

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

Year Five Final Report
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By

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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, implemented a long-term coral reef monitoring and assessment program in 2001. This program has established 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 fifth year of monitoring in St. Croix and the third year of monitoring in St. Thomas, with comparisons to previous years. St. Thomas monitoring and assessment employed a stratified design based upon the position of reefs along the insular platform (mid-shelf and shelf-edge). This design was implemented to complement other ongoing monitoring studies and to facilitate a systematic evaluation of the effects of natural and human-induced stresses influencing the decline or recovery of coral reef systems.

Digital video and diver surveys were used to quantify coral diversity, coral recruit density, 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 (Buck Island, Cane Bay, Great Pond, Jacks/Isaacs Bay, Long Reef/Eagle Ray, Mutton Snapper, Salt River, and Sprat Hole) and six permanent sites surrounding the island of St. Thomas (Seahorse Cottage Shoal, South Capella, South Water, the Grammanik Bank, the Red Hind Bank, and College Shoal East).

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. Sixty-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 mid-shelf reefs (5 – 30 m depth) located 2 to 10 km from the shore of the main islands and shelf-edge reefs (>30 m depth) located 10 to 15 km offshore along the edge of the insular platform. Distance from shore may be a factor in the historical degeneration of coral reef systems in the Virgin Islands (Herzlieb *et al.* 2005). A systematic approach to investigating these cross-shelf coral reef systems allows us to evaluate the variable impacts and synergistic effects of natural impacts and human-induced stress that influence 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.* 2003a). In 2003, monitoring continued at St. Croix reefs and began at reef systems distributed across the insular platform surrounding St. Thomas. In 2004 and 2005, monitoring continued at reefs surrounding both islands, with additional reefs surrounding St. Thomas being added each year.

Objectives for Monitoring Coral Reefs

Effective management is necessary to maintain the resources in the territorial and federal waters of the Virgin Islands in an ecologically and economically sustainable manner. Monitoring programs are essential for successful management because they provide managers with fundamental information with which to make and enforce decisions. Standards for resource protection can be measured by comparison to baseline data established by monitoring. Monitoring also provides the means to assess the status and trends of ecological resources, allowing managers to determine the effectiveness of current management and to develop effective management plans 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 St. Thomas. This report presents results from the fifth year of monitoring in St. Croix and the third year of monitoring in St. Thomas. For both islands, temporal changes from year to year in the conditions of the reef communities are assessed. In addition, biotic and abiotic parameters are compared among the mid-shelf and shelf-edge reefs of St. Thomas.

Section I: St. Croix

Methods

Benthic Assessments:

Between August and October 2005, the University of the Virgin Islands determined the benthic composition at eight long-term monitoring sites previously established off the island of St. Croix. Two of the sites (Great Pond and Jacks Bay) are within the East End Marine Park Boundary (Figure 1, Table 1). Details on site selection and prior sampling methodology can be found in Nemeth *et al.* (2004).

Table 1. St. Croix site location information and number of benthic transects at each site. Dates are for benthic cover assessments, followed by coral health/Diadema assessments, if done on separate days.

Site	Date Sampled	GPS Coordinates	Depth (ft.)	No. of Transects
Buck Island	8/9/05, 1/13/06	N 17° 47.122, W 64° 36.550	35	6
Cane Bay	8/29/05, 3/16/05	N 17° 46.433, W 64° 48.810	30	6
Great Pond	8/17/05, 11/22/05	N 17° 42.668, W 64° 39.148	14	6
Jacks/Isaac Bay	8/18/05, 11/22/05	N 17° 44.588, W 64° 34.309	35	6
Long Reef/Eagle Ray	8/8/05, 2/4/05	N 17° 45.688, W 64° 41.929	30	6
Mutton Snapper	10/20/05	N 17° 38.217, W 64° 51.683	75	6
Salt River West Wall	8/25/05, 10/13/05	N 17° 47.116, W 64° 45.564	20	6
Sprat Hole	10/4/05, 1/20/06	N 17° 44.038, W 64° 53.722	40	6

At all sites except 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. For Mutton Snapper, transects were marked 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 different years do not represent the exact area of reef, but do correspond to the same general area.

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 m² (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. One-way ANOVA tests were performed to determine if there were significant differences in the percent cover of these benthic categories at each site between years after meeting assumptions. Percent cover values were arcsin transformed prior to testing. The Long Reef (macroalgae), Buck Island (sponges), Cane Bay (sand), and Jacks Bay (sand) sites did not have homogeneous variances across years and were compared with Wilcoxon/Kruskal-Wallis nonparametric tests. When main effects tests indicated significant differences across years, pairs of means were tested with a Tukey's HSD.

At all sites, all coral colonies ≥ 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. Repeated measures ANOVA tests were used to determine if there were significant differences in the percent of diseased and bleached colonies between years two through five. 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 sites. The mean number of sea urchins per 10 m² was calculated for each site and a One-way ANOVA tests were performed to determine if there were differences in the mean density of sea urchins at each site between years.

Fish Census:

In 2005, fish assemblages were surveyed on St. Croix using two census methods. The first was the belt transect method of Brock (1954) as described previously (Nemeth et al. 2004). Belt transects were 30 x 2 m (60 m²). 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. During surveys, divers estimated fish length by reference to a PVC measuring "T-bar" marked in 1 cm increments (Bohnsack and Bannerot 1986). On St. Croix, diminutive/cryptic fish species (gobies, blennies, apogonids) were excluded from belt transect fish counts. At each site, ten replicate belt transects were conducted with the exception of Mutton Snapper [MS] site (3 transects). An attempt was made to standardize the duration of each belt transect to 20 minutes on St. Croix (see Table 1).

In 2005, we continued the use of a second fish census method - the Roving Diver Survey (RDS; Kimmel 1985, Kramer and Lang 2003, Nemeth et al. 2005) - to compliment the use of belt transects at each site. In the RDS method, divers swam a haphazard circuit in the immediate vicinity of the survey site while listing all observed fish species into one of five abundance categories as follows: 1 fish; 2-10 fish, 10-100 fish; 101-1000 fish; and >

1000 fish. Observations were recorded onto blank underwater sheets, rather than pre-printed forms (i.e. divers generated a new species list for each survey). All observed fish species were recorded, including cryptic/diminutive species. For “rare species” (see results), FL was recorded for every individual observed. Each RDS was 30 minutes in duration and three or four replicate surveys were conducted at each site. RDS were not conducted at MS due to limited bottom time.

On St. Croix, eight sites were surveyed between August 17 and October 20, 2005 (Table 2). The same eight sites were surveyed in 2004 (Nemeth et al. 2005) and in 2003 (Nemeth et al. 2004), and five of these were surveyed in 2002 as well (Toller 2002). See Nemeth et al. (2004) for complete site descriptions and locations. 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 assemblage structure (average density, species richness, Shannon Diversity [H'], etc.). A more comprehensive analysis of trends in fish assemblage structure will be forthcoming.

Table 2. Summary of fish census effort on St. Croix, 2005.

SR = Salt River, CB = Cane Bay, ER = Long Reef/Eagle Ray,
SH = Sprat Hole, BI = Buck Island, IB = Jacks/Isaacs Bay,
GP = Great Pond, MS = Mutton Snapper

Survey Method	Site	Survey Date	Total No. of Replicates	Cumul. Survey Time (min)	Avg Time per Transect (min)
Belt Transect	SR	23-Aug-05	10	165	16.5
	CB	29-Aug-05	10	188	18.8
	ER	25-Aug-05	10	197	19.7
	SH	31-Aug-05	10	196	19.6
	BI	2-Sep-05	10	176	17.6
	IB	18-Aug-05	10	178	17.8
	GP	17-Aug-05	10	167	16.7
	MS	20-Oct-05	3	47	15.7
Roving Diver	SR	23-Aug-05	3	90	30
	CB	29-Aug-05	4	120	30
	ER	25-Aug-05	4	120	30
	SH	31-Aug-05	4	120	30
	BI	2-Sep-05	4	120	30
	IB	18-Aug-05	3	90	30
	GP	17-Aug-05	4	120	30
	MS	na	0	-	-

Results and Recommendations

Benthic Assessments:

In 2005, the percent cover of living coral at the St. Croix sites ranged from a low of 4.7% at Jack's Bay to a high of 32% at Mutton Snapper. The percent cover of living coral remained fairly constant at each site from 2001 to 2005, with only Mutton Snapper showing a 7% decrease (Figure 2A). However, this decrease was not found to be statistically significant. In 2005, turf algae covering dead coral was the most dominant substrate type at most sites, except Mutton Snapper, where macroalgae was the most abundant substrate type. In 2005 dead coral with turf algae ranged from a low of 24.6% at the Mutton Snapper site to a high of 84.6% at Salt River (Figure 2B). At most sites, dead coral covered with turf algae varied between years, with a variable pattern of significant differences between years (Appendix IA). In 2004, macroalgae ranged from a low of 0.6% at Buck Island to a high of 36.5% at Mutton Snapper. Macroalgae also varied between years, with a variable pattern of significant differences (Appendix IB). In most cases, significant increases/decreases in turf algal cover corresponded with significant decreases/increases in macroalgal cover. Seasonal variations in macroalgal cover can affect the integrity of annual comparisons. See Nemeth *et al.* (2002, 2003a, and 2004) for detailed discussion involving the collection and analysis of turf and macroalgae video transect data. Sponges and gorgonians each comprised less than 10% of the benthic cover at all sites, with sponge cover increasing significantly at Buck Island between years 2001 and 2002 and 2003, 2004, and 2005 (Figure 2D, E). Sand/sediment was the predominant substrate type found at the sites, ranging from 0.0% at Long Reef to 4.2% at Cane Bay. The Percent cover of sand/sediment varied significantly between years for four sites (Figure 2F, Appendix IC), indicating a separation of sites into those with shifting sediment environments, Buck Is., Cane Bay, Jacks Bay, and Long Reef; a highly wave washed environment surrounded by pavement, Great Pond; sites on steeply sloping shores, not prone to sediment accumulation, Salt River and Sprat Hole; and a deep site away from terrestrial sediment sources and sediment resuspending turbulence, Mutton Snapper (Figure 2F).

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 2005, *Montastraea* spp. were the most abundant corals at seven of the eight sites. *Millepora complanata* and *Porites astreoides* were the dominant corals at Great Pond, comprising 84.3% of the community in nearly equal proportions. At all sites, species composition tended to differ somewhat between years (Figure 4A-H). At several sites, year-to-year differences noted in percent composition of corals species (see Nemeth *et al.* 2004) remained constant or reversed. Buck Island, Cane Bay, Mutton Snapper, showed a leveling of the increasing trend of *Montastrea* complex dominance, while Sprat Hole showed an increase in *P. astreoides* at the apparent expense of the *Montastrea* complex and Salt River showed a jump in the *Montastrea* complex. In many cases, increases in *Montastraea* complex corals corresponded with decreases or only marginal increases of the stress tolerant corals *Porites astreoides* and *Siderastrea siderea*. This is encouraging, as it may indicate an improvement in overall reef quality at these sites. See Nemeth *et al.* (2004) for a more detailed discussion regarding these types of changes in reef community structure.

For 2005, the Shannon – Weaver Diversity Index (H') for coral ranged from a high of 2.47 at Salt River to a low of 0.52 at Mutton Snapper. Coral diversity increased or remained

nearly constant at most sites from 2003 to 2004, with the exception of Jacks Bay and Mutton Snapper (Figure 5).

In 2005, a major bleaching event affected the USVI and is reflected in the unprecedented prevalence of bleaching encountered in sites sampled after August (Figure 6). Sites that showed no or little bleaching were sampled prior to the bleaching event (Table 1) and reflect background levels of bleaching and not resistance (e.g. Cane Bay and Long Reef). A full accounting of this event will be presented in the year six monitoring report. Long Reef showed the highest incidence of disease, with two cases of yellow blotch disease and one case of black band disease. Surprisingly, no cases of disease were recorded in corals sampled during the bleaching event, however, this changed as the event subsided, with massive colony and tissue loss due to epizootic outbreaks of white band disease (Smith, et al., in prep). A species by species accounting of the low incidence of disease in 2005, showed cases only in *Montastrea* spp. and *Siderastrea siderea* (Figure 7). An accounting over all years suggests that *Montastrea franksi* and *S. siderea* are the most affected by disease at study sites in St. Croix.

No *Diadema antillarum* sea urchins were present at most sites in 2005, the exceptions being Great Pond (5.2 urchins/10 m²). Due to high variance and a high proportion of transects with zero values no significant differences in urchin density were found between years (Figure 8). Note that reporting of urchin population density from previous years was in number·20m⁻¹, not in number·10m⁻¹ (see Nemeth et al. 2002, 2003 and 2004). Values from previous years should be divided by 2 to scale properly to number·10m⁻¹.

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 will be also made available on the University of the Virgin Islands web site <http://rps.uvi.edu/VIMAS/reefs.htm>.

Fish Census:

A general description of reef fish assemblages found at the eight St. Croix survey sites has already been given (Nemeth and Herzleib 2002, Toller 2002, Nemeth et al. 2003, Nemeth et al. 2004). Most of these characteristics were again observed in 2005 and are not discussed here. In terms of reef fish abundance, richness, and diversity (Figure 9A-C), variability was again high within and among sites [see Appendix 1 for detailed species composition]. However, observations at each site remained relatively consistent between years (Figure 9A-C). Exceptions to these generalized observations (listed in Table 2) are discussed separately below.

In belt transects, a total of 25,479 individuals were observed across all sites (data pooled), representing 100 species from 36 families (Appendix V). Using RDS, a total of 127 species were observed representing 42 families (Appendix VI). Combining data from belt transects and RDS observations, a total of 137 species were recorded in 2005 surveys. As reported for 2003 and 2004, small fish predominated in 2005 surveys (Appendix VII). Most fish (10,081 fish or 39.6 %) fell into the small size category (5 – 10 cm), and 97.0 % of all fish observations were < 20 cm in length. Few large fish (30-40 cm) were observed (88 fish or 0.35 %) and even fewer very large fish (> 40 cm) were observed (32 fish or 0.13 %).

Fish abundance, as examined by 10 families (Figure 10A-J), was also similar among years. For example, families dominated by small planktivorous species (e.g. labrids and pomacentrids) were numerically dominant at all sites in 2003, 2004, and 2005 (Figure 10A, B). Groupers (Serranidae) and snappers (Lutjanidae) were relatively rare (Figure 10E, F) and small in size. Typically, observations were of diminutive serranids, such as hamletfish (*Hypoplectrus* spp.), harlequin bass (*Serranus tigrinis*) and tobaccofish (*S. tabacarius*) or of smallish species such as coney (*Cephalopholis fulvus*) and graysby (*C. cruentatus*). Comparisons of fish families across years (Figure 10A-J) showed few pronounced change in abundance or species composition. Exceptions are discussed below.

Observed Trends in Reef Fish Assemblages

Five different changes, or trends, were evident in St. Croix reef fish assemblages based upon results of 2005 surveys in comparison to data from 2003 and 2004 (Table 3). Each trend is presented individually below.

Table 3. Observed trends in fish communities on St. Croix between 2003 and 2004

Site	Fish Family	Affected Species	Observed Trend: 2003/4 to 2005	Affected Size Class	Most Probable Explanation (see text)
ER	Carangidae Labridae	mackerel scad	increase	na	schooling
		creole wrasse	increase	10-20 cm	schooling, natural variation
BI	Scaridae	striped parrotfish	increase	< 5 cm	variable recruitment patterns
		princess parrotfish	decrease	< 5 cm	variable recruitment patterns
SR,CB GP, MS	Haemulidae	French grunt	decrease	-	fishing, natural variation
		white grunt	decrease	-	fishing, natural variation
MS	Pomacentridae	blue chromis	decrease	all	natural variation, sampling artifact
-	Serranidae	red hind	increase	-	variable recruitment patterns, enhanced recruitment

In 2005 surveys, the mackerel scad, *Decapterus macarellus* (Carangidae) was observed in great abundance at ER and in lesser abundances at CB and BI. Mackerel scad are considered occasional on St. Croix (Clavijo et al. 1980), and schools are occasionally observed over outer reefs (Randall 1967). Mackerel scad was not recorded during 2003 or 2004 surveys. In 2005, this species was observed to swim rapidly in compact schools foraging several meters below the surface. Combined observations (1,790 fish) at ER were sufficiently large to elevate the mackerel scad to the 9th most commonly observed fish species by rank abundance (all sites pooled). However, it is believed that the large numbers recorded at ER correspond to a single large school of ~ 450 fish that was observed multiple times during independent belt transects.

Overall fish abundance at ER was markedly higher in 2005 than in previous years (Figure 9A). This increase is attributed in large part to schooling mackerel scad (above), and also to an increase in the average abundance of creole wrasse, *Clepticus parrae* (Labridae). Creole wrasse abundance was 4 fish/survey in 2003 and 7.2 fish/survey in 2004. In contrast, in 2005 creole wrasse were observed at 116.7 fish/survey, representing a greater than ten-fold increase. Most (94.6%) *C. parrae* observed at ER were larger individuals (FL 10 – 20 cm), indicating primarily adult fish. Creole wrasses are only loosely associated with reefs (Randall 1967) and this localized increase in abundance may be explained by the foraging movements of large schools of adults. It is suspected that *C. parrae* and *D. macarellus*, which are both schooling planktivorous species, had congregated in the survey area to feed on suspended materials in tidal currents exiting Christiansted Harbor.

A decline in pomacentrid abundance at MS is suggested by Figure 10B. Examination of species composition suggests that the abundance of blue chromis declined by about 70 %

while the abundance of most other pomacentrid species remained relatively constant between years at this site. Declines affected all size classes, but were most pronounced in the smallest class (≤ 5 cm FL). It must also be noted that the very limited number of observations (3 transects) obtained in 2005 make it difficult to draw robust inferences.

The collective abundance of grunts (Haemulidae) declined appreciably in 2005, and haemulid abundance was markedly reduced at four sites (SR, CB, GP, and MS) as shown in Figure 10G. Grunt observations in 2005 and previous years have been dominated by one species – French grunt, *Haemulon flavolineatum*. The observed decline in *H. flavolineatum* abundance across three years is shown in Figure 11A. White grunt (*H. plumieri*), which are locally less abundant than French grunt, were also observed to decline in 2005 (Figure 11B). The reason for a decline in abundance of either species is unknown. Both *H. flavolineatum* and *H. plumieri* are of importance to commercial and recreational fishers of St. Croix and are frequently taken with net, trap, hook and line, or spear (Toller, pers. Obs.). Decreased haemulid abundance may be related to harvest pressure, however this inference should be substantiated with fishery-dependent data on landings of haemulids.

Nemeth et al. (2004) reported a trend of parrotfish decline at BI between 2003 and 2004. Based upon examination of size structure, they attributed this decline to poor recruitment at BI in 2004. In 2005, the decline in parrotfish abundance at BI had apparently reversed, and scarids were observed at abundances comparable to those of 2003. Parrotfish diversity remained relatively high (7-9 species) at BI and species composition was similar among years (not shown). Further examination of scarid size classes (Figure 12) indicates that in 2005 small fishes (≤ 5 cm) were more abundant than in 2004. Striped parrotfish (*Scarus iserti*) dominated observations in the smallest size class and showed increased abundance over previous years. Redband parrotfish (*Sparisoma aurofrenatum*) and stoplight parrotfish recruits were comparable among years but princess parrotfish (*Scarus taeniopterus*) recruits declined relative to 2003 and 2004. Together, these data suggest that inter-annual variation in scarid abundance at BI may be influenced by species-specific patterns of recruitment.

RDS Observations of Rare Species

The RDS method was incorporated into the St. Croix annual fish survey in 2004 to provide greater detection of “rare species” (commercially important, rare and/or vulnerable fishes). In particular, it was suggested that RDS would enable quantification of the larger, long-lived resident reef fishes (e.g. some grouper and snapper species) that were nearly absent from previous years’ fish surveys on St. Croix. The RDS method was found to effectively increase our ability to enumerate species and to provide additional sensitivity for detecting rare species (Nemeth et al. 2004).

Results from 2005 surveys of RDS observations for rare species are summarized in Table 4 (more detailed information is presented in Appendix VI). From a list of 12 targeted fishes, observations in 2005 yielded a similar species list as in 2004. In 2005, only four rare species were observed by either belt transect or RDS methods: red hind (*Epinephelus guttatus*), tiger grouper (*Mycteroperca tigris*), mutton snapper (*Lutjanus analis*), and Nassau grouper (*Epinephelus striatus*). The single *E. striatus* individual (FL = 36 cm) observed at BI was the first record for this species during the past three years of St. Croix fish surveys. The observation corresponds, probably not coincidentally, to the recently expanded no fishing area encompassed within Buck Island Reef National Monument.

Table 4. Comparison of reef fish community richness estimates obtained using belt transects and roving diver surveys (RDS) at seven St. Croix sites, 2004.

Site	Total No. Spp. Obs. at Site (either method)	Belt Transects				RDS			
		Total Survey Time (min)	No. Spp. Observed	Avg. No. Per Repl. (St.Dev)	% of Total Obs. at site	Total Survey Time (min)	No. Spp. Observed	Avg. No. Per Repl. (St.Dev)	% of Total Obs. at site
SR	77	185	54	21.1 (5.9)	70.1%	120	73	35.0 (13.8)	94.8%
CB	75	193	55	27.1 (3.1)	73.3%	150	72	41.6 (7.6)	96.0%
ER	80	173	52	24.7 (3.5)	65.0%	120	73	47.0 (9.2)	91.3%
SH	78	184	61	28.3 (3.9)	78.2%	120	65	40.0 (13.3)	83.3%
BI	70	164	57	24 (3.5)	81.4%	90	59	36.3 (11.2)	84.3%
IB	68	168	49	20.3 (4.8)	72.1%	90	63	40.7 (11.5)	92.6%
GP	69	180	51	20.8 (3.2)	73.9%	150	64	39.0 (7.8)	92.8%
Avg	73.9	178.1	54.1	23.8	73.4%	120.0	67.0	39.9	90.7%

Table 5. Abundance of 12 commercially important, rare and/or vulnerable fish species on St. Croix, 2005

			Relative Fish Abundance*											
Site	Method	Total Survey Time (min)												
Salt River	belt	165	-	-	-	-	1	-	-	-	-	-	-	-
	RDS	90	-	-	-	0.33 (0-1)	0.33 (0-1)	-	-	-	-	-	-	-
Cane Bay	belt	188	-	-	-	-	-	-	-	-	-	-	-	-
	RDS	120	-	-	-	-	-	-	-	-	-	-	-	-
Isaac's Bay	belt	178	-	-	-	-	1	-	-	-	-	-	-	-
	RDS	90	-	-	-	-	1.33 (0-2)	-	-	-	-	-	-	-
Eagle Ray	belt	197	-	-	-	-	3	-	-	-	-	-	-	-
	RDS	120	-	-	-	-	1.0 (0-2)	-	-	-	-	-	-	-
Sprat Hole	belt	196	-	-	-	-	-	-	1	-	-	-	-	-
	RDS	120	-	-	-	-	0.25 (0-1)	-	0.25 (0-1)	-	-	-	-	-
Buck Island	belt	176	-	-	-	-	6	-	-	-	-	-	-	-
	RDS	120	0.25 (0-1)	-	-	-	1.0 (0-2)	-	0.25 (0-1)	-	-	-	-	-
Great Pond	belt	167	-	-	-	-	1	-	-	-	-	-	-	-
	RDS	120	-	-	-	-	0.5 (0-1)	-	-	-	-	-	-	-
Mutton Snapper**	belt	47	-	-	-	-	-	-	-	-	-	-	-	-

*Belt transect observations reported as total number of fish in 10 replicate surveys. RDS observations reported as mean Abundance Index (AI) over 3 or 4 replicate 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, 5= >1000 fish.

**At Mutton Snapper site, only three belt transects were conducted. No RDS were performed.

Recommendations

The foregoing results indicate that our methodological approach is relatively robust for the study of coral reef fish communities and trends can be distinguished in some instances. Continued monitoring will undoubtedly reveal more temporal patterns. However, as noted previously (Nemeth *et al.* 2004), any conclusions about status and trends of St. Croix's coral reef fish communities are still compromised by lack of a stratified sampling design. The threat(s) under study should be identified explicitly and *a priori* so that appropriate data are collected to test for correlations. Most of the salient threats to USVI coral reef ecosystems have been identified (Catanzaro *et al.* 2002).

With respect to coral reef fish communities of St. Croix, a rather obvious threat is overfishing. Fishing pressure may alter reef fish community structure in numerous ways (e.g. Dayton *et al.* 2002) however two impacts are likely to be detected using visual census methods: 1) the reduction in absolute abundance of targeted species, and 2) the selective removal of the largest individuals from populations of targeted species. Data collected in this study to date, however, have treated either the entire diversity of fish assemblages at specific reef sites or trends within individual families of fish. Instead, an emphasis should be placed on species-level information for fish that are targeted by the local fishery. Fisheries-dependent information is directly applicable to our monitoring study design and analyses. The last stock assessment for the USVI was conducted 12 years ago (Appeldoorn *et al.* 1992) and harvest patterns may have changed in the interim. However, biostatistical data from the USVI commercial fisher port sampling program have been collected for reef fish landings on St. Croix for over 20 years. This under-utilized database could be used to focus sampling and analytical efforts towards targeted fish species.

Section II: St. Thomas

Methods

Benthic Assessments:

Through late April until early June 2005, the University of the Virgin Islands assessed the benthic composition at six sites in St. Thomas, USVI (Figure 13, Table 6). Three of these sites were established in 2003, one was established in 2004, and two sites (South Water and College Shoal East) were added in 2005. Monitoring in St. Thomas was based upon a stratified design to test hypotheses involving differences between reef systems located at different points along the insular platform, as well as to fill gaps in existing knowledge on previously unstudied reef systems. See Nemeth *et al.* (2003a and 2003b) for a detailed description and rationale for site selection.

Table 6. St. Thomas site location information.

Site	Date Sampled	GPS Coordinates	Depth (ft.)	No. of Transects	No. of Quadrats
Seahorse Cottage Shoal ¹	5/09/05	N 18° 17.680, W 64° 52.050	61 - 80	6	30
South Capella ¹	5/03/05	N 18° 15.760, W 64° 52.342	80	6	30
South Water ¹	6/01/05	N 18° 16.841, W 64° 56.755	75	6	30
Grammanik Bank ²	4/27/05	N 18° 11.468, W 64° 57.019	126	6	30
Red Hind Bank ²	4/29/05	N 18° 12.130, W 65° 00.095	128 - 131	6	30
College Shoal East ²	4/28/05	N 18° 11.141, W 65° 04.606	93 - 109	6	30

¹ mid-shelf sites

² shelf-edge sites

Video transects, coral disease and bleaching assessments, and sea urchin counts were all performed using the same methodology as previous years (see Nemeth *et al.* 2003a). In addition, one way ANOVA tests were used to test for significant differences in arcsine transformed percent cover of coral, dead coral covered with turf algae, macroalgae, sponges, gorgonians, and sand/sediment across years at each site.

Fish Census:

On St. Thomas six sites were surveyed between 27 April and 11 May 2005 (Table 7). Four of these sites were sampled in 2004 (Nemeth et al. 2005) and three in 2003 (Nemeth et al. 2004). As outlined earlier in this report, sites were stratified based on proximity to the Puerto Rican shelf edge. Three sites, South Water Island (WI), Seahorse Cottage Shoal (SCS), and South Capella (SCP) were roughly midway between St. Thomas and the southern edge of the insular shelf while the other three sites, College Shoal East (CSE), Grammanik Bank (GB), and Red Hind Bank (RHB) were on or within 500 m of the shelf edge. For detailed site descriptions see Nemeth et al. 2004, 2005 and the previous section of this report.

Table 7. Summary of fish census effort on St. Thomas, 2005

Survey Method	Site	Survey Date	Total No. of Replicates	Cumul. Survey Time (min)	Ave. Time per Replicate (min)
Belt Transect	WI	11-May-05	10	75	7.5
	SCS	9-May-05	10	75	7.5
	SoCap	3-May-05	10	75	7.5
	CSE	5-May-05	10	75	7.5
	RH	6-May-05	10	75	7.5
	GB	2-May-05	10	75	7.5
Roving Diver	WI	10-May-05	3	90	30
	SCS	9-May-05	3	90	30
	SoCap	3-May-05	3	90	30
	CSE	28-Apr-05	3	45	15
	RH	6-May-05	3	45	15
	GB	27-Apr-05	3	45	15

Fish census methods were similar to those employed on St. Croix in 2005. Both belt transects and RDS's were used, differing from the methodology described for St. Croix earlier in this report in two ways. First, belt transects were standardized to 7.5 min in duration on St. Thomas as opposed to 15 min on St. Croix. Ten replicate belt transects were conducted on all six sites. Second, RDS replicate surveys differed in duration in St. Thomas depending on site. On the relatively shallow (< 28 m) midshelf sites (WI, SCS, SCP) replicates were 30 min in duration. Deep water (>28 m) offshore site surveys (CSE, GB, RHB) were limited to 15 min. All RDS replicates were sub-divided into 5 min intervals so the number of species encountered at all sites could be compared over time. Data from all fish surveys were recorded, transcribed onto Microsoft Excel spreadsheets and analyzed for descriptive statistics of reef fish assemblage structure similarly to that described from St. Croix.

Results and Recommendations

Benthic Assessments:

At the St. Thomas sites in 2005, percent cover of living coral ranged from a low of 2.6% at South Water to a high of 41.7% at the College Shoal East. Both the Grammanik Bank and South Capella sites were significantly different between years (Figure 14A, Appendix I), however, there were no trends over time. The percent cover of dead coral covered with turf algae ranged from 11.5% at College Shoal East to 22.9% at South Water (Figure 14B). The percent cover of macroalgae ranged from 37.6% and 37.8% at the Grammanik Bank and Red Hind Bank, respectively, to 59.5% at South Water (Figure 14C). Sponges, gorgonians, and sand/sediment each comprised less than 10% of the benthic cover at all sites, except for the Red Hind Bank, where the percent cover of sponges was 12.4% (Figure 14D-F). Gorgonians did not vary significantly for any site over the years sampled.

The coral reefs of St. Thomas were dominated by coral species in the genus *Montastraea*. Coral species composition was similar between mid-shelf and shelf-edge sites and between years for all sites. Corals within the *M. annularis* complex were the most abundant corals at all sites (Figure 15, Figure 16).

In 2005, the Shannon – Weaver Diversity Index (H') for coral ranged from a high of 2.0 at the South Water to a low of 0.45 at South Capella. The pattern of diversity between mid-shelf and shelf-edge was variable, with no clear pattern between strata (Figure 17).

Coral diseases in the 2005 sampling were only encountered at Seahorse Cottage Shoal and South Capella, in contrast to previous years when diseases were more evenly distributed and generally present (Figure 18A). Seahorse Cottage Shoal showed the highest incidence of diseased coral colonies at 2.8%, while South Water showed the highest prevalence of bleaching at 48.7. Bleaching affected nearly half the coral colonies at the South Water site, and maintained low background levels at the other sites (Figure 18B). *Montastraea franksii* was the most common coral with disease, while *Siderastrea siderea* was the coral most commonly affected by bleaching (Figure 19). Diseases observed by divers included black band disease, dark spots disease, yellow blotch disease and white plague.

D. antillarum sea urchins were observed only at the Grammanik Bank, with a density of 0.1 urchins/10 m². No significant differences in sea urchin density were found between years or reef systems.

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

Fish Census:

A total of 7590 fish representing 83 species and 24 families were recorded during belt transects in 2005 (Appendix XI). Using RDS, 95 species representing 29 families were observed (Appendix XII). Combined, 97 species and 29 families were recorded from St. Thomas in 2005. As in St. Croix, small fish predominated the belt surveys (Appendix XIII). Most individuals (4280 or 56.4%) were less than 5 cm in length and 95.1% were less than 20 cm in length. Large fish observed (30-40 cm) constituted 0.5 % (38 fish) of the total, and very large fish (> 40 cm) made up 0.6 % (47 fish). The most abundant fish at all sites except CSE was the blue chromis (*Chromis cyanea*, n=1829). On CSE the most dominant fish was the creole wrasse (*Clepticus parrae*, n=657).

Total fish abundance in 2005 was variable between and within sites but was higher on all annually repeated survey sites except GB where it was slightly lower than in both 2003 and 2004 (Figure 20A). Total fish abundance was not related to the site's proximity to the shelf edge. On CSE, fish abundance was artificially high due to a large school of creole wrasse (n =150-200 fish) that swam through several transects. High total abundance on SCP was due to large numbers of pomacentrids including blue chromis, bicolor damselfish (*Stegastes partitus*) and three-spot damselfish (*S. planifrons*), all of which were recorded in at levels nearly triple those in 2004 (Nemeth et al. 2005).

Species richness and diversity were higher in 2005 than 2004 at all repeated survey sites except RHB, where diversity was slightly lower (Figure 20 B,C). Both species richness and diversity were slightly higher on mid-shelf sites than on the shelf edge. Among the mid-shelf sites WI was lowest in community species richness and community diversity, as well as in total fish abundance.

The abundance of fish by family for St. Thomas sites are shown in Figure 21A-J. Densities increased for all families at all sites from 2004 to 2005. Labrid densities were high at CSE as mentioned above, due to a large school of creole wrasse at the site. Pomacentrids were in relatively high abundance on all sites and were comprised almost entirely of blue chromis, brown chromis (*C. multilineata*), bicolor damselfish (*S. partitus*) and 3-spot damselfish (*S. planifrons*). Blue chromis were in especially high densities on SCP and CSE. The herbivorous pomacentrid species (*Stegastes planifrons*, *S. leucostictus* and *S. diencaeus*) were common on the mid-shelf sites but were absent in the shelf edge site transects (Appendix XI). Acanthurids were relatively common on the mid-shelf sites and less abundant on the shelf edge. Acanthurid abundance increased from 2003 and 2004 to 2005 on all four of the re-surveyed sites, but increases were more dramatic on the mid-shelf sites, SCS and SCP. Mirroring the acanthurids, scarid abundance increased on all sites from 2004 to 2005, with the most dramatic increases on the two mid-shelf sites (SCS, SCP). The abundance of large serranids was low on all sites but was highest on GB. Serranids on the mid-shelf sites were represented primarily by the red hind (*Epinephelus guttatus*), graysby (*E. cruentatus*) and coney (*E. fulvus*), while on the off-shore sites were represented by tiger grouper (*Mycteroperca tigris*), red hind (*Epinephelus guttatus*), yellowfin grouper (*M. venenosa*) and yellowmouth grouper (*M. interstitialis*), (Appendix XI). The increase in large serranid density on GB was due to relatively high numbers of tiger grouper recorded at that site. The survey site is in a tiger grouper spawning aggregation area although spawning has been observed there only in March and April (Nemeth et al. 2004). Lutjanids densities were highest at GB and RHB, due to large numbers of schoolmaster snapper (*Lutjanus apodus*) aggregating at those sites presumably to spawn. Lane snapper (*L. synagris*) and gray snapper (*L. griseus*) spawn on SCS during June and July (pers. obs.), and these species were recorded

in both belt transects and RDS surveys at that site. Haemulids were in low abundance at offshore sites but showed a large increase in abundance at SCS. This increase was due to one school of sub-adult tomtate (*Haemulon aurolineatum*) that were not present at the other sites or in 2004. Chaetodontids increased dramatically at SCS from 2004 to 2005 but most noticeably were absent from WI. This may reflect the lower stony coral cover and/or physical relief at WI. Pomacanthids were uncommon or absent at all sites, however there was an increase in number from 2004 to 2005. Balistids, represented by queen triggerfish (*Balistes vetula*), black durgon (*Melichthys niger*) and ocean triggerfish (*Canthidermis sufflamen*) were nearly absent from all sites except CSE where large numbers of black durgon were observed.

RDS Observations of Rare Species (St. Thomas)

As on St. Croix, the RDS method was incorporated into the annual fish surveys to provide greater detection of commercially important, rare and/or vulnerable fishes. Results from 2005 RDS surveys are presented in Appendix XII and observations of rare species from these surveys are summarized in Table 8.

Table 8. Abundance of 12 commercially important, rare and/or vulnerable fish species, St. Thomas 2005

			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
South Water Island	belt	75	2	-	-	-	2	-	-	-	-	-	-	-
	RDS	90	-	-	-	-	1.3 (1,2)	-	0.7 (0,2)	-	-	-	-	-
Seahorse Cottage	belt	75	-	-	-	-	2	-	2	1	-	-	-	-
	RDS	90	0.3 (0,1)	-	-	-	1.7 (1,2)	-	2.7 (2,3)	-	1.0 (0,2)	-	-	-
South Capella	belt	75	-	-	-	-	-	-	-	2	-	-	-	-
	RDS	90	0.3 (0,1)	-	-	-	-	-	0.7 (0,1)	1.7 (1,2)	-	-	-	-
College Shoal East	belt	75	-	-	1	1	3	-	-	-	-	-	-	-
	RDS	45	-	-	-	-	0.3 (0,1)	-	-	1.3 (0,2)	-	-	-	-
Red Hind Bank	belt	75	-	-	-	1	1	-	-	-	-	-	-	-
	RDS	45	-	0.7 (0,2)	0.3 (0,1)	1.7 (1,2)	1.3 (1,2)	-	0.7 (0,2)	-	-	-	-	-
Grammanik Bank	belt	75	-	2	5	20	1	45	-	-	-	-	-	-
	RDS	45	-	1.7 (1,2)	0.3 (0,1)	2.0 (2,2)	0.3 (0,1)	2.7 (2,3)	-	-	0.3 (0,1)	-	-	-

*Belt transect occurrences reported as total number of fish observed over 10 repetitive surveys. RDS occurrences reported as mean Abundance Index (AI) over 3 repetitive surveys with maximum and minimum AI in parentheses. AI: 0=no fish, 1=1 fish, 2=2-10 fish, 3=11-100 fish, 4=101-1000 fish, 5>1000 fish.

Higher numbers of commercially important and/or rare species were detected by RDS and belt transects on St. Thomas than St. Croix in both 2004 and 2005 (Table 8). Five species of grouper including the red hind, yellowfin, yellowmouth, tiger and Nassau (*E. striatus*) were observed in RDS surveys in 2005 in St. Thomas. All of these species except the Nassau grouper were observed on both the Grammanik Bank and the Red Hind Bank, and more observations were recorded on both sites in 2005 than 2004. The Grammanik Bank was closed to fishing from February through May 2005, and the Red Hind Bank has been closed permanently to fishing since 1999. The high number (relative to St. Croix) of grouper observations on the south edge of the Puerto Rican shelf may be due to prolonged protection of these commercially exploited fish in the Marine Conservation Area, which encompasses the Red Hind Bank and lays within 3 km of the Grammanik Bank. The alternative hypothesis is that the natural benthic attributes and oceanographic processes present on the south edge of the Puerto Rican shelf attract and keep fish on these sites at the exclusion of other areas. The increased number of grouper observations from 2004 to 2005 is probably due to seasonal or

inter-annual variability, or is an artifact of our small sample size. Mutton snapper (*L. analis*) and dog snapper (*L. jocu*) were observed slightly more often in 2005 than 2004 on the mid-shelf sites, and cubera were observed in high numbers on the Grammanik Bank. Inadvertently, surveys were conducted 7 days after the full moon in August, which is during the time period that cubera snapper are known to aggregate to spawn on the Grammanik Bank (Kadison et al. in press).

Summary of Fish Data

Total fish abundance was lower in St. Thomas than St. Croix on belt transects due in part to differences in methodology. Transects were at least twice as long in duration on St. Croix, rendering comparisons between islands invalid. On St. Thomas, total fish abundance was variable within strata and sites, however community species richness and diversity was higher on mid-shelf sites than shelf-edge sites. Acanthurids and scarids were in higher abundance on mid-shelf sites than deeper off-shore sites and had greater increases in abundance from 2004 to 2005 on midshelf sites. Scarid density increases involved primarily very small fish (< 5 cm) and were probably due to natural variations in recruitment of juvenile fish to the reef. Large serranids were rare but were much more common in St. Thomas belt transects and RDS surveys than in St. Croix. Most large serranids were made observed at the Grammanik Bank, the site most closely associated with the shelf edge. Lutjanids were common only on the Grammanik Bank, Red Hind Bank and Seahorse Cottage Shoal, which are all sites on which lutjanids spawn in the summer months. A summary of observed trends in St. Thomas fish assemblages, based on belt transects and RDS is in Table 9.

Table 9. Observed trends in St. Thomas fish assemblages between 2005 and previous survey periods (2003-2004).

Site	Fish Family	Affected Species	Observed Trend: 2003/4 to 2005	Affected Size Class	Most Probable Explanation (see text)
SCS, SCP	Acanthuridae	blue tang, ocean surgeon, doctorfish	increase	10-20 cm	natural variation
SCS, SCP	Scaridae	stripped parrotfish, redband parrotfish	increase	< 5 cm	variable recruitment patterns
SCS, SCP	Haemulidae	french grunt, tomtate	increase	10-20 cm	natural variation
GB, RHB	Serranidae	all groupers	increase	> 40 cm	natural variation, long-term protection
GB, RHB	Lutjanidae	schoolmaster snapper	increase	30-40 cm	spawning aggregation, long term protection
		cubera snapper	increase	> 40 cm	spawning aggregation

Summary

St. Croix

On St. Croix, turf algae covering dead coral was the dominant substrate at most sampled sites, ranging from 10.7% to 82.2%. The percent cover of other benthic organisms ranged from 4.2% to 35.2% for living hard coral, 4.9% to 57.0% for macroalgae, 0.1% to 4.2% for sponges, and 0% to 9.5% for gorgonians. Coral species composition was similar between most sites. Coral diversity (H') varied between 0.78 and 2.19 between sites. Coral condition varied between sites with incidence of coral disease and bleaching ranging from 0% to 5.6% and 1.5% to 9.8%, respectively. *Diadema* sea urchins were uncommon and observed on transects at only two 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. At several sites, trends indicating possible decreases in reef quality reversed in 2004. At this stage, it is difficult to attribute these changes in species composition to a specific cause. Due to the slow growth rates of corals, assessments must continue over a greater time period to determine if these changes are the result of actual changes in coral community structure, or are the result of sampling variation. Coral diversity increased at most sites from 2001 to 2004. 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 between year 2003 and other sampled years. Percent cover of turf and macroalgae varied significantly between years at most sites. Between 2003 and 2004, percent cover turf algae tended to decrease at most sites, with corresponding increases in macroalgal cover. This trend warrants special attention, as macroalgae can overgrow or overshadow corals, leading to a loss of live coral and a phase shift to a macroalgal dominated reef.

Levels of disease tended to decrease in 2004, while levels of bleaching varied between sites and years. Only one type of disease (dark spots disease) was observed in 2004, in contrast to several diseases in previous years. No significant annual differences in sea urchin density were found.

Fish abundance averaged from approximately 200 to 400 fish per census. The number of fish species observed at the St. Croix sites ranged from 68 to 80 species. The St. Croix fish fauna was numerically dominated by planktivorous wrasses and damselfishes. The commercially important large groupers, snappers, and angelfishes were uncommon to absent at all sites. The majority of fish observed in 2004 were small, with most fish ≤ 5 cm. Relatively few large fish (30 – 40 cm) and very few larger fish (≥ 40 cm) were observed.

Changes in reef fish communities between 2003 and 2004 were evident at four of the St. Croix sites. Changes at three of these sites can be attributed to natural variation. Changes at the fourth site (a decrease in surgeonfish and parrotfish abundance at Jacks/Isaac Bay) can be attributed to fishing pressure from trap or trammel net commercial fishing. The ecological consequences of over-harvesting the predominant vertebrate herbivores from a coral reef ecosystem are detrimental and surgeonfish and parrotfish populations in St. Croix should be closely monitored in the future.

Results to date indicate that the approach being used to monitor St. Croix fish communities is relatively robust and trends can be distinguished in some instances. However, as noted previously (Nemeth *et al.* 2004), conclusions about the status and trends of these fish communities are compromised by the lack of a stratified sampling design. Also, more emphases should be placed on species-level information for locally targeted fisheries species. Incorporating biostatistical data from the USVI commercial fisher port sampling program to identify the most targeted species can enhance the effectiveness of this monitoring program.

St. Thomas

On St. Thomas, macroalgae was the predominant substrate at three of the four sites, and ranged from 33.1% to 40.4% across all sites. Living coral was the predominant substrate at one site (the Grammanik Bank) and ranged from 25.7% to 49.6% across all sites. The percent cover of sponges ranged from 2.9% to 5.7% and the percent cover of gorgonians ranged from 0% to 3.5%. There were no significant differences in percent cover for any benthic category between mid-shelf, and shelf-edge reefs. The coral reefs of St. Thomas were generally dominated by coral species in the genus *Montastraea*, with species composition being similar between reef systems. Coral diversity (H') ranged between 0.90 and 1.38, with mid-shelf sites tending to have lower diversity than shelf-edge sites. Levels of coral bleaching and disease were similar between reef systems and ranged from 2.5% to 10.4% and 20.2% to 27.93%, respectively. *Diadema* sea urchins were uncommon and observed only at one site, with no significant difference in sea urchin density between reef systems.

Benthic composition, coral community structure, and coral diversity were similar between 2003 and 2004. There were no significant differences in levels of coral disease between 2003 and 2004. Levels of bleaching tended to increase in 2004, with significant increases at two sites.

Abiotic factors at the St. Thomas reefs tended to differ between the sampled mid-shelf site (Flat Cay) and the shelf-edge site (the Red Hind Bank). Current headed predominantly west at Flat Cay and predominantly both north and south at the Red Hind Bank. Since Flat Cay is located east of the most heavily developed areas of St. Thomas, this reef may be significantly affected by terrigenous stresses despite the reef's mid-shelf location (see Nemeth *et al.* 2004 for a more detailed discussion). Daily mean temperature at Flat Cay tended to be higher than the Red Hind Bank. Higher current speeds occurred in late summer at both sites and the highest temperatures occurred in August at both sites. Current and temperature patterns in 2004 were very similar to those recorded in 2003 (see Nemeth *et al.* 2004).

