	9	5	2	26	1	0	0	60	80	8.0	13.0
Caranx ruber	bar jack	0	0	1	8	0	0	3	4	2	3	60	21	2.1	2.6
Holocentrus rufus	longspine squirrelfish	1	3	0	3	3	0	1	1	0	0	60	12	1.2	1.3
Clepticus parrae	creole wrasse	0	0	253	506	0	11	300	20	0	0	50	1090	109.0	180.0
Canthigaster rostrata	sharpnose puffer	3	1	1	5	0	0	6	0	0	0	50	16	1.6	2.3
Halichoeres garnoti	yellowhead wrasse	5	3	0	2	1	0	0	0	2	0	50	13	1.3	1.7
Psuedupeneus maculatus	spotted goatfish	0	1	0	1	5	1	0	2	0	0	50	10	1.0	1.6
Aulostomus maculatus	trumpetfish	0	0	3	1	0	2	0	1	0	1	50	8	0.8	1.0
Cantherhines pullus	orangespotted filefish	1	0	0	0	3	0	1	1	0	1	50	7	0.7	0.9
Holacanthus tricolor	rock beauty	0	0	1	2	0	0	2	2	0	0	50	7	0.7	0.9
Chaetodon striatus	banded butterflyfish	2	1	0	0	1	0	1	0	1	0	50	6	0.6	0.7
Chromis cyanea	blue chromis	0	0	120	320	0	0	0	20	0	1	40	461	46.1	103.3
Abudefduf saxatilis	sergeant major	0	0	6	6	0	0	0	6	0	1	40	19	1.9	2.8
Stegastes fuscus	dusky damselfish	0	2	3	0	0	0	0	7	0	3	40	15	1.5	2.3
Chromis multilineata	brown chromis	0	0	95	102	0	0	0	1	0	0	30	198	19.8	41.5
Mulloidichthys martinicus	yellow goatfish	0	1	1	0	0	10	0	0	0	0	30	12	1.2	3.1
Halichoeres maculipinna	clown wrasse	3	6	0	0	0	0	2	0	0	0	30	11	1.1	2.0
Hypoplectrus puella	barred hamlet	0	0	4	4	0	0	0	1	0	0	30	9	0.9	1.7
Myripristis jacobus	blackbar soldierfish	0	0	3	3	0	0	0	2	0	0	30	8	0.8	1.3
Lutjanus apodus	schoolmaster	0	3	0	2	0	0	1	0	0	0	30	6	0.6	1.1
Bodianus rufus	spanish hogfish	0	1	3	0	0	0	0	2	0	0	30	6	0.6	1.1
Sparisoma viride	stoplight parrotfish	0	1	0	0	2	0	0	3	0	0	30	6	0.6	1.1

Appendix VII (a.) continued. Salt River belt transect data, St. Croix

Species	Common Name	Transect No. 1	2	3	4	5	6	7	8	9	10	%Freq	Total	Avg	StDev
Chaetodon aculeatus	longsnout butterflyfish	1	0	0	3	0	0	1	0	0	0	30	5	0.5	1.0
Stegastes leucostictus	beaugregory	0	1	2	1	0	0	0	0	0	0	30	4	0.4	0.7
Haemulon plumieri	white grunt	0	1	0	0	1	0	2	0	0	0	30	4	0.4	0.7
Gramma loreto	fairy basslet	0	0	145	125	0	0	0	0	0	0	20	270	27.0	57.1
Cephalopholis cruentatus	graysby	0	0	5	3	0	0	0	0	0	0	20	8	0.8	1.8
Lutjanus mahogoni	mahogany snapper	1	0	0	0	2	0	0	0	0	0	20	3	0.3	0.7
Stegastes planifrons	threespot damselfish	0	0	0	2	0	0	0	0	0	1	20	3	0.3	0.7
Haemulon sciurus	bluestriped grunt	0	0	1	0	0	1	0	0	0	0	20	2	0.2	0.4
Acanthostracion ploygonia	honeycomb cowfish	0	0	0	1	0	0	0	0	1	0	20	2	0.2	0.4
Chaetodon ocellatus	spotfin butterflyfish	0	0	0	0	2	0	0	0	0	0	10	2	0.2	0.6
Hypoplectrus nigricans	black hamlet	0	0	0	1	0	0	0	0	0	0	10	1	0.1	0.3
Acanthurus chirurgus	doctorfish	0	0	0	0	0	0	0	0	0	1	10	1	0.1	0.3
Sphyraena barracuda	great barracuda	0	0	0	0	1	0	0	0	0	0	10	1	0.1	0.3
Caranx latus	horse-eye jack	0	0	0	0	0	0	0	1	0	0	10	1	0.1	0.3
Neoniphon marianus	longjaw squirrelfish	0	0	0	1	0	0	0	0	0	0	10	1	0.1	0.3
Synodus intermedius	sand diver	0	0	1	0	0	0	0	0	0	0	10	1	0.1	0.3
Lactophrys bicaudalis	spotted trunkfish	0	0	0	0	0	0	0	0	1	0	10	1	0.1	0.3
Hypoplectrus chlorurus	yellowtail hamlet	0	0	1	0	0	0	0	0	0	0	10	1	0.1	0.3
	n = 51 species	286	311	750	1162	428	253	470	222	108	148	Total = 4,138 fish			

Appendix VII (b.) Cane Bay belt transect data, St. Croix

Species	Common Name	Transect No. 1	2	3	4	5	6	7	8	9	10	%Freq	Total	Avg	StDev
Chromis cyanea	blue chromis	267	205	232	190	31	100	192	126	52	61	100	1456	145.6	82.6
Chromis multilineata	brown chromis	27	230	91	45	25	105	12	13	90	34	100	672	67.2	66.7
Thalassoma bifasciatum	bluehead wrasse	59	182	67	35	40	60	38	74	28	19	100	602	60.2	46.4
Stegastes partitus	bicolor damselfish	58	46	31	20	30	25	14	27	9	10	100	270	27	15.6
Gramma loreto	fairy basslet	69	66	28	6	3	4	2	8	9	10	100	205	20.5	25.8
Scarus taeniopterus	princess parrotfish	8	10	18	3	8	6	15	16	7	10	100	101	10.1	4.8
Abudefduf saxatilis	sergeant major	10	15	14	10	22	6	3	4	2	3	100	89	8.9	6.6
Sparisoma viride	stoplight parrotfish	7	4	18	11	4	5	12	11	3	7	100	82	8.2	4.7
Sparisoma aurofrenatum	redband parrotfish	11	22	12	6	10	4	2	2	4	8	100	81	8.1	6.1
Melichthys niger	black durgon	7	7	8	3	12	10	9	3	5	9	100	73	7.3	2.9
Halichoeres garnoti	yellowhead wrasse	2	7	18	6	4	6	7	13	5	4	100	72	7.2	4.8
Acanthurus bahianus	ocean surgeon	6	9	7	3	10	5	3	2	5	5	100	55	5.5	2.6
Chaetodon capistratus	foureye butterflyfish	7	8	2	5	1	5	5	3	2	4	100	42	4.2	2.3
Acanthurus coeruleus	blue tang	1	6	4	4	3	1	4	2	6	3	100	34	3.4	1.8
Cephalopholis fulvus	coney	0	2	4	5	2	4	2	3	4	3	90	29	2.9	1.4
Haemulon flavolineatum	french grunt	4	2	2	2	3	3	0	2	3	7	90	28	2.8	1.8
Stegastes fuscus	dusky damselfish	0	6	6	0	0	19	9	15	4	7	70	66	6.6	6.4
Stegastes planifrons	threespot damselfish	20	14	13	3	0	3	3	2	0	0	70	58	5.8	7.1
Myripristis jacobus	blackbar soldierfish	3	6	1	0	3	2	1	0	4	0	70	20	2	2.0
Canthigaster rostrata	sharpnose puffer	2	4	5	2	3	0	1	0	0	2	70	19	1.9	1.7
Clepticus parrae	creole wrasse	134	230	53	10	12	9	0	0	0	0	60	448	44.8	77.4
Mulloidichthys martinicus	yellow goatfish	1	2	28	3	0	1	0	0	2	0	60	37	3.7	8.6
Cephalopholis cruentatus	graysby	7	6	6	0	2	2	0	0	0	4	60	27	2.7	2.8
Microspathodon chrysurus	yellowtail damselfish	0	0	1	0	2	3	3	2	0	4	60	15	1.5	1.5
Bodianus rufus	spanish hogfish	0	4	2	0	1	0	1	0	2	1	60	11	1.1	1.3
Caranx ruber	bar jack	4	5	0	4	0	0	0	2	0	1	50	16	1.6	2.0
Hypoplectrus puella	barred hamlet	0	1	1	1	1	1	0	0	0	0	50	5	0.5	0.5
Stegastes leucostictus	beaugregory	0	4	2	0	0	0	1	4	0	0	40	11	1.1	1.7
Serranus tigrinius	harlequin bass	0	0	3	0	0	2	0	1	0	2	40	8	0.8	1.1
Chaetodon aculeatus	longsnout butterflyfish	0	1	1	2	1	0	0	0	0	0	40	5	0.5	0.7
Scarus croicensis	striped parrotfish	0	0	0	4	0	0	3	8	0	0	30	15	1.5	2.7
Stegastes variabilis	cocoa damselfish	0	0	0	6	5	0	2	0	0	0	30	13	1.3	2.3
Chaetodon striatus	banded butterflyfish	0	4	0	0	4	0	2	0	0	0	30	10	1	1.7

Appendix VII (b.) continued. Cane Bay belt transect data, St. Croix

Species	Common Name	Transect No. 1	2	3	4	5	6	7	8	9	10	%Freq	Total	Avg	StDev
Holacanthus tricolor	rock beauty	0	0	0	4	2	1	0	0	0	0	30	7	0.7	1.3
Aulostomus maculatus	trumpetfish	1	0	4	0	0	0	1	0	0	0	30	6	0.6	1.3
Holocentrus rufus	longspine squirrelfish	0	0	1	0	0	0	0	0	1	2	30	4	0.4	0.7
Haemulon sciurus	bluestriped grunt	1	1	0	1	0	0	0	0	0	0	30	3	0.3	0.5
Cantherhines pullus	orangespotted filefish	0	1	0	0	1	0	0	0	0	1	30	3	0.3	0.5
Lactophrys bicaudalis	spotted trunkfish	1	0	1	0	0	0	0	0	1	0	30	3	0.3	0.5
Lutjanus mahogoni	mahogany snapper	0	7	0	0	5	0	0	0	0	0	20	12	1.2	2.6
Ocyurus chrysurus	yellowtail snapper	5	0	0	0	1	0	0	0	0	0	20	6	0.6	1.6
Acanthurus chirurgus	doctorfish	0	1	0	2	0	0	0	0	0	0	20	3	0.3	0.7
Neoniphon marianus	longjaw squirrelfish	0	2	1	0	0	0	0	0	0	0	20	3	0.3	0.7
Synodus intermedius	sand diver	0	0	0	0	0	0	0	0	1	2	20	3	0.3	0.7
Lactophrys triqueter	smooth trunkfish	0	0	0	1	0	0	0	1	0	0	20	2	0.2	0.4
Hypoplectrus chlorurus	yellowtail hamlet	1	0	1	0	0	0	0	0	0	0	20	2	0.2	0.4
Haemulon chrysargyreum	smallmouth grunt	0	0	0	0	0	0	0	0	6	0	10	6	0.6	1.9
Amblycirrhitus pinos	redspotted hawkfish	0	0	0	2	0	0	0	0	0	0	10	2	0.2	0.6
Priacanthus arenatus	bigeye	0	0	0	0	0	0	0	0	1	0	10	1	0.1	0.3
Hypoplectrus nigricans	black hamlet	1	0	0	0	0	0	0	0	0	0	10	1	0.1	0.3
Gymnothorax miliaris	goldentail moray	1	0	0	0	0	0	0	0	0	0	10	1	0.1	0.3
Lutjanus analis	mutton snapper	0	0	0	0	0	0	0	0	0	1	10	1	0.1	0.3
Bothus lunatus	peacock flounder	0	0	0	0	0	0	0	0	1	0	10	1	0.1	0.3
Epinephelus adcensionis	rock hind	0	0	0	1	0	0	0	0	0	0	10	1	0.1	0.3
Hypoplectrus guttavarius	shy hamlet	0	0	0	1	0	0	0	0	0	0	10	1	0.1	0.3
Haemulon macrostomum	spanish grunt	0	0	0	0	0	0	0	0	1	0	10	1	0.1	0.3
Equetus punctatus	spotted drum	0	0	0	0	0	0	0	0	1	0	10	1	0.1	0.3
Psuedupeneus maculatus	spotted goatfish	0	0	0	0	0	1	0	0	0	0	10	1	0.1	0.3
Haemulon plumieri	white grunt	0	1	0	0	0	0	0	0	0	0	10	1	0.1	0.3
Cantherhines macrocerus	whitespotted filefish	0	0	0	0	0	0	0	1	0	0	10	1	0.1	0.3
Gerres cinereus	yellowfin majorra	0	1	0	0	0	0	0	0	0	0	10	1	0.1	0.3
	n = 61 species	725	1122	686	401	251	393	347	345	259	224	Total = 4753			

Appendix VII (c.) Isaac's Bay belt transect data, St. Croix

Species	Common Name	Transect No. 1	2	3	4	5	6	7	8	9	10	%Freq	Total	Avg	StDev
Thalassoma bifasciatum	bluehead wrasse	40	91	69	85	16	81	115	65	100	80	100	742	74.2	28.8
Stegastes partitus	bicolor damselfish	34	39	38	32	19	36	40	81	130	85	100	534	53.4	34.3
Acanthurus bahianus	ocean surgeon	17	25	27	31	29	10	62	58	47	30	100	336	33.6	16.9
Chromis cyanea	blue chromis	51	32	27	2	76	5	16	4	10	20	100	243	24.3	23.6
Sparisoma aurofrenatum	redband parrotfish	11	23	16	14	1	9	10	3	14	11	100	112	11.2	6.3
Halichoeres garnoti	yellowhead wrasse	18	9	12	7	2	7	3	8	11	2	100	79	7.9	5.0
Cephalopholis fulvus	coney	13	4	3	5	7	1	1	1	5	3	100	43	4.3	3.7
Scarus croicensis	striped parrotfish	7	1	6	1	5	9	3	0	4	8	90	44	4.4	3.1
Sparisoma chrysopterum	redtail parrotfish	15	3	1	3	5	2	2	1	0	0	80	32	3.2	4.4
Microspathodon chrysurus	yellowtail damselfish	0	4	2	3	0	1	2	1	2	3	80	18	1.8	1.3
Holocentrus adcensionis	squirrelfish	0	3	2	1	3	0	4	7	0	2	70	22	2.2	2.2
Sparisoma viride	stoplight parrotfish	1	0	0	0	3	5	1	2	2	4	70	18	1.8	1.8
Acanthurus coeruleus	blue tang	14	1	4	2	21	0	0	0	0	29	60	71	7.1	10.5
Myripristis jacobus	blackbar soldierfish	6	2	0	0	8	4	0	0	1	5	60	26	2.6	3.0
Bodianus rufus	spanish hogfish	8	0	1	1	0	0	11	0	1	2	60	24	2.4	3.9
Haemulon flavolineatum	french grunt	12	1	0	4	2	0	0	0	1	3	60	23	2.3	3.7
Melichthys niger	black durgon	5	1	1	3	0	0	0	0	2	3	60	15	1.5	1.7
Scarus taeniopterus	princess parrotfish	3	2	0	0	1	1	0	0	2	3	60	12	1.2	1.2
Chromis multilineata	brown chromis	12	0	12	0	10	0	7	0	0	9	50	50	5.0	5.5
Caranx ruber	bar jack	3	1	1	0	0	0	4	0	0	4	50	13	1.3	1.7
Stegastes fuscus	dusky damselfish	0	0	0	0	7	2	1	3	0	0	40	13	1.3	2.3
Holocentrus rufus	longspine squirrelfish	2	3	3	0	0	0	0	0	4	0	40	12	1.2	1.6
Cephalopholis cruentatus	graysby	1	0	0	0	2	1	0	0	0	1	40	5	0.5	0.7
Epinephelus guttatus	red hind	1	1	0	0	0	0	0	1	1	0	40	4	0.4	0.5
Holacanthus tricolor	rock beauty	0	0	1	1	1	0	1	0	0	0	40	4	0.4	0.5
Mulloidichthys martinicus	yellow goatfish	4	0	0	0	0	0	1	0	0	10	30	15	1.5	3.2
Halichoeres maculipinna	clown wrasse	0	5	5	2	0	0	0	0	0	0	30	12	1.2	2.1
Halichoeres poeyi	blackear wrasse	0	3	5	2	0	0	0	0	0	0	30	10	1.0	1.8
Sparisoma rubripinne	yellowtail parrotfish	0	0	4	2	0	0	0	0	1	0	30	7	0.7	1.3
Stegastes variabilis	cocoa damselfish	0	0	0	0	3	0	1	0	0	1	30	5	0.5	1.0
Halichoeres bivittatus	slippery dick	0	3	0	0	0	0	0	1	1	0	30	5	0.5	1.0
Acanthurus chirurgus	doctorfish	1	0	0	0	1	1	0	0	0	0	30	3	0.3	0.5
Clepticus parrae	creole wrasse	15	6	0	0	0	0	0	0	0	0	20	21	2.1	4.9
Stegastes leucostictus	beaugregory	8	2	0	0	0	0	0	0	0	0	20	10	1.0	2.5

Appendix VII (c.) continued. Isaac's Bay belt transect data, St. Croix

Species	Common Name	Transect No. 1	2	3	4	5	6	7	8	9	10	%Freq	Total	Avg	StDev
Scarus vetula	queen parrotfish	0	0	3	3	0	0	0	0	0	0	20	6	0.6	1.3
Lutjanus apodus	schoolmaster	1	0	0	3	0	0	0	0	0	0	20	4	0.4	1.0
Psuedupeneus maculatus	spotted goatfish	0	0	0	0	0	0	1	0	3	0	20	4	0.4	1.0
Serranus tigrinius	harlequin bass	2	1	0	0	0	0	0	0	0	0	20	3	0.3	0.7
Lutjanus mahogoni	mahogany snapper	2	0	0	0	1	0	0	0	0	0	20	3	0.3	0.7
Haemulon aurolineatum	tomtate	1	0	0	0	0	0	0	0	0	1	20	2	0.2	0.4
Gramma loreto	fairy basslet	11	0	0	0	0	0	0	0	0	0	10	11	1.1	3.5
Haemulon chrysargyreum	smallmouth grunt	5	0	0	0	0	0	0	0	0	0	10	5	0.5	1.6
Abudefduf saxatilis	sergeant major	4	0	0	0	0	0	0	0	0	0	10	4	0.4	1.3
Chaetodon striatus	banded butterflyfish	3	0	0	0	0	0	0	0	0	0	10	3	0.3	0.9
Halichoeres radiatus	pudding wife	0	0	2	0	0	0	0	0	0	0	10	2	0.2	0.6
Amblycirrhitus pinos	redspotted hawkfish	0	2	0	0	0	0	0	0	0	0	10	2	0.2	0.6
Priacanthus arenatus	bigeye	1	0	0	0	0	0	0	0	0	0	10	1	0.1	0.3
Caranx fusus	blue runner	0	0	0	0	0	1	0	0	0	0	10	1	0.1	0.3
Haemulon carbonarium	caesar grunt	0	0	0	0	1	0	0	0	0	0	10	1	0.1	0.3
Scomberomorus regalis	cero mackerel	1	0	0	0	0	0	0	0	0	0	10	1	0.1	0.3
Equetus acuminatus	highhat	0	0	0	0	0	1	0	0	0	0	10	1	0.1	0.3
Bothus lunatus	peacock flounder	1	0	0	0	0	0	0	0	0	0	10	1	0.1	0.3
Holacanthus ciliaris	queen angelfish	0	0	0	0	1	0	0	0	0	0	10	1	0.1	0.3
Malacanthus plumieri	sand tilefish	0	0	0	1	0	0	0	0	0	0	10	1	0.1	0.3
Canthigaster rostrata	sharpnose puffer	0	0	1	0	0	0	0	0	0	0	10	1	0.1	0.3
Lactophrys triqueter	smooth trunkfish	0	0	0	0	0	0	1	0	0	0	10	1	0.1	0.3
Dasyatis americana	southern stingray	0	0	0	0	0	1	0	0	0	0	10	1	0.1	0.3
Equetus punctatus	spotted drum	0	0	0	0	0	0	0	0	0	1	10	1	0.1	0.3
Stegastes planifrons	threespot damselfish	0	0	1	0	0	0	0	0	0	0	10	1	0.1	0.3
Aulostomus maculatus	trumpetfish	0	0	0	0	1	0	0	0	0	0	10	1	0.1	0.3
	n = 60 species	334	268	247	208	226	178	287	236	342	320	Total = 2646 fish			

