AECOM Environment

Prepared for:
Massachusetts Office of
Coastal Zone Management
Boston, MA

Prepared by:
AECOM
Woods Hole, MA
60223972.7
May 4, 2012

ENV12 CZM 01 Benthic Infaunal Analysis Report

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Prepared By Stacy Doner

Contents

List of Appendices

List of Tables

List of Figures

List of Acronyms

BPI – Benthic Position Index

CZM – Massachusetts Office of Coastal Zone Management

DMF – Division of Marine Fisheries

EMU – Ecological Marine Unit

EPA – U.S. Environmental Protection Agency

ETOH – Ethanol

ITIS – Integrated Taxonmic Information System

SOP – Standard Operating Procedure

USGS – U.S. Geological Survey

WoRMS – World Register of Marine Species

1.0 Introduction

The Massachusetts Office of Coastal Zone Management (CZM) is developing an integrated ocean management plan as required by the 2008 Massachusetts Oceans Act. One of the priority tasks is to categorize and map the various marine habitats in Commonwealth waters. CZM and the U.S. Geological Survey (USGS) Woods Hole Coastal and Marine Science Center are working cooperatively to map seafloor habitats in Massachusetts coastal waters. High-resolution bathymetry and surficial geology are merged with sediment data developed by USGS to produce sediment maps. The validation of these maps is a priority research objective outlined in the 2009 Massachusetts Ocean Management Plan.

In June 2010, CZM and the Massachusetts Division of Marine Fisheries (DMF) conducted a survey on the U.S. Environmental Protection Agency (EPA)'s OSV *Bold* in Massachusetts Bay and northern Cape Cod Bay for the purpose of validating the sediment maps in two of the target areas. At that time, 100 stations were sampled for sediment grain size and infaunal analysis (Normandeau, 2010). A similar survey was conducted in September 2011 in three additional target areas: (1) southern Cape Cod Bay, (2) south of the Islands including Vineyard Sound, and (3) Buzzards Bay (Figure 1-1). CZM and USGS are analyzing the sediment and photographic data. This document presents the results of the analysis of the 214 benthic infaunal grab samples collected in 2011. Characterization of faunal assemblages and their relationship to three environmental factors of interest (depth, sediment type, and Ecological Marine Units [EMUs]) are also presented.

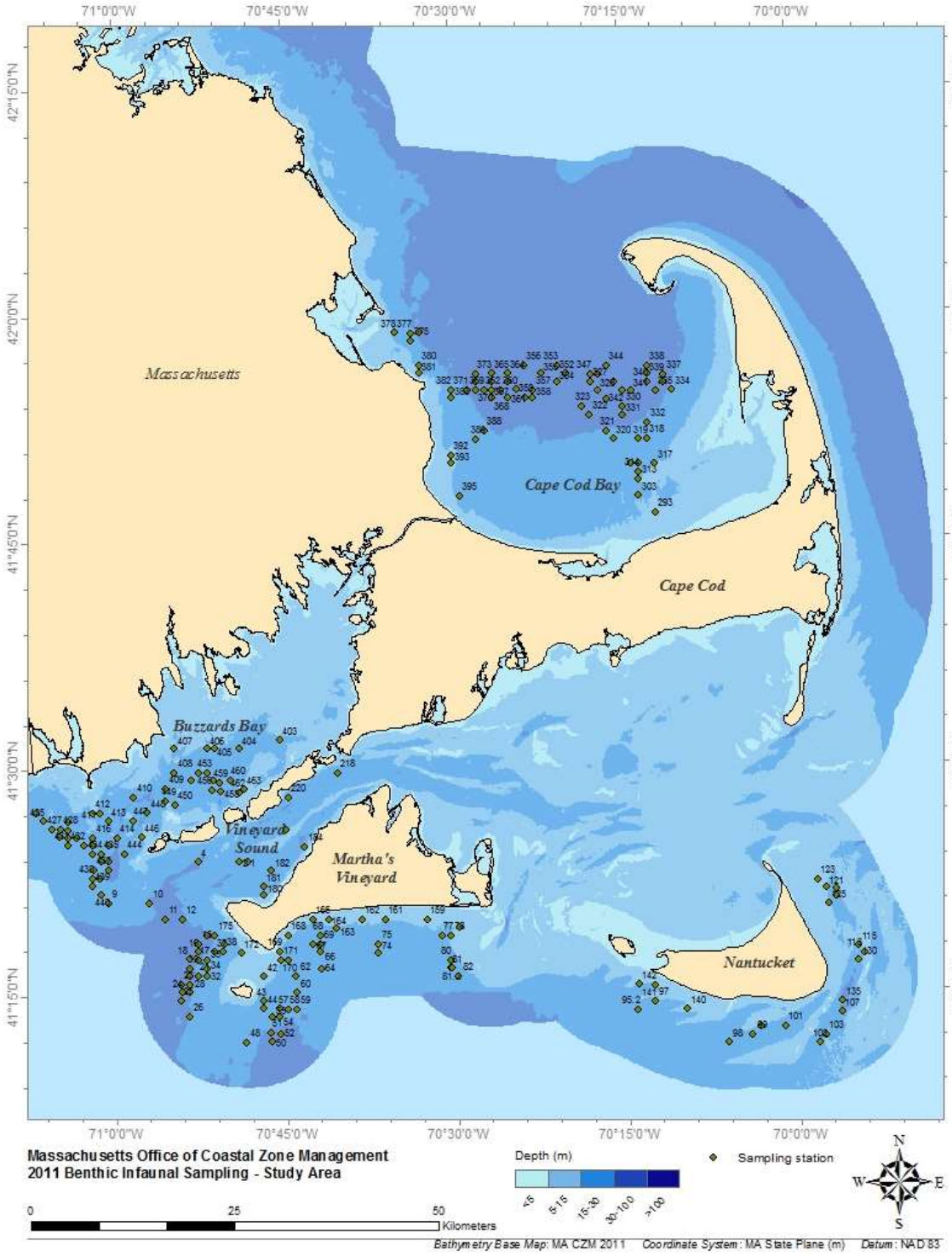

Figure 1-1. Location of the 214 infaunal stations sampled in September 2011.

2.0 Methods

2.1 Field Methods

Fieldwork was conducted by CZM on September 9–16, 2011, aboard the OSV *Bold*. USGS's SEABOSS system was deployed to take representative photographs of the bottom sediment texture. Sediment samples were collected with a 0.1-m^2 modified Van Veen grab attached to the SEABOSS[1]. The resulting grab sample was divided using a sheet of plexiglass. One side (volume roughly 0.06 m^2) was used for grain size analysis by collecting the top 2 cm of sediment for processing by USGS. The remaining sediment on this side of the grab was then removed manually using long-handled spoons.

The other side of the grab (roughly 0.04 m^2) was used for infaunal analysis. The sediment used for infaunal analysis was released from the grab onto a 0.5-mm-mesh sieve placed in a plastic tray. Each infaunal sample was then sieved in the field in the wet lab on the OSV *Bold*. Infaunal samples were preserved, labeled, and stored according to CZM's Standard Operating Procedure (SOP) for infauna listed in Appendix F (Normandeau, 2010). Samples were transferred to AECOM on September 16, 2011 for processing. Sample locations, depth, and environmental information are presented in Appendix A.

2.2 Laboratory Methods

Infauna samples were rinsed with filtered seawater by AECOM over a 0.5-mm-mesh sieve and transferred to 80% ETOH for sorting and storage. To facilitate the sorting process, all samples were stained in a saturated alcoholic solution of Rose Bengal at least overnight, but no longer than 48 h. After rinsing with clean alcohol, all organisms, including anterior fragments, were removed and sorted to major taxonomic categories such as polychaetes, arthropods, and mollusks by Cove Corporation and AECOM. During the sorting process, the presence or absence of Copepoda, Nematoda, and Ostracoda was noted. All organisms were then identified by taxonomists to the family level except Anthozoa, Nemertea, Oligochaeta, and Turbellaria, which were identified only to Class or Phylum. All identifications were recorded on customized datasheets. For each batch of ten samples, one was randomly selected for QA/QC, resorted, and all taxa re-identified. Quality assurance results for both sorting and taxonomy are presented in Appendix B.

2.3 Statistical Analysis

2.3.1 Preliminary Data Treatment

Prior to statistical analysis, several modifications were made to the benthic databases. Some taxa were excluded for diversity and multivariate analysis (i.e., number of taxa, commonness, diversity, evenness, similarity) because they could not be identified to family level due to the poor condition of the specimen or because it was an unidentifiable juvenile. Anthozoa, Nemertea, Oligochaeta, and Turbellaria were not identified to the family level but were treated as valid taxa in all statistical analyses. Epifaunal organisms including barnacles, mussels, and slipper shells, which are normally

[1] On 14 September, the SEABOSS electronics cable failed and the SEABOSS was no longer used for sampling. From that point forward, we used a 0.1-m^2 Van Veen grab that was on the *Bold* and continued to follow the subsampling procedure. Photos of the seafloor were obtained via a GoPro camera strapped to the Van Veen sampler frame. Light was provided by a flashlight taped to the sampler frame.

excluded from infaunal analysis, were retained for these analyses since the overall objective is to characterize seafloor habitats[2]. Abundance calculations included all taxa occurring in each sample as well as abundance of taxa exluding poorly preserved specimens and juveniles (analalyzed data). Calculations based on taxa (number of taxa, commonness, diversity, evenness, similarity, etc.) were performed using the analyzed data only.

At South of Islands Station 172, a mussel bed was located during sample collection. A non-quantitative subsample was collected from the grain size portion of the grab. The 29 individuals contained in this subsample were identified but were excluded from all analyses.

2.3.2 Statistical Analysis

Basic descriptive statistics were calculated for each infaunal sample. The number of "common" (occurring in at least 75% of samples), "less common" (occurring in 35–74% of samples), and "rare" (occurring in less than 35% of samples) taxa in each sample was determined for each of the three regions.

The PRIMER 6 package of statistical routines (Clark & Gorley, 2006) was used to calculate abundance of each taxon, number of taxa, and the diversity index Shannon's H′ ($\log_e$), and Pielou's evenness value J′.

Similarity analyses using the Bray-Curtis algorithm based on 4^{th}-root transformed data were performed for each study area. All similarity matrices were clustered using a hierarchical agglomerative clustering technique, with group average sorting. In order to identify faunal assemblages, the SIMPROF routine was used to identify internally consistent groups that were significantly different from other groups of stations. SIMPER analysis was performed in order to identify the contribution of individual taxa to the overall dissimilarity among faunal groups. Non-metric multi-dimensional scaling (MDS) diagrams based on the Bray-Curtis similarity matrix were generated to depict the relationship of stations in two-dimensional space in terms of the major cluster groups and the three environmental factors of interest.

The ANOSIM routine in PRIMER was used to test three *a priori* null hypotheses concerning infaunal community composition:

$H_0$1. There is no difference in infaunal assemblages among depth zones.

$H_0$2. There is no difference in infaunal assemblages among sediment types.

$H_0$3. There is no difference in infaunal assemblages among EMUs.

Station water depth was divided into five zones, however, only three occurred in this dataset: (1) 5–15 m, (2) 15–30 m, and (3) 30–100 m.

[2] At several stations, large clusters of *Mytilus* were removed from the sample before preservation. In addition, sand dollars and other large epifauna were generally removed from the samples before preservation. However, some small epifauna and *Crepidula* were retained in the samples and these were used in the analysis.

Sediment type was determined using a slight adjustment of the “modified Shepard” classification scheme (USGS) and the USGS laboratory sediment results (Appendix E). Four sediment types were identified: (1) mud, (2) sand, (3) gravelly sediment, and (4) gravel (Figure 2-1). No hard bottoms were sampled for infauna during this study.

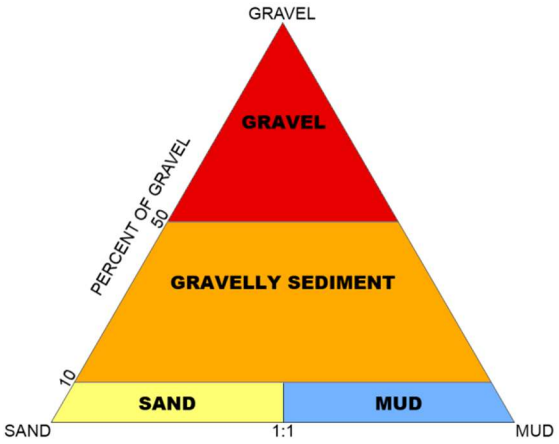

Figure 2-1. Modified Shepard diagram showing sediment types used to classify the 214 infaunal samples collected in September 2011.

The third factor to be tested, EMUs, was developed by CZM. The three digit code includes information on sediment type, Benthic Position Index (BPI)[3], and depth zones. Each variable is captured in the ones, tens, or hundreds place of this code. The possible values for each variable are given in Table 2-1. A total of 22 EMU types were represented in the 2011 infaunal stations. An EMU of 233, for example, translates to sand, flat bottom, and mid depth. A full list of EMUs reported is presented in Table 2-2.

[3] BPI is a second order derivative of bathymetry. The derivation evaluates elevation differences between a focal point and the mean elevation of the surrounding cells within a user defined annulus or circle. A negative value represents a cell that is lower than its neighboring cells (depressions) and a positive value represents a cell that is higher than its neighboring cells (crests). Larger numbers represent more prominent features on the seafloor, which differ greatly from surrounding areas. Flat areas or areas with a constant slope produce near-zero values. (Lundblad et al. 2006).

Table 2-1. Ecological Marine Unit components.

Ones Place	Bathymetry	Depth (m)
	1	<5
	2	5–15 (shallow)
	3	15–30 (mid)
	4	30–100 (deep)
	5	>100
Tens Place	**Benthic Position Index**	
	10	Deep depression
	20	Depression
	30	Flat
	40	Ridge
	50	High ridge
Hundreds Place	**Sediment**	
	100	Mud
	200	Sand
	300	Gravelly sediment
	400	Gravel
	500	Hard bottom

For mapping purposes, only the eight most common EMU types are depicted in Section 3 of this report and are represented as solid shaded triangles in the MDS plots. To be classified as a common EMU, the type must occur in at least five of the 214 stations.

Table 2-2. Ecological Marine Unit (EMU) types represented in the 2011 infaunal samples. EMU types in bold are considered common, occurring in at least five stations.

EMU Code	Description
114	Mud, Deep depression, Deep
123	Mud, Depression, Mid
124	Mud, Depression, Deep
132	Mud, Flat, Shallow
133	**Mud, Flat, Mid**
134	**Mud, Flat, Deep**
213	Sand, Deep depression, Mid
214	Sand, Deep depression, Deep
223	**Sand, Depression, Mid**
224	**Sand, Depression, Deep**
232	**Sand, Flat, Shallow**
233	**Sand, Flat, Mid**
234	**Sand, Flat, Deep**
242	**Sand, Ridge, Shallow**
243	Sand, Ridge, Mid
314	Gravelly sediment, Deep depression, Deep
323	Gravelly sediment, Depression, Mid
332	Gravelly sediment, Flat, Shallow
333	Gravelly sediment, Flat, Mid
334	Gravelly sediment, Flat, Deep
342	Gravelly sediment, Ridge, Shallow
433	Gravel, Flat, Mid

3.0 Results

3.1 Cape Cod Bay

A total of 65,020 individuals belonging to 109 taxa were identified in the 67 infaunal stations sampled in Cape Cod Bay; of these, 231 organisms belonging to five taxa were not considered further for calculation of diversity, resulting in a final database of 64,789 individuals in 104 taxa. The full benthic database is presented in Appendix C-1. The average number of organisms per station was 970.4 (SD ± 909.7) individuals, with 21 stations exceeding 1,000 individuals per 0.04-m^2 grab. One station (Station 303) had fewer than 100 individuals. Twelve taxa were considered common, occurring in at least 51 stations. The 18 less common taxa occurred in 23–50 stations (Table 3-1). The remaining 74 taxa were considered rare, occurring in less than 23 stations. The 20 most abundant taxa comprised 93.3% of the individuals and included polychaetes (14 taxa), bivalves (two taxa), and one each of the following: oligochaete, cumacean, tanaid, and nemertean. The most abundant taxa were the polychaete families Paraonidae and Polygordiidae.

Table 3-2 presents the summary community statistics for the Cape Cod Bay stations. Shannon diversity, H′ (log_e) ranged from a low of 1.06 at Station 317 to a high of 2.98 at Station 378. The average Shannon diversity value for the 67 stations was 2.00 (SD ± 0.43). Evenness (J′) ranged from a low of 0.33 at Station 317 to a high of 0.83 at Station 378 with an average value of 0.62 (SD ± 0.09).

Similarity analysis revealed two major clusters of stations at the 36.5% level of similarity (Figure 3-1). SIMPROF analysis identified 18 small internally consistent groups of stations, including several outliers; five major groups with internal similarities ranging from 61.1 to 64.7% can be discerned (Table 3-3).

SIMPER analysis revealed the taxa that contribute to the similarity within groups as well as the dissimilarity between groups. The five major groups can be characterized as follows (detailed similarity/dissimilarity tables showing the contribution of individual taxa are presented in Appendix Tables D-1 and D-2).

- **Group 1A** (n=22) contained the highest abundances of Paraonidae. The polychaete families Cossuridae, Capitellidae, Lumbrineridae, and Sabellidae also contributed strongly to the faunal assemblages at these stations, cumulatively comprising 61.0% of the fauna. Within group similarity was 64.7%. Group 1A differed from Group 1B in that Group 1A had higher average abundances of oligochaetes. All stations were muddy and ranged from 30 to 100 m in depth, except Station 321 which is 15–30 m deep. The dominant EMU was 134, except for one occurrence of the common EMU 133 at Station 321.
- **Group 1B** (n=33) was dominated by polychaetes including Paraonidae, Lumbrineridae, and Capitellidae. The bivalve family Nuculidae was also relatively abundant. Average similarity determined by SIMPER analysis was 61.64%. Group 1B differed from Group 1A with a higher average abundance of Cirratulidae, Spionidae, Ampharetidae, and Leuconidae. Depth for the Group 1B stations ranged from 15 to 100 m, with either mud or sand. Four common EMU types occurred, 233 (n=11), 134 (n=14), 234 (n=7), and 133 (n=1).

Table 3-1. Common (unshaded) and less common (shaded) taxa from the Cape Cod Bay infaunal samples collected in September 2011 (67 stations total).

Taxon	Total (All)	# Stations Occurs	Abundance Ranking
Paraonidae	13,267	66	1
Lumbrineridae	3,540	66	8
Capitellidae	3,797	65	6
Spionidae	3,923	63	5
Nuculidae	4,483	62	4
Nemertea	307	61	17
Sabellidae	3,220	57	10
Cossuridae	3,571	56	7
Cirratulidae	3,243	56	9
Nephtyidae	331	56	16
Oligochaeta	2,483	52	11
Phyllodocidae	218	51	24
Ampharetidae	423	40	14
Pholoidae	282	38	18
Maldanidae	492	37	12
Leuconidae	261	36	20
Dorvilleidae	250	33	21
Syllidae	5,367	32	3
Thyasiridae	400	32	15
Yoldiidae	107	31	35
Flabelligeridae	76	30	37
Harrimaniidae	63	29	40
Polygordiidae	10,549	28	2
Mytilidae	206	28	25
Diastylidae	73	28	38
Apistobranchidae	114	27	34
Periplomatidae	120	25	32
Oweniidae	189	24	26
Terebellidae	41	24	50
Polynoidae	31	23	51

Table 3-2. Summary statistics by station for the Cape Cod Bay infaunal samples collected in September 2011.

Station	Abundance (All data)	Abundance (Analyzed Data)	Number of Taxa	Common	Less Common	Rare	H′ (log_e)	J′
293	856	856	21	10	5	6	1.12	0.37
303	93	93	14	7	2	5	1.78	0.67
313	4,189	4,189	23	9	7	7	1.19	0.38
314	3,562	3,561	32	10	8	14	1.69	0.49
315	661	661	39	11	10	18	2.56	0.70
316	4,250	4,250	28	8	9	11	1.42	0.43
317	2,695	2,695	24	7	6	11	1.06	0.33
318	875	875	33	12	10	10	2.25	0.64
319	1,303	1,303	33	12	9	12	2.26	0.65
320	1,330	1,330	29	11	7	11	1.93	0.57
321	319	319	17	10	3	4	2.06	0.73
322	502	502	27	12	10	5	2.27	0.69
323	260	260	24	12	7	5	2.37	0.75
327	102	102	15	11	4	0	1.80	0.66
328	285	285	8	8	0	0	1.17	0.56
329	643	643	19	11	5	3	1.98	0.67
330	600	600	20	11	5	4	2.01	0.67
331	1,182	1,182	25	12	5	8	2.00	0.62
332	2,448	2,448	36	12	11	13	2.02	0.56
334	844	844	21	12	2	7	2.01	0.66
335	238	238	10	8	1	1	1.66	0.72
336	402	402	12	8	2	2	1.53	0.62
337	494	494	11	9	1	1	1.49	0.62
338	315	315	14	10	3	1	1.69	0.64
339	414	414	17	12	3	2	1.73	0.61
340	451	451	15	10	4	1	1.55	0.57
341	197	197	12	8	3	1	1.88	0.76
342	242	242	16	10	2	4	1.98	0.71
343	596	596	15	11	4	0	1.78	0.66
344	298	298	23	12	9	2	2.14	0.68
345	261	260	15	11	2	2	1.75	0.65
347	340	340	18	10	5	3	1.79	0.62
352	544	544	26	12	11	3	1.75	0.54
353	497	495	21	12	6	3	1.47	0.48
354	329	328	22	12	7	3	1.77	0.57
355	152	152	14	9	4	1	1.63	0.62
356	368	368	15	9	4	2	1.48	0.55
357	225	225	25	12	8	5	2.14	0.66
358	471	470	30	12	12	6	2.19	0.64
359	510	510	33	11	14	8	2.18	0.62
360	360	360	25	12	7	6	2.06	0.64
361	547	547	29	11	12	6	2.18	0.65
362	665	665	28	11	9	8	2.07	0.62

Station	Abundance (All data)	Abundance (Analyzed Data)	Number of Taxa	Common	Less Common	Rare	H′ (log_e)	J′
363	473	473	27	12	10	5	2.22	0.67
364	643	643	31	12	12	7	2.30	0.67
365	742	740	32	11	13	8	2.20	0.64
366	679	678	32	10	8	14	2.39	0.69
367	916	914	39	11	14	14	2.23	0.61
368	881	880	35	10	12	13	2.38	0.67
369	1,081	1,081	34	11	15	8	2.25	0.64
370	1,327	1,327	52	12	15	25	2.71	0.69
371	1,502	1,499	50	12	14	24	2.76	0.71
372	1,245	1,240	56	12	17	27	2.84	0.71
373	847	846	46	12	13	21	2.76	0.72
375	961	961	34	10	9	15	2.19	0.62
376	1,157	1,155	52	11	17	24	2.66	0.67
377	1,530	1,530	48	12	16	20	2.35	0.61
378	285	282	37	9	6	22	2.98	0.83
380	552	551	37	9	8	20	2.10	0.58
381	749	749	34	9	8	17	2.40	0.68
382	1,267	1,267	57	12	17	28	2.55	0.63
383	1,983	1,983	40	12	12	16	2.19	0.59
388	2,598	2,598	42	12	16	14	1.78	0.48
389	1,757	1,756	41	12	14	15	1.92	0.52
392	2,064	1,935	18	6	5	7	1.46	0.51
393	2,163	2,090	25	10	5	10	1.41	0.44
395	1,703	1,702	45	11	12	12	2.08	0.55

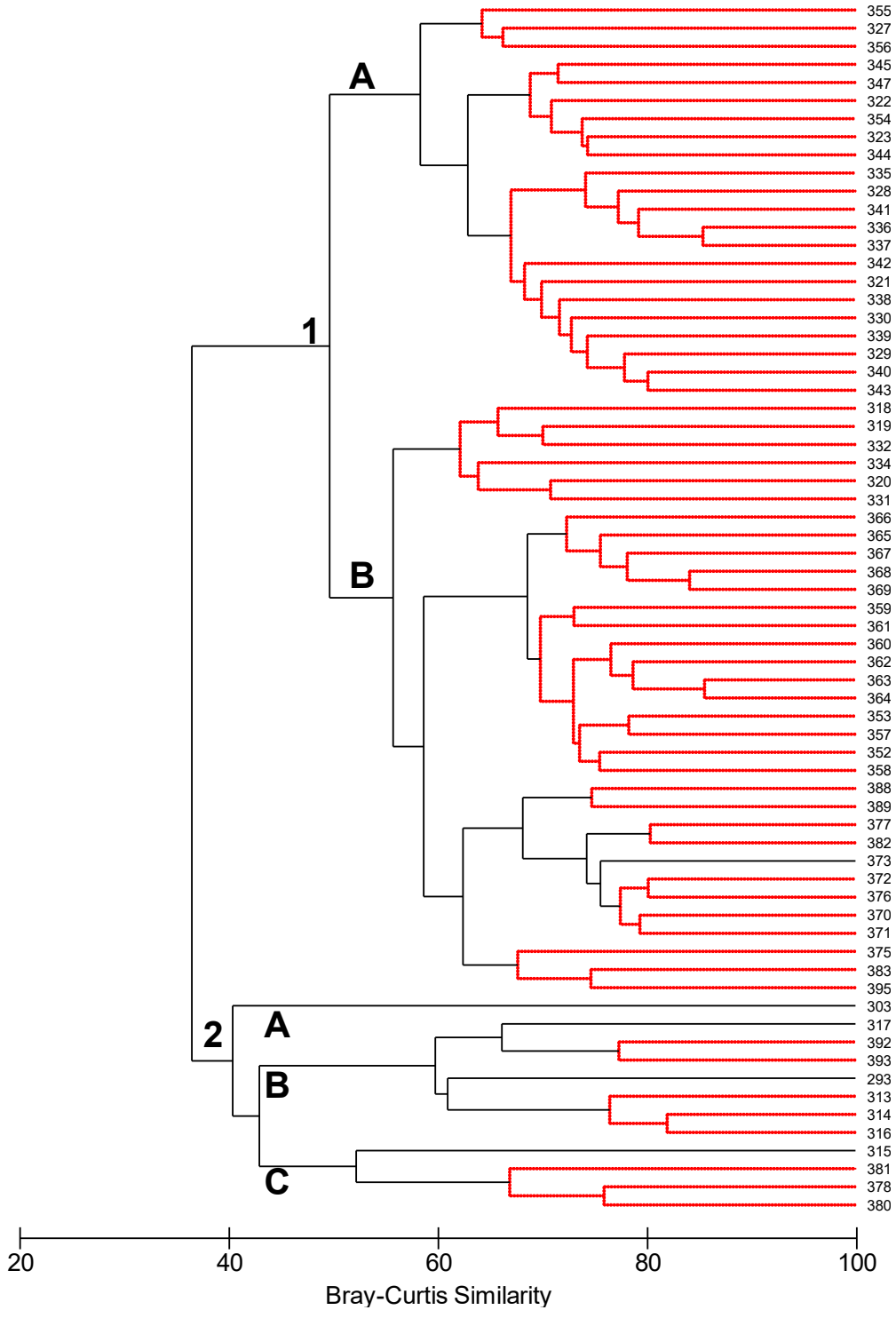

Figure 3-1. Similarity among the 67 stations sampled in Cape Cod Bay as determined by the Bray-Curtis algorithm applied to fourth-root-transformed data with group-average clustering. Stations within clusters highlighted in red have infaunal assemblages that are similar to one another (and are dissimilar to sites in adjacent clusters) according to the SIMPROF routine.

- **Group 2A** (n=1) contained a single sample, Station 303. This station had low abundance and diversity, with only 93 organisms in 14 taxa. Although it contained high numbers of Polygordiidae and Paraonidae, it lacked the Syllidae and Oligochaeta of the Group 2B stations and the Echinarachniidae, Maldanidae, and Spionidae of Group 2C. The EMU of this station was 233.
- **Group 2B** (n=7) was dominated by annelids, with the polychaete families Polygordiidae, Syllidae, Paraonidae, Spionidae as well as oligochaetes comprising 56.4% of the fauna. The overall within-group similarity calculated by SIMPER analysis was 64.1%. Station 317 differed in that the bivalve family Mactridae was also abundant. Station 293 differed in having a higher abundance of the polychaete family Lumbrineridae than was reported for other stations in this group. All seven stations were sandy, with a depth range of 5–30m. Three common EMU types, 232, 233, and 242, occurred in this group.
- **Group 2C** (n=4) had an average within-group similarity of 61.1%. Polychaetes were dominant once again (Spionidae, Polygordiidae, and Cirratulidae), with the bivalve family Nuculidae and Echinarachniidae (sand dollars) rounding out the top five with a cumulative contribution of 31.6%. Station 315, which is an outlier to the three other stations in this group, had high numbers of the amphipod family Corophiidae (194 individuals) in addition to the other top five taxa. EMU types were predominantly rare (333 and 243) with only 242 considered common. All four stations were classified as sandy with depths ranging from 5 to 30 m.

Table 3-3. SIMPER results for the 67 Cape Cod Bay infaunal stations showing percent similarity (shaded cells) and dissimilarity (unshaded cells) within and between five major groups of stations.

Group	1A	1B	2A	2B	2C
1A	64.70	50.31	61.28	65.28	68.43
1B	50.31	61.64	70.57	63.48	56.74
2A	61.28	70.57	NA[1]	58.82	60.93
2B	65.28	63.48	58.82	64.06	57.03
2C	68.43	56.74	60.93	57.03	61.08

[1] Only a single station represented in Group 2A.

The MDS plots (Figures 3-2 and 3-3) depict the distribution in two-dimensional space of the cluster groups as well as the three factors being examined. The stress level of 0.13 indicates that the plots are reasonable representations of the data. For depth, a large grouping of stations deeper than 30 m is distinct from a group that is a mixture of 5–15 m and 15–30 m stations (Figure 3-2B). Sediment type shows a similar pattern, with a large cluster of mud stations adjacent to sandy stations (Figure 3-3A). The single gravelly station (Station 315) clusters with three sandy stations. Eight EMU types, six of which are considered common, were represented in the 67 Cape Cod Bay stations. The two most abundant EMU types were 233 and 134. Types 333 and 243 are considered rare and occurred in less than five stations overall. Figure 3-4, shows the spatial arrangement of these station groupings.

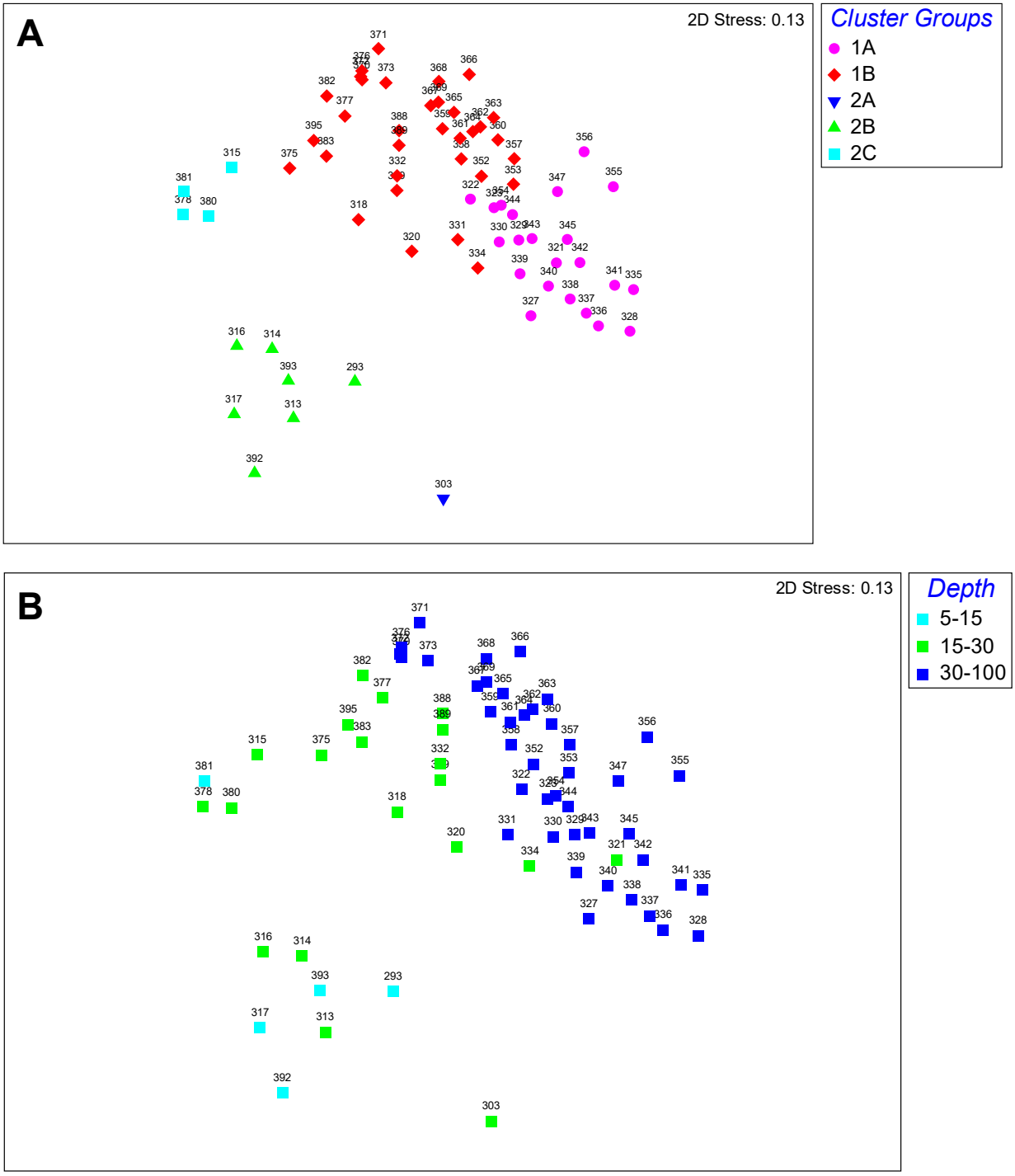

Figure 3-2. Multidimensional scaling diagram of the 67 stations sampled in Cape Code Bay based on (A) five major cluster groups and (B) depth (m).

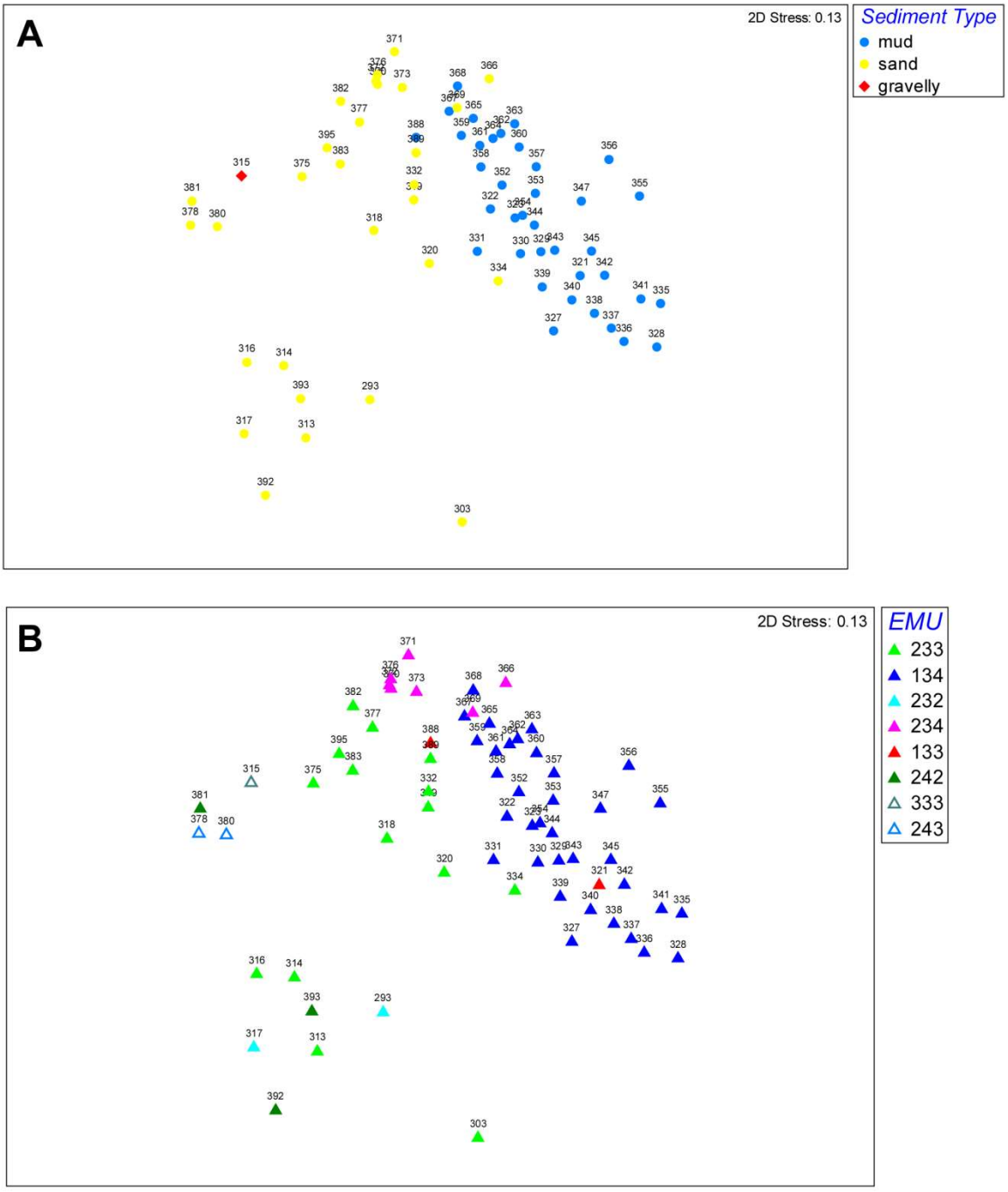

Figure 3-3. Multidimensional scaling diagram of the 67 stations sampled in Cape Code Bay based on (A) sediment type and (B) Ecological Marine Units (EMUs).

The ANOSIM tests of the null hypotheses resulted in all three hypotheses being rejected (Table 3-4). The null hypothesis that there is no difference in faunal assemblages among depth zones was rejected based on the global test statistic (R) of 0.528 with a significance level of 0.1%. Further examination of the pairwise tests shows the greatest difference was between shallow (5–15 m) stations and deep (30–100 m) stations (R=0.899, p<0.1%).

Differences based on sediment type were also found to be significant with a global test statistic of R=0.501 (p<0.1%), leading to a rejection of the null hypothesis that there is no difference in assemblages based on sediment type. Pairwise comparisons showed a significant difference between mud and sand stations (R=0.494, p<0.1%) and between mud and gravelly stations (R=0.938, p<2.6%).

The null hypothesis that there is no difference in faunal assemblages among EMUs was rejected (R=0.609, p<0.1%). Significant differences (p<0.1%) were identified between 134 vs.242, 134 vs. 234, and 233 vs. 134. Seven additional pairwise comparisons were significant but with p values ranging from 0.2 to 2.8%: 232 vs. 134, 232 vs. 234, 233 vs. 242, 333 vs. 134, 134 vs. 243, 234 vs. 243, and 234 vs. 242.

Table 3-4. Results of one-way ANOSIM for depth, sediment type, and Ecological Marine Unit (EMU) for the Cape Cod Bay infaunal samples.

Factor	Test	Test Statistic (R)	Significance Level (%)
Depth (m)	**Global Test**	**0.528**	**0.1**
	5-15, 15-30	0.344	1.1
	5-15, 30-100	0.899	0.1
	15-30, 30-100	0.435	0.1
Sediment Type	**Global Test**	**0.501**	**0.1**
	sand, gravelly	0.024	50.0
	sand, mud	0.494	0.1
	gravelly, mud	0.938	2.6
Ecological Marine Unit	**Global Test**	**0.609**	**0.1**
	232, 233	0.325	9.6
	232, 333	1	33.3
	232, 133	1	33.3
	232, 134	0.941	0.2
	232, 234	1	2.8
	232, 243	1	33.3
	232, 242	0	60.0
	233, 333	0.105	37.5
	233, 133	0.079	27.9
	233, 134	0.606	0.1
	233, 234	0.108	13.3
	233, 243	0.337	9.6
	233, 242	0.429	2.2
	333, 133	1	33.3
	333, 134	0.945	2.8
	333, 234	1	12.5
	333, 243	1	33.3
	333, 242	0.333	50.0
	133, 134	0.176	12.3
	133, 234	0.701	5.6
	133, 243	1	33.3
	133, 242	0.917	10.0
	134, 234	0.49	0.1
	134, 243	0.971	0.2
	134, 242	0.983	0.1
	234, 243	1	2.8
	234, 242	0.984	0.8
	243, 242	0.333	30.0

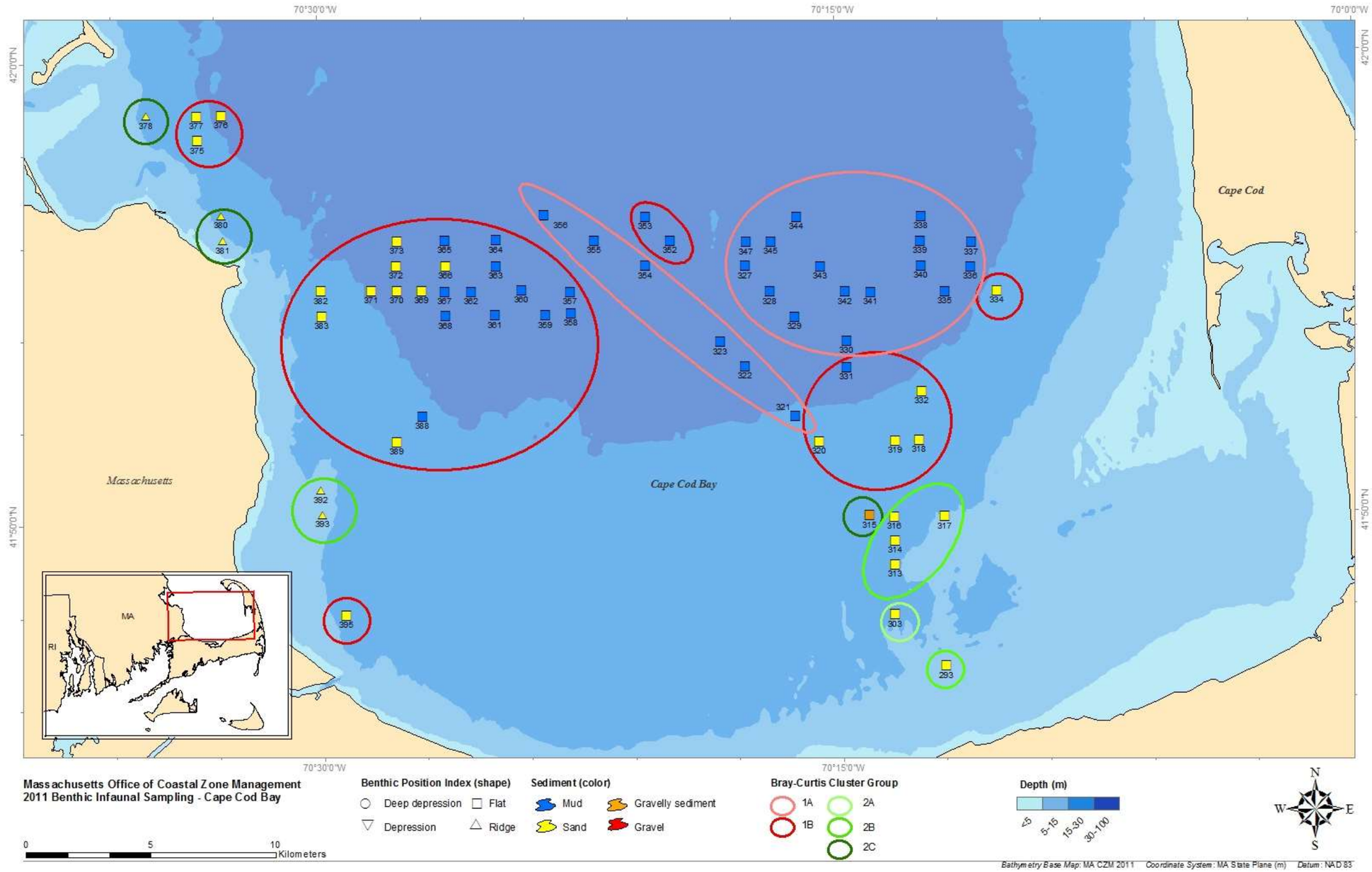

Figure 3-4. Map of Ben thic Position Index (BPI), sediment type, and depth for the Cape Code Bay stations. Stations included in each major cluster group are indicated by the colored circles.

3.2 South of the Islands

A total of 56,953 individuals belonging to 134 taxa were identified in the 95 infaunal stations sampled South of the Islands. Of these, 166 specimens belonging to six taxa were not considered further for calculations of diversity due to poor specimen condition or the presence of juveniles, resulting in a final database of 56,787 individuals in 128 taxa. The full benthic database is presented in Appendix C-2. The average number of organisms per station was 599.5 (SD ± 712.1) individuals, with 15 stations exceeding 1,000 individuals per 0.04-m^2 sample. Sixteen stations had fewer than 100 individuals, with a low of 12 at Station 103. Six taxa were considered common, occurring in at least 72 stations while the 20 less common taxa occurred in 34–71 stations (Table 3-5). An additional 102 taxa were considered rare, occurring in less than 34 stations. The 20 most abundant taxa comprised 94.2% of all individuals with the taxa divided among polychaetes (11 taxa), amphipods (three taxa), bivalves (two taxa), and one each of echinoderms, nemerteans, oligochaetes, and tanaids. The most abundant taxon was the bivalve family Nuculidae, comprising 24.6% of the fauna. The polychaete family Capitellidae and the amphipod family Ampeliscidae were also abundant, comprising 16.0% and 9.0% respectively.

Summary statistics for the 95 South of the Islands infaunal stations are presented in Table 3-6. The average Shannon diversity, H′ ($\log_e$), was 1.77 (SD ± 0.62), ranging from a low of 0.35 at Station 20 to a high of 3.06 at Station 168. Evenness (J′) ranged from a low of 0.10 at Station 20 to a high of 0.95 at Station 103 with an average value of 0.58 (SD ± 0.20).

Similarity analysis revealed numerous small clusters ranging from a similarity level of 9.1 to 65.0%. SIMPROF analysis identified 28 small, internally consistent groups of stations, including several outliers (Figrure 3-5) . The 95 South of the Islands stations form a continuum rather than clearly identifiable groups. These small clusters were grouped into 17 groups and subgroups for reporting purposes. The internal similarities for the eight main groups are presented in Table 3-7.

SIMPER analysis revealed the taxa that contribute to the similarity within groups as well as the dissimilarity between groups. The 17 groups can be characterized as follows (detailed similarity/dissimilarity tables showing the contribution of individual taxa are presented in Appendix Tables D-3 and D-4).

- **Group 1** (n=1). Station 107 was an outlier with a similarity of 9.1% to all other stations. Abundance was extremely low, with only 23 individuals belonging to six taxa, all considered rare. The only taxon containing more than one individual was the epifaunal polychaete family Spirorbidae, which had 23 individuals. This family is currently treated as a subfamily of the family Serpulidae in the World Register of Marine Species (WoRMS) and has incorrectly been synonymyzed with the family Aberrantidae by the Integrated Taxonomic Information System (IT IS). Due to these inconsistencies, the older family name Spirorbidae was retained.
- **Group 2** (n=7) was a cluster with weak similarity of 34.7%. It was comprised of stations with low abundances; all stations in this group contained fewer than 65 individuals. Glycerid and spionid polychaetes had the highest contributions. The full depth range as well as several EMU types were represented at these stations.
- **Group 3** (n=3) are all stations south of Nantucket. The stations are sandy, 5–30 m deep, and located either on flat bottom or on a ridge. Abundances ranged from a low of 31 individuals at Station 102 to a high of 1,570 individuals at Station 140. The bivalve families Mactridae and Mytilidae and the amphipod family Haustoriidae dominated, comprising 36.0% of the fauna. Polychaetes appeared to be less important at these stations.

Table 3-5. Common (unshaded) and less common (shaded) taxa from South of the Islands infaunal samples collected in 2011, 95 stations.

Taxon	Total (All)	# Stations Occurs	Abundance Ranking
Oligochaeta	5,087	86	4
Spionidae	1,385	80	10
Paraonidae	2,596	79	7
Cirratulidae	1,040	77	11
Nephtyidae	616	77	14
Nemertea	415	73	16
Capitellidae	9,096	72	2
Tellinidae	409	66	17
Nuculidae	14,036	62	1
Syllidae	2,343	60	8
Lumbrineridae	682	54	13
Diastylidae	172	53	24
Ampeliscidae	5,105	52	3
Unciolidae	491	51	15
Polygordiidae	1,916	50	9
Ampharetidae	3,450	49	5
Mactridae	187	49	23
Glyceridae	253	48	21
Phoxocephalidae	245	42	22
Phyllodocidae	147	42	25
Maldanidae	310	37	19
Tanaissuidae	375	37	18
Magelonidae	3,100	36	6
Echinarachniidae	265	35	20
Oenonidae	93	35	31
Orbiniidae	95	35	30
Oweniidae	89	35	32

Table 3-6. Summary statistics by station for South of the Islands infaunal samples collected in 2011.

Station	Abundance (All data)	Abundance (Analyzed Data)	Number of Taxa	Common	Less Common	Rare	H′ (log_e)	J′
1	170	164	22	6	10	6	1.80	0.58
2	303	303	19	5	9	5	1.16	0.39
4	195	195	24	5	10	9	2.07	0.65
9	78	78	12	4	6	2	1.60	0.64
10	2,072	2,072	31	7	15	9	0.81	0.24
11	480	480	19	5	6	8	1.46	0.50
12	278	278	19	6	8	5	1.90	0.65
15	639	639	25	7	10	8	1.85	0.58
16	772	772	26	6	10	10	1.61	0.49
17	686	686	26	7	15	4	1.44	0.44
18	1,989	1,989	34	6	13	15	0.89	0.25
19	422	422	21	5	4	11	0.82	0.27
20	3,873	3,873	28	6	8	14	0.35	0.10
21	261	259	14	5	2	6	0.83	0.31
22	464	464	15	5	4	6	0.88	0.32
23	640	640	25	6	11	8	1.15	0.36
24	378	378	22	7	11	4	1.72	0.56
25	607	606	23	6	12	5	1.87	0.60
26	781	781	32	6	13	13	1.73	0.50
28	1,509	1,509	25	7	10	8	0.58	0.18
32	626	626	25	7	13	5	2.12	0.66
34	203	203	23	5	11	7	2.10	0.67
35	252	252	22	7	12	3	2.22	0.72
37	696	696	13	4	4	5	0.37	0.14
38	89	88	27	5	12	9	2.90	0.88
42	35	34	9	2	4	3	1.20	0.55
43	313	311	22	6	11	5	1.86	0.60
44	506	504	22	6	14	2	1.09	0.35
48	175	175	20	6	9	5	2.48	0.83
50	544	544	27	7	13	7	1.71	0.52
51	795	795	32	7	17	8	2.12	0.61
52	603	598	25	7	13	5	2.00	0.62
54	1,441	1,404	33	6	15	12	1.99	0.57
55	993	981	31	7	17	7	1.94	0.57
57	589	583	25	7	13	5	2.05	0.64
58	1,077	1,075	26	6	13	7	1.78	0.55
59	1,160	1,160	22	7	13	2	1.14	0.37
60	472	472	20	6	11	3	1.70	0.57
62	373	373	26	6	10	10	2.17	0.67
64	789	788	28	7	12	9	2.03	0.61
66	1,406	1,401	26	7	13	6	1.42	0.44
67	334	332	17	4	10	3	0.76	0.27
68	385	383	34	7	13	14	2.22	0.63

Station	Abundance (All data)	Abundance (Analyzed Data)	Number of Taxa	Common	Less Common	Rare	H′ (log_e)	J′
69	526	518	27	7	14	6	1.81	0.55
74	70	70	20	6	10	4	2.57	0.86
75	231	231	18	5	9	4	1.54	0.53
77	485	485	18	7	9	2	1.02	0.35
78	24	23	10	5	2	3	1.99	0.86
80	1,745	1,745	31	7	12	12	1.40	0.41
81	613	613	14	6	8	0	1.56	0.59
81 Dup	840	840	25	7	10	8	1.85	0.58
82	235	235	13	3	7	3	0.91	0.35
95	3,001	3,001	24	7	9	8	1.10	0.35
97	523	523	23	7	9	7	2.09	0.67
98	334	311	24	6	9	8	2.23	0.70
99	267	267	16	6	5	5	1.97	0.71
100	214	214	16	5	4	7	1.23	0.44
101	61	57	14	4	5	5	1.97	0.75
102	31	28	17	4	6	7	2.60	0.92
103	12	12	9	2	3	4	2.09	0.95
107	23	23	6	0	2	3	0.87	0.49
113	39	39	7	3	2	2	1.33	0.68
115	29	26	12	2	4	6	2.06	0.83
119	342	342	23	7	9	7	2.61	0.83
120	425	425	27	7	13	7	2.27	0.69
121	454	454	27	7	8	12	2.11	0.64
123	1,022	1,022	34	7	13	14	1.96	0.56
125	961	960	38	7	13	17	2.52	0.69
130	110	109	21	1	9	11	2.19	0.72
135	43	43	14	5	6	3	2.20	0.83
140	1,570	1,568	23	2	7	14	0.40	0.13
141	192	192	16	4	9	3	1.78	0.64
156	68	68	18	4	8	5	2.54	0.88
159	1,185	1,185	19	7	7	5	0.94	0.32
161	287	287	24	7	11	6	2.62	0.83
162	212	212	23	7	12	4	2.09	0.67
163	98	98	22	7	11	4	2.55	0.82
164	278	265	22	6	9	6	2.39	0.77
166	3,904	3,904	26	6	10	10	0.51	0.16
168	110	109	34	5	16	13	3.06	0.87
169	299	298	28	6	12	10	2.07	0.62
170	378	365	24	5	10	8	2.09	0.66
171	265	265	22	7	11	4	1.72	0.56
172	46	46	15	6	5	4	2.26	0.83
173	526	526	28	7	15	6	1.88	0.56
175	218	218	22	7	11	4	2.40	0.78
176	1,550	1,549	33	7	9	17	1.02	0.29
180	774	774	31	6	11	14	1.15	0.33

Station	Abundance (All data)	Abundance (Analyzed Data)	Number of Taxa	Common	Less Common	Rare	H′ (log_e)	J′
181	624	623	29	6	11	12	1.72	0.51
182	186	185	26	6	12	8	2.20	0.67
183	127	127	21	5	7	9	2.08	0.68
184	152	152	28	7	11	10	2.75	0.82
218	244	244	39	6	12	21	2.54	0.69
220	500	498	48	7	15	26	2.75	0.71

- **Group 4** (n=2) included Stations 21 and 37. The dominant taxa were the bivalve families Nuculidae and Mytilidae, which comprised 49.0% of the fauna. Both stations had low diversity and evenness values.
- **Group 5** (n=1). Station 2, located in Vineyard Sound, had low evenness (0.39). Of the 303 individuals reported, 216 (71.3 %) belonged to the amphipod family Ampeliscidae.
- **Group 6** (n=5) was dominated by polychaetes, with Syllidae, Polygordiidae, Paraonidae, Cirratulidae, and Glyceridae cumulatively comprising 44.68% of the fauna.
- **Group 7** (n=22) was dominated by the polychaete families Magelonidae, Spionidae, Nephtyidae, the amphipod family Haustoriidae, and Oligochaeta, collectively comprising 42.41% of the fauna.
  - **Group 7A** (n=5) contained stations northeast of Nantucket with an average similarity of 64.4%. The polychaete families Magelonidae, Spionidae, Paraonidae, and the amphipod families Haustoriidae, Unciolidae, and Phoxocephalidae comprised 40.9% of the fauna, but none of these taxa contributed more than 10%.
  - **Group 7B** (n=5) differed from Group 7A in that Magelonidae had a much higher percent contribution (17.5% vs. 9.8%, respectively). Haustoriidae was also a higher contributor (12.97%). Nephtyidae, Spionidae, and Oligochaeta rounded out the top five contributors.
  - **Group 7C** (n=9) had an average similarity of 57.9%. Oligochaeta had the largest contribution to the fauna at 8.3% followed by Spionidae (7.9%), Nemertea (7.6%), and Polygordiidae (6.8%).
  - **Group 7D** (n=3) was a group in which 53.1% of the fauna was comprised of just four taxa: Magelonidae, Haustoriidae, Spionidae, and Echinarachniidae.
- **Group 8** (n=54) was dominated by Oligochaeta, Paraonidae, Nuculidae, Lumbrineridae, and Cirratulidae, collectively comprising 40.22% of the fauna.
  - **Group 8A** (n=9) was dominated by the polychaete families Capitellidae and Ampharetidae (29.6%) while lacking the Ampeliscidae that were common to other Group 8 subgroups. The species composition of the Ampharetidae at Stations 80, 81, 82, and 95 was examined and found to be dominated by *Asabellides oculata*, a polychaete known to build tube mats in the region (Kinney & Flood 2006).
  - **Group 8B** (n=3) contained stations from Vineyard Sound. The amphipod family Ampeliscidae dominated, contributing 13.8% with Capitellidae, Oligochaeta, and Lumbrineridae rounding out the top four dominant taxa.

- **Group 8C** (n=21) was a larger grouping of several small clusters with an overall similarity of 63.3%. Station 34 was an outlier to other stations in this group in that it lacked Ampeliscidae and had the lowest abundance of 203 individuals. At the remaining stations, Ampeliscidae, Oligochaeta, Paraonidae, and Polygordiidae were important contributors, collectively comprising 30.2% of the fauna.
- **Group 8D** (n=6) was dominated by Paraonidae (11.4%), Oligochaeta (10.3%), and Polygordiidae (9.0%). These stations were all sand or gravel, and 15–30 m deep with an average similarity of 60.8%.
- **Group 8E** (n=4) was a small cluster with 52.7% similarity. Abundances ranged from 89 to 186 individuals per sample. No taxon contributed more than 8% to the total fauna of the group. The bivalve family Mactridae (7.9%), Oligochaeta (7.3%), and the polychaete families Lumbrineridae (7.2%) and Spionidae (7.2%) had the highest contributions. All stations except Station 168 were classified as sand, flat bottom, and mid depth (EMU 233).
- **Group 8F** (n=8) stations were dominated by the bivalve family Nuculidae, with a station average of 1,182.3 (SD ± 1,200) individuals (15.5% of fauna). Polychaetes of the families Paraonidae, Lumbrineridae, Nephtyidae and oligochaetes comprised an additional 30.1% of the fauna. EMU type 234 (sand, flat bottom, deep) was the most common at these stations, with types 233 and 334 also occurring.
- **Group 8G** (n=3) included the three mud stations, Stations 9, 19, and 22. Station 9 was shallower, 15–30 m deep. Oligochaetes and the bivalve Nuculidae dominated, comprising 35.0% of the fauna.