Fish abundance averaged from approximately 60 to 100 fish per census. The number of fish species observed at the St. Thomas sites ranged from 40 to 72 species. The St. Thomas fish fauna was numerically dominated by planktivorous wrasse and damselfishes at all sites. The commercially important large groupers, snappers, angelfishes, and triggerfishes were observed at low densities at all sites. The majority of fish observed in 2004 were small or intermediate in size, with most falling into the 5 – 10 cm size category. Relatively few large fish were observed.

Three of the St. Thomas sites monitored in this study have been determined as spawning aggregation sites for grouper (Red Hind Bank, Grammanik Bank) and snapper (Seahorse Cottage Shoal, Red Hind Bank, and 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. The number of groupers and snappers observed in St. Thomas decreased from 2003 to 2004. Since densities of these fish are generally low, this difference may be a reflection of natural variation. However, it may be the result of fishing pressure. In particular, the Grammanik Bank is unprotected and regularly fished, especially during the spawning season. Over-harvesting of aggregating fishes at this site may have impacts throughout the territory and could be responsible for the decrease in the number of groupers observed in 2004. Protection of spawning aggregation sites is essential for the proper management of Virgin Islands fisheries.

Acknowledgments

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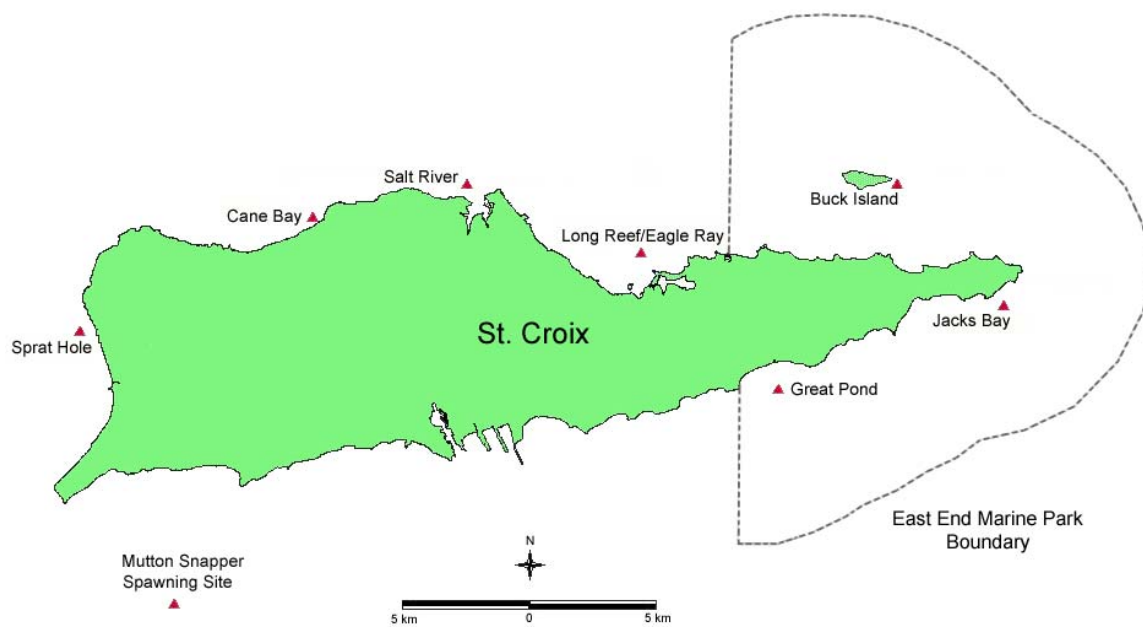


Fig. 1 Locations of monitoring sites in St. Croix, USVI. Great Pond and Jacks Bay are located within the East End Marine Park. Buck Island is located within the Buck Island Reef National Monument.

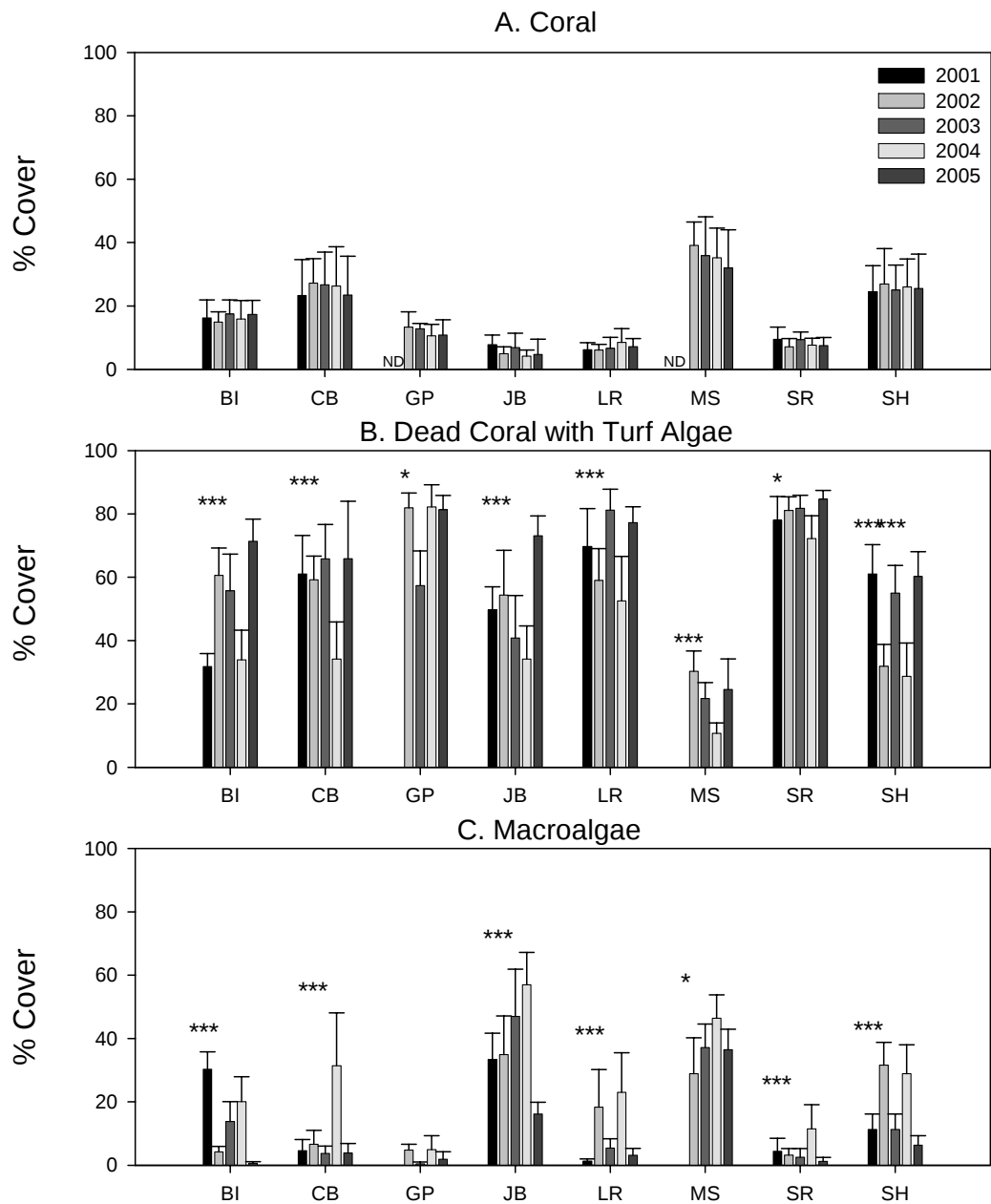


Fig. 2A, B, C Mean percent cover of A. Scleractinian corals, B. Dead coral with turf algae, and C. Macroalgae for 2001 - 2005 at eight monitored sites: BI Buck Island; CB Cane Bay; GP Great Pond; JB Jacks Bay; LR Long Reef/Eagle Ray; MS Mutton Snapper; SR Salt River; SH Sprat Hole. GP and MS sampling 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: * = $P < 0.05$; ** = $P < 0.01$; *** = $P < 0.001$.

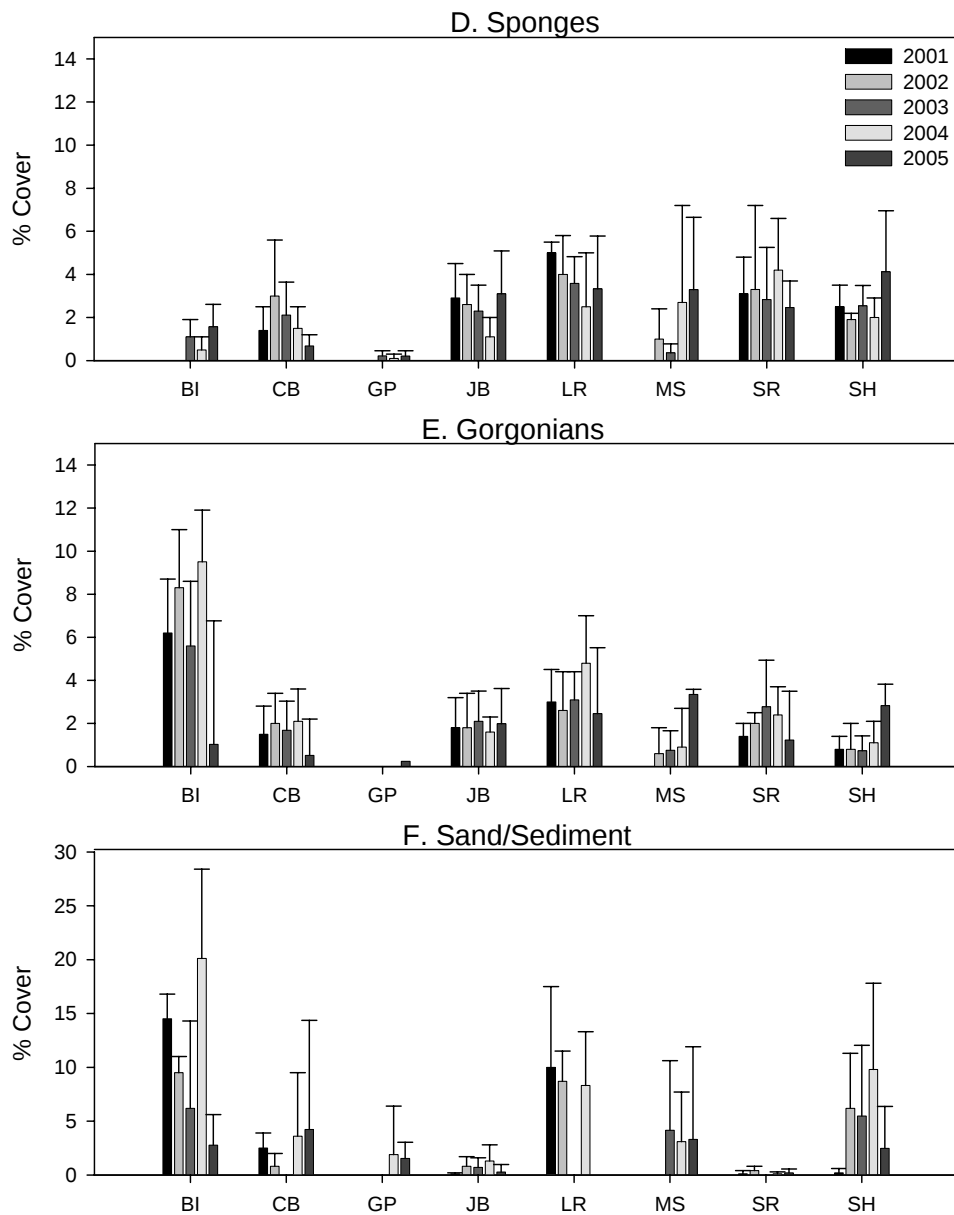


Fig. 2D, E, F Mean percent cover of D. Sponges, E. Gorgonians, and F. Sand/Sediment for 2001 - 2005 at eight monitored sites: BI Buck Island; CB Cane Bay; GP Great Pond; JB Jacks Bay; LR Long Reef/Eagle Ray; MS Mutton Snapper; SRW Salt River; SH Sprat Hole. GP and MS sampling began in 2002. $n = 6$ transects 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: * = $P < 0.05$; ** = $P < 0.01$

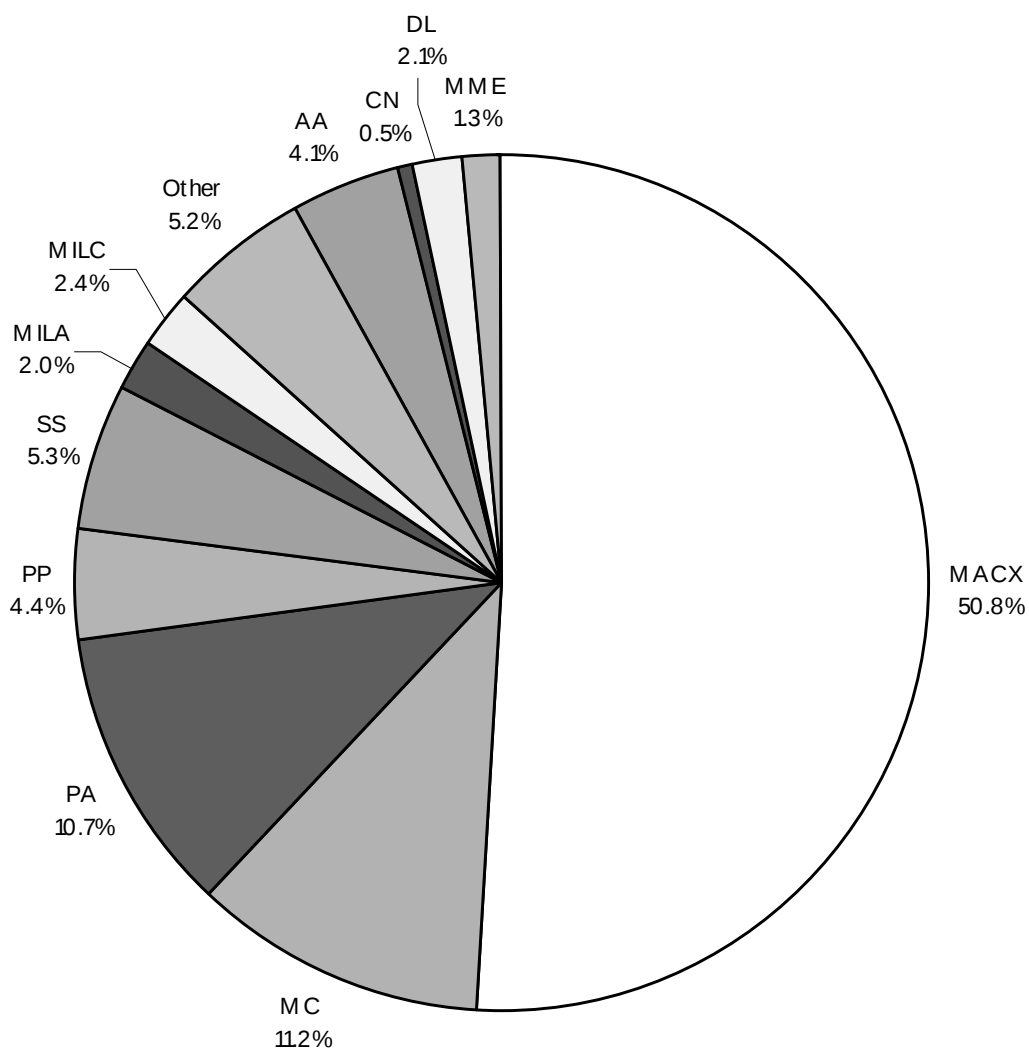


Fig. 3 Percentage coral species composition at all sampled sites in St. Croix, USVI over years 2001-2005 (see text for description of site and time sampling).

MACX *Montastraea annularis* complex; MC *Montastraea cavernosa*;

PA *Porites astreoides*; PP *Porites porites*; AA *Agaricia agaricites*;

MILC *Millepora complanata*; SS *Siderastrea siderea*; DS *Diploria strigosa*;

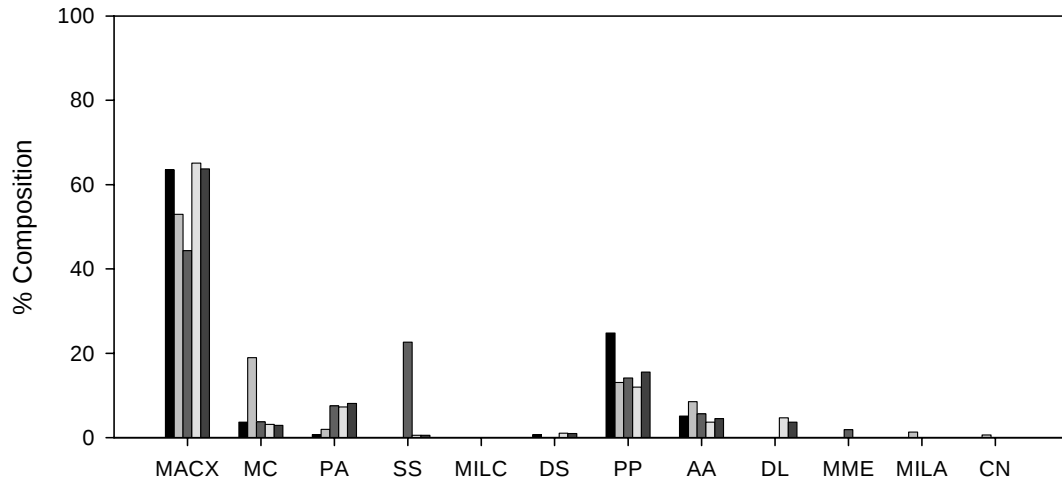
DL *Diploria labyrinthiformes*; CN *Colpophyllia natans*; MILA *Millepora Alaicornis*;

MME *Meandrina meandrites*.

'Other' category denotes percent of all other coral species combined and includes:

Acropora palmata, *Dendrogyra cylindrus*, *Dichocoenia stokesii*, *Diploria strigosa*, *Eusmilia fastigiata*, *Isopyhyllastrea rigida*, *Madracis decactis*, *Madracis mirabilis*, *Mycetophyllia ferox*, *Porites furcata*, *Siderastrea radians*, and *Stephanocoenia michelinii*.

A. Buck Island



B. Cane Bay

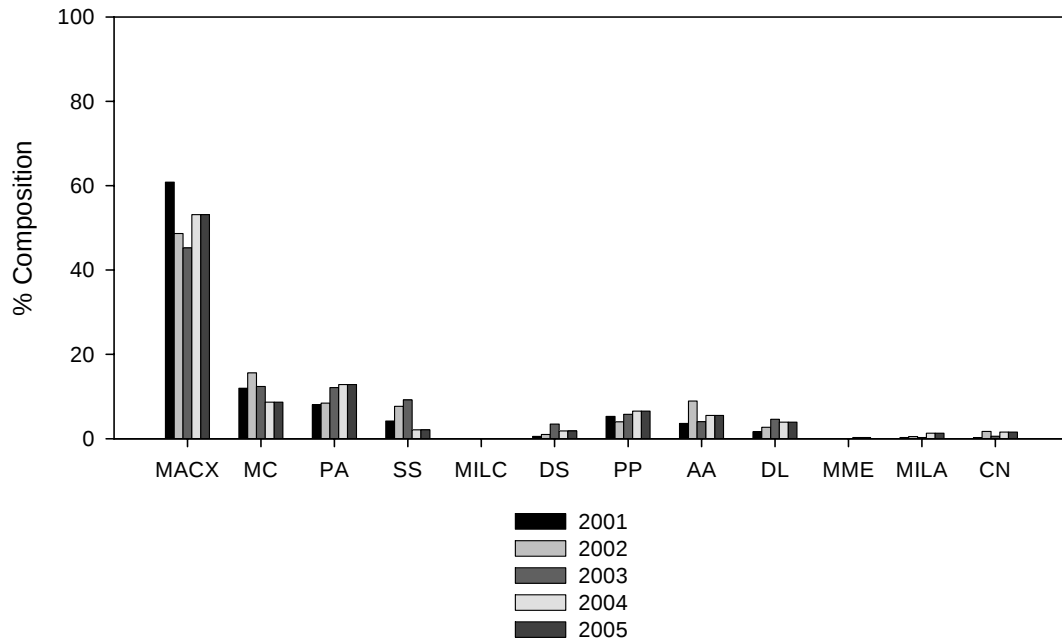
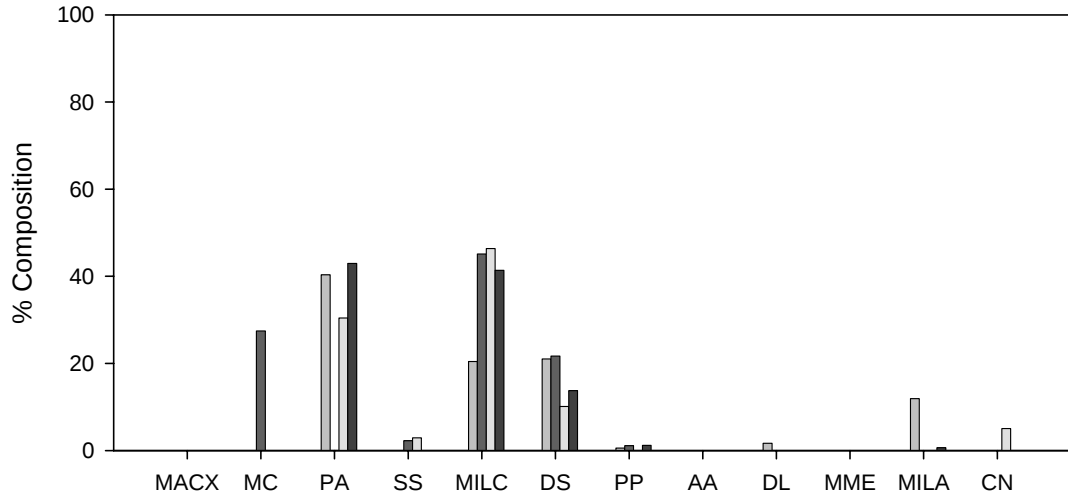


Fig. 4A, B Percent of species composition of living coral cover of the most common coral species at A. Buck Island and B. Cane Bay for years 2001, 2002, 2003, 2004, and 2005
 MACX *Montastraea annularis* complex; MC *M. cavernosa*; PA *Porites astreoides*; SS *Siderastrea siderea*;
 MILC *Millepora complanata*; 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.

C. Great Pond



D. Jacks Bay

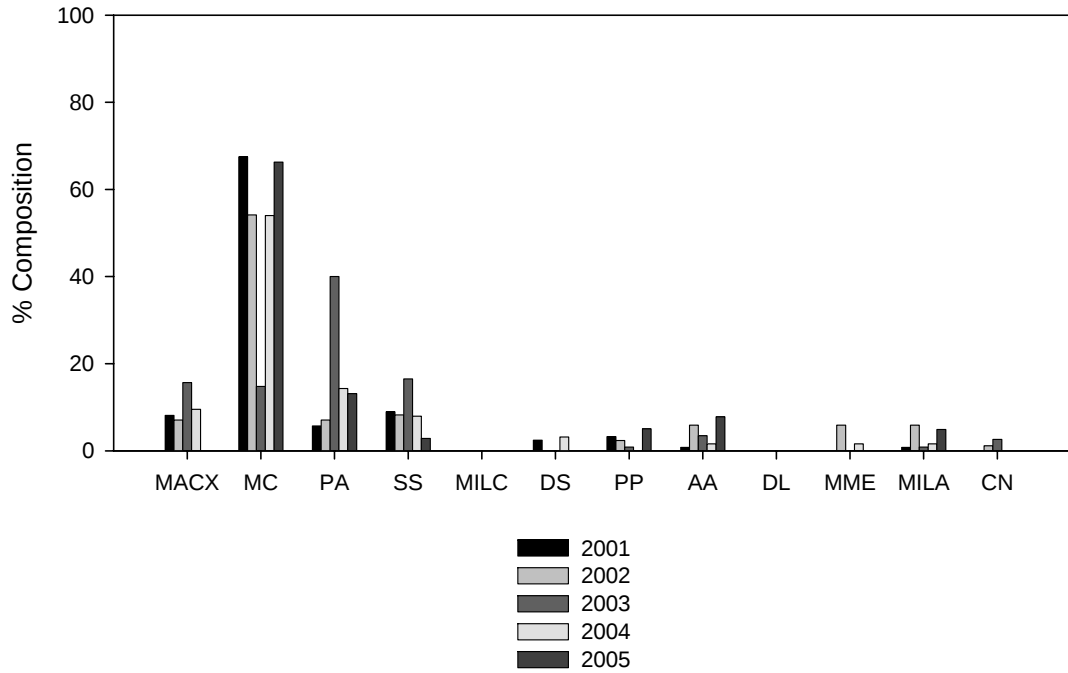
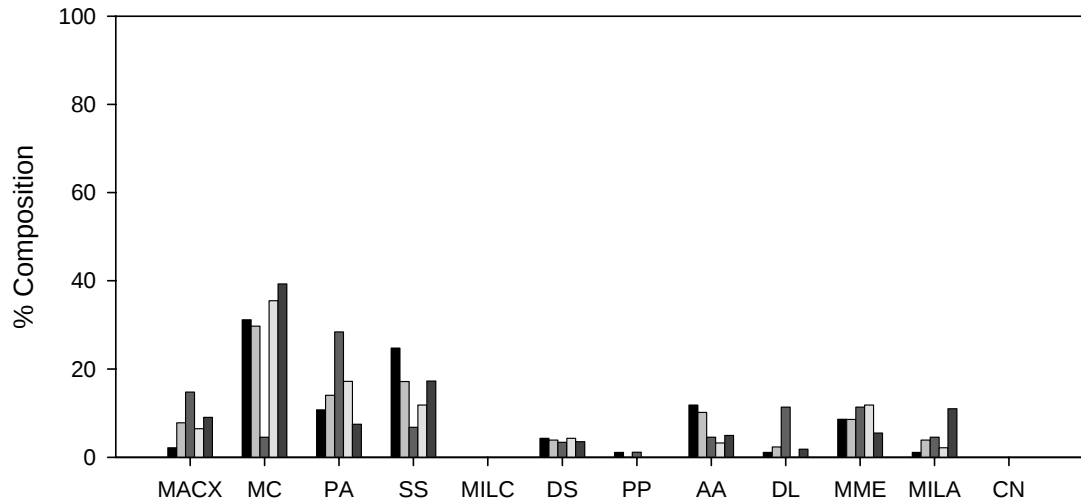


Fig. 4C, D Percent of species composition of living coral cover of the most common coral species at C. Great Pond and D. Jacks Bay for years 2001, 2002, 2003, 2004, and 2005. MACX *Montastraea annularis* complex; MC *Montastraea cavernosa*; PA *Porites astreoides*; SS *Siderastrea siderea*; MILC *Millepora complanata*; DS *Diploria strigosa*; PP *Porites porites*; AA *Agaricia agaricites*; DL *Diploria labyrinthiformis*; MME *Meandrina meandrites*; MILA *Millepora alcicornis*; CN *Colpophyllia natans*. n = 6 transects for all samplings. Sampling of GP began in 2002.

E. Long Reef



F. Mutton Snapper

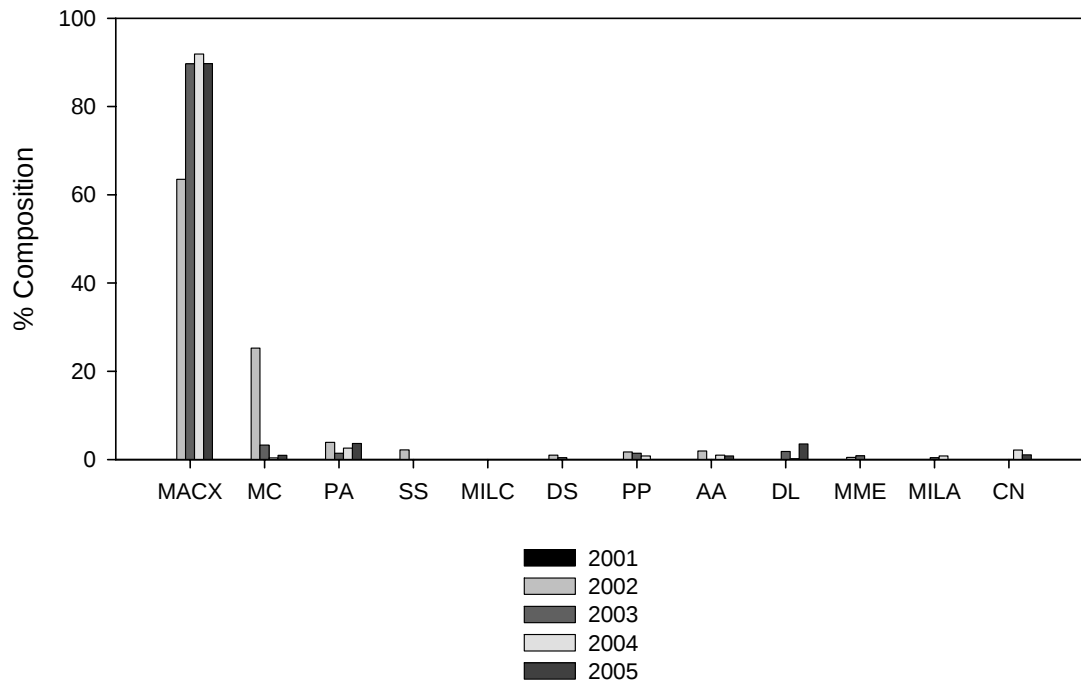
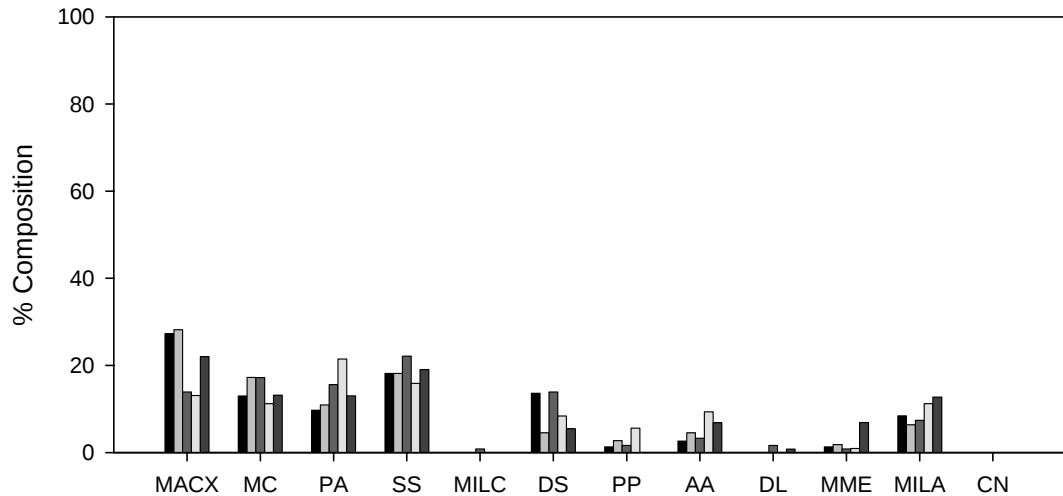


Fig. 4E, F Percent of species composition of living coral cover of the most common coral species at E. Long Reef and F. Mutton Snapper for years 2001, 2002, 2003, 2004, and 2005. MACX *Montastraea annularis* complex; MC *Montastraea cavernosa*; PA *Porites astreoides*; SS *Siderastrea siderea*; MILC *Millepora complanata*; DS *Diploria strigosa*; PP *Porites porites*; AA *Agaricia agaricites*; DL *Diploria labyrinthiformis*; MME *Meandrina meandrites*; MILA *Millepora alcicornis*; CN *Colpophyllia natans*. Sampling of MS began in 2002. n = 6 transects, except for n = 5 transects at MS in 2002.

G. Salt River



H. Sprat Hole

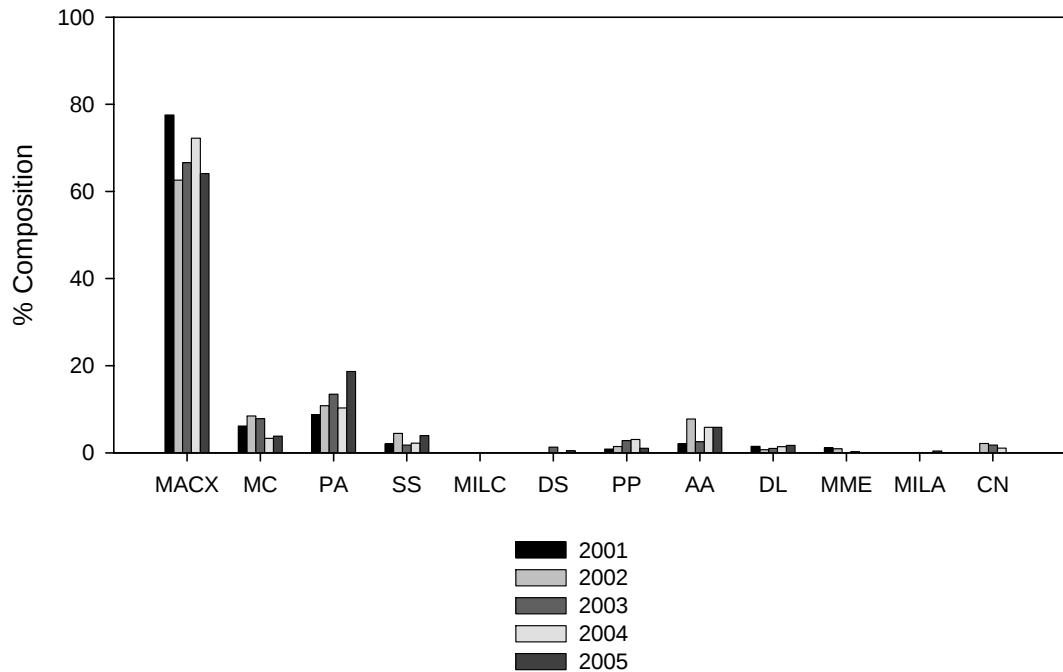


Fig. 4G, H Percent of species composition of living coral cover of the most common coral species at G. Salt River and H. Sprat Hole for years 2001, 2002, 2003, 2004, and 2005. MACX *Montastraea annularis* complex; MC *Montastraea cavernosa*; PA *Porites astreoides*; SS *Siderastrea siderea*; MILC *Millepora complanata*; DS *Diploria strigosa*; PP *Porites porites*; AA *Agaricia agaricites*; DL *Diploria labyrinthiformis*; MME *Meandrina meandrites*; MILA *Millepora alcicornis*; CN *Colpophyllia natans*. n = 6 transects for all samplings, except n = 5 transects for SH in 2002.

Coral Diversity

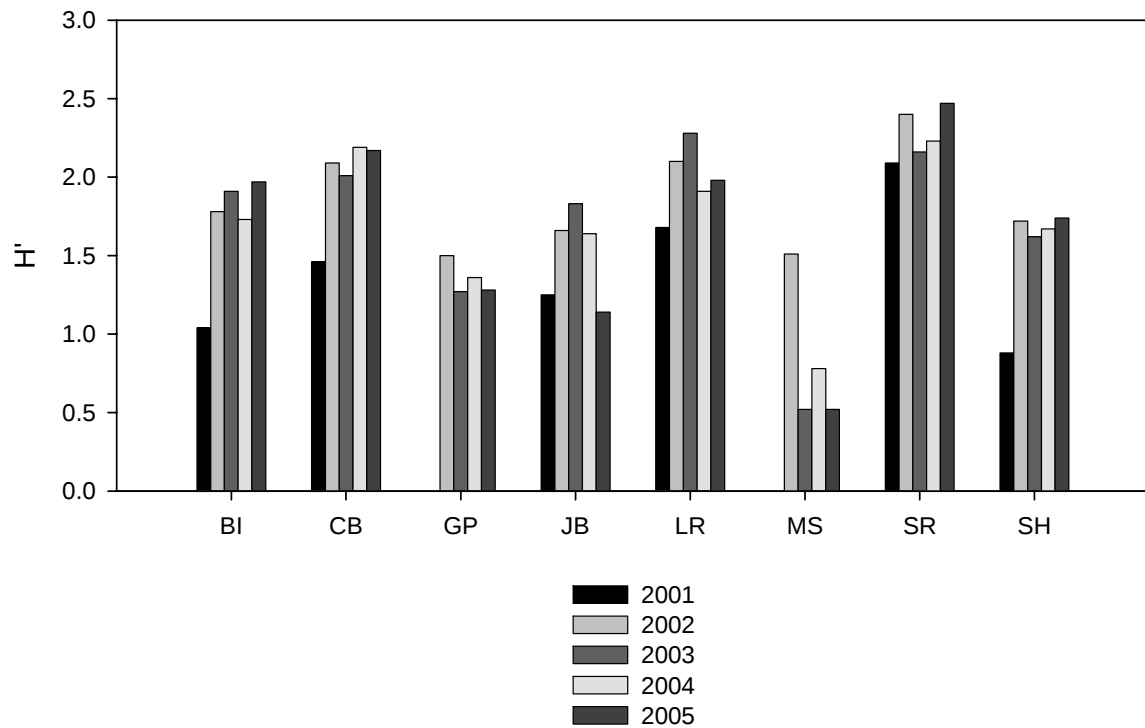
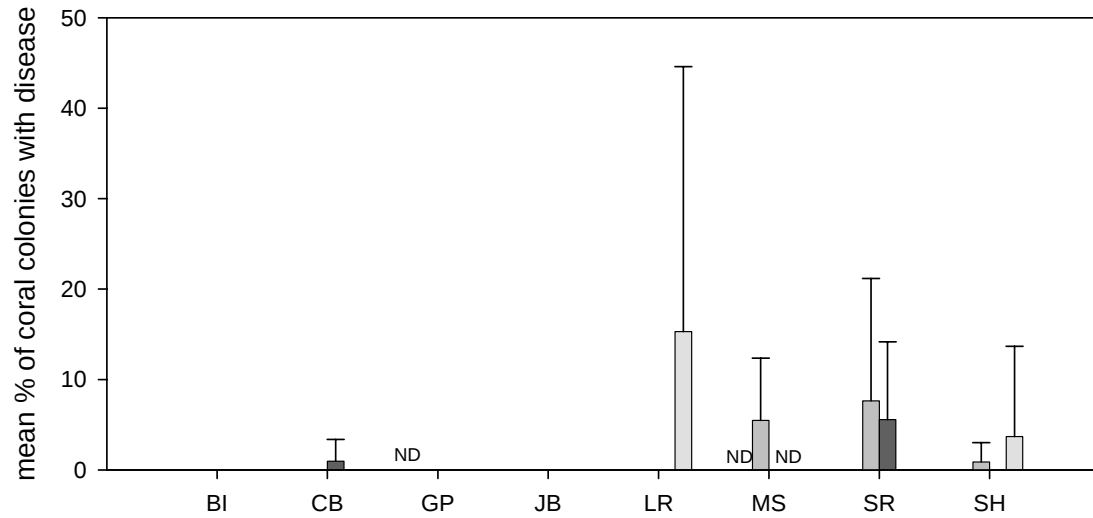


Fig. 5 Shannon - Weaver Diversity Index (H') for corals at eight monitored sites in St. Croix, USVI for years 2001- 2005.
 BI Buck Island; CB Cane Bay; GP Great Pond; JB Jacks Bay; LR Long Reef/Eagle Ray;
 MS Mutton Snapper; SR Salt River; SH Sprat Hole
 Sampling for Great Pond and Mutton Snapper began in 2002.

A. Coral Disease



B. Coral Bleaching

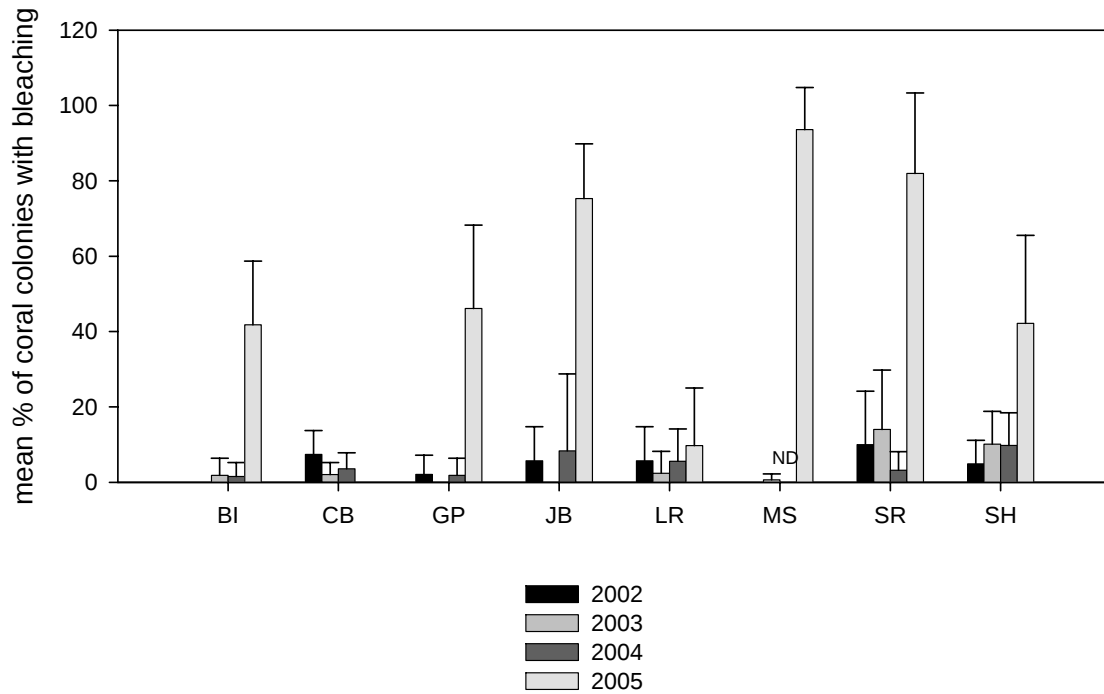


Fig. 6 Mean percentage of A. colonies with disease and B. colonies with bleaching of all coral colonies sampled at each monitoring site for year 2002-2005.