Appendix VII (d.) Eagle Ray belt transect data, St. Croix

Species	Common Name	Transect No. 1	2	3	4	5	6	7	8	9	10	%Freq	Total	Avg	StDev
Thalassoma bifasciatum	bluehead wrasse	66	92	115	169	14	31	14	22	102	51	100	676	67.6	51.4
Stegastes partitus	bicolor damselfish	27	14	33	27	25	20	21	25	13	14	100	219	21.9	6.7
Acanthurus bahianus	ocean surgeon	7	10	11	11	6	14	20	13	3	3	100	98	9.8	5.3
Stegastes fuscus	dusky damselfish	8	8	9	13	3	6	14	14	2	6	100	83	8.3	4.3
Scarus croicensis	striped parrotfish	2	13	5	7	2	7	7	8	1	8	100	60	6.0	3.6
Scarus taeniopterus	princess parrotfish	5	3	7	2	7	3	12	5	1	1	100	46	4.6	3.4
Serranus tigrinius	harlequin bass	2	6	2	3	4	6	5	3	1	2	100	34	3.4	1.8
Haemulon flavolineatum	french grunt	2	3	4	4	3	3	8	2	2	1	100	32	3.2	1.9
Chromis cyanea	blue chromis	64	47	2	11	8	7	0	4	15	3	90	161	16.1	21.6
Halichoeres garnoti	yellowhead wrasse	12	19	23	19	0	2	4	2	6	9	90	96	9.6	8.3
Stegastes leucostictus	beaugregory	5	5	4	4	1	4		5	15	10	90	53	5.9	4.1
Sparisoma viride	stoplight parrotfish	2	3	2	6	6	4	9	3	4	0	90	39	3.9	2.6
Chaetodon capistratus	foureye butterflyfish	5	4	5	5	4	6	6	1	2	0	90	38	3.8	2.1
Holocentrus rufus	longspine squirrelfish	2	1	2	2	1	1	1	0	2	4	90	16	1.6	1.1
Sparisoma aurofrenatum	redband parrotfish	16	13	9	12	1	3	0	0	1	2	80	57	5.7	6.1
Acanthurus coeruleus	blue tang	3	3	3	1	4	0	7	3	0	1	80	25	2.5	2.1
Cephalopholis cruentatus	graysby	4	2	3	4	2	0	1	0	1	1	80	18	1.8	1.5
Microspathodon chrysurus	yellowtail damselfish	0	1	1	2	2	1	3	1	1	0	80	12	1.2	0.9
Chromis multilineata	brown chromis	22	11	25	12	10	0	0	0	15	1	70	96	9.6	9.3
Psuedupeneus maculatus	spotted goatfish	1	1	4	0	0	3	1	2	4	0	70	16	1.6	1.6
Myripristis jacobus	blackbar soldierfish	11	8	9	8	4	0	2	0	0	0	60	42	4.2	4.4
Cephalopholis fulvus	coney	0	0	6	0	6	2	3	0	2	3	60	22	2.2	2.3
Ocyurus chrysurus	yellowtail snapper	2	0	1	1	0	1	1	0	0	1	60	7	0.7	0.7
Halichoeres maculipinna	clown wrasse	0	3	25	9	0	2	2	0	0	0	50	41	4.1	7.9
Canthigaster rostrata	sharpnose puffer	0	1	1	0	4	4	0	0	1	0	50	11	1.1	1.6
Abudefduf saxatilis	sergeant major	4	2	1	2	0	0	0	0	0	0	40	9	0.9	1.4
Caranx ruber	bar jack	1	0	1	4	2	0	0	0	0	0	40	8	0.8	1.3
Stegastes variabilis	cocoa damselfish	0	0	0	0	10	1	3	0	0	0	30	14	1.4	3.2
Gramma loreto	fairy basslet	5	0	3	0	0	0	0	0	0	3	30	11	1.1	1.9
Lutjanus apodus	schoolmaster	2	0	0	0	3	0	0	0	1	0	30	6	0.6	1.1
Epinephelus guttatus	red hind	0	0	0	2	1	0	1	0	0	0	30	4	0.4	0.7
Clepticus parrae	creole wrasse	20	20	0	0	0	0	0	0	0	0	20	40	4.0	8.4
Lutjanus mahogoni	mahogany snapper	8	2	0	0	0	0	0	0	0	0	20	10	1.0	2.5
Mulloidichthys martinicus	yellow goatfish	7	0	1	0	0	0	0	0	0	0	20	8	0.8	2.2

Appendix VII (d.) continued. Eagle Ray belt transect data, St. Croix

Species	Common Name	Transect No. 1	2	3	4	5	6	7	8	9	10	%Freq	Total	Avg	StDev
Aulostomus maculatus	trumpetfish	2	0	0	0	0	0	1	0	0	0	20	3	0.3	0.7
Acanthurus chirurgus	doctorfish	0	0	0	0	1	0	1	0	0	0	20	2	0.2	0.4
Haemulon plumieri	white grunt	1	0	0	0	0	0	0	1	0	0	20	2	0.2	0.4
Caranx fusus	blue runner	3	0	0	0	0	0	0	0	0	0	10	3	0.3	0.9
Chaetodon striatus	banded butterflyfish	0	0	0	0	0	0	0	2	0	0	10	2	0.2	0.6
Hypoplectrus puella	barred hamlet	0	0	0	0	0	2	0	0	0	0	10	2	0.2	0.6
Haemulon carbonarium	caesar grunt	0	0	2	0	0	0	0	0	0	0	10	2	0.2	0.6
Haemulon chrysargyreum	smallmouth grunt	0	2	0	0	0	0	0	0	0	0	10	2	0.2	0.6
Chaetodon ocellatus	spotfin butterflyfish	0	0	0	0	0	2	0	0	0	0	10	2	0.2	0.6
Priacanthus arenatus	bigeye	0	0	0	1	0	0	0	0	0	0	10	1	0.1	0.3
Haemulon sciurus	bluestriped grunt	0	0	1	0	0	0	0	0	0	0	10	1	0.1	0.3
Equetus acuminatus	highhat	0	0	0	0	1	0	0	0	0	0	10	1	0.1	0.3
Chaetodon aculeatus	longsnout butterflyfish	1	0	0	0	0	0	0	0	0	0	10	1	0.1	0.3
Cantherhines pullus	orangespotted filefish	0	1	0	0	0	0	0	0	0	0	10	1	0.1	0.3
Holacanthus ciliaris	queen angelfish	1	0	0	0	0	0	0	0	0	0	10	1	0.1	0.3
Scarus vetula	queen parrotfish	0	0	0	0	0	0	0	1	0	0	10	1	0.1	0.3
Amblycirrhitus pinos	redspotted hawkfish	0	0	0	0	0	0	0	0	1	0	10	1	0.1	0.3
Sparisoma chrysopterum	redtail parrotfish	1	0	0	0	0	0	0	0	0	0	10	1	0.1	0.3
Malacanthus plumieri	sand tilefish	0	0	0	0	0	1	0	0	0	0	10	1	0.1	0.3
Bodianus rufus	spanish hogfish	0	0	0	0	0	0	1	0	0	0	10	1	0.1	0.3
	n = 54 species	324	298	320	341	135	136	148	117	196	124	Total = 2139 fish			

Appendix VII (e.) Sprat Hole belt transect data, St. Croix

Species	Common Name	Transect No. 1	2	3	4	5	6	7	8	9	10	%Freq	Total	Avg	StDev
Chromis cyanea	blue chromis	90	99	145	73	57	130	130	240	27	40	100	1031	103.1	62.3
Stegastes partitus	bicolor damselfish	17	16	25	25	22	16	29	22	25	27	100	224	22.4	4.7
Thalassoma bifasciatum	bluehead wrasse	5	50	19	64	17	14	15	15	3	19	100	221	22.1	19.4
Chromis multilineata	brown chromis	3	3	23	22	65	24	2	31	11	10	100	194	19.4	19.0
Stegastes planifrons	threespot damselfish	6	16	19	6	22	11	16	19	3	2	100	120	12.0	7.3
Scarus taeniopterus	princess parrotfish	19	17	16	10	12	10	5	6	7	8	100	110	11.0	4.9
Sparisoma viride	stoplight parrotfish	2	7	11	13	16	7	6	3	7	9	100	81	8.1	4.3
Sparisoma aurofrenatum	redband parrotfish	0	2	6	15	12	7	2	7	7	9	90	67	6.7	4.6
Gramma loreto	fairy basslet	4	8	6	3	7	0	3	10	8	1	90	50	5.0	3.3
Halichoeres garnoti	yellowhead wrasse	2	4	5	11	8	8	2	3	0	5	90	48	4.8	3.4
Canthigaster rostrata	sharpnose puffer	2	3	6	0	3	6	2	2	2	2	90	28	2.8	1.9
Scarus croicensis	striped parrotfish	0	0	8	4	2	4	6	5	3	6	80	38	3.8	2.6
Acanthurus coeruleus	blue tang	0	5	5	1	2	3	1	1	8	0	80	26	2.6	2.6
Acanthurus bahianus	ocean surgeon	0	0	3	1	2	2	5	2	7	4	80	26	2.6	2.2
Cephalopholis cruentatus	graysby	0	3	1	4	1	1	0	1	4	2	80	17	1.7	1.5
Stegastes fuscus	dusky damselfish	4	0	0	9	0	7	1	2	2	9	70	34	3.4	3.7
Chaetodon capistratus	foureye butterflyfish	0	3	4	0	3	0	4	2	6	8	70	30	3.0	2.7
Haemulon flavolineatum	french grunt	0	2	1	4	0	0	1	3	3	2	70	16	1.6	1.4
Clepticus parrae	creole wrasse	0	0	78	0	77	31	1	1	0	6	60	194	19.4	32.1
Holocentrus rufus	longspine squirrelfish	1	1	0	3	0	3	0	2	1	0	60	11	1.1	1.2
Myripristis jacobus	blackbar soldierfish	0	0	2	0	2	2	1	0	2	1	60	10	1.0	0.9
Hypoplectrus puella	barred hamlet	0	0	0	1	1	0	1	1	2	2	60	8	0.8	0.8
Mulloidichthys martinicus	yellow goatfish	0	0	0	0	1	3	10	0	1	1	50	16	1.6	3.1
Bodianus rufus	spanish hogfish	0	3	1	0	0	2	0	0	1	3	50	10	1.0	1.2
Melichthys niger	black durgon	0	2	0	3	0	0	1	0	2	1	50	9	0.9	1.1
Serranus tigrinius	harlequin bass	0	2	0	1	0	4	0	0	0	2	40	9	0.9	1.4
Scarus vetula	queen parrotfish	0	0	1	4	1	0	0	0	0	0	30	6	0.6	1.3
Caranx ruber	bar jack	0	0	0	0	0	1	1	0	3	0	30	5	0.5	1.0
Cephalopholis fulvus	coney	2	0	0	0	0	2	1	0	0	0	30	5	0.5	0.8
Chaetodon aculeatus	longsnout butterflyfish	0	0	2	0	0	0	0	2	1	0	30	5	0.5	0.8
Lutjanus apodus	schoolmaster	0	0	2	0	1	0	0	0	2	0	30	5	0.5	0.8
Hypoplectrus unicolor	butter hamlet	1	1	0	0	0	1	0	0	0	0	30	3	0.3	0.5
Hypoplectrus chlorurus	yellowtail hamlet	0	0	1	0	1	1	0	0	0	0	30	3	0.3	0.5
Heteroconger longissimus	brown garden eel	0	0	0	15	0	15	0	0	0	0	20	30	3.0	6.3

Appendix VII (e.) continued. Sprat Hole belt transect data, St. Croix

Species	Common Name	Transect No. 1	2	3	4	5	6	7	8	9	10	%Freq	Total	Avg	StDev
Stegastes variabilis	cocoa damselfish	0	0	0	0	0	0	0	0	2	6	20	8	0.8	1.9
Abudefduf saxatilis	sergeant major	0	0	0	0	0	0	0	2	2	0	20	4	0.4	0.8
Holacanthus tricolor	rock beauty	0	0	2	0	1	0	0	0	0	0	20	3	0.3	0.7
Haemulon sciurus	bluestriped grunt	0	0	0	0	0	0	0	0	1	1	20	2	0.2	0.4
Lutjanus mahogoni	mahogany snapper	0	0	1	0	0	0	0	1	0	0	20	2	0.2	0.4
Epinephelus guttatus	red hind	0	0	0	0	0	0	0	0	1	1	20	2	0.2	0.4
Malacanthus plumieri	sand tilefish	0	0	0	0	0	1	0	1	0	0	20	2	0.2	0.4
Psuedupeneus maculatus	spotted goatfish	0	0	0	1	0	0	0	1	0	0	20	2	0.2	0.4
Aulostomus maculatus	trumpetfish	0	0	0	0	1	0	0	0	0	1	20	2	0.2	0.4
Chaetodon striatus	banded butterflyfish	0	2	0	0	0	0	0	0	0	0	10	2	0.2	0.6
Sparisoma atomarium	greenblotch parrotfish	0	0	0	0	0	0	2	0	0	0	10	2	0.2	0.6
Microspathodon chrysurus	yellowtail damselfish	0	0	0	0	0	0	0	0	2	0	10	2	0.2	0.6
Stegastes leucostictus	beaugregory	0	0	0	0	0	1	0	0	0	0	10	1	0.1	0.3
Gymnothorax miliaris	goldentail moray	0	0	0	1	0	0	0	0	0	0	10	1	0.1	0.3
Acanthostracion ploygonia	honeycomb cowfish	0	0	1	0	0	0	0	0	0	0	10	1	0.1	0.3
Bothus lunatus	peacock flounder	0	0	0	0	0	0	0	0	0	1	10	1	0.1	0.3
Lactophrys triqueter	smooth trunkfish	0	0	0	0	0	1	0	0	0	0	10	1	0.1	0.3
Lactophrys bicaudalis	spotted trunkfish	0	0	0	0	0	0	0	0	0	1	10	1	0.1	0.3
Holocentrus adcensionis	squirrelfish	0	0	0	0	0	0	0	0	1	0	10	1	0.1	0.3
Haemulon plumieri	white grunt	0	0	1	0	0	0	0	0	0	0	10	1	0.1	0.3
Ocyurus chrysurus	yellowtail snapper	0	0	0	0	0	0	0	0	1	0	10	1	0.1	0.3
	n = 55 species	158	249	395	294	337	318	248	385	158	190	Total = 2732 fish			

Appendix VII (f.) Buck Island belt transect data, St. Croix

Species	Common Name	Transect No. 1	2	3	4	5	6	7	8	9	10	%Freq	Total	Avg	StDev
Chromis cyanea	blue chromis	55	91	23	22	58	15	32	75	23	53	100	447	44.7	25.6
Stegastes planifrons	threespot damselfish	30	25	29	13	19	32	42	40	10	27	100	267	26.7	10.5
Scarus croicensis	striped parrotfish	12	36	26	24	12	3	9	3	10	14	100	149	14.9	10.6
Sparisoma aurofrenatum	redband parrotfish	21	19	11	13	26	4	9	6	8	13	100	130	13.0	7.0
Halichoeres garnoti	yellowhead wrasse	13	16	14	10	9	8	10	7	11	11	100	109	10.9	2.8
Thalassoma bifasciatum	bluehead wrasse	7	13	4	3	6	1	24	12	8	15	100	93	9.3	6.9
Sparisoma viride	stoplight parrotfish	9	11	6	14	7	2	19	3	2	5	100	78	7.8	5.6
Stegastes leucostictus	beaugregory	5	5	3	5	6	7	4	5	3	9	100	52	5.2	1.8
Acanthurus coeruleus	blue tang	1	2	1	9	10	1	3	1	1	3	100	32	3.2	3.4
Stegastes partitus	bicolor damselfish	11	3	3	1	8	7	15	4	0	1	90	53	5.3	4.9
Acanthurus bahianus	ocean surgeon	1	7	5	4	6	0	2	1	5	2	90	33	3.3	2.4
Stegastes variabilis	cocoa damselfish	4	3	1	3	2	1	1	2	10	0	90	27	2.7	2.8
Chaetodon capistratus	foureye butterflyfish	1	2	3	2	3	2	2	2	5	0	90	22	2.2	1.3
Clepticus parrae	creole wrasse	26	5	10	34	2	0	0	36	8	50	80	171	17.1	17.9
Hypoplectrus nigricans	black hamlet	2	0	4	7	5	2	0	5	2	4	80	31	3.1	2.3
Haemulon flavolineatum	french grunt	2	3	0	2	8	1	2	1	3	0	80	22	2.2	2.3
Caranx ruber	bar jack	2	4	2	2	1	0	0	2	1	6	80	20	2.0	1.8
Scarus taeniopterus	princess parrotfish	0	1	2	0	0	5	38	8	48	26	70	128	12.8	17.9
Sparisoma atomarium	greenblotch parrotfish	2	3	14	5	2	2	0	0	0	1	70	29	2.9	4.2
Canthigaster rostrata	sharpnose puffer	1	2	1	2	3	0	0	3	3	0	70	15	1.5	1.3
Stegastes fuscus	dusky damselfish	0	0	1	12	0	1	3	1	0	3	60	21	2.1	3.7
Cephalopholis cruentatus	graysby	1	4	0	1	2	0	0	3	0	1	60	12	1.2	1.4
Haemulon aurolineatum	tomtate	1	1	0	1	3	0	0	1	3	0	60	10	1.0	1.2
Aulostomus maculatus	trumpetfish	0	1	1	1	3	0	0	0	1	1	60	8	0.8	0.9
Cephalopholis fulvus	coney	0	0	1	3	1	3	0	3	0	0	50	11	1.1	1.4
Psuedupeneus maculatus	spotted goatfish	0	0	3	2	0	2	2	0	2	0	50	11	1.1	1.2
Hypoplectrus puella	barred hamlet	2	0	1	0	1	0	0	0	2	3	50	9	0.9	1.1
Serranus tigrinius	harlequin bass	0	1	0	1	0	0	2	2	0	1	50	7	0.7	0.8
Epinephelus guttatus	red hind	0	0	0	0	1	1	0	2	1	1	50	6	0.6	0.7
Gramma loreto	fairy basslet	5	7	0	4	0	0	0	1	0	0	40	17	1.7	2.6
Ocyurus chrysurus	yellowtail snapper	0	0	0	10	0	0	0	1	2	3	40	16	1.6	3.1
Acanthurus chirurgus	doctorfish	1	1	0	2	1	0	0	0	0	0	40	5	0.5	0.7
Holocentrus rufus	longspine squirrelfish	1	0	0	0	1	0	0	0	0	2	30	4	0.4	0.7
Lutjanus mahogoni	mahogany snapper	1	0	0	1	1	0	0	0	0	0	30	3	0.3	0.5

