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Reef Benthic Fauna and Sediment Characterization

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ABSTRACT

High-resolution backscatter and bathymetric maps created by multibeam sonar surveys were used to identify different seafloor bottom types within existing, potentially expanded, and newly proposed reef areas in New York waters. Existing sites included Smithtown in Long Island Sound (LIS), and Rockaway, Atlantic Beach, Hempstead, Yellowbar, Kismet, Fire Island, Twelve Mile along the South Shore. Potential expansions are proposed on the South Shore for McAllister, Moriches, and Shinnecock reefs in addition to a new site called Sixteen Fathom. In Long Island Sound, new sites are proposed for Huntington/Oyster Bay, Port Jefferson/Mount Sinai, and Mattituck. Grab samples were collected within these areas to characterize sediment properties and macrofauna. Multivariate analysis was used to identify important factors explaining variations in community structure. Sites within Long Island Sound had 3 to 10 bottom types (i.e., acoustic provinces), but sediments and benthic community structure was characterized by greater among site variation compared to within site variability. Sites along the South Shore had 4 to 12 bottom types (acoustic provinces), and although sediments were mostly sandy, there was substantial within site variation in benthic community structure.

INTRODUCTION

The New York State Department of Environmental Conservation (NYSDEC) has created and has managed artificial reef sites in marine waters off Long Island. These areas provide both ecosystem services and significant benefits to the recreational and commercial rod and reel fishing industry. As part of the permitting process, NYSDEC required detailed bathymetry, sonar backscatter, sediment grain-size, and benthic macrofauna information about the existing, potentially expanded, and newly proposed reef areas. Existing sites included Smithtown in Long Island Sound (LIS), and Rockaway, Atlantic Beach, Hempstead, Yellowbar, Kismet, Fire Island, Twelve Mile along the South Shore. Potential expansions are proposed on the South Shore for McAllister, Moriches, and Shinnecock reefs in addition to a new site called Sixteen Fathom. In Long Island Sound (LIS), new sites are proposed for Huntington/Oyster Bay, Port Jefferson/Mount Sinai, and Mattituck. Multibeam sonar mapping surveys conducted by Roger Flood of SoMAS collected high resolution bathymetry and backscatter data at all of the South Shore sites and Smithtown in LIS. In addition, existing NOAA sonar data were reprocessed and made available by Roger Flood for Huntington/Oyster Bay, Port Jefferson/Mount Sinai, and Mattituck in LIS. The backscatter data were used to guide ground-truth sampling in the present study.

Maps generated by sonar surveys are incredibly useful, enabling large areas to be surveyed at fine resolution in relatively short periods of time; however, these maps are not sufficient for predicting detailed bottom characteristics or the distribution of benthic communities, and at least one ground truth stage is required to link the acoustic survey maps with environmental and biological assemblages. Acoustic surveys can distinguish areas of different bottom type or character, but determining that those sites are, for example, rocky substrates, rippled sands, shelly sands, or muddy surfaces requires verification by direct sampling. Knowing the type of bottom present is an important indicator of the benthic community that may be present, but benthic communities are highly variable and cannot be accurately predicted based on bottom type alone. In addition, geophysical features detectable by acoustic surveys that appear to

characterize distinct sedimentary regions are not necessarily biologically relevant (Brown *et al.*, 2002).

The goal of the current study was to provide ground-truth data on seafloor sediment properties and information on the benthic macrofauna community characteristics of the reef areas. Sampling locations were determined by visual examination of high resolution backscatter maps created from the multibeam sonar surveys. The multibeam sonar surveys were conducted as part of a separate task, and these maps are not part of the current report.

METHODS

Study Areas and Sampling Locations

This study was carried out at fifteen existing, potentially expanded, and newly proposed reef areas in New York waters and adjacent areas in Long Island Sound and on the South Shore of Long Island (Figure 1). Stratification of the reef areas into bottom type provinces was conducted by visual examination of preliminary 300 kHz multibeam backscatter data collected by Roger Flood (SoMAS) for all of the South Shore sites and Smithtown in LIS. In addition, existing NOAA sonar data were reprocessed and made available for the current study by Roger Flood for Huntington/Oyster Bay, Port Jefferson/Mount Sinai, and Mattituck in LIS. In the stratification process, acoustic backscatter was taken as a proxy for bottom type or habitat. Flanagan, et al. (2019) found that habitats visually characterized based on an examination of backscatter intensity and texture in this way explained more of the infaunal community variation than any analysis that used a combination of other environmental variables (e.g., water depth & sediment grain size) or those constructed using categorical habitat classes from existing habitat classification schemes. A polygon feature class consisting of the bottom type provinces was created in ArcGIS 10.7.1 (ESRI, Redlands CA). Bottom type provinces were assigned a two-character site code (e.g., AB = Atlantic Beach) and an arbitrarily defined, single character province code of A, B, C, etc. reflecting the number of provinces within a site. Polygons in the GIS feature class were clipped to conform to the outline of the designated reef areas allowing an estimate of strata areas in square kilometers.

Budget considerations allowed ground-truth grab sampling at bottom type provinces consisting of 7 samples at each of the existing reef sites (Smithtown, Rockaway, Atlantic Beach, Hempstead, Yellowbar, Kismet, Fire Island, and Twelve Mile) and 14 samples at each of the potential expansion sites (McAllister, Moriches, and Shinnecock) and the new sites (Sixteen Fathom, Huntington/Oyster Bay, Port Jefferson/Mount Sinai, and Mattituck). Sampling stations were randomly positioned within each province using the “Create Random Points” tool in ArcGIS 10.7.1 (ESRI, Redlands CA). Not all provinces could be sampled since the study had constraints on the number of samples at each site, but an attempt was made to sample as many bottom provinces as possible. Bottom type provinces and ground-truth sampling locations are identified in Figure 2.

Sediment and Fauna Sampling

Bottom samples for sediments and fauna were collected on June 29-30, 2021 in Long Island Sound and August 10-13, 2020 along the South Shore using a modified van Veen grab (0.04 m²). A total of 49 samples were collected at the four Long Island Sound reefs and 105 samples at the eleven South Shore reefs. Subsamples of sediments for grain size were drawn from each grab sample. The remaining sediment was washed through a 0.5 mm sieve for fauna. All material left on the sieve was preserved in 10% buffered formalin and stained with rose bengal. Faunal samples were rewashed in the lab and transferred to 70% ethanol before sorting and identification. Individual organisms were identified to species level whenever possible and the total for each taxon enumerated. Unless otherwise noted, all abundances in this report are expressed as the number of individuals per sample (i.e., per 0.04 m²).

Sediment grain size analysis followed methodology in Folk (1974) to estimate percent composition by weight of major size-fractions (gravel, sand, silt-clay or mud). Samples were initially partitioned into three size-fractions by adding 50 ml of a 1% Calgon solution to the sample, mixing to disaggregate the particles in the sample, and wet sieving with distilled water through a combination of 2 mm and 63 micron sieves. The >2 mm (gravel) and 2 mm-63 micron (sand) fractions were placed in a drying oven at 60° C for at least 48 hours to obtain dry weights. Water containing the <63 micron fraction (silt-clay or mud) was brought up to 1000 ml total volume by adding distilled water in a graduated cylinder, mixed thoroughly, and subsampled with a 20 ml pipette at a depth of 20 cm, 20 seconds after mixing to obtain an estimate of mud. Pipette samples were placed in a drying oven at 60° C for at least 48 hours to obtain dry weight estimates. Weight estimates for mud (silt-clay) included a correction for the amount of Calgon introduced to the samples.

Data Entry and Summary

Data were entered into Microsoft Excel spreadsheets, and faunal data were summarized by using PC-ORD (MJM Software Design, Gleneden Beach, OR). This summary and subsequent data analyses required assigning a unique 4-character code for each species. This was created in most cases by using the first 2 characters in both the genus and species name. Faunal data at each sampling station were summarized by calculating the abundance (total number of individuals per grab), species richness S (number of species per grab), Shannon diversity ($H' = -\sum p_i \ln p_i$) where p_i is the proportion of individuals of each species, equitability ($E = H' / \ln S$), and Simpson's index of diversity ($D = 1 / \sum p_i^2$). H' is the common entropy measure of diversity that combines both species richness and the evenness of individuals distributed among the organisms in the sample. Equitability ranges from 0 to 1 and measures how evenly individuals are distributed among the S species present. Simpson's index of diversity for large samples approximates the probability that two individuals randomly sampled belong to different species. Abundance expressed as the number of individuals per square meter was also calculated, but this metric is not presented in detail, since abundance per sample was preferred. A geodatabase of the data and GIS maps displaying selected data were created in ArcGIS version 10.7.1 (ESRI, Redlands CA). All data were imported into the GIS directly from the Excel spreadsheets.

Multivariate Analysis

Data were analyzed by principal components analysis (PCA) and redundancy analysis (RDA). PCA is an ordination method that utilizes only the faunal data. RDA is a multivariate direct gradient technique that explicitly incorporates regression with environmental variables in the analysis of the faunal data. RDA, first suggested by Rao (1964), is a technique that combines ordination of sample sites based on species abundance data with regression on the environmental data in order to examine the relationship between community structure and environmental variables (Jongman *et al.*, 1995). By examining the environmental and biological data simultaneously, this analysis depicts the trends in the species data that are related to the selected environmental data. PCA and RDA are based on Euclidean distance, which is not the most appropriate resemblance measure for species data, since it incorrectly interprets shared species absences between samples as similarities. In order to circumvent this shortcoming, abundance data were Hellinger transformed by taking the square root of relative abundances of each species in a sample (Legendre and Gallagher, 2001). This transformation focuses the analysis on compositional differences, reduces the influence of the most abundant species, and combined with Euclidean distance, has been shown to produce good representations of ecological data (Legendre and Gallagher, 2001).

Within the RDA analysis, environmental variables that explained community variation were identified by sequentially adding variables in a forward selection process (Jongman *et al.*, 1995). Candidate variables included water depth, grab penetration depth, percent gravel, percent sand, and percent mud (*i.e.*, silt-clay). At each step in the process, the environmental variable explaining the largest amount of faunal variability is selected, and its effect is removed before the next best fitting variable is considered. Variables identified by forward selection were checked for inclusion using the AICc stopping criterion (Burnham and Anderson 2002). AICc is the small sample, bias adjusted version of the Akaike Information Criterion (AIC). The use of AICc applies an information-theoretic approach to statistical modeling that overcomes problems associated with multiple significance testing (Burnham and Anderson 2014). Although a not entirely correct interpretation (see Burnham and Anderson 2002), AIC is often considered as measure that assesses the tradeoff between fit and complexity among models. In application, the model with the smallest AIC or AICc is chosen over the complete set of models considered (Hastie *et al.* 2009). PCA and RDA was carried out using Canoco 4.5 (ter Braak and Smilauer 2002).

RESULTS

Long Island Sound

General Description of the Environmental and Faunal Characteristics of the Reef Areas

Sediments within the Long Island Sound reef areas differed among the sites but were most often characterized by low percent gravel contents (Appendix 1). Of the 49 samples, only 11 had percent gravel contents greater than 1%, and none of these exceeded 6.2%. It should be noted that gravel included not just mineral grains but also bits of shell and other material that did not pass through the 2mm sieve. The predominant (*i.e.*, > 50% by weight) grain size in 26 samples was sand, while 23 samples were dominated by mud (> 50%). Water depths at sampling stations

ranged from 9.0 to 29.0 m. The modified van Veen grab penetrated to its maximum depth of 10 cm for 33 of the 49 samples, and mean penetration depth was 9.3 cm.

A total of 3,783 animals representing 88 taxa were collected in the 49 samples. Average abundance in the 49 samples was 77.2 individuals per sample (1,930 per m²). Of the 88 taxa, 64% were polychaetes, 26% were molluscs, 5% were crustaceans, and the remainder (5%) was distributed among five other groups (Nematoda, Nemertinea, Oligochaeta, Echinodermata, and Chordata) (Table 1). Numerical dominants included the polychaete Maldanidae spp juveniles (538 individuals) that could not be identified to species level, the bivalve *Macoploma* (fr. *Macoma*) *tenta* (400 individuals), the polychaetes *Levinsenia gracilis* (388 individuals), *Cirritulidae* spp (*Kirkegaardia baptistae* + *Tharyx acutus*) (376 individuals), *Nephtys incisa* (167 individuals), the infaunal deposit feeding bivalve *Yoldia limatula* (167 individuals), Nematoda spp (151 individuals), the polychaete *Sigambra tentaculata* (147 individuals), the surface deposit feeding bivalve *Ameritella* (fr. *Tellina*) *agilis* (144 individuals), the archiannelid polychaete *Polygordius jouinae* (118 individuals), the polychaete *Prionospio* (= *Minuspio*) sp (108 individuals), the gastropod *Ilyanassa trivittata* (75 individuals), the polychaetes *Capitellidae* spp (*Heteromastus* + *Notomastus*) (68 individuals), the polychaete *Sabaco elongates* (59 individuals), the amphipod *Unciola irrorata* (58 individuals), the gastropod *Acteocina canaliculata* (51 individuals), the amphipods *Ampelisca* spp (*macrocephala* + *verrilli*) (48 individuals), and the bivalve *Pitar morrhuanus* (47 individuals). These 18 taxa represented about 83% of the total number of individuals collected, and no other taxon had an average abundance greater than 1 per sample (i.e., >49 individuals). Faunal data listed by sample are tabulated in Appendix 2.

a) Huntington – Oyster Bay

Fourteen samples were collected at this reef site. Sampling stations at this site had a mean water depth of 14.9 m ± 0.4 m sd. The van Veen grab penetrated to its maximum depth of 10 cm at all stations. On average, sediments were an approximately even mixture of sand (mean ± sd = 46.3% ± 15.8) and mud (52.4% ± 16.0 sd) (Figure 3). The gravel fraction (1.3% ± 1.7) of the sediments consisted of mineral grains, shell hash, and other bits of organic detritus (e.g., wood).

Faunal abundances ranged from 31 to 94 individuals per sample and species richness varied from 9 to 17 species per sample. Mean abundance was 64.1 ± 16.0 (sd) individuals per sample, and mean species richness was 14.4 ± 2.4 (sd) species per sample (Figure 4). A total of 37 taxa and 897 individuals were collected. The most abundant taxon was the bivalve *Macoploma* (fr. *Macona*) *tenta* (Table 2). This taxon had an average abundance of 26 individuals per sample and represented 40.4% of the total number of individuals in the samples from this site. Other abundant taxa included *Prionospio* (= *Minuspio*) sp (mean = 4.7 per sample), juveniles of the polychaete Maldanidae spp (4.1) that could not be identified to species level, the polychaete *Nephtys incisa* (3.3), the amphipod *Unciola irrorata* (3.1), the polychaetes *Cirritulidae* spp (*Kirkegaardia baptistae* + *Tharyx acutus*) (3.0), the Maldanid polychaete *Sabaco elongates* (2.9), the polychaetes *Capitellidae* spp (*Heteromastus* + *Notomastus*) (2.9), the infaunal deposit feeding bivalve *Yoldia limatula* (2.6), the amphipod *Leptocheirus pinguis* (2.4), the cone shaped tube building polychaete *Pectinaria gouldii* (1.6), and the polychaete *Melinna cristata* (1.1). All other taxa had an average abundance less than 1.0 individual per sample. Mean Shannon diversity was 2.01 ± 0.37 (sd), and mean equitability was 0.76 ± 0.11 (sd) (Figure 4).

b) Smithtown

Seven samples were collected at this site, since it was an existing reef. Water depths averaged $11.3 \text{ m} \pm 1.5 \text{ sd}$. Five of the seven grab samples penetrated to their maximum depth of 10 cm, and average penetration depth was $9.6 \text{ cm} \pm 0.9 \text{ sd}$. There was a large variation in the amount of sand and mud present, with the sand fraction varying from 27-97% and the mud fraction ranging from 3-73%. Average sand and mud contents were $76.0\% \pm 24.2 \text{ sd}$ and $23.2\% \pm 24.4 \text{ sd}$, respectively (Figure 3). Sediment samples had small amounts of gravel ($0.8\% \pm 0.7 \text{ sd}$).

The Smithtown site had the largest total number of individuals and taxa of the Long Island Sound sites, despite the fact that only seven samples were collected compared to fourteen at the other Long Island Sound sites. A total of 1,426 individuals and 61 taxa were collected. Faunal abundances varied from 72 to 309 individuals per sample. Species richness ranged from 10 to 35 species per sample. Mean abundance was $203.7 \pm 96.8 \text{ (sd)}$ individuals per sample and mean species richness was $23.3 \pm 9.6 \text{ (sd)}$ species per sample (Figure 4). These values exceeded all of the other Long Island Sound reef sites. In contrast mean Shannon diversity and equitability at the Smithtown reef was lower than at the other Long Island Sound sites. Mean Shannon diversity was $1.86 + 0.25 \text{ (sd)}$, and mean equitability was $0.62 + 0.08 \text{ (sd)}$ (Figure 4). Twenty-three taxa had average abundances exceeding one individual per sample (Table 2). These included juveniles of the polychaete Maldanidae spp (mean = 63.4 per sample), the polychaetes Cirritulidae spp (*Kirkegaardia baptistae* + *Tharyx acutus*) (44.4), Nematoda spp (20.0), the polychaetes *Polygordius jouinae* (16.3), *Aricidea catherinae* (5.7), the surface deposit feeding bivalve *Ameritella* (fr. *Tellina*) *agilis* (5.1), the polychaete *Glycinde multidentis* (= *G. solitaria*) (4.0), the polychaete *Prionospio* (= *Minuspio*) sp (3.9), the barrel-bubble gastropod *Acteocina canaliculata* (3.3), the polychaete *Levinsenia gracilis* (3.0), the the polychaetes Capitellidae spp (*Heteromastus* + *Notomastus*) (2.9), the Maldanid polychaete *Sabaco elongatus* (2.4), the bivalve *Macoploma* (fr. *Macoma*) *tenta* (2.1), the mudsnail *Ilyanassa trivittata* (2.0), the infaunal deposit feeding bivalve *Yoldia limatula* (1.9), the polychaetes *Scoletoma fragilis* (1.7), *Sigambra tentaculata* (1.4), *Spionidae* spp juveniles (*Dipolydora* + *Polydora*) (1.4), the false quahog *Pitar morrhuanus* (1.3), the glassy and semitransparent bivalve *Lyonsia* spp (*arenosa* + *hyalina*) (1.1), the razor clam *Ensis leei* (fr. *E. directus*) (1.0), the Maldanid polychaete *Clymenella zonalis* (1.0), and the amphipod *Leptocheirus pinguis* (1.0).

c) Port Jefferson – Mt. Sinai

This potential reef site was the deepest and muddiest of the four Long Island Sound sites. Fourteen samples were collected at this site. Water depths ranged from 27-29 m, with an average of $28.1 \text{ m} \pm 0.7 \text{ sd}$. All grab samples penetrated to the maximum depth of 10 cm. Sediments were variable, but mud content exceeded 50% at all fourteen samples. Grain size ranges were 0-4.9% gravel, 12.1-45.7% sand, and 53.4-88.0% mud. Average gravel (with shell), sand, and mud contents were $0.8\% \pm 1.5 \text{ (sd)}$, $29.9\% \pm 10.9$, and $69.3\% \pm 11.3$, respectively (Figure 3).

Faunal summary characteristics at this site were fairly similar to that of the Huntington – Oyster Bay site (Figure 4). A total of 962 individuals and 36 taxa were collected. Mean abundance was 68.7 ± 13.8 (sd) individuals per sample and mean species richness was 13.0 ± 2.1 (sd) species per sample. Abundances ranged from 53 to 105 individuals per sample, and species richness varied from 9 to 17 species per sample. Mean Shannon diversity was 1.96 ± 0.32 (sd), and mean equitability was 0.76 ± 0.11 (sd). The most abundant taxa were the polychaetes *Levinsenia gracilis* (mean = 25.5 per sample), *Sigambra tentaculata* (8.8), the infaunal deposit feeding bivalve *Yoldia limatula* (8.4), the polychaete *Nephtys incisa* (6.6), the infaunal deposit feeding bivalve *Nucula proxima* (2.2), the false quahog *Pitar morrhuanus* (2.1), the barrel-bubble *Acteocina canaliculata* (2.0), the polychaete *Scoelepis bousfieldi* (1.7), the bivalve *Macoploma* (fr. *Macoma*) *tenta* (1.6), juvenile polychaetes of Maldanidae spp (1.6), the mudsnail *Ilyanassa trivittata* (1.1), the polychaetes Cirritulidae spp (*Kirkegaardia baptistae* + *Tharyx acutus*) (1.1), the polychaete *Melinna cristata* (1.0) (Table 2). All of the remaining taxa had an average abundance less than 1.0 individual per sample at this site.

d) Mattituck

This potential reef was the sandiest of the four Long Island Sound sites. Fourteen samples were collected. Water depths averaged $25.3 \text{ m} \pm 2.5$ sd. Grab samples penetrated to a depth of $7.9 \text{ cm} \pm 1.0$ (sd), the lowest average penetration depth of the four Long Island Sound reef sites (Figure 3). Samples were primarily sand (mean = $92.2\% \pm 2.3$ sd) with a small amount of mud ($7.8\% \pm 2.3$), and virtually no gravel ($0.0\% \pm 0.1$). The sand fraction varied from 89-96% and the mud fraction ranged from 4-13%. Gravel never exceeded 0.3% in any sample.

The Mattituck site had the lowest abundance and the greatest Shannon diversity and equitability of the four Long Island Sound sites (Figure 4). Species richness was moderate and comparable to Huntington–Oyster Bay and Port Jefferson-Mt. Sinai. Faunal abundances varied from 3 to 50 individuals per sample, and species richness ranged from 2 to 19 species per sample. Mean abundance was 35.6 ± 13.1 (sd) individuals per sample, and mean species richness was 15.0 ± 4.5 (sd) species per sample. Mean Shannon diversity was 2.27 ± 0.52 (sd), and mean equitability was 0.87 ± 0.05 (sd). A total of 498 individuals and 48 taxa were collected in the fourteen samples. The most abundant taxon was the surface deposit feeding bivalve *Ameritella* (fr. *Tellina*) *agilis* (mean = 7.7 per sample) (Table 2). Other abundant taxa included the amphipod *Ampelisca* spp (*macrocephala* + *verrilli*) (3.4), the polychaete *Nephtys incisa* (3.2), the mudsnail *Ilyanassa trivittata* (2.9), the polychaetes *Spiophanes bombyx* (2.1), *Scoloplos rubra* (1.8), *Nephtys bucera* (1.4), *Spiochaetopterus oculatus* (1.1), and the commensal pea crab *Rathbunixa* (fr. *Pinnixa*) *sayana* (1.1) which lives in association with a tube-building polychaete, and juveniles of the polychaete Maldanidae spp (1.0) which could not be identified to genus. No other taxa had an average abundance greater than 1.0 individual per sample.

Multivariate Analysis

Forward selection RDA resulted in identifying and retaining 3 environmental variables based on the AICc stopping criterion: % sand, water depth, and grab penetration depth (Figure 5). These environmental variables explained 42.6% of the total variability in community structure. The separation of the reef sites in this ordination is almost complete and indicated that community

structure differed considerably among the sites. Within site variation was considerably less, as reflected in the tight grouping of sampling stations, especially at Port Jefferson – Mt. Sinai and Mattituck. A total of 96% of the explained species-environment relationship was contained in the first two ordination axes, so there was no need to plot additional axes.

Differences among sites with respect to environmental variables is straightforward using this diagram. Mattituck is distinguished as having the highest % sand and lowest penetration depth as indicated by its position along the first ordination axis. Water depths are deepest at the Port Jefferson – Mt. Sinai site and shallowest at Huntington - Oyster Bay and Smithtown, along the second ordination axis. Distinct difference in taxon abundances are also evident. For example, focusing just on several bivalve species, it is clear that *Ameritella agilis* (Amag) was more abundant at Mattituck than other sites, *Nucula proxima* (Nupr), *Pitar morrhuanus* (Pimo), and *Yoldia limatula* (Yoli) were most abundant at Port Jefferson – Mt. Sinai, and *Macoploma tenta* (Mate) was highly abundant at Huntington – Oyster Bay and absent at Mattituck. Comparable differences can be identified for other taxonomic groups. It should be noted that for clarity only 20 of the 88 taxa are plotted in this diagram. The remaining taxa would all be crowded around the origin, and the cluttered plot would have been very difficult to examine.

South Shore

General Description of the Environmental and Faunal Characteristics of the Reef Areas

Sediments within the South Shore reef areas were mostly sandy with a few exceptions (Appendix 3). Of the 105 samples, 97 had percent sand contents greater than 50%. Only five samples had gravel contents greater than 50% and only two samples had greater than 50% mud. It should be noted that gravel included not just mineral grains but also bits of shell and other material that did not pass through the 2mm sieve. Water depths ranged from 2.4 to 43.3 meters at the sampling stations. The modified van Veen grab penetrated to its maximum depth of 10 cm in only 8 of the 105 samples, reflecting the high sand content at most stations. Mean penetration depth was 6.6 cm.

A total of 24,970 animals representing 186 taxa were collected in the 105 samples. Average abundance in the 105 samples was 237.8 individuals per sample (5945 per m²). Of the 186 taxa, 51% were polychaetes, 11% were molluscs, 32% were crustaceans, and the remainder (6%) was distributed among ten other groups (Table 3). Numerical dominants included the polychaete *Polygordius jouinae* (5,433 individuals), Nematoda spp (4,293 individuals), the amphipod *Pseudunciola obliquua* (2,890), the polychaetes *Cirritulidae* spp (*Kirkegaardia baptistae* + *Tharyx acutus*) (2,855 individuals), the polychaetes *Microphthalmus szelkowi* (2,021) and *M. aberrans* (997), Oligochaeta spp (826), the amphipods *Ampelisca* spp (*macrocephala* + *verrilli*) (331 individuals), the polychaetes *Caulleriella venefica* (246), *Neanthes arenaceodentata* (238), *Goniadella gracilis* (230), and *Nephtys picta* (191), the amphipods *Rhepoxynius epistomus* (158), *Unciola irrorata* (158), and *Ampelisca* spp (*abdita* + *vadurum*) (152), the polychaetes *Streptosyllis arenae* (146) and *Protohaustorius wigleyi* (143), the slipper snail *Crepidula fornicata* (138), the polychaete *Paradoneis lyra* (138), the surf clam *Spisula solidissima* (133), the polychaetes *Prionospio pygmaeus* (131), *Spiophanes bombyx* (130), and *Aricidea catherinae* (120), the surface deposit feeding bivalve *Ameritella* (fr. *Tellina*) *agilis* (109), and the polychaete

Aricidea wassi(109). These 25 taxa represented about 89% of the total number of individuals collected, and no other taxon had an average abundance greater than 1 per sample (i.e., >105 individuals). Faunal data listed by sample are tabulated in Appendix 4.

a) Rockaway

Seven samples were collected at this site, since it was an existing reef. Water depths averaged $11.8 \text{ m} \pm 0.6 \text{ sd}$. Grab samples penetrated to a depth of $4.4 \text{ cm} \pm 1.0 \text{ (sd)}$, the lowest average penetration depth of the eleven South Shore reef sites (Figure 6). All samples exceeded 91% sand with small amounts of gravel (0-7%) and mud (1-2%) present. Average sand content was $96.6\% \pm 2.4 \text{ sd}$. Average gravel and mud contents were $2.0\% \pm 2.3 \text{ sd}$ and $1.3\% \pm 0.4 \text{ sd}$, respectively (Figure 6).

The Rockaway site had the lowest total number of individuals and taxa of the South Shore sites. A total of 342 individuals and 37 taxa were collected. Faunal abundances varied from 9 to 88 individuals per sample. Species richness ranged from 8 to 19 taxa per sample. Mean abundance was $48.9 \pm 31.2 \text{ (sd)}$ individuals per sample and mean species richness was $13.3 \pm 4.4 \text{ (sd)}$ species per sample (Figure 7). These values were lower than all sites except Moriches. In contrast, mean equitability at the Rockaway reef was greater than at the other South Shore sites. Mean Shannon diversity was $2.07 + 0.36 \text{ (sd)}$, and mean equitability was $0.83 + 0.15 \text{ (sd)}$ (Figure 7). Eleven taxa had average abundances exceeding one individual per sample (Table 4). These included the amphipods *Ampelisca* spp (*macrocephala* + *verilli*) (mean = 18.7 per sample) and *Protohaustorius wigleyi* (4.6), the surf clam *Spisula solidissima* (3.1), the polychaetes *Nephtys picta* (3.0), *Spiochaetopterus oculatus* (2.3), *Caulleriella venefica* (2.1), and *Aricidea catherinae* (2.0), the surface deposit feeding bivalve *Ameritella* (fr. *Tellina*) *agilis* (1.4), the polychaete *Spiophanes bombyx* (1.1), *Oligochaeta* spp (1.0), and the polychaete *Polygordius jouinae* (1.0). No other taxa had an average abundance greater than 1.0 individual per sample.

b) Atlantic Beach

Seven samples were collected at the existing Atlantic Beach reef site. Water depths averaged $18.5 \text{ m} \pm 0.4 \text{ sd}$ (Figure 6). Grab samples penetrated to a depth of $6.1 \text{ cm} \pm 1.5 \text{ (sd)}$. Two sampling stations (AT-04, AT-06) had substantial amounts of gravel, while the other five locations were all > 97% sand. This grain size variability created large standard deviations in the average gravel and sand contents. Average gravel and sand contents were $15.4\% \pm 31.2 \text{ sd}$ and $81.8\% \pm 34.8 \text{ sd}$, respectively. Average mud content was $2.8\% + 3.7 \text{ sd}$. The two high gravel content stations were located along northwest to southeast trending high backscatter regions that appear to be sand waves.

Faunal abundances ranged from 13 to 325 individuals per sample and species richness varied from 10 to 32 species per sample. One of the gravel rich stations (AT-04 with 84% gravel) had the lowest abundance (13 individuals per sample), species richness (10 species), and the highest equitability (0.95) of the Atlantic Beach locations. Mean abundance was $174.1 \pm 97.8 \text{ (sd)}$ individuals per sample, and mean species richness was $21.9 \pm 8.7 \text{ (sd)}$ species per sample. A total of 69 species were collected. Mean Shannon diversity was $2.01 \pm 0.61 \text{ (sd)}$, and mean equitability was $0.67 \pm 0.19 \text{ (sd)}$. Twenty-three taxa had average abundances greater than or

equal to one individual per sample (Table 4). These included the polychaete *Polygordius jouinae* (mean = 37.4 per sample), the amphipod *Pseudunciola obliquua* (37.3), Nematoda spp (19.6), the tube building amphipods *Ampelisca* spp (*macrocephala* + *verrilli*) (12.3), the polychaete *Aricidea wassi* (6.6), Oligochaeta spp (5.3), the surf clam *Spisula solidissima* (4.1), the polychaetes Cirritulidae spp (*Kirkegaardia baptistae* + *Tharyx acutus*) (3.9) and *Aricidea catherinae* (3.7), the amphipod *Protohaustorius wigleyi* (3.6), the polychaetes *Scoletoma tenuis* (3.4) and *Goniadella gracilis* (3.3), the amphipod *Unciola irrorata* (2.7), the tanaid crustacean *Tanaisius psammophilus* (2.4), the polychaetes *Caulleriella venefica* (2.4) and *Nephtys picta* (2.1), the amphipod *Rhepoxynius epistomus* (1.9), the polychaetes Capitellidae spp (+ *Notomastus*) (1.7), the surface deposit feeding bivalve *Ameritella* (fr. *Tellina*) *agilis* (1.6), the polychaetes *Parapionosyllis longicirrata* (1.6) and *Polydora cornuta* (1.4), the cumacean *Pseudoleptocuma minus* (1.4), and the isopod *Edotia triloba* (1.1).

c) McAllister

The McAllister reef site stations, like Atlantic Beach, had highly variable grain size values. These were associated with large variations in backscatter and potential sand waves. Fourteen stations were sampled. Water depths ranged from 15.2 to 16.5 m (mean = 15.9 m \pm 0.4 sd), and the grab penetration depth was consistently between 4 and 6 cm (mean = 5.2 cm \pm 0.8 sd). Sediment grain size was highly variable, ranging from 0.0 - 84.0% gravel and shell, 14.2 - 98.5% sand, and 0.5 - 60.3% silt-clay. Average gravel (with shell), sand, and mud contents were 17.5% \pm 28.5 (sd), 75.6% \pm 30.4, and 6.9% \pm 15.5, respectively. High gravel contents were found at stations MC-02, MC-03, MC-05, MC-12, and MC-14. Station MC-07 had a very high mud content. The remaining stations were largely sand in composition (MC-01, MC-04, MC-06, MC-08, MC-09, MC-10, MC-11, and MC-13).

Mean Shannon diversity (2.19 \pm 0.44) was higher at this reef site compared to other sites along the South Shore. Mean abundance and species richness was 115.5 \pm 160.3 (sd) individuals per sample and mean species richness was 18.2 + 6.6 (sd) species per sample. Mean equitability was 0.79 + 0.17 (sd). Abundances ranged from 18 to 604 individuals per sample, accounting for the high standard deviation, and species richness ranged from 7 to 31 species per sample. A total of 76 taxa were collected. Twenty-on taxa exceeded a mean abundance \geq 1 individual per sample. The most abundant taxon was the amphipod *Pseudunciola obliquua* (mean = 37.6 individuals per sample). Other abundant taxa included Oligochaeta spp (10.1), Nematoda spp (8.6), the amphipods *Ampelisca* spp (*macrocephala* + *verrilli*) (6.4), the polychaetes *Paradoneis lyra* (6.1), *Polygordius jouinae* (5.1), and *Prionospio pygmaeus* (5.0), the surface deposit feeding bivalve *Ameritella* (fr. *Tellina*) *agilis* (2.4), the amphipod *Protohaustorius wigleyi* (2.4), the polychaetes *Nephtys picta* (2.4) and *Spiophanes bombyx* (1.9), the amphipods *Ampelisca* spp (*abdita* + *vadurum*) (1.9), and *Rhepoxynius epistomus* (1.8), the polychaetes *Polydora cornuta* (1.8), *Polycirrus eximius* (1.7), Cirritulidae spp (*Kirkegaardia baptistae* + *Tharyx acutus*) (1.4), *Caulleriella venefica* (1.2), Capitellidae spp (*Heteromastus* + *Notomastus*) (1.2), and *Parapionosyllis longicirrata* (1.1), the cumacean *Pseudoleptocuma minus* (1.1), and the polychaete *Streptosyllis arenae* (1.1).

d) Hempstead

Seven samples were collected at this existing reef site. With the exception of HE-01 and HE-06, samples consisted of > 98% sand. Water depths averaged 18.2 ± 1.4 (sd) meters and ranged from 15.8 to 20.1 m (Figure 6). The van Veen grab penetrated to an average of 7.0 ± 0.6 cm, ranging from 6-8 cm. Average gravel (and shell) content was $6.1\% \pm 9.7$ (sd). Mean sand and mud contents were $91.5\% \pm 12.3$ and $2.3\% \pm 4.3$, respectively. Station HE-01 and HE-06 had 23.0 and 17.2% gravel, respectively.

Average abundance was 162.6 ± 150.5 individuals per sample (Figure 7), and average species richness was 20.1 ± 3.0 species per sample. Faunal abundances varied from 47 to 492 individuals per sample. Species richness ranged from 17 to 26 species per sample. A total of 63 species were collected. Mean Shannon diversity was 2.11 ± 0.48 (sd), and mean equitability was 0.71 ± 0.17 (sd).

Like McAllister and Atlantic Beach, the polychaete *Polygordius jouinae* (mean = 58.9 per sample) and the amphipod *Pseudunciola obliquua* (31.7) were abundant at the Hempstead reef site. Twenty-five other taxa were found at abundances > 1 per sample at Hempstead. These included Nematoda spp (9.9), the polychaete *Prionospio pygmaeus* (7.6), the amphipod *Unciola irrorata* (5.7), Oligochaeta spp (3.9), the polychaete *Scoletoma tenuis* (3.6), the amphipod *Rhepoxynius epistomus* (3.3), the polychaetes *Nephtys picta* (2.3), *Spiophanes bombyx* (2.1), and *Caulleriella venefica* (2.1), the amphipods *Liljeborgia* sp (2.0) and *Phoxocephalus holbolli* (1.7), the polychaete Cirritulidae spp (*Kirkegaardia baptistae* + *Tharyx acutus*) (1.7), the amphipods *Ampelisca* spp (*macrocephala* + *verrilli*) (1.6), the polychaete *Aricidea catherinae* (1.6), the amphipod *Corophium* sp (1.6), the tanaid *Tanaissus psammophilus* (1.4), the polychaete *Polycirrus eximius* (1.4), the surf clam *Spisula solidissima* (1.4), the polychaete *Harmothoe extenuate* (1.4), the surface deposit feeding bivalve *Ameritella* (fr. *Tellina*) *agilis* (1.3), the amphipods *Protohaustorius wigleyi* (1.1) and *Ampelisca* spp (*abdita* + *vadurum*) (1.0), the polychaetes *Goniadella gracilis* (1.0) and *Aricidea wassi* (1.0), and the sand dollar *Echinarachnius parma* (1.0).

e) Sixteen Fathoms

Fourteen samples were collected at this potential reef site. The van Veen grab penetrated an average of 6.6 ± 1.3 cm, and water depths ranged from 26.8 to 31.1 m, averaging 29.1 ± 1.5 m (Figure 6). Sediments were primarily sandy (sand mean = $90.9\% \pm 14.4$ sd). The one exception was at station SF-13 which consisted of both gravel (47.2%) and sand (44.2%). The gravel fraction (mean = $5.3\% \pm 13.0$ sd) and mud fraction ($3.8\% \pm 3.9$ sd) were both minor parts of the sediments at most sampling sites.

Faunal abundances ranged from 42 to 761 individuals per sample and species richness varied from 16 to 34 species per sample. Mean abundance was 297.7 ± 275.3 (sd) individuals per sample (Figure 7), and mean species richness was 24.9 ± 6.6 (sd) species per sample. A total of 98 taxa were collected, the highest total of any site along the South Shore. Mean Shannon diversity was 1.85 ± 0.68 (sd), and mean equitability was 0.59 ± 0.23 (sd). Twenty-five taxa exceed an average abundance of 1 per sample (Table 4). The most abundant taxon was again the polychaete *Polygordius jouinae* (mean = 167.8 individuals per sample), followed by Cirritulidae spp (*Kirkegaardia baptistae* + *Tharyx acutus*) (28.4), Nematoda spp (26.8), Oligochaeta spp

(7.8), the amphipods *Ampelisca* spp (*abdita* + *vadurum*) (7.2), the polychaetes *Caulleriella venefica* (5.5) and *Nephtys picta* (3.4), the amphipod *Unciola irrorata* (2.8), the polychaete *Goniadella gracilis* (2.6), the amphipods *Leptocheirus pinguis* (2.5) and *Byblis serrata* (2.4), the sand dollar *Echinarachnius parma* (2.3), the polychaete *Scoletoma fragilis* (2.3), the infaunal deposit feeding bivalve *Nucula tenuis* (2.3), the polychaete *Exogone dispar* (1.9), the amphipod *Rhepoxynius epistomus* (1.9), the surf clam *Spisula solidissima* (1.9), the polychaetes *Aricidea catherinae* (1.6), *Aricidea wassi* (1.6) and *Scalibregma inflatum* (1.6), the isopod *Politolana polita* (1.5), the polychaetes *Streptosyllis arenae* (1.4) and *Harmothoe extenuate* (1.3), the amphipods *Phoxocephalus holbolli* (1.1) and *Pseudunciola obliquua* (1.1).

f) Fisherman

Seven samples were collected at the Fisherman (Yellowbar) reef site. Water depths ranged from 9.1 to 11.6 meters, averaging 10.4 ± 0.8 (sd) meters. Five of the seven grab samples penetrated to the maximum of 10 cm, and the average penetration depth was $9.4 \text{ cm} \pm 1.1$ (sd). This was the highest mean grab penetration depth of the South Shore reef sites (Figure 6). The samples were primarily sand but sometimes mixed with a small amount of gravel and shell (Figure 6). Sand content averaged $94.6\% \pm 5.7\%$ (sd), and ranged from 84 to 99%. Gravel content ranged from 0.1% to 15.2% and averaged $4.6\% \pm 5.5$ (sd). The mud fraction was a very minor part of the sediment in the samples (mean = $0.8\% \pm 0.3$ sd).

One station (FS-01) was quite different in faunal characteristics than the remaining sampling locations at this reef site. FS-01 had the highest abundance (2,497 individuals per sample) and lowest species richness (10 species), Shannon diversity (0.66), and equitability (0.29) of samples at this site, primarily because of the large number of individuals (2,012) of the polychaete *Microphthalmus szcelkowi* collected in the grab. The remaining six samples at this reef location had high abundances of a related species *M. aberrans*.