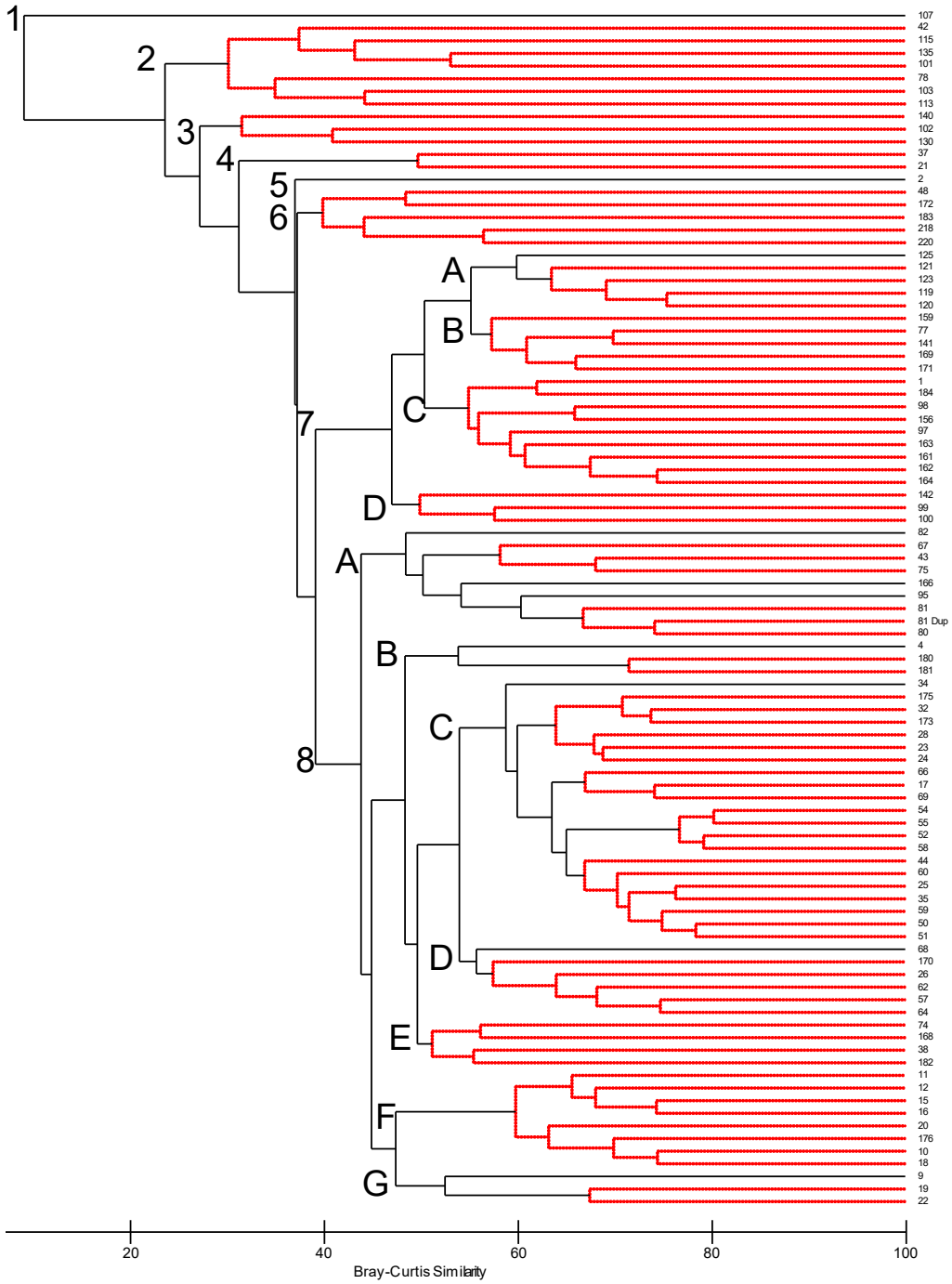

Figure 3-5. Similarity among the 95 stations sampled South of the Islands as determined by the Bray-Curtis algorithm applied to fourth-root-transformed data with group-average clustering. Stations within clusters highlighted in red have infaunal assemblages that are similar to one another (and are dissimilar to sites in adjacent clusters) according to the SIMPROF routine.

Table 3-7. SIMPER results for the 95 South of the Islands infaunal stations showing percent similarity (shaded cells) and dissimilarity (unshaded cells) within and between eight major groups of stations.

Group	1	2	3	4	5	6	7	8
1	NA[1]	88.42	83.89	81.32	100.00	94.53	91.55	91.25
2	88.42	34.67	76.90	82.26	77.38	74.97	68.84	79.31
3	83.89	76.90	34.67	75.37	73.97	74.11	68.73	74.21
4	81.32	82.26	75.37	49.72	81.82	78.30	73.90	65.53
5	100.00	77.38	73.97	81.82	NA[1]	66.37	63.51	62.43
6	94.53	74.97	74.11	78.30	66.37	43.27	61.83	63.12
7	91.55	68.84	68.73	73.90	63.51	61.83	52.34	60.85
8	91.25	79.31	74.21	65.53	62.43	63.12	60.85	49.57

[1] Only a single station represented in Groups 1 and 5.

The MDS plots (Figures 3-6 and 3-7) depict the distribution in two-dimensional space of the cluster groups as well as the three factors being examined. The stress level of 0.21 suggests that the plots give a potentially useful 2-D representation but that any conclusions should be based on additional evidence. For depth, deep stations (30–100 m) form a loose grouping except for Station 135. Shallow (5–15 m) and mid depths (15–30 m) show no clear pattern (Figure 3-8B). All four sediment types occurred South of the Islands, but the majority of stations (83%) were sandy. The five mud stations formed two small groupings, as did the two gravel stations. The gravelly sediment stations did not clearly group together. Eighteen EMU types were represented in the South of the Islands stations, with ten considered to be rare. Common EMU types 234 and 224 are the only EMUs that formed distinct clusters (Figure 3-7B). Figurs 3-8 shows the spatial arrangement of these station groupings

Table 3-8 shows the ANOSIM test results of the three null hypotheses. Differences based on depth were found to be weakly significant with a global test statistic of R=0.136 ($p<0.2\%$). This low R statistic falls within the possible values obtained by chance, suggesting that the differences may not be biologically significant. The null hypothesis that there is no difference in faunal assemblages among depth zones therefore cannot be rejected. Further examination of the pairwise tests shows that the shallow (5–15 m) and deep (30–100 m) stations are significantly different (R=0.458, $p<0.1\%$). Shallow vs. mid depth stations are less significantly different (R=0.182, $p<0.9\%$). The pairwise test between mid (15–30 m) and deep (30–100 m) stations showed no significant difference (R=-0.01, $R<51.9\%$).

The null hypothesis that there is no difference in assemblages based on sediment type could not be rejected based on a global test statistic (R) of 0.238 with a significance level of 0.5%. This R value falls within the possible values obtained strictly by chance, suggesting that the differences may not be biologically significant. A significant pairwise differences was found for sand vs. gravelly sediment (R=0.306, $p<0.4\%$). Sand vs. mud was statistically significant (R=0.231, $p<4.8$) but may not be biologically significant as indicated by the global test statistic.

The null hypothesis that there is no difference in faunal assemblages among EMUs was rejected (R=0.317, $p<0.1\%$). The R value does not fall within the possible values obtained by chance, suggesting that at least some differences may be biologically significant. Pairwise tests run the full spectrum with R values of 0 (no difference) to 1 (completely different) and significance levels of 0.1 to 100%.

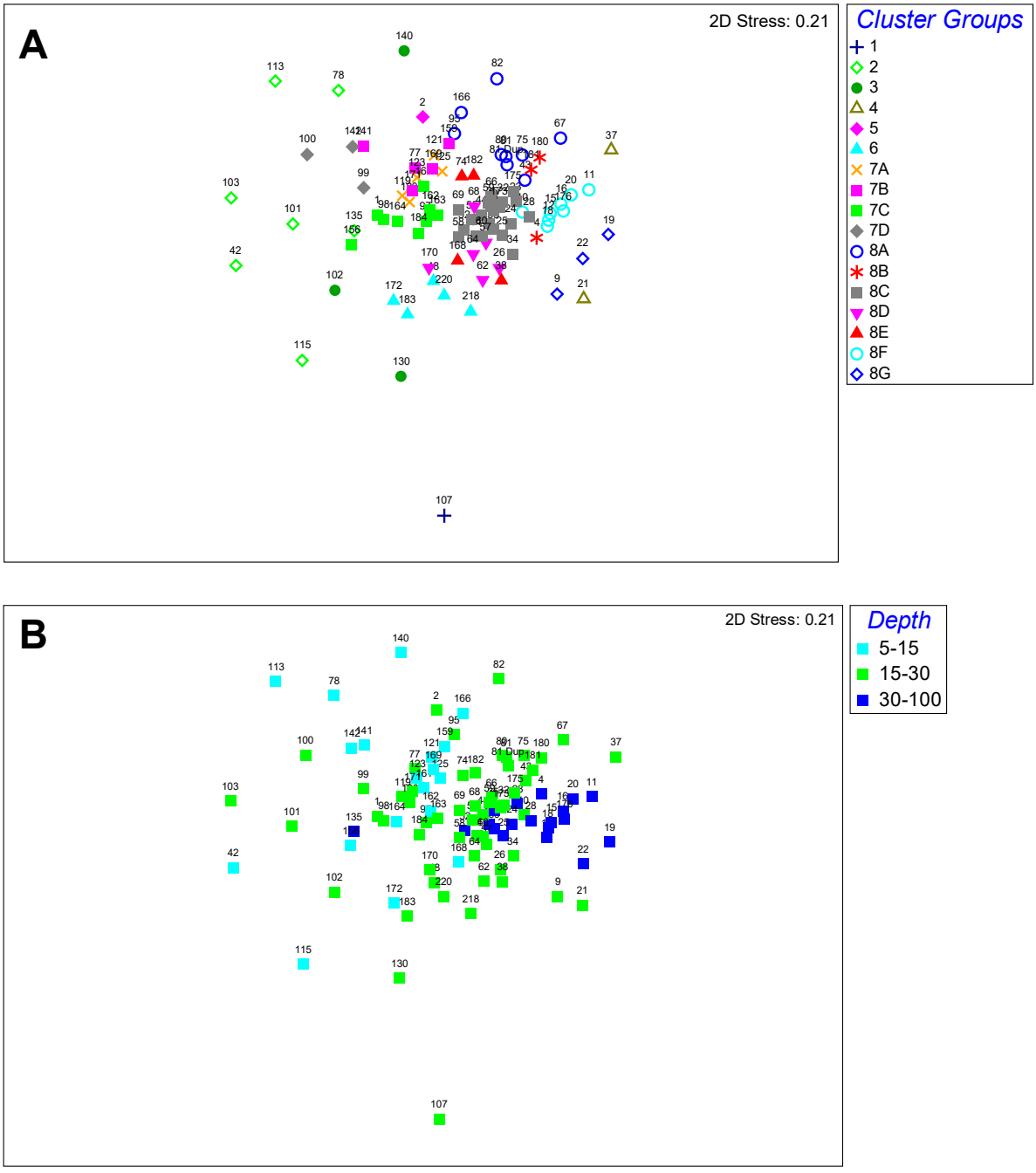

Figure 3-6. Multidimensional scaling diagram of the 95 stations sampled South of the Islands based on (A) cluster groups and (B) depth (m).

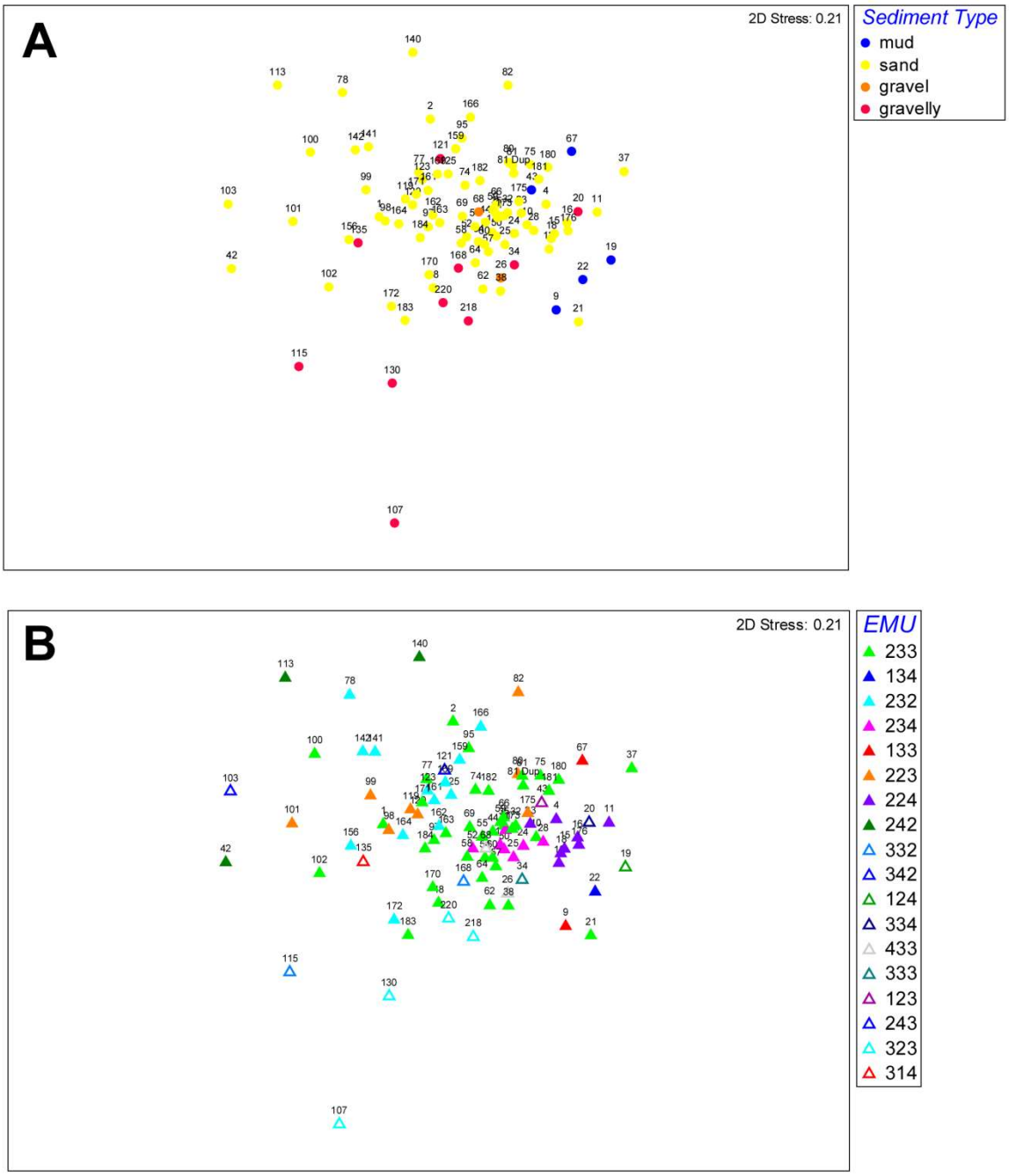

Figure 3-7. Multidimensional scaling diagram of the 95 stations sampled South of the Islands based on (A) sediment type and (B) Ecological Marine Units (EMUs).

Table 3-8. Results of one-way ANOSIM for depth, sediment type, and Ecological Marine Unit (EMU) for the South of the Islands infaunal samples.

Factor	Test	Test Statistic (R)	Significance Level (%)
Depth (m)	**Global Test**	**0.136**	**0.2**
	15-30, 30-100	-0.01	51.9
	15-30, 5-15	0.182	0.9
	30-100, 5-15	0.458	0.1
Sediment Type	**Global Test**	**0.238**	**0.5**
	sand, mud	0.231	4.8
	sand, gravelly	0.306	0.4
	sand, gravel	-0.107	62.6
	mud, gravelly	0.151	11.8
	mud, gravel	0.255	23.8
	gravelly, gravel	-0.346	97.0
Ecological Marine Unit	**Global Test**	**0.317**	**0.1**
	233, 224	0.139	10.5
	233, 133	0.416	4.9
	233, 234	-0.268	99.5
	233, 124	0.607	12.8
	233, 334	0.286	17.9
	233, 134	0.485	15.4
	233, 433	-0.075	56.7
	233, 333	-0.076	56.4
	233, 242	0.875	0.2
	233, 123	-0.137	69.2
	233, 232	0.221	0.9
	233, 223	0.19	7
	233, 243	0.932	2.6
	233, 323	0.627	0.2
	233, 332	0.442	4.4
	233, 342	0.192	17.9
	233, 314	0.465	12.8
	224, 133	0.625	6.7
	224, 234	0.574	0.2
	224, 124	0.661	22.2
	224, 334	0.116	33.3
	224, 134	0.589	22.2
	224, 433	0.634	4.4
	224, 333	0.652	22.2
	224, 242	0.906	0.6
	224, 123	0.393	22.2
	224, 232	0.674	0.1
	224, 223	0.528	0.2
	224, 243	1	11.1
	224, 323	0.831	0.2
	224, 332	0.858	2.2
	224, 342	0.92	11.1
	224, 314	1	11.1
	133, 234	0.935	2.8
	133, 124	0	66.7
	133, 334	0	66.7

Factor	Test	Test Statistic (R)	Significance Level (%)
Ecological Marine Unit		**continued**	
	133, 134	-1	100
	133, 433	0.5	66.7
	133, 333	0	66.7
	133, 242	0.417	20
	133, 123	0	66.7
	133, 232	0.772	1
	133, 223	0.487	2.2
	133, 243	1	33.3
	133, 323	0.321	20
	133, 332	0.25	33.3
	133, 342	1	33.3
	133, 314	1	33.3
	234, 124	0.959	12.5
	234, 334	0.891	12.5
	234, 134	0.959	12.5
	234, 433	0.896	2.8
	234, 333	0.415	25
	234, 242	0.833	0.8
	234, 123	0.687	12.5
	234, 232	0.401	0.4
	234, 223	0.394	0.3
	234, 243	1	12.5
	234, 323	0.749	0.3
	234, 332	0.929	2.8
	234, 342	0.973	12.5
	234, 314	1	12.5
	124, 433	1	33.3
	124, 242	0.333	25
	124, 232	0.903	7.1
	124, 223	0.634	11.1
	124, 323	0.417	40
	124, 332	0	66.7
	334, 433	1	33.3
	334, 242	0.111	75
	334, 232	0.72	7.1
	334, 223	0.384	22.2
	334, 323	0.25	40
	334, 332	0	66.7
	134, 433	1	33.3
	134, 242	0.111	75
	134, 232	0.834	7.1
	134, 223	0.571	11.1
	134, 323	0.167	40
	134, 332	0	66.7
	433, 333	0	66.7
	433, 242	-0.167	80
	433, 123	0	66.7
	433, 232	0.348	12.4
	433, 223	0.198	17.8

Factor	Test	Test Statistic (R)	Significance Level (%)
Ecological Marine Unit		**continued**	
	433, 243	1	33.3
	433, 323	-0.036	40
	433, 332	0.5	33.3
	433, 342	1	33.3
	433, 314	1	33.3
	333, 242	0.111	50
	333, 232	0.45	21.4
	333, 223	0.196	33.3
	333, 323	-0.167	80
	333, 332	0	66.7
	242, 123	0.111	75
	242, 232	0.696	0.5
	242, 223	0.489	1.8
	242, 243	-0.778	100
	242, 323	0.167	25.7
	242, 332	-0.083	50
	242, 342	-0.556	100
	242, 314	-1	100
	123, 232	0.385	21.4
	123, 223	0.107	33.3
	123, 323	0.083	40
	123, 332	0	66.7
	232, 223	0.003	43.6
	232, 243	0.817	7.1
	232, 323	0.598	0.2
	232, 332	0.585	3.8
	232, 342	-0.089	50
	232, 314	0.146	28.6
	223, 243	0.759	11.1
	223, 323	0.513	0.4
	223, 332	0.474	6.7
	223, 342	-0.161	66.7
	223, 314	0.134	44.4
	243, 323	0.333	40
	243, 332	0	66.7
	323, 332	0.036	53.3
	323, 342	-0.167	60
	323, 314	0	60
	332, 342	0	66.7
	332, 314	-1	100

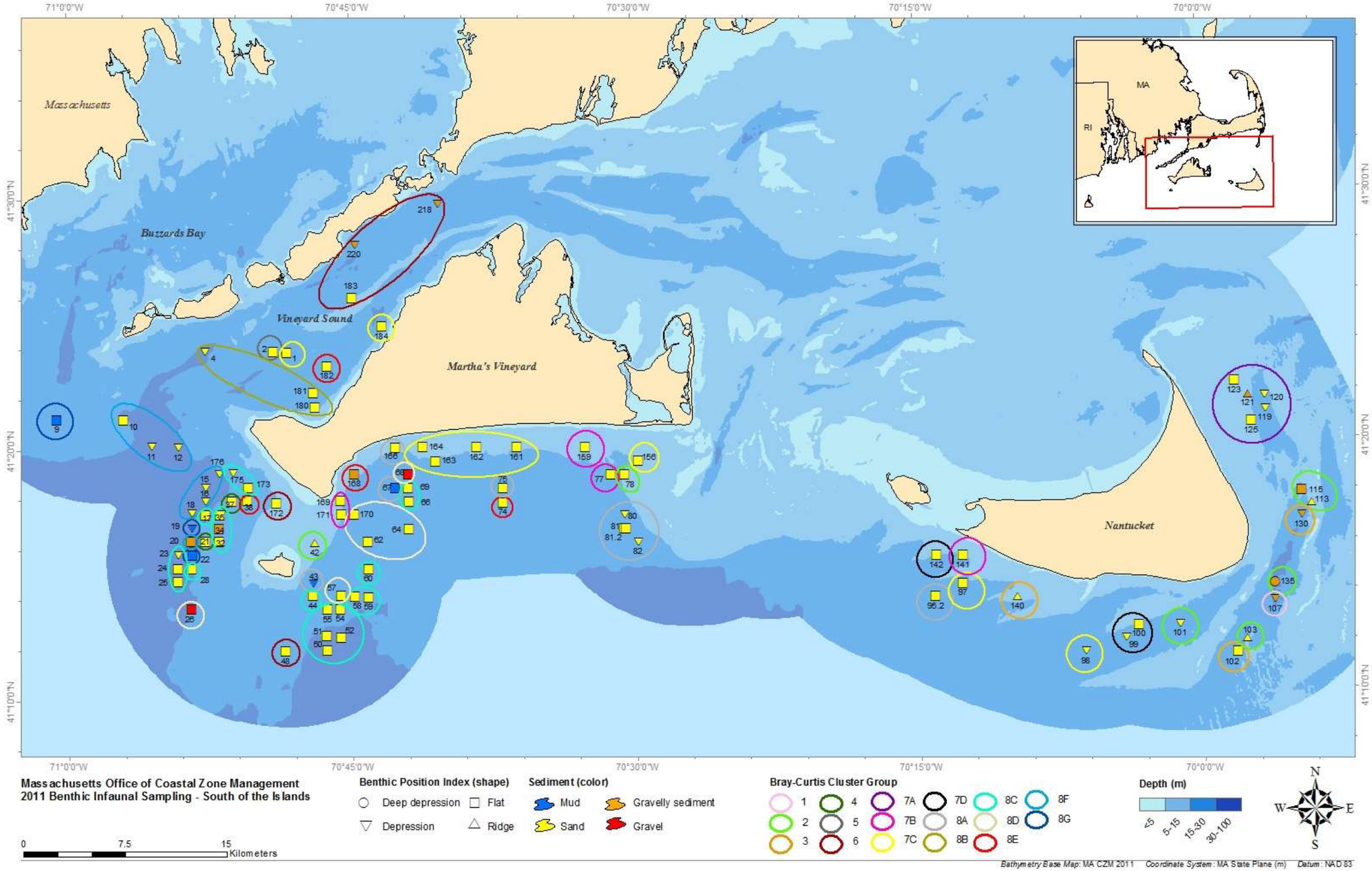

Figure 3-8. Map of Benthic Position Index (BPI), sediment type, and depth for the South of the Islands stations. Stations included in each major cluster group are indicated by the circles.

3.3 Buzzards Bay

A total of 14,344 organisms belonging to 121 taxa were identified in the 52 infaunal stations sampled in Buzzards Bay; of these, 39 individuals belonging to seven taxa were not considered further for calculations of diversity, resulting in a final database of 14,305 individuals in 114 taxa. The full benthic database is presented in Appendix C-3. The average number of organisms per station was 275.8 (SD ± 467.5), much lower than was reported for Cape Cod Bay and South of the Islands stations. No station exceeded 1,000 individuals per 0.04-m^2 sample, and seven stations each had fewer than 100 individuals. The highest abundance was at Station 416 with 941 individuals. Seven taxa were considered common, occurring in at least 39 stations. The 20 less common taxa occurred in 18–38 stations (Table 3-9). An additional 87 taxa were considered rare, occurring in less than 18 stations. The 20 most abundant taxa comprised 89.7% of the individuals and included polychaetes (nine taxa), amphipods (three taxa), bivalves (two taxa), gastropods (two taxa), and one each of the following taxa: decapod, nemertean, oligochaete, and barnacle. The most abundant taxa were the amphipod family Ampeliscidae, the bivalve family Nuculidae, and the polychaete family Spionidae. Other taxa of note were epifaunal including barnacles of the family Balanidae (n=541), which ranked seventh overall in abundance and slipper shells of the family Calyptraeidae (n=454), which ranked eighth.

Table 3-10 presents the summary community statistics for the Buzzards Bay infaunal stations. Shannon diversity, H′ (log_e), ranged from a low of 0.37 at Station 433 to a high of 3.14 at Station 449. The average Shannon diversity value for the 52 Buzzards Bay stations was 1.98 (SD ± 0.66). Evenness (J′) ranged from a low of 0.14 at Station433 to a high of 0.97 at Station 432 with an average value of 0.64 (SD ± 0.19).

Similarity analysis revealed two major clusters of stations at the 37.4% level of similarity, with two stations as outliers to all others (Figure 3-9). SIMPROF analysis identified 15 small internally consistent groups of stations, including several outliers; five major groups with internal similarities ranging from 55.20 to 64.32% can be discerned as well as five outlier stations (Table 3-11).

SIMPER analysis revealed the taxa that contribute to the similarity within groups as well as the dissimilarity between groups. The major groups and outlier stations can be characterized as follows (detailed similarity/dissimilarity tables showing the contribution of individual taxa are presented in Appendix Tables D-5 and D-6).

- **Group 1** (Station 432) was an outlier with only 23.0% similarity to all other stations. Abundance was extremely low with only 10 individuals in five taxa (three polychaetes, one amphipod, and one bivalve). The polychaete Capitellidae was dominant with a total of three individuals.
- **Group 2** (Station 462) was an outlier to Groups 3 and 4 at the 27.4% level of similarity. This station was dominated by epifaunal organisms including the slipper snail Calyptraeidae (n=129) and barnacles (n=41), which collectively comprised 67.5% of the organisms present. This station lacked the high numbers of other fauna, such as Spionidae and Oligochaeta that were observed at other stations where barnacles and slipper shells also occurred in large numbers.
- **Group 3** (n=23) was dominated by the polychaete families Lumbrineridae, Paraonidae, Spionidae, Nephtyidae, and Chaetopteridae and the bivalve family Nuculidae. These taxa had a cumulative contribution of 41.92%.

Table 3-9. Common (unshaded) and less common (shaded) taxa from the Buzzards Bay infaunal samples collected in 2011, from 52 stations.

Taxon	Total (All)	# Stations Occurs	Abundance Ranking
Nephtyidae	339	48	11
Paraonidae	568	46	6
Ampeliscidae	4,687	44	1
Capitellidae	754	44	4
Spionidae	809	44	3
Tellinidae	176	41	14
Nuculidae	1,628	40	2
Cirratulidae	348	38	10
Lumbrineridae	444	38	9
Nemertea	129	37	20
Syllidae	291	36	12
Oligochaeta	681	35	5
Mactridae	77	26	23
Chaetopteridae	160	25	16
Pinnotheridae	191	25	13
Polygordiidae	154	24	18
Pyramidellidae	158	24	17
Glyceridae	49	23	29
Orbiniidae	84	23	22
Phoxocephalidae	143	23	19
Diastylidae	36	22	34
Maldanidae	74	22	25
Cylichnidae	119	20	21
Magelonidae	72	19	27
Haustoriidae	170	18	15
Pholoidae	45	18	30
Phyllodocidae	42	18	31

Table 3-10. Summary statistics by station for the 52 Buzzards Bay infaunal samples collected in 2011.

Station	Abundance (All data)	Abundance (Analyzed Data)	Number of Taxa	Common	Less Common	Rare	H′ (log_e)	J′
403	200	200	26	7	10	9	2.55	0.78
404	118	118	18	5	7	6	1.93	0.67
405	182	182	33	7	15	11	2.74	0.78
406	115	115	21	5	11	5	2.53	0.83
407	138	136	24	6	9	9	2.65	0.83
408	127	127	16	7	5	4	2.15	0.77
409	187	169	30	5	11	14	2.83	0.83
410	135	135	26	5	11	10	2.78	0.85
411	100	95	19	5	11	3	2.16	0.74
412	62	59	16	5	5	6	2.39	0.86
413	406	406	27	7	14	6	1.36	0.41
414	514	513	31	5	11	15	1.19	0.35
415	618	618	25	7	13	5	0.88	0.27
416	941	941	27	7	10	10	0.91	0.28
417	50	50	12	4	4	4	1.38	0.55
418	144	144	14	7	6	1	1.82	0.69
419	181	181	12	4	6	2	0.87	0.35
424	118	118	22	7	12	2	2.35	0.76
425	151	151	21	6	10	5	2.36	0.78
427	119	119	18	4	11	3	2.12	0.73
428	379	379	22	7	11	4	1.44	0.46
429	572	572	21	7	10	4	1.35	0.44
430	244	244	18	6	11	1	2.16	0.75
431	66	66	18	6	11	1	1.85	0.64
432	10	10	5	3	2	0	1.56	0.97
433	519	519	14	6	5	3	0.37	0.14
434	80	80	16	6	9	1	1.68	0.61
435	117	117	20	7	9	4	2.39	0.80
436	176	176	21	6	12	3	2.09	0.69
437	200	200	17	6	8	3	1.38	0.49
438	437	437	19	7	9	3	1.01	0.34
439	160	160	19	5	7	7	1.83	0.62
440	414	414	20	6	9	5	1.36	0.45
441	566	564	32	7	15	10	1.78	0.51
442	511	511	28	7	14	6	1.71	0.51
443	329	328	18	6	7	5	1.05	0.36
444	245	245	20	6	4	9	1.33	0.44
446	401	400	38	7	14	17	2.63	0.72
447	347	347	34	7	14	13	2.78	0.79
448	310	310	32	7	11	14	2.92	0.84
449	396	395	56	7	15	31	3.14	0.78
450	156	156	32	4	12	16	3.00	0.87

Station	Abundance (All data)	Abundance (Analyzed Data)	Number of Taxa	Common	Less Common	Rare	H′ (log_e)	J′
451	93	93	17	6	7	4	2.01	0.71
452	151	150	19	5	7	7	2.09	0.71
453	104	104	17	6	5	6	1.94	0.68
455	175	174	27	6	11	10	2.26	0.69
456	905	903	32	7	12	11	2.01	0.58
458	533	533	48	5	16	25	2.90	0.75
459	649	649	31	7	11	11	2.23	0.65
460	167	167	25	6	12	7	2.77	0.86
462	252	252	17	3	7	5	1.56	0.55
463	74	73	20	5	10	5	2.67	0.89

  - **Group 3A** (Station 414) was an outlier to the remainder of Group 3 at the 42.9% level of similarity, due in part to the dominance of the bivalve family Nuculidae. Nuculids were common at several stations in Group 3, but reached their highest density of 401 individuals at this station. Station 414 also contained a higher number of Anthozoa (n=11) than was seen at other stations in Group 3
  - **Group 3B** (n=6) was dominated by the bivalve family Nuculidae and the polychaete families Nephtyidae, Paraonidae, Lumbrineridae, and Chaetopteridae. These five taxa had a cumulative contribution of 55.1%. All six stations were 15–30 m deep and sandy, except for Station 452, which was muddy. Three EMU types were represented with the common types 133 (n=4) and 233 (n=1) as well as the rare type 123 (n=1) present.
  - **Group 3C** (n=16) was dominated by the polychaete families Lumbrineridae, Spionidae, Paraonidae, the crab family Pinnotheridae, and Oligochaeta, which combined had a cumulative contribution of 31.5%. Three stations in this group (Stations456, 458, and 459) had high abundances of both barnacles and slipper shells, but those two taxa did not comprise more than 50% of the organisms present as was reported for Station 462. Depth covered the full range of 5–100 m, and both mud and sand stations were present. EMU types were also mixed, with six types occurring; the common type 233 (n=7) occurred most frequently.

- **Group 4** (n=27) was dominated by the amphipod family Ampeliscidae, which had a contribution of 14.59%. The polychaete families Nephtyidae, Paraonidae, Capitellidae, and Spionidae cumulatively contributed an additional 27.28%.
  - **Group 4A** (n=1) contained a single station, Station 417. This station had the second lowest abundance of the Buzzards Bay samples with 50 individuals. More than half of these individuals belonged to the amphipod family Ampeliscidae (n=33).
  - **Group 4B** (n=2) Stations 411 and 412 clustered together at 60% similarity. Ampeliscidae, Magelonidae, Spionidae, Mactridae, and Paraonidae cumulatively comprised 53.7% of the fauna.
  - **Group 4C** (n=2) Stations 419 and 431 clustered together with 64.3% similarity. Capitellidae, Ampeliscidae, Cirratulidae, and Nuculidae cumulatively comprised 51.6% of the fauna present at these two stations.

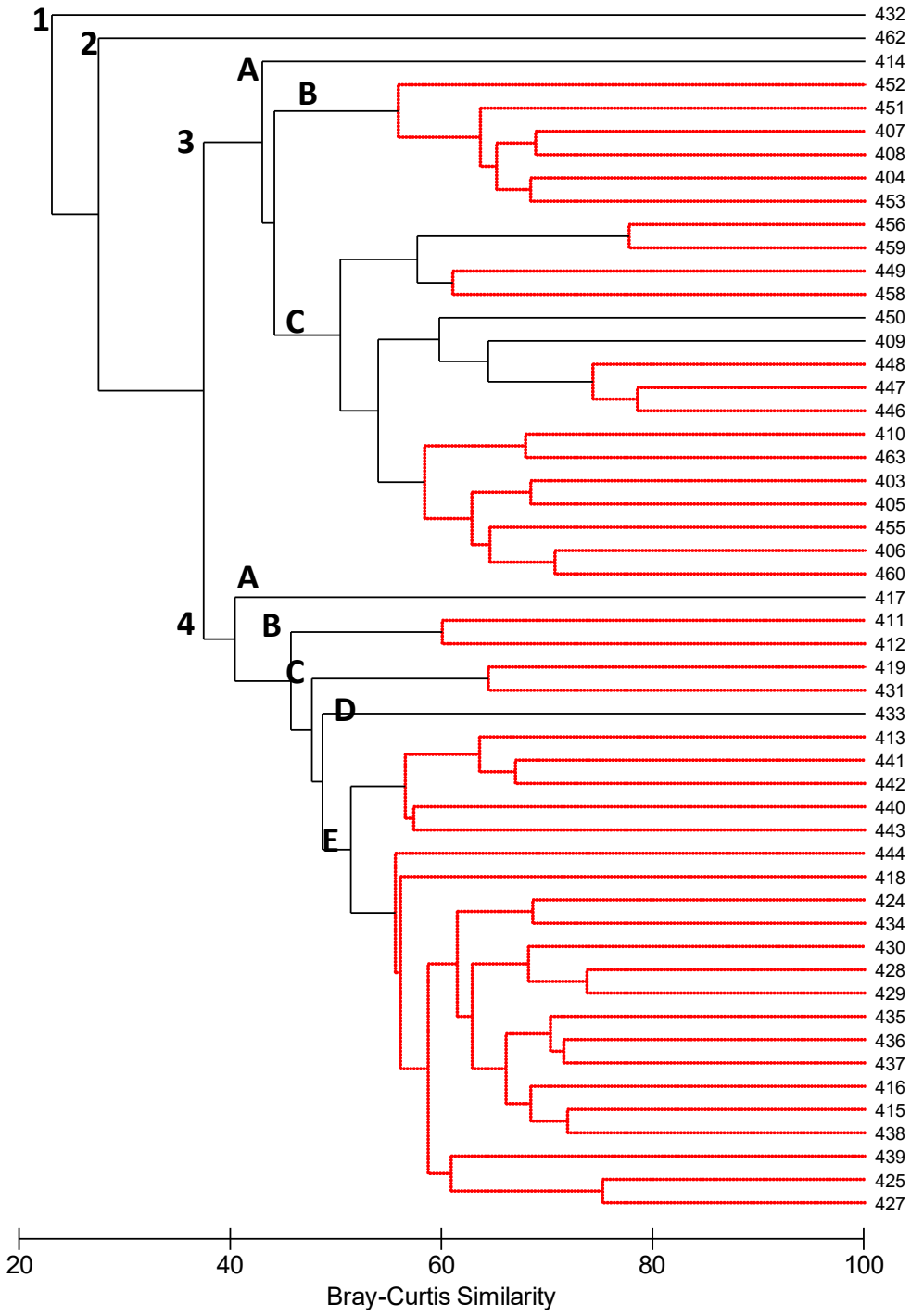

Figure 3-9. Similarity among the 52 stations sampled in Buzzards Bay as determined by the Bray-Curtis algorithm applied to the fourth-root transformed data with group-average clustering. Stations within clusters highlighted in red have infaunal assemblages that are similar to one another (and are dissimilar to sites in adjacent clusters) according to the SIMPROF routine.

Table 3-11. SIMPER results for the 52 Buzzards Bay infaunal stations showing percent similarity (shaded cells) and dissimilarity (unshaded cells) within and between major groups of stations.

Group	1	2	3A	3B	3C	4A	4B	4C	4D	4E
1	NA[1]	87.07	76.03	85.12	83.26	68.25	76.25	63.92	74.11	71.28
2	87.07	NA[1]	66.47	69.45	66.14	84.72	87.61	70.78	77.08	76.57
3A	76.03	66.47	NA[1]	57.31	56.98	82.61	71.58	65.92	74.77	62.77
3B	85.12	69.45	57.31	62.06	55.93	78.81	68.54	63.95	66.47	63.00
3C	83.26	66.14	56.98	55.93	55.20	80.24	68.21	64.51	70.60	59.73
4A	68.25	84.72	82.61	78.81	80.24	NA[1]	59.86	55.55	61.00	59.96
4B	76.25	87.61	71.58	68.54	68.21	59.86	59.97	69.13	53.40	53.00
4C	63.92	70.78	65.92	63.95	64.51	55.55	69.13	64.32	61.65	51.93
4D	74.11	77.08	74.77	66.47	70.60	61.00	53.40	61.65	NA[1]	51.38
4E	71.28	76.57	62.77	63.00	59.73	59.96	53.00	51.93	51.38	57.01

[1] Only a single station represented in Group 1, 2, 3A, 4A, and 4D.

- **Group 4D** (n=1) contained a single outlier station, Station 433. As with the other Group 4 clusters, Ampeliscidae were abundant, compromising 94% of individuals recorded at this station (488 out of 519 individuals). At other stations with large numbers of Ampeliscidae, this percent contribution was not nearly as high.

- **Group 4E** (n=21) was dominated by Ampeliscidae, Nephtyidae, Paraonidae, Capitellidae, and Syllidae, cumulatively comprising 40.22% of the fauna. Stations in this group are all sandy and 15–30 m deep. Three EMU types were represented at these stations, with common types 233 (n=19) and 223 (n=1) as well as rare type 243 (n=1).

MDS plots (Figures 3-10 and 3-11) depict the distribution in two-dimensional space of the cluster groups as well as the factors being examined. The stress level of 0.17 indicates that the plots are reasonable representations of the data. For depth, a loose main grouping of mid-depth stations (15–30 m) was present. The two shallow (5–15 m) and two deep (30–100 m) stations did not group together. Sediment type showed a loose cluster of sand stations with a cluster of 10 mud stations. Stations 462, 431, and 432 did not group with the other mud stations. Nine EMU types, three of which are considered common, were represented in the 52 Buzzards Bay stations. The two most abundant EMU types were 233 and 133. No tight clustering of EMUs was evident. Figure 3-12 shows the spatial arrangement of these groupings.

The null hypothesis that there is no difference in faunal assemblages among depth zones cannot be rejected for the Buzzard Bay samples. The global test statistic (R) was 0.321 with a significance level of 2.4%. Further examination of the pairwise tests shows that the greatest difference is between the 5–15 and 30–100 m deep stations (R=0.404, p<4%). A full list of the pairwise ANOSIM tests is presented in Table 3-12.

Differences based on sediment type were found to be significant with a global test statistic of R=0.365 (p<0.1%), leading to a rejection of the null hypothesis that there is no difference in assemblages based on sediment type. The only pairwise comparison, between mud and sand stations, equals the R value, since no additional sediment types were sampled in Buzzards Bay.

The null hypothesis that there is no difference in faunal assemblages among EMUs cannot be rejected (R=0.228, p<0.2%). This R value falls within the possible values obtained strictly by chance, suggesting that the differences may not be biologically significant. Pairwise tests run the full spectrum with R values of 0 (no difference) to 1 (completely different) and significance levels of 0.1 to 100%.

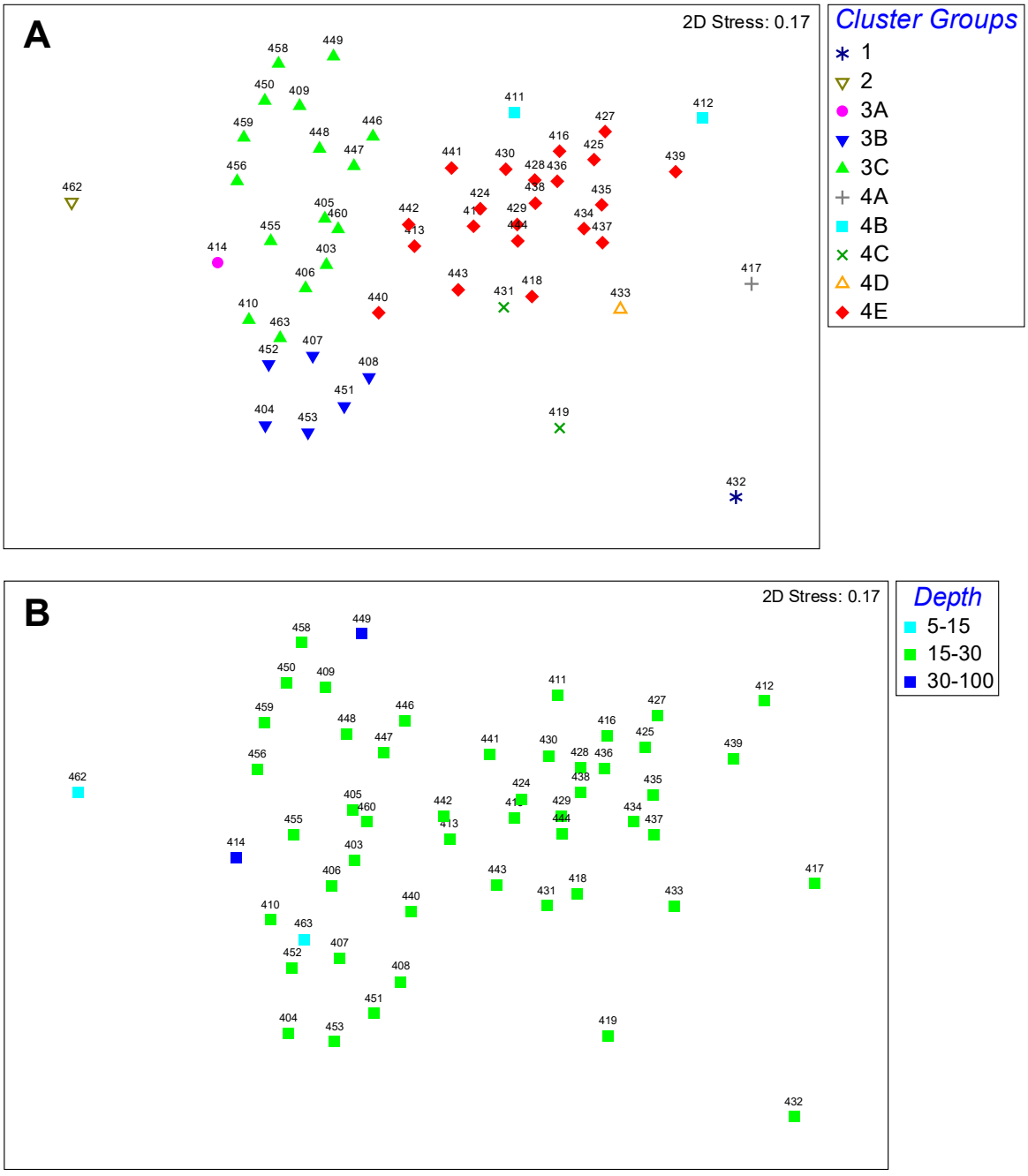

Figure 3-10. Multidimensional scaling diagram of the 52 stations sampled in Buzzards Bay based on (A) cluster groups and (B) depth (m).

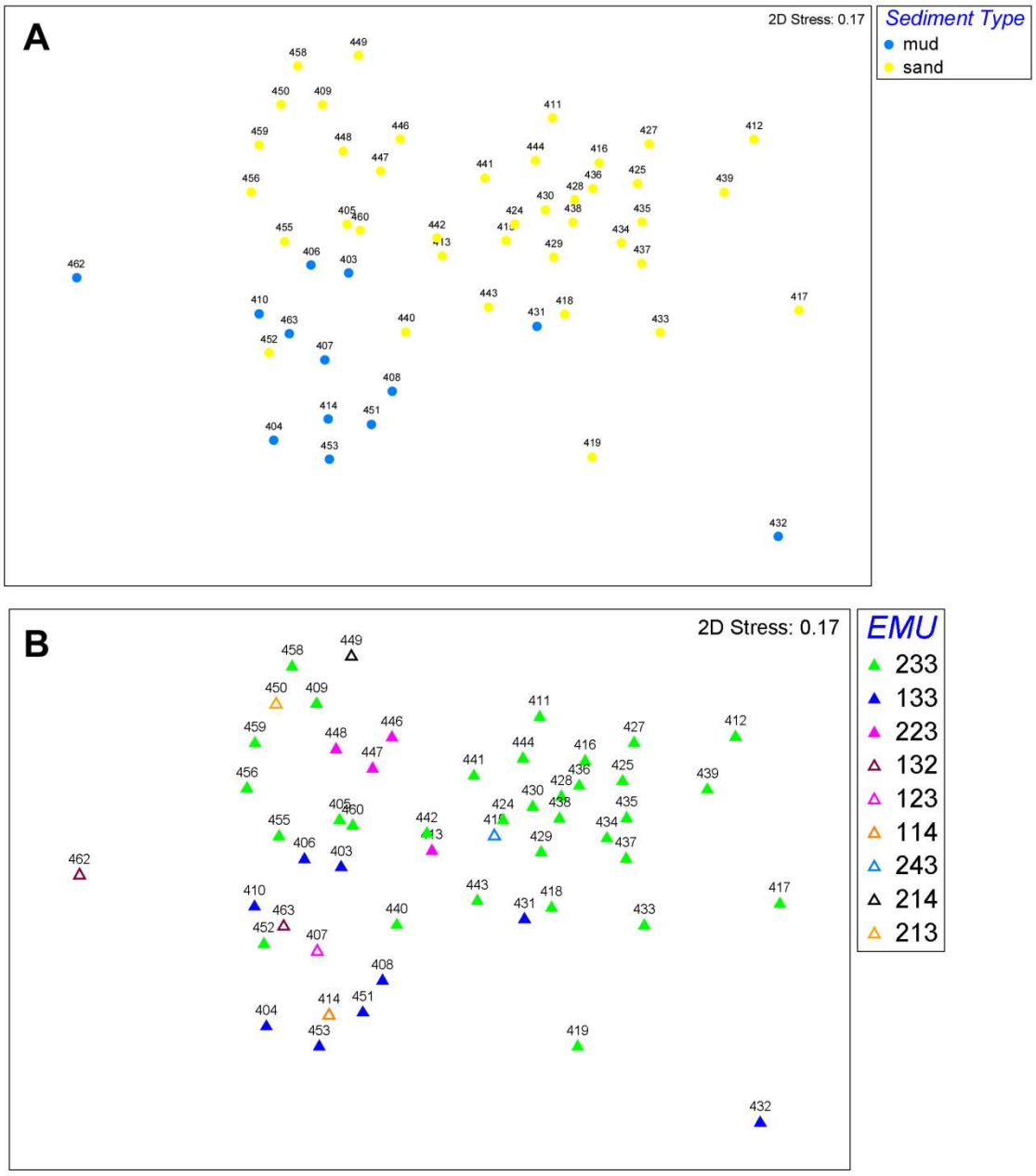

Figure 3-11. Multidimensional scaling diagram of the 52 stations sampled in Buzzards Bay based on (A) sediment type and (B) Ecological Marine Units (EMUs).

Table 3-12. Results of one-way ANOSIM for depth, sediment type, and Ecological Marine Unit (EMU) for the Buzzards Bay infaunal samples.

Factor	Test	Test Statistic (R)	Significance Level (%)
Depth (m)	**Global Test**	**0.321**	**2.4**
	15-30, 30-100	0.232	11.9
	15-30, 5-15	0.404	4.0
	30-100, 5-15	0.25	33.3
Sediment Type[1]	**Global Test**	**0.365**	**0.1**
Ecological Marine Unit	**Global Test**	**0.228**	**0.2**
	133, 233	0.334	0.2
	133, 123	-0.377	90
	133, 223	0.302	5.7
	133, 114	0.358	30
	133, 243	0.235	30
	133, 214	0.549	20
	133, 213	0.407	20
	133, 132	0.234	23.6
	233, 123	0.312	27.3
	233, 223	-0.065	62.5
	233, 114	0.435	9.1
	233, 243	-0.446	100
	233, 214	0.291	27.3
	233, 213	0.359	15.2
	233, 132	0.559	1.2
	123, 223	0.917	20
	123, 132	-1	100
	223, 114	1	20
	223, 243	0.5	20
	223, 214	0.25	40
	223, 213	0.167	40
	223, 132	0.821	6.7
	114, 132	-1	100
	243, 132	0	66.7
	214, 132	0	66.7
	213, 132	0	66.7

[1] Only stations comprised of sand or mud were present in the Buzzards Bay infaunal samples.

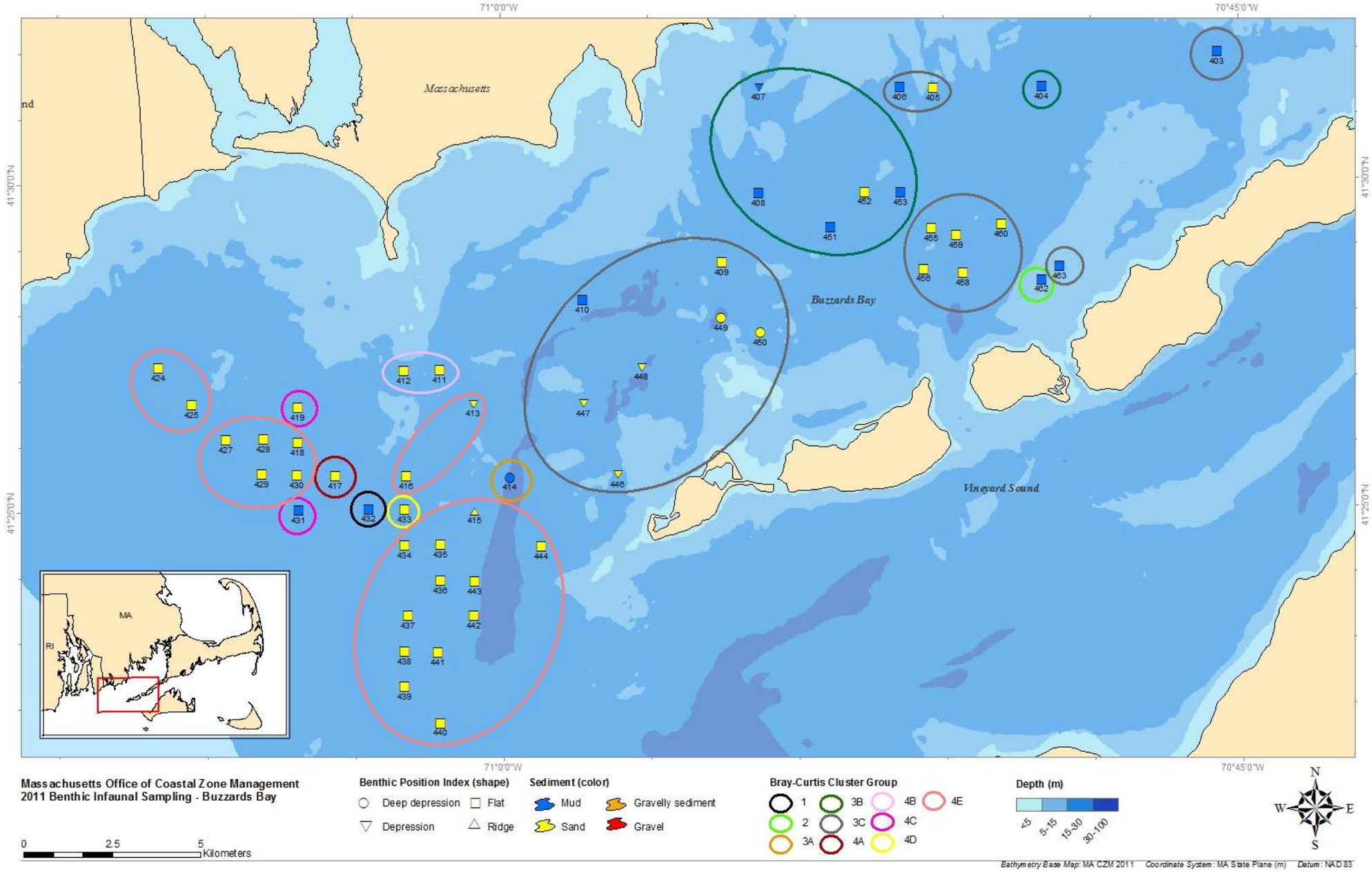

Figure 3-12. Map of Benthic Position Index (BPI), sediment type, and depth for the Buzzards Bay stations. Stations included in each major cluster group are indicated by the polygons.

3.4 Regional Summary

For the three regions analyzed, 161 valid taxa were identified. Polychaetes were dominant, comprising 26.71% of the taxa followed by bivalves (17.39%) and amphipods (13.66%). A summary of taxa by major taxonomic group is presented in Table 3-13.

Table 3-14 lists the taxa identified from the 214 samples. Tables 3-15 through 3-19 provide additional summary information.

Table 3-13. Distribution of the identified taxa according to major taxonomic groups.

Phylum	Subphylum	Class	Order	Number of taxa	Percent Total Fauna
Cnidaria	Anthozoa			1	0.62
Platyhelminthes		Turbellaria		1	0.62
Nemertea				1	0.62
Annelida		Oligochaeta		1	0.62
		Polychaeta		**43**	**26.71**
Arthropoda	Chelicerata	Pycnogonida	Pantopoda	2	1.24
	Crustacea	Cephalocarida	Brachypoda	1	0.62
		Malacostraca	**Amphipoda**	**22**	**13.66**
			Cumacea	5	3.11
			Decapoda	13	8.07
			Isopoda	7	4.35
			Mysida	1	0.62
			Tanaidacea	1	0.62
		Maxillopoda	Sessillia	1	0.62
Mollusca		Aplacophora		1	0.62
		Bivalvia		**28**	**17.39**
		Gastropoda		17	10.56
		Scaphopoda		1	0.62
Sipuncula				2	1.24
Phoronida				1	0.62
Echinodermata		Echinoidea		1	0.62
		Holothuroidea		5	3.11
		Ophiuroidea		2	1.24
Hemichordata				1	0.62
Chordata	Tunicata	Ascidiacea		2	1.24
			TOTAL	161	100.00

Table 3-14. Families identified as part of the 2011 CZM infaunal analysis.

CNIDARIA	Pilargidae
Anthozoa	Pisionidae
PLATYHELMINTHES	Poecilochaetidae
Turbellaria	Polygordiidae
NEMERTEA	Polynoidae
Nemertea	Sabellaridae
ANNELIDA	Sabellidae
Clitellata	Scalibregmatidae
Oligochaeta	Sigalionidae
Oligochaeta	Sphaerodoridae
Polychaeta	Spionidae
Ampharetidae	Spirorbidae
Apistobranchidae	Sternaspidae
Capitellidae	Syllidae
Chaetopteridae	Terebellidae
Cirratulidae	Trichobranchidae
Cossuridae	Trochochaetidae
Dorvilleidae	**ARTHROPODA**
Eunicidae	**CHELICERATA**
Flabelligeridae	**Pycnogonida**
Glyceridae	**Pantopoda**
Goniadidae	Callipallenidae
Hesionidae	Phoxichilidiidae
Lumbrineridae	**CRUSTACEA**
Magelonidae	**Cephalocarida**
Maldanidae	**Brachiopoda**
Nephtyidae	Hutchinsoniellidae
Nereididae	**Malacostraca**
Oenonidae	**Amphipoda**
Onuphidae	Ampeliscidae
Opheliidae	Ampithoidae
Orbiniidae	Aoridae
Oweniidae	Argissidae
Paraonidae	Bateidae
Pectinariidae	Caprellida
Pholoidae	Corophiidae
Phyllodocidae	Dulichiidae
Haustoriidae	Chaetiliidae
Ischyroceridae	Cirolanidae
Liljeborgiidae	Idoteidae

Lysianassidae
Maeridae
Melitidae
Oedicerotidae
Photidae
Phoxocephalidae
Pleustidae
Pontogeneiidae
Pontoporeiidae
Stenothoidae
Unciolidae

Cumacea

Bodotriidae
Diastylidae
Lampropidae
Leuconidae
Nannastacidae

Decapoda

Anomura

Paguridae

Axiidea

Axiidae
Callianassidae

Brachyura

Calappidae
Cancridae
Epialtidae
Majidae
Panopeidae
Pinnotheridae
Portunidae
Varunidae

Caridea

Crangonidae

Gebiidae

Upogebiidae

Isopoda

Ancinidae
Anthuridae
Veneridae
Yoldiidae

Gastropoda

Paramunnidae
Sphaeromatidae

Mysida

Mysidae

Tanaidacea

Tannaissuidae

Maxillopoda

Sessilia

Balanidae

MOLLUSCA

Aplacophora

Chaetodermatidae

Bivalvia

Anomiidae
Arcidae
Arcticidae
Astartidae
Cardiidae
Carditidae
Corbulidae
Crassatellidae
Hiatellidae
Lasaeidae
Leptonidae
Lucinidae
Lyonsiidae
Mactridae
Montacutidae
Myidae
Mytilidae
Nuculidae
Pandoridae
Periplomatidae
Petricolidae
Pharidae
Solenidae
Tellinidae
Thraciidae
Thyasiridae

SIPUNCULA

Golfingiidae
Sipunculidae

Acmaeidae	**PHORONIDA**
Acteonidae	Phoronidae
Caecidae	**ECHINODERMATA**
Calyptraeidae	**Echinoidea**
Columbellidae	Echinarachniidae
Cylichnidae	**Holothuroidea**
Eulimidae	Caudinidae
Mangeliidae	Molpadiidae
Nassariidae	Phyllophoridae
Naticidae	Sclerodactylidae
Nudibranchia spp.	Synaptidae
Pyramidellidae	**Ophiuroidea**
Retusidae	Amphiuridae
Rissoidae	Ophiuridae
Schaphandridae	**HEMICHORDATA**
Turridae	Harrimaniidae
Vitrinellidae	**CHORDATA**
Scaphopoda	Molgulidae
Gadilidae	Styelidae

Table 3-15. Summary of infauna across subregions for the 214 benthic stations sampled.

	Total # Individuals	# Taxa	Mean # Individuals per Grab (+/- SD)	# Stations with > 1000 Individuals per Grab	Mean Shannon Index (+/- SD)	Mean J' (+/- SD)
Cape Cod Bay	64,789	104	970 +/- 910	21	2.00 +/-0.43	0.62 +/-0.09
South of Islands	56,787	128	600 +/- 712	15	1.77 +/-0.62	0.58 +/- 0.20
Buzzards Bay	14,305	114	276 +/-468	0	1.98 +/-0.66	0.64 +/- 0.19

Table 3-16. Contribution of phyla to infaunal grabs across subregions.

	% Annelida	% Arthropoda	% Mollusca	% Other
Cape Cod Bay	35.58	27.88	25.96	10.58
South of Islands	30.47	35.16	27.34	7.03
Buzzards Bay	29.82	32.46	28.95	8.77

Table 3-17. Summary of sediment types across subregions. Only stations containing infauna are included.

	Total # Stations	# Stations Classified as Mud	# Stations Classified as Sand	# Stations Classified as Gravelly	# Stations Classified as Gravel
Cape Cod Bay	67	37 (55%)	29 (43%)	1 (2%)	0
South of Islands	95	4 (4%)	79 (83%)	10 (11%)	2 (2%)
Buzzards Bay	53	11 (21%)	42 (79%)	0	0

Table 3-18. Summary of sediment types across subregions. All stations in study area are included.

	Total # Stations	# Stations Classified as Mud	# Stations Classified as Sand	# Stations Classified as Gravelly	# Stations Classified as Gravel
Cape Cod Bay	108	37 (34%)	65 (60%)	4 (4%)	2 (2%)
South of Islands	120	4 (3%)	97 (81%)	15 (13%)	4 (3%)
Buzzards Bay	53	11 (21%)	42 (79%)	0	0

Table 3-19. Most abundant taxa (by % of total) in each subregion.

	Most Abundant	Second most abundant	Third most abundant	Other notables
Cape Cod Bay	Paraonidae (polychaete) 20%	Polygordiidae (polychaete) 16%	Syllidae (polychaete) 8%	
South of Islands	Nuculidae (bivalve) 25%	Capitellidae (polychaetes) 16%	Ampeliscidae (amphipod) 9%	
Buzzards Bay	Ampeliscidae (amphipod) 33%	Nuculidae (bivalve) 11%	Spionidae (polychaete) 6%	Balanidae (barnacles; 7th most abundant) Calyptraeidae (slipper shells ; 8th most abundant)

4.0 Conclusions

Two distinct faunal assemblages were identified for Cape Cod Bay, Group 1 (55 stations) and Group 2 (12 stations). For South of the Islands, the stations formed a continuum rather than identifiable groups. The 28 small groups identified by SIMPROF were condensed down to 17 groups and subgroups for reporting purposes. Two main groups and two groups of outliers were identified for Buzzards Bay, with several small subgroups within the larger groups. Groups in both South of the Islands and Buzzards Bay stations did not cluster based on the three factors of interest. The presence of many small groups in these two study areas suggests that factors other than depth, sediment type, and EMU are structuring these communities.