Appendix VII (f.) continued. Buck Island belt transect data, St. Croix

Species	Common Name	Transect No. 1	2	3	4	5	6	7	8	9	10	%Freq	Total	Avg	StDev
Scarus vetula	queen parrotfish	0	1	1	1	0	0	0	0	0	0	30	3	0.3	0.5
Haemulon plumieri	white grunt	1	0	0	1	1	0	0	0	0	0	30	3	0.3	0.5
Halichoeres maculipinna	clown wrasse	0	10	0	0	0	0	0	1	0	0	20	11	1.1	3.1
Mulloidichthys martinicus	yellow goatfish	0	0	0	4	5	0	0	0	0	0	20	9	0.9	1.9
Halichoeres radiatus	pudding wife	0	0	0	1	2	0	0	0	0	0	20	3	0.3	0.7
Halichoeres bivittatus	slippery dick	2	0	0	1	0	0	0	0	0	0	20	3	0.3	0.7
Microspathodon chrysurus	yellowtail damselfish	0	0	0	0	0	1	1	0	0	0	20	2	0.2	0.4
Hemiramphus brasiliensis	ballyhoo	0	0	0	0	0	0	0	0	0	500	10	500	50.0	158.1
Haemulon sciurus	bluestriped grunt	0	0	0	0	0	0	0	0	7	0	10	7	0.7	2.2
Chromis multilineata	brown chromis	0	0	0	0	0	0	0	7	0	0	10	7	0.7	2.2
Hypoplectrus unicolor	butter hamlet	0	0	0	0	0	0	2	0	0	0	10	2	0.2	0.6
Gymnothorax miliaris	goldentail moray	0	0	0	0	0	1	0	0	0	0	10	1	0.1	0.3
Stegastes diencaeus	longfin damselfish	0	0	0	1	0	0	0	0	0	0	10	1	0.1	0.3
Bothus lunatus	peacock flounder	0	0	1	0	0	0	0	0	0	0	10	1	0.1	0.3
Hypoplectrus guttavarius	shy hamlet	0	0	0	0	0	1	0	0	0	0	10	1	0.1	0.3
Haemulon chrysargyreum	smallmouth grunt	0	0	0	0	1	0	0	0	0	0	10	1	0.1	0.3
Equetus punctatus	spotted drum	0	0	0	0	0	0	1	0	0	0	10	1	0.1	0.3
Cantherhines macrocerus	whitespotted filefish	0	0	0	0	1	0	0	0	0	0	10	1	0.1	0.3
Hypoplectrus chlorurus	yellowtail hamlet	0	0	0	0	1	0	0	0	0	0	10	1	0.1	0.3
Sparisoma rubripinne	yellowtail parrotfish	0	0	0	1	0	0	0	0	0	0	10	1	0.1	0.3
	n = 54 species	220	277	171	223	218	103	223	238	179	755	Total = 2607 fish			

Appendix VII (g.) Great Pond belt transect data, St. Croix

Species	Common Name	Transect No. 1	2	3	4	5	6	7	8	9	10	%Freq	Total	Avg	StDev
Thalassoma bifasciatum	bluehead wrasse	152	95	148	65	98	145	64	103	50	56	100	976	97.6	39.4
Microspathodon chrysurus	yellowtail damselfish	20	17	7	28	6	21	17	20	34	19	100	189	18.9	8.4
Acanthurus coeruleus	blue tang	13	7	15	16	5	14	30	5	70	13	100	188	18.8	19.4
Stegastes fuscus	dusky damselfish	16	20	22	16	22	21	10	11	27	15	100	180	18.0	5.3
Halichoeres bivittatus	slippery dick	26	19	15	14	10	15	14	33	1	2	100	149	14.9	9.7
Sparisoma viride	stoplight parrotfish	10	10	13	10	6	11	9	16	8	6	100	99	9.9	3.0
Stegastes partitus	bicolor damselfish	7	4	16	2	4	21	80	19	0	20	90	173	17.3	23.5
Acanthurus bahianus	ocean surgeon	17	21	40	8	3	4	31	16	0	12	90	152	15.2	12.8
Scarus croicensis	striped parrotfish	3	1	0	7	3	4	6	11	10	18	90	63	6.3	5.5
Sparisoma aurofrenatum	redband parrotfish	9	3	4	1	2	2	1	0	7	5	90	34	3.4	2.9
Caranx ruber	bar jack	0	2	1	21	2	0	4	2	1	4	80	37	3.7	6.2
Chromis multilineata	brown chromis	0	24	2	5	0	13	0	5	151	50	70	250	25.0	47.0
Scarus vetula	queen parrotfish	4	0	3	5	3	2	0	0	15	3	70	35	3.5	4.4
Halichoeres garnoti	yellowhead wrasse	0	0	0	3	0	1	8	5	120	60	60	197	19.7	39.7
Sparisoma rubripinne	yellowtail parrotfish	9	11	5	0	1	1	0	0	0	3	60	30	3.0	4.1
Cephalopholis fulvus	coney	2	0	0	2	0	1	3	0	5	2	60	15	1.5	1.6
Halichoeres maculipinna	clown wrasse	14	16	9	1	0	0	0	0	0	3	50	43	4.3	6.3
Abudefduf saxatilis	sergeant major	1	3	0	12	0	0	5	0	1	0	50	22	2.2	3.8
Melichthys niger	black durgon	0	1	0	0	0	0	2	0	5	9	40	17	1.7	3.0
Scarus taeniopterus	princess parrotfish	0	0	0	0	0	0	0	2	3	6	30	11	1.1	2.0
Stegastes planifrons	threespot damselfish	0	0	0	2	2	2	0	0	0	0	30	6	0.6	1.0
Halichoeres radiatus	pudding wife	2	1	1	0	0	0	0	0	0	0	30	4	0.4	0.7
Stegastes leucostictus	beaugregory	0	0	0	1	1	0	1	0	0	0	30	3	0.3	0.5
Bodianus rufus	spanish hogfish	0	0	0	2	0	0	0	0	0	50	20	52	5.2	15.8
Haemulon flavolineatum	french grunt	0	0	0	0	0	0	0	2	0	40	20	42	4.2	12.6
Lutjanus apodus	schoolmaster	0	0	0	0	0	0	0	0	3	3	20	6	0.6	1.3
Stegastes diencaeus	longfin damselfish	3	2	0	0	0	0	0	0	0	0	20	5	0.5	1.1
Chaetodon striatus	banded butterflyfish	0	1	0	0	0	2	0	0	0	0	20	3	0.3	0.7
Holocentrus adcensionis	squirrelfish	0	0	0	0	1	0	2	0	0	0	20	3	0.3	0.7
Sargocentron vexillarium	dusky squirrelfish	0	1	0	0	0	1	0	0	0	0	20	2	0.2	0.4
Malacanthus plumieri	sand tilefish	0	0	0	0	1	0	0	0	1	0	20	2	0.2	0.4
Haemulon chrysargyreum	smallmouth grunt	8	0	0	0	0	0	0	0	0	0	10	8	0.8	2.5
Eucinostomus jonesi	slender mojarra	0	0	6	0	0	0	0	0	0	0	10	6	0.6	1.9
Myripristis jacobus	blackbar soldierfish	0	0	0	0	0	0	0	0	4	0	10	4	0.4	1.3

Appendix VII (g.) continued. Great Pond belt transect data, St. Croix

Species	Common Name	Transect No. 1	2	3	4	5	6	7	8	9	10	%Freq	Total	Avg	StDev
Acanthurus chirurgus	doctorfish	0	0	4	0	0	0	0	0	0	0	10	4	0.4	1.3
Sparisoma atomarium	greenblotch parrotfish	0	0	0	4	0	0	0	0	0	0	10	4	0.4	1.3
Sparisoma radians	bucktooth parrotfish	0	3	0	0	0	0	0	0	0	0	10	3	0.3	0.9
Haemulon sciurus	bluestriped grunt	0	0	0	0	0	0	0	0	0	2	10	2	0.2	0.6
Stegastes variabilis	cocoa damselfish	0	0	0	0	0	0	2	0	0	0	10	2	0.2	0.6
Chaetodon capistratus	foureye butterflyfish	0	0	0	2	0	0	0	0	0	0	10	2	0.2	0.6
Scomberomorus regalis	cero mackerel	0	0	1	0	0	0	0	0	0	0	10	1	0.1	0.3
Heteropriacanthus cruentatus	glasseye snapper	0	1	0	0	0	0	0	0	0	0	10	1	0.1	0.3
Serranus tigrinius	harlequin bass	0	0	0	0	1	0	0	0	0	0	10	1	0.1	0.3
Sargocentron coruscum	reef squirrelfish	0	0	0	1	0	0	0	0	0	0	10	1	0.1	0.3
Lactophrys bicaudalis	spotted trunkfish	0	0	0	0	0	0	0	1	0	0	10	1	0.1	0.3
Enchelycore nigricans	viper moray	0	0	0	0	0	1	0	0	0	0	10	1	0.1	0.3
Mulloidichthys martinicus	yellow goatfish	0	0	0	1	0	0	0	0	0	0	10	1	0.1	0.3
	n = 47 species	316	263	312	229	171	282	289	251	516	401	Total = 3030 fish			

Appendix VII (h.) Mutton Snapper belt transect data, St. Croix

Species	Common Name	Transect No. 1	2	3	4	5	6	7	%Freq	Total No	Avg No	StDev
Chromis cyanea	blue chromis	140	82	100	160	142	135	68	100	827	118.1	34.7
Stegastes partitus	bicolor damselfish	84	50	90	170	160	131	102	100	787	112.4	43.3
Thalassoma bifasciatum	bluehead wrasse	97	61	73	90	180	105	140	100	746	106.6	41.0
Chromis multilineata	brown chromis	40	18	70	150	3	25	5	100	311	44.4	51.9
Melichthys niger	black durgon	33	2	2	6	8	4	11	100	66	9.4	10.9
Acanthurus bahianus	ocean surgeon	7	4	6	8	13	11	3	100	52	7.4	3.6
Chaetodon capistratus	foureye butterflyfish	11	3	7	7	3	3	13	100	47	6.7	4.1
Scarus taeniopterus	princess parrotfish	11	5	4	2	2	10	10	100	44	6.3	3.9
Myripristis jacobus	blackbar soldierfish	8	4	2	6	3	3	8	100	34	4.9	2.5
Haemulon flavolineatum	french grunt	2	1	1	11	6	2	6	100	29	4.1	3.7
Sparisoma aurofrenatum	redband parrotfish	8	3	1	3	1	5	4	100	25	3.6	2.4
Microspathodon chrysurus	yellowtail damselfish	1	1	1	3	3	1	4	100	14	2.0	1.3
Gramma loreto	fairy basslet	7	18	13	10	10	2	0	86	60	8.6	6.2
Halichoeres garnoti	yellowhead wrasse	8	8	9	3	5	0	23	86	56	8.0	7.3
Cephalopholis cruentatus	graysby	2	4	8	0	1	1	2	86	18	2.6	2.7
Holacanthus tricolor	rock beauty	1	1	0	2	1	1	1	86	7	1.0	0.6
Scarus croicensis	striped parrotfish	1	0	0	6	8	7	10	71	32	4.6	4.2
Acanthurus coeruleus	blue tang	0	2		2	3	4	4	71	15	2.5	1.5
Caranx ruber	bar jack	2	1	2	0	4	0	2	71	11	1.6	1.4
Mulloidichthys martinicus	yellow goatfish	17	1	0	15	7	0	0	57	40	5.7	7.5
Stegastes planifrons	threespot damselfish	3	0	0	4	7	0	1	57	15	2.1	2.7
Bodianus rufus	spanish hogfish	2	0	2	0	0	3	1	57	8	1.1	1.2
Sparisoma viride	stoplight parrotfish	0	2	1	0	2	1	0	57	6	0.9	0.9
Clepticus parrae	creole wrasse	60	20	20	0	0	0	0	43	100	14.3	22.3
Lutjanus mahogoni	mahogany snapper	2	0	0	0	0	1	4	43	7	1.0	1.5
Holocentrus rufus	longspine squirrelfish	1	0	0	0	0	3	1	43	5	0.7	1.1
Psuedupeneus maculatus	spotted goatfish	0	0	0	0	0	15	2	29	17	2.4	5.6
Stegastes fuscus	dusky damselfish	0	3	0	0	2	0	0	29	5	0.7	1.3
Cephalopholis fulvus	coney	0	0	0	0	0	1	3	29	4	0.6	1.1
Lactophrys triqueter	smooth trunkfish	0	0	0	0	0	2	2	29	4	0.6	1.0
Lactophrys bicaudalis	spotted trunkfish	0	0	1	0	1	0	0	29	2	0.3	0.5
Hypoplectrus chlorurus	yellowtail hamlet	1	1	0	0	0	0	0	29	2	0.3	0.5
Scomberomorus regalis	cero mackerel	4	0	0	0	0	0	0	14	4	0.6	1.5

Appendix VII (h.) continued. Mutton Snapper belt transect data, St. Croix

Species	Common Name	Transect No. 1	2	3	4	5	6	7	%Freq	Total No	Avg No	StDev
Haemulon sciurus	bluestriped grunt	0	0	0	0	3	0	0	14	3	0.4	1.1
Chaetodon striatus	banded butterflyfish	2	0	0	0	0	0	0	14	2	0.3	0.8
Hypoplectrus puella	barred hamlet	0	0	0	0	0	2	0	14	2	0.3	0.8
Halichoeres maculipinna	clown wrasse	0	0	0	0	2	0	0	14	2	0.3	0.8
Paranthias furcifer	creolefish	2	0	0	0	0	0	0	14	2	0.3	0.8
Balistes vetula	queen triggerfish	0	0	0	0	2	0	0	14	2	0.3	0.8
Halichoeres cyanocephalus	yellowcheek wrasse	0	0	0	0	2	0	0	14	2	0.3	0.8
Diodon holocanthus	balloonfish	0	0	0	0	0	0	1	14	1	0.1	0.4
Stegastes variabilis	cocoa damselfish	0	0	0	0	0	1	0	14	1	0.1	0.4
Acanthurus chirurgus	doctorfish	0	0	0	0	0	0	1	14	1	0.1	0.4
Sphyraena barracuda	great barracuda	0	0	0	0	0	1	0	14	1	0.1	0.4
Sparisoma atomarium	greenblotch parrotfish	0	0	1	0	0	0	0	14	1	0.1	0.4
Acanthostracion ploygonia	honeycomb cowfish	1	0	0	0	0	0	0	14	1	0.1	0.4
Neoniphon marianus	longjaw squirrelfish	1	0	0	0	0	0	0	14	1	0.1	0.4
Chaetodon aculeatus	longsnout butterflyfish	0	0	0	0	0	1	0	14	1	0.1	0.4
Holacanthus ciliaris	queen angelfish	0	0	0	0	0	1	0	14	1	0.1	0.4
Chaetodon sedentarius	reef butterflyfish	0	0	1	0	0	0	0	14	1	0.1	0.4
Acanthostracion quadricornis	scrawled cowfish	0	0	0	0	0	0	1	14	1	0.1	0.4
Monacanthus tuckeri	slender filefish	0	0	1	0	0	0	0	14	1	0.1	0.4
Holocentrus adcensionis	squirrelfish	0	1	0	0	0	0	0	14	1	0.1	0.4
	n = 53 species	559	296	416	658	584	482	433	Total =	3428 fish		

Appendix VIII. Abundance of fish observed in belt transects, St. Thomas, 2003

Family	Species	Common Name	Total No. of Fish Observed					
			BB	BP	SC	FC	GB	HB
Acanthuridae								
	Acanthurus bahianus	ocean surgeon	69	14	8	15	18	15
	Acanthurus chirurgus	doctorfish	14	-	15	1	4	5
	Acanthurus coeruleus	blue tang	75	10	2	84	1	9
Aulostomidae								
	Aulostomus maculatus	trumpetfish	-	1	-	4	-	-
Balistidae								
	Balistes vetula	queen triggerfish	-	-	2	1	-	-
	Melichthys niger	black durgon	-	-	-	-	16	-
Carangidae								
	Caranx ruber	bar jack	3	-	60	4	-	1
Chaetodontidae								
	Chaetodon aculeatus	longsnout butterflyfish	-	-	-	-	3	4
	Chaetodon capistratus	foureye butterflyfish	6	3	18	10	23	15
	Chaetodon sedentarius	reef butterflyfish	-	-	-	2	1	-
	Chaetodon striatus	banded butterflyfish	1	-	2	1	2	1
Clinidae								
	Ophobennius atlanticus	redlip blenny	4	-	-	-	-	-
Gobiidae								
	Gobiosoma evelynae	sharknose cleaning goby	-	-	-	3	-	-
	Gobiosoma genie	broadstripe cleaning goby	-	-	-	1	-	-
Grammatidae								
	Gramma loreto	fairy basslet	-	9	-	6	11	6
Haemulidae								
	Haemulon aurolineatum	tomtate	-	6	27	-	-	-
	Haemulon carbonarium	caesar grunt	-	-	1	2	-	-

Appendix VIII continued. Abundance of fish observed in belt transects, St. Thomas, 2003

Family	Species	Common Name	Total No. of Fish Observed					
			BB	BP	SC	FC	GB	HB
Haemulidae								
	Haemulon flavolineatum	french grunt	4	4	15	10	2	10
	Haemulon macrostomum	spanish grunt	3	-	-	-	-	-
	Haemulon parra	sailors choice	-	-	7	-	-	-
	Haemulon plumieri	white grunt	-	-	4	1	-	5
	Haemulon sciurus	bluestriped grunt	-	-	1	4	-	15
Holocentridae								
	Holocentrus rufus	longspine squirrelfish	4	12	9	13	7	16
	Myripristis jacobus	blackbar soldierfish	-	-	-	-	12	1
	Neoniphon marianus	longjaw squirrelfish	-	-	-	-	5	-
Inermiidae								
	Inermia vittata	boga	-	-	-	-	19	-
Labridae								
	Bodianus rufus	spanish hogfish	-	-	1	3	18	4
	Clepticus parrae	creole wrasse	-	-	-	31	124	263
	Halichoeres bivittatus	slippery dick	23	-	-	-	-	-
	Halichoeres garnoti	yellowhead wrasse	38	11	68	44	17	8
	Halichoeres radiatus	pudding wife	14	-	-	-	-	-
	Thalassoma bifasciatum	bluehead wrasse	-	96	66	51	18	57
Lutjanidae								
	Lutjanus analis	mutton snapper	-	-	1	-	-	3
	Lutjanus apodus	schoolmaster	-	-	8	-	7	2
	Lutjanus cyanopterus	cubera snapper	-	-	-	-	4	-
	Lutjanus griseus	gray snapper	-	-	8	-	-	-
	Lutjanus jocu	dog snapper	2	-	-	-	-	-
	Lutjanus mahogoni	mahogany snapper	-	-	4	-	-	-
	Lutjanus synagris	lane snapper	-	-	2	-	1	-
	Ocyurus Chrysurus	yellowtail snapper	15	32	5	4	7	7