In part because of the high abundances of these two polychaete taxa (*M. szcelkowi* and *M. aberrans*), the Fisherman reef site had the highest average abundance and lowest average Shannon diversity and equitability of the South Shore sites (Figure 7). Abundances ranged from 182 to 2,497 individuals per sample and species richness varied from 10 to 30 species per sample. Average abundances were 814.6 ± 780.4 (sd) individuals per sample, and average species richness was 18.0 ± 7.0 (sd) species per sample. A total of 54 species were collected. Mean Shannon diversity was $1.22 + 0.40$ (sd), and mean equitability was $0.43 + 0.12$ (sd). The most abundant taxon was the polychaete *Microphthalmus szcelkowi* (mean = 287.4 individuals per sample), but as mentioned previously it was found in only one sample. Other abundant taxa were from 17 other groups and included Nematoda spp (mean = 200.6 individuals per sample), the polychaetes *Microphthalmus aberrans* (142.0), Cirritulidae spp (*Kirkegaardia baptistae* + *Tharyx acutus*) (103.7), *Polygordius jouinae* (14.6), *Neanthes arenaceodentata* (12.9), *Streptosyllis arenae* (9.0), Oligochaeta spp (6.9), the polychaete *Brania wellfleetensis* (6.4), the isopod *Chiridotea coeca* (5.7), the polychaete *Parapionosyllis longicirrata* (2.9), the amphipods *Eobrolgus spinosus* (2.9) and *Lysianopsis alba* (1.6), the polychaete *Polycirrus eximius* (1.3), Nemertinea spp (including juvenile *C. lacteus*) (1.0), the surface deposit feeding bivalve *Ameritella* (fr. *Tellina*) *agilis* (1.0), the surf clam *Spisula solidissima* (1.0), and the polychaete

Caulleriella venefica (1.0). No other taxa exceed an average abundance of 1 per sample at this site (Table 4).

g) Kismet

Like the Fisherman reef site, Kismet was within Great South Bay, and this was the shallowest of the South Shore reefs, averaging $2.8 \text{ m} \pm 0.6$ (sd), and ranging from 2.4 to 4.0 m (Figure 6). Grab penetration depths averaged $7.1 \text{ cm} \pm 1.9$ (sd) and varied from 4.5 to 10 cm. Sediments samples were all greater than 50% sand, but several (KI-02, KI-06) had substantial amounts of gravel (44.9%, 15.7%, respectively). Mean gravel content was $10.4\% \pm 16.2$ (sd), and average sand content was $87.0\% \pm 16.0$ (sd). Mud formed a minor fraction of the sediment (mean = $2.5\% \pm 2.5$ sd). Gravel, sand, and mud contents ranged from 0.1 to 44.9%, 54.2 to 99.0, and 0.9 to 7.5%, respectively (Figure 6).

Faunal abundances varied widely from 19 to 1,132 individuals per sample. This variation was mainly due to variable abundances of the polychaetes Cirritulidae spp (*Kirkegaardia baptisteeae* + *Tharyx acutus*) in the samples. This polychaete group varied between 2 and 808 individuals per sample. Species richness ranged from 11 to 47 species per sample, producing the highest average species richness (mean = 27.1 ± 14.9 species) of the South Shore reef sites (Figure 7). A total of 79 species were collected. Average abundances were 411.6 ± 445.1 (sd) individuals per sample. Average Shannon diversity and equitability were 2.03 ± 0.35 (sd) and 0.68 ± 0.22 (sd), respectively. Reflecting the high species richness at this site, a total of 34 taxa exceeded 1 individual per sample. These abundant taxa included Cirritulidae spp (*Kirkegaardia baptisteeae* + *Tharyx acutus*) (mean = 231.4 individuals per sample), Nematoda spp (48.0), the polychaete *Neanthes arenaceodentata* (21.0), the amphipod *Lysianopsis alba* (7.7), the isopod *Ianiropsis* sp (7.0), the amphipod *Batea catharinensis* (6.3), the polychaete *Brania wellfleetensis* (6.1), the subsurface deposit feeding bivalve *Nucula proxima* (6.1), the cumacean *Oxyurostylis smithi* (5.1), the amphipods *Elasmopus levis* (5.0), *Rhepoxynius epistomus* (4.9), *Eobroglus spinosus* (4.9), the polychaetes *Polygordius jouinae* (4.0) and *Caulleriella venefica* (3.0), the amphipod *Unciola irrorata* (2.7), the polychaete *Dipolydora socialis* (2.6), the bivalve *Solemya velum* (2.4), the polychaetes Capitellidae spp (*Heteromastus* + *Notomastus*) (2.3), Oligochaeta spp (2.3), the polychaetes *Prionospio heterobranchia* (2.1), *Capitella* spp (2.0), *Scolecopsis bousfieldi* (2.0), the amphipods *Ampelisca* spp (*macrocephala* + *verrilli*) (2.0), the amphipod *Rudilemboides naglei* (2.0), the polychaetes *Aricidea catherinae* (1.9) and *Exogone dispar* (1.7), the amphipods *Ampelisca* spp (*abdita* + *vadurum*) (1.4), the surface deposit feeding bivalve *Ameritella* (fr. *Tellina*) *agilis* (1.4), the polychaete *Parapionosyllis longicirrata* (1.3), the amphipod *Idunella barnardi* (1.3), the polychaetes *Streptosyllis arenae* (1.1) and *Glycinde solitaria* (1.1), and the amphipods *Stenothoe minuta* (1.1) and *Microdeutopus anomalus* (1.0). Other taxa at this reef site did not exceed an average abundance of 1 per sample (Table 4).

h) Fire Island

Seven samples were collected at this existing reef site. Water depths ranged from 19.2 to 21.0 m, averaging $20.1 \text{ m} \pm 0.6$ (sd). Grab penetration depths were above 7 cm and averaged $7.9 \text{ cm} \pm 1.1$ (sd). Samples were largely sand (Figure 6), with sand contents ranging from 92.0 to 99.5%.

Average sand by weight was $97.9\% \pm 2.7$ (sd). Gravel ranged from 0 to 7.2% in samples and averaged $1.5\% \pm 2.6$ (sd). Mud content was always less than 1% (mean = $0.6\% \pm 0.2$ sd).

Faunal abundances ranged from 104 to 600 individuals per sample. Average abundance was 393.7 ± 169.5 (sd) individuals per sample. Average species richness was 22.1 ± 3.9 (sd) species per sample, and samples contained 15 to 27 species. Average Shannon diversity was 1.52 ± 0.47 (sd). Average equitability was 0.49 ± 0.15 (sd) (Figure 7). A total of 55 taxa were collected at this site. Much like McAllister, Atlantic Beach, and Hempstead, the amphipod *Pseudunciola obliquua* (mean = 228.9 individuals per sample) and the polychaete *Polygordius jouinae* (mean = 58.9 per sample) were abundant at the Fire Island reef site (Table 4). Sixteen other taxa had abundances greater than 1 per sample. These included Nematoda spp (mean = 37.1 per sample), Oligochaeta spp (27.3), the polychaetes *Streptosyllis arenae* (4.9), *Caulleriella venefica* (4.1), and *Syllides longocirratus* (3.0), the amphipod *Rhepoxynius epistomus* (2.6), the polychaetes *Parougia caeca* (2.6), *Exogone dispar* (2.4), *Spiophanes bombyx* (2.1), *Goniadella gracilis* (1.6), Cirritulidae spp (*Kirkegaardia baptisteeae* + *Tharyx acutus*) (1.3), the surf clam *Spisula solidissima* (1.3), the amphipod *Protohaustorius wigleyi* (1.3), the polychaetes *Nephtys picta* (1.1) and *Aricidea wassi* (1.0), and the tanaid *Tanaissus psammophilus* (1.0).

i) Moriches

With one exception (MO-09), all of the fourteen samples at this potential reef site were sandy with little gravel or mud. MO-09 had 41.6% sand and 58.4% mud. This station MO-09 had the lowest species richness (5), Shannon diversity (0.64), and equitability (0.40) of the samples at this site.

Sand contents averaged $95.0\% \pm 15.4$ (sd), and without MO-09 ranged from 95.2% to 100%. Average gravel content was $0.1\% \pm 0.3$ (sd), and average mud content was $4.9\% \pm 15.4$ (sd). Without station MO-09, mud content ranged from 0.1% to 4.3%. Water depths were $22.9 \text{ m} \pm 0.8$ (sd) on average and varied from 21.6 to 24.1 m. Grab penetration depths ranged from 2 to 10 cm, and the average was $5.2 \text{ cm} \pm 2.0$ (sd) (Figure 6).

A total of 51 taxa and 599 individuals were collected at this site in the fourteen samples. Average abundance was 42.8 ± 40.1 (sd) individuals per sample, the lowest average of the South Shore sites (Figure 7). Average species richness was 10.2 ± 4.8 (sd) species per sample, also the lowest average for the South Shore sites. Abundances ranged from 11 to 148 individuals per sample. Species richness varied from 5 to 21 taxa per sample. Average Shannon diversity was 1.74 ± 0.50 (sd), and mean equitability was 0.78 ± 0.19 (sd). Reflecting the low number of animals collected, only eight taxa had average abundances exceeding 1 individual per sample. These were the polychaete *Polygordius jouinae* (mean = 13.7 individuals per sample), Nematoda spp (7.2), the amphipod *Pseudunciola obliquua* (4.6), Oligochaeta spp (3.0), the polychaetes *Spiophanes bombyx* (1.9) and *Nephtys picta* (1.6), the sand dollar *Echinarachnius parma* (1.6), and the amphipod *Protohaustorius wigleyi* (1.4). Note that the two most abundant species at Moriches, the polychaete *Polygordius jouinae* and the amphipod *Pseudunciola obliquua*, were also the most abundant taxa at McAllister, Atlantic Beach, and Hempstead, and Fire Island.

j) Twelve Mile

Seven samples were collected at the Twelve Mile reef site. Water depths ranged from 38.4 to 43.3 meters and averaged $41.6 \text{ m} \pm 1.6$ (sd), the deepest of the South Shore sites (Figure 6). Grab penetration depths ranged from 6.0 to 8.0 cm. Average penetration depth was $6.9 \text{ cm} \pm 0.7$ (sd). Gravel was generally 1% or less (mean = $0.4\% \pm 0.4$ sd). Sediments were primarily sandy ranging from 89.0% to 99.2% (mean = $97.3\% \pm 3.7$ sd). One station (TW-01) had 11.0% mud, but all other sites had low mud content, ranging from 0.6% to 1.2%. Mean mud content was $2.3\% \pm 3.8$ (sd).

A total of 60 taxa and 1,117 individuals were collected in the seven samples at this site. Abundances varied from 19 to 339 individuals per sample, and species richness ranged from 13 to 24 species per sample. Average abundance was 159.6 ± 112.8 (sd) individuals per sample. Average species richness was 19.7 ± 4.1 (sd) species per sample (Figure 7). Mean Shannon diversity was 1.99 ± 0.58 (sd), and mean equitability was 0.67 ± 0.20 (sd) (Figure 7). Seventeen taxa exceeded an average of 1 individual per sample (Table 4). These included the polychaete *Polygordius jouinae* (mean = 77.0 individuals per sample), Nematoda spp (32.6), the polychaete *Goniadella gracilis* (5.7), the amphipod *Byblis serrata* (5.0), the polychaetes Cirritulidae spp (*Kirkegaardia baptisteeae* + *Tharyx acutus*) (3.6) and *Exogone dispar* (3.3), Oligochaeta spp (2.7), the polychaetes *Scoletoma fragilis* (2.4), *Scalibregma inflatum* (2.3), *Caulleriella venefica* (2.1), and *Spiophanes bombyx* (1.9), the sand dollar *Echinarachnius parma* (1.6), the amphipod *Unciola* spp (*dissimillis* + *serrata*) (1.3), the polychaetes *Glycinde solitaria* (1.3), *Nephtys picta* (1.1), *Aglaophamus circinata* (1.0), and *Potamilla neglecta* (1.0).

k) Shinnecock

Fourteen samples were collected at the Shinnecock potential reef site. Water depths ranged from 23.8 to 25.3 m. Average depths were $24.6 \text{ m} \pm 0.4$ (sd). Grab penetration depths were 6.0 to 9.0 cm and the average penetration depth was $7.9 \text{ cm} \pm 0.8$ (sd). Sand was the dominant sediment fraction (Figure 6), but several stations (SH-04, SH-09, SH-03) had substantial amounts of gravel (62.0, 52.3, and 19.1%, respectively). Mean gravel content was $11.3\% \pm 20.2$ (sd), and mean sand content was $87.9\% \pm 20.4$ (sd). Mud was generally less than 1.8% by weight (mean = $0.8\% \pm 0.4$ sd).

Faunal abundances ranged from 56 to 545 individuals per sample. Average abundance was 244.9 ± 125.6 (sd) individuals per sample. Average species richness was 19.1 ± 3.5 (sd) species per sample, and samples contained 13 to 24 species. Average Shannon diversity was 1.60 ± 0.36 (sd). Average equitability was 0.54 ± 0.11 (sd). A total of 74 taxa and 3,428 individuals were collected at this site. Fifteen taxa had average abundances greater than or equal to 1 per sample (Table 4). These included Nematoda spp (mean = 90.1 individuals per sample), the polychaete *Polygordius jouinae* (75.6) commonly found at all of the South Shore sites, Oligochaeta spp (13.5), the amphipod *Pseudunciola obliquua* (13.5), the slipper snail *Crepidula fornicata* (9.5), the polychaetes *Goniadella gracilis* (6.9), *Spio filicornis* (5.2), *Paradoneis lyra* (3.4), and *Pseudomystides* sp (1.8), the tanaid *Tanaissus psammophilus* (1.6), the polychaetes *Caulleriella venefica* (1.6), *Aricidea catherinae* (1.2), Cirritulidae spp (*Kirkegaardia baptisteeae* + *Tharyx acutus*) (1.1), and *Scoletoma fragilis* (1.1), and the surf clam *Spisula solidissima* (1.1).

Multivariate Analysis

Forward selection RDA resulted in identifying and retaining all of the environmental variables based on the AICc stopping criterion: water depth, grab penetration depth, % gravel, % sand, and % mud (Figure 8). Since the sediment grain size variables always add to 100%, only two are independent. These environmental variables explained only 17.0% of the total variability in community structure. The large variation (i.e., large envelopes around the samples) in community structure for some reef sites like Atlantic Beach, McAllister, Hempstead, Moriches, and Shinnecock is also reflected in the high contrast in bottom type (high backscatter variation) and distinctly different grain size among stations within these sites. For example, two Shinnecock stations (SH-04 and SH-09) plot well away from other Shinnecock samples and also have higher backscatter and gravel content than other locations within this site. Reef sites with relatively small envelopes (e.g., Rockaway, Fisherman, Kismet, Twelve Mile, and Fire Island) tended to have more homogeneous backscatter patterns and grain size. Additionally, the two Great South Bay sites (Fisherman and Kismet) are separated from the remaining South Shore sites along the second ordination axis, suggesting clear differences in faunal composition.

DISCUSSION

General Description of the Sediments and Faunal Characteristics

Both sediment and faunal characteristics varied within and among the areas sampled. It is tempting to compare the Long Island Sounds areas to those along the South Shore; however, this would be problematic for several reasons. Samples for the South Shore and Long Island Sound areas were collected in different years and almost in different seasons (August 2020 vs. June 2021, respectively). Nearshore benthic communities are dynamic and capable of changing rapidly in response to physical (e.g., low DO) and biotic events (e.g., recruitment success or failure). Twice as many samples were collected along the South Shore compared to Long Island Sound, so comparisons of the total number of animals collected and the number of taxa are not valid. In addition, the two regions experience very different environmental regimes, i.e., coastal ocean vs. estuarine, and the salinity, temperature, primary productivity, stratification, and other drivers differ considerably.

Sediments at all sites along the South Shore and two sites in Long Island Sound were primarily sandy, with an average of 75% or greater sand content by weight. Two sites in Long Island Sound, i.e., Port Jefferson – Mt. Sinai and Huntington – Oyster Bay were muddy, with 69.3% and 52.4% mud (silt-clay), respectively. These two potential reef sites had an interesting community structure worth noting. Work by Sanders (1956) in Long Island Sound and Sanders (1958, 1960) in Buzzards Bay, Massachusetts described a mud species assemblage termed the *Nucula/ Nephys/ Yoldia* mud community. This community was named after two infaunal deposit feeding bivalves and the polychaete *Nephys*, presumed by Sanders at the time to be an infaunal deposit feeder and which was later discovered to be a predator. Other researchers, especially Rhoads et al. (1978), described this assemblage as a late successional stage mud community, i.e., characteristic of an area that had been stable for a long enough period of time to allow species with relatively long life spans and low recruitment rates to become dominant. Late succession species tend to feed on buried organic material and have high rates of bioturbation, so they are

functionally important in recycling nutrients in soft sediment systems. In contrast, early successional species have very little impact on sub-surface sediment characteristics.

Cursory observations taken when the samples were collected suggested that the Port Jefferson – Mt. Sinai site has been stable longer than the Huntington – Oyster Bay site. *Yoldia limatula* were about 5 cm in shell length at the Port Jefferson – Mt. Sinai site. This is close to their maximum size of 6.25 cm reported in Abbott (1974). *Y. limatula* at the Huntington – Oyster Bay site were about half that size (~ 3 cm), suggesting younger individuals. *Nucula proxima* was absent from the Huntington – Oyster Bay site. Instead two small, fast growing, early colonizing species, *Macoploma (Macoma) tenta* and *Mulinia lateralis*, were present (Pearson and Rosenberg, 1978; Rhoads et al. 1978). Additionally, shell hash from the latter two species was a dominant part of the gravel fraction of the sediments at Huntington – Oyster Bay, also suggesting a disturbance at some point(s) in the past.

Multivariate analysis revealed that water depth, grab penetration depth, and grain size characteristics (% gravel sand, mud) explained about 17.0% of the community structure at the South Shore sites and 42.6% of the community structure at the Long Island Sound sites. The South Shore result is not unusually low. Flanagan et al. (2019) found that depth and grain size characteristics were weak to moderate predictors of benthic community structure. Additionally, given greater within site variability in bottom type, the South Shore sites were more under sampled relative to Long Island Sound sites which showed less contrast in bottom type. The lower within site variation within the Long Island Sound sites coupled with the high contrast in depth and grain size between sites accounts for the greater amount of explained community variation there. Further, Cerrato and Maher (2007) examining benthic samples in the Peconic Estuary system discovered that 10 samples or more within a single homogenous bottom type would be needed to adequately characterize benthic community structure. Thus, the sampling in the current study which averaged only two samples per bottom type was limited in its ability to fully characterize benthic community structure at these existing and potential reef areas.

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Table 1. List of species collected during Long Island Sound sampling.

Phylum	Subphylum/Class/Order	Family	Species	Code
NEMATODA			Nematoda spp	Nema
NEMERTINEA		Lineidae	<i>Cerebratulus lacteus</i>	Cere
			Nemertinea spp (Including juvenile <i>C. lacteus</i>)	Nmrt
MOLLUSCA	Bivalvia	Tellinidae	<i>Ameritella agilis</i>	Amag
		Arcidae	<i>Anadara transversa</i>	Antr
		Corbulidae	<i>Caryocorbula contracta</i>	Caco
		Pharidae	<i>Ensis leei</i>	Enle
		Lyonsiidae	<i>Lyonsia</i> spp (<i>arenosa/hyalina</i>)	Lysp
		Tellinidae	<i>Macoploma tenta</i>	Mate
		Veneridae	<i>Mercenaria mercenaria</i>	Meme
		Mactridae	<i>Mulinia lateralis</i>	Mula
		Nuculidae	<i>Nucula proxima</i>	Nupr
		Pandoridae	<i>Pandora gouldiana</i>	Pago
		Veneridae	<i>Pitar morrhuanus</i>	Pimo
		Yoldiidae	<i>Yoldia limatula</i>	Yoli
	Gastropoda	Tornatinidae	<i>Acteocina canaliculata</i>	Acca
		Naticidae	<i>Euspira heros</i>	Euhe
		Nassariidae	<i>Ilyanassa trivittata</i>	Iltr
		Pyramidellidae	<i>Turbonilla interrupta</i>	Tuin
ANNELIDA	Oligochaeta		Oligochaeta spp	Olsp
	Polychaeta	Ampharetidae	<i>Ampharete arctica</i>	Amar
		Ampharetidae	<i>Ampharete oculata</i>	Amoc
		Terebellidae	<i>Amphitrite ornata</i>	Amor
		Pilargidae	<i>Ancistrosyllis groenlandica</i>	Angr
		Oeononidae	<i>Arabella iricolor</i>	Arir
		Paraonidae	<i>Aricidea catherinae</i>	Arca
		Paraonidae	<i>Aricidea cerrutii</i>	Arce
		Paraonidae	<i>Aricidea wassi</i>	Arwa
		Flabelligeridae	<i>Pherusa affinis</i>	Phaf
		Syllidae	<i>Brania wellfleetensis</i>	Brwe
		Capitellidae	<i>Capitella</i> spp	Casp
		Capitellidae	Capitellidae spp (Heteromastus/Notomastus)	Cahn
		Cirratulidae	<i>Cauleriella venefica</i>	Cave
		Cirratulidae	<i>Cirriiformia grandis</i>	Cigr
		Cirratulidae	Cirratulidae spp (<i>Kirkegaardia baptisteeae/Tharyx acutus</i>)	Cisp
		Cossuridae	<i>Cossura longocirrata</i>	Colo
		Maldanidae	<i>Clymenella torquata</i>	Clto
		Maldanidae	<i>Clymenella zonalis</i>	Clzo
		Oeononidae	<i>Drilonereis longa</i>	Drlo
		Glyceridae	<i>Glycera americana</i>	Glam
		Goniadidae	<i>Glycinde multicens (=G. solitaria)</i>	Glmu
		Phyllodocidae	<i>Hypereteone heteropoda</i>	Hyhe
		Phyllodocidae	<i>Hypereteone lactea</i>	Hyla
		Orbiniidae	<i>Leitoscoloplos robustus</i>	Lero
		Orbiniidae	<i>Leitoscoloplos</i> spp (juveniles)	Leju
		Paraonidae	<i>Levinsenia gracilis</i>	Legr
		Maldanidae	Maldanidae spp (juveniles)	Mald
		Ampharetidae	<i>Melinna cristata</i>	Mecr
		Magelonidae	<i>Magelona</i> sp	Masp
		Nephtyidae	<i>Nephtys bucera</i>	Nebu
		Nephtyidae	<i>Nephtys picta</i>	Nepi
		Nephtyidae	<i>Nephtys incisa</i>	Nein
		Lumbrineridae	<i>Ninoe nigripes</i>	Nini
		Oeononidae	<i>Notocirrus spinifera</i>	Nosp
		Spionidae	<i>Paraprionospio pinnata</i>	Papi
		Pectinariidae	<i>Pectinaria gouldii</i>	Pego

Phylum	Subphylum/Class/Order	Family	Species	Code
		Phyllodoceidae	<i>Phyllodoce arenae</i>	Phar
		Nereididae	<i>Platynereis dumerilii</i>	Pldu
		Terebellidae	<i>Pista cristata</i>	Picr
		Terebellidae	<i>Polycirrus eximius</i>	Poex
		Spionidae	<i>Polydora cornuta</i>	Poco
		Polygordiidae	<i>Polygordius jouinae</i>	Pojo
		Spionidae	<i>Prionospio (=Minuspio) sp</i>	Prsp
		Spionidae	<i>Prionospio heterobranchia</i>	Prhe
		Maldanidae	<i>Sabaco elongatus</i>	Sael
		Sabellariidae	<i>Sabellaria vulgaris</i>	Savu
		Scalibregmatidae	<i>Scalibregma inflatum</i>	Scin
		Spionidae	<i>Scolelepis bousfieldi</i>	Scbo
		Lumbrineridae	<i>Scoletoma fragilis</i>	Scfr
		Orbiniidae	<i>Scoloplos rubra</i>	Scru
		Pilargidae	<i>Sigambra tentaculata</i>	Site
		Sphaerodoridae	<i>Sphaerodoridium minutum</i>	Spmi
		Spionidae	<i>Spio filicornis</i>	Spfi
		Chaetopteridae	<i>Spiochaetopterus oculatus</i>	Spoc
		Spionidae	Spionidae spp juveniles (<i>Dipolydora/Polydora</i>)	Spssp
		Spionidae	<i>Spiophanes bombyx</i>	Spbo
		Spionidae	<i>Streblospio benedicti</i>	Stbe
ARTHROPODA	Crustacea/Amphipoda	Oedicerotidae	<i>Americhelidium americanum</i>	Amam
		Ampeliscidae	<i>Ampelisca</i> spp (<i>abdita/vadurum</i>)	Amav
		Ampeliscidae	<i>Ampelisca</i> spp (<i>macrocephala/verrilli</i>)	Ammv
		Bateidae	<i>Leptocheirus pinguis</i>	Lepi
		Unciolidae	<i>Unciola irrorata</i>	Unir
		Crustacea/Cumacea	Diastylidae	<i>Leucon americanus</i>
		Diastylidae	<i>Oxyurostylis smithi</i>	Oxsm
	Crustacea/Isopoda	Idoteidae	<i>Edotia triloba</i>	Edtr
	Crustacea/Mysidaceae	Mysidae	<i>Neomysis americana</i>	Neam
	Crustacea/Decapoda	Crangonidae	<i>Crangon septemspinosa</i>	Crse
		Callianassidae	<i>Gilvossius setimanus</i>	Gise
		Panopeidae	<i>Panopeus herbstii</i>	Pahe
		Paguridae	<i>Pagurus longicarpus</i>	Palo
	ECHINODERMATA	Stelleroidea	Pinnotheridae	<i>Rathbunixa sayana</i>
CHORDATA		Amphiuridae	<i>Amphioplus abditus</i>	Amab
		Gobiidae	<i>Gobiosoma bosc</i>	Gobo
		Molgulidae	<i>Molgula manhattensis</i>	Moma

Table 2. Abundant Long Island Sound taxa. Taxa with an average abundance >= 1 per sample at any site.					
Species	Code	Huntington- Oyster Bay	Smithtown	Port Jefferson - Mt. Sinai	Mattituck
Nematoda					
Nematoda spp	Nema	0.2	20.0	0.4	0.1
Bivalvia					
<i>Ameritella agilis</i>	Amag	0.0	5.1	0.0	7.7
<i>Ensis leei</i>	Enle	0.1	1.0	0.0	0.1
<i>Lyonsia</i> spp (<i>arenosa/hyalina</i>)	Lysp	0.4	1.1	0.2	0.0
<i>Macoploma tenta</i>	Mate	25.9	2.1	1.6	0.0
<i>Nucula proxima</i>	Nupr	0.0	0.7	2.2	0.1
<i>Pitar morrhuanus</i>	Pimo	0.6	1.3	2.1	0.0
<i>Yoldia limatula</i>	Yoli	2.6	1.9	8.4	0.0
Gastropoda					
<i>Acteocina canaliculata</i>	Acca	0.0	3.3	2.0	0.0
<i>Ilyanassa trivittata</i>	Iltr	0.3	2.0	1.1	2.9
Polychaeta					
<i>Aricidea catherinae</i>	Arca	0.0	5.7	0.0	0.1
Capitellidae spp (<i>Heteromastus/Notomastus</i>)	Cahn	2.9	2.9	0.0	0.5
Cirritulidae spp (<i>Kirkegaardia baptisteae/Tharyx acutus</i>)	Cisp	3.0	44.4	1.1	0.5
<i>Glycinde multidentis</i> (= <i>G. solitaria</i>)	Glmu	0.0	4.0	0.0	0.0
<i>Levinsenia gracilis</i>	Legr	0.7	3.0	25.5	0.0
Maldanidae spp (juveniles)	Mald	4.1	63.4	1.6	1.0
<i>Melinna cristata</i>	Mecr	1.1	0.1	1.0	0.0
<i>Nephtys bucera</i>	Nebu	0.0	0.0	0.0	1.4
<i>Nephtys incisa</i>	Nein	3.3	0.9	6.6	3.2
<i>Pectinaria gouldii</i>	Pego	1.6	0.0	0.2	0.0
<i>Polygordius jouinae</i>	Pojo	0.0	16.3	0.0	0.3
<i>Prionospio</i> (= <i>Minuspio</i>) sp	Prsp	4.7	3.9	0.6	0.5
<i>Sabaco elongatus</i>	Sael	2.9	2.4	0.1	0.0
<i>Scolelepis bousfieldi</i>	Scbo	0.1	0.6	1.7	0.0
<i>Scoletoma fragilis</i>	Scfr	0.0	1.7	0.0	0.0
<i>Scoloplos rubra</i>	Scru	0.0	0.7	0.0	1.8
<i>Sigambra tentaculata</i>	Site	0.8	1.4	8.8	0.2
<i>Spiochaetopterus oculatus</i>	Spoc	0.0	0.3	0.1	1.1
Spionidae spp juveniles (<i>Dipolydora/Polydora</i>)	Spsp	0.9	1.4	0.6	0.4
<i>Spiophanes bombyx</i>	Spbo	0.0	0.3	0.0	2.1
Amphipoda					
<i>Ampelisca</i> spp (<i>macrocephala/verrilli</i>)	Ammv	0.0	0.0	0.0	3.4
<i>Leptocheirus pinguis</i>	Lepi	2.4	1.0	0.0	0.2
<i>Unciola irrorata</i>	Unir	3.1	0.7	0.1	0.6
Decapoda					
<i>Rathbunixa sayana</i>	Rasa	0.1	0.0	0.4	1.1

Table 3. List of species collected during South Shore sampling

Phylum	Subphylum/Class/Order	Family	Species (Taxa)	Code		
CNIDARIA	Actinaria	Haloclavidae	<i>Haloclava producta</i>	Hapr		
	Scleractinia	Rhizangiidae	<i>Astrangia poculata</i>	Aspo		
NEMATODA			Nematoda spp	Nema		
NEMERTINEA		Lineidae	<i>Cerebratulus lacteus</i>	Cere		
			Nemertinea spp (Including juvenile <i>C. lacteus</i>)	Nmrt		
SIPUNCULA		Golfingiidae	<i>Phascolopsis gouldii</i>	Phgo		
PLATYHELMINTHES			Turbellaria sp	Turb		
MOLLUSCA	Bivalvia	Tellinidae	<i>Ameritella agilis</i>	Amag		
		Arcidae	<i>Anadara transversa</i>	Antr		
		Astartidae	<i>Astarte castanea</i>	Asca		
		Mytilidae	<i>Crenella decussata</i>	Crde		
		Lasaeidae	<i>Kurtiella planulata</i>	Kupl		
		Mytilidae	<i>Musculus discors</i>	Mudi		
		Mytilidae	<i>Mytilus edulis</i> (juvenile)	Myed		
		Nuculidae	<i>Nucula proxima</i>	Nupr		
		Nuculidae	<i>Nucula tenuis</i>	Nute		
		Veneridae	<i>Pitar morrhuanus</i>	Pimo		
		Solemyidae	<i>Solemya velum</i>	Sove		
		Solenidae	<i>Solen viridis</i>	Sovi		
		Mactridae	<i>Spisula solidissima</i>	Spso		
		Yoldiidae	<i>Yoldia limatula</i>	Yoli		
		Gastropoda	Calyptraeidae	<i>Crepidula fornicata</i>	Crfo	
			Calyptraeidae	<i>Crepidula plana</i>	Crpl	
			Naticidae	<i>Euspira heros</i>	Euhe	
			Naticidae	<i>Euspira triseriata</i>	Eutr	
			Naticidae	<i>Polinices immaculatus</i>	Poim	
			Nassariidae	<i>Ilyanassa trivittata</i>	Iltr	
			Oligochaeta spp	Olsp		
	ANNELIDA		Oligochaeta Polychaeta	Nephtyidae	<i>Aglaophamus circinata</i>	Agci
				Nephtyidae	<i>Aglaophamus verrilli</i>	Agve
				Ampharetidae	<i>Ampharete arctica</i>	Amar
				Ampharetidae	<i>Asabellides oculata</i>	Asoc
				Pilargidae	<i>Ancistrosyllis groenlandica</i>	Angr
				Oeononidae	<i>Arabella iricolor</i>	Arir
		Paraonidae		<i>Aricidea catherinae</i>	Arca	
		Paraonidae		<i>Aricidea cerrutii</i>	Arce	
		Paraonidae		<i>Aricidea wassi</i>	Arwa	
		Syllidae		<i>Brania wellfleetensis</i>	Brwe	
		Capitellidae		<i>Capitella</i> spp	Casp	
		Capitellidae		Capitellidae spp (<i>Heteromastus/Notomastus</i>)	Cahn	
		Cirratulidae		<i>Cauleriella venefica</i>	Cave	
		Cirratulidae		<i>Cirriformia grandis</i>	Cigr	
		Cirratulidae		Cirratulidae spp (<i>Kirkegaardia baptisteeae/Tharyx acutus</i>)	Cisp	
		Maldanidae		<i>Clymenella torquata</i>	Clto	
		Maldanidae		<i>Clymenella zonalis</i>	Clzo	
		Onuphidae		<i>Diopatra cuprea</i>	Dicu	
		Spionidae		<i>Dipolydora socialis</i>	Diso	
		Oeononidae		<i>Drilonereis longa</i>	Drlo	
		Syllidae		<i>Erinaceusyllis erinaceus</i>	Erer	
	Phyllodocidae	<i>Eumida sanguinea</i>	Eusa			
Syllidae	<i>Exogone dispar</i>	Exdi				
Glyceridae	<i>Glycera americana</i>	Glam				
Glyceridae	<i>Glycera dibranchiata</i>	Gldi				
Goniadidae	<i>Glycinde solitaria</i>	Glso				
Goniadidae	<i>Goniadella gracilis</i>	Gogr				

Phylum	Subphylum/Class/Order	Family	Species (Taxa)	Code
		Hesionidae	<i>Gyptis vittata</i>	Gyvi
		Polynoidae	<i>Harmothoe extenuata</i>	Haex
		Serpulidae	<i>Hydroides dianthus</i>	Hydi
		Phyllodocidae	<i>Hypereteone heteropoda</i>	Hyhe
		Phyllodocidae	<i>Hypereteone lactea</i>	Hyla
		Orbiniidae	<i>Leitoscoloplos robustus</i>	Lero
		Orbiniidae	<i>Leitoscoloplos</i> spp (juveniles)	Leju
		Polynoidae	<i>Lepidonotus squamatus</i>	Lesq
		Paraonidae	<i>Levinsenia gracilis</i>	Legr
		Lumbrineridae	<i>Lumbrinerides acuta</i>	Luac
		Maldanidae	Maldanidae spp (juveniles)	Masp
		Magelonidae	<i>Megalona</i> sp	Mesp
		Microphthalmidae	<i>Microphthalmus aberrans</i>	Miab
		Microphthalmidae	<i>Microphthalmus sczelkowi</i>	Misc
		Nereididae	<i>Neanthes arenaceodentata</i>	Near
		Nephtyidae	<i>Nephtys bucera</i>	Nebu
		Nephtyidae	<i>Nephtys picta</i>	Nepi
		Nephtyidae	<i>Nephtys incisa</i>	Nein
		Lumbrineridae	<i>Ninoe nigripes</i>	Nini
		Oeonidae	<i>Notocirrus spinifera</i>	Nosp
		Onuphidae	<i>Onuphis eremita</i>	Oner
		Onuphidae	<i>Onuphis opalina</i>	Onop
		Opheliidae	<i>Ophelina acuminata</i>	Opac
		Hesionidae	<i>Oxydromus obscurus</i>	Oxob
		Paraonidae	<i>Paradoneis lyra</i>	Paly
		Paraonidae	<i>Paraonis fulgens</i>	Pafu
		Phyllodocidae	<i>Paranaitis speciosa</i>	Pasp
		Syllidae	<i>Parapionosyllis longicirrata</i>	Para
		Dorvilleidae	<i>Parougia caeca</i>	Paca
		Dorvilleidae	<i>Pettiboneia</i> sp	Pesp
		Flabelligeridae	<i>Pherusa affinis</i>	Phaf
		Sigalionidae	<i>Pholoe minuta</i>	Phmi
		Phyllodocidae	<i>Phyllodoce arenae</i>	Phar
		Phyllodocidae	<i>Phyllodoce mucosa</i>	Phmu
		Sigalionidae	<i>Pisione</i> sp	Pisp
		Terebellidae	<i>Pista cristata</i>	Picr
		Terebellidae	<i>Polycirrus eximius</i>	Poex
		Spionidae	<i>Polydora cornuta</i>	Poco
		Polygordiidae	<i>Polygordius jouinae</i>	Pojo
		Sabellidae	<i>Potamilla neglecta</i>	Pone
		Spionidae	<i>Prionospio heterobranchia</i>	Prhe
		Spionidae	<i>Prionospio pygmaeus</i>	Prpy
		Syllidae	<i>Proceraea cornuta</i>	Prco
		Phyllodocidae	<i>Pseudomystides</i> sp	Pssp
		Maldanidae	<i>Sabaco elongatus</i>	Sael
		Sabellariidae	<i>Sabellaria vulgaris</i>	Savu
		Scalibregmatidae	<i>Scalibregma inflatum</i>	Scin
		Dorvilleidae	<i>Schistomeringos rudolphi</i>	Schi
		Spionidae	<i>Scolecopsis bousfieldi</i>	Scbo
		Lumbrineridae	<i>Scoletoma fragilis</i>	Scfr
		Lumbrineridae	<i>Scoletoma hebes</i>	Sche
		Lumbrineridae	<i>Scoletoma tenuis</i>	Scte
		Orbiniidae	<i>Scoloplos acmeiceps</i>	Scac
		Orbiniidae	<i>Scoloplos rubra</i>	Scru
		Sigalionidae	<i>Sigalion arenicola</i>	Siar
		Sphaerodoridae	<i>Sphaerodoridium minutum</i>	Spmi
		Syllidae	<i>Sphaerosyllis hystrix</i>	Sphy

Phylum	Subphylum/Class/Order	Family	Species (Taxa)	Code		
		Spionidae	<i>Spio filicornis</i>	Spfi		
		Chaetopteridae	<i>Spiochaetopterus oculatus</i>	Spoc		
		Spionidae	Spionidae spp juveniles (<i>Dipolydora / Polydora</i>)	Spsp		
		Spionidae	<i>Spiophanes bombyx</i>	Spbo		
		Spionidae	<i>Streblospio benedicti</i>	Stbe		
		Syllidae	<i>Streptosyllis arenae</i>	Star		
		Syllidae	<i>Streptosyllis varians</i>	Stva		
		Syllidae	<i>Syllides longocirratu</i>	Sylo		
		Syllidae	<i>Syllis gracilis</i>	Sygr		
		Syllidae	<i>Syllis cornuta</i>	Syco		
		Travisiidae	<i>Travisia carnea</i>	Trca		
ARTHROPODA	Crustacea/Amphipoda	Haustoriidae	<i>Acanthohaustorius millsii</i>	Acmi		
		Oedicerotidae	<i>Americhelidium americanum</i>	Amam		
		Ampeliscidae	<i>Ampelisca</i> spp (<i>abditu / vadurum</i>)	Amav		
		Ampeliscidae	<i>Ampelisca</i> spp (<i>macrocephala / verrilli</i>)	Ammv		
		Bathyporeiidae	<i>Bathyporeia quoddyensis</i>	Baqu		
		Bateidae	<i>Batea catharinensis</i>	Baca		
		Ampeliscidae	<i>Byblis serrata</i>	Byse		
		Corophiidae	<i>Corophium</i> sp	Cosp		
		Caprellidae	<i>Deutella incerta</i>	Dein		
		Dulichidae	<i>Dyopedos porrectus</i>	Dypo		
		Maeridae	<i>Elasmopus levis</i>	Elle		
		Phoxocephalidae	<i>Eobrolgus spinosus</i>	Eosp		
		Ischyroceridae	<i>Erichthonius brasiliensis</i>	Erbr		
		Aoridae	<i>Globosolembos smithi</i>	Glsm		
		Tryphosidae	<i>Hippomedon serratus</i>	Hise		
		Liljeborgiidae	<i>Idunella barnardi</i>	Idba		
		Bateidae	<i>Leptocheirus pinguis</i>	Lepi		
		Liljeborgiidae	<i>Liljeborgia</i> sp	Lisp		
		Lysianassidae	<i>Lysianopsis alba</i>	Lyal		
		Aoridae	<i>Microdeutopus anomalus</i>	Mian		
		Microtopodidae	<i>Microtopodus raneyi</i>	Mira		
		Oedicerotidae	<i>Monoculodes</i> sp	Mosp		
		Caprellidae	<i>Paracaprella tenuis</i>	Pate		
		Photidae	<i>Photis reinhardi</i>	Phre		
		Phoxocephalidae	<i>Phoxocephalus holbolli</i>	Phho		
		Haustoriidae	<i>Protohaustorius wigleyi</i>	Prwi		
		Unciolidae	<i>Pseudunciola obliqua</i>	Psob		
		Phoxocephalidae	<i>Rhepoxynius epistomus</i>	Rhep		
		Unciolidae	<i>Rudilemboides naglei</i>	Runa		
		Stenothoidae	<i>Stenothoe minuta</i>	Stmi		
		Unciolidae	<i>Unciola irrorata</i>	Unir		
		Unciolidae	<i>Unciola</i> spp (<i>dissimilis / serrata</i>)	Unsp		
			Crustacea/Cumacea	Diastylidae	<i>Diastylis sculpta</i>	Disc
				Diastylidae	<i>Oxyurostylis smithi</i>	Oxsm
				Bodotriidae	<i>Pseudoleptocuma minus</i>	Psmi
			Crustacea/Isopoda	Ancinidae	<i>Ancinus depressus</i>	Ande
				Chaetiliidae	<i>Chiridotea coeca</i>	Chco
				Chaetiliidae	<i>Chiridotea tuftsi</i>	Chtu
				Anthuridae	<i>Cyathura polita</i>	Cypo
				Idoteidae	<i>Edotia triloba</i>	Edtr
				Janiridae	<i>Ianiropsis</i> sp	Iasp
				Cirolanidae	<i>Politolana polita</i>	Popo
		Anthuridae	<i>Ptilanthura tenuis</i>	Ptte		
	Crustacea/Mysidacea	Mysidae	<i>Heteromysis formosa</i>	Hefo		
		Mysidae	<i>Neomysis americana</i>	Neam		
	Crustacea/Decapoda	Cancridae	<i>Cancer irroratus</i>	Cair		