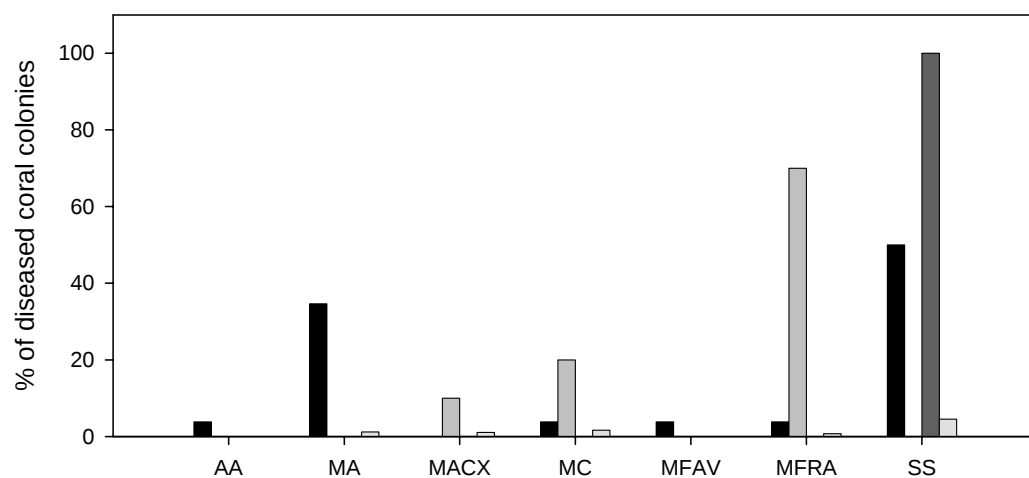
BI Buck Island; CB Cane Bay; GP Great Pond; JB Jacks Bay; LR Long Reef/Eagle Ray;

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. MS was not sampled in 2004. Asterisk denotes significant difference: * = $P < 0.01$

A. Coral Disease



B. Coral Bleaching

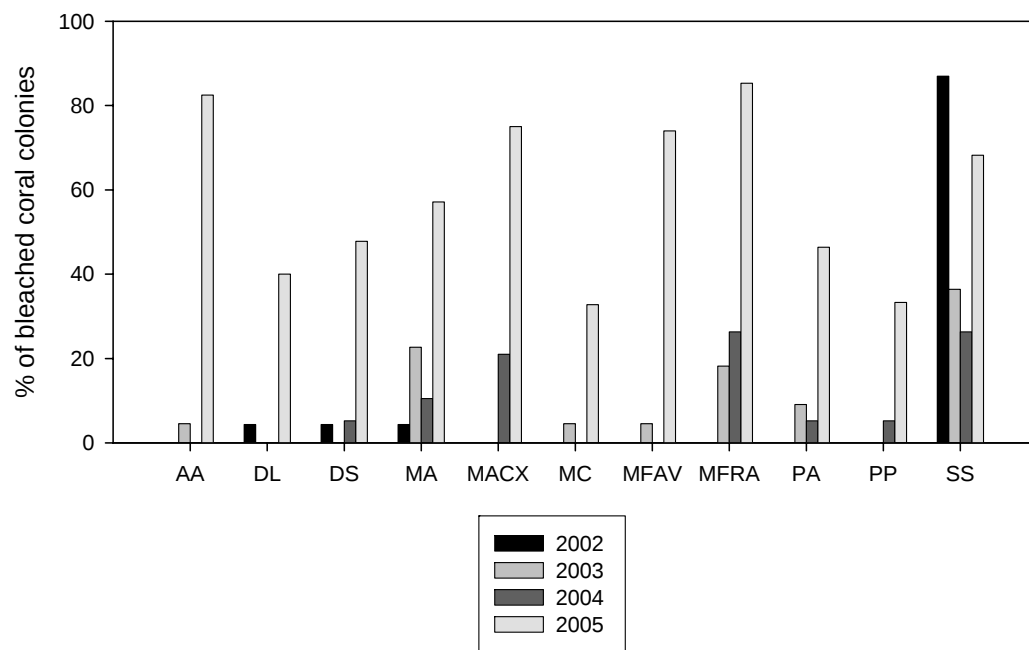


Fig. 7 Percentage of A. diseased colonies and B. bleached colonies of all coral species with disease and bleaching sampled at all St. Croix monitoring sites, with the exception of Mutton Snapper for year 2002-2005. AA *Agaricea agaricites*; DL *Diploria labyrinthiformis*; DS *Diploria strigosa*; MA *Montastraea annularis*; MACX unidentified species belonging to the *M. annularis* complex; MC *M. cavernosa*; MFAV *M. faveolata*; MFRA *M. franksii*; PA *Porites astreoides*; PP *Porites porites*; SS *Siderastrea siderea*

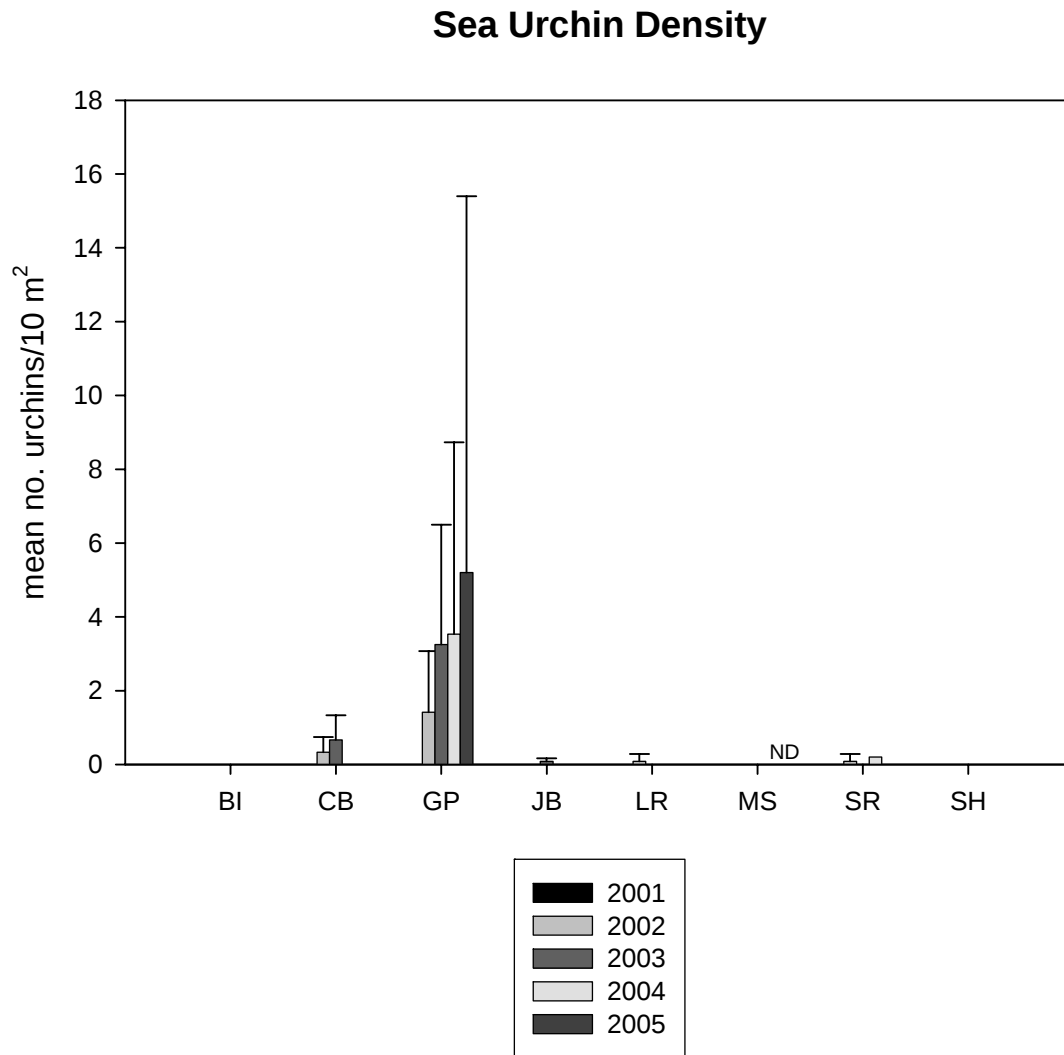


Fig. 8 Mean sea urchin density at each St. Croix monitoring site for years 2001-2005.
 BI Buck Island; CB Cane Bay; GP Great Pond; JB Jacks Bay; LR Long Reef/Eagle Ray;
 MS Mutton Snapper; SR Salt River; SH Sprat Hole.
 GP and MS sampling began in 2002. No urchins were observed at any site in 2001.
 n = 6 transects for all sites except for n = 3 transects at BI 2001 and 2002 and n = 5 transects at
 MS and SH in 2002. No urchin assessments were performed at MS in 2004.

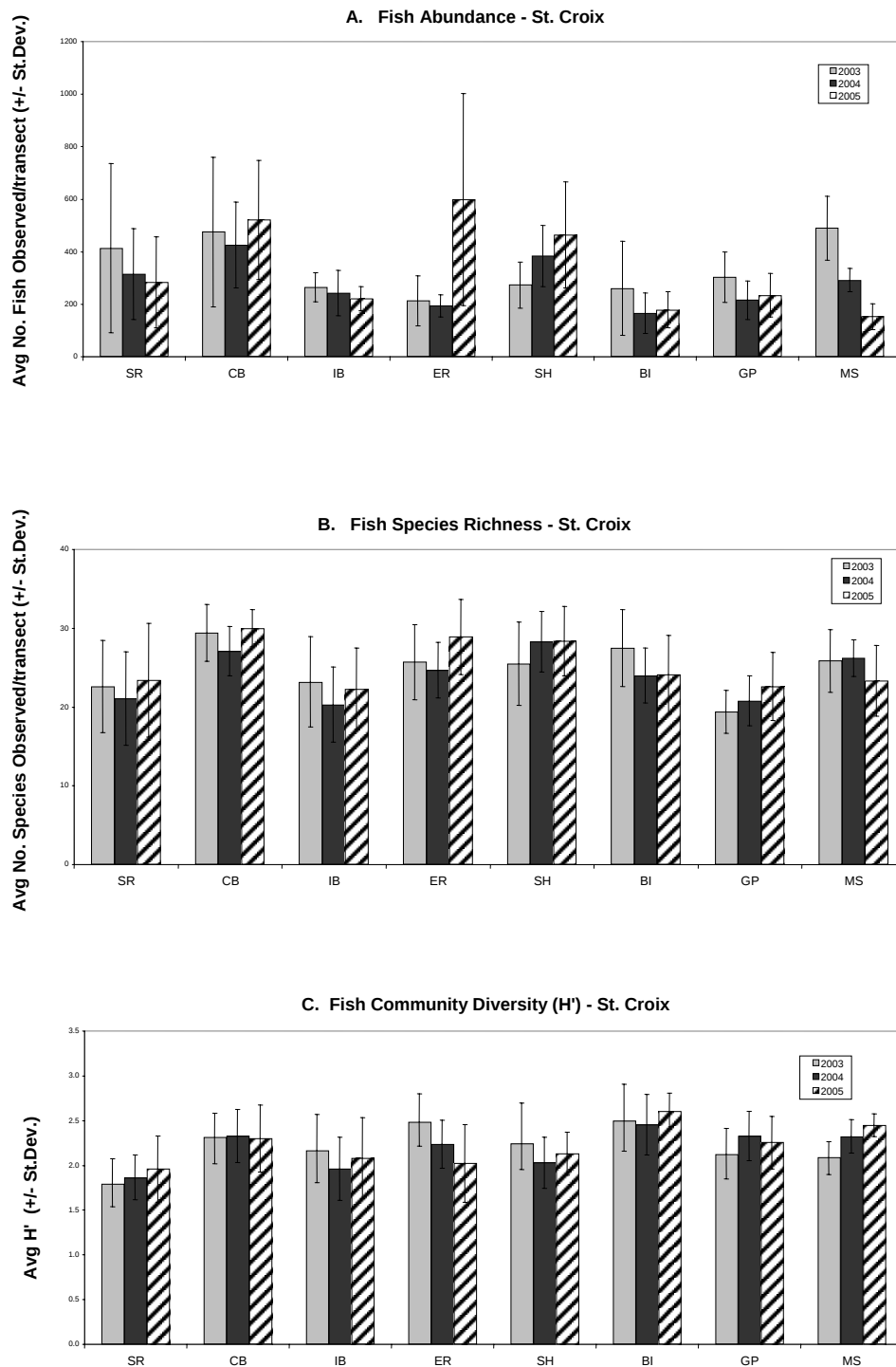


Fig. 9. Reef fish assemblage structure across eight St. Croix reef sites. Data are from belt transect surveys conducted in 2003, 2004 and 2005. A. Average abundance. B. Average species richness. C. Average Shannon diversity (H'). Reef sites are as follows: SR=Salt River, CB=Cane Bay, IB=Isaacs Bay, ER=Eagle Ray, SH=Sprat Hole, BI=Buck Island, GP=Great Pond, MS=Mutton Snapper spawning aggregation site.

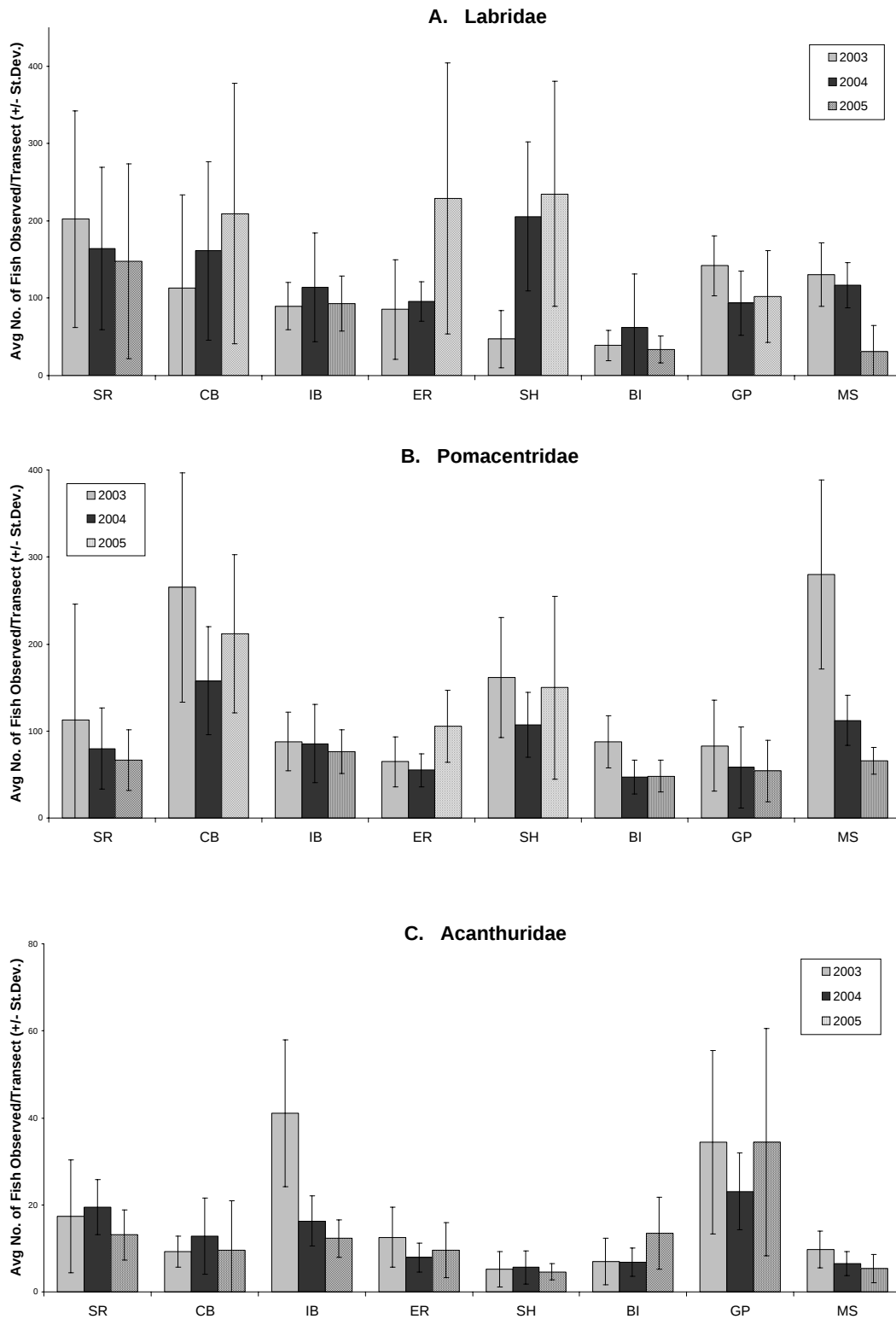


Fig. 10A, B, C Fish abundance by family across eight St. Croix reef sites.

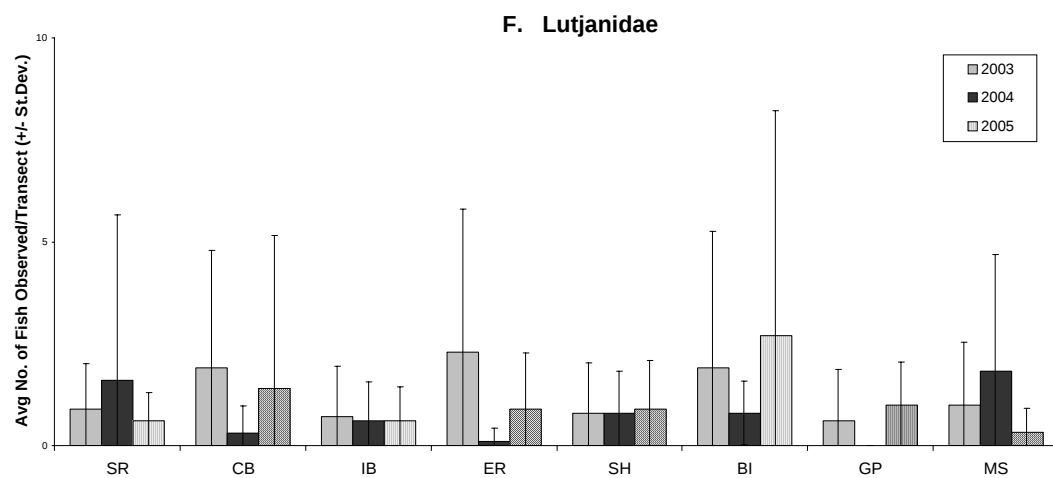
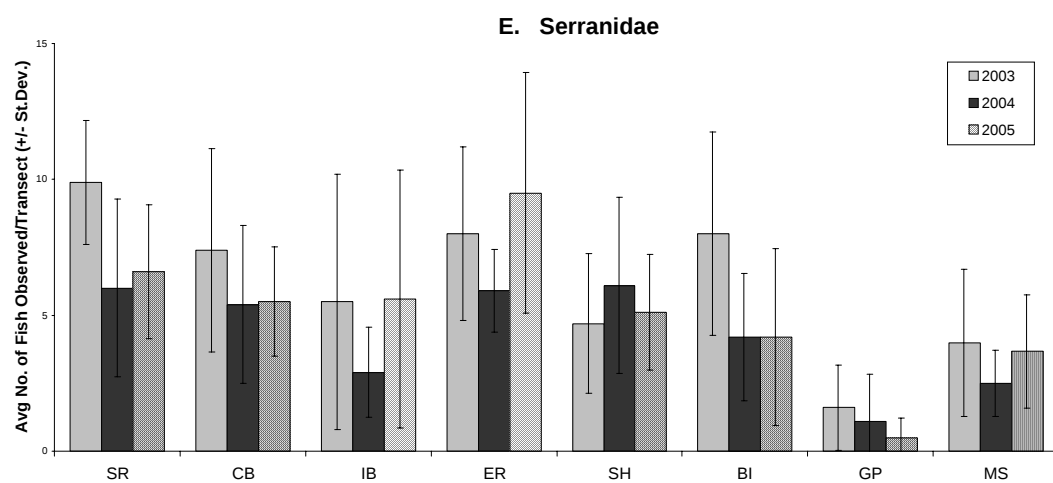
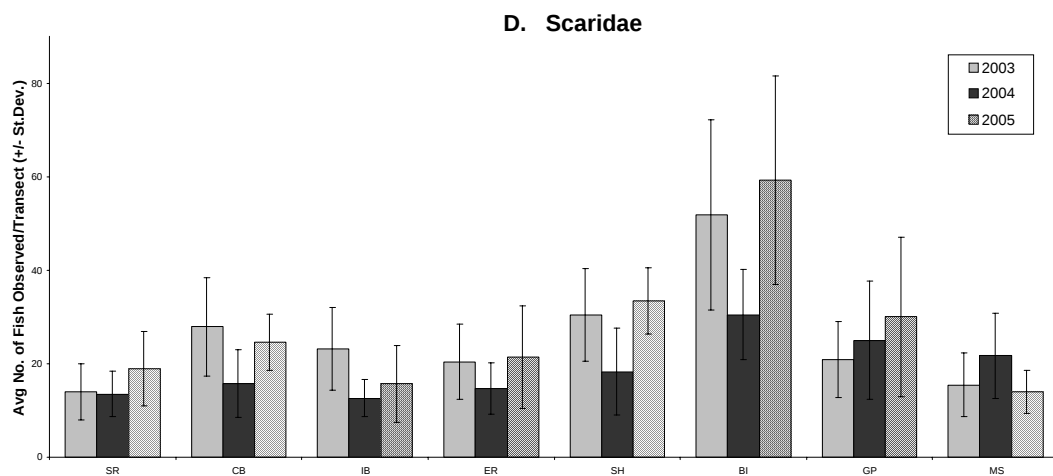


Fig. 10D, E, F Fish abundance by family across eight St. Croix reef sites.

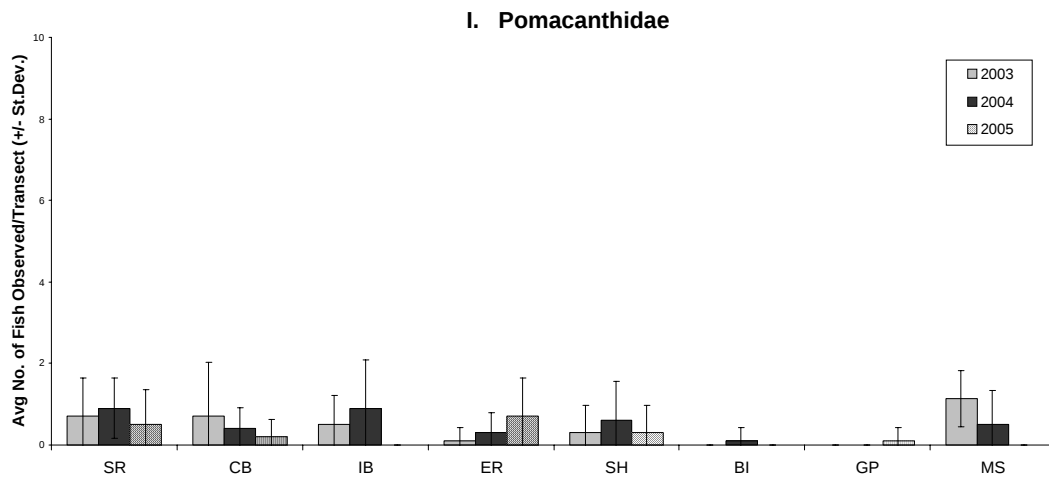
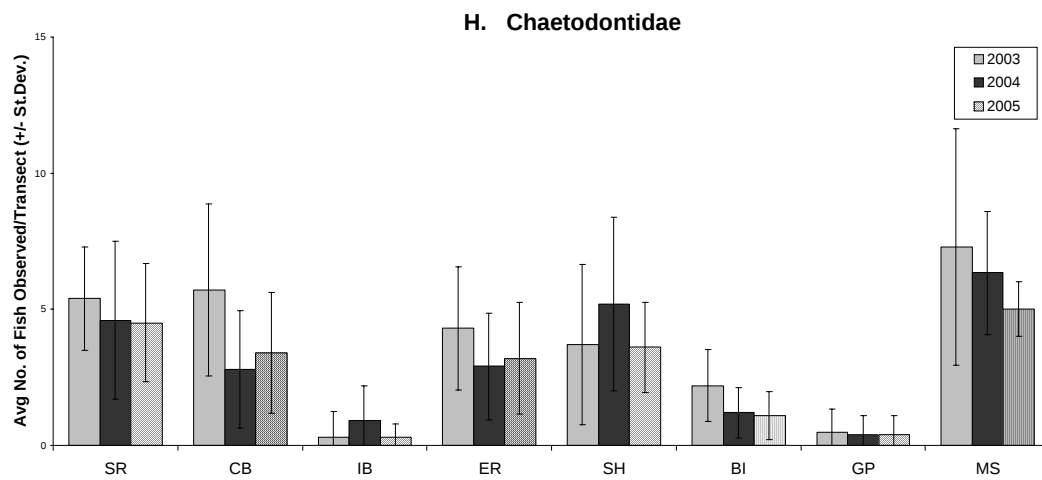
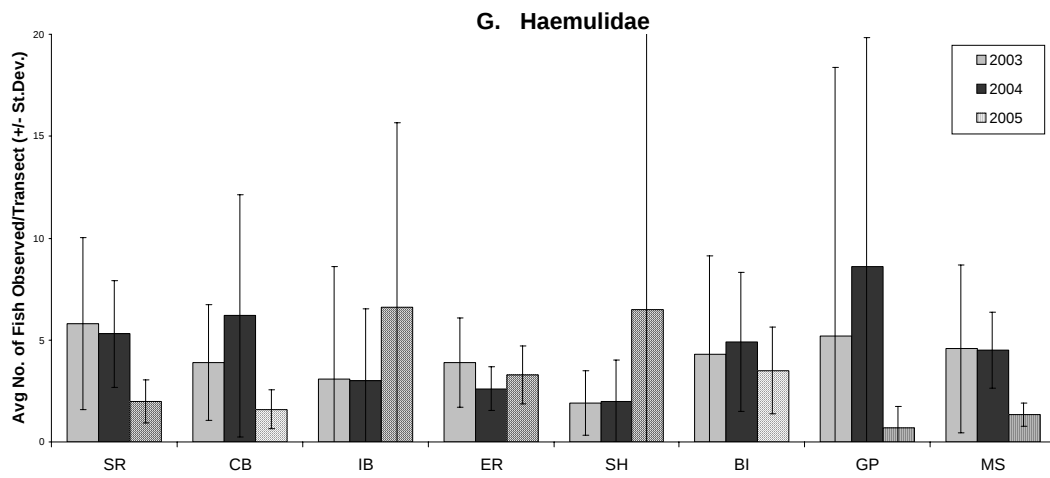


Fig. 10G, H, I Fish abundance by family across eight St. Croix reef sites.

J. Balistidae

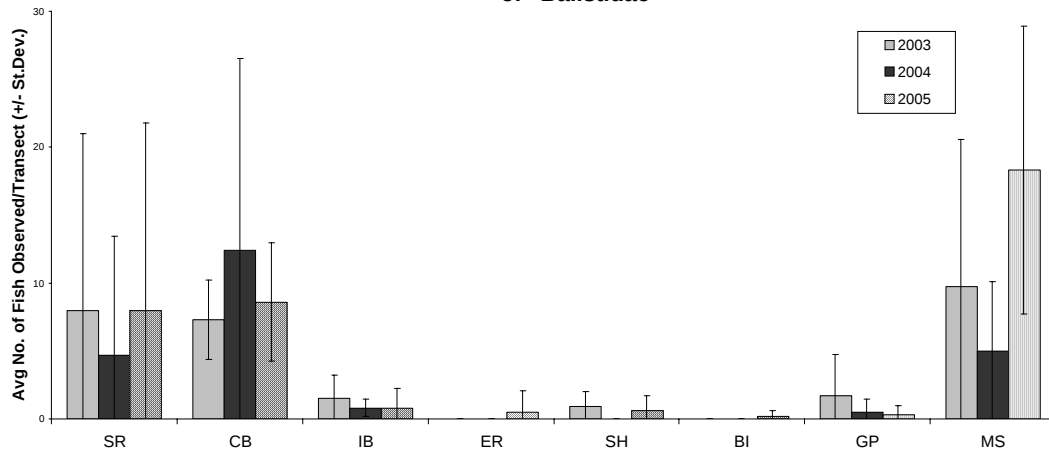
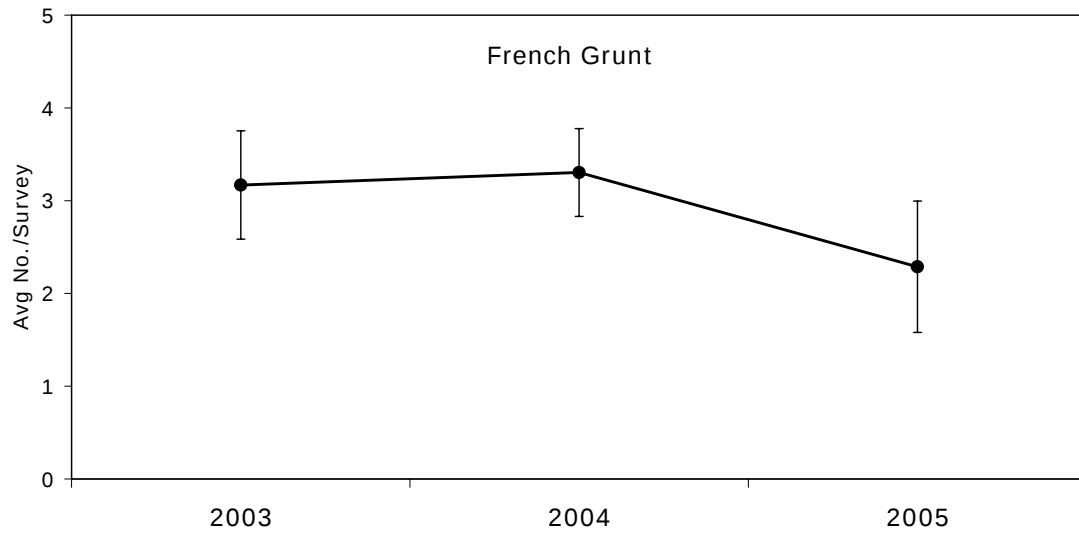


Fig. 10J Fish abundance by family across eight St. Croix reef sites. Data are from belt transect surveys in 2003, 2004 and 2005. A. Labridae, B. Pomacentridae, C. Acanthuridae, D. Scaridae, E. Serranidae, F. Lutjanidae, G. Haemulidae, H. Chaetodontidae, I. Pomacanthidae, J. Balistidae. Site abbreviations as in Figure 1.

A. Haemulon flavolineatum



B. Haemulon plumieri

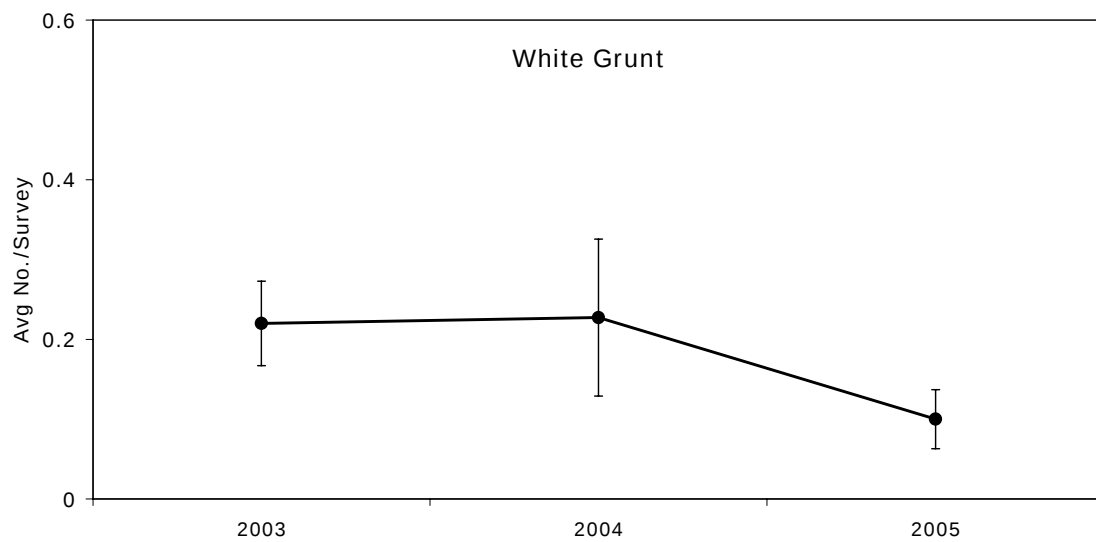


Fig. 11A, B Observed trends in abundance of grunts (Haemulidae) in belt transect surveys, St. Croix, 2003-2005. A. Abundance of French Grunt, *Haemulon flavolineatum*. B. Abundance of white grunt, *H. plumieri*.

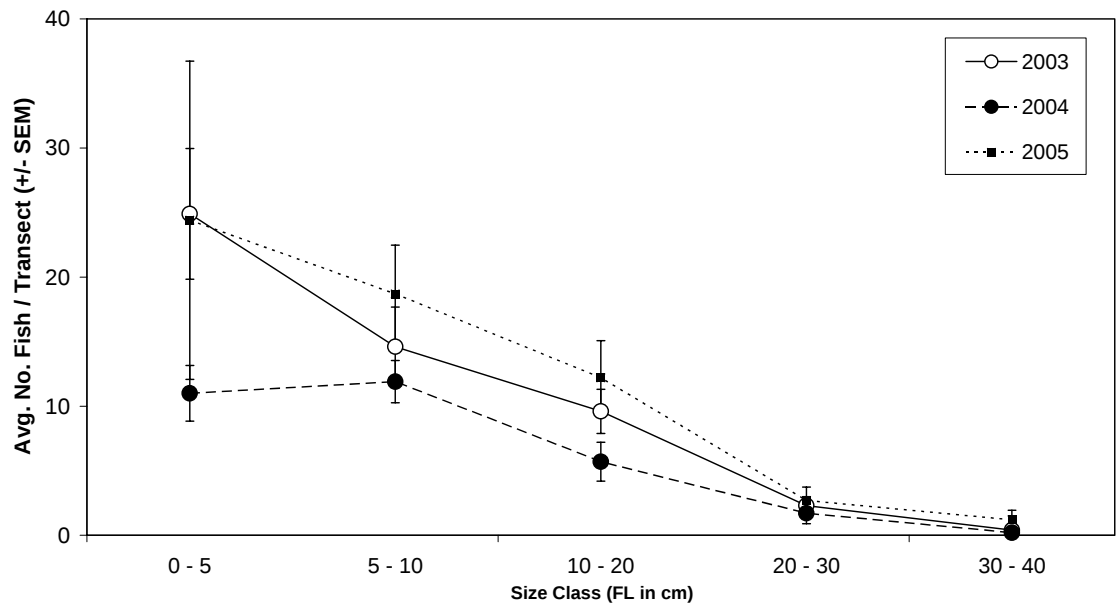


Fig. 12 Size distribution of parrotfishes at Buck Island, St. Croix, 2003-2005.

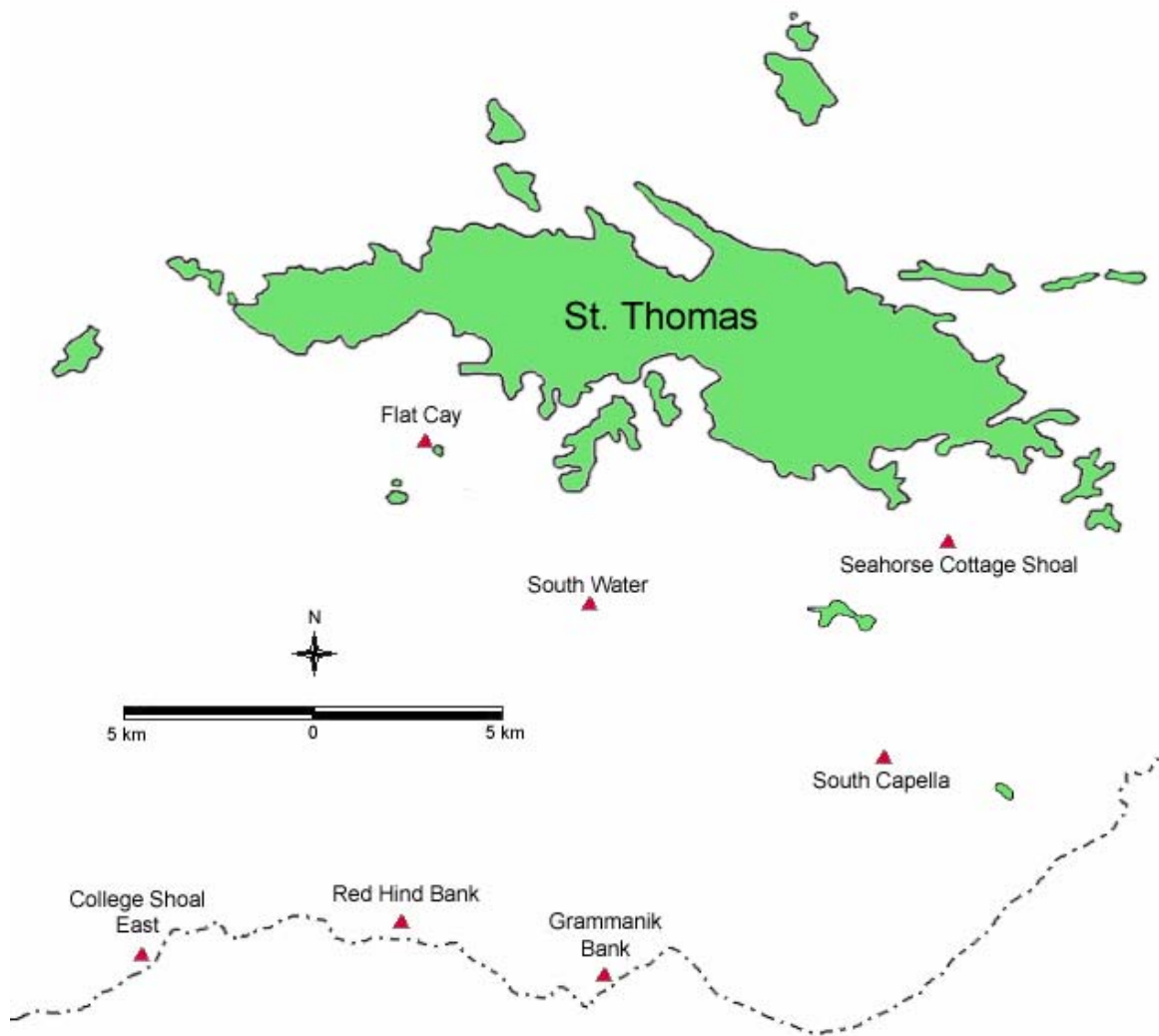


Fig. 13 Locations of monitoring sites in St. Thomas, USVI. Biotic assessments were performed at Seahorse Cottage Shoal, South Capella, South Water, Grammanik Bank, Red Hind Bank, and College Shoal East. Abiotic assessments were performed at Flat Cay and the Red Hind Bank. The Red Hind Bank is located within the Red Hind Bank Marine Conservation District.

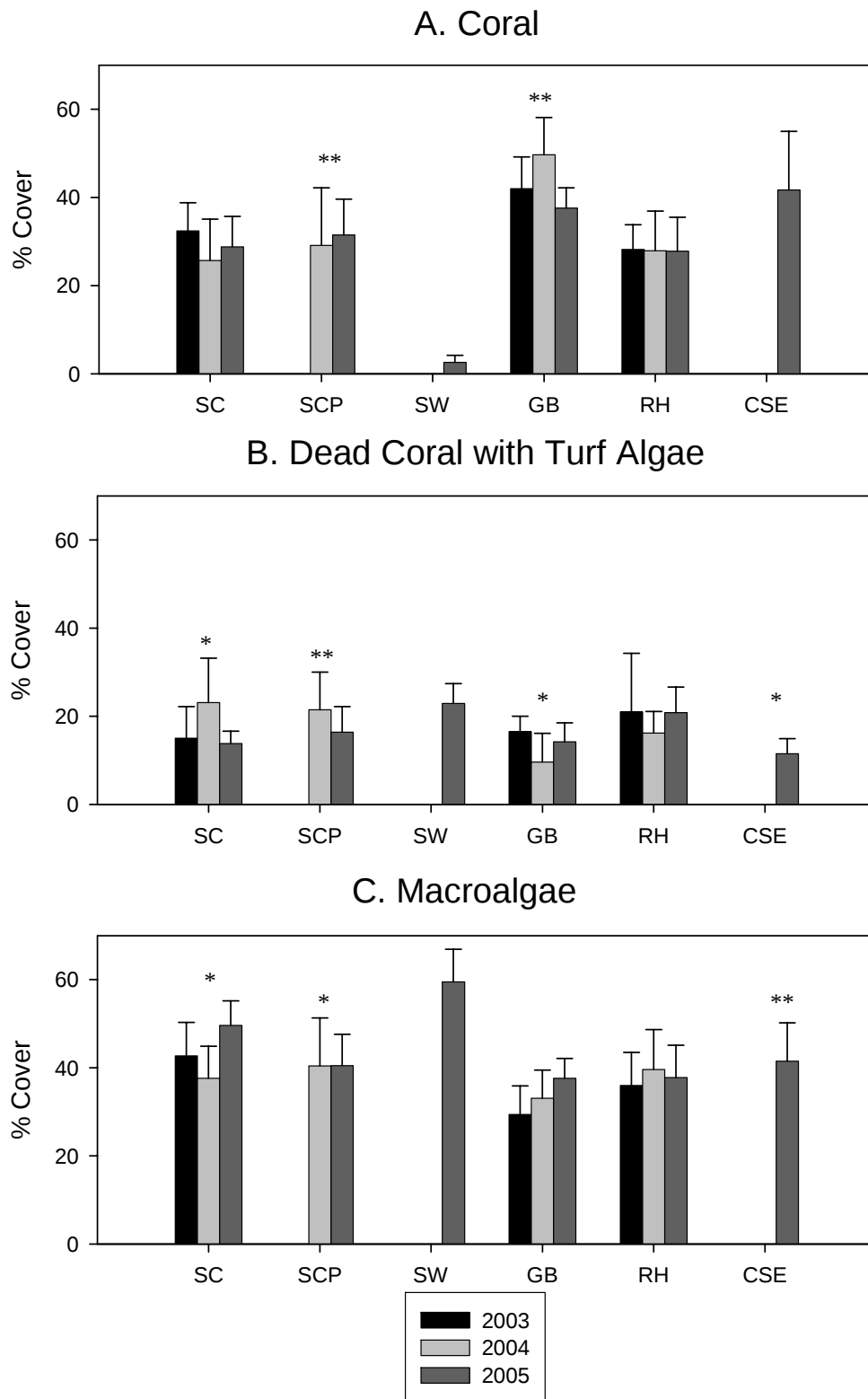


Fig. 14A, B, C Mean percent cover of A. Scleractinian corals, B. Dead coral with turf algae, and C. Macroalgae for St. Thomas monitored sites: SC Seahorse Cottage Shoal; SCP South Capella; SW South Water; GB Grammanik Bank; RH Red Hind Bank; CSE College Shoal East. SC, SCP and SW are mid-shelf sites and GB, RH and CSE are shelf-edge sites. n = 6 transects for all sites sampled in 2003 and 2005, n = 10 transects for all sites sampled in 2004. Sampling for SCP began in 2004, sampling for SW and CSE began in 2005. Error bars represent standard deviation.

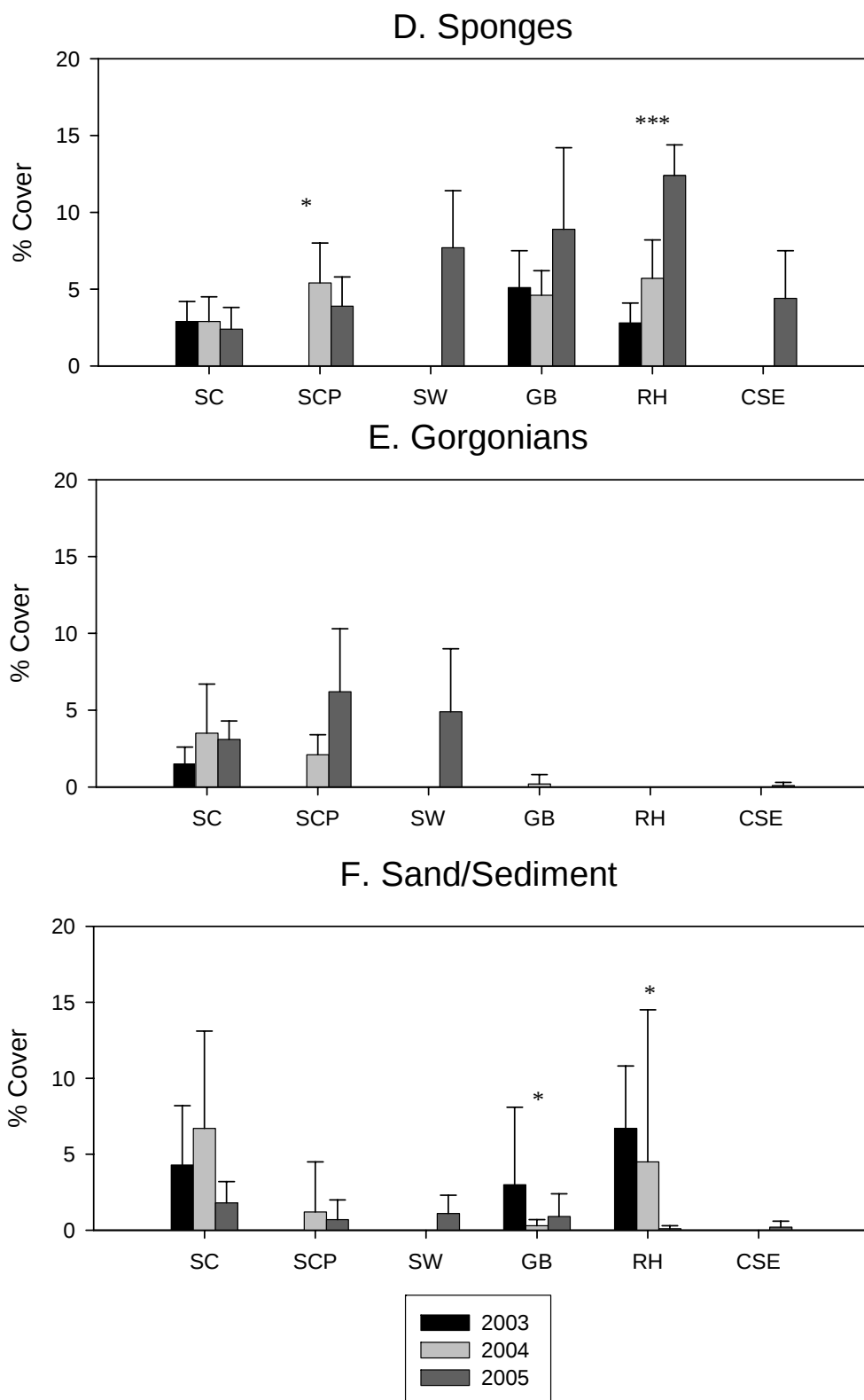


Fig. 14D, E, F Mean percent cover of D. Sponges, E. Gorgonians, and F. Sand/Sediment for St. Thomas monitored sites: SC Seahorse Cottage Shoal; SCP South Capella; SW South Water; GB Grammanik Bank; RH Red Hind Bank CSE College Shoal East. SC, SCP and SW are mid-shelf sites and GB, RH and CSE are shelf-edge sites. n = 6 transects for all sites sampled in 2003 and 2005, n = 10 transects for all sites sampled in 2004. Sampling for SCP began in 2004, sampling for SW and CSE began in 2005. Error bars represent standard deviation.