Appendix VIII continued. Abundance of fish observed in belt transects, St. Thomas, 2003

Family	Species	Common Name	Total No. of Fish Observed BB	BP	SC	FC	GB	HB
Mullidae								
	Mulloidichthys martinicus	yellow goatfish	1	4	30	37	1	10
	Psuedupeneus maculatus	spotted goatfish	5	5	2	4	-	4
Ostraciidae								
	Lactophrys triqueter	smooth trunkfish	-	-	2	-	1	3
Pomacanthidae								
	Centropyge aurantonotus	flameback angelfish	-	-	-	-	-	1
	Holacanthus ciliaris	queen angelfish	-	-	1	3	-	1
	Holacanthus tricolor	rock beauty	1	1	1	2	2	5
	Pomacanthus arcuatus	gray angelfish	-	1	-	1	-	3
	Pomacanthus paru	french angelfish	-	-	1	6	-	2
Pomacentridae								
	Abudefduf saxatilis	sergeant major	7	-	0	7	-	-
	Chromis cyanea	blue chromis	-	38	121	156	241	87
	Chromis multilineata	brown chromis	-	17	12	258	64	-
	Microspathodon chrysurus	yellowtail damselfish	22	2	3	-	-	1
	Stegastes diencaeus	longfin damselfish	54	7	4	2	-	-
	Stegastes fuscus	dusky damselfish	54	-	-	-	24	-
	Stegastes leucostictus	beaugregory	60	65	-	55	-	-
	Stegastes partitus	bicolor damselfish	6	-	31	15	32	51
	Stegastes planifrons	threespot damselfish	1	123	-	34	-	-
	Stegastes variabilis	cocoa damselfish	-	0	15	14	-	-
Priacanthidae								
	Heteropriacanthus cruentatus	glasseye snapper	-	-	43	-	-	-
Scaridae								
	Scarus croicensis	striped parrotfish	-	95	27	36	-	10
	Scarus taeniopterus	princess parrotfish	9	40	45	113	50	29
	Scarus vetula	queen parrotfish	-	-	6	-	-	1
	Sparisoma aurofrenatum	redband parrotfish	25	29	12	-	-	-

Appendix VIII continued. Abundance of fish observed in belt transects, St. Thomas, 2003

Family	Species	Common Name	Total No. of Fish Observed BB	BP	SC	FC	GB	HB
Scaridae								
	Sparisoma chrysopterum	redtail parrotfish	2	-	1	1	-	-
	Sparisoma radians	bucktooth parrotfish	-	-	-	-	-	-
	Sparisoma rubripinne	yellowtail parrotfish	5	4	1	1	5	-
	Sparisoma viride	stoplight parrotfish	40	35	8	16	12	13
Sciaenidae								
	Equetus punctatus	spotted drum	-	1	1	2	-	-
Serranidae								
	Cephalopholis cruentatus	graysby	5	5	6	6	11	3
	Cephalopholis fulvus	coney	-	-	-	1	1	-
	Epinephelus guttatus	red hind	-	4	-	2	5	5
	Epinephelus striatus	Nassau grouper	-	1	-	1	1	-
	Hypoplectrus chlorurus	yellowtail hamlet	-	-	-	5	2	
	Hypoplectrus guttavarius	shy hamlet	-	-	-	5	-	-
	Hypoplectrus nigricans	black hamlet	-	16	-	3	-	1
	Hypoplectrus puella	barred hamlet	-	36	1	16	2	7
	Hypoplectrus unicolor	butter hamlet	-	4	3	1	-	-
	Mycteroperca tigris	tiger grouper	-	-	-	-	3	3
	Mycteroperca venenosa	yellowfin grouper	-	-	-	-	-	1
	Paranthias furcifer	creolefish	-	-	-	-	55	7
	Serranus tabacarius	tobaccofish	-	-	-	-	1	-
Sphyraenidae								
	Sphyraena barracuda	great barracuda	-	-	-	-	-	1
Sparidae								
	Calamus calamus	jolthead porgy	-	-	3	1	-	-
Tetraodontidae								
	Canthigaster rostrata	sharpnose puffer	1	1	3	9	-	15
	Diodon holocanthus	balloonfish	-	-	-	2	-	-
	Spheroides spengleri	bandtail puffer	-	-	-	2	-	-

Appendix IX. Size distribution of all fish observed in belt transects, St. Thomas, 2003.

Species	Common Name	Total Length (cm) 0-5	5-10	10-20	20-30	30-40	> 40	Total No.
Acanthuridae								
Acanthurus bahianus	ocean surgeonfish	1	39	85	14	-	-	139
Acanthurus chirurgus	doctorfish	-	10	19	9	1	-	39
Acanthurus coeruleus	blue tang	5	37	116	23	-	-	181
Aulostomidae								
Aulostomus maculates	trumpetfish	-	-	1	4	-	-	5
Balistidae								
Balistes vetula	queen triggerfish	-	-	2	1	-	-	3
Cantherines pullus	orangespotted filefish	-	-	1	-	-	-	1
Melichthys niger	black durgon	-	-	11	1	3	1	16
Carangidae								
Caranx ruber	bar jack	-	-	4	4	60	-	68
Chaetodontidae								
Chaetodon aculeatus	longsnout butterfly	-	7	-	-	-	-	7
Chaetodon capistratus	foureye butterflyfish	-	65	10	-	-	-	75
Chaetodon sedentarius	reef butterfly	-	3	-	-	-	-	3
Chaetodon striatus	banded butterflyfish	-	6	1	-	-	-	7
Clinidae								
Ophioblennius atlanticus	redlip blenny	2	2	-	-	-	-	5
Gobiidae								
Gobiosoma evelynae	sharknose cleaner goby	3	-	-	-	-	-	3
Gobiosoma genie	broadstripe cleaner goby	1	-	-	-	-	-	1
Grammatidae								
Gramma loreto	fairy basslet	21	17	2	-	-	-	40
Haemulidae								
Haemulon aurolineatum	tomtate	-	4	10	2	-	-	16
Haemulon carbonarium	Caesar grunt	-	-	-	3	-	-	3
Haemulon flavolineatum	French grunt	-	4	29	12	-	-	45
Haemulon mactostomum	Spanish grunt	-	1	2	-	-	-	3
Haemulon parra	sailors choice	-	4	9	-	3	-	16
Haemulon plumieri	white grunt	-	-	6	4	-	-	10
Haemulon sciurus	bluestriped grunt	-	-	8	18	-	-	26
Holocentridae								
Holocentrus rufus	longspine squirrelfish	-	5	46	8	2	-	61
Myripristis jacobus	blackbar soldierfish	-	1	12	-	-	-	13
Neonophon marianus	longjaw squirrelfish	-	2	3	-	-	-	5
Imermidae								
Inermia vittata	boga	-	10	9	-	-	-	19

Appendix IX continued. Size distribution of all fish observed in belt transects, St. Thomas, 2003.

Species	Common Name	Total Length (cm) 0-5	5-10	10-20	20-30	30-40	> 40	Total No.
Labridae								
Bodianthus rufus	Spanish hogfish	-	1	1	1	5	-	8
Clepticus parrae	creole wrasse	-	278	140	1	1	-	418
Halichoeres bivittatus	slippery dick	-	19	4	-	-	-	23
Halichoeres garnoti	yellow headed wrasse	28	91	65	2	-	-	186
Halichoeres maculipinna	clown wrasse	2	32	8	-	-	-	42
Halichoeres radiatus	puddingwife	-	12	2	-	-	-	14
Thalassoma bifasciatum	blue headed wrasse	103	434	77	-	-	-	614
Lujanidae								
Lutjanus analis	mutton snapper	-	-	1	2	-	1	4
Lutjanus apodus	schoolmaster	-	-	10	-	4	3	17
Lutjanus cyanopterus	cubera snapper	-	-	-	-	-	4	4
Lutjanus griseus	gray snapper	-	-	3	1	-	7	11
Lutjanus jocu	dog snapper	-	-	2	-	-	-	2
Lutjanus mahogani	mahogany snapper	-	-	4	-	-	-	4
Lutjanus synagris	lane snapper	-	1	-	-	2	-	3
Ocyurus chrysurus	yellowtail snapper	-	20	28	9	12	1	70
Mullidae								
Mulloidichthys martinicus	yellow goatfish	-	-	10	36	36	-	83
Pseudupeneus maculatus	spotted goatfish	1	2	16	1	-	-	20
Ostraciontidae								
Lactophyrus triqueter	smooth trunkfish	-	1	4	-	-	-	5
Pomocanthidae								
Centropyge aurantonotus	flameback angelfish	1	-	-	-	-	-	1
Holocanthus ciliarus	queen angelfish	-	-	2	3	-	-	5
Holocanthus tricolor	rock beauty	1	1	10	-	-	-	12
Pomacanthus arcuatus	gray angelfish	-	-	2	2	-	-	5
Pomacanthus paru	French angelfish	-	1	3	2	2	-	9
Priacanthidae								
Heteropriacanthus cruentatus	glasseye snapper	-	-	-	1	6	-	7
Pomocentridae								
Abudefduf saxatillis	seargent major	2	8	4	-	-	-	14
Chromis cyanea	blue chromis	146	140	104	-	-	-	390
Chromis multilineata	brown chromis	7	275	5	-	-	-	287
Microspathodon chrysurus	yellowtail damselfish	-	12	15	1	-	-	28
Stegastes diencaeus	longfin damselfish	4	63	-	-	-	-	67
Stegastes fuscus	dusky damselfish	9	45	-	-	-	-	54
Steastes leucostictus	beaugregory	44	164	2	-	-	-	210
Stegastes partitus	bicolor damselfish	11	214	14	-	-	-	239
Stegastes planifrons	3-spot damselfish	50	108	-	-	-	-	158
Stegastes variables	cocoa damselfish	88	157	11	-	-	-	256

Appendix IX continued. Size distribution of all fish observed in belt transects, St. Thomas, 2003.

Species	Common Name	Total Length (cm) 0-5	5-10	10-20	20-30	30-40	> 40	Total No.
Scaridae								
Scarus croicensis	striped parrotfish	57	57	33	20	1	-	168
Scarus taeniopterus	princess parrotfish	34	156	76	16	4	-	286
Scarus vetula	queen parrotfish	-	-	6	1	-	-	7
Sparisoma aurofrenatum	redband parrotfish	9	51	39	12	3	-	114
Sparisoma chrysopterum	redtail parrotfish	-	-	2	2	-	-	4
Sparisoma rubripinne	redfin parrotfish	-	5	9	2	-	-	16
Sparisoma viride	stoplight parrotfish	21	36	36	23	3	5	124
Sciaenidae								
Equetus punctatus	spotted drum	-	-	2	2	-	-	4
Serranidae								
Cephalopholis cruentatus	graysby	1	3	26	4	2	-	36
Cephalopholis fulvus	coney	-	-	1	-	-	-	1
Epinephelus guttatus	red hind	-	-	-	7	4	5	16
Epinephelus striatus	Nassau grouper	-	-	-	-	-	3	3
Hypoplectrus aberrans	yellowbelly hamlet	2	-	-	-	-	-	2
Hypoplectrus chlorurus	yellowtail hamlet	-	3	2	-	-	-	5
Hypoplectrus guttavarius	shy hamlet	-	4	1	-	-	-	5
Hypoplectrus nigricans	black hamlet	-	15	5	-	-	-	20
Hypoplectrus puella	barred hamlet	16	37	7	-	-	-	60
Hypoplectrus unicolor	butter hamlet	-	2	4	-	-	-	6
Mycteroperca tigris	tiger grouper	-	-	-	-	3	3	6
Mycteroperca venenosa	yellowfin grouper	-	-	-	-	1	-	1
Paranthias furcifer	creolefish	-	-	7	-	-	-	7
Serranus tabacarius	tobacco fish	-	7	52	-	-	-	59
Sparidae								
Calamus calamus	jolthead porgy	-	-	-	2	-	2	4
Sphyraenidae								
Sphyraena barracuda	great barracuda	-	-	-	1	-	-	1
Tetraodontidae								
Canthigaster rostrata	sharpnose puffer	16	11	2	-	-	-	29
Spheroides spengleri	bandtail puffer	-	2	-	-	-	-	2
	Total =	709	2699	1249	264	160	36	5117
	% =	13.9	52.7	24.4	5.1	3.1	0.7	100.00

Appendix X (a.) Benner Bay belt transect data, St. Thomas, 2003

Species	Common Name	Transect No. 1	2	3	4	5	6	7	8	9	10	%Freq	Total	Avg	StDev
Thalassoma bifasciatum	bluehead wrasse	6	66	7	9	0	38	24	3	29	48	90	230	23.0	22.1
Acanthurus coeruleus	blue tang	2	7	4	1	7	12	3	16	10	13	100	75	7.5	5.1
Acanthurus bahianus	ocean surgeon	5	6	8	11	6	0	9	4	10	10	90	69	6.9	3.4
Stegastes leucostictus	beaugregory	11	5	12	3	2	2	4	5	16	6	100	66	6.6	4.8
Stegastes dorsopunicans	dusky damselfish	1	4	1	6	11	12	5	5	6	3	100	54	5.4	3.7
Stegastes diencaeus	longfin damselfish	0	0	5	17	6	5	6	6	9	0	70	54	5.4	5.1
Sparisoma viride	stoplight parrotfish	4	9	2	2	7	3	0	5	4	4	90	50	4.0	2.6
Halichoeres garnoti	yellowhead wrasse	2	0	1	0	4	10	8	11	0	2	70	38	3.8	4.3
Sparisoma aurofrenatum	redband parrotfish	0	8	1	1	2	0	1	4	3	5	80	25	2.5	2.5
Halichoeres maculipinna	clown wrasse	0	0	1	1	7	3	9	4	0	0	60	25	2.5	3.2
Halichoeres bivittatus	slippery dick	8	7	0	0	4	2	2	0	0	0	50	23	2.3	3.1
Microspathodon chrysurus	yellowtail damselfish	0	2	0	1	2	7	1	1	4	4	80	22	2.2	2.2
Ocyurus chrysurus	yellowtail snapper	1	0	10	0	0	0	0	1	2	1	50	15	1.5	3.1
Acanthurus chirurgus	doctorfish	1	2	0	1	1	9	0	0	0	0	50	14	1.4	2.8
Halichoeres radiatus	puddingwife	0	1	0	1	2	3	4	3	0	0	60	14	1.4	1.5
Haemulon parra	sailors choice	0	0	0	0	0	0	0	1	8	0	80	9	0.9	2.5
Sparisoma taeniopterus	princess parrotfish	0	0	9	0	0	0	0	0	0	0	10	9	0.9	2.8
Abudefduf saxatilis	sergeant major	0	0	0	0	0	1	4	0	0	2	60	7	0.7	1.5
Chaetodon capistratus	foureye butterflyfish	0	1	0	0	1	0	0	1	3	0	40	6	0.6	2.5
Haemulon sciurus	bluestriped grunt	0	0	0	0	1	1	0	1	2	1	50	6	0.6	2.8
Stegastes partitus	bicolor damselfish	4	0	2	0	0	0	0	0	0	0	20	6	0.6	1.3
Sparisoma rubripinne	redfin parrotfish	2	0	0	3	0	0	0	0	0	0	20	5	0.5	1.1
Epinephalus cruentatus	graysby	0	1	2	2	0	0	0	0	0	0	70	5	0.5	0.8
Psuedupeneus maculatus	spotted goatfish	0	0	0	1	0	0	0	4	0	0	80	5	0.5	1.3
Haemulon flavolineatum	french grunt	0	0	3	0	0	0	0	0	0	1	80	4	0.4	1.0
Serranus tobacarius	tobaccofish	0	0	0	0	1	3	0	0	0	0	80	4	0.4	1.0
Ophioblennius atlanticus	redlip blenny	0	2	0	0	2	0	0	0	0	0	80	4	0.4	0.8
Holocentrus rufus	longspine squirrelfish	0	1	0	0	0	0	2	0	0	1	30	4	0.4	0.7
Haemulon mactostomum	Spanish grunt	0	0	0	0	1	0	0	2	0	0	20	3	0.3	0.7
Lutjanus griseus	gray snapper	0	0	0	1	0	0	2	0	0	0	20	3	0.3	0.7
Caranx rubber	bar jack	3	0	0	0	0	0	0	0	0	0	10	3	0.3	0.9
Sparisoma chrysopterum	redtail parrotfish	0	0	0	0	0	0	0	2	0	0	10	2	0.2	0.6
Lutjanus jocu	dog snapper	0	0	0	0	0	1	0	0	0	1	20	2	0.2	0.4
Holacanthus tricolor	rock beauty	0	0	0	0	0	0	0	0	0	1	10	1	0.1	0.3

Appendix X (a.) continued. Benner Bay belt transect data, St. Thomas, 2003

Species	Common Name	Transect No. 1	2	3	4	5	6	7	8	9	10	%Freq	Total	Avg	StDev
Chaetodon striatus	banded butterflyfish	0	0	1	0	0	0	0	0	0	0	10	1	0.1	0.3
Stegastes planifrons	3-spot damsel	1	0	0	0	0	0	0	0	0	0	10	1	0.1	0.3
Canthigaster rostrata	sharpnose puffer	0	0	0	0	0	0	0	0	0	1	10	1	0.1	0.3
Mulloidichthys martinicus	yellow goatfish	0	0	0	1	0	0	0	0	0	0	10	1	0.1	0.3
	n = 38 species	51	122	69	62	67	112	84	79	106	104		Total fish = 856		