Phylum	Subphylum/Class/Order	Family	Species (Taxa)	Code
		Crangonidae	<i>Crangon septemspinosa</i>	Crse
		Pinnotheridae	<i>Dissodactylus mellitae</i>	Dime
		Panopeidae	<i>Dyspanopeus sayi</i>	Dysa
		Epialtidae	<i>Libinia emarginata</i>	Liem
		Panopeidae	<i>Panopeus herbstii</i>	Pahe
		Paguridae	<i>Pagurus acadianus</i>	Paac
		Paguridae	<i>Pagurus arcuatus</i>	Paar
		Paguridae	<i>Pagurus annulipes</i>	Paan
		Paguridae	<i>Pagurus longicarpus</i>	Palo
		Paguridae	<i>Pagurus pollicaris</i>	Papo
		Pinnotheridae	<i>Rathbunixa sayana</i>	Rasa
	Crustacea/Sessilia	Balanidae	<i>Amphibalanus amphitrite</i>	Amph
		Balanidae	<i>Balanus</i> sp	Basp
	Crustacea/Tanaidacea	Tanaissuidae	<i>Tanaissus psammophilus</i>	Taps
ECHINODERMATA	Echinoidea	Echinarachniidae	<i>Echinarachnius parma</i>	Ecpa
	Holothuroidea	Synaptidae	<i>Leptosynapta</i> sp	Lesp
CHORDATA		Molgulidae	<i>Molgula manhattensis</i>	Moma

Table 4. Abundant South Shore taxa. Taxa with an average abundance >= 1 per sample at any site.												
Species	Code	Rockaway	Atlantic Beach	McAllister	Hempstead	Sixteen Fathoms	Fisherman	Kismet	Fire Island	Moriches	Twelve Mile	Shinnecock
Nematoda												
Nematoda spp	Nema	0.1	19.6	8.6	9.9	26.8	200.6	48.0	37.1	7.2	32.6	90.1
Nemertinea												
Nemertinea spp (Including juvenile <i>C. lacteus</i>)	Nmrt	0.0	0.3	0.2	0.3	0.1	1.0	0.0	0.6	0.0	0.7	0.3
Bivalvia												
<i>Ameritella agilis</i>	Amag	1.4	1.6	2.4	1.3	0.6	1.0	1.4	0.4	0.8	0.1	0.3
<i>Nucula proxima</i>	Nupr	0.0	0.1	0.0	0.0	0.5	0.1	6.1	0.0	0.1	0.6	0.0
<i>Nucula tenuis</i>	Nute	0.0	0.1	0.1	0.0	2.3	0.0	0.0	0.0	0.0	0.0	0.0
<i>Solemya velum</i>	Sove	0.0	0.0	0.0	0.0	0.0	0.1	2.4	0.0	0.0	0.0	0.0
<i>Spisula solidissima</i>	Spsa	3.1	4.1	0.7	1.4	1.9	1.0	0.0	1.3	0.4	0.0	1.1
Gastropoda												
<i>Crepidula fornicata</i>	Crfo	0.0	0.1	0.0	0.3	0.0	0.0	0.1	0.0	0.0	0.1	9.5
Oligochaeta												
Oligochaeta spp	Olsp	1.0	5.3	10.1	3.9	7.8	6.9	2.3	27.3	3.0	2.7	13.5
Polychaete												
<i>Aglaophamus circinata</i>	Agci	0.0	0.1	0.2	0.0	0.1	0.0	0.0	0.3	0.0	1.0	0.0
<i>Aricidea catherinae</i>	Arca	2.0	3.7	0.4	1.6	1.6	0.1	1.9	0.7	0.1	0.6	1.2
<i>Aricidea wassi</i>	Arwa	0.1	6.6	0.7	1.0	1.6	0.0	0.0	1.0	0.5	0.6	0.3
<i>Brania wellfleetensis</i>	Brwe	0.0	0.0	0.2	0.0	0.1	6.4	6.1	0.0	0.1	0.0	0.1
<i>Capitella</i> spp	Casp	0.0	0.0	0.1	0.0	0.1	0.4	2.0	0.1	0.1	0.0	0.0
Capitellidae spp (<i>Heteromastus/Notomastus</i>)	Cahn	0.7	1.7	1.2	0.7	0.9	0.1	2.3	0.4	0.6	0.1	0.0
<i>Cauterella venefica</i>	Cave	2.1	2.4	1.2	2.1	5.5	1.0	3.0	4.1	0.7	2.1	1.6
Cirritulidae spp (<i>Kirkegaardia baptistae/Tharyx acutus</i>)	Cisp	0.6	3.9	1.4	1.7	28.4	103.7	231.4	1.3	0.0	3.6	1.1
<i>Dipolydora socialis</i>	Diso	0.0	0.0	0.0	0.3	0.0	0.0	2.6	0.1	0.0	0.0	0.0
<i>Exogone dispar</i>	Exdi	0.0	0.0	0.3	0.3	1.9	0.0	1.7	2.4	0.2	3.3	0.9
<i>Glycinde solitaria</i>	Glso	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0	1.3	0.0
<i>Goniadella gracilis</i>	Gogr	0.0	3.3	0.9	1.0	2.6	0.6	0.0	1.6	0.0	5.7	6.9
<i>Harmothoe extenuata</i>	Haex	0.0	0.0	0.0	1.4	1.3	0.0	0.0	0.1	0.0	0.0	0.6
<i>Microphthalmus aberrans</i>	Miab	0.0	0.0	0.1	0.0	0.0	142.0	0.1	0.0	0.0	0.0	0.0
<i>Microphthalmus sczelkowi</i>	Misc	0.0	0.0	0.1	0.0	0.0	287.4	0.1	0.3	0.1	0.1	0.1
<i>Neanthes arenaceodentata</i>	Near	0.1	0.0	0.0	0.0	0.0	12.9	21.0	0.0	0.0	0.0	0.0
<i>Nephtys picta</i>	Nepi	3.0	2.1	2.4	2.3	3.4	0.6	0.9	1.1	1.6	1.1	0.6
<i>Paradoneis lyra</i>	Paly	0.0	0.3	6.1	0.0	0.0	0.0	0.0	0.1	0.0	0.4	3.4
<i>Parapionosyllis longicirrata</i>	Para	0.0	1.6	1.1	0.0	0.0	2.9	1.3	0.1	0.0	0.1	0.0
<i>Parougia caeca</i>	Paca	0.0	0.3	0.0	0.0	0.4	0.1	0.0	2.6	0.0	0.1	0.2
<i>Polycirrus eximius</i>	Poex	0.0	0.7	1.7	1.4	0.3	1.3	0.4	0.3	0.0	0.0	0.1
<i>Polydora cornuta</i>	Poco	0.3	1.4	1.8	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0
<i>Polygordius jouinae</i>	Pojo	1.0	37.4	5.1	58.9	167.8	14.6	4.0	58.9	13.7	77.0	75.6
<i>Potamilla neglecta</i>	Pone	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
<i>Prionospio heterobranchia</i>	Prhe	0.0	0.0	0.0	0.0	0.0	0.0	2.1	0.0	0.0	0.0	0.0
<i>Prionospio pygmaeus</i>	Prpy	0.1	0.7	5.0	7.6	0.1	0.0	0.0	0.0	0.0	0.0	0.1
<i>Pseudomystides</i> sp	Pssp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8
<i>Scalibregma inflatum</i>	Scin	0.0	0.0	0.1	0.0	1.6	0.0	0.0	0.0	0.0	2.3	0.0
<i>Scolecopsis bousfieldi</i>	Scbo	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.4
<i>Scoletoma fragilis</i>	Scfr	0.0	0.0	0.0	0.1	2.3	0.0	0.0	0.0	0.0	2.4	1.1
<i>Scoletoma tenuis</i>	Scte	0.0	3.4	0.3	3.6	0.1	0.0	0.7	0.1	0.0	0.0	0.0
<i>Spio filicornis</i>	Spfi	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.1	0.0	0.0	5.2
<i>Spiochaetopterus oculatus</i>	Spoc	2.3	0.1	0.9	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0
<i>Spiophanes bombyx</i>	Spbo	1.1	0.4	1.9	2.1	0.9	0.1	0.9	2.1	1.9	1.9	0.3
<i>Streptosyllis arenae</i>	Star	0.0	0.3	1.1	0.3	1.4	9.0	1.1	4.9	0.1	0.0	0.0
<i>Syllides longicirrat</i>	Sylo	0.0	0.3	0.4	0.1	0.4	0.4	0.0	3.0	0.3	0.1	0.6
Amphipoda												
<i>Ampelisca</i> spp (<i>abdita/vadurum</i>)	Amav	0.0	0.9	1.9	1.0	7.2	0.1	1.4	0.0	0.1	0.0	0.0
<i>Ampelisca</i> spp (<i>macrocephala/verilli</i>)	Ammv	18.7	12.3	6.4	1.6	0.0	0.0	2.0	0.0	0.0	0.0	0.0
<i>Batea catharinensis</i>	Baca	0.0	0.0	0.0	0.0	0.1	0.3	6.3	0.0	0.0	0.0	0.0
<i>Byblis serrata</i>	Byse	0.0	0.0	0.0	0.0	2.4	0.0	0.0	0.4	0.0	5.0	0.1
<i>Corophium</i> sp	Cosp	0.0	0.1	0.2	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.1
<i>Elasmopus levis</i>	Elle	0.0	0.0	0.0	0.0	0.1	0.3	5.0	0.0	0.0	0.1	0.0
<i>Eobrolgus spinosus</i>	Eosp	0.0	0.9	0.1	0.0	0.1	2.9	4.9	0.0	0.0	0.0	0.0
<i>Idunella barnardi</i>	Idba	0.0	0.1	0.0	0.0	0.0	0.0	1.3	0.0	0.0	0.0	0.0
<i>Leptocheirus pinguis</i>	Lepi	0.0	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0
<i>Liljeborgia</i> sp	Lisp	0.0	0.1	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lysianopsis alba</i>	Lyal	0.0	0.0	0.0	0.0	0.0	1.6	7.7	0.0	0.0	0.0	0.0
<i>Microdeutopus anomalus</i>	Mian	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
<i>Phoxocephalus holbolli</i>	Phho	0.0	0.0	0.0	1.7	1.1	0.0	0.0	0.0	0.0	0.0	0.0
<i>Protohaustorius wigleyi</i>	Prwi	4.6	3.6	2.4	1.1	0.9	0.0	0.0	1.3	1.4	0.0	0.2
<i>Pseudunciola obliqua</i>	Psob	0.0	37.3	37.6	31.7	1.1	0.7	0.3	228.9	4.6	0.4	13.5
<i>Rhepoxynius epistomus</i>	Rhep	0.0	1.9	1.8	3.3	1.9	0.0	4.9	2.6	0.4	0.4	0.7
<i>Rudilemboides naglei</i>	Runa	0.0	0.0	0.0	0.0	0.1	0.0	2.0	0.0	0.0	0.0	0.0
<i>Stenothoe minuta</i>	Stmi	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0
<i>Unciola irrorata</i>	Unir	0.7	2.7	0.9	5.7	2.8	0.9	2.7	0.4	0.1	0.3	0.8
<i>Unciola</i> spp (<i>dissimilis/serrata</i>)	Unsp	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.4
Cumacea												
<i>Oxyurostylis smithi</i>	Oxsm	0.1	0.4	0.0	0.0	0.1	0.6	5.1	0.0	0.0	0.1	0.1
<i>Pseudoleptocuma minus</i>	Psmi	0.1	1.4	1.1	0.1	0.5	0.0	0.0	0.3	0.1	0.1	0.2

Table 4. Abundant South Shore taxa. Taxa with an average abundance ≥ 1 per sample at any site.												
Species	Code	Rockaway	Atlantic Beach	McAllister	Hempstead	Sixteen Fathoms	Fisherman	Kismet	Fire Island	Moriches	Twelve Mile	Shinnecock
Isopoda												
<i>Chiridotea coeca</i>	Chco	0.0	0.0	0.1	0.1	0.1	5.7	0.1	0.0	0.0	0.0	0.0
<i>Edotia triloba</i>	Edtr	0.0	1.1	0.0	0.0	0.1	0.0	0.1	0.3	0.1	0.0	0.5
<i>Ianiropsis</i> sp	Iasp	0.1	0.0	0.0	0.0	0.0	0.0	7.0	0.0	0.0	0.0	0.0
<i>Politolana polita</i>	Popo	0.0	0.3	0.0	0.6	1.5	0.0	0.0	0.4	0.1	0.6	0.4
Tanaidacea												
<i>Tanaissus psammophilus</i>	Taps	0.0	2.4	0.1	1.4	0.1	0.0	0.0	1.0	0.3	0.0	1.6
Echinoidea												
<i>Echinarachnius parma</i>	Ecpa	0.0	0.0	0.1	1.0	2.3	0.0	0.0	0.9	1.6	1.6	0.5

Figure 1. Artificial reef locations in New York waters. From HDR Inc., et al (2020). All reef sites except Matinecock Reef in LIS were sampled.

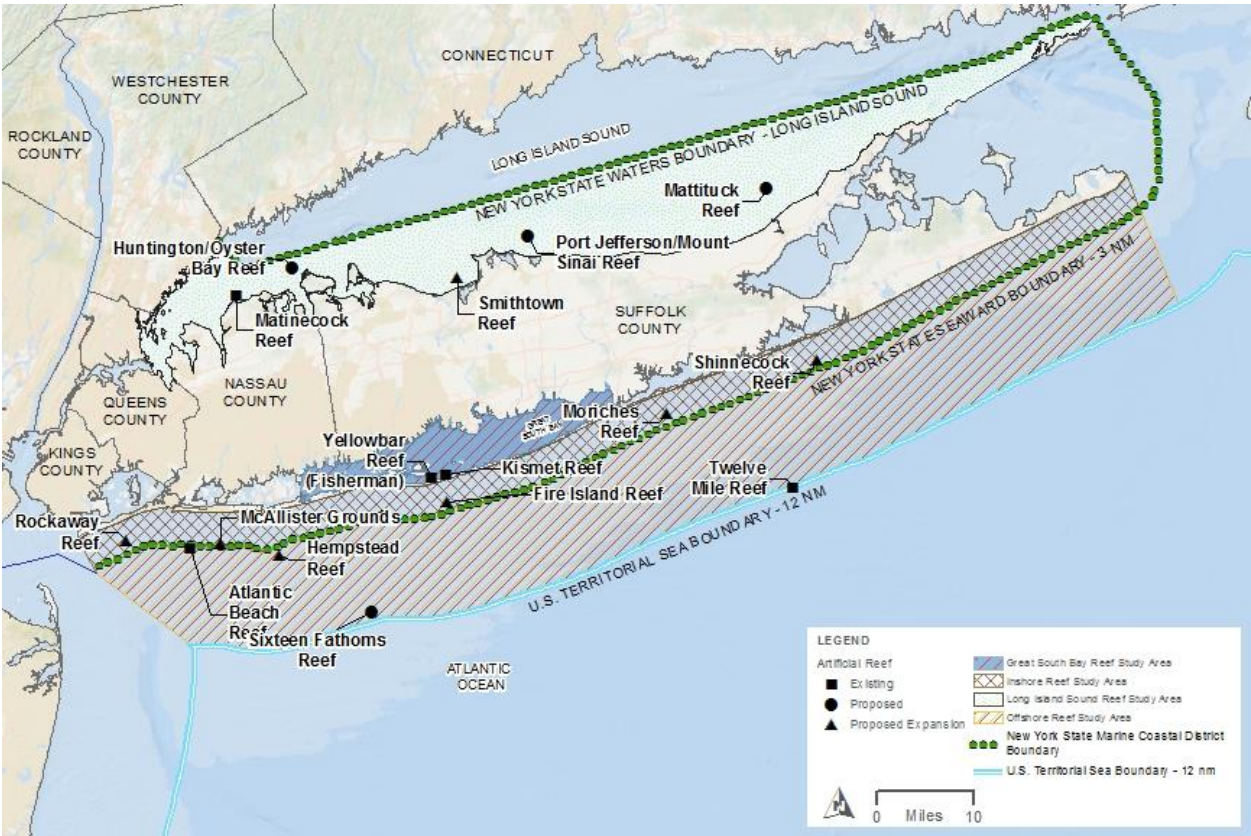


Figure 2. Sonar bottom type provinces and sampling locations. Sampling locations are green circles, the sample ID for the location is in red with a beige border, and the arbitrarily assigned bottom type province codes are in black. Stars are reef material.

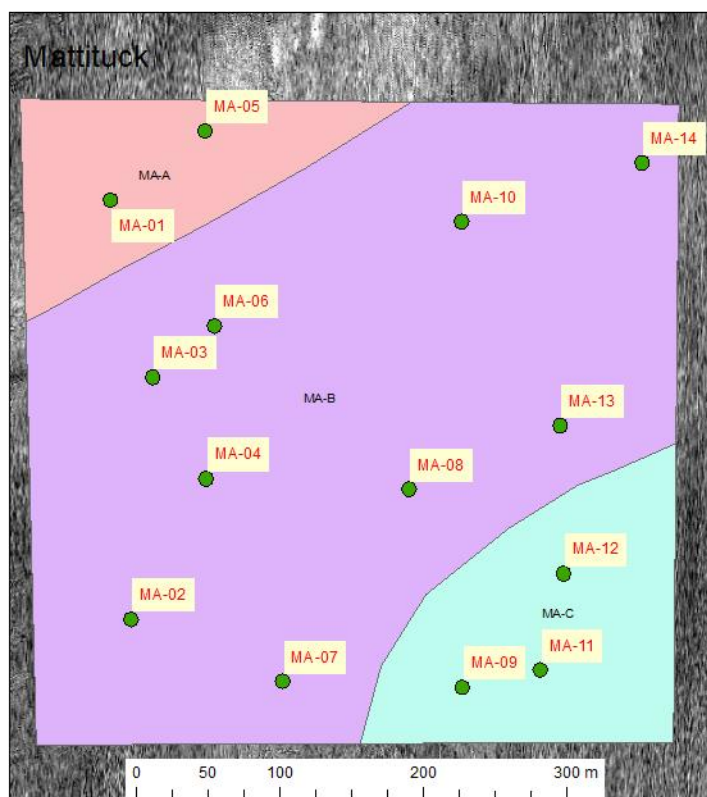
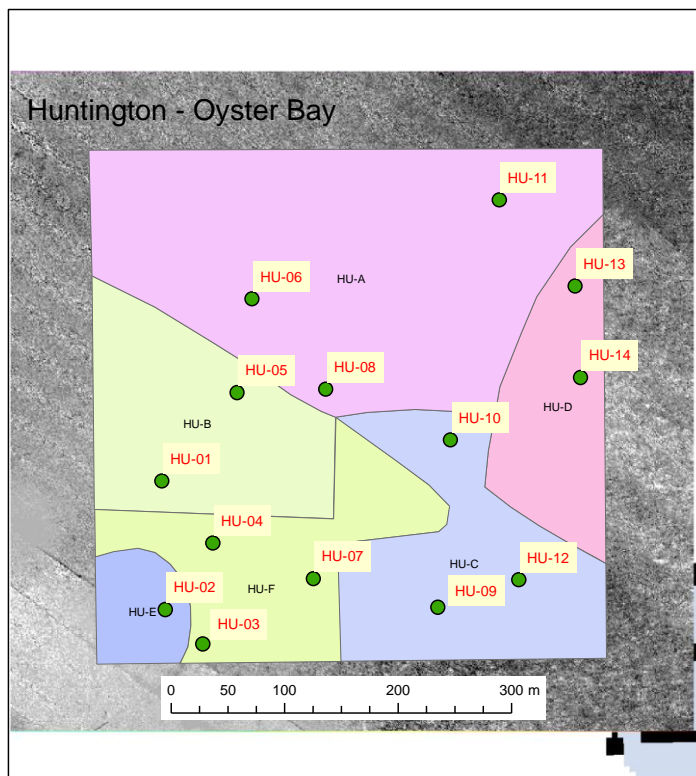


Figure 2. continued

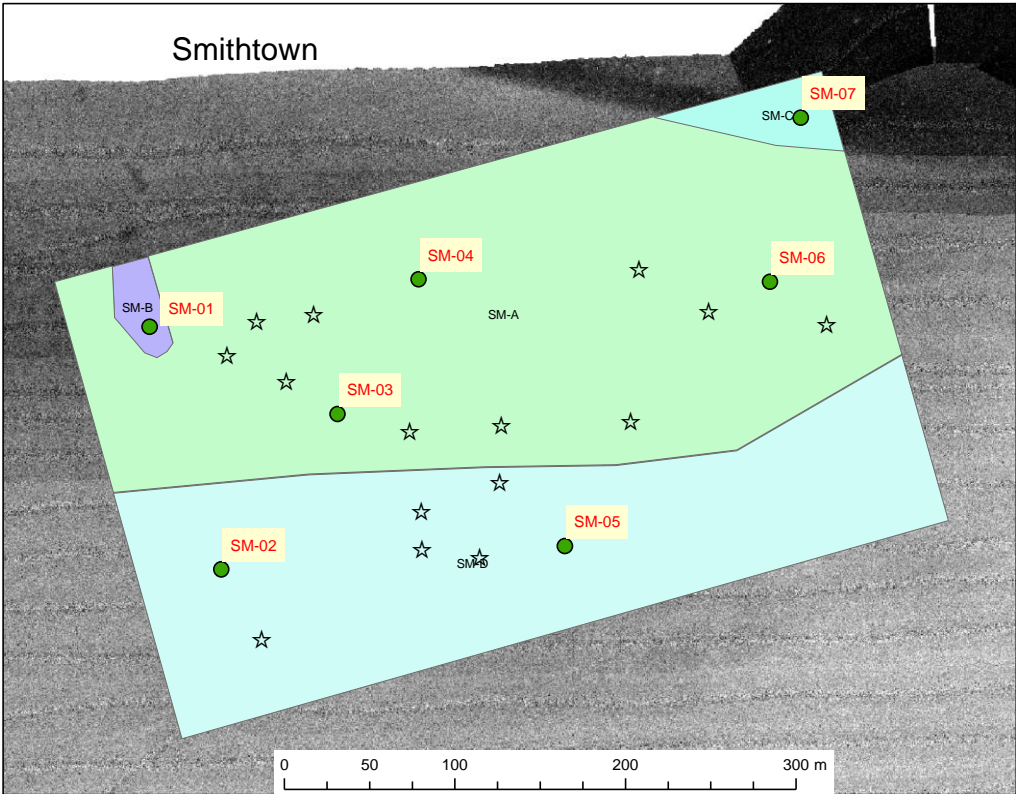
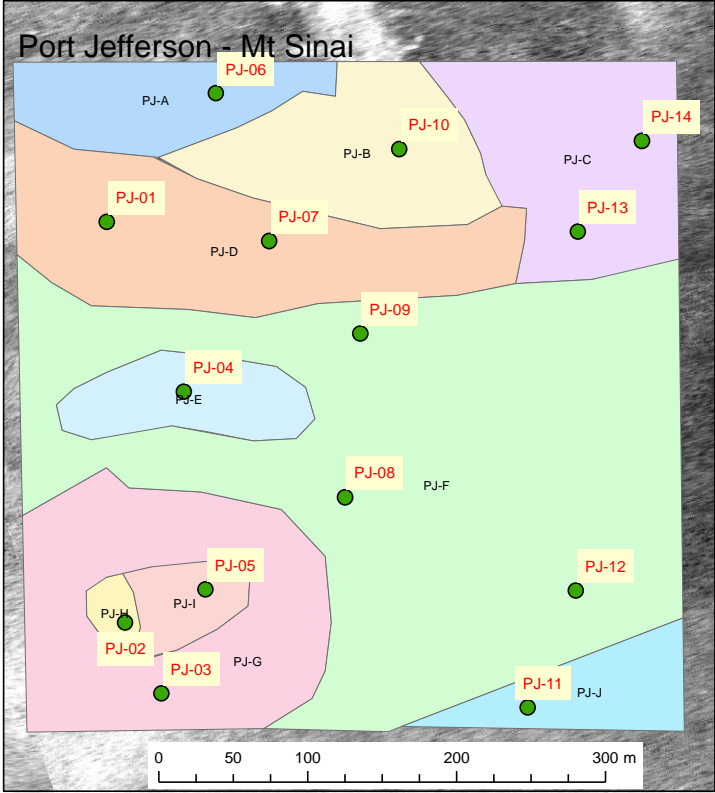


Figure 2. continued.

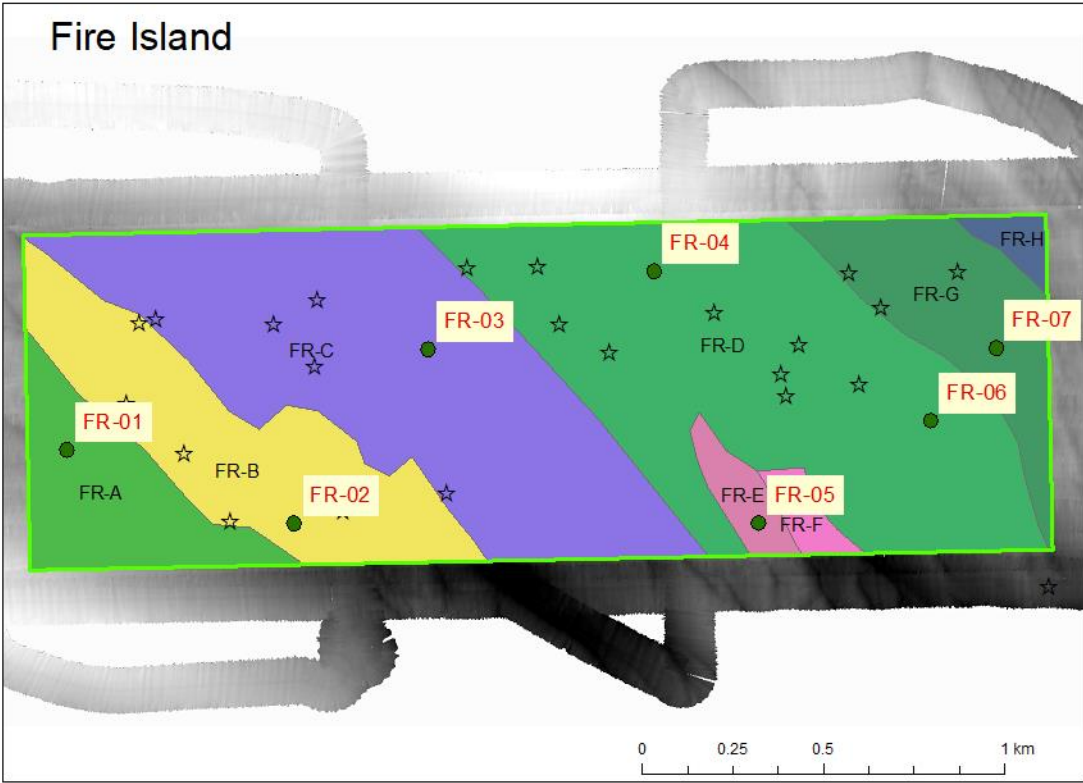
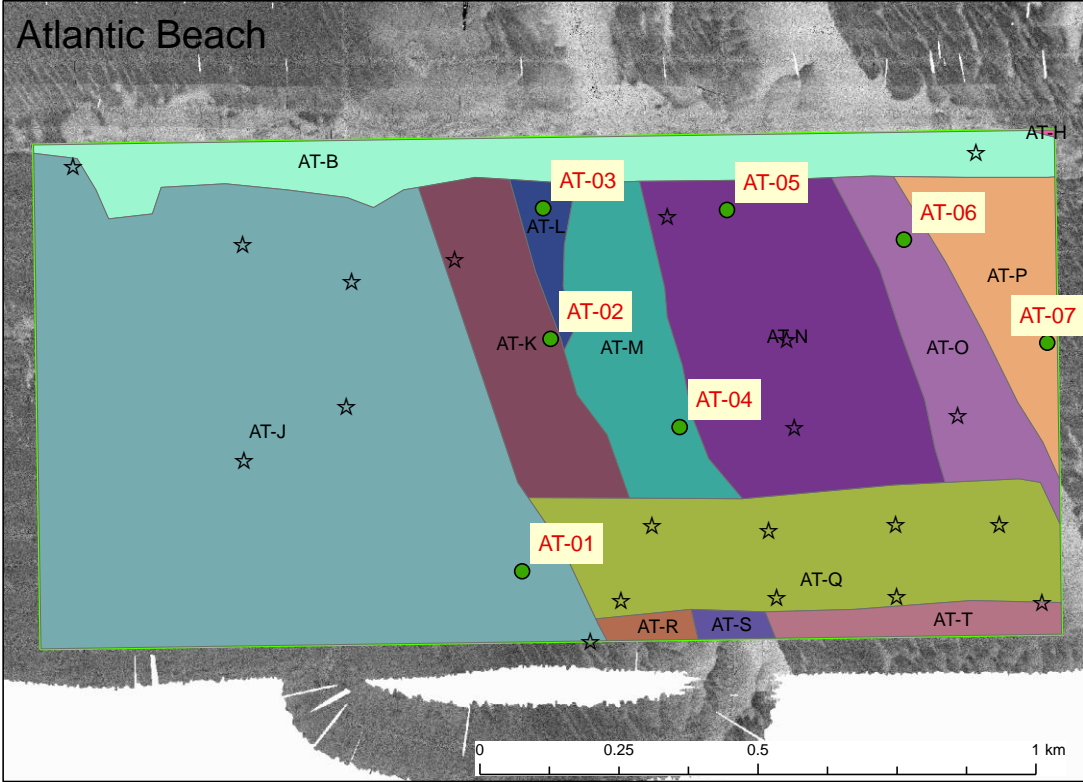


Figure 2. continued.

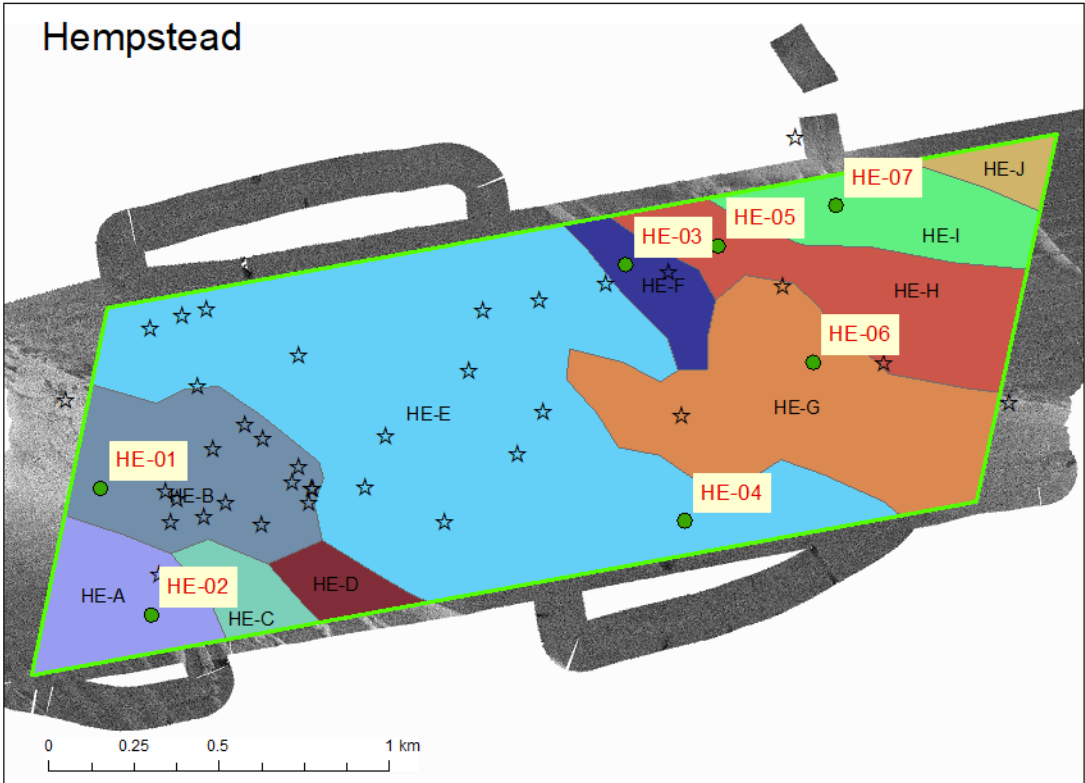
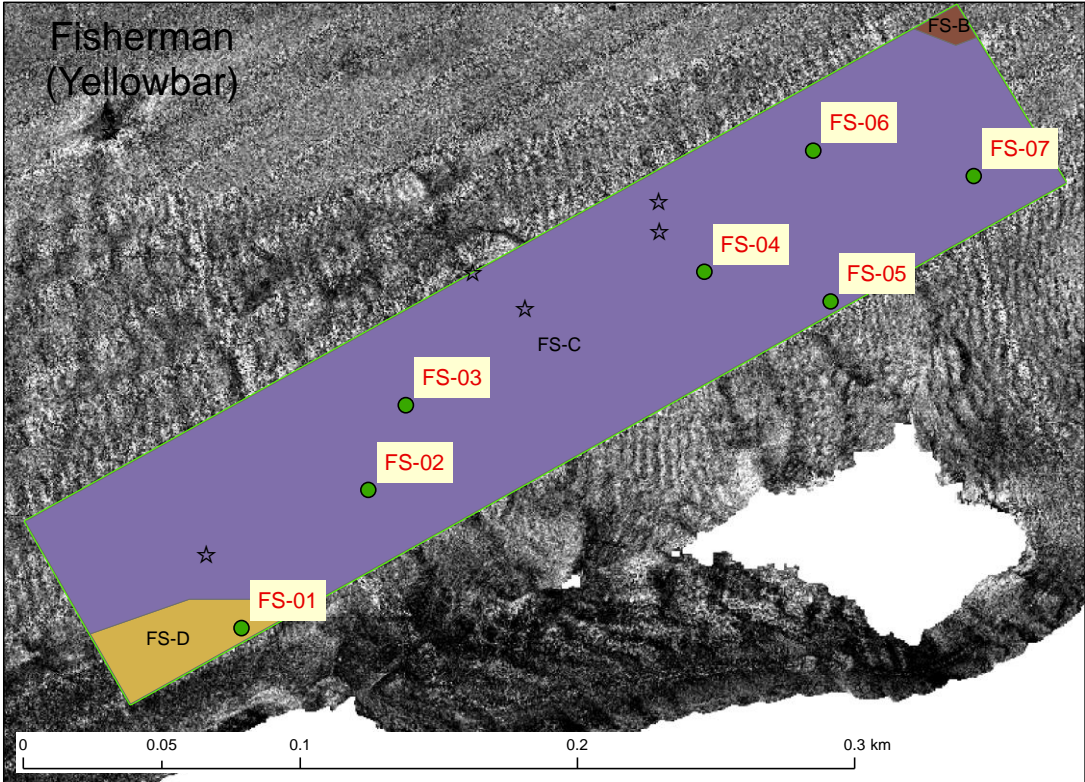


Figure 2. continued

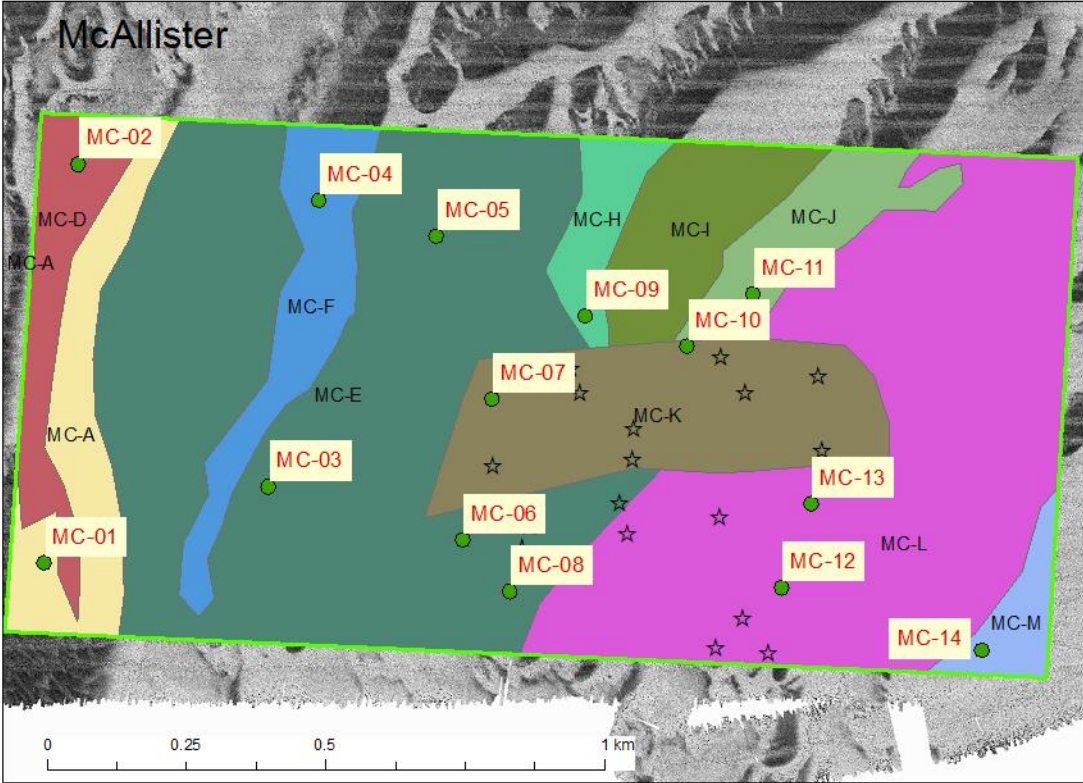
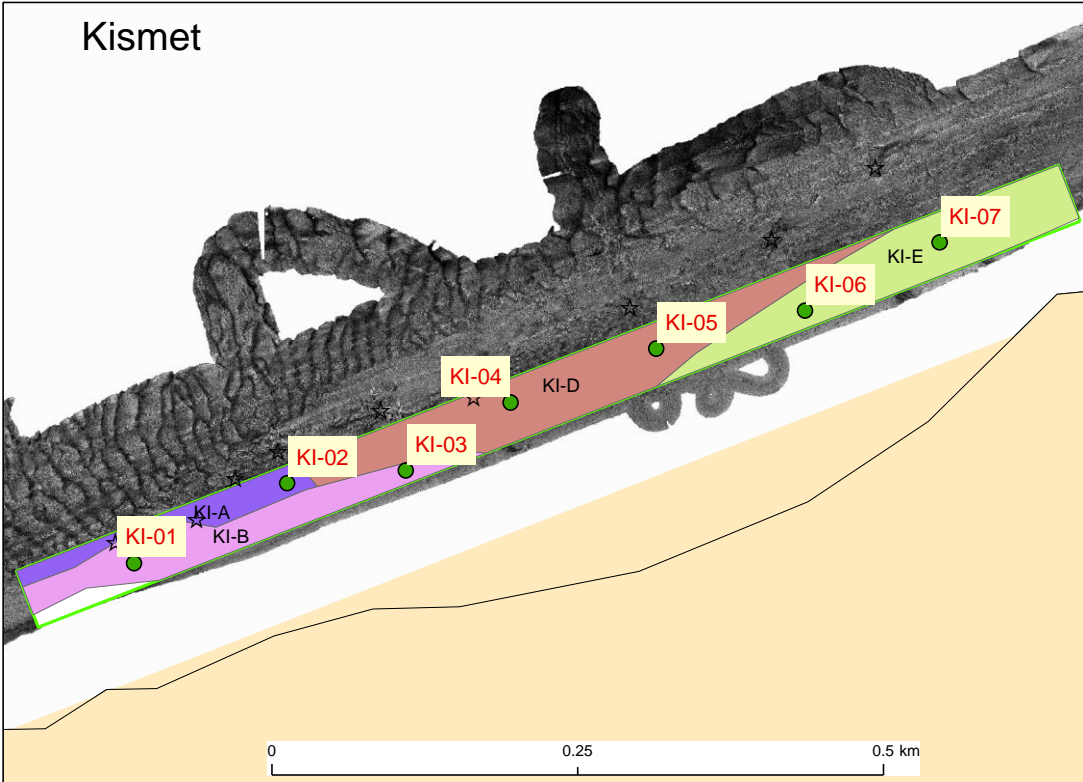