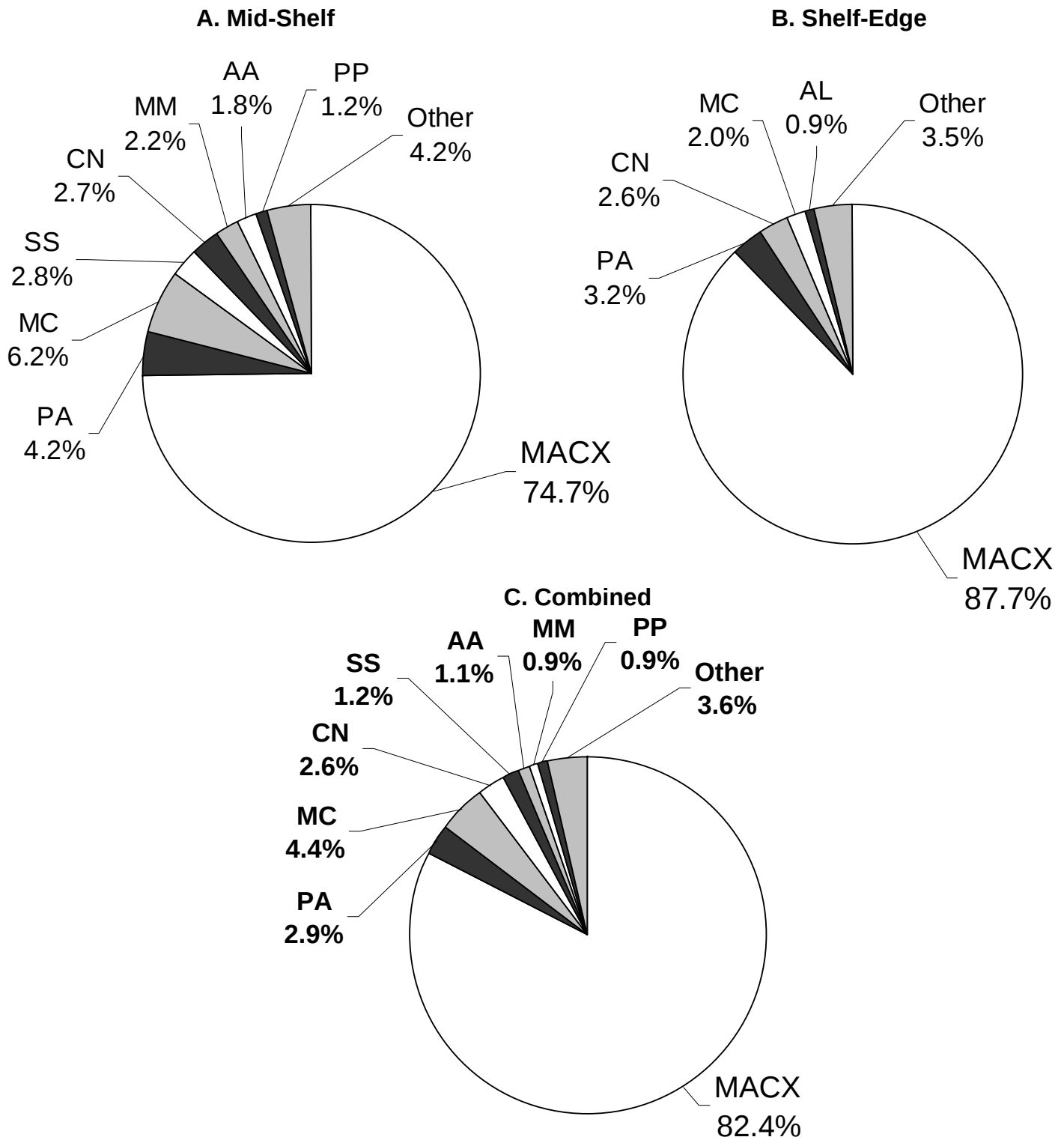
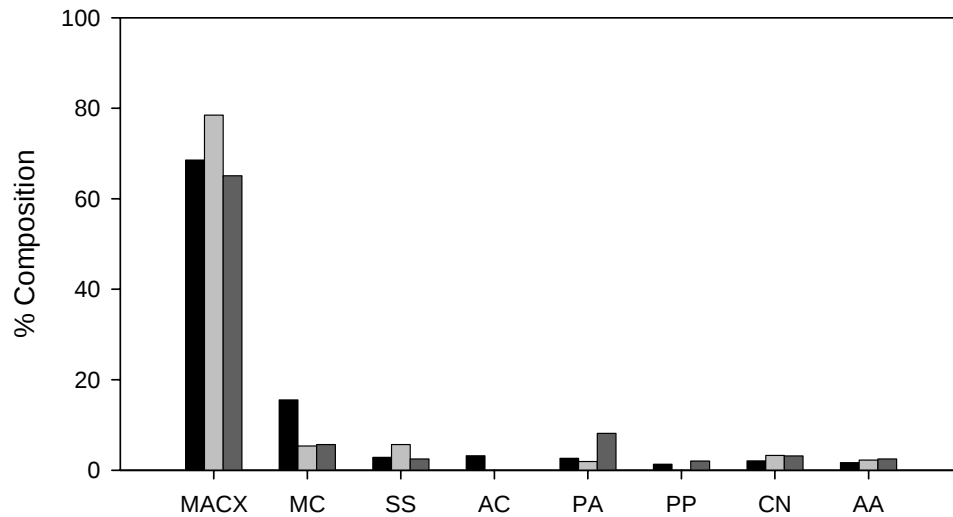


Fig. 15 Percentage coral species composition at A. Mid-shelf sites and B. Shelf-edge sites and C. all sites combined for St. Thomas, USVI. MACX *Montastraea annularis* complex; MC *M. cavernosa*; PA *Porites astreoides*; SS *Siderastrea siderea*; AA *Agaricia agaricites*; AL *A. lamarcki*; AF *A. fragilis*; CN *Colpophyllia natans*. Other denotes percent of all other coral species combined and includes: *Acropora cervicornis*, *Agaricia grahamae*, *Diploria labyrinthiformis*, *D. strigosa*, *Eusmilia fastigiata*, *Madracis decactis*, *M. formosa*,

M. mirabilis, *Millepora alcornis*, *Mussa angulosa*, *Mycetophyllia aliciae*, *My. ferox*, *My. lamarckiana*, *Porites furcata*, *P. porites*.

A. Seahorse Cottage Shoal



B. South Capella

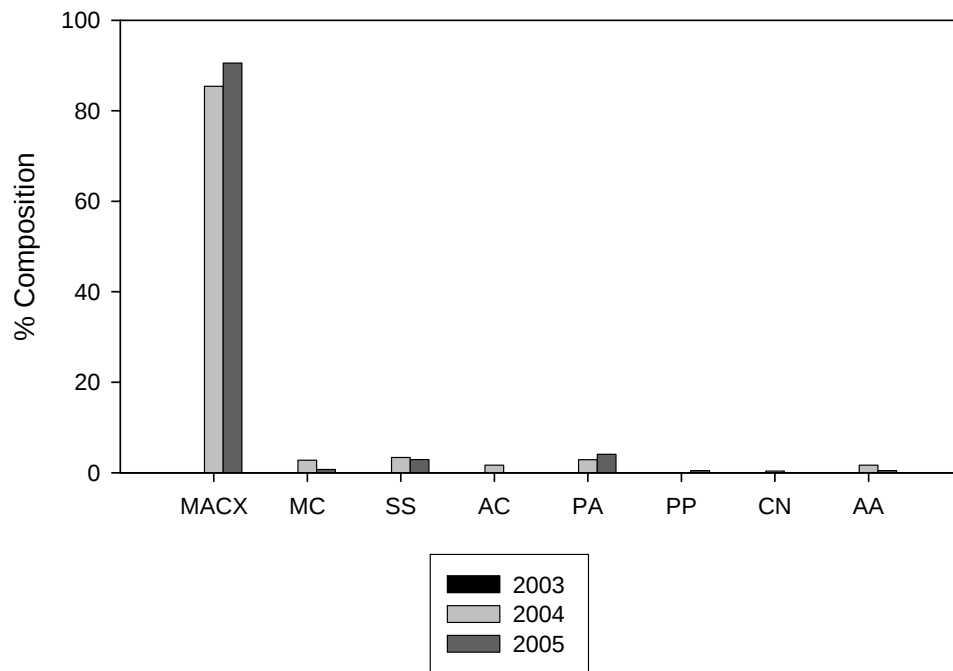


Fig. 16A, B Percent of species composition of living coral cover of the most common coral species at St. Thomas mid-shelf sites: A. Seahorse Cottage Shoal and B. South Capella. Percent composition calculated by dividing the number of random dots falling on each coral species by the total number of dots on all living coral at each site. Sampling for South Capella began in 2004. MACX *Montastrea annularis* complex; MC *M. cavernosa*; SS *Siderastrea siderea*; AC *Acropora cervicornis*; PA *Porites astreoides*; PP *P. porites*; CN *Colpophyllia natans*; AA *Agaricia agaricites*.

C. South Water

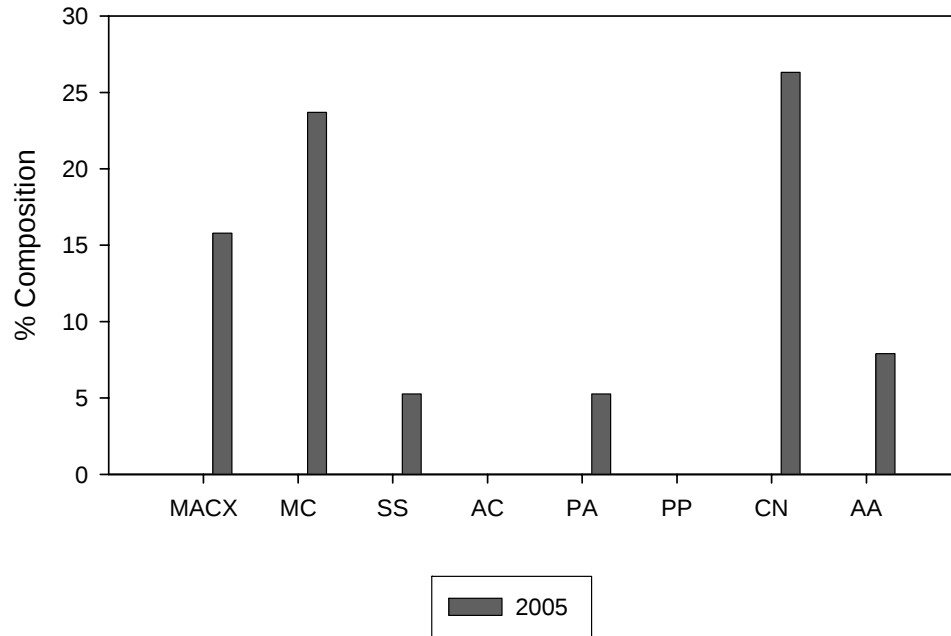
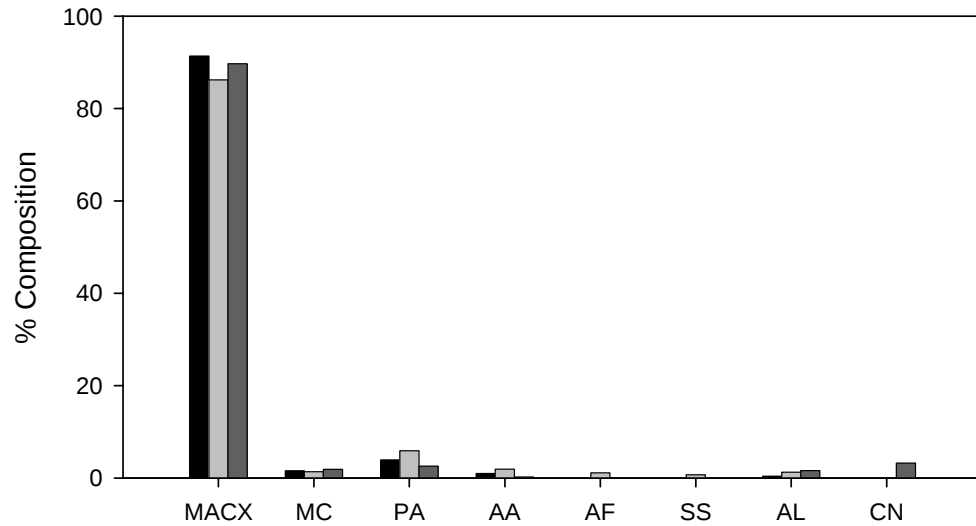


Fig. 16C Percent of species composition of living coral cover of the most common coral species at St. Thomas mid-shelf sites: C. South Water. Percent composition calculated by dividing the number of random dots falling on each coral species by the total number of dots on all living coral at each site. Sampling for South Water began in 2005. MACX *Montastraea annularis* complex; MC *M. cavernosa*; SS *Siderastrea siderea*; AC *Acropora cervicornis*; PA *Porites astreoides*; PP *P. porites*; CN *Colpophyllia natans*; AA *Agaricia agaricites*.

D. Grammanik Bank



E. Red Hind Bank

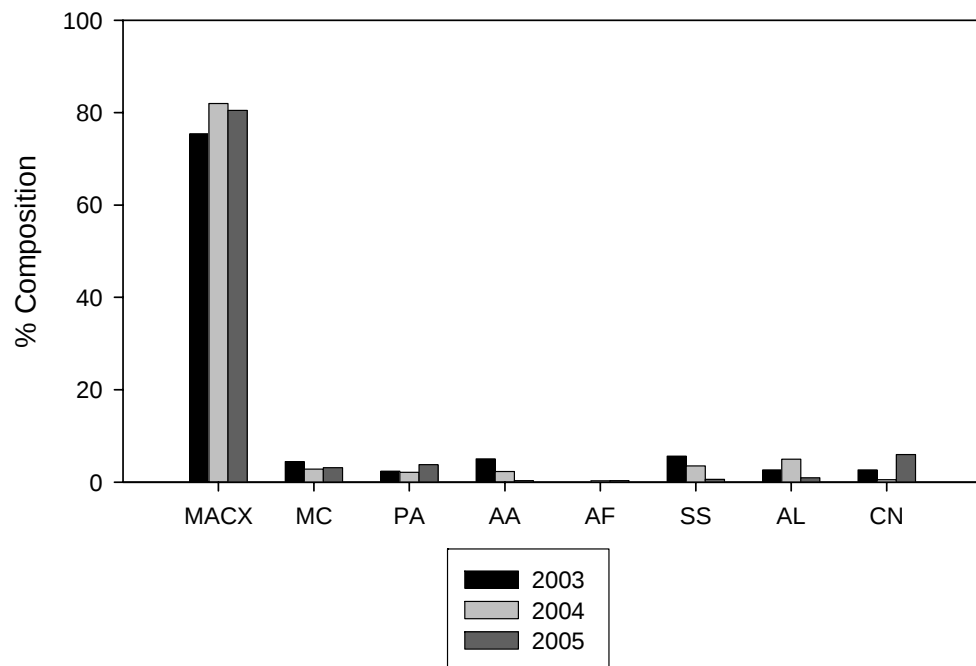


Fig. 16D,E Percent of species composition of living coral cover of the most common coral species at St. Thomas shelf-edge sites: D. Grammanik Bank and E. Red Hind Bank. Percent composition calculated by dividing the number of random dots falling on each coral species by the total number of dots on all living coral at each site.
 MACX *Montastraea annularis* complex; MC *M. cavernosa*; PA *Porites astreoides*; AA *Agaricia agaricites*; AF *A. fragilis*; SS *Siderastrea siderea*; AL *A. lamarcki*; CN *Colpophylia natans*.

F. College Shoal East

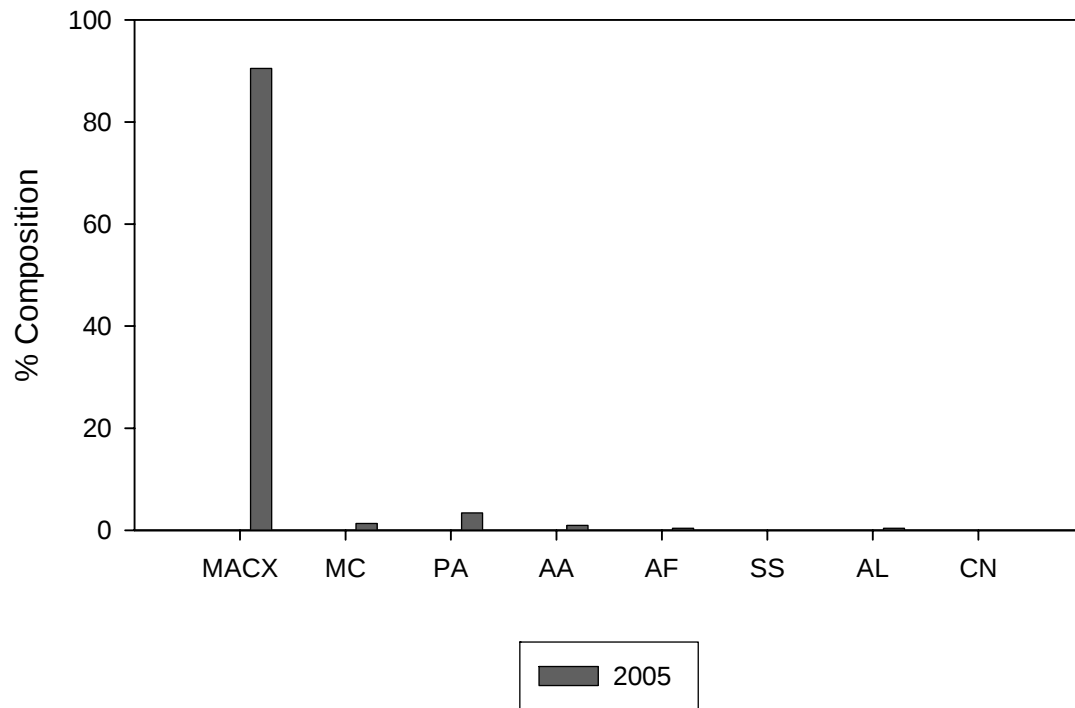


Fig. 16F Percent of species composition of living coral cover of the most common coral species at St. Thomas shelf-edge sites: F. College Shoal East. Percent composition calculated by dividing the number of random dots falling on each coral species by the total number of dots on all living coral at each site. Sampling for College Shoal East began in 2005. MACX *Montastraea annularis* complex; MC *M. cavernosa*; PA *Porites astreoides*; AA *Agaricia agaricites*; AF *A. fragilis*; SS *Siderastrea siderea*; AL *A. lamarcki*; CN *Colpophylia natans*.

Coral Diversity

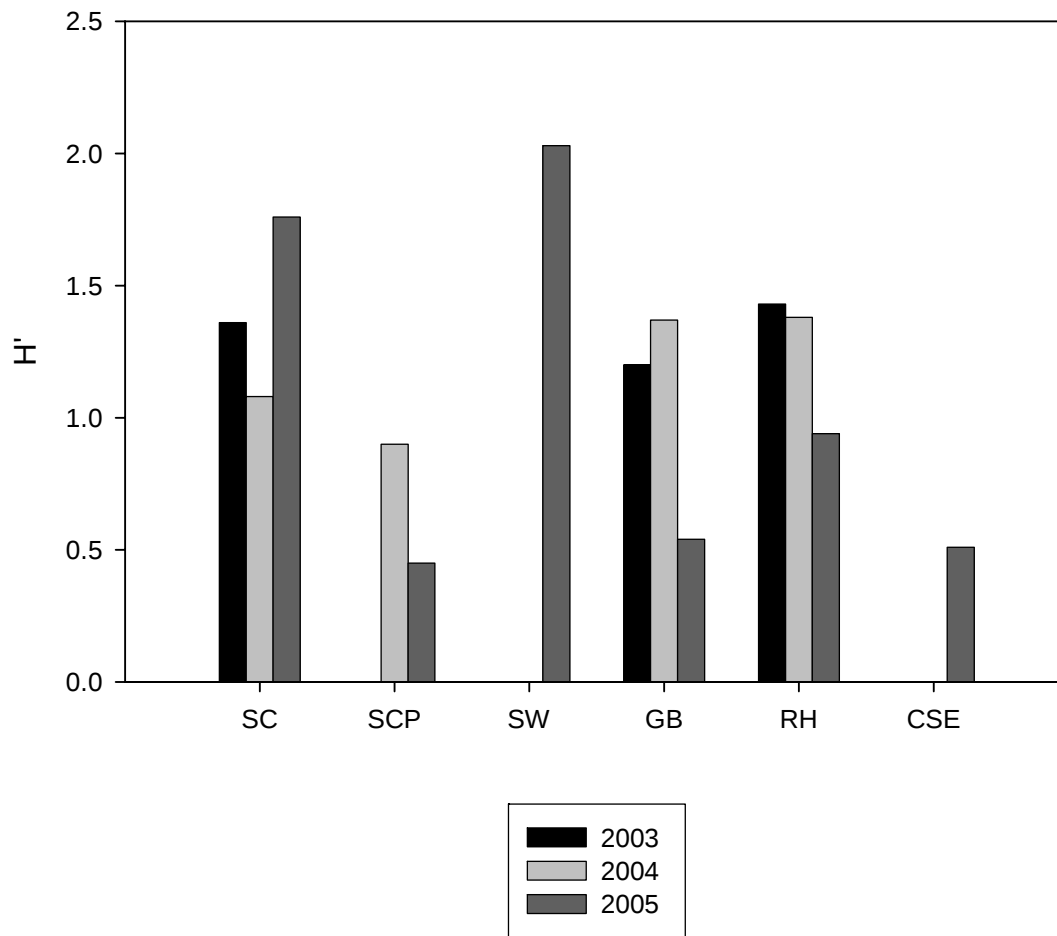
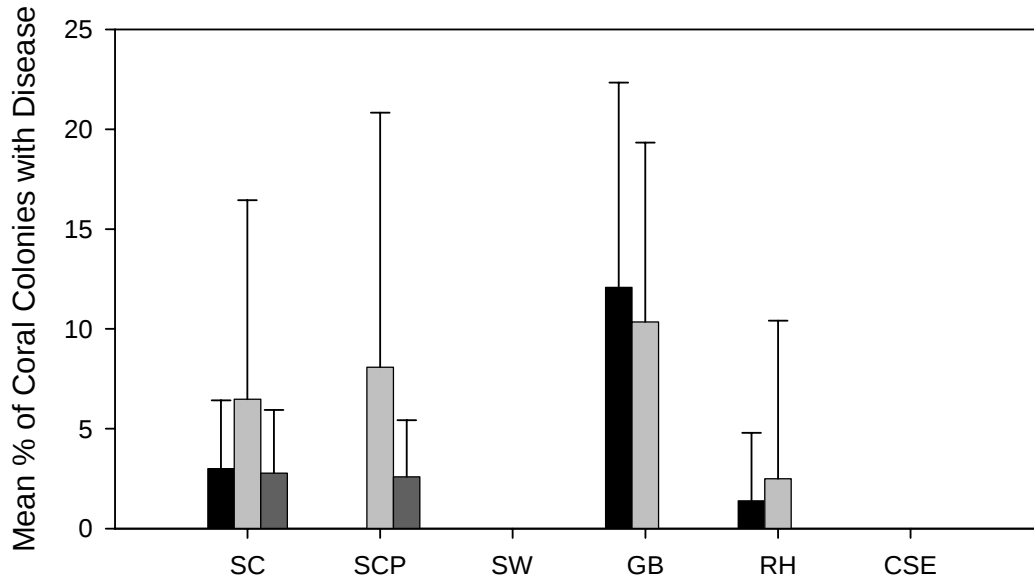


Fig. 17 Shannon - Weaver Diversity Index (H') for corals at six monitored sites in St. Thomas, USVI. SC Seahorse Cottage Shoal; SCP South Capella; SW South Water; GB Grammanik Bank; RH Red Hind Bank; CSE College Shoal East. SC, SCP, and SW are mid-shelf sites and GB, RH, and CSE are shelf-edge sites. $n = 6$ transects for all sites sampled in 2003 and 2005, $n = 10$ transects for all sites sampled in 2004. Sampling for SCP began in 2004, sampling for SW and CSE began in 2005.

A. Coral Disease



B. Coral Bleaching

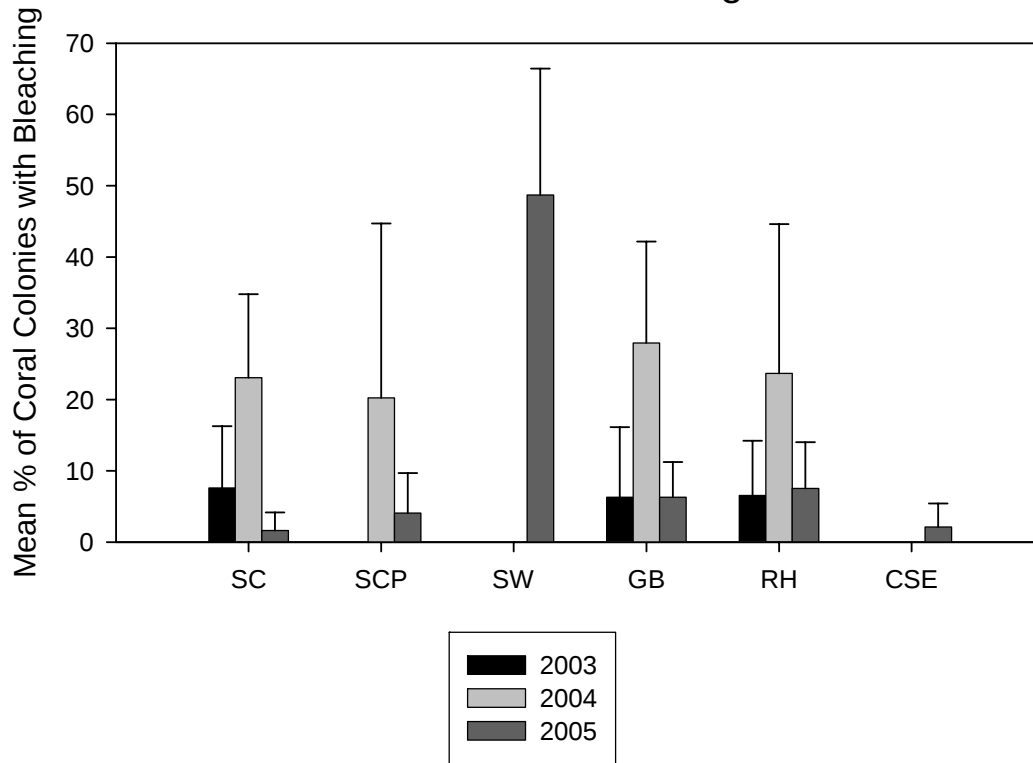
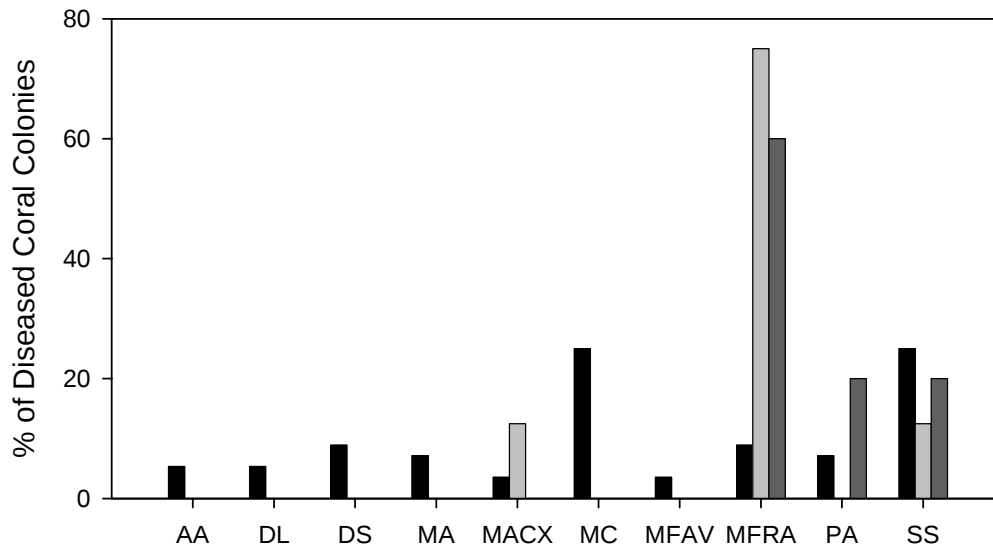


Fig. 18 Mean percentage of A. colonies with disease and B. colonies with bleaching of all coral colonies sampled at each monitoring site.
 SC Seahorse Cottage Shoal; SCP South Capella; SW South Water; GB Grammanik Bank;
 RH Red Hind Bank; CSE College Shoal East.
 Sampling for SCP began 2004, sampling for SW and CSE began 2005.
 Error bars represent standard deviation.

A. Coral Disease



B. Coral Bleaching

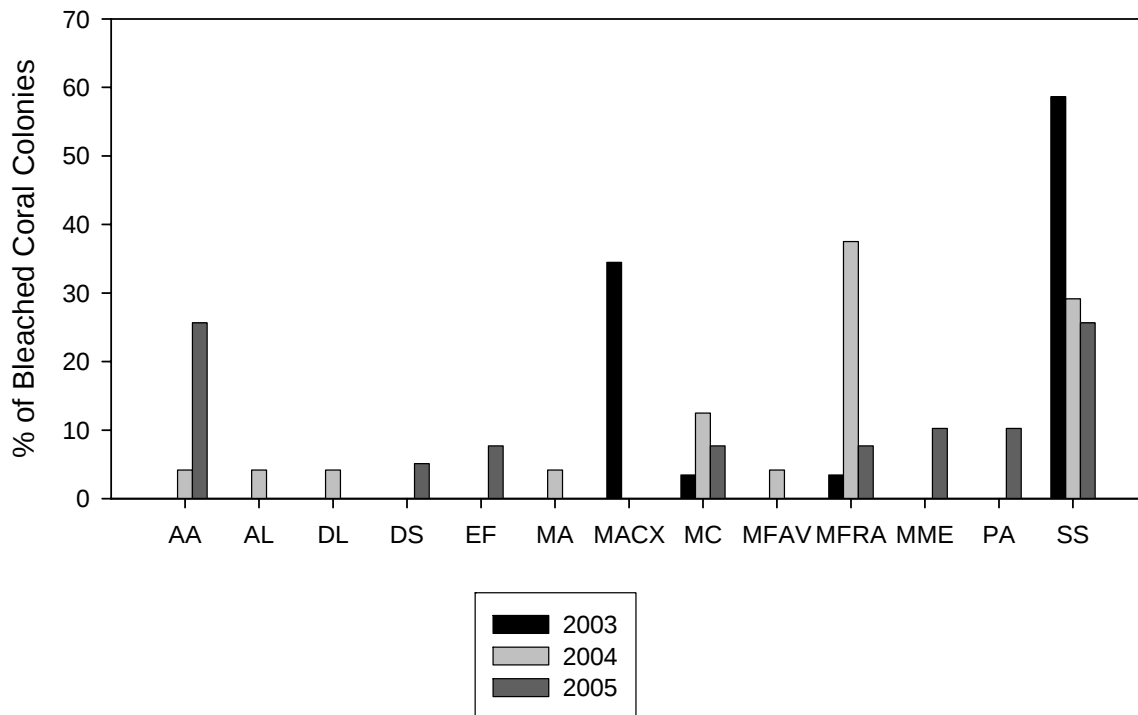
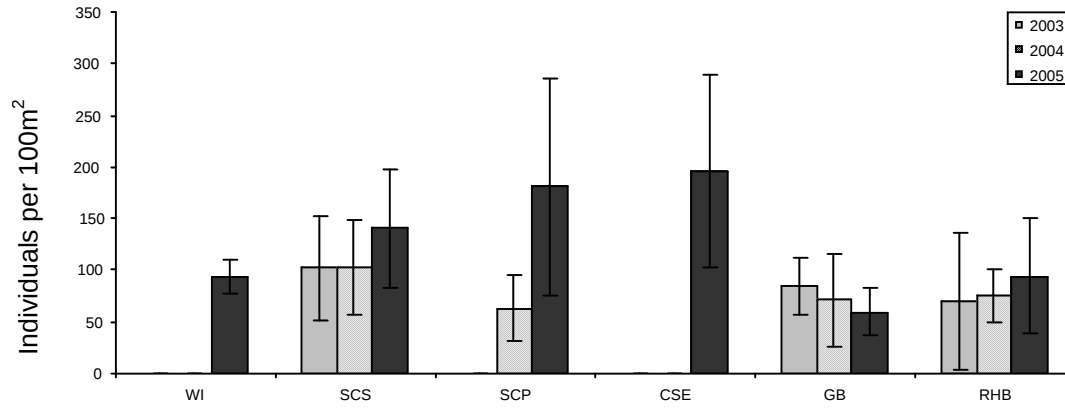
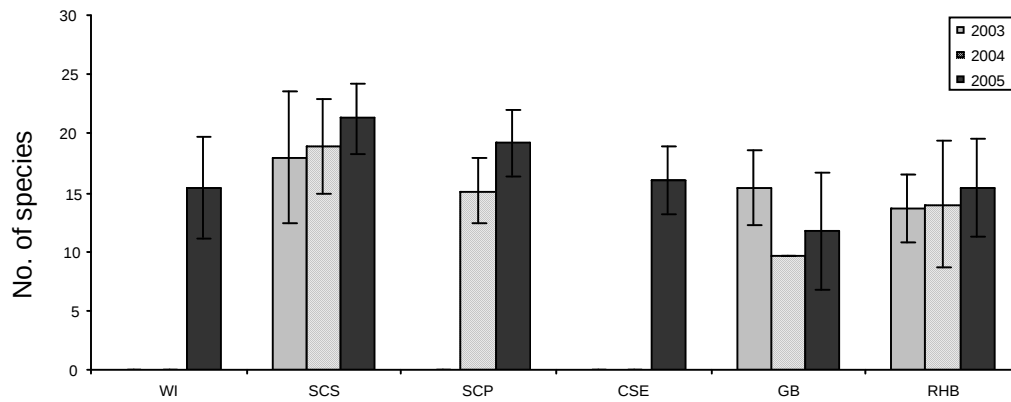


Fig. 19 Percentage of A. diseased colonies and B. bleached colonies of all coral species with disease and bleaching sampled at each St. Thomas monitoring site.
 AA *Agaricea agaricites*; AL *Agaricea lamarcki*; DL *Diploria labyrinthiformis*; DS *D. strigosa*; EF *Eusmilia fastigiata*; MA *Montastraea annularis*; MACX unidentified species belonging to the *M. annularis* complex; MC *M. cavernosa*; MFAV *M. faveolata*; MFRA *M. franksii*; MME *Meandrina meandrites*; PA *Porites astreoides*; SS *Siderastrea siderea*

A. Fish Abundance-St. Thomas



B. Community Species Richness-St. Thomas



C. Community Diversity (H') - St. Thomas

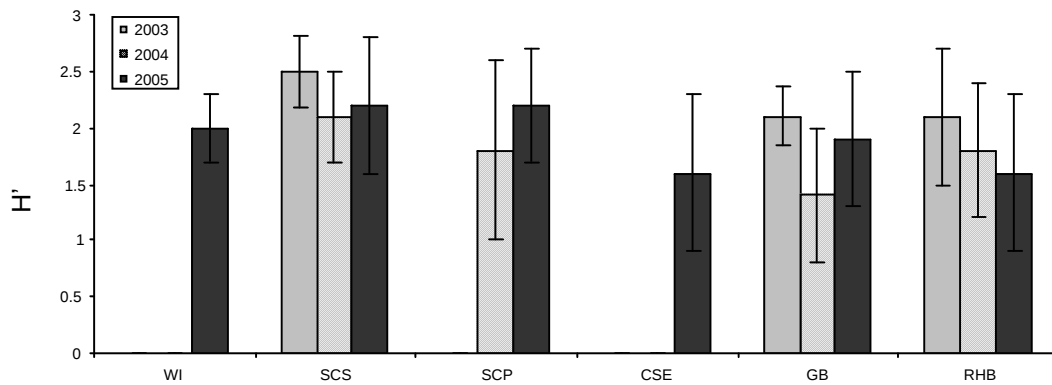


Fig. 20A,B,C Reef fish community structure across six St. Thomas reef sites years 2003-2005.
A. average abundance; B. average species richness;
C. average Shannon-Weaver diversity (H').

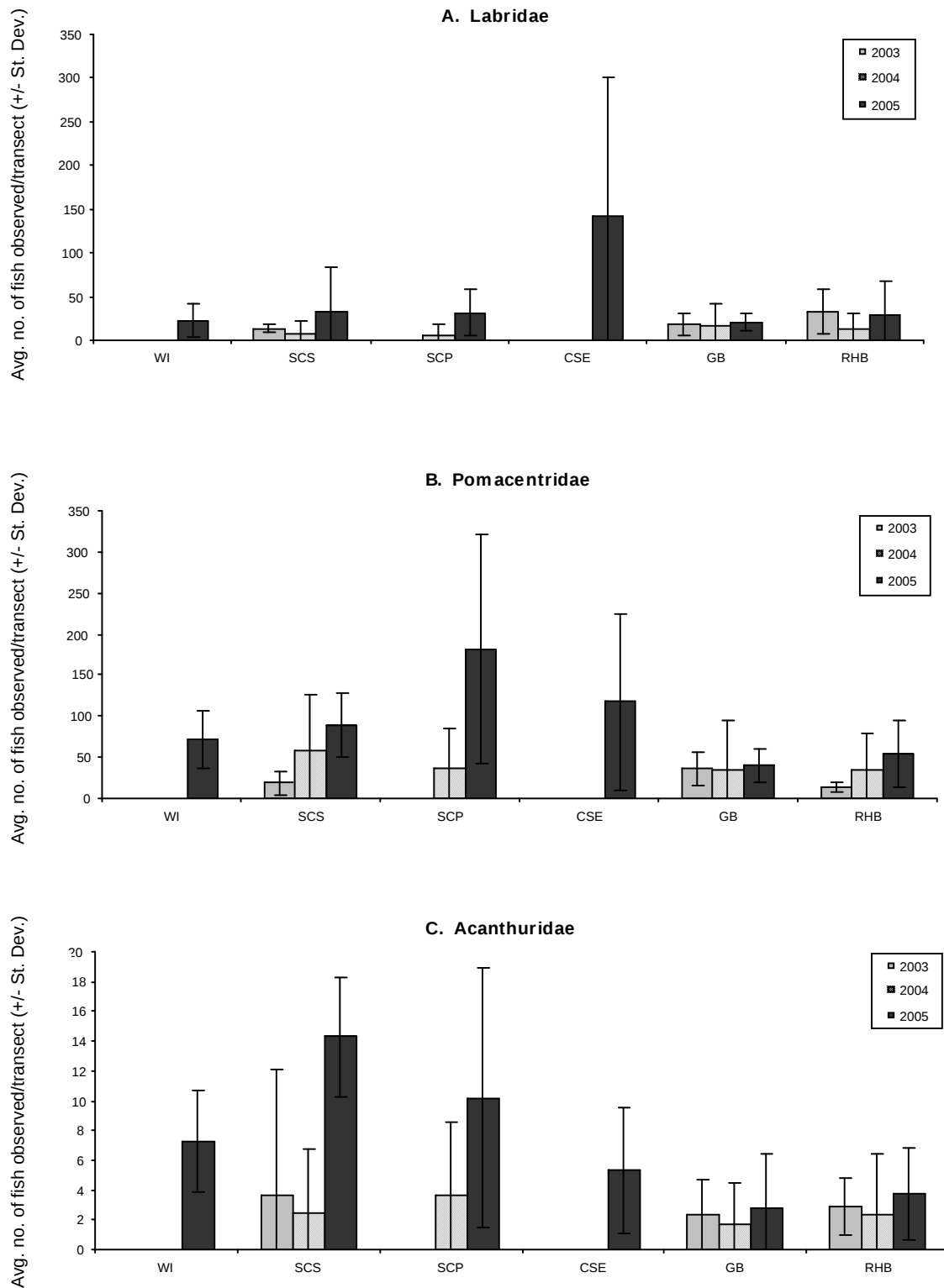
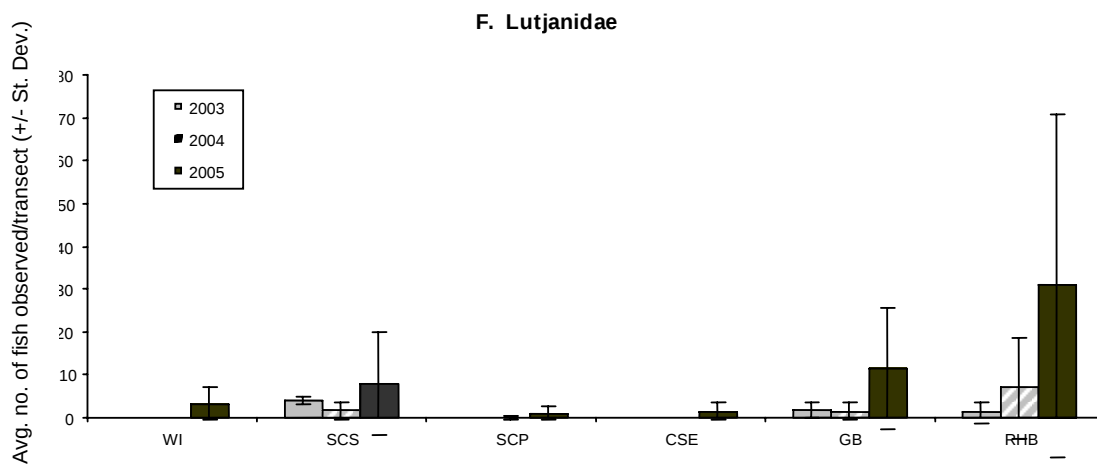
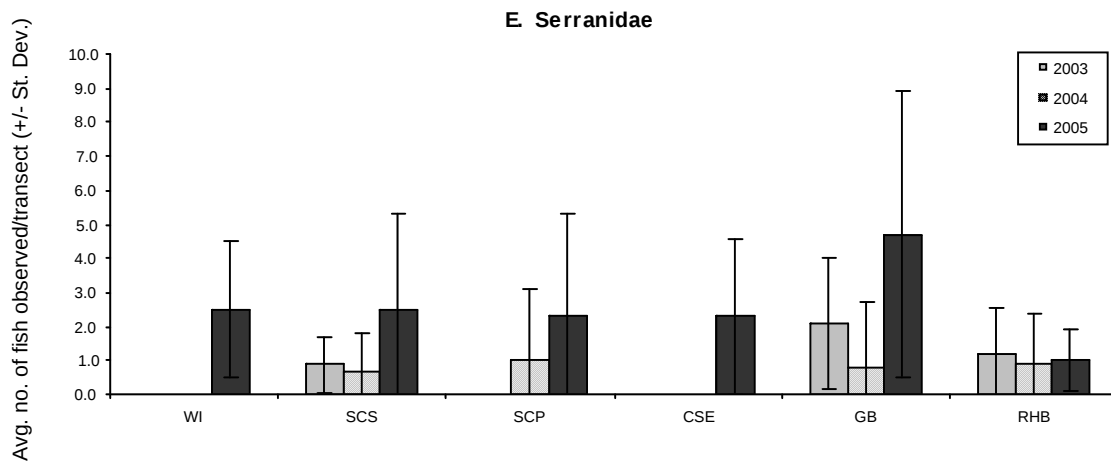
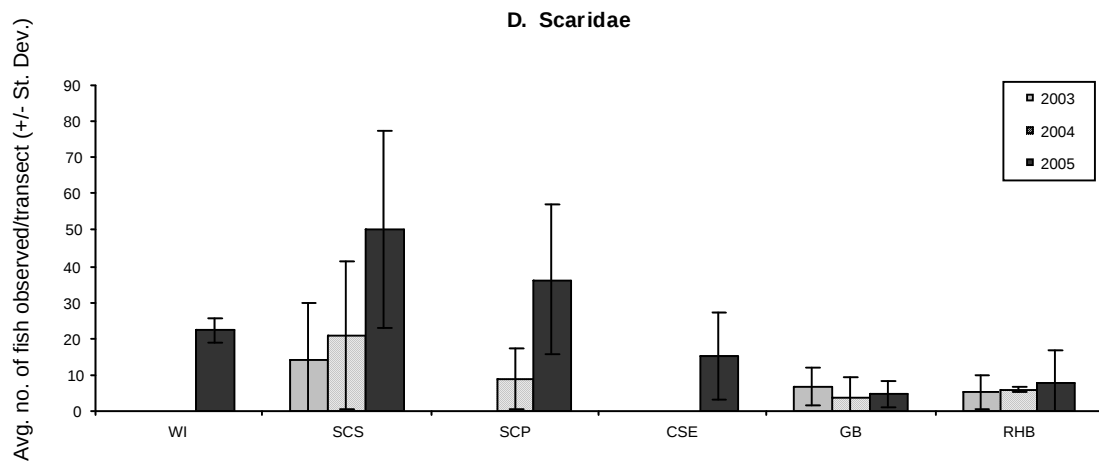


Fig. 21 A,B,C Fish abundance by family across six St. Thomas reef sites, 2003 - 2005.



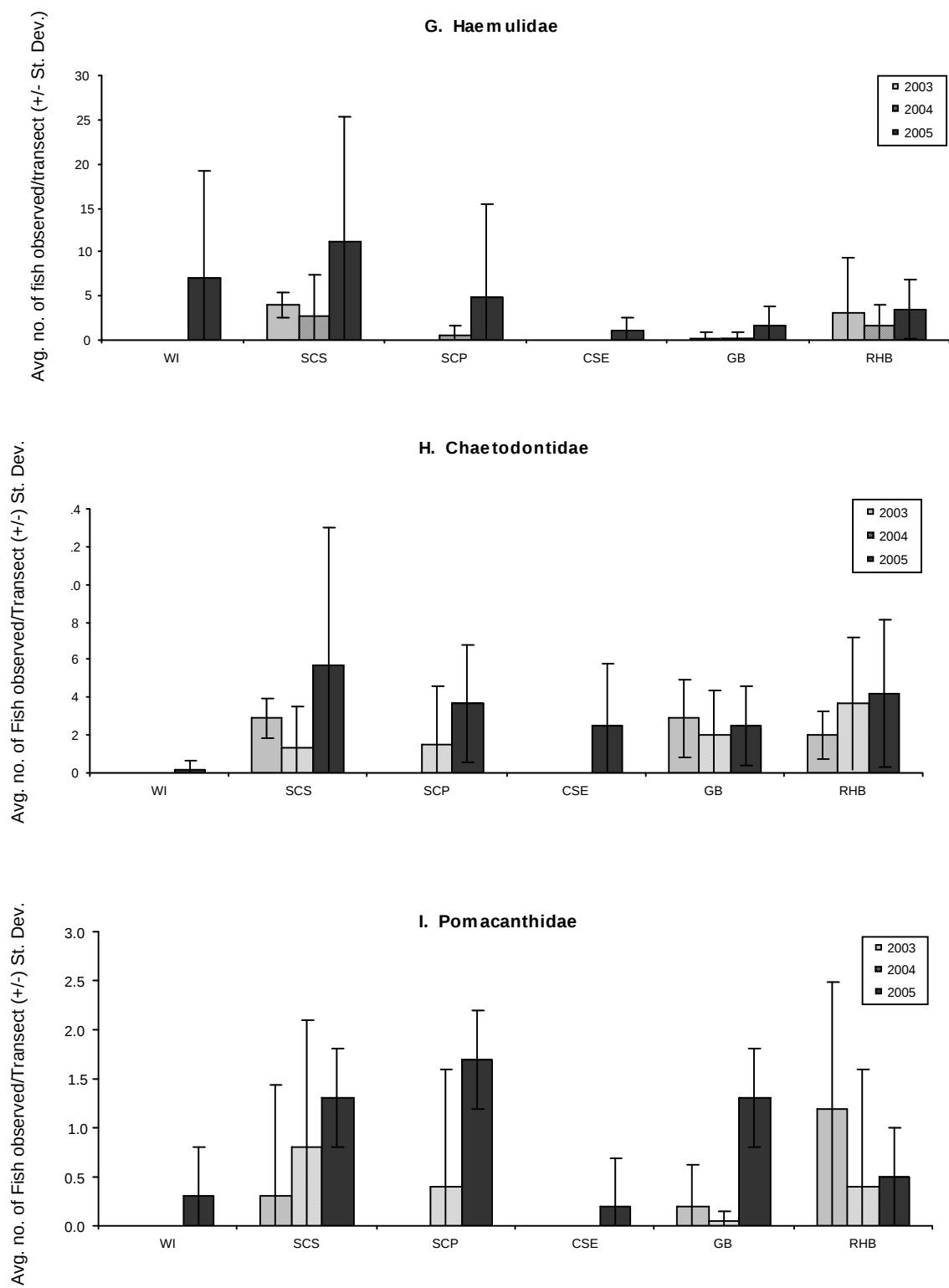


Fig. 21G, H, I Fish abundance by family across six St. Thomas reef sites, 2003 - 2005.