The ANOSIM tests of the null hypotheses varied amongst the three study areas. In Cape Cod Bay, all three null hypotheses were rejected based on significant global R values of 0.528 (depth), 0.501 (sediment type), and 0.609 (EMU). The null hypotheses for depth and sediment type could not be rejected for South of the Islands stations due to the global statistic falling within the range of possible values achieved by chance. This suggests that the differences found may not be biologically significant. The null hypothesis that there is no difference in faunal assemblages among EMUs was rejected, but pairwise tests ran the full spectrum fromh R values of 0 (no difference) to 1 (completely different) and significance levels of 0.1 to 100%. For Buzzards Bay, the null hypothesis for no difference in assemblages based on sediment type was rejected. The null hypothesis for both depth and EMU could not be rejected for Buzzards Bay due to the global test statistic falling within the range of possible values achieved by chance but some pairwise tests did show support for biologically significant differences.

5.0 References

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Appendix A

Infaunal Station Locations

Table A-1. Station locations for the 2011 benthic infaunal samples.

STATION	LATITUDE	LONGITUDE	Depth (m)	Sediment	EMU
1	41.397597	-70.806285	15–30	Sand	233
2	41.39772	-70.817993	15–30	Sand	233
4	41.39809	-70.878522	30–100	Sand	224
9	41.353577	-71.009462	15–30	Mud	133
10	41.353133	-70.95066	15–30	Sand	233
11	41.335478	-70.926218	30–100	Sand	224
12	41.334633	-70.902603	30–100	Sand	224
15	41.307948	-70.878845	30–100	Sand	224
16	41.299033	-70.878753	30–100	Sand	224
17	41.289807	-70.878907	30–100	Sand	234
18	41.290628	-70.89104	30–100	Sand	224
19	41.280892	-70.89137	30–100	Mud	124
20	41.272137	-70.891525	30–100	Gravelly sediment	334
21	41.27229	-70.878905	15–30	Sand	233
22	41.263035	-70.890762	30–100	Mud	134
23	41.263122	-70.903492	30–100	Sand	224
24	41.254152	-70.903275	30–100	Sand	234
25	41.245405	-70.903653	30–100	Sand	234
26	41.227163	-70.891313	15–30	Gravel	433
28	41.254083	-70.890942	30–100	Sand	234
32	41.271992	-70.866658	15–30	Sand	233
34	41.28051	-70.866628	15–30	Gravelly sediment	333
35	41.289483	-70.865965	15–30	Sand	233
37	41.298648	-70.855197	15–30	Sand	233
38	41.298905	-70.842047	15–30	Sand	233
42	41.270927	-70.782905	5–15	Sand	242
43	41.243717	-70.784338	15–30	Mud	123
44	41.235653	-70.784533	15–30	Sand	233
48	41.198813	-70.808715	15–30	Sand	233
50	41.199397	-70.772308	30–100	Sand	234
51	41.208718	-70.772765	30–100	Sand	234
52	41.207617	-70.759512	30–100	Sand	234
54	41.226448	-70.760073	15–30	Sand	233
55	41.226372	-70.771618	15–30	Sand	233
57	41.235472	-70.759508	15–30	Sand	233
58	41.235085	-70.747668	15–30	Sand	233
59	41.234432	-70.735762	15–30	Sand	233
60	41.25302	-70.73554	15–30	Sand	233
62	41.271413	-70.735713	15–30	Sand	233

STATION	LATITUDE	LONGITUDE	Depth (m)	Sediment	EMU
64	41.279622	-70.699215	15–30	Sand	233
66	41.297863	-70.699353	15–30	Sand	233
67	41.306707	-70.710998	15–30	Mud	133
68	41.316058	-70.699517	15–30	Gravel	433
69	41.306568	-70.699745	15–30	Sand	233
74	41.296683	-70.615947	15–30	Sand	233
75	41.305918	-70.61601	15–30	Sand	233
77	41.314368	-70.520557	15–30	Sand	233
78	41.3144	-70.508668	5–15	Sand	232
80	41.287482	-70.509057	15–30	Sand	223
81	41.278613	-70.509173	15–30	Sand	233
81dup	41.278505	-70.507648	15–30	Sand	233
82	41.26949	-70.497723	15–30	Sand	223
95	41.230698	-70.236105	15–30	Sand	233
97	41.239187	-70.21122	15–30	Sand	233
98	41.192827	-70.104188	15–30	Sand	223
99	41.201468	-70.068333	15–30	Sand	223
100	41.210075	-70.056498	15–30	Sand	233
101	41.210207	-70.020443	15–30	Sand	223
102	41.190895	-69.969837	15–30	Sand	233
103	41.199922	-69.96117	15–30	Sand	243
107	41.225108	-69.937	15–30	Gravelly sediment	323
113	41.289548	-69.902708	5–15	Sand	242
115	41.297645	-69.911173	5–15	Gravelly sediment	332
119	41.3526	-69.94236	15–30	Sand	223
120	41.361352	-69.943395	15–30	Sand	223
121	41.362362	-69.957463	5–15	Gravelly sediment	342
123	41.371448	-69.969555	5–15	Sand	232
125	41.344315	-69.954583	5–15	Sand	232
130	41.28136	-69.911567	15–30	Gravelly sediment	323
135	41.236533	-69.936173	30–100	Gravelly sediment	314
140	41.229993	-70.163637	5–15	Sand	242
141	41.257572	-70.210773	5–15	Sand	232
142	41.257995	-70.234312	5–15	Sand	232
156	41.323325	-70.4967	5–15	Sand	232
159	41.332973	-70.543325	5–15	Sand	232
161	41.333292	-70.60396	5–15	Sand	232
162	41.333505	-70.639068	5–15	Sand	232
163	41.324438	-70.675608	15–30	Sand	233
164	41.333788	-70.686973	5–15	Sand	232
166	41.333773	-70.710852	5–15	Sand	232

STATION	LATITUDE	LONGITUDE	Depth (m)	Sediment	EMU
168	41.316362	-70.74698	5–15	Gravelly sediment	332
169	41.2984	-70.759527	5–15	Sand	232
170	41.289542	-70.747302	15–30	Sand	233
171	41.289588	-70.75863	15–30	Sand	233
172	41.297172	-70.815957	5–15	Sand	232
173	41.307577	-70.841077	15–30	Sand	233
175	41.31754	-70.854645	15–30	Sand	223
176	41.317098	-70.86659	30–100	Sand	224
180	41.360858	-70.781618	15–30	sand	233
181	41.370407	-70.782593	15–30	sand	233
182	41.388135	-70.770417	15–30	sand	233
183	41.433235	-70.74833	15–30	sand	233
184	41.414437	-70.721712	15–30	sand	233
218	41.495325	-70.672132	15–30	Gravelly sediment	323
220	41.468913	-70.745858	15–30	Gravelly sediment	323
293	41.779372	-70.200078	5–15	Sand	232
303	41.798072	-70.224415	15–30	Sand	233
313	41.816028	-70.224002	15–30	Sand	233
314	41.82466	-70.223573	15–30	Sand	233
315	41.833958	-70.235795	15–30	Gravelly sediment	333
316	41.833355	-70.223803	15–30	Sand	233
317	41.83318	-70.199728	5–15	Sand	232
318	41.86091	-70.211262	15–30	Sand	233
319	41.860722	-70.22307	15–30	Sand	233
320	41.860872	-70.259505	15–30	Sand	233
321	41.869995	-70.27094	15–30	Mud	133
322	41.888232	-70.295085	30–100	Mud	134
323	41.897197	-70.306872	30–100	Mud	134
327	41.924497	-70.29407	30–100	Mud	134
328	41.915113	-70.282387	30–100	Mud	134
329	41.905838	-70.270737	30–100	Mud	134
330	41.897047	-70.245773	30–100	Mud	134
331	41.88753	-70.24602	30–100	Mud	134
332	41.8785	-70.209752	15–30	Sand	233
334	41.914398	-70.172992	15–30	Sand	233
335	41.91429	-70.197858	30–100	Mud	134
336	41.923062	-70.1854	30–100	Mud	134
337	41.931823	-70.184853	30–100	Mud	134
338	41.941588	-70.209103	30–100	Mud	134
339	41.932647	-70.209363	30–100	Mud	134
340	41.923612	-70.209448	30–100	Mud	134

STATION	LATITUDE	LONGITUDE	Depth (m)	Sediment	EMU
341	41.914423	-70.233808	30–100	Mud	134
342	41.914662	-70.246053	30–100	Mud	134
343	41.923867	-70.258037	30–100	Mud	134
344	41.941897	-70.269275	30–100	Mud	134
345	41.933123	-70.281705	30–100	Mud	134
347	41.933097	-70.293793	30–100	Mud	134
352	41.933857	-70.330288	30–100	Mud	134
353	41.942698	-70.342312	30–100	Mud	134
354	41.924958	-70.342535	30–100	Mud	134
355	41.934338	-70.366838	30–100	Mud	134
356	41.943565	-70.3913	30–100	Mud	134
357	41.915937	-70.378713	30–100	Mud	134
358	41.90812	-70.378837	30–100	Mud	134
359	41.907615	-70.390955	30–100	Mud	134
360	41.916795	-70.402492	30–100	Mud	134
361	41.907782	-70.415153	30–100	Mud	134
362	41.916382	-70.426763	30–100	Mud	134
363	41.925415	-70.414642	30–100	Mud	134
364	41.934897	-70.414563	30–100	Mud	134
365	41.934888	-70.43908	30–100	Mud	134
366	41.925723	-70.438987	30–100	Sand	234
367	41.91652	-70.4394	30–100	Mud	134
368	41.907743	-70.439093	30–100	Mud	134
369	41.916833	-70.450497	30–100	Sand	234
370	41.916998	-70.462573	30–100	Sand	234
371	41.917133	-70.474942	30–100	Sand	234
372	41.925937	-70.462942	30–100	Sand	234
373	41.934833	-70.462383	30–100	Sand	234
375	41.97191	-70.55815	15–30	Sand	233
376	41.980865	-70.546402	30–100	Sand	234
377	41.980675	-70.558347	15–30	Sand	233
378	41.981005	-70.583002	15–30	Sand	243
380	41.944802	-70.546995	15–30	Sand	243
381	41.935713	-70.546398	5–15	Sand	242
382	41.917242	-70.499133	15–30	Sand	233
383	41.908145	-70.498832	15–30	Sand	233
388	41.871625	-70.451005	15–30	Mud	133
389	41.862532	-70.463415	15–30	Sand	233
392	41.845455	-70.500393	5–15	Sand	242
393	41.836632	-70.499823	5–15	Sand	242
395	41.800188	-70.488713	15–30	Sand	233

STATION	LATITUDE	LONGITUDE	Depth (m)	Sediment	EMU
403	41.532172	-70.757025	15–30	Mud	133
404	41.523768	-70.816567	15–30	Mud	133
405	41.523458	-70.853153	15–30	Sand	233
406	41.523728	-70.86444	15–30	Mud	133
407	41.523922	-70.912293	15–30	Mud	123
408	41.497043	-70.912515	15–30	Mud	133
409	41.479582	-70.925062	15–30	Sand	233
410	41.470108	-70.972557	15–30	Mud	133
411	41.452605	-71.020927	15–30	Sand	233
412	41.452373	-71.032975	15–30	Sand	233
413	41.443822	-71.009793	15–30	Sand	223
414	41.425092	-70.997232	30–100	Mud	114
415	41.416637	-71.009367	15–30	Sand	243
416	41.425642	-71.03245	15–30	Sand	233
417	41.425705	-71.056257	15–30	Sand	233
418	41.434162	-71.069127	15–30	Sand	233
419	41.443093	-71.069068	15–30	Sand	233
424	41.453377	-71.116018	15–30	Sand	233
425	41.443977	-71.104945	15–30	Sand	233
427	41.434957	-71.09323	15–30	Sand	233
428	41.435115	-71.080663	15–30	Sand	233
429	41.42614	-71.081188	15–30	Sand	233
430	41.425947	-71.069372	15–30	Sand	233
431	41.41702	-71.068962	15–30	Mud	133
432	41.417252	-71.045018	15–30	Mud	133
433	41.417067	-71.033032	15–30	Sand	233
434	41.407942	-71.033132	15–30	Sand	233
435	41.408072	-71.020983	15–30	Sand	233
436	41.398965	-71.02103	15–30	Sand	233
437	41.390105	-71.032137	15–30	Sand	233
438	41.38096	-71.033275	15–30	Sand	233
439	41.371958	-71.03326	15–30	Sand	233
440	41.362748	-71.021375	15–30	Sand	233
441	41.380608	-71.021967	15–30	Sand	233
442	41.38993	-71.009675	15–30	Sand	233
443	41.398623	-71.009412	15–30	Sand	233
444	41.407587	-70.98669	15–30	Sand	233
446	41.425683	-70.960992	15–30	Sand	223
447	41.44376	-70.97246	15–30	Sand	223
448	41.452928	-70.9525	15–30	Sand	223
449	41.4654	-70.92556	30–100	Sand	214

STATION	LATITUDE	LONGITUDE	Depth (m)	Sediment	EMU
450	41.46156	-70.912277	15–30	Sand	213
451	41.488218	-70.888228	15–30	Mud	133
452	41.497195	-70.876717	15–30	Sand	233
453	41.497073	-70.864612	15–30	Mud	133
455	41.487853	-70.854303	15–30	Sand	233
456	41.477493	-70.856812	15–30	Sand	233
458	41.47645	-70.843512	15–30	Sand	233
459	41.485948	-70.845718	15–30	Sand	233
460	41.488708	-70.830545	15–30	Sand	233
462	41.474652	-70.816918	5–15	Mud	132
463	41.478063	-70.81076	5–15	Mud	132

Appendix B

QA/QC Documentation and Corrective Action Log

CZM 2011 Benthos Corrective Action Log

AECOM Marine and Coastal Center

Date	Task(s)	Task Description	Description of Corrective Action	Date Corrective Action Completed
Cape Cod Bay Infaunal Samples				
11/23/11	3	Infaunal identifications.	A taxonomy problem was identified at Cove Corporation. Both Denise Crivella and Barbara Weems misidentified goniadids as glycerids. Both taxonomists were retrained on how to distinguish the two families and were required to reidentify/recount all Glyceridae vials from all batches before any further taxonomic QC inspections were performed. After retraining, no other Glyceridae or Goniadidae misidentifications were detected in the subsequent taxonomic QC inspections.	11/28/11
12/1/11	3	Infaunal data analysis.	Todd Callaghan requested that the analysis be run with fourth-root rather than square-root transformation. Analysis rerun and database resubmitted.	12/1/11
12/6/11	3	Identification of Ascidiacea juveniles.	Mary Carmen, WHOI, examined them and was unsure of what they were. Tim Morris, Cove Corporation, responded with the following “I have seen thousands of individuals of a wide size range and from many different locales along the eastern sea board. Izzie and I both agree the smaller individuals are ascidians because they look like little versions of the larger individuals we have identified to species. However, they can’t be identified because their branchial basket is too poorly developed, but they do have tiny incurrent and excurrent siphons, are covered with sand grains, and many have root-like stolons to anchor them in sandy environments.” Ed Enos, MBL, also confirmed the identification.	1/5/12

Date	Task(s)	Task Description	Description of Corrective Action	Date Corrective Action Completed
12/9/11	3	Infaunal identifications.	The following name changes were made to the database: Nuculanidae=Yoldiidae, Nototanaidae=Tanaissuidae, Isaeidae=Photidae, Aoridae=Unciolidae, Podoceridae=Dulichiidae based on currently accepted classification scheme in the World Register of Marine Species.	1/13/12
South of the Islands Infaunal Samples				
12/23/11	4	Sta. 172 subsample.	Following discussion with Todd Callaghan, specimens in this subsample were identified but were excluded from all analysis since the sample was not quantitative.	12/23/11
Buzzard Bay Benthic Samples				
3/7/12	5	Infaunal identifications.	Two errors noted in database. Spelling of “Gadiidae” corrected to read “Gadilidae” and Nototanaidae corrected to read Tanaissuidae.	3/7/12
Draft Infaunal Report				
3/12/11	6	Taxa included in analysis.	Due to the project objective, the taxa Balanidae, Calyptraeidae, Mytilidae, Spirorbidae, and Sabellaridae were included in analysis even though they are considered to be infaunal organisms. Analyses for the three regions were rerun.	3/15/12
3/15/12	6	ANOSIM analysis of data based on three factors of interest.	Revised codes received from D. Sampson and analysis rerun using correct information.	3/20/12

Quality Assurance Statement

Project: CZM 2011 Benthos

Description of Data Set or Deliverable: Cape Cod Bay Benthic Data

I. Description of Audit and Review Activities:

Comparison of raw data vs. database

II. Accuracy:

√ QC samples and calibration standards were analyzed according to the CWQAPP and the acceptance criteria were met. (Attach QC data with DQO calculated). Corrective action for exceedences was taken.

√ Samples were analyzed according to the procedures specified in the CWQAPP.

√ 100% hand-entered and/or calculated data were checked for accuracy.

√ Data are reported in the units specified in the CWQAPP.

√ Qualifiers are assigned properly. Distinguish between suspect (s) - reported but not used in calculations, and Error (e) - data unavailable due to instrument failure or sample loss.

III. Completeness

√ All samples received are reported.

√ All parameters specified in the CWQAPP for this task are reported.

IV. Description of outstanding issues or deficiencies noted above that may affect data quality.

There are no outstanding issues.

11/23/11

Signature of Reviewer/Date

11/29/11

Signature of Task Leader/Date

AECOM

Sorting Sample Batch Listing Sheet

Client: CZM Benthic Infaunal Analysis	Study Site: Cape Cod Bay
Sorter: Briley Morrill	Survey Date: September 2011

I. BATCHES OF SAMPLES

Batch #1	Batch #2	Batch #3	Batch #4
1) Sta. 330	1) Sta. 342	1) Sta. 340	1)
2) Sta. 328	2) Sta. 321	2) Sta. 341	2)
3) Sta. 339	3) Sta. 293	3) Sta. 334	3)
4) Sta. 329	4) Sta. 336	4) Sta. 314	4)
5) Sta. 322	5) Sta. 335	5) Sta. 316	5)
6) Sta. 343	6) Sta. 320	6) Sta. 313	6)
7) Sta. 303	7) Sta. 338	7) Sta. 331	7)
8) Sta. 319	8) Sta. 337	8) Sta. 332	8)
9) Sta. 323	9) Sta. 327	9)	9)
10)	10)	10)	10)

II. QC EVALUATION

QC Results	Batch #1	Batch #2	Batch #3	Batch #4
QC Sample	303	293	341	
QC Date	Nov. 21, 2011	Nov. 21, 2011	Nov. 21, 2011	
QC Inspector	Stacy Doner	Stacy Doner	Stacy Doner	
Percent Error	1.08%	0.70%	2.54%	

III. COMMENTS CONCERNING SAMPLE PROCESSING

Necessary Remedial Action:
None
Comments:
None

2011 CZM Benthic Infauna Quality Assurance Statement

Subcontractor: Cove Corporation

Task: Sorting and taxonomy of CZM's Cape Cod Bay macrobenthic samples

Date(s) infaunal samples were collected: September 10-11, 2011

Date task was completed: October 31, 2011

Number of samples analyzed: 41

Description of audit and review activities:

See "QC Report".

Description of outstanding issues or deficiencies that may affect data quality:

See "Corrective Action Log".

Remarks:

There are no additional comments to report.

Tim Mavis

Signature of Subcontractor QA Officer

October 31, 2011

Date

Quality Control Report of Infaunal Sorting

Denise H. Crivella (n=18 samples) and Barbara A. Weems (n=23 samples) sorted the 41 Cape Cod Bay macrobenthic samples. Each sorter's samples were divided into batches with a maximum of 10 samples in each batch (see attached sorting sample batch listings). For all batch with 5 or more samples (n=4), one sample from each batch was randomly selected to evaluate sorting performance. All four samples passed the sorting QC evaluation (see Tables 2 and 3). A 95% efficiency level was used to evaluate whether or not the batch passed or failed the QC inspection.

Table 2. Overall sorting performance.

Total number of samples sorted	41
Total number of QC samples	4
Percentage of samples checked	9.8
Total number of QC failures	0
Total number of samples resorted	0
Overall sorting QC error for Denise Crivella (percentage)	0.9
Overall sorting QC error for Barbara Weems (percentage)	0.4

Table 3. Detailed sorting QC results.

Sorter	Batch	Station Id.	QC Inspector and Inspection Date	No. Found	Total No.	% Error
DHC	3	375	BAW 25OCT11	7	961	0.7
DHC	4	359	BAW 25OCT11	6	510	1.2
overall sorting performance for DHC				13	1471	0.9
BAW	1	380	DHC 25OCT11	4	552	0.7
BAW	2	360	DHC 25OCT11	0	360	0.0
overall sorting performance for BAW				4	912	0.4

Quality Control Report of Infaunal Taxonomy

Denise H. Crivella (Polychaeta; n = 20 samples), C. Timothy Morris (Arthropoda and misc. taxa; n = 41 samples), Nancy K. Mountford (Mollusca; n = 41 samples), and Barbara A. Weems (Polychaeta; n = 21 samples) identified the 41 Cape Cod Bay macrobenthic samples. Each taxonomist's samples were divided into batches with 10 or 11 samples in each batch (see attached taxonomy sample batch listings). One sample from the batch was randomly selected to evaluate taxonomy performance of each taxonomist. Please note that in some cases (e.g., Tim Morris and Nancy Mountford) the taxonomist who identified the sample performed the QC check. The reason is quite simple; they are the only Cove taxonomists who are qualified to identify arthropods or molluscs. The QC evaluation was performed using a blank data sheet (i.e., a "blind" sample). After the sample was reprocessed, a comparison was made between the QC and original data sheets. All identification and enumeration differences were recorded as errors. Except for Barbara's second batch (see explanation below), all samples passed the taxonomy check (see Tables 5 and 6). A 95% efficiency level was used to evaluate whether or not the batch passed or failed the QC inspection.

Barbara's second batch of samples had a failing percentage. However, the principle problem encountered with her sample was the inability to recognize countable sabellids (i.e., she only counted 12 individuals when 73 were present in the sample; a total of 61 errors). Many of the individuals in this sample were missing branchial crowns. She was retrained to look for other anterior, anatomical features (i.e., the collar and dorsal lips), and was then required to recount all sabellids in her first and second batches. All of those counts were very similar, if not identical, and no addition QC measures were deemed necessary.

Table 4. Overall taxonomy performance.

Total number of samples identified	41
Total number of QC samples	4
Percentage of samples checked	9.8
Total number of QC failures	1
Total number of samples re-identified	0
Overall taxonomy QC error for Denise Crivella (percentage)	2.3
Overall taxonomy QC error for Tim Morris (percentage)	1.0
Overall taxonomy QC error for Nancy Mountford (percentage)	0.4
Overall taxonomy QC error for Barbara Weems (percentage)	5.0

Table 5. Taxonomy QC results for Denise Crivella.

Batch No.	Station Id.	QC Inspector & Inspection Date	Id. Errors	Total No.	% Error
1	Sta. 344	T. Morris 27OCT11	5	278	1.8
2	Sta. 357	T. Morris 28OCT11	6	199	3.0
Overall taxonomy QC error			11	477	2.3

Table 6. Taxonomy QC results for Tim Morris.

Batch No.	Station Id.	QC Inspector & Inspection Date	Id. Errors	Total No.	% Error
1	Sta. 382	T. Morris 25OCT11	1	113	0.9
2	Sta. 376	T. Morris 25OCT11	1	67	1.5
3	Sta. 357	T. Morris 25OCT11	0	9	0
4	Sta. 355	T. Morris 25OCT11	0	6	0
Overall taxonomy QC error			2	195	1.0

Table 7. Taxonomy QC results for Nancy Mountford.

Batch No.	Station Id.	QC Inspector & Inspection Date	Id. Errors	Total No.	% Error
1	Sta. 382	N. Mountford 25OCT11	1	520	0.2
2	Sta. 376	N. Mountford 25OCT11	2	223	0.9
3	Sta. 357	N. Mountford 25OCT11	0	17	0
4	Sta. 355	N. Mountford 25OCT11	0	1	0
Overall taxonomy QC error			3	761	0.4

Table 8. Taxonomy QC results for Barbara Weems.

Batch No.	Station Id.	QC Inspector & Inspection Date	Id. Errors	Total No.	% Error
1	Sta. 317	T. Morris 26OCT11	5	634	0.8
2	Sta. 367	N. Mountford 31OCT11	69	834	8.3
Overall taxonomy QC error			74	1468	5.0

Cove Corporation - Sorting Sample Batch Listing Sheet

Client: CZM Benthic Infaunal Analysis	**Study Site:** Cape Cod Bay
Sorter: Denise Crivella	**Survey Date:** September 10-11, 2011

I. BATCHES OF SAMPLES

Batch #1		Batch #2			
1) Sta. 376	48,126	1) Sta. 361	48,140		
2) Sta. 378	48,124	2) Sta. 359	48,142		
3) Sta. 392	48,117	3) Sta. 357	48,144		
4) Sta. 389	48,118	4) Sta. 354	48,147		
5) Sta. 381	48,122	5) Sta. 352	48,149		
6) Sta. 375	48,127	6) Sta. 344	48,152		
7) Sta. 373	48,128	7) Sta. 315	48,155		
8) Sta. 370	48,131	8) Sta. 371	48,130		
9) Sta. 365	48,136				
10) Sta. 363	48,138				

II. QC EVALUATION

QC Results	Batch #1	Batch #2		
QC Sample	Sta. 375	Sta. 359		
Serial No.	48,127	48,142		
QC Date	Oct. 25, 2011	Oct. 25, 2011		
QC Inspector	Barbara Weems	Barbara Weems		
Percent Error	0.73%	1.18%		

III. COMMENTS CONCERNING SAMPLE PROCESSING

(initialize & date all entries -- continue on back if necessary)

Necessary Remedial Action: *none*
Comments: *none*

Cove Corporation – Sorting Sample Batch Listing Sheet

Client: CZM Benthic Infaunal Analysis	**Study Site:** Cape Cod Bay
Sorter: Barbara Weems	**Survey Date:** September 10-11, 2011

I. BATCHES OF SAMPLES

Batch #1		Batch #2		Batch #3		
1) Sta. 395	48,115	1) Sta. 367	48,134	1) Sta. 318	48,153	
2) Sta. 393	48,116	2) Sta. 366	48,135	2) Sta. 317	48,154	
3) Sta. 388	48,119	3) Sta. 364	48,137	3) Sta. 356	48,145	
4) Sta. 383	48,120	4) Sta. 362	48,139			
5) Sta. 382	48,121	5) Sta. 360	48,141			
6) Sta. 380	48,123	6) Sta. 347	48,150			
7) Sta. 377	48,125	7) Sta. 358	48,143			
8) Sta. 372	48,129	8) Sta. 355	48,146			
9) Sta. 369	48,132	9) Sta. 353	48,148			
10) Sta. 368	48,133	10) Sta. 345	48,151			

II. QC EVALUATION

QC Results	Batch #1	Batch #2	Batch #3	
QC Sample	Sta. 380	Sta. 360	NA; batch has <5 samples	
Serial No.	48,123	48,141		
QC Date	Oct. 25, 2011	Oct. 25, 2011		
QC Inspector	Denise Crivella	Denise Crivella		
Percent Error	0.72%	0%		

III. COMMENTS CONCERNING SAMPLE PROCESSING

(initialize & date all entries -- continue on back if necessary)

Necessary Remedial Action: *none*
Comments: *none*

Quality Assurance Statement

Project: CZM 2011 Benthos

Description of Data Set or Deliverable: South of the Islands Benthic Data

I. Description of Audit and Review Activities:

Comparison of raw data vs. database

II. Accuracy:

√ QC samples and calibration standards were analyzed according to the CWQAPP and the acceptance criteria were met. (Attach QC data with DQO calculated). Corrective action for exceedences was taken.

√ Samples were analyzed according to the procedures specified in the CWQAPP.

√ 100% hand-entered and/or calculated data were checked for accuracy.

√ Data are reported in the units specified in the CWQAPP.

√ Qualifiers are assigned properly. Distinguish between suspect (s) - reported but not used in calculations, and Error (e) - data unavailable due to instrument failure or sample loss.

III. Completeness

√ All samples received are reported.

√ All parameters specified in the CWQAPP for this task are reported.

IV. Description of outstanding issues or deficiencies noted above that may affect data quality.

There are no outstanding issues.

1/3/2012 — Signature of Reviewer/Date

1/3/2012 — Signature of Task Leader/Date

AECOM

Sorting Sample Batch Listing Sheet

Client: CZM Benthic Infaunal Analysis	Study Site: South of the Islands
Sorter: Briley Morrill	Survey Date: September 2011

I. BATCHES OF SAMPLES

Batch #1	Batch #2	Batch #3	Batch #4
1) Sta. 125	1) Sta. 48	1)	1)
2) Sta. 123	2) Sta. 42	2)	2)
3) Sta. 121	3) Sta. 220	3)	3)
4) Sta. 120	4) Sta. 113	4)	4)
5) Sta. 95	5) Sta. 135	5)	5)
6) Sta. 12	6) Sta. 115	6)	6)
7) Sta. 11	7) Sta. 97	7)	7)
8) Sta. 2	8) Sta. 162	8)	8)
9) Sta. 119	9) Sta. 172	9)	9)
10)Sta. 81	10) Sta. 164	10)	10)
11) Sta. 77			

II. QC EVALUATION

QC Results	Batch #1	Batch #2	Batch #3	Batch #4
QC Sample	125	42		
QC Date	Nov. 21, 2011	Dec. 28, 2011		
QC Inspector	S. Doner	S. Doner		
Percent Error	0.52%	0.00%		

III. COMMENTS CONCERNING SAMPLE PROCESSING

Necessary Remedial Action:
None
Comments:
None

AECOM

Sorting Sample Batch Listing Sheet

Client: CZM Benthic Infaunal Analysis	Study Site: South of the Islands
Sorter: Stacy Doner	Survey Date: September 2011

I. BATCHES OF SAMPLES

Batch #1	Batch #2	Batch #3	Batch #4
1) Sta. 10	1)	1)	1)
2) Sta. 9	2)	2)	2)
3) Sta. 81 Dup	3)	3)	3)
4) Sta. 82	4)	4)	4)
5) Sta. 130	5)	5)	5)
6) Sta. 103	6)	6)	6)
7) Sta. 100	7)	7)	7)
8) Sta. 4	8)	8)	8)
9) Sta. 159	9)	9)	9)
10)Sta. 166	10)	10)	10)

II. QC EVALUATION

QC Results	Batch #1	Batch #2	Batch #3	Batch #4
QC Sample	159			
QC Date	Dec. 22, 2011			
QC Inspector	B. Morrill			
Percent Error	0.42%			

III. COMMENTS CONCERNING SAMPLE PROCESSING

Necessary Remedial Action:
None
Comments:
None

AECOM

Taxonomy Sample Batch Listing Sheet

Client: CZM Benthic Infaunal Analysis	Study Site: South of the Islands
Taxonomist: Stacy Doner	Survey Date: September 2011

I. BATCHES OF SAMPLES

Batch #1	Batch #2	Batch #3	Batch #4
1) Sta. 125	1) Sta. 48	1) Sta. 10	1)
2) Sta. 123	2) Sta. 42	2) Sta. 9	2)
3) Sta. 121	3) Sta. 220	3) Sta. 81 Dup	3)
4) Sta. 120	4) Sta. 113	4) Sta. 82	4)
5) Sta. 95	5) Sta. 135	5) Sta. 130	5)
6) Sta. 12	6) Sta. 115	6) Sta. 103	6)
7) Sta. 11	7) Sta. 97	7) Sta. 100	7)
8) Sta. 2	8) Sta. 162	8) Sta. 4	8)
9) Sta. 119	9) Sta. 172	9) Sta. 159	9)
10)Sta. 81	10) Sta. 164	10)Sta. 166	10)
11) Sta. 77			

II. QC EVALUATION

QC Results	Batch #1	Batch #2	Batch #3	Batch #4
QC Sample	125	42	159	
QC Date	Nov. 21, 2011	Dec. 28, 2011	Dec. 28, 2011	
QC Inspector	S. Doner	S. Doner	S. Doner	
Percent Error	1.04%	0.00%	0.68%	

III. COMMENTS CONCERNING SAMPLE PROCESSING

Necessary Remedial Action:
None
Comments:
None

2011 CZM Benthic Infauna Quality Assurance Statement

Subcontractor: Cove Corporation

Task: Sorting and taxonomy of CZM's South of the Islands macrobenthic samples

Date(s) infaunal samples were collected: September 12-14, 2011

Date task was completed: December 9, 2011

Number of samples analyzed: 64

Description of audit and review activities:

See "QC Report".

Description of outstanding issues or deficiencies that may affect data quality:

See "Corrective Action Log".

Remarks:

There are no additional comments to report.

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received electronically
Signature of Subcontractor QA Officer

December 9, 2011
Date

Quality Control Report of Infaunal Sorting

Denise H. Crivella (n=31 samples) and Barbara A. Weems (n=33 samples) sorted the 64 South of the Islands macrobenthic samples. Each sorter's samples were divided into batches with a maximum of 10 samples in each batch (see attached sorting sample batch listings). For all batches with 5 or more samples (n=8), one sample from each batch was randomly selected to evaluate sorting performance. All eight QC samples passed the sorting QC evaluation (see Tables 2 and 3). A 95% efficiency level was used to evaluate whether or not the batch passed or failed the QC inspection.

Table 2. Overall sorting performance.

Total number of samples sorted	64
Total number of QC samples	8
Percentage of samples checked	12.5
Total number of QC failures	0
Total number of samples resorted	0
Overall sorting QC error for Denise Crivella (percentage)	0.5
Overall sorting QC error for Barbara Weems (percentage)	0.8

Table 3. Detailed sorting QC results.

Sorter	Batch	Station Id.	QC Inspector and Inspection Date	No. Found	Total No.	% Error
DHC	1	Sta. 140	BAW 07NOV11	4	1570	0.3%
DHC	2	Sta. 59	BAW 28NOV11	6	1160	0.5%
DHC	3	Sta. 21	BAW 29NOV11	5	261	1.9%
DHC	4	Sta. 26	BAW 07DEC11	5	781	0.6%
overall sorting performance for DHC				20	3772	0.5%
BAW	1	Sta. 141	DHC 08NOV11	1	192	0.5%
BAW	2	Sta. 78	DHC 28NOV11	0	24	0%
BAW	3	Sta. 16	DHC 28NOV11	3	772	0.4%
BAW	4	Sta. 218	DHC 07DEC11	6	245	2.4%
overall sorting performance for BAW				10	1233	0.8%

Quality Control Report of Infaunal Taxonomy

Denise H. Crivella (Polychaeta; n = 31 samples), C. Timothy Morris (Arthropoda and misc. taxa; n = 64 samples), Nancy K. Mountford (Mollusca; n = 64 samples), and Barbara A. Weems (Polychaeta; n = 31 samples) identified the 64 South of the Islands macrobenthic samples. Each taxonomist's samples were divided into batches with a maximum of 10 samples in each batch (see attached taxonomy sample batch listings). For all batches with 5 or more samples, one sample from each batch was randomly selected to evaluate taxonomy performance of each taxonomist. Please note in certain cases (e.g., Tim Morris and Nancy Mountford) the taxonomist who identified the sample performed the QC check. The reason is quite simple; they are the only Cove taxonomists who are qualified to identify arthropods or molluscs. The QC evaluation was performed using a blank data sheet (i.e., a "blind" sample). After the taxonomic QC inspection was completed, a comparison was made between the QC and original data sheets. All identification and enumeration differences were recorded as taxonomy errors. Please also note Denise's third batch (see Table 5) and Barbara's first and fourth batches (see Table 6) were reprocessed because the QC samples had failing percentages. All other QC samples, including Denise's and Barbara's QC reevaluations of failed batches, passed the taxonomy check (see Tables 5–8). A 95% efficiency level was used to evaluate whether or not the batch passed or failed the QC inspection.

Table 4. Overall taxonomy performance.

Total number of samples identified	64
Total number of QC samples*	6 (or 11)
Percentage of samples checked*	9.4 (or 17.2)
Total number of QC failures	3
Total number of samples reprocessed	18
Overall taxonomy QC error for Denise Crivella (percentage)	3.0%
Overall taxonomy QC error for Tim Morris (percentage)	0.2%
Overall taxonomy QC error for Nancy Mountford (percentage)	0.2%
Overall taxonomy QC error for Barbara Weems (percentage)	2.9%

* The number of batches for each major taxonomic group was different (see attached taxonomy sample batch listings). For arthropods, molluscs, and misc. taxa, all samples were divided into 7 batches because only one taxonomist identified these groups. For polychaetes, all samples were divided into 8 batches because two taxonomists identified this group.

Table 5. Taxonomy QC results for Denise Crivella.

Batch No.	Station Id.	QC Inspector & Inspection Date	Id. Errors	Total No.	% Error
1	Sta. 176	T. Morris 23NOV11	4	230	1.7%
2	Sta. 58	T. Morris 23NOV11	22	770	2.9%
3*	Sta. 32	T. Morris 28NOV11	31	450	6.9%
3 reQC	Sta. 176	T. Morris 29NOV11	0	99	0%
4	Sta. 26	T. Morris 07DEC11	13	747	1.7%
Overall taxonomy QC error			70	2296	3.0%

* Batch #3 was reprocessed because the QC sample had a failing percentage.

Table 6. Taxonomy QC results for Barbara Weems.

Batch No.	Station Id.	QC Inspector & Inspection Date	Id. Errors	Total No.	% Error
1*	Sta. 168	T. Morris 28NOV11	4	69	5.8%
1 reQC	Sta. 180	N. Mountford 28NOV11	0	92	0%
2	Sta. 66	T. Morris 28NOV11	12	1213	1.0%
3	Sta. 37	T. Morris 28NOV11	0	18	0%
4*	Sta. 17	T. Morris 07DEC11	52	629	8.3%
4 reQC	Sta. 25	T. Morris 09DEC11	1	343	0.3%
Overall taxonomy QC error			69	2364	2.9%

* Batches #1 and #4 were reprocessed because the QC samples had failing percentages.

Table 7. Taxonomy QC results for Tim Morris.

Batch No.	Station Id.	QC Inspector & Inspection Date	Id. Errors	Total No.	% Error
1	Sta. 168	T. Morris 23NOV11	0	24	0%
2	Sta. 107	T. Morris 23NOV11	0	1	0%
3	Sta. 75	T. Morris 23NOV11	0	8	0%
4	Sta. 44	T. Morris 23NOV11	0	422	0%
5*	Sta. 22	T. Morris 23NOV11	1	9	11.1%
6	No QC check was performed because batch only contained two samples.				
7	Sta. 22	T. Morris 07DEC11	0	175	0%
Overall taxonomy QC error			1	639	0.2%

* Passes QC inspection because the sample abundance is low.

Table 8. Taxonomy QC results for Nancy Mountford.

Batch No.	Station Id.	QC Inspector & Inspection Date	Id. Errors	Total No.	% Error
1	Sta. 168	N. Mountford 28NOV11	0	17	0%
2	Sta. 107	N. Mountford 28NOV11	0	3	0%
3	Sta. 75	N. Mountford 28NOV11	0	12	0%
4	Sta. 44	N. Mountford 28NOV11	0	3	0%
5	Sta. 22	N. Mountford 28NOV11	1	371	0.3%
6	No QC check was performed because batch only contained two samples.				
7	Sta. 25	N. Mountford 07DEC11	0	88	0%
Overall taxonomy QC error			1	494	0.2%

Cove Corporation - Sorting Sample Batch Listing Sheet

Client: MCZM Benthic Infaunal Analysis	**Study Site:** South of the Islands
Sorter: Denise Crivella	**Survey Date:** September 12-14, 2011

I. BATCHES OF SAMPLES

Batch #1		Batch #2		Batch #3		Batch #4	
1) Sta. 181	48,157	1) Sta. 80	48,176	1) Sta. 32	48,198	1) Sta. 98	48,209
2) Sta. 176	48,159	2) Sta. 68	48,181	2) Sta. 24	48,200	2) Sta. 26	48,210
3) Sta. 171	48,162	3) Sta. 62	48,184	3) Sta. 21	48,203	3) Sta. 18	48,212
4) Sta. 169	48,163	4) Sta. 59	48,186	4) Sta. 20	48,204	4) Sta. 184	48,215
5) Sta. 156	48,168	5) Sta. 58	48,187	5) Sta. 19	48,205	5) Sta. 55	48,217
6) Sta. 163	48,166	6) Sta. 54	48,189			6) Sta. 34	48,218
7) Sta. 142	48,169	7) Sta. 51	48,191				
8) Sta. 140	48,171	8) Sta. 44	48,193				
9) Sta. 102	48,173	9) Sta. 38	48,195				
10) Sta. 101	48,174	10) Sta. 35	48,197				

II. QC EVALUATION

QC Results	Batch #1	Batch #2	Batch #3	Batch #4
QC Sample	Sta. 140	Sta. 59	Sta. 21	Sta. 26
Serial No.	48,171	48,186	48,203	48,210
QC Date	Nov. 7, 2011	Nov. 28, 2011	Nov. 29, 2011	Dec. 7, 2011
QC Inspector	Barbara Weems	Barbara Weems	Barbara Weems	Barbara Weems
Percent Error	0.3%	0.5%	1.9%	0.6%

III. COMMENTS CONCERNING SAMPLE PROCESSING

(initialize & date all entries -- continue on back if necessary)

Necessary Remedial Action:

None

Comments:

None

Cove Corporation - Sorting Sample Batch Listing Sheet

Client: MCZM Benthic Infaunal Analysis	**Study Site:** South of the Islands
Sorter: Barbara Weems	**Survey Date:** September 12-14, 2011

I. BATCHES OF SAMPLES

Batch #1		Batch #2		Batch #3		Batch #4	
1) Sta. 182	48,156	1) Sta. 78	48,177	1) Sta. 43	48,194	1) Sta. 170	48,208
2) Sta. 180	48,158	2) Sta. 75	48,178	2) Sta. 37	48,196	2) Sta. 25	48,211
3) Sta. 175	48,160	3) Sta. 74	48,179	3) Sta. 28	48,199	3) Sta. 17	48,213
4) Sta. 173	48,161	4) Sta. 69	48,180	4) Sta. 23	48,201	4) Sta. 218	48,214
5) Sta. 168	48,164	5) Sta. 67	48,182	5) Sta. 22	48,202	5) Sta. 183	48,216
6) Sta. 164	48,165	6) Sta. 66	48,183	6) Sta. 16	48,206	6) Sta. 1	48,219
7) Sta. 161	48,167	7) Sta. 60	48,185	7) Sta. 15	48,207		
8) Sta. 141	48,170	8) Sta. 57	48,188				
9) Sta. 107	48,172	9) Sta. 52	48,190				
10) Sta. 99	48,175	10) Sta. 50	48,192				

II. QC EVALUATION

QC Results	Batch #1	Batch #2	Batch #3	Batch #4
QC Sample	Sta. 141	Sta. 78	Sta. 16	Sta. 218
Serial No.	48,170	48,177	48,206	48,214
QC Date	Nov. 8, 2011	Nov. 28, 2011	Nov. 28, 2011	Dec. 7, 2011
QC Inspector	Denise Crivella	Denise Crivella	Denise Crivella	Denise Crivella
Percent Error	0.5%	0%	0.4%	2.4%

III. COMMENTS CONCERNING SAMPLE PROCESSING

(initialize & date all entries -- continue on back if necessary)

Necessary Remedial Action: *None*
Comments: *None*

Cove Corporation - Taxonomy Sample Batch Listing Sheet

Client: MCZM Benthic Infaunal Analysis	**Study Site:** South of the Islands
Taxonomist: Denise Crivella (Polychaetes)	**Survey Date:** September 12-14, 2011

I. BATCHES OF SAMPLES

Batch #1		Batch #2		Batch #3		Batch #4	
1) Sta. 181	48,157	1) Sta. 80	48,176	1) Sta. 32	48,198	1) Sta. 98	48,209
2) Sta. 176	48,159	2) Sta. 68	48,181	2) Sta. 24	48,200	2) Sta. 26	48,210
3) Sta. 171	48,162	3) Sta. 62	48,184	3) Sta. 21	48,203	3) Sta. 18	48,212
4) Sta. 169	48,163	4) Sta. 59	48,186	4) Sta. 20	48,204	4) Sta. 184	48,215
5) Sta. 156	48,168	5) Sta. 58	48,187	5) Sta. 19	48,205	5) Sta. 55	48,217
6) Sta. 163	48,166	6) Sta. 54	48,189			6) Sta. 34	48,218
7) Sta. 142	48,169	7) Sta. 51	48,191				
8) Sta. 140	48,171	8) Sta. 44	48,193				
9) Sta. 102	48,173	9) Sta. 38	48,195				
10) Sta. 101	48,174	10) Sta. 35	48,197				

II. QC EVALUATION

QC Results	Batch #1	Batch #2	Batch #3	Batch #3 (reQC)	Batch #4
QC Sample	Sta. 176	Sta. 58	Sta. 32	Sta. 24	Sta. 26
Serial No.	48,159	48,187	48,198	48,200	48,210
QC Date	Nov. 23, 2011	Nov. 23, 2011	Nov. 28, 2011	Nov. 29, 2011	Dec. 7, 2011
QC Inspector	Tim Morris	Tim Morris	Tim Morris	Tim Morris	Tim Morris
Percent Error	1.7%	2.9%	6.9%	0%	1.7%

III. COMMENTS CONCERNING SAMPLE PROCESSING

(initialize & date all entries -- continue on back if necessary)

Necessary Remedial Action:

Yes; must reprocess batch #3.

Comments:

All Glyceridae vials from batches 1-3 were rechecked after taxonomist was retrained to differentiate glycerids from goniadids.

Cove Corporation - Taxonomy Sample Batch Listing Sheet

Client: MCZM Benthic Infaunal Analysis	**Study Site:** South of the Islands
Taxonomist: Barbara Weems (Polychaetes)	**Survey Date:** September 12-14, 2011

I. BATCHES OF SAMPLES

Batch #1		Batch #2		Batch #3		Batch #4	
1) Sta. 182	48,156	1) Sta. 78	48,177	1) Sta. 43	48,194	1) Sta. 170	48,208
2) Sta. 180	48,158	2) Sta. 75	48,178	2) Sta. 37	48,196	2) Sta. 25	48,211
3) Sta. 175	48,160	3) Sta. 74	48,179	3) Sta. 28	48,199	3) Sta. 17	48,213
4) Sta. 173	48,161	4) Sta. 69	48,180	4) Sta. 23	48,201	4) Sta. 218	48,214
5) Sta. 168	48,164	5) Sta. 67	48,182	5) Sta. 22	48,202	5) Sta. 183	48,216
6) Sta. 164	48,165	6) Sta. 66	48,183	6) Sta. 16	48,206	6) Sta. 1	48,219
7) Sta. 161	48,167	7) Sta. 60	48,185	7) Sta. 15	48,207		
8) Sta. 141	48,170	8) Sta. 57	48,188				
9) Sta. 107	48,172	9) Sta. 52	48,190				
10) Sta. 99	48,175	10) Sta. 50	48,192				

II. QC EVALUATION

QC Results	Batch #1	Batch #1 (reQC)	Batch #2	Batch #3	Batch #4	Batch #4 (reQC)
QC Sample	Sta. 168	Sta. 180	Sta. 66	Sta. 37	Sta. 17	Sta. 25
Serial No.	48,164	48,158	48,183	48,196	48,213	48,211
QC Date	Nov. 28, 2011	Nov. 28, 2011	Nov. 28, 2011	Nov. 28, 2011	Dec. 7, 2011	Dec. 7, 2011
QC Inspector	Tim Morris	Nancy Mountford	Tim Morris	Tim Morris	Nancy Mountford	Tim Morris
Percent Error	5.8%	0%	1.0%	0%	8.3%	0.3%

III. COMMENTS CONCERNING SAMPLE PROCESSING

(initialize & date all entries -- continue on back if necessary)

Necessary Remedial Action:

Yes; must reprocess batches #1 and #4.

Comments:

All Glyceridae vials from batches 1-3 were rechecked after taxonomist was retrained to differentiate glycerids from goniadids.

Cove Corporation - Taxonomy Sample Batch Listing Sheet

Client: MCZM Benthic Infaunal Analysis	**Study Site:** South of the Islands
Taxonomist: Tim Morris (Arthropods & Misc. Taxa)	**Survey Date:** September 12-14, 2011

I. BATCHES OF SAMPLES

Batch #1		Batch #2		Batch #3		Batch #4	
1) Sta. 182	48,156	1) Sta. 163	48,166	1) Sta. 80	48,176	1) Sta. 59	48,186
2) Sta. 181	48,157	2) Sta. 161	48,167	2) Sta. 78	48,177	2) Sta. 58	48,187
3) Sta. 180	48,158	3) Sta. 156	48,168	3) Sta. 75	48,178	3) Sta. 57	48,188
4) Sta. 176	48,159	4) Sta. 142	48,169	4) Sta. 74	48,179	4) Sta. 54	48,189
5) Sta. 175	48,160	5) Sta. 141	48,170	5) Sta. 69	48,180	5) Sta. 52	48,190
6) Sta. 173	48,161	6) Sta. 140	48,171	6) Sta. 68	48,181	6) Sta. 51	48,191
7) Sta. 171	48,162	7) Sta. 107	48,172	7) Sta. 67	48,182	7) Sta. 50	48,192
8) Sta. 169	48,163	8) Sta. 102	48,173	8) Sta. 66	48,183	8) Sta. 44	48,193
9) Sta. 168	48,164	9) Sta. 101	48,174	9) Sta. 62	48,184	9) Sta. 43	48,194
10) Sta. 164	48,165	10) Sta. 99	48,175	10) Sta. 60	48,185	10) Sta. 38	48,195

II. QC EVALUATION

QC Results	Batch #1	Batch #2	Batch #3	Batch #4
QC Sample	Sta. 168	Sta. 107	Sta. 75	Sta. 44
Serial No.	48,164	48,172	48,178	48,193
QC Date	Nov. 23, 2011	Nov. 23, 2011	Nov. 23, 2011	Nov. 23, 2011
QC Inspector	Tim Morris	Tim Morris	Tim Morris	Tim Morris
Percent Error	0%	0%	0%	0%

III. COMMENTS CONCERNING SAMPLE PROCESSING

(initialize & date all entries -- continue on back if necessary)

Necessary Remedial Action: *None*
Comments: *None*

Cove Corporation - Taxonomy Sample Batch Listing Sheet

Client: MCZM Benthic Infaunal Analysis	**Study Site:** South of the Islands
Taxonomist: Tim Morris (Arthropods & Misc. Taxa)	**Survey Date:** September 12-14, 2011

I. BATCHES OF SAMPLES

Batch #5		Batch #6		Batch #7		
1) Sta. 37	48,196	1) Sta. 16	48,206	1) Sta. 218	48,214	
2) Sta. 35	48,197	2) Sta. 15	48,207	2) Sta. 184	48,215	
3) Sta. 32	48,198			3) Sta. 183	48,216	
4) Sta. 28	48,199			4) Sta. 170	48,208	
5) Sta. 24	48,200			5) Sta. 98	48,209	
6) Sta. 23	48,201			6) Sta. 55	48,217	
7) Sta. 22	48,202			7) Sta. 34	48,218	
8) Sta. 21	48,203			8) Sta. 26	48,210	
9) Sta. 20	48,204			9) Sta. 25	48,211	
10) Sta. 19	48,205			10) Sta. 18	48,212	
				11) Sta. 17	48,213	
				12) Sta. 1	48,219	

II. QC EVALUATION

QC Results	Batch #5	Batch #6	Batch #7	
QC Sample	Sta. 22	No QC check was performed because this batch only contained two samples.	Sta. 25	
Serial No.	48,202		48,211	
QC Date	Nov. 23, 2011		Dec. 7, 2011	
QC Inspector	Tim Morris		Tim Morris	
Percent Error	11.1%		0%	

III. COMMENTS CONCERNING SAMPLE PROCESSING

(initialize & date all entries -- continue on back if necessary)

Necessary Remedial Action:

None

Comments:

Batch #5 passed the QC evaluation because the abundance of animals in station #22 was low (i.e., the sample contained 9 animals, and there was only 1 taxonomy error).

Cove Corporation - Taxonomy Sample Batch Listing Sheet

Client: MCZM Benthic Infaunal Analysis	**Study Site:** South of the Islands
Taxonomist: Nancy Mountford (Molluscs)	**Survey Date:** September 12-14, 2011

I. BATCHES OF SAMPLES

Batch #1		Batch #2		Batch #3		Batch #4	
1) Sta. 182	48,156	1) Sta. 163	48,166	1) Sta. 80	48,176	1) Sta. 59	48,186
2) Sta. 181	48,157	2) Sta. 161	48,167	2) Sta. 78	48,177	2) Sta. 58	48,187
3) Sta. 180	48,158	3) Sta. 156	48,168	3) Sta. 75	48,178	3) Sta. 57	48,188
4) Sta. 176	48,159	4) Sta. 142	48,169	4) Sta. 74	48,179	4) Sta. 54	48,189
5) Sta. 175	48,160	5) Sta. 141	48,170	5) Sta. 69	48,180	5) Sta. 52	48,190
6) Sta. 173	48,161	6) Sta. 140	48,171	6) Sta. 68	48,181	6) Sta. 51	48,191
7) Sta. 171	48,162	7) Sta. 107	48,172	7) Sta. 67	48,182	7) Sta. 50	48,192
8) Sta. 169	48,163	8) Sta. 102	48,173	8) Sta. 66	48,183	8) Sta. 44	48,193
9) Sta. 168	48,164	9) Sta. 101	48,174	9) Sta. 62	48,184	9) Sta. 43	48,194
10) Sta. 164	48,165	10) Sta. 99	48,175	10) Sta. 60	48,185	10) Sta. 38	48,195

II. QC EVALUATION

QC Results	Batch #1	Batch #2	Batch #3	Batch #4
QC Sample	Sta. 168	Sta. 107	Sta. 75	Sta. 44
Serial No.	48,164	48,172	48,178	48,193
QC Date	Nov. 28, 2011	Nov. 28, 2011	Nov. 28, 2011	Nov. 28, 2011
QC Inspector	Nancy Mountford	Nancy Mountford	Nancy Mountford	Nancy Mountford
Percent Error	0%	0%	0%	0%

III. COMMENTS CONCERNING SAMPLE PROCESSING

(initialize & date all entries -- continue on back if necessary)

Necessary Remedial Action: *None*
Comments: *None*

Cove Corporation - Taxonomy Sample Batch Listing Sheet

Client: MCZM Benthic Infaunal Analysis	**Study Site:** South of the Islands
Taxonomist: Nancy Mountford (Molluscs)	**Survey Date:** September 12-14, 2011

I. BATCHES OF SAMPLES

Batch #5		Batch #6		Batch #7		
1) Sta. 37	48,196	1) Sta. 16	48,206	1) Sta. 218	48,214	
2) Sta. 35	48,197	2) Sta. 15	48,207	2) Sta. 184	48,215	
3) Sta. 32	48,198			3) Sta. 183	48,216	
4) Sta. 28	48,199			4) Sta. 170	48,208	
5) Sta. 24	48,200			5) Sta. 98	48,209	
6) Sta. 23	48,201			6) Sta. 55	48,217	
7) Sta. 22	48,202			7) Sta. 34	48,218	
8) Sta. 21	48,203			8) Sta. 26	48,210	
9) Sta. 20	48,204			9) Sta. 25	48,211	
10) Sta. 19	48,205			10) Sta. 18	48,212	
				11) Sta. 17	48,213	
				12) Sta. 1	48,219	

II. QC EVALUATION

QC Results	Batch #5	Batch #6	Batch #7	
QC Sample	Sta. 22	No QC check was performed because this batch only contained two samples.	Sta. 25	
Serial No.	48,202		48,211	
QC Date	Nov. 28, 2011		Dec. 7, 2011	
QC Inspector	Nancy Mountford		Nancy Mountford	
Percent Error	0.3%		0%	

III. COMMENTS CONCERNING SAMPLE PROCESSING

(initialize & date all entries -- continue on back if necessary)

Necessary Remedial Action:

None

Comments:

None

Quality Assurance Statement

Project: CZM 2011 Benthos

Description of Data Set or Deliverable: Buzzard's Bay Benthic Data

I. Description of Audit and Review Activities:

Comparison of raw data vs. database

II. Accuracy:

√ QC samples and calibration standards were analyzed according to the CWQAPP and the acceptance criteria were met. (Attach QC data with DQO calculated). Corrective action for exceedences was taken.

√ Samples were analyzed according to the procedures specified in the CWQAPP.

√ 100% hand-entered and/or calculated data were checked for accuracy.

√ Data are reported in the units specified in the CWQAPP.

√ Qualifiers are assigned properly. Distinguish between suspect (s) - reported but not used in calculations, and Error (e) - data unavailable due to instrument failure or sample loss.

III. Completeness

√ All samples received are reported.

√ All parameters specified in the CWQAPP for this task are reported.

IV. Description of outstanding issues or deficiencies noted above that may affect data quality.

There are no outstanding issues.

2/7/12 2/7/12

Signature of Reviewer/Date Signature of Task Leader/Date

AECOM

Sorting Sample Batch Listing Sheet

Client: CZM Benthic Infaunal Analysis	Study Site: Buzzards Bay
Sorter: Briley Morrill	Survey Date: September 2011

I. BATCHES OF SAMPLES

Batch #1	Batch #2	Batch #3	Batch #4
1) Sta. 440	1) Sta. 424	1) Sta. 428	1)
2) Sta. 451	2) Sta. 433	2) Sta. 416	2)
3) Sta. 408	3) Sta. 432	3) Sta. 427	3)
4) Sta. 455	4) Sta. 415	4) Sta. 452	4)
5) Sta. 443	5) Sta. 460	5) Sta. 462	5)
6) Sta. 406	6) Sta. 418	6) Sta. 456	6)
7) Sta. 463	7) Sta. 425	7)	7)
8) Sta. 439	8) Sta. 453	8)	8)
9) Sta.429	9) Sta. 414	9)	9)
10) Sta. 407	10) Sta. 430	10)	10)

II. QC EVALUATION

QC Results	Batch #1	Batch #2	Batch #3	Batch #4
QC Sample	463	453	416	
QC Date	Feb. 6, 2012	Feb. 6, 2012	Feb. 6, 2012	
QC Inspector	Stacy Doner	Stacy Doner	Stacy Doner	
Percent Error	0.0%	0.96%	0.43%	

III. COMMENTS CONCERNING SAMPLE PROCESSING

Necessary Remedial Action:
None
Comments:
None

AECOM

Taxonomy Sample Batch Listing Sheet

Client: CZM Benthic Infaunal Analysis	**Study Site: Buzzards Bay**
Taxonomist: Stacy Doner	**Survey Date: September 2011**

I. BATCHES OF SAMPLES

Batch #1	Batch #2	Batch #3	Batch #4
1) Sta. 440	1) Sta. 424	1) Sta. 428	1)
2) Sta. 451	2) Sta. 433	2) Sta. 416	2)
3) Sta. 408	3) Sta. 432	3) Sta. 427	3)
4) Sta. 455	4) Sta. 415	4) Sta. 452	4)
5) Sta. 443	5) Sta. 460	5) Sta. 462	5)
6) Sta. 406	6) Sta. 418	6) Sta. 456	6)
7) Sta. 463	7) Sta. 425	7)	7)
8) Sta. 439	8) Sta. 453	8)	8)
9) Sta.429	9) Sta. 414	9)	9)
10) Sta. 407	10) Sta. 430	10)	10)

II. QC EVALUATION

QC Results	Batch #1	Batch #2	Batch #3	Batch #4
QC Sample	463	453	416	
QC Date	Feb. 6, 2012	Feb. 6, 2012	Feb. 6, 2012	
QC Inspector	Stacy Doner	Stacy Doner	Stacy Doner	
Percent Error	0.0%	0.0%	0.64%	

III. COMMENTS CONCERNING SAMPLE PROCESSING

Necessary Remedial Action:
None
Comments:
None

2011 CZM Benthic Infauna Quality Assurance Statement

Subcontractor: Cove Corporation

Task: Sorting and taxonomy of CZM's Buzzards Bay macrobenthic samples

Date(s) infaunal samples were collected: September 14-16, 2011

Date task was completed: January 6, 2012

Number of samples analyzed: 26

Description of audit and review activities:

See "QC Report".

Description of outstanding issues or deficiencies that may affect data quality:

See "Corrective Action Log".

Remarks:

There are no additional comments to report.