Figure 2. continued

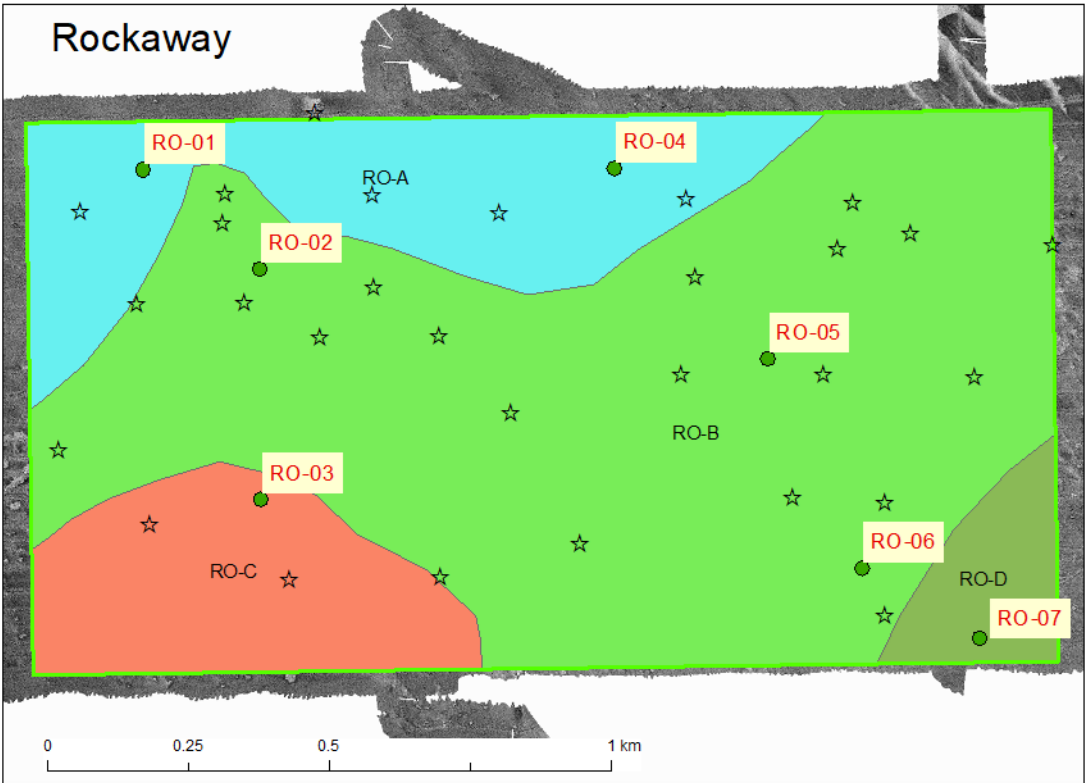
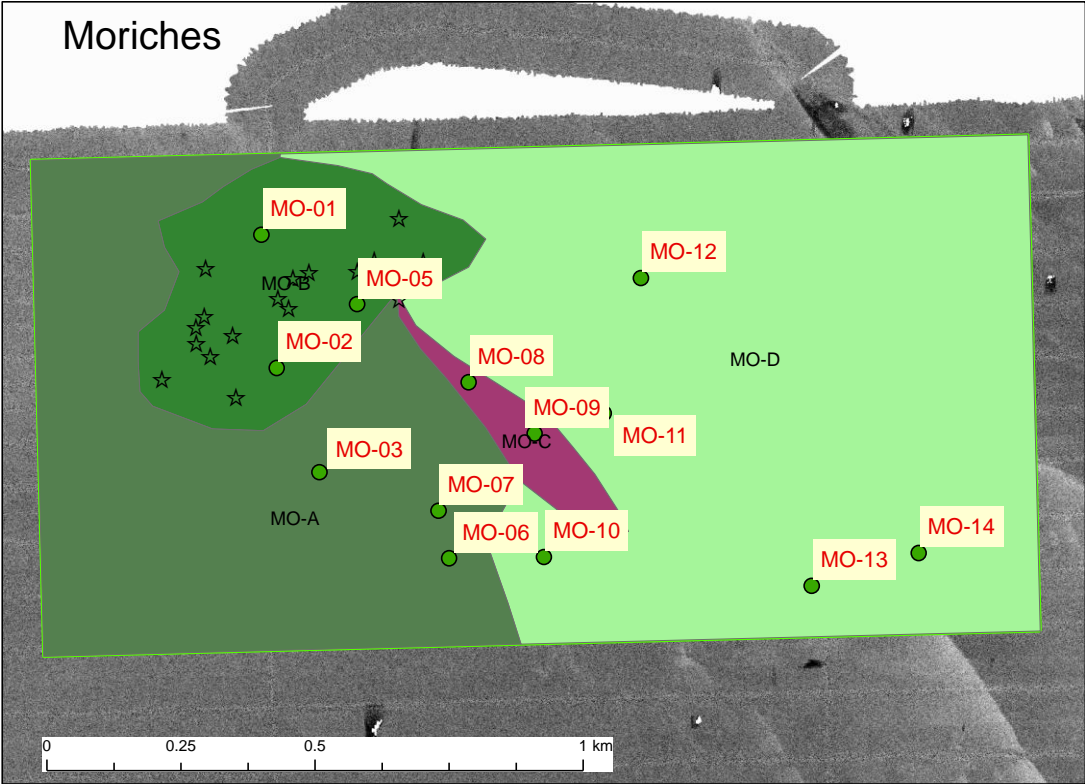


Figure 2. continued

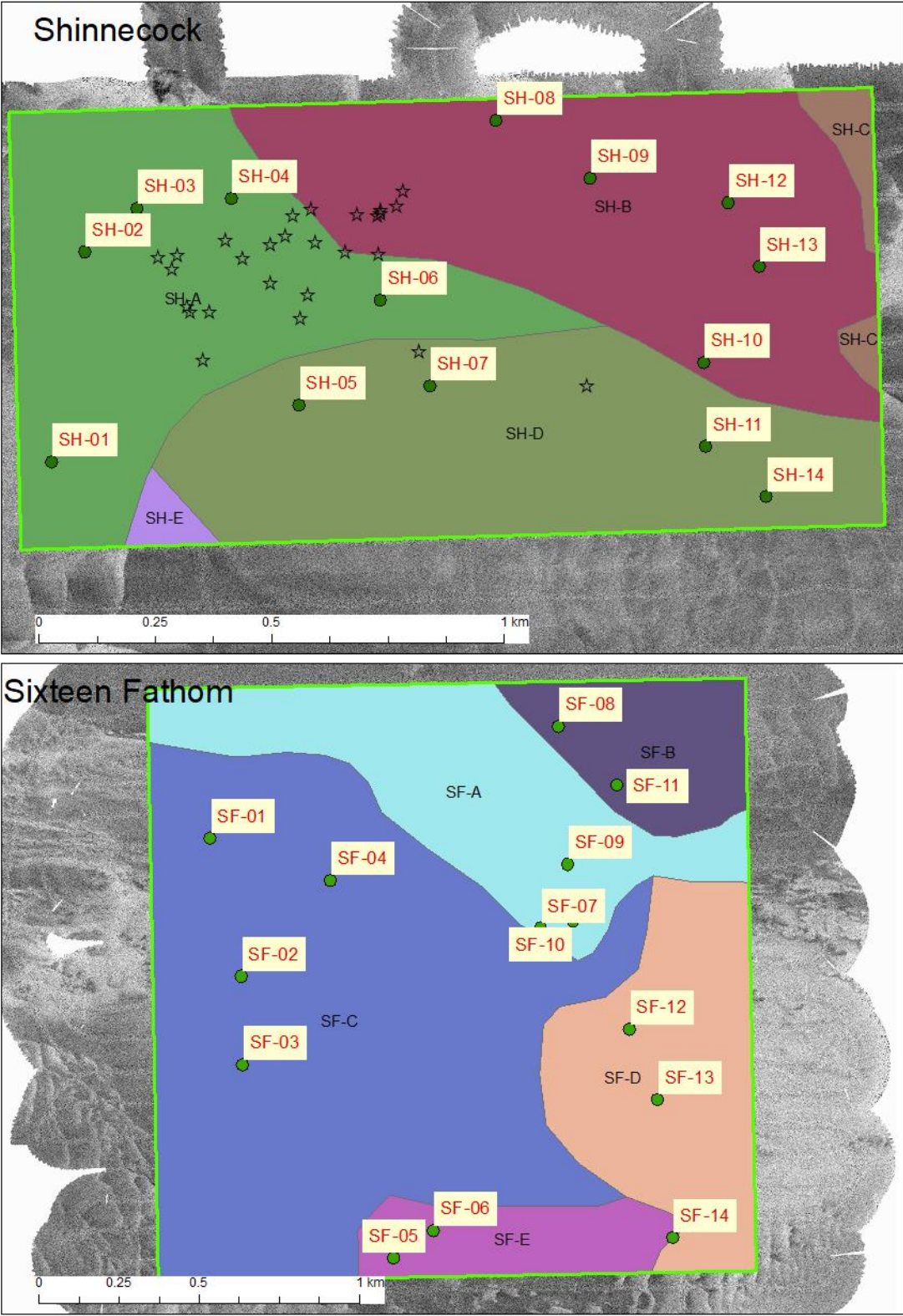


Figure 2. continued

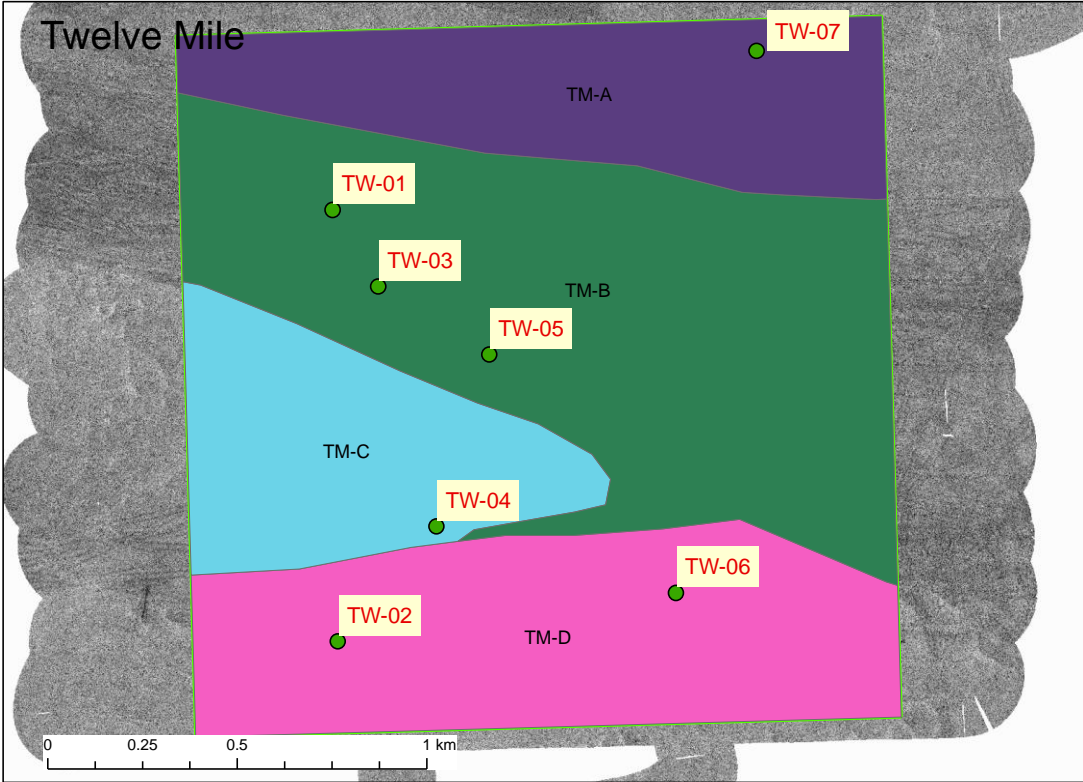


Figure 3. Mean water depth, grab penetration depth, and sediment grain-size characteristics at the LIS reef sites. Error bars are standard deviation.

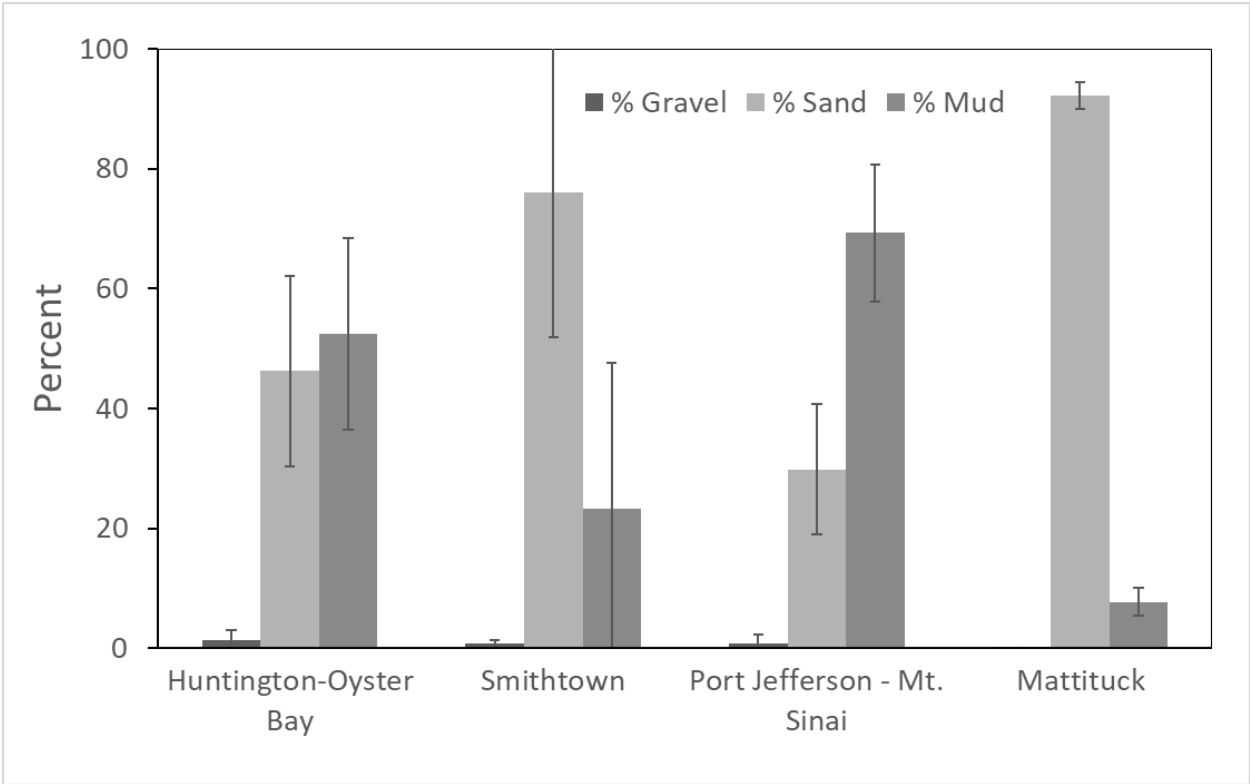
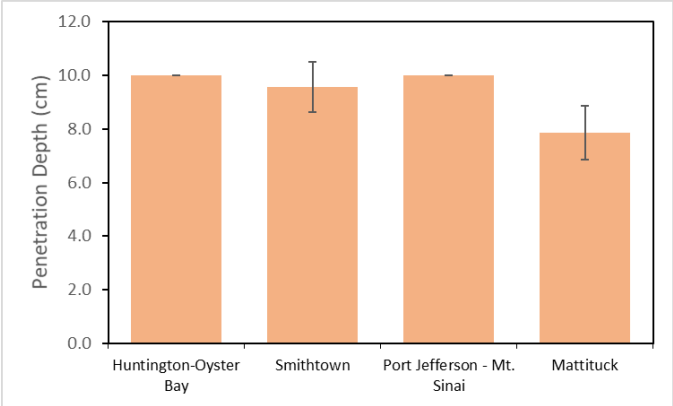
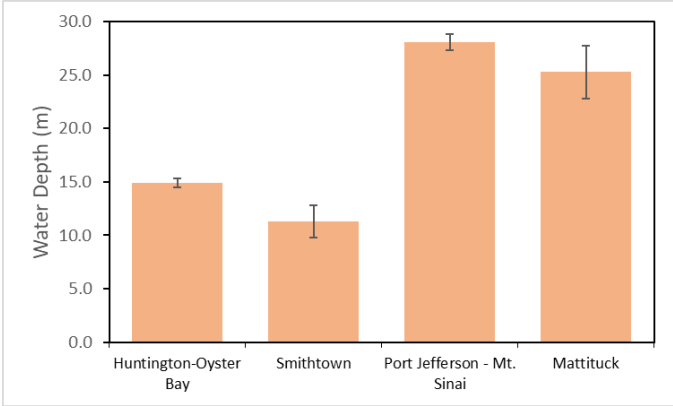


Figure 4. Mean abundance, species richness, Shannon diversity and Equitability at the LIS reef sites. Error bars are standard deviation.

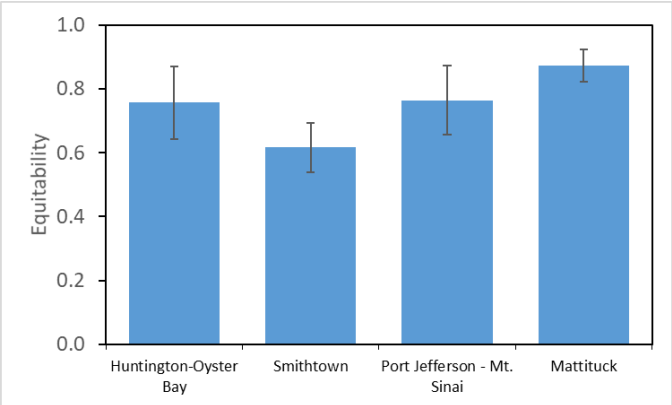
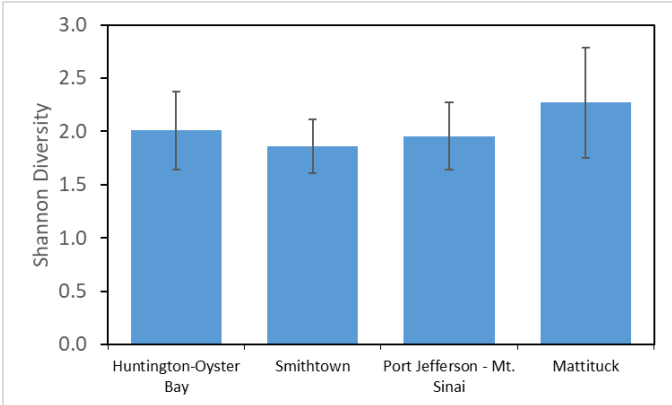
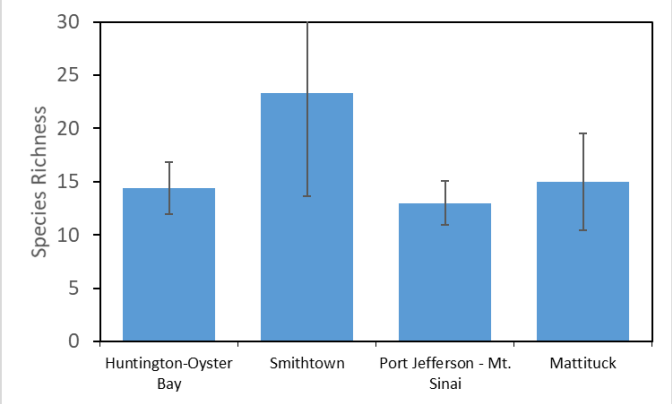
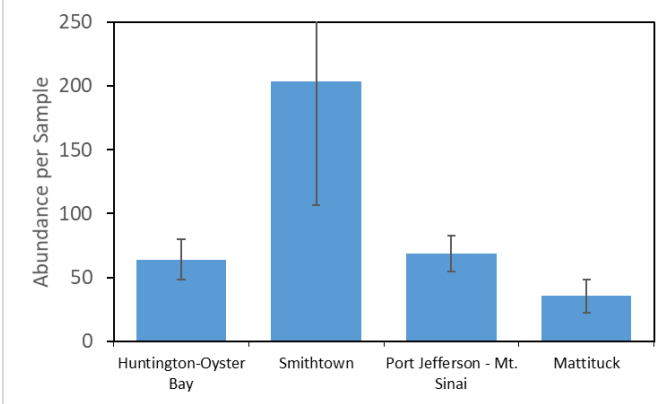


Figure 5. RDA ordination triplot results for axes 1 & 2 of the Long Island Sound data. Eigenvalues for these axes are 0.232 and 0.165, respectively. The third axis eigenvalue (not shown) was 0.030. Samples are plotted as points, and they are colored and enclosed in envelopes based on membership in each reef site. Sample points close to one another tend to have similar faunal structure than those further apart. Continuous explanatory variables and individual taxa are plotted as vectors. The arrowhead represents high, the origin average, and the tail (when extended through the origin) low values. Projections of sample points onto an individual taxa vector approximate the Hellinger transformed abundances for that taxon. For clarity, only the species with the highest amounts of explained variance (those with > 25%) are plotted. See Table 2 for species abbreviation codes.

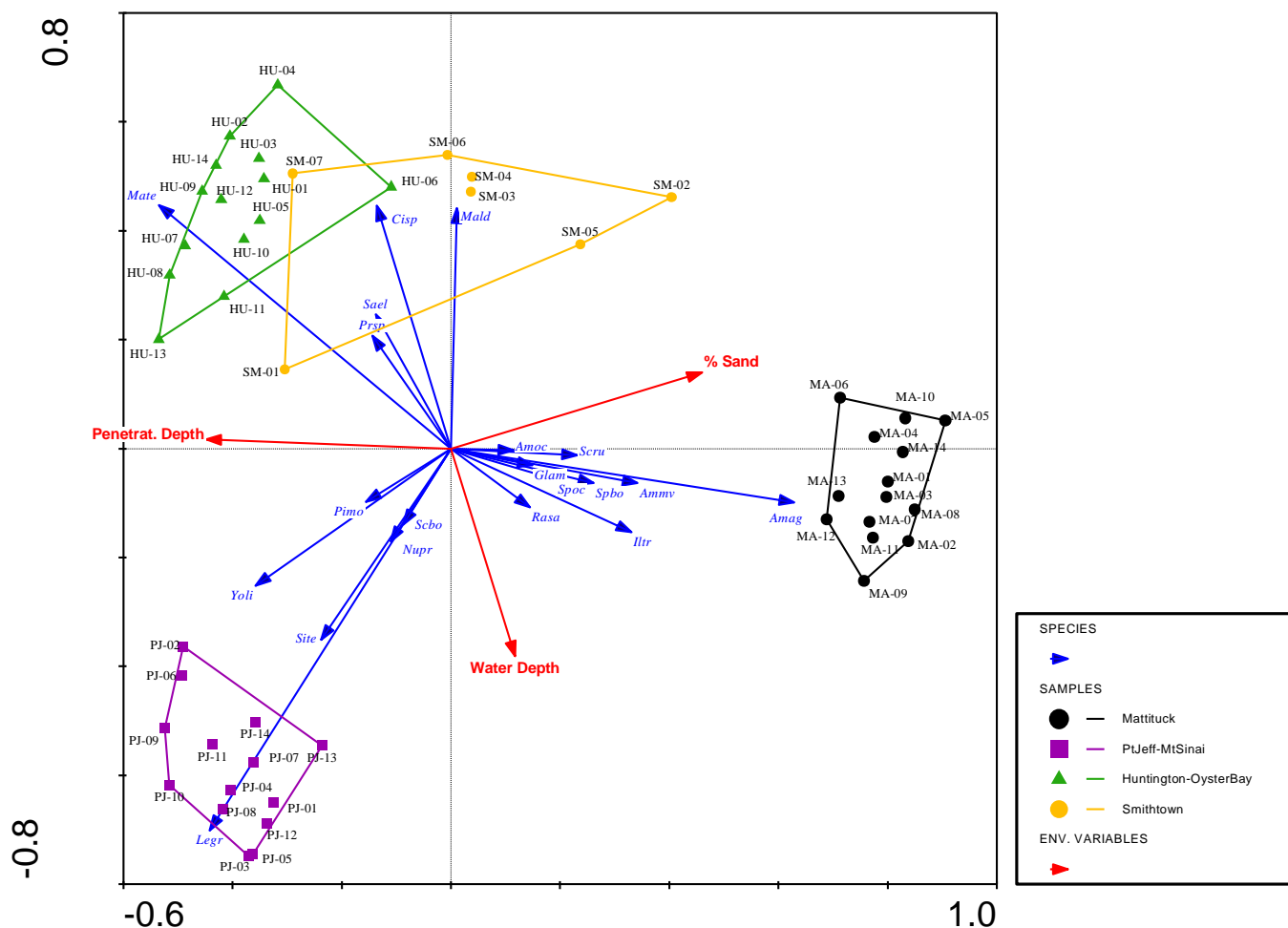


Figure 6. Mean water depth, grab penetration depth, and sediment grain-size characteristics at the SS reef sites. Error bars are standard deviation.

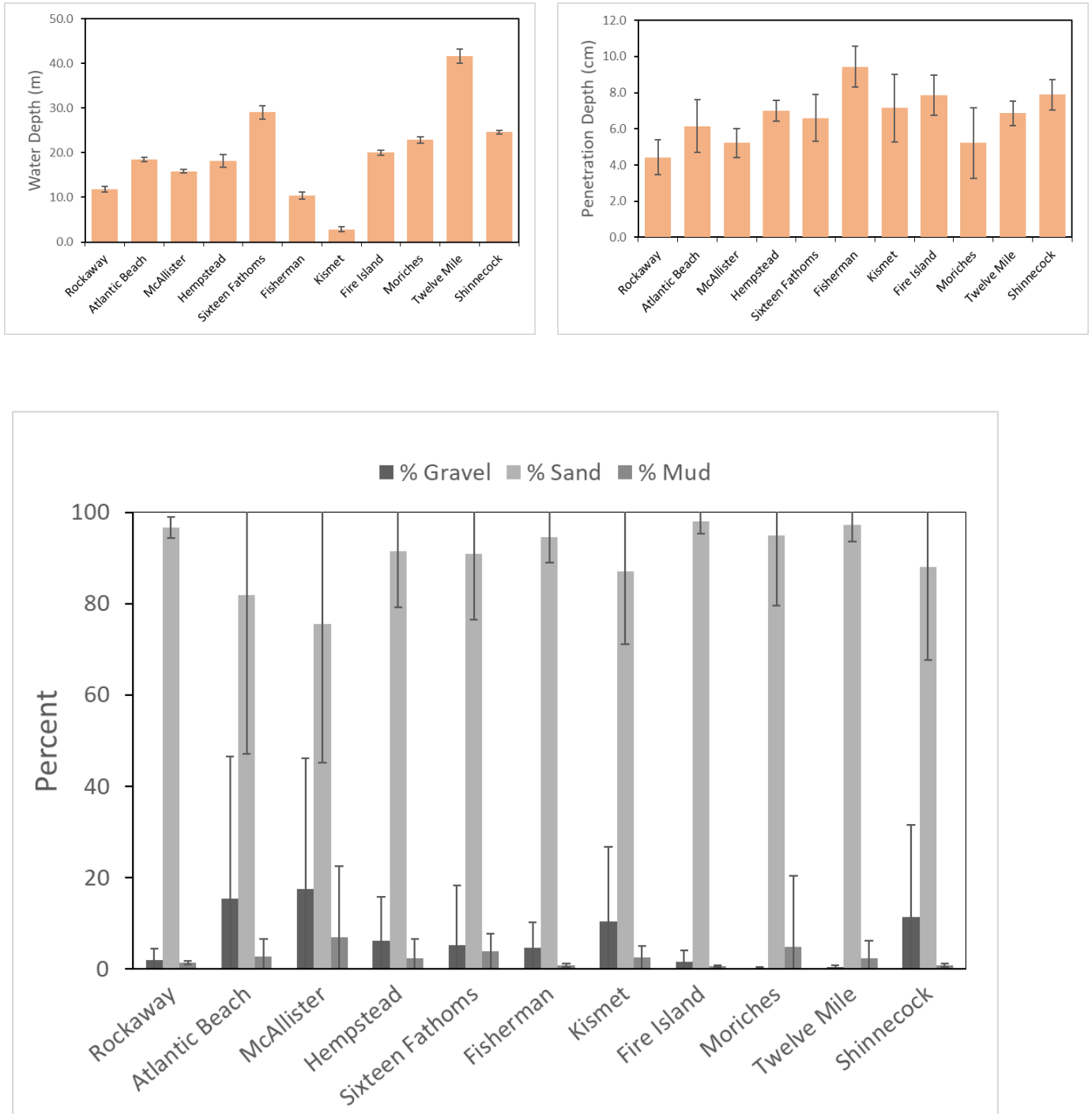


Figure 7. Mean abundance, species richness, Shannon diversity and Equitability at the SS reef sites. Error bars are standard deviation.

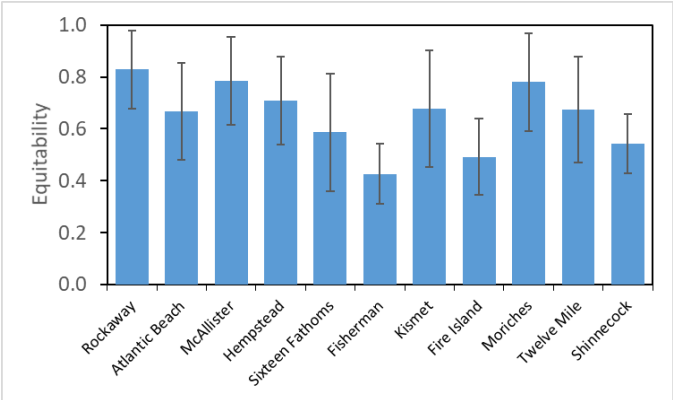
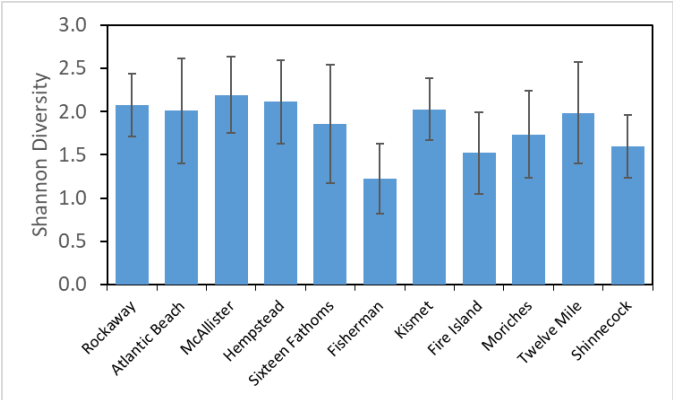
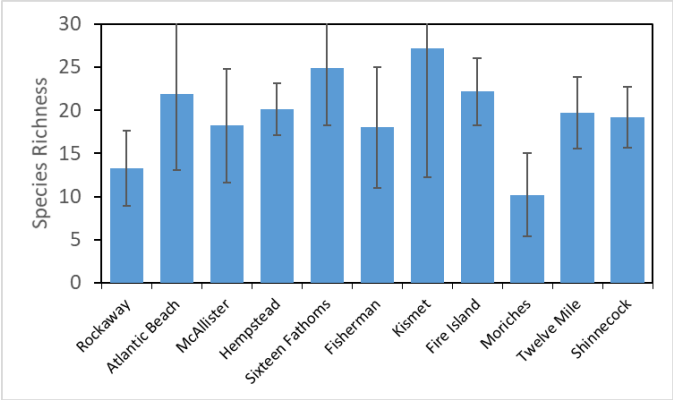
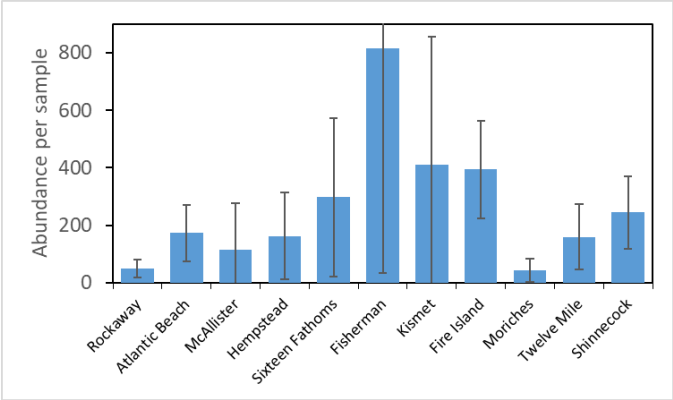
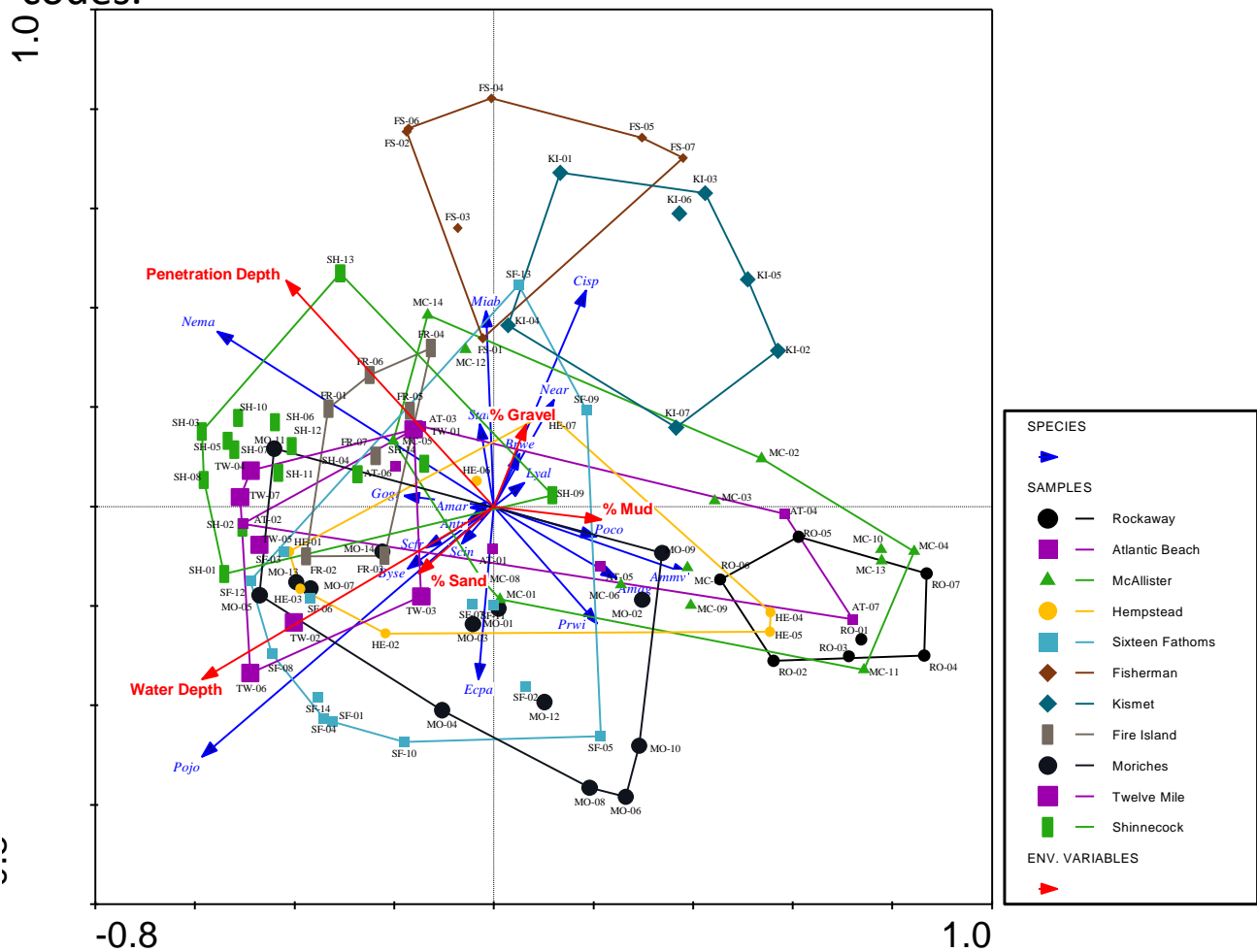


Figure 8. RDA ordination triplot for axes 1 & 2 of the South Shore data. Eigenvalues for these axes are 0.085 and 0.055, respectively. The third and fourth axis eigenvalue (not shown) were 0.021 and 0.010. Samples are plotted as points, and they are colored and enclosed in envelopes based on membership in each reef site. Sample points close to one another tend to have similar faunal structure than those further apart. Continuous explanatory variables and individual taxa are plotted as vectors. The arrowhead represents high, the origin average, and the tail (when extended through the origin) low values. Projections of sample points onto an individual taxa vector approximate the Hellinger transformed abundances for that taxon. For clarity, only the species with the highest amounts of explained variance (those with > 20%) are plotted. See Table 4 for species abbreviation codes.