Appendix X (b.) Black Point belt transect data, St. Thomas, 2003

Species	Common Name	Transect No. 1	2	3	4	5	6	7	8	9	10	%Freq	Total	Avg	StDev
Stegastes planifrons	3-spot damselfish	10	17	15	17	12	16	5	5	10	16	100	123	20.3	26.8
Scarus croicensis	Striped parrotfish	12	22	0	0	19	26	6	3	6	1	80	95	15.9	23.1
Thalssoma bifasciatum	blue headed wrasse	16	0	15	2	10	10	1	4	9	19	90	86	16.0	25.3
Steastes leucostictus	beaugregory	10	16	0	0	10	23	6	0	0	0	50	65	10.5	15.2
Scarus taeniopterus	Princess parrotfish	0	0	15	11	0	0	0	0	1	13	40	40	7.3	12.3
Chromis cyanea	blue chromis	3	7	3	0	1	11	0	4	5	4	80	38	10.7	23.2
Hypoplectrus puella	barred hamlet	5	6	2	3	4	10	0	0	6	0	70	36	9.6	20.2
Sparisoma viride	stoplight parrotfish	0	0	2	5	2	11	2	4	9	0	70	35	9.5	20.3
Ocyurus chrysurus	yellowtail snapper	6	7	3	0	1	11	1	0	3	0	70	32	9.3	20.4
Sparisoma aurofrenatum	redband parrotfish	3	6	0	3	3	12	0	0	0	2	60	29	8.1	17.5
Chromis multilineata	brown chromis	0	0	6	0	0	1	0	0	4	6	40	17	5.2	11.8
Hypoplectrus nigricans	black hamlet	7	1	0	1	3	0	0	1	1	2	70	16	7.8	20.7
Acanthurus bahianus	ocean surgeon	2	0	0	1	0	5	1	1	3	1	70	14	7.6	20.7
Canthigaster rostrata	sharpnose puffer	2	0	3	3	0	0	0	2	2	2	60	14	6.7	17.7
Holocentrus rufus	longspine squirrelfish	3	3	1	0	0	0	0	2	0	3	50	12	5.6	14.7
Halichoeres garnoti	yellow head wrasse	0	0	4	0	0	2	0	0	2	3	40	11	4.6	11.8
Acanthurus coeruleus	blue tang	1	0	5	0	0	0	0	0	2	2	40	10	4.5	11.8
Gramma loreto	fairy basselet	2	2	0	0	3	0	0	2	0	0	40	9	4.5	11.8
Stegastes diencaeus	longfin damselfish	0	0	5	2	0	0	0	0	0	0	20	7	2.5	6.0
Haemulon aurolineatum	tomtate	0	0	0	0	6	0	0	0	0	0	10	6	1.5	3.4
Cephalopholis cruentatus	graysby	0	0	1	1	0	1	1	0	0	1	50	5	5.0	14.9
Pseudupeneus maculatus	spotted goatfish	0	0	0	0	0	0	0	0	4	1	20	5	2.3	6.0
Haemulon flavolineatum	French grunt	0	0	1	1	1	0	0	0	0	1	40	4	4.0	12.0
Sparisoma rubripinne	redfin parrotfish	0	0	0	0	0	0	0	4	0	0	10	4	1.3	3.1
Epinephelus guttatus	red hind	2	1	0	0	0	0	0	1	0	0	30	4	3.1	9.0
Mulloidichthys martinicus	yellow goatfish	0	0	4	0	0	0	0	0	0	0	10	4	1.3	3.1
Chaetodon capistratus	foureye butterflyfish	0	0	1	1	0	0	0	1	0	0	30	3	3.0	9.0
Microspathodon chrysurus	yellowtail damselfish	1	1	0	0	0	0	0	0	0	0	20	2	2.0	6.0
Hypoplectrus unicolor	butter hamlet	1	0	0	0	0	0	1	0	0	0	20	2	2.0	6.0
Hypoplectrus aberrans	yellowbelly hamlet	0	0	0	0	1	1	0	0	0	0	20	2	2.0	6.0
Pomacanthus arcuatus	gray snapper	0	0	0	0	0	0	0	0	0	1	10	1	1.0	3.0
Holocanthus ciliarus	queen Angelfish	0	0	0	0	0	0	1	0	0	0	10	1	1.0	3.0
Epinephelus striatus	Nassau grouper	0	0	1	0	0	0	0	0	0	0	10	1	1.0	3.0

Appendix X (b.) continued. Black Point belt transect data, St. Thomas, 2003

Species	Common Name	Transect No. 1	2	3	4	5	6	7	8	9	10	%Freq	Total	Avg	StDev
Cantherines pullus	orangespotted filefish	0	0	0	1	0	0	0	0	0	0	10	1	0.1	3.0
Aulostomus maculatus	trumpetfish	0	0	0	0	0	0	0	0	0	1	10	1	0.1	3.0
Equetus punctatus	spotted drum	0	1	0	0	0	0	0	0	0	0	10	1	0.1	3.0
	n = 36 species	86	90	87	52	76	140	25	34	67	79		Total fish = 736		

Appendix X (c.) Sea Horse Cottage Shoal belt transect data, St. Thomas, 2003

Species	Common Name	Transect No. 1	2	3	4	5	6	7	8	9	10	%Freq	Total	Avg	StDev
Chromis cyanea	blue chromis	21	30	16	27	7	3	17				100	212	17.3	9.8
Halichoeres garnoti	yellow head wrasse	11	24	2	20	4	3	4				100	68	9.7	9.0
Thalssoma bifasciatum	blue head wrasse	8	14	10	6	2	6	20				100	66	9.4	6.0
Caranx ruber	bar jack	0	0	60	0	0	0	0				14	60	8.6	22.7
Scarus taeniopterus	princess parrotfish	4	8	5	8	6	9	5				100	45	6.4	1.9
Priacanthus cruentatus	glasseye snapper	0	1	40	2	0	0	0				43	43	6.1	14.9
Stgastes partitus	bicolor damselfish	4	6	12	0	3	4	2				86	31	4.4	3.8
Mulloidichthys martinicus	yellow goatfish	0	0	30	0	0	0	0				14	30	4.3	11.3
Haemulon aurolineatum	tomtate	4	3	0	0	20	0	0				43	27	3.9	7.3
Scarus croicensis	striped parrotfish	3	11	0	8	3	2	0				71	27	3.9	4.1
Chaetodon capistratus	foureye butterfly	0	6	2	2	2	4	2				86	18	2.6	1.9
Haemulon flavolineatum	French grunt	2	0	3	4	2	2	2				86	15	2.1	1.2
Acanthurus chirurgus	doctorfish	0	4	2	2	4	3	0				71	15	2.1	1.7
Stegastes variablis	cocoa damsel	1	1	0	10	3	0	0				57	15	2.1	3.6
Sparisoma aurofrenatum	redband parrot	2	4	2	3	1	0	0				71	12	1.7	1.5
Chromis multilineata	brown chromis	0	0	0	0	5	7	0				29	12	1.7	3.0
Holocentrus rufus	longspine squirrelfish	1	0	3	3	1	0	1				71	9	1.3	1.3
Sparisoma viride	stoplight parrotfish	0	2	3	0	0	2	1				43	8	1.1	1.2
Lutjanus apodus	schoolmaster	0	0	0	0	1	3	4				43	8	1.1	1.7
Lutjanus griseus	gray snapper	0	0	2	5	0	0	1				43	8	1.1	1.9
Acanthurus bahianus	ocean surgeon	0	0	2	2	2	1	1				71	8	1.1	0.9
Haemulon parra	sailors choice	0	0	1	2	0	0	4				43	7	1.0	1.5
Scarus vetula	queen parrotfish	0	0	6	0	0	0	0				14	6	0.9	2.3
Cephalopholis cruentatus	graysby	2	0	1	0	0	1	2				57	6	0.9	0.9
Ocyurus chrysurus	yellowtail snapper	1	0	0	0	0	2	2				43	5	0.7	1.0
Haemulon plumieri	white grunt	0	0	0	1	2	1	0				43	4	0.6	0.8
Lutjanus mahogani	mahogany snapper	0	0	0	0	0	2	2				29	4	0.6	1.0
Stegastes diencaeus	longfin damselfish	0	0	0	0	0	0	4				14	4	0.6	1.5
Microspathodon chrysurus	yellowtail damselfish	0	0	0	0	1	2	0				29	3	0.4	0.8
Canthigaster rostrata	shortnose puffer	0	0	2	0	0	1	0				29	3	0.4	0.8
Hypoplectrus unicolor	butter hamlet	0	1	0	0	2	0	0				29	3	0.4	0.8
Calamus calamus	saucereye porgy	1	0	1	0	0	0	1				43	3	0.4	0.5
Chaetodon striatus	banded butterflyfish	0	0	0	0	0	0	2				14	2	0.3	0.8
Lutjanus synagris	lane snapper	2	0	0	0	0	0	0				14	2	0.3	0.8

Appendix X (c.) continued. Seahorse Cottage Shoal belt transect data, St. Thomas, 2003

Species	Common Name	Transect No. 1	2	3	4	5	6	7	8	9	10	%Freq	Total	Avg	StDev
Acanthurus coeruleus	blue tang	0	0	0	0	2	0	0				14	2	0.3	0.8
Balistes vetula	queen triggerfish	0	0	0	0	1	0	1				29	2	0.3	0.5
Lactophyrus triqueter	smooth trunkfish	0	0	0	2	0	0	0				14	2	0.3	0.8
Pseudupeneus maculatus	spotted goatfish	0	0	0	0	2	0	0				14	2	0.3	0.8
Pomacanthus paru	French butterflyfish	0	0	0	0	0	1	0				14	1	0.1	0.4
Holocanthus tricolor	rock beauty	0	0	0	0	0	0	1				14	1	0.1	0.4
Holocanthus ciliarus	queen angelfish	0	0	1	0	0	0	0				14	1	0.1	0.4
Haemulon sciurus	bluestriped grunt	0	0	0	0	0	0	1				14	1	0.1	0.4
Haemulon carbonarium	Caesar grunt	0	0	0	0	0	1	0				14	1	0.1	0.4
Sparisoma rubripinne	redfin parrotfish	0	0	0	0	0	1	0				14	1	0.1	0.4
Sparisoma chrysopterum	redtail parrotfish	0	1	0	0	0	0	0				14	1	0.1	0.4
Lutjanus analis	mutton snapper	0	0	0	0	0	0	1				14	1	0.1	0.4
Bodianthus rufus	Spanish hogfish	0	0	0	0	0	0	1				14	1	0.1	0.4
Hypoplectrus puella	barred hamlet	1	0	0	0	0	0	0				14	1	0.1	0.4
Equetus punctatus	spotted drum	0	0	1	0	0	0	0				14	1	0.1	0.4
	n = 49	68	116	207	107	76	61	82				Total fish = 717			

Appendix X (d.) Flat Cay belt transect data, St. Thomas, 2003

Species	Common Name	Transect No. 1	2	3	4	5	6	7	8	9	10	%Freq	Total	Avg	StDev
Chromis multilineata	brown chromis	36	0	32	10	10	40	50	5	50	25	90	258	25.8	18.6
Chromis cyanea	blue chromis	59	0	0	17	21	0	3	5	29	22	70	156	15.6	18.6
Stgastes partitus	bicolor damselfish	13	19	12	21	12	7	12	18	20	17	100	151	15.1	4.5
Scarus taeniopterus	princess parrotfish	21	11	8	20	50	0	0	1	0	2	70	113	11.3	15.8
Acanthurus coeruleus	blue tang	4	26	3	3	17	12	2	6	6	5	100	84	8.4	7.7
Steastes leucostictus	beaugregory	3	0	5	6	6	2	11	7	6	9	90	55	5.5	3.2
Thalssoma bifasciatum	blue head wrasse	3	7	2	17	8	0	10	4	0	0	70	51	5.1	5.4
Halichoeres garnoti	yellow head wrasse	3	11	10	5	4	1	3	3	2	2	100	44	4.4	3.4
Sparisoma aurofrenatum	redband parrotfish	4	0	6	5	8	4	2	2	2	5	90	38	3.8	2.3
Mulloidichthys martinicus	yellow goatfish	0	2	1	0	0	6	0	28	0	0	40	37	3.7	8.7
Scarus croicensis	striped parrotfish	0	0	0	0	0	13	9	7	7	0	40	36	3.6	4.9
Stegastes planifrons	3-spot damselfish	5	2	10	6	0	2	2	1	2	4	90	34	3.4	2.9
Clepticus parrae	creole wrasse	0	2	2	0	0	0	0	27	0	0	30	31	3.1	8.4
Sparisoma viride	stoplight parrotfish	1	0	4	2	2	3	1	0	2	1	80	16	1.6	1.2
Hypoplectrus puella	barred hamlet	1	1	3	1	3	1	3	1	0	2	90	16	1.6	1.0
Acanthurus bahianus	ocean surgeon	0	2	0	2	4	3	4	0	0	0	50	15	1.5	1.7
Holocentrus rufus	longspine squirrelfish	1	0	1	1	0	2	2	3	0	3	70	13	1.3	1.1
Chaetodon capistratus	foureye butterfly	0	0	3	1	2	0	2	2	0	0	50	10	1.0	1.1
Haemulon flavolineatum	French grunt	1	0	0	1	2	2	0	1	2	1	70	10	1.0	0.8
Canthigaster rostrata	shortnose puffer	2	1	1	0	0	0	1	0	1	3	60	9	0.9	0.9
Abudefduf saxatillis	sergeant major	0	0	7	0	0	0	0	0	0	0	90	7	0.7	2.2
Pomacanthus paru	French angelfish	1	1	1	0	0	2	0	0	0	1	50	6	0.6	0.7
Cephalopholis cruentatus	graysby	1	0	0	1	0	1	0	1	1	1	60	6	0.6	0.5
Gramma loreto	fairy basselet	0	0	0	0	0	3	1	2	0	0	30	6	0.6	1.0
Hypoplectrus chlorurus	yellowtail hamlet	0	0	0	0	0	0	1	1	0	3	30	5	0.5	0.9
Hypoplectrus guttavarius	shy hamlet	0	1	0	1	0	1	0	1	1	0	50	5	0.5	0.5
Haemulon sciurus	bluestriped grunt	0	0	0	2	2	0	0	0	0	0	20	4	0.4	0.8
Ocyurus chrysurus	yellowtail snapper	0	0	0	0	0	0	1	0	0	3	20	4	0.4	0.9
Caranx ruber	bar jack	2	0	0	1	0	1	0	0	0	0	30	4	0.4	0.7
Aulostomus maculatus	trumpetfish	0	0	0	0	0	0	0	0	2	2	20	4	0.4	0.8
Pseudupeneus maculatus	spotted goatfish	0	2	0	0	0	1	0	1	0	0	30	4	0.4	0.7
Holocanthus ciliarus	queen angelfish	1	0	0	1	1	0	0	0	0	0	30	3	0.3	0.4
Bodianthus rufus	Spanish hogfish	0	0	1	0	1	1	0	0	0	0	30	3	0.3	0.4
Hypoplectrus nigricans	black hamlet	1	0	1	0	0	0	0	0	1	0	30	3	0.3	0.4

Appendix X (d.) continued. Flat Cay belt transect data, St. Thomas, 2003

Species	Common Name	Transect No. 1	2	3	4	5	6	7	8	9	10	%Freq	Total	Avg	StDev
Gobiosoma evelynae	sharknose gobi	0	0	0	0	0	0	0	0	1	2	20	3	0.3	0.6
Holocanthus tricolor	rock beauty	0	0	0	1	0	1	0	0	0	0	20	2	0.2	0.4
Chaetodon sedentarius	reef butterfly	0	0	0	0	0	2	0	0	0	0	10	2	0.2	0.6
Haemulon carbonarium	Caesar grunt	0	0	0	0	0	1	0	1	0	0	20	2	0.2	0.4
Epinephelus guttatus	red hind	0	0	0	0	0	0	0	0	1	1	20	2	0.2	0.4
Stegastes diencaeus	longfin damselfish	1	1	0	0	0	0	0	0	0	0	20	2	0.2	0.4
Spheroides spengleri	bandtail puffer	0	0	1	0	0	1	0	0	0	0	20	2	0.2	0.4
Equetus punctatus	spotted drum	0	1	0	0	1	0	0	0	0	0	20	2	0.2	0.4
Pomacanthus arcuatus	gray angelfish	1	0	0	0	0	0	0	0	0	0	10	1	0.1	0.3
Chaetodon striatus	banded butterfly	1	0	0	0	0	0	0	0	0	0	10	1	0.1	0.3
Haemulon plumieri	white grunt	0	0	0	0	0	0	0	0	0	1	10	1	0.1	0.3
Sparisoma rubripinne	redfin parrotfish	0	0	0	0	0	0	0	1	0	0	10	1	0.1	0.3
Sparisoma chrysopterum	redtail parrotfish	0	0	0	0	0	0	1	0	0	0	10	1	0.1	0.3
Epinephelus striatus	Nassau grouper	0	0	0	0	0	0	1	0	0	0	10	1	0.1	0.3
Epinephelus adscensionis	rock hind	0	0	0	0	0	0	1	0	0	0	10	1	0.1	0.3
Acanthurus chirurgus	doctorfish	0	0	0	0	0	0	1	0	0	0	10	1	0.1	0.3
Balistes vetula	queen triggerfish	0	0	0	0	0	0	0	0	0	1	10	1	0.1	0.3
Hypoplectrus unicolor	butter hamlet	0	0	0	0	0	0	0	0	1	0	10	1	0.1	0.3
Gobiosoma genie	cleaning goby	1	0	0	0	0	0	0	0	0	0	10	1	0.1	0.3
Calamus calamus	saucereye porgy	0	0	0	0	1	0	0	0	0	0	10	1	0.1	0.3
	n = 54	168	90	114	125	155	113	124	129	137	116		Total fish = 1271		

Appendix X (e.) Grammanik Bank belt transect data, St. Thomas, 2003

Species	Common Name	Transect No. 1	2	3	4	5	6	7	8	9	10	%Freq	Total	Avg	StDev
Chromis multilineata	brown chromis	40	0	50	7	30	15	20	0	35	44	80	241	24.1	18.3
Gobiosoma horsti	yellowline gobi	0	0	3	25	0	10	26	26	10	24	80	124	12.4	11.7
Abudefduf saxatillis	sergent major	20	0	10	21	11	0	0	0	0	2	50	64	10.4	15.4
Liopropma rubre	peppermint bass	10	0	8	0	5	2	22	0	0	8	60	55	10.5	17.7
Scarus croicensis	striped parrotfish	0	3	8	2	1	9	6	6	10	5	90	50	12.7	25.8
Stegastes planifrons	3-spot damselfish	2	2	4	7	5	0	2	1	6	3	90	32	11.1	26.3
Stegastes diencaeus	longfin damselfish	0	0	0	0	0	0	0	24	0	0	10	24	3.1	7.6
Chaetodon striatus	banded butterflyfish	0	0	3	2	3	4	2	2	5	2	80	23	9.4	23.5
Holocentrus rufus	longspine squirrelfish	0	0	0	16	0	0	0	3	0	0	20	19	3.5	7.3
Acanthurus chirurgus	doctorfish	0	0	0	3	0	2	4	0	3	6	50	18	6.2	14.7
Lachnolaimus maximus	hogfish	0	1	0	17	0	0	0	0	0	0	20	18	3.5	7.5
Clepticus parrae	creole wrasse	0	0	5	0	6	4	0	3	0	0	40	18	5.3	11.7
Halichoeres radiatus	puddingwife	0	0	2	4	0	4	0	1	0	6	50	17	6.1	14.7
Cantherines pullus	orangespotted filefish	8	0	1	0	1	3	0	2	0	1	60	16	6.9	17.8
Sparisoma rubripinne	redfin porrotfish	0	1	0	3	1	0	0	5	2	0	50	12	5.6	14.8
Holocentrus coruscum	reef squirrelfish	0	0	3	4	1	0	0	0	4	0	40	12	4.7	11.8
Epinephelus striatus	Nassau grouper	3	4	0	0	2	0	0	2	0	0	40	11	4.6	11.8
Inermia vittata	boga	0	0	2	0	0	1	3	2	1	2	60	11	6.5	17.8
Scarus taeniopterus	princess parrotfish	0	0	0	3	0	6	0	1	0	0	30	10	3.6	8.9
Lutjanus griseus	gray snapper	3	0	1	0	0	0	0	1	0	2	40	7	4.3	11.9
Lutjanus synagris	lane snapper	1	0	0	0	0	0	0	4	2	0	30	7	3.4	8.9
Holcentrus marianus	longjaw squirrelfish	1	2	0	0	0	2	1	0	0	1	50	7	5.2	14.9
Sparisoma aurofrenatum	redband parrotfish	0	0	1	0	0	0	0	4	0	0	20	5	2.3	6.0
Cephalopholis cruentatus	graysby	1	0	1	0	1	1	0	0	1	0	50	5	5.0	14.9
Holocentrus adscensionis	squirrelfish	0	0	1	1	0	1	0	0	0	2	40	5	4.1	11.9
Lutjanus jocu	dog snapper	0	2	0	1	0	0	0	1	0	0	30	4	3.1	8.9
Acanthurus coeruleus	blue tang	0	2	0	0	0	0	2	0	0	0	20	4	2.2	6.0
Epinephelus guttatus	red hind	1	0	0	0	0	2	0	0	0	0	20	3	2.1	6.0
Holocanthus ciliarus	queen angelfish	0	1	1	0	0	0	0	0	0	0	20	2	2.0	6.0
Chaetodon ocellatus	spotfin butterfly	0	0	0	0	0	0	0	2	0	0	10	2	1.1	3.0
Haemulon melanurum	cottonwick	0	0	2	0	0	0	0	0	0	0	10	2	1.1	3.0
Hypoplectrus nigricans	black hamlet	0	0	0	1	0	1	0	0	0	0	20	2	2.0	6.0
Hypoplectrus unicolor	butter hamlet	1	1	0	0	0	0	0	0	0	0	20	2	2.0	6.0
Chaetodon aculeatus	long snout	0	0	1	0	0	0	0	0	0	0	10	1	1.0	3.0