Signature of Subcontractor QA Officer

January 6, 2012

Date

Quality Control Report of Infaunal Sorting

Denise H. Crivella and Barbara A. Weems sorted the 26 Buzzards Bay macrobenthic samples. Each technician sorted 13 samples, and thus, each sorter only had one batch of samples (see attached sample batch listings for each sorter). One sample from each batch was randomly selected to evaluate sorting performance. Both QC samples passed the sorting QC evaluation (see Tables 2 and 3). A 95% efficiency level was used to evaluate whether or not each batch passed or failed the QC inspection.

Table 2. Overall sorting performance.

Total number of samples sorted	26
Total number of QC samples	2
Percentage of samples checked	7.7
Total number of QC failures	0
Total number of samples resorted	0
Overall sorting QC error for Denise Crivella (percentage)	0.0
Overall sorting QC error for Barbara Weems (percentage)	0.4
Overall sorting QC error for both sorters (percentage)	0.4

Table 3. Detailed sorting QC results.

Sorter	Batch	Station Id.	QC Inspector and Inspection Date	No. Found	Total No.	% Error
DHC	1	Sta. 417	BAW 05JAN12	0	50	0.0%
BAW	1	Sta. 41	DHC 05JAN12	2	511	0.4%
Overall sorting QC error for both sorters				2	561	0.4%

Quality Control Report of Infaunal Taxonomy

Denise H. Crivella (Polychaeta; n = 13 samples), C. Timothy Morris (Arthropoda and miscellaneous animal phyla; n = 26 samples), Nancy K. Mountford (Mollusca; n = 26 samples), and Barbara A. Weems (Polychaeta; n = 13 samples) identified the 26 Buzzards Bay macrobenthic samples. The number of batches for each major taxonomic group was different. Polychaetes were divided into two batches of samples because two taxonomists identified this group (see attached sample batch listings for Denise and Barbara). Arthropoda, Mollusca, and miscellaneous animal phyla were divided into three batches of samples because only one taxonomist identified these groups (see attached sample batch listings for Tim and Nancy). One sample from each batch was randomly selected to evaluate taxonomy performance of each taxonomist. Please note in certain cases (e.g., Tim and Nancy), the taxonomist who identified the sample performed the QC check. The reason is quite simple; they are the only Cove taxonomists who are qualified to identify arthropods, molluscs, or miscellaneous animal phyla. QC evaluations were performed using a blank data sheet (i.e., a "blind" sample). After the taxonomic QC inspection was completed, a comparison was made between the original and QC data sheets. All identification and enumeration differences were recorded as taxonomy errors. All QC samples (n = 5) passed the taxonomy QC check (see Tables 5–8). A 95% efficiency level was used to evaluate whether or not each batch passed or failed the taxonomy QC inspection.

Table 4. Overall taxonomy performance.

Total number of samples identified	26
Total number of QC samples*	3 (or 2)
Percentage of samples checked*	11.5 (or 7.7)
Total number of QC failures	0
Total number of samples reprocessed	0
Overall taxonomy QC error for Denise Crivella (percentage)	0.0%
Overall taxonomy QC error for Tim Morris (percentage)	0.9%
Overall taxonomy QC error for Nancy Mountford (percentage)	0.9%
Overall taxonomy QC error for Barbara Weems (percentage)	0.7%

* The number of batches for each major taxonomic group was different (see attached sample batch listings for each taxonomist). For arthropods, molluscs, and miscellaneous animal phyla, all samples were divided into 3 batches because only one taxonomist identified these groups. For polychaetes, all samples were divided into 2 batches because two taxonomists identified this group.

Table 5. Taxonomy QC results for Denise Crivella (Polychaeta).

Batch No.	Station Id.	QC Inspector & Inspection Date	Id. Errors	Total No.	% Error
1	Sta. 410	T. Morris 05JAN12	0	93	0.0%

Table 6. Taxonomy QC results for Barbara Weems (Polychaeta).

Batch No.	Station Id.	QC Inspector & Inspection Date	Id. Errors	Total No.	% Error
1	Sta. 441	T. Morris 05JAN12	1	140	0.7%

Table 7. Taxonomy QC results for Tim Morris (Arthropoda & misc. animal phyla).

Batch No.	Station Id.	QC Inspector & Inspection Date	Id. Errors	Total No.	% Error
1	Sta. 447	T. Morris 05JAN12	0	58	0.0%
2	Sta. 437	T. Morris 05JAN12	2	154	1.3%
3	Sta. 404	T. Morris 05JAN12	0	5	0.0%
Overall taxonomy QC error			2	217	0.9%

Table 8. Taxonomy QC results for Nancy Mountford (Mollusca).

Batch No.	Station Id.	QC Inspector & Inspection Date	Id. Errors	Total No.	% Error
1	Sta. 447	N. Mountford 06JAN12	0	29	0.0%
2*	Sta. 437	N. Mountford 06JAN12	1	9	11.1%
3	Sta. 404	N. Mountford 06JAN12	0	75	0.0%
Overall taxonomy QC error			1	113	0.9%

* Passes QC inspection because the sample abundance is low.

Cove Corporation - Sorting Sample Batch Listing Sheet

Client: MCZM Benthic Infaunal Analysis	**Study Site:** Buzzards Bay
Sorter: Denise Crivella	**Survey Date:** September 14-15, 2011

I. BATCHES OF SAMPLES

Batch #1		Batch #1 (*continued*)			
1) Sta. 409	48,242	11) Sta. 412	48,239		
2) Sta. 436	48,232	12) Sta. 411	48,240		
3) Sta. 410	48,241	13) Sta. 404	48,244		
4) Sta. 450	48,222				
5) Sta. 448	48,224				
6) Sta. 447	48,225				
7) Sta. 444	48,227				
8) Sta. 437	48,231				
9) Sta. 431	48,235				
10) Sta. 417	48,237				

II. QC EVALUATION

QC Results	**Batch #1**			
QC Sample	Sta. 417			
Serial No.	48,237			
QC Date	Jan. 5, 2012			
QC Inspector	Barbara Weems			
Percent Error	0.0%			

III. COMMENTS CONCERNING SAMPLE PROCESSING

(initialize & date all entries -- continue on back if necessary)

Necessary Remedial Action: *None*
Comments: *None*

Cove Corporation - Sorting Sample Batch Listing Sheet

Client: MCZM Benthic Infaunal Analysis	**Study Site:** Buzzards Bay
Sorter: Barbara Weems	**Survey Date:** September 14-15, 2011

I. BATCHES OF SAMPLES

Batch #1		Batch #1 (*continued*)			
1) Sta. 459	48,220	11) Sta. 413	48,238		
2) Sta. 442	48,228	12) Sta. 405	48,243		
3) Sta. 438	48,230	13) Sta. 403	48,245		
4) Sta. 458	48,221				
5) Sta. 449	48,223				
6) Sta. 446	48,226				
7) Sta. 441	48,229				
8) Sta. 435	48,233				
9) Sta. 434	48,234				
10) Sta. 419	48,236				

II. QC EVALUATION

QC Results	**Batch #1**			
QC Sample	Sta. 442			
Serial No.	48,228			
QC Date	Jan. 5, 2012			
QC Inspector	Denise Crivella			
Percent Error	0.4%			

III. COMMENTS CONCERNING SAMPLE PROCESSING

(initialize & date all entries -- continue on back if necessary)

Necessary Remedial Action: *None*
Comments: *None*

Cove Corporation - Taxonomy Sample Batch Listing Sheet

Client: MCZM Benthic Infaunal Analysis	**Study Site:** Buzzards Bay
Taxonomist: Denise Crivella (Polychaetes)	**Survey Date:** September 14-15, 2011

I. BATCHES OF SAMPLES

Batch #1		**Batch #1 (*continued*)**			
1) Sta. 409	48,242	11) Sta. 412	48,239		
2) Sta. 436	48,232	12) Sta. 411	48,240		
3) Sta. 410	48,241	13) Sta. 404	48,244		
4) Sta. 450	48,222				
5) Sta. 448	48,224				
6) Sta. 447	48,225				
7) Sta. 444	48,227				
8) Sta. 437	48,231				
9) Sta. 431	48,235				
10) Sta. 417	48,237				

II. QC EVALUATION

QC Results	**Batch #1**			
QC Sample	Sta. 410			
Serial No.	48,241			
QC Date	Jan. 5, 2012			
QC Inspector	Tim Morris			
Percent Error	0.0%			

III. COMMENTS CONCERNING SAMPLE PROCESSING

(initialize & date all entries -- continue on back if necessary)

Necessary Remedial Action: *None*
Comments: *None*

Cove Corporation - Taxonomy Sample Batch Listing Sheet

Client: MCZM Benthic Infaunal Analysis	**Study Site:** Buzzards Bay
Taxonomist: Barbara Weems (Polychaetes)	**Survey Date:** September 14-15, 2011

I. BATCHES OF SAMPLES

Batch #1		Batch #1 (*continued*)			
1) Sta. 459	48,220	11) Sta. 413	48,238		
2) Sta. 442	48,228	12) Sta. 405	48,243		
3) Sta. 438	48,230	13) Sta. 403	48,245		
4) Sta. 458	48,221				
5) Sta. 449	48,223				
6) Sta. 446	48,226				
7) Sta. 441	48,229				
8) Sta. 435	48,233				
9) Sta. 434	48,234				
10) Sta. 419	48,236				

II. QC EVALUATION

QC Results	**Batch #1**			
QC Sample	Sta. 441			
Serial No.	48,229			
QC Date	Jan. 5, 2012			
QC Inspector	Tim Morris			
Percent Error	0.7%			

III. COMMENTS CONCERNING SAMPLE PROCESSING

(initialize & date all entries -- continue on back if necessary)

Necessary Remedial Action: *None*
Comments: *None*

Cove Corporation - Taxonomy Sample Batch Listing Sheet

Client: MCZM Benthic Infaunal Analysis	**Study Site:** Buzzards Bay
Taxonomist: Tim Morris (Arthropods & Misc. Taxa)	**Survey Date:** September 14-15, 2011

I. BATCHES OF SAMPLES

Batch #1		Batch #2		Batch #3		
1) Sta. 459	48,220	1) Sta. 438	48,230	1) Sta. 411	48,240	
2) Sta. 458	48,221	2) Sta. 437	48,231	2) Sta. 410	48,241	
3) Sta. 450	48,222	3) Sta. 436	48,232	3) Sta. 409	48,242	
4) Sta. 449	48,223	4) Sta. 435	48,233	4) Sta. 405	48,243	
5) Sta. 448	48,224	5) Sta. 434	48,234	5) Sta. 404	48,244	
6) Sta. 447	48,225	6) Sta. 431	48,235	6) Sta. 403	48,245	
7) Sta. 446	48,226	7) Sta. 419	48,236			
8) Sta. 444	48,227	8) Sta. 417	48,237			
9) Sta. 442	48,228	9) Sta. 413	48,238			
10) Sta. 441	48,229	10) Sta. 412	48,239			

II. QC EVALUATION

QC Results	Batch #1	Batch #2	Batch #3	
QC Sample	Sta. 447	Sta. 437	Sta. 404	
Serial No.	48,225	48,231	48,244	
QC Date	Jan. 5, 2012	Jan. 5, 2012	Jan. 5, 2012	
QC Inspector	Tim Morris	Tim Morris	Tim Morris	
Percent Error	0.0%	1.3%	0.0%	

III. COMMENTS CONCERNING SAMPLE PROCESSING

(initialize & date all entries -- continue on back if necessary)

Necessary Remedial Action: *None*
Comments: *None*

Cove Corporation - Taxonomy Sample Batch Listing Sheet

Client: MCZM Benthic Infaunal Analysis	**Study Site:** Buzzards Bay
Taxonomist: Nancy Mountford (Molluscs)	**Survey Date:** September 14-15, 2011

I. BATCHES OF SAMPLES

Batch #1		Batch #2		Batch #3		
1) Sta. 459	48,220	1) Sta. 438	48,230	1) Sta. 411	48,240	
2) Sta. 458	48,221	2) Sta. 437	48,231	2) Sta. 410	48,241	
3) Sta. 450	48,222	3) Sta. 436	48,232	3) Sta. 409	48,242	
4) Sta. 449	48,223	4) Sta. 435	48,233	4) Sta. 405	48,243	
5) Sta. 448	48,224	5) Sta. 434	48,234	5) Sta. 404	48,244	
6) Sta. 447	48,225	6) Sta. 431	48,235	6) Sta. 403	48,245	
7) Sta. 446	48,226	7) Sta. 419	48,236			
8) Sta. 444	48,227	8) Sta. 417	48,237			
9) Sta. 442	48,228	9) Sta. 413	48,238			
10) Sta. 441	48,229	10) Sta. 412	48,239			

II. QC EVALUATION

QC Results	Batch #1	Batch #2	Batch #3	
QC Sample	Sta. 447	Sta. 437	Sta. 404	
Serial No.	48,225	48,231	48,244	
QC Date	Jan. 6, 2012	Jan. 6, 2012	Jan. 6, 2012	
QC Inspector	Nancy Mountford	Nancy Mountford	Nancy Mountford	
Percent Error	0.0%	11.1%	0.0%	

III. COMMENTS CONCERNING SAMPLE PROCESSING

(initialize & date all entries -- continue on back if necessary)

Necessary Remedial Action:

None; batch #2 passes the QC inspection because the sample had a low abundance, and there was only one 1 taxonomic error.

Comments:

None

Appendix C

Raw Infaunal Data

Table C-1. Cape Cod Bay infaunal database. Taxa shaded in pink were excluded from the analyzed dataset used for statistical analysis. Taxa shaded dark grey are common taxa, light grey are less common taxa, and unshaded are rare taxa.

TAXA	293	303	313	314	315	316	317	318	319	320	321	322	323	327	328	329	330	331	332	334	335	336	337
Copepoda	P	P	P	P	P	P	P	P	P	P	P	A	P	P	A	P	A	P	P	P	P	P	P
Nematoda	A	A	P	P	P	A	P	P	P	A	A	A	P	P	A	P	A	P	P	A	A	A	A
Ostracoda	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Ampeliscidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ampharetidae	0	0	0	5	1	3	1	1	3	0	0	3	0	1	0	0	1	0	2	0	0	0	0
Amphipoda spp.	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Anthozoa	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	3	2	7	0	0	1
Anthuridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apistobranchidae	0	0	0	0	0	0	0	0	0	4	3	2	4	0	0	12	0	0	0	0	0	0	0
Arcticidae	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0
Argissidae	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Ascidiacea juv.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Astartidae	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Axiidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bivalvia spp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Calyptraeidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cancridae	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Capitellidae	1	1	3	10	13	3	0	123	135	145	34	93	29	6	35	53	67	73	262	51	51	19	12
Caprellidae	0	0	0	0	0	0	0	0	2	0	0	1	1	0	0	1	0	3	0	0	0	0	0
Cardiidae	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Carditidae	0	0	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chaetiliidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chaetodermatidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chaetopteridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cirolanidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cirratulidae	2	2	1	8	15	10	1	8	2	2	3	2	2	1	0	2	0	1	2	1	0	0	0

TAXA	293	303	313	314	315	316	317	318	319	320	321	322	323	327	328	329	330	331	332	334	335	336	337
Corophiidae	0	0	0	7	194	14	0	2	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cossuridae	0	0	0	2	1	0	0	3	72	344	91	45	31	7	25	158	116	232	476	183	75	183	207
Crangonidae	1	0	2	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diastylidae	0	0	0	0	2	0	0	1	0	0	0	1	0	0	0	0	0	1	1	0	0	0	0
Dorvilleidae	10	0	65	88	0	36	3	2	0	3	0	2	0	0	0	0	0	0	1	0	2	1	1
Dulichiidae	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Echinarachniidae	0	0	0	0	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Flabelligeridae	1	0	0	1	2	1	0	6	1	0	1	1	0	1	0	1	0	8	4	8	0	1	0
Gastropoda spp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Glyceridae	3	2	5	7	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Goniadidae	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Harrimaniidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haustoriidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hesionidae	0	0	57	36	0	47	0	1	0	48	0	0	0	0	0	0	0	0	0	0	0	0	0
Hiatellidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Idoteidae	0	0	0	1	2	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0
Lampropidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lasaeidae	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Leuconidae	0	0	0	0	5	0	0	9	8	2	0	4	2	0	0	0	0	2	2	0	0	0	0
Lumbrineridae	28	6	7	18	7	11	3	171	246	0	17	58	26	18	9	31	25	49	222	139	12	9	9
Lyonsiidae	0	0	0	0	0	1	5	0	0	2	0	1	0	0	0	0	0	0	1	0	0	0	0
Lysianassidae	0	0	0	1	0	0	1	0	0	0	0	0	1	0	0	0	1	0	12	0	0	0	0
Mactridae	6	0	0	1	1	0	31	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Maldanidae	1	0	0	2	28	5	3	17	3	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Melitidae	0	0	0	14	0	0	0	1	1	0	0	0	0	0	0	0	0	0	4	5	0	0	0
Molgulidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Molpadiidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0
Myidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mysidae	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TAXA	293	303	313	314	315	316	317	318	319	320	321	322	323	327	328	329	330	331	332	334	335	336	337
Mytilidae	0	0	0	0	6	1	0	4	9	1	0	1	0	0	0	0	0	0	7	0	0	0	0
Nannastacidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0
Nassariidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Naticidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nemertea	2	1	5	0	0	0	1	2	15	9	0	2	6	1	0	2	6	3	8	4	1	0	2
Nephtyidae	1	0	1	2	5	3	3	5	4	4	2	10	5	0	0	7	3	5	7	6	0	0	0
Nereididae	0	0	0	1	3	2	0	11	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nuculidae	1	10	0	1	27	0	0	54	141	57	25	66	29	9	4	35	67	69	288	45	5	10	18
Oedicerotidae	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Oenonidae	0	0	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oligochaeta	37	0	71	298	1	154	68	27	28	64	35	20	6	3	191	95	33	63	123	97	0	97	155
Opheliidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ophiuridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ophiuroidea juv.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Orbiniidae	4	3	2	8	1	5	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0
Oweniidae	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	0	0	0	1	1	0	0	0
Paguridae	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pandoridae	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Paramunnidae	0	0	0	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	6	1	0	0	0
Paraonidae	87	15	498	418	12	352	209	128	203	423	57	129	43	48	13	196	183	353	797	248	39	58	63
Pectinariidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Periplomatidae	0	0	2	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0
Pholoidae	0	1	51	80	11	21	15	4	4	1	0	1	0	1	0	4	0	0	1	0	0	0	0
Phoronidae	6	0	0	0	0	0	0	0	0	1	2	0	1	0	0	0	0	0	0	8	0	0	0
Photidae	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	5	0	0	0	1	0
Phoxocephalidae	0	0	0	0	0	0	4	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phyllodocidae	2	0	1	2	6	1	0	15	5	1	0	3	2	1	0	0	1	8	3	2	0	0	0
Pleustidae	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0
Poecilochaetidae	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0

TAXA	293	303	313	314	315	316	317	318	319	320	321	322	323	327	328	329	330	331	332	334	335	336	337
Polygordiidae	627	45	2707	958	75	2189	1950	12	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Polynoidae	0	0	2	0	2	0	0	0	1	0	0	0	1	0	0	0	0	0	1	0	0	0	0
Retusidae	0	0	0	0	0	0	0	0	0	0	1	4	0	0	0	0	0	0	0	0	0	0	0
Rissoidae	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0
Sabellidae	0	0	0	0	1	0	0	6	197	158	41	30	57	3	6	28	75	251	83	20	51	21	24
Scalibregmatidae	0	0	10	26	29	26	0	10	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaphandridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sclerodactylidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sigalionidae	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Solenidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sphaerodoridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0
Spionidae	8	3	11	48	84	172	5	235	196	49	4	9	4	1	2	11	9	40	113	14	1	1	2
Stenothoidae	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	1	1	0	0	0	0
Sternaspidae	0	0	0	0	0	0	0	0	2	1	0	2	3	0	0	0	0	1	3	0	0	0	0
Styelidae	0	0	0	0	41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Syllidae	27	0	657	1492	5	1179	319	10	1	1	0	0	1	0	0	0	2	2	0	0	0	0	0
Tanaissuidae	0	2	28	21	0	7	56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tellinidae	0	0	0	0	0	1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Terebellidae	0	0	1	1	0	2	0	0	0	0	0	4	0	0	0	1	2	4	0	0	0	0	0
Thraciidae	0	0	0	0	1	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0
Thyasiridae	0	0	0	0	0	0	0	0	0	0	0	7	2	0	0	4	4	0	0	0	0	0	0
Trichobranchidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trochochaetidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Turbellaria	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Turridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Unciolidae	0	0	0	0	1	0	5	2	0	0	0	0	0	0	0	0	1	0	7	2	0	0	0
Veneridae	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Yoldiidae	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	1	0	0	0	0
Grand Total	856	93	4189	3562	661	4250	2695	875	1303	1330	319	502	260	102	285	643	600	1182	2448	844	238	402	494

TAXA	338	339	340	341	342	343	344	345	347	352	353	354	355	356	357	358	359	360	361	362	363	364	365
Copepoda	P	P	P	P	P	P	P	P	A	P	P	P	A	P	P	P	P	P	P	P	P	P	P
Nematoda	A	A	A	P	P	A	P	A	A	P	A	P	A	P	P	P	A	P	P	P	A	P	P
Ostracoda	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Ampeliscidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Ampharetidae	0	1	0	0	0	0	0	0	0	4	2	4	2	6	1	8	19	11	12	18	18	17	34
Amphipoda spp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Anthozoa	0	0	0	1	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0
Anthuridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apistobranchidae	0	0	1	1	0	5	11	2	5	1	0	0	0	0	0	0	0	0	1	0	1	0	2
Arcticidae	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Argissidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ascidiacea juv.	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	2
Astartidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Axiidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bivalvia spp.	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Calyptraeidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cancridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Capitellidae	30	33	30	34	30	64	55	77	37	49	42	39	9	38	11	26	50	30	47	84	32	50	59
Caprellidae	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	1
Cardiidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Carditidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chaetiliidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chaetodermatidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0
Chaetopteridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Cirolanidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cirratulidae	0	5	0	0	0	0	1	1	4	8	9	3	6	10	12	22	27	25	34	61	46	73	155
Corophiidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0

TAXA	338	339	340	341	342	343	344	345	347	352	353	354	355	356	357	358	359	360	361	362	363	364	365
Cossuridae	84	149	246	39	30	158	11	20	16	14	13	8	5	24	3	26	12	9	7	24	4	48	13
Crangonidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diastylidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	1	6	0
Dorvilleidae	0	1	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	3
Dulichiidae	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Echinarachniidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Flabelligeridae	0	0	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1
Gastropoda spp.	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Glyceridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Goniadidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Harrimaniidae	0	0	0	0	0	0	1	0	2	1	3	2	1	1	1	2	10	1	2	0	1	1	3
Haustoriidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hesionidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hiatellidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Idoteidae	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0
Lampropidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lasaeidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Leuconidae	0	0	0	0	0	2	6	0	0	1	0	0	0	0	2	3	4	5	6	4	8	12	7
Lumbrineridae	10	15	17	5	19	47	35	18	49	72	48	34	33	66	60	77	61	76	87	109	84	96	79
Lyonsiidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Lysianassidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Mactridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Maldanidae	0	0	0	0	0	0	0	0	0	2	0	0	1	0	1	1	3	0	5	1	4	3	0
Melitidae	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	4	0	0	1	0	1
Molgulidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Molpadiidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Myidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Mysidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mytilidae	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	5	1	0	2	0	0	0	0

TAXA	338	339	340	341	342	343	344	345	347	352	353	354	355	356	357	358	359	360	361	362	363	364	365
Nannastacidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	1
Nassariidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Naticidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nemertea	6	3	6	1	2	3	1	2	8	4	4	3	3	6	1	2	5	5	3	2	1	4	10
Nephtyidae	2	5	0	0	2	6	4	2	1	9	9	6	1	0	12	8	4	8	11	11	8	13	5
Nereididae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nuculidae	32	5	11	10	32	14	6	7	9	14	3	10	0	1	11	62	39	6	35	16	7	14	14
Oedicerotidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oenonidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oligochaeta	126	132	59	35	50	33	39	18	0	1	4	3	1	0	1	6	0	2	0	1	3	11	0
Opheliidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Ophiuridae	0	0	0	0	0	0	0	1	0	0	2	0	0	1	4	1	0	0	0	0	3	3	0
Ophiuroidea juv.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Orbiniidae	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Oweniidae	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	1	1	0	1	0	0	0	2
Paguridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pandoridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Paramunnidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Paraonidae	0	45	55	50	65	224	98	100	159	289	319	171	76	204	75	172	218	144	219	258	173	226	249
Pectinariidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Periplomatidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	3	2	1	1	1
Pholoidae	1	0	0	0	0	0	0	0	1	2	2	0	0	0	1	2	2	0	0	1	0	1	0
Phoronidae	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Photidae	0	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Phoxocephalidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2
Phyllodocidae	1	1	1	0	1	1	1	0	0	1	4	1	0	2	1	1	4	1	7	0	2	2	1
Pleustidae	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0
Poecilochaetidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Polygordiidae	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	1

TAXA	338	339	340	341	342	343	344	345	347	352	353	354	355	356	357	358	359	360	361	362	363	364	365
Polynoidae	0	0	0	0	0	1	1	0	1	1	0	0	0	0	0	1	1	0	0	1	2	3	1
Retusidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rissoidae	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	4	0	0	0	1	3	2	0
Sabellidae	15	6	17	19	5	28	11	3	38	44	17	29	11	2	13	22	12	2	23	29	10	9	22
Scalibregmatidae	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Scaphandridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Sclerodactylidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sigalionidae	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Solenidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sphaerodoridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0
Spionidae	5	9	4	0	0	9	6	5	1	3	5	2	0	0	1	5	9	15	5	10	4	5	33
Stenothoidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
Sternaspidae	0	0	0	0	0	0	1	0	1	0	0	1	0	0	1	1	0	0	3	0	0	0	0
Styelidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Syllidae	0	0	1	0	0	0	1	0	0	0	0	1	0	0	0	0	2	0	2	0	0	1	1
Tanaissuidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tellinidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Terebellidae	1	1	1	0	0	1	2	0	0	0	1	1	0	0	0	1	4	0	1	1	0	2	0
Thraciidae	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	3	0	0	0	0	0	0	0
Thyasiridae	0	0	0	0	0	0	2	3	5	15	2	6	0	3	3	0	7	3	16	11	20	13	9
Trichobranchidae	0	0	0	0	0	0	0	0	0	0	2	0	0	0	5	0	5	4	0	9	25	11	19
Trochochaetidae	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	10	0	0	1	0
Turbellaria	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Turridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Unciolidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Veneridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Yoldiidae	1	0	0	1	1	0	3	0	0	4	3	0	1	0	2	4	1	3	0	4	10	11	6
Grand Total	315	414	451	197	242	596	298	261	340	544	497	329	152	368	225	471	510	360	547	665	473	643	742

TAXA	366	367	368	369	370	371	372	373	375	376	377	378	380	381	382	383	388	389	392	393	395
Copepoda	P	P	P	P	P	P	P	P	P	A	P	A	P	A	P	A	P	P	P	P	P
Nematoda	P	P	A	P	P	P	P	P	A	A	P	P	P	A	P	P	A	P	P	P	P
Ostracoda	P	P	P	P	P	P	P	P	P	A	P	P	P	A	P	A	P	P	A	P	P
Ampeliscidae	1	0	0	0	2	1	2	2	0	3	3	0	0	0	1	1	0	0	0	0	2
Ampharetidae	30	20	17	35	21	14	37	43	0	13	5	0	0	1	3	0	1	3	0	0	2
Amphipoda spp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Anthozoa	0	0	0	0	3	3	3	2	0	6	2	1	0	0	3	0	1	11	0	0	4
Anthuridae	0	0	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0
Apistobranchidae	0	3	0	1	5	3	6	2	1	3	3	0	0	0	5	0	21	6	0	0	0
Arcticidae	0	0	0	0	18	0	3	0	1	8	1	0	0	1	0	0	7	0	1	2	1
Argissidae	0	1	0	0	2	2	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0
Ascidiacea juv.	1	1	1	0	0	3	5	1	0	1	0	3	0	0	0	0	0	1	129	73	0
Astartidae	0	0	0	0	0	1	1	0	0	3	0	0	0	0	3	0	0	1	2	0	0
Axiidae	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Bivalvia spp.	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0
Calyptraeidae	2	0	1	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	1
Cancridae	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2
Capitellidae	59	86	88	71	101	95	83	33	13	108	126	5	5	2	87	242	147	138	0	4	129
Caprellidae	0	1	2	2	9	6	2	1	0	3	0	0	0	0	7	0	6	1	0	0	0
Cardiidae	0	0	0	0	0	0	0	0	1	1	4	0	0	0	2	1	2	0	0	0	1
Carditidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chaetiliidae	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0
Chaetodermatidae	0	0	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Chaetopteridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cirolanidae	0	0	0	0	0	0	0	0	0	0	0	1	1	5	0	0	0	0	1	0	0
Cirratulidae	136	182	175	181	255	284	202	126	71	185	222	7	15	126	92	95	92	101	0	3	126
Corophiidae	0	0	0	0	1	2	0	1	0	0	0	1	0	0	1	0	0	0	0	0	5
Cossuridae	35	30	36	46	8	10	21	4	0	3	2	0	0	0	1	4	138	17	0	0	2
Crangonidae	2	1	0	0	0	2	1	0	1	0	1	0	0	0	1	0	0	1	0	0	0

TAXA	366	367	368	369	370	371	372	373	375	376	377	378	380	381	382	383	388	389	392	393	395
Diastylidae	3	1	4	9	2	7	4	1	1	1	3	1	1	5	6	1	5	2	0	0	0
Dorvilleidae	0	2	0	2	1	0	4	1	3	1	1	0	0	1	4	2	1	1	1	2	2
Dulichiidae	0	0	1	0	2	4	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
Echinarachniidae	0	0	1	0	0	0	7	0	0	0	1	18	3	36	31	2	0	0	16	8	0
Flabelligeridae	1	0	1	2	0	2	2	0	0	2	4	0	1	1	4	0	0	14	0	0	0
Gastropoda spp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Glyceridae	0	0	0	0	0	0	0	0	0	0	0	2	1	2	0	0	0	0	1	0	1
Goniadidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Harrimaniidae	0	2	5	2	1	0	1	1	0	1	2	2	2	0	3	4	3	0	0	0	2
Haustoriidae	0	0	0	0	0	0	1	1	0	0	0	11	1	40	0	0	0	0	0	0	0
Hesionidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hiatellidae	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Idoteidae	0	0	0	0	0	0	5	4	23	5	6	9	0	0	3	97	0	0	0	0	1
Lampropidae	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	0	0	0	0	0
Lasaeidae	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Leuconidae	8	7	8	11	5	10	12	3	1	6	9	0	0	0	18	18	4	6	0	0	41
Lumbrineridae	61	82	87	82	52	66	40	46	76	93	147	4	3	12	45	88	74	87	1	4	72
Lyonsiidae	1	0	3	2	3	9	6	3	2	3	3	2	0	0	1	1	0	1	0	0	4
Lysianassidae	0	1	0	0	1	0	0	0	0	0	9	1	3	3	1	2	0	2	0	1	0
Mactridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Maldanidae	0	3	5	3	34	90	20	24	1	60	41	9	3	74	25	3	2	8	1	4	1
Melitidae	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0
Molgulidae	0	0	0	1	0	3	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0
Molpadiidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Myidae	1	1	0	0	1	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0
Mysidae	3	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mytilidae	2	3	2	3	15	29	23	32	0	11	7	4	3	3	19	3	0	3	0	0	6
Nannastacidae	1	4	4	5	10	32	11	13	0	7	3	0	0	0	1	1	2	0	0	0	0
Nassariidae	0	0	0	0	0	2	0	0	0	0	0	3	1	0	0	0	0	0	0	1	0

TAXA	366	367	368	369	370	371	372	373	375	376	377	378	380	381	382	383	388	389	392	393	395
Naticidae	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Nemertea	2	5	5	3	10	5	14	5	2	15	23	5	2	4	5	6	9	6	11	4	11
Nephtyidae	9	10	10	9	8	8	3	4	7	1	6	6	9	0	4	12	9	9	0	3	4
Nereididae	0	1	1	0	3	1	4	1	0	0	0	0	0	0	1	0	0	0	0	0	0
Nuculidae	37	36	51	82	78	213	125	80	174	165	429	5	35	25	479	224	93	201	0	3	629
Oedicerotidae	0	1	0	1	0	0	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0
Oenonidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oligochaeta	0	1	0	0	2	2	2	8	0	0	1	0	0	0	1	37	24	58	88	42	26
Opheliidae	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	1
Ophiuridae	1	0	1	3	0	0	4	5	0	0	0	0	0	0	0	0	0	0	0	0	0
Ophiuroidea juv.	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Orbiniidae	0	0	0	0	0	0	0	0	0	0	1	12	7	8	0	3	0	0	0	0	0
Oweniidae	0	2	1	1	9	8	2	0	67	6	0	2	3	0	52	9	2	0	0	0	13
Paguridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pandoridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Paramunnidae	0	0	0	0	0	0	1	2	1	1	0	0	0	0	0	0	1	0	0	0	1
Paraonidae	186	299	248	386	236	204	248	178	125	190	171	39	50	2	99	237	954	851	90	93	220
Pectinariidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Periplomatidae	0	1	1	1	13	16	12	17	0	11	10	0	0	0	10	4	5	3	0	0	1
Pholoidae	0	1	2	1	7	0	4	8	3	6	7	0	0	3	7	6	3	0	3	11	2
Phoronidae	0	0	0	0	19	7	6	2	3	13	4	1	5	4	19	1	10	1	0	0	1
Photidae	0	1	0	0	2	7	1	0	4	0	0	0	1	1	4	32	3	1	0	0	3
Phoxocephalidae	0	1	4	0	4	5	11	7	2	0	0	17	15	29	1	6	0	0	0	0	24
Phyllodocidae	0	0	0	1	10	7	2	1	17	6	8	7	5	17	14	21	4	4	1	1	6
Pleustidae	1	0	0	0	0	1	3	0	1	0	0	0	0	0	1	0	0	2	0	0	0
Poecilochaetidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Polygordiidae	0	0	0	0	5	1	1	2	59	4	14	28	97	140	12	17	6	3	735	846	11
Polynoidae	1	0	0	1	0	1	3	0	0	0	1	0	0	0	2	0	1	1	0	0	0
Retusidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TAXA	366	367	368	369	370	371	372	373	375	376	377	378	380	381	382	383	388	389	392	393	395
Rissoidae	7	0	6	11	10	32	49	8	0	1	1	0	0	0	1	0	0	2	0	0	0
Sabellidae	27	73	36	53	176	119	73	25	2	23	16	0	0	3	43	9	928	173	0	0	2
Scalibregmatidae	1	0	0	0	1	0	2	0	2	1	4	0	1	0	17	9	1	5	0	0	3
Scaphandridae	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Sclerodactylidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Sigalionidae	0	0	0	0	2	0	0	0	1	0	0	5	10	7	1	0	0	0	0	1	0
Solenidae	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	0
Sphaerodoridae	0	1	0	0	2	2	3	0	0	1	1	0	1	0	2	0	2	0	0	0	1
Spionidae	29	20	28	43	111	78	94	74	291	128	205	48	243	175	97	746	8	7	6	11	323
Stenothoidae	5	0	0	0	0	8	0	0	0	2	0	1	0	0	0	3	0	0	0	1	1
Sternaspidae	0	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Styelidae	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
Syllidae	0	0	0	0	1	0	1	0	1	5	7	0	13	0	13	31	1	2	755	827	5
Tanaissuidae	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0	0	0	0	165	197	0
Tellinidae	0	0	0	0	0	0	0	0	0	0	0	1	2	7	0	0	0	0	0	1	0
Terebellidae	0	1	0	0	0	1	0	0	0	2	0	0	0	0	0	0	3	2	0	0	0
Thraciidae	0	0	0	0	0	0	3	0	0	0	4	1	1	1	1	1	2	0	0	0	3
Thyasiridae	5	9	17	7	39	56	33	54	0	9	2	0	0	0	2	0	18	14	0	0	0
Trichobranchidae	13	15	17	14	18	33	31	12	0	24	3	0	0	0	3	0	1	3	0	0	0
Trochochaetidae	0	2	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Turbellaria	0	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
Turridae	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
Unciolidae	0	0	0	0	0	0	0	2	0	0	1	7	3	8	1	0	0	0	57	18	0
Veneridae	0	0	0	0	1	0	1	2	0	3	0	0	0	0	0	0	0	0	0	0	4
Yoldiidae	5	3	8	6	3	3	4	2	0	5	4	0	0	0	2	1	2	0	0	0	0
Grand Total	679	916	881	1081	1327	1502	1245	847	961	1157	1530	285	552	749	1267	1983	2598	1757	2064	2163	1703

Table C-2. South of the Islands infaunal database. Taxa shaded in pink were excluded from the analyzed dataset used for statistical analysis. Taxa shaded dark grey are common taxa, light grey are less common taxa, and unshaded are rare taxa.

Station	1	2	4	9	10	11	12	15	16	17	18	19	20	21	22	23	24	25	26	28	32	34	35
Copepoda	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Nematoda	A	P	P	A	P	A	A	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P
Ostracoda	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Acmaeidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Acteonidae	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Ampeliscidae	2	216	83	1	32	16	2	3	7	25	15	0	0	0	0	13	71	169	0	4	0	0	99
Ampharetidae	0	1	0	0	1	1	1	1	2	0	0	0	0	0	0	2	0	0	1	0	1	0	0
Amphipoda spp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Anomiidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Anthozoa	0	0	0	1	0	4	2	1	1	0	1	0	2	1	5	0	0	0	1	0	0	0	0
Anthuridae	1	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0
Aoridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Arcidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Arcticidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Argissidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ascidiacea juv.	6	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	0	0	0
Astartidae	0	17	0	0	1	2	0	0	0	0	0	1	1	0	1	1	0	2	1	1	0	0	0
Balanidae	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
Bateidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bivalvia spp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bodotriidae	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0
Caecidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Calappidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Callianassidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Callipallenidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Calyptraeidae	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2	0	0	0	0

Station	1	2	4	9	10	11	12	15	16	17	18	19	20	21	22	23	24	25	26	28	32	34	35
Cancridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Capitellidae	0	0	21	0	8	7	1	22	18	3	0	2	9	0	1	6	3	2	0	4	125	2	17
Caprellidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cardiidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Carditidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Chaetiliidae	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chaetopteridae	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cirolanidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cirratulidae	8	3	0	1	24	30	3	14	16	7	19	1	3	1	5	17	17	1	48	21	45	7	5
Columbellidae	0	0	3	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	0	0
Corophiidae	0	1	0	0	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cossuridae	0	0	0	0	0	0	2	3	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Crangonidae	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0
Crassatellidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cylichnidae	0	0	0	0	0	0	0	0	0	0	1	0	3	0	0	0	0	0	0	0	0	0	0
Diastylidae	2	4	0	0	3	0	0	0	0	2	3	1	5	0	0	1	2	1	0	1	0	0	2
Dorvilleidae	0	0	0	0	0	0	0	0	0	6	1	0	0	1	0	0	0	2	0	0	0	1	1
Dulichiidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Echinarachniidae	96	38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Eulimidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Eunicidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0
Flabelligeridae	0	0	0	0	0	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Gastropoda spp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Glyceridae	11	6	3	0	1	0	0	0	0	0	0	0	0	0	1	0	0	2	1	0	6	0	0
Golfingiidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Goniadidae	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	27	0	0	1	0
Haustoriidae	9	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hesionidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hiatellidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Station	1	2	4	9	10	11	12	15	16	17	18	19	20	21	22	23	24	25	26	28	32	34	35
Holothuroidea juv.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Idoteidae	0	0	2	0	3	0	0	0	0	0	2	1	2	0	2	1	0	1	0	0	1	1	5
Ischyroceridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lasaeidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Leptonidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Leuconidae	0	0	0	0	17	0	0	1	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0
Liljeborgiidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lucinidae	0	0	0	0	0	0	0	0	0	0	0	2	2	0	1	0	0	0	0	0	0	0	0
Lumbrineridae	0	1	35	2	14	28	11	106	46	11	35	2	22	0	2	15	16	3	28	7	6	7	3
Lyonsiidae	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0
Lysianassidae	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mactridae	1	0	0	0	0	0	0	0	0	11	0	0	1	0	0	1	1	2	1	0	1	2	2
Maeridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Magelonidae	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Majidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Maldanidae	0	0	0	1	60	5	14	6	39	0	49	0	0	0	0	0	0	0	1	0	2	1	0
Melitidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Montacutidae	0	0	0	0	0	0	0	0	2	0	3	0	0	0	0	0	0	0	0	0	0	0	0
Myidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mysidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mytilidae	0	0	0	0	0	0	0	0	0	0	0	3	1	17	2	2	0	7	4	3	0	4	0
Nannastacidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nassariidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Naticidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nemertea	1	1	1	2	3	0	2	3	6	3	3	0	0	2	2	0	1	2	5	3	2	0	4
Nephtyidae	2	1	0	0	9	7	7	18	9	4	19	5	35	1	0	6	1	0	1	10	5	0	2
Nereididae	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nuculidae	0	0	2	4	1771	299	104	230	477	7	1665	355	3662	210	366	486	196	70	4	1358	143	26	19
Oedicerotidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Station	1	2	4	9	10	11	12	15	16	17	18	19	20	21	22	23	24	25	26	28	32	34	35
Oenonidae	0	0	3	1	1	0	2	3	8	2	1	2	1	0	5	0	2	0	1	1	0	0	0
Oligochaeta	1	0	11	42	25	4	70	13	29	412	32	21	43	17	46	39	17	72	38	34	80	35	8
Onuphidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Opheliidae	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0
Ophiuroidea juv.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Orbiniidae	0	0	7	0	0	0	0	0	0	2	1	0	0	0	0	2	2	3	0	1	4	2	3
Oweniidae	0	0	0	0	1	8	8	2	3	1	1	0	3	0	0	0	0	0	0	0	1	0	1
Paguridae	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pandoridae	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Panopeidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Paraonidae	4	6	2	13	14	61	38	178	71	10	46	7	43	2	24	25	15	10	160	8	24	29	17
Periplomatidae	0	0	0	0	4	2	0	13	12	0	12	2	5	0	0	0	0	1	0	0	0	0	0
Pholoidae	0	0	1	0	1	0	2	6	0	1	5	2	3	2	0	0	0	0	2	1	0	0	0
Phoronidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Photidae	0	0	1	0	8	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Phoxocephalidae	2	0	0	0	1	0	0	1	0	1	4	0	0	0	0	0	3	0	2	1	0	1	0
Phyllodocidae	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	2	2	1	2	1	1
Phyllophoridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Pinnotheridae	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pisionidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Polygordiidae	7	0	2	0	0	0	0	0	0	148	0	0	0	0	0	1	16	186	395	15	15	70	26
Polynoidae	0	0	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pontogeneiidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Pontoporeiidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Portunidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pyramidellidae	0	0	1	4	0	0	0	0	0	0	1	9	3	0	1	0	0	0	0	1	1	0	0
Rissoidae	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sabellaridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Sabellidae	0	0	0	0	0	0	0	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Station	1	2	4	9	10	11	12	15	16	17	18	19	20	21	22	23	24	25	26	28	32	34	35
Scalibregmatidae	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Sigalionidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sipunculidae	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Solenidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Sphaerodoridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Sphaeromatidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spionidae	1	1	2	0	2	0	0	2	0	1	4	0	2	0	0	4	1	1	4	7	130	2	4
Spirorbidae	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Stenothoidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sternaspidae	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Syllidae	0	0	4	6	42	0	6	2	6	20	35	0	0	0	0	3	8	59	32	0	3	6	11
Synaptidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tanaissuidae	2	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Tellinidae	2	2	3	0	2	0	0	0	2	3	2	0	8	1	0	4	2	6	2	22	24	1	20
Terebellidae	0	0	0	0	0	0	0	3	0	0	1	0	0	0	0	0	0	0	1	0	0	1	0
Thraciidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Thyasiridae	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Trichobranchidae	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Turbellaria	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Unciolidae	0	1	3	0	10	0	0	1	2	2	15	0	1	0	0	4	0	2	10	0	1	1	1
Upogebiidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Varunidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Veneridae	0	0	0	0	0	0	0	1	1	0	1	0	4	1	0	0	0	0	0	2	2	0	0
Yoldiidae	0	0	2	0	6	1	0	0	1	0	1	0	6	0	0	3	1	0	0	1	0	0	0
Grand Total	170	303	195	78	2072	480	278	639	772	686	1989	422	3873	261	464	640	378	607	781	1509	626	203	252

Station	37	38	42	43	44	48	50	51	52	54	55	57	58	59	60	62	64	66	67	68	69	74	75
Copepoda	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Nematoda	P	P	A	P	P	A	P	P	P	P	P	A	P	P	P	P	A	P	P	A	A	A	P
Ostracoda	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Acmaeidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Acteonidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ampeliscidae	0	4	0	8	390	6	316	384	39	337	327	7	236	812	204	12	4	11	2	0	33	1	2
Ampharetidae	0	2	0	7	0	0	0	1	0	2	2	0	1	1	0	0	4	12	283	23	0	0	16
Amphipoda spp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Anomiidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Anthozoa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Anthuridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aoridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Arcidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Arcticidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Argissidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Ascidiacea juv.	0	1	0	2	2	0	0	0	5	37	12	5	2	0	0	0	0	5	0	1	8	0	0
Astartidae	0	0	0	0	0	0	0	1	2	4	0	0	0	0	1	0	0	0	0	0	0	1	0
Balanidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bateidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bivalvia spp.	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bodotriidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Caecidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Calappidae	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Callianassidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Callipallenidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Calyptraeidae	0	2	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	4	0	1	0
Cancridae	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	0
Capitellidae	2	0	0	154	15	1	22	74	3	0	4	2	0	195	139	0	2	440	15	15	22	0	141
Caprellidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Station	37	38	42	43	44	48	50	51	52	54	55	57	58	59	60	62	64	66	67	68	69	74	75
Cardiidae	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Carditidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chaetiliidae	0	0	1	0	18	3	0	0	10	12	16	0	1	0	1	0	3	0	0	0	0	0	0
Chaetopteridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cirolanidae	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Cirratulidae	0	1	0	7	19	22	3	16	4	35	30	63	16	4	5	53	43	2	1	6	21	1	16
Columbellidae	0	0	0	4	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0	0	1
Corophiidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cossuridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Crangonidae	0	2	0	1	0	0	0	2	0	1	2	1	0	0	0	0	0	1	0	0	1	0	2
Crassatellidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cylichnidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diastylidae	0	2	0	0	1	0	0	14	1	0	3	7	1	1	4	0	1	0	0	0	7	2	3
Dorvilleidae	0	0	0	0	0	0	1	0	1	2	0	4	1	1	2	3	6	1	0	1	6	0	0
Dulichiidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Echinarachniidae	0	0	0	0	1	0	0	1	4	3	3	0	1	1	0	0	0	0	0	1	0	1	0
Eulimidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Eunicidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Flabelligeridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Gastropoda spp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Glyceridae	0	1	1	0	1	3	1	1	0	0	0	3	0	0	1	8	21	0	1	33	7	0	2
Golfingiidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Goniadidae	0	1	0	0	0	20	0	0	0	0	0	0	1	0	0	1	7	0	0	1	0	0	0
Haustoriidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0
Hesionidae	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	2	0	1	0	0	0
Hiatellidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Holothuroidea juv.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0
Idoteidae	1	0	0	0	1	0	3	25	2	5	1	3	1	0	0	0	0	3	0	0	0	0	0
Ischyroceridae	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0

Station	37	38	42	43	44	48	50	51	52	54	55	57	58	59	60	62	64	66	67	68	69	74	75
Lasaeidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Leptonidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Leuconidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Liljeborgiidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lucinidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lumbrineridae	0	6	0	4	6	0	6	16	19	17	6	6	12	9	6	7	3	1	1	3	1	6	3
Lyonsiidae	1	0	0	1	0	0	1	1	0	1	0	0	0	0	0	0	0	0	1	1	0	1	0
Lysianassidae	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mactridae	1	4	0	0	0	0	1	4	5	18	4	2	8	0	4	0	2	2	1	0	2	9	0
Maeridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Magelonidae	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
Majidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Maldanidae	0	1	0	0	2	2	1	1	1	0	1	3	0	0	1	0	1	0	0	0	0	0	0
Melitidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Montacutidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Myidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mysidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Mytilidae	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Nannastacidae	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nassariidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Naticidae	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Nemertea	0	0	0	0	1	2	2	2	2	3	2	7	5	2	1	4	15	2	0	11	16	2	0
Nephtyidae	13	4	2	2	10	20	2	1	12	19	5	1	11	1	0	3	11	5	0	2	21	16	0
Nereididae	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nuculidae	649	3	1	55	2	0	12	37	0	4	2	1	0	13	3	0	0	163	7	4	4	5	9
Oedicerotidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oenonidae	0	0	0	1	0	20	0	1	0	0	0	1	0	0	0	1	12	0	3	1	1	0	1
Oligochaeta	1	1	0	9	0	0	2	20	193	467	135	170	441	8	24	55	130	669	5	39	303	6	21
Onuphidae	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Station	37	38	42	43	44	48	50	51	52	54	55	57	58	59	60	62	64	66	67	68	69	74	75
Opheliidae	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	0
Ophiuroidea juv.	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Orbiniidae	0	1	0	2	2	0	2	1	0	2	4	0	0	1	0	0	0	24	3	2	0	0	1
Oweniidae	1	0	0	3	1	0	0	0	0	2	1	0	0	0	0	1	0	1	3	1	1	4	0
Paguridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0
Pandoridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Panopeidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Paraonidae	1	8	0	25	19	8	16	19	10	16	16	76	20	34	18	98	187	11	2	163	19	6	9
Periplomatidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pholoidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Phoronidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Photidae	0	0	0	0	0	0	8	3	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
Phoxocephalidae	0	1	0	0	2	7	5	9	21	4	5	4	6	7	1	0	1	1	0	0	0	0	0
Phyllodocidae	0	0	0	1	0	0	19	39	1	4	4	1	2	6	0	1	0	0	0	0	0	0	0
Phyllophoridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pinnotheridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Pisionidae	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	8	0	0	0	0	0	0	0
Polygordiidae	0	5	0	7	2	38	59	24	80	111	99	109	74	28	19	82	95	22	0	36	3	0	0
Polynoidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pontogeneiidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pontoporeiidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Portunidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pyramidellidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rissoidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sabellaridae	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	8	0	0	0
Sabellidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scalibregmatidae	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
Sigalionidae	0	0	0	0	0	1	0	3	0	0	0	0	0	3	0	0	0	0	0	0	2	0	0
Sipunculidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Station	37	38	42	43	44	48	50	51	52	54	55	57	58	59	60	62	64	66	67	68	69	74	75
Solenidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Sphaerodoridae	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Sphaeromatidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spionidae	0	2	1	1	1	2	6	30	10	15	4	1	3	1	1	1	1	14	0	2	2	3	1
Spirorbidae	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Stenothoidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Sternaspidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Syllidae	0	0	0	0	3	10	43	41	167	251	267	96	186	16	28	18	228	9	0	4	24	0	0
Synaptidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Tanaissuidae	0	0	24	0	0	3	0	0	1	28	13	0	20	0	0	1	0	1	0	1	7	0	0
Tellinidae	19	11	0	10	1	0	7	14	1	4	1	0	3	9	0	0	0	1	0	3	4	1	1
Terebellidae	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0	1	1	0	0	0	0	0	0
Thraciidae	0	0	0	0	0	0	0	0	0	1	0	0	2	0	0	0	0	0	0	0	0	0	0
Thyasiridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trichobranchidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Turbellaria	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Unciolidae	0	0	0	7	6	3	3	8	8	31	19	10	21	7	9	8	5	1	2	7	5	1	0
Upogebiidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Varunidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Veneridae	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Yoldiidae	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Grand Total	696	89	35	313	506	175	544	795	603	1441	993	589	1077	1160	472	373	789	1406	334	385	526	70	231

Station	77	78	80	81	81 Dup	82	95	97	98	99	100	101	102	103	107	113	115	119	120	121	123	125	130
Copepoda	A	P	P	P	A	A	A	P	P	P	P	P	P	A	P	P	P	P	A	A	P	P	P
Nematoda	A	A	P	A	A	A	A	A	P	A	A	A	P	A	A	A	A	A	A	A	A	P	A
Ostracoda	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P
Acmaeidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0
Acteonidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ampeliscidae	1	0	0	0	0	4	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0
Ampharetidae	2	1	103	31	106	189	1085	19	0	0	0	0	0	0	0	1	0	0	0	0	1	5	0
Amphipoda spp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Anomiidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Anthozoa	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	5	0	1	0	0	1	0
Anthuridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Aoridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Arcidae	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	4
Arcticidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Argissidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ascidiacea juv.	0	0	0	0	0	0	0	0	23	0	0	4	3	0	0	0	0	0	0	0	0	0	0
Astartidae	0	0	0	0	0	0	0	0	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Balanidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0
Bateidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bivalvia spp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
Bodotriidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Caecidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Calappidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Callianassidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	3	3	0
Callipallenidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Calyptraeidae	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0
Cancridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Capitellidae	1	3	1092	283	355	12	1656	19	2	2	1	0	0	1	0	1	0	7	30	1	11	151	0
Caprellidae	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0

Station	77	78	80	81	81 Dup	82	95	97	98	99	100	101	102	103	107	113	115	119	120	121	123	125	130
Cardiidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Carditidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chaetiliidae	0	0	0	0	0	0	2	1	1	0	1	1	0	1	1	0	1	3	8	0	0	1	0
Chaetopteridae	0	0	1	0	1	1	2	2	1	0	0	0	0	0	0	0	0	0	1	1	3	15	0
Cirolanidae	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cirratulidae	2	1	81	2	11	0	17	17	0	6	1	0	1	0	0	0	0	10	4	16	17	29	0
Columbellidae	0	0	5	0	1	0	19	0	0	0	0	0	1	0	0	0	0	0	0	3	0	0	22
Corophiidae	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0
Cossuridae	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Crangonidae	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Crassatellidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cylichnidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diastylidae	0	0	3	6	5	1	17	0	1	0	0	0	1	1	0	0	0	0	0	8	2	9	0
Dorvilleidae	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	3	0	15	12	36	0
Dulichiidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Echinarachniidae	0	0	0	0	0	0	0	1	31	11	1	2	2	0	0	0	0	4	8	0	9	0	0
Eulimidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Eunicidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Flabelligeridae	0	0	3	0	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gastropoda spp.	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Glyceridae	3	0	0	0	0	0	5	8	0	0	0	0	0	3	0	2	1	1	1	0	1	7	4
Golfingiidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Goniadidae	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haustoriidae	55	7	0	0	0	0	1	0	4	13	126	20	2	2	0	1	0	51	142	10	42	12	1
Hesionidae	0	0	1	0	0	0	0	1	0	0	0	2	0	0	0	0	1	0	0	0	0	0	2
Hiatellidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Holothuroidea juv.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Idoteidae	0	0	4	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	8	0	0

Station	77	78	80	81	81 Dup	82	95	97	98	99	100	101	102	103	107	113	115	119	120	121	123	125	130
Ischyroceridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lasaeidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Leptonidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Leuconidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Liljeborgiidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Lucinidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lumbrineridae	0	0	14	11	38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lyonsiidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
Lysianassidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mactridae	0	5	1	0	0	0	0	0	1	0	0	2	2	0	0	0	1	0	1	0	0	0	3
Maeridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Magelonidae	368	0	5	3	1	2	10	7	1	72	55	10	0	0	0	0	0	66	77	203	551	248	1
Majidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Maldanidae	0	0	2	0	1	0	0	6	0	0	0	0	1	0	0	0	0	0	0	1	0	13	1
Melitidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Montacutidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Myidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mysidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mytilidae	0	0	0	0	0	0	0	0	0	0	0	1	2	1	1	0	0	0	0	0	0	3	3
Nannastacidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nassariidae	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0
Naticidae	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0	6	1
Nemertea	1	0	2	0	1	0	6	5	16	6	1	1	1	0	0	11	0	11	8	12	20	18	41
Nephtyidae	6	1	6	2	4	0	23	16	3	3	3	1	0	0	0	0	1	10	4	18	43	28	0
Nereididae	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	4	1
Nuculidae	1	0	13	171	66	9	1	0	0	3	0	0	1	0	1	0	0	0	1	0	0	0	2
Oedicerotidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Oenonidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0
Oligochaeta	17	1	129	55	67	6	42	167	13	15	0	1	0	1	0	0	3	19	1	35	25	21	0

Station	77	78	80	81	81 Dup	82	95	97	98	99	100	101	102	103	107	113	115	119	120	121	123	125	130
Onuphidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	0
Opheliidae	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0
Ophiuroidea juv.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Orbiniidae	1	0	5	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Oweniidae	0	0	3	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Paguridae	0	0	0	0	1	0	2	0	0	0	1	0	0	0	0	0	0	0	0	7	2	3	1
Pandoridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Panopeidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Paraonidae	3	0	232	27	145	0	3	34	7	0	0	0	1	0	0	0	0	27	27	16	16	77	0
Periplomatidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Pholoidae	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phoronidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Photidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phoxocephalidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	29	4	17	22	1
Phyllodocidae	0	0	2	1	3	1	1	0	0	0	0	0	0	0	1	0	0	1	3	6	3	4	1
Phyllophoridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pinnotheridae	2	0	0	0	0	0	0	0	1	3	1	0	0	0	0	0	0	0	0	0	1	2	0
Pisionidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	4
Polygordiidae	0	0	0	0	0	0	0	12	6	0	0	1	0	0	0	0	0	0	1	0	3	2	0
Polynoidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pontogeneiidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pontoporeiidae	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	20	0	18	28	2	6	0	0
Portunidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pyramidellidae	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1
Rissoidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sabellaridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sabellidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scalibregmatidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sigalionidae	0	0	1	0	0	0	1	2	4	0	0	0	1	0	0	0	0	0	1	0	5	0	0

Station	77	78	80	81	81 Dup	82	95	97	98	99	100	101	102	103	107	113	115	119	120	121	123	125	130
Sipunculidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Solenidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sphaerodoridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sphaeromatidae	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Spionidae	6	2	27	9	15	6	94	77	115	30	18	2	2	0	0	3	0	38	7	66	55	165	0
Spirorbidae	0	0	0	0	0	0	0	0	12	0	0	0	0	0	18	0	0	0	0	0	0	0	0
Stenothoidae	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sternaspidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Syllidae	0	0	0	0	1	0	0	121	19	12	0	0	0	0	0	0	1	4	2	2	23	29	2
Synaptidae	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Tanaissuidae	5	0	0	0	0	0	0	1	42	88	1	12	7	1	0	0	1	30	14	0	31	0	0
Tellinidae	1	0	2	10	4	2	2	1	7	0	0	0	0	0	0	0	0	5	1	1	2	9	4
Terebellidae	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	0
Thraciidae	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Thyasiridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trichobranchidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Turbellaria	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Unciolidae	10	0	1	2	0	0	3	0	0	0	0	0	0	0	0	0	0	9	23	16	101	8	0
Upogebiidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Varunidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Veneridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9
Yoldiidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	485	24	1745	613	840	235	3001	523	334	267	214	61	31	12	23	39	29	342	425	454	1022	961	110

Station	135	140	141	142	156	159	161	162	163	164	166	168	169	170	171	172	172 Sub	173	175	176
Copepoda	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	A	P	P	P
Nematoda	A	A	A	A	A	P	A	A	P	A	P	A	P	A	P	P	A	P	P	P
Ostracoda	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P
Acmaeidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Acteonidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ampeliscidae	0	0	0	0	0	0	0	1	0	0	2	3	3	0	0	0	0	83	55	21
Ampharetidae	2	1468	6	3	0	3	6	2	5	7	28	0	4	0	0	0	0	2	1	2
Amphipoda spp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Anomiidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Anthozoa	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Anthuridae	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3
Aoridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Arcidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Arcticidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Argissidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ascidiacea juv.	0	0	0	0	0	0	0	0	0	13	0	1	0	13	0	0	0	0	0	0
Astartidae	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	1	0	0	9
Balanidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bateidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bivalvia spp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Bodotriidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Caecidae	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	8	25	0	0	0
Calappidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Callianassidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Callipallenidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Calyptraeidae	0	4	0	0	0	0	0	0	1	0	0	1	0	1	0	0	0	0	0	1
Cancridae	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0
Capitellidae	2	0	0	2	0	13	22	1	1	18	3541	0	5	0	8	1	0	246	8	7

