

BISCAYNE BAY, FLORIDA BENTHIC COMMUNITY ASSESMENT

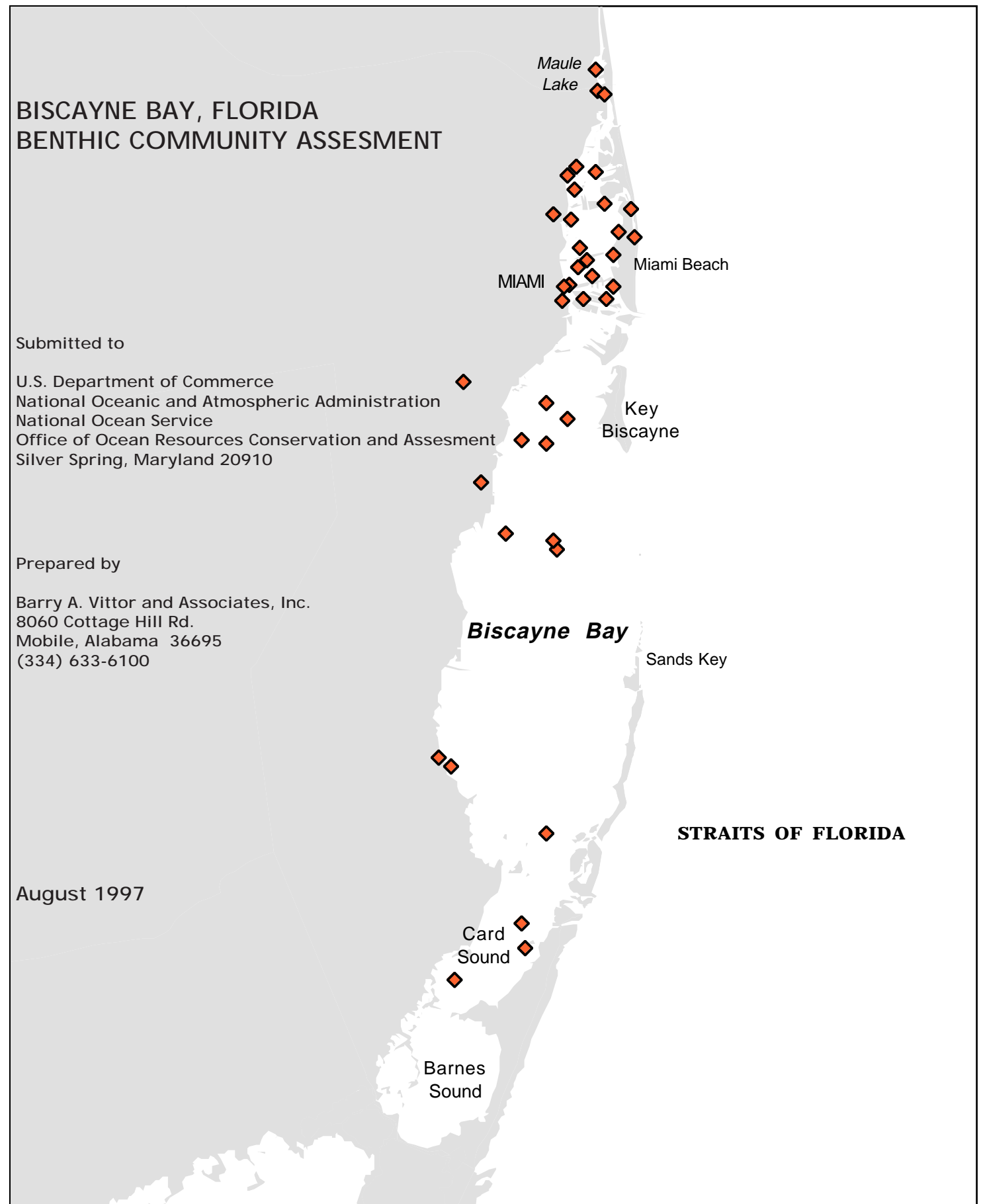
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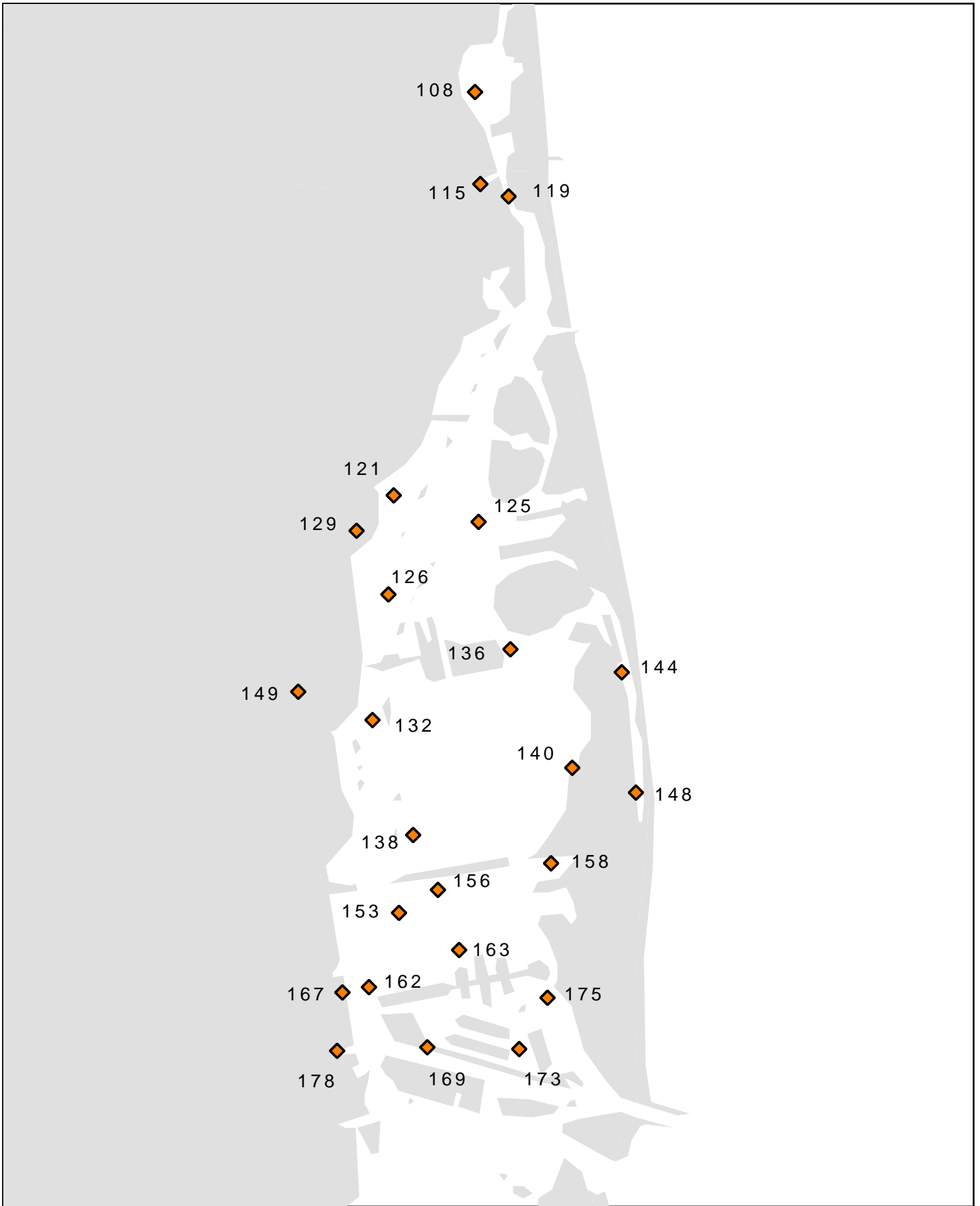
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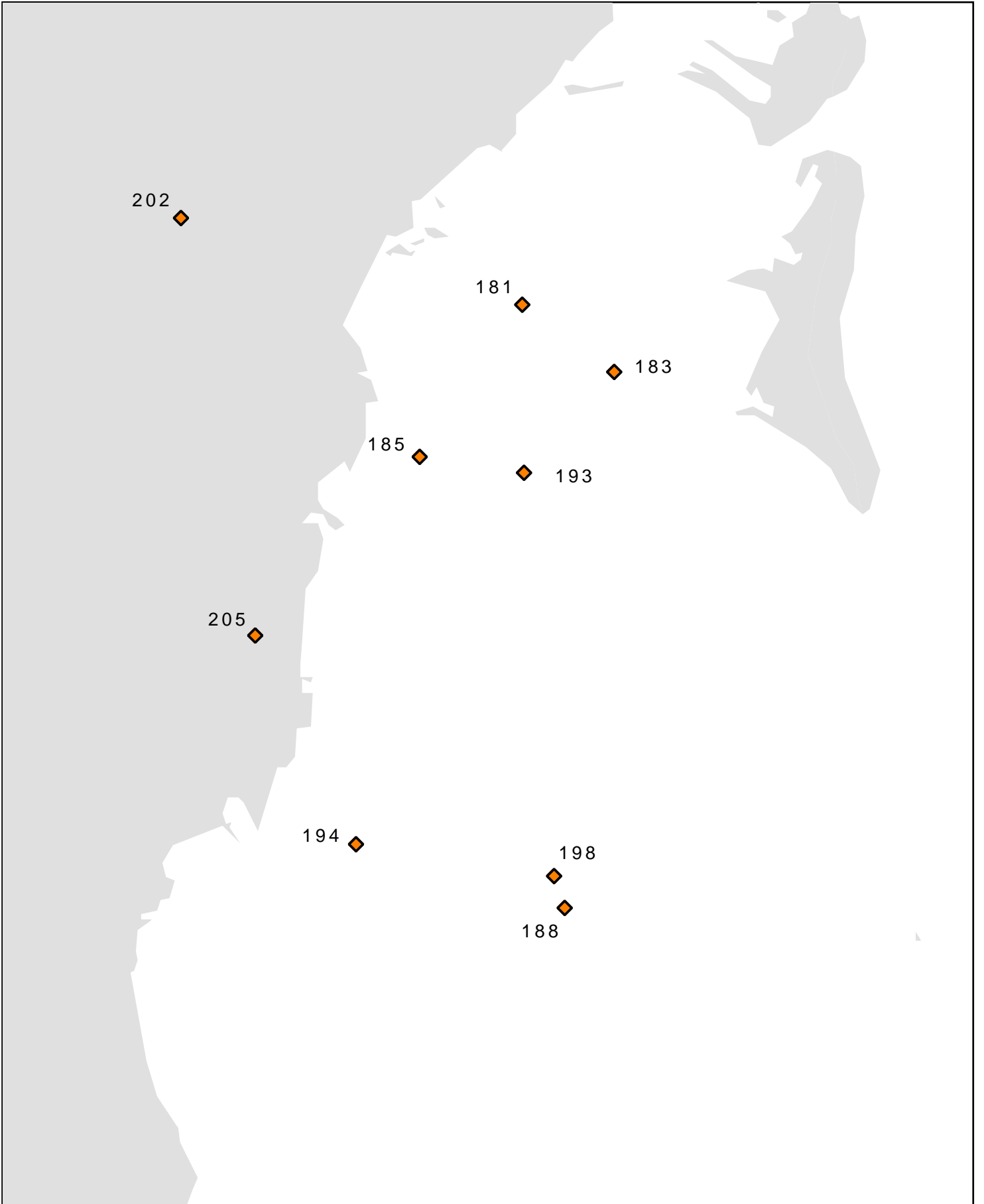
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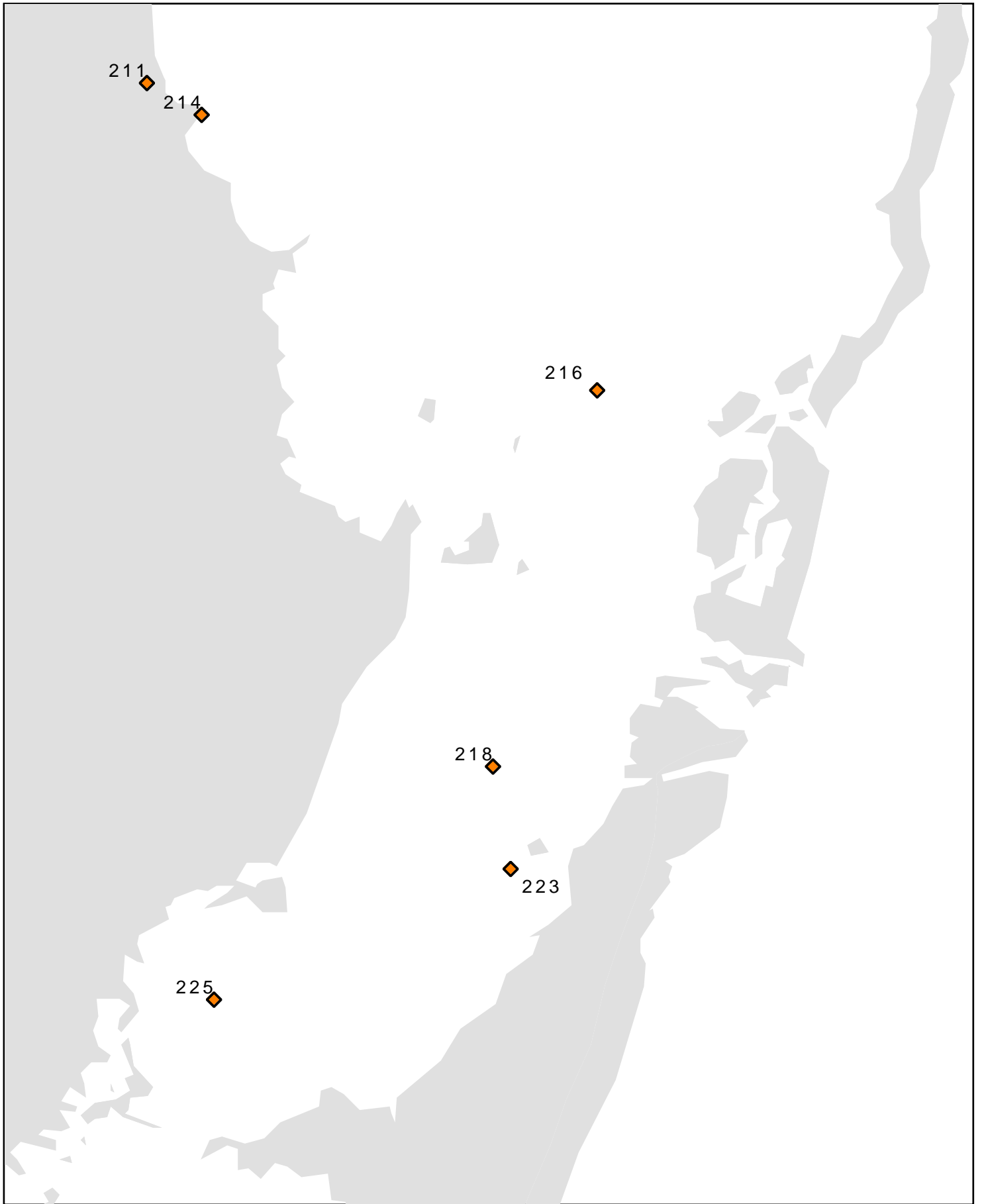
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INTRODUCTION

Biscayne Bay, Florida was sampled during June, 1996. One aspect of this evaluation was benthic community characterization, which was accomplished via sample collection by National Oceanic and Atmospheric Administration (NOAA) personnel and laboratory and data analysis by Barry A. Vittor & Associates, Inc. (BVA).

METHODS

Sample Collection And Handling

A Young dredge (area = 0.04 m²) was used to collect replicate bottom samples at each of 40 stations in Biscayne Bay. Macroinfaunal samples were sieved through a 0.5-mm mesh screen and preserved with 10% formalin on ship. Macroinfaunal samples were transported to the BVA laboratory in Mobile, Alabama.

Sediment Analysis

Sediment texture was determined at half-phi intervals using the hydrometer technique for fractions smaller than 44 µm and nested sieves for larger particle fractions. Texture parameters computed included percent gravel, sand, and silt /clay. Total organic carbon (TOC) content was measured as ash-free dry weight expressed as a percentage.

Macroinfaunal Sample Analysis

In the laboratory of BVA, benthic samples were inventoried, rinsed gently through a 0.5 mm mesh sieve to remove preservatives and sediment, stained with Rose Bengal, and stored in 70% isopropanol solution until processing. Sample material (sediment, detritus, organisms) was placed in white enamel trays for sorting under Wild M-5A dissecting microscopes. All macroinvertebrates were carefully removed with forceps and placed in labelled glass vials containing 70% isopropanol. Each vial represented a major taxonomic group (e.g. Polychaeta, Mollusca, Arthropoda). All sorted macroinvertebrates were identified to the lowest practical

identification level (LPIL), which in most cases was to species level unless the specimen was a juvenile, damaged, or otherwise unidentifiable. The number of individuals of each taxon, excluding fragments, was recorded. A voucher collection was prepared, composed of representative individuals of each species not previously encountered in samples from the region.

DATA ANALYSIS

All data generated as a result of laboratory analysis of macroinfauna samples were first coded on data sheets. Enumeration data were entered for each species according to station and replicate. These data were reduced to a data summary report for each station, which included a taxonomic species list and benthic community parameters information. Archive data files of species identification and enumeration were prepared.

The QA/QC report for the Biscayne Bay samples is given in the Appendix.

The analytical methodologies utilized for this study were similar to those used in other benthic community characterization reports prepared for NOAA. Macroinfaunal characterization involves an evaluation of several biological community structure parameters (e.g., species abundance, species composition and species diversity indices) during initial data reduction, followed by pattern and classification analysis for delineation of taxa assemblages. Since species are distributed along environmental gradients, there are generally no distinct boundaries between communities. However, the relationships between habitats and species assemblages often reflect the interactions of physical and biological factors and indicate major ecological trends.