Appendix X (e.) continued. Grammanik Bank belt transect data, St. Thomas, 2003

Species	Common Name	Transect No. 1	2	3	4	5	6	7	8	9	10	%Freq	Total	Avg	StDev
Mycteroperca bonaci	black grouper	0	0	0	0	0	0	1	0	0	0	10	1	1.0	3.0
Mycteroperca venenosa	yellowfin grouper	1	0	0	0	0	0	0	0	0	0	10	1	1.0	3.0
Lutjanus cyanopterus	cubera snapper	0	0	0	0	1	0	0	0	0	0	10	1	1.0	3.0
Paranthias furcifer	creolefish	0	0	0	0	1	0	0	0	0	0	10	1	1.0	3.0
Lactophyrus polygonia	honeycomb cowfish	0	1	0	0	0	0	0	0	0	0	10	1	1.0	3.0
Pseudupeneus maculatus	spotted goatfish	0	0	0	0	0	0	0	0	0	1	10	1	1.0	3.0
	n = 40	92	20	107	117	69	67	89	90	79	109		Total fish = 839		

Appendix X (f.) Red Hind Bank belt transect data, St. Thomas, 2003

Species	Common Name	Transect No. 1	2	3	4	5	6	7	8	9	10	%Freq	Total	Avg	StDev
Clepticus parrae	creole wrasse	200	3	0	0	0	32	14	0	6	8	60	263	26.3	61.8
Chromis cyanea	blue chromis	14	8	8	6	3	4	13	22	4	5	100	87	8.7	6.0
Thalssoma bifasciatum	blue headed wrasse	0	0	10	6	0	2	12	0	21	6	40	57	5.7	7.0
Stegastes partitus	bicolor damselfish	6	6	10	6	0	2	3	0	8	10	80	51	5.1	3.7
Scarus taenopterus	princess parrotfish	5	1	0	0	0	5	4	6	7	1	70	29	2.9	2.8
Holocentrus rufus	longspine squirrelfish	0	3	1	1	0	0	1	8	0	2	60	16	1.6	2.5
Chaetodon capistratus	foureye butterfly	2	1	0	0	4	2	0	2	2	2	70	15	1.5	1.3
Haemulon sciurus	bluestriped grunt	0	0	0	0	0	0	0	15	0	0	10	15	1.5	4.7
Acanthurus bahianus	ocean surgeon	3	0	1	0	2	2	2	4	1	0	70	15	1.5	1.4
Sparisoma viride	stoplight parrotfish	0	0	2	0	0	3	3	3	2	0	50	13	1.3	1.4
Haemulon flavolineatum	French grunt	1	0	2	0	1	1	0	4	1	0	60	10	1.0	1.2
Scarus croicensis	striped parrotfish	0	0	0	0	3	0	0	7	0	0	20	10	1.0	2.3
Mulloidichthys martinicus	yellow goatfish	0	0	0	0	0	0	0	8	0	2	20	10	1.0	2.5
Acanthurus coeruleus	blue tang	0	0	2	0	0	0	1	2	0	4	40	9	0.9	1.4
Halichoeres garnoti	yellow head wrasse	0	1	0	0	0	0	7	0	0	0	20	8	0.8	2.2
Ocyurus chrysurus	yellowtail snapper	0	0	0	0	0	0	0	0	7	0	10	7	0.7	2.2
Hypoplectrus puella	barred hamlet	0	0	0	0	0	0	7	0	0	0	10	7	0.7	2.2
Paranthias furcifer	creolefish	2	0	0	0	1	0	0	4	0	0	30	7	0.7	1.3
Gramma loreto	fairy basselet	0	0	0	0	0	0	0	6	0	0	10	6	0.6	1.9
Holocanthus tricolor	rock beauty	2	1	0	0	1	1	0	0	0	0	40	5	0.5	0.7
Haemulon plumieri	white grunt	0	1	1	0	0	0	0	2	1	0	40	5	0.5	0.7
Epinephelus guttatus	red hind	1	0	0	0	1	0	0	2	0	1	40	5	0.5	0.7
Acanthurus chirurgus	doctorfish	0	0	2	1	1	0	1	0	0	0	40	5	0.5	0.7
Chaetodon acuatus	longsnout butterfly	0	2	0	0	0	0	2	0	0	0	20	4	0.4	0.8
Bodianus rufus	Spanish hogfish	0	0	0	0	0	0	0	4	0	0	10	4	0.4	1.3
Pseudupeneus maculatus	spotted goatfish	4	0	0	0	0	0	0	0	0	0	10	4	0.4	1.3
Pomacanthus arcuatus	gray snapper	0	0	0	0	3	0	0	0	0	0	10	3	0.3	0.9
Mycteroperca tigris	tiger grouper	0	0	0	0	0	2	0	0	0	1	20	3	0.3	0.7
Cephalopholis cruentatus	graysby	1	0	0	0	1	0	0	0	0	1	20	3	0.3	0.5
Lutjanus analis	mutton snapper	0	0	0	2	1	0	0	0	0	0	20	3	0.3	0.7
Lactophyrus triqueter	smooth trunkfish	1	0	1	1	0	0	0	0	0	0	30	3	0.3	0.5
Pomacanthus paru	French grunt	0	0	0	0	0	0	0	2	0	0	10	2	0.2	0.6
Lutjanus apodus	schoolmaster	0	0	0	2	0	0	0	0	0	0	10	2	0.2	0.6
Holocanthus ciliarus	queen angelfish	0	0	1	0	0	0	0	0	0	0	10	1	0.1	0.3

Appendix X (f.) continued. Red Hind Bank belt transect data, St. Thomas, 2003

Species	Common Name	Transect No. 1	2	3	4	5	6	7	8	9	10	%Freq	Total	Avg	StDev
Chaetodon striatus	banded butterfly	0	0	0	0	0	0	1	0	0	0	10	1	0.1	0.3
Scarus vetula	queen parrotfish	0	0	0	1	0	0	0	0	0	0	10	1	0.1	0.3
Mycteroperca venenosa	yellowfin grouper	0	0	0	0	0	1	0	0	0	0	10	1	0.1	0.3
Microspathodon chrysurus	yellowtail damselfish	0	0	0	0	1	0	0	0	0	0	10	1	0.1	0.3
Hypoplectrus nigricans	black hamlet	0	0	0	1	0	0	0	0	0	0	10	1	0.1	0.3
Myripristis jacobus	blackbar soldierfish	1	0	0	0	0	0	0	0	0	0	10	1	0.1	0.3
Sphyraena barracuda	great barracuda	0	0	0	0	0	0	1	0	0	0	10	1	0.1	0.3
Caranx ruber	bar jack	1	0	0	0	0	0	0	0	0	0	10	1	0.1	0.3
	n = 42	244	27	41	27	23	57	72	101	60	43		Total fish = 695		

Appendix XI (a.) Benner Bay roving diver data, St. Thomas 2003. Data is reported in abundance categories: 0 = no fish, 1=1fish, 2=2-10 fish, 3=11-100 fish, 4=101-1000 fish, 5=over 1000 fish.

Species	Common Name	Transect No. 1	2		3	%Freq	Avg	StDev
Acanthurus bahianus	ocean surgeon	3	4	4	100	3.7	0.6	
Acanthurus chirugus	doctorfish	4	3	4	100	3.7	0.6	
Thalsssoma bifasciatum	bluehead wrasse	4	3	4	100	3.7	0.6	
Coryphopterus personatus	glass goby	4	3		4	100	3.7	0.6
Abudefduf saxatillis	sergeant major	3	4		3	100	3.3	0.6
Halichoeres bivittatus	slippery dick	3	4		3	100	3.3	0.6
Mulloidichthys martinicus	yellow goatfish	3	4		3	100	3.3	0.6
Stegastes leucostictus	beaugregory	3	3		3	100	3.0	0.0
Microspathodon chrysurus	yellowtailed damselfish	3	3		3	100	3.0	0.0
Sparisoma viride	stoplight parrotfish	3	3		3	100	3.0	0.0
Sparisoma rubripinne	redfin parrotfish	3	3		3	100	3.0	0.0
Haemulon flavolineatum	French grunt	3	3		3	100	3.0	0.0
Ocyurus chrysurus	yellowtail snapper	3	3		3	100	3.0	0.0
Halichoeres garnoti	yellowhead wrasse	3	3		3	100	3.0	0.0
Holocentrus rufus	longspine squirrelfish	3	3		3	100	3.0	0.0
Stegastes partitus	bicolor damselfish	2	3		3	100	2.7	0.6
Sparisoma aurofrenatum	redband parrotfish	4	0		4	66	2.7	2.3
Chaetodon capistratus	four-eye butterflyfish	2	3	3	100	2.7	0.6	
Haemulon aurolineatum	tomtate grunt	2	3		3	100	2.7	0.6
Lutjanus apodus	schoolmaster	3	2		3	100	2.7	0.6
Lutjanus griseus	gray snapper	2	3		3	100	2.7	0.6
Halichoeres maculipinna	clown wrasse	3	2		3	100	2.7	0.6
Halichoeres radiatus	puddingwife	3	2		3	100	2.7	0.6
Pseudupeneus maculatus	spotted goatfish	2	3		3	100	2.7	0.6
Acanthurus coeruleus	blue tang	0	4		3	66	2.3	2.1
Scarus iserti	striped parrotfish	0	3		4	66	2.3	2.1
Haemulon carbonarium	Ceasar grunt	2	2		3	100	2.3	0.6
Cephalopholis cruentatus	graysby	3	2		2	100	2.3	0.6
Lutjanus mahogoni	mahogany snapper	2	2		3	100	2.3	0.6
Caranx ruber	bar jack	2	3		2	100	2.3	0.6
Stegastes diencaeus	longfin damselfish	3	0		3	66	2.0	1.7
Sparisoma chrysopterum	redtail parrotfish	0	3		3	66	2.0	1.7
Scarus taeniopterus	princess parrotfish	0	3		3	66	2.0	1.7

Appendix XI (a.) continued. Benner Bay roving diver data, St. Thomas, 2003

Species	Common Name	Transect No. 1	2	3	%Freq	Avg AI	StDev
Chaetodon striatus	striped butterflyfish	2	2	2	100	2.0	0.0
Haemulon plumieri	white grunt	1	2	3	100	2.0	1.0
Haemulon sciurus	bluestripe grunt	2	2	2	100	2.0	0.0
Opioblennius atlanticus	red-lipped blenny	3	3	0	66	2.0	1.7
Gerres cinereus	silver jenny	2	2	2	100	2.0	0.0
Canthigaster rostrata	sharpnose puffer	2	2	1	100	1.7	0.6
Haemulon parra	sailors choice	0	3	2	66	1.7	1.5
Anisotremus virginicus	porkfish	2	0	3	66	1.7	1.5
Epinephelus guttatus	red hind	2	1	2	100	1.7	0.6
Holocentrus adscensionis	rock hind	0	2	3	66	1.7	1.5
Myripristis jacobus	blackbar soldierfish	2	0	3	66	1.7	1.5
Scomberomorus regalis	cero mackerel	2	2	1	100	1.7	0.6
Stegastes dorsapunicus	cocoa damselfish	2	2	0	66	1.3	1.2
Scarus guacamaia	rainbow parrotfish	0	2	2	66	1.3	1.2
Holocanthus ciliarus	queen angelfish	0	2	2	66	1.3	1.2
Aulostomus maculatus	trumpetfish	2	1	1	100	1.3	0.6
Malacoctenus triangulatus	saddled blenny	2	2	0	66	1.3	1.2
Megalops atlanticus	tarpon	2	0	2	66	1.3	1.2
Priacanthus cruentatus	glasseye snapper	2	2	0	66	1.3	1.2
Calamus calamus	jolthead porgy	0	2	2	66	1.3	1.2
Stegastes fuscus	dusky damselfish	0	0	3	33	1.0	1.7
Holocanthus tricolor	rock beauty	2	0	1	66	1.0	1.0
Cantherhines pullus	orangespotted filefish	2	1	0	66	1.0	1.0
Diodon hystix	porcupinefish	1	1	1	100	1.0	0.0
Haemulon chrysargyreum	smallmouth grunt	0	0	3	33	1.0	1.7
Serranus tabacarius	tobaccofish	0	0	3	33	1.0	1.7
Gobiosoma genie	cleaning goby	0	1	2	66	1.0	1.0
Lactophyrus triqueter	smooth trunkfish	2	1	0	66	1.0	1.0
Cephalopholis fulvus	coney	0	1	3	66	0.7	0.6
Stegastes planifrons	threespot damselfish	0	2	0	33	0.7	1.2
Scarus vetula	queen parrotfish	0	0	2	33	0.7	1.2
Pomacanthus arcuatus	gray angelfish	2	0	0	33	0.7	1.2
Haemulon macrostomum	Spanish grunt	0	2	0	33	0.7	1.2

Appendix XI (a.) continued. Benner Bay roving diver data, St. Thomas, 2003

Species	Common Name	Transect No. 1	2	3	%Freq	Avg AI	StDev
Anisotremus surinamensis	black margate	0	2	0	33	0.7	1.2
Lutjanus jocu	dog snapper	0	0	2	33	0.7	1.2
Lutjanus analis	mutton snapper	0	2	0	33	0.7	1.2
Halichoeres poeyi	blackear wrasse	0	2	0	33	0.7	1.2
Gobiosoma evelynae	sharknose goby	2	0	0	33	0.7	1.2
Lactophrys quadricornis	scrawled cowfish	2	0	0	33	0.7	1.2
Caranx crysos	blue runner	2	0	0	33	0.7	1.2
Synodus intermedius	sand diver	2	0	0	33	0.7	1.2
Sparisoma radians	bucktooth parrotfish	0	0	1	33	0.3	0.6
Balistes vetula	queen trigger	0	0	1	33	0.3	0.6
Hypoplectrus puella	barred hamlet	1	0	0	33	0.3	0.6
Serranus tigrinus	harlequin bass	0	0	1	33	0.3	0.6
Apogon maculatus	flamefish	1	0	0	33	0.3	0.6
Acanthemblemaria maria	secretary blenny	1	0	0	33	0.3	0.6
Sphyraena barracuda	barracuda	0	0	1	33	0.3	0.6
Equetus punctatus	spotted drum	1	0	0	33	0.3	0.6
Gymnothorax funibris	green moray eel	0	0	1	33	0.3	0.6

n = 83 species

Appendix XI (b.) Black Point roving diver data, St. Thomas, 2003. Data is reported in abundance categories: 0 = no fish, 1=1fish, 2=2-10 fish, 3=11-100 fish, 4=101-1000 fish, 5=over 1000 fish.