Station	135	140	141	142	156	159	161	162	163	164	166	168	169	170	171	172	172 Sub	173	175	176
Caprellidae	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cardiidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Carditidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chaetiliidae	1	0	0	0	1	0	1	0	2	1	5	0	4	1	1	0	0	0	0	0
Chaetopteridae	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cirolanidae	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cirratulidae	0	0	0	0	0	11	5	1	1	0	32	13	5	10	4	1	0	7	8	8
Columbellidae	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0
Corophiidae	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Cossuridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Crangonidae	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	0	0
Crassatellidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cylichnidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Diastylidae	0	7	1	1	1	0	1	2	5	0	4	3	3	3	1	0	0	0	2	0
Dorvilleidae	0	0	0	0	0	1	0	2	0	1	0	0	1	5	0	0	0	1	0	0
Dulichiidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Echinarachniidae	0	2	1	9	1	0	1	1	6	8	0	0	2	2	1	0	0	0	0	0
Eulimidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Eunicidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Flabelligeridae	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0
Gastropoda spp.	0	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Glyceridae	6	0	4	0	0	0	0	9	0	7	3	3	0	39	1	1	0	4	0	0
Golfingiidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Goniadidae	0	0	0	0	0	0	0	0	1	0	0	2	0	2	0	0	0	0	0	0
Haustoriidae	0	12	42	5	9	23	43	5	0	2	0	2	52	2	54	0	0	0	0	0
Hesionidae	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hiatellidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Holothuroidea juv.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Station	135	140	141	142	156	159	161	162	163	164	166	168	169	170	171	172	172 Sub	173	175	176
Idoteidae	0	26	1	0	0	0	1	0	0	0	0	0	1	0	0	0	0	3	1	0
Ischyroceridae	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
Lasaeidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Leptonidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Leuconidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Liljeborgiidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lucinidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lumbrineridae	0	0	0	0	0	0	0	0	0	0	0	7	0	3	1	0	0	8	9	28
Lyonsiidae	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
Lysianassidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mactridae	1	2	0	0	6	0	5	6	16	15	0	7	0	7	1	0	0	2	0	0
Maeridae	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Magelonidae	1	0	78	3	5	937	32	2	0	2	76	1	130	0	135	0	0	0	0	0
Majidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Maldanidae	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0	0	1	0	20
Melitidae	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Montacutidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Myidae	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
Mysidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mytilidae	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nannastacidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nassariidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Naticidae	0	0	0	2	1	0	0	0	0	1	0	2	0	0	0	0	0	0	0	0
Nemertea	1	0	3	0	14	13	25	12	8	13	1	0	0	10	1	1	0	2	2	2
Nephtyidae	2	0	9	2	0	10	9	5	6	6	9	1	9	6	6	0	0	3	15	20
Nereididae	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0
Nuculidae	0	0	0	0	0	0	0	0	1	0	0	2	2	1	0	0	0	15	42	1250
Oedicerotidae	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0

Station	135	140	141	142	156	159	161	162	163	164	166	168	169	170	171	172	172 Sub	173	175	176
Oenonidae	0	0	0	0	0	1	0	0	0	0	2	1	0	0	2	1	0	1	1	0
Oligochaeta	12	6	1	11	4	62	41	40	25	3	24	17	19	152	7	4	0	30	13	52
Onuphidae	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Opheliidae	0	1	0	0	0	0	0	1	0	0	0	0	0	3	0	0	0	0	0	0
Ophiuroidea juv.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Orbiniidae	0	0	0	0	0	2	2	1	0	0	3	0	0	0	1	0	0	1	1	0
Oweniidae	0	0	2	1	0	1	0	0	3	0	1	1	1	0	0	0	0	3	8	14
Paguridae	0	1	0	0	0	0	0	0	1	0	0	7	1	0	0	0	0	0	0	0
Pandoridae	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0
Panopeidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Paraonidae	0	0	0	1	3	80	3	9	1	7	0	2	27	60	16	2	0	74	26	53
Periplomatidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
Pholoidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Phoronidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Photidae	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Phoxocephalidae	0	0	0	0	0	0	2	2	1	2	0	1	3	0	3	0	0	1	0	0
Phyllodocidae	0	5	0	0	0	2	0	0	0	0	3	1	0	0	0	0	0	2	3	2
Phyllophoridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Pinnotheridae	0	3	1	0	0	0	11	1	0	3	0	0	0	0	0	0	0	0	0	0
Pisionidae	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	1	0	0	0	0
Polygordiidae	2	0	0	0	1	0	1	9	3	33	0	1	0	6	0	14	0	6	0	0
Polynoidae	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pontogeneiidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pontoporeiidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Portunidae	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pyramidellidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3
Rissoidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sabellaridae	0	0	0	0	0	0	0	0	0	0	29	0	0	0	0	0	0	0	0	0

Station	135	140	141	142	156	159	161	162	163	164	166	168	169	170	171	172	172 Sub	173	175	176
Sabellidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scalibregmatidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Sigalionidae	0	4	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0
Sipunculidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Solenidae	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0
Sphaerodoridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sphaeromatidae	0	0	0	0	0	0	19	0	0	0	0	0	1	0	0	0	0	0	0	0
Spionidae	1	9	3	3	3	20	26	8	5	73	121	7	10	0	17	3	0	9	12	9
Spirorbidae	0	0	0	0	8	0	0	0	0	13	0	0	0	14	0	0	0	0	0	0
Stenothoidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sternaspidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Syllidae	9	1	0	0	4	0	6	90	2	46	5	9	0	26	0	4	1	1	2	12
Synaptidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tanaissuidae	0	0	4	4	3	0	0	0	0	0	0	2	7	5	1	2	1	0	0	0
Tellinidae	0	7	2	0	2	2	21	2	3	3	0	0	2	0	2	0	0	14	3	0
Terebellidae	0	0	0	0	0	0	0	0	0	0	6	2	0	0	0	0	0	0	0	0
Thraciidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Thyasiridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Trichobranchidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Turbellaria	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Unciolidae	0	0	34	0	0	0	1	0	0	0	0	2	1	0	0	0	0	0	0	7
Upogebiidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Varunidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Veneridae	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	3
Yoldiidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Grand Total	43	1570	192	47	68	1185	287	212	98	278	3904	110	299	378	265	46	29	526	218	1550

Station	180	181	182	183	184	218	220
Copepoda	P	P	P	P	P	P	P
Nematoda	P	P	P	A	P	P	A
Ostracoda	P	P	P	P	P	P	P
Acmaeidae	0	0	0	0	0	0	0
Acteonidae	0	0	0	0	0	0	0
Ampeliscidae	605	371	58	0	1	0	0
Ampharetidae	1	0	1	0	0	1	0
Amphipoda spp.	0	0	0	0	0	0	0
Anomiidae	0	0	0	0	0	0	2
Anthozoa	0	0	0	0	0	1	1
Anthuridae	0	0	0	0	1	0	0
Aoridae	0	0	0	0	0	0	10
Arcidae	0	0	0	0	0	2	1
Arcticidae	0	0	0	0	0	0	0
Argissidae	0	0	0	0	0	0	0
Ascidiacea juv.	0	0	0	0	0	0	0
Astartidae	0	0	0	0	1	0	0
Balanidae	0	0	0	0	0	0	0
Bateidae	0	0	0	0	0	2	78
Bivalvia spp.	0	0	0	0	0	0	0
Bodotriidae	3	0	0	0	0	0	0
Caecidae	0	0	0	1	0	3	0
Calappidae	0	0	0	0	0	0	0
Callianassidae	1	0	0	0	0	0	1
Callipallenidae	0	0	0	0	0	0	0
Calyptraeidae	0	0	3	0	0	2	0
Cancridae	0	0	0	0	0	0	0
Capitellidae	28	56	9	0	1	1	1
Caprellidae	0	0	0	1	0	1	9

Station	180	181	182	183	184	218	220
Cardiidae	0	0	0	0	0	0	0
Carditidae	0	0	0	0	0	0	0
Chaetiliidae	0	0	0	1	0	0	0
Chaetopteridae	1	1	0	0	0	0	0
Cirolanidae	0	0	0	0	0	0	0
Cirratulidae	2	0	1	2	7	10	33
Columbellidae	8	1	0	0	0	5	4
Corophiidae	0	0	0	0	0	1	1
Cossuridae	0	0	0	0	0	0	0
Crangonidae	1	0	0	0	0	0	0
Crassatellidae	0	0	0	3	0	2	0
Cylichnidae	1	2	0	1	0	0	0
Diastylidae	2	2	5	0	0	0	1
Dorvilleidae	0	0	1	0	0	0	6
Dulichiidae	0	0	0	0	0	0	0
Echinarachniidae	0	0	1	7	2	0	2
Eulimidae	0	0	0	0	0	1	0
Eunicidae	0	0	0	0	0	0	0
Flabelligeridae	0	0	0	0	0	0	0
Gastropoda spp.	0	0	1	0	0	0	0
Glyceridae	0	2	8	3	0	7	5
Golfingiidae	0	0	0	1	0	0	0
Goniadidae	0	1	0	0	0	0	0
Haustoriidae	0	0	0	0	1	0	0
Hesionidae	0	0	0	0	0	0	0
Hiatellidae	0	0	0	0	0	0	0
Holothuroidea juv.	0	0	0	0	0	0	0
Idoteidae	0	0	0	0	0	0	0
Ischyroceridae	0	0	0	0	0	0	0

Station	180	181	182	183	184	218	220
Lasaeidae	0	0	0	0	0	0	0
Leptonidae	0	1	0	0	0	0	0
Leuconidae	0	0	0	0	0	0	0
Liljeborgiidae	1	0	1	0	0	0	0
Lucinidae	0	0	0	0	0	0	0
Lumbrineridae	12	11	1	0	0	0	1
Lyonsiidae	4	11	1	0	0	3	1
Lysianassidae	0	0	0	0	0	1	6
Mactridae	0	1	3	1	7	0	1
Maeridae	0	0	0	0	0	0	5
Magelonidae	0	0	0	0	9	1	1
Majidae	0	0	0	0	0	0	1
Maldanidae	10	45	0	0	0	6	7
Melitidae	0	0	0	0	0	0	0
Montacutidae	0	0	0	0	0	0	0
Myidae	0	0	0	0	0	0	0
Mysidae	0	0	0	0	0	0	0
Mytilidae	0	0	0	0	0	5	0
Nannastacidae	0	0	0	0	0	0	0
Nassariidae	0	0	0	0	1	0	0
Naticidae	0	0	1	0	0	2	0
Nemertea	0	4	1	1	2	5	8
Nephtyidae	5	2	3	2	5	0	6
Nereididae	0	0	0	0	0	0	1
Nuculidae	10	11	2	0	2	1	0
Oedicerotidae	0	0	0	0	2	0	0
Oenonidae	4	0	0	0	0	1	1
Oligochaeta	13	34	7	9	29	58	8
Onuphidae	0	0	0	0	0	0	0

Station	180	181	182	183	184	218	220
Opheliidae	0	0	0	0	0	0	0
Ophiuroidea juv.	0	1	0	0	0	0	2
Orbiniidae	0	0	2	0	1	0	0
Oweniidae	0	1	0	0	0	0	0
Paguridae	0	0	0	0	0	0	8
Pandoridae	1	1	1	0	1	0	1
Panopeidae	0	0	0	0	0	1	0
Paraonidae	4	5	0	2	1	7	10
Periplomatidae	0	0	0	0	0	0	0
Pholoidae	0	0	0	0	0	0	0
Phoronidae	1	0	0	0	0	0	0
Photidae	0	0	0	0	0	0	7
Phoxocephalidae	1	0	0	3	15	2	28
Phyllodocidae	5	3	0	0	0	1	3
Phyllophoridae	0	0	0	0	0	0	0
Pinnotheridae	5	3	0	0	3	0	1
Pisionidae	0	0	0	1	1	0	1
Polygordiidae	0	0	7	2	17	5	10
Polynoidae	0	0	0	0	0	0	2
Pontogeneiidae	0	0	0	0	0	0	0
Pontoporeiidae	0	0	0	0	0	0	0
Portunidae	0	0	0	0	0	0	0
Pyramidellidae	28	11	0	0	0	4	0
Rissoidae	0	0	0	0	0	0	0
Sabellaridae	0	0	0	0	0	8	4
Sabellidae	0	0	0	0	0	0	0
Scalibregmatidae	0	0	0	0	0	0	1
Sigalionidae	0	0	0	0	0	0	0
Sipunculidae	0	0	0	0	0	0	0

Station	180	181	182	183	184	218	220
Solenidae	1	0	2	0	0	1	0
Sphaerodoridae	0	0	0	0	0	0	0
Sphaeromatidae	0	0	0	0	0	0	0
Spionidae	7	12	5	0	5	1	9
Spirorbidae	0	0	0	0	0	0	0
Stenothoidae	0	0	0	0	0	0	1
Sternaspidae	0	0	0	0	0	0	0
Syllidae	0	0	0	53	5	74	144
Synaptidae	0	0	0	0	0	1	0
Tanaissuidae	0	0	0	0	3	1	6
Tellinidae	6	9	56	5	20	1	2
Terebellidae	0	0	0	25	8	14	15
Thraciidae	0	0	0	3	0	1	0
Thyasiridae	0	0	0	0	0	0	0
Trichobranchidae	0	0	0	0	0	0	0
Turbellaria	0	1	0	0	1	0	0
Unciolidae	1	14	2	0	0	0	41
Upogebiidae	0	0	0	0	0	0	0
Varunidae	0	0	0	0	0	0	2
Veneridae	2	4	3	0	0	0	0
Yoldiidae	0	3	0	0	0	0	0
Grand Total	774	624	186	127	152	244	500

Table C-3. Buzzards Bay raw infaunal database. Taxa shaded in pink were excluded from the analyzed dataset used for statistical analysis. Taxa shaded dark grey are common taxa, light grey are less common taxa, and unshaded are rare taxa.

Row Labels	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	424	425	427	428
Copepoda	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Nematoda	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	A
Ostracoda	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	A	P	P
Acteonidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ampeliscidae	6	0	6	0	0	1	22	0	42	7	294	5	522	792	33	42	7	2	3	15	264
Ampharetidae	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Amphipoda spp.	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Amphiuridae	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ampithoidae	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Ancinidae	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Anomiidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Anthozoa	1	0	0	0	0	0	0	1	0	0	0	11	0	0	0	0	0	0	0	0	0
Anthuridae	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Aoridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Arcidae	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
Ascidiacea juv.	0	0	0	0	0	0	18	0	5	2	0	0	0	0	0	0	0	0	0	0	0
Astartidae	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Balanidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bateidae	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bivalvia spp.	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Bodotriidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Caecidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Calappidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Callianassidae	0	0	0	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Calyptraeidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Capitellidae	3	0	5	3	5	3	1	0	0	0	25	10	2	5	1	55	148	31	1	3	9

Row Labels	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	424	425	427	428
Caprellidae	0	0	0	0	0	0	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0
Cardiidae	0	0	6	0	1	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0
Carditidae	1	0	0	0	0	0	7	1	0	0	1	0	0	0	0	0	0	0	0	0	0
Caudinidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chaetiliidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	17	1	2
Chaetopteridae	6	3	4	4	15	10	11	17	2	0	4	8	0	0	0	0	0	0	0	0	0
Cirolanidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Cirratulidae	18	0	8	4	4	2	5	1	0	0	6	0	9	7	1	7	3	6	7	9	10
Columbellidae	1	0	1	0	0	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0	0
Corbulidae	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Corophiidae	0	0	0	0	0	0	1	0	0	0	0	0	1	3	0	0	0	0	0	0	0
Cossuridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Crangonidae	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Crassatellidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Cylichnidae	5	18	1	10	19	23	0	15	0	0	1	1	0	0	0	3	0	0	0	0	0
Diastylidae	0	0	1	1	0	0	1	0	0	0	2	0	1	4	0	0	3	1	0	0	1
Dorvilleidae	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
Echinarachniidae	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0
Epialtidae	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Eulimidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Flabelligeridae	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Gadilidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gastropoda spp.	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Glyceridae	1	0	2	1	0	0	4	0	1	0	0	0	0	0	0	0	0	1	1	1	0
Harrimaniidae	0	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0
Haustoriidae	0	0	0	0	0	0	0	0	1	13	0	0	0	8	3	0	0	2	51	50	14
Hesionidae	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Holothuroidea juv.	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hutchinsoniellidae	0	0	0	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Row Labels	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	424	425	427	428
Idoteidae	0	0	0	0	2	0	0	1	0	0	0	0	1	0	0	0	1	1	0	0	0
Ischyroceridae	0	0	0	0	1	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0
Leuconidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Liljeborgiidae	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lucinidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lumbrineridae	22	7	50	8	7	7	27	17	1	1	13	6	2	0	0	0	0	0	0	0	2
Lyonsiidae	0	0	0	0	0	0	0	1	0	1	1	0	0	2	0	0	0	0	0	0	0
Mactridae	0	0	0	0	0	0	0	0	3	4	1	1	3	9	1	5	2	0	2	3	5
Maeridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Magelonidae	0	0	0	0	0	0	0	0	6	7	0	1	1	4	0	0	0	1	2	4	2
Maldanidae	0	4	3	0	3	0	1	6	0	0	1	3	2	0	0	0	0	0	0	0	0
Mangeliidae	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Montacutidae	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Mysidae	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mytilidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nassariidae	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Naticidae	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Nemertea	11	1	5	0	4	1	5	4	0	0	5	4	3	3	0	0	3	1	0	1	0
Nephtyidae	22	16	4	7	21	17	0	17	6	1	3	7	6	6	5	4	7	5	4	3	1
Nereididae	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nuculidae	3	52	6	0	11	39	10	7	0	0	5	401	5	2	0	4	4	7	6	0	11
Nudibranchia spp.	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oenonidae	0	0	0	0	0	0	2	0	0	0	3	0	0	1	0	0	0	0	0	0	0
Oligochaeta	4	0	3	6	0	0	3	3	7	0	11	4	4	0	0	2	0	30	5	10	5
Onuphidae	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Opheliidae	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Ophiuroidea juv.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Orbiniidae	0	0	0	0	0	0	0	0	0	0	1	0	3	9	0	0	0	3	3	1	9
Oweniidae	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0

Row Labels	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	424	425	427	428
Paguridae	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
Pandoridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Panopeidae	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Paraonidae	48	5	34	17	6	7	13	12	3	4	2	11	7	9	0	5	0	8	7	0	6
Pectinariidae	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Petricolidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pharidae	0	0	0	0	0	0	0	0	2	1	6	0	0	0	0	0	0	0	0	0	0
Pholoidae	1	0	3	1	0	0	0	4	1	0	0	7	0	0	0	0	0	0	0	0	0
Phoronidae	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Photidae	0	0	0	0	1	0	0	0	0	0	0	2	0	1	0	0	0	0	0	0	0
Phoxichilidiidae	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phoxocephalidae	0	0	0	0	0	0	0	0	5	3	1	0	9	16	1	12	0	1	15	4	5
Phyllodocidae	0	0	3	0	0	0	1	3	0	0	4	2	0	0	0	0	0	0	0	0	1
Pilargidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pinnotheridae	2	1	4	17	1	0	22	1	0	0	1	0	0	0	0	0	1	3	0	0	0
Pleustidae	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
Polygordiidae	0	0	3	0	0	0	2	0	2	0	0	0	9	16	0	0	1	6	0	4	3
Polynoidae	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pontoporeiidae	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Pyramidellidae	0	2	3	1	1	0	0	4	1	0	2	0	4	0	0	0	0	0	3	0	0
Retusidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sabellaridae	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scalibregmatidae	0	0	7	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sclerodactylidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sigalionidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sipuncula spp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sipunculidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spionidae	13	1	5	22	19	7	3	8	5	6	6	0	12	9	0	1	0	5	3	5	18
Spirorbidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Row Labels	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	424	425	427	428
Stenothoidae	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Syllidae	1	0	4	1	1	0	0	0	0	0	0	3	5	13	0	1	0	1	3	1	0
Tanaissuidae	0	0	0	0	0	0	0	0	0	7	0	0	0	6	0	0	0	0	15	3	0
Tellinidae	22	2	1	2	4	6	0	2	5	1	2	0	3	7	1	2	0	1	0	0	3
Terebellidae	1	0	1	0	0	0	0	4	1	0	0	0	0	0	0	0	0	0	0	0	0
Turbellaria	4	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Unciolidae	0	0	0	0	0	0	0	0	0	0	0	0	0	5	1	0	0	0	0	0	6
Upogebiidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Veneridae	0	1	0	0	1	1	1	0	1	0	4	1	1	1	0	0	0	0	0	0	0
Vitrinellidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Yoldiidae	1	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0
Grand Total	200	118	182	115	138	127	187	135	100	62	406	514	618	941	50	144	181	118	151	119	379

Row Labels	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	446	447	448	449	450
Copepoda	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P
Nematoda	P	A	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Ostracoda	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Acteonidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ampeliscidae	82	0	6	2	488	48	36	81	138	344	89	7	336	288	255	175	139	26	32	9	6
Ampharetidae	0	0	0	0	0	1	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0
Amphipoda spp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Amphiuridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Ampithoidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ancinidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Anomiidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Anthozoa	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
Anthuridae	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	7	7	5	0	0
Aoridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Arcidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0
Ascidiacea juv.	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
Astartidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0
Balanidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bateidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	1
Bivalvia spp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Bodotriidae	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Caecidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Calappidae	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Callianassidae	0	0	0	0	0	0	0	0	0	1	0	0	2	0	0	0	3	7	3	1	10
Calyptraeidae	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0
Capitellidae	47	41	37	3	0	3	1	1	1	2	0	20	26	30	1	4	13	35	13	31	3
Caprellidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0
Cardiidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0
Carditidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2

Row Labels	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	446	447	448	449	450
Caudinidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0
Chaetiliidae	2	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Chaetopteridae	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	6	4	1	3
Cirolanidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cirratulidae	16	13	2	0	0	0	4	0	0	0	0	3	7	6	0	2	12	7	23	44	11
Columbellidae	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	8	3
Corbulidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	2	2	2	3
Corophiidae	0	0	0	0	1	0	0	0	0	0	0	0	4	4	0	0	1	1	11	1	0
Cossuridae	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Crangonidae	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0
Crassatellidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cylichnidae	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0
Diastylidae	0	0	1	0	0	1	1	1	3	0	0	2	2	3	0	1	3	0	0	0	0
Dorvilleidae	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0
Echinarachniidae	0	0	0	0	0	0	12	3	3	0	1	0	0	0	0	0	0	0	0	0	0
Epialtidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Eulimidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0
Flabelligeridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gadilidae	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0
Gastropoda spp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Glyceridae	0	0	0	0	0	0	0	1	0	0	0	0	2	1	1	2	3	2	2	4	0
Harrimaniidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haustoriidae	2	3	2	0	0	2	1	3	1	0	11	0	2	1	0	0	0	0	0	0	0
Hesionidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Holothuroidea juv.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hutchinsoniellidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Idoteidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0
Ischyroceridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Leuconidae	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	0	0	0	0	0

Row Labels	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	446	447	448	449	450
Liljeborgiidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	3	1	2
Lucinidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Lumbrineridae	1	0	1	0	0	0	0	1	0	1	0	13	15	7	20	2	35	11	27	32	15
Lyonsiidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	1
Mactridae	2	0	1	1	6	0	6	10	2	1	2	0	3	1	0	1	0	0	0	1	0
Maeridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0
Magelonidae	2	5	0	0	0	3	14	3	4	6	5	0	1	0	0	0	0	0	0	1	0
Maldanidae	0	0	1	0	0	0	0	0	0	0	0	2	0	2	1	0	1	3	4	0	2
Mangeliidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Montacutidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Mysidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Mytilidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
Nassariidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Naticidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nemertea	0	2	1	0	1	0	0	2	2	3	0	2	0	3	2	0	6	6	11	3	3
Nephtyidae	4	1	1	0	3	2	1	2	8	3	4	11	12	14	3	7	6	2	1	4	6
Nereididae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nuculidae	370	87	2	0	1	0	3	0	7	2	3	280	58	81	9	5	9	16	3	1	0
Nudibranchia spp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oenonidae	1	0	0	0	0	0	0	0	1	0	0	0	3	0	3	0	1	2	0	1	1
Oligochaeta	1	5	0	0	0	1	0	12	0	1	0	35	6	17	10	6	26	38	35	47	9
Onuphidae	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1	0
Opheliidae	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Ophiuroidea juv.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0
Orbiniidae	6	5	2	0	2	1	3	1	1	7	6	0	6	0	4	2	1	7	0	1	0
Oweniidae	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0
Paguridae	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Pandoridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Panopeidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0

Row Labels	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	446	447	448	449	450
Paraonidae	8	5	3	2	2	7	4	5	4	7	3	26	20	21	5	0	16	85	32	35	0
Pectinariidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Petricolidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Pharidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pholoidae	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	7	2	4	2	1
Phoronidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Photidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Phoxichilidiidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phoxocephalidae	3	25	0	0	6	1	1	7	7	5	5	0	7	0	0	0	1	0	0	0	0
Phyllodocidae	0	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	3	8	2	3
Pilargidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0
Pinnotheridae	0	0	1	0	0	1	0	0	0	0	0	0	0	2	0	0	18	8	12	16	16
Pleustidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Polygordiidae	0	13	1	0	0	2	10	12	0	22	11	0	12	0	0	2	1	7	0	6	3
Polynoidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Pontoporeiidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pyramidellidae	0	1	0	0	2	0	0	0	0	0	0	1	0	4	0	0	0	0	0	1	1
Retusidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sabellaridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
Scalibregmatidae	0	0	0	0	0	0	0	0	0	1	0	0	3	0	3	0	7	7	8	4	25
Sclerodactylidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
Sigalionidae	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
Sipuncula spp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sipunculidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Spionidae	11	8	0	0	2	2	4	9	3	5	0	1	6	4	0	4	31	13	27	13	7
Spirorbidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	12	0
Stenothoidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Syllidae	2	19	1	2	0	3	9	16	14	24	8	3	15	2	7	13	4	24	23	47	6
Tanaissuidae	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0

Row Labels	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	446	447	448	449	450
Tellinidae	8	6	2	0	3	2	4	4	0	1	5	0	5	7	1	13	13	9	3	5	0
Terebellidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	4	7	1	6
Turbellaria	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Unciolidae	2	4	0	0	0	0	1	0	0	1	1	0	0	6	1	0	3	1	1	4	0
Upogebiidae	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	2
Veneridae	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	2	0
Vitrinellidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Yoldiidae	1	0	1	0	0	0	0	0	0	0	0	2	0	0	1	0	0	0	0	0	0
Grand Total	572	244	66	10	519	80	117	176	200	437	160	414	566	511	329	245	401	347	310	396	156

Row Labels	451	452	453	455	456	458	459	460	462	463
Copepoda	A	P	P	P	A	P	P	P	A	A
Nematoda	P	P	A	P	A	P	P	P	A	P
Ostracoda	P	P	P	P	A	P	P	P	P	P
Acteonidae	0	0	1	0	0	0	0	0	0	0
Ampeliscidae	0	0	0	6	1	11	1	14	1	3
Ampharetidae	0	1	1	0	0	1	1	0	0	2
Amphipoda spp.	0	0	0	0	0	0	0	0	0	0
Amphiuridae	0	0	0	0	0	0	0	0	0	0
Ampithoidae	0	0	0	0	0	0	0	0	0	0
Ancinidae	0	0	0	0	0	0	0	0	0	0
Anomiidae	0	0	0	0	0	4	0	0	0	0
Anthozoa	1	0	1	0	0	1	0	0	0	2
Anthuridae	0	0	0	0	0	0	0	0	0	0
Aoridae	0	0	0	0	0	3	0	0	1	0
Arcidae	0	0	0	0	1	2	2	0	0	0
Ascidiacea juv.	0	0	0	0	0	0	0	0	0	0
Astartidae	0	0	0	0	0	0	0	0	0	0
Balanidae	0	0	0	0	304	101	95	0	41	0
Bateidae	0	0	0	0	0	1	0	0	0	0
Bivalvia spp.	0	0	0	1	2	0	0	0	0	1
Bodotriidae	0	0	0	0	0	0	0	0	0	0
Caecidae	0	0	0	0	0	1	0	0	0	0
Calappidae	0	0	0	0	0	0	0	0	0	0
Callianassidae	0	0	0	3	2	0	4	1	0	0
Calyptraeidae	0	0	0	0	114	90	118	0	129	0
Capitellidae	1	0	2	1	27	43	36	21	1	0
Caprellidae	0	1	0	0	1	1	0	0	0	0
Cardiidae	0	0	0	0	0	3	0	0	0	1
Carditidae	0	0	0	0	0	0	0	0	0	0

Row Labels	451	452	453	455	456	458	459	460	462	463
Caudinidae	0	0	0	0	0	0	0	0	0	0
Chaetiliidae	0	0	0	0	0	0	0	0	0	0
Chaetopteridae	5	9	3	11	2	12	0	7	0	11
Cirolanidae	0	0	0	0	0	0	0	0	0	0
Cirratulidae	1	1	0	5	8	31	25	7	13	0
Columbellidae	0	0	0	1	14	29	3	0	3	0
Corbulidae	0	0	0	1	2	0	3	0	0	0
Corophiidae	0	0	0	0	0	0	0	0	0	0
Cossuridae	0	0	0	0	0	0	0	0	0	0
Crangonidae	0	0	0	0	0	0	1	0	0	0
Crassatellidae	0	0	0	0	0	0	0	0	0	0
Cylichnidae	1	1	4	6	1	0	0	4	1	3
Diastylidae	1	0	0	0	0	1	0	1	0	0
Dorvilleidae	0	1	0	0	0	0	0	0	0	2
Echinarachniidae	0	0	0	0	0	0	0	0	0	0
Epialtidae	0	0	0	0	0	0	0	0	0	0
Eulimidae	0	0	0	0	0	0	0	0	0	0
Flabelligeridae	0	0	0	0	1	0	0	0	1	0
Gadilidae	0	0	0	0	0	0	0	0	0	0
Gastropoda spp.	0	0	0	0	0	0	0	0	0	0
Glyceridae	0	0	0	1	0	14	1	1	1	1
Harrimaniidae	0	0	0	0	0	0	0	0	0	0
Haustoriidae	0	0	0	0	0	0	0	0	0	0
Hesionidae	0	0	0	0	0	0	0	0	0	0
Holothuroidea juv.	0	0	0	0	0	0	0	0	0	0
Hutchinsoniellidae	0	0	0	0	0	0	0	0	0	0
Idoteidae	0	0	0	0	0	0	0	0	0	0
Ischyroceridae	0	0	0	0	0	0	0	0	0	0
Leuconidae	0	0	0	0	0	0	0	0	0	0

Row Labels	451	452	453	455	456	458	459	460	462	463
Liljeborgiidae	0	3	0	3	2	0	2	0	0	0
Lucinidae	0	0	0	0	0	0	0	0	0	0
Lumbrineridae	5	11	6	4	11	12	8	27	5	4
Lyonsiidae	0	0	0	0	0	1	0	0	0	0
Mactridae	0	0	0	0	0	1	0	0	0	0
Maeridae	0	0	0	0	0	0	0	0	0	0
Magelonidae	0	0	0	0	0	0	0	0	0	0
Maldanidae	0	0	4	0	4	12	3	0	6	6
Mangeliidae	0	0	0	0	1	0	0	0	0	0
Montacutidae	0	1	0	0	0	0	0	0	0	0
Mysidae	0	0	0	1	3	0	0	0	0	0
Mytilidae	0	0	0	0	0	0	0	0	0	0
Nassariidae	1	0	0	2	0	0	0	1	0	0
Naticidae	0	0	0	0	0	0	0	0	0	0
Nemertea	1	2	0	1	8	1	10	5	1	2
Nephtyidae	19	12	10	11	8	0	1	7	0	14
Nereididae	1	1	0	1	0	0	0	0	0	0
Nuculidae	33	14	52	11	3	0	2	0	3	0
Nudibranchia spp.	0	0	0	0	0	0	0	0	0	0
Oenonidae	0	0	0	0	0	1	0	0	0	0
Oligochaeta	0	2	0	1	126	40	152	14	0	0
Onuphidae	0	0	0	0	0	0	0	0	0	0
Opheliidae	0	0	0	0	0	0	0	0	0	0
Ophiuroidea juv.	0	0	0	0	0	0	0	0	0	0
Orbiniidae	0	0	0	0	0	0	0	0	0	0
Oweniidae	0	0	0	0	0	1	0	1	0	0
Paguridae	0	0	0	0	0	3	0	0	0	0
Pandoridae	0	0	0	0	0	2	0	0	0	0
Panopeidae	0	0	0	0	6	7	2	0	1	0

Row Labels	451	452	453	455	456	458	459	460	462	463
Paraonidae	15	19	7	3	4	14	1	8	0	3
Pectinariidae	0	0	0	0	0	0	2	0	0	0
Petricolidae	0	0	0	0	0	0	0	0	0	0
Pharidae	0	0	0	0	0	0	0	0	0	0
Pholoidae	0	0	0	1	1	2	0	3	0	2
Phoronidae	0	0	0	1	0	0	0	0	0	0
Photidae	0	0	0	0	0	0	0	0	0	0
Phoxichilidiidae	0	0	0	0	0	0	0	0	0	0
Phoxocephalidae	0	0	0	0	0	3	0	0	0	0
Phyllodocidae	0	0	0	2	2	2	1	0	0	0
Pilargidae	0	0	0	0	0	0	0	1	0	0
Pinnotheridae	0	7	0	16	5	13	12	10	0	1
Pleustidae	0	0	0	0	0	0	0	0	0	0
Polygordiidae	0	0	0	0	0	5	1	0	0	0
Polynoidae	0	0	0	0	0	1	0	0	0	0
Pontoporeiidae	0	0	0	0	0	0	0	0	0	0
Pyramidellidae	2	0	2	1	34	9	28	5	43	3
Retusidae	1	0	0	0	0	0	0	0	0	0
Sabellaridae	0	0	3	0	0	1	2	0	0	0
Scalibregmatidae	0	0	0	0	0	1	0	2	0	0
Sclerodactylidae	0	0	0	0	0	0	0	0	0	0
Sigalionidae	0	0	0	0	0	2	0	0	1	0
Sipuncula spp.	0	1	0	0	0	0	0	0	0	0
Sipunculidae	0	0	0	0	0	0	0	0	0	0
Spionidae	1	60	1	76	202	29	121	14	0	7
Spirorbidae	0	0	0	0	0	0	0	0	0	0
Stenothoidae	0	0	0	0	0	0	0	0	0	0
Syllidae	0	0	0	0	2	8	1	1	0	3
Tanaissuidae	0	0	0	0	0	0	0	0	0	0

Row Labels	451	452	453	455	456	458	459	460	462	463
Tellinidae	4	1	5	0	2	3	3	2	0	1
Terebellidae	0	0	0	3	1	5	0	9	0	2
Turbellaria	0	3	0	0	0	1	0	0	0	0
Unciolidae	0	0	0	0	0	0	0	0	0	0
Upogebiidae	0	0	0	0	0	1	0	0	0	0
Veneridae	0	0	1	1	0	2	0	1	0	0
Vitrinellidae	0	0	0	0	0	1	7	0	0	0
Yoldiidae	0	0	1	0	0	0	0	0	0	0
Grand Total	93	151	104	175	905	533	649	167	252	74

Appendix D

SIMPER analysis of Bray-Curtis cluster groups

D- 1. SIMPER (Similarity) analysis of Bray-Curtis cluster groups identified by the SIMPROF routine for the Cape Cod Bay infaunal stations.

Group	Stations			Ave. Similarity	
Group 1A	**Stations included: 321, 322, 323, 327, 328, 329, 330, 335, 336, 337, 338, 339, 340, 340, 341, 343, 344, 345, 347, 354, 355, 356**			**Ave. Similarity: 64.70%**	
Species	**Av.Abund**	**Av.Sim**	**Sim/SD**	**Contrib%**	**Cum.%**
Paraonidae	2.89	9.12	2.81	14.10	14.10
Cossuridae	2.70	8.38	3.35	12.96	27.06
Capitellidae	2.43	8.24	5.45	12.74	39.80
Lumbrineridae	2.16	7.20	6.73	11.13	50.93
Sabellidae	2.05	6.53	4.23	10.10	61.03
Nuculidae	1.85	5.54	2.60	8.56	69.59
Oligochaeta	2.15	5.54	1.33	8.56	78.15
Group 1B	**Stations included: 318, 319, 320, 331, 332, 334, 352, 353, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 375, 376, 377, 382, 383, 388, 389, 395**			**Ave. Similarity: 61.64%**	
Species	**Av.Abund**	**Av.Sim**	**Sim/SD**	**Contrib%**	**Cum.%**
Paraonidae	3.97	6.29	4.68	10.20	10.20
Lumbrineridae	2.93	4.56	2.92	7.40	17.61
Capitellidae	2.93	4.46	5.46	7.24	24.85
Nuculidae	2.92	3.94	4.90	6.40	31.25
Cirratulidae	2.71	3.55	2.94	5.76	37.01
Sabellidae	2.50	3.37	3.35	5.47	42.48
Spionidae	2.56	3.25	3.69	5.28	47.76
Cossuridae	2.12	2.74	2.05	4.45	52.21
Nephtyidae	1.61	2.61	3.69	4.24	56.45
Nemertea	1.51	2.27	5.40	3.69	60.14
Leuconidae	1.48	2.01	2.35	3.27	63.41
Ampharetidae	1.50	1.77	1.35	2.87	66.28
Phyllodocidae	1.24	1.55	1.65	2.52	68.80
Oligochaeta	1.36	1.32	0.97	2.14	70.94
Thyasiridae	1.28	1.26	0.91	2.05	72.99
Maldanidae	1.24	1.15	1.09	1.86	74.85
Yoldiidae	0.99	1.09	0.97	1.77	76.62
Group 2A	**Stations included: 303**				
Group 2B	**Stations included: 293, 313, 314, 316, 317, 392, 393**			**Ave. Similarity: 64.06%**	
Species	**Av.Abund**	**Av.Sim**	**Sim/SD**	**Contrib%**	**Cum.%**
Polygordiidae	5.98	11.40	8.27	17.80	17.80
Syllidae	4.89	8.53	3.69	13.32	31.12
Paraonidae	3.80	7.00	9.24	10.93	42.05
Oligochaeta	3.08	5.71	8.93	8.91	50.96
Spionidae	2.09	3.50	8.13	5.46	56.42
Tanaissuidae	2.30	3.17	1.30	4.95	61.37
Dorvilleidae	1.95	2.96	3.39	4.62	65.99
Lumbrineridae	1.65	2.85	4.84	4.45	70.44
Pholoidae	1.84	2.50	1.48	3.91	74.35
Maldanidae	1.06	1.66	1.50	2.59	76.94

Group 2C	Stations included: 315, 378, 380, 381			Ave. Similarity: 61.08%	
Species	**Av.Abund**	**Av.Sim**	**Sim/SD**	**Contrib%**	**Cum.%**
Spionidae	3.31	5.14	7.21	8.42	8.42
Polygordiidae	2.96	4.65	7.15	7.61	16.03
Nuculidae	2.11	3.28	4.85	5.36	21.40
Cirratulidae	2.23	3.15	10.90	5.16	26.55
Echinarachniidae	2.09	3.06	3.77	5.01	31.57
Paraonidae	2.05	2.87	2.87	4.70	36.27
Maldanidae	2.07	2.83	4.61	4.63	40.90
Phyllodocidae	1.68	2.70	21.70	4.43	45.33
Lumbrineridae	1.55	2.45	14.98	4.02	49.34
Capitellidae	1.52	2.36	7.69	3.86	53.20
Orbiniidae	1.54	2.34	3.35	3.83	57.03
Mytilidae	1.40	2.34	26.18	3.83	60.86
Sigalionidae	1.48	2.24	3.76	3.67	64.53
Unciolidae	1.41	2.13	4.16	3.49	68.02
Diastylidae	1.17	1.81	17.48	2.96	70.98
Phoxocephalidae	1.58	1.80	0.91	2.94	73.92
Thraciidae	1.00	1.76	28.32	2.87	76.80

D- 2. SIMPER (Dissimilarity) analysis of Bray-Curtis cluster groups identified by SIMPROF routine for the Cape Cod Bay infaunal stations.

Group	Stations		Ave. Similarity			
Groups 2A and 2B			**Average dissimilarity: 58.82%**			
Species	Group 2B Av.Abund	Group 2A Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Syllidae	4.89	0.00	7.20	4.63	12.24	12.24
Polygordiidae	5.98	2.59	5.04	4.43	8.57	20.81
Oligochaeta	3.08	0.00	4.56	9.28	7.76	28.57
Dorvilleidae	1.95	0.00	2.83	2.96	4.81	33.38
Paraonidae	3.80	1.97	2.66	3.30	4.52	37.90
Tanaissuidae	2.30	1.19	2.28	1.69	3.88	41.79
Nuculidae	0.47	1.78	1.97	2.08	3.35	45.14
Pholoidae	1.84	1.00	1.63	2.49	2.77	47.91
Maldanidae	1.06	0.00	1.59	2.15	2.70	50.61
Groups 2B and 2C			**Average dissimilarity: 57.03%**			
Species	Group 2B Av.Abund	Group 2C Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Syllidae	4.89	0.85	3.80	2.81	6.66	6.66
Polygordiidae	5.98	2.96	2.87	3.40	5.03	11.68
Oligochaeta	3.08	0.25	2.68	4.57	4.70	16.38
Tanaissuidae	2.30	0.44	1.91	1.56	3.35	19.74
Paraonidae	3.80	2.05	1.62	2.09	2.84	22.58
Dorvilleidae	1.95	0.25	1.58	2.06	2.77	25.34
Nuculidae	0.47	2.11	1.56	2.38	2.74	28.08
Echinarachniidae	0.53	2.09	1.53	1.97	2.69	30.77
Phoxocephalidae	0.20	1.58	1.43	1.59	2.51	33.28
Spionidae	2.09	3.31	1.32	1.75	2.31	35.59
Haustoriidae	0.00	1.33	1.29	1.39	2.27	37.86
Pholoidae	1.84	0.78	1.24	1.43	2.17	40.03
Mytilidae	0.14	1.40	1.22	3.15	2.14	42.17
Corophiidae	0.51	1.18	1.20	0.94	2.10	44.27
Sigalionidae	0.29	1.48	1.13	2.16	1.98	46.24
Diastylidae	0.00	1.17	1.12	5.19	1.96	48.21
Cirratulidae	1.14	2.23	1.09	1.24	1.91	50.11
Groups 2A and 2C			**Average dissimilarity: 60.93%**			
Species	Group 2A Av.Abund	Group 2C Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Echinarachniidae	0.00	2.09	2.73	4.20	4.47	4.47
Maldanidae	0.00	2.07	2.71	3.09	4.44	8.91
Spionidae	1.32	3.31	2.63	3.19	4.32	13.23
Phyllodocidae	0.00	1.68	2.21	6.73	3.63	16.86
Phoxocephalidae	0.00	1.58	2.12	1.49	3.48	20.34
Sigalionidae	0.00	1.48	1.95	3.84	3.21	23.54
Unciolidae	0.00	1.41	1.86	3.99	3.05	26.60
Mytilidae	0.00	1.40	1.84	18.38	3.02	29.62
Haustoriidae	0.00	1.33	1.79	1.25	2.93	32.55
Nephtyidae	0.00	1.20	1.58	1.47	2.59	35.14
Diastylidae	0.00	1.17	1.54	5.31	2.52	37.66
Corophiidae	0.00	1.18	1.49	0.69	2.44	40.10
Cirratulidae	1.19	2.23	1.36	1.36	2.24	42.34
Tanaissuidae	1.19	0.44	1.36	3.61	2.23	44.57
Mysidae	1.00	0.00	1.32	21.41	2.16	46.73
Thraciidae	0.00	1.00	1.32	21.41	2.16	48.89
Phoronidae	0.00	0.98	1.31	1.43	2.15	51.04

Groups 2B and 1B			**Average dissimilarity: 63.48%**			
Species	Group 2B Av.Abund	Group 1B Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Polygordiidae	5.98	0.67	5.08	3.20	8.01	8.01
Syllidae	4.89	0.71	3.94	2.68	6.20	14.21
Sabellidae	0.00	2.50	2.32	2.82	3.66	17.87
Nuculidae	0.47	2.92	2.21	2.63	3.49	21.36
Tanaissuidae	2.30	0.00	2.18	1.71	3.43	24.78
Cossuridae	0.17	2.12	1.91	1.70	3.00	27.79
Capitellidae	0.97	2.93	1.85	2.20	2.92	30.70
Oligochaeta	3.08	1.36	1.65	1.66	2.60	33.30
Cirratulidae	1.14	2.71	1.49	1.66	2.35	35.65
Leuconidae	0.00	1.48	1.36	3.01	2.14	37.79
Lumbrineridae	1.65	2.93	1.32	2.22	2.08	39.87
Dorvilleidae	1.95	0.63	1.28	1.43	2.02	41.89
Thyasiridae	0.00	1.28	1.18	1.39	1.87	43.75
Pholoidae	1.84	0.93	1.12	1.52	1.77	45.52
Ampharetidae	0.54	1.50	1.11	1.41	1.74	47.27
Trichobranchidae	0.00	1.13	1.03	1.22	1.62	48.89
Hesionidae	1.12	0.11	0.99	0.87	1.57	50.46
Yoldiidae	0.00	0.99	0.94	1.45	1.48	51.93
Groups 2A and 1B			**Average dissimilarity: 70.57%**			
Species	Group 2A Av.Abund	Group 1B Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Sabellidae	0.00	2.50	3.20	2.84	4.53	4.53
Cossuridae	0.00	2.12	2.82	1.88	4.00	8.53
Polygordiidae	2.59	0.67	2.68	1.81	3.80	12.33
Paraonidae	1.97	3.97	2.60	3.19	3.69	16.02
Capitellidae	1.00	2.93	2.46	4.39	3.48	19.50
Nephtyidae	0.00	1.61	2.14	3.62	3.03	22.53
Ampharetidae	0.00	1.50	1.92	1.81	2.72	25.26
Lumbrineridae	1.57	2.93	1.92	3.33	2.72	27.97
Cirratulidae	1.19	2.71	1.86	1.89	2.63	30.60
Leuconidae	0.00	1.48	1.86	3.00	2.63	33.24
Oligochaeta	0.00	1.36	1.78	1.26	2.53	35.76
Thyasiridae	0.00	1.28	1.63	1.38	2.31	38.07
Phyllodocidae	0.00	1.24	1.58	2.16	2.24	40.31
Tanaissuidae	1.19	0.00	1.56	4.67	2.21	42.52
Orbiniidae	1.32	0.13	1.55	2.71	2.20	44.72
Glyceridae	1.19	0.06	1.49	3.21	2.11	46.83
Spionidae	1.32	2.56	1.49	1.35	2.11	48.94
Maldanidae	0.00	1.24	1.46	1.57	2.07	51.00
Groups 2C and 1B			**Average dissimilarity: 56.74%**			
Species	Group 2C Av.Abund	Group 1B Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Polygordiidae	2.96	0.67	2.05	2.08	3.62	3.62
Cossuridae	0.25	2.12	1.67	1.68	2.94	6.56
Echinarachniidae	2.09	0.22	1.66	2.61	2.93	9.49
Paraonidae	2.05	3.97	1.65	2.36	2.90	12.40
Sabellidae	0.58	2.50	1.64	1.82	2.90	15.29
Lumbrineridae	1.55	2.93	1.28	3.24	2.25	17.55
Orbiniidae	1.54	0.13	1.24	2.68	2.18	19.73
Capitellidae	1.52	2.93	1.20	2.72	2.11	21.83
Sigalionidae	1.48	0.13	1.19	2.65	2.10	23.93
Phoxocephalidae	1.58	0.56	1.17	1.43	2.06	25.99
Haustoriidae	1.33	0.06	1.15	1.36	2.03	28.02
Thyasiridae	0.00	1.28	1.09	1.41	1.91	29.93
Oligochaeta	0.25	1.36	1.08	1.23	1.90	31.83
Unciolidae	1.41	0.22	1.07	2.22	1.88	33.71
Spionidae	3.31	2.56	1.04	1.39	1.84	35.54
Leuconidae	0.37	1.48	1.02	1.77	1.80	37.34
Corophiidae	1.18	0.31	1.02	0.86	1.79	39.13
Ampharetidae	0.50	1.50	0.99	1.53	1.75	40.88
Maldanidae	2.07	1.24	0.98	1.26	1.73	42.60
Trichobranchidae	0.00	1.13	0.95	1.23	1.67	44.27
Cirratulidae	2.23	2.71	0.88	1.60	1.56	45.83
Yoldiidae	0.00	0.99	0.86	1.47	1.51	47.34
Tellinidae	0.95	0.00	0.84	1.55	1.48	48.82
Nuculidae	2.11	2.92	0.82	1.43	1.45	50.27

Groups 2B and 1A			**Average dissimilarity: 65.28%**			
Species	Group 2B Av.Abund	Group 1A Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Polygordiidae	5.98	0.11	7.87	6.04	12.05	12.05
Syllidae	4.89	0.24	6.16	3.77	9.43	21.49
Cossuridae	0.17	2.70	3.46	2.57	5.29	26.78
Tanaissuidae	2.30	0.00	3.09	1.71	4.74	31.52
Sabellidae	0.00	2.05	2.75	3.92	4.22	35.73
Pholoidae	1.84	0.25	2.15	1.96	3.29	39.02
Dorvilleidae	1.95	0.34	2.09	1.94	3.20	42.22
Capitellidae	0.97	2.43	2.02	1.77	3.10	45.32
Nuculidae	0.47	1.85	1.89	1.96	2.89	48.21
Oligochaeta	3.08	2.15	1.57	1.16	2.40	50.61
Groups 2A and 1A			**Average dissimilarity: 61.28%**			
Species	Group 2A Av.Abund	Group 1A Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Cossuridae	0.00	2.70	5.89	3.24	9.61	9.61
Polygordiidae	2.59	0.11	5.43	5.20	8.86	18.48
Oligochaeta	0.00	2.15	4.70	1.70	7.68	26.15
Sabellidae	0.00	2.05	4.44	4.30	7.25	33.40
Capitellidae	1.00	2.43	3.08	4.11	5.03	38.43
Orbiniidae	1.32	0.09	2.71	3.43	4.42	42.85
Glyceridae	1.19	0.00	2.61	6.83	4.26	47.11
Tanaissuidae	1.19	0.00	2.61	6.83	4.26	51.37
Groups 2C and 1A			**Average dissimilarity: 68.43%**			
Species	Group 2C Av.Abund	Group 1A Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Polygordiidae	2.96	0.11	3.39	5.03	4.95	4.95
Cossuridae	0.25	2.70	2.93	2.67	4.28	9.23
Spionidae	3.31	1.14	2.62	2.45	3.83	13.07
Echinarachniidae	2.09	0.00	2.47	4.46	3.61	16.68
Oligochaeta	0.25	2.15	2.36	1.70	3.44	20.12
Maldanidae	2.07	0.09	2.35	2.93	3.43	23.56
Phoxocephalidae	1.58	0.00	1.92	1.69	2.81	26.36
Cirratulidae	2.23	0.70	1.84	1.57	2.70	29.06
Sabellidae	0.58	2.05	1.76	1.90	2.57	31.63
Orbiniidae	1.54	0.09	1.75	2.98	2.56	34.19
Sigalionidae	1.48	0.05	1.72	3.48	2.51	36.70
Unciolidae	1.41	0.05	1.64	3.50	2.39	39.10
Haustoriidae	1.33	0.00	1.62	1.42	2.36	41.46
Mytilidae	1.40	0.09	1.57	4.00	2.30	43.76
Corophiidae	1.18	0.00	1.35	0.78	1.98	45.74
Diastylidae	1.17	0.05	1.35	3.74	1.97	47.71
Phyllodocidae	1.68	0.58	1.34	1.80	1.96	49.67
Paraonidae	2.05	2.89	1.24	1.43	1.81	51.48
Groups 1B and 1A			**Average dissimilarity:50.31%**			
Species	Group 1B Av.Abund	Group 1A Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Cirratulidae	2.71	0.70	2.31	1.94	4.59	4.59
Oligochaeta	1.36	2.15	1.68	1.34	3.33	7.92
Spionidae	2.56	1.14	1.63	1.36	3.25	11.16
Leuconidae	1.48	0.24	1.49	2.00	2.95	14.12
Ampharetidae	1.50	0.39	1.46	1.53	2.91	17.03
Paraonidae	3.97	2.89	1.35	1.16	2.69	19.72
Nuculidae	2.92	1.85	1.34	1.41	2.67	22.39
Cossuridae	2.12	2.70	1.30	1.35	2.59	24.99
Maldanidae	1.24	0.09	1.28	1.53	2.55	27.54
Trichobranchidae	1.13	0.00	1.28	1.21	2.55	30.08
Thyasiridae	1.28	0.57	1.26	1.27	2.50	32.58
Lumbrineridae	2.93	2.16	1.10	1.56	2.19	34.77
Periplomatidae	0.97	0.00	1.03	1.54	2.06	36.82
Mytilidae	1.00	0.09	1.03	1.27	2.04	38.87
Nephtyidae	1.61	0.86	1.00	1.10	1.99	40.86
Yoldiidae	0.99	0.34	1.00	1.29	1.99	42.85
Sabellidae	2.50	2.05	0.96	1.16	1.90	44.75
Phyllodocidae	1.24	0.58	0.96	1.29	1.90	46.65
Pholoidae	0.93	0.25	0.95	1.39	1.88	48.53
Diastylidae	0.84	0.05	0.91	1.37	1.81	50.34

D- 3. SIMPER (Similarity) analysis of Bray Curtis cluster groups identified for the South of the Islands infaunal samples.

Group	Stations			Ave. Similarity	
Group 1	**Stations included: 107**				
Group 2	**Stations included 42, 78, 101, 103, 113, 115, 135**			**Ave. Similarity: 34.67%**	
Species	**Av.Abund**	**Av.Sim**	**Sim/SD**	**Contrib%**	**Cum.%**
Glyceridae	0.87	4.32	0.90	12.47	12.47
Spionidae	0.81	3.90	0.90	11.25	23.71
Oligochaeta	0.88	3.60	0.91	10.39	34.10
Chaetiliidae	0.71	3.57	0.91	10.29	44.39
Nephtyidae	0.77	3.50	0.91	10.10	54.49
Group 3	**Stations included: 102, 130, 140**			**Ave. Similarity: 34.67%**	
Species	**Av.Abund**	**Av.Sim**	**Sim/SD**	**Contrib%**	**Cum.%**
Mactridae	1.23	4.46	6.40	12.87	12.87
Mytilidae	1.17	4.03	3.89	11.62	24.49
Haustoriidae	1.35	3.99	5.78	11.50	35.99
Tellinidae	1.01	1.50	0.58	4.34	40.33
Echinarachniidae	0.79	1.47	0.58	4.24	44.57
Spionidae	0.97	1.47	0.58	4.24	48.81
Arcidae	0.80	1.45	0.58	4.19	53.00
Group 4	**Stations included:21, 37**			**Ave. Similarity: 49.72%**	
Species	**Av.Abund**	**Av.Sim**	**Species**	**Contrib%**	**Cum.%**
Nuculidae	4.43	19.30	——	38.82	38.82
Mytilidae	1.52	5.07	——	10.20	49.01
Nephtyidae	1.45	5.07	——	10.20	59.21
Group 5	**Stations included: 2**				
Group 6	**Stations included: 48, 172, 183, 218, 220**			**Ave. Similarity: 43.27%**	
Species	**Av.Abund**	**Av.Sim**	**Species**	**Contrib%**	**Cum.%**
Syllidae	2.46	5.03	4.13	11.62	11.62
Polygordiidae	1.78	4.05	2.56	9.36	20.98
Paraonidae	1.49	3.56	3.84	8.23	29.21
Cirratulidae	1.71	3.46	4.15	8.00	37.21
Glyceridae	1.35	3.23	4.02	7.48	44.68
Nemertea	1.27	2.93	3.77	6.76	51.44
Group 7A	**Stations included: 119, 120, 121, 123, 125**			**Ave. Similarity: 64.38%**	
Species	**Av.Abund**	**Av.Sim**	**Species**	**Contrib%**	**Cum.%**
Magelonidae	3.68	6.32	8.81	9.82	9.82
Spionidae	2.65	4.41	4.60	6.86	16.68
Paraonidae	2.30	4.19	6.42	6.51	23.18
Haustoriidae	2.46	4.14	3.78	6.43	29.61
Unciolidae	2.15	3.65	5.51	5.67	35.28
Phoxocephalidae	2.00	3.60	5.07	5.59	40.87
Nemertea	1.91	3.60	8.90	5.58	46.46
Nephtyidae	2.02	3.45	6.75	5.36	51.82
Group 7B	**Stations included: 77, 141, 159, 169, 171**			**Ave. Similarity: 60.89%**	
Species	**Av.Abund**	**Av.Sim**	**Species**	**Contrib%**	**Cum.%**
Magelonidae	3.93	10.66	7.14	17.50	17.50
Haustoriidae	2.57	7.90	6.46	12.97	30.47
Nephtyidae	1.67	5.20	9.05	8.54	39.00
Spionidae	1.76	4.95	8.83	8.13	47.14
Oligochaeta	1.91	4.74	3.97	7.78	54.92

Group 7C	Stations included: 1, 97, 98, 156, 161, 162, 163, 164,184			Ave. Similarity: 57.93%	
Species	**Av.Abund**	**Av.Sim**	**Sim/SD**	**Contrib%**	**Cum.%**
Oligochaeta	2.09	4.80	3.51	8.28	8.28
Spionidae	2.05	4.55	3.57	7.86	16.14
Nemertea	1.70	4.38	3.67	7.56	23.70
Polygordiidae	1.61	3.96	4.63	6.84	30.54
Paraonidae	1.49	3.73	5.05	6.43	36.97
Tellinidae	1.45	3.64	5.76	6.29	43.26
Syllidae	1.86	3.64	1.61	6.29	49.54
Echinarachniidae	1.55	3.42	3.51	5.91	55.46

Group 7D	Stations included: 99, 100, 142			Ave. Similarity: 52.49%	
Species	**Av.Abund**	**Av.Sim**	**Sim/SD**	**Contrib%**	**Cum.%**
Magelonidae	2.32	8.01	2.85	15.26	15.26
Haustoriidae	2.25	7.46	12.66	14.21	29.47
Spionidae	1.91	7.10	5.57	13.52	43.00
Echinarachniidae	1.52	5.72	2.98	10.91	53.90

Group 8A	Stations included: 43, 67, 75, 80, 81, 81dup, 82, 95, 166			Ave. Similarity: 53.64%	
Species	**Av.Abund**	**Av.Sim**	**Sim/SD**	**Contrib%**	**Cum.%**
Capitellidae	4.34	8.80	3.80	16.40	16.40
Ampharetidae	3.14	7.09	2.61	13.21	29.61
Oligochaeta	2.29	5.49	5.22	10.23	39.84
Nuculidae	1.91	4.00	1.45	7.46	47.30
Spionidae	1.77	3.12	1.58	5.82	53.11

Group 8B	Stations included: 4, 180, 181			Ave. Similarity: 59.75%	
Species	**Av.Abund**	**Av.Sim**	**Species**	**Contrib%**	**Cum.%**
Ampeliscidae	4.12	8.24	7.52	13.79	13.79
Capitellidae	2.39	5.26	21.97	8.80	22.60
Oligochaeta	2.04	4.43	16.04	7.42	30.01
Lumbrineridae	2.04	4.41	10.91	7.38	37.39
Tellinidae	1.54	3.34	78.53	5.59	42.99
Nuculidae	1.60	3.28	6.66	5.49	48.48
Spionidae	1.56	3.17	10.46	5.31	53.79

Group 8C	Stations included: 17, 23, 24, 25, 28, 32, 34, 35, 44, 50, 51, 52, 54, 55, 58, 59, 60, 66, 69, 173, 175			Ave. Similarity: 63.27%	
Species	**Av.Abund**	**Av.Sim**	**Species**	**Contrib%**	**Cum.%**
Ampeliscidae	2.97	5.23	1.68	8.26	8.26
Oligochaeta	2.79	4.92	2.22	7.78	16.04
Paraonidae	2.08	4.77	6.58	7.54	23.58
Polygordiidae	2.25	4.19	2.17	6.62	30.20
Cirratulidae	1.79	3.79	4.54	5.99	36.19
Syllidae	2.13	3.71	2.24	5.87	42.06
Nuculidae	2.27	3.68	1.53	5.81	47.87

Group 8D	Stations included: 26, 57, 62, 64, 68, 170			Ave. Similarity: 60.79%	
Species	**Av.Abund**	**Av.Sim**	**Species**	**Contrib%**	**Cum.%**
Paraonidae	3.28	6.95	17.49	11.44	11.44
Oligochaeta	3.03	6.24	5.57	10.27	21.71
Polygordiidae	2.97	5.46	3.76	8.98	30.69
Cirratulidae	2.34	4.66	4.02	7.67	38.36
Syllidae	2.52	4.58	3.77	7.54	45.90
Nemertea	1.68	3.55	9.84	5.83	51.73

Group 8E	Stations included: 38, 74, 168, 182			Ave. Similarity: 52.74%	
Species	**Av.Abund**	**Av.Sim**	**Species**	**Contrib%**	**Cum.%**
Mactridae	1.52	4.16	7.01	7.90	7.90
Oligochaeta	1.56	3.84	3.78	7.27	15.17
Lumbrineridae	1.44	3.82	3.60	7.25	22.42
Spionidae	1.41	3.80	8.77	7.20	29.62
Nuculidae	1.30	3.61	6.94	6.84	36.46
Diastylidae	1.30	3.59	10.69	6.81	43.26
Nephtyidae	1.43	3.53	3.80	6.70	49.96
Ampeliscidae	1.62	3.45	9.43	6.54	56.50

Group 8F	Stations included: 10, 11, 12, 15, 16, 18, 20, 176			Ave. Similarity: 63.15%	
Species	**Av.Abund**	**Av.Sim**	**Species**	**Av.Abund**	**Av.Sim**
Nuculidae	5.31	9.78	6.44	15.49	15.49
Paraonidae	2.70	5.63	4.64	8.91	24.40
Lumbrineridae	2.35	4.80	6.54	7.60	32.00
Oligochaeta	2.30	4.59	5.06	7.27	39.27
Nephtyidae	1.93	4.01	8.72	6.34	45.61
Cirratulidae	1.86	3.72	4.68	5.89	51.50
Group 8G	**Stations included: 9, 19, 22**			**Ave. Similarity: 57.49%**	
Species	**Av.Abund**	**Av.Sim**	**Species**	**Av.Abund**	**Av.Sim**
Oligochaeta	2.43	10.16	4.22	17.67	17.67
Nuculidae	3.38	9.99	1.75	17.37	35.04
Paraonidae	1.91	7.66	4.42	13.33	48.37
Lumbrineridae	1.19	5.27	7.21	9.16	57.53

D- 2. SIMPER (Dissimilarity) analysis of Bray-Curtis cluster groups identified by the SIMPROF routine for the South of the Islands infaunal samples.