Assemblage Structure

Several numerical indices were chosen for analysis and interpretation of the macroinfaunal data. Selection was based primarily on the ability of the index to provide a meaningful summary of data, as well as the applicability of the index to the characterization of the benthic community. Infaunal abundance is reported as the total number of individuals per station and the total number

of individuals per square meter (= density). Taxa richness is reported as the total number of taxa represented in a given station collection.

Taxa diversity, which is often related to the ecological stability and environmental "quality" of the benthos, was estimated by the Pielou's Index (Pielou, 1966), according to the following formula:

$$H' = - \sum_{i=1}^S p_i (\ln p_i)$$

where, S = is the number of taxa in the sample,

i = is the i'th taxa in the sample, and

p_i = is the number of individuals of the i'th taxa divided by the total number of

individuals in the sample.

Taxa diversity within a given community is dependent upon the number of taxa present (taxa richness) and the distribution of all individuals among those taxa (equitability or evenness).

In order to quantify and compare faunal equitability to taxa diversity for a given area, Pielou's Index J' (Pielou, 1966) was calculated as $J' = H' / \ln S$, where $\ln S = H'_{\max}$, or the maximum

possible diversity, when all taxa are represented by the same number of individuals;

thus, $J' = H' / H'_{\max}$.

Macroinfaunal data were graphically and statistically analyzed to identify any differences in density between stations. Data for total density were variously transformed and tested for normality (Shapiro-Wilk W; SAS Institute, 1995). Data could not be normalized with standard transformations [e.g. $\ln(x+1)$, $(x+1)$] and were analyzed using non-parametric methods (SAS Institute, 1995).

Faunal Similarities

Cluster analysis was performed on the faunal data to examine between-station differences at the Florida Bay stations and to compare faunal composition at each station within the study area.

Both normal and inverse cluster analyses were used in this study. Normal analysis (sometimes

called Q-analysis) treats samples as individual observations, each being composed of a number of attributes (i.e. the various taxa from a given sample). Normal analysis is instructive in helping to ascertain community structure and to infer specific ecological conditions between sampling stations from the relative distributions of species. Inverse clustering (termed R-analysis) is based on taxa as individuals, each of which is characterized by its relative abundance in the various samples. This type of analysis is commonly used to identify species groupings with particular habitats or environmental conditions.

Cluster analysis of both station collections (normal analysis) and taxa (inverse analysis) was performed using the average linkage method (SAS Institute 1997). In this method, the distance between two clusters is the average distance between pairs of observations, one in each cluster. Taxa used in these analyses were selected according to their percent abundance in the assemblage. Total densities for each of the selected taxa at a given station were \ln transformed [$x=\ln(x+1)$] before the analyses.

HABITAT CHARACTERISTICS

Sediment data for the 40 stations are given in Table 1 and Figures 1, 2, and 3. Sediment composition at the 40 stations varied considerably from 78% silt (sandy silt) at Station 178 to greater than 98% sand at Stations 216 and 218 (Table 1; Figure 1); however, the sediment at the majority of stations was predominantly sand or silty sand (Figure 2). The total organic carbon (TOC) fraction of the sediment ranged from 0.69% at Station 216 to 16.2% at Station 208 (Table 1; Figure 3).

BENTHIC COMMUNITY CHARACTERIZATION

Faunal Composition, Abundance, And Community Structure

Table 2 provides a complete phylogenetic listing for all stations as well as data on taxa abundance and station occurrence. Four Microsoft TMExcel 5.0 (Macintosh version) spreadsheets are being provided separately to NOAA which include: raw data on taxa abundance and density by

Table 1. Summary of sediment and benthic macroinfaunal data for the Biscayne Bay stations, June 1996.

Station Number	Total Taxa	Mean Taxa per Repl.	Total No. Indivs.	Mean Density (nos/m ²)	Density (Std. Dev.)	H'	J'	D	% Gravel	% Sand	% Silt	% Clay	TOC	Textural Description
108	83	46.0	1513	12608	7624	2.83	0.64	11.20	3.54	92.15	1.1	–	4.22	sand
115	84	48.7	2125	17708	959	2.06	0.46	10.83	2.43	94.47	0.5	–	3.63	sand
119	95	55.7	1124	9367	5883	2.99	0.66	13.38	2.92	92.8	0.92	–	5.83	sand
121	152	89.0	2825	23542	4811	3.55	0.71	19.00	2.62	73.91	18.28	5.19	4.61	silty sand
125	134	77.3	1907	15892	5432	3.53	0.72	17.61	–	58.4	33.16	8.44	8.72	silty sand
126	135	76.7	1196	9967	3229	3.87	0.79	18.91	1.62	78.05	14.19	6.15	4.37	silty sand
129	36	18.3	337	2808	1962	2.41	0.67	6.01	0.29	24.95	31.32	43.44	12.83	silty clay
132	207	116.3	1960	16333	1924	4.23	0.79	27.17	1.67	75.61	18.89	3.83	2.94	silty sand
136	153	89.0	2248	18733	6194	3.66	0.73	19.69	0.67	92.49	1.85	–	7.33	sand
138	70	39.0	1439	11992	12941	2.43	0.57	9.49	19.81	45.92	21.39	12.87	12.81	ravelly muddy sand
140	137	68.0	1613	13442	6915	2.91	0.59	18.41	3.06	94.48	0.35	–	7.93	sand
144	64	32.0	720	6000	1741	2.40	0.58	9.58	3.48	95.59	0.12	–	7.78	sand
148	58	30.3	841	7008	1907	1.61	0.40	8.46	1.42	96.2	0.58	–	6.56	sand
149	17	7.3	70	583	488	2.32	0.82	3.77	1.28	50.93	23.03	24.75	10.47	clayey sand
153	162	80.3	1965	16375	12709	3.49	0.69	21.23	0.24	86.17	10.58	3.01	2.16	sand
156	101	60.0	1812	15100	2407	3.47	0.75	13.33	0.66	64.77	25.31	9.27	10.68	silty sand
158	116	58.7	1249	10408	11230	3.75	0.79	16.27	0.4	62.33	29.24	8.03	8.79	silty sand
162	162	96.7	2317	19308	9640	3.85	0.76	20.91	1	94.93	1.33	–	2.1	sand
163	183	108.3	2522	21017	4600	4.06	0.78	23.24	16.2	81.88	0.28	–	4.98	gravelly sand
167	161	94.7	2369	19742	2004	3.69	0.73	20.59	0.16	78.38	16.45	5.01	3.54	silty sand
169	98	57.3	868	7233	1409	3.62	0.79	14.34	0.29	44.94	47.43	7.34	9.52	silty sand
173	90	53.0	612	5100	613	3.62	0.80	13.87	0.04	16.89	67.12	15.95	11.1	sandy silt
175	262	143.0	4162	34683	6020	4.15	0.75	31.32	8.03	87.95	0.87	–	7.46	gravelly sand
178	38	23.0	319	2658	586	2.80	0.77	6.42	–	6.8	78.03	15.16	11.91	sandy silt
181	196	103.0	1450	12083	2575	4.06	0.77	26.79	2.56	94.72	0.8	–	2.13	sand
183	85	43.0	348	2900	1260	3.75	0.84	14.35	1.92	53.78	32.1	12.21	7	silty sand
185	134	70.0	1816	15133	7565	2.11	0.43	17.72	0.68	97.86	0.18	–	0.93	sand
188	188	96.3	1010	8417	2028	4.42	0.84	27.03	4.2	65.4	21.6	8.81	5.27	silty sand
193	159	77.0	831	6925	4327	3.99	0.79	23.50	–	84.05	10.03	5.92	2	sand
194	144	66.7	1014	8450	7645	3.53	0.71	20.66	2.58	95.52	0.29	–	3.54	sand
198	183	91.3	922	7683	5310	4.65	0.89	26.66	0.15	68.64	17.57	13.65	4.98	silty sand
202	19	12.0	3144	26200	14262	0.41	0.14	2.24	12.2	87.06	0.06	–	2.48	gravelly sand
205	30	16.0	188	1567	364	2.02	0.59	5.54	0.98	67.21	25.98	5.82	4.63	silty sand
208	8	3.0	22	183	194	1.84	0.88	2.26	0.73	52.31	24.76	22.2	16.2	clayey sand
211	33	18.0	211	1758	194	2.69	0.77	5.98	13.17	51.13	27.16	8.54	11.39	ravelly muddy sand
214	51	23.0	230	1917	1787	3.25	0.83	9.18	11.4	46.93	34.42	7.25	12.15	ravelly muddy sand
216	160	83.0	1018	8483	6484	4.22	0.83	22.96	0.5	98.73	0.08	–	0.69	sand
218	141	83.3	1636	13633	2374	3.37	0.68	18.92	0.52	98.31	0.13	–	1.88	sand
223	166	95.3	1542	12850	585	4.10	0.80	22.48	4.94	75.51	10.09	9.47	8.36	sand
225	99	51.7	929	7742	3018	3.19	0.69	14.34	4.12	68.52	18.85	8.51	11.69	silty sand

Figure 1. Sediment composition for the Biscayne Bay stations. June 1996

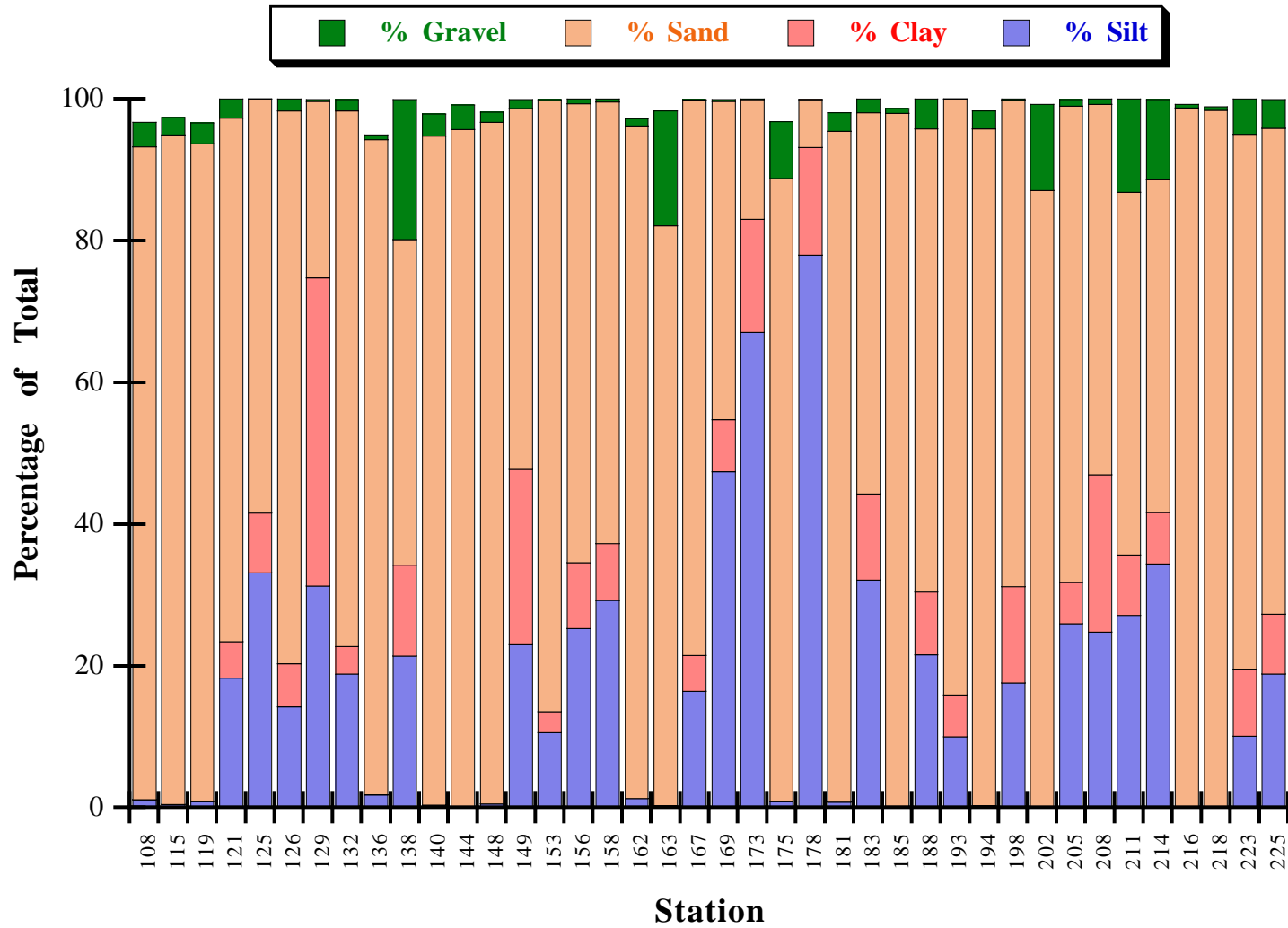


Figure 2. Percent gravel/sand and percent silt/clay content of sediments for the Biscayne Bay stations, June 1996.

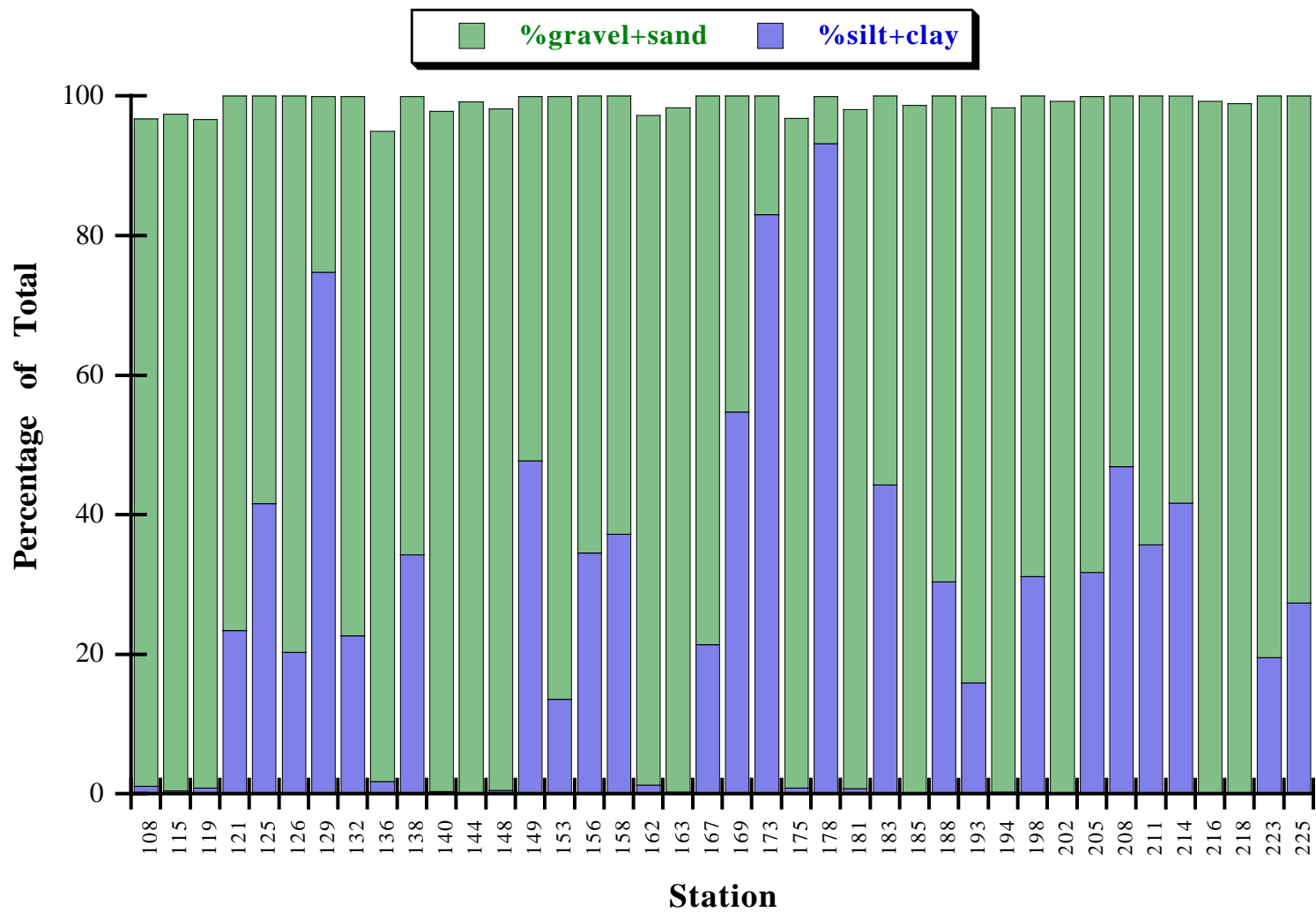


Figure 3. percent total organic carbon (TOC) content of sediments for the Biscayne Bay stations, June 1996.