Appendix 1 - LIS Artificial Reef Field and Grain Size Data

Sample	Reef Site	Site Code	StatID	Latitude	Longitude	Grab Penetration Depth (cm)	Water Depth (m)	Percent Gravel	Percent Sand	Percent Mud (Silt-Clay)
1	Mattituck	MA	MA-07	41.054644	-72.571522	6.5	23	0.05	91.10	8.84
2	Mattituck	MA	MA-09	41.054574	-72.570035	6	22	0.27	92.51	7.22
3	Mattituck	MA	MA-11	41.054670	-72.569385	8	22	0.00	93.32	6.68
4	Mattituck	MA	MA-12	41.055268	-72.569169	9	23	0.02	90.85	9.13
5	Mattituck	MA	MA-13	41.056196	-72.569164	7.5	24	0.02	92.25	7.73
6	Mattituck	MA	MA-08	41.055825	-72.570429	8	24	0.01	93.34	6.66
7	Mattituck	MA	MA-14	41.057827	-72.568425	9	27	0.00	86.84	13.16
8	Mattituck	MA	MA-10	41.057490	-72.569933	7	28	0.00	92.51	7.49
9	Mattituck	MA	MA-05	41.058102	-72.572036	7.5	29	0.00	96.03	3.97
10	Mattituck	MA	MA-01	41.057687	-72.572835	9	29	0.02	92.07	7.90
11	Mattituck	MA	MA-06	41.056879	-72.572004	8	27	0.00	88.97	11.03
12	Mattituck	MA	MA-03	41.056570	-72.572526	9.5	27	0.00	92.42	7.58
13	Mattituck	MA	MA-04	41.055926	-72.572108	7.5	25	0.00	94.24	5.76
14	Mattituck	MA	MA-02	41.055057	-72.572762	7.5	24	0.00	94.33	5.67
15	PortJeff-MtSinai	PJ	PJ-11	40.996610	-73.065264	10	28	0.00	15.11	84.89
16	PortJeff-MtSinai	PJ	PJ-12	40.997310	-73.064860	10	27	0.00	12.05	87.95
17	PortJeff-MtSinai	PJ	PJ-13	40.999480	-73.064781	10	28	0.00	36.44	63.56
18	PortJeff-MtSinai	PJ	PJ-14	41.000020	-73.064253	10	28	0.22	37.56	62.22
19	PortJeff-MtSinai	PJ	PJ-10	41.000004	-73.066190	10	28	0.86	45.72	53.41
20	PortJeff-MtSinai	PJ	PJ-06	41.000365	-73.067644	10	29	0.01	38.18	61.80
21	PortJeff-MtSinai	PJ	PJ-07	40.999465	-73.067244	10	29	0.36	42.88	56.76
22	PortJeff-MtSinai	PJ	PJ-09	40.998893	-73.066536	10	29	0.00	20.97	79.03
23	PortJeff-MtSinai	PJ	PJ-04	40.998565	-73.067953	10	29	0.00	15.96	84.04
24	PortJeff-MtSinai	PJ	PJ-08	40.997906	-73.066685	10	28	0.07	21.18	78.74
25	PortJeff-MtSinai	PJ	PJ-05	40.997367	-73.067815	10	28	1.41	35.36	63.23
26	PortJeff-MtSinai	PJ	PJ-02	40.997177	-73.068462	10	27	4.94	35.08	59.98
27	PortJeff-MtSinai	PJ	PJ-03	40.996743	-73.068184	10	27	0.38	32.46	67.16
28	PortJeff-MtSinai	PJ	PJ-01	40.999602	-73.068538	10	28	3.37	29.40	67.22
29	Huntington-OysterBay	HU	HU-12	40.957410	-73.459225	10	14	2.89	33.02	64.10
30	Huntington-OysterBay	HU	HU-09	40.957204	-73.460077	10	14	0.91	29.28	69.82
31	Huntington-OysterBay	HU	HU-07	40.957448	-73.461375	10	15	0.18	42.17	57.65
32	Huntington-OysterBay	HU	HU-03	40.956946	-73.462545	10	15	1.28	69.98	28.74
33	Huntington-OysterBay	HU	HU-02	40.957224	-73.462931	10	15	1.89	67.12	30.99
34	Huntington-OysterBay	HU	HU-04	40.957744	-73.462421	10	15	1.83	67.75	30.42
35	Huntington-OysterBay	HU	HU-01	40.958244	-73.462944	10	15	0.00	52.90	47.10
36	Huntington-OysterBay	HU	HU-05	40.958936	-73.462140	10	15	1.73	61.63	36.64
37	Huntington-OysterBay	HU	HU-06	40.959677	-73.461967	10	15.5	0.09	52.11	47.80
38	Huntington-OysterBay	HU	HU-08	40.958949	-73.461211	10	15	0.44	40.84	58.73
39	Huntington-OysterBay	HU	HU-10	40.958529	-73.459914	10	15	0.82	42.04	57.14
40	Huntington-OysterBay	HU	HU-14	40.959007	-73.458542	10	14.5	0.19	22.07	77.74
41	Huntington-OysterBay	HU	HU-13	40.959733	-73.458582	10	15	6.22	37.54	56.24
42	Huntington-OysterBay	HU	HU-11	40.960427	-73.459360	10	15.5	0.09	29.15	70.76
43	Smithtown	SM	SM-01	40.932924	-73.185913	10	12.5	0.51	65.58	33.90
44	Smithtown	SM	SM-02	40.931637	-73.185449	7.5	9.5	0.54	96.64	2.82
45	Smithtown	SM	SM-03	40.932444	-73.184617	10	11.6	0.00	91.50	8.50
46	Smithtown	SM	SM-04	40.933146	-73.184034	9.5	11.5	0.73	78.58	20.69
47	Smithtown	SM	SM-05	40.931723	-73.183054	10	9	1.61	93.82	4.56
48	Smithtown	SM	SM-06	40.933094	-73.181588	10	12	1.71	78.86	19.43
49	Smithtown	SM	SM-07	40.933956	-73.181351	10	12.9	0.15	27.01	72.84

Appendix 2 – Long Island Sound Faunal Summary by Sample

***** Data Summarization *****

Modified from PC-ORD, 6.08
17 Dec 2022, 15:53:06

DataSummaryAllSamples

Summary of: 49 sites				N = 88 species			
Num.	Name	Abund.	Max.	S	E	H'	D
1	HU-01	62	10	16	0.874	2.422	0.8913
2	HU-02	79	38	13	0.698	1.791	0.7262
3	HU-03	65	24	17	0.806	2.283	0.8284
4	HU-04	69	29	16	0.699	1.939	0.7612
5	HU-05	48	7	17	0.933	2.643	0.9175
6	HU-06	78	26	15	0.818	2.216	0.8340
7	HU-07	65	41	10	0.613	1.411	0.5822
8	HU-08	58	22	14	0.824	2.174	0.8187
9	HU-09	75	30	14	0.771	2.036	0.7950
10	HU-10	66	33	15	0.686	1.858	0.7181
11	HU-11	42	10	15	0.876	2.372	0.8776
12	HU-12	94	63	17	0.508	1.439	0.5376
13	HU-13	31	16	9	0.754	1.656	0.6993
14	HU-14	65	29	14	0.728	1.920	0.7531
15	MA-01	50	13	19	0.845	2.487	0.8784
16	MA-02	40	7	15	0.873	2.364	0.8813
17	MA-03	32	7	15	0.906	2.453	0.8906
18	MA-04	50	12	17	0.877	2.485	0.8864
19	MA-05	48	18	14	0.787	2.078	0.8064
20	MA-06	20	8	10	0.838	1.930	0.7900
21	MA-07	38	7	17	0.905	2.564	0.9030
22	MA-08	28	9	13	0.881	2.261	0.8520
23	MA-09	46	9	17	0.875	2.479	0.8922
24	MA-10	44	19	19	0.759	2.235	0.7872
25	MA-11	3	2	2	0.918	0.637	0.4444
26	MA-12	39	8	15	0.892	2.415	0.8836
27	MA-13	27	5	18	0.942	2.722	0.9191
28	MA-14	33	6	19	0.917	2.701	0.9128
29	PJ-01	71	51	11	0.473	1.133	0.4678
30	PJ-02	64	24	11	0.835	2.001	0.8091
31	PJ-03	72	32	9	0.754	1.656	0.7326
32	PJ-04	56	16	14	0.851	2.247	0.8559
33	PJ-05	68	28	12	0.726	1.805	0.7621
34	PJ-06	59	19	13	0.823	2.112	0.8342
35	PJ-07	62	24	12	0.757	1.881	0.7825
36	PJ-08	105	57	13	0.637	1.633	0.6705
37	PJ-09	80	22	14	0.843	2.224	0.8572
38	PJ-10	86	31	16	0.771	2.138	0.8172
39	PJ-11	53	16	14	0.844	2.228	0.8487
40	PJ-12	61	12	12	0.892	2.216	0.8740
41	PJ-13	65	20	17	0.771	2.183	0.8246
42	PJ-14	60	29	14	0.726	1.915	0.7372
43	SM-01	72	29	11	0.743	1.782	0.7654
44	SM-02	251	74	29	0.652	2.195	0.8316
45	SM-03	260	126	29	0.571	1.923	0.7073
46	SM-04	279	145	28	0.522	1.738	0.6708
47	SM-05	309	120	35	0.614	2.183	0.7884
48	SM-06	178	106	21	0.548	1.667	0.6248
49	SM-07	77	40	10	0.670	1.542	0.6804
AVERAGES:		77.2	31.2	15.4	0.772	2.048	0.7839

4606 cells in main matrix
Percent of cells empty = 83.565
Matrix total = 3783

Abund. = total abundance per sample
S = Richness = number of non-zero elements in sample
E = Evenness = $H' / \ln(\text{Richness})$
H' = Diversity = $-\sum (P_i \cdot \ln(P_i))$ = Shannon's diversity index
D = Simpson's diversity index for infinite population = $1 - \sum (P_i \cdot P_i)$
where P_i = proportion of individuals in the sample belonging to species i

***** Analysis completed *****

PC-ORD, 6.08
21 Dec 2022, 10:43:54

Matrix contents: 49 sites
by 88 species

DataSummaryBySample

Species file:

C:\Users\Bob\Documents\2019&2020Proposals\ArtificialReef\PC-ORD\LISSpeciesList.txt

SPECIES LISTS FOR EACH SAMPLE UNIT AND ABUNDANCE

DataSummaryBySample

Sample unit: HU-01

Amoc	Ampharete oculata	1.000
Cahn	Capitellidae spp (Hetero/Noto)	7.000
Cere	Cerebratulus lacteus	1.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	6.000
Legr	Levinsenia gracilis	1.000
Lepi	Leptocheirus pinguis	1.000
Mald	Maldanidae spp (juveniles)	9.000
Mate	Macoploma tenta	10.000
Nein	Nephtys incisa	5.000
Pego	Pectinaria gouldii	2.000
Prsp	Prionospio (=Minuspio) sp	2.000
Sael	Sabaco elongatus	10.000
Site	Sigambra tentaculata	1.000
Spss	Spionidae spp juv(Dipoly&Poly)	1.000
Unir	Unciola irrorata	3.000
Yoli	Yoldia limatula	2.000

DataSummaryBySample

Sample unit: HU-02

Cisp	Cirritulidae (Kirkeg./Tharyx)	6.000
Euhe	Euspira heros	1.000
Lepi	Leptocheirus pinguis	3.000
Lysp	Lyonsia spp (arenosa/hyalina)	1.000
Mald	Maldanidae spp (juveniles)	7.000
Mate	Macoploma tenta	38.000
Mecr	Melinna cristata	2.000
Nein	Nephtys incisa	3.000
Phaf	Pherusa affinis	1.000
Pimo	Pitar morrhuanus	1.000
Prsp	Prionospio (=Minuspio) sp	12.000
Sael	Sabaco elongatus	1.000
Yoli	Yoldia limatula	3.000

DataSummaryBySample

Sample unit: HU-03

Amar	Ampharete arctica	2.000
Amoc	Ampharete oculata	1.000
Cahn	Capitellidae spp (Hetero/Noto)	3.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	3.000
Enle	Ensis leei	1.000
Lepi	Leptocheirus pinguis	1.000
Mald	Maldanidae spp (juveniles)	4.000
Mate	Macoploma tenta	24.000
Mecr	Melinna cristata	1.000
Nein	Nephtys incisa	4.000
Nmrt	Nemertinea spp(+juvc. lacteus)	2.000
Pego	Pectinaria gouldii	1.000
Prsp	Prionospio (=Minuspio) sp	3.000
Sael	Sabaco elongatus	2.000
Spss	Spionidae spp juv(Dipoly&Poly)	1.000
Unir	Unciola irrorata	6.000
Yoli	Yoldia limatula	6.000

DataSummaryBySample

Sample unit: HU-04

Amar	Ampharete arctica	1.000
Amav	Ampelisca abdita/vadurum	1.000
Cere	Cerebratulus lacteus	2.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	6.000
Lepi	Leptocheirus pinguis	1.000
Lysp	Lyonsia spp (arenosa/hyalina)	1.000
Mald	Maldanidae spp (juveniles)	15.000
Mate	Macoploma tenta	29.000
Mecr	Melinna cristata	1.000
Nein	Nephtys incisa	2.000
Oxsm	Oxyurostylis smithi	1.000

Papi	Paraprionospio pinnata	1.000
Prsp	Prionospio (=Minuspio) sp	3.000
Sael	Sabaco elongatus	3.000
Unir	Unciola irrorata	1.000
Yoli	Yoldia limatula	1.000

DataSummaryBySample
Sample unit: HU-05

Amav	Ampelisca abdita/vadurum	1.000
Cahn	Capitellidae spp (Hetero/Noto)	7.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	3.000
Mald	Maldanidae spp (juveniles)	4.000
Mate	Macoploma tenta	6.000
Mecr	Melinna cristata	4.000
Nein	Nephtys incisa	3.000
Papi	Paraprionospio pinnata	1.000
Pego	Pectinaria gouldii	5.000
Pimo	Pitar morrhuanus	2.000
Poex	Polycirrus eximius	1.000
Prsp	Prionospio (=Minuspio) sp	2.000
Sael	Sabaco elongatus	1.000
Site	Sigambra tentaculata	1.000
Spss	Spionidae spp juv(Dipoly&Poly)	2.000
Unir	Unciola irrorata	2.000
Yoli	Yoldia limatula	3.000

DataSummaryBySample
Sample unit: HU-06

Cahn	Capitellidae spp (Hetero/Noto)	2.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	2.000
Iltr	Ilyanassa trivittata	2.000
Lepi	Leptocheirus pinguis	26.000
Mald	Maldanidae spp (juveniles)	6.000
Mate	Macoploma tenta	14.000
Mecr	Melinna cristata	2.000
Nein	Nephtys incisa	4.000
Pego	Pectinaria gouldii	3.000
Phaf	Pherusa affinis	3.000
Pimo	Pitar morrhuanus	1.000
Rasa	Rathbunixa sayana	1.000
Sael	Sabaco elongatus	4.000
Spss	Spionidae spp juv(Dipoly&Poly)	3.000
Unir	Unciola irrorata	5.000

DataSummaryBySample
Sample unit: HU-07

Cisp	Cirritulidae (Kirkeg./Tharyx)	1.000
Legr	Levinsenia gracilis	1.000
Mate	Macoploma tenta	41.000
Nein	Nephtys incisa	3.000
Pego	Pectinaria gouldii	3.000
Prsp	Prionospio (=Minuspio) sp	5.000
Sael	Sabaco elongatus	2.000
Spss	Spionidae spp juv(Dipoly&Poly)	1.000
Unir	Unciola irrorata	5.000
Yoli	Yoldia limatula	3.000

DataSummaryBySample
Sample unit: HU-08

Cahn	Capitellidae spp (Hetero/Noto)	6.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	2.000
Legr	Levinsenia gracilis	4.000
Lysp	Lyonsia spp (arenosa/hyalina)	1.000
Mald	Maldanidae spp (juveniles)	3.000
Mate	Macoploma tenta	22.000
Nein	Nephtys incisa	4.000
Pego	Pectinaria gouldii	3.000
Pimo	Pitar morrhuanus	1.000
Prsp	Prionospio (=Minuspio) sp	2.000
Sael	Sabaco elongatus	3.000
Site	Sigambra tentaculata	2.000
Unir	Unciola irrorata	4.000
Yoli	Yoldia limatula	1.000

DataSummaryBySample
Sample unit: HU-09

Cisp	Cirritulidae (Kirkeg./Tharyx)	3.000
Legr	Levinsenia gracilis	1.000
Lepi	Leptocheirus pinguis	1.000
Mald	Maldanidae spp (juveniles)	4.000
Mate	Macoploma tenta	30.000
Mecr	Melinna cristata	1.000

Nein	Nephtys incisa	4.000
Pego	Pectinaria gouldii	1.000
Pimo	Pitar morrhuanus	2.000
Prsp	Prionospio (=Minuspio) sp	8.000
Sael	Sabaco elongatus	7.000
Spss	Spionidae spp juv(Dipoly&Poly)	1.000
Unir	Unciola irrorata	9.000
Yoli	Yoldia limatula	3.000

DataSummaryBySample
Sample unit: HU-10

Cahn	Capitellidae spp (Hetero/Noto)	2.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	1.000
Iltr	Ilyanassa trivittata	1.000
Leam	Leucon americanus	1.000
Mald	Maldanidae spp (juveniles)	1.000
Mate	Macoploma tenta	33.000
Mecr	Melinna cristata	1.000
Nein	Nephtys incisa	8.000
Prsp	Prionospio (=Minuspio) sp	6.000
Sael	Sabaco elongatus	2.000
Scbo	Scolecopsis bousfieldi	1.000
Site	Sigambra tentaculata	2.000
Spss	Spionidae spp juv (Dipoly&Poly)	2.000
Unir	Unciola irrorata	4.000
Yoli	Yoldia limatula	1.000

DataSummaryBySample
Sample unit: HU-11

Cahn	Capitellidae spp (Hetero/Noto)	10.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	1.000
Legr	Levinsenia gracilis	1.000
Lysp	Lyonsia spp (arenosa/hyalina)	2.000
Mate	Macoploma tenta	7.000
Mecr	Melinna cristata	1.000
Nein	Nephtys incisa	3.000
Nema	Nematoda spp	2.000
Pago	Pandora gouldiana	1.000
Pego	Pectinaria gouldii	1.000
Pldu	Platynereis dumerilii	1.000
Prsp	Prionospio (=Minuspio) sp	3.000
Sael	Sabaco elongatus	3.000
Unir	Unciola irrorata	1.000
Yoli	Yoldia limatula	5.000

DataSummaryBySample
Sample unit: HU-12

Cisp	Cirritulidae (Kirkeg./Tharyx)	1.000
Iltr	Ilyanassa trivittata	1.000
Lysp	Lyonsia spp (arenosa/hyalina)	1.000
Mald	Maldanidae spp (juveniles)	3.000
Mate	Macoploma tenta	63.000
Mecr	Melinna cristata	2.000
Nein	Nephtys incisa	1.000
Pago	Pandora gouldiana	1.000
Pego	Pectinaria gouldii	1.000
Phaf	Pherusa affinis	1.000
Prsp	Prionospio (=Minuspio) sp	8.000
Rasa	Rathbunixa sayana	1.000
Sael	Sabaco elongatus	2.000
Site	Sigambra tentaculata	1.000
Tuin	Turbonilla interrupta	1.000
Unir	Unciola irrorata	1.000
Yoli	Yoldia limatula	5.000

DataSummaryBySample
Sample unit: HU-13

Cahn	Capitellidae spp (Hetero/Noto)	1.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	3.000
Legr	Levinsenia gracilis	1.000
Mate	Macoploma tenta	16.000
Mula	Mulinia lateralis	1.000
Pimo	Pitar morrhuanus	2.000
Site	Sigambra tentaculata	2.000
Spss	Spionidae spp juv (Dipoly&Poly)	2.000
Yoli	Yoldia limatula	3.000

DataSummaryBySample
Sample unit: HU-14

Cahn	Capitellidae spp (Hetero/Noto)	3.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	4.000
Legr	Levinsenia gracilis	1.000

Lepi	Leptocheirus pinguis	1.000
Mald	Maldanidae spp (juveniles)	2.000
Mate	Macoploma tenta	29.000
Mula	Mulinia lateralis	2.000
Nein	Nephtys incisa	2.000
Nema	Nematoda spp	1.000
Pego	Pectinaria gouldii	3.000
Prsp	Prionospio (=Minuspio) sp	12.000
Sael	Sabaco elongatus	1.000
Site	Sigambra tentaculata	2.000
Unir	Unciola irrorata	2.000

DataSummaryBySample
Sample unit: MA-01

Amag	Ameritella agilis	13.000
Amar	Ampharete arctica	1.000
Ammv	Ampelisca macrocephala/verrili	1.000
Amoc	Ampharete oculata	1.000
Angr	Ancistrosyllis groenlandica	1.000
Cahn	Capitellidae spp (Hetero/Noto)	1.000
Drlo	Drilonereis longa	1.000
Glam	Glycera americana	3.000
Hyla	Hypereteone lactea	1.000
Iltr	Ilyanassa trivittata	6.000
Mald	Maldanidae spp (juveniles)	3.000
Nein	Nephtys incisa	7.000
Pojo	Polygordius jouinae	1.000
Prsp	Prionospio (=Minuspio) sp	1.000
Rasa	Rathbunixa sayana	2.000
Scru	Scoloplos rubra	1.000
Spbo	Spiophanes bombyx	4.000
Spss	Spionidae spp juv(Dipoly&Poly)	1.000
Tuin	Turbonilla interrupta	1.000

DataSummaryBySample
Sample unit: MA-02

Amag	Ameritella agilis	7.000
Ammv	Ampelisca macrocephala/verrili	7.000
Amoc	Ampharete oculata	1.000
Glam	Glycera americana	1.000
Hyla	Hypereteone lactea	1.000
Iltr	Ilyanassa trivittata	1.000
Mald	Maldanidae spp (juveniles)	1.000
Nein	Nephtys incisa	7.000
Palo	Pagurus longicarpus	1.000
Phar	Phyllodoce arenae	1.000
Rasa	Rathbunixa sayana	3.000
Scru	Scoloplos rubra	4.000
Spbo	Spiophanes bombyx	1.000
Spoc	Spiochaetopterus oculatus	3.000
Spss	Spionidae spp juv(Dipoly&Poly)	1.000

DataSummaryBySample
Sample unit: MA-03

Amab	Amphioplus abditus	1.000
Amag	Ameritella agilis	7.000
Amar	Ampharete arctica	2.000
Amav	Ampelisca abdita/vadurum	1.000
Ammv	Ampelisca macrocephala/verrili	2.000
Cahn	Capitellidae spp (Hetero/Noto)	2.000
Iltr	Ilyanassa trivittata	3.000
Nein	Nephtys incisa	1.000
Nepi	Nephtys picta	3.000
Nosp	Notocirrus spinifera	1.000
Phaf	Pherusa affinis	1.000
Spbo	Spiophanes bombyx	5.000
Spoc	Spiochaetopterus oculatus	1.000
Spss	Spionidae spp juv(Dipoly&Poly)	1.000
Unir	Unciola irrorata	1.000

DataSummaryBySample
Sample unit: MA-04

Amag	Ameritella agilis	12.000
Ammv	Ampelisca macrocephala/verrili	6.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	1.000
Iltr	Ilyanassa trivittata	2.000
Lepi	Leptocheirus pinguis	1.000
Lero	Leitoscoloplos robustus	2.000
Mald	Maldanidae spp (juveniles)	2.000
Masp	Magelona sp	1.000
Nein	Nephtys incisa	4.000
Nema	Nematoda spp	1.000
Nepi	Nephtys picta	7.000
Prsp	Prionospio (=Minuspio) sp	2.000

Rasa	Rathbunixa sayana	2.000
Scru	Scoloplos rubra	1.000
Spbo	Spiophanes bombyx	3.000
Spoc	Spiochaetopterus oculatus	2.000
Unir	Unciola irrorata	1.000

DataSummaryBySample
Sample unit: MA-05

Amag	Ameritella agilis	18.000
Ammv	Ampelisca macrocephala/verrili	1.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	3.000
Glam	Glycera americana	1.000
Iltr	Ilyanassa trivittata	8.000
Leju	Leitoscoloplos spp (juveniles)	1.000
Lero	Leitoscoloplos robustus	1.000
Mald	Maldanidae spp (juveniles)	3.000
Nebu	Nephtys buccera	2.000
Palo	Pagurus longicarpus	1.000
Pojo	Polygordius jouinae	1.000
Rasa	Rathbunixa sayana	2.000
Spbo	Spiophanes bombyx	5.000
Spoc	Spiochaetopterus oculatus	1.000

DataSummaryBySample
Sample unit: MA-06

Amab	Amphioplus abditus	1.000
Amag	Ameritella agilis	8.000
Amoc	Ampharete oculata	1.000
Cahn	Capitellidae spp (Hetero/Noto)	1.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	2.000
Glam	Glycera americana	1.000
Iltr	Ilyanassa trivittata	3.000
Lepi	Leptocheirus pinguis	1.000
Rasa	Rathbunixa sayana	1.000
Unir	Unciola irrorata	1.000

DataSummaryBySample
Sample unit: MA-07

Amag	Ameritella agilis	5.000
Amam	Americhelidium americanum	1.000
Amar	Ampharete arctica	1.000
Ammv	Ampelisca macrocephala/verrili	5.000
Amoc	Ampharete oculata	1.000
Amor	Amphitrite ornata	1.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	1.000
Iltr	Ilyanassa trivittata	2.000
Nebu	Nephtys buccera	4.000
Nein	Nephtys incisa	7.000
Nini	Ninoe nigripes	1.000
Phaf	Pherusa affinis	1.000
Picr	Pista cristata	1.000
Scru	Scoloplos rubra	2.000
Spbo	Spiophanes bombyx	2.000
Spoc	Spiochaetopterus oculatus	1.000
Unir	Unciola irrorata	2.000

DataSummaryBySample
Sample unit: MA-08

Amag	Ameritella agilis	2.000
Ammv	Ampelisca macrocephala/verrili	9.000
Drlo	Drilonereis longa	2.000
Glam	Glycera americana	1.000
Iltr	Ilyanassa trivittata	3.000
Masp	Magelona sp	1.000
Nema	Nematoda spp	1.000
Nepi	Nephtys picta	2.000
Nmrt	Nemertinea spp(+juv. lacteus)	1.000
Palo	Pagurus longicarpus	2.000
Scru	Scoloplos rubra	1.000
Spbo	Spiophanes bombyx	1.000
Spoc	Spiochaetopterus oculatus	2.000

DataSummaryBySample
Sample unit: MA-09

Amag	Ameritella agilis	7.000
Amar	Ampharete arctica	1.000
Ammv	Ampelisca macrocephala/verrili	9.000
Amoc	Ampharete oculata	1.000
Cahn	Capitellidae spp (Hetero/Noto)	1.000
Cere	Cerebratulus lacteus	1.000
Euhe	Euspira heros	1.000
Glam	Glycera americana	1.000

Iltr	Ilyanassa trivittata	5.000
Leju	Leitoscoloplos spp (juveniles)	1.000
Nein	Nephtys incisa	6.000
Phaf	Pherusa affinis	1.000
Prsp	Prionospio (=Minuspio) sp	1.000
Scru	Scoloplos rubra	3.000
Site	Sigambra tentaculata	3.000
Spbo	Spiophanes bombyx	3.000
Spoc	Spiochaetopterus oculatus	1.000

DataSummaryBySample
Sample unit: MA-10

Amag	Ameritella agilis	19.000
Amam	Americhelidium americanum	1.000
Amar	Ampharete arctica	2.000
Arca	Aricidea catherinae	1.000
Cahn	Capitellidae spp (Hetero/Noto)	1.000
Cere	Cerebratulus lacteus	1.000
Iltr	Ilyanassa trivittata	1.000
Leju	Leitoscoloplos spp (juveniles)	1.000
Lepi	Leptocheirus pinguis	1.000
Mald	Maldanidae spp (juveniles)	1.000
Neam	Neomysis americana	1.000
Nebu	Nephtys buccera	5.000
Pojo	Polygordius jouinae	1.000
Prsp	Prionospio (=Minuspio) sp	1.000
Rasa	Rathbunixa sayana	2.000
Scru	Scoloplos rubra	2.000
Spbo	Spiophanes bombyx	1.000
Spoc	Spiochaetopterus oculatus	1.000
Unir	Unciola irrorata	1.000

DataSummaryBySample
Sample unit: MA-11

Amag	Ameritella agilis	1.000
Iltr	Ilyanassa trivittata	2.000

DataSummaryBySample
Sample unit: MA-12

Amag	Ameritella agilis	3.000
Ammv	Ampelisca macrocephala/verrili	2.000
Drlo	Drilonereis longa	1.000
Iltr	Ilyanassa trivittata	1.000
Mald	Maldanidae spp (juveniles)	2.000
Nebu	Nephtys buccera	3.000
Nein	Nephtys incisa	8.000
Nupr	Nucula proxima	1.000
Prsp	Prionospio (=Minuspio) sp	1.000
Rasa	Rathbunixa sayana	2.000
Scin	Scalibregma inflatum	1.000
Scru	Scoloplos rubra	8.000
Spbo	Spiophanes bombyx	3.000
Spoc	Spiochaetopterus oculatus	2.000
Spss	Spionidae spp juv(Dipoly&Poly)	1.000

DataSummaryBySample
Sample unit: MA-13

Amab	Amphioplus abditus	1.000
Amag	Ameritella agilis	1.000
Ammv	Ampelisca macrocephala/verrili	3.000
Amoc	Ampharete oculata	1.000
Amor	Amphitrite ornata	1.000
Glam	Glycera americana	2.000
Iltr	Ilyanassa trivittata	2.000
Mald	Maldanidae spp (juveniles)	2.000
Nein	Nephtys incisa	5.000
Palo	Pagurus longicarpus	1.000
Picr	Pista cristata	1.000
Rasa	Rathbunixa sayana	1.000
Scin	Scalibregma inflatum	1.000
Scru	Scoloplos rubra	1.000
Spbo	Spiophanes bombyx	1.000
Spoc	Spiochaetopterus oculatus	1.000
Spss	Spionidae spp juv(Dipoly&Poly)	1.000
Unir	Unciola irrorata	1.000

DataSummaryBySample
Sample unit: MA-14

Amag	Ameritella agilis	5.000
Amar	Ampharete arctica	1.000
Ammv	Ampelisca macrocephala/verrili	3.000
Amoc	Ampharete oculata	1.000

Amor	Amphitrite ornata	1.000
Arca	Aricidea catherinae	1.000
Cahn	Capitellidae spp (Hetero/Noto)	1.000
Enle	Ensis leei	2.000
Glam	Glycera americana	1.000
Iltr	Ilyanassa trivittata	2.000
Masp	Magelona sp	1.000
Nebu	Nephtys bucera	6.000
Pojo	Polygordius jouinae	1.000
Prsp	Prionospio (=Minuspio) sp	1.000
Rasa	Rathbunixa sayana	1.000
Scin	Scalibregma inflatum	1.000
Scru	Scoloplos rubra	2.000
Spoc	Spiochaetopterus oculatus	1.000
Unir	Unciola irrorata	1.000

DataSummaryBySample
Sample unit: PJ-01

Caco	Caryocorbula contracta	1.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	1.000
Gise	Gilvossius setimanus	1.000
Iltr	Ilyanassa trivittata	1.000
Legr	Levinsenia gracilis	51.000
Mald	Maldanidae spp (juveniles)	1.000
Mecr	Melinna cristata	1.000
Nein	Nephtys incisa	7.000
Site	Sigambra tentaculata	1.000
Unir	Unciola irrorata	1.000
Yoli	Yoldia limatula	5.000

DataSummaryBySample
Sample unit: PJ-02

Amav	Ampelisca abdita/vadurum	1.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	4.000
Legr	Levinsenia gracilis	24.000
Mald	Maldanidae spp (juveniles)	3.000
Mate	Macoploma tenta	4.000
Nein	Nephtys incisa	7.000
Nema	Nematoda spp	2.000
Pego	Pectinaria gouldii	1.000
Scbo	Scolecopsis bousfieldi	6.000
Site	Sigambra tentaculata	5.000
Yoli	Yoldia limatula	7.000

DataSummaryBySample
Sample unit: PJ-03

Iltr	Ilyanassa trivittata	3.000
Legr	Levinsenia gracilis	32.000
Mald	Maldanidae spp (juveniles)	1.000
Mecr	Melinna cristata	1.000
Nein	Nephtys incisa	5.000
Pimo	Pitar morrhuanus	6.000
Scbo	Scolecopsis bousfieldi	3.000
Site	Sigambra tentaculata	5.000
Yoli	Yoldia limatula	16.000

DataSummaryBySample
Sample unit: PJ-04

Acca	Acteocina canaliculata	4.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	1.000
Iltr	Ilyanassa trivittata	3.000
Legr	Levinsenia gracilis	16.000
Lysp	Lyonsia spp (arenosa/hyalina)	1.000
Mate	Macoploma tenta	2.000
Mula	Mulinia lateralis	1.000
Nein	Nephtys incisa	7.000
Nupr	Nucula proxima	4.000
Pimo	Pitar morrhuanus	2.000
Rasa	Rathbunixa sayana	1.000
Scbo	Scolecopsis bousfieldi	2.000
Site	Sigambra tentaculata	3.000
Yoli	Yoldia limatula	9.000

DataSummaryBySample
Sample unit: PJ-05

Iltr	Ilyanassa trivittata	2.000
Legr	Levinsenia gracilis	28.000
Mald	Maldanidae spp (juveniles)	1.000
Mecr	Melinna cristata	1.000
Nein	Nephtys incisa	9.000
Nupr	Nucula proxima	2.000
Pago	Pandora gouldiana	1.000

Pimo	Pitar morrhuanus	2.000
Sael	Sabaco elongatus	1.000
Scbo	Scolecopsis bousfieldi	1.000
Site	Sigambra tentaculata	13.000
Yoli	Yoldia limatula	7.000

DataSummaryBySample
Sample unit: PJ-06

Acca	Acteocina canaliculata	3.000
Amav	Ampelisca abdita/vadurum	1.000
Amor	Amphitrite ornata	1.000
Legr	Levinsenia gracilis	19.000
MalD	Maldanidae spp (juveniles)	8.000
Mate	Macoploma tenta	3.000
Mecr	Melinna cristata	1.000
Nein	Nephtys incisa	5.000
Nupr	Nucula proxima	1.000
Pimo	Pitar morrhuanus	1.000
Prsp	Prionospio (=Minuspio) sp	2.000
Site	Sigambra tentaculata	6.000
Yoli	Yoldia limatula	8.000

DataSummaryBySample
Sample unit: PJ-07

Acca	Acteocina canaliculata	2.000
Gobo	Gobiosoma bosc	1.000
Iltr	Ilyanassa trivittata	1.000
Legr	Levinsenia gracilis	11.000
Mate	Macoploma tenta	1.000
Nein	Nephtys incisa	9.000
Nema	Nematoda spp	2.000
Pago	Pandora gouldiana	1.000
Poco	Polydora cornuta	1.000
Prsp	Prionospio (=Minuspio) sp	3.000
Site	Sigambra tentaculata	24.000
Yoli	Yoldia limatula	6.000

DataSummaryBySample
Sample unit: PJ-08

Amav	Ampelisca abdita/vadurum	1.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	2.000
Iltr	Ilyanassa trivittata	1.000
Legr	Levinsenia gracilis	57.000
MalD	Maldanidae spp (juveniles)	3.000
Nein	Nephtys incisa	5.000
Nupr	Nucula proxima	6.000
Pego	Pectinaria gouldii	1.000
Pimo	Pitar morrhuanus	3.000
Prsp	Prionospio (=Minuspio) sp	1.000
Scbo	Scolecopsis bousfieldi	1.000
Site	Sigambra tentaculata	14.000
Yoli	Yoldia limatula	10.000

DataSummaryBySample
Sample unit: PJ-09

Acca	Acteocina canaliculata	4.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	2.000
Edtr	Edotia triloba	1.000
Legr	Levinsenia gracilis	22.000
Mate	Macoploma tenta	8.000
Moma	Molgula manhattensis	5.000
Nein	Nephtys incisa	6.000
Nupr	Nucula proxima	2.000
Pahe	Panopeus herbstii	1.000
Pimo	Pitar morrhuanus	3.000
Rasa	Rathbunixa sayana	2.000
Site	Sigambra tentaculata	12.000
Unir	Unciola irrorata	1.000
Yoli	Yoldia limatula	11.000

DataSummaryBySample
Sample unit: PJ-10

Acca	Acteocina canaliculata	1.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	2.000
Edtr	Edotia triloba	2.000
Legr	Levinsenia gracilis	31.000
Mate	Macoploma tenta	3.000
Mecr	Melinna cristata	2.000
Moma	Molgula manhattensis	2.000
Nein	Nephtys incisa	8.000
Nupr	Nucula proxima	1.000
Picr	Pista cristata	1.000

Pimo	Pitar morrhuanus	4.000
Prsp	Prionospio (=Minuspio) sp	1.000
Scbo	Scolecopsis bousfieldi	4.000
Site	Sigambra tentaculata	12.000
Spoc	Spiochaetopterus oculatus	1.000
Yoli	Yoldia limatula	11.000

DataSummaryBySample
Sample unit: PJ-11

Acca	Acteocina canaliculata	5.000
Cere	Cerebratulus lacteus	1.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	2.000
Iltr	Ilyanassa trivittata	2.000
Legr	Levinsenia gracilis	9.000
Mate	Macoploma tenta	1.000
Mecr	Melinna cristata	2.000
Nein	Nephtys incisa	5.000
Nupr	Nucula proxima	2.000
Pego	Pectinaria gouldii	1.000
Pimo	Pitar morrhuanus	3.000
Scbo	Scolecopsis bousfieldi	1.000
Site	Sigambra tentaculata	3.000
Yoli	Yoldia limatula	16.000

DataSummaryBySample
Sample unit: PJ-12

Acca	Acteocina canaliculata	6.000
Cere	Cerebratulus lacteus	1.000
Legr	Levinsenia gracilis	8.000
Lysp	Lyonsia spp (arenosa/hyalina)	1.000
Mecr	Melinna cristata	3.000
Nein	Nephtys incisa	10.000
Nupr	Nucula proxima	12.000
Pimo	Pitar morrhuanus	2.000
Scbo	Scolecopsis bousfieldi	3.000
Site	Sigambra tentaculata	6.000
Spoc	Spiochaetopterus oculatus	1.000
Yoli	Yoldia limatula	8.000

DataSummaryBySample
Sample unit: PJ-13

Amor	Amphitrite ornata	1.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	1.000
Iltr	Ilyanassa trivittata	1.000
Legr	Levinsenia gracilis	20.000
Mald	Maldanidae spp (juveniles)	1.000
Mecr	Melinna cristata	2.000
Moma	Molgula manhattensis	1.000
Nein	Nephtys incisa	4.000
Nema	Nematoda spp	2.000
Nupr	Nucula proxima	1.000
Picr	Pista cristata	1.000
Pimo	Pitar morrhuanus	2.000
Prsp	Prionospio (=Minuspio) sp	1.000
Rasa	Rathbunixa sayana	2.000
Scbo	Scolecopsis bousfieldi	3.000
Site	Sigambra tentaculata	16.000
Spss	Spionidae spp juv(Dipoly&Poly)	6.000

DataSummaryBySample
Sample unit: PJ-14

Acca	Acteocina canaliculata	3.000
Amar	Ampharete arctica	1.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	1.000
Iltr	Ilyanassa trivittata	2.000
Legr	Levinsenia gracilis	29.000
Lysp	Lyonsia spp (arenosa/hyalina)	1.000
Mald	Maldanidae spp (juveniles)	4.000
Mate	Macoploma tenta	1.000
Mecr	Melinna cristata	1.000
Nein	Nephtys incisa	6.000
Pimo	Pitar morrhuanus	1.000
Site	Sigambra tentaculata	3.000
Spss	Spionidae spp juv(Dipoly&Poly)	3.000
Yoli	Yoldia limatula	4.000

DataSummaryBySample
Sample unit: SM-01

Cahn	Capitellidae spp (Hetero/Noto)	4.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	29.000
Iltr	Ilyanassa trivittata	1.000
Legr	Levinsenia gracilis	15.000

Mald	Maldanidae spp (juveniles)	7.000
Mate	Macoploma tenta	1.000
Nein	Nephtys incisa	1.000
Prsp	Prionospio (=Minuspio) sp	8.000
Sael	Sabaco elongatus	1.000
Site	Sigambra tentaculata	4.000
Yoli	Yoldia limatula	1.000

DataSummaryBySample
Sample unit: SM-02

Acca	Acteocina canaliculata	2.000
Amag	Ameritella agilis	21.000
Amar	Ampharete arctica	2.000
Amav	Ampelisca abdita/vadurum	1.000
Amoc	Ampharete oculata	1.000
Antr	Anadara transversa	2.000
Arca	Aricidea catherinae	32.000
Brwe	Brania wellfleetensis	1.000
Cahn	Capitellidae spp (Hetero/Noto)	1.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	74.000
Crse	Crangon septemspinosa	1.000
Enle	Ensis leei	2.000
Hyhe	Hypereteone heteropoda	1.000
Iltr	Ilyanassa trivittata	5.000
Lysp	Lyonsia spp (arenosa/hyalina)	1.000
Mald	Maldanidae spp (juveniles)	32.000
Meme	Mercenaria mercenaria	1.000
Nepi	Nephtys picta	1.000
Palo	Pagurus longicarpus	2.000
Picr	Pista cristata	1.000
Pimo	Pitar morrhuanus	1.000
Pojo	Polygordius jouinae	50.000
Savu	Sabellaria vulgaris	1.000
Scfr	Scoletoma fragilis	2.000
Scru	Scoloplos rubra	1.000
Spfi	Spio filicornis	1.000
SpSP	Spionidae spp juv(Dipoly&Poly)	9.000
Stbe	Streblospio benedicti	1.000
Unir	Unciola irrorata	1.000

DataSummaryBySample
Sample unit: SM-03

Acca	Acteocina canaliculata	6.000
Amag	Ameritella agilis	2.000
Arca	Aricidea catherinae	2.000
Cahn	Capitellidae spp (Hetero/Noto)	1.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	60.000
Cito	Clymenella torquata	1.000
Colo	Cossura longocirrata	2.000
Enle	Ensis leei	3.000
Glam	Glycera americana	2.000
GlmU	Glycinde multident(=solitaria)	6.000
Iltr	Ilyanassa trivittata	2.000
Legr	Levinsenia gracilis	1.000
Lysp	Lyonsia spp (arenosa/hyalina)	1.000
Mald	Maldanidae spp (juveniles)	126.000
Mate	Macoploma tenta	2.000
Neam	Neomysis americana	1.000
Nein	Nephtys incisa	3.000
Nema	Nematoda spp	10.000
Papi	Paraprionospio pinnata	1.000
Pimo	Pitar morrhuanus	1.000
Prsp	Prionospio (=Minuspio) sp	2.000
Sael	Sabaco elongatus	5.000
Scbo	Scolecopsis bousfieldi	3.000
Scin	Scalibregma inflatum	3.000
Site	Sigambra tentaculata	4.000
Spbo	Spiophanes bombyx	2.000
Spoc	Spiochaetopterus oculatus	2.000
Unir	Unciola irrorata	2.000
Yoli	Yoldia limatula	4.000