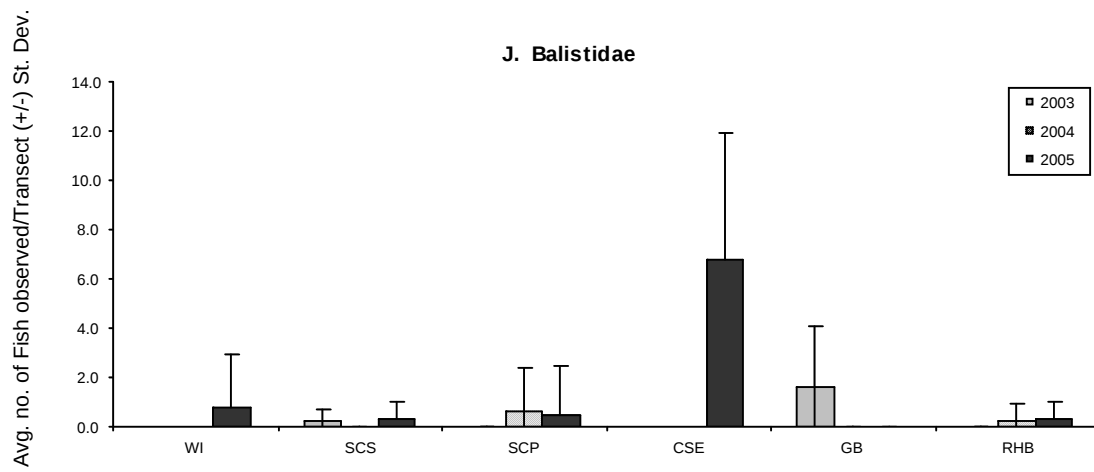


Fig. 21J Fish abundance by family across six St. Thomas reef sites, 2003 - 2005.

Appendix I. Significant differences between years 2001-2005 at St. Croix sites for A. dead coral covered with turf algae, B. macroalgae, C. sediment/sand and at St. Thomas sites for D. coral, E. dead coral covered with turf algae, F. macroalgae, and G. sponge. Years not connected by the same letter were significantly different. ND = no data (see text). --- = not significant in main effects test.

A.

	2001	2002	2003	2004	2005
Buck Is.	B	A	A	B	A
Cane Bay	B	B	B	A	B
Great Pond	ND	ND	B	A	AB
Jacks Bay	BC	B	BC	C	A
Long Reef	ABC	BC	A	C	AB
Mutton	ND	A	A	B	A
Salt River	AB	AB	A	B	A
Sprat Hole	A	BC	AB	C	A

B.

	2001	2002	2003	2004	2005
Buck Is.	A	CD	BC	AB	D
Cane Bay	B	B	B	A	B
Great Pond	---	---	---	---	---
Jacks Bay	B	B	AB	A	C
Long Reef	C	AB	BC	A	BC
Mutton	ND	B	AB	A	AB
Salt River	AB	B	B	A	B
Sprat Hole	C	A	BC	AB	C

C.

	2001	2002	2003	2004	2005
Buck Is.	AB	ABC	BC	A	C
Cane Bay	---	---	---	---	---
Great Pond	---	---	---	---	---
Jacks Bay	A	A	A	A	A
Long Reef	A	A	B	A	AB
Mutton	---	---	---	---	---
Salt River	---	---	---	---	---
Sprat Hole	---	---	---	---	---

Appendix I (continued). Significant differences for St. Thomas sites between years 2001-2005 for dead coral covered with D. coral, E. dead coral with turf algae, F. macroalgae, and G. Sponge. Years not connected by the same letter were significantly different. ND = no data (see text). --- = not significant in main effects test.

	2001	2002	2003	2004	2005
College	ND	ND	---	ND	---
Grammanik	ND	ND	AB	A	B
Red Hind	ND	ND	---	---	---
Seahorse College	ND	ND	---	---	---
South Capella	ND	ND	A	B	B
South Water	ND	ND	ND	ND	---

D.

E.

	2001	2002	2003	2004	2005
College	ND	ND	A	ND	B
Grammanik	ND	ND	A	B	B
Red Hind	ND	ND	---	---	---
Seahorse College	ND	ND	AB	A	B
South Capella	ND	ND	B	A	B
South Water	ND	ND	ND	ND	---

F.

	2001	2002	2003	2004	2005
College	ND	ND	A	ND	B
Grammanik	ND	ND	---	---	---
Red Hind	ND	ND	---	---	---
Seahorse College	ND	ND	AB	B	A
South Capella	ND	ND	B	AB	A
South Water	ND	ND	ND	ND	---

G.

	2001	2002	2003	2004	2005
College	ND	ND	---	---	---
Grammanik	ND	ND	---	---	---
Red Hind	ND	ND	C	B	A
Seahorse College	ND	ND	---	---	---
South Capella	ND	ND	B	A	AB
South Water	ND	ND	ND	ND	---

Appendix II: Summary of 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
Agaricia agaricites (AA)	0.77	0.61	0.00	0.38	0.32	0.18	0.50	2.20
Acropora cervicornis (AC)	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00
Agaricia fragilis (AF)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia grahamae (AG)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia lamarcki (AL)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acropora palmata (AP)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acropora prolifera (APR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia tenuifolia (AT)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia undata (AU)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Colpophyllia breviserialis (CB)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Colpophyllia natans (CN)	0.00	0.00	0.00	0.00	0.00	0.25	0.00	0.00
Coral juvenile (CORJU)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diploria clivosa (DC)	0.00	0.08	0.17	0.00	0.00	0.00	0.00	1.06
Dendrogyra cylindrus (DCY)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diploria labyrinthiformis (DL)	0.66	0.98	0.00	0.00	0.13	0.92	0.06	0.35
Diploria strigosa (DS)	0.16	1.14	0.26	0.00	0.26	0.00	0.39	0.53
Dichocoenia stokesi (DSO)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dichocoenia stelleris (DST)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Eusmilia fastigata (EF)	0.00	0.08	0.00	0.00	0.06	0.04	0.00	0.00
Favia fragum (FF)	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Leptoseris cucullata (LC)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Isophyllastrea rigida (IR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Isophyllia sinuosa (IS)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Montastrea annularis (MA)	4.75	6.96	0.00	0.00	0.00	0.00	0.45	18.59
Montastrea cavernosa (MC)	0.55	0.61	0.00	3.10	2.65	0.21	0.90	0.88
Montastrea faveolata (MFAV)	0.16	4.69	0.00	0.00	0.00	0.00	0.45	0.00
Montastrea franksii (MFRA)	5.41	0.00	0.00	0.00	0.13	22.20	0.50	0.00
Montastrea complex (MACX)	0.33	0.83	0.00	0.00	0.52	0.00	0.11	0.00
Mycetophyllia aliciae (MAL)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mussa angulosa (MAN)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manicina areolata (MAR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis decactis (MD)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis formosa (MFO)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis mirabilis (MM)	0.05	1.21	0.00	0.00	0.00	0.00	0.11	0.00
Madracis pharensis (MP)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia danaana (MDA)	0.05	0.00	0.00	0.00	0.00	0.11	0.00	0.00
Mycetophyllia ferox (MF)	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00
Millepora alcorni (MILA)	0.00	0.08	0.03	0.23	0.71	0.00	0.84	0.00
Millepora complanata (MILC)	0.00	0.00	0.37	0.00	0.00	0.00	0.00	0.00
Millepora squarrosa (MILS)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia lamarckiana (ML)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Meandrina meandrites (MME)	0.00	0.00	0.00	0.00	0.39	0.04	0.50	0.09
Oculina diffusa (OD)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites astreoides (PA)	1.26	2.80	4.32	0.60	0.58	0.88	0.95	2.56
Porites branneri (PB)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites divaricata (PD)	0.55	0.23	0.00	0.00	0.00	0.00	0.11	0.00
Porites furcata (PF)	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites porites (PP)	2.51	2.12	0.13	0.23	0.00	0.00	0.00	0.70
Solenastrea bourmoni (SB)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scolymia cubensis (SC)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Solenastrea hyades (SH)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scolymia lacera (SL)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stephanocoenia michelinii (SM)	0.16	0.00	0.00	0.00	0.00	0.00	0.06	0.00
Siderastrea radians (SR)	0.00	0.00	0.00	0.00	0.13	0.04	0.28	0.00
Siderastrea siderea (SS)	0.11	0.76	0.00	0.15	1.29	0.04	1.40	0.79
Tubastraea aurea (TA)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coral unknown sps. (CORAL)	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.00

St. Thomas

Mean Percent Cover for all Sites

Categories	Seahorse Cottage	South Capella	South Water	Grammanik Bank	Red Hind Bank	College Shoal East
Acropora cervicornis (AC)	0.00	0.00	0.00	0.00	0.00	0.00
Acropora palmata (AP)	0.00	0.00	0.00	0.00	0.00	0.00
Acropora prolifera (APR)	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia agaricites (AA)	0.00	0.00	0.00	0.51	0.00	0.00
Agaricia fragilis (AF)	0.00	0.00	0.00	0.00	0.00	0.94
Agaricia grahamae (AG)	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia humilis (AH)	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia lamarcki (AL)	0.00	0.00	0.00	0.00	1.48	0.00
Agaricia tenuifolia (AT)	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia undata (AU)	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia species (AGSP)	0.00	0.00	0.00	0.00	1.98	0.00
Colpophyllia natans (CN)	0.00	0.00	0.00	7.12	0.00	0.00
Dendrogyra cylindrus (DCY)	0.00	0.00	0.00	0.00	0.00	0.00
Diploria clivosa (DC)	0.00	0.00	0.00	0.00	0.00	0.00
Diploria labyrinthiformis (DL)	0.00	0.00	0.00	0.00	0.00	0.00
Diploria strigosa (DS)	0.00	0.00	0.00	0.00	0.00	0.00
Dichocoenia stokesii (DSO)	0.00	0.00	0.00	0.00	0.00	0.00
Eusmilia fastigiata (EF)	0.00	0.00	0.00	0.00	0.00	0.00
Favia fragum (FF)	0.00	0.00	0.00	0.00	0.00	0.00
Isophyllia sinuosa (IS)	0.00	0.00	0.00	0.00	0.00	0.00
Isopyhyllastrea rigida (IR)	0.00	0.00	0.00	0.00	0.00	0.00
Leptoseris cucullata (LC)	0.00	0.00	0.00	0.00	0.00	0.00
Manicina areolata (MAR)	0.00	0.46	0.00	0.00	0.00	0.00
Madracis decactis (MD)	0.40	0.00	0.84	0.00	0.00	0.00
Madracis formosa (MAFO)	0.00	0.00	0.00	0.00	0.00	0.00
Madracis mirabilis (MM)	0.00	0.00	0.00	0.00	0.00	0.00
Meandrina meandrites (MME)	0.00	0.00	0.00	0.00	0.00	0.00
Montastraea annularis (MA)	0.00	0.00	0.00	0.00	0.00	0.00
M. annularis complex (MACX)	0.00	0.00	0.42	0.00	0.00	0.00
Montastraea cavernosa (MC)	1.98	0.00	0.00	0.00	0.00	0.00
Montastraea faveolata (MFAV)	5.93	0.00	0.00	0.00	0.00	0.00
Montastraea franksi (MFRA)	5.93	14.25	0.42	35.58	23.22	27.12
Montastraea species (MSPP)	0.00	0.00	0.00	0.00	0.00	0.00
Mussa angulosa (MAN)	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia aliciae (MAL)	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia danaana (MDA)	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia lamarckiana (ML)	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia ferox (MF)	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia species (MYSP)	0.00	0.00	0.00	0.00	0.00	0.00
Oculina diffusa (OD)	0.00	0.00	0.00	0.00	0.00	0.00
Porites astreoides (PA)	2.37	3.68	0.00	2.03	0.99	2.81
Porites branneri (PB)	0.00	0.00	0.00	0.00	0.00	0.00
Porites divaricata (PD)	0.40	0.00	0.00	0.00	0.00	0.00
Porites furcata (PF)	0.40	0.00	0.00	0.00	0.00	0.00
Porites porites (PP)	0.40	0.00	0.00	0.00	0.00	1.40
Porites branching species (PBSP)	0.00	0.00	0.00	0.00	0.00	0.00
Scolymia cubensis (SC)	0.00	0.00	0.00	0.00	0.00	0.00
Scolymia lacera (SL)	0.00	0.00	0.00	0.00	0.00	0.00
Scolymia species (SCSP)	0.00	0.00	0.00	0.00	0.00	0.00
Siderastrea radians (SR)	0.00	0.00	0.00	0.00	0.00	0.00
Siderastrea siderea (SS)	0.40	1.38	0.42	0.00	0.00	0.00
Siderastrea species (SSPP)	0.00	0.00	0.00	0.00	0.00	0.00
Solenastrea bourmoni (SB)	0.00	0.00	0.00	0.00	0.00	0.00
Solenastrea hyades (SH)	0.00	0.00	0.00	0.00	0.00	0.00
Stephanocoenia michelinii (SM)	0.00	0.00	0.00	0.00	0.00	0.00
Tubastraea aurea (TA)	0.00	0.00	0.00	0.00	0.00	0.00
Millepora albicornis (MILA)	0.00	0.00	0.00	0.00	0.00	0.00
Millepora complanata (MILC)	0.00	0.00	0.00	0.00	0.00	0.00
Millepora squarrosa (MILS)	0.00	0.00	0.00	0.00	0.00	0.00
Coral juvenile (CORJU)	0.00	0.00	0.00	0.00	0.00	0.00
Hard Coral, unknown spp. (CORAL)	0.40	0.00	0.00	1.02	0.99	0.00

Percent Cover by Transect

Coral Species	T1	T2	T3	T4	T5	T 6	Mean % Cover
Agaricia agaricites (AA)	0.00	2.05	0.95	1.46	0.00	0.00	0.74
Acropora cervicornis (AC)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia fragilis (AF)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia grahamae (AG)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia lamarcki (AL)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acropora palmata (AP)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acropora prolifera (APR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia tenuifolia (AT)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia undata (AU)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Colpophyllia breviserialis (CB)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Colpophyllia natans (CN)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coral juvenile (CORJU)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diploria clivosa (DC)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dendrogyra cylindrus (DCY)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diploria labyrinthiformis (DL)	0.00	0.00	0.32	0.00	3.25	0.00	0.59
Diploria strigosa (DS)	0.00	0.34	0.63	0.00	0.00	0.00	0.16
Dichocoenia stokesi (DSO)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dichocoenia stellaris (DST)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Eusmilia fastigata (EF)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Favia fragum (FF)	0.00	0.00	0.32	0.00	0.00	0.00	0.05
Leptoseris cucullata (LC)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Isophyllastrea rigida (IR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Isophyllia sinuosa (IS)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Montastrea annularis (MA)	3.40	2.39	3.79	10.20	5.92	1.22	4.49
Montastrea cavernosa (MC)	0.00	0.00	0.00	2.92	0.00	0.00	0.49
Montastrea faveolata (MFAV)	0.00	0.00	0.00	0.87	0.00	0.00	0.15
Montastrea franksii (MFRA)	4.42	12.29	1.26	4.08	5.62	5.31	5.50
Montastrea complex (MACX)	0.00	0.00	0.00	0.00	0.89	1.22	0.35
Mycetophyllia aliciae (MAL)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mussa angulosa (MAN)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manicina areolata (MAR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis decactis (MD)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis formosa (MFO)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis mirabilis (MM)	0.34	0.00	0.00	0.00	0.00	0.00	0.06
Madracis pharensis (MP)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia danaana (MDA)	0.00	0.00	0.00	0.00	0.00	0.41	0.07
Mycetophyllia ferox (MF)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Millipora alaicornis (MILA)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Millipora complanata (MILC)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Millipora squarrosa (MILS)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia lamarckiana (ML)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Meandrina meandrites (MME)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Oculina diffusa (OD)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites astreoides (PA)	0.00	0.00	1.26	1.46	1.18	4.08	1.33
Porites branneri (PB)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites divaricata (PD)	0.00	2.05	0.95	0.29	0.00	0.00	0.55
Porites furcata (PF)	0.00	0.00	0.00	0.29	0.00	0.00	0.05
Porites porites (PP)	7.48	0.00	2.21	0.00	3.55	2.04	2.55
Solenastrea bournoni (SB)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scolymia cubensis (SC)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Solenastrea hyades (SH)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scolymia lacera (SL)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stephanocoenia michelinii (SM)	0.34	0.00	0.00	0.58	0.00	0.00	0.15
Siderastrea radians (SR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Siderastrea siderea (SS)	0.00	0.00	0.00	0.58	0.00	0.00	0.10
Tubastraea aurea (TA)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coral unknown sps. (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
Agaricia agaricites (AA)	0.44	0.48	0.48	0.44	0.50	0.40	0.46
Acropora cervicornis (AC)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia fragilis (AF)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia grahamae (AG)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia lamarcki (AL)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acropora palmata (AP)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acropora prolifera (APR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia tenuifolia (AT)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia undata (AU)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Colpophyllia breviserialis (CB)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Colpophyllia natans (CN)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coral juvenile (CORJU)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diploria clivosa (DC)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dendrogyra cylindrus (DCY)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diploria labyrinthiformis (DL)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diploria strigosa (DS)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dichocoenia stokesi (DSO)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dichocoenia stellaris (DST)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Eusmilia fastigata (EF)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Favia fragum (FF)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Leptoseris cucullata (LC)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Isophyllastrea rigida (IR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Isophyllia sinuosa (IS)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Montastrea annularis (MA)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Montastrea cavernosa (MC)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Montastrea faveolata (MFAV)	10.13	11.06	11.00	10.04	11.50	9.27	10.50
Montastrea franksii (MFRA)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Montastrea complex (MACX)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia aliciae (MAL)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mussa angulosa (MAN)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manicina areolata (MAR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis decactis (MD)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis formosa (MFO)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis mirabilis (MM)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis pharensis (MP)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia danaana (MDA)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia ferox (MF)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Millipora alvicornis (MILA)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Millipora complanata (MILC)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Millipora squarrosa (MILS)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia lamarckiana (ML)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Meandrina meandrites (MME)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Oculina diffusa (OD)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites astreoides (PA)	3.52	3.85	3.83	3.49	4.00	3.23	3.65
Porites branneri (PB)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites divaricata (PD)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites furcata (PF)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites porites (PP)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Solenastrea bourmoni (SB)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scolymia cubensis (SC)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Solenastrea hyades (SH)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scolymia lacera (SL)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stephanocoenia michelinii (SM)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Siderastrea radians (SR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Siderastrea siderea (SS)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tubastraea aurea (TA)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coral unknown sps. (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
Agaricia agaricites (AA)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acropora cervicornis (AC)	0.00	0.00	0.00	0.00	0.40	0.00	0.07
Agaricia fragilis (AF)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia grahamae (AG)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia lamarcki (AL)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acropora palmata (AP)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acropora prolifera (APR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia tenuifolia (AT)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia undata (AU)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Colpophyllia breviserialis (CB)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Colpophyllia natans (CN)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coral juvenile (CORJU)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diploria clivosa (DC)	0.00	0.00	0.00	3.61	0.40	0.00	0.67
Dendrogyra cylindrus (DCY)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diploria labyrinthiformis (DL)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diploria strigosa (DS)	0.34	0.00	0.00	1.61	6.40	0.00	1.39
Dichocoenia stokesi (DSO)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dichocoenia stellaris (DST)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Eusmilia fastigata (EF)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Favia fragum (FF)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Leptoseris cucullata (LC)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Isophyllastrea rigida (IR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Isophyllia sinuosa (IS)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Montastrea annularis (MA)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Montastrea cavernosa (MC)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Montastrea faveolata (MFAV)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Montastrea franksii (MFRA)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Montastrea complex (MACX)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia aliciae (MAL)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mussa angulosa (MAN)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manicina areolata (MAR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis decactis (MD)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis formosa (MFO)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis mirabilis (MM)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis pharensis (MP)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia danaana (MDA)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia ferox (MF)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Millipora alaicornis (MILA)	0.00	0.00	0.40	0.00	0.00	0.00	0.07
Millipora complanata (MILC)	5.76	4.41	6.00	2.41	2.80	3.68	4.18
Millipora squarrosa (MILS)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia lamarckiana (ML)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Meandrina meandrites (MME)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Oculina diffusa (OD)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites astreoides (PA)	1.69	3.39	8.80	3.21	6.80	2.11	4.33
Porites branneri (PB)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites divaricata (PD)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites furcata (PF)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites porites (PP)	0.34	0.00	0.40	0.00	0.00	0.00	0.12
Solenastrea bournoni (SB)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scolymia cubensis (SC)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Solenastrea hyades (SH)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scolymia lacera (SL)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stephanocoenia michelinii (SM)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Siderastrea radians (SR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Siderastrea siderea (SS)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tubastraea aurea (TA)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coral unknown sps. (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
Agaricia agaricites (AA)	0.92	0.36	0.00	0.00	0.00	0.92	0.37
Acropora cervicornis (AC)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia fragilis (AF)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia grahamae (AG)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia lamarcki (AL)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acropora palmata (AP)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acropora prolifera (APR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia tenuifolia (AT)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia undata (AU)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Colpophyllia breviserialis (CB)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Colpophyllia natans (CN)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coral juvenile (CORJU)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diploria clivosa (DC)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dendrogyra cylindrus (DCY)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diploria labyrinthiformis (DL)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diploria strigosa (DS)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dichocoenia stokesi (DSO)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dichocoenia stellaris (DST)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Eusmilia fastigata (EF)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Favia fragum (FF)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Leptoseris cucullata (LC)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Isophyllastrea rigida (IR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Isophyllia sinuosa (IS)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Montastrea annularis (MA)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Montastrea cavernosa (MC)	8.72	0.72	0.00	0.00	0.52	8.72	3.11
Montastrea faveolata (MFAV)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Montastrea franksii (MFRA)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Montastrea complex (MACX)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia aliciae (MAL)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mussa angulosa (MAN)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manicina areolata (MAR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis decactis (MD)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis formosa (MFO)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis mirabilis (MM)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis pharensis (MP)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia danaana (MDA)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia ferox (MF)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Millipora alvicornis (MILA)	0.00	0.00	0.88	0.00	0.52	0.00	0.23
Millipora complanata (MILC)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Millipora squarrosa (MILS)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia lamarckiana (ML)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Meandrina meandrites (MME)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Oculina diffusa (OD)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites astreoides (PA)	1.38	0.00	0.44	0.00	0.52	1.38	0.62
Porites branneri (PB)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites divaricata (PD)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites furcata (PF)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites porites (PP)	0.46	0.00	0.00	0.00	0.52	0.46	0.24
Solenastrea bourmoni (SB)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scolymia cubensis (SC)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Solenastrea hyades (SH)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scolymia lacera (SL)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stephanocoenia michelinii (SM)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Siderastrea radians (SR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Siderastrea siderea (SS)	0.00	0.36	0.44	0.00	0.00	0.00	0.13
Tubastraea aurea (TA)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coral unknown sps. (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
Agaricia agaricites (AA)	0.00	0.40	0.77	0.36	0.00	0.53	0.34
Acropora cervicornis (AC)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia fragilis (AF)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia grahamae (AG)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia lamarcki (AL)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acropora palmata (AP)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acropora prolifera (APR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia tenuifolia (AT)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia undata (AU)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Colpophyllia breviserialis (CB)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Colpophyllia natans (CN)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coral juvenile (CORJU)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diploria clivosa (DC)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dendrogyra cylindrus (DCY)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diploria labyrinthiformis (DL)	0.00	0.40	0.00	0.36	0.00	0.00	0.13
Diploria strigosa (DS)	0.32	0.40	0.39	0.36	0.00	0.00	0.24
Dichocoenia stokesi (DSO)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dichocoenia stellaris (DST)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Eusmilia fastigata (EF)	0.00	0.00	0.00	0.00	0.00	0.53	0.09
Favia fragum (FF)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Leptoseris cucullata (LC)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Isophyllastrea rigida (IR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Isophyllia sinuosa (IS)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Montastrea annularis (MA)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Montastrea cavernosa (MC)	2.26	2.41	4.63	1.43	1.92	3.70	2.73
Montastrea faveolata (MFAV)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Montastrea franksii (MFRA)	0.32	0.00	0.00	0.36	0.00	0.00	0.11
Montastrea complex (MACX)	0.00	0.00	0.00	1.79	0.77	0.53	0.51
Mycetophyllia aliciae (MAL)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mussa angulosa (MAN)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manicina areolata (MAR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis decactis (MD)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis formosa (MFO)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis mirabilis (MM)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis pharensis (MP)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia danaana (MDA)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia ferox (MF)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Millipora alvicornis (MILA)	0.32	1.20	0.00	0.71	0.77	1.59	0.77
Millipora complanata (MILC)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Millipora squarrosa (MILS)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia lamarckiana (ML)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Meandrina meandrites (MME)	0.97	0.80	0.00	0.00	0.00	0.53	0.38
Oculina diffusa (OD)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites astreoides (PA)	1.61	0.40	0.39	0.71	0.00	0.00	0.52
Porites branneri (PB)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites divaricata (PD)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites furcata (PF)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites porites (PP)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Solenastrea bourmoni (SB)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scolymia cubensis (SC)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Solenastrea hyades (SH)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scolymia lacera (SL)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stephanocoenia michelinii (SM)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Siderastrea radians (SR)	0.00	0.00	0.00	0.36	0.00	0.53	0.15
Siderastrea siderea (SS)	2.58	0.00	4.25	0.36	0.00	0.00	1.20
Tubastraea aurea (TA)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coral unknown sps. (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
Agaricia agaricites (AA)	0.00	0.00	0.00	0.00	0.00	1.12	0.19
Acropora cervicornis (AC)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia fragilis (AF)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia grahamae (AG)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia lamarcki (AL)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acropora palmata (AP)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acropora prolifera (APR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia tenuifolia (AT)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia undata (AU)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Colpophyllia breviserialis (CB)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Colpophyllia natans (CN)	0.00	0.00	1.74	0.00	0.00	0.00	0.29
Coral juvenile (CORJU)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diploria clivosa (DC)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dendrogyra cylindrus (DCY)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diploria labyrinthiformis (DL)	0.00	0.00	0.00	3.29	0.00	1.35	0.77
Diploria strigosa (DS)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dichocoenia stokesi (DSO)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dichocoenia stellaris (DST)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Eusmilia fastigata (EF)	0.00	0.19	0.00	0.00	0.00	0.00	0.03
Favia fragum (FF)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Leptoseris cucullata (LC)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Isophyllastrea rigida (IR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Isophyllia sinuosa (IS)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Montastrea annularis (MA)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Montastrea cavernosa (MC)	0.00	0.00	0.75	0.00	0.00	0.67	0.24
Montastrea faveolata (MFAV)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Montastrea franksii (MFRA)	24.90	21.08	12.94	29.16	18.87	22.20	21.52
Montastrea complex (MACX)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia aliciae (MAL)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mussa angulosa (MAN)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manicina areolata (MAR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis decactis (MD)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis formosa (MFO)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis mirabilis (MM)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis pharensis (MP)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia danaana (MDA)	0.00	0.00	0.00	0.49	0.00	0.00	0.08
Mycetophyllia ferox (MF)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Millipora alaicornis (MILA)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Millipora complanata (MILC)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Millipora squarrosa (MILS)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia lamarckiana (ML)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Meandrina meandrites (MME)	0.00	0.00	0.25	0.00	0.00	0.00	0.04
Oculina diffusa (OD)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites astreoides (PA)	0.41	1.16	1.00	0.82	1.35	0.67	0.90
Porites branneri (PB)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites divaricata (PD)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites furcata (PF)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites porites (PP)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Solenastrea bourmoni (SB)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scolymia cubensis (SC)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Solenastrea hyades (SH)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scolymia lacera (SL)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stephanocoenia michelinii (SM)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Siderastrea radians (SR)	0.00	0.00	0.00	0.16	0.00	0.00	0.03
Siderastrea siderea (SS)	0.00	0.00	0.25	0.00	0.00	0.00	0.04
Tubastraea aurea (TA)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coral unknown sps. (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
Agaricia agaricites (AA)	1.53	0.30	0.68	0.00	0.00	0.35	0.48
Acropora cervicornis (AC)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia fragilis (AF)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia grahamae (AG)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia lamarcki (AL)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acropora palmata (AP)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acropora prolifera (APR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia tenuifolia (AT)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia undata (AU)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Colpophyllia breviserialis (CB)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Colpophyllia natans (CN)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coral juvenile (CORJU)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diploria clivosa (DC)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dendrogyra cylindrus (DCY)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diploria labyrinthiformis (DL)	0.00	0.00	0.00	0.00	0.33	0.00	0.06
Diploria strigosa (DS)	0.92	0.60	0.00	0.40	0.00	0.35	0.38
Dichocoenia stokesi (DSO)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dichocoenia stellaris (DST)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Eusmilia fastigata (EF)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Favia fragum (FF)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Leptoseris cucullata (LC)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Isophyllastrea rigida (IR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Isophyllia sinuosa (IS)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Montastrea annularis (MA)	0.61	0.60	0.00	0.00	1.33	0.00	0.42
Montastrea cavernosa (MC)	0.31	0.60	0.34	1.21	2.67	0.35	0.91
Montastrea faveolata (MFAV)	0.00	0.00	0.00	2.02	1.00	0.00	0.50
Montastrea franksii (MFRA)	0.00	0.30	2.70	0.00	0.00	0.00	0.50
Montastrea complex (MACX)	0.00	0.60	0.00	0.00	0.00	0.00	0.10
Mycetophyllia aliciae (MAL)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mussa angulosa (MAN)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manicina areolata (MAR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis decactis (MD)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis formosa (MFO)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis mirabilis (MM)	0.61	0.00	0.00	0.00	0.00	0.00	0.10
Madracis pharensis (MP)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia danaana (MDA)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia ferox (MF)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Millipora alcornis (MILA)	0.31	0.00	1.01	1.62	1.67	0.70	0.88
Millipora complanata (MILC)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Millipora squarrosa (MILS)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia lamarckiana (ML)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Meandrina meandrites (MME)	0.61	0.91	1.35	0.00	0.00	0.00	0.48
Oculina diffusa (OD)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites astreoides (PA)	1.53	1.21	1.01	0.00	1.33	0.35	0.91
Porites branneri (PB)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites divaricata (PD)	0.61	0.00	0.00	0.00	0.00	0.00	0.10
Porites furcata (PF)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites porites (PP)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Solenastrea bourmoni (SB)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scolymia cubensis (SC)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Solenastrea hyades (SH)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scolymia lacera (SL)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stephanocoenia michelinii (SM)	0.00	0.00	0.00	0.40	0.00	0.00	0.07
Siderastrea radians (SR)	0.92	0.00	0.68	0.00	0.00	0.00	0.27
Siderastrea siderea (SS)	0.92	3.93	0.68	0.00	1.00	1.40	1.32
Tubastraea aurea (TA)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coral unknown sps. (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
Agaricia agaricites (AA)	0.82	3.85	2.41	2.36	ND	1.81	2.25
Acropora cervicornis (AC)	0.00	0.00	0.00	0.00	ND	0.00	0.00
Agaricia fragilis (AF)	0.00	0.00	0.00	0.00	ND	0.00	0.00
Agaricia grahamae (AG)	0.00	0.00	0.00	0.00	ND	0.00	0.00
Agaricia lamarcki (AL)	0.00	0.00	0.00	0.00	ND	0.00	0.00
Acropora palmata (AP)	0.00	0.00	0.00	0.00	ND	0.00	0.00
Acropora prolifera (APR)	0.00	0.00	0.00	0.00	ND	0.00	0.00
Agaricia tenuifolia (AT)	0.00	0.00	0.00	0.00	ND	0.00	0.00
Agaricia undata (AU)	0.00	0.00	0.00	0.00	ND	0.00	0.00
Colpophyllia breviserialis (CB)	0.00	0.00	0.00	0.00	ND	0.00	0.00
Colpophyllia natans (CN)	0.00	0.00	0.00	0.00	ND	0.00	0.00
Coral juvenile (CORJU)	0.00	0.00	0.00	0.00	ND	0.00	0.00
Diploria clivosa (DC)	0.00	0.00	3.21	1.89	ND	0.00	1.02
Dendrogyra cylindrus (DCY)	0.00	0.00	0.00	0.00	ND	0.00	0.00
Diploria labyrinthiformis (DL)	1.63	0.00	0.00	0.00	ND	0.00	0.33
Diploria strigosa (DS)	0.00	0.00	0.00	0.00	ND	2.71	0.54
Dichocoenia stokesi (DSO)	0.00	0.00	0.00	0.00	ND	0.00	0.00
Dichocoenia stellaris (DST)	0.00	0.00	0.00	0.00	ND	0.00	0.00
Eusmilia fastigata (EF)	0.00	0.00	0.00	0.00	ND	0.00	0.00
Favia fragum (FF)	0.00	0.00	0.00	0.00	ND	0.00	0.00
Leptoseris cucullata (LC)	0.00	0.00	0.00	0.00	ND	0.00	0.00
Isophyllastrea rigida (IR)	0.00	0.00	0.00	0.00	ND	0.00	0.00
Isophyllia sinuosa (IS)	0.00	0.00	0.00	0.00	ND	0.00	0.00
Montastrea annularis (MA)	11.02	11.06	9.64	43.40	ND	20.36	19.09
Montastrea cavernosa (MC)	2.45	0.00	1.61	0.00	ND	0.00	0.81
Montastrea faveolata (MFAV)	0.00	0.00	0.00	0.00	ND	0.00	0.00
Montastrea franksii (MFRA)	0.00	0.00	0.00	0.00	ND	0.00	0.00
Montastrea complex (MACX)	0.00	0.00	0.00	0.00	ND	0.00	0.00
Mycetophyllia aliciae (MAL)	0.00	0.00	0.00	0.00	ND	0.00	0.00
Mussa angulosa (MAN)	0.00	0.00	0.00	0.00	ND	0.00	0.00
Manicina areolata (MAR)	0.00	0.00	0.00	0.00	ND	0.00	0.00
Madracis decactis (MD)	0.00	0.00	0.00	0.00	ND	0.00	0.00
Madracis formosa (MFO)	0.00	0.00	0.00	0.00	ND	0.00	0.00
Madracis mirabilis (MM)	0.00	0.00	0.00	0.00	ND	0.00	0.00
Madracis pharensis (MP)	0.00	0.00	0.00	0.00	ND	0.00	0.00
Mycetophyllia danaana (MDA)	0.00	0.00	0.00	0.00	ND	0.00	0.00
Mycetophyllia ferox (MF)	0.00	0.00	0.00	0.00	ND	0.00	0.00
Millipora alcornis (MILA)	0.00	0.00	0.00	0.00	ND	0.00	0.00
Millipora complanata (MILC)	0.00	0.00	0.00	0.00	ND	0.00	0.00
Millipora squarrosa (MILS)	0.00	0.00	0.00	0.00	ND	0.00	0.00
Mycetophyllia lamarckiana (ML)	0.00	0.00	0.00	0.00	ND	0.00	0.00
Meandrina meandrites (MME)	0.00	0.00	0.00	0.47	ND	0.00	0.09
Oculina diffusa (OD)	0.00	0.00	0.00	0.00	ND	0.00	0.00
Porites astreoides (PA)	4.49	2.88	1.61	0.94	ND	2.71	2.53
Porites branneri (PB)	0.00	0.00	0.00	0.00	ND	0.00	0.00
Porites divaricata (PD)	0.00	0.00	0.00	0.00	ND	0.00	0.00
Porites furcata (PF)	0.00	0.00	0.00	0.00	ND	0.00	0.00
Porites porites (PP)	2.86	0.00	0.00	0.00	ND	0.45	0.66
Solenastrea bourmoni (SB)	0.00	0.00	0.00	0.00	ND	0.00	0.00
Scolymia cubensis (SC)	0.00	0.00	0.00	0.00	ND	0.00	0.00
Solenastrea hyades (SH)	0.00	0.00	0.00	0.00	ND	0.00	0.00
Scolymia lacera (SL)	0.00	0.00	0.00	0.00	ND	0.00	0.00
Stephanocoenia michelinii (SM)	0.00	0.00	0.00	0.00	ND	0.00	0.00
Siderastrea radians (SR)	0.00	0.00	0.00	0.00	ND	0.00	0.00
Siderastrea siderea (SS)	2.04	0.00	0.80	0.94	ND	0.00	0.76
Tubastraea aurea (TA)	0.00	0.00	0.00	0.00	ND	0.00	0.00
Coral unknown sps. (CORAL)	0.00	0.00	0.00	0.00	ND	0.00	0.00

Percent Cover by Transect

Coral Species	T1	T2	T3	T4	T5	T6
Acropora cervicornis (AC) - coral	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
Acropora prolifera (APR) - coral	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
Agaricia fragilis (AF) - coral	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
Agaricia humilis (AH) - coral	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
Agaricia tenuifolia (AT) - coral	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
Agaricia species (AGSP) - coral	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
Dendrogyra cylindrus (DCY) - coral	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
Diploria labyrinthiformis (DL) - coral	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
Dichocoenia stokesii (DSO) - coral	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
Favia fragum (FF) - coral	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
Isophyllastrea rigida (IR) - coral	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
Manicina areolata (MAR) - coral	0.00	0.00	0.00	0.00	0.00	0.00
Madracis decactis (MD) - coral	0.37	0.38	0.38	0.39	0.42	0.44
Madracis formosa (MAFO) - coral	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
Meandrina meandrites (MME) - coral	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
Montastraea annularis complex (MACX)	0.00	0.00	0.00	0.00	0.00	0.00
Montastraea cavernosa (MC) - coral	1.87	1.88	1.88	1.93	2.08	2.21
Montastraea faveolata (MFAV) - coral	5.60	5.64	5.64	5.79	6.25	6.64
Montastraea franksi (MFRA) - coral	5.60	5.64	5.64	5.79	6.25	6.64
Montastraea species (MSPP) - coral	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
Mycetophyllia aliciae (MAL) - coral	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
Mycetophyllia lamarckiana (ML) - coral	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
Mycetophyllia species (MYSP) - coral	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
Porites astreoides (PA) - coral	2.24	2.26	2.26	2.32	2.50	2.65
Porites branneri (PB) - coral	0.00	0.00	0.00	0.00	0.00	0.00
Porites divaricata (PD) - coral	0.37	0.38	0.38	0.39	0.42	0.44
Porites furcata (PF) - coral	0.37	0.38	0.38	0.39	0.42	0.44
Porites porites (PP) - coral	0.37	0.38	0.38	0.39	0.42	0.44
Porites branching species (PBSP) - coral	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
Scolymia lacera (SL) - coral	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
Siderastrea radians (SR) - coral	0.00	0.00	0.00	0.00	0.00	0.00
Siderastrea siderea (SS) - coral	0.37	0.38	0.38	0.39	0.42	0.44
Siderastrea species (SSPP) - coral	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
Solenastrea hyades (SH) - coral	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
Tubastraea aurea (TA) - coral	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
Millepora complanata (MILC) - coral	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
Coral juvenile (CORJU) - coral	0.00	0.00	0.00	0.00	0.00	0.00
Hard Coral, unknown spp. (CORAL) - coral	0.37	0.38	0.38	0.39	0.42	0.44

Percent Cover by Transect

Coral Species	T1	T2	T3	T4	T5	T6
Acropora cervicornis (AC) - coral	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
Acropora prolifera (APR) - coral	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
Agaricia fragilis (AF) - coral	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
Agaricia humilis (AH) - coral	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
Agaricia tenuifolia (AT) - coral	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
Agaricia species (AGSP) - coral	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
Dendrogyra cylindrus (DCY) - coral	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
Diploria labyrinthiformis (DL) - coral	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
Dichocoenia stokesii (DSO) - coral	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
Favia fragum (FF) - coral	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
Isophyllastrea rigida (IR) - coral	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
Manicina areolata (MAR) - coral	0.46	0.45	0.44	0.48	0.47	0.46
Madracis decactis (MD) - coral	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
Madracis mirabilis (MM) - coral	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
Montastraea annularis (MA) - coral	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
Montastraea cavernosa (MC) - coral	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
Montastraea franksi (MFRA) - coral	14.16	14.09	13.72	14.98	14.42	14.16
Montastraea species (MSPP) - coral	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
Mycetophyllia aliciae (MAL) - coral	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
Mycetophyllia lamarckiana (ML) - coral	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
Mycetophyllia species (MYSP) - coral	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
Porites astreoides (PA) - coral	3.65	3.64	3.54	3.86	3.72	3.65
Porites branneri (PB) - coral	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
Porites furcata (PF) - coral	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
Porites branching species (PBSP) - coral	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
Scolymia lacera (SL) - coral	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
Siderastrea radians (SR) - coral	0.00	0.00	0.00	0.00	0.00	0.00
Siderastrea siderea (SS) - coral	1.37	1.36	1.33	1.45	1.40	1.37
Siderastrea species (SSPP) - coral	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
Solenastrea hyades (SH) - coral	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
Tubastraea aurea (TA) - coral	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
Millepora complanata (MILC) - coral	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
Coral juvenile (CORJU) - coral	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

Percent Cover by Transect

Coral Species	T1	T2	T3	T4	T5	T6
Acropora cervicornis (AC) - coral	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
Acropora prolifera (APR) - coral	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
Agaricia fragilis (AF) - coral	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
Agaricia humilis (AH) - coral	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
Agaricia tenuifolia (AT) - coral	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
Agaricia species (AGSP) - coral	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
Dendrogyra cylindrus (DCY) - coral	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
Diploria labyrinthiformis (DL) - coral	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
Dichocoenia stokesii (DSO) - coral	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
Favia fragum (FF) - coral	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
Isophyllastrea rigida (IR) - coral	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
Manicina areolata (MAR) - coral	0.00	0.00	0.00	0.00	0.00	0.00
Madracis decactis (MD) - coral	0.84	0.82	0.78	0.82	0.93	0.83
Madracis formosa (MAFO) - coral	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
Meandrina meandrites (MME) - coral	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
Montastraea annularis complex (MACX)	0.42	0.41	0.39	0.41	0.47	0.42
Montastraea cavernosa (MC) - coral	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
Montastraea franksi (MFRA) - coral	0.42	0.41	0.39	0.41	0.47	0.42
Montastraea species (MSPP) - coral	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
Mycetophyllia aliciae (MAL) - coral	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
Mycetophyllia lamarckiana (ML) - coral	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
Mycetophyllia species (MYSP) - coral	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
Porites astreoides (PA) - coral	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
Porites divaricata (PD) - coral	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
Porites porites (PP) - coral	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
Scolymia cubensis (SC) - coral	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
Scolymia species (SCSP) - coral	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
Siderastrea siderea (SS) - coral	0.42	0.41	0.39	0.41	0.47	0.42
Siderastrea species (SSPP) - coral	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
Solenastrea hyades (SH) - coral	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
Tubastraea aurea (TA) - coral	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
Millepora complanata (MILC) - coral	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
Coral juvenile (CORJU) - coral	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

Percent Cover by Transect

Coral Species	T1	T2	T3	T4	T5	T6
Acropora cervicornis (AC) - coral	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
Acropora prolifera (APR) - coral	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia agaricites (AA) - coral	0.46	0.53	0.49	0.55	0.44	0.57
Agaricia fragilis (AF) - coral	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
Agaricia humilis (AH) - coral	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
Agaricia tenuifolia (AT) - coral	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
Agaricia species (AGSP) - coral	0.00	0.00	0.00	0.00	0.00	0.00
Colpophyllia natans (CN) - coral	6.45	7.49	6.83	7.69	6.19	8.05
Dendrogyra cylindrus (DCY) - coral	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
Diploria labyrinthiformis (DL) - coral	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
Dichocoenia stokesii (DSO) - coral	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
Favia fragum (FF) - coral	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
Isophyllastrea rigida (IR) - coral	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
Manicina areolata (MAR) - coral	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
Madracis formosa (MAFO) - coral	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
Meandrina meandrites (MME) - coral	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
Montastraea annularis complex (MACX)	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
Montastraea faveolata (MFAV) - coral	0.00	0.00	0.00	0.00	0.00	0.00
Montastraea franksi (MFRA) - coral	32.26	37.43	34.15	38.46	30.97	40.23
Montastraea species (MSPP) - coral	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
Mycetophyllia aliciae (MAL) - coral	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
Mycetophyllia lamarckiana (ML) - coral	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
Mycetophyllia species (MYSP) - coral	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
Porites astreoides (PA) - coral	1.84	2.14	1.95	2.20	1.77	2.30
Porites branneri (PB) - coral	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
Porites furcata (PF) - coral	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
Porites branching species (PBSP) - coral	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
Scolymia lacera (SL) - coral	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
Siderastrea radians (SR) - coral	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
Siderastrea species (SSPP) - coral	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
Solenastrea hyades (SH) - coral	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
Tubastraea aurea (TA) - coral	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
Millepora complanata (MILC) - coral	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
Coral juvenile (CORJU) - coral	0.00	0.00	0.00	0.00	0.00	0.00
Hard Coral, unknown spp. (CORAL) - coral	0.92	1.07	0.98	1.10	0.88	1.15