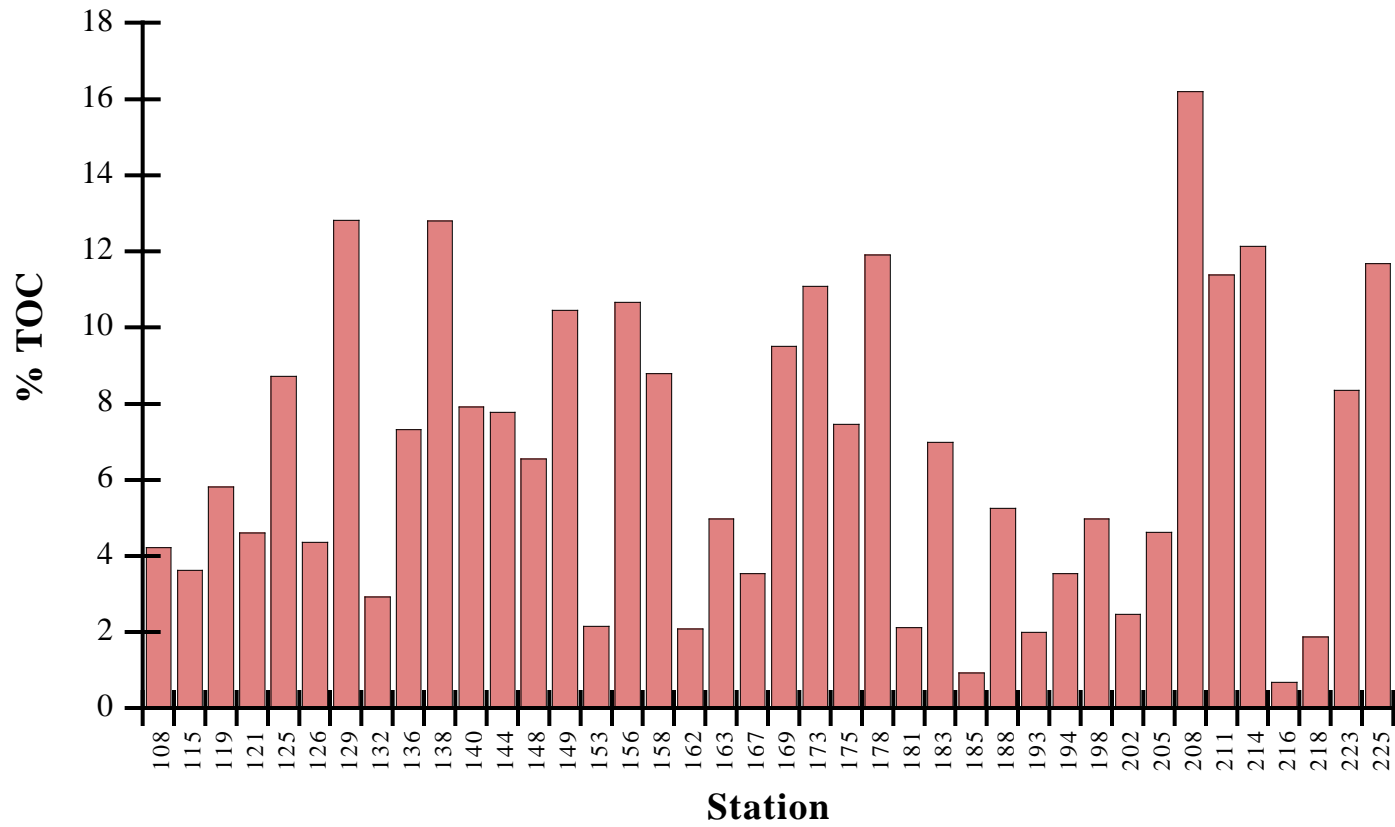


Table 2. Abundance and distribution of taxa for the Biscayne Bay stations, June 1996.

Taxa						Station	Station %	Comments
	Phylum	Class	Individuals	% Total	Cummulative %	Occurrence	Occurrence	
<i>Caecum pulchellum</i>	M	Gast	9234	16.967	16.967	35	87.5	
<i>Tarebia granifera</i>	M	Gast	2923	5.371	22.338	1	2.5	
<i>Fabricinuda trilobata</i>	A	Poly	2664	4.895	27.232	29	72.5	
<i>Scoletoma verrilli</i>	A	Poly	1495	2.747	29.979	31	77.5	
<i>Leptocheilia</i> (LPIL)	Ar	Mala	1490	2.738	32.717	24	60.0	mature male necessary for species identification
Oligochaeta (LPIL)	A	Olig	1310	2.407	35.124	39	97.5	marine and some esturine specimens only ID'd to class
<i>Monticellina dorsobranchialis</i>	A	Poly	851	1.564	36.688	33	82.5	
<i>Mediomastus</i> (LPIL)	A	Poly	851	1.564	38.252	32	80.0	anterior portions only, pygidium need for species ID
Sipuncula (LPIL)	S		829	1.523	39.775	28	70.0	juvenile specimen or missing characters
<i>Nucula aegeenis</i>	M	Biva	785	1.442	41.217	25	62.5	
Actiniaria (LPIL)	Cn	Anth	759	1.395	42.612	28	70.0	order is lowest identification level
<i>Cirrophorus</i> (LPIL)	A	Poly	757	1.391	44.003	32	80.0	immature and/or fragmented portion only
<i>Erichthonius brasiliensis</i>	Ar	Mala	689	1.266	45.269	19	47.5	
Sabellidae (LPIL)	A	Poly	503	0.924	46.193	24	60.0	missing branchial crown
<i>Exogone rolani</i>	A	Poly	500	0.919	47.112	29	72.5	
<i>Bispira melanostigma</i>	A	Poly	494	0.908	48.019	6	15.0	
Rhynchozoela (LPIL)	R		486	0.893	48.912	38	95.0	no identifiable characters
Aoridae (LPIL)	Ar	Mala	479	0.880	49.792	28	70.0	lacking appendages
Maldanidae (LPIL)	A	Poly	465	0.854	50.647	21	52.5	fragmented portion, pygidium needed for positive ID
<i>Harbansus paucichelatus</i>	Ar	Ostr	460	0.845	51.492	16	40.0	
Capitellidae (LPIL)	A	Poly	405	0.744	52.236	32	80.0	immature and/or fragmented portion only
<i>Caecum nitidum</i>	M	Gast	386	0.709	52.945	25	62.5	
Ophiuroidea (LPIL)	E	Ophi	384	0.706	53.651	30	75.0	central disk missing characters
<i>Haplosyllis spongicola</i>	A	Poly	375	0.689	54.340	6	15.0	
<i>Haplocytheridea setipunctata</i>	Ar	Ostr	360	0.661	55.001	16	40.0	
Cirratulidae (LPIL)	A	Poly	357	0.656	55.657	30	75.0	anterior fragment, posterior needed for species ID

Table 2. Continued

Taxa	No. of					Station	Station %	Comments
	Phylum	Class	Individuals	% Total	Cummulative %	Occurrence	Occurrence	
Lumbrineridae (LPIL)	A	Poly	355	0.652	56.310	27	67.5	damaged and/or immature specimen
<i>Parasterope pollex</i>	Ar	Ostr	355	0.652	56.962	9	22.5	
<i>Vaunthompsonia</i> sp.B	Ar	Mala	340	0.625	57.587	16	40.0	
<i>Shoemakerella cubensis</i>	Ar	Mala	325	0.597	58.184	17	42.5	
<i>Aricidea philbinae</i>	A	Poly	324	0.595	58.779	22	55.0	
<i>Phascolion strombi</i>	S		317	0.582	59.362	24	60.0	
Bivalvia (LPIL)	M	Biva	311	0.571	59.933	32	80.0	crushed and/or juvenile specimen
<i>Cumella garrityi</i>	Ar	Mala	304	0.559	60.492	17	42.5	
<i>Lembos</i> (LPIL)	Ar	Mala	275	0.505	60.997	21	52.5	need adult male with all appendages
Lucinidae (LPIL)	M	Biva	269	0.494	61.491	24	60.0	juvenile specimen
<i>Syllis cornuta</i>	A	Poly	263	0.483	61.974	22	55.0	
<i>Elasmopus</i> (LPIL)	Ar	Mala	259	0.476	62.450	11	27.5	immature specimen
<i>Paramicrodeutopus myersi</i>	Ar	Mala	253	0.465	62.915	14	35.0	
<i>Dulichella appendiculata</i>	Ar	Mala	251	0.461	63.376	9	22.5	
<i>Rutiderma darbyi</i>	Ar	Ostr	247	0.454	63.830	16	40.0	
<i>Acteocina canaliculata</i>	M	Gast	245	0.450	64.280	24	60.0	
Gastropoda (LPIL)	M	Gast	244	0.448	64.729	37	92.5	crushed and/or immature specimen
<i>Exogone lourei</i>	A	Poly	242	0.445	65.173	18	45.0	
Amphiuridae (LPIL)	E	Ophi	240	0.441	65.614	20	50.0	immature specimen
<i>Schistomeringos rudolphi</i>	A	Poly	235	0.432	66.046	22	55.0	
<i>Ceratonereis versipedata</i>	A	Poly	234	0.430	66.476	16	40.0	
<i>Tubulanus</i> (LPIL)	R		233	0.428	66.904	30	75.0	genus is lowest identification level
<i>Cirrophorus furcatus</i>	A	Poly	232	0.426	67.331	15	37.5	
<i>Golfingia</i> (LPIL)	S		228	0.419	67.750	13	32.5	immature and/or damaged specimen
<i>Chone</i> (LPIL)	A	Poly	227	0.417	68.167	16	40.0	genus is lowest identification level

Table 2. Continued

Taxa	No. of					Station	Station %	Comments
	Phylum	Class	Individuals	% Total	Cummulative %	Occurrence	Occurrence	
Spirorbidae (LPIL)	A	Poly	226	0.415	68.582	14	35.0	associated tube needed for identification
<i>Leucon americanus</i>	Ar	Mala	226	0.415	68.997	13	32.5	
<i>Prionospio</i> (LPIL)	A	Poly	223	0.410	69.407	31	77.5	missing identification characters
<i>Aricidea taylora</i>	A	Poly	221	0.406	69.813	26	65.0	
Tellinidae (LPIL)	M	Biva	217	0.399	70.212	22	55.0	missing identification characters
Nereididae (LPIL)	A	Poly	211	0.388	70.599	28	70.0	missing identification characters and/or immature
Melitidae (LPIL)	Ar	Mala	211	0.388	70.987	19	47.5	specimen lacks third uropod
<i>Carpias</i> (LPIL)	Ar	Mala	206	0.379	71.366	12	30.0	mature male necessary for species identification
<i>Aricidea suecica</i>	A	Poly	200	0.367	71.733	15	37.5	
<i>Phascolion</i> sp.B	S		195	0.358	72.091	21	52.5	
<i>Terebellides parvus</i>	A	Poly	188	0.345	72.437	17	42.5	
<i>Sinelobus stanfordi</i>	Ar	Mala	184	0.338	72.775	9	22.5	
<i>Potamethus</i> (LPIL)	A	Poly	183	0.336	73.111	15	37.5	immature and/or fragmented portion only
<i>Schistomeringos pectinata</i>	A	Poly	181	0.333	73.444	23	57.5	
<i>Photis</i> sp.J	Ar	Mala	176	0.323	73.767	5	12.5	
<i>Elasmopus</i> sp.C	Ar	Mala	174	0.320	74.087	4	10.0	
<i>Caulleriella</i> cf. <i>alata</i>	A	Poly	163	0.300	74.386	21	52.5	
<i>Sphaerosyllis piriferopsis</i>	A	Poly	163	0.300	74.686	18	45.0	
<i>Aapseudes</i> (LPIL)	Ar	Mala	160	0.294	74.980	6	15.0	missing appendages
<i>Leptocheilia forresti</i>	Ar	Mala	156	0.287	75.266	15	37.5	
<i>Pseudopolydora antennata</i>	A	Poly	155	0.285	75.551	8	20.0	
<i>Spiochaetopterus oculatus</i>	A	Poly	152	0.279	75.831	8	20.0	
Syllidae (LPIL)	A	Poly	148	0.272	76.102	20	50.0	
<i>Cumella</i> sp.N	Ar	Mala	148	0.272	76.374	7	17.5	
<i>Capitella capitata</i>	A	Poly	146	0.268	76.643	15	37.5	

Table 2. Continued

Taxa	No. of					Station	Station %	Comments
	Phylum	Class	Individuals	% Total	Cummulative %	Occurrence	Occurrence	
<i>Xenanthura brevitelson</i>	Ar	Mala	146	0.268	76.911	13	32.5	
<i>Schwartziella catesbyana</i>	M	Gast	146	0.268	77.179	10	25.0	
<i>Glycinde solitaria</i>	A	Poly	144	0.265	77.444	23	57.5	
<i>Photis</i> (LPIL)	Ar	Mala	144	0.265	77.708	9	22.5	
<i>Exogone</i> (LPIL)	A	Poly	139	0.255	77.964	18	45.0	
<i>Pagurapseudes largoensis</i>	Ar	Mala	138	0.254	78.217	7	17.5	
<i>Chione cancellata</i>	M	Biva	136	0.250	78.467	24	60.0	
<i>Amakusanthura magnifica</i>	Ar	Mala	130	0.239	78.706	16	40.0	
<i>Pontomyia</i> (LPIL)	Ar	Inse	129	0.237	78.943	12	30.0	
<i>Tellina sybaritica</i>	M	Biva	129	0.237	79.180	23	57.5	
<i>Ehlersia ferrugina</i>	A	Poly	128	0.235	79.415	11	27.5	
Asciacea (LPIL)	C	Asci	127	0.233	79.649	13	32.5	
<i>Eusarsiella absens</i>	Ar	Ostr	125	0.230	79.878	11	27.5	
<i>Acuminodeutopus naglei</i>	Ar	Mala	122	0.224	80.103	11	27.5	
Spionidae (LPIL)	A	Poly	119	0.219	80.321	28	70.0	
<i>Eusarsiella disparalis</i>	Ar	Ostr	113	0.208	80.529	18	45.0	
<i>Capitella jonesi</i>	A	Poly	111	0.204	80.733	15	37.5	
<i>Elasmopus levis</i>	Ar	Mala	105	0.193	80.926	6	15.0	
<i>Ampelisca</i> (LPIL)	Ar	Mala	105	0.193	81.119	14	35.0	
<i>Synasterope setisparsa</i>	Ar	Ostr	105	0.193	81.312	11	27.5	
Paraonidae (LPIL)	A	Poly	103	0.189	81.501	18	45.0	
<i>Exogone breviantennata</i>	A	Poly	102	0.187	81.688	4	10.0	
<i>Tellina</i> (LPIL)	M	Biva	101	0.186	81.874	15	37.5	
<i>Phoronis</i> (LPIL)	Ph		99	0.182	82.056	10	25.0	
<i>Scoloplos rubra</i>	A	Poly	97	0.178	82.234	9	22.5	

Table 2. Continued

Taxa	No. of					Station	Station %	Comments
	Phylum	Class	Individuals	% Total	Cummulative %	Occurrence	Occurrence	
<i>Streblosoma hartmanae</i>	A	Poly	94	0.173	82.407	14	35.0	
<i>Sphaerosyllis taylori</i>	A	Poly	93	0.171	82.578	14	35.0	
<i>Lucina multilineata</i>	M	Biva	93	0.171	82.748	17	42.5	
<i>Cerapus benthophilus</i>	Ar	Mala	90	0.165	82.914	8	20.0	
<i>Cymadusa compta</i>	Ar	Mala	88	0.162	83.075	8	20.0	
Serpulidae (LPIL)	A	Poly	84	0.154	83.230	13	32.5	
<i>Piromis roberti</i>	A	Poly	83	0.153	83.382	9	22.5	
<i>Solemya occidentalis</i>	M	Biva	83	0.153	83.535	2	5.0	
<i>Bogaea</i> sp.A	A	Poly	82	0.151	83.686	1	2.5	
<i>Syllis broomensis</i>	A	Poly	82	0.151	83.836	18	45.0	
<i>Tharyx kirkegaardi</i>	A	Poly	82	0.151	83.987	8	20.0	
<i>Pseudoleptochelia</i> sp.A	Ar	Mala	81	0.149	84.136	3	7.5	
<i>Tagelus divisus</i>	M	Biva	81	0.149	84.285	11	27.5	
<i>Paranesidea</i> sp.A	Ar	Ostr	79	0.145	84.430	11	27.5	
<i>Eusarsiella</i> (LPIL)	Ar	Ostr	79	0.145	84.575	17	42.5	
Terebellidae (LPIL)	A	Poly	78	0.143	84.718	15	37.5	
<i>Grandidierella bonnieroides</i>	Ar	Mala	78	0.143	84.861	15	37.5	
<i>Scolelepis texana</i>	A	Poly	77	0.141	85.003	11	27.5	
<i>Paracerceis caudata</i>	Ar	Mala	76	0.140	85.143	14	35.0	
<i>Deutella incerta</i>	Ar	Mala	76	0.140	85.282	13	32.5	
<i>Phtisica marina</i>	Ar	Mala	74	0.136	85.418	10	25.0	
<i>Cumella</i> (LPIL)	Ar	Mala	74	0.136	85.554	18	45.0	
<i>Nematoneis hebes</i>	A	Poly	71	0.130	85.685	12	30.0	
<i>Ceratocephale oculata</i>	A	Poly	70	0.129	85.813	11	27.5	
<i>Cirrophorus lyra</i>	A	Poly	69	0.127	85.940	6	15.0	