DataSummaryBySample
Sample unit: SM-04

Acca	Acteocina canaliculata	6.000
Antr	Anadara transversa	1.000
Arca	Aricidea catherinae	2.000
Cahn	Capitellidae spp (Hetero/Noto)	3.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	65.000
Clzo	Clymenella zonalis	6.000
Colo	Cossura longocirrata	1.000
Glam	Glycera americana	1.000
GlmU	Glycinde multident(=solitaria)	13.000
Iltr	Ilyanassa trivittata	3.000
Legr	Levinsenia gracilis	2.000
Leju	Leitoscoloplos spp (juveniles)	2.000

Lepi	Leptocheirus pinguis	6.000
Lysp	Lyonsia spp (arenosa/hyalina)	1.000
Mald	Maldanidae spp (juveniles)	145.000
Meme	Mercenaria mercenaria	1.000
Mula	Mulinia lateralis	1.000
Nein	Nephtys incisa	1.000
Nupr	Nucula proxima	1.000
Olsp	Oligochaeta spp	1.000
Papi	Paraprionospio pinnata	1.000
Phaf	Pherusa affinis	1.000
Pimo	Pitar morrhuanus	1.000
Poex	Polycirrus eximius	2.000
Sael	Sabaco elongatus	2.000
Scfr	Scoletoma fragilis	6.000
Unir	Unciola irrorata	1.000
Yoli	Yoldia limatula	3.000

DataSummaryBySample
Sample unit: SM-05

Acca	Acteocina canaliculata	7.000
Amag	Ameritella agilis	13.000
Amar	Ampharete arctica	1.000
Amav	Ampelisca abdita/vadurum	2.000
Arca	Aricidea catherinae	2.000
Arce	Aricidea cerrutii	2.000
Cahn	Capitellidae spp (Hetero/Noto)	2.000
Cere	Cerebratulus lacteus	1.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	24.000
Clzo	Clymenella zonalis	1.000
Enle	Ensis leei	2.000
Glmu	Glycinde multidens(=solitaria)	1.000
Iltr	Ilyanassa trivittata	3.000
Leju	Leitoscoloplos spp (juveniles)	1.000
Lepi	Leptocheirus pinguis	1.000
Lero	Leitoscoloplos robustus	1.000
Lysp	Lyonsia spp (arenosa/hyalina)	4.000
Mald	Maldanidae spp (juveniles)	28.000
Mate	Macoploma tenta	1.000
Mecr	Melinna cristata	1.000
Nema	Nematoda spp	120.000
Nupr	Nucula proxima	1.000
Olsp	Oligochaeta spp	3.000
Palo	Pagurus longicarpus	1.000
Phaf	Pherusa affinis	2.000
Pimo	Pitar morrhuanus	4.000
Pojo	Polygordius jouinae	64.000
Sael	Sabaco elongatus	2.000
Scfr	Scoletoma fragilis	2.000
Scin	Scalibregma inflatum	1.000
Scru	Scoloplos rubra	4.000
Site	Sigambra tentaculata	1.000
Spmi	Sphaerodoridium minutum	1.000
Unir	Unciola irrorata	1.000
Yoli	Yoldia limatula	4.000

DataSummaryBySample
Sample unit: SM-06

Acca	Acteocina canaliculata	1.000
Arca	Aricidea catherinae	2.000
Cahn	Capitellidae spp (Hetero/Noto)	3.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	19.000
Glmu	Glycinde multidens(=solitaria)	8.000
Legr	Levinsenia gracilis	3.000
Leju	Leitoscoloplos spp (juveniles)	1.000
Lysp	Lyonsia spp (arenosa/hyalina)	1.000
Mald	Maldanidae spp (juveniles)	106.000
Meme	Mercenaria mercenaria	1.000
Mula	Mulinia lateralis	1.000
Nema	Nematoda spp	10.000
Olsp	Oligochaeta spp	1.000
Papi	Paraprionospio pinnata	3.000
Phar	Phyllodoce arenae	1.000
Prsp	Prionospio (=Minuspio) sp	6.000
Sael	Sabaco elongatus	7.000
Scbo	Scolelepis bousfieldi	1.000
Scfr	Scoletoma fragilis	1.000
Site	Sigambra tentaculata	1.000
Spsp	Spionidae spp juv(Dipoly&Poly)	1.000

DataSummaryBySample
Sample unit: SM-07

Acca	Acteocina canaliculata	1.000
Cahn	Capitellidae spp (Hetero/Noto)	6.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	40.000
Mate	Macoploma tenta	11.000
Nein	Nephtys incisa	1.000

Nupr	Nucula proxima	3.000
Pimo	Pitar morrhuanus	2.000
Prsp	Prionospio (=Minuspio) sp	11.000
Scfr	Scoletoma fragilis	1.000
Yoli	Yoldia limatula	1.000

***** Lists completed. Normal exit. *****

Appendix 3 - South Shore Reef Field and Grain Size Data

Sample	Reef Site	Site Code	StatID	Latitude	Longitude	Grab Penetration Depth (cm)	Water Depth (m)	Percent Gravel	Percent Sand	Percent Mud (Silt-Clay)
101	Shinnecock	SH	SH-08	40.80457	-72.46959	7.5	24.7	7.18	92.08	0.74
102	Shinnecock	SH	SH-09	40.80340	-72.46724	6.0	25.0	52.33	46.62	1.05
103	Shinnecock	SH	SH-12	40.80285	-72.46374	9.0	24.7	0.86	98.58	0.57
104	Shinnecock	SH	SH-13	40.80160	-72.46299	9.0	24.7	0.18	99.23	0.59
105	Shinnecock	SH	SH-10	40.79978	-72.46448	8.0	25.0	0.16	99.21	0.64
106	Shinnecock	SH	SH-11	40.79816	-72.46449	7.0	24.4	0.14	99.22	0.64
107	Shinnecock	SH	SH-14	40.79716	-72.46299	8.0	23.8	0.13	99.15	0.72
108	Shinnecock	SH	SH-07	40.79948	-72.47147	8.0	24.4	0.57	99.03	0.40
109	Shinnecock	SH	SH-05	40.79918	-72.47482	8.0	23.8	0.65	98.92	0.43
110	Shinnecock	SH	SH-06	40.80117	-72.47267	8.0	25.3	4.53	95.06	0.41
111	Shinnecock	SH	SH-03	40.80307	-72.47879	8.0	25.0	19.08	80.16	0.75
112	Shinnecock	SH	SH-02	40.80226	-72.48015	7.0	24.7	1.91	97.10	0.99
113	Shinnecock	SH	SH-01	40.79822	-72.48116	9.0	24.4	8.53	89.62	1.84
114	Twelve Mile	TW	TW-01	40.61659	-72.53277	8.0	42.1	0.00	89.02	10.98
115	Twelve Mile	TW	TW-03	40.61474	-72.53141	7.0	43.3	0.37	98.45	1.18
116	Twelve Mile	TW	TW-05	40.61305	-72.52801	7.0	41.1	0.00	99.08	0.92
117	Twelve Mile	TW	TW-04	40.60900	-72.52981	7.0	41.8	0.07	99.23	0.69
118	Twelve Mile	TW	TW-02	40.60633	-72.53298	6.0	41.8	0.97	98.46	0.57
119	Twelve Mile	TW	TW-06	40.60726	-72.52240	6.0	43.0	1.05	97.88	1.08
120	Twelve Mile	TW	TW-07	40.62008	-72.51941	7.0	38.4	0.55	98.88	0.57
121	Shinnecock	SH	SH-04	40.80321	-72.47639	8.0	24.7	61.95	36.88	1.17
122	Moriches	MO	MO-14	40.72011	-72.76105	5.0	23.5	0.29	98.97	0.74
123	Moriches	MO	MO-13	40.71960	-72.76343	5.0	24.1	0.08	99.76	0.16
124	Moriches	MO	MO-10	40.72020	-72.76932	5.0	23.5	0.51	95.16	4.33
125	Moriches	MO	MO-06	40.72022	-72.77141	2.0	22.7	0.90	99.10	0.00
126	Moriches	MO	MO-07	40.72102	-72.77162	3.0	22.9	0.00	99.98	0.02
127	Moriches	MO	MO-09	40.72227	-72.76945	10.0	23.5	0.00	41.62	58.38
128	Moriches	MO	MO-11	40.72259	-72.76792	6.0	23.2	0.00	99.86	0.14
129	Moriches	MO	MO-12	40.72484	-72.76702	5.0	21.9	0.00	99.87	0.13
130	Moriches	MO	MO-08	40.72316	-72.77088	5.0	23.5	0.00	99.50	0.50
131	Moriches	MO	MO-05	40.72452	-72.77330	8.0	23.2	0.24	98.83	0.93
132	Moriches	MO	MO-01	40.72573	-72.77538	6.0	21.9	0.02	98.95	1.03
133	Moriches	MO	MO-02	40.72349	-72.77511	5.0	21.6	0.00	99.45	0.55
134	Moriches	MO	MO-03	40.72172	-72.77423	4.0	22.6	0.00	99.32	0.68
135	Moriches	MO	MO-04	40.72204	-72.77359	4.0	22.2	0.02	99.19	0.78
136	Fire Island	FR	FR-07	40.59837	-73.19336	10.0	19.8	1.70	97.87	0.43
137	Fire Island	FR	FR-06	40.59659	-73.19554	8.0	19.8	1.19	98.35	0.46
138	Fire Island	FR	FR-05	40.59413	-73.20123	8.5	20.4	0.14	99.27	0.59
139	Fire Island	FR	FR-04	40.60045	-73.20446	7.5	19.2	0.06	99.34	0.60
140	Fire Island	FR	FR-03	40.59862	-73.21188	7.0	20.1	0.01	99.53	0.46
141	Fire Island	FR	FR-02	40.59436	-73.21635	7.0	21.0	7.21	91.98	0.81
142	Fire Island	FR	FR-01	40.59630	-73.22371	7.0	20.1	0.00	99.14	0.86
143	Hempstead	HE	HE-07	40.52321	-73.53052	8.0	15.8	0.50	98.60	0.89
144	Hempstead	HE	HE-05	40.52219	-73.53463	6.0	17.1	0.70	98.68	0.62
145	Hempstead	HE	HE-03	40.52173	-73.53784	7.0	17.7	0.45	98.99	0.55
146	Hempstead	HE	HE-06	40.51907	-73.53140	7.0	20.1	17.20	70.83	11.96
147	Hempstead	HE	HE-04	40.51495	-73.53594	7.0	18.9	0.15	98.69	1.16
148	Hempstead	HE	HE-02	40.51269	-73.55447	7.0	18.3	0.98	98.41	0.62
149	Hempstead	HE	HE-01	40.51606	-73.55616	7.0	19.2	22.98	76.48	0.54
150	McAllister	MC	MC-14	40.53354	-73.65040	6.0	16.2	13.55	85.95	0.49
151	McAllister	MC	MC-12	40.53460	-73.65462	6.0	15.8	83.99	14.18	1.83
152	McAllister	MC	MC-13	40.53595	-73.65396	6.0	15.2	0.00	98.15	1.85
153	McAllister	MC	MC-11	40.53935	-73.65512	6.0	15.2	0.00	98.09	1.91
154	McAllister	MC	MC-10	40.53852	-73.65654	6.0	15.5	0.60	96.28	3.12
155	McAllister	MC	MC-09	40.53903	-73.65868	5.0	15.5	0.01	97.34	2.65
156	McAllister	MC	MC-07	40.53772	-73.66069	4.0	15.8	2.16	37.60	60.25
157	McAllister	MC	MC-06	40.53545	-73.66136	6.0	15.8	0.50	97.88	1.62
158	McAllister	MC	MC-08	40.53460	-73.66037	4.0	16.2	6.31	93.22	0.47

Appendix 3 - South Shore Reef Field and Grain Size Data

Sample	Reef Site	Site Code	StatID	Latitude	Longitude	Grab Penetration Depth (cm)	Water Depth (m)	Percent Gravel	Percent Sand	Percent Mud (Silt-Clay)
159	McAllister	MC	MC-01	40.53518	-73.67023	5.0	16.5	0.75	98.51	0.74
160	McAllister	MC	MC-03	40.53636	-73.66546	4.0	16.2	42.78	52.06	5.16
161	McAllister	MC	MC-05	40.54036	-73.66182	5.0	15.8	72.65	23.92	3.44
162	McAllister	MC	MC-04	40.54097	-73.66429	5.0	16.5	0.59	89.94	9.47
163	McAllister	MC	MC-02	40.54161	-73.66938	5.0	15.8	21.73	74.99	3.28
164	Rockaway	RO	RO-07	40.53705	-73.83364	4.0	12.5	0.42	98.01	1.57
165	Rockaway	RO	RO-06	40.53819	-73.83608	6.0	12.8	1.20	98.05	0.75
166	Rockaway	RO	RO-05	40.54157	-73.83800	3.0	11.9	7.08	91.60	1.32
167	Rockaway	RO	RO-04	40.54465	-73.84117	5.0	11.3	2.18	96.77	1.04
168	Rockaway	RO	RO-03	40.53942	-73.84867	5.0	11.6	0.15	98.75	1.10
169	Rockaway	RO	RO-02	40.54311	-73.84863	4.0	11.6	1.94	96.54	1.52
170	Rockaway	RO	RO-01	40.54473	-73.85105	4.0	11.0	1.31	96.76	1.93
171	Atlantic Beach	AT	AT-01	40.52664	-73.71809	7.0	18.9	0.04	97.62	2.34
172	Atlantic Beach	AT	AT-04	40.52894	-73.71470	4.0	18.9	84.12	4.71	11.17
173	Atlantic Beach	AT	AT-02	40.53039	-73.71741	8.0	18.3	1.80	97.41	0.79
174	Atlantic Beach	AT	AT-03	40.53251	-73.71753	7.0	17.7	0.11	98.50	1.40
175	Atlantic Beach	AT	AT-05	40.53245	-73.71363	7.0	18.3	0.47	97.74	1.79
176	Atlantic Beach	AT	AT-06	40.53192	-73.70988	5.0	18.6	20.71	78.63	0.66
177	Atlantic Beach	AT	AT-07	40.53022	-73.70687	5.0	18.9	0.29	98.25	1.46
178	Fisherman(Yellowbar)	FS	FS-01	40.63220	-73.24233	10.0	9.1	0.13	99.33	0.54
179	Fisherman(Tellowbar)	FS	FS-02	40.63265	-73.24178	10.0	10.1	5.87	93.62	0.51
180	Fisherman(Yellowbar)	FS	FS-03	40.63292	-73.24162	10.0	10.7	0.10	99.44	0.46
181	Fisherman(Yellowbar)	FS	FS-04	40.63333	-73.24033	10.0	11.6	15.21	83.93	0.86
182	Fisherman(Yellowbar)	FS	FS-05	40.63323	-73.23979	10.0	9.8	1.18	97.91	0.91
183	Fisherman(Yellowbar)	FS	FS-06	40.63372	-73.23986	9.0	11.0	1.85	97.14	1.01
184	Fisherman(Yellowbar)	FS	FS-07	40.63363	-73.23917	7.0	10.4	7.86	90.81	1.32
185	Kismet	KI	KI-01	40.63570	-73.21449	7.5	2.4	0.74	97.85	1.41
186	Kismet	KI	KI-02	40.63627	-73.21300	5.0	4.0	44.89	54.19	0.92
187	Kismet	KI	KI-03	40.63635	-73.21185	8.0	2.7	3.18	89.37	7.46
188	Kismet	KI	KI-04	40.63683	-73.21082	10.0	3.2	0.11	98.95	0.94
189	Kismet	KI	KI-05	40.63721	-73.20940	7.0	2.7	0.18	98.39	1.42
190	Kismet	KI	KI-06	40.63746	-73.20796	4.5	2.4	15.73	79.94	4.33
191	Kismet	KI	KI-07	40.63795	-73.20664	8.0	2.4	8.09	90.56	1.36
192	Sixteen Fathom	SF	SF-08	40.43923	-73.35581	7.0	28.6	0.29	97.91	1.80
193	Sixteen Fathom	SF	SF-11	40.43755	-73.35370	6.0	29.9	0.01	94.29	5.70
194	Sixteen Fathom	SF	SF-09	40.43535	-73.35556	8.0	31.1	0.97	90.02	9.02
195	Sixteen Fathom	SF	SF-10	40.43376	-73.35541	7.0	30.8	0.55	96.13	3.31
196	Sixteen Fathom	SF	SF-07	40.43357	-73.35660	6.0	30.8	0.19	87.68	12.12
197	Sixteen Fathom	SF	SF-12	40.43068	-73.35340	7.0	30.3	18.07	81.17	0.77
198	Sixteen Fathom	SF	SF-13	40.42869	-73.35243	8.0	29.9	47.18	44.22	8.60
199	Sixteen Fathom	SF	SF-14	40.42480	-73.35195	8.0	29.0	4.34	94.89	0.77
200	Sixteen Fathom	SF	SF-06	40.42512	-73.36076	7.0	27.1	1.14	97.93	0.94
201	Sixteen Fathom	SF	SF-05	40.42437	-73.36224	6.0	27.1	0.00	99.01	0.99
202	Sixteen Fathom	SF	SF-03	40.42988	-73.36766	7.0	26.8	0.19	99.02	0.79
203	Sixteen Fathom	SF	SF-02	40.43238	-73.36765	5.5	27.4	0.63	92.70	6.66
204	Sixteen Fathom	SF	SF-04	40.43502	-73.36431	3.0	29.0	0.06	98.98	0.97
205	Sixteen Fathom	SF	SF-01	40.43627	-73.36870	7.0	29.0	0.40	98.63	0.97

Appendix 4 – South Shore Faunal Summary by Sample

***** Data Summarization *****

Modified from PC-ORD, 6.08
17 Dec 2022, 15:43:53

DataSummaryAllSamples

Summary of: 105 sites				N = 186 species			
Num.	Name	Abund.	Max.	S	E	H'	D
1	AT-01	175	65	27	0.695	2.291	0.8123
2	AT-02	325	142	26	0.558	1.819	0.7295
3	AT-03	240	160	17	0.473	1.339	0.5340
4	AT-04	13	3	10	0.958	2.205	0.8757
5	AT-05	194	39	29	0.795	2.676	0.8991
6	AT-06	158	36	32	0.755	2.618	0.8857
7	AT-07	114	86	12	0.445	1.105	0.4234
8	FR-01	600	355	27	0.426	1.405	0.6020
9	FR-02	335	184	22	0.416	1.287	0.5892
10	FR-03	104	29	22	0.780	2.411	0.8585
11	FR-04	477	333	20	0.407	1.221	0.4930
12	FR-05	443	300	15	0.423	1.147	0.5094
13	FR-06	527	362	25	0.391	1.259	0.5044
14	FR-07	270	113	24	0.602	1.914	0.7556
15	FS-01	2497	2012	10	0.286	0.659	0.3267
16	FS-02	875	590	22	0.371	1.147	0.5080
17	FS-03	575	455	10	0.317	0.729	0.3533
18	FS-04	182	64	16	0.630	1.748	0.7614
19	FS-05	316	189	20	0.466	1.396	0.5871
20	FS-06	479	286	18	0.467	1.351	0.5987
21	FS-07	778	502	30	0.450	1.529	0.5678
22	HE-01	151	80	20	0.598	1.790	0.6859
23	HE-02	147	55	20	0.633	1.896	0.7460
24	HE-03	492	255	26	0.443	1.443	0.6366
25	HE-04	100	48	17	0.692	1.961	0.7394
26	HE-05	47	5	21	0.941	2.866	0.9344
27	HE-06	69	16	20	0.847	2.538	0.8880
28	HE-07	132	33	17	0.807	2.286	0.8651
29	KI-01	684	263	41	0.516	1.917	0.7390
30	KI-02	77	20	15	0.841	2.277	0.8592
31	KI-03	1132	808	47	0.376	1.449	0.4824
32	KI-04	51	10	16	0.879	2.437	0.8897
33	KI-05	147	43	20	0.717	2.147	0.8336
34	KI-06	771	498	40	0.462	1.705	0.5734
35	KI-07	19	4	11	0.943	2.260	0.8809
36	MC-01	93	40	15	0.698	1.890	0.7562
37	MC-02	118	44	27	0.678	2.233	0.8031
38	MC-03	18	4	11	0.936	2.245	0.8765
39	MC-04	108	41	20	0.723	2.165	0.8054
40	MC-05	61	17	15	0.826	2.237	0.8460
41	MC-06	71	15	18	0.885	2.559	0.9002
42	MC-07	18	5	7	0.924	1.798	0.8148
43	MC-08	24	6	13	0.889	2.279	0.8646
44	MC-09	51	7	23	0.923	2.894	0.9319
45	MC-10	29	8	14	0.857	2.261	0.8537
46	MC-11	76	20	22	0.818	2.529	0.8764
47	MC-12	604	471	24	0.306	0.974	0.3793
48	MC-13	27	7	15	0.891	2.413	0.8779
49	MC-14	319	83	31	0.642	2.205	0.8220
50	MO-01	33	7	17	0.894	2.532	0.8926
51	MO-02	29	12	8	0.812	1.688	0.7562
52	MO-03	14	3	7	0.962	1.871	0.8367
53	MO-04	17	6	6	0.856	1.534	0.7474
54	MO-05	148	80	21	0.545	1.658	0.6586
55	MO-06	19	4	10	0.918	2.114	0.8587
56	MO-07	13	4	6	0.896	1.605	0.7692
57	MO-08	11	3	6	0.934	1.673	0.7934
58	MO-09	26	22	5	0.399	0.643	0.2781
59	MO-10	25	4	11	0.946	2.269	0.8864
60	MO-11	71	46	7	0.568	1.106	0.5344
61	MO-12	21	4	13	0.936	2.401	0.8934
62	MO-13	87	35	15	0.654	1.770	0.7491
63	MO-14	85	37	11	0.595	1.426	0.6688
64	RO-01	72	24	17	0.816	2.312	0.8453

65	RO-02	57	11	19	0.900	2.649	0.9104
66	RO-03	70	27	14	0.815	2.152	0.8127
67	RO-04	36	13	11	0.771	1.849	0.7747
68	RO-05	9	2	8	0.983	2.043	0.8642
69	RO-06	10	2	8	0.974	2.025	0.8600
70	RO-07	88	57	16	0.539	1.493	0.5651
71	SF-01	761	640	29	0.260	0.876	0.2904
72	SF-02	42	9	16	0.840	2.330	0.8662
73	SF-03	474	251	33	0.512	1.792	0.6776
74	SF-04	212	183	16	0.271	0.750	0.2532
75	SF-05	53	11	17	0.845	2.394	0.8758
76	SF-06	176	75	34	0.668	2.355	0.7862
77	SF-07	44	11	17	0.850	2.408	0.8698
78	SF-08	646	488	26	0.346	1.127	0.4186
79	SF-09	84	15	28	0.868	2.893	0.9204
80	SF-10	108	54	28	0.665	2.216	0.7342
81	SF-11	72	27	23	0.730	2.289	0.8059
82	SF-12	626	446	24	0.358	1.139	0.4679
83	SF-13	689	301	34	0.591	2.086	0.7663
84	SF-14	184	137	23	0.407	1.277	0.4399
85	SH-01	369	249	21	0.416	1.268	0.5184
86	SH-02	222	98	19	0.500	1.471	0.6522
87	SH-03	375	219	18	0.405	1.171	0.5631
88	SH-04	253	102	21	0.605	1.841	0.7558
89	SH-05	258	144	24	0.475	1.509	0.6259
90	SH-06	56	14	18	0.801	2.314	0.8571
91	SH-07	284	132	21	0.516	1.570	0.6713
92	SH-08	545	228	15	0.523	1.415	0.6686
93	SH-09	171	132	13	0.402	1.032	0.3968
94	SH-10	249	122	22	0.544	1.680	0.6906
95	SH-11	245	126	23	0.520	1.631	0.6642
96	SH-12	152	33	22	0.726	2.246	0.8534
97	SH-13	153	88	13	0.558	1.431	0.6224
98	SH-14	96	54	18	0.608	1.758	0.6610
99	TW-01	59	12	24	0.865	2.748	0.9089
100	TW-02	260	153	21	0.567	1.728	0.6368
101	TW-03	19	4	13	0.949	2.434	0.8975
102	TW-04	196	93	23	0.598	1.874	0.7164
103	TW-05	129	45	23	0.707	2.216	0.8076
104	TW-06	339	268	17	0.329	0.931	0.3658
105	TW-07	115	36	17	0.695	1.969	0.7856

AVERAGES: 237.8 139.2 19.1 0.657 1.847 0.7122

19530 cells in main matrix
Percent of cells empty = 89.708
Matrix total = 24970

Abund. = total abundance per sample
S = Richness = number of non-zero elements in row
E = Evenness = $H' / \ln(\text{Richness})$
 $H' = \text{Diversity} = - \sum (P_i \cdot \ln(P_i)) = \text{Shannon's diversity index}$
 $D = \text{Simpson's diversity index for infinite population} = 1 / \sum (P_i^2)$
where $P_i = \text{proportion of individuals in the sample belonging to species } i$

***** Analysis completed *****

PC-ORD, 6.08
21 Dec 2022, 10:39:28

Matrix contents: 105 sites
by 186 species

DataSummaryBySample

Species file:
C:\Users\Bob\Documents\2019&2020Proposals\ArtificialReef\PC-ORD\SSSpeciesList.txt

SPECIES LISTS FOR EACH SAMPLE UNIT AND ABUNDANCE

DataSummaryBySample

Sample unit: AT-01

Acmi	Acanthohaustorius millsii	2.000
Amag	Ameritella agilis	2.000
Arca	Aricidea catherinae	1.000
Arwa	Aricidea wassi	14.000
Asoc	Asabellides oculata	1.000
Cahn	Capitellidae spp (Hetero/Noto)	1.000
Cave	Caulleriella venefica	2.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	3.000
Clzo	Clymenella zonalis	3.000
Edtr	Edotia triloba	3.000
Nema	Nematoda spp	3.000
Nepi	Nephtys picta	1.000
Olsp	Oligochaeta spp	3.000
Paca	Parougia caeca	1.000
Paly	Paradoneis lyra	1.000
Pojo	Polygordius jouinae	30.000
Prwi	Protohaustorius wigleyi	17.000
Psmi	Pseudoleptocuma minus	3.000
Psob	Pseudunciola obliquua	65.000
Rhep	Rhepoxynius epistomus	4.000
Spbo	Spiophanes bombyx	2.000
Spso	Spisula solidissima	4.000
Star	Streptosyllis arenae	1.000
Sylo	Syllides longocirratu	1.000
Taps	Tanaissus psammophilus	5.000
Trca	Travisia carnea	1.000
Unir	Unciola irrorata	1.000

DataSummaryBySample

sample unit: AT-02

Amam	Americhelidium americanum	2.000
Arca	Aricidea catherinae	3.000
Arwa	Aricidea wassi	2.000
Cahn	Capitellidae spp (Hetero/Noto)	1.000
Cave	Caulleriella venefica	10.000
Cere	Cerebratulus lacteus	2.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	1.000
Glam	Glycera americana	2.000
Gogr	Goniadella gracilis	22.000
Nema	Nematoda spp	83.000
Nepi	Nephtys picta	3.000
Olsp	Oligochaeta spp	3.000
Paca	Parougia caeca	1.000
Pafu	Paraonis fulgens	1.000
Paly	Paradoneis lyra	1.000
Para	Parapionosyllis longicirrata	1.000
Pojo	Polygordius jouinae	142.000
Popo	Politolana polita	1.000
Psmi	Pseudoleptocuma minus	2.000
Psob	Pseudunciola obliquua	29.000
Ptte	Ptilanthura tenuis	1.000
Spso	Spisula solidissima	3.000
Star	Streptosyllis arenae	1.000
Sylo	Syllides longocirratu	1.000
Taps	Tanaissus psammophilus	2.000
Unir	Unciola irrorata	5.000

DataSummaryBySample

sample unit: AT-03

Amag	Ameritella agilis	3.000
Arca	Aricidea catherinae	3.000
Arwa	Aricidea wassi	3.000
Cave	Caulleriella venefica	1.000
Cere	Cerebratulus lacteus	1.000
Edtr	Edotia triloba	1.000
Nema	Nematoda spp	30.000

Nute	Nucula tenuis	1.000
Olsp	Oligochaeta spp	1.000
Pojo	Polygordius jouinae	14.000
Prwi	Protohaustorius wigleyi	5.000
Psmi	Pseudoleptocuma minus	2.000
Psob	Pseudunciola obliquua	160.000
Ptte	Ptilanthura tenuis	1.000
Rhep	Rhepoxynius epistomus	4.000
Spsa	Spisula solidissima	2.000
Taps	Tanaissus psammophilus	8.000

DataSummaryBySample
Sample unit: AT-04

Amag	Ameritella agilis	1.000
Asoc	Asabellides oculata	1.000
Cave	Caulleriella venefica	1.000
Crse	Crangon septemspinosa	1.000
Oxsm	Oxyurostylis smithi	2.000
Poco	Polydora cornuta	3.000
Prwi	Protohaustorius wigleyi	1.000
Psob	Pseudunciola obliquua	1.000
Spsa	Spisula solidissima	1.000
Taps	Tanaissus psammophilus	1.000

DataSummaryBySample
Sample unit: AT-05

Agve	Aglaophamus verrilli	1.000
Amag	Ameritella agilis	5.000
Amav	Ampelisca abdita/vadurum	5.000
Arca	Aricidea catherinae	3.000
Arwa	Aricidea wassi	25.000
Cahn	Capitellidae spp (Hetero/Noto)	8.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	21.000
Crfo	Crepidula fornicata	1.000
Edtr	Edotia triloba	4.000
Eosp	Eobrolgus spinosus	6.000
Eutr	Euspira triseriata	1.000
Leju	Leitoscoloplos spp (juveniles)	2.000
Masp	Maldanidae spp (juveniles)	1.000
Nebu	Nephtys bucera	1.000
Nepi	Nephtys picta	4.000
Nupr	Nucula proxima	1.000
Olsp	Oligochaeta spp	25.000
Onop	Onuphis opalina	1.000
Oxsm	Oxyurostylis smithi	1.000
Phar	Phyllodoce arenae	1.000
Poco	Polydora cornuta	7.000
Pojo	Polygordius jouinae	39.000
Prpy	Prionospio pygmaeus	2.000
Prwi	Protohaustorius wigleyi	2.000
Psob	Pseudunciola obliquua	5.000
Sovi	Solen viridis	3.000
Spoc	Spiochaetopterus oculatus	1.000
Spsa	Spisula solidissima	17.000
Yoli	Yoldia limatula	1.000

DataSummaryBySample
Sample unit: AT-06

Agci	Aglaophamus circinata	1.000
Amav	Ampelisca abdita/vadurum	1.000
Angr	Ancistrosyllis groenlandica	1.000
Arca	Aricidea catherinae	14.000
Aspo	Astrangia poculata	1.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	2.000
Clzo	Clymenella zonalis	2.000
Cosp	Corophium sp	1.000
Crse	Crangon septemspinosa	1.000
Eusa	Eumida sanguinea	1.000
Glam	Glycera americana	1.000
Gogr	Goniadella gracilis	1.000
Idba	Idunella barnardi	1.000
Lesp	Leptosynapta sp	1.000
Lisp	Liljeborgia sp	1.000
Nema	Nematoda spp	21.000
Nepi	Nephtys picta	1.000
Nmrt	Nemertinea spp(+juv. lacteus)	2.000
Olsp	Oligochaeta spp	5.000
Para	Parapionosyllis longicirrata	10.000
Picr	Pista cristata	1.000
Pisp	Pisione sp	4.000
Poex	Polycirrus eximius	5.000
Pojo	Polygordius jouinae	36.000
Popo	Politolana polita	1.000
Psmi	Pseudoleptocuma minus	1.000
Psob	Pseudunciola obliquua	1.000
Savu	Sabellaria vulgaris	1.000

Scte	Scoletoma tenuis	24.000
Spsa	Spisula solidissima	2.000
Taps	Tanaissus psammophilus	1.000
Unir	Unciola irrorata	12.000

DataSummaryBySample
Sample unit: AT-07

Ammv	Ampelisca macrocephala/verrili	86.000
Arca	Aricidea catherinae	2.000
Arwa	Aricidea wassi	2.000
Cahn	Capitellidae spp (Hetero/Noto)	2.000
Cave	Caulleriella venefica	3.000
Nepi	Nephtys picta	6.000
Pojo	Polygordius jouinae	1.000
Prpy	Prionospio pygmaeus	3.000
Psmi	Pseudoleptocuma minus	2.000
Rhep	Rhepoxynius epistomus	5.000
Spbo	Spiophanes bombyx	1.000
Unir	Unciola irrorata	1.000

DataSummaryBySample
Sample unit: FR-01

Amar	Ampharete arctica	2.000
Byse	Byblis serrata	1.000
Cave	Caulleriella venefica	6.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	2.000
Clzo	Clymenella zonalis	1.000
Crse	Crangon septemspinosa	1.000
Edtr	Edotia triloba	2.000
Exdi	Exogone dispar	5.000
Gogr	Goniadella gracilis	2.000
Mesp	Megalona sp	2.000
Nema	Nematoda spp	96.000
Nepi	Nephtys picta	1.000
Nmrt	Nemertinea spp(+juv. lacteus)	1.000
Olsp	Oligochaeta spp	7.000
Paly	Paradoneis lyra	1.000
Poex	Polycirrus eximius	1.000
Pojo	Polygordius jouinae	88.000
Prwi	Protohaustorius wigleyi	1.000
Psmi	Pseudoleptocuma minus	2.000
Psob	Pseudunciola obliquua	355.000
Rhep	Rhepoxynius epistomus	2.000
Scru	Scoloplos rubra	1.000
Siar	Sigalion arenicola	1.000
Spbo	Spiophanes bombyx	3.000
Spsa	Spisula solidissima	1.000
Star	Streptosyllis arenae	12.000
Sylo	Syllides longocirratu	3.000

DataSummaryBySample
Sample unit: FR-02

Angr	Ancistrosyllis groenlandica	1.000
Cave	Caulleriella venefica	2.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	2.000
Diso	Dipolydora socialis	1.000
Exdi	Exogone dispar	2.000
Gogr	Goniadella gracilis	4.000
Haex	Harmothoe extenuata	1.000
Mesp	Megalona sp	1.000
Nema	Nematoda spp	7.000
Nepi	Nephtys picta	1.000
Nmrt	Nemertinea spp(+juv. lacteus)	1.000
Olsp	Oligochaeta spp	6.000
Oner	Onuphis eremita	1.000
Poex	Polycirrus eximius	1.000
Pojo	Polygordius jouinae	184.000
Psob	Pseudunciola obliquua	110.000
Spfi	Spio filicornis	1.000
Spsa	Spisula solidissima	3.000
Star	Streptosyllis arenae	1.000
Sylo	Syllides longocirratu	2.000
Taps	Tanaissus psammophilus	2.000
Unir	Unciola irrorata	1.000

DataSummaryBySample
Sample unit: FR-03

Amag	Ameritella agilis	1.000
Amam	Americhelidium americanum	1.000
Arca	Aricidea catherinae	1.000
Arwa	Aricidea wassi	6.000
Asoc	Asabellides oculata	1.000
Cahn	Capitellidae spp (Hetero/Noto)	2.000
Casp	Capitella spp	1.000

Cave	Caulleriella venefica	3.000
Cere	Cerebratulus lacteus	1.000
Dime	Dissodactylus mellitae	1.000
Ecpa	Echinarachnius parma	4.000
Nema	Nematoda spp	8.000
Nepi	Nephtys picta	2.000
Olsp	Oligochaeta spp	11.000
Pojo	Polygordius jouinae	20.000
Psob	Pseudunciola obliquua	29.000
Rhep	Rhepoxynius epistomus	3.000
Scte	Scoletoma tenuis	1.000
Spbo	Spiophanes bombyx	2.000
Star	Streptosyllis arenae	1.000
Sylo	Syllides longocirratu	3.000
Taps	Tanaissus psammophilus	2.000

DataSummaryBySample

Sample unit: FR-04

Agci	Aglaophamus circinata	2.000
Arce	Aricidea cerrutii	1.000
Byse	Byblis serrata	1.000
Cahn	Capitellidae spp (Hetero/Noto)	1.000
Cave	Caulleriella venefica	7.000
Ecpa	Echinarachnius parma	2.000
Exdi	Exogone dispar	2.000
Misc	Microphthalmus sczelkowi	2.000
Nema	Nematoda spp	51.000
Nepi	Nephtys picta	1.000
Olsp	Oligochaeta spp	39.000
Paca	Parougia caeca	14.000
Pafu	Paraonis fulgens	1.000
Pojo	Polygordius jouinae	2.000
Prwi	Protohaustorius wigleyi	2.000
Psob	Pseudunciola obliquua	333.000
Rhep	Rhepoxynius epistomus	4.000
Spbo	Spiophanes bombyx	2.000
Star	Streptosyllis arenae	4.000
Sylo	Syllides longocirratu	6.000

DataSummaryBySample

Sample unit: FR-05

Amag	Ameritella agilis	1.000
Arwa	Aricidea wassi	1.000
Cave	Caulleriella venefica	3.000
Gogr	Goniadella gracilis	1.000
Nema	Nematoda spp	17.000
Nmrt	Nemertinea spp(+juv. lacteus)	1.000
Olsp	Oligochaeta spp	70.000
Pojo	Polygordius jouinae	32.000
Popo	Politolana polita	1.000
Prwi	Protohaustorius wigleyi	4.000
Psob	Pseudunciola obliquua	300.000
Rhep	Rhepoxynius epistomus	1.000
Spbo	Spiophanes bombyx	4.000
Star	Streptosyllis arenae	5.000
Sylo	Syllides longocirratu	2.000

DataSummaryBySample

Sample unit: FR-06

Amar	Ampharete arctica	2.000
Arca	Aricidea catherinae	1.000
Asca	Astarte castanea	5.000
Asoc	Asabellides oculata	1.000
Cave	Caulleriella venefica	5.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	4.000
Clzo	Clymenella zonalis	2.000
Exdi	Exogone dispar	2.000
Gogr	Goniadella gracilis	3.000
Nema	Nematoda spp	67.000
Nepi	Nephtys picta	1.000
Nmrt	Nemertinea spp(+juv. lacteus)	1.000
Olsp	Oligochaeta spp	4.000
Paca	Parougia caeca	3.000
Pafu	Paraonis fulgens	1.000
Para	Parapionosyllis longicirrata	1.000
Pojo	Polygordius jouinae	44.000
Popo	Politolana polita	2.000
Psob	Pseudunciola obliquua	362.000
Rhep	Rhepoxynius epistomus	6.000
Spbo	Spiophanes bombyx	1.000
Spsa	Spisula solidissima	2.000
Star	Streptosyllis arenae	4.000
Taps	Tanaissus psammophilus	1.000
Unir	Unciola irrorata	2.000

DataSummaryBySample

Sample unit: FR-07

Amag	Ameritella agilis	1.000
Arca	Aricidea catherinae	3.000
Baqu	Bathyporeia quoddyensis	1.000
Byse	Byblis serrata	1.000
Cave	Caulleriella venefica	3.000
Cere	Cerebratulus lacteus	1.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	1.000
Exdi	Exogone dispar	6.000
Gogr	Goniadella gracilis	1.000
Nema	Nematoda spp	14.000
Nepi	Nephtys picta	2.000
Olsp	Oligochaeta spp	54.000
Oner	Onuphis eremita	1.000
Onop	Onuphis opalina	1.000
Paca	Parougia caeca	1.000
Pojo	Polygordius jouinae	42.000
Prwi	Protohaustorius wigleyi	2.000
Psob	Pseudunciola obliqua	113.000
Rhep	Rhepoxynius epistomus	2.000
Spbo	Spiophanes bombyx	3.000
Spso	Spisula solidissima	3.000
Star	Streptosyllis arenae	7.000
Sylo	Syllides longocirratu	5.000
Taps	Tanaissus psammophilus	2.000

DataSummaryBySample

Sample unit: FS-01

Chco	Chiridotea coeca	22.000
Misc	Microphthalmus sczelkowi	2012.000
Nema	Nematoda spp	384.000
Nmrt	Nemertinea spp(+juvC. lacteus)	5.000
Olsp	Oligochaeta spp	29.000
Pafu	Paraonis fulgens	3.000
Pojo	Polygordius jouinae	31.000
Spso	Spisula solidissima	6.000
Star	Streptosyllis arenae	2.000
Turb	Turbellaria sp	3.000