Percent Cover by Transect

Coral Species	T1	T2	T3	T4	T5	T6
Acropora cervicornis (AC) - coral	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
Acropora prolifera (APR) - coral	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
Agaricia fragilis (AF) - coral	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
Agaricia humilis (AH) - coral	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia lamarcki (AL) - coral	1.55	1.46	1.48	1.44	1.49	1.48
Agaricia tenuifolia (AT) - coral	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
Agaricia species (AGSP) - coral	2.06	1.95	1.97	1.92	1.98	1.97
Colpophyllia natans (CN) - coral	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
Diploria clivosa (DC) - coral	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
Diploria strigosa (DS) - coral	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
Eusmilia fastigiata (EF) - coral	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
Isophyllia sinuosa (IS) - coral	0.00	0.00	0.00	0.00	0.00	0.00
Isophyllastrea rigida (IR) - coral	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
Manicina areolata (MAR) - coral	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
Madracis formosa (MAFO) - coral	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
Meandrina meandrites (MME) - coral	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
Montastraea annularis complex (MACX)	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
Montastraea faveolata (MFAV) - coral	0.00	0.00	0.00	0.00	0.00	0.00
Montastraea franksi (MFRA) - coral	24.23	22.93	23.15	22.60	23.27	23.15
Montastraea species (MSPP) - coral	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
Mycetophyllia aliciae (MAL) - coral	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
Mycetophyllia lamarckiana (ML) - coral	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
Mycetophyllia species (MYSP) - coral	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
Porites astreoides (PA) - coral	1.03	0.98	0.99	0.96	0.99	0.99
Porites branneri (PB) - coral	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
Porites furcata (PF) - coral	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
Porites branching species (PBSP) - coral	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
Scolymia lacera (SL) - coral	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
Siderastrea radians (SR) - coral	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
Siderastrea species (SSPP) - coral	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
Solenastrea hyades (SH) - coral	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
Tubastraea aurea (TA) - coral	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
Millepora complanata (MILC) - coral	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
Coral juvenile (CORJU) - coral	0.00	0.00	0.00	0.00	0.00	0.00
Hard Coral, unknown spp. (CORAL) - coral	1.03	0.98	0.99	0.96	0.99	0.99

Percent Cover by Transect

Coral Species	T1	T2	T3	T4	T5	T6
Acropora cervicornis (AC) - coral	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
Acropora prolifera (APR) - coral	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
Agaricia fragilis (AF) - coral	1.03	0.93	0.94	0.88	0.90	0.93
Agaricia grahamae (AG) - coral	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
Agaricia lamarcki (AL) - coral	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
Agaricia undata (AU) - coral	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
Colpophyllia natans (CN) - coral	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
Diploria clivosa (DC) - coral	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
Diploria strigosa (DS) - coral	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
Eusmilia fastigiata (EF) - coral	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
Isophyllia sinuosa (IS) - coral	0.00	0.00	0.00	0.00	0.00	0.00
Isophyllastrea rigida (IR) - coral	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
Manicina areolata (MAR) - coral	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
Madracis formosa (MAFO) - coral	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
Meandrina meandrites (MME) - coral	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
Montastraea annularis complex (MACX)	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
Montastraea faveolata (MFAV) - coral	0.00	0.00	0.00	0.00	0.00	0.00
Montastraea franksi (MFRA) - coral	29.74	26.98	27.23	25.66	26.01	27.10
Montastraea species (MSPP) - coral	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
Mycetophyllia aliciae (MAL) - coral	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
Mycetophyllia lamarckiana (ML) - coral	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
Mycetophyllia species (MYSP) - coral	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
Porites astreoides (PA) - coral	3.08	2.79	2.82	2.65	2.69	2.80
Porites branneri (PB) - coral	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
Porites furcata (PF) - coral	0.00	0.00	0.00	0.00	0.00	0.00
Porites porites (PP) - coral	1.54	1.40	1.41	1.33	1.35	1.40
Porites branching species (PBSP) - coral	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
Scolymia lacera (SL) - coral	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
Siderastrea radians (SR) - coral	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
Siderastrea species (SSPP) - coral	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
Solenastrea hyades (SH) - coral	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
Tubastraea aurea (TA) - coral	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
Millepora complanata (MILC) - coral	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
Coral juvenile (CORJU) - coral	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

Appendix III: 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
Dead Coral w/ Algae (DCA)	71.31	66.31	80.84	73.85	76.99	18.53	71.31	56.74
Other (O)	0.05	0.00	0.26	0.00	0.00	0.00	0.05	3.88
Pavement (P)	0.00	0.00	0.00	0.00	0.00	0.14	0.00	0.44
Rubble (R)	0.00	0.00	1.50	0.23	0.00	0.00	0.00	0.00
Sand (S)	2.79	4.01	0.13	0.00	5.82	2.01	2.79	5.20
Gorgonians (GO)	5.79	1.67	0.00	1.74	3.04	0.18	5.79	0.44
Sponges (SPO)	1.58	0.68	0.20	3.02	3.49	2.47	1.58	3.08
Zoanthids (ZO)	0.00	0.00	0.00	0.00	0.06	0.07	0.00	1.67
Coralline Algae (CALG)	0.00	0.08	4.51	0.60	0.00	0.00	0.00	0.00
Macro Algae (MACA)	0.44	0.98	0.52	0.15	0.45	0.11	0.44	0.00
Dictyota (DICT)	0.05	2.20	1.05	15.34	2.97	7.84	0.05	0.53
Liagora (LIAG)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lobophora (LOBO)	0.00	0.68	0.00	0.23	0.00	19.70	0.00	0.00
Schizothrix (SCHIZ)	0.00	0.00	0.00	0.00	0.00	0.49	0.00	0.00
Halimeda (HALI)	0.11	0.00	0.13	0.15	0.00	0.04	0.11	0.26
Sargassum (SARG)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unknown (UNK)	0.66	0.15	0.00	0.45	0.13	0.07	0.66	0.62
Bleached Coral (BL)	0.00	0.00	0.00	0.00	0.00	23.44	0.00	0.00
Black Band Disease (BBD)	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00
White Band Disease (WBD)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Yellow Plague (PLA)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Yellow Blotch Disease (YBD)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dark Blotch Disease (DBD)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

St. Thomas

Mean Percent Cover for all Sites

Categories	Seahorse Cottage	South Capella	South Water	Grammanik Bank	Red Hind Bank	College Shoal East
Gorgonians (GO) - go	0.00	0.00	0.34	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	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
Soft Coral - Sea Fan (FAN) - go	0.27	2.32	0.21	0.00	0.00	0.00
Soft Coral - Plume form (PLUME) - go	1.04	1.88	0.34	0.00	0.00	0.00
Soft Coral - Rod form (ROD) - go	1.74	1.97	4.03	0.00	0.00	0.08
Soft Coral - Whip form (WHIP) - go	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
Ball Sponge (BALL) - spo	0.00	0.00	0.00	0.00	0.00	0.00
Barrel/Vase Sponge (BASP) - spo	0.00	0.61	0.00	0.57	0.00	0.00
Boring Sponge (BOSP) - spo	0.06	0.23	0.14	0.00	0.00	0.00
Encrusting Sponge (ENSP) - spo	0.83	1.07	4.72	7.22	11.46	4.28
Rope Sponge (ROPE) - spo	0.66	0.38	0.60	0.18	0.08	0.00
Tube Sponge (TUBE) - spo	0.12	0.08	0.71	0.00	0.25	0.00
Sponge (SPO) - spo	0.74	1.54	1.51	0.88	0.66	0.16
Palythoa caribaeorum (PALY) - zo	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
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	8.75	4.70	9.19	8.79	8.06	3.39
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	12.47	13.19	2.05	5.59	4.43	1.55
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	28.39	22.57	48.21	23.21	25.35	36.53
Sargassum spp. (SARG) - maca	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
Coralline Algae (CALG) - calg	0.06	0.00	0.00	0.09	0.00	0.23
Dead coral w/ turf algae (DCA) - dca	13.76	16.41	22.90	14.21	20.75	11.49
Boulder (B)	0.00	0.00	0.00	0.00	0.00	0.00
Sand/Sediment (S)	1.75	0.69	1.11	0.92	0.08	0.24
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	0.00	0.00	0.00	0.00	0.22
Unknown (UNK)	0.53	0.84	1.32	0.75	1.07	0.16

Percent Cover by Transect

Categories	T1	T2	T3	T4	T5	T6	Mean % Cover
Dead Coral w/ Algae (DCA)	61.56	76.45	80.50	64.47	68.34	76.73	71.34
Other (O)	0.00	0.00	0.00	0.29	0.00	0.00	0.05
Pavement (P)	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
Sand (S)	10.20	1.02	0.00	0.00	5.33	0.00	2.76
Gorgonians (GO)	5.44	2.39	6.29	8.60	4.73	6.94	5.73
Sponges (SPO)	3.40	0.34	0.31	2.58	1.18	1.63	1.58
Zoanthids (ZO)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coralline Algae (CALG)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Macro algae (MACA)	1.70	0.68	0.31	0.00	0.00	0.00	0.45
Dictyota (DICT)	0.00	0.00	0.00	0.00	0.00	0.41	0.07
Liagora (LIAG)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lobophora (LOBO)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Schizothrix (SCHIZ)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Halimeda (HALI)	0.00	0.00	0.63	0.00	0.00	0.00	0.10
Sargassum (SARG)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unknown (UNK)	1.70	0.00	0.31	1.72	0.00	0.00	0.62
Bleached Coral (BL)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Black Band Disease (BBD)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
White Band Disease (WBD)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Yellow Plague (PLA)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Yellow Blotch Disease (YBD)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dark Blotch Disease (DBD)	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
Dead Coral w/ Algae (DCA)	74.89	40.87	52.15	65.50	85.50	76.40	65.89
Other (O)	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
Rubble (R)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sand (S)	0.00	23.08	0.00	0.44	1.50	0.40	4.24
Gorgonians (GO)	0.00	1.44	4.31	4.37	0.00	0.00	1.69
Sponges (SPO)	1.76	0.96	0.48	0.87	0.00	0.00	0.68
Zoanthids (ZO)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coralline Algae (CALG)	0.00	0.00	0.00	0.00	0.00	0.40	0.07
Macro algae (MACA)	1.76	1.44	0.00	0.87	0.50	1.20	0.96
Dictyota (DICT)	3.52	5.77	0.00	0.87	2.50	0.80	2.24
Liagora (LIAG)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lobophora (LOBO)	3.96	0.00	0.00	0.00	0.00	0.00	0.66
Schizothrix (SCHIZ)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Halimeda (HALI)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sargassum (SARG)	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	0.80	0.13
Bleached Coral (BL)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Black Band Disease (BBD)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
White Band Disease (WBD)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Yellow Plague (PLA)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Yellow Blotch Disease (YBD)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dark Blotch Disease (DBD)	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Categories	Percent Cover by Transect						Mean % Cover
	T1	T2	T3	T4	T5	T6	
Dead Coral w/ Algae (DCA)	66.44	85.42	82.80	87.95	80.00	85.26	81.31
Other (O)	1.36	0.00	0.00	0.00	0.00	0.00	0.23
Pavement (P)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rubble (R)	6.10	0.00	0.40	0.00	0.00	2.11	1.43
Sand (S)	0.68	0.00	0.00	0.00	0.00	0.00	0.11
Gorgonians (GO)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sponges (SPO)	0.00	0.34	0.00	0.40	0.00	0.53	0.21
Zoanthids (ZO)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coralline Algae (CALG)	15.93	5.42	1.20	0.40	0.40	0.53	3.98
Macro algae (MACA)	0.68	0.00	0.00	0.00	2.40	0.00	0.51
Dictyota (DICT)	0.00	1.02	0.00	0.40	0.40	5.79	1.27
Liagora (LIAG)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lobophora (LOBO)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Schizothrix (SCHIZ)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Halimeda (HALI)	0.68	0.00	0.00	0.00	0.00	0.00	0.11
Sargassum (SARG)	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
Bleached Coral (BL)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Black Band Disease (BBD)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
White Band Disease (WBD)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Yellow Plague (PLA)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Yellow Blotch Disease (YBD)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dark Blotch Disease (DBD)	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Categories	Percent Cover by Transect						Mean % Cover
	T1	T2	T3	T4	T5	T6	
Dead Coral w/ Algae (DCA)	66.51	82.37	76.75	75.92	70.41	66.51	73.08
Other (O)	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
Rubble (R)	0.00	0.00	0.00	1.57	0.00	0.00	0.26
Sand (S)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gorgonians (GO)	0.92	3.24	2.19	0.00	2.55	0.92	1.64
Sponges (SPO)	2.75	0.72	5.70	2.09	4.59	2.75	3.10
Zoanthids (ZO)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coralline Algae (CALG)	0.00	0.72	0.44	2.62	0.00	0.00	0.63
Macro algae (MACA)	0.00	0.00	0.00	1.05	0.00	0.00	0.17
Dictyota (DICT)	17.43	10.79	12.72	16.75	18.37	17.43	15.58
Liagora (LIAG)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lobophora (LOBO)	0.46	0.00	0.00	0.00	0.51	0.46	0.24
Schizothrix (SCHIZ)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Halimeda (HALI)	0.46	0.00	0.00	0.00	0.00	0.46	0.15
Sargassum (SARG)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unknown (UNK)	0.00	0.72	0.44	0.00	1.53	0.00	0.45
Bleached Coral (BL)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Black Band Disease (BBD)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
White Band Disease (WBD)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Yellow Plague (PLA)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Yellow Blotch Disease (YBD)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dark Blotch Disease (DBD)	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
Dead Coral w/ Algae (DCA)	72.26	70.80	76.83	80.71	79.23	83.68	77.25
Other (O)	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
Rubble (R)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sand (S)	1.29	20.00	6.56	1.79	5.38	0.00	5.84
Gorgonians (GO)	3.23	1.20	1.93	3.57	4.23	4.21	3.06
Sponges (SPO)	5.81	0.80	2.70	2.14	6.92	1.58	3.33
Zoanthids (ZO)	0.00	0.00	0.00	0.00	0.00	0.53	0.09
Coralline Algae (CALG)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Macro algae (MACA)	0.00	0.40	0.39	0.36	0.38	1.58	0.52
Dictyota (DICT)	9.03	0.40	1.16	4.64	0.38	0.00	2.60
Liagora (LIAG)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lobophora (LOBO)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Schizothrix (SCHIZ)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Halimeda (HALI)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sargassum (SARG)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unknown (UNK)	0.00	0.40	0.00	0.00	0.00	0.53	0.15
Bleached Coral (BL)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Black Band Disease (BBD)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
White Band Disease (WBD)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Yellow Plague (PLA)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Yellow Blotch Disease (YBD)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dark Blotch Disease (DBD)	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
Dead Coral w/ Algae (DCA)	21.47	23.84	40.29	14.53	27.12	20.18	24.57
Other (O)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pavement (P)	0.00	0.00	0.00	0.49	0.65	0.00	0.19
Rubble (R)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sand (S)	0.00	0.00	0.00	0.00	18.63	0.00	3.10
Gorgonians (GO)	0.27	0.49	0.00	0.00	0.00	0.60	0.23
Sponges (SPO)	9.24	1.46	0.87	0.00	0.65	7.53	3.29
Zoanthids (ZO)	0.00	0.00	0.00	0.00	0.65	0.00	0.11
Coralline Algae (CALG)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Macro algae (MACA)	0.00	0.00	0.00	0.00	0.65	0.30	0.16
Dictyota (DICT)	12.77	13.63	6.38	12.56	6.21	8.13	9.95
Liagora (LIAG)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lobophora (LOBO)	22.55	31.14	32.75	21.43	20.26	25.60	25.62
Schizothrix (SCHIZ)	0.00	0.73	0.00	0.00	0.65	2.71	0.68
Halimeda (HALI)	0.00	0.00	0.00	0.25	0.00	0.00	0.04
Sargassum (SARG)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unknown (UNK)	0.00	0.49	0.00	0.00	0.00	0.00	0.08
Bleached Coral (BL)	32.88	25.79	16.52	49.51	21.24	34.34	30.05
Black Band Disease (BBD)	0.27	0.00	0.00	0.00	0.00	0.00	0.05
White Band Disease (WBD)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Yellow Plague (PLA)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Yellow Blotch Disease (YBD)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dark Blotch Disease (DBD)	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
Dead Coral w/ Algae (DCA)	84.40	83.08	86.24	85.02	81.00	88.11	84.64
Other (O)	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
Rubble (R)	0.00	0.00	0.00	0.00	0.00	0.35	0.06
Sand (S)	0.00	0.00	0.00	0.81	0.00	0.00	0.13
Gorgonians (GO)	1.83	2.72	1.01	3.24	2.33	2.45	2.26
Sponges (SPO)	0.61	1.21	2.68	4.05	2.33	3.85	2.46
Zoanthids (ZO)	0.00	3.63	0.00	0.81	0.00	0.70	0.86
Coralline Algae (CALG)	3.06	0.00	0.00	0.00	1.67	0.00	0.79
Macro algae (MACA)	0.00	0.00	0.00	0.40	0.00	0.00	0.07
Dictyota (DICT)	1.22	0.30	0.34	0.00	3.33	1.05	1.04
Liagora (LIAG)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lobophora (LOBO)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Schizothrix (SCHIZ)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Halimeda (HALI)	0.00	0.00	0.67	0.00	0.00	0.00	0.11
Sargassum (SARG)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unknown (UNK)	0.00	0.00	0.67	0.00	0.00	0.00	0.11
Bleached Coral (BL)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Black Band Disease (BBD)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
White Band Disease (WBD)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Yellow Plague (PLA)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Yellow Blotch Disease (YBD)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dark Blotch Disease (DBD)	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
Dead Coral w/ Algae (DCA)	63.67	54.76	64.40	39.72	ND	56.95	55.90
Other (O)	0.00	4.29	1.60	4.67	ND	9.42	4.00
Pavement (P)	0.41	0.48	0.80	0.00	ND	0.45	0.43
Rubble (R)	0.00	0.00	0.00	0.00	ND	0.00	0.00
Sand (S)	0.00	15.71	8.80	0.93	ND	0.90	5.27
Gorgonians (GO)	0.00	0.95	0.00	0.93	ND	0.45	0.47
Sponges (SPO)	4.90	2.86	4.40	0.93	ND	1.79	2.98
Zoanthids (ZO)	4.49	1.43	0.40	1.87	ND	0.00	1.64
Coralline Algae (CALG)	0.00	0.00	0.00	0.00	ND	0.00	0.00
Macro algae (MACA)	0.00	0.00	0.00	0.00	ND	0.00	0.00
Dictyota (DICT)	0.41	0.95	0.00	0.00	ND	1.35	0.54
Liagora (LIAG)	0.00	0.00	0.00	0.00	ND	0.00	0.00
Lobophora (LOBO)	0.00	0.00	0.00	0.00	ND	0.00	0.00
Schizothrix (SCHIZ)	0.00	0.00	0.00	0.00	ND	0.00	0.00
Halimeda (HALI)	0.82	0.00	0.00	0.47	ND	0.00	0.26
Sargassum (SARG)	0.00	0.00	0.00	0.00	ND	0.00	0.00
Unknown (UNK)	0.00	0.95	0.40	0.93	ND	0.90	0.64
Bleached Coral (BL)	0.00	0.00	0.00	0.00	ND	0.00	0.00
Black Band Disease (BBD)	0.00	0.00	0.00	0.00	ND	0.00	0.00
White Band Disease (WBD)	0.00	0.00	0.00	0.00	ND	0.00	0.00
Yellow Plague (PLA)	0.00	0.00	0.00	0.00	ND	0.00	0.00
Yellow Blotch Disease (YBD)	0.00	0.00	0.00	0.00	ND	0.00	0.00
Dark Blotch Disease (DBD)	0.00	0.00	0.00	0.00	ND	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	0.77	0.83	0.00	0.27
Soft Coral - Plume form (PLUME) - go	1.87	2.63	0.00	0.00	0.00	1.77	1.04
Soft Coral - Rod form (ROD) - go	0.00	1.13	1.13	3.09	3.33	1.77	1.74
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	0.38	0.00	0.00	0.00	0.06
Encrusting Sponge (ENSP) - spo	0.75	0.00	0.75	3.09	0.42	0.00	0.83
Rope Sponge (ROPE) - spo	1.49	0.75	0.00	0.00	1.25	0.44	0.66
Tube Sponge (TUBE) - spo	0.75	0.00	0.00	0.00	0.00	0.00	0.12
Sponge (SPO) - spo	0.00	0.38	0.38	1.16	2.08	0.44	0.74
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	6.34	7.52	6.39	8.11	10.42	13.72	8.75
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	11.57	16.54	19.92	8.49	11.67	6.64	12.47
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	39.93	17.67	24.81	28.57	27.92	31.42	28.39
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	0.39	0.00	0.00	0.06
Dead coral w/ turf algae (DCA) - dca	17.16	10.90	14.29	16.99	11.25	11.95	13.76
Boulder (B)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sand/Sediment (S)	1.87	3.38	1.50	0.00	3.33	0.44	1.75
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)	0.75	0.00	0.38	1.16	0.00	0.88	0.53

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	0.46	0.00	0.44	1.45	6.98	4.57	2.32
Soft Coral - Plume form (PLUME) - go	4.11	1.36	4.42	0.00	0.00	1.37	1.88
Soft Coral - Rod form (ROD) - go	0.46	0.00	4.42	0.48	4.65	1.83	1.97
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	0.44	0.00	0.00	3.20	0.61
Boring Sponge (BOSP) - spo	0.00	1.36	0.00	0.00	0.00	0.00	0.23
Encrusting Sponge (ENSP) - spo	1.83	0.91	0.88	0.97	1.40	0.46	1.07
Rope Sponge (ROPE) - spo	0.00	0.00	0.88	0.00	1.40	0.00	0.38
Tube Sponge (TUBE) - spo	0.00	0.00	0.00	0.48	0.00	0.00	0.08
Sponge (SPO) - spo	0.00	0.45	4.42	4.35	0.00	0.00	1.54
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	0.00	2.73	0.88	3.38	10.70	10.50	4.70
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	21.46	17.27	11.95	6.76	13.49	8.22	13.19
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	28.77	24.55	19.47	28.02	20.00	14.61	22.57
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	22.83	6.36	19.03	20.29	13.95	15.98	16.41
Boulder (B)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sand/Sediment (S)	0.46	0.00	0.00	0.00	0.47	3.20	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	0.00	0.00
Unknown (UNK)	0.00	1.36	0.88	0.48	0.93	1.37	0.84

Percent Cover by Transect

Categories	T1	T2	T3	T4	T5	T6	Mean % Cover
Gorgonians (GO) - go	0.00	0.00	0.39	1.64	0.00	0.00	0.34
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	1.25	0.21
Soft Coral - Plume form (PLUME) - go	0.00	1.65	0.39	0.00	0.00	0.00	0.34
Soft Coral - Rod form (ROD) - go	3.36	0.82	0.39	1.23	12.15	6.25	4.03
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	0.82	0.00	0.00	0.00	0.00	0.14
Encrusting Sponge (ENSP) - spo	1.26	4.12	5.47	3.69	4.21	9.58	4.72
Rope Sponge (ROPE) - spo	0.00	0.00	2.34	1.23	0.00	0.00	0.60
Tube Sponge (TUBE) - spo	0.00	2.47	0.00	0.00	1.40	0.42	0.71
Sponge (SPO) - spo	1.26	1.23	1.56	1.64	0.00	3.33	1.51
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	16.81	4.94	7.81	13.11	7.48	5.00	9.19
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	4.62	0.82	1.17	0.82	2.80	2.08	2.05
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	50.42	44.44	51.56	48.36	45.33	49.17	48.21
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	18.07	30.04	25.78	20.08	23.83	19.58	22.90
Boulder (B)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sand/Sediment (S)	1.68	3.29	0.78	0.41	0.47	0.00	1.11
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)	0.42	0.82	1.17	3.28	1.40	0.83	1.32

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	3.41	0.00	0.00	0.00	0.57
Boring Sponge (BOSP) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Encrusting Sponge (ENSP) - spo	0.92	5.88	9.27	12.64	4.87	9.77	7.22
Rope Sponge (ROPE) - spo	0.00	0.53	0.00	0.55	0.00	0.00	0.18
Tube Sponge (TUBE) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sponge (SPO) - spo	0.00	0.53	0.49	2.20	0.88	1.15	0.88
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	17.05	10.16	4.39	7.14	1.33	12.64	8.79
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	7.83	2.67	5.37	6.59	7.08	4.02	5.59
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	17.97	25.13	20.98	24.18	33.19	17.82	23.21
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	0.55	0.00	0.00	0.09
Dead coral w/ turf algae (DCA) - dca	13.82	17.11	21.46	10.99	11.50	10.34	14.21
Boulder (B)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sand/Sediment (S)	0.00	1.07	3.90	0.55	0.00	0.00	0.92
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)	0.46	0.53	0.00	0.00	1.77	1.72	0.75

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	11.34	9.76	11.33	8.17	14.85	13.30	11.46
Rope Sponge (ROPE) - spo	0.00	0.49	0.00	0.00	0.00	0.00	0.08
Tube Sponge (TUBE) - spo	0.52	0.00	0.99	0.00	0.00	0.00	0.25
Sponge (SPO) - spo	1.03	0.00	0.00	1.92	0.50	0.49	0.66
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	7.73	7.80	11.82	9.13	9.90	1.97	8.06
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	2.06	2.44	8.37	5.29	4.95	3.45	4.43
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	25.26	21.95	25.62	27.88	29.21	22.17	25.35
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	21.13	20.98	25.62	16.35	12.38	28.08	20.75
Boulder (B)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sand/Sediment (S)	0.00	0.00	0.49	0.00	0.00	0.00	0.08
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)	1.03	0.49	2.46	0.96	0.50	0.99	1.07

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	0.47	0.00	0.00	0.00	0.00	0.08
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	3.59	1.86	9.86	3.54	4.93	1.87	4.28
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	0.51	0.00	0.47	0.00	0.00	0.00	0.16
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	5.64	5.58	2.82	2.21	3.14	0.93	3.39
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	0.51	3.72	1.41	0.00	1.79	1.87	1.55
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	40.51	22.79	51.17	30.97	35.87	37.85	36.53
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	0.51	0.00	0.00	0.88	0.00	0.00	0.23
Dead coral w/ turf algae (DCA) - dca	12.31	5.58	13.15	15.93	11.21	10.75	11.49
Boulder (B)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sand/Sediment (S)	0.51	0.00	0.94	0.00	0.00	0.00	0.24
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	1.35	0.00	0.22
Unknown (UNK)	0.51	0.00	0.00	0.00	0.00	0.47	0.16

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

	Mean % of Coral Colonies with Disease ($\pm$ SD)	Mean % of Coral Colonies with Bleaching ($\pm$ SD)	Mean Density of <i>Diadema</i> (/m ²) ($\pm$ SD)
St. Croix:			
Buck Island	0	41.8 $\pm$ 16.9	0
Cane Bay	0	0	0
Great Pond	0	46.1 $\pm$ 22.1	5.2 $\pm$ 20.4
Jacks/Isaac Bay	0	75.3 $\pm$ 14.5	0
Long Reef/Eagle Ray	15.3 $\pm$ 29	77.8 $\pm$ 18.1	0
Mutton Snapper	0	93.6 $\pm$ 11.2	0
Salt River	0	81.9 $\pm$ 21.4	0
Sprat Hole	3.7 $\pm$ 10	42.2 $\pm$ 23.4	0
St. Thomas:			
Seahorse Cottage Shoal	2.78 $\pm$ 3.16	1.63 $\pm$ 2.52	0
South Capella	2.59 $\pm$ 2.84	4.09 $\pm$ 5.59	0
South Water	0	48.70 $\pm$ 17.74	0
Grammanik Bank	0	6.28 $\pm$ 4.95	0
Red Hind Bank	0	7.53 $\pm$ 6.50	0
College Shoal East	0	2.12 $\pm$ 3.32	0

Date	Location	Transect	Species	Width (cm)	Height (cm)	Disease	Bleaching
01/13/06	Buck StX	1	ND	ND	ND	ND	ND
01/13/06	Buck StX	2	MFRA	25	10	0	100 SP
01/13/06	Buck StX	2	MFAV	20	25	0	100 P
01/13/06	Buck StX	2	MFRA	20	20	0	100 SP
01/13/06	Buck StX	2	PA	18	5	0	100 SP
01/13/06	Buck StX	2	MFAV	35	25	0	0 OK
01/13/06	Buck StX	2	MFAV	45	20	0	0 OK
01/13/06	Buck StX	2	EF	20	10	0	100 SP
01/13/06	Buck StX	2	MFAV	30	15	0	0 OK
01/13/06	Buck StX	2	PA	30	20	0	0 OK
01/13/06	Buck StX	2	MA	30	10	0	100 BL
01/13/06	Buck StX	2	MA	100	70	0	0 OK
01/13/06	Buck StX	2	MFAV	50	20	0	0 OK
01/13/06	Buck StX	3	AA	20	15	0	100 P
01/13/06	Buck StX	3	MFAV	25	15	0	0 OK
01/13/06	Buck StX	3	MFAV	20	5	0	0 OK
01/13/06	Buck StX	3	PA	20	5	0	0 OK
01/13/06	Buck StX	3	MFAV	30	25	0	0 OK
01/13/06	Buck StX	3	MC	30	15	0	100 SP
01/13/06	Buck StX	3	MFAV	30	25	0	100 P
01/13/06	Buck StX	3	M	25	25	0	100 SP
01/13/06	Buck StX	4	AA	15	10	0	30 ND
01/13/06	Buck StX	4	PA	30	15	0	0 ND
01/13/06	Buck StX	4	MA	50	25	0	ND ND
01/13/06	Buck StX	4	MA	20	30	0	ND ND
01/13/06	Buck StX	4	MA	30	30	0	ND ND
01/13/06	Buck StX	4	PA	15	10	0	ND ND
01/13/06	Buck StX	4	MA	40	40	0	ND ND
01/13/06	Buck StX	5	MFRA	30	20	0	ND ND
01/13/06	Buck StX	5	DL	30	30	0	ND ND
01/13/06	Buck StX	5	MFRA	15	18	0	ND ND
01/13/06	Buck StX	5	DL	15	15	0	ND ND
01/13/06	Buck StX	5	PD	ND	ND	0	ND ND
01/13/06	Buck StX	5	MA	40	60	0	ND ND
01/13/06	Buck StX	5	MFRA	40	40	0	ND ND
01/13/06	Buck StX	6	MFRA	30	20	0	ND ND
01/13/06	Buck StX	6	DS	15	10	0	ND ND
01/13/06	Buck StX	6	MFRA	20	20	0	ND ND
01/13/06	Buck StX	6	MA	50	50	0	ND ND
01/13/06	Buck StX	6	MA	70	60	0	ND ND
01/13/06	Buck StX	6	AA	20	20	0	ND ND
10/17/05	Cane	1	AA	15	12	0	99 BL
10/17/05	Cane	1	PA	20	20	0	OK
10/17/05	Cane	1	PA	12	12	0	OK
10/17/05	Cane	1	MA	12	7	0	100 BL
10/17/05	Cane	1	AA	12	10	0	100 BL
10/17/05	Cane	1	MFRA	35	40	0	98 BL
10/17/05	Cane	1	MC	25	10	0	OK

Date	Location	Transect	Species	Width (cm)	Height (cm)	Disease	Bleaching
10/17/05	Cane	1	MFAV	45	50	0	90 PB
10/17/05	Cane	1	MFAV	20	35	0	100 BL
10/17/05	Cane	2	DL	25	15	0	100 BL
10/17/05	Cane	2	MA	50	60	0	100 BL
10/17/05	Cane	2	MFAV	25	20	0	95 BL
10/17/05	Cane	2	MFAV	25	50	0	95 BL
10/17/05	Cane	2	PA	10	10	0	85 PB
10/17/05	Cane	2	MA	10	10	0	100 BL
10/17/05	Cane	2	MA	25	30	0	100 BL
10/17/05	Cane	2	PD	10	7	0	100 BL
10/17/05	Cane	2	DS	25	30	0	100 BL
10/17/05	Cane	2	PA	10	7	0	40 PB
10/17/05	Cane	2	MC	12	17	0	OK
10/17/05	Cane	2	MA	45	55	0	100 BL
10/17/05	Cane	2	MA	15	30	0	100 BL
10/17/05	Cane	2	PA	7	12	0	50 PB
10/17/05	Cane	2	MA	30	15	0	90 PB
10/17/05	Cane	2	AA	25	20	0	100 BL
10/17/05	Cane	3	PD	60	60	0	100 BL
10/17/05	Cane	3	MFAV	25	20	0	100 BL
10/17/05	Cane	3	SS	40	80	0	100 BL
10/17/05	Cane	3	MC	15	22	0	OK
10/17/05	Cane	3	AA	25	50	0	100 BL
10/17/05	Cane	3	MA	30	30	0	95 BL
10/17/05	Cane	3	MCD	25	25	0	100 BL
10/17/05	Cane	3	MA	50	60	0	99 BL
10/17/05	Cane	3	AA	20	20	0	100 BL
10/17/05	Cane	3	DS	35	40	0	70 PB
10/17/05	Cane	3	MA	50	50	0	95 BL
10/17/05	Cane	3	MA	100	160	0	100 BL
10/17/05	Cane	3	DS	35	25	0	100 BL
10/17/05	Cane	3	PA	15	20	0	OK
10/17/05	Cane	3	AA	10	12	0	100 BL
10/17/05	Cane	3	MA	35	40	0	100 BL
10/17/05	Cane	3	DS	25	70	0	75 PB
10/17/05	Cane	4	MC	7	10	0	OK
10/17/05	Cane	4	MC	15	15	0	OK
10/17/05	Cane	4	PA	10	12	0	OK
10/17/05	Cane	4	MFAV	55	30	0	100 BL
10/17/05	Cane	4	AA	15	12	0	40 PB
10/17/05	Cane	4	MFAV	20	30	0	95 BL
10/17/05	Cane	4	MFAV	40	40	0	100 BL
10/17/05	Cane	4	MFAV	40	25	0	100 BL
10/17/05	Cane	4	MA	90	70	0	95 BL
10/17/05	Cane	4	MFAV	110	60	0	99 BL
10/17/05	Cane	4	MA	20	45	0	100 BL
10/17/05	Cane	4	PA	12	30	0	OK
10/17/05	Cane	4	DS	20	20	0	15 PB

Date	Location	Transect	Species	Width (cm)	Height (cm)	Disease	Bleaching
10/17/05	Cane	1	MFAV	45	50	0	90 PB
10/17/05	Cane	1	MFAV	20	35	0	100 BL
10/17/05	Cane	2	DL	25	15	0	100 BL
10/17/05	Cane	2	MA	50	60	0	100 BL
10/17/05	Cane	2	MFAV	25	20	0	95 BL
10/17/05	Cane	2	MFAV	25	50	0	95 BL
10/17/05	Cane	2	PA	10	10	0	85 PB
10/17/05	Cane	2	MA	10	10	0	100 BL
10/17/05	Cane	2	MA	25	30	0	100 BL
10/17/05	Cane	2	PD	10	7	0	100 BL
10/17/05	Cane	2	DS	25	30	0	100 BL
10/17/05	Cane	2	PA	10	7	0	40 PB
10/17/05	Cane	2	MC	12	17	0	OK
10/17/05	Cane	2	MA	45	55	0	100 BL
10/17/05	Cane	2	MA	15	30	0	100 BL
10/17/05	Cane	2	PA	7	12	0	50 PB
10/17/05	Cane	2	MA	30	15	0	90 PB
10/17/05	Cane	2	AA	25	20	0	100 BL
10/17/05	Cane	3	PD	60	60	0	100 BL
10/17/05	Cane	3	MFAV	25	20	0	100 BL
10/17/05	Cane	3	SS	40	80	0	100 BL
10/17/05	Cane	3	MC	15	22	0	OK
10/17/05	Cane	3	AA	25	50	0	100 BL
10/17/05	Cane	3	MA	30	30	0	95 BL
10/17/05	Cane	3	MCD	25	25	0	100 BL
10/17/05	Cane	3	MA	50	60	0	99 BL
10/17/05	Cane	3	AA	20	20	0	100 BL
10/17/05	Cane	3	DS	35	40	0	70 PB
10/17/05	Cane	3	MA	50	50	0	95 BL
10/17/05	Cane	3	MA	100	160	0	100 BL
10/17/05	Cane	3	DS	35	25	0	100 BL
10/17/05	Cane	3	PA	15	20	0	OK
10/17/05	Cane	3	AA	10	12	0	100 BL
10/17/05	Cane	3	MA	35	40	0	100 BL
10/17/05	Cane	3	DS	25	70	0	75 PB
10/17/05	Cane	4	MC	7	10	0	OK
10/17/05	Cane	4	MC	15	15	0	OK
10/17/05	Cane	4	PA	10	12	0	OK
10/17/05	Cane	4	MFAV	55	30	0	100 BL
10/17/05	Cane	4	AA	15	12	0	40 PB
10/17/05	Cane	4	MFAV	20	30	0	95 BL
10/17/05	Cane	4	MFAV	40	40	0	100 BL
10/17/05	Cane	4	MFAV	40	25	0	100 BL
10/17/05	Cane	4	MA	90	70	0	95 BL
10/17/05	Cane	4	MFAV	110	60	0	99 BL
10/17/05	Cane	4	MA	20	45	0	100 BL
10/17/05	Cane	4	PA	12	30	0	OK
10/17/05	Cane	4	DS	20	20	0	15 PB

Date	Location	Transect	Species	Width (cm)	Height (cm)	Disease	Bleaching
11/22/05	Great Pond	3	PA	10	5	0	100 SP
11/22/05	Great Pond	3	PA	10	5	0	0 OK
11/22/05	Great Pond	3	PA	10	5	0	0 OK
11/22/05	Great Pond	3	PA	30	20	0	20 PB
11/22/05	Great Pond	3	PA	10	7	0	100 SP
11/22/05	Great Pond	3	PA	10	5	0	100 SP
11/22/05	Great Pond	3	DSO	30	20	0	100 SP
11/22/05	Great Pond	4	DC	20	10	0	0 OK
11/22/05	Great Pond	4	MILC	40	20	0	DEAD
11/22/05	Great Pond	4	DC	50	20	0	0 OK
11/22/05	Great Pond	4	DS	30	20	0	0 OK
11/22/05	Great Pond	4	PA	15	5	0	100 BL
11/22/05	Great Pond	4	DC	25	10	0	35 PB
11/22/05	Great Pond	4	PA	10	5	0	0 OK
11/22/05	Great Pond	5	PA	30	18	0	50 PB
11/22/05	Great Pond	5	PA	35	10	0	0 OK
11/22/05	Great Pond	5	MILC	20	15	0	20 PB
11/22/05	Great Pond	5	PA	25	5	0	30 PB
11/22/05	Great Pond	5	PA	10	3	0	0 OK
11/22/05	Great Pond	6	DS	45	25	0	0 OK
11/22/05	Great Pond	6	DC	20	5	0	100 SP
11/22/05	Great Pond	6	PA	20	5	0	10 PB
11/22/05	Great Pond	6	MILC	10	15	0	0 OK
11/22/05	Great Pond	6	DS	50	25	0	3 OK
11/22/05	Great Pond	6	PA	20	10	0	30 PB
11/22/05	Great Pond	6	DS	12	5	0	0 OK
11/22/05	Great Pond	6	PA	10	5	0	0 OK
11/22/05	Jacks	1	DS	7	10	0	0 OK
11/22/05	Jacks	1	PA	12	12	0	45 PB
11/22/05	Jacks	1	MFAV	17	10	0	85 BL
11/22/05	Jacks	1	PA	20	15	0	100 BL
11/22/05	Jacks	1	PA	12	15	0	10 PB
11/22/05	Jacks	1	SS	25	20	0	65 BL
11/22/05	Jacks	2	MC	35	20	0	20 PB
11/22/05	Jacks	2	DS	20	20	0	85 BL
11/22/05	Jacks	2	MC	65	80	0	70 BL
11/22/05	Jacks	2	SS	20	20	0	0 OK
11/22/05	Jacks	3	MC	12	12	0	95 BL
11/22/05	Jacks	3	MILA	5	15	0	2 OK
11/22/05	Jacks	3	MC	50	65	0	95 BL
11/22/05	Jacks	4	AA	35	15	0	100 BL
11/22/05	Jacks	4	PA	7	10	0	0 OK
11/22/05	Jacks	4	MACX	15	10	0	20 PB
11/22/05	Jacks	5	PP	10	7	0	99 BL
11/22/05	Jacks	5	MM	50	50	0	85 BL
11/22/05	Jacks	5	MC	7	20	0	10 PB
11/22/05	Jacks	5	MC	35	15	0	60 LB
11/22/05	Jacks	5	MME	10	10	0	ND

Date	Location	Transect	Species	Width (cm)	Height (cm)	Disease	Bleaching
11/22/05	Jacks	6	MACX	7	10	0	90 BL
11/22/05	Jacks	6	AA	7	10	0	100 BL
11/22/05	Jacks	6	PP	7	15	0	85 BL
11/22/05	Jacks	6	AA	17	15	0	100 BL
11/22/05	Jacks	6	SS	10	15	0	40 BL
02/04/05	Long	1	MA	ND	ND	0	0 OK
02/04/05	Long	1	MME	ND	ND	0	0 OK
02/04/05	Long	1	MC	ND	ND	0	0 OK
02/04/05	Long	2	MC	ND	ND	0	0 OK
02/04/05	Long	2	MME	ND	ND	0	0 OK
02/04/05	Long	2	PA	ND	ND	0	0 OK
02/04/05	Long	2	MC	ND	ND	0	1 PB
02/04/05	Long	3	MA	ND	ND	0	0 OK
02/04/05	Long	3	MC	ND	ND	0	0 OK
02/04/05	Long	3	MA	ND	ND	0	0 OK
02/04/05	Long	3	MC	ND	ND	0	0 OK
02/04/05	Long	3	MC	ND	ND	0	0 OK
02/04/05	Long	3	MA	ND	ND	0	0 OK
02/04/05	Long	3	PA	ND	ND	0	0 OK
02/04/05	Long	4	MA	ND	ND	0	0 OK
02/04/05	Long	4	MC	ND	ND	0	0 OK
02/04/05	Long	4	MA	ND	ND	0	10 PB
02/04/05	Long	5	PP	ND	ND	0	0 OK
02/04/05	Long	5	MA	ND	ND	0	0 OK
02/04/05	Long	5	MA	ND	ND	5 YBD	0 OK
02/04/05	Long	5	MME	ND	ND	0	0 OK
02/04/05	Long	6	PP	ND	ND	0	0 OK
02/04/05	Long	6	MC	ND	ND	1 BBD	0 OK
02/04/05	Long	6	SS	ND	ND	10 YBD	0 OK
10/20/05	Mutton	1	MFRA	15	10	0	100 BL
10/20/05	Mutton	1	MFRA	25	15	0	90 PB
10/20/05	Mutton	1	MFRA	55	30	0	95 BL
10/20/05	Mutton	1	MFRA	20	15	0	100 BL
10/20/05	Mutton	1	MFRA	15	5	0	20 PB
10/20/05	Mutton	1	MFRA	35	15	0	95 BL
10/20/05	Mutton	1	MFRA	30	15	0	90 PB
10/20/05	Mutton	1	MFRA	45	25	0	85 PB
10/20/05	Mutton	1	MFRA	30	25	0	80 PB
10/20/05	Mutton	1	MFRA	45	15	0	90 PB
10/20/05	Mutton	1	MFRA	55	25	0	100 BL
10/20/05	Mutton	1	MFRA	65	35	0	90 PB
10/20/05	Mutton	2	MFRA	35	30	0	95 BL
10/20/05	Mutton	2	MFRA	25	20	0	100 BL
10/20/05	Mutton	2	MFRA	35	30	0	100 BL
10/20/05	Mutton	2	MFRA	25	15	0	100 BL
10/20/05	Mutton	2	MFRA	20	10	0	100 BL
10/20/05	Mutton	2	MFRA	35	10	0	90 PB
10/20/05	Mutton	2	MFRA	75	50	0	90 PB

Date	Location	Transect	Species	Width (cm)	Height (cm)	Disease	Bleaching
10/20/05	Mutton	2	PA	30	30	0	50 PB
10/20/05	Mutton	2	MFRA	25	20	0	100 BL
10/20/05	Mutton	2	MFRA	15	15	0	100 BL
10/20/05	Mutton	2	MFRA	45	20	0	95 BL
10/20/05	Mutton	2	MFRA	50	25	0	85 PB
10/20/05	Mutton	2	MFRA	20	10	0	100 BL
10/20/05	Mutton	2	MFRA	20	10	0	95 BL
10/20/05	Mutton	3	MFRA	25	25	0	95 BL
10/20/05	Mutton	3	MC	35	25	0	0 OK
10/20/05	Mutton	3	MFRA	15	15	0	100 BL
10/20/05	Mutton	3	MFRA	35	20	0	85 PB
10/20/05	Mutton	3	MFRA	35	15	0	100 BL
10/20/05	Mutton	3	MFRA	40	20	0	100 BL
10/20/05	Mutton	3	MFRA	15	10	0	100 BL
10/20/05	Mutton	3	MFRA	35	25	0	90 PB
10/20/05	Mutton	3	DS	55	40	0	0 OK
10/20/05	Mutton	3	MFRA	25	15	0	100 BL
10/20/05	Mutton	3	PP	10	10	0	0 OK
10/20/05	Mutton	4	MFRA	50	45	0	90 PB
10/20/05	Mutton	4	PA	15	10	0	75 PB
10/20/05	Mutton	4	MFRA	20	20	0	85 PB
10/20/05	Mutton	4	MFRA	25	25	0	90 PB
10/20/05	Mutton	4	PA	15	15	0	90 PB
10/20/05	Mutton	4	MFRA	55	35	0	90 PB
10/20/05	Mutton	4	MFRA	45	40	0	90 PB
10/20/05	Mutton	4	MFRA	25	10	0	100 BL
10/20/05	Mutton	4	MFRA	40	15	0	100 BL
10/20/05	Mutton	4	MFRA	35	25	0	95 BL
10/20/05	Mutton	4	MFRA	65	40	0	75 PB
10/20/05	Mutton	4	MFRA	60	50	0	90 PB
10/20/05	Mutton	4	MFRA	50	35	0	80 PB
10/20/05	Mutton	4	CN	85	60	0	100 BL
10/20/05	Mutton	4	MFRA	50	25	0	100 BL
10/20/05	Mutton	5	MFRA	65	40	0	100 BL
10/20/05	Mutton	5	MFRA	60	50	0	90 PB
10/20/05	Mutton	5	MFRA	35	20	0	90 PB
10/20/05	Mutton	5	MFRA	30	15	0	100 BL
10/20/05	Mutton	5	MC	15	10	0	20 PB
10/20/05	Mutton	5	MFRA	55	35	0	100 BL
10/20/05	Mutton	5	MC	45	35	0	0 OK
10/20/05	Mutton	5	MFRA	25	25	0	100 BL
10/20/05	Mutton	5	MFRA	20	20	0	100 BL
10/20/05	Mutton	6	MFRA	30	20	0	100 BL
10/20/05	Mutton	6	MFRA	55	50	0	75 PB
10/20/05	Mutton	6	MFRA	50	35	0	100 BL
10/20/05	Mutton	6	MFRA	15	15	0	100 BL
10/20/05	Mutton	6	MFRA	30	20	0	100 BL
10/20/05	Mutton	6	CN	20	15	0	100 BL