Table 2. Continued

Taxa	No. of					Station	Station %	Comments
	Phylum	Class	Individuals	% Total	Cummulative %	Occurrence	Occurrence	
<i>Ampelisca</i> sp.B	Ar	Mala	66	0.121	86.061	2	5.0	
<i>Eusarsiella cornuta</i>	Ar	Ostr	66	0.121	86.183	13	32.5	
Polyplacophora (LPIL)	M	Poly	64	0.118	86.300	16	40.0	
<i>Cylindrobulla beauii</i>	M	Gast	64	0.118	86.418	14	35.0	
<i>Kalliapseudes</i> sp.C	Ar	Mala	63	0.116	86.534	9	22.5	
<i>Pettiboneia duofurca</i>	A	Poly	62	0.114	86.647	14	35.0	
<i>Prionospio heterobranchia</i>	A	Poly	62	0.114	86.761	13	32.5	
Eunicidae (LPIL)	A	Poly	62	0.114	86.875	15	37.5	
Ostracoda (LPIL)	Ar	Ostr	61	0.112	86.987	18	45.0	
<i>Pseudovermilia occidentalis</i>	A	Poly	59	0.108	87.096	2	5.0	
<i>Prionospio cristata</i>	A	Poly	58	0.107	87.202	18	45.0	
Amphipoda (LPIL)	Ar	Mala	58	0.107	87.309	18	45.0	
<i>Mysella planulata</i>	M	Biva	57	0.105	87.414	11	27.5	
<i>Syllis prolifera</i>	A	Poly	56	0.103	87.517	7	17.5	
<i>Batea catharinensis</i>	Ar	Mala	56	0.103	87.619	7	17.5	
<i>Cerapus</i> sp.B	Ar	Mala	55	0.101	87.720	8	20.0	
<i>Eusarsiella</i> sp.E	Ar	Ostr	55	0.101	87.822	3	7.5	
Veneridae (LPIL)	M	Biva	54	0.099	87.921	17	42.5	
<i>Aspidosiphon albus</i>	S		52	0.096	88.016	4	10.0	
<i>Aricidea</i> (LPIL)	A	Poly	52	0.096	88.112	19	47.5	
<i>Batea carinata</i>	Ar	Mala	52	0.096	88.207	9	22.5	
<i>Glycera</i> sp.F	A	Poly	51	0.094	88.301	16	40.0	
<i>Podarke</i> sp.D	A	Poly	50	0.092	88.393	10	25.0	
<i>Syllis</i> (LPIL)	A	Poly	50	0.092	88.485	18	45.0	
Hesionidae (LPIL)	A	Poly	50	0.092	88.577	20	50.0	

Table 2. Continued

Taxa	No. of					Station	Station %	Comments
	Phylum	Class	Individuals	% Total	Cummulative %	Occurrence	Occurrence	
<i>Maera</i> sp.C	Ar	Mala	50	0.092	88.669	2	5.0	
<i>Turbonilla</i> (LPIL)	M	Gast	50	0.092	88.760	12	30.0	
<i>Corophium</i> sp.T	Ar	Mala	49	0.090	88.851	2	5.0	
<i>Rictaxis punctostriatus</i>	M	Gast	49	0.090	88.941	14	35.0	
<i>Taylorpholoe hirsuta</i>	A	Poly	48	0.088	89.029	8	20.0	
<i>Asychis elongatus</i>	A	Poly	46	0.085	89.113	14	35.0	
<i>Pagurus</i> (LPIL)	Ar	Mala	45	0.083	89.196	4	10.0	
<i>Anomalocardia auberiana</i>	M	Biva	45	0.083	89.279	5	12.5	
<i>Branchiomma nigromaculata</i>	A	Poly	44	0.081	89.359	6	15.0	
<i>Notomastus</i> (LPIL)	A	Poly	44	0.081	89.440	15	37.5	
Gastropoda - Opisthobranchia (LPIL)	M	Gast	44	0.081	89.521	12	30.0	
<i>Podarkeopsis levifuscina</i>	A	Poly	43	0.079	89.600	17	42.5	
Paratanaidae (LPIL)	Ar	Mala	43	0.079	89.679	12	30.0	
Hydrobiidae (LPIL)	M	Gast	43	0.079	89.758	2	5.0	
<i>Isolda pulchella</i>	A	Poly	42	0.077	89.835	13	32.5	
<i>Lumbrineris latreilli</i>	A	Poly	42	0.077	89.913	13	32.5	
<i>Prionospio perkinsi</i>	A	Poly	42	0.077	89.990	4	10.0	
<i>Ampelisca</i> sp.C	Ar	Mala	42	0.077	90.067	3	7.5	
<i>Cyclaspis</i> sp.N	Ar	Mala	42	0.077	90.144	6	15.0	
<i>Axiothella</i> sp.A	A	Poly	41	0.075	90.219	3	7.5	
<i>Grubeosyllis clavata</i>	A	Poly	41	0.075	90.295	8	20.0	
<i>Eusarsiella radiicosta</i>	Ar	Ostr	41	0.075	90.370	9	22.5	
<i>Scyphoproctus platyproctus</i>	A	Poly	40	0.073	90.444	5	12.5	
Aeginellidae (LPIL)	Ar	Mala	40	0.073	90.517	16	40.0	
<i>Lucina</i> (LPIL)	M	Biva	40	0.073	90.591	7	17.5	

Table 2. Continued

Taxa	No. of					Station	Station %	Comments
	Phylum	Class	Individuals	% Total	Cummulative %	Occurrence	Occurrence	
<i>Pettibonella multiuncinata</i>	A	Poly	39	0.072	90.662	10	25.0	
<i>Pseudofabriciola sofla</i>	A	Poly	39	0.072	90.734	2	5.0	
<i>Owenia fusiformis</i>	A	Poly	39	0.072	90.806	10	25.0	
<i>Erichsonella attenuata</i>	Ar	Mala	39	0.072	90.877	6	15.0	
<i>Platynereis dumerilli</i>	A	Poly	38	0.070	90.947	14	35.0	
<i>Marginella apicina</i>	M	Gast	38	0.070	91.017	13	32.5	
Pyramidellidae (LPIL)	M	Gast	38	0.070	91.087	12	30.0	
<i>Lucina pectinata</i>	M	Biva	37	0.068	91.155	10	25.0	
<i>Ischnochiton papillosus</i>	M	Poly	37	0.068	91.223	3	7.5	
<i>Mediomastus californiensis</i>	A	Poly	36	0.066	91.289	7	17.5	
<i>Aricidea</i> sp.X	A	Poly	36	0.066	91.355	11	27.5	
Anthuridae (LPIL)	Ar	Mala	36	0.066	91.421	10	25.0	
<i>Cubanocuma</i> sp.A	Ar	Mala	36	0.066	91.487	7	17.5	
<i>Diastoma varium</i>	M	Gast	36	0.066	91.553	10	25.0	
<i>Fimbriosthenelais minor</i>	A	Poly	35	0.064	91.618	8	20.0	
<i>Melinna maculata</i>	A	Poly	35	0.064	91.682	13	32.5	
<i>Scoletoma testudinum</i>	A	Poly	35	0.064	91.746	4	10.0	
<i>Leitoscoloplos</i> (LPIL)	A	Poly	35	0.064	91.811	10	25.0	
<i>Corophium</i> (LPIL)	Ar	Mala	35	0.064	91.875	7	17.5	
<i>Diplodonta</i> (LPIL)	M	Biva	35	0.064	91.939	13	32.5	
<i>Cirratulus</i> sp.A	A	Poly	34	0.062	92.002	3	7.5	
<i>Dorvillea sociabilis</i>	A	Poly	34	0.062	92.064	4	10.0	
<i>Eunice unifrons</i>	A	Poly	34	0.062	92.127	6	15.0	
<i>Polycirrus</i> (LPIL)	A	Poly	34	0.062	92.189	16	40.0	
Tubificidae (LPIL)	A	Olig	34	0.062	92.252	1	2.5	

Table 2. Continued

Taxa	No. of					Station	Station %	Comments
	Phylum	Class	Individuals	% Total	Cummulative %	Occurrence	Occurrence	
<i>Eusarsiella zostericola</i>	Ar	Ostr	34	0.062	92.314	7	17.5	
<i>Tellina mera</i>	M	Biva	34	0.062	92.377	4	10.0	
Semelidae (LPIL)	M	Biva	33	0.061	92.437	10	25.0	
<i>Paraeupolymnia</i> sp.A	A	Poly	32	0.059	92.496	12	30.0	
<i>Odontosyllis enopla</i>	A	Poly	32	0.059	92.555	6	15.0	
<i>Halmyrapseudes bahamensis</i>	Ar	Mala	32	0.059	92.614	1	2.5	
<i>Turbonilla conradi</i>	M	Gast	32	0.059	92.672	4	10.0	
<i>Sthenelais boa</i>	A	Poly	31	0.057	92.729	8	20.0	
<i>Haminoea succinea</i>	M	Gast	31	0.057	92.786	7	17.5	
<i>Dipolydora socialis</i>	A	Poly	30	0.055	92.841	8	20.0	
<i>Calyptrea centralis</i>	M	Gast	30	0.055	92.897	6	15.0	
<i>Macoma constricta</i>	M	Biva	29	0.053	92.950	2	5.0	
<i>Lucina radians</i>	M	Biva	29	0.053	93.003	7	17.5	
Cerithiidae (LPIL)	M	Gast	29	0.053	93.056	11	27.5	
<i>Laeonereis culveri</i>	A	Poly	28	0.051	93.108	4	10.0	
<i>Mexieulepis weberi</i>	A	Poly	28	0.051	93.159	9	22.5	
<i>Paramphinome</i> sp.B	A	Poly	28	0.051	93.211	8	20.0	
<i>Polycirrus plumosus</i>	A	Poly	28	0.051	93.262	8	20.0	
Phyllodocidae (LPIL)	A	Poly	28	0.051	93.314	17	42.5	
<i>Carpias algicola</i>	Ar	Mala	28	0.051	93.365	6	15.0	
<i>Podocerus kleidus</i>	Ar	Mala	28	0.051	93.417	1	2.5	
<i>Nereis acuminata</i>	A	Poly	27	0.050	93.466	6	15.0	
Lysianassidae (LPIL)	Ar	Mala	27	0.050	93.516	9	22.5	
<i>Eusarsiella cresseyi</i>	Ar	Ostr	27	0.050	93.565	3	7.5	
<i>Diplodonta semiaspera</i>	M	Biva	27	0.050	93.615	7	17.5	

Table 2. Continued

Taxa	No. of					Station	Station %	Comments
	Phylum	Class	Individuals	% Total	Cummulative %	Occurrence	Occurrence	
<i>Brachidontes exustus</i>	M	Biva	26	0.048	93.663	8	20.0	
<i>Jaspidella blanesi</i>	M	Gast	26	0.048	93.710	7	17.5	
<i>Malmgreniella</i> sp.B	A	Poly	25	0.046	93.756	12	30.0	
<i>Pseudopolydora pulchra</i>	A	Poly	25	0.046	93.802	3	7.5	
<i>Pseudopolydora</i> (LPIL)	A	Poly	25	0.046	93.848	8	20.0	
<i>Chaetozone</i> (LPIL)	A	Poly	24	0.044	93.892	13	32.5	
<i>Americhelidium americanum</i>	Ar	Mala	24	0.044	93.936	6	15.0	
<i>Leptosynapta multigranula</i>	E	Holo	24	0.044	93.981	7	17.5	
<i>Modiolus modiolus squamosus</i>	M	Biva	24	0.044	94.025	11	27.5	
<i>Dentimargo aureocincta</i>	M	Gast	24	0.044	94.069	15	37.5	
<i>Marginella lavalleeana</i>	M	Gast	24	0.044	94.113	8	20.0	
<i>Cerapus</i> (LPIL)	Ar	Mala	23	0.042	94.155	9	22.5	
<i>Armandia maculata</i>	A	Poly	22	0.040	94.196	11	27.5	
<i>Sphaerosyllis aciculata</i>	A	Poly	22	0.040	94.236	3	7.5	
<i>Polydora cornuta</i>	A	Poly	22	0.040	94.276	9	22.5	
Sphaeromatidae (LPIL)	Ar	Mala	22	0.040	94.317	5	12.5	
<i>Neomegamphopus</i> (LPIL)	Ar	Mala	22	0.040	94.357	4	10.0	
Corbulidae (LPIL)	M	Biva	22	0.040	94.398	4	10.0	
<i>Pseudobranchiomma</i> (LPIL)	A	Poly	21	0.039	94.436	9	22.5	
<i>Listriella barnardi</i>	Ar	Mala	21	0.039	94.475	8	20.0	
Montacutidae (LPIL)	M	Biva	21	0.039	94.513	14	35.0	
<i>Turbonilla dalli</i>	M	Gast	21	0.039	94.552	4	10.0	
<i>Odostomia</i> (LPIL)	M	Gast	21	0.039	94.591	8	20.0	
Olividae (LPIL)	M	Gast	21	0.039	94.629	8	20.0	
Lineidae (LPIL)	R		20	0.037	94.666	7	17.5	

Table 2. Continued

Taxa	No. of					Station	Station %	Comments
	Phylum	Class	Individuals	% Total	Cummulative %	Occurrence	Occurrence	
<i>Gitanopsis</i> (LPIL)	Ar	Mala	20	0.037	94.703	1	2.5	
<i>Eusarsiella childi</i>	Ar	Ostr	20	0.037	94.739	5	12.5	
<i>Hydroides bispinosa</i>	A	Poly	19	0.035	94.774	9	22.5	
<i>Apseudes</i> sp.A	Ar	Mala	19	0.035	94.809	4	10.0	
<i>Asteropella maclaughlinae</i>	Ar	Ostr	19	0.035	94.844	8	20.0	
Mytilidae (LPIL)	M	Biva	19	0.035	94.879	12	30.0	
<i>Strombiformis</i> (LPIL)	M	Gast	19	0.035	94.914	8	20.0	
Marginellidae (LPIL)	M	Gast	19	0.035	94.949	8	20.0	
<i>Branchiosyllis exilis</i>	A	Poly	18	0.033	94.982	7	17.5	
<i>Sabellaria</i> sp.A	A	Poly	18	0.033	95.015	7	17.5	
<i>Pseudopolydora glandulosa</i>	A	Poly	18	0.033	95.048	1	2.5	
<i>Uromunna reynoldsi</i>	Ar	Mala	18	0.033	95.081	2	5.0	
<i>Eobrolgus spinosus</i>	Ar	Mala	18	0.033	95.114	4	10.0	
Ampithoidae (LPIL)	Ar	Mala	18	0.033	95.147	7	17.5	
<i>Eusarsiella elofsoni</i>	Ar	Ostr	18	0.033	95.180	8	20.0	
<i>Corbula contracta</i>	M	Biva	18	0.033	95.214	5	12.5	
<i>Nassarius albus</i>	M	Gast	18	0.033	95.247	10	25.0	
<i>Dentatisyllis carolinae</i>	A	Poly	17	0.031	95.278	5	12.5	
<i>Pararicia belizensis</i>	A	Poly	17	0.031	95.309	4	10.0	
<i>Trichobranchus glacialis</i>	A	Poly	17	0.031	95.340	4	10.0	
<i>Bhawania goodei</i>	A	Poly	17	0.031	95.372	7	17.5	
<i>Scoloplos</i> (LPIL)	A	Poly	17	0.031	95.403	5	12.5	
Orbiniidae (LPIL)	A	Poly	17	0.031	95.434	7	17.5	
<i>Laevicardium mortoni</i>	M	Biva	17	0.031	95.465	7	17.5	
<i>Macoma tenta</i>	M	Biva	17	0.031	95.496	4	10.0	

Table 2. Continued

Taxa	No. of					Station	Station %	Comments
	Phylum	Class	Individuals	% Total	Cummulative %	Occurrence	Occurrence	
<i>Marginella</i> (LPIL)	M	Gast	17	0.031	95.528	8	20.0	
<i>Cerithidea</i> (LPIL)	M	Gast	17	0.031	95.559	7	17.5	
Aclididae (LPIL)	M	Gast	17	0.031	95.590	6	15.0	
<i>Crepidula</i> (LPIL)	M	Gast	17	0.031	95.621	6	15.0	
<i>Limnodrilus hoffmeisteri</i>	A	Olig	16	0.029	95.651	1	2.5	
<i>Batea</i> (LPIL)	Ar	Mala	16	0.029	95.680	8	20.0	
Amphilochidae (LPIL)	Ar	Mala	16	0.029	95.710	7	17.5	
Bodotriidae (LPIL)	Ar	Mala	16	0.029	95.739	5	12.5	
Decapoda Natantia (LPIL)	Ar	Mala	16	0.029	95.768	6	15.0	
<i>Paracypridina floridensis</i>	Ar	Ostr	16	0.029	95.798	3	7.5	
<i>Ophiactis</i> (LPIL)	E	Ophi	16	0.029	95.827	4	10.0	
<i>Lucina nassula</i>	M	Biva	16	0.029	95.857	8	20.0	
Ungulinidae (LPIL)	M	Biva	16	0.029	95.886	5	12.5	
<i>Arabella mutans</i>	A	Poly	15	0.028	95.914	7	17.5	
<i>Sternaspis scutata</i>	A	Poly	15	0.028	95.941	1	2.5	
<i>Scoletoma ernesti</i>	A	Poly	15	0.028	95.969	6	15.0	
<i>Scoletoma</i> (LPIL)	A	Poly	15	0.028	95.996	6	15.0	
<i>Glycera</i> (LPIL)	A	Poly	15	0.028	96.024	7	17.5	
Goniadidae (LPIL)	A	Poly	15	0.028	96.051	9	22.5	
<i>Ampelisca vadorum</i>	Ar	Mala	15	0.028	96.079	3	7.5	
<i>Eusarsiella paniculata</i>	Ar	Ostr	15	0.028	96.106	3	7.5	
<i>Abra aequalis</i>	M	Biva	15	0.028	96.134	4	10.0	
<i>Mysella</i> (LPIL)	M	Biva	15	0.028	96.162	1	2.5	
<i>Crepidula maculosa</i>	M	Gast	15	0.028	96.189	5	12.5	
<i>Tharyx acutus</i>	A	Poly	14	0.026	96.215	4	10.0	