DataSummaryBySample

Sample unit: FS-02

Amag	Ameritella agilis	2.000
Ande	Ancinus depressus	2.000
Brwe	Brania wellfleetensis	1.000
Cere	Cerebratulus lacteus	1.000
Chco	Chiridotea coeca	5.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	48.000
Crse	Crangon septemspinosa	1.000
Miab	Microphthalmus aberrans	158.000
Myed	Mytilus edulis (juvenile)	1.000
Near	Neanthes arenaceodentata	5.000
Nema	Nematoda spp	590.000
Nepi	Nephtys picta	1.000
Olsp	Oligochaeta spp	1.000
Oxsm	Oxyurostylis smithi	1.000
Para	Parapionosyllis longicirrata	10.000
Poex	Polycirrus eximius	2.000
Pojo	Polygordius jouinae	4.000
Psob	Pseudunciola obliqua	1.000
Schi	Schistomeringos rudolphi	2.000
Sphy	Sphaerosyllis hystrix	5.000
Star	Streptosyllis arenae	33.000
Sylo	Syllides longocirratu	1.000

DataSummaryBySample

Sample unit: FS-03

Chco	Chiridotea coeca	1.000
Cigr	Cirriiformia grandis	1.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	3.000
Miab	Microphthalmus aberrans	455.000
Nema	Nematoda spp	75.000
Nmrt	Nemertinea spp(+juvC. lacteus)	2.000
Olsp	Oligochaeta spp	1.000
Pojo	Polygordius jouinae	34.000
Schi	Schistomeringos rudolphi	1.000
Star	Streptosyllis arenae	2.000

DataSummaryBySample

Sample unit: FS-04

Chco	Chiridotea coeca	11.000
Cigr	Cirriiformia grandis	1.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	33.000

Gogr	Goniadella gracilis	1.000
Gyvi	Gyptis vittata	1.000
Miab	Microphthalmus aberrans	64.000
Near	Neanthes arenaceodentata	8.000
Nema	Nematoda spp	50.000
Olsp	Oligochaeta spp	1.000
Oxsm	Oxyurostylis smithi	1.000
Paca	Parougia caeca	1.000
Para	Parapionosyllis longicirrata	1.000
Pojo	Polygordius jouinae	3.000
Spbo	Spiophanes bombyx	1.000
Star	Streptosyllis arenae	4.000
Sylo	Syllides longocirratu	1.000

DataSummaryBySample
sample unit: FS-05

Amag	Ameritella agilis	3.000
Ande	Ancinus depressus	4.000
Arca	Aricidea catherinae	1.000
Brwe	Brania wellfleetensis	1.000
Cair	Cancer irroratus	1.000
Cigr	Cirriiformia grandis	2.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	72.000
Glam	Glycera americana	2.000
Gldi	Glycera dibranchiata	1.000
Miab	Microphthalmus aberrans	189.000
Near	Neanthes arenaceodentata	14.000
Nema	Nematoda spp	5.000
Nepi	Nephtys picta	2.000
Olsp	Oligochaeta spp	2.000
Poex	Polycirrus eximius	5.000
Pojo	Polygordius jouinae	3.000
Psob	Pseudunciola obliquua	4.000
Sove	Solemya velum	1.000
Star	Streptosyllis arenae	2.000
Sygr	Syllis gracilis	2.000

DataSummaryBySample
sample unit: FS-06

Amag	Ameritella agilis	2.000
Brwe	Brania wellfleetensis	1.000
Cere	Cerebratulus lacteus	1.000
Chco	Chiridotea coeca	1.000
Cigr	Cirriiformia grandis	1.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	68.000
Gogr	Goniadella gracilis	3.000
Gyvi	Gyptis vittata	1.000
Lesp	Leptosynapta sp	1.000
Miab	Microphthalmus aberrans	72.000
Neam	Neomysis americana	1.000
Near	Neanthes arenaceodentata	5.000
Nema	Nematoda spp	286.000
Olsp	Oligochaeta spp	1.000
Para	Parapionosyllis longicirrata	8.000
Pojo	Polygordius jouinae	10.000
Star	Streptosyllis arenae	16.000
Sylo	Syllides longocirratu	1.000

DataSummaryBySample
sample unit: FS-07

Amav	Ampelisca abdita/vadurum	1.000
Baca	Batea catharinensis	2.000
Brwe	Brania wellfleetensis	42.000
Cahn	Capitellidae spp (Hetero/Noto)	1.000
Casp	Capitella spp	3.000
Cave	Caulleriella venefica	7.000
Cere	Cerebratulus lacteus	1.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	502.000
Elle	Elasmopus levis	2.000
Eosp	Eobrolgus spinosus	20.000
Eusa	Eumida sanguinea	3.000
Gldi	Glycera dibranchiata	1.000
Lyal	Lysianopsis alba	11.000
Miab	Microphthalmus aberrans	56.000
Near	Neanthes arenaceodentata	58.000
Nema	Nematoda spp	14.000
Nepi	Nephtys picta	1.000
Nupr	Nucula proxima	1.000
Olsp	Oligochaeta spp	13.000
Oxsm	Oxyurostylis smithi	2.000
Pahe	Panopeus herbstii	2.000
Palo	Pagurus longicarpus	1.000
Para	Parapionosyllis longicirrata	1.000
Poex	Polycirrus eximius	2.000
Pojo	Polygordius jouinae	17.000
Schi	Schistomeringos rudolphi	1.000

Spso	Spisula solidissima	1.000
Spsp	Spionidae spp juv(Dipoly/Poly)	2.000
Star	Streptosyllis arenae	4.000
Unir	Unciola irrorata	6.000

DataSummaryBySample
Sample unit: HE-01

Amam	Americhelidium americanum	1.000
Angr	Ancistrosyllis groenlandica	1.000
Antr	Anadara transversa	1.000
Asca	Astarte castanea	1.000
Cere	Cerebratulus lacteus	1.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	1.000
Crfo	Crepidula fornicata	2.000
Crse	Crangon septemspinosus	1.000
Gogr	Goniadella gracilis	6.000
Nema	Nematoda spp	12.000
Nepi	Nephtys picta	3.000
Olsp	Oligochaeta spp	5.000
Pimo	Pitar morrhuanus	1.000
Poex	Polycirrus eximius	6.000
Pojo	Polygordius jouinae	80.000
Psmi	Pseudoleptocuma minus	1.000
Psob	Pseudunciola obliquua	22.000
Rhep	Rhepoxynius epistomus	3.000
Scte	Scoletoma tenuis	1.000
Taps	Tanaissus psammophilus	2.000

DataSummaryBySample
Sample unit: HE-02

Acmi	Acanthohaustorius millsii	1.000
Amag	Ameritella agilis	2.000
Arca	Aricidea catherinae	1.000
Arwa	Aricidea wassi	3.000
Cave	Caulleriella venefica	4.000
Cypo	Cyathura polita	1.000
Ecpa	Echinarachnius parma	3.000
Mesp	Megalona sp	2.000
Nema	Nematoda spp	3.000
Nepi	Nephtys picta	1.000
Olsp	Oligochaeta spp	7.000
Pojo	Polygordius jouinae	55.000
Popo	Politolana polita	1.000
Prwi	Protohaustorius wigleyi	2.000
Psob	Pseudunciola obliquua	48.000
Rhep	Rhepoxynius epistomus	3.000
Spbo	Spiophanes bombyx	2.000
Spso	Spisula solidissima	1.000
Taps	Tanaissus psammophilus	6.000
Trca	Travisia carnea	1.000

DataSummaryBySample
Sample unit: HE-03

Amag	Ameritella agilis	4.000
Arca	Aricidea catherinae	2.000
Arwa	Aricidea wassi	2.000
Cahn	Capitellidae spp (Hetero/Noto)	1.000
Cave	Caulleriella venefica	5.000
Chco	Chiridotea coeca	1.000
Ecpa	Echinarachnius parma	1.000
Eutr	Euspira triseriata	1.000
Exdi	Exogone dispar	2.000
Mesp	Megalona sp	1.000
Nema	Nematoda spp	42.000
Nepi	Nephtys picta	1.000
Nmrt	Nemertinea spp(+juvc. lacteus)	2.000
Olsp	Oligochaeta spp	5.000
Pojo	Polygordius jouinae	255.000
Popo	Politolana polita	3.000
Prwi	Protohaustorius wigleyi	3.000
Psob	Pseudunciola obliquua	145.000
Rhep	Rhepoxynius epistomus	5.000
Spbo	Spiophanes bombyx	1.000
Spso	Spisula solidissima	3.000
Star	Streptosyllis arenae	2.000
Stva	Streptosyllis varians	1.000
Sylo	Syllides longocirratu	1.000
Taps	Tanaissus psammophilus	1.000
Unir	Unciola irrorata	2.000

DataSummaryBySample
Sample unit: HE-04

Ammv	Ampelisca macrocephala/verrili	11.000
Arca	Aricidea catherinae	6.000

Arwa	Aricidea wassi	1.000
Cahn	Capitellidae spp (Hetero/Noto)	3.000
Cave	Caulleriella venefica	2.000
Cere	Cerebratulus lacteus	1.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	2.000
Clto	Clymenella torquata	2.000
Ecpa	Echinarachnius parma	1.000
Nepi	Nephtys picta	6.000
Nosp	Notocirrus spinifera	1.000
Pojo	Polygordius jouinae	3.000
Prpy	Prionospio pygmaeus	48.000
Rhep	Rhepoxynius epistomus	3.000
Spbo	Spiophanes bombyx	8.000
Spso	Spisula solidissima	1.000
Unir	Unciola irrorata	1.000

DataSummaryBySample

Sample unit: HE-05

Amag	Ameritella agilis	2.000
Amam	Americhelidium americanum	2.000
Amav	Ampelisca abdita/vadurum	1.000
Arca	Aricidea catherinae	1.000
Arwa	Aricidea wassi	1.000
Cahn	Capitellidae spp (Hetero/Noto)	1.000
Cave	Caulleriella venefica	2.000
Cere	Cerebratulus lacteus	1.000
Ecpa	Echinarachnius parma	2.000
Mesp	Megalona sp	1.000
Nepi	Nephtys picta	4.000
Oner	Onuphis eremita	4.000
Prpy	Prionospio pygmaeus	5.000
Prwi	Protohaustorius wigleyi	3.000
Psob	Pseudunciola obliquua	4.000
Rhep	Rhepoxynius epistomus	5.000
Scac	Scoloplos acmeceps	1.000
Spbo	Spiophanes bombyx	2.000
Spso	Spisula solidissima	1.000
Taps	Tanaisius psammophilus	1.000
Unir	Unciola irrorata	3.000

DataSummaryBySample

Sample unit: HE-06

Amag	Ameritella agilis	1.000
Amav	Ampelisca abdita/vadurum	1.000
Asoc	Asabellides oculata	1.000
Cave	Caulleriella venefica	2.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	9.000
Clzo	Clymenella zonalis	2.000
Diso	Dipolydora socialis	1.000
Gyvi	Gyptis vittata	1.000
Nema	Nematoda spp	4.000
Nepi	Nephtys picta	1.000
Olsp	Oligochaeta spp	10.000
Poco	Polydora cornuta	1.000
Pojo	Polygordius jouinae	16.000
Psob	Pseudunciola obliquua	3.000
Rhep	Rhepoxynius epistomus	4.000
Scfr	Scoletoma fragilis	1.000
Spbo	Spiophanes bombyx	2.000
Spso	Spisula solidissima	3.000
Spssp	Spionidae spp juv(Dipoly/Poly)	5.000
Unir	Unciola irrorata	1.000

DataSummaryBySample

Sample unit: HE-07

Amav	Ampelisca abdita/vadurum	5.000
Arca	Aricidea catherinae	1.000
Cigr	Cirriiformia grandis	2.000
CoSp	Corophium sp	11.000
Diso	Dipolydora socialis	1.000
Erbr	Ericthonius brasiliensis	1.000
Gogr	Goniadella gracilis	1.000
Haex	Harmothoe extenuata	10.000
Iltr	Ilyanassa trivittata	1.000
Lisp	Liljeborgia sp	14.000
Nema	Nematoda spp	8.000
Phho	Phoxocephalus holbolli	12.000
Poex	Polycirrus eximius	4.000
Pojo	Polygordius jouinae	3.000
Scte	Scoletoma tenuis	24.000
Spso	Spisula solidissima	1.000
Unir	Unciola irrorata	33.000

DataSummaryBySample

Sample unit: KI-01

Amag	Ameritella agilis	2.000
Arca	Aricidea catherinae	11.000
Asoc	Asabellides oculata	1.000
Baca	Batea catharinensis	1.000
Brwe	Brania wellfleetensis	27.000
Cave	Caulleriella venefica	8.000
Chco	Chiridotea coeca	1.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	263.000
Edtr	Edotia triloba	1.000
Elle	Elasmopus levis	1.000
Eosp	Eobrolgus spinosus	2.000
Exdi	Exogone dispar	4.000
Glso	Glycinde solitaria	3.000
Hapr	Haloclava producta	1.000
Idba	Idunella barnardi	2.000
Leju	Leitoscoloplos spp (juveniles)	1.000
Lesp	Leptosynapta sp	1.000
Lyal	Lysianopsis alba	3.000
Myed	Mytilus edulis (juvenile)	1.000
Near	Neanthes arenaceodentata	54.000
Nema	Nematoda spp	220.000
Nepi	Nephtys picta	3.000
Olsp	Oligochaeta spp	6.000
Oxob	Oxydromus obscurus	2.000
Oxsm	Oxyurostylis smithi	18.000
Pahe	Panopeus herbstii	3.000
Para	Parapionosyllis longicirrata	4.000
Poex	Polycirrus eximius	1.000
Pojo	Polygordius jouinae	6.000
Prhe	Prionospio heterobranchia	3.000
Rasa	Rathbunixa sayana	1.000
Rhep	Rhepoxynius epistomus	10.000
Runa	Rudilemboides naglei	1.000
Scbo	Scolecopsis bousfieldi	10.000
Schi	Schistomeringos rudolphi	2.000
Scte	Scoletoma tenuis	1.000
Sove	Solemya velum	1.000
Star	Streptosyllis arenae	1.000
Stbe	Streblospio benedicti	1.000
Stmi	Stenothoe minuta	1.000
Unir	Unciola irrorata	1.000

DataSummaryBySample
Sample unit: KI-02

Amag	Ameritella agilis	2.000
Ammv	Ampelisca macrocephala/verrili	1.000
Baca	Batea catharinensis	2.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	16.000
Eosp	Eobrolgus spinosus	7.000
Exdi	Exogone dispar	3.000
Liem	Libinia emarginata	2.000
Lyal	Lysianopsis alba	5.000
Near	Neanthes arenaceodentata	5.000
Oxsm	Oxyurostylis smithi	4.000
Phgo	Phascolopsis gouldii	1.000
Pojo	Polygordius jouinae	1.000
Rhep	Rhepoxynius epistomus	20.000
Stmi	Stenothoe minuta	2.000
Unir	Unciola irrorata	6.000

DataSummaryBySample
Sample unit: KI-03

Amag	Ameritella agilis	3.000
Amav	Ampelisca abdita/vadurum	5.000
Ammv	Ampelisca macrocephala/verrili	11.000
Arca	Aricidea catherinae	2.000
Arir	Arabella iricolor	2.000
Baca	Batea catharinensis	10.000
Brwe	Brania wellfleetensis	8.000
Cahn	Capitellidae spp (Hetero/Noto)	14.000
Casp	Capitella spp	13.000
Cave	Caulleriella venefica	8.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	808.000
Clto	Clymenella torquata	5.000
Clzo	Clymenella zonalis	1.000
Elle	Elasmopus levis	1.000
Eosp	Eobrolgus spinosus	7.000
Exdi	Exogone dispar	3.000
Glam	Glycera americana	1.000
Glsm	Globosolembos smithi	4.000
Glso	Glycinde solitaria	5.000
Idba	Idunella barnardi	5.000
Lesp	Leptosynapta sp	1.000
Lyal	Lysianopsis alba	18.000
Misc	Microphthalmus sczelkowi	1.000
Near	Neanthes arenaceodentata	57.000
Nema	Nematoda spp	75.000

Nupr	Nucula proxima	1.000
Oisp	Oligochaeta spp	2.000
Oxob	Oxydromus obscurus	2.000
Oxsm	Oxyurostylis smithi	7.000
Pahe	Panopeus herbstii	1.000
Para	Parapionosyllis longicirrata	1.000
Pate	Paracaprella tenuis	1.000
Phar	Phyllodoce arenae	1.000
Phgo	Phascolopsis gouldii	1.000
Poex	Polycirrus eximius	2.000
Pojo	Polygordius jouinae	6.000
Prco	Proceraea cornuta	2.000
Prhe	Prionospio heterobranchia	12.000
Runa	Rudilemboides naglei	7.000
Scbo	Scoletopsis bousfieldi	3.000
Schi	Schistomeringos rudolphi	1.000
Scte	Scoletoma tenuis	1.000
Sove	Solemya velum	3.000
Spbo	Spiophanes bombyx	2.000
Stbe	Streblospio benedicti	2.000
Turb	Turbellaria sp	5.000
Unir	Unciola irrorata	1.000

DataSummaryBySample

Sample unit: KI-04

Amag	Ameritella agilis	3.000
Aspo	Astrangia poculata	1.000
Brwe	Brania wellfleetensis	1.000
Casp	Capitella spp	1.000
Cave	Caulereriella venefica	5.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	8.000
Hyhe	Hypereteone heteropoda	1.000
Mtab	Microphthalmus aberrans	1.000
Nema	Nematoda spp	10.000
Nepi	Nephtys picta	2.000
Pojo	Polygordius jouinae	4.000
Psob	Pseudunciola obliquua	2.000
Rhep	Rhepoxynius epistomus	3.000
Scbo	Scoletopsis bousfieldi	1.000
Scte	Scoletoma tenuis	1.000
Star	Streptosyllis arenae	7.000

DataSummaryBySample

Sample unit: KI-05

Baca	Batea catharinensis	20.000
Brwe	Brania wellfleetensis	4.000
Cahn	Capitellidae spp (Hetero/Noto)	1.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	25.000
Dein	Deutella incerta	2.000
Eosp	Eobrolgus spinosus	1.000
Glam	Glycera americana	1.000
Iasp	Ianiropsis sp	43.000
Idba	Idunella barnardi	2.000
Lyal	Lysianopsis alba	1.000
Near	Neanthes arenaceodentata	23.000
Oisp	Oligochaeta spp	2.000
Oxsm	Oxyurostylis smithi	2.000
Pojo	Polygordius jouinae	1.000
Rhep	Rhepoxynius epistomus	1.000
Schi	Schistomeringos rudolphi	2.000
Scte	Scoletoma tenuis	2.000
Sove	Solemya velum	12.000
Spbo	Spiophanes bombyx	1.000
Stmi	Stenothoe minuta	1.000

DataSummaryBySample

Sample unit: KI-06

Amav	Ampelisca abdita/vadurum	5.000
Arce	Aricidea cerrutii	1.000
Asoc	Asabellides oculata	1.000
Baca	Batea catharinensis	11.000
Brwe	Brania wellfleetensis	2.000
Cahn	Capitellidae spp (Hetero/Noto)	1.000
Cere	Cerebratulus lacteus	1.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	498.000
Crfo	Crepidula fornicata	1.000
Dein	Deutella incerta	3.000
Diso	Dipolydora socialis	18.000
Dysa	Dyspanopeus sayi	4.000
Elle	Elasmopus levis	32.000
Eosp	Eobrolgus spinosus	17.000
Eusa	Eumida sanguinea	2.000
Exdi	Exogone dispar	2.000
Gyvi	Gyptis vittata	1.000
Hydi	Hydroides dianthus	4.000
Iasp	Ianiropsis sp	6.000

Iltr	Ilyanassa trivittata	1.000
Lesp	Leptosynapta sp	1.000
Lesq	Lepidonotus squamatus	1.000
Lyal	Lysianopsis alba	27.000
Mlan	Microdeutopus anomalus	7.000
Near	Neanthes arenaceodentata	4.000
Nema	Nematoda spp	31.000
Nupr	Nucula proxima	41.000
Olsp	Oligochaeta spp	5.000
Oxsm	Oxyurostylis smithi	3.000
Para	Parapionosyllis longicirrata	4.000
Poco	Polydora cornuta	1.000
Pojo	Polygordius jouinae	7.000
Prco	Proceraea cornuta	1.000
Runa	Rudilemboides naglei	6.000
Sovi	Solen viridis	1.000
Spbo	Spiophanes bombyx	3.000
Stbe	Streblospio benedicti	1.000
Stmi	Stenothoe minuta	4.000
Sygr	Syllis gracilis	1.000
Unir	Unciola irrorata	11.000

DataSummaryBySample
Sample unit: KI-07

Ammv	Ampelisca macrocephala/verrili	2.000
Brwe	Brania wellfleetensis	1.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	2.000
Elle	Elasmopus levis	1.000
Near	Neanthes arenaceodentata	4.000
Nepi	Nephtys picta	1.000
Nupr	Nucula proxima	1.000
Olsp	Oligochaeta spp	1.000
Oxsm	Oxyurostylis smithi	2.000
Pojo	Polygordius jouinae	3.000
Sove	Solemya velum	1.000

DataSummaryBySample
Sample unit: MC-01

Acmi	Acanthohaustorius millsi	1.000
Amag	Ameritella agilis	2.000
Arwa	Aricidea wassi	5.000
Cave	Caulleriella venefica	7.000
Ecpa	Echinarachnius parma	1.000
Mesp	Megalona sp	1.000
Miab	Microphthalmus aberrans	2.000
Nepi	Nephtys picta	2.000
Pojo	Polygordius jouinae	19.000
Psmi	Pseudoleptocuma minus	1.000
Psob	Pseudunciola obliquua	40.000
Rhep	Rhepoxynius epistomus	7.000
Spoc	Spiochaetopterus oculatus	2.000
Spos	Spisula solidissima	2.000
Taps	Tanaissus psammophilus	1.000

DataSummaryBySample
Sample unit: MC-02

Amag	Ameritella agilis	2.000
Amav	Ampelisca abdita/vadurum	18.000
Ammv	Ampelisca macrocephala/verrili	20.000
Antr	Anadara transversa	1.000
Asoc	Asabellides oculata	1.000
Cahn	Capitellidae spp (Hetero/Noto)	1.000
Casp	Capitella spp	1.000
Cave	Caulleriella venefica	1.000
Cere	Cerebratulus lacteus	1.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	2.000
Cizo	Clymenella zonalis	1.000
Dicu	Diopatra cuprea	2.000
Nema	Nematoda spp	6.000
Nepi	Nephtys picta	3.000
Nosp	Notocirrus spinifera	1.000
Olsp	Oligochaeta spp	1.000
Phar	Phyllodoce arenae	1.000
Poex	Polycirrus eximius	1.000
Prpy	Prionospio pygmaeus	44.000
Psob	Pseudunciola obliquua	1.000
Sael	Sabaco elongatus	1.000
Spbo	Spiophanes bombyx	2.000
Spfi	Spio filicornis	1.000
Spoc	Spiochaetopterus oculatus	2.000
Spos	Spisula solidissima	1.000
Spsp	Spionidae spp juv(Dipoly/Poly)	1.000
Unir	Unciola irrorata	1.000

DataSummaryBySample

Sample unit: MC-03

Amag	Ameritella agilis	1.000
Cahn	Capitellidae spp (Hetero/Noto)	1.000
Cave	Caulleriella venefica	1.000
Glam	Glycera americana	2.000
Nema	Nematoda spp	2.000
Poco	Polydora cornuta	3.000
Prpy	Prionospio pygmaeus	1.000
Rhep	Rhepoxynius epistomus	1.000
Spbo	Spiophanes bombyx	1.000
Spoc	Spiochaetopterus oculatus	4.000
Unir	Unciola irrorata	1.000

DataSummaryBySample

Sample unit: MC-04

Amag	Ameritella agilis	2.000
Amam	Americhelidium americanum	1.000
Ammv	Ampelisca macrocephala/verrili	41.000
Arwa	Aricidea wassi	1.000
Asoc	Asabellides oculata	1.000
Cahn	Capitellidae spp (Hetero/Noto)	10.000
Cave	Caulleriella venefica	1.000
Cere	Cerebratulus lacteus	1.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	3.000
Eosp	Eobrolgus spinosus	1.000
Glam	Glycera americana	1.000
Nepi	Nephtys picta	6.000
Olsp	Oligochaeta spp	2.000
Poco	Polydora cornuta	9.000
Prpy	Prionospio pygmaeus	18.000
Sovi	Solen viridis	1.000
Spbo	Spiophanes bombyx	2.000
Spssp	Spionidae spp juv(Dipoly/Poly)	3.000
Trca	Travisia carnea	1.000
Unir	Unciola irrorata	3.000

DataSummaryBySample

Sample unit: MC-05

Amav	Ampelisca abdita/vadurum	3.000
Arca	Aricidea catherinae	3.000
Asca	Astarte castanea	1.000
Asoc	Asabellides oculata	1.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	3.000
Gldi	Glycera dibranchiata	3.000
Leju	Leitoscoloplos spp (juveniles)	1.000
Misc	Microphthalmus szcelkowi	1.000
Nema	Nematoda spp	14.000
Olsp	Oligochaeta spp	2.000
Poco	Polydora cornuta	5.000
Pojo	Polygordius jouinae	17.000
Prpy	Prionospio pygmaeus	1.000
Scte	Scoletoma tenuis	3.000
Unir	Unciola irrorata	3.000

DataSummaryBySample

Sample unit: MC-06

Agci	Aglaophamus circinata	3.000
Amag	Ameritella agilis	3.000
Ammv	Ampelisca macrocephala/verrili	1.000
Cahn	Capitellidae spp (Hetero/Noto)	1.000
Cave	Caulleriella venefica	2.000
Cere	Cerebratulus lacteus	1.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	1.000
Nema	Nematoda spp	3.000
Nepi	Nephtys picta	4.000
Olsp	Oligochaeta spp	5.000
Pojo	Polygordius jouinae	5.000
Prwi	Protohaustorius wigleyi	15.000
Psmi	Pseudoleptocuma minus	6.000
Psob	Pseudunciola obliqua	9.000
Rhep	Rhepoxynius epistomus	7.000
Sovi	Solen viridis	1.000
Spbo	Spiophanes bombyx	3.000
Spso	Spisula solidissima	1.000

DataSummaryBySample

Sample unit: MC-07

Amag	Ameritella agilis	2.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	1.000
Masp	Maldanidae spp (juveniles)	2.000
Poco	Polydora cornuta	5.000
Poex	Polycirrus eximius	4.000
Pojo	Polygordius jouinae	3.000

Spbo Spiophanes bombyx 1.000

DataSummaryBySample
Sample unit: MC-08

Cahn	Capitellidae spp (Hetero/Noto)	1.000
Cave	Caulleleriella venefica	1.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	1.000
Erer	Erinaceusyllis erinaceus	1.000
Gogr	Goniadella gracilis	1.000
Nepi	Nepthys picta	1.000
Paly	Paradoneis lyra	2.000
Pojo	Polygordius jouinae	6.000
Psmi	Pseudoleptocuma minus	1.000
Psob	Pseudunciola obliquua	5.000
Scin	Scalibregma inflatum	1.000
Sovi	Solen viridis	1.000
Spso	Spisula solidissima	2.000

DataSummaryBySample
Sample unit: MC-09

Amag	Ameritella agilis	2.000
Amav	Ampelisca abdita/vadurum	1.000
Ammv	Ampelisca macrocephala/verrili	4.000
Arwa	Aricidea wassi	4.000
Cahn	Capitellidae spp (Hetero/Noto)	2.000
Casp	Capitella spp	1.000
Cave	Caulleleriella venefica	1.000
Cere	Cerebratulus lacteus	1.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	1.000
Nema	Nematoda spp	5.000
Nepi	Nepthys picta	5.000
Nosp	Notocirrus spinifera	1.000
Olsp	Oligochaeta spp	2.000
Poco	Polydora cornuta	1.000
Pojo	Polygordius jouinae	3.000
Prpy	Prionospio pygmaeus	1.000
Prwi	Protohaustorius wigleyi	2.000
Rhep	Rhepoxynius epistomus	1.000
Sovi	Solen viridis	1.000
Spbo	Spiophanes bombyx	7.000
Spoc	Spiochaetopterus oculatus	3.000
Spso	Spisula solidissima	1.000
Unsp	Unciola dissimilis/serrata	1.000

DataSummaryBySample
Sample unit: MC-10

Amag	Ameritella agilis	8.000
Amav	Ampelisca abdita/vadurum	1.000
Ammv	Ampelisca macrocephala/verrili	2.000
Cahn	Capitellidae spp (Hetero/Noto)	1.000
Cere	Cerebratulus lacteus	1.000
Cigr	Cirriiformia grandis	1.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	1.000
Nepi	Nepthys picta	6.000
Olsp	Oligochaeta spp	1.000
Poco	Polydora cornuta	1.000
Prpy	Prionospio pygmaeus	1.000
Sovi	Solen viridis	1.000
Spbo	Spiophanes bombyx	3.000
Unir	Unciola irrorata	1.000

DataSummaryBySample
Sample unit: MC-11

Amag	Ameritella agilis	5.000
Amam	Americhelidium americanum	1.000
Ammv	Ampelisca macrocephala/verrili	20.000
Angr	Ancistrosyllis groenlandica	1.000
Cere	Cerebratulus lacteus	1.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	1.000
Ecpa	Echinarachnius parma	1.000
Iltr	Ilyanassa trivittata	1.000
Nepi	Nepthys picta	5.000
Nmrt	Nemertinea spp(+juv. lacteus)	1.000
Olsp	Oligochaeta spp	1.000
Phar	Phyllodoce arenae	1.000
Pojo	Polygordius jouinae	2.000
Prpy	Prionospio pygmaeus	3.000
Prwi	Protohaustorius wigleyi	13.000
Psmi	Pseudoleptocuma minus	3.000
Rhep	Rhepoxynius epistomus	4.000
Sovi	Solen viridis	3.000
Spbo	Spiophanes bombyx	6.000
Spso	Spisula solidissima	1.000
SpSP	Spionidae spp juv(Dipoly/Poly)	1.000

Unir	Unciola irrorata	1.000
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DataSummaryBySample
Sample unit: MC-12

Arca	Aricidea catherinae	1.000
Basp	Balanus sp	1.000
Brwe	Brania wellfleetensis	1.000
Cair	Cancer irroratus	1.000
Cave	Caulleriella venefica	2.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	1.000
Cosp	Corophium sp	1.000
Exdi	Exogone dispar	4.000
Kupl	Kurtiella planulata	1.000
Misc	Microphthalmus sczelkowi	1.000
Nema	Nematoda spp	9.000
Nmrt	Nemertinea spp(+juvc. lacteus)	1.000
Olsp	Oligochaeta spp	64.000
Pafu	Paraonis fulgens	1.000
Palo	Pagurus longicarpus	1.000
Poex	Polycirrus eximius	6.000
Pojo	Polygordius jouinae	12.000
Psmi	Pseudoleptocuma minus	2.000
Psob	Pseudunciola obliqua	471.000
Rhep	Rhepoxynius epistomus	4.000
Sps0	Spisula solidissima	1.000
Star	Streptosyllis arenae	14.000
Sylo	Syllides longocirratu	3.000
Unir	Unciola irrorata	1.000

DataSummaryBySample
Sample unit: MC-13

Amag	Ameritella agilis	7.000
Amav	Ampelisca abdita/vadurum	2.000
Ammv	Ampelisca macrocephala/verrili	1.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	1.000
Erbr	Ericthonius brasiliensis	1.000
Iltr	Ilyanassa trivittata	1.000
Nepi	Nephtys picta	1.000
Prpy	Prionospio pygmaeus	1.000
Prwi	Protohaustorius wigleyi	3.000
Psmi	Pseudoleptocuma minus	1.000
Rhep	Rhepoxynius epistomus	1.000
Sovi	Solen viridis	4.000
Spbo	Spiophanes bombyx	1.000
Spfi	Spio filicornis	1.000
Spoc	Spiochaetopterus oculatus	1.000

DataSummaryBySample
Sample unit: MC-14

Amav	Ampelisca abdita/vadurum	1.000
Angr	Ancistrosyllis groenlandica	5.000
Arca	Aricidea catherinae	1.000
Brwe	Brania wellfleetensis	2.000
Cave	Caulleriella venefica	1.000
Chco	Chiridotea coeca	2.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	3.000
Cosp	Corophium sp	2.000
Erer	Erinaceusyllis erinaceus	3.000
Gogr	Goniadella gracilis	11.000
Kupl	Kurtiella planulata	3.000
Nema	Nematoda spp	81.000
Nmrt	Nemertinea spp(+juvc. lacteus)	1.000
Nute	Nucula tenuis	2.000
Olsp	Oligochaeta spp	63.000
Paly	Paradoneis lyra	83.000
Para	Parapionosyllis longicirrata	15.000
Pesp	Pettiboneia sp	1.000
Pisp	Pisione sp	2.000
Poco	Polydora cornuta	1.000
Poex	Polycirrus eximius	13.000
Pojo	Polygordius jouinae	4.000
Psmi	Pseudoleptocuma minus	1.000
Scte	Scoletoma tenuis	1.000
Sovi	Solen viridis	1.000
Spfi	Spio filicornis	1.000
Sps0	Spisula solidissima	1.000
Star	Streptosyllis arenae	1.000
Sylo	Syllides longocirratu	3.000
Trca	Travisia carnea	8.000
Unir	Unciola irrorata	2.000

DataSummaryBySample
Sample unit: MO-01

Amag	Ameritella agilis	1.000
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Brwe	<i>Brania wellfleetensis</i>	1.000
Cave	<i>Caulleirella venefica</i>	1.000
Cere	<i>Cerebratulus lacteus</i>	2.000
Chtu	<i>Chiridotea tuftsi</i>	1.000
Exdi	<i>Exogone dispar</i>	1.000
Lero	<i>Leitoscoloplos robustus</i>	1.000
Masp	<i>Malidanidae</i> spp (juveniles)	1.000
Mesp	<i>Megalona</i> sp	1.000
Nema	<i>Nematoda</i> spp	1.000
Nepi	<i>Nephtys picta</i>	2.000
Pojo	<i>Polygordius jouinae</i>	6.000
Prwi	<i>Protohaustorius wigleyi</i>	3.000
Psob	<i>Pseudunciola obliquua</i>	7.000
Siar	<i>Sigalion arenicola</i>	1.000
Spsa	<i>Spisula solidissima</i>	1.000
Taps	<i>Tanaissus psammophilus</i>	2.000

DataSummaryBySample
Sample unit: MO-02

Amag	<i>Ameritella agilis</i>	1.000
Arwa	<i>Aricidea wassi</i>	2.000
Mesp	<i>Megalona</i> sp	1.000
Nepi	<i>Nephtys picta</i>	5.000
Pojo	<i>Polygordius jouinae</i>	1.000
Prwi	<i>Protohaustorius wigleyi</i>	5.000
Psob	<i>Pseudunciola obliquua</i>	12.000
Spbo	<i>Spiophanes bombyx</i>	2.000

DataSummaryBySample
Sample unit: MO-03

Amag	<i>Ameritella agilis</i>	2.000
Casp	<i>Capitella</i> spp	1.000
Ecpa	<i>Echinarachnius parma</i>	3.000
Glam	<i>Glycera americana</i>	1.000
Nema	<i>Nematoda</i> spp	2.000
Pojo	<i>Polygordius jouinae</i>	2.000
Rhep	<i>Rhepoxynius epistomus</i>	3.000

DataSummaryBySample
Sample unit: MO-04

Amag	<i>Ameritella agilis</i>	1.000
Arca	<i>Aricidea catherinae</i>	1.000
Ecpa	<i>Echinarachnius parma</i>	5.000
Palo	<i>Pagurus longicarpus</i>	1.000
Pojo	<i>Polygordius jouinae</i>	6.000
Psob	<i>Pseudunciola obliquua</i>	3.000

DataSummaryBySample
Sample unit: MO-05

Amag	<i>Ameritella agilis</i>	1.000
Amav	<i>Ampelisca abdita/vadurum</i>	1.000
Cere	<i>Cerebratulus lacteus</i>	1.000
Crpl	<i>Crepidula plana</i>	1.000
Ecpa	<i>Echinarachnius parma</i>	1.000
Exdi	<i>Exogone dispar</i>	2.000
Mesp	<i>Megalona</i> sp	1.000
Nema	<i>Nematoda</i> spp	30.000
Nepi	<i>Nephtys picta</i>	4.000
Nosp	<i>Notocirrus spinifera</i>	1.000
Olsp	<i>Oligochaeta</i> spp	11.000
Pojo	<i>Polygordius jouinae</i>	80.000
Popo	<i>Politolana polita</i>	1.000
Prwi	<i>Protohaustorius wigleyi</i>	1.000
Psmi	<i>Pseudoleptocuma minus</i>	1.000
Psob	<i>Pseudunciola obliquua</i>	2.000
Scac	<i>Scoloplos acmeceps</i>	1.000
Scru	<i>Scoloplos rubra</i>	2.000
Siar	<i>Sigalion arenicola</i>	1.000
Sylo	<i>Syllides longocirratu</i> s	4.000
Taps	<i>Tanaissus psammophilus</i>	1.000

DataSummaryBySample
Sample unit: MO-06

Acmi	<i>Acanthohaustorius millsi</i>	1.000
Amag	<i>Ameritella agilis</i>	1.000
Cave	<i>Caulleirella venefica</i>	2.000
Ecpa	<i>Echinarachnius parma</i>	3.000
Mesp	<i>Megalona</i> sp	1.000
Pojo	<i>Polygordius jouinae</i>	4.000
Prwi	<i>Protohaustorius wigleyi</i>	4.000
Rhep	<i>Rhepoxynius epistomus</i>	1.000
Spbo	<i>Spiophanes bombyx</i>	1.000

Spso Spisula solidissima 1.000

DataSummaryBySample
Sample unit: MO-07

Amam Americhelidium americanum 1.000
Ecpa Echinarachnius parma 2.000
Nema Nematoda spp 4.000
Pojo Polygordius jouinae 4.000
Prwi Protohaustorius wigleyi 1.000
Psob Pseudunciola obliquua 1.000

DataSummaryBySample
Sample unit: MO-08

Cahn Capitellidae spp (Hetero/Noto) 3.000
Ecpa Echinarachnius parma 3.000
Nepi Nephtys picta 1.000
Pojo Polygordius jouinae 2.000
Prwi Protohaustorius wigleyi 1.000
Rhep Rhepoxynius epistomus 1.000

DataSummaryBySample
Sample unit: MO-09

Hyla Hypereteone lactea 1.000
Leju Leitoscoloplos spp (juveniles) 1.000
Pojo Polygordius jouinae 1.000
Spbo Spiophanes bombyx 22.000
Unir Unciola irrorata 1.000

DataSummaryBySample
Sample unit: MO-10

Amag Ameritella agilis 4.000
Arwa Aricidea wassi 3.000
Cahn Capitellidae spp (Hetero/Noto) 3.000
Cave Caulleriella venefica 4.000
Disc Diastylis sculpta 1.000
Ecpa Echinarachnius parma 1.000
Nepi Nephtys picta 2.000
Palo Pagurus longicarpus 1.000
Pojo Polygordius jouinae 3.000
Star Sigalion arenicola 1.000
Spso Spisula solidissima 2.000

DataSummaryBySample
Sample unit: MO-11

Cahn Capitellidae spp (Hetero/Noto) 1.000
Nema Nematoda spp 46.000
Nepi Nephtys picta 4.000
Olsp Oligochaeta spp 4.000
Pojo Polygordius jouinae 14.000
Sovi Solen viridis 1.000
Spbo Spiophanes bombyx 1.000

DataSummaryBySample
Sample unit: MO-12

Amam Americhelidium americanum 1.000
Cave Caulleriella venefica 1.000
Cere Cerebratulus lacteus 1.000
Drlo Drilonereis longa 1.000
Ecpa Echinarachnius parma 3.000
Nepi Nephtys picta 1.000
Nupr Nucula proxima 1.000
Olsp Oligochaeta spp 2.000
Pojo Polygordius jouinae 3.000
Prwi Protohaustorius wigleyi 4.000
Psob Pseudunciola obliquua 1.000
Star Sigalion arenicola 1.000
Taps Tanaissus psammophilus 1.000

DataSummaryBySample
Sample unit: MO-13

Arwa Aricidea wassi 2.000
Asoc Asabellides oculata 1.000
Cahn Capitellidae spp (Hetero/Noto) 1.000
Cere Cerebratulus lacteus 1.000
Ecpa Echinarachnius parma 1.000
Edtr Edotia triloba 1.000
Leju Leitoscoloplos spp (juveniles) 1.000
Nema Nematoda spp 18.000

Nepi	Nephtys picta	3.000
O1sp	Oligochaeta spp	18.000
Pojo	Polygordius jouinae	35.000
Prwi	Protohaustorius wigleyi	1.000
Psob	Pseudunciola obliqua	2.000
Spoc	Spiochaetopterus oculatus	1.000
Spso	Spisula solidissima	1.000