Date	Location	Transect	Species	Width (cm)	Height (cm)	Disease	Bleaching
10/20/05	Mutton	6	MFRA	30	25	0	100 BL
10/20/05	Mutton	6	MC	25	25	0	80 PB
10/20/05	Mutton	6	MFRA	25	15	0	100 BL
10/20/05	Mutton	6	MDA	25	20	0	100 BL
10/20/05	Mutton	6	MFRA	40	25	0	85 PB
10/20/05	Mutton	6	MFRA	25	20	0	100 BL
10/20/05	Mutton	6	MFRA	30	30	0	40 PB
10/20/05	Mutton	6	MFRA	35	35	0	85 PB
10/20/05	Mutton	6	MFRA	45	30	0	100 BL
10/20/05	Mutton	6	MFRA	30	15	0	100 BL
10/13/05	Salt River	1	DS	12	11	0	96 BL
10/13/05	Salt River	1	DS	14	11	0	100 BL
10/13/05	Salt River	1	SS	20	15	0	2 PB
10/13/05	Salt River	1	MA	16	11	0	98 BL
10/13/05	Salt River	1	PA	12	10	0	15 PB
10/13/05	Salt River	2	MA	50	45	0	99 BL
10/13/05	Salt River	2	PA	14	12	0	OK
10/13/05	Salt River	2	MC	15	12	0	2 PB
10/13/05	Salt River	2	SS	58	33	0	OK
10/13/05	Salt River	2	MC	17	11	0	OK
10/13/05	Salt River	2	SM	18	15	0	95 BL
10/13/05	Salt River	3	SS	20	15	0	95 BL
10/13/05	Salt River	3	AA	8	8	0	100 BL
10/13/05	Salt River	3	MILA	30	4	0	50 PB
10/13/05	Salt River	4	MFAV	15	15	0	100 BL
10/13/05	Salt River	4	MFAV	40	25	0	100 BL
10/13/05	Salt River	4	MC	10	15	0	0 OK
10/13/05	Salt River	5	MFRA	12	12	0	100 BL
10/13/05	Salt River	5	SS	10	15	0	80 PB
10/13/05	Salt River	5	MA	15	12	0	100 BL
10/13/05	Salt River	5	MC	35	30	0	OK
10/13/05	Salt River	5	PA	10	10	0	10 PB
10/13/05	Salt River	5	PA	15	15	0	80 PB
10/13/05	Salt River	5	DS	12	10	0	70 PB
10/13/05	Salt River	5	SS	35	40	0	OK
10/13/05	Salt River	6	IR	12	10	0	100 BL
10/13/05	Salt River	6	PA	40	25	0	100 BL
10/13/05	Salt River	6	SS	25	25	0	100 BL
10/13/05	Salt River	6	MFAV	25	20	0	90 PB
01/20/06	Sprat	1	MC	25	45	0	0 OK
01/20/06	Sprat	1	PA	15	5	0	0 OK
01/20/06	Sprat	1	MA	60	65	0	100 P
01/20/06	Sprat	1	SS	25	15	0	100 SP
01/20/06	Sprat	1	MC	10	10	0	0 OK
01/20/06	Sprat	1	PA	25	25	0	0 OK
01/20/06	Sprat	1	MA	50	45	0	100 SP
01/20/06	Sprat	1	MC	30	15	0	0 OK
01/20/06	Sprat	1	MFRA	30	25	0	100 SP

Date	Location	Transect	Species	Width (cm)	Height (cm)	Disease	Bleaching
01/20/06	Sprat	1	MFRA	40	35	0	0 OK
01/20/06	Sprat	1	MA	45	25	0	100 SP
01/20/06	Sprat	1	MFRA	50	40	0	100 P
01/20/06	Sprat	2	PA	15	5	0	0 OK
01/20/06	Sprat	2	MA	25	35	0	100 P
01/20/06	Sprat	2	MC	65	55	0	0 OK
01/20/06	Sprat	2	MFRA	45	40	0	100 SP
01/20/06	Sprat	2	MFRA	25	40	0	0 OK
01/20/06	Sprat	2	MA	15	30	0	100 SP
01/20/06	Sprat	2	MFRA	12	12	0	100 SP
01/20/06	Sprat	2	SS	40	30	0	100 BL
01/20/06	Sprat	2	MA	20	45	0	100 SP
01/20/06	Sprat	2	SS	40	25	0	100 BL
01/20/06	Sprat	2	MC	20	35	0	0 OK
01/20/06	Sprat	3	PA	20	15	0	100 BL
01/20/06	Sprat	3	PA	15	10	0	100 SP
01/20/06	Sprat	3	PA	25	10	0	100 SP
01/20/06	Sprat	3	MFRA	10	7	0	100 SP
01/20/06	Sprat	3	MA	18	30	0	100 SP
01/20/06	Sprat	3	MA	10	12	0	100 SP
01/20/06	Sprat	4	MA	55	70	0	100 P
01/20/06	Sprat	4	MA	60	45	0	100 SP
01/20/06	Sprat	4	MFRA	15	25	0	0 OK
01/20/06	Sprat	4	MA	20	15	0	0 OK
01/20/06	Sprat	4	AA	10	8	0	100 BL
01/20/06	Sprat	4	MA	10	12	0	100 P
01/20/06	Sprat	5	SS	25	20	0	100 P
01/20/06	Sprat	5	PA	15	10	0	0 OK
01/20/06	Sprat	5	MA	60	45	0	100 SP
01/20/06	Sprat	5	MA	95	45	0	100 P
01/20/06	Sprat	5	MA	80	60	0	100 BL
01/20/06	Sprat	5	MA	50	45	0	100 P
01/20/06	Sprat	5	MA	115	50	0	100 P
01/20/06	Sprat	5	MA	100	50	0	100 P
01/20/06	Sprat	6	DL	60	20	ND WSD	100 SP
01/20/06	Sprat	6	MA	40	15	0	100 SP
01/20/06	Sprat	6	MA	55	20	0	100 P
01/20/06	Sprat	6	MFRA	30	40	ND WSD	100 P
01/20/06	Sprat	6	PA	25	20	0	0 OK
01/20/06	Sprat	6	PA	25	5	0	0 OK
01/20/06	Sprat	6	MFRA	10	15	0	0 OK
01/20/06	Sprat	6	MA	25	15	0	0 OK
01/20/06	Sprat	6	MA	30	15	0	0 OK

**Seahorse
Cottage Shoal**

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

Transect 1

5/9/05

No. of *Diadema*: 0
 % of Coral Colonies with Disease: 7.14
 % of Coral Colonies with Bleaching: 0
 Coral Species % Diseased % Bleached
 PA 0 0
 MFRA 0 0
 MFRA 0 0
 MFRA 0 0
 PA 0 0
 DL 0 0
 PA 0 0
 MFRA 0 0
 PA 2 WP 0
 MFRA 0 0
 MFRA 0 0
 PA 0 0
 MFRA 0 0
 MM 0 0

Transect 2

5/9/05

No. of *Diadema*: 0
 % of Coral Colonies with Disease: 4.76
 % of Coral Colonies with Bleaching: 4.76
 Coral Species % Diseased % Bleached
 SS 0 0
 MFRA 0 0
 AA 0 0
 PA 0 0
 MA 0 0
 EF 0 0
 MFRA 0 0
 MA 0 0
 PA 0 0
 MC 0 0
 AA 0 0
 PA 0 0
 MFRA 0 0
 MFRA 0 0
 MFRA 0 0
 MFRA 0 0
 DS 0 0
 MFRA 0 0
 MFRA 0 0
 MFRA 0 0
 MFRA 0 5 PB
 MFRA 2 WP 0

Transect 3

5/9/05

No. of *Diadema*: 0
 % of Coral Colonies with Disease: 0
 % of Coral Colonies with Bleaching: 0
 Coral Species % Diseased % Bleached
 MFAV 0 0
 MFAV 0 0
 MFRA 0 0
 MC 0 0
 MFRA 0 0
 AA 0 0
 MC 0 0
 MFRA 0 0
 MFRA 0 0
 MFRA 0 0
 MFRA 0 0
 DS 0 0
 MFRA 0 0
 MFRA 0 0
 MFRA 0 0
 MFAV 0 0
 MFRA 0 0
 MC 0 0
 MFRA 0 0
 MFRA 0 0
 MME 0 0
 MFRA 0 0
 MME 0 0

Transect 4

5/9/05

No. of *Diadema*: 0
 % of Coral Colonies with Disease: 0
 % of Coral Colonies with Bleaching: 0
 Coral Species % Diseased % Bleached
 PA 0 0
 MFRA 0 0
 PA 0 0
 DL 0 0
 MFAV 0 0
 MFRA 0 0
 SS 0 0
 MFRA 0 0
 PA 0 0
 MFAV 0 0
 PP 0 0
 MFRA 0 0
 PP 0 0
 MM 0 0

Transect 5

5/9/05

No. of *Diadema*: 0
 % of Coral Colonies with Disease: 4.76
 % of Coral Colonies with Bleaching: 0
 Coral Species % Diseased % Bleached
 MFRA 0 0
 MFRA 0 0
 MFRA 0 0
 MFRA 0 0

Transect 6

5/9/05

No. of *Diadema*: 0
 % of Coral Colonies with Disease: 0
 % of Coral Colonies with Bleaching: 5.00
 Coral Species % Diseased % Bleached
 PA 0 0
 MFRA 0 0
 MFRA 0 0
 MFRA 0 0

South Capella

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

Transect 1

5/3/05

No. of *Diadema*: 0

% of Coral Colonies with Disease: 0

% of Coral Colonies with Bleaching: 14.29

Coral Species	% Diseased	% Bleached
MFRA	0	0
MFRA	0	0
AA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
SS	0	20 B
PA	0	0
PA	0	0
MC	0	0
MFRA	0	0
SS	0	60 PB
MFRA	0	0
PA		

Transect 2

5/3/05

No. of *Diadema*: 0

% of Coral Colonies with Disease: 0

% of Coral Colonies with Bleaching: 0

Coral Species	% Diseased	% Bleached
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MC	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0

Transect 3

5/3/05

No. of *Diadema*: 0

% of Coral Colonies with Disease: 5.00

% of Coral Colonies with Bleaching: 5.00

Coral Species	% Diseased	% Bleached
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	60 WP	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
PA	0	0
MFRA	0	0
AA	0	2 B
MFRA	0	0

Transect 4

5/3/05

No. of *Diadema*: 0

% of Coral Colonies with Disease: 5.26

% of Coral Colonies with Bleaching: 0

Coral Species	% Diseased	% Bleached
MFRA	20 WP	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
PA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0

Transect 5

5/3/05

No. of *Diadema*: 0

% of Coral Colonies with Disease: 0

% of Coral Colonies with Bleaching: 0

Coral Species	% Diseased	% Bleached
SS	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MC	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MC	0	0
MFRA	0	0
MFRA		

Transect 6

5/3/05

No. of *Diadema*: 0

% of Coral Colonies with Disease: 5.26

% of Coral Colonies with Bleaching: 5.26

Coral Species	% Diseased	% Bleached
MFRA	0	0
MFRA	0	0
SS	0	80 PB
PA	0	0
MFRA	0	0
SS	60 DS	0
AA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0

Transect 1**5/10/05**

No. of *Diadema*: 0
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 62.50
Coral Species % Diseased % Bleached

PA	0	2 B
SS	0	100 PB
MC	0	0
MME	0	100 PB
MFRA	0	0
MC	0	0
MME	0	100B
DS	0	0

Transect 2**5/10/05**

48.70

No. of *Diadema*: 0
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 50.00
Coral Species % Diseased % Bleached

PA	0	100 PB
MC	0	0
MFRA	0	0
EF	0	100 B

Transect 3**5/10/05**

No. of *Diadema*: 0
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 63.64
Coral Species % Diseased % Bleached

SS	0	100 PB
SS	0	100 PB
MA	0	0
EF	0	100 B
MFRA	0	0
MC	0	0
EF	0	100 B
AA	0	100 B
PA	0	0
SS	0	100 B
AA	0	50 B

Transect 4**5/10/05**

No. of *Diadema*: 0
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 62.50
Coral Species % Diseased % Bleached

DS	0	100 PB
MME	0	100 B
MC	0	0
MC	0	0
MME	0	10 PB
MC	0	0
SS	0	100 PB
PA	0	2 B

Transect 5**5/10/05**

No. of *Diadema*: 0
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 28.57
Coral Species % Diseased % Bleached

MFRA	0	0
MA	0	0
PA	0	100 B
MFRA	0	0
MC	0	100 PB
MC	0	0
PA	0	0

Transect 6**5/10/05**

No. of *Diadema*: 0
% of Coral Colonies with Disease: 0
% of Coral Colonies with Bleaching: 25.00
Coral Species % Diseased % Bleached

MC	0	100 PB
MFRA	0	0
MC	0	0
MC	0	0
DS	0	5 B
AA	0	0
AA	0	0
SS	0	0

Transect 1

No. of <i>Diadema</i>:	0	
% of Coral Colonies with Disease:		0
% of Coral Colonies with Bleaching:		10.00
Coral Species	% Diseased	% Bleached
DS	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
SS	0	80 PB
MFRA	0	0
MFRA	0	0
AA	0	0
MFRA	0	0
MFRA	0	0

Transect 2

No. of <i>Diadema</i>:	0	
% of Coral Colonies with Disease:		0
% of Coral Colonies with Bleaching:		0
Coral Species	% Diseased	% Bleached
MFRA	0	0
MC	0	0
MFRA	0	0
MFRA	0	0
MC	0	0
MFRA	0	0
MFRA	0	0
AA	0	0
MFRA	0	0
MFRA	0	0

Transect 3

No. of <i>Diadema</i>:	0	
% of Coral Colonies with Disease:		0
% of Coral Colonies with Bleaching:		7.69
Coral Species	% Diseased	% Bleached
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MC	0	0
AA	0	70 PB
MC	0	0
MC	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0

Transect 4

No. of <i>Diadema</i>:	0	
% of Coral Colonies with Disease:		0
% of Coral Colonies with Bleaching:		10.00
Coral Species	% Diseased	% Bleached
MFRA	0	0
MFRA	0	0
MFRA	0	0
AA	0	70 PB
MFRA	0	0
MFRA	0	0
PA	0	0
PA	0	0
MFRA	0	0
MFRA	0	0

Transect 5

No. of <i>Diadema</i>:	0	
% of Coral Colonies with Disease:		0
% of Coral Colonies with Bleaching:		0
Coral Species	% Diseased	% Bleached
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0

Transect 6

No. of <i>Diadema</i>:	0	
% of Coral Colonies with Disease:		0
% of Coral Colonies with Bleaching:		10.00
Coral Species	% Diseased	% Bleached
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	2 B
AA	0	10 B
PA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
AA	0	0
MFRA	0	0
MFRA	0	0

Red Hind Bank

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

Transect 1

4/29/05

No. of <i>Diadema</i> :	0	
% of Coral Colonies with Disease:		0
% of Coral Colonies with Bleaching:		12.50
Coral Species	% Diseased	% Bleached
MFRA	0	0
MC	0	20 PB
MFRA	0	0
AA	0	0
MFRA	0	0
MFRA	0	0
MC	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	90 B
AA	0	0
MFRA	0	0
MFRA	0	0
PA	0	0
MFRA	0	0
PA	0	0

Transect 2

4/29/05

No. of <i>Diadema</i> :	0	
% of Coral Colonies with Disease:		0
% of Coral Colonies with Bleaching:		12.50
Coral Species	% Diseased	% Bleached
MC	0	0
SS	0	60 B
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
DS	0	0
AA	0	20 PB
PA	0	0
MC	0	0
MFRA	0	0

Transect 3

4/29/05

No. of <i>Diadema</i> :	0	
% of Coral Colonies with Disease:		0
% of Coral Colonies with Bleaching:		0
Coral Species	% Diseased	% Bleached
MFRA	0	0
AA	0	0
MFR	0	0
MFRA	0	0
MFRA	0	0
PA	0	0
MC	0	0
PA	0	0
MFRA	0	0
MFRA	0	0

Transect 4

4/29/05

No. of <i>Diadema</i> :	0	
% of Coral Colonies with Disease:		0
% of Coral Colonies with Bleaching:		0
Coral Species	% Diseased	% Bleached
MFRA	0	0
MFRA	0	0
MC	0	0
AA	0	0
AA	0	0
AA	0	0
MFRA	0	0

Transect 5

4/29/05

No. of <i>Diadema</i> :	0.00	
% of Coral Colonies with Disease:		0
% of Coral Colonies with Bleaching:		5.88
Coral Species	% Diseased	% Bleached
MFRA	0	0
MFRA	0	0
DL	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
AA	0	10 PB
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
AA	0	0
MFRA	0	0
MFRA	0	0
PA	0	0
MFRA	0	0
MFRA	0	0

Transect 6

4/29/05

No. of <i>Diadema</i> :	0	
% of Coral Colonies with Disease:		0
% of Coral Colonies with Bleaching:		14.29
Coral Species	% Diseased	% Bleached
DL	0	0
AA	0	60 PB
MFRA	0	0
AA	0	0
MFRA	0	0
MFRA	0	0
AA	0	0

**College Shoal
East**

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

Transect 1

5/28/05

No. of <i>Diadema</i> :	0	
% of Coral Colonies with Disease:		0
% of Coral Colonies with Bleaching:		0
Coral Species	% Diseased	% Bleached
MFRA	0	0
DL	0	0
MFRA	0	0
DL	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
PP	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
AA	0	0

Transect 2

5/28/05

No. of <i>Diadema</i> :	0	
% of Coral Colonies with Disease:		0
% of Coral Colonies with Bleaching:		0
Coral Species	% Diseased	% Bleached
MFRA	0	0
MFRA	0	0
PA	0	0
AA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
PA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0

Transect 3

5/28/05

No. of <i>Diadema</i> :	0	
% of Coral Colonies with Disease:		0
% of Coral Colonies with Bleaching:		0
Coral Species	% Diseased	% Bleached
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
SS	0	0
PA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MILA	0	0
MFRA	0	0
MFRA	0	0
AA	0	0
AA	0	0
MFRA	0	0
AA	0	0
MFRA	0	0
AA	0	0
MFRA	0	0

Transect 4

5/28/05

No. of <i>Diadema</i> :	0	
% of Coral Colonies with Disease:		0
% of Coral Colonies with Bleaching:		0
Coral Species	% Diseased	% Bleached
MFRA	0	0
MFRA	0	0
PA	0	0
AA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
PA	0	0
MFRA	0	0
MFRA	0	0

Transect 5

5/28/05

No. of <i>Diadema</i> :	0	
% of Coral Colonies with Disease:		0
% of Coral Colonies with Bleaching:		7.14
Coral Species	% Diseased	% Bleached
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MC	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	8 B

Transect 6

5/28/05

No. of <i>Diadema</i> :	0	
% of Coral Colonies with Disease:		0
% of Coral Colonies with Bleaching:		5.56
Coral Species	% Diseased	% Bleached
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
AA	0	60 PB
MFRA	0	0
MFRA	0	0
MFRA	0	0
MFRA	0	0
AA	0	0
PA	0	0

Appendix V. Abundance of fish observed in belt transects, St. Croix, 2005

Family	Species	Common Name	SR	CB	Total No. of Fish Observed						Total
					IB	ER	SH	BI	GP	MS	
Acanthuridae											
	<i>Acanthurus bahianus</i>	ocean surgeon	89	67	93	56	24	51	141	6	527
	<i>Acanthurus chirurgus</i>	doctorfish	-	-	2	14	-	25	-	4	45
	<i>Acanthurus coeruleus</i>	blue tang	42	28	28	26	22	59	203	6	414
Apogonidae											
	<i>Apogon townsendi</i>	belted cardinalfish	-	-	-	12	-	-	-	-	12
Aulostomidae											
	<i>Aulostomus maculatus</i>	trumpetfish	3	4	2	-	9	2	1	-	21
Balistidae											
	<i>Balistes vetula</i>	queen triggerfish	-	-	-	-	-	1	-	-	1
	<i>Melichthys niger</i>	black durgon	80	86	8	5	6	1	3	55	244
Blenniidae											
	<i>Ophioblennius atlanticus</i>	redlip blenny	-	-	-	-	-	-	25	-	25
Bothidae											
	<i>Bothus lunatus</i>	peacock flounder	-	-	-	-	-	-	1	-	1
Carangidae											
	<i>Caranx fusus</i>	blue runner	-	-	3	-	-	-	-	-	3
	<i>Caranx latus</i>	horse-eye jack	6	-	-	-	-	-	-	-	6
	<i>Caranx ruber</i>	bar jack	3	36	18	22	14	48	42	2	185
	<i>Decapterus macarellus</i>	mackerel scad	-	100	-	1,780	-	10	-	-	1,890
Chaetodontidae											
	<i>Chaetodon aculeatus</i>	longsnout butterflyfish	4	6	-	-	2	-	-	-	12
	<i>Chaetodon capistratus</i>	foureye butterflyfish	32	24	-	27	30	11	2	11	137
	<i>Chaetodon striatus</i>	banded butterflyfish	9	4	3	5	4	-	2	4	31
Cirrhitidae											
	<i>Amblycirrhitus pinos</i>	redspotted hawkfish	1	2	2	1	-	-	-	-	6

Appendix V continued. Abundance of fish observed in belt transects, St. Croix, 2005

Family	Species	Common Name	SR	CB	Total No. of Fish Observed						Total
					IB	ER	SH	BI	GP	MS	
Dasyatidae											
	<i>Dasyatis americana</i>	southern stingray	1	-	1	-	1	-	-	-	3
Exocoetidae											
	<i>Hemiramphus brasiliensis</i>	ballyhoo	-	-	-	100	-	-	-	-	100
Gerreidae											
	<i>Gerres cinereus</i>	yellowfin majorra	-	1	-	-	-	-	-	-	1
Ginglymostomatidae											
	<i>Ginglymostoma cirratum</i>	nurse shark	-	-	-	-	-	-	1	-	1
Grammatidae											
	<i>Gramma loreto</i>	fairy basslet	102	245	3	40	42	34	-	14	480
Haemulidae											
	<i>Haemulon aurolineatum</i>	tomtate	-	-	5	-	-	8	-	-	13
	<i>Haemulon carbonarium</i>	caesar grunt	1	4	25	-	1	-	-	-	31
	<i>Haemulon chrysargyreum</i>	smallmouth grunt	-	1	15	-	-	7	1	-	24
	<i>Haemulon flavolineatum</i>	french grunt	19	11	18	29	61	19	6	4	167
	<i>Haemulon melanurum</i>	cottonwick	-	-	3	-	-	-	-	-	3
	<i>Haemulon plumieri</i>	white grunt	-	-	-	-	-	1	-	-	1
	<i>Haemulon sciurus</i>	bluestriped grunt	-	-	-	4	3	-	-	-	7
Holocentridae											
	<i>Holocentrus adscensionis</i>	squirrelfish	-	2	1	-	1	-	3	-	7
	<i>Holocentrus rufus</i>	longspine squirrelfish	3	2	2	7	23	7	-	1	45
	<i>Myripristis jacobus</i>	blackbar soldierfish	10	5	21	55	17	-	12	2	122
	<i>Neoniphon marianus</i>	longjaw squirrelfish	1	4	5	-	-	1	-	-	11
	<i>Sargocentron coruscus</i>	reef squirrelfish	1	-	-	-	-	-	1	-	2
Inermiidae											
	<i>Inermia vittata</i>	boga	-	-	-	100	81	-	-	-	181

Appendix V continued. Abundance of fish observed in belt transects, St. Croix, 2005

Family	Species	Common Name	SR	CB	Total No. of Fish Observed						Total
					IB	ER	SH	BI	GP	MS	
Kyphosidae											
	<i>Kyphosus sectatrix/incisor</i>	Bermuda chub	1	-	-	-	-	-	-	-	1
Labridae											
	<i>Bodianus rufus</i>	spanish hogfish	2	9	5	6	6	-	2	1	31
	<i>Clepticus parrae</i>	creole wrasse	320	1,570	22	1,167	1,937	64	-	40	5,120
	<i>Halichoeres bivittatus</i>	slippery dick	5	-	16	1	2	-	110	-	134
	<i>Halichoeres garnoti</i>	yellowhead wrasse	58	54	62	99	79	68	3	9	432
	<i>Halichoeres maculipinna</i>	clown wrasse	20	5	20	10	1	4	92	-	152
	<i>Halichoeres pictus</i>	rainbow wrasse	-	5	-	-	-	-	-	-	5
	<i>Halichoeres poeyi</i>	blackear wrasse	-	-	1	-	-	-	-	-	1
	<i>Halichoeres radiatus</i>	pudding wife	1	-	3	1	-	1	26	-	32
	<i>Thalassoma bifasciatum</i>	bluehead wrasse	1,073	451	803	1,008	325	201	788	43	4,692
Lutjanidae											
	<i>Lutjanus analis</i>	mutton snapper	-	-	-	-	1	-	-	-	1
	<i>Lutjanus apodus</i>	schoolmaster	5	-	-	-	2	1	5	-	13
	<i>Lutjanus mahogoni</i>	mahogany snapper	-	3	5	-	5	5	3	-	21
	<i>Ocyurus chrysurus</i>	yellowtail snapper	1	11	1	9	1	21	2	1	47
Malacanthidae											
	<i>Malacanthus plumieri</i>	sand tilefish	-	1	1	-	-	-	6	-	8
Monocanthidae											
	<i>Cantherhines pullus</i>	orangespotted filefish	6	-	2	1	1	-	8	1	19
Mullidae											
	<i>Mulloidichthys martinicus</i>	yellow goatfish	3	24	5	3	9	3	-	2	49
	<i>Psuedupeneus maculatus</i>	spotted goatfish	1	-	23	7	-	4	1	-	36
Muraenidae											
	<i>Gymnothorax funebris</i>	green moray	2	-	-	-	-	-	-	-	2
	<i>Gymnothorax moringa</i>	spotted moray	-	1	-	-	-	-	-	-	1

Appendix V continued. Abundance of fish observed in belt transects, St. Croix, 2005

Family	Species	Common Name	SR	CB	Total No. of Fish Observed						Total
					IB	ER	SH	BI	GP	MS	
Ostraciidae											
	<i>Acanthostracion ploygonia</i>	honeycomb cowfish	3	3	1	3	2	1	-	1	14
	<i>Lactophrys bicaudalis</i>	spotted trunkfish	1	-	-	1	1	-	-	-	3
	<i>Lactophrys triqueter</i>	smooth trunkfish	1	3	3	-	2	-	1	-	10
Pomacanthidae											
	<i>Holacanthus ciliaris</i>	queen angelfish	-	-	-	1	-	-	-	-	1
	<i>Holacanthus tricolor</i>	rock beauty	5	2	-	5	3	-	-	-	15
	<i>Pomacanthus paru</i>	french angelfish	-	-	-	1	-	-	1	-	2
Pomacentridae											
	<i>Abudefduf saxatilis</i>	sergeant major	61	36	-	24	7	-	33	-	161
	<i>Chromis cyanea</i>	blue chromis	76	944	229	287	504	170	1	47	2,258
	<i>Chromis multilineata</i>	brown chromis	86	621	14	159	454	-	145	27	1,506
	<i>Microspathodon chrysurus</i>	yellowtail damselfish	22	17	22	10	2	1	126	2	202
	<i>Stegastes adustus</i>	dusky damselfish	6	1	15	48	1	-	70	-	141
	<i>Stegastes diencaeus</i>	longfin damselfish	15	75	-	53	37	28	121	3	332
	<i>Stegastes leucostictus</i>	beaugregory	4	7	18	40	7	28	2	3	109
	<i>Stegastes partitus</i>	bicolor damselfish	394	327	464	410	301	97	41	113	2,147
	<i>Stegastes planifrons</i>	threespot damselfish	2	86	1	5	183	157	2	2	438
	<i>Stegastes variabilis</i>	cocoa damselfish	-	-	-	18	1	-	-	-	19
Priacanthidae											
	<i>Heteropriacanthus cruentatus</i>	glasseye snapper	-	1	1	-	4	-	-	-	6
Scaridae											
	<i>Scarus iserti</i>	striped parrotfish	24	62	22	66	72	353	40	6	645
	<i>Scarus taeniopterus</i>	princess parrotfish	45	39	4	20	81	9	-	18	216
	<i>Scarus vetula</i>	queen parrotfish	1	1	-	-	8	16	48	-	74
	<i>Sparisoma atomarium</i>	greenblotch parrotfish	-	-	17	-	2	14	-	-	33
	<i>Sparisoma aurofrenatum</i>	redband parrotfish	100	79	82	110	93	120	39	14	637
	<i>Sparisoma chrysopteron</i>	redtail parrotfish	3	-	3	1	-	1	15	-	23
	<i>Sparisoma rubripinne</i>	redfin parrotfish	2	-	2	-	-	2	29	-	35
	<i>Sparisoma viride</i>	stoplight parrotfish	14	65	27	17	78	77	129	4	411

Appendix V continued. Abundance of fish observed in belt transects, St. Croix, 2005

Family	Species	Common Name	SR	CB	Total No. of Fish Observed						Total	
					IB	ER	SH	BI	GP	MS		
Sciaenidae												
	<i>Equetus punctatus</i>	spotted drum	-	-	-	-	-	1	-	-	1	
	<i>Odontoscion dentex</i>	reef croaker	-	-	-	-	1	-	-	-	1	
Scombridae												
	<i>Scomberomorus regalis</i>	cero mackerel	-	-	-	1	-	-	3	-	4	
Scorpaenidae												
	<i>Scorpaena plumieri</i>	spotted scorpionfish	-	-	1	-	1	-	-	-	2	
Serranidae												
	<i>Cephalopholis cruentatus</i>	graysby	6	27	8	13	27	5	-	8	94	
	<i>Cephalopholis fulvus</i>	coney	43	11	37	34	9	3	4	-	141	
	<i>Epinephelus guttatus</i>	red hind	1	-	1	3	-	6	1	-	12	
	<i>Hypoplectrus chlorurus</i>	yellowtail hamlet	1	3	-	1	-	3	-	1	9	
	<i>Hypoplectrus guttavarius</i>	shy hamlet	1	1	-	-	-	-	-	-	2	
	<i>Hypoplectrus nigricans</i>	black hamlet	1	1	-	-	1	8	-	-	11	
	<i>Hypoplectrus puella</i>	barred hamlet	3	3	-	1	4	13	-	1	25	
	<i>Hypoplectrus unicolor</i>	butter hamlet	-	-	-	-	1	2	-	1	4	
	<i>Liopropoma rubre</i>	peppermint basslet	-	-	-	-	1	-	-	-	1	
	<i>Rypticus saponaceus</i>	greater soapfish	-	1	-	-	-	-	-	-	1	
	<i>Serranus tabacarius</i>	tobacco fish	-	1	-	3	-	-	-	-	4	
	<i>Serranus tigrinus</i>	harlequin bass	10	7	10	40	8	2	-	-	77	
Sphyraenidae												
	<i>Sphyraena barracuda</i>	great barracuda	-	1	-	-	-	2	1	1	5	
Synodontidae												
	<i>Synodus intermedius</i>	sand diver	-	-	-	1	-	1	-	-	2	
Tetraodontidae												
	<i>Canthigaster rostrata</i>	sharpnose puffer	5	27	3	12	31	7	-	3	88	
	<i>Diodon holacanthus</i>	balloonfish	-	-	1	-	-	-	-	-	1	
n = 100 species			Total =	2,841	5,218	2,213	5,983	4,637	1,784	2,342	461	25,479

Appendix VI. Size distribution of all fish observed in belt transects, St. Croix, 2005.

Species	Common Name	Total Length (cm)						Total No.
		0-5	5-10	10-20	20-30	30-40	> 40	
Acanthuridae								
<i>Acanthurus bahianus</i>	ocean surgeon	67	99	350	11	-	-	527
<i>Acanthurus chirurgus</i>	doctorfish	-	3	38	4	-	-	45
<i>Acanthurus coeruleus</i>	blue tang	87	58	262	7	-	-	414
Apogonidae								
<i>Apogon townsendi</i>	belted cardinalfish	12	-	-	-	-	-	12
Aulostomidae								
<i>Aulostomus maculatus</i>	trumpetfish	-	-	1	2	11	7	21
Balistidae								
<i>Balistes vetula</i>	queen triggerfish	-	-	-	-	1	-	1
<i>Melichthys niger</i>	black durgon	1	28	73	128	14	-	244
Blenniidae								
<i>Ophioblennius atlanticus</i>	redlip blenny	3	19	3	-	-	-	25
Bothidae								
<i>Bothus lunatus</i>	peacock flounder	-	-	1	-	-	-	1
Carangidae								
<i>Caranx fuscus</i>	blue runner	-	-	3	-	-	-	3
<i>Caranx latus</i>	horse-eye jack	-	-	1	-	-	5	6
<i>Caranx ruber</i>	bar jack	-	7	126	50	2	-	185
<i>Decapterus macarellus</i>	mackerel scad	-	-	1880	10	-	-	1890
Chaetodontidae								
<i>Chaetodon aculeatus</i>	longsnout butterflyfish	-	12	-	-	-	-	12
<i>Chaetodon capistratus</i>	four-eye butterflyfish	4	133	-	-	-	-	137
<i>Chaetodon striatus</i>	banded butterflyfish	-	9	22	-	-	-	31
Cirrhitidae								
<i>Amblycirrhitus pinos</i>	redspotted hawkfish	2	4	-	-	-	-	6
Dasyatidae								
<i>Dasyatis americana</i>	southern stingray	-	-	-	-	-	3	3
Exocoetidae								
<i>Hemiramphus brasiliensis</i>	ballyhoo	-	-	-	100	-	-	100
Gerreidae								
<i>Gerres cinereus</i>	yellowfin majorra	-	-	-	1	-	-	1
Ginglymostomatidae								
<i>Ginglymostoma cirratum</i>	nurse shark	-	-	-	-	-	1	1
Grammatidae								
<i>Gramma loreto</i>	fairy basslet	437	43	-	-	-	-	480

Appendix VI continued. Size distribution of all fish observed in belt transects, St. Croix, 2005.

Species	Common Name	0-5	5-10	Total Length (cm)				Total No.
				10-20	20-30	30-40	> 40	
Haemulidae								
<i>Haemulon aurolineatum</i>	tomtate	-	3	10	-	-	-	13
<i>Haemulon carbonarium</i>	caesar grunt	-	-	20	11	-	-	31
<i>Haemulon chrysargyreum</i>	smallmouth grunt	-	-	24	-	-	-	24
<i>Haemulon flavolineatum</i>	french grunt	50	3	114	-	-	-	167
<i>Haemulon melanurum</i>	cottonwick	-	-	3	-	-	-	3
<i>Haemulon plumieri</i>	white grunt	-	-	-	1	-	-	1
<i>Haemulon sciurus</i>	bluestriped grunt	-	-	1	5	1	-	7
Holocentridae								
<i>Holocentrus adcionis</i>	squirrelfish	-	-	3	4	-	-	7
<i>Holocentrus rufus</i>	longspine squirrelfish	-	1	40	4	-	-	45
<i>Myripristis jacobus</i>	blackbar soldierfish	-	11	111	-	-	-	122
<i>Neonippon marianus</i>	longjaw squirrelfish	-	-	11	-	-	-	11
<i>Sargocentron coruscus</i>	reef squirrelfish	-	-	2	-	-	-	2
Inermiidae								
<i>Inermia vittata</i>	boga	-	20	161	-	-	-	181
Kyphosidae								
<i>Kyphosus sectatrix/incisor</i>	Bermuda chub	-	-	-	1	-	-	1
Labridae								
<i>Bodianus rufus</i>	spanish hogfish	6	13	10	2	-	-	31
<i>Clepticus parrae</i>	creole wrasse	1477	1491	2152	-	-	-	5120
<i>Halichoeres bivittatus</i>	slippery dick	24	65	45	-	-	-	134
<i>Halichoeres garnoti</i>	yellowhead wrasse	78	263	91	-	-	-	432
<i>Halichoeres maculipinna</i>	clown wrasse	23	97	32	-	-	-	152
<i>Halichoeres pictus</i>	rainbow wrasse	-	3	2	-	-	-	5
<i>Halichoeres poeyi</i>	blackear wrasse	-	1	-	-	-	-	1
<i>Halichoeres radiatus</i>	pudding wife	13	17	2	-	-	-	32
<i>Thalassoma bifasciatum</i>	bluehead wrasse	2180	2482	30	-	-	-	4692
Lutjanidae								
<i>Lutjanus analis</i>	mutton snapper	-	-	-	-	-	1	1
<i>Lutjanus apodus</i>	schoolmaster	-	-	5	4	2	2	13
<i>Lutjanus mahogoni</i>	mahogany snapper	-	1	18	2	-	-	21
<i>Ocyurus chrysurus</i>	yellowtail snapper	-	-	19	25	3	-	47
Malacanthidae								
<i>Malacanthus plumieri</i>	sand tilefish	-	-	3	4	1	-	8
Monocanthidae								
<i>Cantherhines pullus</i>	orangespotted filefish	-	4	13	2	-	-	19
Mullidae								
<i>Mulloidichthys martinicus</i>	yellow goatfish	-	-	45	4	-	-	49
<i>Psuedupeneus maculatus</i>	spotted goatfish	-	2	31	3	-	-	36

Appendix VI continued. Size distribution of all fish observed in belt transects, St. Croix, 2005.

Species	Common Name	0-5	5-10	Total Length (cm)				Total No.
				10-20	20-30	30-40	> 40	
Muraenidae								
<i>Gymnothorax funebris</i>	green moray	-	-	-	-	-	2	2
<i>Gymnothorax moringa</i>	spotted moray	-	-	-	-	-	1	1
Ostraciidae								
<i>Acanthostrac. ploygonia</i>	honeycomb cowfish	-	-	-	9	5	-	14
<i>Lactophrys bicaudalis</i>	spotted trunkfish	2	1	-	-	-	-	3
<i>Lactophrys triqueter</i>	smooth trunkfish	1	2	7	-	-	-	10
Pomacanthidae								
<i>Holacanthus ciliaris</i>	queen angelfish	-	-	-	1	-	-	1
<i>Holacanthus tricolor</i>	rock beauty	3	2	8	2	-	-	15
<i>Pomacanthus paru</i>	french angelfish	-	-	1	1	-	-	2
Pomacentridae								
<i>Abudefduf saxatilis</i>	sergeant major	-	65	96	-	-	-	161
<i>Chromis cyanea</i>	blue chromis	946	1312	-	-	-	-	2258
<i>Chromis multilineata</i>	brown chromis	398	1077	31	-	-	-	1506
<i>Microspath. chrysurus</i>	yellowtail damselfish	34	44	124	-	-	-	202
<i>Stegastes adustus</i>	dusky damselfish	23	116	2	-	-	-	141
<i>Stegastes diencaeus</i>	longfin damselfish	67	265	-	-	-	-	332
<i>Stegastes leucostictus</i>	beaugregory	28	81	-	-	-	-	109
<i>Stegastes partitus</i>	bicolor damselfish	936	1211	-	-	-	-	2147
<i>Stegastes planifrons</i>	threespot damselfish	126	312	-	-	-	-	438
<i>Stegastes variabilis</i>	cocoa damselfish	18	1	-	-	-	-	19
Priacanthidae								
<i>Heteropriac. cruentatus</i>	glasseye snapper	-	-	3	3	-	-	6
Scaridae								
<i>Scarus iserti</i>	striped parrotfish	330	220	90	5	-	-	645
<i>Scarus taeniopterus</i>	princess parrotfish	8	46	109	49	4	-	216
<i>Scarus vetula</i>	queen parrotfish	-	4	12	42	14	2	74
<i>Sparisoma atomarium</i>	greenblotch parrotfish	7	26	-	-	-	-	33
<i>Sparisoma aurofrenatum</i>	redband parrotfish	184	126	269	58	-	-	637
<i>Sparisoma chrysopterum</i>	redtail parrotfish	-	3	6	13	1	-	23
<i>Sparisoma rubripinne</i>	redfin parrotfish	3	8	10	12	2	-	35
<i>Sparisoma viride</i>	stoplight parrotfish	205	71	61	49	25	-	411
Sciaenidae								
<i>Equetus punctatus</i>	spotted drum	-	-	1	-	-	-	1
<i>Odontoscion dentex</i>	reef croaker	-	-	1	-	-	-	1
Scombridae								
<i>Scomberomorus regalis</i>	cero mackerel	-	-	-	-	1	3	4

Appendix VI continued. Size distribution of all fish observed in belt transects, St. Croix, 2005.

Species	Common Name	0-5	5-10	Total Length (cm)				Total No.	
				10-20	20-30	30-40	> 40		
Scorpaenidae									
<i>Scorpaena plumieri</i>	spotted scorpionfish	-	-	1	1	-	-	2	
Serranidae									
<i>Cephalopholis cruentatus</i>	graysby	-	12	73	9	-	-	94	
<i>Cephalopholis fulvus</i>	coney	1	45	86	9	-	-	141	
<i>Epinephelus guttatus</i>	red hind	-	-	6	5	1	-	12	
<i>Hypoplectrus chlorurus</i>	yellowtail hamlet	-	7	2	-	-	-	9	
<i>Hypoplectrus guttavarius</i>	shy hamlet	-	2	-	-	-	-	2	
<i>Hypoplectrus nigricans</i>	black hamlet	1	5	5	-	-	-	11	
<i>Hypoplectrus puella</i>	barred hamlet	4	19	2	-	-	-	25	
<i>Hypoplectrus unicolor</i>	butter hamlet	-	3	1	-	-	-	4	
<i>Liopropoma rubre</i>	peppermint basslet	-	1	-	-	-	-	1	
<i>Rypticus saponaceus</i>	greater soapfish	-	-	-	1	-	-	1	
<i>Serranus tabacarius</i>	tobacco fish	1	3	-	-	-	-	4	
<i>Serranus tigrinus</i>	harlequin bass	12	55	10	-	-	-	77	
Sphyraenidae									
<i>Sphyraena barracuda</i>	great barracuda	-	-	-	-	-	5	5	
Synodontidae									
<i>Synodus intermedius</i>	sand diver	-	-	2	-	-	-	2	
Tetraodontidae									
<i>Canthigaster rostrata</i>	sharpnose puffer	44	44	-	-	-	-	88	
<i>Diodon holacanthus</i>	balloonfish	-	-	1	-	-	-	1	
Total =		7,846	10,081	6,778	654	88	32	25,479	
% =		30.8%	39.6%	26.6%	2.6%	0.35%	0.13%	100.0%	

Appendix VII. Relative abundance of fish observed in Roving Diver Surveys, St. Croix, 2005.

Family	Species	Common Name	SR	CB	Avg. AI*		SH	BI	GP	All Sites
					IB	ER				
Acanthuridae										
	<i>Acanthurus bahianus</i>	ocean surgeon	3.7	3.5	4.0	3.5	2.8	3.3	4.0	3.50
	<i>Acanthurus chirurgus</i>	doctorfish	-	1.3	1.3	0.5	-	2.8	1.0	1.00
	<i>Acanthurus coeruleus</i>	blue tang	3.3	3.5	3.3	2.8	2.3	3.3	4.3	3.23
Apogonidae										
	<i>Apogon lachneri</i>	whitestar cardinalfish	-	-	-	-	-	1.0	-	0.15
	<i>Apogon townsendi</i>	belted cardinalfish	0.3	1.0	-	0.8	0.3	0.5	-	0.42
Aulostomidae										
	<i>Aulostomus maculatus</i>	trumpetfish	0.3	1.3	0.3	0.8	1.8	2.0	0.8	1.08
Balistidae										
	<i>Melichthys niger</i>	black durgon	3.0	3.5	2.3	0.8	1.5	-	1.5	1.73
Blenniidae										
	<i>Ophioblennius atlanticus</i>	redlip blenny	-	-	-	-	0.3	-	3.3	0.54
Bothidae										
	<i>Bothus lunatus</i>	peacock flounder	-	0.3	-	0.3	-	0.3	-	0.12
Carangidae										
	<i>Caranx latus</i>	horse-eye jack	-	0.5	-	-	-	-	-	0.08
	<i>Caranx ruber</i>	bar jack	1.7	2.8	2.3	1.8	1.3	2.3	2.8	2.12
	<i>Decapterus macarellus</i>	mackerel scad	-	-	-	3.0	-	-	-	0.46
Chaenopsidae										
	<i>Acanthemblemaria spinosa</i>	spinyhead blenny	0.7	0.8	-	-	0.5	-	-	0.27
Chaetodontidae										
	<i>Chaetodon aculeatus</i>	longsnout butterflyfish	1.7	1.5	-	0.3	1.0	-	-	0.62
	<i>Chaetodon capistratus</i>	foureye butterflyfish	3.0	2.8	-	2.8	2.5	1.8	0.5	1.92
	<i>Chaetodon striatus</i>	banded butterflyfish	1.7	1.5	1.3	0.8	1.0	-	1.0	1.00

Appendix VII continued. Relative abundance of fish observed in Roving Diver Surveys, St. Croix, 2005.