Table 2. Continued

Taxa	No. of					Station	Station %	Comments
	Phylum	Class	Individuals	% Total	Cummulative %	Occurrence	Occurrence	
<i>Erichsonella</i> (LPIL)	Ar	Mala	14	0.026	96.241	4	10.0	
Synaptidae (LPIL)	E	Holo	14	0.026	96.266	2	5.0	
<i>Asthenothaerus hemphilli</i>	M	Biva	14	0.026	96.292	2	5.0	
<i>Chione</i> (LPIL)	M	Biva	14	0.026	96.318	6	15.0	
<i>Laonice cirrata</i>	A	Poly	13	0.024	96.342	6	15.0	
<i>Erichsonella floridana</i>	Ar	Mala	13	0.024	96.366	5	12.5	
<i>Ceradocus sheardi</i>	Ar	Mala	13	0.024	96.389	2	5.0	
<i>Arcopsis adamsi</i>	M	Biva	13	0.024	96.413	3	7.5	
<i>Carditamera floridana</i>	M	Biva	13	0.024	96.437	2	5.0	
<i>Cardiomya costellata</i>	M	Biva	13	0.024	96.461	3	7.5	
<i>Corbula</i> (LPIL)	M	Biva	13	0.024	96.485	3	7.5	
Cardiidae (LPIL)	M	Biva	13	0.024	96.509	7	17.5	
<i>Strombiformis hemphilli</i>	M	Gast	13	0.024	96.533	3	7.5	
<i>Turbonilla interrupta</i>	M	Gast	13	0.024	96.557	3	7.5	
Rissoidae (LPIL)	M	Gast	13	0.024	96.581	7	17.5	
<i>Phascolion</i> (LPIL)	S		12	0.022	96.603	4	10.0	
<i>Lumbrineris coccinea</i>	A	Poly	12	0.022	96.625	4	10.0	
<i>Nereis</i> (LPIL)	A	Poly	12	0.022	96.647	9	22.5	
<i>Dasybranchus</i> (LPIL)	A	Poly	12	0.022	96.669	2	5.0	
<i>Colanthura</i> sp.A	Ar	Mala	12	0.022	96.691	1	2.5	
<i>Pseudophilomedes ambon</i>	Ar	Ostr	12	0.022	96.713	5	12.5	
<i>Asteropella pax</i>	Ar	Ostr	12	0.022	96.735	6	15.0	
<i>Paranebalia belizensis</i>	Ar	Mala	12	0.022	96.757	4	10.0	
Ophiuridae (LPIL)	E	Ophi	12	0.022	96.779	2	5.0	
<i>Cumingia tellinoides</i>	M	Biva	12	0.022	96.801	3	7.5	

Table 2. Continued

Taxa	No. of					Station	Station %	Comments
	Phylum	Class	Individuals	% Total	Cummulative %	Occurrence	Occurrence	
<i>Mitrella lunata</i>	M	Gast	12	0.022	96.823	3	7.5	
<i>Teinostoma biscaynense</i>	M	Gast	12	0.022	96.845	4	10.0	
<i>Acteocina bidentata</i>	M	Gast	12	0.022	96.867	3	7.5	
<i>Olivella</i> (LPIL)	M	Gast	12	0.022	96.889	5	12.5	
<i>Nudibranchia</i> (LPIL)	M	Gast	12	0.022	96.911	6	15.0	
<i>Antalis antillarum</i>	M	Scap	12	0.022	96.933	5	12.5	
Calyptraeidae (LPIL)	M	Gast	12	0.022	96.955	10	25.0	
<i>Diopatra cuprea</i>	A	Poly	11	0.020	96.976	6	15.0	
<i>Macrochaeta</i> sp.A	A	Poly	11	0.020	96.996	3	7.5	
<i>Paraprionospio pinnata</i>	A	Poly	11	0.020	97.016	3	7.5	
<i>Cossura soyeri</i>	A	Poly	11	0.020	97.036	2	5.0	
<i>Progoniada regularis</i>	A	Poly	11	0.020	97.056	2	5.0	
<i>Ophryotrocha notoglanulata</i>	A	Poly	11	0.020	97.077	1	2.5	
<i>Exogone atlantica</i>	A	Poly	11	0.020	97.097	4	10.0	
<i>Magelona pettiboneae</i>	A	Poly	11	0.020	97.117	8	20.0	
<i>Hydroides dianthus</i>	A	Poly	11	0.020	97.137	5	12.5	
<i>Plesiolembos rectangularus</i>	Ar	Mala	11	0.020	97.158	4	10.0	
<i>Neomegamphopus hiatus</i>	Ar	Mala	11	0.020	97.178	4	10.0	
<i>Chevalia ariculae</i>	Ar	Mala	11	0.020	97.198	1	2.5	
<i>Leucothoe spinicarpa</i>	Ar	Mala	11	0.020	97.218	5	12.5	
<i>Bemlos unicornis</i>	Ar	Mala	11	0.020	97.238	4	10.0	
<i>Oxyurostylis smithi</i>	Ar	Mala	11	0.020	97.259	6	15.0	
<i>Apseudes</i> cf. <i>propinquus</i>	Ar	Mala	11	0.020	97.279	4	10.0	
<i>Leptocheilia dubia</i>	Ar	Mala	11	0.020	97.299	3	7.5	
<i>Kalliapseudes</i> (LPIL)	Ar	Mala	11	0.020	97.319	5	12.5	

Table 2. Continued

Taxa	No. of					Station	Station %	Comments
	Phylum	Class	Individuals	% Total	Cummulative %	Occurrence	Occurrence	
Xanthidae (LPIL)	Ar	Mala	11	0.020	97.339	8	20.0	
<i>Skogsbergia leneri</i>	Ar	Ostr	11	0.020	97.360	2	5.0	
<i>Asteropella</i> (LPIL)	Ar	Ostr	11	0.020	97.380	6	15.0	
Cylindroleberididae (LPIL)	Ar	Ostr	11	0.020	97.400	7	17.5	
<i>Cyclinella tenuis</i>	M	Biva	11	0.020	97.420	3	7.5	
<i>Anodontia alba</i>	M	Biva	11	0.020	97.440	3	7.5	
<i>Tagelus</i> (LPIL)	M	Biva	11	0.020	97.461	5	12.5	
Carditidae (LPIL)	M	Biva	11	0.020	97.481	2	5.0	
Chamidae (LPIL)	M	Biva	11	0.020	97.501	4	10.0	
<i>Bulla striata</i>	M	Gast	11	0.020	97.521	6	15.0	
Muricidae (LPIL)	M	Gast	11	0.020	97.542	1	2.5	
Turridae (LPIL)	M	Gast	11	0.020	97.562	8	20.0	
Porifera (LPIL)	P		10	0.018	97.580	4	10.0	
<i>Eunice</i> sp.J	A	Poly	10	0.018	97.598	4	10.0	
<i>Oxyurostylis</i> (LPIL)	Ar	Mala	10	0.018	97.617	5	12.5	
Hippolytidae (LPIL)	Ar	Mala	10	0.018	97.635	1	2.5	
<i>Asteropella monambon</i>	Ar	Ostr	10	0.018	97.654	5	12.5	
<i>Tellina similis</i>	M	Biva	10	0.018	97.672	6	15.0	
Psammobiidae (LPIL)	M	Biva	10	0.018	97.690	2	5.0	
<i>Pyrogophorus platyrachis</i>	M	Gast	10	0.018	97.709	1	2.5	
<i>Glycera americana</i>	A	Poly	9	0.017	97.725	5	12.5	
<i>Lysidice</i> sp.B	A	Poly	9	0.017	97.742	6	15.0	
<i>Glycera robusta</i>	A	Poly	9	0.017	97.758	3	7.5	
<i>Autolytus</i> (LPIL)	A	Poly	9	0.017	97.775	4	10.0	
Bateidae (LPIL)	Ar	Mala	9	0.017	97.791	7	17.5	

Table 2. Continued

Taxa	No. of					Station	Station %	Comments
	Phylum	Class	Individuals	% Total	Cummulative %	Occurrence	Occurrence	
Cumacea (LPIL)	Ar	Mala	9	0.017	97.808	5	12.5	
<i>Thor</i> (LPIL)	Ar	Mala	9	0.017	97.824	5	12.5	
Sarsiellidae (LPIL)	Ar	Ostr	9	0.017	97.841	2	5.0	
<i>Odostomia laevigata</i>	M	Gast	9	0.017	97.858	6	15.0	
Chironomidae (LPIL)	Ar	Inse	8	0.015	97.872	1	2.5	
<i>Pectinaria gouldii</i>	A	Poly	8	0.015	97.887	6	15.0	
<i>Potamethus</i> sp.B	A	Poly	8	0.015	97.902	2	5.0	
<i>Streptosyllis pettiboneae</i>	A	Poly	8	0.015	97.916	5	12.5	
<i>Chrysopetalum hernancortezae</i>	A	Poly	8	0.015	97.931	2	5.0	
<i>Eunice</i> (LPIL)	A	Poly	8	0.015	97.946	6	15.0	
Eulepethidae (LPIL)	A	Poly	8	0.015	97.960	5	12.5	
<i>Bemlos brunneomaculatus mackinneyi</i>	Ar	Mala	8	0.015	97.975	2	5.0	
<i>Cyclaspis pustulata</i>	Ar	Mala	8	0.015	97.990	5	12.5	
<i>Kalliapseudes bahamaensis</i>	Ar	Mala	8	0.015	98.005	3	7.5	
<i>Diplodonta punctata</i>	M	Biva	8	0.015	98.019	4	10.0	
<i>Atys sandersoni</i>	M	Gast	8	0.015	98.034	2	5.0	
<i>Rissoina cancellata</i>	M	Gast	8	0.015	98.049	1	2.5	
<i>Cerithium atratum</i>	M	Gast	8	0.015	98.063	4	10.0	
<i>Aspidosiphon</i> (LPIL)	S		7	0.013	98.076	2	5.0	
Ceratopogonidae (LPIL)	Ar	Inse	7	0.013	98.089	3	7.5	
<i>Eumida sanguinea</i>	A	Poly	7	0.013	98.102	5	12.5	
<i>Stenoninereis martini</i>	A	Poly	7	0.013	98.115	2	5.0	
<i>Notomastus latericeus</i>	A	Poly	7	0.013	98.128	4	10.0	
<i>Dorvillea clavata</i>	A	Poly	7	0.013	98.141	4	10.0	
<i>Nereis panamensis</i>	A	Poly	7	0.013	98.153	3	7.5	

Table 2. Continued

Taxa	No. of					Station	Station %	Comments
	Phylum	Class	Individuals	% Total	Cummulative %	Occurrence	Occurrence	
<i>Caulleriella</i> sp.K	A	Poly	7	0.013	98.166	5	12.5	
<i>Sthenelais</i> (LPIL)	A	Poly	7	0.013	98.179	4	10.0	
<i>Protohadzia schoenerae</i>	Ar	Mala	7	0.013	98.192	3	7.5	
<i>Stenothoe gallensis</i>	Ar	Mala	7	0.013	98.205	2	5.0	
<i>Bemlos brunneomaculatus inermis</i>	Ar	Mala	7	0.013	98.218	3	7.5	
Isaeidae (LPIL)	Ar	Mala	7	0.013	98.231	4	10.0	
Ischyroceridae (LPIL)	Ar	Mala	7	0.013	98.243	5	12.5	
<i>Leucon</i> (LPIL)	Ar	Mala	7	0.013	98.256	3	7.5	
Mysidae (LPIL)	Ar	Mala	7	0.013	98.269	4	10.0	
<i>Podocopa</i> (LPIL)	Ar	Ostr	7	0.013	98.282	5	12.5	
Cypridopsidae (LPIL)	Ar	Ostr	7	0.013	98.295	1	2.5	
<i>Amphioplus thrombodes</i>	E	Ophi	7	0.013	98.308	3	7.5	
<i>Lioberus castaneus</i>	M	Biva	7	0.013	98.321	3	7.5	
<i>Lima pellucida</i>	M	Biva	7	0.013	98.333	2	5.0	
<i>Circulus suppressus</i>	M	Gast	7	0.013	98.346	2	5.0	
<i>Granulina ovuliformis</i>	M	Gast	7	0.013	98.359	4	10.0	
<i>Cerithium</i> (LPIL)	M	Gast	7	0.013	98.372	2	5.0	
Eulimidae (LPIL)	M	Gast	7	0.013	98.385	5	12.5	
Cnidaria (LPIL)	Cn		6	0.011	98.396	1	2.5	
<i>Dasybranchus lunulatus</i>	A	Poly	6	0.011	98.407	3	7.5	
<i>Demonax microphthalmus</i>	A	Poly	6	0.011	98.418	3	7.5	
<i>Plakosyllis quadrioculata</i>	A	Poly	6	0.011	98.429	2	5.0	
<i>Protodorvillea kefersteini</i>	A	Poly	6	0.011	98.440	3	7.5	
<i>Goniada maculata</i>	A	Poly	6	0.011	98.451	2	5.0	
<i>Leitoscoloplos foliosus</i>	A	Poly	6	0.011	98.462	2	5.0	

Table 2. Continued

Taxa	No. of					Station	Station %	Comments
	Phylum	Class	Individuals	% Total	Cummulative %	Occurrence	Occurrence	
<i>Ophelina cylindricaudata</i>	A	Poly	6	0.011	98.473	1	2.5	
<i>Syllis corallicola</i>	A	Poly	6	0.011	98.484	3	7.5	
<i>Ancistrosyllis jonesi</i>	A	Poly	6	0.011	98.495	2	5.0	
<i>Ophryotrocha</i> (LPIL)	A	Poly	6	0.011	98.506	1	2.5	
<i>Caulleriella</i> (LPIL)	A	Poly	6	0.011	98.517	5	12.5	
<i>Poecilochaetus</i> (LPIL)	A	Poly	6	0.011	98.528	6	15.0	
Ampharetidae (LPIL)	A	Poly	6	0.011	98.539	5	12.5	
<i>Ampelisca schellenbergi</i>	Ar	Mala	6	0.011	98.550	3	7.5	
<i>Ampelisca</i> sp.Y	Ar	Mala	6	0.011	98.561	4	10.0	
<i>Maera</i> (LPIL)	Ar	Mala	6	0.011	98.572	1	2.5	
<i>Cyclaspis unicornis</i>	Ar	Mala	6	0.011	98.583	2	5.0	
<i>Eusarsiella gigacantha</i>	Ar	Ostr	6	0.011	98.594	3	7.5	
<i>Lyonsia hyalina floridana</i>	M	Biva	6	0.011	98.605	1	2.5	
<i>Cardiomya perrostrata</i>	M	Biva	6	0.011	98.616	3	7.5	
<i>Semele</i> (LPIL)	M	Biva	6	0.011	98.627	1	2.5	
Pteriidae (LPIL)	M	Biva	6	0.011	98.638	4	10.0	
<i>Elysia</i> (LPIL)	M	Gast	6	0.011	98.649	2	5.0	
<i>Sipunculus nudus</i>	S		5	0.009	98.659	3	7.5	
<i>Chironomus</i> (LPIL)	Ar	Inse	5	0.009	98.668	1	2.5	
<i>Galathowenia oculata</i>	A	Poly	5	0.009	98.677	4	10.0	
<i>Pista quadrilobata</i>	A	Poly	5	0.009	98.686	3	7.5	
<i>Axiiothella mucosa</i>	A	Poly	5	0.009	98.695	2	5.0	
<i>Harmothoe imbricata</i>	A	Poly	5	0.009	98.705	3	7.5	
<i>Glycera</i> sp.J	A	Poly	5	0.009	98.714	3	7.5	
<i>Euchone</i> (LPIL)	A	Poly	5	0.009	98.723	2	5.0	

Table 2. Continued

Taxa	No. of					Station	Station %	Comments
	Phylum	Class	Individuals	% Total	Cummulative %	Occurrence	Occurrence	
<i>Fimbriosthenelais</i> (LPIL)	A	Poly	5	0.009	98.732	4	10.0	
<i>Sphaerosyllis</i> (LPIL)	A	Poly	5	0.009	98.741	4	10.0	
<i>Lumbrineris</i> (LPIL)	A	Poly	5	0.009	98.751	2	5.0	
<i>Monoculodes</i> sp.C	Ar	Mala	5	0.009	98.760	4	10.0	
<i>Photis pugnator</i>	Ar	Mala	5	0.009	98.769	1	2.5	
<i>Lembos unifasciatus unifasciatus</i>	Ar	Mala	5	0.009	98.778	2	5.0	
<i>Lembos unifasciatus reductus</i>	Ar	Mala	5	0.009	98.787	2	5.0	
<i>Listriella</i> (LPIL)	Ar	Mala	5	0.009	98.796	4	10.0	
<i>Asteropterygion occulitrist</i>	Ar	Ostr	5	0.009	98.806	4	10.0	
<i>Thyone deichmannae</i>	E	Holo	5	0.009	98.815	3	7.5	
<i>Anomia simplex</i>	M	Biva	5	0.009	98.824	2	5.0	
<i>Nearomya floridana</i>	M	Biva	5	0.009	98.833	2	5.0	
<i>Transennella conradina</i>	M	Biva	5	0.009	98.842	3	7.5	
Vitrinellidae (LPIL)	M	Gast	5	0.009	98.852	2	5.0	
<i>Crepidula plana</i>	M	Gast	5	0.009	98.861	2	5.0	
<i>Autolytus</i> sp.A	A	Poly	4	0.007	98.868	2	5.0	
<i>Heteromastus filiformis</i>	A	Poly	4	0.007	98.875	1	2.5	
<i>Pherusa inflata</i>	A	Poly	4	0.007	98.883	3	7.5	
<i>Ancistrosyllis carolinensis</i>	A	Poly	4	0.007	98.890	2	5.0	
<i>Magelona</i> sp.I	A	Poly	4	0.007	98.898	2	5.0	
<i>Chaetozone</i> sp.A	A	Poly	4	0.007	98.905	4	10.0	
<i>Glycera dibranchiata</i>	A	Poly	4	0.007	98.912	2	5.0	
<i>Goniada teres</i>	A	Poly	4	0.007	98.920	2	5.0	
<i>Lumbrineris</i> sp.D	A	Poly	4	0.007	98.927	3	7.5	
<i>Naineris grubei</i>	A	Poly	4	0.007	98.934	3	7.5	