Group			Ave. Dissimilarity			
Groups 7C and 5			**Average dissimilarity: 62.33%**			
Species	Group 7C Av.Abund	Group 5 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Ampeliscidae	0.35	3.83	5.82	5.40	9.35	9.35
Oligochaeta	2.09	0.00	3.44	3.04	5.51	14.86
Syllidae	1.86	0.00	3.05	1.88	4.89	19.75
Astartidae	0.35	2.03	2.89	2.35	4.64	24.39
Polygordiidae	1.61	0.00	2.67	3.93	4.29	28.67
Mactridae	1.36	0.00	2.31	2.12	3.70	32.37
Groups 7C and 8B			**Average dissimilarity: 65.11%**			
Species	Group 7C Av.Abund	Group 8B Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Ampeliscidae	0.35	4.12	4.95	4.59	7.60	7.60
Lumbrineridae	0.00	2.04	2.76	4.04	4.24	11.84
Pyramidellidae	0.00	1.71	2.23	3.71	3.42	15.26
Echinarachniidae	1.55	0.00	2.08	2.01	3.19	18.45
Syllidae	1.86	0.47	1.93	1.53	2.97	21.42
Lyonsiidae	0.00	1.41	1.86	5.13	2.85	24.27
Columbellidae	0.00	1.33	1.78	4.40	2.74	27.01
Nuculidae	0.24	1.60	1.78	2.58	2.73	29.74
Magelonidae	1.34	0.00	1.77	2.18	2.71	32.45
Groups 5 and 8B			**Average dissimilarity: 62.55%**			
Species	Group 5 Av.Abund	Group 8B Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Echinarachniidae	2.48	0.00	3.67	8.51	5.87	5.87
Capitellidae	0.00	2.39	3.51	11.07	5.61	11.48
Astartidae	2.03	0.00	3.00	8.51	4.80	16.28
Oligochaeta	0.00	2.04	3.00	8.18	4.80	21.08
Pyramidellidae	0.00	1.71	2.45	3.30	3.92	25.00
Nuculidae	0.00	1.60	2.32	8.23	3.71	28.71
Lyonsiidae	0.00	1.41	2.05	4.78	3.27	31.98
Groups 7C and 8G			**Average dissimilarity: 73.43%**			
Species	Group 7C Av.Abund	Group 8G Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Nuculidae	0.24	3.38	5.41	2.22	7.37	7.37
Spionidae	2.05	0.00	3.58	2.87	4.88	12.25
Polygordiidae	1.61	0.00	2.86	3.82	3.90	16.15
Echinarachniidae	1.55	0.00	2.79	1.97	3.81	19.95
Tellinidae	1.45	0.00	2.58	4.03	3.51	23.47
Syllidae	1.86	0.52	2.56	1.54	3.48	26.95
Mactridae	1.36	0.00	2.48	2.13	3.37	30.32
Groups 5 and 8G			**Average dissimilarity: 74.18%**			
Species	Group 5 Av.Abund	Group 8G Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Ampeliscidae	3.83	0.33	7.09	13.10	9.56	9.56
Nuculidae	0.00	3.38	6.65	2.28	8.96	18.51
Echinarachniidae	2.48	0.00	5.10	7.51	6.87	25.38
Oligochaeta	0.00	2.43	5.02	4.70	6.77	32.15
Groups 8B and 8G			**Average dissimilarity: 63.72%**			
Species	Group 8B Av.Abund	Group 8G Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Ampeliscidae	4.12	0.33	5.77	6.15	9.05	9.05
Nuculidae	1.60	3.38	2.95	1.52	4.63	13.68
Capitellidae	2.39	0.73	2.65	2.26	4.16	17.84
Spionidae	1.56	0.00	2.41	7.32	3.78	21.62
Tellinidae	1.54	0.00	2.39	9.98	3.75	25.37
Unciolidae	1.42	0.00	2.22	3.47	3.48	28.85
Lyonsiidae	1.41	0.00	2.17	5.08	3.41	32.26

Groups 7C and 8F			**Average dissimilarity: 67.42%**			
Species	Group 7C Av.Abund	Group 8F Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Nuculidae	0.24	5.31	6.43	3.94	9.54	9.54
Lumbrineridae	0.00	2.35	3.05	4.69	4.53	14.07
Maldanidae	0.29	1.88	2.14	1.96	3.18	17.25
Polygordiidae	1.61	0.00	2.09	3.59	3.10	20.34
Echinarachniidae	1.55	0.00	2.03	1.99	3.01	23.35
Periplomatidae	0.00	1.41	1.77	2.37	2.63	25.98
Magelonidae	1.34	0.00	1.72	2.15	2.55	28.53
Spionidae	2.05	0.84	1.71	1.29	2.53	31.07
Groups 5 and 8F			**Average dissimilarity: 67.52%**			
Species	Group 5 Av.Abund	Group 8F Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Nuculidae	0.00	5.31	7.42	4.60	10.99	10.99
Echinarachniidae	2.48	0.00	3.57	6.74	5.29	16.29
Oligochaeta	0.00	2.30	3.29	3.97	4.87	21.15
Ampeliscidae	3.83	1.58	3.28	2.65	4.86	26.01
Maldanidae	0.00	1.88	2.66	2.26	3.94	29.95
Capitellidae	0.00	1.49	2.16	2.16	3.19	33.14
Groups 8B and 8F			**Average dissimilarity: 53.81%**			
Species	Group 8B Av.Abund	Group 8F Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Nuculidae	1.60	5.31	4.27	2.63	7.93	7.93
Ampeliscidae	4.12	1.58	2.96	2.38	5.49	13.42
Cirratulidae	0.40	1.86	1.75	1.96	3.25	16.67
Periplomatidae	0.00	1.41	1.61	2.34	2.99	19.66
Paraonidae	1.37	2.70	1.60	2.41	2.98	22.64
Columbellidae	1.33	0.00	1.57	4.11	2.92	25.56
Pyramidellidae	1.71	0.45	1.54	1.77	2.87	28.43
Lyonsiidae	1.41	0.13	1.50	2.73	2.78	31.22
Groups 8G and 8F			**Average dissimilarity: 52.57%**			
Species	Group 8G Av.Abund	Group 8F Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Nuculidae	3.38	5.31	3.39	1.29	6.44	6.44
Maldanidae	0.33	1.88	2.39	2.23	4.55	10.99
Nephtyidae	0.50	1.93	2.22	1.76	4.22	15.20
Oweniidae	0.00	1.39	2.16	2.93	4.10	19.30
Ampeliscidae	0.33	1.58	1.94	1.97	3.70	23.00
Lumbrineridae	1.19	2.35	1.75	2.60	3.33	26.34
Periplomatidae	0.40	1.41	1.68	1.57	3.19	29.53
Syllidae	0.52	1.39	1.67	1.35	3.19	32.71
Groups 7C and 8C			**Average dissimilarity: 53.11%**			
Species	Group 7C Av.Abund	Group 8C Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Ampeliscidae	0.35	2.97	3.59	1.96	6.75	6.75
Nuculidae	0.24	2.27	2.84	1.41	5.35	12.10
Lumbrineridae	0.00	1.65	2.23	4.92	4.19	16.29
Capitellidae	1.17	2.03	1.78	1.20	3.35	19.64
Magelonidae	1.34	0.05	1.74	2.09	3.27	22.91
Oligochaeta	2.09	2.79	1.71	1.30	3.21	26.13
Echinarachniidae	1.55	0.38	1.68	1.39	3.16	29.29
Haustoriidae	1.24	0.06	1.64	1.52	3.09	32.38
Groups 5 and 8C			**Average dissimilarity: 58.00%**			
Species	Group 5 Av.Abund	Group 8C Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Oligochaeta	0.00	2.79	4.06	2.35	7.01	7.01
Nuculidae	0.00	2.27	3.44	1.52	5.93	12.94
Polygordiidae	0.00	2.25	3.31	2.51	5.72	18.66
Echinarachniidae	2.48	0.38	3.19	3.16	5.50	24.15
Syllidae	0.00	2.13	3.10	2.34	5.34	29.50
Capitellidae	0.00	2.03	3.06	1.71	5.27	34.77

Groups 8B and 8C			**Average dissimilarity: 48.59%**			
Species	Group 8B Av.Abund	Group 8C Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Polygordiidae	0.40	2.25	2.24	2.07	4.61	4.61
Syllidae	0.47	2.13	2.00	1.71	4.12	8.73
Ampeliscidae	4.12	2.97	1.89	1.26	3.90	12.63
Pyramidellidae	1.71	0.15	1.85	2.63	3.82	16.44
Cirratulidae	0.40	1.79	1.73	1.96	3.55	20.00
Maldanidae	1.46	0.45	1.54	1.52	3.17	23.17
Columbellidae	1.33	0.10	1.52	2.91	3.13	26.30
Lyonsiidae	1.41	0.19	1.48	2.42	3.04	29.34
Nuculidae	1.60	2.27	1.42	0.99	2.93	32.27
Groups 8G and 8C			**Average dissimilarity: 59.97%**			
Species	Group 8G Av.Abund	Group 8C Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Ampeliscidae	0.33	2.97	4.19	2.05	6.99	6.99
Polygordiidae	0.00	2.25	3.52	2.48	5.87	12.87
Nuculidae	3.38	2.27	2.97	1.57	4.95	17.82
Syllidae	0.52	2.13	2.56	1.70	4.26	22.08
Spionidae	0.00	1.53	2.39	2.87	3.99	26.07
Capitellidae	0.73	2.03	2.34	1.21	3.90	29.97
Tellinidae	0.00	1.41	2.23	2.63	3.72	33.69
Groups 8F and 8C			**Average dissimilarity: 50.43%**			
Species	Group 8F Av.Abund	Group 8C Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Nuculidae	5.31	2.27	3.65	1.91	7.24	7.24
Polygordiidae	0.00	2.25	2.65	2.45	5.25	12.49
Ampeliscidae	1.58	2.97	2.08	1.52	4.13	16.63
Maldanidae	1.88	0.45	1.81	1.99	3.58	20.21
Periplomatidae	1.41	0.05	1.58	2.28	3.14	23.35
Syllidae	1.39	2.13	1.43	1.25	2.83	26.19
Oligochaeta	2.30	2.79	1.30	1.22	2.59	28.78
Capitellidae	1.49	2.03	1.30	1.19	2.58	31.35
Groups 7C and 4			**Average dissimilarity: 72.11%**			
Species	Group 7C Av.Abund	Group 4 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Nuculidae	0.24	4.43	7.90	4.56	10.95	10.95
Spionidae	2.05	0.00	3.76	2.98	5.21	16.16
Syllidae	1.86	0.00	3.42	1.95	4.75	20.91
Polygordiidae	1.61	0.00	3.01	4.10	4.17	25.08
Echinarachniidae	1.55	0.00	2.94	1.99	4.07	29.15
Mytilidae	0.11	1.52	2.60	2.26	3.61	32.76
Groups 5 and 4			**Average dissimilarity: 81.82%**			
Species	Group 5 Av.Abund	Group 4 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Nuculidae	0.00	4.43	9.60	5.13	11.73	11.73
Ampeliscidae	3.83	0.00	8.31	323.05	10.16	21.89
Echinarachniidae	2.48	0.00	5.38	323.05	6.58	28.46
Astartidae	2.03	0.00	4.40	323.05	5.38	33.84
Groups 8B and 4			**Average dissimilarity: 66.88%**			
Species	Group 8B Av.Abund	Group 4 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Ampeliscidae	4.12	0.00	6.63	8.24	9.91	9.91
Nuculidae	1.60	4.43	4.70	3.00	7.02	16.94
Lumbrineridae	2.04	0.00	3.40	3.64	5.08	22.01
Capitellidae	2.39	0.59	2.92	2.60	4.37	26.38
Pyramidellidae	1.71	0.00	2.71	3.81	4.06	30.44
Groups 8G and 4			**Average dissimilarity: 58.08%**			
Species	Group 8G Av.Abund	Group 4 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Nuculidae	3.38	4.43	3.70	0.98	6.36	6.36
Tellinidae	0.00	1.54	3.68	2.44	6.33	12.70
Pyramidellidae	1.38	0.00	3.27	4.32	5.63	18.33
Oenonidae	1.23	0.00	2.90	6.22	4.99	23.31
Lumbrineridae	1.19	0.00	2.84	7.22	4.88	28.20
Nephtyidae	0.50	1.45	2.77	1.55	4.77	32.96

Groups 8F and 4			**Average dissimilarity: 59.11%**			
Species	Group 8F Av.Abund	Group 4 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Lumbrineridae	2.35	0.00	3.73	4.61	6.30	6.30
Maldanidae	1.88	0.00	2.94	2.34	4.98	11.28
Paraonidae	2.70	1.09	2.59	2.89	4.38	15.66
Ampeliscidae	1.58	0.00	2.48	2.24	4.19	19.86
Nuculidae	5.31	4.43	2.29	1.45	3.87	23.72
Mytilidae	0.13	1.52	2.23	2.03	3.77	27.50
Cirratulidae	1.86	0.50	2.16	1.99	3.65	31.15
Groups 8C and 4			**Average dissimilarity: 65.04%**			
Species	Group 8C Av.Abund	Group 4 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Ampeliscidae	2.97	0.00	4.87	2.10	7.49	7.49
Nuculidae	2.27	4.43	3.88	1.93	5.96	13.45
Polygordiidae	2.25	0.00	3.68	2.53	5.66	19.11
Syllidae	2.13	0.00	3.44	2.39	5.29	24.40
Lumbrineridae	1.65	0.00	2.74	5.06	4.21	28.61
Capitellidae	2.03	0.59	2.57	1.29	3.96	32.56
Groups 7C and 8D			**Average dissimilarity: 55.27%**			
Species	Group 7C Av.Abund	Group 8D Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Paraonidae	1.49	3.28	2.31	3.36	4.19	4.19
Lumbrineridae	0.00	1.57	2.03	4.62	3.68	7.86
Polygordiidae	1.61	2.97	1.83	1.63	3.32	11.18
Cirratulidae	0.98	2.34	1.83	1.56	3.32	14.50
Magelonidae	1.34	0.00	1.71	2.23	3.09	17.59
Unciolidae	0.11	1.39	1.69	2.00	3.07	20.66
Glyceridae	0.76	1.84	1.63	1.50	2.95	23.61
Echinarachniidae	1.55	0.36	1.57	1.39	2.85	26.45
Syllidae	1.86	2.52	1.48	1.29	2.68	29.14
Haustoriidae	1.24	0.20	1.46	1.47	2.65	31.78
Groups 5 and 8D			**Average dissimilarity: 63.81%**			
Species	Group 5 Av.Abund	Group 8D Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Oligochaeta	0.00	3.03	4.35	4.70	6.82	6.82
Ampeliscidae	3.83	0.82	4.28	3.44	6.71	13.52
Polygordiidae	0.00	2.97	4.20	3.43	6.58	20.11
Syllidae	0.00	2.52	3.59	2.99	5.63	25.74
Echinarachniidae	2.48	0.36	3.01	3.71	4.72	30.46
Groups 8B and 8D			**Average dissimilarity: 60.17%**			
Species	Group 8B Av.Abund	Group 8D Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Ampeliscidae	4.12	0.82	3.80	3.12	6.31	6.31
Polygordiidae	0.40	2.97	2.95	2.70	4.90	11.21
Syllidae	0.47	2.52	2.35	2.05	3.90	15.11
Cirratulidae	0.40	2.34	2.31	2.35	3.85	18.96
Paraonidae	1.37	3.28	2.25	4.90	3.73	22.69
Capitellidae	2.39	0.72	1.97	1.96	3.27	25.96
Pyramidellidae	1.71	0.00	1.96	3.64	3.26	29.22
Lyonsiidae	1.41	0.17	1.45	2.54	2.41	31.63
Groups 8G and 8D			**Average dissimilarity: 61.75%**			
Species	Group 8G Av.Abund	Group 8D Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Polygordiidae	0.00	2.97	4.45	3.51	7.20	7.20
Nuculidae	3.38	0.80	3.75	1.68	6.08	13.28
Syllidae	0.52	2.52	2.96	1.98	4.80	18.08
Glyceridae	0.33	1.84	2.29	1.92	3.71	21.80
Pyramidellidae	1.38	0.00	2.08	4.60	3.37	25.16
Unciolidae	0.00	1.39	2.07	2.08	3.36	28.52
Paraonidae	1.91	3.28	2.03	3.76	3.29	31.81

Groups 8F and 8D			**Average dissimilarity: 55.53%**			
Species	Group 8F Av.Abund	Group 8D Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Nuculidae	5.31	0.80	5.05	3.20	9.09	9.09
Polygordiidae	0.00	2.97	3.39	3.38	6.10	15.19
Glyceridae	0.13	1.84	1.99	2.42	3.58	18.77
Periplomatidae	1.41	0.00	1.57	2.39	2.82	21.59
Syllidae	1.39	2.52	1.54	1.24	2.78	24.37
Maldanidae	1.88	0.72	1.50	1.91	2.70	27.07
Goniadidae	0.00	1.18	1.34	1.72	2.41	29.48
Dorvilleidae	0.13	1.13	1.23	1.76	2.22	31.70
Groups 8C and 8D			**Average dissimilarity: 46.00%**			
Species	Group 8C Av.Abund	Group 8D Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Ampeliscidae	2.97	0.82	2.71	1.71	5.89	5.89
Nuculidae	2.27	0.80	1.97	1.18	4.29	10.17
Capitellidae	2.03	0.72	1.83	1.29	3.97	14.14
Glyceridae	0.47	1.84	1.68	1.80	3.65	17.80
Paraonidae	2.08	3.28	1.41	3.01	3.07	20.87
Polygordiidae	2.25	2.97	1.36	1.27	2.95	23.82
Oligochaeta	2.79	3.03	1.35	1.40	2.95	26.77
Goniadidae	0.10	1.18	1.31	1.63	2.84	29.61
Tellinidae	1.41	0.42	1.29	1.58	2.81	32.42
Groups 4 and 8D			**Average dissimilarity: 73.82%**			
Species	Group 4 Av.Abund	Group 8D Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Nuculidae	4.43	0.80	5.74	3.71	7.77	7.77
Polygordiidae	0.00	2.97	4.64	3.63	6.28	14.05
Syllidae	0.00	2.52	3.97	3.14	5.38	19.43
Paraonidae	1.09	3.28	3.42	8.67	4.64	24.07
Glyceridae	0.00	1.84	2.91	3.03	3.94	28.01
Cirratulidae	0.50	2.34	2.91	2.49	3.94	31.95
Groups 7C and 8E			**Average dissimilarity: 54.52%**			
Species	Group 7C Av.Abund	Group 8E Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Syllidae	1.86	0.43	2.38	1.56	4.37	4.37
Lumbrineridae	0.00	1.44	2.16	4.42	3.96	8.33
Ampeliscidae	0.35	1.62	1.88	1.53	3.46	11.79
Nemertea	1.70	0.55	1.69	1.85	3.10	14.88
Nuculidae	0.24	1.30	1.59	2.02	2.92	17.80
Capitellidae	1.17	0.43	1.57	1.44	2.88	20.69
Echinarachniidae	1.55	0.50	1.53	1.17	2.81	23.50
Calyptraeidae	0.11	1.13	1.50	2.82	2.76	26.26
Magelonidae	1.34	0.50	1.39	1.49	2.55	28.81
Haustoriidae	1.24	0.59	1.38	1.29	2.53	31.34
Groups 5 and 8E			**Average dissimilarity: 56.12%**			
Species	Group 5 Av.Abund	Group 8E Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Ampeliscidae	3.83	1.62	3.74	2.42	6.66	6.66
Echinarachniidae	2.48	0.50	3.26	4.25	5.81	12.47
Astartidae	2.03	0.25	2.91	4.59	5.19	17.66
Oligochaeta	0.00	1.56	2.58	4.06	4.59	22.25
Mactridae	0.00	1.52	2.56	4.71	4.56	26.81
Nuculidae	0.00	1.30	2.19	4.33	3.90	30.71
Groups 8B and 8E			**Average dissimilarity: 54.66%**			
Species	Group 8B Av.Abund	Group 8E Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Ampeliscidae	4.12	1.62	3.27	2.33	5.99	5.99
Capitellidae	2.39	0.43	2.61	2.31	4.78	10.77
Pyramidellidae	1.71	0.00	2.22	3.60	4.07	14.83
Columbellidae	1.33	0.00	1.78	4.25	3.25	18.09
Maldanidae	1.46	0.50	1.67	1.47	3.05	21.14
Mactridae	0.33	1.52	1.62	2.03	2.97	24.10
Calyptraeidae	0.00	1.13	1.50	6.22	2.75	26.85
Chaetopteridae	1.00	0.00	1.34	7.99	2.45	29.30
Cirratulidae	0.40	1.22	1.23	1.66	2.26	31.55

Groups 8G and 8E			**Average dissimilarity: 65.90%**			
Species	Group 8G Av.Abund	Group 8E Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Nuculidae	3.38	1.30	3.52	1.46	5.34	5.34
Mactridae	0.00	1.52	2.75	4.40	4.17	9.51
Tellinidae	0.00	1.39	2.52	1.37	3.83	13.34
Spionidae	0.00	1.41	2.50	7.04	3.80	17.14
Pyramidellidae	1.38	0.00	2.46	4.13	3.74	20.88
Ampeliscidae	0.33	1.62	2.19	1.55	3.33	24.20
Nephtyidae	0.50	1.43	2.03	1.39	3.08	27.28
Oenonidae	1.23	0.25	1.80	1.87	2.73	30.01
Groups 8F and 8E			**Average dissimilarity: 59.74%**			
Species	Group 8F Av.Abund	Group 8E Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Nuculidae	5.31	1.30	5.04	3.20	8.43	8.43
Paraonidae	2.70	1.11	2.07	1.92	3.47	11.90
Maldanidae	1.88	0.50	1.94	1.89	3.25	15.15
Mactridae	0.13	1.52	1.83	2.99	3.07	18.22
Periplomatidae	1.41	0.00	1.77	2.34	2.96	21.18
Capitellidae	1.49	0.43	1.61	1.55	2.70	23.88
Syllidae	1.39	0.43	1.57	1.38	2.62	26.50
Tellinidae	0.66	1.39	1.50	1.26	2.51	29.01
Calyptraeidae	0.13	1.13	1.32	2.54	2.21	31.23
Groups 8C and 8E			**Average dissimilarity: 49.50%**			
Species	Group 8C Av.Abund	Group 8E Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Syllidae	2.13	0.43	2.41	1.69	4.87	4.87
Capitellidae	2.03	0.43	2.39	1.45	4.82	9.70
Ampeliscidae	2.97	1.62	2.37	1.62	4.78	14.48
Oligochaeta	2.79	1.56	1.89	1.37	3.82	18.30
Polygordiidae	2.25	1.03	1.87	1.43	3.78	22.08
Nuculidae	2.27	1.30	1.70	1.03	3.44	25.52
Calyptraeidae	0.10	1.13	1.40	3.00	2.82	28.34
Paraonidae	2.08	1.11	1.29	1.35	2.60	30.94
Groups 4 and 8E			**Average dissimilarity: 66.60%**			
Species	Group 4 Av.Abund	Group 8E Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Nuculidae	4.43	1.30	5.87	4.40	8.82	8.82
Ampeliscidae	0.00	1.62	3.01	2.38	4.52	13.33
Lumbrineridae	0.00	1.44	2.72	4.24	4.08	17.42
Spionidae	0.00	1.41	2.63	9.59	3.95	21.36
Diastylidae	0.00	1.30	2.43	8.91	3.65	25.02
Mytilidae	1.52	0.30	2.39	1.76	3.59	28.61
Calyptraeidae	0.00	1.13	2.12	6.76	3.18	31.79
Groups 8D and 8E			**Average dissimilarity: 53.25%**			
Species	Group 8D Av.Abund	Group 8E Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Syllidae	2.52	0.43	2.78	1.93	5.23	5.23
Paraonidae	3.28	1.11	2.77	3.12	5.21	10.44
Polygordiidae	2.97	1.03	2.53	1.69	4.75	15.19
Oligochaeta	3.03	1.56	1.95	2.21	3.66	18.84
Tellinidae	0.42	1.39	1.60	1.32	3.00	21.84
Cirratulidae	2.34	1.22	1.52	1.93	2.86	24.70
Nemertea	1.68	0.55	1.43	2.03	2.68	27.38
Ampeliscidae	0.82	1.62	1.41	1.46	2.64	30.02
Groups 7C and 2			**Average dissimilarity: 67.57%**			
Species	Group 7C Av.Abund	Group 2 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Syllidae	1.86	0.39	3.43	1.63	5.07	5.07
Paraonidae	1.49	0.00	3.23	4.04	4.78	9.85
Tellinidae	1.45	0.00	3.13	4.35	4.63	14.48
Echinarachniidae	1.55	0.17	3.12	1.66	4.61	19.10
Polygordiidae	1.61	0.31	2.88	2.04	4.27	23.37
Oligochaeta	2.09	0.88	2.75	1.46	4.06	27.43
Nemertea	1.70	0.55	2.68	1.66	3.97	31.40

Groups 5 and 2			**Average dissimilarity: 77.38%**			
Species	Group 5 Av.Abund	Group 2 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Ampeliscidae	3.83	0.00	9.85	11.90	12.73	12.73
Echinarachniidae	2.48	0.17	5.99	4.25	7.75	20.48
Astartidae	2.03	0.00	5.22	11.90	6.74	27.22
Paraonidae	1.57	0.00	4.02	11.90	5.20	32.42
Groups 8B and 2			**Average dissimilarity: 83.35%**			
Species	Group 8B Av.Abund	Group 2 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Ampeliscidae	4.12	0.00	7.50	8.59	9.00	9.00
Lumbrineridae	2.04	0.00	3.86	3.56	4.63	13.64
Capitellidae	2.39	0.64	3.20	2.92	3.84	17.48
Pyramidellidae	1.71	0.00	3.07	4.15	3.68	21.16
Tellinidae	1.54	0.00	2.83	13.30	3.40	24.55
Nuculidae	1.60	0.14	2.63	3.64	3.16	27.71
Unciolidae	1.42	0.00	2.63	3.67	3.15	30.86
Groups 8G and 2			**Average dissimilarity: 84.00%**			
Species	Group 8G Av.Abund	Group 2 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Nuculidae	3.38	0.14	8.75	2.54	10.42	10.42
Paraonidae	1.91	0.00	5.57	4.20	6.63	17.05
Oligochaeta	2.43	0.88	4.66	1.85	5.54	22.59
Pyramidellidae	1.38	0.00	3.96	4.01	4.72	27.31
Oenonidae	1.23	0.00	3.51	5.55	4.17	31.48
Groups 8F and 2			**Average dissimilarity: 83.59%**			
Species	Group 8F Av.Abund	Group 2 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Nuculidae	5.31	0.14	8.98	4.64	10.74	10.74
Paraonidae	2.70	0.00	4.91	3.80	5.88	16.62
Lumbrineridae	2.35	0.00	4.22	4.33	5.05	21.66
Maldanidae	1.88	0.00	3.33	2.36	3.98	25.64
Cirratulidae	1.86	0.14	3.08	2.85	3.69	29.33
Ampeliscidae	1.58	0.00	2.80	2.25	3.35	32.69
Groups 8C and 2			**Average dissimilarity: 78.15%**			
Species	Group 8C Av.Abund	Group 2 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Ampeliscidae	2.97	0.00	5.53	2.08	7.08	7.08
Nuculidae	2.27	0.14	4.13	1.46	5.29	12.37
Paraonidae	2.08	0.00	3.94	5.12	5.04	17.41
Polygordiidae	2.25	0.31	3.70	1.99	4.73	22.14
Oligochaeta	2.79	0.88	3.69	1.65	4.72	26.87
Syllidae	2.13	0.39	3.33	1.80	4.27	31.13
Groups 4 and 2			**Average dissimilarity: 82.26%**			
Species	Group 4 Av.Abund	Group 2 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Nuculidae	4.43	0.14	13.27	5.33	16.14	16.14
Tellinidae	1.54	0.00	4.79	2.65	5.82	21.96
Mytilidae	1.52	0.29	3.84	1.69	4.67	26.63
Paraonidae	1.09	0.00	3.40	7.44	4.13	30.76
Groups 8D and 2			**Average dissimilarity: 76.29%**			
Species	Group 8D Av.Abund	Group 2 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Paraonidae	3.28	0.00	5.80	13.53	7.60	7.60
Polygordiidae	2.97	0.31	4.71	2.66	6.17	13.78
Cirratulidae	2.34	0.14	3.91	3.43	5.13	18.91
Oligochaeta	3.03	0.88	3.90	2.35	5.12	24.02
Syllidae	2.52	0.39	3.85	2.12	5.04	29.06
Lumbrineridae	1.57	0.00	2.79	4.79	3.65	32.72

Groups 8E and 2			**Average dissimilarity: 74.94%**			
Species	Group 8E Av.Abund	Group 2 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Ampeliscidae	1.62	0.00	3.48	2.49	4.64	4.64
Lumbrineridae	1.44	0.00	3.15	4.00	4.21	8.85
Tellinidae	1.39	0.00	3.08	1.44	4.11	12.95
Nuculidae	1.30	0.14	2.54	2.50	3.40	16.35
Paraonidae	1.11	0.00	2.49	1.51	3.32	19.67
Diastylidae	1.30	0.14	2.48	2.97	3.31	22.99
Calyptraeidae	1.13	0.00	2.45	6.03	3.27	26.26
Cirratulidae	1.22	0.14	2.28	2.30	3.04	29.30
Mactridae	1.52	0.67	1.99	1.29	2.65	31.96
Groups 7C and 8A			**Average dissimilarity: 63.03%**			
Species	Group 7C Av.Abund	Group 8A Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Capitellidae	1.17	4.34	4.47	1.80	7.09	7.09
Ampharetidae	0.88	3.14	3.39	1.52	5.38	12.47
Nuculidae	0.24	1.91	2.63	1.61	4.16	16.63
Syllidae	1.86	0.28	2.46	1.58	3.91	20.54
Echinarachniidae	1.55	0.00	2.32	1.92	3.68	24.23
Polygordiidae	1.61	0.18	2.18	2.39	3.46	27.68
Nemertea	1.70	0.53	1.92	1.54	3.04	30.72
Groups 5 and 8A			**Average dissimilarity: 66.18%**			
Species	Group 5 Av.Abund	Group 8A Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Capitellidae	0.00	4.34	6.76	3.19	10.22	10.22
Ampeliscidae	3.83	0.87	4.88	4.29	7.37	17.59
Echinarachniidae	2.48	0.00	4.15	5.13	6.27	23.86
Oligochaeta	0.00	2.29	3.70	5.16	5.59	29.46
Ampharetidae	1.00	3.14	3.54	1.68	5.34	34.80
Groups 8B and 8A			**Average dissimilarity: 54.58%**			
Species	Group 8B Av.Abund	Group 8A Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Ampeliscidae	4.12	0.87	4.19	3.61	7.67	7.67
Ampharetidae	0.33	3.14	3.74	2.02	6.85	14.52
Capitellidae	2.39	4.34	2.63	1.45	4.81	19.33
Pyramidellidae	1.71	0.00	2.21	3.35	4.06	23.39
Maldanidae	1.46	0.24	1.75	1.31	3.20	26.59
Cirratulidae	0.40	1.67	1.75	1.69	3.20	29.78
Lyonsiidae	1.41	0.22	1.53	2.21	2.80	32.58
Groups 8G and 8A			**Average dissimilarity: 65.41%**			
Species	Group 8G Av.Abund	Group 8A Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Capitellidae	0.73	4.34	6.01	2.18	9.19	9.19
Ampharetidae	0.00	3.14	5.60	2.31	8.57	17.75
Nuculidae	3.38	1.91	3.28	1.70	5.02	22.77
Spionidae	0.00	1.77	2.94	2.01	4.49	27.26
Pyramidellidae	1.38	0.00	2.47	3.41	3.78	31.04
Groups 8F and 8A			**Average dissimilarity: 57.24%**			
Species	Group 8F Av.Abund	Group 8A Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Nuculidae	5.31	1.91	4.21	2.10	7.35	7.35
Capitellidae	1.49	4.34	3.42	1.64	5.98	13.33
Ampharetidae	0.80	3.14	2.99	1.81	5.22	18.55
Maldanidae	1.88	0.24	2.20	1.91	3.85	22.39
Paraonidae	2.70	1.79	1.81	1.36	3.16	25.55
Periplomatidae	1.41	0.00	1.76	2.26	3.08	28.63
Lumbrineridae	2.35	1.11	1.69	1.39	2.96	31.59
Groups 8C and 8A			**Average dissimilarity: 52.98%**			
Species	Group 8C Av.Abund	Group 8A Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Ampharetidae	0.55	3.14	3.50	1.83	6.60	6.60
Capitellidae	2.03	4.34	3.21	1.56	6.06	12.66
Ampeliscidae	2.97	0.87	2.98	1.81	5.62	18.28
Polygordiidae	2.25	0.18	2.79	2.07	5.27	23.54
Syllidae	2.13	0.28	2.52	1.78	4.76	28.30
Nuculidae	2.27	1.91	1.81	1.18	3.41	31.71

Groups 4 and 8A			**Average dissimilarity: 68.42%**			
Species	Group 4 Av.Abund	Group 8A Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Capitellidae	0.59	4.34	6.46	2.44	9.44	9.44
Ampharetidae	0.00	3.14	5.89	2.34	8.61	18.05
Nuculidae	4.43	1.91	4.67	2.06	6.82	24.87
Spionidae	0.00	1.77	3.08	2.04	4.50	29.37
Mytilidae	1.52	0.00	2.87	2.39	4.19	33.56
Groups 8D and 8A			**Average dissimilarity: 60.60%**			
Species	Group 8D Av.Abund	Group 8A Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Capitellidae	0.72	4.34	4.40	2.06	7.26	7.26
Polygordiidae	2.97	0.18	3.57	2.66	5.89	13.15
Ampharetidae	0.77	3.14	3.12	1.62	5.15	18.30
Syllidae	2.52	0.28	2.94	2.16	4.85	23.15
Paraonidae	3.28	1.79	2.22	1.48	3.67	26.82
Glyceridae	1.84	0.56	1.73	1.61	2.85	29.66
Nuculidae	0.80	1.91	1.72	1.34	2.83	32.50
Groups 8E and 8A			**Average dissimilarity: 58.16%**			
Species	Group 8E Av.Abund	Group 8A Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Capitellidae	0.43	4.34	5.45	2.30	9.37	9.37
Ampharetidae	0.55	3.14	3.84	1.84	6.61	15.97
Mactridae	1.52	0.22	1.96	2.37	3.36	19.34
Paraonidae	1.11	1.79	1.77	1.38	3.04	22.38
Calyptraeidae	1.13	0.00	1.68	4.64	2.88	25.27
Tellinidae	1.39	1.06	1.46	1.35	2.51	27.77
Polygordiidae	1.03	0.18	1.42	1.38	2.44	30.21
Groups 2 and 8A			**Average dissimilarity: 79.26%**			
Species	Group 2 Av.Abund	Group 8A Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Capitellidae	0.64	4.34	7.28	2.58	9.19	9.19
Ampharetidae	0.46	3.14	5.87	1.85	7.41	16.60
Nuculidae	0.14	1.91	4.06	1.65	5.12	21.72
Paraonidae	0.00	1.79	3.63	1.57	4.59	26.30
Cirratulidae	0.14	1.67	3.09	2.12	3.89	30.20
Groups 7C and 6			**Average dissimilarity: 57.57%**			
Species	Group 7C Av.Abund	Group 6 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Haustoriidae	1.24	0.00	1.81	1.43	3.14	3.14
Echinarachniidae	1.55	0.56	1.75	1.27	3.04	6.18
Mactridae	1.36	0.40	1.59	1.40	2.76	8.94
Magelonidae	1.34	0.40	1.59	1.35	2.76	11.70
Spionidae	2.05	1.05	1.58	1.18	2.74	14.44
Terebellidae	0.19	1.23	1.56	1.10	2.70	17.15
Syllidae	1.86	2.46	1.51	1.32	2.63	19.78
Oligochaeta	2.09	1.52	1.49	1.22	2.59	22.36
Oenonidae	0.00	1.02	1.48	1.31	2.56	24.93
Glyceridae	0.76	1.35	1.33	1.71	2.31	27.24
Cirratulidae	0.98	1.71	1.33	1.39	2.31	29.55
Nephtyidae	1.37	0.97	1.29	1.17	2.24	31.79
Groups 5 and 6			**Average dissimilarity: 66.37%**			
Species	Group 5 Av.Abund	Group 6 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Ampeliscidae	3.83	0.31	5.71	2.79	8.60	8.60
Syllidae	0.00	2.46	3.72	4.92	5.61	14.21
Echinarachniidae	2.48	0.56	3.20	1.78	4.83	19.04
Polygordiidae	0.00	1.78	2.93	2.27	4.41	23.44
Astartidae	2.03	0.24	2.78	3.32	4.19	27.63
Oligochaeta	0.00	1.52	2.33	1.58	3.51	31.15

Groups 8B and 6			**Average dissimilarity: 67.01%**			
Species	Group 8B Av.Abund	Group 6 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Ampeliscidae	4.12	0.31	4.83	3.16	7.21	7.21
Lumbrineridae	2.04	0.20	2.50	2.23	3.73	10.94
Syllidae	0.47	2.46	2.32	2.29	3.46	14.39
Capitellidae	2.39	0.80	2.08	2.48	3.10	17.50
Pyramidellidae	1.71	0.28	1.92	1.99	2.86	20.36
Nuculidae	1.60	0.20	1.82	2.33	2.72	23.08
Polygordiidae	0.40	1.78	1.75	1.73	2.61	25.69
Cirratulidae	0.40	1.71	1.65	1.82	2.47	28.15
Maldanidae	1.46	0.88	1.52	1.20	2.27	30.42
Groups 8G and 6			**Average dissimilarity: 70.25%**			
Species	Group 8G Av.Abund	Group 6 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Nuculidae	3.38	0.20	5.43	1.87	7.73	7.73
Polygordiidae	0.00	1.78	3.15	2.27	4.49	12.22
Syllidae	0.52	2.46	3.01	2.24	4.28	16.50
Pyramidellidae	1.38	0.28	2.10	1.70	2.99	19.49
Oligochaeta	2.43	1.52	1.96	1.19	2.80	22.29
Phoxocephalidae	0.00	1.29	1.96	1.71	2.78	25.07
Lumbrineridae	1.19	0.20	1.87	1.88	2.67	27.74
Terebellidae	0.00	1.23	1.84	1.04	2.62	30.36
Groups 8F and 6			**Average dissimilarity: 67.81%**			
Species	Group 8F Av.Abund	Group 6 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Nuculidae	5.31	0.20	6.34	2.99	9.34	9.34
Lumbrineridae	2.35	0.20	2.78	2.52	4.11	13.45
Polygordiidae	0.00	1.78	2.27	2.56	3.34	16.79
Oweniidae	1.39	0.00	1.78	2.60	2.63	19.42
Periplomatidae	1.41	0.00	1.72	2.12	2.53	21.96
Ampeliscidae	1.58	0.31	1.70	1.64	2.50	24.46
Maldanidae	1.88	0.88	1.65	1.26	2.43	26.89
Paraonidae	2.70	1.49	1.60	1.75	2.36	29.25
Syllidae	1.39	2.46	1.54	1.36	2.27	31.53
Groups 8C and 6			**Average dissimilarity: 58.99%**			
Species	Group 8C Av.Abund	Group 6 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Ampeliscidae	2.97	0.31	3.51	1.74	5.94	5.94
Nuculidae	2.27	0.20	2.84	1.33	4.81	10.75
Oligochaeta	2.79	1.52	2.08	1.26	3.53	14.28
Lumbrineridae	1.65	0.20	1.98	2.25	3.35	17.63
Capitellidae	2.03	0.80	1.83	1.19	3.10	20.74
Terebellidae	0.10	1.23	1.43	1.16	2.42	23.16
Unciolidae	1.21	0.77	1.40	1.49	2.37	25.53
Syllidae	2.13	2.46	1.34	1.45	2.26	27.79
Orbiniidae	1.00	0.00	1.31	1.66	2.22	30.01
Groups 4 and 6			**Average dissimilarity: 78.30%**			
Species	Group 4 Av.Abund	Group 6 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Nuculidae	4.43	0.20	7.89	2.59	10.08	10.08
Syllidae	0.00	2.46	4.18	5.12	5.34	15.42
Polygordiidae	0.00	1.78	3.32	2.28	4.24	19.66
Mytilidae	1.52	0.30	2.52	1.60	3.22	22.87
Glyceridae	0.00	1.35	2.39	5.75	3.06	25.93
Phoxocephalidae	0.00	1.29	2.05	1.70	2.61	28.54
Veneridae	1.09	0.00	2.02	3.15	2.58	31.12

Groups 8D and 6			**Average dissimilarity: 54.44%**			
Species	Group 8D Av.Abund	Group 6 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Paraonidae	3.28	1.49	2.28	2.76	4.20	4.20
Oligochaeta	3.03	1.52	2.05	1.43	3.77	7.97
Lumbrineridae	1.57	0.20	1.80	2.17	3.30	11.27
Polygordiidae	2.97	1.78	1.60	1.51	2.94	14.20
Unciolidae	1.39	0.77	1.46	1.52	2.68	16.89
Goniadidae	1.18	0.42	1.42	1.59	2.61	19.49
Terebellidae	0.72	1.23	1.32	1.64	2.43	21.93
Dorvilleidae	1.13	0.31	1.32	1.47	2.42	24.35
Syllidae	2.52	2.46	1.14	1.35	2.09	26.44
Phoxocephalidae	0.60	1.29	1.12	1.33	2.06	28.51
Cirratulidae	2.34	1.71	1.10	1.27	2.02	30.53
Groups 8E and 6			**Average dissimilarity: 63.49%**			
Species	Group 8E Av.Abund	Group 6 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Syllidae	0.43	2.46	2.84	2.19	4.47	4.47
Ampeliscidae	1.62	0.31	2.00	1.65	3.15	7.62
Lumbrineridae	1.44	0.20	1.90	1.99	3.00	10.62
Mactridae	1.52	0.40	1.70	1.67	2.68	13.30
Diastylidae	1.30	0.20	1.69	2.08	2.66	15.96
Nuculidae	1.30	0.20	1.67	1.89	2.62	18.58
Tellinidae	1.39	0.74	1.63	1.15	2.57	21.15
Terebellidae	0.30	1.23	1.55	1.16	2.43	23.58
Calyptraeidae	1.13	0.24	1.40	1.82	2.20	25.79
Phoxocephalidae	0.50	1.29	1.33	1.46	2.10	27.89
Nephtyidae	1.43	0.97	1.30	1.15	2.05	29.94
Polygordiidae	1.03	1.78	1.30	1.02	2.05	31.99
Groups 2 and 6			**Average dissimilarity: 74.97%**			
Species	Group 2 Av.Abund	Group 6 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Syllidae	0.39	2.46	4.10	2.38	5.47	5.47
Polygordiidae	0.31	1.78	3.28	1.56	4.38	9.85
Paraonidae	0.00	1.49	3.08	4.14	4.11	13.96
Cirratulidae	0.14	1.71	3.06	2.63	4.08	18.04
Phoxocephalidae	0.00	1.29	2.33	1.73	3.11	21.15
Terebellidae	0.00	1.23	2.19	1.03	2.92	24.08
Oenonidae	0.00	1.02	2.18	1.25	2.91	26.98
Oligochaeta	0.88	1.52	2.10	1.39	2.80	29.78
Caecidae	0.00	0.80	2.00	0.97	2.67	32.45
Groups 8A and 6			**Average dissimilarity: 70.50%**			
Species	Group 8A Av.Abund	Group 6 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Capitellidae	4.34	0.80	4.78	1.99	6.79	6.79
Ampharetidae	3.14	0.20	4.29	1.85	6.09	12.88
Syllidae	0.28	2.46	3.00	2.48	4.26	17.13
Nuculidae	1.91	0.20	2.65	1.45	3.75	20.88
Polygordiidae	0.18	1.78	2.38	1.89	3.38	24.26
Phoxocephalidae	0.00	1.29	1.66	1.72	2.35	26.61
Terebellidae	0.29	1.23	1.54	1.10	2.18	28.79
Lumbrineridae	1.11	0.20	1.51	1.18	2.14	30.93
Groups 7C and 7B			**Average dissimilarity: 49.57%**			
Species	Group 7C Av.Abund	Group 7B Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Magelonidae	1.34	3.93	4.04	2.25	8.15	8.15
Syllidae	1.86	0.00	2.83	1.94	5.72	13.87
Polygordiidae	1.61	0.00	2.48	3.86	5.01	18.88
Haustoriidae	1.24	2.57	2.10	1.71	4.23	23.11
Mactridae	1.36	0.20	1.89	1.81	3.82	26.93
Unciolidae	0.11	1.04	1.66	1.02	3.35	30.28
Groups 5 and 7B			**Average dissimilarity: 60.75%**			
Species	Group 5 Av.Abund	Group 7B Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Magelonidae	0.00	3.93	6.83	4.00	11.24	11.24
Ampeliscidae	3.83	0.46	5.93	4.06	9.75	20.99
Haustoriidae	0.00	2.57	4.49	7.10	7.39	28.39
Astartidae	2.03	0.00	3.54	9.65	5.83	34.22

Groups 8B and 7B			**Average dissimilarity: 63.30%**			
Species	Group 8B Av.Abund	Group 7B Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Magelonidae	0.00	3.93	5.42	3.98	8.56	8.56
Ampeliscidae	4.12	0.46	4.99	3.89	7.89	16.45
Haustoriidae	0.00	2.57	3.56	6.68	5.62	22.07
Lumbrineridae	2.04	0.20	2.58	2.84	4.07	26.15
Pyramidellidae	1.71	0.00	2.30	3.68	3.63	29.78
Lyonsiidae	1.41	0.00	1.92	5.10	3.03	32.81
Groups 8G and 7B			**Average dissimilarity: 71.91%**			
Species	Group 8G Av.Abund	Group 7B Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Magelonidae	0.00	3.93	7.35	3.93	10.22	10.22
Nuculidae	3.38	0.44	5.32	1.96	7.40	17.62
Haustoriidae	0.00	2.57	4.84	5.76	6.73	24.35
Spionidae	0.00	1.76	3.27	5.94	4.55	28.90
Pyramidellidae	1.38	0.00	2.58	4.24	3.59	32.49
Groups 8F and 7B			**Average dissimilarity: 63.79%**			
Species	Group 8F Av.Abund	Group 7B Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Nuculidae	5.31	0.44	6.40	3.55	10.03	10.03
Magelonidae	0.00	3.93	5.28	3.78	8.28	18.31
Haustoriidae	0.15	2.57	3.22	5.10	5.05	23.37
Lumbrineridae	2.35	0.20	2.88	3.33	4.52	27.89
Maldanidae	1.88	0.20	2.31	2.08	3.62	31.51
Groups 8C and 7B			**Average dissimilarity: 57.09%**			
Species	Group 8C Av.Abund	Group 7B Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Magelonidae	0.05	3.93	5.42	3.91	9.49	9.49
Ampeliscidae	2.97	0.46	3.61	1.87	6.32	15.81
Haustoriidae	0.06	2.57	3.53	5.43	6.18	21.99
Polygordiidae	2.25	0.00	3.10	2.51	5.44	27.42
Syllidae	2.13	0.00	2.90	2.33	5.09	32.51
Groups 4 and 7B			**Average dissimilarity: 72.02%**			
Species	Group 4 Av.Abund	Group 7B Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Nuculidae	4.43	0.44	7.94	3.80	11.02	11.02
Magelonidae	0.00	3.93	7.73	4.24	10.74	21.75
Haustoriidae	0.00	2.57	5.09	6.99	7.07	28.82
Spionidae	0.00	1.76	3.44	7.44	4.78	33.60
Groups 8D and 7B			**Average dissimilarity: 61.49%**			
Species	Group 8D Av.Abund	Group 7B Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Magelonidae	0.00	3.93	5.24	4.23	8.53	8.53
Polygordiidae	2.97	0.00	3.94	3.54	6.41	14.94
Syllidae	2.52	0.00	3.37	3.12	5.48	20.42
Haustoriidae	0.20	2.57	3.16	4.73	5.14	25.56
Paraonidae	3.28	1.72	2.18	1.38	3.54	29.10
Lumbrineridae	1.57	0.20	1.83	2.57	2.98	32.08
Groups 8E and 7B			**Average dissimilarity: 57.52%**			
Species	Group 8E Av.Abund	Group 7B Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Magelonidae	0.50	3.93	5.29	3.25	9.20	9.20
Haustoriidae	0.59	2.57	3.06	3.00	5.32	14.52
Mactridae	1.52	0.20	2.06	2.61	3.59	18.11
Lumbrineridae	1.44	0.20	1.93	2.37	3.35	21.46
Ampeliscidae	1.62	0.46	1.85	1.38	3.22	24.68
Calyptraeidae	1.13	0.00	1.75	6.26	3.04	27.71
Paraonidae	1.11	1.72	1.70	1.42	2.95	30.66
Groups 2 and 7B			**Average dissimilarity: 68.55%**			
Species	Group 2 Av.Abund	Group 7B Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Magelonidae	0.54	3.93	7.85	2.79	11.45	11.45
Haustoriidae	0.85	2.57	4.00	2.02	5.83	17.28
Paraonidae	0.00	1.72	3.72	1.72	5.43	22.71
Tellinidae	0.00	1.15	2.65	6.80	3.87	26.58
Unciolidae	0.00	1.04	2.59	0.98	3.77	30.35

Groups 8A and 7B			**Average dissimilarity: 57.11%**			
Species	Group 8A Av.Abund	Group 7B Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Magelonidae	1.08	3.93	4.53	1.91	7.93	7.93
Capitellidae	4.34	1.22	4.49	1.73	7.87	15.80
Haustoriidae	0.11	2.57	3.85	3.68	6.74	22.54
Ampharetidae	3.14	1.10	3.13	1.52	5.48	28.01
Nuculidae	1.91	0.44	2.51	1.47	4.40	32.41
Groups 6 and 7B			**Average dissimilarity: 66.14%**			
Species	Group 6 Av.Abund	Group 7B Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Magelonidae	0.40	3.93	5.48	2.27	8.28	8.28
Haustoriidae	0.00	2.57	3.89	3.55	5.88	14.17
Syllidae	2.46	0.00	3.47	4.91	5.25	19.41
Polygordiidae	1.78	0.00	2.71	2.48	4.10	23.51
Unciolidae	0.77	1.04	1.67	1.06	2.53	26.04
Terebellidae	1.23	0.00	1.62	1.08	2.45	28.49
Ampharetidae	0.20	1.10	1.52	1.41	2.30	30.79
Groups 7C and 7D			**Average dissimilarity: 53.40%**			
Species	Group 7C Av.Abund	Group 7D Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Polygordiidae	1.61	0.00	2.91	3.93	5.45	5.45
Syllidae	1.86	0.62	2.76	1.49	5.16	10.61
Tellinidae	1.45	0.00	2.62	4.16	4.90	15.51
Mactridae	1.36	0.00	2.52	2.15	4.71	20.22
Tanaissuidae	0.82	1.83	2.21	1.38	4.14	24.36
Haustoriidae	1.24	2.25	2.11	1.21	3.96	28.32
Paraonidae	1.49	0.33	2.03	1.97	3.81	32.13
Groups 5 and 7D			**Average dissimilarity: 66.69%**			
Species	Group 5 Av.Abund	Group 7D Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Ampeliscidae	3.83	0.33	7.31	4.99	10.96	10.96
Magelonidae	0.00	2.32	4.72	3.22	7.08	18.04
Haustoriidae	0.00	2.25	4.67	2.30	7.00	25.04
Astartidae	2.03	0.00	4.24	9.55	6.36	31.39
Groups 8B and 7D			**Average dissimilarity: 76.43%**			
Species	Group 8B Av.Abund	Group 7D Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Ampeliscidae	4.12	0.33	5.90	4.81	7.73	7.73
Magelonidae	0.00	2.32	3.62	3.30	4.74	12.47
Haustoriidae	0.00	2.25	3.57	2.54	4.67	17.13
Lumbrineridae	2.04	0.00	3.29	3.66	4.31	21.44
Tanaissuidae	0.00	1.83	2.84	2.14	3.71	25.15
Pyramidellidae	1.71	0.00	2.64	3.77	3.45	28.60
Tellinidae	1.54	0.00	2.42	11.89	3.17	31.77
Groups 8G and 7D			**Average dissimilarity: 78.54%**			
Species	Group 8G Av.Abund	Group 7D Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Nuculidae	3.38	0.44	6.48	1.87	8.25	8.25
Magelonidae	0.00	2.32	5.16	3.41	6.57	14.82
Haustoriidae	0.00	2.25	5.11	2.50	6.51	21.32
Spionidae	0.00	1.91	4.27	4.90	5.44	26.76
Tanaissuidae	0.00	1.83	4.03	2.24	5.13	31.89
Groups 8F and 7D			**Average dissimilarity: 74.67%**			
Species	Group 8F Av.Abund	Group 7D Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Nuculidae	5.31	0.44	7.34	3.40	9.84	9.84
Paraonidae	2.70	0.33	3.65	3.27	4.89	14.72
Lumbrineridae	2.35	0.00	3.62	4.47	4.85	19.57
Magelonidae	0.00	2.32	3.52	3.20	4.72	24.29
Haustoriidae	0.15	2.25	3.18	2.26	4.26	28.54
Maldanidae	1.88	0.00	2.86	2.33	3.83	32.37

Groups 8C and 7D			**Average dissimilarity: 70.41%**			
Species	Group 8C Av.Abund	Group 7D Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Ampeliscidae	2.97	0.33	4.30	1.96	6.10	6.10
Magelonidae	0.05	2.32	3.60	3.20	5.11	11.21
Polygordiidae	2.25	0.00	3.57	2.50	5.07	16.29
Haustoriidae	0.06	2.25	3.53	2.48	5.01	21.30
Nuculidae	2.27	0.44	3.19	1.28	4.54	25.83
Paraonidae	2.08	0.33	2.78	3.28	3.95	29.78
Syllidae	2.13	0.62	2.69	1.58	3.83	33.61
Groups 4 and 7D			**Average dissimilarity: 79.31%**			
Species	Group 4 Av.Abund	Group 7D Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Nuculidae	4.43	0.44	9.81	3.26	12.37	12.37
Magelonidae	0.00	2.32	5.47	3.72	6.90	19.27
Haustoriidae	0.00	2.25	5.42	2.58	6.84	26.11
Spionidae	0.00	1.91	4.53	6.20	5.71	31.82
Groups 8D and 7D			**Average dissimilarity: 72.58%**			
Species	Group 8D Av.Abund	Group 7D Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Polygordiidae	2.97	0.00	4.51	3.57	6.21	6.21
Paraonidae	3.28	0.33	4.45	7.08	6.13	12.34
Magelonidae	0.00	2.32	3.49	3.53	4.81	17.15
Haustoriidae	0.20	2.25	3.10	2.19	4.27	21.42
Syllidae	2.52	0.62	3.05	1.68	4.20	25.62
Glyceridae	1.84	0.00	2.83	3.02	3.90	29.52
Oligochaeta	3.03	1.26	2.75	1.65	3.78	33.30
Groups 8E and 7D			**Average dissimilarity: 66.05%**			
Species	Group 8E Av.Abund	Group 7D Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Magelonidae	0.50	2.32	3.20	2.12	4.85	4.85
Haustoriidae	0.59	2.25	2.97	1.58	4.50	9.35
Tanaissuidae	0.30	1.83	2.81	1.61	4.26	13.61
Mactridae	1.52	0.00	2.79	4.57	4.22	17.83
Lumbrineridae	1.44	0.00	2.63	4.12	3.98	21.80
Tellinidae	1.39	0.00	2.56	1.38	3.88	25.69
Ampeliscidae	1.62	0.33	2.30	1.51	3.48	29.17
Capitellidae	0.43	1.13	1.82	3.24	2.76	31.93
Groups 2 and 7D			**Average dissimilarity: 65.09%**			
Species	Group 2 Av.Abund	Group 7D Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Magelonidae	0.54	2.32	5.27	2.04	8.10	8.10
Haustoriidae	0.85	2.25	4.35	1.45	6.68	14.78
Echinarachniidae	0.17	1.52	4.09	2.35	6.28	21.05
Tanaissuidae	0.87	1.83	3.58	1.52	5.51	26.56
Spionidae	0.81	1.91	3.10	1.57	4.76	31.32
Groups 8A and 7D			**Average dissimilarity: 69.76%**			
Species	Group 8A Av.Abund	Group 7D Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Capitellidae	4.34	1.13	5.28	2.13	7.57	7.57
Ampharetidae	3.14	0.44	4.81	1.94	6.90	14.47
Haustoriidae	0.11	2.25	3.92	2.11	5.62	20.09
Tanaissuidae	0.00	1.83	3.24	2.11	4.64	24.73
Nuculidae	1.91	0.44	3.02	1.40	4.32	29.06
Echinarachniidae	0.00	1.52	2.77	3.02	3.97	33.02
Groups 6 and 7D			**Average dissimilarity: 71.37%**			
Species	Group 6 Av.Abund	Group 7D Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Haustoriidae	0.00	2.25	3.99	2.09	5.59	5.59
Magelonidae	0.40	2.32	3.55	1.72	4.97	10.56
Polygordiidae	1.78	0.00	3.20	2.29	4.49	15.05
Syllidae	2.46	0.62	3.20	1.89	4.48	19.53
Glyceridae	1.35	0.00	2.31	5.40	3.24	22.77
Phoxocephalidae	1.29	0.00	1.98	1.72	2.78	25.55
Echinarachniidae	0.56	1.52	1.98	1.34	2.77	28.32
Paraonidae	1.49	0.33	1.91	2.13	2.67	30.99