DataSummaryBySample
Sample unit: MO-14

Cave	Caulleriella venefica	2.000
Crse	Crangon septemspinosa	1.000
Misc	Microphthalmus sczelkowi	1.000
Nepi	Nephtys picta	1.000
O1sp	Oligochaeta spp	7.000
Pafu	Paraonis fulgens	1.000
Pojo	Polygordius jouinae	31.000
Psmi	Pseudoleptocuma minus	1.000
Psob	Pseudunciola obliqua	37.000
Rhep	Rhepoxynius epistomus	1.000
Star	Streptosyllis arenae	2.000

DataSummaryBySample
Sample unit: RO-01

Amag	Ameritella agilis	1.000
Amam	Americhelidium americanum	1.000
Ammv	Ampelisca macrocephala/verrili	24.000
Arca	Aricidea catherinae	4.000
Arwa	Aricidea wassi	1.000
Cahn	Capitellidae spp (Hetero/Noto)	1.000
Cave	Caulleriella venefica	9.000
Cere	Cerebratulus lacteus	2.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	2.000
Nepi	Nephtys picta	5.000
O1sp	Oligochaeta spp	1.000
Oner	Onuphis eremita	4.000
Pojo	Polygordius jouinae	1.000
Prwi	Protohaustorius wigleyi	5.000
Spbo	Spiophanes bombyx	3.000
Spoc	Spiochaetopterus oculatus	6.000
Spso	Spisula solidissima	2.000

DataSummaryBySample
Sample unit: RO-02

Ammv	Ampelisca macrocephala/verrili	11.000
Arca	Aricidea catherinae	5.000
Cahn	Capitellidae spp (Hetero/Noto)	3.000
Cave	Caulleriella venefica	5.000
Leju	Leitoscoloplos spp (juveniles)	1.000
Masp	Maldanidae spp (juveniles)	1.000
Near	Neanthes arenaceodentata	1.000
Nepi	Nephtys picta	4.000
O1sp	Oligochaeta spp	6.000
Oxsm	Oxyurostylis smithi	1.000
Phar	Phyllodoce arenae	1.000
Pojo	Polygordius jouinae	3.000
Prwi	Protohaustorius wigleyi	5.000
Siar	Sigalion arenicola	1.000
Sovi	Solen viridis	1.000
Spbo	Spiophanes bombyx	3.000
Spoc	Spiochaetopterus oculatus	2.000
Spso	Spisula solidissima	2.000
Unir	Uniola irrorata	1.000

DataSummaryBySample
Sample unit: RO-03

Amag	Ameritella agilis	2.000
Amam	Americhelidium americanum	2.000
Ammv	Ampelisca macrocephala/verrili	27.000
Arca	Aricidea catherinae	3.000
Nepi	Nephtys picta	3.000
Onop	Onuphis opalina	2.000
Paar	Pagurus arcuatus	5.000
Phar	Phyllodoce arenae	1.000
Pimo	Pitar morrhuanus	2.000
Pojo	Polygordius jouinae	2.000
Prwi	Protohaustorius wigleyi	8.000
Spoc	Spiochaetopterus oculatus	4.000
Spso	Spisula solidissima	6.000
Unir	Uniola irrorata	3.000

DataSummaryBySample
Sample unit: RO-04

Amag	Ameritella agilis	1.000
Amam	Americhelidium americanum	1.000
Ammv	Ampelisca macrocephala/verrili	10.000
Cave	Caulleriella venefica	1.000
Iasp	Ianiropsis sp	1.000
Mosp	Monoculodes sp	1.000
Nepi	Nepthys picta	3.000
Prwi	Protohaustorius wigleyi	13.000
Spbo	Spiophanes bombyx	1.000
Spoc	Spiochaetopterus oculatus	2.000
Spso	Spisula solidissima	2.000

DataSummaryBySample
Sample unit: RO-05

Amag	Ameritella agilis	1.000
Ammv	Ampelisca macrocephala/verrili	1.000
Leju	Leitoscoloplos spp (juveniles)	1.000
Nema	Nematoda spp	1.000
Nepi	Nepthys picta	1.000
Poco	Polydora cornuta	2.000
Prwi	Protohaustorius wigleyi	1.000
Unir	Unciola irrorata	1.000

DataSummaryBySample
Sample unit: RO-06

Amam	Americhelidium americanum	1.000
Ammv	Ampelisca macrocephala/verrili	1.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	1.000
Leju	Leitoscoloplos spp (juveniles)	1.000
Nepi	Nepthys picta	2.000
Pojo	Polygordius jouinae	1.000
Psmi	Pseudoleptocuma minus	1.000
Spso	Spisula solidissima	2.000

DataSummaryBySample
Sample unit: RO-07

Amag	Ameritella agilis	5.000
Ammv	Ampelisca macrocephala/verrili	57.000
Arca	Aricidea catherinae	2.000
Asoc	Asabellides oculata	1.000
Cahn	Capitellidae spp (Hetero/Noto)	1.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	1.000
Mesp	Megalona sp	2.000
Nepi	Nepthys picta	3.000
Oner	Onuphis eremita	1.000
Paan	Pagurus annulipes	1.000
Paar	Pagurus arcuatus	1.000
Prpy	Prionospio pygmaeus	1.000
Sovi	Solen viridis	1.000
Spbo	Spiophanes bombyx	1.000
Spoc	Spiochaetopterus oculatus	2.000
Spso	Spisula solidissima	8.000

DataSummaryBySample
Sample unit: SF-01

Amag	Ameritella agilis	1.000
Amav	Ampelisca abdita/vadurum	1.000
Arca	Aricidea catherinae	1.000
Arwa	Aricidea wassi	2.000
Byse	Byblis serrata	5.000
Cahn	Capitellidae spp (Hetero/Noto)	1.000
Cair	Cancer irroratus	1.000
Cave	Caulleriella venefica	14.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	3.000
Ecpa	Echinarachnius parma	1.000
Erbr	Erichthonius brasiliensis	2.000
Exdi	Exogone dispar	4.000
Glam	Glycera americana	1.000
Gogr	Goniadella gracilis	7.000
Moma	Molgula manhattensis	1.000
Nepi	Nepthys picta	8.000
Olsp	Oligochaeta spp	22.000
Pojo	Polygordius jouinae	640.000
Popo	Politolana polita	20.000
Psmi	Pseudoleptocuma minus	1.000
Psob	Pseudunciola obliquua	7.000
Rhep	Rhepoxynius epistomus	3.000
Scfr	Scoletoma fragilis	2.000
Siar	Sigalion arenicola	1.000
Spbo	Spiophanes bombyx	2.000
Spso	Spisula solidissima	6.000
Star	Streptosyllis arenae	2.000
Sylo	Syllides longocirratus	1.000

Unir Uncia irrorata 1.000

DataSummaryBySample
Sample unit: SF-02

Amav	Ampelisca abdita/vadurum	1.000
Arca	Aricidea catherinae	1.000
Arwa	Aricidea wassi	2.000
Cave	Caulleriella venefica	9.000
Cere	Cerebratulus lacteus	1.000
Chco	Chiridotea coeca	1.000
Exdi	Exogone dispar	1.000
Gogr	Goniadella gracilis	1.000
Hise	Hippomedon serratus	1.000
Nepi	Nephtys picta	2.000
Pojo	Polygordius jouinae	8.000
Psmi	Pseudoleptocuma minus	3.000
Rhep	Rhepoxynius epistomus	8.000
Scfr	Scoletoma fragilis	1.000
Spbo	Spiophanes bombyx	1.000
Unir	Uncia irrorata	1.000

DataSummaryBySample
Sample unit: SF-03

Amar	Ampharete arctica	2.000
Arca	Aricidea catherinae	2.000
Arwa	Aricidea wassi	1.000
Asca	Astarte castanea	2.000
ASOC	Asabellides oculata	2.000
Brwe	Brania wellfleetensis	2.000
Byse	Byblis serrata	2.000
Cair	Cancer irroratus	1.000
Cave	Caulleriella venefica	17.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	33.000
Clzo	Clymenella zonalis	1.000
Ecpa	Echinarachnius parma	7.000
Exdi	Exogone dispar	5.000
Gogr	Goniadella gracilis	13.000
Haex	Harmothoe extenuata	1.000
Hefo	Heteromysis formosa	1.000
Mesp	Megalona sp	1.000
Nema	Nematoda spp	86.000
Nepi	Nephtys picta	4.000
Nmrt	Nemertinea spp(+juvc. lacteus)	2.000
Nupr	Nucula proxima	1.000
Olsp	Oligochaeta spp	18.000
Paca	Parougia caeca	2.000
Pafu	Paraonis fulgens	1.000
Pojo	Polygordius jouinae	251.000
Prwi	Protohaustorius wigleyi	1.000
Psob	Pseuduncia obliqua	1.000
Rhep	Rhepoxynius epistomus	4.000
Spbo	Spiophanes bombyx	2.000
Spmi	Sphaerodoridium minutum	1.000
Spso	Spisula solidissima	2.000
Star	Streptosyllis arenae	4.000
Unir	Uncia irrorata	1.000

DataSummaryBySample
Sample unit: SF-04

Cave	Caulleriella venefica	4.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	3.000
Ecpa	Echinarachnius parma	4.000
Exdi	Exogone dispar	1.000
Iltr	Ilyanassa trivittata	1.000
Masp	Maldanidae spp (juveniles)	1.000
Mesp	Megalona sp	1.000
Nebu	Nephtys bucera	2.000
Nema	Nematoda spp	2.000
Nepi	Nephtys picta	3.000
Olsp	Oligochaeta spp	1.000
Pojo	Polygordius jouinae	183.000
Popo	Politolana polita	1.000
Scfr	Scoletoma fragilis	2.000
Siar	Sigalion arenicola	2.000
Taps	Tanaissus psammophilus	1.000

DataSummaryBySample
Sample unit: SF-05

Amag	Ameritella agilis	1.000
Arwa	Aricidea wassi	7.000
Cave	Caulleriella venefica	1.000
Glam	Glycera americana	1.000
Nepi	Nephtys picta	4.000
Olsp	Oligochaeta spp	4.000

Onop	Onuphis opalina	1.000
Pojo	Polygordius jouinae	11.000
Prwi	Protohaustorius wigleyi	11.000
Psmi	Pseudoleptocuma minus	1.000
Rhep	Rhepoxynius epistomus	3.000
Scfr	Scoletoma fragilis	1.000
Spbo	Spiophanes bombyx	2.000
Spoc	Spiochaetopterus oculatus	1.000
Sps0	Spisula solidissima	1.000
Trca	Travisia carnea	1.000
Unir	Unciola irrorata	2.000

DataSummaryBySample
Sample unit: SF-06

Arca	Aricidea catherinae	2.000
Arwa	Aricidea wassi	2.000
Asca	Astarte castanea	3.000
Byse	Byblis serrata	5.000
Cahn	Capitellidae spp (Hetero/Noto)	1.000
Casp	Capitella spp	1.000
Cave	Caulleriella venefica	1.000
Cere	Cerebratulus lacteus	2.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	1.000
Clzo	Clymenella zonalis	1.000
Ecpa	Echinarachnius parma	3.000
Edtr	Edotia triloba	1.000
Exdi	Exogone dispar	2.000
Gogr	Goniadella gracilis	1.000
Iltr	Ilyanassa trivittata	1.000
Mesp	Megalona sp	2.000
Nema	Nematoda spp	26.000
Nepi	Nephtys picta	5.000
Nupr	Nucula proxima	1.000
Olsp	Oligochaeta spp	5.000
Paca	Parougia caeca	1.000
Phho	Phoxocephalus holbolli	1.000
Pojo	Polygordius jouinae	75.000
Prpy	Prionospio pygmaeus	1.000
Psmi	Pseudoleptocuma minus	1.000
Psob	Pseudunciola obliquua	2.000
Rhep	Rhepoxynius epistomus	4.000
Spbo	Spiophanes bombyx	2.000
Sps0	Spisula solidissima	8.000
Star	Streptosyllis arenae	10.000
Stva	Streptosyllis varians	2.000
Sylo	Syllides longocirratu	1.000
Taps	Tanaissus psammophilus	1.000
Unir	Unciola irrorata	1.000

DataSummaryBySample
Sample unit: SF-07

Amag	Ameritella agilis	1.000
Arca	Aricidea catherinae	4.000
Asoc	Asabellides oculata	1.000
Cahn	Capitellidae spp (Hetero/Noto)	2.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	3.000
Ecpa	Echinarachnius parma	11.000
Legr	Levinsenia gracilis	1.000
Leju	Leitoscoloplos spp (juveniles)	2.000
Masp	Maldanidae spp (juveniles)	2.000
Nema	Nematoda spp	2.000
Oxsm	Oxyurostylis smithi	1.000
Pojo	Polygordius jouinae	9.000
Psob	Pseudunciola obliquua	1.000
Scfr	Scoletoma fragilis	1.000
Scin	Scalibregma inflatum	1.000
Scte	Scoletoma tenuis	1.000
Turb	Turbellaria sp	1.000

DataSummaryBySample
Sample unit: SF-08

Amag	Ameritella agilis	2.000
Amam	Americhelidium americanum	1.000
Amav	Ampelisca abdita/vadurum	2.000
Arwa	Aricidea wassi	1.000
Byse	Byblis serrata	12.000
Cahn	Capitellidae spp (Hetero/Noto)	1.000
Cave	Caulleriella venefica	10.000
Chtu	Chiridotea tuftsi	1.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	7.000
Ecpa	Echinarachnius parma	4.000
Exdi	Exogone dispar	11.000
Hise	Hippomedon serratus	2.000
Neam	Neomysis americana	1.000
Nema	Nematoda spp	60.000
Nepi	Nephtys picta	4.000

Nupr	Nucula proxima	1.000
Oisp	Oligochaeta spp	19.000
Palo	Pagurus longicarpus	1.000
Pojo	Polygordius jouinae	488.000
Rhep	Rhepoxynius epistomus	2.000
Runa	Rudilemboides naglei	1.000
Scin	Scalibregma inflatum	7.000
Spbo	Spiophanes bombyx	1.000
Spso	Spisula solidissima	1.000
Star	Streptosyllis arenae	3.000
Sylo	Syllides longocirratu	3.000

DataSummaryBySample
Sample unit: SF-09

Amav	Ampelisca abdita/vadurum	11.000
Arca	Aricidea catherinae	1.000
Arwa	Aricidea wassi	1.000
Byse	Byblis serrata	1.000
Cahn	Capitellidae spp (Hetero/Noto)	2.000
Cair	Cancer irroratus	1.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	15.000
Drlo	Drilonereis longa	1.000
Ecpa	Echinarachnius parma	1.000
Glam	Glycera americana	1.000
Haex	Harmothoe extenuata	3.000
Iltr	Ilyanassa trivittata	6.000
Lepi	Leptocheirus pinguis	5.000
Masp	Maldanidae spp (juveniles)	1.000
Nein	Nephtys incisa	5.000
Nema	Nematoda spp	1.000
Nini	Ninoe nigripes	2.000
Nosp	Notocirrus spinifera	2.000
Nupr	Nucula proxima	1.000
Oisp	Oligochaeta spp	3.000
Paca	Parougia caeca	1.000
Phho	Phoxocephalus holbolli	1.000
Pojo	Polygordius jouinae	1.000
Scfr	Scoletoma fragilis	3.000
Sche	Scoletoma hebes	3.000
Spso	Spisula solidissima	2.000
Syco	Syllis cornuta	1.000
Unir	Unciola irrorata	8.000

DataSummaryBySample
Sample unit: SF-10

Agve	Aglaophamus verrilli	1.000
Amag	Ameritella agilis	3.000
Amav	Ampelisca abdita/vadurum	3.000
Amph	Amphibalanus amphitrite	1.000
Arca	Aricidea catherinae	1.000
Arwa	Aricidea wassi	3.000
Asoc	Asabellides oculata	1.000
Byse	Byblis serrata	2.000
Cahn	Capitellidae spp (Hetero/Noto)	3.000
Cere	Cerebratulus lacteus	1.000
Dypo	Dyopodos porrectus	1.000
Elle	Elasmopus levis	2.000
Gogr	Goniadella gracilis	2.000
Haex	Harmothoe extenuata	2.000
Leju	Leitoscoloplos spp (juveniles)	1.000
Nema	Nematoda spp	1.000
Nepi	Nephtys picta	9.000
Nupr	Nucula proxima	1.000
Pesp	Pettiboneia sp	1.000
Phmi	Pholoe minuta	1.000
Pojo	Polygordius jouinae	54.000
Rhep	Rhepoxynius epistomus	1.000
Scfr	Scoletoma fragilis	4.000
Scin	Scalibregma inflatum	4.000
Siar	Sigalion arenicola	1.000
Spbo	Spiophanes bombyx	1.000
Spmi	Sphaerodoridium minutum	1.000
Spso	Spisula solidissima	2.000

DataSummaryBySample
Sample unit: SF-11

Agve	Aglaophamus verrilli	1.000
Amag	Ameritella agilis	1.000
Amav	Ampelisca abdita/vadurum	1.000
Arca	Aricidea catherinae	1.000
Asoc	Asabellides oculata	1.000
Byse	Byblis serrata	3.000
Cave	Caulleriella venefica	1.000
Cere	Cerebratulus lacteus	1.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	2.000
Eosp	Eobrolgus spinosus	1.000

Leju	Leitoscoloplos spp (juveniles)	2.000
Nein	Nephtys incisa	1.000
Nepi	Nephtys picta	3.000
Olsp	Oligochaeta spp	27.000
Paar	Pagurus arcuatus	2.000
Pojo	Polygordius jouinae	15.000
Prwi	Protohaustorius wigleyi	1.000
Psmi	Pseudoleptocuma minus	1.000
Rhep	Rhepoxynius epistomus	1.000
Scfr	Scoletoma fragilis	1.000
Scin	Scalibregma inflatum	2.000
Siar	Sigalion arenicola	1.000
Spss	Spionidae spp juv(Dipoly/Poly)	2.000

DataSummaryBySample
sample unit: SF-12

Agci	Aglaophamus circinata	1.000
Arca	Aricidea catherinae	3.000
Arwa	Aricidea wassi	1.000
Byse	Byblis serrata	1.000
Cair	Cancer irroratus	1.000
Cave	Caulleriella venefica	6.000
Cere	Cerebratulus lacteus	1.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	28.000
Exdi	Exogone dispar	1.000
Gogr	Goniadella gracilis	12.000
Nema	Nematoda spp	92.000
Nepi	Nephtys picta	4.000
Nupr	Nucula proxima	2.000
Olsp	Oligochaeta spp	5.000
Paca	Parougia caeca	1.000
Palo	Pagurus longicarpus	3.000
Phho	Phoxocephalus holbolli	2.000
Pojo	Polygordius jouinae	446.000
Psob	Pseudunciola obliquua	1.000
Scfr	Scoletoma fragilis	10.000
Sche	Scoletoma hebes	1.000
Spso	Spisula solidissima	2.000
Sylo	Syllides longocirratu	1.000
Unir	Unciola irrorata	1.000

DataSummaryBySample
sample unit: SF-13

Amav	Ampelisca abdita/vadurum	81.000
Arca	Aricidea catherinae	6.000
Asoc	Asabellides oculata	1.000
Baca	Batea catharinensis	1.000
Cahn	Capitellidae spp (Hetero/Noto)	1.000
Cave	Caulleriella venefica	4.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	301.000
Clzo	Clymenella zonalis	4.000
Drlo	Drilonereis longa	1.000
Glam	Glycera americana	1.000
Haex	Harmothoe extenuata	12.000
Lepi	Leptocheirus pinguis	30.000
Lesq	Lepidonotus squamatus	1.000
Mudi	Musculus discors	5.000
Nema	Nematoda spp	99.000
Nini	Ninoe nigripes	6.000
Nute	Nucula tenuis	31.000
Olsp	Oligochaeta spp	5.000
Opac	Ophelina acuminata	1.000
Pesp	Pettiboneia sp	1.000
Phaf	Pherusa affinis	1.000
Phho	Phoxocephalus holbolli	11.000
Phmi	Pholoe minuta	1.000
Phre	Photis reinhardi	3.000
Pimo	Pitar morrhuanus	2.000
Poex	Polycirrus eximius	3.000
Pojo	Polygordius jouinae	31.000
Ptte	Ptilanthura tenuis	2.000
Sael	Sabaco elongatus	2.000
Scfr	Scoletoma fragilis	7.000
Sche	Scoletoma hebes	1.000
Scin	Scalibregma inflatum	8.000
Spoc	Spiochaetopterus oculatus	1.000
Unir	Unciola irrorata	24.000

DataSummaryBySample
sample unit: SF-14

Amam	Americhelidium americanum	1.000
Amav	Ampelisca abdita/vadurum	1.000
Arca	Aricidea catherinae	1.000
Arwa	Aricidea wassi	3.000
Asoc	Asabellides oculata	1.000
Byse	Byblis serrata	3.000

Cahn	Capitellidae spp (Hetero/Noto)	1.000
Cave	Caulleriella venefica	10.000
Cere	Cerebratulus lacteus	2.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	1.000
Ecpa	Echinarachnius parma	1.000
Eosp	Eobrolgus spinosus	1.000
Exdi	Exogone dispar	2.000
Gogr	Goniadella gracilis	1.000
Nema	Nematoda spp	6.000
Nepi	Nephtys picta	2.000
Nute	Nucula tenuis	1.000
Poex	Polycirrus eximius	1.000
Pojo	Polygordius jouinae	137.000
Psob	Pseudunciola obliquua	3.000
Spbo	Spiophanes bombyx	2.000
Spso	Spisula solidissima	2.000
Star	Streptosyllis arenae	1.000

DataSummaryBySample
Sample unit: SH-01

Amar	Ampharete arctica	1.000
Arca	Aricidea catherinae	9.000
Arce	Aricidea cerrutii	4.000
Cave	Caulleriella venefica	3.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	2.000
Edtr	Edotia triloba	1.000
Gogr	Goniadella gracilis	19.000
Luac	Lumbrinerides acuta	1.000
Nema	Nematoda spp	54.000
Nmrt	Nemertinea spp(+juvc. lacteus)	3.000
Olsp	Oligochaeta spp	1.000
Oxsm	Oxyurostylis smithi	1.000
Paly	Paradoneis lyra	1.000
Pojo	Polygordius jouinae	249.000
Popo	Politolana polita	1.000
Psob	Pseudunciola obliquua	13.000
Rhep	Rhepoxynius epistomus	1.000
Scfr	Scoletoma fragilis	1.000
Star	Sigalion arenicola	1.000
Sylo	Syllides longocirratu	2.000
Unir	Unciola irrorata	1.000

DataSummaryBySample
Sample unit: SH-02

Amag	Ameritella agilis	2.000
Amam	Americhelidium americanum	1.000
Arce	Aricidea cerrutii	1.000
Asca	Astarte castanea	1.000
Clzo	Clymenella zonalis	1.000
Edtr	Edotia triloba	4.000
Erer	Erinaceusyllis erinaceus	2.000
Gogr	Goniadella gracilis	3.000
Hise	Hippomedon serratus	1.000
Nema	Nematoda spp	86.000
Nepi	Nephtys picta	2.000
Olsp	Oligochaeta spp	5.000
Paly	Paradoneis lyra	8.000
Poim	Polinices immaculatus	2.000
Pojo	Polygordius jouinae	98.000
Prpy	Prionospio pygmaeus	1.000
Scfr	Scoletoma fragilis	1.000
Spso	Spisula solidissima	1.000
Unir	Unciola irrorata	2.000

DataSummaryBySample
Sample unit: SH-03

Amar	Ampharete arctica	2.000
ASOC	Asabellides oculata	2.000
Cere	Cerebratulus lacteus	1.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	1.000
Disc	Diastylis sculpta	1.000
Erer	Erinaceusyllis erinaceus	3.000
Gogr	Goniadella gracilis	13.000
Luac	Lumbrinerides acuta	1.000
Misc	Microphthalmus sczelkowi	1.000
Nema	Nematoda spp	219.000
Nepi	Nephtys picta	1.000
Olsp	Oligochaeta spp	7.000
Paca	Parougia caeca	1.000
Paly	Paradoneis lyra	1.000
Pojo	Polygordius jouinae	115.000
Psob	Pseudunciola obliquua	3.000
Scfr	Scoletoma fragilis	2.000
Unir	Unciola irrorata	1.000

DataSummaryBySample

Sample unit: SH-04

Amar	Ampharete arctica	2.000
Angr	Ancistrosyllis groenlandica	1.000
Antr	Anadara transversa	1.000
Cere	Cerebratulus lacteus	2.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	2.000
Crpl	Crepidula plana	2.000
Eusa	Eumida sanguinea	1.000
Gogr	Goniadella gracilis	7.000
Masp	Malvanidae spp (juveniles)	7.000
Moma	Molgula manhattensis	1.000
Myed	Mytilus edulis (juvenile)	1.000
Nema	Nematoda spp	15.000
Olsp	Oligochaeta spp	102.000
Oxsm	Oxyurostylis smithi	1.000
Pasp	Paranaitis speciosa	1.000
Pojo	Polygordius jouinae	57.000
Psmi	Pseudoleptocuma minus	1.000
Scfr	Scoletoma fragilis	4.000
Spfi	Spio filicornis	40.000
Spso	Spisula solidissima	1.000
Unir	Unciola irrorata	4.000

DataSummaryBySample

Sample unit: SH-05

Amar	Ampharete arctica	4.000
Arca	Aricidea catherinae	1.000
Arwa	Aricidea wassi	1.000
Cave	Caulleirella venefica	2.000
Cere	Cerebratulus lacteus	1.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	1.000
Ecpa	Echinarachnius parma	1.000
Exdi	Exogone dispar	1.000
Gogr	Goniadella gracilis	6.000
Luac	Lumbrinerides acuta	1.000
Mudi	Musculus discors	1.000
Nema	Nematoda spp	144.000
Olsp	Oligochaeta spp	12.000
Pafu	Paraonis fulgens	1.000
Poex	Polycirrus eximius	1.000
Pojo	Polygordius jouinae	62.000
Prwi	Protohaustorius wigleyi	1.000
Psob	Pseudunciola obliquua	2.000
Pssp	Pseudomystides sp	10.000
Scfr	Scoletoma fragilis	1.000
Siar	Sigalion arenicola	1.000
Spso	Spisula solidissima	1.000
Sylo	Syllides longocirratu	1.000
Unir	Unciola irrorata	1.000

DataSummaryBySample

Sample unit: SH-06

Arce	Aricidea cerrutii	1.000
Asca	Astarte castanea	1.000
Cizo	Clymenella zonalis	1.000
Edtr	Edotia triloba	2.000
Gogr	Goniadella gracilis	5.000
Iltr	Ilyanassa trivittata	1.000
Nema	Nematoda spp	11.000
Nmrt	Nemertinea spp(+juv. lacteus)	1.000
Olsp	Oligochaeta spp	1.000
Paly	Paradoneis lyra	1.000
Pojo	Polygordius jouinae	9.000
Popo	Politolana polita	1.000
Psmi	Pseudoleptocuma minus	1.000
Psob	Pseudunciola obliquua	14.000
Scfr	Scoletoma fragilis	1.000
Siar	Sigalion arenicola	1.000
Spfi	Spio filicornis	3.000
Unir	Unciola irrorata	1.000

DataSummaryBySample

Sample unit: SH-07

Arca	Aricidea catherinae	2.000
Baqu	Bathyporeia quoddyensis	1.000
Cave	Caulleirella venefica	2.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	3.000
Exdi	Exogone dispar	3.000
Gogr	Goniadella gracilis	1.000
Misc	Microphthalmus sczelkowi	1.000
Nema	Nematoda spp	132.000
Nepi	Nephtys picta	3.000
Olsp	Oligochaeta spp	8.000
Paca	Parougia caeca	2.000

Paly	Paradoneis lyra	3.000
Pojo	Polygordius jouinae	93.000
Psmi	Pseudoleptocuma minus	1.000
Psob	Pseudunciola obliquua	17.000
Pssp	Pseudomystides sp	1.000
Star	Sigalion arenicola	1.000
Spbo	Spiophanes bombyx	2.000
Spso	Spisula solidissima	4.000
Taps	Tanaissus psammophilus	3.000
Unsp	Unciola dissimillis/serrata	1.000

DataSummaryBySample
Sample unit: SH-08

Amar	Ampharete arctica	3.000
Clzo	Clymenella zonalis	2.000
Crfo	Crepidula fornicata	1.000
Gogr	Goniadella gracilis	12.000
Nema	Nematoda spp	228.000
Olsp	Oligochaeta spp	33.000
Paan	Pagurus annulipes	1.000
Pafu	Paraonis fulgens	1.000
Paly	Paradoneis lyra	19.000
Pojo	Polygordius jouinae	210.000
Scfr	Scoletoma fragilis	4.000
Spfi	Spio filicornis	27.000
Spso	Spisula solidissima	1.000
Trca	Travisia carnea	1.000
Unsp	Unciola dissimillis/serrata	2.000

DataSummaryBySample
Sample unit: SH-09

Amph	Amphibalanus amphitrite	8.000
Asoc	Asabellides oculata	3.000
Cosp	Corophium sp	1.000
Crfo	Crepidula fornicata	132.000
Crpl	Crepidula plana	3.000
Gogr	Goniadella gracilis	2.000
Haex	Harmothoe extenuata	8.000
Masp	Maldanidae spp (juveniles)	1.000
Papo	Pagurus pollicaris	1.000
Pojo	Polygordius jouinae	7.000
Scfr	Scoletoma fragilis	1.000
Spfi	Spio filicornis	3.000
Unir	Unciola irrorata	1.000

DataSummaryBySample
Sample unit: SH-10

Arca	Aricidea catherinae	2.000
Brwe	Brania wellfleetensis	1.000
Byse	Byblis serrata	1.000
Cave	Caulleriella venefica	7.000
Cere	Cerebratulus lacteus	2.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	2.000
Gogr	Goniadella gracilis	8.000
Luac	Lumbrinerides acuta	1.000
Nema	Nematoda spp	122.000
Olsp	Oligochaeta spp	2.000
Paly	Paradoneis lyra	1.000
Poex	Polycirrus eximius	1.000
Pojo	Polygordius jouinae	60.000
Psob	Pseudunciola obliquua	22.000
Pssp	Pseudomystides sp	1.000
Rhep	Rhepoxynius epistomus	1.000
Scbo	Scolecopsis bousfieldi	1.000
Spbo	Spiophanes bombyx	1.000
Spso	Spisula solidissima	1.000
Sylo	Syllides longocirratus	1.000
Taps	Tanaissus psammophilus	8.000
Unsp	Unciola dissimillis/serrata	3.000

DataSummaryBySample
Sample unit: SH-11

Amag	Ameritella agilis	1.000
Amam	Americhelidium americanum	1.000
Arca	Aricidea catherinae	1.000
Arwa	Aricidea wassi	2.000
Baqu	Bathyporeia quoddyensis	1.000
Cave	Caulleriella venefica	8.000
Cere	Cerebratulus lacteus	1.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	4.000
Ecpa	Echinarachnius parma	3.000
Euhe	Euspira heros	1.000
Exdi	Exogone dispar	8.000
Luac	Lumbrinerides acuta	1.000

Nema	Nematoda spp	126.000
Paly	Paradoneis lyra	1.000
Pojo	Polygordius jouinae	63.000
Prwi	Protohaustorius wigleyi	1.000
Psob	Pseudunciola obliquua	2.000
Pssp	Pseudomystides sp	11.000
Rhep	Rhepoxynius epistomus	1.000
Scbo	Scolecopsis bousfieldi	3.000
Spsa	Spisula solidissima	1.000
Sylo	Syllides longocirratu	3.000
Taps	Tanaissus psammophilus	1.000

DataSummaryBySample
Sample unit: SH-12

Amag	Ameritella agilis	1.000
Arca	Aricidea catherinae	1.000
Arce	Aricidea cerrutii	7.000
Cave	Caulleriella venefica	1.000
Cere	Cerebratulus lacteus	1.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	1.000
Crde	Crenella decussata	1.000
Gogr	Goniadella gracilis	20.000
Luac	Lumbrinerides acuta	1.000
Nema	Nematoda spp	27.000
Nepi	Nephtys picta	2.000
Olsp	Oligochaeta spp	6.000
Paly	Paradoneis lyra	10.000
Pisp	Pisione sp	2.000
Pojo	Polygordius jouinae	31.000
Popo	Politolana polita	2.000
Psob	Pseudunciola obliquua	33.000
Pssp	Pseudomystides sp	1.000
Rhep	Rhepoxynius epistomus	1.000
Scbo	Scolecopsis bousfieldi	1.000
Siar	Sigalion arenicola	1.000
Sylo	Syllides longocirratu	1.000

DataSummaryBySample
Sample unit: SH-13

Amam	Americhelidium americanum	1.000
Ecpa	Echinarachnius parma	2.000
Erer	Erinaceusyllis erinaceus	1.000
Exdi	Exogone dispar	1.000
Haex	Harmothoe extenuata	1.000
Luac	Lumbrinerides acuta	4.000
Nema	Nematoda spp	88.000
Nosp	Notocirrus spinifera	1.000
Olsp	Oligochaeta spp	10.000
Paly	Paradoneis lyra	2.000
Popo	Politolana polita	2.000
Psob	Pseudunciola obliquua	29.000
Taps	Tanaissus psammophilus	11.000

DataSummaryBySample
Sample unit: SH-14

Arca	Aricidea catherinae	1.000
Arwa	Aricidea wassi	1.000
Baqu	Bathyporeia quoddyensis	2.000
Ecpa	Echinarachnius parma	1.000
Mesp	Megalona sp	2.000
Nema	Nematoda spp	10.000
Nepi	Nephtys picta	1.000
Olsp	Oligochaeta spp	2.000
Pojo	Polygordius jouinae	5.000
Prwi	Protohaustorius wigleyi	1.000
Psob	Pseudunciola obliquua	54.000
Pssp	Pseudomystides sp	1.000
Rhep	Rhepoxynius epistomus	6.000
Scfr	Scoletoma fragilis	1.000
Siar	Sigalion arenicola	1.000
Spbo	Spiophanes bombyx	1.000
Spsa	Spisula solidissima	5.000
Sylo	Syllides longocirratu	1.000

DataSummaryBySample
Sample unit: TW-01

Amar	Ampharete arctica	1.000
Antr	Anadara transversa	1.000
Cahn	Capitellidae spp (Hetero/Noto)	1.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	6.000
Clzo	Clymenella zonalis	1.000
Ecpa	Echinarachnius parma	1.000
Gldi	Glycera dibranchiata	2.000
Luac	Lumbrinerides acuta	1.000

Mira	Microprotopus raneyi	1.000
Nema	Nematoda spp	12.000
Nepi	Nepthys picta	1.000
Nini	Ninoe nigripes	2.000
Nupr	Nucula proxima	4.000
Opac	Ophelina acuminata	1.000
Pmhu	Phyllodoce mucosa	1.000
Pimo	Pitar morrhuanus	1.000
Pojo	Polygordius jouinae	6.000
Pone	Potamilla neglecta	6.000
Psob	Pseudunciola obliquua	1.000
Scbe	Scoletoma hebes	1.000
Scin	Scalibregma inflatum	1.000
Sovi	Solen viridis	1.000
Unir	Unciola irrorata	1.000
Yoli	Yoldia limatula	5.000

DataSummaryBySample
Sample unit: TW-02

Agci	Aglaophamus circinata	1.000
Amar	Ampharete arctica	1.000
Arca	Aricidea catherinae	1.000
Asoc	Asabellides oculata	3.000
Byse	Byblis serrata	9.000
Cave	Caulleriella venefica	1.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	10.000
Ecpa	Echinarachnius parma	1.000
Exdi	Exogone dispar	2.000
Glso	Glycinde solitaria	9.000
Masp	Maldanidae spp (juveniles)	3.000
Nema	Nematoda spp	22.000
Nepi	Nepthys picta	1.000
Nmrt	Nemertinea spp(+juv. lacteus)	1.000
Olsp	Oligochaeta spp	4.000
Oxsm	Oxyurostylis smithi	1.000
Pojo	Polygordius jouinae	153.000
Scfr	Scoletoma fragilis	10.000
Scin	Scalibregma inflatum	11.000
Spbo	Spiophanes bombyx	7.000
Unsp	Unciola dissimilis/serrata	9.000

DataSummaryBySample
Sample unit: TW-03

Antr	Anadara transversa	1.000
Arca	Aricidea catherinae	2.000
Byse	Byblis serrata	4.000
Ecpa	Echinarachnius parma	1.000
Elle	Elasmopus levis	1.000
Glam	Glycera americana	1.000
Nema	Nematoda spp	2.000
Nepi	Nepthys picta	2.000
Pojo	Polygordius jouinae	1.000
Psob	Pseudunciola obliquua	1.000
Rhep	Rhepoxynius epistomus	1.000
Scfr	Scoletoma fragilis	1.000
Spbo	Spiophanes bombyx	1.000

DataSummaryBySample
Sample unit: TW-04

Amag	Ameritella agilis	1.000
Antr	Anadara transversa	2.000
Arwa	Aricidea wassi	2.000
Byse	Byblis serrata	5.000
Cave	caulleriella venefica	3.000
Cere	Cerebratulus lacteus	1.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	4.000
Exdi	Exogone dispar	13.000
Glam	Glycera americana	1.000
Gogr	Goniadella gracilis	4.000
Hise	Hippomedon serratus	1.000
Masp	Maldanidae spp (juveniles)	3.000
Misc	Microphthalmus sczelkowi	1.000
Nema	Nematoda spp	93.000
Nepi	Nepthys picta	1.000
Nmrt	Nemertinea spp(+juv. lacteus)	1.000
Olsp	Oligochaeta spp	5.000
Pojo	Polygordius jouinae	44.000
Pone	Potamilla neglecta	1.000
Popo	Politolana polita	2.000
Scfr	Scoletoma fragilis	2.000
Scin	Scalibregma inflatum	3.000
Spbo	Spiophanes bombyx	3.000

DataSummaryBySample
Sample unit: TW-05

Agci	Aglaophamus circinata	4.000
Amar	Ampharete arctica	1.000
Antr	Anadara transversa	1.000
Arca	Aricidea catherinae	1.000
Arwa	Aricidea wassi	1.000
Byse	Byblis serrata	5.000
Cair	Cancer irroratus	1.000
Cave	Caulleliella venefica	7.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	2.000
Crfo	Crepidula fornicata	1.000
Ecpa	Echinarachnius parma	7.000
Exdi	Exogone dispar	5.000
Glam	Glycera americana	2.000
Nema	Nematoda spp	45.000
Olsp	Oligochaeta spp	2.000
Pafu	Paraonis fulgens	1.000
Paly	Paradoneis lyra	3.000
Phmu	Phyllodoce mucosa	1.000
Pojo	Polygordius jouinae	31.000
Scfr	Scoletoma fragilis	4.000
Scin	Scalibregma inflatum	1.000
Spbo	Spiophanes bombyx	2.000
Sylo	Syllides longocirratu	1.000

DataSummaryBySample
Sample unit: TW-06

Agve	Aglaophamus verrilli	2.000
Arce	Aricidea cerrutii	1.000
Byse	Byblis serrata	9.000
Drlo	Drilonereis longa	1.000
Exdi	Exogone dispar	2.000
Glam	Glycera americana	2.000
Gogr	Goniadella gracilis	25.000
Luac	Lumbrinerides acuta	3.000
Nema	Nematoda spp	18.000
Nepi	Nephtys picta	2.000
Paac	Pagurus acadianus	1.000
Paca	Parougia caeca	1.000
Pojo	Polygordius jouinae	268.000
Popo	Politolana polita	1.000
Psmi	Pseudoleptocuma minus	1.000
Sovi	Solen viridis	1.000
Unir	Unciola irrorata	1.000

DataSummaryBySample
Sample unit: TW-07

Agci	Aglaophamus circinata	2.000
Arwa	Aricidea wassi	1.000
Byse	Byblis serrata	3.000
Cave	Caulleliella venefica	4.000
Cisp	Cirritulidae (Kirkeg./Tharyx)	3.000
Ecpa	Echinarachnius parma	1.000
Exdi	Exogone dispar	1.000
Gogr	Goniadella gracilis	11.000
Nema	Nematoda spp	36.000
Nepi	Nephtys picta	1.000
Nmrt	Nemertinea spp(+juv. lacteus)	3.000
Olsp	Oligochaeta spp	8.000
Para	Parapionosyllis longicirrata	1.000
Pojo	Polygordius jouinae	36.000
Popo	Politolana polita	1.000
Psob	Pseudunciola obliquua	1.000
Rhep	Rhepoxynius epistomus	2.000

***** Lists completed. Normal exit. *****