Table 2. Continued

Taxa	No. of					Station	Station %	Comments
	Phylum	Class	Individuals	% Total	Cummulative %	Occurrence	Occurrence	
<i>Scoletoma impatiens</i>	A	Poly	4	0.007	98.942	2	5.0	
<i>Tharyx</i> (LPIL)	A	Poly	4	0.007	98.949	3	7.5	
Flabelligeridae (LPIL)	A	Poly	4	0.007	98.956	2	5.0	
Trichobranchidae (LPIL)	A	Poly	4	0.007	98.964	4	10.0	
<i>Serolis mgrayi</i>	Ar	Mala	4	0.007	98.971	3	7.5	
<i>Ceradocus shoemakeri</i>	Ar	Mala	4	0.007	98.978	2	5.0	
<i>Elasmopus balkomanus</i>	Ar	Mala	4	0.007	98.986	1	2.5	
<i>Listriella</i> sp.G	Ar	Mala	4	0.007	98.993	3	7.5	
Corophiidae (LPIL)	Ar	Mala	4	0.007	99.000	2	5.0	
<i>Campylaspis</i> sp.M	Ar	Mala	4	0.007	99.008	3	7.5	
<i>Cyclaspis</i> (LPIL)	Ar	Mala	4	0.007	99.015	3	7.5	
Nannastacidae (LPIL)	Ar	Mala	4	0.007	99.022	3	7.5	
<i>Periclimenes</i> (LPIL)	Ar	Mala	4	0.007	99.030	1	2.5	
<i>Alpheus</i> (LPIL)	Ar	Mala	4	0.007	99.037	4	10.0	
<i>Rhithropanopeus harrisi</i>	Ar	Mala	4	0.007	99.045	1	2.5	
<i>Paranebalia</i> (LPIL)	Ar	Mala	4	0.007	99.052	2	5.0	
<i>Americardia media</i>	M	Biva	4	0.007	99.059	4	10.0	
<i>Glycymeris decussata</i>	M	Biva	4	0.007	99.067	3	7.5	
<i>Tellina iris</i>	M	Biva	4	0.007	99.074	4	10.0	
<i>Pitar</i> (LPIL)	M	Biva	4	0.007	99.081	2	5.0	
<i>Macoma</i> (LPIL)	M	Biva	4	0.007	99.089	3	7.5	
Pinnidae (LPIL)	M	Biva	4	0.007	99.096	1	2.5	
<i>Neritina virginea</i>	M	Gast	4	0.007	99.103	2	5.0	
<i>Alvania</i> (LPIL)	M	Gast	4	0.007	99.111	2	5.0	
<i>Haminoea</i> (LPIL)	M	Gast	4	0.007	99.118	1	2.5	

Table 2. Continued

Taxa	No. of					Station	Station %	Comments
	Phylum	Class	Individuals	% Total	Cummulative %	Occurrence	Occurrence	
Caecidae (LPIL)	M	Gast	4	0.007	99.125	3	7.5	
Columbellidae (LPIL)	M	Gast	4	0.007	99.133	3	7.5	
Conidae (LPIL)	M	Gast	4	0.007	99.140	4	10.0	
Scaphandridae (LPIL)	M	Gast	4	0.007	99.147	3	7.5	
Turbinidae (LPIL)	M	Gast	4	0.007	99.155	1	2.5	
<i>Clunio marshalli</i>	Ar	Inse	3	0.006	99.160	3	7.5	
<i>Hesione picta</i>	A	Poly	3	0.006	99.166	3	7.5	
<i>Mooreonuphis pallidula</i>	A	Poly	3	0.006	99.171	1	2.5	
<i>Nereiphylla fragilis</i>	A	Poly	3	0.006	99.177	3	7.5	
<i>Notomastus hemipodus</i>	A	Poly	3	0.006	99.182	3	7.5	
<i>Spio pettiboneae</i>	A	Poly	3	0.006	99.188	3	7.5	
<i>Streblospio benedicti</i>	A	Poly	3	0.006	99.193	2	5.0	
<i>Trypanosyllis vittigera</i>	A	Poly	3	0.006	99.199	2	5.0	
<i>Branchiosyllis oculata</i>	A	Poly	3	0.006	99.204	2	5.0	
<i>Naineris</i> sp.A	A	Poly	3	0.006	99.210	2	5.0	
<i>Fimbriosthenelais hobbsi</i>	A	Poly	3	0.006	99.215	1	2.5	
<i>Naineris bicornis</i>	A	Poly	3	0.006	99.221	3	7.5	
<i>Aglaophamus circinata</i>	A	Poly	3	0.006	99.226	2	5.0	
<i>Syllides bansei</i>	A	Poly	3	0.006	99.232	1	2.5	
<i>Nereis grayi</i>	A	Poly	3	0.006	99.237	2	5.0	
<i>Notomastus tenuis</i>	A	Poly	3	0.006	99.243	3	7.5	
<i>Syllis</i> sp.A	A	Poly	3	0.006	99.248	1	2.5	
<i>Glycera papillosa</i>	A	Poly	3	0.006	99.254	1	2.5	
<i>Sphaerosyllis perkinsi</i>	A	Poly	3	0.006	99.260	2	5.0	
<i>Megalomma</i> (LPIL)	A	Poly	3	0.006	99.265	1	2.5	

Table 2. Continued

Taxa	No. of					Station	Station %	Comments
	Phylum	Class	Individuals	% Total	Cummulative %	Occurrence	Occurrence	
<i>Magelona</i> (LPIL)	A	Poly	3	0.006	99.271	3	7.5	
Dorvilleidae (LPIL)	A	Poly	3	0.006	99.276	2	5.0	
Sigalionidae (LPIL)	A	Poly	3	0.006	99.282	3	7.5	
<i>Accalathura crenulata</i>	Ar	Mala	3	0.006	99.287	1	2.5	
Idoteidae (LPIL)	Ar	Mala	3	0.006	99.293	1	2.5	
<i>Ampithoe longimana</i>	Ar	Mala	3	0.006	99.298	2	5.0	
<i>Plesiolembos ovalipes</i>	Ar	Mala	3	0.006	99.304	2	5.0	
<i>Uhlorchestia uhleri</i>	Ar	Mala	3	0.006	99.309	2	5.0	
<i>Listriella carinata</i>	Ar	Mala	3	0.006	99.315	2	5.0	
<i>Caprella scaura</i>	Ar	Mala	3	0.006	99.320	1	2.5	
<i>Ampithoe</i> (LPIL)	Ar	Mala	3	0.006	99.326	2	5.0	
Oedicerotidae (LPIL)	Ar	Mala	3	0.006	99.331	2	5.0	
Phoxocephalidae (LPIL)	Ar	Mala	3	0.006	99.337	3	7.5	
<i>Cubanocuma</i> (LPIL)	Ar	Mala	3	0.006	99.342	3	7.5	
<i>Hippolyte zostericola</i>	Ar	Mala	3	0.006	99.348	2	5.0	
<i>Actinoseta chelisparsa</i>	Ar	Ostr	3	0.006	99.353	2	5.0	
<i>Pseudophilomedes</i> (LPIL)	Ar	Ostr	3	0.006	99.359	2	5.0	
<i>Ophiostigma isocanthum</i>	E	Ophi	3	0.006	99.364	1	2.5	
<i>Amphioplus sepultus</i>	E	Ophi	3	0.006	99.370	2	5.0	
<i>Amphioplus</i> (LPIL)	E	Ophi	3	0.006	99.375	2	5.0	
<i>Leptosynapta</i> (LPIL)	E	Holo	3	0.006	99.381	2	5.0	
<i>Lucina muricata</i>	M	Biva	3	0.006	99.386	1	2.5	
Pectinidae (LPIL)	M	Biva	3	0.006	99.392	3	7.5	
<i>Volvarina avenacea</i>	M	Gast	3	0.006	99.397	1	2.5	
<i>Alvania auberiana</i>	M	Gast	3	0.006	99.403	1	2.5	

Table 2. Continued

Taxa	No. of					Station	Station %	Comments
	Phylum	Class	Individuals	% Total	Cummulative %	Occurrence	Occurrence	
<i>Mitrella ocellata</i>	M	Gast	3	0.006	99.408	1	2.5	
<i>Turbonilla hemphilli</i>	M	Gast	3	0.006	99.414	1	2.5	
<i>Caecum floridanum</i>	M	Gast	3	0.006	99.419	1	2.5	
<i>Caecum</i> (LPIL)	M	Gast	3	0.006	99.425	3	7.5	
<i>Conus</i> (LPIL)	M	Gast	3	0.006	99.430	3	7.5	
<i>Modulus</i> (LPIL)	M	Gast	3	0.006	99.436	1	2.5	
Bullidae (LPIL)	M	Gast	3	0.006	99.441	2	5.0	
Dentaliidae (LPIL)	M	Scap	3	0.006	99.447	3	7.5	
<i>Thala foveata</i>	M	Gast	3	0.006	99.452	1	2.5	
<i>Dicrotendipes</i> (LPIL)	Ar	Inse	2	0.004	99.456	1	2.5	
<i>Cabira incerta</i>	A	Poly	2	0.004	99.460	2	5.0	
<i>Hobsonia florida</i>	A	Poly	2	0.004	99.463	1	2.5	
<i>Oenone fulgida</i>	A	Poly	2	0.004	99.467	1	2.5	
<i>Phyllodoce arenae</i>	A	Poly	2	0.004	99.471	2	5.0	
<i>Scolelepis squamata</i>	A	Poly	2	0.004	99.474	1	2.5	
<i>Ceratonereis singularis</i>	A	Poly	2	0.004	99.478	1	2.5	
<i>Drilonereis longa</i>	A	Poly	2	0.004	99.482	2	5.0	
<i>Genetyllis</i> sp.A	A	Poly	2	0.004	99.486	2	5.0	
<i>Terebella pterochaeta</i>	A	Poly	2	0.004	99.489	1	2.5	
<i>Typosyllis</i> sp.B	A	Poly	2	0.004	99.493	2	5.0	
<i>Lepidonotus variabilis</i>	A	Poly	2	0.004	99.497	2	5.0	
<i>Euclymene</i> sp.E	A	Poly	2	0.004	99.500	2	5.0	
<i>Leitoscoloplos robustus</i>	A	Poly	2	0.004	99.504	1	2.5	
<i>Loimia medusa</i>	A	Poly	2	0.004	99.508	1	2.5	
<i>Kinbergonuphis</i> sp.C	A	Poly	2	0.004	99.511	1	2.5	

Table 2. Continued

Taxa	No. of					Station	Station %	Comments
	Phylum	Class	Individuals	% Total	Cummulative %	Occurrence	Occurrence	
<i>Aricidea finitima</i>	A	Poly	2	0.004	99.515	2	5.0	
<i>Marphysa</i> sp.H	A	Poly	2	0.004	99.519	2	5.0	
<i>Eunice rosaurae</i>	A	Poly	2	0.004	99.522	1	2.5	
<i>Glycera</i> sp.Q	A	Poly	2	0.004	99.526	1	2.5	
<i>Demonax</i> (LPIL)	A	Poly	2	0.004	99.530	2	5.0	
<i>Ehlersia</i> (LPIL)	A	Poly	2	0.004	99.533	1	2.5	
<i>Harmothoe</i> (LPIL)	A	Poly	2	0.004	99.537	2	5.0	
<i>Amphicteis</i> (LPIL)	A	Poly	2	0.004	99.541	2	5.0	
<i>Amphictene</i> (LPIL)	A	Poly	2	0.004	99.544	1	2.5	
<i>Pectinaria</i> (LPIL)	A	Poly	2	0.004	99.548	2	5.0	
Glyceridae (LPIL)	A	Poly	2	0.004	99.552	2	5.0	
Oeonidae (LPIL)	A	Poly	2	0.004	99.555	2	5.0	
Onuphidae (LPIL)	A	Poly	2	0.004	99.559	1	2.5	
Polynoidae (LPIL)	A	Poly	2	0.004	99.563	2	5.0	
<i>Harrieta faxoni</i>	Ar	Mala	2	0.004	99.566	2	5.0	
<i>Edotia lyonsi</i>	Ar	Mala	2	0.004	99.570	2	5.0	
<i>Colanthura</i> (LPIL)	Ar	Mala	2	0.004	99.574	1	2.5	
<i>Neomegamphopus kalanii</i>	Ar	Mala	2	0.004	99.577	1	2.5	
<i>Bemlos tempus</i>	Ar	Mala	2	0.004	99.581	1	2.5	
<i>Elasmopus</i> sp.G	Ar	Mala	2	0.004	99.585	1	2.5	
<i>Corophium</i> sp.O	Ar	Mala	2	0.004	99.588	2	5.0	
<i>Ceradocus</i> (LPIL)	Ar	Mala	2	0.004	99.592	2	5.0	
<i>Hartmanodes</i> (LPIL)	Ar	Mala	2	0.004	99.596	2	5.0	
Liljeborgiidae (LPIL)	Ar	Mala	2	0.004	99.599	2	5.0	
Diastylidae (LPIL)	Ar	Mala	2	0.004	99.603	1	2.5	

Table 2. Continued

Taxa	No. of					Station	Station %	Comments
	Phylum	Class	Individuals	% Total	Cummulative %	Occurrence	Occurrence	
<i>Pseudoleptochelia</i> (LPIL)	Ar	Mala	2	0.004	99.607	1	2.5	
Apseudidae (LPIL)	Ar	Mala	2	0.004	99.610	1	2.5	
<i>Alpheus normanni</i>	Ar	Mala	2	0.004	99.614	1	2.5	
<i>Polyonyx gibbesi</i>	Ar	Mala	2	0.004	99.618	1	2.5	
<i>Pinnixa floridana</i>	Ar	Mala	2	0.004	99.621	2	5.0	
<i>Paguristes</i> (LPIL)	Ar	Mala	2	0.004	99.625	1	2.5	
<i>Pinnixa</i> (LPIL)	Ar	Mala	2	0.004	99.629	2	5.0	
Majidae (LPIL)	Ar	Mala	2	0.004	99.633	2	5.0	
Paguridae (LPIL)	Ar	Mala	2	0.004	99.636	2	5.0	
<i>Eusarsiella nodimarginus</i>	Ar	Ostr	2	0.004	99.640	2	5.0	
<i>Eusarsiella culteri</i>	Ar	Ostr	2	0.004	99.644	2	5.0	
<i>Eurypylus</i> (LPIL)	Ar	Ostr	2	0.004	99.647	1	2.5	
Philomedidae (LPIL)	Ar	Ostr	2	0.004	99.651	1	2.5	
<i>Amphioplus abditus</i>	E	Ophi	2	0.004	99.655	2	5.0	
<i>Pentamera pulcherrima</i>	E	Holo	2	0.004	99.658	1	2.5	
<i>Leptosynapta tenuis</i>	E	Holo	2	0.004	99.662	1	2.5	
Holothuriidae (LPIL)	E	Holo	2	0.004	99.666	2	5.0	
<i>Echinaster sentus</i>	E	Aste	2	0.004	99.669	1	2.5	
<i>Echinaster</i> (LPIL)	E	Aste	2	0.004	99.673	1	2.5	
<i>Cooperella atlantica</i>	M	Biva	2	0.004	99.677	2	5.0	
<i>Gastrochaena hians</i>	M	Biva	2	0.004	99.680	1	2.5	
<i>Gouldia cerina</i>	M	Biva	2	0.004	99.684	1	2.5	
<i>Laevicardium laevigatum</i>	M	Biva	2	0.004	99.688	2	5.0	
<i>Glycymeris pectinata</i>	M	Biva	2	0.004	99.691	1	2.5	
<i>Linga pensylvanica</i>	M	Biva	2	0.004	99.695	2	5.0	

Table 2. Continued

Taxa	No. of					Station	Station %	Comments
	Phylum	Class	Individuals	% Total	Cummulative %	Occurrence	Occurrence	
<i>Linga amiantus</i>	M	Biva	2	0.004	99.699	1	2.5	
<i>Crenella</i> (LPIL)	M	Biva	2	0.004	99.702	1	2.5	
<i>Lyonsia</i> (LPIL)	M	Biva	2	0.004	99.706	2	5.0	
Limidae (LPIL)	M	Biva	2	0.004	99.710	2	5.0	
<i>Arene tricarinata</i>	M	Gast	2	0.004	99.713	2	5.0	
<i>Astrarium phoebium</i>	M	Gast	2	0.004	99.717	1	2.5	
<i>Modulus carchedonius</i>	M	Gast	2	0.004	99.721	2	5.0	
<i>Puperita pupa</i>	M	Gast	2	0.004	99.724	1	2.5	
<i>Conus jaspideus</i>	M	Gast	2	0.004	99.728	2	5.0	
<i>Jaspidella jaspidea</i>	M	Gast	2	0.004	99.732	2	5.0	
<i>Teinostoma</i> (LPIL)	M	Gast	2	0.004	99.735	1	2.5	
<i>Bulla</i> (LPIL)	M	Gast	2	0.004	99.739	1	2.5	
<i>Acteocina</i> (LPIL)	M	Gast	2	0.004	99.743	1	2.5	
<i>Elimia</i> (LPIL)	M	Gast	2	0.004	99.746	1	2.5	
Acteonidae (LPIL)	M	Gast	2	0.004	99.750	2	5.0	
Hamineidae (LPIL)	M	Gast	2	0.004	99.754	1	2.5	
Nassariidae (LPIL)	M	Gast	2	0.004	99.757	1	2.5	
Bryozoa (LPIL)	Bz		1	0.002	99.759	1	2.5	
<i>Aspidosiphon muelleri</i>	S		1	0.002	99.761	1	2.5	
<i>Asheum beckae</i>	Ar	Inse	1	0.002	99.763	1	2.5	
<i>Bhawania heteroseta</i>	A	Poly	1	0.002	99.765	1	2.5	
<i>Brania wellfleetensis</i>	A	Poly	1	0.002	99.767	1	2.5	
<i>Eurysyllis tuberculata</i>	A	Poly	1	0.002	99.768	1	2.5	
<i>Ougia tenuidentis</i>	A	Poly	1	0.002	99.770	1	2.5	
<i>Prionospio cirrifera</i>	A	Poly	1	0.002	99.772	1	2.5	