Species	Common Name	Transect No. 1	2	3	%Freq	Avg AI	StDev
Sparisoma aurofrenatum	redband parrotfish	4	4	4	100	4.0	0.0
Thalssoma bifasciatum	bluehead wrasse	4	4	4	100	4.0	0.0
Scarus taeniopterus	princess parrotfish	4	3	4	100	3.7	0.6
Chromis multilineata	brown chromis	3	3	4	100	3.3	0.6
Halichoeres garnoti	yellowhead wrasse	4	3	3	100	3.3	0.6
Acanthurus bahianus	ocean surgeon	3	4	2	100	3.0	1.0
Chromis cyanea	blue chromis	3	3	3	100	3.0	0.0
Sparisoma viride	stoplight parrotfish	3	3	3	100	3.0	0.0
Canthigaster rostrata	sharpnose pufferfish	3	3	3	100	3.0	0.0
Hypoplectrus puella	barred hamlet	3	3	3	100	3.0	0.0
Cephalopholis cruentatus	graysby	3	3	3	100	3.0	0.0
Pseudupeneus maculatus	spotted goatfish	3	3	3	100	3.0	0.0
Acanthurus coeruleus	blue tang	3	2	3	100	2.7	0.6
Serranus tabacarius	tobaccofish	2	3	3	100	2.7	0.6
Ocyurus chrysurus	yellowtail snapper	3	2	3	100	2.7	0.6
Stegastes fuscus	dusky damselfish	4	0	3	66	2.3	2.1
Haemulon aurolineatum	tomtate	4	3	0	66	2.3	2.1
Hypoplectrus nigricans	black hamlet	2	3	2	100	2.3	0.6
Stegastes partitus	bicolor damselfish	2	2	2	100	2.0	0.0
Stegastes planifrons	threespot damselfish	4	2	0	66	2.0	2.0
Stegastes leucostictus	beaugregory	0	3	3	66	2.0	1.7
Stegastes diencaeus	longfin damselfish	3	0	3	66	2.0	1.7
Holocanthus ciliarus	queen angelfish	2	2	2	100	2.0	0.0
Epinephelus striatus	Nassau grouper	2	2	2	100	2.0	0.0
Mulloidichthys martinicus	yellow goatfish	1	2	3	100	2.0	1.0
Holocentrus rufus	longspine squirrelfish	2	1	3	100	2.0	1.0
Acanthurus chirugus	doctorfish	2	3	0	66	1.7	1.5
Pomacanthus arcuatus	gray angelfish	2	1	2	100	1.7	0.6
Haemulon flavolineatum	French grunt	3	2	0	66	1.7	1.5
Hypoplectrus chlorurus	yellowtail hamlet	1	3	1	100	1.7	1.2
Hypoplectrus unicolor	butter hamlet	2	2	1	100	1.7	0.6
Clepticus parrae	creole wrasse	0	2	3	66	1.7	0.7

Appendix XI (b.) continued. Black Point roving diver data, St. Thomas, 2003

Species	Common Name	Transect No. 1	2	3	%Freq	Avg AI	StDev
Sarisoma rubripinne	redfin parrotfish	2	2	0	66	1.3	1.2
Sparisoma chrysopterum	redtail parrotfish	0	0	4	33	1.3	2.3
Haemulon melanurum	cottonwick	1	0	3	66	1.3	1.5
Lactophyrus triqueter	smooth trunkfish	1	2	1	100	1.3	0.6
Gramma loreto	royal gramma	1	1	2	100	1.3	0.6
Holocentrus adscensionis	squirrelfish	2	2	0	66	1.3	1.2
Caranx ruber	bar jack	0	2	2	66	1.3	1.2
Microspathodon chrysurus	yellowtail damselfish	0	1	2	66	1.0	1.0
Holocanthus tricolor	rock beauty	0	1	2	66	1.0	1.0
Haemulon parrae	sailors choice	0	0	3	33	1.0	1.7
Hypoplectrus aberrans	yellowbelly hamlet	1	1	1	100	1.0	0.0
Aulostomus maculatus	trumpetfish	2	1	0	66	1.0	1.0
Bodianus rufus	Spanish hogfish	0	1	2	66	1.0	1.0
Gobiosoma evelynae	sharknose goby	0	3	0	33	1.0	1.7
Equetus punctatus	spotted drum	2	0	1	66	1.0	1.0
Synodus interstitialis	sand diver	2	0	1	66	1.0	1.0
Scarus vetula	queen parrotfish	0	0	2	33	0.7	1.2
Chaetodon capistratus	four-eye butterflyfish	2	0	0	33	0.7	1.2
Hypoplectrus guttavarius	shy hamlet	0	1	1	66	0.7	0.6
Cephalopholis fulvus	coney	0	1	1	66	0.7	0.6
Epinephelus guttatus	red hind	1	0	1	66	0.7	0.6
Halichoeres radiatus	puddingwife	0	1	1	66	0.7	0.6
Halichoeres bivittatus	slippery dick	0	2	0	33	0.7	1.2
Gobiosoma genie	cleaning goby	1	0	1	66	0.7	0.6
Myripristis jacobus	blackbar soldierfish	0	2	0	33	0.7	1.2
Sphyreana barracuda	barracuda	0	1	1	66	0.7	0.6
Abudefduf saxatilis	sergeant major	0	1	0	33	0.3	0.6
Sparisoma radians	bucktooth parrotfish	0	1	0	33	0.3	0.6
Scarus iserti	striped parrotfish	0	1	0	33	0.3	0.6
Cantherhinus macrocerus	whitespotted filefish	0	0	1	33	0.3	0.6
Apogon maculatus	flamefish	0	1	0	33	0.3	0.6
Calamus calamus	jolthead porgy	0	1	0	33	0.3	0.6

n = 64 species

Appendix XI (c.) Seahorse Cottage Shoal roving diver data, St. Thomas, 2003. Data is reported in abundance categories: 0 = no fish, 1=1fish, 2=2-10 fish, 3=11-100 fish, 4=101-1000 fish, 5=over 1000 fish.

Species	Common Name	Transect No. 1	2	3	%Freq	Avg AI	StDev
Stegastes partitus	bicolor damselfish	4	4	3	100	3.7	0.6
Acanthurus coeruleus	blue tang	3	4	3	100	3.3	0.6
Chromis cyanea	blue chromis	3	4	3	100	3.3	0.6
Chromis multilineata	brown chromis	4	3	3	100	3.3	0.6
Sparisoma aurofrenatum	redband parrotfish	3	4	3	100	3.3	0.6
Scarus taeniopterus	princess parrotfish	3	4	3	100	3.3	0.6
Lutjanus synagris	lane snapper	3	4	3	100	3.3	0.6
Acanthurus bahianus	ocean surgeon	3	3	3	100	3.0	0.0
Sparisoma viride	stoplight parrotfish	2	4	3	100	3.0	1.0
Ocyurus chrysurus	yellowtail snapper	3	3	3	100	3.0	0.0
Halichoeres garnoti	yellowhead wrasse	4	2	3	100	3.0	1.0
Mulloidichthys martinicus	yellow goatfish	2	4	3	100	3.0	1.0
Pseudupeneus maculatus	spotted goatfish	3	3	3	100	3.0	0.0
Microspathodon chrysurus	yellowtail damselfish	3	3	2	100	2.7	0.6
Abudefduf saxatillis	sergeant major	2	3	3	100	2.7	0.6
Scarus iserti	striped parrotfish	2	3	3	100	2.7	0.6
Balistes vetula	queen trigger	3	3	2	100	2.7	0.6
Haemulon flavolineatum	French grunt	2	3	3	100	2.7	0.6
Cephalopholis cruentatus	graysby	2	3	3	100	2.7	0.6
Lutjanus apodus	schoolmaster snapper	3	2	3	100	2.7	0.6
Lutjanus griesus	gray snapper	3	2	3	100	2.7	0.6
Lutjanus analis	mutton snapper	3	3	2	100	2.7	0.6
Holocentrus rufus	longspine squirrelfish	3	2	3	100	2.7	0.6
Caranx ruber	bar jack	2	3	3	100	2.7	0.6
Calamus calamus	jolthead porgy	2	3	3	100	2.7	0.6
Holocanthus tricolor	rock beauty	2	3	2	100	2.3	0.6
Haemulon parra	sailors choice	2	3	2	100	2.3	0.6
Thalssoma bifasciatum	bluehead wrasse	4	0	3	66	2.3	2.1
Bodianus rufus	Spanish hogfish	2	3	2	100	2.3	0.6
Gramma loreto	royal gramma	4	3	0	66	2.3	2.1
Acanthurus chirugus	doctorfish	3	0	3	66	2.0	1.7
Scarus vetula	queen parrotfish	0	3	3	66	2.0	1.7
Holocanthus ciliarus	queen angelfish	3	2	1	100	2.0	1.0

Appendix XI (c.) continued. Seahorse Cottage Shoal roving diver data, St. Thomas, 2003

Species	Common Name	Transect No. 1	2	3	%Freq	Avg AI	StDev
Chaetodon capistratus	four-eye butterfly	3	0	3	66	2.0	1.7
Haemulon plumieri	white grunt	2	3	1	100	2.0	1.0
Hypoplectrus puella	barred hamlet	2	2	2	100	2.0	0.0
H.adscensionis	longspine squirrel	0	3	3	66	2.0	1.7
Myripristis jacobus	blackbar soldierfish	2	2	2	100	2.0	0.0
Stegastes planifrons	bicolor damselfish	0	2	3	66	1.7	1.5
Sparisoma rubripinne	redfin parrotfish	0	2	3	66	1.7	1.5
Sparisoma chrysopterum	redtail parrotfish	2	0	3	66	1.7	1.5
Chaetodon striatus	banded butterflyfish	2	1	2	100	1.7	0.6
Haemulon sciurus	bluestripe grunt	2	1	2	100	1.7	0.6
Stegastes leucostictus	beaugregory	2	0	2	66	1.3	1.2
Pomacanthus arcuatus	gray angelfish	0	2	2	66	1.3	1.2
Hypoplectrus nigricans	black hamlet	0	2	2	66	1.3	1.2
Aulostomus maculatus	trumpetfish	1	1	2	100	1.3	0.6
Gobiosoma genie	cleaning goby	2	2	0	0	1.3	1.2
Priacanthus cruentatus	glasseye snapper	2	0	2	66	1.3	1.2
Cheatodon ocellatus	four-eye snapper	0	3	0	33	1.0	1.7
Cantherhines pullus	orangespotted filefish	1	1	1	100	1.0	0.0
Diodon hystix	porcupinefish	1	0	2	66	1.0	1.0
Haemulon aurolineatum	tomtate	0	0	3	33	1.0	1.7
Malacoctenus macropus	rosy blenny	3	0	0	33	1.0	1.7
Halichoeres bivittatus	slippery dick	3	0	1	33	1.3	1.5
Clepticus parrae	creole wrasse	0	0	3	33	1.0	1.7
Lachnolaimus maximus	hogfish	1	2	0	66	1.0	1.0
Dasyatus americanus	southern stingray	2	0	1	66	1.0	1.0
Haemulon chrysargyreum	smallmouth grunt	2	0	0	33	0.7	1.2
Haemulon carbonarium	Ceaser grunt	0	2	0	33	0.7	1.2
Epinephelus adscensionis	rock hind	2	0	0	33	0.7	1.2
Epinephelus guttatus	red hind	2	0	0	33	0.7	1.2
Serranus tigrinus	harliquin bass	0	2	0	33	0.7	1.2
Lutjanus mahogoni	mahogany snapper	0	2	0	33	0.7	1.2
Halicheores radiatus	puddingwife	0	2	0	33	0.7	1.2
Gobiosoma genie	cleaner goby	0	2	0	33	0.7	1.2
Lactophrys polygonia	honeycomb cowfish	0	2	0	33	0.7	1.2

Appendix XI (c.) continued. Seahorse Cottage Shoal roving diver data, St. Thomas, 2003

Species	Common Name	Transect No. 1	2	3	%Freq	Avg AI	StDev
Amblycirrhitus pinos	redspotted hawkfish	2	0	0	33	0.7	1.2
Pomacanthus paru	French angelfish	1	0	0	33	0.3	0.6
Cantherhines macrocerus	whitespotted filefish	0	1	0	33	0.3	0.6
Alectis ciliaris	African pompano	0	0	1	33	0.3	0.6
Echeneis neucrates	sharksucker	1	0	0	33	0.3	0.6

n = 72 species

Appendix XI (d.) Flat Cay roving diver data, St. Thomas, 2003. Data is reported in abundance categories: 0 = no fish, 1=1fish, 2=2-10 fish, 3=11-100 fish, 4=101-1000 fish, 5=over 1000 fish.

Species	Common Name	Transect No. 1	2	3	%Freq	Avg AI	StDev
Stegastes partitus	bicolor damselfish	4	4	3	100	3.7	0.6
Chromis cyanea	blue chromis	3	4	4	100	3.7	0.6
Chromis multilineata	brown chromis	4	4	3	100	3.7	0.6
Ocyurus chrysurus	yellowtail snapper	3	4	4	100	3.7	0.6
Halichoeres garnoti	yellowhead wrasse	3	4	4	100	3.7	0.6
Thalssoma bifasciatum	bluehead wrasse	3	4	4	100	3.7	0.6
Acanthurus coeruleus	blue tang	4	3	3	100	3.3	0.6
Stegastes planifrons	threespot damselfish	3	3	4	100	3.3	0.6
Sparisoma aurofrenatum	redband parrotfish	4	3	3	100	3.3	0.6
Scarus taeniopterus	princess parrotfish	4	4	2	100	3.3	1.2
Holocentrus rufus	longspine squirrelfish	3	4	3	100	3.3	0.6
Acanthurus bahianus	ocean surgeon	3	3	3	100	3.0	0.0
Sparisoma viride	stoplight parrotfish	3	3	3	100	3.0	0.0
Scarus iserti	striped parrotfish	4	4	1	100	3.0	1.7
Chaetodon capistratus	four-eye butterflyfish	3	3	3	100	3.0	0.0
Mulloidichthys martinicus	yellow goatfish	3	3	3	100	3.0	0.0
Pseudupeneus maculatus	spotted goatfish	3	4	2	100	3.0	1.0
Microspathodon chrysurus	yellowtail damselfish	3	3	2	100	2.7	0.6
Haemulon flavolineatum	French grunt	2	3	3	100	2.7	0.6
Serranus tabacarius	tobaccofish	3	3	2	100	2.7	0.6
Lutjanus griseus	gray snapper	3	2	3	100	2.7	0.6
Clepticus parrae	creole wrasse	3	2	3	100	2.7	0.6
Canthigaster rostrata	sharpnose puffer	1	3	3	100	2.3	1.2
Haemulon aurolineatum	tomtate	3	4	0	66	2.3	2.1
Haemulon sciurus	bluestriped grunt	3	3	1	100	2.3	1.2
Hypoplectrus puella	barred hamlet	2	3	2	100	2.3	0.6
Aulostomus maculatus	trumpetfish	2	3	2	100	2.3	0.6
Bodianus rufus	Spanish hogfish	3	2	2	100	2.3	0.6
Caranx ruber	bar jack	3	2	2	100	2.3	0.6
Calamus calamus	jolthead porgy	3	2	2	100	2.3	0.6
Acanthurus chirugus	doctorfish	3	1	2	100	2.0	1.0
Stegastes leucostictus	beaugregory	3	3	0	66	2.0	1.7
Stegastes diencaeus	longfin damselfish	3	2	1	100	2.0	1.0

Appendix XI (d.) continued. Flat Cay roving diver data, St. Thomas, 2003

Species	Common Name	Transect No. 1	2	3	%Freq	Avg AI	StDev
Holocanthus tricolor	rock beauty	2	1	3	100	2.0	1.0
Haemulon plumieri	white grunt	3	0	3	66	2.0	1.7
Halichoeres bivittatus	slippery dick	2	3	1	100	2.0	1.0
Holocentrus adscensionis	squirrelfish	0	3	3	66	2.0	1.7
Pomacanthus arcuatus	gray angelfish	2	1	2	100	1.7	0.6
Cephalopholis cruentatus	graysby	0	3	2	66	1.7	1.5
Serranus tigrinus	harlequin bass	2	2	1	100	1.7	0.6
Chaetodon aculeatus	longsnout butterflyfish	0	2	2	66	1.3	1.2
Haemulon carbonarium	Ceaser grunt	0	2	2	66	1.3	1.2
Hypoplectrus nigricans	black hamlet	0	2	2	66	1.3	1.2
Hypoplectrus chlorurus	yellowtail hamlet	0	2	2	66	1.3	1.2
Hypoplectrus aberrans	yellowbelly hamlet	1	2	1	100	1.3	0.6
Lutjanus mahogoni	mahogany snapper	2	2	0	66	1.3	1.2
Opioblennius atlanticus	red-lip blenny	2	0	2	66	1.3	1.2
Halichoeres radiatus	puddingwife	2	0	2	66	1.3	1.2
Holocanthus ciliarus	queen angelfish	2	0	1	66	1.0	1.0
Haemulon parra	sailors choice	2	1		66	1.0	0.7
Hypoplectrus unicolor	butter hamlet	0	2	1	66	1.0	1.0
Hypoplectrus guttavarius	shy hamlet	1	0	2	66	1.0	1.0
Lutjanus synagris	lane snapper	3	0	0	33	1.0	1.7
Halichoeres pictus	rainbow wrasse	3	0	0	33	1.0	1.7
Gobiosoma evelynae	sharknose goby	0	0	3	33	1.0	1.7
Equetus punctatus	spotted drum	1	1	1	100	1.0	0.0
Sparisoma rubripinne	redfin parrotfish	2	0	0	33	0.7	1.2
Sparisoma chrysopterum	redtail parrotfish	2	0	0	33	0.7	1.2
Pomacanthus paru	French angelfish	2	0	0	33	0.7	1.2
Chaetodon sedentarius	reef butterfly	2	0	0	33	0.7	1.2
Cantherhines pullus	orangespotted filefish	0	0	2	33	0.7	1.2
Diodon hystix	porcupinefish	1	0	1	66	0.7	0.6
Epinephelus guttatus	red hind	1	1	0	66	0.7	0.6
Apogon maculatus	flamefish	0	2	0	33	0.7	1.2
Coryphopterus glaucofraneum	bridled goby	0	2	0	33	0.7	1.2
Gobiosoma genie	cleaning goby	0	2	0	33	0.7	1.2

Appendix XI (d.) continued. Flat Cay roving diver data, St. Thomas, 2003

Species	Common Name	Transect No. 1	2	3	%Freq	Avg AI	StDev
Gerres cinereus	silver jenny	0	2	0	33	0.7	1.2
Lactophrys triqueter	smooth trunkfish	0	0	2	33	0.7	1.2
Gramma loreto	royal gramma	0	0	2	33	0.7	1.2
Myripristis jacobus	blackbar soldierfish	2	0	0	33	0.7	1.2
Amblycirrhitus pinos	redspotted hawkfish	0	0	2	33	0.7	1.2
Dasyatus americana	southern stingray	0	1	1	66	0.7	0.6
Stegastes fuscus	dusky damselfish	0	0	1	33	0.3	0.6
Scarus vetula	queen parrotfish	0	0	1	33	0.3	0.6
Spheroides spengleri	bandtail puffer	1	0	0	33	0.3	0.6
Epinephelus striatus	Nassau grouper	1	0	0	33	0.3	0.6
Lactophrys polygonia	honeycombed cowfish	0	0	1	33	0.3	0.6
Lactophrys quadricornis	scrawled cowfish	0	1	0	33	0.3	0.6
Sphyraena barracuda	great baracuda	1	0	0	33	0.3	0.6
Priacanthus cruentatus	glasseye snapper	0	0	1	33	0.3	0.6
Synodus intermedius	sand diver	0	1	0	33	0.3	0.6
Malacoctenus triangulatus	saddled bleeny	0	1	0	33	0.3	0.6
Malacanthus pulmieri	sand tilefish	0	0	1	33	0.3	0.6
Gymnothorax funibris	green morey eel	0	1	0	33	0.3	0.6

n = 84 species

Appendix XI (e.) Grammanik Bank roving diver data, St. Thomas, 2003. Data is reported in abundance categories: 0 = no fish, 1=1fish, 2=2-10 fish, 3=11-100 fish, 4=101-1000 fish, 5=over 1000 fish.