Family	Species	Common Name	SR	CB	Avg. AI*		SH	BI	GP	All Sites
					IB	ER				
Cirrhitidae										
	<i>Amblycirrhitus pinos</i>	redspotted hawkfish	0.7	0.3	0.3	0.5	0.3	-	-	0.27
Congridae										
	<i>Heteroconger longissimus</i>	brown garden eel	-	-	-	-	1.0	-	-	0.15
Dasyatidae										
	<i>Dasyatis americana</i>	southern stingray	-	-	-	-	0.3	0.3	0.3	0.12
Echeneidae										
	<i>Echeneis naucrates</i>	sharksucker	-	0.3	-	-	-	-	-	0.04
Gerreidae										
	<i>Gerres cinereus</i>	yellowfin majorra	-	0.5	-	-	-	1.0	0.5	0.31
Gobiidae										
	<i>Coryphopterus dicrus</i>	colon goby	-	0.5	-	0.5	-	0.5	-	0.23
	<i>Coryphopterus eidolon</i>	pallid goby	-	-	-	-	1.0	1.3	-	0.35
	<i>Coryphopterus glaucofrenatum</i>	bridled goby	1.0	3.8	0.7	2.8	3.0	3.0	-	2.12
	<i>Coryphopterus lipernes</i>	peppermint goby	-	2.8	-	0.5	2.0	2.3	-	1.15
	<i>C. personatus/hyalinus</i>	glass/masked goby	2.7	5.0	-	2.3	2.5	3.8	-	2.38
	<i>Elacatinus evelynae/genie</i>	sharknose/cleaning goby	1.0	1.8	0.7	0.8	1.0	1.8	-	1.00
	<i>Gnatholepis thompsoni</i>	goldspot goby	-	2.0	-	1.0	0.8	0.8	-	0.69
	<i>Gobiosoma chancei</i>	shortstripe goby	-	0.3	-	-	0.5	-	-	0.12
	<i>Gobiosoma prochilos</i>	broadstripe goby	1.0	-	-	0.8	-	-	-	0.23
	<i>Gobiosoma saucrum</i>	leopard goby	-	0.3	-	-	0.3	-	-	0.08
Grammatidae										
	<i>Gramma loreto</i>	fairy basslet	3.7	4.0	1.3	1.5	2.8	2.8	0.5	2.35

Appendix VII continued. Relative abundance of fish observed in Roving Diver Surveys, St. Croix, 2005.

Family	Species	Common Name	SR	CB	Avg. AI*		SH	BI	GP	All Sites
					IB	ER				
Haemulidae										
	<i>Anisotremus virginicus</i>	porkfish	0.3	-	-	-	-	-	-	0.04
	<i>Haemulon aurolineatum</i>	tomtate	-	-	1.7	-	-	2.8	-	0.62
	<i>Haemulon carbonarium</i>	caesar grunt	1.3	1.5	0.3	0.8	0.5	-	2.0	0.92
	<i>Haemulon chrysargyreum</i>	smallmouth grunt	0.3	2.3	2.7	0.5	-	2.0	1.0	1.23
	<i>Haemulon flavolineatum</i>	french grunt	3.0	2.5	2.7	2.3	2.3	3.0	2.3	2.54
	<i>Haemulon macrostomum</i>	spanish grunt	0.3	-	-	-	-	-	-	0.04
	<i>Haemulon plumieri</i>	white grunt	1.3	1.0	-	0.5	0.5	1.3	-	0.65
	<i>Haemulon sciurus</i>	bluestriped grunt	1.7	1.0	0.3	1.5	0.3	0.5	-	0.73
Holocentridae										
	<i>Holocentrus adscensionis</i>	squirrelfish	-	0.3	1.7	-	-	-	1.8	0.50
	<i>Holocentrus rufus</i>	longspine squirrelfish	1.3	1.0	0.7	2.0	2.3	1.5	0.3	1.31
	<i>Myripristis jacobus</i>	blackbar soldierfish	2.3	3.0	3.0	3.0	2.0	-	2.8	2.27
	<i>Neoniphon marianus</i>	longjaw squirrelfish	0.3	1.8	0.7	0.5	0.5	1.0	-	0.69
	<i>Sargocentron vexillarium</i>	dusky squirrelfish	-	-	-	-	-	-	0.5	0.08
Inermiidae										
	<i>Inermia vittata</i>	boga	-	1.0	-	-	1.0	-	-	0.31
Kyphosidae										
	<i>Kyphosus sectatrix/incisor</i>	Bermuda chub	0.7	-	-	-	-	-	0.5	0.15
Labridae										
	<i>Bodianus rufus</i>	spanish hogfish	0.7	1.5	2.0	0.3	1.3	-	2.0	1.08
	<i>Clepticus parrae</i>	creole wrasse	4.3	3.0	3.0	3.0	4.0	3.3	-	2.88
	<i>Halichoeres bivittatus</i>	slippery dick	0.7	-	2.0	0.5	1.0	1.3	4.0	1.35
	<i>Halichoeres garnoti</i>	yellowhead wrasse	2.7	3.5	3.7	2.5	2.8	3.0	2.5	2.92
	<i>Halichoeres maculipinna</i>	clown wrasse	1.7	0.8	2.7	1.3	1.8	0.8	3.5	1.73
	<i>Halichoeres pictus</i>	rainbow wrasse	-	1.3	-	-	-	0.5	-	0.27
	<i>Halichoeres poeyi</i>	blackear wrasse	-	-	0.7	-	-	-	1.0	0.23
	<i>Halichoeres radiatus</i>	pudding wife	0.3	-	0.7	0.8	-	0.3	2.5	0.65
	<i>Thalassoma bifasciatum</i>	bluehead wrasse	4.7	4.3	4.3	4.5	3.5	4.0	4.8	4.27

Appendix VII continued. Relative abundance of fish observed in Roving Diver Surveys, St. Croix, 2005.

Family	Species	Common Name	SR	CB	Avg. AI*		SH	BI	GP	All Sites
					IB	ER				
Labrisomidae										
	<i>Malacoctenus aurolineatus</i>	goldline blenny	1.0	-	-	-	-	-	1.0	0.27
	<i>Malacoctenus bohlkei</i>	diamond blenny	-	-	-	-	-	0.3	-	0.04
	<i>Malacoctenus macropus</i>	rosy blenny	-	-	-	-	-	-	0.3	0.04
	<i>Malacoctenus triangulatus</i>	saddled blenny	1.0	-	1.0	-	-	-	2.0	0.54
Lutjanidae										
	<i>Lutjanus analis</i>	mutton snapper	-	-	-	-	0.3	0.3	-	0.08
	<i>Lutjanus apodus</i>	schoolmaster	0.7	2.0	0.7	-	1.5	-	1.5	0.92
	<i>Lutjanus mahogoni</i>	mahogany snapper	1.0	2.3	1.7	0.8	1.8	1.5	2.0	1.58
	<i>Ocyurus chrysurus</i>	yellowtail snapper	2.3	1.8	1.0	2.5	0.5	2.3	1.5	1.69
Malacanthidae										
	<i>Malacanthus plumieri</i>	sand tilefish	-	0.3	0.7	-	0.8	0.5	2.8	0.73
Monocanthidae										
	<i>Aluterus scripta</i>	scrawled filefish	0.3	0.3	-	-	-	0.3	-	0.12
	<i>Cantherhines macrocerus</i>	whitespotted filefish	-	-	-	-	0.5	0.3	-	0.12
	<i>Cantherhines pullus</i>	orangespotted filefish	1.7	0.8	0.7	1.0	-	0.3	1.8	0.85
Mullidae										
	<i>Mulloidichthys martinicus</i>	yellow goatfish	1.7	3.0	1.3	1.3	2.0	2.8	1.3	1.92
	<i>Psuedupeneus maculatus</i>	spotted goatfish	1.3	-	2.0	2.3	0.3	2.0	1.3	1.27
Muraenidae										
	<i>Gymnothorax funebris</i>	green moray	-	0.3	-	-	-	-	-	0.04
Myliobatidae										
	<i>Aetobatus narinari</i>	spotted eagle ray	0.3	-	0.3	-	-	-	-	0.08
Opistognathidae										
	<i>Opistognathus aurifrons</i>	yellowhead jawfish	3.3	-	-	1.5	-	-	-	0.62

Appendix VII continued. Relative abundance of fish observed in Roving Diver Surveys, St. Croix, 2005.

Family	Species	Common Name	SR	CB	Avg. AI*		SH	BI	GP	All Sites
					IB	ER				
Ostraciidae										
	<i>Acanthostracion ploygonia</i>	honeycomb cowfish	0.7	0.5	-	1.3	1.3	0.5	-	0.62
	<i>Lactophrys bicaudalis</i>	spotted trunkfish	0.3	-	0.3	-	-	0.3	0.3	0.15
	<i>Lactophrys triqueter</i>	smooth trunkfish	-	0.8	0.3	0.3	1.0	0.5	0.3	0.46
Pempheridae										
	<i>Pempheris schomburgki</i>	glassy sweeper	-	-	-	-	-	-	0.5	0.08
Pomacanthidae										
	<i>Holacanthus ciliaris</i>	queen angelfish	-	0.8	-	-	-	-	1.0	0.27
	<i>Holacanthus tricolor</i>	rock beauty	2.0	0.8	1.7	1.3	1.0	-	-	0.88
	<i>Pomacanthus arcuatus</i>	gray angelfish	-	-	-	-	-	0.3	-	0.04
	<i>Pomacanthus paru</i>	french angelfish	1.0	-	-	-	-	-	0.3	0.15
Pomacentridae										
	<i>Abudefduf saxatilis</i>	sergeant major	3.0	3.5	1.7	3.0	2.0	-	2.5	2.23
	<i>Chromis cyanea</i>	blue chromis	4.0	4.5	4.0	3.3	3.8	3.8	0.3	3.31
	<i>Chromis multilineata</i>	brown chromis	3.7	4.5	3.0	3.5	3.5	0.5	3.3	3.12
	<i>Microspathodon chrysurus</i>	yellowtail damselfish	1.3	2.8	2.7	2.3	0.3	0.5	3.8	1.92
	<i>Stegastes adustus</i>	dusky damselfish	2.7	-	3.3	1.0	-	-	3.0	1.31
	<i>Stegastes diencaeus</i>	longfin damselfish	-	3.3	2.0	1.5	3.0	2.8	1.8	2.12
	<i>Stegastes leucostictus</i>	beaugregory	1.3	1.5	2.7	1.5	1.3	2.5	1.8	1.77
	<i>Stegastes partitus</i>	bicolor damselfish	4.7	3.8	4.3	4.3	3.5	3.5	3.5	3.88
	<i>Stegastes planifrons</i>	threespot damselfish	1.3	3.3	-	1.0	3.5	3.8	0.3	1.96
	<i>Stegastes variabilis</i>	cocoa damselfish	-	-	-	0.3	-	-	0.8	0.15
Priacanthidae										
	<i>Heteropriacanthus cruentatus</i>	glasseye snapper	-	0.8	-	0.3	0.5	-	0.5	0.31
	<i>Priacanthus arenatus</i>	bigeye	-	-	-	-	-	0.3	-	0.04

Appendix VII continued. Relative abundance of fish observed in Roving Diver Surveys, St. Croix, 2005.

Family	Species	Common Name	SR	CB	Avg. AI*		SH	BI	GP	All Sites
					IB	ER				
Scaridae										
	<i>Scarus iserti</i>	striped parrotfish	2.7	3.0	2.0	3.0	3.0	3.8	1.8	2.77
	<i>Scarus taeniopterus</i>	princess parrotfish	3.3	3.0	1.3	2.8	3.0	1.0	-	2.04
	<i>Scarus vetula</i>	queen parrotfish	0.7	1.8	0.7	-	1.3	2.3	3.5	1.50
	<i>Sparisoma atomarium</i>	greenblotch parrotfish	-	0.5	1.7	0.5	-	2.3	-	0.69
	<i>Sparisoma aurofrenatum</i>	redband parrotfish	3.3	3.3	3.7	3.0	3.3	3.3	3.0	3.23
	<i>Sparisoma chrysopteron</i>	redtail parrotfish	1.0	0.3	2.0	0.3	-	0.8	1.8	0.81
	<i>Sparisoma rubripinne</i>	redfin parrotfish	-	0.5	0.7	-	-	1.0	3.0	0.77
	<i>Sparisoma viride</i>	stoplight parrotfish	2.7	3.0	2.3	2.3	3.3	2.8	3.8	2.88
Sciaenidae										
	<i>Equetus punctatus</i>	spotted drum	-	-	0.7	0.3	-	0.3	-	0.15
	<i>Pareques acuminatus</i>	high-hat	-	-	0.3	-	-	-	-	0.04
Scombridae										
	<i>Euthynnus alleteratus</i>	little tunny	-	-	-	0.3	-	-	-	0.04
	<i>Scomberomorus regalis</i>	cero mackerel	0.3	-	-	-	-	-	-	0.04
Serranidae										
	<i>Cephalopholis cruentatus</i>	graysby	1.7	3.0	1.7	2.3	2.8	2.0	-	1.92
	<i>Cephalopholis fulvus</i>	coney	3.3	1.8	3.0	2.5	1.3	0.5	2.0	1.96
	<i>Epinephelus guttatus</i>	red hind	0.3	-	1.3	1.0	0.3	1.0	0.5	0.62
	<i>Epinephelus striatus</i>	Nassau grouper	-	-	-	-	-	0.3	-	0.04
	<i>Hypoplectrus chlorurus</i>	yellowtail hamlet	2.0	0.8	-	0.8	0.3	1.3	-	0.69
	<i>Hypoplectrus guttavarius</i>	shy hamlet	-	-	-	-	-	0.5	-	0.08
	<i>Hypoplectrus nigricans</i>	black hamlet	0.7	0.8	-	-	0.5	2.8	-	0.69
	<i>Hypoplectrus puella</i>	barred hamlet	0.7	1.0	0.3	0.3	1.0	2.0	-	0.77
	<i>Hypoplectrus unicolor</i>	butter hamlet	-	-	-	-	0.3	-	-	0.04
	<i>Liopropoma rubre</i>	peppermint basslet	0.3	0.5	-	-	-	-	-	0.12
	<i>Mycteroperca tigris</i>	tiger grouper	0.3	-	-	-	-	-	-	0.04
	<i>Paranthias furcifer</i>	creolefish	-	0.3	-	-	-	-	-	0.04
	<i>Rypticus saponaceus</i>	greater soapfish	0.3	0.3	0.3	-	-	-	0.3	0.15
	<i>Serranus tabacarius</i>	tobacco fish	-	0.8	-	2.0	-	0.3	-	0.46
	<i>Serranus tigrinus</i>	harlequin bass	2.0	1.3	1.3	2.8	1.3	-	-	1.19

Appendix VII continued. Relative abundance of fish observed in Roving Diver Surveys, St. Croix, 2005.

Family	Species	Common Name	SR	CB	Avg. AI*		SH	BI	GP	All Sites
					IB	ER				
Sparidae										
	<i>Calamus calamus</i>	saucereye porgy	-	-	-	0.3	-	-	-	0.04
	<i>Calamus</i> sp.	porgy, unident.	-	-	-	-	-	0.3	0.3	0.08
Sphyraenidae										
	<i>Sphyraena barracuda</i>	great barracuda	-	-	0.7	0.3	-	-	-	0.12
Synodontidae										
	<i>Synodus intermedius</i>	sand diver	-	-	-	0.8	0.3	0.3	-	0.19
Tetraodontidae										
	<i>Canthigaster rostrata</i>	sharpnose puffer	0.3	2.0	0.7	1.0	2.5	2.3	-	1.31
	<i>Diodon hystrix</i>	porcupinefish	0.3	0.3	-	-	-	-	-	0.08
	<i>Sphoeroides spengleri</i>	bandtail puffer	-	0.3	-	-	-	-	-	0.04
		No. of Replicate Surveys	3	4	3	4	4	4	4	26
		Total No. Species =	76	83	66	75	72	76	63	127

*Average Abundance Index (AI) was calculated as the mean score from 3 or 4 replicate surveys using the following scale: 0=no fish, 1=1fish, 2=2-10 fish, 3=11-100 fish, 4=101-1000 fish, 5 = 1001+ fish.

Appendix VIII. Size distribution of all fish observed in belt transects, St. Thomas, 2005.

Species	Common Name	Fork length (cm)						Total No.
		0-5	5-10	10-20	20-30	30-40	>40	
Acanthuridae								
<i>Acanthurus bahianus</i>	ocean surgeonfish	-	49	23	-	-	-	72
<i>Acanthurus chirurgus</i>	doctorfish	1	66	12	-	-	-	79
<i>Acanthurus coeruleus</i>	blue tang	4	47	49	4	-	-	103
Aulostomidae								
<i>Aulostomus maculatus</i>	trumpetfish	-	-	-	-	2	-	2
Balistidae								
			-					
<i>Balistes vetula</i>	queen triggerfish	-	-	7	6	-	-	13
<i>Melichthys niger</i>	black durgon	-	1	32	5	-	-	39
<i>Canthidermis sufflamen</i>	ocean triggerfish	-	-	3	3	-	-	6
Carangidae								
<i>Caranx ruber</i>	bar jack	-	1	4	21	6	-	32
Cheatodontidae								
<i>Chaetodon capistratus</i>	foureye butterflyfish	42	45	-	-	-	-	87
<i>Chaetodon striatus</i>	banded butterflyfish	-	12	-	-	-	-	12
<i>Chaetodon sedentarius</i>	reef butterflyfish	-	7	-	-	-	-	7
	longsnout							
<i>Chaetodon aculeatus</i>	butterflyfish	1	5	-	-	-	-	6
Grammatidae								
<i>Gramma loreto</i>	fairy basslet	285	-	-	-	-	-	285
Haemulidae								
<i>Haemulon plumieri</i>	white grunt	-	28	6	1	-	-	35
<i>Haemulon sciurus</i>	bluestriped grunt	-	-	12	2	-	-	4
<i>Haemulon flavolineatum</i>	French grunt	-	38	30	-	-	-	68
<i>Haemulon striatus</i>	striped grunt	-	-	-	1	-	-	1
<i>Haemulon carbonarium</i>	Caesar grunt	-	-	1	4	-	-	5
<i>Haemulon parra</i>	sailors choice	-	-	1	-	-	-	1
<i>Haemulon aurolineatum</i>	tomtate	-	-	48	-	-	-	48
<i>Anisotremus virginicus</i>	porkfish	-	-	3	-	-	-	3
Holocentridae								
<i>Holocentrus rufus</i>	longspine squirrelfish	-	69	42	-	-	-	111
<i>Holocentrus adscensionis</i>	squirrelfish	-	2	-	-	-	-	2
<i>Myripristis jacobus</i>	blackbar soldierfish	-	14	8	-	-	-	22
<i>Priacanthus cruentatus</i>	glasseye snapper	-	1	1	-	-	-	2
Kyphosidae								
<i>Kyphosus sectatrix</i>	Bermuda chub	-	-	-	6	-	-	6

Appendix VIII continued. Size distribution of all fish observed in belt transects, St. Thomas, 2005.

Species	Common Name	Fork length (cm)						Total No.
		0-5	5-10	10-20	20-30	30-40	>40	
Labridae								
<i>Halichoeres maculipinna</i>	clown wrasse	11	-	-	-	-	-	11
<i>Halichoeres garnoti</i>	yellow headed wrasse	220	52	1	-	-	-	273
<i>Thalassoma bifasciatum</i>	blue headed wrasse	343	95	21	-	-	-	459
<i>Clepticus parrae</i>	creole wrasse	552	358	-	-	-	-	910
<i>Bodianus rufus</i>	Spanish hogfish	-	2	3	-	-	-	5
Lutjanidae								
<i>Lutjanus apodus</i>	schoolmaster snapper	-	3	99	102	5	-	209
<i>Lutjanus griseus</i>	gray snapper	-	-	7	20	2	-	29
<i>Lutjanus analis</i>	mutton snapper	-	-	-	2	-	-	2
<i>Lutjanus mahogani</i>	mahogany snapper	-	-	10	10	-	-	20
<i>Ocyurus chrysurus</i>	yellowtail snapper	-	-	3	8	-	-	11
<i>Lutjanus synagris</i>	lane snapper	-	24	-	-	-	-	24
<i>Lutjanus cyanopterus</i>	cubera snapper	-	-	-	-	-	45	45
<i>Lutjanus jocu</i>	dog snapper	-	-	1	2	-	-	3
Mullidae								
<i>Mulloidichthys martinicus</i>	yellow goatfish	-	32	33	3	-	-	68
<i>Pseudupeneus maculatus</i>	spotted goatfish	-	10	6	-	-	-	16
Ostraciidae								
<i>Lactophyrus triqueter</i>	smooth trunkfish	-	4	-	-	-	-	4
Pomacanthidae								
<i>Pomacanthus paru</i>	French angel	-	-	2	1	-	-	3
<i>Pomacanthus arcuatus</i>	gray angel	0	-	1	1	-	-	2
<i>Holocanthus tricolor</i>	rock beauty	1	12	4	-	-	-	17
<i>Holocanthus ciliaris</i>	queen angel	-	-	5	7	-	-	12
Pomacentridae								
<i>Stegastes partitus</i>	bicolor damselfish	599	186	-	-	-	-	785
<i>Stegastes planifrons</i>	three-spot damselfish	167	48	-	-	-	-	212
<i>Stegastes leucostictus</i>	beaugregory	6	8	-	-	-	-	14
<i>Stegastes diencaeus</i>	longfin damselfish	9	5	-	-	-	-	14
<i>Stegastes variabilis</i>	cocoa damselfish	8	2	-	-	-	-	10
<i>Chromis cyanea</i>	blue chromis	1481	348	-	-	-	-	1829
<i>Chromis multilineata</i>	brown chromis	251	173	-	-	-	-	424
<i>Microspathodon chrysurus</i>	yellowtail damselfish	22	1	-	-	-	-	23
<i>Abudefduf saxatilis</i>	sergeant major	-	6	-	-	-	-	6
Scaridae								
<i>Sparisoma viride</i>	stoplight parrotfish	1	8	24	15	2	-	51
<i>Sparisoma rubripinne</i>	redfin parrotfish	2	20	7	4	1	-	34

Appendix VIII continued. Size distribution of all fish observed in belt transects, St. Thomas, 2005.

Species	Common Name	0-5	5-10	10-20	20-30	30-40	>40	Total No.
Scaridae								
<i>Sparisoma aurofrenatum</i>	redband parrotfish	55	38	10	3	-	-	106
<i>Scarus taeniopterus</i>	princess parrotfish	20	78	18	3	-	-	119
<i>Scarus iserti</i>	striped parrotfish	154	296	21	3	-	-	436
<i>Scarus vetula</i>	queen parrotfish	-	-	5	7	-	-	12
<i>Sparisoma chrysopteron</i>	redtail parrotfish	-	-	2	2	-	-	4
Scombridae								
<i>Scomberomorus regalis</i>	cero	-	-	-	-	2	-	2
Serranidae								
<i>Mycteroperca tigris</i>	tiger grouper	-	-	-	9	12	-	21
<i>Epinephelus guttatus</i>	red hind grouper	-	-	7	6	2	-	15
<i>Epinephelus cruentatus</i>	graysby	-	19	19	2	-	-	40
<i>Epinephelus striatus</i>	Nassau grouper	-	-	-	-	2	-	2
<i>Epinephelus fulvus</i>	coney	-	1	3	1	-	-	5
<i>Mycteroperca venenosa</i>	yellowfin grouper	-	-	-	-	-	2	2
<i>Mycteroperca interstitialis</i>	yellowmouth grouper	-	-	-	-	2	-	2
<i>Hypoplectrus puella</i>	barred Hamlet	14	21	-	-	-	-	35
<i>Hypoplectrus nigricans</i>	black hamlet	1	1	-	-	-	-	2
<i>Hypoplectrus chlorurus</i>	yellowtail hamlet	4	13	-	-	-	-	17
<i>Hypoplectrus unicolor</i>	butter hamlet	3	9	-	-	-	-	12
<i>Hypoplectrus aberrans</i>	yellowbelly hamlet	1	2	-	-	-	-	3
<i>Serranus tigrinus</i>	harlequin bass	1	2	-	-	-	-	3
<i>Serranus tabacarius</i>	tobacco fish	1	-	-	-	-	-	1
<i>Paranthias furcifer</i>	creolefish	-	76	2	-	-	-	78
Sparidae								
<i>Calamus calamus</i>	saucereye porgy	-	-	-	1	-	-	1
Tetraodontidae								
<i>Canthigaster rostrata</i>	shortnose puffer	10	4	-	-	-	-	14
<i>Spheroides spengleri</i>	bandtail puffer	-	1	-	-	-	-	1
Total =		4280	2344	596	285	38	47	7590
% =		56.4%	30.9%	7.8%	3.8%	0.5%	0.6%	100.0%

Appendix IX. Size distribution of all fish observed in belt transects, St. Thomas, 2005.

Species	Common Name	Fork length (cm)						Total No.
		0-5	5-10	10-20	20-30	30-40	>40	
Acanthuridae								
<i>Acanthurus bahianus</i>	ocean surgeonfish	-	49	23	-	-	-	72
<i>Acanthurus chirurgus</i>	doctorfish	1	66	12	-	-	-	79
<i>Acanthurus coeruleus</i>	blue tang	4	47	49	4	-	-	103
Aulostomidae								
<i>Aulostomus maculatus</i>	trumpetfish	-	-	-	-	2	-	2
Balistidae								
<i>Balistes vetula</i>	queen triggerfish	-	-	7	6	-	-	13
<i>Melichthys niger</i>	black durgon	-	1	32	5	-	-	39
<i>Canthidermis sufflamen</i>	ocean triggerfish	-	-	3	3	-	-	6
Carangidae								
<i>Caranx ruber</i>	bar jack	-	1	4	21	6	-	32
Cheatodontidae								
<i>Chaetodon capistratus</i>	foureye butterflyfish	42	45	-	-	-	-	87
<i>Chaetodon striatus</i>	banded butterflyfish	-	12	-	-	-	-	12
<i>Chaetodon sedentarius</i>	reef butterflyfish	-	7	-	-	-	-	7
<i>Chaetodon aculeatus</i>	longsnout butterflyfish	1	5	-	-	-	-	6
Grammatidae								
<i>Gramma loreto</i>	fairy basslet	285	-	-	-	-	-	285
Haemulidae								
<i>Haemulon plumieri</i>	white grunt	-	28	6	1	-	-	35
<i>Haemulon sciurus</i>	bluestriped grunt	-	-	12	2	-	-	4
<i>Haemulon flavolineatum</i>	French grunt	-	38	30	-	-	-	68
<i>Haemulon striatus</i>	striped grunt	-	-	-	1	-	-	1
<i>Haemulon carbonarium</i>	Caesar grunt	-	-	1	4	-	-	5
<i>Haemulon parra</i>	sailors choice	-	-	1	-	-	-	1
<i>Haemulon aurolineatum</i>	tomtate	-	-	48	-	-	-	48
<i>Anisotremus virginicus</i>	porkfish	-	-	3	-	-	-	3
Holocentridae								
<i>Holocentrus rufus</i>	longspine squirrelfish	-	69	42	-	-	-	111
<i>Holocentrus adscensionis</i>	squirrelfish	-	2	-	-	-	-	2
<i>Myripristis jacobus</i>	blackbar soldierfish	-	14	8	-	-	-	22
<i>Priacanthus cruentatus</i>	glasseye snapper	-	1	1	-	-	-	2
Kyphosidae								
<i>Kyphosus sectatrix</i>	Bermuda chub	-	-	-	6	-	-	6

Appendix IX continued. Size distribution of all fish observed in belt transects, St. Thomas, 2005.

Species	Common Name	Fork length (cm)						Total No.
		0-5	5-10	10-20	20-30	30-40	>40	
Labridae								
<i>Halichoeres maculipinna</i>	clown wrasse	11	-	-	-	-	-	11
<i>Halichoeres garnoti</i>	yellow headed wrasse	220	52	1	-	-	-	273
<i>Thalassoma bifasciatum</i>	blue headed wrasse	343	95	21	-	-	-	459
<i>Clepticus parrae</i>	creole wrasse	552	358	-	-	-	-	910
<i>Bodianus rufus</i>	Spanish hogfish	-	2	3	-	-	-	5
Lutjanidae								
<i>Lutjanus apodus</i>	schoolmaster snapper	-	3	99	102	5	-	209
<i>Lutjanus griseus</i>	gray snapper	-	-	7	20	2	-	29
<i>Lutjanus analis</i>	mutton snapper	-	-	-	2	-	-	2
<i>Lutjanus mahogani</i>	mahogany snapper	-	-	10	10	-	-	20
<i>Ocyurus chrysurus</i>	yellowtail snapper	-	-	3	8	-	-	11
<i>Lutjanus synagris</i>	lane snapper	-	24	-	-	-	-	24
<i>Lutjanus cyanopterus</i>	cubera snapper	-	-	-	-	-	45	45
<i>Lutjanus jocu</i>	dog snapper	-	-	1	2	-	-	3
Mullidae								
<i>Mulloidichthys martinicus</i>	yellow goatfish	-	32	33	3	-	-	68
<i>Pseudupeneus maculatus</i>	spotted goatfish	-	10	6	-	-	-	16
Ostraciidae								
<i>Lactophyrus triqueter</i>	smooth trunkfish	-	4	-	-	-	-	4
Pomacanthidae								
<i>Pomacanthus paru</i>	French angel	-	-	2	1	-	-	3
<i>Pomacanthus arcuatus</i>	gray angel	0	-	1	1	-	-	2
<i>Holocanthus tricolor</i>	rock beauty	1	12	4	-	-	-	17
<i>Holocanthus ciliaris</i>	queen angel	-	-	5	7	-	-	12
Pomacentridae								
<i>Stegastes partitus</i>	bicolor damselfish	599	186	-	-	-	-	785
<i>Stegastes planifrons</i>	three-spot damselfish	167	48	-	-	-	-	212
<i>Stegastes leucostictus</i>	beaugregory	6	8	-	-	-	-	14
<i>Stegastes diencaeus</i>	longfin damselfish	9	5	-	-	-	-	14
<i>Stegastes variabilis</i>	cocoa damselfish	8	2	-	-	-	-	10
<i>Chromis cyanea</i>	blue chromis	1481	348	-	-	-	-	1829
<i>Chromis multilineata</i>	brown chromis	251	173	-	-	-	-	424
<i>Microspathodon chrysurus</i>	yellowtail damselfish	22	1	-	-	-	-	23
<i>Abudefduf saxatilis</i>	sergeant major	-	6	-	-	-	-	6
Scaridae								
<i>Sparisoma viride</i>	stoplight parrotfish	1	8	24	15	2	-	51
<i>Sparisoma rubripinne</i>	redfin parrotfish	2	20	7	4	1	-	34

Appendix IX continued. Size distribution of all fish observed in belt transects, St. Thomas, 2005.

Species	Common Name	0-5	5-10	10-20	20-30	30-40	>40	Total No.
Scaridae								
<i>Sparisoma aurofrenatum</i>	redband parrotfish	55	38	10	3	-	-	106
<i>Scarus taeniopterus</i>	princess parrotfish	20	78	18	3	-	-	119
<i>Scarus iserti</i>	striped parrotfish	154	296	21	3	-	-	436
<i>Scarus vetula</i>	queen parrotfish	-	-	5	7	-	-	12
<i>Sparisoma chrysopteron</i>	redtail parrotfish	-	-	2	2	-	-	4
Scombridae								
<i>Scomberomorus regalis</i>	cero	-	-	-	-	2	-	2
Serranidae								
<i>Mycteroperca tigris</i>	tiger grouper	-	-	-	9	12	-	21
<i>Epinephelus guttatus</i>	red hind grouper	-	-	7	6	2	-	15
<i>Epinephelus cruentatus</i>	graysby	-	19	19	2	-	-	40
<i>Epinephelus striatus</i>	Nassau grouper	-	-	-	-	2	-	2
<i>Epinephelus fulvus</i>	coney	-	1	3	1	-	-	5
<i>Mycteroperca venenosa</i>	yellowfin grouper	-	-	-	-	-	2	2
<i>Mycteroperca interstitialis</i>	yellowmouth grouper	-	-	-	-	2	-	2
<i>Hypoplectrus puella</i>	barred Hamlet	14	21	-	-	-	-	35
<i>Hypoplectrus nigricans</i>	black hamlet	1	1	-	-	-	-	2
<i>Hypoplectrus chlorurus</i>	yellowtail hamlet	4	13	-	-	-	-	17
<i>Hypoplectrus unicolor</i>	butter hamlet	3	9	-	-	-	-	12
<i>Hypoplectrus aberrans</i>	yellowbelly hamlet	1	2	-	-	-	-	3
<i>Serranus tigrinus</i>	harlequin bass	1	2	-	-	-	-	3
<i>Serranus tabacarius</i>	tobacco fish	1	-	-	-	-	-	1
<i>Paranthias furcifer</i>	creolefish	-	76	2	-	-	-	78
Sparidae								
<i>Calamus calamus</i>	saucereye porgy	-	-	-	1	-	-	1
Tetraodontidae								
<i>Canthigaster rostrata</i>	shortnose puffer	10	4	-	-	-	-	14
<i>Spheroides spengleri</i>	bandtail puffer	-	1	-	-	-	-	1
Total =		4280	2344	596	285	38	47	7590
% =		56.4%	30.9%	7.8%	3.8%	0.5%	0.6%	100.0%

Appendix X. Relative abundance of fish observed in Roving Diver Surveys, St. Thomas, 2005.

Family	Species	Common Name	SCP	SCS	Avg. AI* WI	GB	RHB	CSE	All Sites
Acanthuridae									
	<i>Acanthurus coeruleus</i>	blue tang	2.0	3.3	2.7	2.0	2.0	2.7	2.44
	<i>Acanthurus bahianus</i>	ocean surgeonfish	2.5	3.0	2.7	2.0	2.0	1.7	2.31
	<i>Acanthurus chirugus</i>	doctorfish	1.5	2.0	2.0	0.7	-	2.3	1.42
Aulostomidae									
	<i>Aulostomus maculatus</i>	trumpetfish	0.5	1.7	-	0.3	-	0.3	0.47
Balistidae									
	<i>Cantherhines pullus</i>	orangespotted filefish	0.5	0.3	0.5	0.3	-	0.3	0.33
	<i>Balistes ventula</i>	queen triggerfish	0.5	1.3	2.7	-	0.3	0.3	0.86
	<i>Melichthys niger</i>	black durgeon	1.0	-	-	3.0	1.3	2.3	1.28
	<i>Canthidermis sufflamen</i>	ocean triggerfish	1.0	-	-	0.3	-	0.7	0.33
Carangidae									
	<i>Caranx ruber</i>	bar jack	2.5	2.0	1.0	0.7	0.3	2.7	1.53
	<i>Caranx lugubris</i>	black jack	-	-	-	1.3	0.7	0.7	0.44
	<i>Caranx latus</i>	horseeye jack	0.5	-	-	-	1.3	0.7	0.42
	<i>Caranx bartholmaei</i>	yellow jack	-	0.7	-	-	-	-	0.11
	<i>Seriola dumerili</i>	amberjack	0.5	-	-	-	-	-	0.88
Cheateodontidae									
	<i>Chaetodon capistratus</i>	four-eye butterflyfish	1.0	-	-	1.3	2.0	2.3	1.11
	<i>Chaetodon striatus</i>	banded butterflyfish	2.0	0.3	-	-	-	1.7	0.67
	<i>Chaetodon ocellatus</i>	spotfin butterflyfish	2.0	2.7	2.0	-	-	-	1.11
	<i>Chaetodon aculeatus</i>	longsnout butterflyfish	0.5	-	1.0	-	0.7	-	0.36
	<i>Chaetodon sedentarius</i>	reef butterflyfish	0.5	-	-	0.7	1.0	-	0.46

Appendix X continued. Relative abundance of fish observed in Roving Diver Surveys, St. Thomas, 2005.

Family	Species	Common Name	SCP	SCS	Avg. AI* WI	GB	RHB	CSE	All Sites
Dasyatidae									
	<i>Dasyatis americana</i>	southern stingray	-	0.7	-	-	-	-	0.11
Gobiidae									
	<i>Coryphopterus personatus</i>	masked goby	3.7	3.7	3.7	3.7	3.7	3.7	3.67
	<i>Gobiosoma genie</i>	cleaning goby	-	-	-	1.0	-	-	0.17
Grammatidae									
	<i>Gramma loreto</i>	fairy basslet	2.50	2.00	-	0.7	2.3	1.67	1.53
Haemulon									
	<i>Haemulon flavolineatum</i>	French grunt	2.5	2.3	2.0	1.3	2.0	0.3	1.75
	<i>Haemulon aurolineatum</i>	tomtate	1.0	3.3	-	-	-	0.3	0.78
	<i>Haemulon carbonarium</i>	caesar grunt	1.5	3.0	0.5	0.3	1.7	-	1.17
	<i>Haemulon macrostomum</i>	Spanish grunt	0.5	-	-	-	-	0.3	0.14
	<i>Haemulon plumieri</i>	white grunt	-	2.0	2.0	1.0	0.3	0.3	0.94
	<i>Haemulon sciurus</i>	bluestriped grunt	1.5	2.0	2.0	0.3	1.7	-	1.25
	<i>Anisotremus virginicus</i>	porkfish	-	-	-	0.7	1.0	-	0.28
Holocentridae									
	<i>Holocentrus rufus</i>	longspine squirrelfish	2.0	2.3	3.0	0.7	1.0	-	1.50
	<i>Holocentrus adscensionis</i>	squirrelfish	0.5	0.3	-	0.7	-	-	0.25
	<i>Myripristis jacobus</i>	blackbar soldierfish	2.0	0.7	1.0	0.7	0.7	1.3	1.06
Inermiidae									
	<i>Inermia vittata</i>	boga	2.0	-	-	-	-	1.0	0.50

Appendix X continued. Relative abundance of fish observed in Roving Diver Surveys, St. Thomas, 2005.

Family	Species	Common Name	SCP	SCS	Avg AI* WI	GB	RHB	CSE	All Sites
Kyphosidae	<i>Kyphosis sectatrix</i>	Bermuda chub	-	-	-	-	0.3	1.3	0.38
Labridae	<i>Halichoeres garnoti</i>	yellowhead wrasse	2.5	2.0	-	-	-	1.7	1.03
	<i>Thalassoma bifasciatum</i>	bluehead wrasse	2.5	3.7	3.3	2.3	0.7	3.3	2.64
	<i>Clepticus parrai</i>	creole wrasse	3.5	-	1.0	2.3	3.0	-	1.64
	<i>Bodianus rufus</i>	Spanish hogfish	1.0	2.0	1.7	1.3	0.7	2.0	1.44
	<i>Lachnolaimus maximus</i>	hogfish	-	1.0	-	0.3	-	-	0.22
Lutjanidae	<i>Lutjanus apodus</i>	schoolmaster	2.5	2.7	-	2.7	3.7	1.3	2.14
	<i>Lutjanus griseus</i>	gray snapper	-	3.7	2.3	-	-	-	1.00
	<i>Lutjanus mahogani</i>	mahogany snapper	-	0.3	-	0.7	-	-	0.17
	<i>Lutjanus jocu</i>	dog snapper	1.5	-	-	-	-	1.3	0.47
	<i>Ocyurus chrysurus</i>	yellowtail snapper	-	3.3	2.0	2.7	0.7	2.7	1.89
	<i>Lutjanus analis</i>	mutton snapper	0.5	2.7	1.0	-	0.7	-	0.81
	<i>Lutjanus cyanopterus</i>	cubera snapper	-	-	-	2.7	-	-	0.44
Malacanthidae	<i>Malacanthus pulmieri</i>	sand tilefish	0.5	-	-	-	-	-	0.08
Mullidae	<i>Mulloidichthys martinicus</i>	yellow goatfish	1.5	2.7	1.0	0.7	-	2.3	1.36
	<i>Pseudupeneus maculatus</i>	striped goatfish	2.0	2.7	1.3	0.7	2.0	-	1.44

Appendix X continued. Relative abundance of fish observed in Roving Diver Surveys, St. Thomas, 2005.

Family	Species	Common Name	SCP	SCS	Avg AI*		GB	RHB	CSE	All Sites
					WI					
Muraenidae										
	<i>Gymnothorax funebris</i>	green moray	0.5	-	0.5	-	-	-	-	0.17
Myliobatidae										
	<i>Aetobatus narinari</i>	spotted eagle ray	-	0.3	-	-	-	-	-	0.06
Ostraciidae										
	<i>Lactophrys triqueter</i>	smooth trunkfish	0.5	0.7	1.0	-	2.0	0.7	0.81	
Pomocanthidae										
	<i>Holocanthus tricolor</i>	rock beauty	2.0	2.3	2.0	0.7	1.3	0.3	1.44	
	<i>Holocanthus ciliaris</i>	queen angel	-	-	0.5	1.3	1.3	0.3	0.58	
	<i>Pomacanthus arcuatus</i>	gray angelfish	-	0.3	1.0	-	0.7	0.3	0.39	
	<i>Pomacanthus paru</i>	french angelfish	-	0.3	-	0.7	-	0.3	0.22	
Pomocentridae										
	<i>Stegastes partitus</i>	bicolor damselfish	3.0	3.7	1.0	2.0	3.0	2.7	2.56	
	<i>Stegastes planifrons</i>	threespot damselfish	2.5	1.0	-	-	-	-	0.58	
	<i>Stegastes leucostictus</i>	beaugregory	-	0.3	-	-	-	-	0.06	
	<i>Stegastes fuscus</i>	dusky damselfish	1.0	0.3	-	-	-	-	0.22	
	<i>Stegastes variabilis</i>	cocoa damselfish	0.5	0.7	-	-	-	-	0.19	
	<i>Chromis cyanea</i>	blue chromis	3.0	3.7	3.5	4.0	3.3	4.0	3.58	
	<i>Chromis multilineata</i>	brown chromis	3.0	3.3	1.0	3.0	-	3.7	2.33	
	<i>Microspathodon chrysurus</i>	yellowtail damselfish	2.0	1.7	0.0	-	-	-	0.61	
	<i>Abudefduf saxatilis</i>	sergent major	1.0	2.3	-	-	-	-	0.56	

Appendix X continued. Relative abundance of fish observed in Roving Diver Surveys, St. Thomas, 2005.

Family	Species	Common Name	SCP	SCS	Avg AI* WI	GB	RHB	CSE	All Sites
Priacanthidae									
	<i>Priacanthus cruentatus</i>	glasseye snapper	0.5	-	-	-	-	-	0.08
Scaridae									
	<i>Sparisoma viride</i>	stoplight parrotfish	2.5	2.7	2.0	1.3	1.7	2.0	2.03
	<i>Sparisoma aurofrenatum</i>	redband parrotfish	2.5	3.0	2.7	2.0	0.7	2.0	2.14
	<i>Sparisoma rubripinne</i>	redfin parrotfish	1.0	-	-	-	0.7	-	0.28
	<i>Sparisoma chrysopterum</i>	redtail parrotfish	-	1.3	-	-	-	-	0.22
	<i>Scarus taeniopterus</i>	princess parrotfish	2.0	3.0	2.3	1.3	1.3	2.7	2.11
	<i>Scarus vetula</i>	queen parrotfish	2.5	2.0	2.3	1.3	2.0	1.3	1.92
	<i>Scarus iserti</i>	striped parrotfish	1.0	3.7	3.5	1.7	2.0	1.0	2.14
Scombridae									
	<i>Scomberomorus regalis</i>	cero mackerel	-	-	-	0.7	-	-	0.11
	<i>Scomberomorus cavalla</i>	king mackerel	-	-	-	-	-	0.3	0.06
Serranidae									
	<i>Hypoplectrus puella</i>	barred hamlet	2.0	2.0	1.3	-	1.0	-	1.06
	<i>Hypoplectrus nigricans</i>	black hamlet	1.0	1.0	-	0.3	-	-	0.39
	<i>Hypoplectrus chlorurus</i>	yellowtail hamlet	1.0	0.3	-	-	1.0	0.3	0.44
	<i>Hypoplectrus unicolor</i>	butter hamlet	1.0	1.7	-	-	-	-	0.44
	<i>Hypoplectrus aberrans</i>	yellowbelly hamlet	0.5	-	-	-	-	-	0.08
	<i>Epinephelus cruentatus</i>	graysby	2.0	2.3	2.0		0.7	0.3	1.22
	<i>Epinephelus fulvus</i>	coney	1.0	1.0	1.7	0.3	-	0.3	0.72
	<i>Epinephelus guttatus</i>	red hind	-	1.7	1.0	0.3	1.3	0.3	0.78
	<i>Epinephelus striatus</i>	Nassau grouper	0.5	0.3	-	-	-	-	0.14
	<i>Mycteroperca venenosa</i>	yellowfin grouper	-	-	-	1.7	0.7	-	0.39

Appendix X continued. Relative abundance of fish observed in Roving Diver Surveys, St. Thomas, 2005.

Family	Species	Common Name	SCP	SCS	Avg AI*		GB	RHB	CSE	All Sites
					WI					
	<i>Mycteroperca interstitialis</i>	yellowmouth grouper	-	-	-		0.3	0.3	-	0.11
	<i>Mycteroperca tigris</i>	tiger grouper	-	-	-		2.0	1.7	-	0.61
	<i>Serranus tigrinus</i>	harlequin bass	1.0	-	-		-	0.3	0.3	0.28
	<i>Serranus. tabacarius</i>	tobaccofish	0.5	-	1.3		-	0.3	-	0.36
	<i>Paranthias furcifer</i>	creole-fish	-	2.7	-		3.3	1.7	1.7	1.56
Sparidae										
	<i>Calamus calamus</i>	saucereye porgy	-	1.7	1.7		-	-	-	0.56
Sphyraenidae										
	<i>Sphyraena barracuda</i>	great barracuda	0.5	-	1.3		-	0.3	1.3	0.58
Synodontidae										
	<i>Synodus spp.</i>	lizardfish	0.5	-	-		-	-	-	0.08
Tetraodontidae										
	<i>Canthigaster rostrata</i>	sharpnose puffer	2.0	1.0	1.5		-	0.3	-	0.81
	<i>Diodon hystix</i>	porcupinefish	0.5	-	-		-	-	-	0.08
No. of Replicate Surveys			3	3	3		3	3	3	18
Total No. Species			69	63	45		51	51	50	95

Average Abundance Index (AI) was calculated as the mean score from 3 replicate surveys using the following scale: 0=no fish, 1=1 fish, 2=2-10 fish, 3=11-100 fish, 4=101-1000 fish, 5=1001+ fish.