Groups 7B and 7D			**Average dissimilarity: 47.77%**			
Species	Group 7B Av.Abund	Group 7D Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Magelonidae	3.93	2.32	3.14	1.29	6.57	6.57
Paraonidae	1.72	0.33	2.74	1.71	5.73	12.30
Tellinidae	1.15	0.00	2.19	7.22	4.59	16.89
Unciolidae	1.04	0.00	2.11	0.97	4.41	21.30
Oligochaeta	1.91	1.26	1.82	1.18	3.81	25.11
Echinarachniidae	0.64	1.52	1.73	1.41	3.62	28.73
Tanaissuidae	1.11	1.83	1.71	1.14	3.58	32.31
Groups 7C and 3			**Average dissimilarity: 66.24%**			
Species	Group 7C Av.Abund	Group 3 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Ampharetidae	0.88	2.06	3.60	1.08	5.44	5.44
Oligochaeta	2.09	0.52	2.79	1.70	4.22	9.66
Polygordiidae	1.61	0.00	2.68	3.68	4.04	13.70
Nephtyidae	1.37	0.00	2.23	2.48	3.37	17.07
Syllidae	1.86	0.73	2.18	1.32	3.29	20.36
Spionidae	2.05	0.97	1.97	1.35	2.97	23.33
Capitellidae	1.17	0.00	1.86	1.49	2.81	26.14
Paraonidae	1.49	0.33	1.84	2.01	2.78	28.91
Columbellidae	0.00	1.06	1.83	1.22	2.77	31.68
Groups 5 and 3			**Average dissimilarity: 73.97%**			
Species	Group 5 Av.Abund	Group 3 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Ampeliscidae	3.83	0.00	7.29	6.25	9.86	9.86
Ampharetidae	1.00	2.06	4.16	1.13	5.63	15.48
Astartidae	2.03	0.00	3.86	6.25	5.22	20.70
Echinarachniidae	2.48	0.79	3.20	2.47	4.32	25.03
Haustoriidae	0.00	1.35	2.51	4.27	3.39	28.42
Mactridae	0.00	1.23	2.34	6.28	3.16	31.58
Groups 8B and 3			**Average dissimilarity: 73.72%**			
Species	Group 8B Av.Abund	Group 3 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Ampeliscidae	4.12	0.00	5.98	6.05	8.12	8.12
Capitellidae	2.39	0.00	3.51	7.44	4.77	12.88
Lumbrineridae	2.04	0.00	3.05	3.57	4.14	17.03
Ampharetidae	0.33	2.06	2.88	0.78	3.90	20.93
Oligochaeta	2.04	0.52	2.32	1.73	3.15	24.08
Unciolidae	1.42	0.00	2.09	3.38	2.83	26.91
Lyonsiidae	1.41	0.00	2.05	4.76	2.78	29.68
Haustoriidae	0.00	1.35	1.96	4.21	2.66	32.34
Groups 8G and 3			**Average dissimilarity: 78.42%**			
Species	Group 8G Av.Abund	Group 3 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Nuculidae	3.38	0.73	5.06	1.79	6.46	6.46
Oligochaeta	2.43	0.52	4.15	1.86	5.30	11.75
Ampharetidae	0.00	2.06	3.57	0.66	4.55	16.31
Paraonidae	1.91	0.33	3.15	3.19	4.02	20.33
Haustoriidae	0.00	1.35	2.72	4.31	3.47	23.79
Mactridae	0.00	1.23	2.54	5.16	3.24	27.03
Oenonidae	1.23	0.00	2.51	4.59	3.21	30.24
Groups 8F and 3			**Average dissimilarity: 80.36%**			
Species	Group 8F Av.Abund	Group 3 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Nuculidae	5.31	0.73	6.32	3.72	7.86	7.86
Paraonidae	2.70	0.33	3.37	3.47	4.19	12.05
Lumbrineridae	2.35	0.00	3.36	4.28	4.19	16.24
Ampharetidae	0.80	2.06	3.11	1.11	3.87	20.11
Nephtyidae	1.93	0.00	2.74	6.13	3.41	23.52
Oligochaeta	2.30	0.52	2.64	1.83	3.29	26.81
Ampeliscidae	1.58	0.00	2.24	2.20	2.79	29.60
Capitellidae	1.49	0.00	2.16	2.19	2.68	32.28

Groups 8C and 3			**Average dissimilarity: 72.48%**			
Species	Group 8C Av.Abund	Group 3 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Ampeliscidae	2.97	0.00	4.39	2.05	6.05	6.05
Oligochaeta	2.79	0.52	3.47	1.69	4.78	10.84
Polygordiidae	2.25	0.00	3.32	2.45	4.58	15.41
Capitellidae	2.03	0.00	3.06	1.70	4.22	19.64
Ampharetidae	0.55	2.06	3.04	0.91	4.19	23.83
Paraonidae	2.08	0.33	2.55	3.53	3.52	27.35
Nuculidae	2.27	0.73	2.50	1.23	3.45	30.79
Groups 4 and 3			**Average dissimilarity: 75.37%**			
Species	Group 4 Av.Abund	Group 3 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Nuculidae	4.43	0.73	7.95	4.56	10.55	10.55
Ampharetidae	0.00	2.06	3.74	0.65	4.97	15.52
Nephtyidae	1.45	0.00	3.16	2.64	4.20	19.72
Haustoriidae	0.00	1.35	2.87	4.88	3.81	23.53
Oligochaeta	1.52	0.52	2.71	1.51	3.59	27.12
Nemertea	0.59	1.18	2.25	1.17	2.98	30.10
Groups 8D and 3			**Average dissimilarity: 73.66%**			
Species	Group 8D Av.Abund	Group 3 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Polygordiidae	2.97	0.00	4.20	3.42	5.70	5.70
Paraonidae	3.28	0.33	4.12	8.21	5.60	11.30
Oligochaeta	3.03	0.52	3.69	2.31	5.01	16.31
Ampharetidae	0.77	2.06	3.03	0.97	4.11	20.42
Cirratulidae	2.34	0.33	2.81	3.15	3.81	24.23
Syllidae	2.52	0.73	2.61	1.70	3.55	27.78
Lumbrineridae	1.57	0.00	2.24	4.34	3.04	30.81
Groups 8E and 3			**Average dissimilarity: 66.78%**			
Species	Group 8E Av.Abund	Group 3 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Ampharetidae	0.55	2.06	3.38	0.90	5.05	5.05
Ampeliscidae	1.62	0.00	2.68	2.32	4.01	9.07
Nephtyidae	1.43	0.00	2.46	2.49	3.69	12.76
Lumbrineridae	1.44	0.00	2.42	3.91	3.62	16.37
Oligochaeta	1.56	0.52	1.96	1.50	2.94	19.31
Columbellidae	0.00	1.06	1.83	1.19	2.74	22.06
Tellinidae	1.39	1.01	1.79	1.25	2.68	24.73
Nemertea	0.55	1.18	1.68	1.20	2.52	27.25
Polygordiidae	1.03	0.00	1.65	1.47	2.47	29.72
Paraonidae	1.11	0.33	1.56	1.50	2.34	32.07
Groups 2 and 3			**Average dissimilarity: 76.90%**			
Species	Group 2 Av.Abund	Group 3 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Ampharetidae	0.46	2.06	4.85	0.90	6.31	6.31
Columbellidae	0.00	1.06	2.89	1.25	3.76	10.07
Nemertea	0.55	1.18	2.82	1.20	3.67	13.74
Tanaissuidae	0.87	0.54	2.40	1.16	3.12	16.86
Mytilidae	0.29	1.17	2.34	1.67	3.04	19.90
Tellinidae	0.00	1.01	2.32	1.37	3.01	22.91
Arcidae	0.00	0.80	2.26	1.36	2.94	25.85
Oligochaeta	0.88	0.52	2.16	1.33	2.81	28.66
Veneridae	0.00	0.91	2.15	1.17	2.79	31.45
Groups 8A and 3			**Average dissimilarity: 75.21%**			
Species	Group 8A Av.Abund	Group 3 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Capitellidae	4.34	0.00	6.77	3.12	9.01	9.01
Ampharetidae	3.14	2.06	5.20	2.27	6.92	15.93
Oligochaeta	2.29	0.52	2.96	1.82	3.94	19.87
Paraonidae	1.79	0.33	2.49	1.55	3.30	23.17
Nuculidae	1.91	0.73	2.23	1.46	2.97	26.14
Cirratulidae	1.67	0.33	2.13	1.97	2.83	28.97
Haustoriidae	0.11	1.35	2.06	2.47	2.74	31.71

Groups 6 and 3			**Average dissimilarity: 74.11%**			
Species	Group 6 Av.Abund	Group 3 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Ampharetidae	0.20	2.06	3.02	0.71	4.07	4.07
Polygordiidae	1.78	0.00	2.94	2.30	3.96	8.03
Syllidae	2.46	0.73	2.63	1.80	3.54	11.57
Haustoriidae	0.00	1.35	2.16	2.95	2.92	14.49
Cirratulidae	1.71	0.33	1.97	2.08	2.66	17.15
Oligochaeta	1.52	0.52	1.95	1.27	2.64	19.79
Terebellidae	1.23	0.00	1.73	1.05	2.34	22.13
Paraonidae	1.49	0.33	1.72	2.26	2.32	24.46
Mytilidae	0.30	1.17	1.70	1.87	2.30	26.75
Columbellidae	0.58	1.06	1.68	1.10	2.26	29.02
Oenonidae	1.02	0.00	1.66	1.25	2.23	31.25
Groups 7B and 3			**Average dissimilarity: 70.64%**			
Species	Group 7B Av.Abund	Group 3 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Magelonidae	3.93	0.33	6.27	3.09	8.88	8.88
Ampharetidae	1.10	2.06	3.93	1.33	5.57	14.45
Nephtyidae	1.67	0.00	2.93	6.13	4.14	18.59
Oligochaeta	1.91	0.52	2.62	1.66	3.71	22.30
Paraonidae	1.72	0.33	2.50	1.74	3.54	25.84
Haustoriidae	2.57	1.35	2.19	2.35	3.10	28.94
Mytilidae	0.00	1.17	2.06	4.48	2.92	31.86
Groups 7D and 3			**Average dissimilarity: 71.71%**			
Species	Group 7D Av.Abund	Group 3 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Ampharetidae	0.44	2.06	4.09	0.87	5.70	5.70
Magelonidae	2.32	0.33	4.07	2.17	5.67	11.37
Tanaissuidae	1.83	0.54	2.84	1.76	3.96	15.33
Nephtyidae	1.27	0.00	2.67	6.06	3.72	19.05
Mactridae	0.00	1.23	2.59	5.57	3.61	22.66
Mytilidae	0.00	1.17	2.48	4.10	3.45	26.11
Capitellidae	1.13	0.00	2.37	4.91	3.30	29.41
Oligochaeta	1.26	0.52	2.34	1.14	3.26	32.67
Groups 7C and 1			**Average dissimilarity: 89.31%**			
Species	Group 7C Av.Abund	Group 1 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Oligochaeta	2.09	0.00	5.07	3.20	5.67	5.67
Spionidae	2.05	0.00	4.92	3.05	5.50	11.18
Syllidae	1.86	0.00	4.48	1.91	5.01	16.19
Nemertea	1.70	0.00	4.23	3.57	4.74	20.93
Polygordiidae	1.61	0.00	3.95	4.10	4.42	25.35
Echinarachniidae	1.55	0.00	3.88	1.89	4.34	29.70
Paraonidae	1.49	0.00	3.67	4.00	4.11	33.81
Groups 5 and 1			**Average dissimilarity: 100.00%**			
Species	Group 5 Av.Abund	Group 1 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Ampeliscidae	3.83	0.00	11.46	Undefined	11.46	11.46
Echinarachniidae	2.48	0.00	7.42	Undefined	7.42	18.88
Spirorbidae	0.00	2.06	6.16	Undefined	6.16	25.04
Astartidae	2.03	0.00	6.07	Undefined	6.07	31.11
Groups 8B and 1			**Average dissimilarity: 93.33%**			
Species	Group 8B Av.Abund	Group 1 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Ampeliscidae	4.12	0.00	8.35	9.36	8.95	8.95
Capitellidae	2.39	0.00	4.93	9.04	5.28	14.23
Lumbrineridae	2.04	0.00	4.32	2.89	4.63	18.86
Spirorbidae	0.00	2.06	4.29	5.94	4.59	23.45
Oligochaeta	2.04	0.00	4.21	7.40	4.51	27.97
Pyramidellidae	1.71	0.00	3.41	3.74	3.65	31.62

Groups 8G and 1			**Average dissimilarity: 89.06%**			
Species	Group 8G Av.Abund	Group 1 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Oligochaeta	2.43	0.00	8.47	3.39	9.51	9.51
Nuculidae	3.38	1.00	7.37	1.50	8.28	17.79
Spirorbidae	0.00	2.06	7.11	4.45	7.98	25.77
Paraonidae	1.91	0.00	6.64	3.50	7.46	33.23
Groups 8F and 1			**Average dissimilarity: 94.27%**			
Species	Group 8F Av.Abund	Group 1 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Nuculidae	5.31	1.00	8.25	3.81	8.75	8.75
Paraonidae	2.70	0.00	5.48	3.50	5.81	14.56
Lumbrineridae	2.35	0.00	4.70	4.04	4.98	19.54
Oligochaeta	2.30	0.00	4.59	3.34	4.87	24.41
Spirorbidae	0.00	2.06	4.15	4.72	4.40	28.82
Nephtyidae	1.93	0.00	3.82	6.27	4.05	32.87
Groups 8C and 1			**Average dissimilarity: 90.83%**			
Species	Group 8C Av.Abund	Group 1 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Ampeliscidae	2.97	0.00	6.18	2.04	6.80	6.80
Oligochaeta	2.79	0.00	5.69	2.41	6.27	13.07
Polygordiidae	2.25	0.00	4.66	2.47	5.14	18.21
Paraonidae	2.08	0.00	4.41	5.01	4.85	23.06
Spirorbidae	0.00	2.06	4.36	7.08	4.80	27.87
Syllidae	2.13	0.00	4.34	2.43	4.78	32.65
Groups 4 and 1			**Average dissimilarity: 81.32%**			
Species	Group 4 Av.Abund	Group 1 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Nuculidae	4.43	1.00	12.79	3.99	15.72	15.72
Spirorbidae	0.50	2.06	5.82	2.23	7.15	22.88
Tellinidae	1.54	0.00	5.76	2.03	7.08	29.95
Oligochaeta	1.52	0.00	5.66	2.06	6.97	36.92
Groups 8D and 1			**Average dissimilarity: 91.40%**			
Species	Group 8D Av.Abund	Group 1 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Paraonidae	3.28	0.00	6.43	19.93	7.04	7.04
Oligochaeta	3.03	0.00	6.03	4.33	6.60	13.64
Polygordiidae	2.97	0.00	5.79	3.53	6.33	19.97
Syllidae	2.52	0.00	4.97	3.00	5.44	25.41
Cirratulidae	2.34	0.00	4.63	4.04	5.07	30.48
Groups 8E and 1			**Average dissimilarity: 88.12%**			
Species	Group 8E Av.Abund	Group 1 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Ampeliscidae	1.62	0.00	3.95	2.25	4.48	4.48
Spirorbidae	0.50	2.06	3.90	1.47	4.43	8.91
Oligochaeta	1.56	0.00	3.83	3.80	4.34	13.25
Mactridae	1.52	0.00	3.82	3.67	4.33	17.59
Nephtyidae	1.43	0.00	3.71	2.10	4.21	21.79
Lumbrineridae	1.44	0.00	3.59	3.48	4.08	25.87
Tellinidae	1.39	0.00	3.51	1.29	3.98	29.85
Spionidae	1.41	0.00	3.46	7.15	3.93	33.79
Groups 2 and 1			**Average dissimilarity: 88.42%**			
Species	Group 2 Av.Abund	Group 1 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Spirorbidae	0.00	2.06	10.64	6.18	12.04	12.04
Naticidae	0.00	1.00	5.17	6.18	5.84	17.88
Phyllodocidae	0.00	1.00	5.17	6.18	5.84	23.73
Glyceridae	0.87	0.00	4.59	1.40	5.19	28.92
Tanaissuidae	0.87	0.00	4.43	0.93	5.01	33.93
Groups 8A and 1			**Average dissimilarity: 90.84%**			
Species	Group 8A Av.Abund	Group 1 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Capitellidae	4.34	0.00	9.88	3.90	10.87	10.87
Ampharetidae	3.14	0.00	7.89	2.05	8.69	19.56
Oligochaeta	2.29	0.00	5.51	4.74	6.06	25.62
Spirorbidae	0.00	2.06	5.22	3.43	5.74	31.37

Groups 6 and 1			**Average dissimilarity: 94.53%**			
Species	Group 6 Av.Abund	Group 1 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Syllidae	2.46	0.00	5.51	4.20	5.83	5.83
Spirorbidae	0.00	2.06	5.13	2.41	5.43	11.26
Polygordiidae	1.78	0.00	4.49	1.85	4.75	16.01
Cirratulidae	1.71	0.00	3.85	3.49	4.07	20.08
Paraonidae	1.49	0.00	3.53	3.44	3.73	23.81
Oligochaeta	1.52	0.00	3.49	1.49	3.70	27.50
Glyceridae	1.35	0.00	3.18	3.88	3.37	30.87
Groups 7B and 1			**Average dissimilarity: 95.13%**			
Species	Group 7B Av.Abund	Group 1 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Magelonidae	3.93	0.00	10.34	3.96	10.87	10.87
Haustoriidae	2.57	0.00	6.83	5.40	7.18	18.05
Spirorbidae	0.00	2.06	5.46	6.40	5.74	23.79
Oligochaeta	1.91	0.00	4.91	3.47	5.17	28.95
Spionidae	1.76	0.00	4.59	7.23	4.83	33.78
Groups 7D and 1			**Average dissimilarity: 90.99%**			
Species	Group 7D Av.Abund	Group 1 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Magelonidae	2.32	0.00	7.85	3.70	8.63	8.63
Haustoriidae	2.25	0.00	7.84	2.30	8.62	17.24
Spirorbidae	0.00	2.06	7.27	5.71	7.99	25.24
Spionidae	1.91	0.00	6.51	7.08	7.16	32.40
Groups 3 and 1			**Average dissimilarity: 83.89%**			
Species	Group 3 Av.Abund	Group 1 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Spirorbidae	0.00	2.06	6.30	3.90	7.50	7.50
Ampharetidae	2.06	0.00	4.86	0.58	5.79	13.30
Haustoriidae	1.35	0.00	3.98	4.27	4.74	18.04
Mactridae	1.23	0.00	3.76	4.08	4.48	22.52
Nemertea	1.18	0.00	3.76	1.02	4.48	27.00
Columbellidae	1.06	0.00	3.40	1.07	4.06	31.05
Groups 7C and 7A			**Average dissimilarity: 49.65%**			
Species	Group 7C Av.Abund	Group 7A Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Magelonidae	1.34	3.68	2.77	2.61	5.58	5.58
Unciolidae	0.11	2.15	2.46	3.33	4.95	10.53
Pontoporeiidae	0.00	1.42	1.81	1.65	3.65	14.17
Phyllodocidae	0.00	1.32	1.59	5.61	3.20	17.37
Haustoriidae	1.24	2.46	1.59	1.34	3.20	20.57
Dorvilleidae	0.38	1.52	1.51	1.66	3.04	23.61
Tanaissuidae	0.82	1.33	1.47	1.42	2.96	26.56
Mactridae	1.36	0.20	1.45	1.83	2.92	29.48
Phoxocephalidae	0.86	2.00	1.41	1.60	2.84	32.32
Groups 5 and 7A			**Average dissimilarity: 66.49%**			
Species	Group 5 Av.Abund	Group 7A Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Ampeliscidae	3.83	0.20	4.86	4.27	7.31	7.31
Magelonidae	0.00	3.68	4.77	6.87	7.18	14.48
Haustoriidae	0.00	2.46	3.30	2.75	4.97	19.45
Astartidae	2.03	0.00	2.69	6.88	4.04	23.49
Phoxocephalidae	0.00	2.00	2.63	4.66	3.96	27.44
Capitellidae	0.00	2.06	2.63	2.79	3.95	31.39
Groups 8B and 7A			**Average dissimilarity: 61.64%**			
Species	Group 8B Av.Abund	Group 7A Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Ampeliscidae	4.12	0.20	4.29	4.06	6.97	6.97
Magelonidae	0.00	3.68	3.98	6.32	6.47	13.43
Haustoriidae	0.00	2.46	2.74	3.01	4.45	17.88
Lumbrineridae	2.04	0.00	2.27	3.98	3.68	21.56
Phoxocephalidae	0.33	2.00	1.84	2.53	2.99	24.55
Cirratulidae	0.40	1.91	1.66	2.24	2.69	27.24
Pyramidellidae	1.71	0.20	1.66	2.19	2.69	29.93
Pontoporeiidae	0.00	1.42	1.64	1.61	2.67	32.60

Groups 8G and 7A			**Average dissimilarity: 73.84%**			
Species	Group 8G Av.Abund	Group 7A Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Magelonidae	0.00	3.68	5.03	6.48	6.81	6.81
Nuculidae	3.38	0.20	4.27	2.19	5.79	12.60
Spionidae	0.00	2.65	3.62	4.97	4.90	17.50
Haustoriidae	0.00	2.46	3.49	2.84	4.72	22.23
Unciolidae	0.00	2.15	2.98	4.09	4.04	26.26
Phoxocephalidae	0.00	2.00	2.78	4.56	3.76	30.03
Groups 8F and 7A			**Average dissimilarity: 63.51%**			
Species	Group 8F Av.Abund	Group 7A Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Nuculidae	5.31	0.20	5.37	3.82	8.45	8.45
Magelonidae	0.00	3.68	3.90	5.78	6.14	14.59
Lumbrineridae	2.35	0.00	2.52	4.49	3.97	18.56
Haustoriidae	0.15	2.46	2.49	2.71	3.93	22.49
Spionidae	0.84	2.65	1.97	1.84	3.10	25.59
Phoxocephalidae	0.43	2.00	1.72	2.14	2.70	28.29
Pontoporeiidae	0.00	1.42	1.61	1.63	2.53	30.82
Groups 8C and 7A			**Average dissimilarity: 54.13%**			
Species	Group 8C Av.Abund	Group 7A Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Magelonidae	0.05	3.68	3.97	5.85	7.33	7.33
Ampeliscidae	2.97	0.20	3.12	1.93	5.76	13.09
Haustoriidae	0.06	2.46	2.71	2.87	5.00	18.09
Nuculidae	2.27	0.20	2.35	1.44	4.34	22.44
Polygordiidae	2.25	0.70	1.83	1.61	3.39	25.82
Lumbrineridae	1.65	0.00	1.83	4.63	3.38	29.20
Pontoporeiidae	0.00	1.42	1.66	1.66	3.06	32.27
Groups 4 and 7A			**Average dissimilarity: 75.75%**			
Species	Group 4 Av.Abund	Group 7A Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Nuculidae	4.43	0.20	6.11	4.53	8.07	8.07
Magelonidae	0.00	3.68	5.23	7.39	6.91	14.98
Spionidae	0.00	2.65	3.76	5.29	4.97	19.95
Haustoriidae	0.00	2.46	3.63	2.85	4.79	24.74
Unciolidae	0.00	2.15	3.10	4.25	4.09	28.84
Phoxocephalidae	0.00	2.00	2.89	4.75	3.82	32.65
Groups 8D and 7A			**Average dissimilarity: 55.92%**			
Species	Group 8D Av.Abund	Group 7A Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Magelonidae	0.00	3.68	3.88	6.82	6.95	6.95
Polygordiidae	2.97	0.70	2.46	2.00	4.41	11.35
Haustoriidae	0.20	2.46	2.45	2.60	4.37	15.73
Spionidae	0.93	2.65	1.81	2.28	3.24	18.97
Lumbrineridae	1.57	0.00	1.68	4.25	3.01	21.97
Pontoporeiidae	0.00	1.42	1.60	1.65	2.86	24.83
Capitellidae	0.72	2.06	1.52	1.57	2.72	27.55
Phoxocephalidae	0.60	2.00	1.50	1.89	2.69	30.24
Groups 8E and 7A			**Average dissimilarity: 61.62%**			
Species	Group 8E Av.Abund	Group 7A Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Magelonidae	0.50	3.68	3.75	4.27	6.09	6.09
Haustoriidae	0.59	2.46	2.28	1.94	3.71	9.79
Capitellidae	0.43	2.06	2.00	1.84	3.24	13.03
Phoxocephalidae	0.50	2.00	1.83	2.17	2.96	16.00
Pontoporeiidae	0.00	1.42	1.81	1.62	2.93	18.93
Ampeliscidae	1.62	0.20	1.74	1.73	2.82	21.75
Lumbrineridae	1.44	0.00	1.74	4.21	2.82	24.58
Syllidae	0.43	1.66	1.63	2.23	2.64	27.22
Dorvilleidae	0.25	1.52	1.59	1.74	2.58	29.79
Nemertea	0.55	1.91	1.59	2.55	2.58	32.37

Groups 2 and 7A			**Average dissimilarity: 73.66%**			
Species	Group 2 Av.Abund	Group 7A Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Magelonidae	0.54	3.68	5.00	3.37	6.79	6.79
Paraonidae	0.00	2.30	3.70	6.42	5.02	11.81
Unciolidae	0.00	2.15	3.46	4.28	4.70	16.51
Phoxocephalidae	0.00	2.00	3.23	4.53	4.39	20.90
Spionidae	0.81	2.65	2.89	2.37	3.92	24.81
Cirratulidae	0.14	1.91	2.81	4.03	3.81	28.63
Haustoriidae	0.85	2.46	2.74	1.57	3.72	32.35
Groups 8A and 7A			**Average dissimilarity: 59.90%**			
Species	Group 8A Av.Abund	Group 7A Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Ampharetidae	3.14	0.50	3.24	1.77	5.40	5.40
Magelonidae	1.08	3.68	3.13	2.10	5.23	10.63
Haustoriidae	0.11	2.46	2.88	2.50	4.81	15.44
Capitellidae	4.34	2.06	2.79	1.44	4.65	20.09
Phoxocephalidae	0.00	2.00	2.39	4.25	3.99	24.08
Nuculidae	1.91	0.20	2.13	1.65	3.55	27.63
Pontoporeiidae	0.00	1.42	1.80	1.60	3.01	30.63
Groups 6 and 7A			**Average dissimilarity: 59.46%**			
Species	Group 6 Av.Abund	Group 7A Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Magelonidae	0.40	3.68	3.87	2.77	6.50	6.50
Haustoriidae	0.00	2.46	2.92	2.56	4.91	11.42
Unciolidae	0.77	2.15	1.92	1.64	3.23	14.65
Spionidae	1.05	2.65	1.88	1.78	3.16	17.81
Pontoporeiidae	0.00	1.42	1.76	1.53	2.95	20.76
Dorvilleidae	0.31	1.52	1.57	1.48	2.64	23.41
Capitellidae	0.80	2.06	1.42	1.35	2.39	25.79
Nephtyidae	0.97	2.02	1.36	1.30	2.29	28.08
Polygordiidae	1.78	0.70	1.35	1.27	2.27	30.35
Groups 7B and 7A			**Average dissimilarity: 44.82%**			
Species	Group 7B Av.Abund	Group 7A Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Syllidae	0.00	1.66	2.00	5.19	4.45	4.45
Pontoporeiidae	0.00	1.42	1.87	1.63	4.17	8.62
Phoxocephalidae	0.53	2.00	1.86	1.85	4.14	12.76
Unciolidae	1.04	2.15	1.55	1.47	3.47	16.23
Dorvilleidae	0.40	1.52	1.55	1.68	3.45	19.68
Phyllodocidae	0.24	1.32	1.37	2.16	3.06	22.74
Tanaissuidae	1.11	1.33	1.37	1.78	3.05	25.79
Callianassidae	0.00	1.05	1.28	1.86	2.86	28.66
Capitellidae	1.22	2.06	1.26	1.19	2.82	31.48
Groups 7D and 7A			**Average dissimilarity: 57.41%**			
Species	Group 7D Av.Abund	Group 7A Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Unciolidae	0.00	2.15	3.02	4.18	5.26	5.26
Phoxocephalidae	0.00	2.00	2.81	4.66	4.90	10.15
Paraonidae	0.33	2.30	2.72	3.80	4.73	14.89
Pontoporeiidae	0.00	1.42	2.13	1.60	3.72	18.60
Dorvilleidae	0.00	1.52	2.04	1.83	3.56	22.16
Magelonidae	2.32	3.68	1.88	1.31	3.28	25.44
Phyllodocidae	0.00	1.32	1.86	5.28	3.23	28.68
Tanaissuidae	1.83	1.33	1.79	1.90	3.11	31.79
Groups 3 and 7A			**Average dissimilarity: 69.49%**			
Species	Group 3 Av.Abund	Group 7A Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Magelonidae	0.33	3.68	4.33	4.14	6.23	6.23
Unciolidae	0.00	2.15	2.82	3.99	4.06	10.30
Ampharetidae	2.06	0.50	2.65	0.82	3.82	14.11
Capitellidae	0.00	2.06	2.62	2.90	3.78	17.89
Nephtyidae	0.00	2.02	2.62	6.00	3.77	21.66
Paraonidae	0.33	2.30	2.52	4.13	3.63	25.29
Phoxocephalidae	0.33	2.00	2.19	2.52	3.16	28.44
Spionidae	0.97	2.65	2.18	1.84	3.14	31.58

Groups 1 and 7A			Average dissimilarity: 92.35%			
Species	Group 1 Av.Abund	Group 7A Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Magelonidae	0.00	3.68	6.42	6.97	6.95	6.95
Spionidae	0.00	2.65	4.62	4.88	5.00	11.95
Haustoriidae	0.00	2.46	4.49	2.53	4.86	16.81
Paraonidae	0.00	2.30	4.07	5.81	4.41	21.22
Unciolidae	0.00	2.15	3.81	3.96	4.13	25.35
Spirorbidae	2.06	0.00	3.69	5.25	3.99	29.34
Phoxocephalidae	0.00	2.00	3.56	4.05	3.85	33.19

D- 3. SIMPER (Similarity) analysis of Bray-Curtis cluster groups identified by the SIMPROF routine for the Buzzards Bay infaunal stations.

Group	Station			Ave. Similarity	
Group 1	**Stations included: 432**				
Group 2	**Stations included: 462**				
Group 3A	**Stations included: 414**				
Group 3B	**Stations included: 404, 407, 408, 451, 452, 453**			**Ave. Similarity: 62.06%**	
Species	**Av.Abund**	**Av.Sim**	**Sim/SD**	**Contrib%**	**Cum.%**
Nuculidae	2.34	8.49	4.29	13.67	13.67
Nephtyidae	1.98	7.53	9.93	12.13	25.81
Paraonidae	1.73	6.32	7.79	10.18	35.99
Lumbrineridae	1.63	6.21	12.36	10.00	45.99
Chaetopteridae	1.60	5.68	9.09	9.15	55.14
Cylichnidae	1.63	5.11	3.18	8.23	63.37
Tellinidae	1.35	4.86	5.16	7.83	71.20
Spionidae	1.58	4.53	4.36	7.29	78.49
Nemertea	0.93	2.64	1.35	4.25	82.74
Capitellidae	0.83	1.77	0.78	2.84	85.59
Pyramidellidae	0.76	1.75	0.77	2.82	88.40
Cirratulidae	0.77	1.58	0.78	2.54	90.94
Group 3C	**Stations included: 403, 405, 406, 409, 410, 446, 447, 448, 449, 450, 455, 456, 458, 459, 460, 463**			**Ave. Similarity: 55.20%**	
Species	**Av.Abund**	**Av.Sim**	**Sim/SD**	**Contrib%**	**Cum.%**
Lumbrineridae	2.01	3.99	4.99	7.23	7.23
Spionidae	2.16	3.99	4.13	7.22	14.45
Pinnotheridae	1.71	3.31	3.87	5.99	20.44
Paraonidae	1.83	3.17	2.05	5.74	26.18
Oligochaeta	1.92	2.96	2.19	5.36	31.54
Cirratulidae	1.70	2.93	2.35	5.30	36.84
Nemertea	1.37	2.50	2.18	4.54	41.38
Chaetopteridae	1.37	2.48	1.49	4.49	45.88
Nephtyidae	1.38	2.45	1.43	4.43	50.31
Ampeliscidae	1.58	2.37	1.54	4.29	54.60
Capitellidae	1.59	2.33	1.58	4.22	58.82
Pholoidae	1.05	1.86	1.61	3.37	62.19
Tellinidae	1.12	1.68	1.29	3.04	65.24
Terebellidae	1.10	1.67	1.24	3.03	68.27
Syllidae	1.23	1.66	1.27	3.00	71.27
Glyceridae	0.98	1.53	1.30	2.77	74.04
Nuculidae	1.04	1.31	0.86	2.37	76.41
Phyllodocidae	0.93	1.27	1.06	2.30	78.71
Pyramidellidae	1.00	1.23	0.86	2.23	80.94
Maldanidae	0.93	1.20	0.87	2.18	83.12
Callianassidae	0.88	1.12	0.89	2.04	85.15
Cylichnidae	0.78	0.95	0.61	1.73	86.88
Scalibregmatidae	0.87	0.80	0.62	1.44	88.33
Corbulidae	0.70	0.67	0.65	1.21	89.53
Columbellidae	0.79	0.65	0.64	1.19	90.72
Group 4A	**Stations included: 414**				
Group 4B	**Stations included: 411 &412**			**Ave. Similarity: 59.97%**	
Species	**Av.Abund**	**Av.Sim**	**Sim/SD**	**Contrib%**	**Cum.%**
Ampeliscidae	2.09	7.15	——	11.93	11.93
Magelonidae	1.60	6.88	——	11.48	23.41
Spionidae	1.53	6.58	——	10.97	34.37
Mactridae	1.37	5.79	——	9.65	44.03
Paraonidae	1.37	5.79	——	9.65	53.68
Phoxocephalidae	1.41	5.79	——	9.65	63.33
Haustoriidae	1.45	4.40	——	7.33	70.66
Lumbrineridae	1.00	4.40	——	7.33	78.00
Nephtyidae	1.28	4.40	——	7.33	85.33
Pharidae	1.09	4.40	——	7.33	92.67

Group	Station			Ave. Similarity	
Group 4C	Stations included: 419 &431			Ave. Similarity: 64.32%	
Species	Av.Abund	Av.Sim	Sim/SD	Contrib%	Cum.%
Capitellidae	2.98	12.78	——	19.87	19.87
Ampeliscidae	1.60	8.11	——	12.61	32.49
Cirratulidae	1.25	6.16	——	9.58	42.07
Nuculidae	1.30	6.16	——	9.58	51.65
Diastylidae	1.16	5.18	——	8.06	59.71
Mactridae	1.09	5.18	——	8.06	67.77
Nemertea	1.16	5.18	——	8.06	75.83
Nephtyidae	1.31	5.18	——	8.06	83.88
Pinnotheridae	1.00	5.18	——	8.06	91.94
Group 4D	Stations included: 433				
Group 4E	Stations included: 413, 415, 416, 418, 424, 425, 427, 428, 429 430, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444			Ave. Similarity: 57.01%	
Species	Av.Abund	Av.Sim	Sim/SD	Contrib%	Cum.%
Ampeliscidae	3.09	7.45	2.05	13.06	13.06
Nephtyidae	1.42	4.13	5.15	7.24	20.30
Paraonidae	1.48	3.89	1.94	6.82	27.12
Capitellidae	1.61	3.86	2.13	6.77	33.89
Syllidae	1.42	3.61	1.80	6.33	40.22
Spionidae	1.36	3.49	1.96	6.13	46.34
Nuculidae	1.74	3.49	1.44	6.12	52.47
Oligochaeta	1.30	2.83	1.26	4.97	57.43
Orbiniidae	1.15	2.81	1.55	4.93	62.36
Phoxocephalidae	1.23	2.77	1.25	4.86	67.22
Tellinidae	1.12	2.51	1.29	4.41	71.63
Cirratulidae	1.16	2.29	0.97	4.02	75.66
Mactridae	0.99	2.08	1.09	3.65	79.31
Magelonidae	0.95	1.96	0.94	3.44	82.75
Polygordiidae	1.04	1.79	0.75	3.14	85.89
Haustoriidae	1.01	1.69	0.82	2.96	88.84
Diastylidae	0.70	1.18	0.75	2.08	90.92

D- 4. SIMPER (Dissimilarity) analysis of Bray-Curtis cluster groups identified by SIMPROF routine for the Buzzards Bay infaunal stations.

Group			Average Dissimilarity			
Groups 3C and 3B			**Average dissimilarity: 55.93%**			
Species	Group 3C Av.Abund	Group 3B Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Oligochaeta	1.92	0.20	2.39	2.06	4.27	4.27
Ampeliscidae	1.58	0.17	2.02	1.80	3.60	7.87
Nuculidae	1.04	2.34	1.95	1.36	3.49	11.36
Pinnotheridae	1.71	0.60	1.67	1.60	2.98	14.34
Terebellidae	1.10	0.00	1.56	1.76	2.79	17.13
Syllidae	1.23	0.17	1.53	1.59	2.74	19.87
Pholoidae	1.05	0.00	1.52	2.23	2.71	22.59
Cirratulidae	1.70	0.77	1.45	1.58	2.59	25.17
Capitellidae	1.59	0.83	1.40	1.44	2.50	27.67
Glyceridae	0.98	0.00	1.37	1.97	2.45	30.12
Cylichnidae	0.78	1.63	1.37	1.59	2.44	32.57
Spionidae	2.16	1.58	1.29	1.41	2.30	34.87
Phyllodocidae	0.93	0.00	1.25	1.59	2.24	37.11
Callianassidae	0.88	0.00	1.24	1.37	2.22	39.33
Scalibregmatidae	0.87	0.00	1.16	1.03	2.07	41.39
Maldanidae	0.93	0.69	1.08	1.10	1.93	43.33
Pyramidellidae	1.00	0.76	1.07	1.22	1.92	45.24
Columbellidae	0.79	0.00	1.00	1.07	1.80	47.04
Corbulidae	0.70	0.00	0.92	1.10	1.65	48.69
Nemertea	1.37	0.93	0.87	1.16	1.55	50.24
Groups 3C and 4B			**Average dissimilarity: 68.21%**			
Species	Group 3C Av.Abund	Group 4B Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Pinnotheridae	1.71	0.00	2.54	3.94	3.72	3.72
Cirratulidae	1.70	0.00	2.42	3.21	3.55	7.27
Magelonidae	0.06	1.60	2.34	3.75	3.43	10.70
Capitellidae	1.59	0.00	2.22	2.17	3.26	13.96
Haustoriidae	0.00	1.45	2.21	2.49	3.23	17.20
Nemertea	1.37	0.00	2.02	2.82	2.96	20.16
Phoxocephalidae	0.14	1.41	1.95	2.67	2.85	23.01
Mactridae	0.13	1.37	1.93	2.82	2.83	25.84
Oligochaeta	1.92	0.81	1.91	1.42	2.80	28.64
Syllidae	1.23	0.00	1.72	1.77	2.53	31.16
Pharidae	0.00	1.09	1.64	5.12	2.41	33.57
Nuculidae	1.04	0.00	1.52	1.31	2.22	35.79
Lumbrineridae	2.01	1.00	1.48	2.84	2.17	37.97
Chaetopteridae	1.37	0.59	1.46	1.28	2.14	40.11
Maldanidae	0.93	0.00	1.37	1.32	2.00	42.11
Cylichnidae	0.78	0.00	1.33	1.00	1.95	44.06
Phyllodocidae	0.93	0.00	1.30	1.57	1.90	45.96
Ampeliscidae	1.58	2.09	1.29	1.08	1.89	47.85
Callianassidae	0.88	0.00	1.29	1.36	1.89	49.74
Tanaissuidae	0.00	0.81	1.27	0.95	1.86	51.60
Groups 3B and 4B			**Average dissimilarity: 68.54%**			
Species	Group 3B Av.Abund	Group 4B Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Nuculidae	2.34	0.00	4.94	4.65	7.20	7.20
Ampeliscidae	0.17	2.09	3.96	3.41	5.78	12.98
Cylichnidae	1.63	0.00	3.38	3.11	4.93	17.91
Magelonidae	0.00	1.60	3.34	9.77	4.88	22.79
Haustoriidae	0.00	1.45	3.08	2.65	4.49	27.28
Phoxocephalidae	0.00	1.41	2.93	13.06	4.28	31.56
Mactridae	0.00	1.37	2.86	8.70	4.18	35.74
Pharidae	0.00	1.09	2.28	11.76	3.33	39.07
haetopteridae	1.60	0.59	2.14	1.46	3.12	42.19
Nemertea	0.93	0.00	1.92	2.10	2.79	44.98
Tanaissuidae	0.00	0.81	1.78	0.95	2.60	47.58
Capitellidae	0.83	0.00	1.73	1.33	2.52	50.11

Groups 3C and 4E			**Average dissimilarity: 59.73%**			
Species	Group 3C Av.Abund	Group 4E Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Ampeliscidae	1.58	3.09	2.43	1.48	4.06	4.06
Pinnotheridae	1.71	0.21	1.99	2.48	3.33	7.40
Lumbrineridae	2.01	0.77	1.76	1.56	2.95	10.35
Chaetopteridae	1.37	0.16	1.74	1.74	2.91	13.26
Phoxocephalidae	0.14	1.23	1.56	1.55	2.62	15.88
Nuculidae	1.04	1.74	1.52	1.05	2.54	18.42
Terebellidae	1.10	0.00	1.45	1.76	2.42	20.84
Orbiniidae	0.23	1.15	1.39	1.67	2.32	23.17
Haustoriidae	0.00	1.01	1.35	1.13	2.26	25.42
Oligochaeta	1.92	1.30	1.32	1.27	2.21	27.64
Pholoidae	1.05	0.10	1.32	1.90	2.21	29.84
Magelonidae	0.06	0.95	1.26	1.35	2.10	31.95
Mactridae	0.13	0.99	1.24	1.44	2.08	34.03
Polygordiidae	0.66	1.04	1.22	1.18	2.05	36.08
Pyramidellidae	1.00	0.35	1.20	1.22	2.01	38.09
Capitellidae	1.59	1.61	1.14	1.18	1.92	40.01
Spionidae	2.16	1.36	1.14	1.09	1.91	41.92
Cylichnidae	0.78	0.16	1.13	1.02	1.89	43.81
Maldanidae	0.93	0.27	1.11	1.26	1.86	45.67
Callianassidae	0.88	0.10	1.11	1.32	1.86	47.53
Cirratulidae	1.70	1.16	1.09	1.07	1.83	49.36
Nemertea	1.37	0.70	1.08	1.24	1.80	51.17
Groups 3B and 4E			**Average dissimilarity: 63.00%**			
Species	Group 3B Av.Abund	Group 4E Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Ampeliscidae	0.17	3.09	5.15	2.42	8.17	8.17
Cylichnidae	1.63	0.16	2.65	2.32	4.21	12.38
Chaetopteridae	1.60	0.16	2.61	2.93	4.15	16.53
Syllidae	0.17	1.42	2.35	1.92	3.73	20.26
Phoxocephalidae	0.00	1.23	2.22	1.76	3.52	23.77
Oligochaeta	0.20	1.30	2.11	1.58	3.35	27.13
Nuculidae	2.34	1.74	2.10	1.46	3.33	30.46
Orbiniidae	0.00	1.15	2.05	2.20	3.25	33.71
Lumbrineridae	1.63	0.77	1.86	1.49	2.95	36.66
Polygordiidae	0.00	1.04	1.84	1.22	2.93	39.59
Haustoriidae	0.00	1.01	1.81	1.15	2.87	42.46
Mactridae	0.00	0.99	1.74	1.60	2.77	45.23
Magelonidae	0.00	0.95	1.72	1.42	2.73	47.96
Capitellidae	0.83	1.61	1.70	1.26	2.69	50.65
Groups 4B and 4E			**Average dissimilarity: 53.00%**			
Species	Group 4B Av.Abund	Group 4E Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Nuculidae	0.00	1.74	3.17	1.55	5.98	5.98
Capitellidae	0.00	1.61	2.99	2.22	5.64	11.63
Syllidae	0.00	1.42	2.69	2.33	5.08	16.71
Ampeliscidae	2.09	3.09	2.60	1.63	4.90	21.61
Orbiniidae	0.00	1.15	2.14	2.20	4.05	25.65
Cirratulidae	0.00	1.16	2.09	1.49	3.95	29.61
Pharidae	1.09	0.07	2.01	5.19	3.79	33.40
Oligochaeta	0.81	1.30	1.79	1.23	3.39	36.78
Polygordiidae	0.59	1.04	1.68	1.25	3.17	39.95
Haustoriidae	1.45	1.01	1.65	1.32	3.12	43.07
Tanaissuidae	0.81	0.33	1.61	1.06	3.03	46.10
Lumbrineridae	1.00	0.77	1.37	1.63	2.59	48.69
Nemertea	0.00	0.70	1.28	1.13	2.42	51.12

Groups 3C and 3A			**Average dissimilarity: 56.98%**			
Species	Group 3C Av.Abund	Group 3A Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Nuculidae	1.04	4.47	3.95	3.22	6.93	6.93
Spionidae	2.16	0.00	2.44	3.28	4.28	11.21
Pinnotheridae	1.71	0.00	1.93	4.25	3.39	14.61
Cirratulidae	1.70	0.00	1.86	3.19	3.27	17.88
Anthozoa	0.26	1.82	1.76	3.19	3.09	20.97
Yoldiidae	0.06	1.32	1.43	4.05	2.50	23.47
Photidae	0.06	1.19	1.31	3.70	2.29	25.76
Columbellidae	0.79	1.78	1.30	1.48	2.28	28.04
Tellinidae	1.12	0.00	1.26	1.73	2.20	30.25
Terebellidae	1.10	0.00	1.24	1.76	2.17	32.41
Ampithoidae	0.00	1.00	1.14	6.78	2.01	34.42
Pyramidellidae	1.00	0.00	1.14	1.26	2.00	36.42
Arcidae	0.30	1.19	1.10	1.81	1.94	38.35
Epialtidae	0.06	1.00	1.09	3.35	1.91	40.27
Magelonidae	0.06	1.00	1.09	3.35	1.91	42.18
Onuphidae	0.06	1.00	1.09	3.35	1.91	44.09
Glyceridae	0.98	0.00	1.09	1.93	1.91	46.00
Flabelligeridae	0.06	1.00	1.08	3.25	1.89	47.89
Montacutidae	0.06	1.00	1.07	3.23	1.88	49.77
Ischyroceridae	0.06	1.00	1.06	3.24	1.87	51.64
Groups 3B and 3A			**Average dissimilarity: 57.31%**			
Species	Group 3B Av.Abund	Group 3A Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Nuculidae	2.34	4.47	3.10	7.80	5.41	5.41
Columbellidae	0.00	1.78	2.60	17.81	4.54	9.95
Pholoidae	0.00	1.63	2.38	17.81	4.15	14.10
Spionidae	1.58	0.00	2.28	2.31	3.98	18.08
Anthozoa	0.33	1.82	2.15	3.03	3.76	21.84
Tellinidae	1.35	0.00	1.97	5.63	3.44	25.27
Ampeliscidae	0.17	1.50	1.94	3.25	3.38	28.65
Oligochaeta	0.20	1.41	1.78	2.46	3.11	31.76
Arcidae	0.00	1.19	1.74	17.81	3.03	34.80
Phyllodocidae	0.00	1.19	1.74	17.81	3.03	37.83
Syllidae	0.17	1.32	1.71	2.69	2.98	40.81
Yoldiidae	0.17	1.32	1.67	2.81	2.92	43.72
Photidae	0.17	1.19	1.52	2.43	2.65	46.37
Caprellidae	0.17	1.19	1.50	2.46	2.62	48.99
Ampithoidae	0.00	1.00	1.46	17.81	2.55	51.54
Groups 4B and 3A			**Average dissimilarity: 71.58%**			
Species	Group 4B Av.Abund	Group 3A Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Nuculidae	0.00	4.47	6.79	20.72	9.49	9.49
Anthozoa	0.00	1.82	2.77	20.72	3.86	13.35
Capitellidae	0.00	1.78	2.70	20.72	3.77	17.13
Columbellidae	0.00	1.78	2.70	20.72	3.77	20.90
Spionidae	1.53	0.00	2.33	12.43	3.25	24.15
Haustoriidae	1.45	0.00	2.22	2.08	3.11	27.25
Nemertea	0.00	1.41	2.15	20.72	3.00	30.25
Phoxocephalidae	1.41	0.00	2.13	23.80	2.98	33.23
Maldanidae	0.00	1.32	2.00	20.72	2.79	36.02
Syllidae	0.00	1.32	2.00	20.72	2.79	38.81
Yoldiidae	0.00	1.32	2.00	20.72	2.79	41.60
Tellinidae	1.25	0.00	1.88	4.27	2.63	44.23
Arcidae	0.00	1.19	1.81	20.72	2.52	46.75
Caprellidae	0.00	1.19	1.81	20.72	2.52	49.27
Photidae	0.00	1.19	1.81	20.72	2.52	51.80

Groups 4E and 3A			**Average dissimilarity: 62.77%**			
Species	Group 4E Av.Abund	Group 3A Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Nuculidae	1.74	4.47	3.76	2.13	6.00	6.00
Anthozoa	0.05	1.82	2.42	6.01	3.85	9.84
Columbellidae	0.00	1.78	2.41	10.78	3.84	13.68
Ampeliscidae	3.09	1.50	2.34	1.84	3.73	17.41
Chaetopteridae	0.16	1.68	2.08	3.31	3.32	20.73
Pholoidae	0.10	1.63	2.08	4.10	3.31	24.04
Spionidae	1.36	0.00	1.82	2.68	2.89	26.93
Phoxocephalidae	1.23	0.00	1.67	1.75	2.66	29.59
Arcidae	0.00	1.19	1.61	10.78	2.57	32.16
Caprellidae	0.00	1.19	1.61	10.78	2.57	34.73
Yoldiidae	0.15	1.32	1.58	2.91	2.51	37.24
Photidae	0.05	1.19	1.56	4.62	2.48	39.72
Orbiniidae	1.15	0.00	1.55	2.18	2.46	42.18
Cirratulidae	1.16	0.00	1.52	1.49	2.42	44.60
Tellinidae	1.12	0.00	1.49	1.86	2.37	46.97
Maldanidae	0.27	1.32	1.44	2.08	2.30	49.27
Polygordiidae	1.04	0.00	1.39	1.20	2.22	51.49
Groups 3C and 4A			**Average dissimilarity: 80.24%**			
Species	Group 3C Av.Abund	Group 4A Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Spionidae	2.16	0.00	3.68	3.12	4.59	4.59
Lumbrineridae	2.01	0.00	3.43	4.59	4.28	8.86
Paraonidae	1.83	0.00	3.13	2.42	3.89	12.76
Oligochaeta	1.92	0.00	3.09	2.47	3.85	16.61
Pinnotheridae	1.71	0.00	2.92	3.70	3.64	20.25
Chaetopteridae	1.37	0.00	2.46	1.90	3.06	23.31
Nemertea	1.37	0.00	2.32	2.72	2.89	26.20
Haustoriidae	0.00	1.32	2.28	4.56	2.84	29.04
Syllidae	1.23	0.00	1.97	1.74	2.46	31.50
Terebellidae	1.10	0.00	1.86	1.69	2.32	33.82
Pholoidae	1.05	0.00	1.82	2.13	2.27	36.09
Ampeliscidae	1.58	2.40	1.74	1.13	2.17	38.26
Chaetiliidae	0.00	1.00	1.73	4.56	2.16	40.42
Cirolanidae	0.00	1.00	1.73	4.56	2.16	42.58
Nuculidae	1.04	0.00	1.73	1.28	2.16	44.74
Pyramidellidae	1.00	0.00	1.73	1.26	2.15	46.90
Glyceridae	0.98	0.00	1.63	1.90	2.04	48.93
Harrimaniidae	0.06	1.00	1.61	2.83	2.00	50.94
Groups 3B and 4A			**Average dissimilarity: 78.81%**			
Species	Group 3B Av.Abund	Group 4A Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Nuculidae	2.34	0.00	6.01	4.33	7.63	7.63
Ampeliscidae	0.17	2.40	5.66	5.13	7.18	14.80
Paraonidae	1.73	0.00	4.40	5.73	5.59	20.39
Lumbrineridae	1.63	0.00	4.13	11.63	5.24	25.63
Cylichnidae	1.63	0.00	4.10	3.00	5.21	30.84
Chaetopteridae	1.60	0.00	4.03	8.52	5.12	35.96
Spionidae	1.58	0.00	3.93	2.43	4.99	40.94
Haustoriidae	0.00	1.32	3.35	10.72	4.25	45.19
Chaetiliidae	0.00	1.00	2.54	10.72	3.23	48.42
Cirolanidae	0.00	1.00	2.54	10.72	3.23	51.65
Groups 4B and 4A			**Average dissimilarity: 59.86%**			
Species	Group 4B Av.Abund	Group 4A Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Magelonidae	1.60	0.00	4.34	8.83	7.25	7.25
Spionidae	1.53	0.00	4.16	8.46	6.95	14.21
Paraonidae	1.37	0.00	3.72	7.32	6.21	20.42
Pharidae	1.09	0.00	2.96	27.56	4.94	25.36
Capitellidae	0.00	1.00	2.72	11.61	4.54	29.90
Chaetiliidae	0.00	1.00	2.72	11.61	4.54	34.44
Cirolanidae	0.00	1.00	2.72	11.61	4.54	38.97
Cirratulidae	0.00	1.00	2.72	11.61	4.54	43.51
Harrimaniidae	0.00	1.00	2.72	11.61	4.54	48.05
Lumbrineridae	1.00	0.00	2.72	11.61	4.54	52.59

Groups 4E and 4A			**Average dissimilarity: 59.96%**			
Species	Group 4E Av.Abund	Group 4A Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Nuculidae	1.74	0.00	3.76	1.54	6.26	6.26
Paraonidae	1.48	0.00	3.26	2.66	5.43	11.69
Syllidae	1.42	0.00	3.21	2.29	5.36	17.05
Spionidae	1.36	0.00	2.99	2.67	4.98	22.04
Oligochaeta	1.30	0.00	2.88	1.72	4.80	26.84
Ampeliscidae	3.09	2.40	2.64	1.72	4.40	31.25
Orbiniidae	1.15	0.00	2.55	2.17	4.26	35.50
Polygordiidae	1.04	0.00	2.30	1.19	3.84	39.34
Cirolanidae	0.00	1.00	2.25	6.67	3.75	43.09
Harrimaniidae	0.00	1.00	2.25	6.67	3.75	46.85
Magelonidae	0.95	0.00	2.16	1.38	3.60	50.45
Groups 3A and 4A			**Average dissimilarity: 82.61%**			
Species	Group 3A Av.Abund	Group 4A Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Nuculidae	4.47	0.00	7.79	Undefined	9.43	9.43
Anthozoa	1.82	0.00	3.17	Undefined	3.84	13.27
Paraonidae	1.82	0.00	3.17	Undefined	3.84	17.11
Columbellidae	1.78	0.00	3.10	Undefined	3.75	20.86
Chaetopteridae	1.68	0.00	2.93	Undefined	3.55	24.41
Pholoidae	1.63	0.00	2.83	Undefined	3.43	27.84
Lumbrineridae	1.57	0.00	2.73	Undefined	3.30	31.14
Nemertea	1.41	0.00	2.46	Undefined	2.98	34.12
Oligochaeta	1.41	0.00	2.46	Undefined	2.98	37.10
Haustoriidae	0.00	1.32	2.29	Undefined	2.77	39.88
Maldanidae	1.32	0.00	2.29	Undefined	2.77	42.65
Syllidae	1.32	0.00	2.29	Undefined	2.77	45.43
Yoldiidae	1.32	0.00	2.29	Undefined	2.77	48.20
Arcidae	1.19	0.00	2.07	Undefined	2.51	50.71
Groups 3C and 4C			**Average dissimilarity: 64.51%**			
Species	Group 3C Av.Abund	Group 4C Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Spionidae	2.16	0.00	3.38	3.20	5.24	5.24
Oligochaeta	1.92	0.00	2.85	2.49	4.42	9.66
Capitellidae	1.59	2.98	2.43	1.23	3.76	13.42
Lumbrineridae	2.01	0.50	2.38	2.22	3.69	17.12
Chaetopteridae	1.37	0.00	2.25	1.96	3.48	20.60
Paraonidae	1.83	0.66	2.01	1.45	3.12	23.72
Terebellidae	1.10	0.00	1.71	1.74	2.65	26.37
Pholoidae	1.05	0.00	1.67	2.19	2.58	28.96
Mactridae	0.13	1.09	1.61	2.39	2.50	31.45
Pyramidellidae	1.00	0.00	1.58	1.28	2.46	33.91
Glyceridae	0.98	0.00	1.50	1.94	2.33	36.24
Cylichnidae	0.78	0.00	1.41	1.00	2.19	38.43
Syllidae	1.23	0.50	1.37	1.32	2.12	40.54
Phyllodocidae	0.93	0.00	1.37	1.56	2.12	42.66
Callianassidae	0.88	0.00	1.36	1.36	2.10	44.76
Scalibregmatidae	0.87	0.00	1.26	1.02	1.95	46.72
Diastylidae	0.39	1.16	1.25	1.41	1.94	48.66
Tellinidae	1.12	0.59	1.23	1.14	1.90	50.56
Groups 3B and 4C			**Average dissimilarity: 63.95%**			
Species	Group 3B Av.Abund	Group 4C Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Capitellidae	0.83	2.98	4.91	2.37	7.67	7.67
Cylichnidae	1.63	0.00	3.64	3.11	5.69	13.36
Chaetopteridae	1.60	0.00	3.58	8.13	5.60	18.96
Spionidae	1.58	0.00	3.49	2.49	5.46	24.42
Ampeliscidae	0.17	1.60	3.21	3.49	5.02	29.45
Lumbrineridae	1.63	0.50	2.59	1.96	4.04	33.49
Paraonidae	1.73	0.66	2.49	1.41	3.89	37.38
Mactridae	0.00	1.09	2.48	6.27	3.88	41.26
Nuculidae	2.34	1.30	2.37	2.54	3.71	44.97
Polygordiidae	0.00	1.00	2.26	10.73	3.53	48.50
Diastylidae	0.17	1.16	2.22	2.24	3.48	51.98

Groups 4B and 4C			**Average dissimilarity: 69.13%**			
Species	Group 4B Av.Abund	Group 4C Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Capitellidae	0.00	2.98	7.18	3.85	10.38	10.38
Magelonidae	1.60	0.00	3.82	9.90	5.53	15.91
Spionidae	1.53	0.00	3.66	9.57	5.30	21.21
Phoxocephalidae	1.41	0.00	3.35	17.75	4.85	26.06
Nuculidae	0.00	1.30	3.13	5.99	4.52	30.58
Cirratulidae	0.00	1.25	3.00	7.71	4.34	34.92
Diastylidae	0.00	1.16	2.79	4.53	4.03	38.95
Nemertea	0.00	1.16	2.79	4.53	4.03	42.99
Pharidae	1.09	0.00	2.61	14.97	3.77	46.76
Pinnotheridae	0.00	1.00	2.39	12.00	3.46	50.22
Groups 4E and 4C			**Average dissimilarity: 51.93%**			
Species	Group 4E Av.Abund	Group 4C Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Ampeliscidae	3.09	1.60	3.29	1.89	6.34	6.34
Capitellidae	1.61	2.98	2.90	1.51	5.59	11.94
Spionidae	1.36	0.00	2.69	2.69	5.18	17.11
Oligochaeta	1.30	0.00	2.59	1.74	4.98	22.09
Phoxocephalidae	1.23	0.00	2.49	1.75	4.79	26.88
Syllidae	1.42	0.50	2.08	1.48	4.01	30.88
Magelonidae	0.95	0.00	1.93	1.41	3.73	34.61
Paraonidae	1.48	0.66	1.92	1.30	3.70	38.31
Haustoriidae	1.01	0.59	1.71	1.08	3.29	41.60
Pinnotheridae	0.21	1.00	1.69	2.23	3.25	44.85
Nuculidae	1.74	1.30	1.66	0.94	3.19	48.04
Polygordiidae	1.04	1.00	1.59	2.63	3.07	51.11
Groups 3A and 4C			**Average dissimilarity: 65.92%**			
Species	Group 3A Av.Abund	Group 4C Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Nuculidae	4.47	1.30	5.08	205.00	7.70	7.70
Anthozoa	1.82	0.00	2.92	22.09	4.43	12.13
Columbellidae	1.78	0.00	2.85	22.09	4.32	16.45
Chaetopteridae	1.68	0.00	2.69	22.09	4.09	20.53
Pholoidae	1.63	0.00	2.61	22.09	3.95	24.49
Oligochaeta	1.41	0.00	2.27	22.09	3.44	27.92
Cirratulidae	0.00	1.25	2.01	8.57	3.05	30.97
Capitellidae	1.78	2.98	1.95	1.56	2.95	33.92
Arcidae	1.19	0.00	1.90	22.09	2.89	36.81
Caprellidae	1.19	0.00	1.90	22.09	2.89	39.70
Photidae	1.19	0.00	1.90	22.09	2.89	42.59
Phyllodocidae	1.19	0.00	1.90	22.09	2.89	45.48
Paraonidae	1.82	0.66	1.90	1.20	2.88	48.36
Diastylidae	0.00	1.16	1.86	4.22	2.83	51.19
Groups 4A and 4C			**Average dissimilarity: 55.55%**			
Species	Group 4A Av.Abund	Group 4C Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Capitellidae	1.00	2.98	6.01	2.26	10.83	10.83
Nuculidae	0.00	1.30	3.92	4.86	7.06	17.88
Diastylidae	0.00	1.16	3.50	3.63	6.30	24.18
Nemertea	0.00	1.16	3.50	3.63	6.30	30.47
Cirolanidae	1.00	0.00	3.00	11.84	5.39	35.87
Harrimaniidae	1.00	0.00	3.00	11.84	5.39	41.26
Phoxocephalidae	1.00	0.00	3.00	11.84	5.39	46.65
Pinnotheridae	0.00	1.00	3.00	11.84	5.39	52.05