Species	Common Name	Transect No. 1	2	3	4	%Freq	Avg AI	StDev
Chromis cyanea	blue chromis	3	4	3	3	100	3.3	0.5
Clepticus parrae	creole wrasse	3	3	4	3	100	3.3	0.5
Lutjanus cyanopterus	cubera snapper	3	3	3	3	100	3.0	0.0
Melichthy niger	black durgon	2	3	3	2	100	2.5	0.6
Thalssoma bifasciatum	bluehead wrasse	3	2	3	2	100	2.5	0.6
Inermia vittata	boga	3	4	3	0	75	2.5	1.7
Chromis multilineata	brown chromis	3	0	3	3	75	2.3	1.5
Ocyurus chrysurus	yellowtail snapper	3	2	2	2	100	2.3	0.5
Acanthurus bahianus	ocean surgeon	3	2	0	3	75	2.0	1.4
Stegastes partitus	bicolor damselfish	0	3	2	3	75	2.0	1.4
Chaetodon capistratus	four-eye butterflyfish	2	2	2	2	100	2.0	0.0
Chaetodon striatus	banded butterflyfish	2	2	2	2	100	2.0	0.0
Lutjanus apodus	schoolmaster snapper	3	2	2	1	100	2.0	0.8
Acanthurus coeruleus	blue tang	3	0	2	2	75	1.8	1.3
Sparisoma viride	stoplight parrotfish	2	1	2	2	100	1.8	0.5
Holocanthus tricolor	rock beauty	2	2	1	2	100	1.8	0.5
Holocentrus rufus	longspine squirrelfish	2	2	2	1	100	1.8	0.5
Myripristis jacobus	blackbar soldierfish	0	2	3	2	75	1.8	1.3
Acanthurus chirugus	doctorfish	3	0	3	0	50	1.5	1.7
Sparisoma aurofrenatum	redband parrotfish	3	0	2	1	75	1.5	1.3
Paranthias furcifer	creolefish	3	0	3	0	50	1.5	1.7
Halichoeres garnoti	yellowhead wrasse	3	2	0	1	75	1.5	1.0
Bodianus rufus	Spanish hogfish	1	1	2	2	100	1.5	0.6
Caranx ruber	bar jack	3	0	2	1	75	1.5	1.3
Scarus taeniopterus	princess parrotfish	0	3	2	0	50	1.3	1.5
Haemulon flavolineatum	French grunt	2	1	2	0	75	1.3	1.0
Cephalopholis cruentatus	graysby	1	1	2	1	100	1.3	0.5
Chaetodon aculeatus	longsnout butterflyfish	0	2	0	2	50	1.0	1.2
Chaetodon sedentarius	reef butterflyfish	0	2	0	2	50	1.0	1.2
Epinephelus guttatus	red hind	2	0	0	2	50	1.0	1.2
Mycteroperca venenosa	yellowfin grouper	2	2	0	0	50	1.0	1.2
Lutjanus mahogoni	mahogany snapper	0	2	1	1	75	1.0	0.8
Gramma loreto	royal gramma	0	3	1	0	50	1.0	1.4

Appendix XI (e.) Grammanik Bank roving diver data, St. Thomas, 2003

Species	Common Name	Transect No. 1	2	3	4	%Freq	Avg AI	StDev
Scomberomorus regalis	cero meckerel	0	1	1	2	75	1.0	0.8
Caranx lugubris	black jack	2	0	0	2	50	1.0	1.2
Canthigaster rostrata	sharpnose puffer	1	2	0	0	50	0.8	1.0
Stegastes planifrons	treespot damselfish	0	2	0	0	25	0.5	1.0
Sparisoma rubripinne	redfin parrotfish	0	2	0	0	25	0.5	1.0
Pomacanthus paru	French angelfish	2	0	0	0	25	0.5	1.0
Diodon hystix	porcupinefish	0	0	1	1	50	0.5	0.6
Hypoplectrus nigricans	black hamlet	0	0	1	1	50	0.5	0.6
Hypoplectrus chlorurus	yellowtail hamlet	0	2	0	0	25	0.5	1.0
Mycteroperca tigris	tiger grouper	0	0	2	0	25	0.5	1.0
Cephalopholis fulvus	coney	2	0	0	0	25	0.5	1.0
Epinephelus striatus	Nassau grouper	2	0	0	0	25	0.5	1.0
Halichoeres bivittatus	slippery dick	0	0	2	0	25	0.5	1.0
Gobiosoma evelynae	sharknose goby	0	0	0	2	25	0.5	1.0
Lactophrys triqueter	smooth trunkfish	0	0	2	0	25	0.5	1.0
Pseudupeneus maculatus	spotted goatfish	0	1	0	1	50	0.5	0.6
Holocentrus marianus	longjaw squirrelfish	0	1	0	1	50	0.5	0.6
Holocentrus adscensionis	squirrelfish	1	1	0	0	50	0.5	0.6
Sphyraena barracuda	great barracuda	0	1	0	1	50	0.5	0.6
Hypoplectrus puella	black hamlet	0	1	0	0	25	0.3	0.5
Epinephelus adscensionis	rock hind	0	0	0	1	25	0.3	0.5
Scomberomorus cavalla	king mackerel	0	0	1	0	25	0.3	0.5
Trachinotus falcatus	permit	0	0	1	0	25	0.3	0.5
Priacanthus cruentatus	glasseye snapper	0	0	1	0	25	0.3	0.5
Synodus intermedius	sand diver	0	0	0 1	25	0.3	0.5	

n = 58 species

Appendix XI (f.) Red Hind Bank roving diver data, St. Thomas, 2003. Data is reported in abundance categories: 0 = no fish, 1=1fish, 2=2-10 fish, 3=11-100 fish, 4=101-1000 fish, 5=over 1000 fish.

Species	Common Name	Transect No. 1	2	3	4	%Freq	Avg	StDev
Chromis cyanea	blue chromis	3	3	4	4	100	3.5	0.6
Stegastes partitus	bicolor damselfish	3	3	3	3	100	3.0	0.0
Scarus taeniopterus	princess parrotfish	3	3	3	3	100	3.0	0.0
Clepticus parrae	creole wrasse	3	3	3	3	100	3.0	0.0
Sparisoma viride	stoplight parrotfish	3	3	2	2	100	2.5	0.6
Halichoeres garnoti	yellowhead wrasse	2	2	3	3	100	2.5	0.6
Acanthurus coeruleus	blue tang	3	3	2	0	75	2.0	1.4
Chromis multilineata	brown chromis	3	3	1	1	100	2.0	1.2
Chaetodon capistratus	four-eye butterflyfish	2	2	2	2	100	2.0	0.0
Chaetodon aculeatus	longsnout butterflyfish	2	2	2	2	100	2.0	0.0
Haemulon flavolineatum	French grunt	2	3	1	2	100	2.0	0.8
Cephalopholis cruentatus	graysby	2	2	2	2	100	2.0	0.0
Ocyurus chrysurus	yellowtail snapper	2	2	2 2	100 2.0	0.0		
Pseudupeneus maculatus	spotted goatfish	2	2	2	2	100	2.0	0.0
Holocanthus ciliarus	queen angelfish	2	2	1	2	100	1.8	0.5
Paranthias furcifer	creolefish	3	0	2	2	75	1.8	1.3
Thalassoma bifasciatum	bluehead wrasse	4	0	0	3	50	1.8	2.1
Myripristis jacobus	blackbar soldierfish	2	2	1	2	100	1.8	0.5
Caranx ruber	bar jack	0	3	2	2	75	1.8	1.3
Acanthurus bahianus	ocean surgeon	3	3	0	0	50	1.5	1.7
Stegastes planifrons	threespot damselfish	0	0	3	3	50	1.5	1.7
Sparisoma aurofrenatum	redband parrotfish	2	2	0	2	75	1.5	1.0
Chaetodon striatus	banded butterflyfish	2	2	0	2	75	1.5	1.0
Haemulon plumieri	white grunt	2	0	2	2	75	1.5	1.0
Holocentrus rufus	longspine squirrelfish	0	2	2	2	75	1.5	1.0
Acanthurus chirugus	doctorfish	0	0	2	3	50	1.3	1.5
Calamus calamus	jolthead porgy	2	0	1	2	75	1.3	1.0
Holocanthus tricolor	rock beauty	2	0	2	0	50	1.0	1.2
Chaetodon. sedentarius	reef butterflyfish	2	2	0	0	50	1.0	1.2
Anistotremis virginicus	porkfish	2	0	1	1	75	1.0	0.8
Epinephelus guttatus	rock hind	1	0	1	2	75	1.0	0.8
Lutjanus apodus	schoolmaster snapper	2	0	0	2	50	1.0	1.2
Lactophrys triqueter	smooth trunkfish	0	2	0	2	50	1.0	1.2

Appendix XI (f.) continued. Red Hind Bank roving diver data, St. Thomas, 2003

Species	Common Name	Transect No. 1	2	3	%Freq	Avg	StDev
Mulloidichthys martinicus	yellow goatfish	0	0	2	2	50	1.0	1.2
Kyphosus spp.	chub	0	3	0	1	50	1.0	1.4
Sparisoma chrysopterum	redtail parrotfish	0	0	0	3	25	0.8	1.5
Melichthy niger	black durgon	0	3	0	0	25	0.8	1.5
Canthigaster rostrata	sharpnose puffer	1	2	0	0	50	0.8	1.0
Haemulon sciurus	bluestripe grunt	1	0	0	2	50	0.8	1.0
Hypoplectrus chlorurus	yellowtail hamlet	2	0	1	0	50	0.8	1.0
Mycteroperca venenosa	yellowfin grouper	0	3	0	0	25	0.8	1.5
Liopropoma rubre	peppermint bass	1	2	0	0	50	0.8	1.0
Lutjanus jocu	dog snapper	1	2	0	0	50	0.8	1.0
Lutjanus analis	mutton snapper	2	0	0	1	50	0.8	1.0
Apogon maculatus	flamefish	0	3	0	0	25	0.8	1.5
Halichoeres bivittatus	slippery dick	0	0	3	0	25	0.8	1.5
Bodianus rufus	Spanish hogfish	2	0	1	0	50	0.8	1.0
Scarus vetula	queen parrotfish	0	0	0	2	25	0.5	1.0
Pomacanthus arcuatus	gray angelfish	0	0	0	2	25	0.5	1.0
Pomacanthus paru	French angelfish	2	0	0	0	25	0.5	1.0
Hypoplectrus nigricans	black hamlet	0	0	2	0	25	0.5	1.0
Mycteroperca tigris	tiger grouper	0	0	0	2	25	0.5	1.0
Cephalopholis fulvus	coney	0	0	2	0	25	0.5	1.0
Epinephelus striatus	Nassau grouper	0	2	0	0	25	0.5	1.0
Gramma loreto	royal gramma	0	0	0	2	25	0.5	1.0
Holocentrus marianus	longjaw squirrelfish	0	2	0	0	25	0.5	1.0
Amblycirrhitus pinos	redspotted hawkfish	1	1	0	0	50	0.5	0.6
Caranx lugubris	black jack	0	0	1	1	50	0.5	0.6
Synodus intermedius	sand diver	2	0	0	0	25	0.5	1.0
Scarus iserti	striped parrotfish	1	0	0	0	25	0.3	0.5
Cantherhines macrocerus	whitespotted filefish	0	0	0	1	25	0.3	0.5
Balistes vetula	queen triggerfish	0	0	0	1	25	0.3	0.5
Haemulon carbonarium	Ceaser grunt	1	0	0	0	25	0.3	0.5
Anisotremus surinamensis	black margate	1	0	0	0	25	0.3	0.5
Hypoplectrus puella	barred hamlet	1	0	0	0	25	0.3	0.5
Hypoplectrus unicolor	butter hamlet	1	0	0	0	25	0.3	0.5
Lutjanus mahogoni	mahogany snapper	0	0	0	1	25	0.3	0.5

Appendix XI (f.) continued. Red Hind Bank roving diver data, St. Thomas, 2003

Species	Common Name	Transect No. 1	2	3	%Freq	Avg	StDev
Lactophrys trigonus	trunkfish	1	0	0 0	25 0.3	0.5	

n = 68 species

Appendix XII. A comparison of point count and belt transect methods, Sprat Hole, St. Croix.

		Belt Transects (n =10)					Point Counts (n =6)				
Common Name	Species	Avg No. Fish per Replicate	StDev	%Freq	Abund Rank	Freq Rank	Avg No. Fish per Replicate	StDev	%Freq	Abund Rank	Freq Rank
blue chromis	*Chromis cyanea*	103.10	62.30	100.0%	1	1 (7)	153.33	72.57	100.0%	1	1 (7)
bicolor damselfish	*Stegastes partitus*	22.40	4.67	100.0%	2	1 (7)	43.67	19.82	100.0%	3	1 (7)
bluehead wrasse	*Thalassoma bifasciatum*	22.10	19.44	100.0%	3	1 (7)	34.17	24.98	83.3%	4	2 (5)
brown chromis	*Chromis multilineata*	19.40	19.02	100.0%	4	1 (7)	19.83	16.22	100.0%	5	1 (7)
creole wrasse	*Clepticus parrae*	19.40	32.06	60.0%	5	5 (4)	88.33	124.16	66.7%	2	3 (5)
threespot damselfish	*Stegastes planifrons*	12.00	7.33	100.0%	6	1 (7)	12.50	9.83	66.7%	6	3 (5)
princess parrotfish	*Scarus taeniopterus*	11.00	4.88	100.0%	7	1 (7)	4.33	1.63	100.0%	8	1 (7)
stoplight parrotfish	*Sparisoma viride*	8.10	4.31	100.0%	8	1 (7)	3.17	1.17	100.0%	9	1 (7)
redband parrotfish	*Sparisoma aurofrenatum*	6.70	4.62	90.0%	9	2 (4)	5.00	3.46	100.0%	7	1 (7)
fairy basslet	*Gramma loreto*	5.00	3.30	90.0%	10	2 (4)	1.17	2.86	16.7%	21	6 (12)
yellowhead wrasse	*Halichoeres garnoti*	4.80	3.36	90.0%	11	2 (4)	2.00	1.26	100.0%	13	1 (7)
striped parrotfish	*Scarus croicensis*	3.80	2.62	80.0%	12	3 (4)	1.67	2.58	33.3%	16	5 (6)
dusky damselfish	*Stegastes fuscus*	3.40	3.66	70.0%	13	4 (3)	2.67	2.07	83.3%	10	2 (5)
foureye butterflyfish	*Chaetodon capistratus*	3.00	2.67	70.0%	14	4 (3)	2.17	1.17	83.3%	12	2 (5)
brown garden eel	*Heteroconger longissimus*	3.00	6.32	20.0%	15	9 (10)	-	-	-	-	-
sharpnose puffer	*Canthigaster rostrata*	2.80	1.87	90.0%	16	2 (4)	1.50	1.22	66.7%	17	3 (5)
blue tang	*Acanthurus coeruleus*	2.60	2.63	80.0%	17	3 (4)	1.17	0.98	66.7%	20	3 (5)
ocean surgeonfish	*Acanthurus bahianus*	2.60	2.22	80.0%	18	3 (4)	1.83	2.23	66.7%	14	3 (5)
graysby	*Cephalopholis cruentatus*	1.70	1.49	80.0%	19	3 (4)	1.00	0.63	83.3%	22	2 (5)
french grunt	*Haemulon flavolineatum*	1.60	1.43	70.0%	20	4 (3)	0.83	0.98	50.0%	23	4 (6)
yellow goatfish	*Mulloidichthys martinicus*	1.60	3.10	50.0%	21	6 (3)	0.33	0.82	16.7%	35	6 (12)
longspine squirrelfish	*Holocentrus rufus*	1.10	1.20	60.0%	22	5 (4)	1.50	1.97	50.0%	18	4 (6)
blackbar soldierfish	*Myripristis jacobus*	1.00	0.94	60.0%	23	5 (4)	2.33	2.50	83.3%	11	2 (5)
spanish hogfish	*Bodianus rufus*	1.00	1.25	50.0%	24	6 (3)	0.67	0.82	50.0%	27	4 (6)
black durgon	*Melichthys niger*	0.90	1.10	50.0%	25	6 (3)	0.67	0.82	50.0%	25	4 (6)
harlequin bass	*Serranus tigrinius*	0.90	1.37	40.0%	26	7 (1)	1.67	2.88	33.3%	15	5 (6)
barred hamlet	*Hypoplectrus puella*	0.80	0.79	60.0%	27	5 (4)	0.50	0.55	50.0%	28	4 (6)

Appendix XII (continued). A comparison of point count and belt transect methods, Sprat Hole, St. Croix.

		Belt Transects (n =10)					Point Counts (n =6)				
Common Name	Species	Avg No. Fish per Replicate	StDev	%Freq	Abund Rank	Freq Rank	Avg No. Fish per Replicate	StDev	%Freq	Abund Rank	Freq Rank
cocoa damselfish	*Stegastes variabilis*	0.80	1.93	20.0%	28	9 (10)	1.50	3.67	16.7%	19	6 (12)
queen parrotfish	*Scarus vetula*	0.60	1.26	30.0%	29	8 (7)	0.67	0.82	50.0%	26	4 (6)
bar jack	*Caranx ruber*	0.50	0.97	30.0%	30	8 (7)	0.33	0.82	16.7%	33	6 (12)
coney	*Cephalopholis fulvus*	0.50	0.85	30.0%	31	8 (7)	0.83	1.33	33.3%	24	5 (6)
longsnout butterflyfish	*Chaetodon aculeatus*	0.50	0.85	30.0%	32	8 (7)	0.50	0.84	33.3%	29	5 (6)
schoolmaster	*Lutjanus apodus*	0.50	0.85	30.0%	33	8 (7)	0.17	0.41	16.7%	39	6 (12)
sergeant major	*Abudefduf saxatilis*	0.40	0.84	20.0%	34	9 (10)	0.33	0.82	16.7%	34	6 (12)
butter hamlet	*Hypoplectrus unicolor*	0.30	0.48	30.0%	35	8 (7)	-	-	-	-	-
yellowtail hamlet	*Hypoplectrus chlorurus*	0.30	0.48	30.0%	36	8 (7)	-	-	-	-	-
rock beauty	*Holacanthus tricolor*	0.30	0.67	20.0%	37	9 (10)	0.33	0.52	33.3%	31	5 (6)
bluestriped grunt	*Haemulon sciurus*	0.20	0.42	20.0%	38	9 (10)	-	-	-	-	-
mahogany snapper	*Lutjanus mahogoni*	0.20	0.42	20.0%	39	9 (10)	0.33	0.52	33.3%	30	5 (6)
red hind	*Epinephelus guttatus*	0.20	0.42	20.0%	40	9 (10)	-	-	-	-	-
sand tilefish	*Malacanthus plumieri*	0.20	0.42	20.0%	41	9 (10)	-	-	-	-	-
spotted goatfish	*Psuedupeneus maculatus*	0.20	0.42	20.0%	42	9 (10)	-	-	-	-	-
trumpetfish	*Aulostomus maculatus*	0.20	0.42	20.0%	43	9 (10)	0.17	0.41	16.7%	40	6 (12)
banded butterflyfish	*Chaetodon striatus*	0.20	0.63	10.0%	44	10 (12)	0.33	0.82	16.7%	32	6 (12)
greenblotch parrotfish	*Sparisoma atomarium*	0.20	0.63	10.0%	45	10 (12)	-	-	-	-	-
yellowtail damselfish	*Microspathodon chrysurus*	0.20	0.63	10.0%	46	10 (12)	-	-	-	-	-
beaugregory	*Stegastes leucostictus*	0.20	0.63	10.0%	47	10 (12)	0.17	0.41	16.7%	37	6 (12)
goldentail moray	*Gymnothorax miliaris*	0.10	0.32	10.0%	48	10 (12)	-	-	-	-	-
honeycomb cowfish	*Acanthostracion ploygonia*	0.10	0.32	10.0%	49	10 (12)	-	-	-	-	-
peacock flounder	*Bothus lunatus*	0.10	0.32	10.0%	50	10 (12)	-	-	-	-	-
smooth trunkfish	*Lactophrys triqueter*	0.10	0.32	10.0%	51	10 (12)	-	-	-	-	-
spotted trunkfish	*Lactophrys bicaudalis*	0.10	0.32	10.0%	52	10 (12)	-	-	-	-	-
squirrelfish	*Holocentrus adcensionis*	0.10	0.32	10.0%	53	10 (12)	-	-	-	-	-
white grunt	*Haemulon plumieri*	0.10	0.32	10.0%	54	10 (12)	-	-	-	-	-
yellowtail snapper	*Ocyurus Chrysurus*	0.10	0.32	10.0%	55	10 (12)	0.17	0.41	16.7%	41	6 (12)
orangespotted filefish	*Cantherhines pullus*	-	-	-	-	-	0.17	0.41	16.7%	38	6 (12)
yellowfin majorra	*Gerres cinereus*	-	-	-	-	-	0.33	0.82	16.7%	36	6 (12)