Table 2. Continued

Taxa	No. of					Station	Station %	Comments
	Phylum	Class	Individuals	% Total	Cummulative %	Occurrence	Occurrence	
<i>Vermiliopsis annulata</i>	A	Poly	1	0.002	99.774	1	2.5	
<i>Ephesiella mammifera</i>	A	Poly	1	0.002	99.776	1	2.5	
<i>Hyboscolex quadricincta</i>	A	Poly	1	0.002	99.778	1	2.5	
<i>Mediomastus ambiseta</i>	A	Poly	1	0.002	99.780	1	2.5	
<i>Opisthodonta</i> sp.B	A	Poly	1	0.002	99.781	1	2.5	
<i>Pilargis berkeleyae</i>	A	Poly	1	0.002	99.783	1	2.5	
<i>Sigambra tentaculata</i>	A	Poly	1	0.002	99.785	1	2.5	
<i>Lepidasthenia varia</i>	A	Poly	1	0.002	99.787	1	2.5	
<i>Lysilla loveni</i>	A	Poly	1	0.002	99.789	1	2.5	
<i>Notomastus lobatus</i>	A	Poly	1	0.002	99.791	1	2.5	
<i>Drilonereis</i> sp.E	A	Poly	1	0.002	99.792	1	2.5	
<i>Polyodontes lupinus</i>	A	Poly	1	0.002	99.794	1	2.5	
<i>Potamethus</i> sp.F	A	Poly	1	0.002	99.796	1	2.5	
<i>Polyodontes oculus</i>	A	Poly	1	0.002	99.798	1	2.5	
<i>Chaetozone</i> sp.B	A	Poly	1	0.002	99.800	1	2.5	
<i>Euprosine</i> cf. <i>triloba</i>	A	Poly	1	0.002	99.802	1	2.5	
<i>Typosyllis armillaris</i>	A	Poly	1	0.002	99.803	1	2.5	
<i>Ancistrosyllis</i> sp.C	A	Poly	1	0.002	99.805	1	2.5	
<i>Lysidice</i> sp.I	A	Poly	1	0.002	99.807	1	2.5	
<i>Syllis lutea</i>	A	Poly	1	0.002	99.809	1	2.5	
<i>Lumbrineris januarii</i>	A	Poly	1	0.002	99.811	1	2.5	
<i>Scoletoma candida</i>	A	Poly	1	0.002	99.813	1	2.5	
<i>Prionospio multibranchiata</i>	A	Poly	1	0.002	99.814	1	2.5	
<i>Prionospio lighti</i>	A	Poly	1	0.002	99.816	1	2.5	
<i>Sabellastarte</i> (LPIL)	A	Poly	1	0.002	99.818	1	2.5	

Table 2. Continued

Taxa	No. of					Station	Station %	Comments
	Phylum	Class	Individuals	% Total	Cummulative %	Occurrence	Occurrence	
<i>Notaulax</i> (LPIL)	A	Poly	1	0.002	99.820	1	2.5	
<i>Scolelepis</i> (LPIL)	A	Poly	1	0.002	99.822	1	2.5	
<i>Malmgreniella</i> (LPIL)	A	Poly	1	0.002	99.824	1	2.5	
<i>Spio</i> (LPIL)	A	Poly	1	0.002	99.825	1	2.5	
<i>Streptosyllis</i> (LPIL)	A	Poly	1	0.002	99.827	1	2.5	
<i>Euclymene</i> (LPIL)	A	Poly	1	0.002	99.829	1	2.5	
<i>Drilonereis</i> (LPIL)	A	Poly	1	0.002	99.831	1	2.5	
Acoetidae (LPIL)	A	Poly	1	0.002	99.833	1	2.5	
Acrocirridae (LPIL)	A	Poly	1	0.002	99.835	1	2.5	
Chaetopteridae (LPIL)	A	Poly	1	0.002	99.836	1	2.5	
Opheliidae (LPIL)	A	Poly	1	0.002	99.838	1	2.5	
Pholoidae (LPIL)	A	Poly	1	0.002	99.840	1	2.5	
Scalibregmatidae (LPIL)	A	Poly	1	0.002	99.842	1	2.5	
<i>Mesanthura floridensis</i>	Ar	Mala	1	0.002	99.844	1	2.5	
<i>Santia milleri</i>	Ar	Mala	1	0.002	99.846	1	2.5	
<i>Amakusanthura</i> (LPIL)	Ar	Mala	1	0.002	99.847	1	2.5	
<i>Limnoria</i> (LPIL)	Ar	Mala	1	0.002	99.849	1	2.5	
<i>Munna</i> (LPIL)	Ar	Mala	1	0.002	99.851	1	2.5	
<i>Ampelisca abdita</i>	Ar	Mala	1	0.002	99.853	1	2.5	
<i>Anamixis cavitura</i>	Ar	Mala	1	0.002	99.855	1	2.5	
<i>Hornellia tequestae</i>	Ar	Mala	1	0.002	99.857	1	2.5	
<i>Orchestia grillus</i>	Ar	Mala	1	0.002	99.859	1	2.5	
<i>Chevalia carpenteri</i>	Ar	Mala	1	0.002	99.860	1	2.5	
<i>Corophium</i> sp.Q	Ar	Mala	1	0.002	99.862	1	2.5	
<i>Dulichella</i> (LPIL)	Ar	Mala	1	0.002	99.864	1	2.5	

Table 2. Continued

Taxa	No. of					Station	Station %	Comments
	Phylum	Class	Individuals	% Total	Cummulative %	Occurrence	Occurrence	
<i>Harpinia</i> (LPIL)	Ar	Mala	1	0.002	99.866	1	2.5	
<i>Amphilochus</i> (LPIL)	Ar	Mala	1	0.002	99.868	1	2.5	
<i>Leucothoe</i> (LPIL)	Ar	Mala	1	0.002	99.870	1	2.5	
<i>Gammarus</i> (LPIL)	Ar	Mala	1	0.002	99.871	1	2.5	
<i>Gibberosus</i> (LPIL)	Ar	Mala	1	0.002	99.873	1	2.5	
<i>Orchestia</i> (LPIL)	Ar	Mala	1	0.002	99.875	1	2.5	
<i>Paracaprella</i> (LPIL)	Ar	Mala	1	0.002	99.877	1	2.5	
Podoceridae (LPIL)	Ar	Mala	1	0.002	99.879	1	2.5	
Synopiidae (LPIL)	Ar	Mala	1	0.002	99.881	1	2.5	
Talitridae (LPIL)	Ar	Mala	1	0.002	99.882	1	2.5	
<i>Campylaspis</i> sp.O	Ar	Mala	1	0.002	99.884	1	2.5	
<i>Heteromysis nouveli</i>	Ar	Mala	1	0.002	99.886	1	2.5	
Tanaidae (LPIL)	Ar	Mala	1	0.002	99.888	1	2.5	
<i>Periclimenes americana</i>	Ar	Mala	1	0.002	99.890	1	2.5	
<i>Thor manningi</i>	Ar	Mala	1	0.002	99.892	1	2.5	
<i>Thor dobkini</i>	Ar	Mala	1	0.002	99.893	1	2.5	
<i>Processa vicina</i>	Ar	Mala	1	0.002	99.895	1	2.5	
<i>Processa</i> (LPIL)	Ar	Mala	1	0.002	99.897	1	2.5	
Alpheidae (LPIL)	Ar	Mala	1	0.002	99.899	1	2.5	
Processidae (LPIL)	Ar	Mala	1	0.002	99.901	1	2.5	
<i>Portunus ordwayi</i>	Ar	Mala	1	0.002	99.903	1	2.5	
Ostracoda family P	Ar	Ostr	1	0.002	99.904	1	2.5	
<i>Reticulocythereis</i> sp.A	Ar	Ostr	1	0.002	99.906	1	2.5	
<i>Actinocythereis</i> sp.A	Ar	Ostr	1	0.002	99.908	1	2.5	
<i>Actinoseta hummelincki</i>	Ar	Ostr	1	0.002	99.910	1	2.5	

Table 2. Continued

Taxa	No. of					Station	Station %	Comments
	Phylum	Class	Individuals	% Total	Cummulative %	Occurrence	Occurrence	
<i>Asteropella</i> sp.B	Ar	Ostr	1	0.002	99.912	1	2.5	
<i>Eusarsiella pilipollicis</i>	Ar	Ostr	1	0.002	99.914	1	2.5	
Nebaliidae (LPIL)	Ar	Mala	1	0.002	99.915	1	2.5	
<i>Ophionephthys limicola</i>	E	Ophi	1	0.002	99.917	1	2.5	
Holothuroidea (LPIL)	E	Holo	1	0.002	99.919	1	2.5	
Asteroidea (LPIL)	E	Aste	1	0.002	99.921	1	2.5	
Echinasteridae (LPIL)	E	Aste	1	0.002	99.923	1	2.5	
<i>Chlamys benedicti</i>	M	Biva	1	0.002	99.925	1	2.5	
<i>Cymatoica orientalis</i>	M	Biva	1	0.002	99.927	1	2.5	
<i>Geukensia demissa</i>	M	Biva	1	0.002	99.928	1	2.5	
<i>Musculus lateralis</i>	M	Biva	1	0.002	99.930	1	2.5	
<i>Pitar fulminatus</i>	M	Biva	1	0.002	99.932	1	2.5	
<i>Semele proficua</i>	M	Biva	1	0.002	99.934	1	2.5	
<i>Codakia costata</i>	M	Biva	1	0.002	99.936	1	2.5	
<i>Modiolus americanus</i>	M	Biva	1	0.002	99.938	1	2.5	
<i>Tagelus plebeius</i>	M	Biva	1	0.002	99.939	1	2.5	
<i>Lyonsia hyalina</i>	M	Biva	1	0.002	99.941	1	2.5	
<i>Anodontia</i> (LPIL)	M	Biva	1	0.002	99.943	1	2.5	
<i>Trachycardium</i> (LPIL)	M	Biva	1	0.002	99.945	1	2.5	
<i>Laevicardium</i> (LPIL)	M	Biva	1	0.002	99.947	1	2.5	
<i>Cardiomya</i> (LPIL)	M	Biva	1	0.002	99.949	1	2.5	
Anomiidae (LPIL)	M	Biva	1	0.002	99.950	1	2.5	
Nuculanidae (LPIL)	M	Biva	1	0.002	99.952	1	2.5	
Thraciidae (LPIL)	M	Biva	1	0.002	99.954	1	2.5	
<i>Odostomia weberi</i>	M	Gast	1	0.002	99.956	1	2.5	

Table 2. Continued

Taxa	No. of					Station	Station %	Comments
	Phylum	Class	Individuals	% Total	Cummulative %	Occurrence	Occurrence	
<i>Olivella dealbata</i>	M	Gast	1	0.002	99.958	1	2.5	
<i>Strombiformis bilineatus</i>	M	Gast	1	0.002	99.960	1	2.5	
<i>Strombus alatus</i>	M	Gast	1	0.002	99.961	1	2.5	
<i>Persicula fluctuata</i>	M	Gast	1	0.002	99.963	1	2.5	
<i>Hyalina lactea</i>	M	Gast	1	0.002	99.965	1	2.5	
<i>Cerithium eburneum</i>	M	Gast	1	0.002	99.967	1	2.5	
<i>Acteocina lepta</i>	M	Gast	1	0.002	99.969	1	2.5	
<i>Turbonilla</i> sp.AD	M	Gast	1	0.002	99.971	1	2.5	
<i>Pyramidella</i> (LPIL)	M	Gast	1	0.002	99.972	1	2.5	
<i>Cyclostrema</i> (LPIL)	M	Gast	1	0.002	99.974	1	2.5	
<i>Ocenebra</i> (LPIL)	M	Gast	1	0.002	99.976	1	2.5	
<i>Schwartziella</i> (LPIL)	M	Gast	1	0.002	99.978	1	2.5	
<i>Arene</i> (LPIL)	M	Gast	1	0.002	99.980	1	2.5	
<i>Jaspidella</i> (LPIL)	M	Gast	1	0.002	99.982	1	2.5	
<i>Melanella</i> (LPIL)	M	Gast	1	0.002	99.983	1	2.5	
<i>Atys</i> (LPIL)	M	Gast	1	0.002	99.985	1	2.5	
<i>Acmaea</i> (LPIL)	M	Gast	1	0.002	99.987	1	2.5	
<i>Diodora</i> (LPIL)	M	Gast	1	0.002	99.989	1	2.5	
Epitoniidae (LPIL)	M	Gast	1	0.002	99.991	1	2.5	
Fasciolaridae (LPIL)	M	Gast	1	0.002	99.993	1	2.5	
Modulidae (LPIL)	M	Gast	1	0.002	99.994	1	2.5	
Naticidae (LPIL)	M	Gast	1	0.002	99.996	1	2.5	
<i>Acanthochitona pygmaea</i>	M	Poly	1	0.002	99.998	1	2.5	
<i>Acanthochitona</i> (LPIL)	M	Poly	1	0.002	100.000	1	2.5	

Table 2. Continued

Taxa Key

A = Annelida

Olig = Oligochaeta

Poly = Polychaeta

Ar = Arthropoda

Inse = Insecta

Mala = Malacostraca

Ostr = Ostracoda

Bz = Bryozoa

C = Chordata

Asci = Ascidiacea

Cn = Cnidaria

Anth = Anthozoa

E = Echinodermata

Aste = Asteroidea

Holo = Holothuroidea

Ophi = Ophiuroidea

M = Mollusca

Biva = Bivalvia

Gast = Gastropoda

Poly = Polyplacophora

Scap = Scaphopoda

P = Porifera

Ph = Phoronida

R = Rhynchozoela

S = Sipuncula

replicate, a complete taxonomic listing with station abundance and occurrence and QA/QC comments, a major taxa table with overall taxa abundance, and an assemblage parameter table including data on mean number of taxa, mean density, taxa diversity and taxa evenness by station.

A total of 54,424 organisms, representing 775 taxa, were identified from the 40 stations (Table 3). Polychaetes were the most numerous organisms present representing 35.4% of the total assemblage, followed in abundance by gastropods (26.2%) and malacostracans (17.5%). Polychaetes represented 36.9% of the total number of taxa followed by malacostracans (24.1%), gastropods (14.9%), and bivalves (12.0%) (Table 3). The percentage abundance of the major taxa at the 40 stations is given in Table 4.

The dominant taxa collected from the samples were the gastropods, *Caecum pulchellum*, and *Tarebia granifera*, and the polychaete, *Fabricinuda trilobata*, representing 17.0%, 5.4% and 4.9% of the total number of individuals, respectively (Table 2). *Tarebia granifera*, the second most abundant taxa, was found at only one station (202). The annelid class, Oligochaeta (LPIL), the Rhynchocoela (LPIL) and the mollusc class, Gastropoda (LPIL) were the most widely distributed taxa being found at 97.5%, 95.0% and 92.5% of the stations, respectively (Table 2). The distribution of dominant taxa representing >10% of the total assemblage at each station is given in Table 5.

Station mean density and mean number of taxa data are given in Table 1 and Figures 4 and 5. Mean densities ranged from 183 organisms·m⁻² at Station 208 to 34,683 organisms·m⁻² at Station 175 (Table 1; Figure 5). The mean number of taxa per replicate ranged from 3.0 at Station 208 to 143.0 at Station 175 (Table 1; Figure 6).

There was a significant positive correlation between station mean density data and total taxa per replicate and % gravel + sand in the sediment, and a significant negative correlation with % silt + clay in the sediments and sediment TOC (Table 6; Figures 6, 7, 8). The number of taxa per replicate was positively correlated with % gravel + sand in the sediment and negatively correlated

Table 3. Summary of abundance of major taxonomic groups for the Biscayne Bay stations, June 1996.

	No. of Individuals	% Total	No. of Taxa	% Total
Annelida				
Polychaeta	19279	35.4	286	36.9
Oligochaeta	1360	2.5	3	0.4
Arthropoda				
Malacostraca	9540	17.5	187	24.1
Ostracoda	2416	4.4	43	5.5
Insecta	155	0.3	7	0.9
Mollusca				
Gastropoda	14280	26.2	110	14.2
Bivalvia	3159	5.8	93	12.0
Scaphopoda	118	0.2	6	0.8
Other Taxa	4117	7.6	40	5.2
TOTAL	54424		775	

Table 4. Breakdown of major taxa by station for the Biscayne Bay stations, June 1996.