Groups 3C and 1			**Average dissimilarity: 83.26%**			
Species	Group 3C Av.Abund	Group 1 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Spionidae	2.16	0.00	4.33	2.99	5.20	5.20
Lumbrineridae	2.01	0.00	4.03	4.21	4.85	10.04
Oligochaeta	1.92	0.00	3.59	2.50	4.31	14.36
Pinnotheridae	1.71	0.00	3.43	3.42	4.12	18.47
Cirratulidae	1.70	0.00	3.22	3.08	3.87	22.35
Nephtyidae	1.38	0.00	2.97	1.69	3.57	25.91
Chaetopteridae	1.37	0.00	2.92	1.82	3.51	29.42
Nemertea	1.37	0.00	2.72	2.62	3.26	32.68
Tellinidae	1.12	0.00	2.22	1.64	2.66	35.35
Terebellidae	1.10	0.00	2.18	1.65	2.62	37.97
Pholoidae	1.05	0.00	2.15	2.04	2.58	40.54
Pyramidellidae	1.00	0.00	2.04	1.25	2.45	42.99
Nuculidae	1.04	0.00	2.02	1.27	2.43	45.42
Glyceridae	0.98	0.00	1.92	1.87	2.30	47.73
Mactridae	0.13	1.00	1.89	2.22	2.27	50.00
Groups 3B and 1			**Average dissimilarity: 85.12%**			
Species	Group 3B Av.Abund	Group 1 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Nuculidae	2.34	0.00	7.66	4.03	9.00	9.00
Nephtyidae	1.98	0.00	6.40	8.39	7.52	16.53
Lumbrineridae	1.63	0.00	5.25	9.83	6.17	22.69
Cylichnidae	1.63	0.00	5.21	2.97	6.12	28.81
Chaetopteridae	1.60	0.00	5.12	8.53	6.01	34.83
Spionidae	1.58	0.00	4.97	2.50	5.83	40.66
Tellinidae	1.35	0.00	4.37	4.61	5.14	45.80
Syllidae	0.17	1.19	3.42	2.35	4.02	49.82
Ampeliscidae	0.17	1.19	3.28	2.41	3.85	53.67
Groups 4B and 1			**Average dissimilarity: 76.25%**			
Species	Group 4B Av.Abund	Group 1 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Magelonidae	1.60	0.00	5.62	7.24	7.37	7.37
Spionidae	1.53	0.00	5.39	6.99	7.07	14.44
Haustoriidae	1.45	0.00	5.22	1.86	6.85	21.28
Phoxocephalidae	1.41	0.00	4.92	47.39	6.45	27.73
Capitellidae	0.00	1.32	4.63	8.99	6.07	33.80
Nephtyidae	1.28	0.00	4.43	4.90	5.81	39.61
Tellinidae	1.25	0.00	4.32	5.81	5.66	45.27
Syllidae	0.00	1.19	4.18	8.99	5.48	50.76
Groups 4E and 1			**Average dissimilarity: 71.28%**			
Species	Group 4E Av.Abund	Group 1 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Ampeliscidae	3.09	1.19	5.32	1.99	7.47	7.47
Nuculidae	1.74	0.00	4.60	1.54	6.46	13.92
Nephtyidae	1.42	0.00	3.91	4.79	5.49	19.41
Spionidae	1.36	0.00	3.68	2.63	5.16	24.57
Oligochaeta	1.30	0.00	3.55	1.71	4.98	29.55
Phoxocephalidae	1.23	0.00	3.43	1.69	4.81	34.36
Orbiniidae	1.15	0.00	3.15	2.15	4.42	38.78
Cirratulidae	1.16	0.00	3.04	1.44	4.26	43.04
Tellinidae	1.12	0.00	3.01	1.80	4.23	47.27
Polygordiidae	1.04	0.00	2.84	1.19	3.98	51.25
Groups 3A and 1			**Average dissimilarity: 76.03%**			
Species	Group 3A Av.Abund	Group 1 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Nuculidae	4.47	0.00	9.12	Undefined	11.99	11.99
Anthozoa	1.82	0.00	3.71	Undefined	4.88	16.87
Columbellidae	1.78	0.00	3.62	Undefined	4.77	21.64
Chaetopteridae	1.68	0.00	3.43	Undefined	4.51	26.14
Nephtyidae	1.63	0.00	3.31	Undefined	4.36	30.50
Pholoidae	1.63	0.00	3.31	Undefined	4.36	34.86
Lumbrineridae	1.57	0.00	3.19	Undefined	4.19	39.05
Nemertea	1.41	0.00	2.88	Undefined	3.79	42.84
Oligochaeta	1.41	0.00	2.88	Undefined	3.79	46.63
Maldanidae	1.32	0.00	2.68	Undefined	3.53	50.16

Groups 4A and 1			**Average dissimilarity: 68.25%**			
Species	Group 4A Av.Abund	Group 1 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Nephtyidae	1.50	0.00	7.44	Undefined	10.90	10.90
Haustoriidae	1.32	0.00	6.55	Undefined	9.60	20.50
Ampeliscidae	2.40	1.19	6.01	Undefined	8.81	29.31
Paraonidae	0.00	1.19	5.92	Undefined	8.67	37.98
Syllidae	0.00	1.19	5.92	Undefined	8.67	46.65
Chaetiliidae	1.00	0.00	4.98	Undefined	7.29	53.94
Groups 4C and 1			**Average dissimilarity: 63.92%**			
Species	Group 4C Av.Abund	Group 1 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Capitellidae	2.98	1.32	6.80	1.87	10.64	10.64
Nephtyidae	1.31	0.00	5.35	2.27	8.37	19.01
Nuculidae	1.30	0.00	5.24	4.29	8.20	27.20
Cirratulidae	1.25	0.00	5.03	5.46	7.86	35.07
Diastylidae	1.16	0.00	4.68	3.31	7.32	42.39
Nemertea	1.16	0.00	4.68	3.31	7.32	49.71
Pinnotheridae	1.00	0.00	4.00	8.90	6.25	55.96
Groups 3C and 4D			**Average dissimilarity: 70.60%**			
Species	Group 3C Av.Abund	Group 4D Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Ampeliscidae	1.58	4.70	5.00	2.43	7.08	7.08
Lumbrineridae	2.01	0.00	3.10	4.80	4.39	11.47
Oligochaeta	1.92	0.00	2.81	2.46	3.98	15.45
Pinnotheridae	1.71	0.00	2.64	3.86	3.73	19.19
Cirratulidae	1.70	0.00	2.51	3.17	3.56	22.75
Mactridae	0.13	1.57	2.32	3.01	3.28	26.03
Capitellidae	1.59	0.00	2.31	2.14	3.27	29.29
Phoxocephalidae	0.14	1.57	2.28	2.78	3.23	32.52
Chaetopteridae	1.37	0.00	2.21	1.94	3.13	35.65
Syllidae	1.23	0.00	1.79	1.75	2.53	38.19
Terebellidae	1.10	0.00	1.68	1.71	2.38	40.57
Orbiniidae	0.23	1.19	1.65	2.29	2.34	42.90
Pholoidae	1.05	0.00	1.64	2.17	2.32	45.23
Calappidae	0.00	1.00	1.56	5.03	2.22	47.45
Glyceridae	0.98	0.00	1.48	1.92	2.09	49.54
Spionidae	2.16	1.19	1.47	1.49	2.08	51.61
Groups 3B and 4D			**Average dissimilarity: 66.47%**			
Species	Group 3B Av.Abund	Group 4D Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Ampeliscidae	0.17	4.70	9.98	8.99	15.02	15.02
Lumbrineridae	1.63	0.00	3.58	12.68	5.39	20.41
Cylichnidae	1.63	0.00	3.56	3.00	5.35	25.76
Chaetopteridae	1.60	0.00	3.50	8.36	5.27	31.03
Mactridae	0.00	1.57	3.45	12.19	5.19	36.22
Phoxocephalidae	0.00	1.57	3.45	12.19	5.19	41.42
Nuculidae	2.34	1.00	3.00	3.02	4.51	45.92
Orbiniidae	0.00	1.19	2.62	12.19	3.95	49.87
Calappidae	0.00	1.00	2.21	12.19	3.32	53.19
Groups 4B and 4D			**Average dissimilarity: 53.40%**			
Species	Group 4B Av.Abund	Group 4D Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Ampeliscidae	2.09	4.70	6.16	3.13	11.53	11.53
Magelonidae	1.60	0.00	3.73	9.88	6.98	18.52
Haustoriidae	1.45	0.00	3.44	1.98	6.44	24.96
Orbiniidae	0.00	1.19	2.78	13.50	5.20	30.15
Pharidae	1.09	0.00	2.54	20.67	4.76	34.92
Calappidae	0.00	1.00	2.33	13.50	4.37	39.29
Columbellidae	0.00	1.00	2.33	13.50	4.37	43.66
Corophiidae	0.00	1.00	2.33	13.50	4.37	48.03
Lumbrineridae	1.00	0.00	2.33	13.50	4.37	52.40

Groups 4E and 4D			**Average dissimilarity: 51.38%**			
Species	Group 4E Av.Abund	Group 4D Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Ampeliscidae	3.09	4.70	3.45	1.33	6.71	6.71
Capitellidae	1.61	0.00	3.14	2.20	6.10	12.82
Syllidae	1.42	0.00	2.82	2.31	5.50	18.31
Oligochaeta	1.30	0.00	2.54	1.73	4.93	23.25
Cirratulidae	1.16	0.00	2.19	1.47	4.27	27.51
Polygordiidae	1.04	0.00	2.03	1.20	3.94	31.46
Haustoriidae	1.01	0.00	1.99	1.13	3.87	35.32
Columbellidae	0.00	1.00	1.98	7.53	3.85	39.17
Nuculidae	1.74	1.00	1.98	1.17	3.85	43.02
Magelonidae	0.95	0.00	1.89	1.39	3.69	46.71
Calappidae	0.05	1.00	1.88	3.73	3.66	50.36
Groups 3A and 4D			**Average dissimilarity: 74.77%**			
Species	Group 3A Av.Abund	Group 4D Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Nuculidae	4.47	1.00	5.48	Undefined	7.33	7.33
Ampeliscidae	1.50	4.70	5.05	Undefined	6.76	14.09
Anthozoa	1.82	0.00	2.87	Undefined	3.84	17.93
Capitellidae	1.78	0.00	2.80	Undefined	3.75	21.68
Chaetopteridae	1.68	0.00	2.65	Undefined	3.55	25.22
Pholoidae	1.63	0.00	2.56	Undefined	3.43	28.65
Lumbrineridae	1.57	0.00	2.47	Undefined	3.30	31.95
Phoxocephalidae	0.00	1.57	2.47	Undefined	3.30	35.25
Oligochaeta	1.41	0.00	2.23	Undefined	2.98	38.24
Maldanidae	1.32	0.00	2.08	Undefined	2.78	41.01
Syllidae	1.32	0.00	2.08	Undefined	2.78	43.79
Tellinidae	0.00	1.32	2.08	Undefined	2.78	46.56
Yoldiidae	1.32	0.00	2.08	Undefined	2.78	49.34
Arcidae	1.19	0.00	1.88	Undefined	2.51	51.85
Groups 4A and 4D			**Average dissimilarity: 61.00%**			
Species	Group 4A Av.Abund	Group 4D Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Ampeliscidae	2.40	4.70	6.69	Undefined	10.97	10.97
Haustoriidae	1.32	0.00	3.82	Undefined	6.27	17.23
Orbiniidae	0.00	1.19	3.45	Undefined	5.66	22.90
Paraonidae	0.00	1.19	3.45	Undefined	5.66	28.56
Pyramidellidae	0.00	1.19	3.45	Undefined	5.66	34.22
Spionidae	0.00	1.19	3.45	Undefined	5.66	39.88
Calappidae	0.00	1.00	2.90	Undefined	4.76	44.64
Capitellidae	1.00	0.00	2.90	Undefined	4.76	49.41
Chaetiliidae	1.00	0.00	2.90	Undefined	4.76	54.17
Groups 4C and 4D			**Average dissimilarity: 61.65%**			
Species	Group 4C Av.Abund	Group 4D Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Ampeliscidae	1.60	4.70	7.87	17.36	12.77	12.77
Capitellidae	2.98	0.00	7.62	3.21	12.36	25.13
Phoxocephalidae	0.00	1.57	3.97	13.97	6.44	31.57
Cirratulidae	1.25	0.00	3.19	7.00	5.17	36.74
Pyramidellidae	0.00	1.19	3.02	13.97	4.89	41.63
Spionidae	0.00	1.19	3.02	13.97	4.89	46.53
Diastylidae	1.16	0.00	2.96	3.81	4.80	51.32
Groups 1 and 4D			**Average dissimilarity: 74.11%**			
Species	Group 1 Av.Abund	Group 4D Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Ampeliscidae	1.19	4.70	13.45	Undefined	18.15	18.15
Phoxocephalidae	0.00	1.57	6.00	Undefined	8.09	26.24
Capitellidae	1.32	0.00	5.04	Undefined	6.80	33.04
Nephtyidae	0.00	1.32	5.04	Undefined	6.80	39.84
Tellinidae	0.00	1.32	5.04	Undefined	6.80	46.65
Orbiniidae	0.00	1.19	4.56	Undefined	6.15	52.79

Groups 3C and 2			**Average dissimilarity: 66.14%**			
Species	Group 3C Av.Abund	Group 2 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Calyptraeidae	0.67	3.37	4.09	1.89	6.19	6.19
Balanidae	0.65	2.53	3.32	2.66	5.02	11.21
Spionidae	2.16	0.00	3.09	3.21	4.67	15.87
Paraonidae	1.83	0.00	2.62	2.48	3.96	19.84
Oligochaeta	1.92	0.00	2.62	2.44	3.96	23.80
Pinnotheridae	1.71	0.00	2.45	3.97	3.70	27.50
Pyramidellidae	1.00	2.56	2.27	1.93	3.43	30.93
Nephtyidae	1.38	0.00	2.08	1.84	3.14	34.07
Chaetopteridae	1.37	0.00	2.05	1.97	3.09	37.17
Syllidae	1.23	0.00	1.67	1.75	2.52	39.68
Tellinidae	1.12	0.00	1.59	1.70	2.40	42.09
Terebellidae	1.10	0.00	1.56	1.73	2.36	44.45
Pholoidae	1.05	0.00	1.52	2.19	2.30	46.75
Aoridae	0.08	1.00	1.41	3.72	2.13	48.87
Sigalionidae	0.07	1.00	1.40	3.47	2.11	50.99
Groups 3B and 2			**Average dissimilarity: 69.45%**			
Species	Group 3B Av.Abund	Group 2 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Calyptraeidae	0.00	3.37	6.71	13.37	9.67	9.67
Balanidae	0.00	2.53	5.04	13.37	7.26	16.92
Nephtyidae	1.98	0.00	3.94	11.66	5.68	22.60
Pyramidellidae	0.76	2.56	3.58	3.00	5.15	27.75
Paraonidae	1.73	0.00	3.45	6.08	4.96	32.72
Chaetopteridae	1.60	0.00	3.16	8.22	4.56	37.27
Spionidae	1.58	0.00	3.09	2.37	4.45	41.72
Tellinidae	1.35	0.00	2.69	5.30	3.87	45.59
Columbellidae	0.00	1.32	2.62	13.37	3.77	49.37
Cirratulidae	0.77	1.90	2.29	1.76	3.30	52.67
Groups 4B and 2			**Average dissimilarity: 87.61%**			
Species	Group 4B Av.Abund	Group 2 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Calyptraeidae	0.00	3.37	7.07	15.02	8.07	8.07
Balanidae	0.00	2.53	5.31	15.02	6.06	14.12
Pyramidellidae	0.50	2.56	4.37	2.47	4.99	19.11
Cirratulidae	0.00	1.90	3.98	15.02	4.54	23.66
Magelonidae	1.60	0.00	3.35	10.67	3.82	27.48
Maldanidae	0.00	1.57	3.28	15.02	3.75	31.23
Spionidae	1.53	0.00	3.21	10.13	3.67	34.89
Haustoriidae	1.45	0.00	3.08	2.01	3.52	38.41
Phoxocephalidae	1.41	0.00	2.94	42.25	3.35	41.77
Mactridae	1.37	0.00	2.87	8.53	3.27	45.04
Paraonidae	1.37	0.00	2.87	8.53	3.27	48.31
Columbellidae	0.00	1.32	2.76	15.02	3.15	51.46
Groups 4E and 2			**Average dissimilarity: 76.57%**			
Species	Group 4E Av.Abund	Group 2 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Calyptraeidae	0.10	3.37	5.92	6.12	7.73	7.73
Balanidae	0.00	2.53	4.56	8.22	5.96	13.69
Pyramidellidae	0.35	2.56	4.04	3.18	5.27	18.96
Ampeliscidae	3.09	1.00	3.81	2.09	4.97	23.93
Paraonidae	1.48	0.00	2.62	2.70	3.42	27.35
Syllidae	1.42	0.00	2.57	2.32	3.36	30.71
Nephtyidae	1.42	0.00	2.54	5.62	3.32	34.03
Spionidae	1.36	0.00	2.41	2.68	3.14	37.17
Maldanidae	0.27	1.57	2.38	2.44	3.11	40.28
Columbellidae	0.00	1.32	2.37	8.22	3.10	43.38
Oligochaeta	1.30	0.00	2.31	1.73	3.02	46.40
Phoxocephalidae	1.23	0.00	2.22	1.74	2.90	49.30
Orbiniidae	1.15	0.00	2.05	2.18	2.68	51.98

Groups 3A and 2			**Average dissimilarity: 66.47%**			
Species	Group 3A Av.Abund	Group 2 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Calyptraeidae	0.00	3.37	4.94	Undefined	7.43	7.43
Nuculidae	4.47	1.32	4.63	Undefined	6.96	14.39
Pyramidellidae	0.00	2.56	3.75	Undefined	5.64	20.04
Balanidae	0.00	2.53	3.71	Undefined	5.58	25.61
Cirratulidae	0.00	1.90	2.78	Undefined	4.19	29.80
Anthozoa	1.82	0.00	2.67	Undefined	4.01	33.81
Paraonidae	1.82	0.00	2.67	Undefined	4.01	37.83
Chaetopteridae	1.68	0.00	2.46	Undefined	3.71	41.53
Nephtyidae	1.63	0.00	2.38	Undefined	3.59	45.12
Pholoidae	1.63	0.00	2.38	Undefined	3.59	48.70
Oligochaeta	1.41	0.00	2.07	Undefined	3.12	51.82
Groups 4A and 2			**Average dissimilarity: 84.72%**			
Species	Group 4A Av.Abund	Group 2 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Calyptraeidae	0.00	3.37	8.58	Undefined	10.13	10.13
Pyramidellidae	0.00	2.56	6.52	Undefined	7.70	17.83
Balanidae	0.00	2.53	6.45	Undefined	7.61	25.44
Maldanidae	0.00	1.57	3.99	Undefined	4.71	30.14
Lumbrineridae	0.00	1.50	3.81	Undefined	4.50	34.64
Nephtyidae	1.50	0.00	3.81	Undefined	4.50	39.14
Ampeliscidae	2.40	1.00	3.56	Undefined	4.20	43.34
Columbellidae	0.00	1.32	3.35	Undefined	3.96	47.29
Haustoriidae	1.32	0.00	3.35	Undefined	3.96	51.25
Groups 4C and 2			**Average dissimilarity: 70.78%**			
Species	Group 4C Av.Abund	Group 2 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Calyptraeidae	0.00	3.37	7.62	15.68	10.76	10.76
Pyramidellidae	0.00	2.56	5.79	15.68	8.18	18.93
Balanidae	0.00	2.53	5.72	15.68	8.08	27.01
Capitellidae	2.98	1.00	4.52	2.36	6.39	33.40
Nephtyidae	1.31	0.00	3.00	2.52	4.24	37.64
Columbellidae	0.00	1.32	2.97	15.68	4.20	41.84
Diastylidae	1.16	0.00	2.63	3.92	3.72	45.56
Mactridae	1.09	0.00	2.48	5.40	3.51	49.06
Maldanidae	0.50	1.57	2.46	1.40	3.47	52.54
Groups 1 and 2			**Average dissimilarity: 87.07%**			
Species	Group 1 Av.Abund	Group 2 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Calyptraeidae	0.00	3.37	10.89	Undefined	12.51	12.51
Pyramidellidae	0.00	2.56	8.28	Undefined	9.51	22.02
Balanidae	0.00	2.53	8.18	Undefined	9.39	31.41
Cirratulidae	0.00	1.90	6.14	Undefined	7.05	38.46
Maldanidae	0.00	1.57	5.06	Undefined	5.81	44.27
Lumbrineridae	0.00	1.50	4.83	Undefined	5.55	49.82
Columbellidae	0.00	1.32	4.25	Undefined	4.89	54.71
Groups 4D and 2			**Average dissimilarity: 77.08%**			
Species	Group 4D Av.Abund	Group 2 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Ampeliscidae	4.70	1.00	8.17	Undefined!	10.60	10.60
Calyptraeidae	0.00	3.37	7.44	Undefined!	9.66	20.26
Balanidae	0.00	2.53	5.59	Undefined!	7.25	27.51
Cirratulidae	0.00	1.90	4.19	Undefined!	5.44	32.96
Mactridae	1.57	0.00	3.46	Undefined!	4.49	37.44
Maldanidae	0.00	1.57	3.46	Undefined!	4.49	41.93
Phoxocephalidae	1.57	0.00	3.46	Undefined!	4.49	46.41
Lumbrineridae	0.00	1.50	3.30	Undefined!	4.29	50.70

Appendix E

Sediment Characterization Tables

Table E-1. Southern Cape Cod Bay sediment classifications. At stations marked with an asterisk, an infauna grab was also obtained.

Station	Depth (ft)	% Gravel	% Sand	% Silt	% Clay	CZM-Modified Shepard Class	USGS Shepard Class	CZM-Modified CMECS Class	CMECS Class
287	48	0	97.48	1.93	0.59	SAND	SAND	SAND	SAND
288	42.1	0	98.67	0.98	0.35	SAND	SAND	SAND	SAND
289	69.3	0	98.45	1.13	0.42	SAND	SAND	SAND	SAND
290	41.7	2.56	94.88	1.86	0.7	SAND	SAND	SAND	SLIGHTLY GRAVELLY
292	44.7	0	99.17	0.62	0.21	SAND	SAND	SAND	SAND
293*	41.7	0	97.36	1.99	0.65	SAND	SAND	SAND	SAND
294	32.9	0.7	98.95	0.24	0.11	SAND	SAND	SAND	SLIGHTLY GRAVELLY
295	49.9	2.83	93.35	2.92	0.89	SAND	SAND	SAND	SLIGHTLY GRAVELLY
296	63.4	0	99.11	0.64	0.25	SAND	SAND	SAND	SAND
297	48.6	0.18	96.58	2.45	0.79	SAND	SAND	SAND	SLIGHTLY GRAVELLY
298	48	0.02	99.31	0.49	0.18	SAND	SAND	SAND	SLIGHTLY GRAVELLY
299	50.9	0.04	95.18	3.57	1.2	SAND	SAND	SAND	SLIGHTLY GRAVELLY
300	44	0	99.08	0.62	0.3	SAND	SAND	SAND	SAND
301	51	0	98.42	1.1	0.47	SAND	SAND	SAND	SAND
302	51	0	97.68	1.74	0.58	SAND	SAND	SAND	SAND
303*	47	0	98.06	1.19	0.75	SAND	SAND	SAND	SAND
304	54	0.23	97.68	1.49	0.6	SAND	SAND	SAND	SLIGHTLY GRAVELLY
305	51	46.28	52.48	0.98	0.26	GRAVELLY	GRAVELLY SEDIMENT	GRAVEL MIXES	GRAVEL MIXES
306	46	0.69	98.81	0.31	0.18	SAND	SAND	SAND	SLIGHTLY GRAVELLY
307	41	0	99.47	0.33	0.2	SAND	SAND	SAND	SAND
308	46	0.07	99.47	0.29	0.17	SAND	SAND	SAND	SLIGHTLY GRAVELLY
309	61	0	98.02	1.44	0.54	SAND	SAND	SAND	SAND
310	66	0.63	95.7	2.89	0.78	SAND	SAND	SAND	SLIGHTLY GRAVELLY
311	60	0.53	98.7	0.57	0.2	SAND	SAND	SAND	SLIGHTLY GRAVELLY

Station	Depth (ft)	% Gravel	% Sand	% Silt	% Clay	CZM-Modified Shepard Class	USGS Shepard Class	CZM-Modified CMECS Class	CMECS Class
312	62	0.12	99.02	0.59	0.26	SAND	SAND	SAND	SLIGHTLY GRAVELLY
313*	59	0.16	99.36	0.35	0.12	SAND	SAND	SAND	SLIGHTLY GRAVELLY
314*	66	1.22	97.29	1.14	0.35	SAND	SAND	SAND	SLIGHTLY GRAVELLY
315*	74	10.54	85.81	2.53	1.12	GRAVELLY	GRAVELLY SEDIMENT	GRAVELLY	GRAVELLY
316*	72	1.03	97.62	0.95	0.4	SAND	SAND	SAND	SLIGHTLY GRAVELLY
317*	93	2.28	97.07	0.43	0.21	SAND	SAND	SAND	SLIGHTLY GRAVELLY
318*	81	9.58	84.15	4.8	1.46	SAND	SAND	GRAVELLY	GRAVELLY
319*	89	0	75.77	17.75	6.49	SAND	SAND	SAND	SAND
320*	98	0	67.07	25.16	7.77	SAND	SILTY SAND	SAND	SAND
321*	101	0	41.55	43.77	14.68	MUD	SANDY SILT	MUD	MUD
322*	107	0	39.69	43.29	17.03	MUD	SANDY SILT	MUD	MUD
323*	109	0	30.99	47.09	21.91	MUD	SAND SILT CLAY	MUD	MUD
324	119						GRAVEL		
325	118	0	9.53	62.8	27.66	MUD	CLAYEY SILT	MUD	MUD
326	111	0.17	43.56	42.47	13.81	MUD	SILTY SAND	MUD	SLIGHTLY GRAVELLY
327*	115	0	10.26	67.55	22.2	MUD	CLAYEY SILT	MUD	MUD
328*	112	0	10.45	69.06	20.49	MUD	CLAYEY SILT	MUD	MUD
329*	108	0	16.54	62.27	21.18	MUD	CLAYEY SILT	MUD	MUD
330*	103	0	29.13	53.05	17.83	MUD	SANDY SILT	MUD	MUD
331*	100	0	47.27	42.47	10.28	MUD	SILTY SAND	MUD	MUD
332*	87	1.34	74.54	18.79	5.31	SAND	SAND	SAND	SLIGHTLY GRAVELLY
333	69						GRAVELLY SEDIMENT		
334*	98.5	3.9	74.56	17.91	3.62	SAND	SAND	SAND	SLIGHTLY GRAVELLY
335*	107.7	0	20.09	63.4	16.51	MUD	SANDY SILT	MUD	MUD
336*	107	0	16.46	65.89	17.63	MUD	CLAYEY SILT	MUD	MUD
337*	107.7	0	10.2	69.33	20.46	MUD	CLAYEY SILT	MUD	MUD

Station	Depth (ft)	% Gravel	% Sand	% Silt	% Clay	CZM-Modified Shepard Class	USGS Shepard Class	CZM-Modified CMECS Class	CMECS Class
338*	112.3	0	5.59	69.05	25.37	MUD	CLAYEY SILT	MUD	MUD
339*	110.6	0	15.93	68.17	15.9	MUD	SANDY SILT	MUD	MUD
340*	109.3	0	14.9	65.89	19.2	MUD	CLAYEY SILT	MUD	MUD
341*	111.3	0	17.2	65.01	17.79	MUD	CLAYEY SILT	MUD	MUD
342*	113.3	0	13.87	67	19.12	MUD	CLAYEY SILT	MUD	MUD
343*	118.5	0	21.31	55.7	22.99	MUD	SAND SILT CLAY	MUD	MUD
344*	124.1	0	10.5	69.27	20.25	MUD	CLAYEY SILT	MUD	MUD
345*	122	0	9.88	66.67	23.45	MUD	CLAYEY SILT	MUD	MUD
346	127	0	7.45	63.23	29.32	MUD	CLAYEY SILT	MUD	MUD
347*	119	0	12.57	61.7	25.74	MUD	CLAYEY SILT	MUD	MUD
348	110	0.16	56.6	32.42	10.84	SAND	SILTY SAND	SAND	SLIGHTLY GRAVELLY
349	102						GRAVEL		
350	126	0	13.52	65.72	20.76	MUD	CLAYEY SILT	MUD	MUD
351	120	0	9.97	69.56	20.47	MUD	CLAYEY SILT	MUD	MUD
352*	121	0	10.24	67.95	21.79	MUD	CLAYEY SILT	MUD	MUD
353*	128	0	6.76	65.8	27.44	MUD	CLAYEY SILT	MUD	MUD
354*	119	0	8.68	68.68	22.65	MUD	CLAYEY SILT	MUD	MUD
355*	127	0	7.86	69.7	22.45	MUD	CLAYEY SILT	MUD	MUD
356*	134	0	13.4	58.45	28.15	MUD	CLAYEY SILT	MUD	MUD
357*	119.2	0	17.42	61.01	21.56	MUD	CLAYEY SILT	MUD	MUD
358*	115	0	24.27	58.19	17.54	MUD	SANDY SILT	MUD	MUD
359*	114.9	0	33.67	49.28	17.05	MUD	SANDY SILT	MUD	MUD
360*	120.8	0	26.43	53.28	20.29	MUD	SAND SILT CLAY	MUD	MUD
361*	115.9	0	41.82	44.69	13.49	MUD	SANDY SILT	MUD	MUD
362*	119.8	0	31.97	50.48	17.55	MUD	SANDY SILT	MUD	MUD
363*	126.4	0	27.14	55.86	16.98	MUD	SANDY SILT	MUD	MUD

Station	Depth (ft)	% Gravel	% Sand	% Silt	% Clay	CZM-Modified Shepard Class	USGS Shepard Class	CZM-Modified CMECS Class	CMECS Class
364*	132	0	24.53	55.85	19.62	MUD	SANDY SILT	MUD	MUD
365*	130.6	0	45.94	40.69	13.38	MUD	SILTY SAND	MUD	MUD
366*	127.7	0	56.91	30.57	12.51	SAND	SILTY SAND	SAND	SAND
367*	123.4	0	48.03	38.67	13.3	MUD	SILTY SAND	MUD	MUD
368*	118.5	0.08	47.42	38.1	14.4	MUD	SILTY SAND	MUD	SLIGHTLY GRAVELLY
369*	119.5	0.1	57.77	27.87	14.28	SAND	SILTY SAND	SAND	SLIGHTLY GRAVELLY
370*	110.3	0	76.14	12.33	11.53	SAND	SAND	SAND	SAND
371*	104.7	0	75.02	16.88	8.09	SAND	SAND	SAND	SAND
372*	114.6	0	72.5	19.96	7.54	SAND	SILTY SAND	SAND	SAND
373*	116.5	0	75.8	17.21	6.99	SAND	SAND	SAND	SAND
374	94.2	0	84.43	11.51	4.07	SAND	SAND	SAND	SAND
375*	84.7	0	91.7	6.02	2.27	SAND	SAND	SAND	SAND
376*	106.4	0	88.99	6.94	4.07	SAND	SAND	SAND	SAND
377*	95.5	0.03	81.74	13.27	4.95	SAND	SAND	SAND	SLIGHTLY GRAVELLY
378*	58.5	0.01	97.01	2.42	0.56	SAND	SAND	SAND	SLIGHTLY GRAVELLY
379	46	0	97.95	1.37	0.67	SAND	SAND	SAND	SAND
380*	55.2	0	97.75	1.86	0.39	SAND	SAND	SAND	SAND
381*	67.7	0	98.97	0.64	0.39	SAND	SAND	SAND	SAND
382*	79.8	0.13	84.33	11.47	4.06	SAND	SAND	SAND	SLIGHTLY GRAVELLY
383*	73.2	0	87.82	9.04	3.14	SAND	SAND	SAND	SAND
384	54.5						GRAVELLY SEDIMENT		
385	65.4	0	84.04	12.23	3.73	SAND	SAND	SAND	SAND
386	83.7	0	72.88	18.84	8.28	SAND	SILTY SAND	SAND	SAND
387	89.3	0	59.15	30.45	10.41	SAND	SILTY SAND	SAND	SAND
388*	90.3	0	42.41	42.71	14.89	MUD	SANDY SILT	MUD	MUD
389*	82.1	0	56.23	32.49	11.28	SAND	SILTY SAND	SAND	SAND

Station	Depth (ft)	% Gravel	% Sand	% Silt	% Clay	CZM-Modified Shepard Class	USGS Shepard Class	CZM-Modified CMECS Class	CMECS Class
390	79.1	0	55.52	30.38	14.1	SAND	SILTY SAND	SAND	SAND
391	68	0.26	73.46	18.53	7.74	SAND	SILTY SAND	SAND	SLIGHTLY GRAVELLY
392*	39.8	0.25	99.11	0.45	0.19	SAND	SAND	SAND	SLIGHTLY GRAVELLY
393*	41.7	0.15	98.41	0.91	0.53	SAND	SAND	SAND	SLIGHTLY GRAVELLY
394	60.5	0.09	98.04	1.36	0.5	SAND	SAND	SAND	SLIGHTLY GRAVELLY
395*	56.8	8.3	70.81	16.05	4.83	SAND	SAND	GRAVELLY	GRAVELLY
Mean	88.2	0.9	61.0	28.3	9.8				
MIN	32.9	0.0	5.6	0.2	0.1				
MAX	134.0	46.3	99.5	69.7	29.3				
	Depth (ft)	**% Gravel**	**% Sand**	**% Silt**	**% Clay**				

Note: Stations 324, 333, 349, and 384 had no grab but USGS used photo and video interpretation to classify the station.

Table E-2. Martha's Vineyard (South of Islands) sediment classifications. At stations marked with an asterisk, an infauna grab was also obtained.

Station	Depth (ft)	% Gravel	% Sand	% Silt	% Clay	CZM-Modified Shepard Class	USGS Class	CZM-Modified CMECS Class	CMECS Class
1*	76	0.45	98.54	0.59	0.42	SAND	SAND	SAND	SLIGHTLY GRAVELLY
2*	78	0.36	98.21	0.88	0.55	SAND	SAND	SAND	SLIGHTLY GRAVELLY
3	82	1.55	97.9	0.31	0.24	SAND	SAND	SAND	SLIGHTLY GRAVELLY
4*	103	0	90.66	6.19	3.14	SAND	SAND	SAND	SAND
5	82	5.32	93.33	0.91	0.44	SAND	SAND	GRAVELLY	GRAVELLY
6	85	0	98.08	1.16	0.75	SAND	SAND	SAND	SAND
7	73.6	0.5	90.01	6.65	2.83	SAND	SAND	SAND	SLIGHTLY GRAVELLY
8							GRAVELLY SEDIMENT		
9*	94.2	0	4.09	76.57	19.35	MUD	SILT	MUD	MUD
10*	97.2	0	81.3	14.88	3.81	SAND	SAND	SAND	SAND
11*	104.1	0	54.91	36.76	8.31	SAND	SILTY SAND	SAND	SAND
12*	104.7	0	65.32	25.06	9.62	SAND	SILTY SAND	SAND	SAND
13							GRAVEL		
14	110.3	0.11	67.81	25.66	6.4	SAND	SILTY SAND	SAND	SLIGHTLY GRAVELLY
15*	111	0	62.25	25.89	11.87	SAND	SILTY SAND	SAND	SAND
16*	109	0	64.8	26.71	8.5	SAND	SILTY SAND	SAND	SAND
17*	102.8	0.46	98.87	0.47	0.2	SAND	SAND	SAND	SLIGHTLY GRAVELLY
18*	109.3	4.1	83.38	9.4	3.13	SAND	SAND	SAND	SLIGHTLY GRAVELLY
19*	108	0	9.53	67.7	22.76	MUD	CLAYEY SILT	MUD	MUD
20*	107.4	13.62	63.11	17.43	5.84	GRAVELLY	GRAVELLY SEDIMENT	GRAVELLY	GRAVELLY
21*	95.5	0.16	59.95	34.08	5.8	SAND	SILTY SAND	SAND	SLIGHTLY GRAVELLY
22*	106	0	49.56	41.44	9	MUD	SILTY SAND	MUD	MUD
23*	109	1.08	96.83	1.55	0.53	SAND	SAND	SAND	SLIGHTLY GRAVELLY

Station	Depth (ft)	% Gravel	% Sand	% Silt	% Clay	CZM-Modified Shepard Class	USGS Class	CZM-Modified CMECS Class	CMECS Class
24*	105	0	97.85	1.51	0.63	SAND	SAND	SAND	SAND
25*	106	0	99.72	0.18	0.1	SAND	SAND	SAND	SAND
26*	100	50.29	49.21	0.36	0.14	GRAVEL	GRAVEL	GRAVEL MIXES	GRAVEL MIXES
27							GRAVELLY SEDIMENT		
28*	102	0	97.37	1.81	0.81	SAND	SAND	SAND	SAND
29							GRAVEL		
30							GRAVEL		
31							GRAVEL		
32*	87	0	97.07	2.44	0.48	SAND	SAND	SAND	SAND
33							GRAVELLY		
34*	88	49.93	49.69	0.29	0.09	GRAVELLY	GRAVELLY SEDIMENT	GRAVEL MIXES	GRAVEL MIXES
35*	87	0	98.93	0.81	0.26	SAND	SAND	SAND	SAND
36							GRAVELLY		
37*	86.7	0.47	55.78	35.18	8.57	SAND	SILTY SAND	SAND	SLIGHTLY GRAVELLY
38*	74.5	0.46	97.58	1.49	0.46	SAND	SAND	SAND	SLIGHTLY GRAVELLY
39							GRAVEL		
40							GRAVEL		
41	36.5	48.2	51.31	0.33	0.17	GRAVELLY	GRAVELLY SEDIMENT	GRAVEL MIXES	GRAVEL MIXES
42*	43.4	0	99.84	0.14	0.02	SAND	SAND	SAND	SAND
43*	79.5	0	26.82	56.33	16.87	MUD	SANDY SILT	MUD	MUD
44*	83.7	0	99.47	0.42	0.11	SAND	SAND	SAND	SAND
45							GRAVELLY		
46	73	0.09	99.79	0.09	0.03	SAND	SAND	SAND	SLIGHTLY GRAVELLY
47	75	0	99.84	0.1	0.06	SAND	SAND	SAND	SAND
48*	94	2.13	97.75	0.09	0.03	SAND	SAND	SAND	SLIGHTLY GRAVELLY
49	104	0.54	99.26	0.13	0.06	SAND	SAND	SAND	SLIGHTLY GRAVELLY

Station	Depth (ft)	% Gravel	% Sand	% Silt	% Clay	CZM-Modified Shepard Class	USGS Class	CZM-Modified CMECS Class	CMECS Class
50*	104	0.16	98.89	0.74	0.21	SAND	SAND	SAND	SLIGHTLY GRAVELLY
51*	102	0	95.7	3.82	0.48	SAND	SAND	SAND	SAND
52*	102	0.19	99.38	0.29	0.14	SAND	SAND	SAND	SLIGHTLY GRAVELLY
53	101	4.55	95.27	0.14	0.03	SAND	SAND	SAND	SLIGHTLY GRAVELLY
54*	97.5	0	99.43	0.4	0.17	SAND	SAND	SAND	SAND
55*	93	0.06	99.33	0.42	0.19	SAND	SAND	SAND	SLIGHTLY GRAVELLY
56	93.2	0.37	98.2	1.15	0.29	SAND	SAND	SAND	SLIGHTLY GRAVELLY
57*	95.9	1.21	98.29	0.32	0.17	SAND	SAND	SAND	SLIGHTLY GRAVELLY
58*	96.5	0	98.87	0.76	0.37	SAND	SAND	SAND	SAND
59*	96.5	0	98.36	1.34	0.3	SAND	SAND	SAND	SAND
60*	92.3	0	99.1	0.59	0.31	SAND	SAND	SAND	SAND
61							GRAVELLY		
62*	85.7	9.98	89.9	0.09	0.03	SAND	SAND	GRAVELLY	GRAVELLY
63							GRAVELLY		
64*	84.7	0	99.39	0.48	0.13	SAND	SAND	SAND	SAND
65							SAND		
66*	78.5	0.91	97.51	1.24	0.34	SAND	SAND	SAND	SLIGHTLY GRAVELLY
67*	73.2	0	4.44	71.64	23.92	MUD	CLAYEY SILT	MUD	MUD
68*	66.3	54.61	45.18	0.14	0.07	GRAVEL	GRAVEL	GRAVEL MIXES	GRAVEL MIXES
69*	73.9	0.11	99.42	0.33	0.14	SAND	SAND	SAND	SLIGHTLY GRAVELLY
70	70.6	0.23	99.31	0.3	0.16	SAND	SAND	SAND	SLIGHTLY GRAVELLY
71	63.4	0	99.42	0.47	0.11	SAND	SAND	SAND	SAND
72	64	0.46	98.82	0.51	0.21	SAND	SAND	SAND	SLIGHTLY GRAVELLY
73	61.4	8.67	91.25	0.07	0.01	SAND	SAND	GRAVELLY	GRAVELLY
74*	75.4	0	99.53	0.35	0.12	SAND	SAND	SAND	SAND
75*	72.2	0	74.68	20.87	4.45	SAND	SILTY SAND	SAND	SAND

Station	Depth (ft)	% Gravel	% Sand	% Silt	% Clay	CZM-Modified Shepard Class	USGS Class	CZM-Modified CMECS Class	CMECS Class
76							GRAVEL		
77*	52.9	0	99.62	0.29	0.09	SAND	SAND	SAND	SAND
78*	42.4	0	99.91	0.07	0.02	SAND	SAND	SAND	SAND
79	58	0	99.15	0.63	0.21	SAND	SAND	SAND	SAND
80*	68	0	92.03	7.21	0.76	SAND	SAND	SAND	SAND
81*	76	0	82.07	17.34	0.6	SAND	SAND	SAND	SAND
82*	80	0	83.08	13.95	2.97	SAND	SAND	SAND	SAND
83							SAND		
155							GRAVELLY SEDIMENT		
156*	40.8	0	99.89	0.1	0.01	SAND	SAND	SAND	SAND
157							GRAVELLY SEDIMENT		
158	43.5	12.73	87.16	0.08	0.02	GRAVELLY	GRAVELLY SEDIMENT	GRAVELLY	GRAVELLY
159*	40.1	0.05	98.91	0.85	0.19	SAND	SAND	SAND	SLIGHTLY GRAVELLY
160	39	0.74	95.76	2.82	0.67	SAND	SAND	SAND	SLIGHTLY GRAVELLY
161*	49	0	99.37	0.51	0.12	SAND	SAND	SAND	SAND
162*	45	0.68	99.2	0.11	0.01	SAND	SAND	SAND	SLIGHTLY GRAVELLY
163*	54.9	0.25	99.1	0.53	0.12	SAND	SAND	SAND	SLIGHTLY GRAVELLY
164*	43	1.73	98.13	0.1	0.03	SAND	SAND	SAND	SLIGHTLY GRAVELLY
165	60.8	8.12	91.15	0.49	0.23	SAND	SAND	GRAVELLY	GRAVELLY
166*	78	0	78.46	18.47	3.06	SAND	SAND	SAND	SAND
168*	50	19.21	74.89	2.83	3.05	GRAVELLY	GRAVELLY SEDIMENT	GRAVELLY	GRAVELLY
169*	49	0.04	99.21	0.5	0.24	SAND	SAND	SAND	SLIGHTLY GRAVELLY
170*	69	1.5	98.32	0.15	0.03	SAND	SAND	SAND	SLIGHTLY GRAVELLY
171*	56	0	99.66	0.25	0.09	SAND	SAND	SAND	SAND
172*	51	1.04	98.57	0.22	0.17	SAND	SAND	SAND	SLIGHTLY GRAVELLY
173*	78	0	79.92	17.49	2.58	SAND	SAND	SAND	SAND

Station	Depth (ft)	% Gravel	% Sand	% Silt	% Clay	CZM-Modified Shepard Class	USGS Class	CZM-Modified CMECS Class	CMECS Class
174							SAND		
175*	92	2	85.72	8.57	3.69	SAND	SAND	SAND	SLIGHTLY GRAVELLY
176*	104	0.73	74.17	19.26	5.86	SAND	SILTY SAND	SAND	SLIGHTLY GRAVELLY
179	92	0.05	99.37	0.32	0.26	SAND	SAND	SAND	SLIGHTLY GRAVELLY
180*	50	0	77.68	16.46	5.86	SAND	SAND	SAND	SAND
181*	61	0	83.85	10.43	5.71	SAND	SAND	SAND	SAND
182*	75	0.08	97.59	1.69	0.64	SAND	SAND	SAND	SLIGHTLY GRAVELLY
183*	54	1.66	97.95	0.26	0.13	SAND	SAND	SAND	SLIGHTLY GRAVELLY
184*	62.1	2.03	96.41	1.11	0.45	SAND	SAND	SAND	SLIGHTLY GRAVELLY
185							GRAVEL		
218*	83.1	48.23	50.96	0.58	0.23	GRAVELLY	GRAVELLY SEDIMENT	GRAVEL MIXES	GRAVEL MIXES
219							GRAVEL		
220*	73	34.57	64.68	0.51	0.23	GRAVELLY	GRAVELLY SEDIMENT	GRAVEL MIXES	GRAVEL MIXES
221	75	58.3	40.09	1.18	0.42	GRAVEL	GRAVEL	GRAVEL MIXES	GRAVEL MIXES
222							GRAVELLY SEDIMENT		
Mean	79.39	4.84	84.55	8.23	2.38				
Min	36.5	0	4.09	0.07	0.01				
Max	111	58.3	99.91	76.57	23.92				
	Depth (ft)	**% Gravel**	**% Sand**	**% Silt**	**% Clay**				

Note: Stations 8, 13, 27, 29, 30, 31, 33, 36, 45 61, 63, 65, 76, 83, 155, 157, 174, 185, 219, and 222 had no grab but USGS used photo and video

Table E-3. Nantucket Sound (South of Islands) sediment classifications. At stations marked with an asterisk, an infauna grab was also obtained.

Station	Depth (ft)	% Gravel	% Sand	% Silt	% Clay	CZM-Modified Shepard Class	USGS Shepard Class	CZM-Modified CMECS Class	CMECS Class
95*	68.6	0	96.72	2.76	0.52	SAND	SAND	SAND	SAND
97*	59.8	0.45	98.83	0.62	0.09	SAND	SAND	SAND	SLIGHTLY GRAVELLY
98*	76.2	0.09	99.73	0.14	0.03	SAND	SAND	SAND	SLIGHTLY GRAVELLY
99*	85.4	4	95.68	0.18	0.13	SAND	SAND	SAND	SLIGHTLY GRAVELLY
100*	50.3	0	99.87	0.09	0.04	SAND	SAND	SAND	SAND
101*	82.1	0.31	99.6	0.07	0.02	SAND	SAND	SAND	SLIGHTLY GRAVELLY
102*	71.3	0.31	99.62	0.05	0.02	SAND	SAND	SAND	SLIGHTLY GRAVELLY
103*	55	0.71	99.26	0.03	0	SAND	SAND	SAND	SLIGHTLY GRAVELLY
104*	65	65.62	34.27	0.08	0.02	GRAVEL	GRAVEL	GRAVEL MIXES	GRAVEL MIXES
105							GRAVEL		
106							GRAVELLY SEDIMENT		
107*	94	23.28	76.69	0.02	0	GRAVELLY	GRAVELLY SEDIMENT	GRAVELLY	GRAVELLY
108*							GRAVEL		
113*	42	3.35	96.61	0.04	0	SAND	SAND	SAND	SLIGHTLY GRAVELLY
114*							GRAVELLY SEDIMENT		
115*	49	29.2	70.76	0.04	0	GRAVELLY	GRAVELLY SEDIMENT	GRAVELLY	GRAVELLY
116*	53	48.06	51.57	0.26	0.12	GRAVELLY	GRAVELLY SEDIMENT	GRAVEL MIXES	GRAVEL MIXES
117*	54.2	38.36	61.45	0.11	0.08	GRAVELLY	GRAVELLY SEDIMENT	GRAVEL MIXES	GRAVEL MIXES
119*	66	0.88	98.9	0.15	0.06	SAND	SAND	SAND	SLIGHTLY GRAVELLY
120*	58.5	0	99.72	0.19	0.09	SAND	SAND	SAND	SAND
121*	36.8	18.5	81.16	0.24	0.1	GRAVELLY	GRAVELLY SEDIMENT	GRAVELLY	GRAVELLY
122*	39	0.03	99.85	0.09	0.03	SAND	SAND	SAND	SLIGHTLY GRAVELLY
123*	36	0.21	99.53	0.17	0.09	SAND	SAND	SAND	SLIGHTLY GRAVELLY

Station	Depth (ft)	% Gravel	% Sand	% Silt	% Clay	CZM-Modified Shepard Class	USGS Shepard Class	CZM-Modified CMECS Class	CMECS Class
125*	43	0.27	99.31	0.31	0.11	SAND	SAND	SAND	SLIGHTLY GRAVELLY
127							GRAVELLY SEDIMENT		
129							GRAVELLY SEDIMENT		
130*	83	19.07	77.8	2.02	1.1	GRAVELLY	GRAVELLY SEDIMENT	GRAVELLY	GRAVELLY
131*	63	0.51	99.42	0.07	0	SAND	SAND	SAND	SLIGHTLY GRAVELLY
132							GRAVEL		
133							GRAVEL		
134*	116	18.92	78.53	2.07	0.47	GRAVELLY	GRAVELLY SEDIMENT	GRAVELLY	GRAVELLY
135*	121	31.22	68.31	0.34	0.12	GRAVELLY	GRAVELLY SEDIMENT	GRAVEL MIXES	GRAVEL MIXES
136*							GRAVEL		
140*	39	0	97.96	1.66	0.38	SAND	SAND	SAND	SAND
141*	41	0	99.87	0.1	0.03	SAND	SAND	SAND	SAND
142*	50	0.69	99.18	0.11	0.01	SAND	SAND	SAND	SLIGHTLY GRAVELLY
Mean	62.9	11.26	88.16	0.44	0.14				
MIN	36.0	0.00	34.27	0.02	0.00				
MAX	121.0	65.62	99.87	2.76	1.10				
	Depth (ft)	**% Gravel**	**% Sand**	**% Silt**	**% Clay**				

Note: Stations 105, 106, 108, 114 127, 129 132, 133, and 136 had no grab but USGS used photo and video interpretation to classify the station.

Table E-4. Buzzards Bay sediment classifications. At stations marked with an asterisk, an infauna grab was also obtained.

Station	Depth (ft)	% Gravel	% Sand	% Silt	% Clay	CZM-Modified Shepard Class	USGS Shepard Class	CZM-Modified CMECS Class	CMECS Class
403*	53	0	7.41	67.24	25.36	MUD	CLAYEY SILT	MUD	MUD
404*	56	0	13.3	60.99	25.7	MUD	CLAYEY SILT	MUD	MUD
405*	50.6	0.65	85.24	10.29	3.82	SAND	SAND	SAND	SLIGHTLY GRAVELLY
406*	50.3	0	17.31	63.26	19.43	MUD	CLAYEY SILT	MUD	MUD
407*	51.6	0.06	12.9	65.28	21.75	MUD	CLAYEY SILT	MUD	SLIGHTLY GRAVELLY
408*	28.3	0	15.32	64.36	20.31	MUD	CLAYEY SILT	MUD	MUD
409*	70	0.82	90.64	6.97	1.56	SAND	SAND	SAND	SLIGHTLY GRAVELLY
410*	63.7	0.19	42.07	41.71	16.02	MUD	SILTY SAND	MUD	SLIGHTLY GRAVELLY
411*	57.5	0	95.52	3.38	1.1	SAND	SAND	SAND	SAND
412*	51.9	0.08	99.73	0.14	0.05	SAND	SAND	SAND	SLIGHTLY GRAVELLY
413*	72.6	0.05	80.69	14.28	4.97	SAND	SAND	SAND	SLIGHTLY GRAVELLY
414*	116.2	0	36.59	44.07	19.34	MUD	SANDY SILT	MUD	MUD
415*	63.4	0	97.67	1.73	0.59	SAND	SAND	SAND	SAND
416*	58.1	0.05	97.14	2.34	0.47	SAND	SAND	SAND	SLIGHTLY GRAVELLY
417*	64	0	99.31	0.48	0.21	SAND	SAND	SAND	SAND
418*	61	0.25	98.68	0.88	0.19	SAND	SAND	SAND	SLIGHTLY GRAVELLY
419*	56	0.48	91.04	6.02	2.45	SAND	SAND	SAND	SLIGHTLY GRAVELLY
422							GRAVEL		
423							GRAVEL		
424*	64	0	93.84	4.12	2.02	SAND	SAND	SAND	SAND
425*	62	0	99.68	0.27	0.05	SAND	SAND	SAND	SAND
426							GRAVEL		
427*	62	0	99.71	0.23	0.06	SAND	SAND	SAND	SAND
428*	59	0	99.13	0.71	0.16	SAND	SAND	SAND	SAND

Station	Depth (ft)	% Gravel	% Sand	% Silt	% Clay	CZM-Modified Shepard Class	USGS Shepard Class	CZM-Modified CMECS Class	CMECS Class
429*	69	0.24	95.57	3.08	1.1	SAND	SAND	SAND	SLIGHTLY GRAVELLY
430*	71	0	98.33	1.2	0.47	SAND	SAND	SAND	SAND
431*	70	0	48.53	34.83	16.65	MUD	SILTY SAND	MUD	MUD
432*	68	0	27.47	55.82	16.71	MUD	SANDY SILT	MUD	MUD
433*	64	0.04	95.74	3.68	0.54	SAND	SAND	SAND	SLIGHTLY GRAVELLY
434*	65	0.08	99.41	0.43	0.08	SAND	SAND	SAND	SLIGHTLY GRAVELLY
435*	68	0	99.3	0.49	0.21	SAND	SAND	SAND	SAND
436*	70	0	98.88	0.62	0.49	SAND	SAND	SAND	SAND
437*	72	0	99.51	0.32	0.16	SAND	SAND	SAND	SAND
438*	75	0	99.39	0.41	0.2	SAND	SAND	SAND	SAND
439*	73	0	99.71	0.2	0.09	SAND	SAND	SAND	SAND
440*	91	0	80.66	14.85	4.5	SAND	SAND	SAND	SAND
441*	78	0	96.53	2.49	0.97	SAND	SAND	SAND	SAND
442*	97	0	94.1	4.49	1.4	SAND	SAND	SAND	SAND
443*	87	0	97.56	1.74	0.69	SAND	SAND	SAND	SAND
444*	73	0.06	95.55	3.19	1.19	SAND	SAND	SAND	SLIGHTLY GRAVELLY
446*	74	0.04	84.52	10.99	4.44	SAND	SAND	SAND	SLIGHTLY GRAVELLY
447*	77	0.05	96.8	2.29	0.86	SAND	SAND	SAND	SLIGHTLY GRAVELLY
448*	89	0.71	85	10.23	4.05	SAND	SAND	SAND	SLIGHTLY GRAVELLY
449*	126	3.6	80.25	11.7	4.44	SAND	SAND	SAND	SLIGHTLY GRAVELLY
450*	99	0.15	81.39	13.61	4.85	SAND	SAND	SAND	SLIGHTLY GRAVELLY
451*	67	0	19.06	59.66	21.27	MUD	CLAYEY SILT	MUD	MUD
452*	59	0	53.91	37.45	8.63	SAND	SILTY SAND	SAND	SAND
453*	61	0	17.78	57.86	24.35	MUD	CLAYEY SILT	MUD	MUD
455*	58	0	60.57	29.17	10.25	SAND	SILTY SAND	SAND	SAND
456*	57	0	50.77	34.6	14.62	SAND	SILTY SAND	SAND	SAND

Station	Depth (ft)	% Gravel	% Sand	% Silt	% Clay	CZM-Modified Shepard Class	USGS Shepard Class	CZM-Modified CMECS Class	CMECS Class
458*	58	0.23	86.35	9.76	3.66	SAND	SAND	SAND	SLIGHTLY GRAVELLY
459*	57	0.42	55.78	32.36	11.44	SAND	SILTY SAND	SAND	SLIGHTLY GRAVELLY
460*	56	0	86.21	9.37	4.42	SAND	SAND	SAND	SAND
462*	44	0	18.79	60.4	20.79	MUD	CLAYEY SILT	MUD	MUD
463*	46	0	48.13	38.7	13.17	MUD	SILTY SAND	MUD	MUD
Mean	67.12	0.16	73.55	19.32	6.97				
Min	28.3	0	7.41	0.14	0.05				
Max	126	3.6	99.73	67.24	25.7				
	Depth (ft)	**% Gravel**	**% Sand**	**% Silt**	**% Clay**				

Note: Stations 422, 423, and 426 had no grab but USGS used photo and video interpretation to classify the station.

Appendix F

Infauna Standard Operating Procedures

Sediment Grain Size Standard Operating Procedures

Infauna Standard Operating Procedures (SOPs)

9-16 September 2011 OSV *Bold* Survey

Field Processing of Samples for Benthic Community Assessment

Grab samples to be used in the assessment of macrobenthic communities are processed in the following manner:

1. Assign a sample number to the sample (sample number = station number). Label the sample jar (either a 1 qt or a 1 gal jar) and lid with permanent marker with the station number, date, computer time of grab, and number of jars. Place transparent adhesive tape over the label on the side of the sample jar to protect the label information. Write the station number, date, and computer time of grab with pencil on a waterproof label and place into the sample jar. Fill in the data sheet with this information.

2. Measure the depth of the sediment at the middle of the sampler. The depth should be >7 cm. Record descriptive information about the grab, such as the presence or absence of a surface floc, color, and smell of surface sediments, and visible fauna on the data sheet.

3. Place a 0.5 mm mesh sieve into a large, flat basin. Dump the sediment onto the mesh. Use the salt water hose in the wet lab to GENTLY rinse the sediment from the tray. EXTREME CARE MUST BE TAKEN TO ASSURE THAT NO SAMPLE IS LOST OVER THE SIDE OF THE SIEVE. Also, please ensure that only salt water is used for rinsing sample.

4. Let the water drain from the sieve box. Using a squirt bottle with its tip snipped and filled with seawater, gently rinse the contents of the tray to one edge. Remove the nonorganic material, leaving only the organisms in the sieve box. Remove any large organisms (clams, snails, anemones) and note the type and quantity on the data sheet. DO NOT PUT THESE LARGE ORGANISMS IN THE SAMPLE JARS.

5. Using a spoon, GENTLY scoop up the bulk of the sample and place it in the plastic screw-top bottle labeled in Step 1 (which should be placed over the sieve or a bucket in case some of the sample spills over). Use the rinse bottle (filled with seawater) to rinse the outside of the sample jar into the sieve, then, using a funnel or the corner of the sieve box, rinse the contents into the jar. The jar should be filled no higher than approximately one half. If the quantity of sample exceeds one half of the jar, place the remainder of the sample in a second, unlabeled container. Label the second container and lid with permanent marker with the sample number, date, computer time of grab, and number of jars. Place transparent adhesive tape over the label on the side of the second jar to protect the label information. Write the station number, date, and computer time of grab with pencil on a waterproof label and place into the second container. Note on the datasheet that the sample consists of more than one container.

6. Carefully inspect the sieve to ensure that all organisms are removed. Use fine forceps (if necessary) to transfer infauna from the sieve to the bottle containing the proper sample number.

7. Ten percent buffered formalin is used to fix and preserve samples. 100 ml of the formalin should be added (using the graduated cylinder provided) to each 1 qt sample jar (or 400 ml to a 1 gal jar). All containers will have borax added to them in advance by the contractor (if not, add teaspoon-full of

borax to assure saturation of the buffer). FILL THE JAR TO THE RIM WITH SEAWATER TO ELIMINATE ANY AIR SPACE. This eliminates the problem of organisms sticking to the cap because of sloshing during shipment. Tightly screw the cap on the jar and wrap the cap with electrical tape to seal the jar. Gently invert the bottle to mix the contents and place in the dark. If the sample occupies more than one container, tape all the sample bottles containing material from that grab together.

8. Prior to sieving the next sample, use copious amounts of forceful water and a stiff brush to clean the sieve, thereby minimizing cross-contamination of samples.

Infauna Quality Control/Quality Assurance

1. Field crews must assure that all grabs processed are acceptable according to the criteria described above.

2. Ensure that no organisms are lost during any step, including transferring the sample to the sieve, and during sieving.

3. Samples must be properly identified and preserved to assure they are received by the processing laboratory in acceptable condition.

Safety and Spill Prevention

1. All preservatives (e.g., formalin solution, isopropyl alcohol) will be used in the dive locker only. The dive locker is open on one side, so this should provide adequate ventilation.

2. Preservatives should only be handled when wearing gloves and eye protection.

3. Preservatives will be poured into sample jars held above a bucket, pan, or bowl so that in the event that some preservative is spilled, it can be captured in the container below.

4. Any spills on the deck, table, or other surface will be wiped up immediately with a rag or paper towel and will be placed in the designated covered bucket.

5. Preservative should never be poured down any drain or into the ocean.

Sediment grain size analysis was performed at USGS Woods Hole by Kate McMullen and followed the procedures in Poppe et al. 2005, found at http://woodshole.er.usgs.gov/openfile/of2005-1001/.

All station-specific sediment grain size characterizations used in this report (i.e., at stations where infauna were grabbed) were the result of laboratory analysis of collected sediments. However, there were several stations observed over the course of the September 2011 survey (where infauna and sediments were not grabbed, and thus not presented here in this document) where Kate McMullen (USGS Woods Hole) observed the photo of the station and used her Best Professional Judgment to characterize the surficial sediment of the station. These characterizations have the notations “visual observation” in the original Excel database received from USGS.