Station	Phylum	Total No. of Taxa	% Taxa	Total No. of Individuals	% Individuals
108	Annelida	30	36.1	705	46.6
	Arthropoda	14	16.9	69	4.6
	Mollusca	37	44.6	726	48.0
	Other Taxa	2	2.4	13	0.9
	TOTAL	83		1513	
115	Annelida	38	45.2	442	20.8
	Arthropoda	20	23.8	256	12.0
	Mollusca	20	23.8	1411	66.4
	Other Taxa	6	7.1	16	0.8
	TOTAL	84		2125	
119	Annelida	32	33.7	362	32.2
	Arthropoda	18	18.9	96	8.5
	Mollusca	34	35.8	531	47.2
	Other Taxa	11	11.6	135	12.0
	TOTAL	95		1124	
121	Annelida	83	54.6	1512	53.5
	Arthropoda	13	8.6	131	4.6
	Mollusca	39	25.7	812	28.7
	Other Taxa	17	11.2	370	13.1
	TOTAL	152		2825	
125	Annelida	46	34.3	946	49.6
	Arthropoda	42	31.3	538	28.2
	Mollusca	38	28.4	257	13.5
	Other Taxa	8	6.0	166	8.7
	TOTAL	134		1907	
126	Annelida	64	47.4	327	27.3
	Arthropoda	34	25.2	371	31.0
	Mollusca	28	20.7	317	26.5
	Other Taxa	9	6.7	181	15.1
	TOTAL	135		1196	
129	Annelida	17	47.2	155	46.0
	Arthropoda	8	22.2	146	43.3
	Mollusca	9	25.0	26	7.7
	Other Taxa	2	5.6	10	3.0
	TOTAL	36		337	

Table 4. Continued

Station	Phylum	Total No. of Taxa	% Taxa	Total No. of Individuals	% Individuals
132	Annelida	94	45.4	1215	62.0
	Arthropoda	56	27.1	324	16.5
	Mollusca	45	21.7	225	11.5
	Other Taxa	12	5.8	196	10.0
	TOTAL	207		1960	
136	Annelida	53	34.6	717	31.9
	Arthropoda	44	28.8	973	43.3
	Mollusca	44	28.8	379	16.9
	Other Taxa	12	7.8	179	8.0
	TOTAL	153		2248	
138	Annelida	11	15.7	129	9.0
	Arthropoda	30	42.9	587	40.8
	Mollusca	22	31.4	707	49.1
	Other Taxa	7	10.0	16	1.1
	TOTAL	70		1439	
140	Annelida	54	39.4	341	21.1
	Arthropoda	39	28.5	168	10.4
	Mollusca	29	21.2	867	53.8
	Other Taxa	15	10.9	237	14.7
	TOTAL	137		1613	
144	Annelida	28	43.8	239	33.2
	Arthropoda	6	9.4	36	5.0
	Mollusca	24	37.5	399	55.4
	Other Taxa	6	9.4	46	6.4
	TOTAL	64		720	
148	Annelida	22	37.9	152	18.1
	Arthropoda	12	20.7	50	5.9
	Mollusca	17	29.3	612	72.8
	Other Taxa	7	12.1	27	3.2
	TOTAL	58		841	
149	Annelida	7	41.2	13	18.6
	Arthropoda	2	11.8	3	4.3
	Mollusca	5	29.4	43	61.4
	Other Taxa	3	17.6	11	15.7
	TOTAL	17		70	
153	Annelida	59	36.4	523	26.6
	Arthropoda	46	28.4	653	33.2
	Mollusca	44	27.2	637	32.4
	Other Taxa	13	8.0	152	7.7
	TOTAL	162		1965	

Table 4. Continued

Station	Phylum	Total No. of Taxa	% Taxa	Total No. of Individuals	% Individuals
156	Annelida	54	53.5	1234	68.1
	Arthropoda	22	21.8	420	23.2
	Mollusca	18	17.8	97	5.4
	Other Taxa	7	6.9	61	3.4
	TOTAL	101		1812	
158	Annelida	57	49.1	839	67.2
	Arthropoda	19	16.4	60	4.8
	Mollusca	31	26.7	234	18.7
	Other Taxa	9	7.8	116	9.3
	TOTAL	116		1249	
162	Annelida	61	37.7	568	24.5
	Arthropoda	57	35.2	998	43.1
	Mollusca	33	20.4	467	20.2
	Other Taxa	11	6.8	284	12.3
	TOTAL	162		2317	
163	Annelida	83	45.4	1138	45.1
	Arthropoda	53	29.0	849	33.7
	Mollusca	37	20.2	428	17.0
	Other Taxa	10	5.5	107	4.2
	TOTAL	183		2522	
167	Annelida	76	47.2	1051	44.4
	Arthropoda	44	27.3	422	17.8
	Mollusca	28	17.4	605	25.5
	Other Taxa	13	8.1	291	12.3
	TOTAL	161		2369	
169	Annelida	44	44.9	457	52.6
	Arthropoda	26	26.5	90	10.4
	Mollusca	21	21.4	230	26.5
	Other Taxa	7	7.1	91	10.5
	TOTAL	98		868	
173	Annelida	47	52.2	396	64.7
	Arthropoda	14	15.6	42	6.9
	Mollusca	24	26.7	152	24.8
	Other Taxa	5	5.6	22	3.6
	TOTAL	90		612	
175	Annelida	105	40.1	2006	48.2
	Arthropoda	90	34.4	1457	35.0
	Mollusca	47	17.9	321	7.7
	Other Taxa	20	7.6	378	9.1
	TOTAL	262		4162	

Table 4. Continued

Station	Phylum	Total No. of Taxa	% Taxa	Total No. of Individuals	% Individuals
178	Annelida	26	68.4	277	86.8
	Arthropoda	6	15.8	9	2.8
	Mollusca	3	7.9	13	4.1
	Other Taxa	3	7.9	20	6.3
	TOTAL	38		319	
181	Annelida	71	36.2	244	16.8
	Arthropoda	66	33.7	579	39.9
	Mollusca	48	24.5	529	36.5
	Other Taxa	11	5.6	98	6.8
	TOTAL	196		1450	
183	Annelida	42	49.4	201	57.8
	Arthropoda	18	21.2	45	12.9
	Mollusca	17	20.0	67	19.3
	Other Taxa	8	9.4	35	10.1
	TOTAL	85		348	
185	Annelida	46	34.3	169	9.3
	Arthropoda	50	37.3	298	16.4
	Mollusca	29	21.6	1207	66.5
	Other Taxa	9	6.7	142	7.8
	TOTAL	134		1816	
188	Annelida	101	53.7	540	53.5
	Arthropoda	43	22.9	222	22.0
	Mollusca	32	17.0	128	12.7
	Other Taxa	12	6.4	120	11.9
	TOTAL	188		1010	
193	Annelida	81	50.9	337	40.6
	Arthropoda	35	22.0	94	11.3
	Mollusca	33	20.8	285	34.3
	Other Taxa	10	6.3	115	13.8
	TOTAL	159		831	
194	Annelida	67	46.5	465	45.9
	Arthropoda	39	27.1	146	14.4
	Mollusca	28	19.4	304	30.0
	Other Taxa	10	6.9	99	9.8
	TOTAL	144		1014	
198	Annelida	87	47.5	392	42.5
	Arthropoda	56	30.6	270	29.3
	Mollusca	31	16.9	162	17.6
	Other Taxa	9	4.9	98	10.6
	TOTAL	183		922	

Table 4. Continued

Station	Phylum	Total No. of Taxa	% Taxa	Total No. of Individuals	% Individuals
202	Annelida	3	15.8	112	3.6
	Arthropoda	9	47.4	29	0.9
	Mollusca	7	36.8	3003	95.5
	Other Taxa	0	0.0	0	0.0
	TOTAL	19		3144	
205	Annelida	18	60.0	153	81.4
	Arthropoda	1	3.3	4	2.1
	Mollusca	10	33.3	30	16.0
	Other Taxa	1	3.3	1	0.5
	TOTAL	30		188	
208	Annelida	2	25.0	5	22.7
	Arthropoda	4	50.0	14	63.6
	Mollusca	2	25.0	3	13.6
	Other Taxa	0	0.0	0	0.0
	TOTAL	8		22	
211	Annelida	17	51.5	82	38.9
	Arthropoda	6	18.2	102	48.3
	Mollusca	7	21.2	22	10.4
	Other Taxa	3	9.1	5	2.4
	TOTAL	33		211	
214	Annelida	26	51.0	166	72.2
	Arthropoda	4	7.8	5	2.2
	Mollusca	18	35.3	36	15.7
	Other Taxa	3	5.9	23	10.0
	TOTAL	51		230	
216	Annelida	67	41.9	391	38.4
	Arthropoda	54	33.8	391	38.4
	Mollusca	29	18.1	197	19.4
	Other Taxa	10	6.3	39	3.8
	TOTAL	160		1018	
218	Annelida	69	48.9	490	30.0
	Arthropoda	36	25.5	610	37.3
	Mollusca	30	21.3	460	28.1
	Other Taxa	6	4.3	76	4.6
	TOTAL	141		1636	
223	Annelida	78	47.0	725	47.0
	Arthropoda	43	25.9	399	25.9
	Mollusca	37	22.3	316	20.5
	Other Taxa	8	4.8	102	6.6
	TOTAL	166		1542	

Table 4. Continued

Station	Phylum	Total No. of Taxa	% Taxa	Total No. of Individuals	% Individuals
225	Annelida	45	45.5	423	45.5
	Arthropoda	23	23.2	155	16.7
	Mollusca	24	24.2	312	33.6
	Other Taxa	7	7.1	39	4.2
	TOTAL	99		929	

Figure 4. Mean macroinfaunal densities for the Biscayne Bay stations, June 1996.

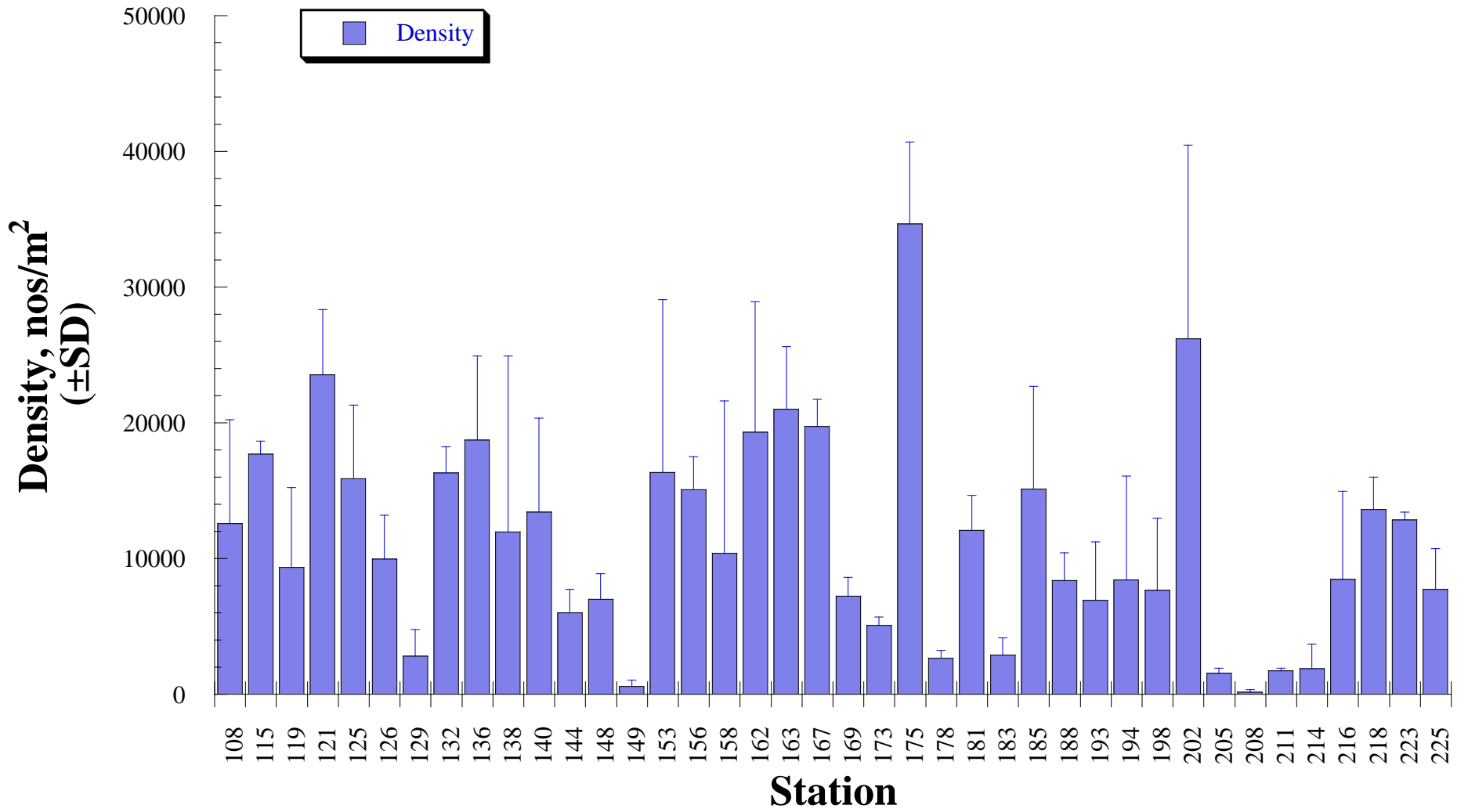


Figure 5. Mean number of macroinvertebrate taxa per replicate for the Biscayne Bay stations, June 1996.

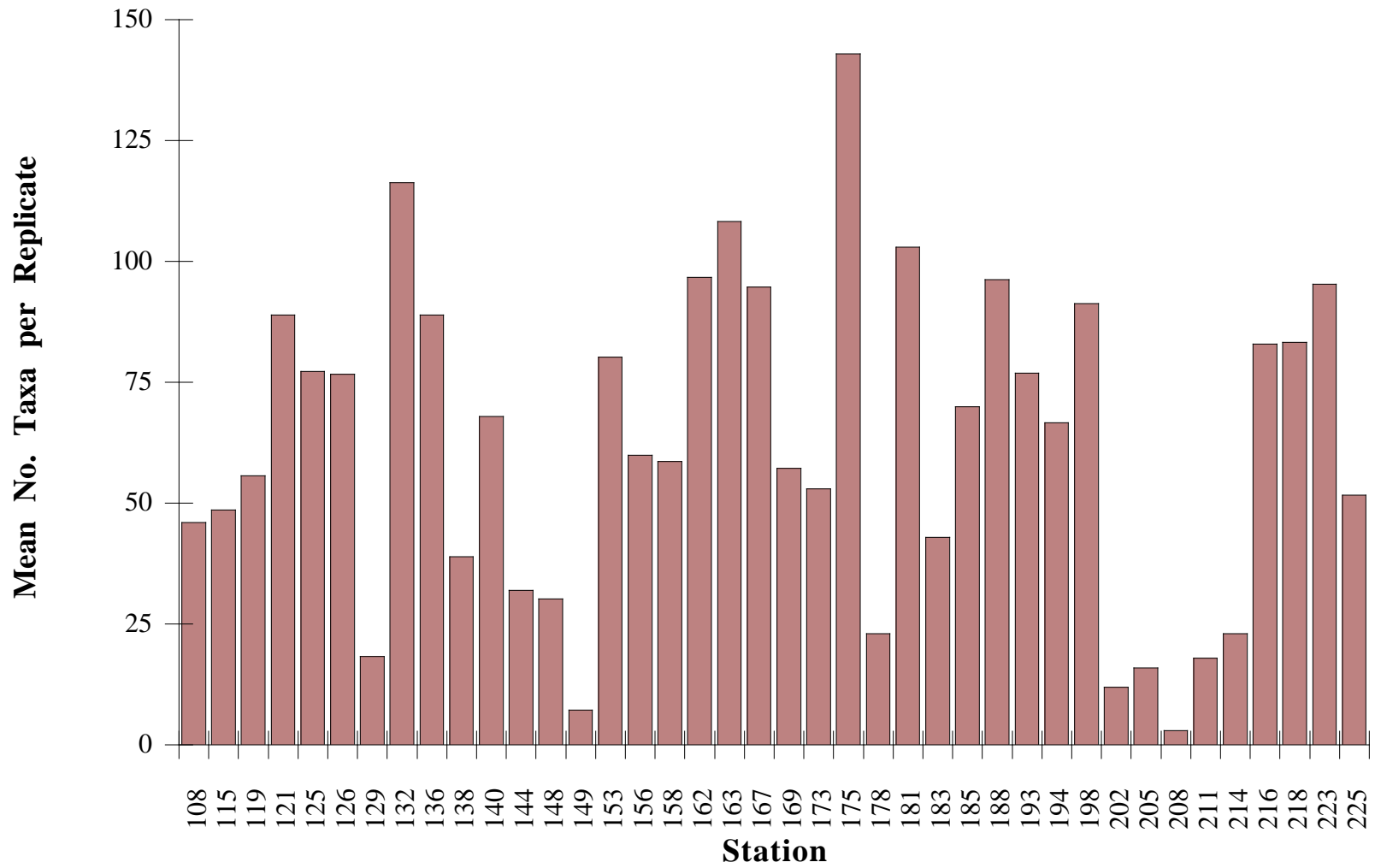


Table 6. Correlation coefficients for the Biscayne Bay data, June 1996.

Variable	by Variable	Correlation Spearman's Rho	Significance Probability
Density	total taxa	0.5938	<.0001
	% gravel & sand	0.5418	0.0003
	% silt & clay	- 0.549	0.0002
	TOC	- 0.5002	0.001
Total Taxa	% gravel & sand	0.3668	0.0199
	% silt & clay	- 0.3606	0.0223
	TOC	- 0.5247	0.0005
% Gravel & Sand	% silt & clay	- 0.9983	<.0001
	TOC	- 0.7192	<.0001
% Silt & Clay	TOC	0.7132	<.0001

Figure 6. Mean macroinvertebrate densities versus the mean number of macroinvertebrate taxa per replicate for the Biscayne Bay stations, June 1996.

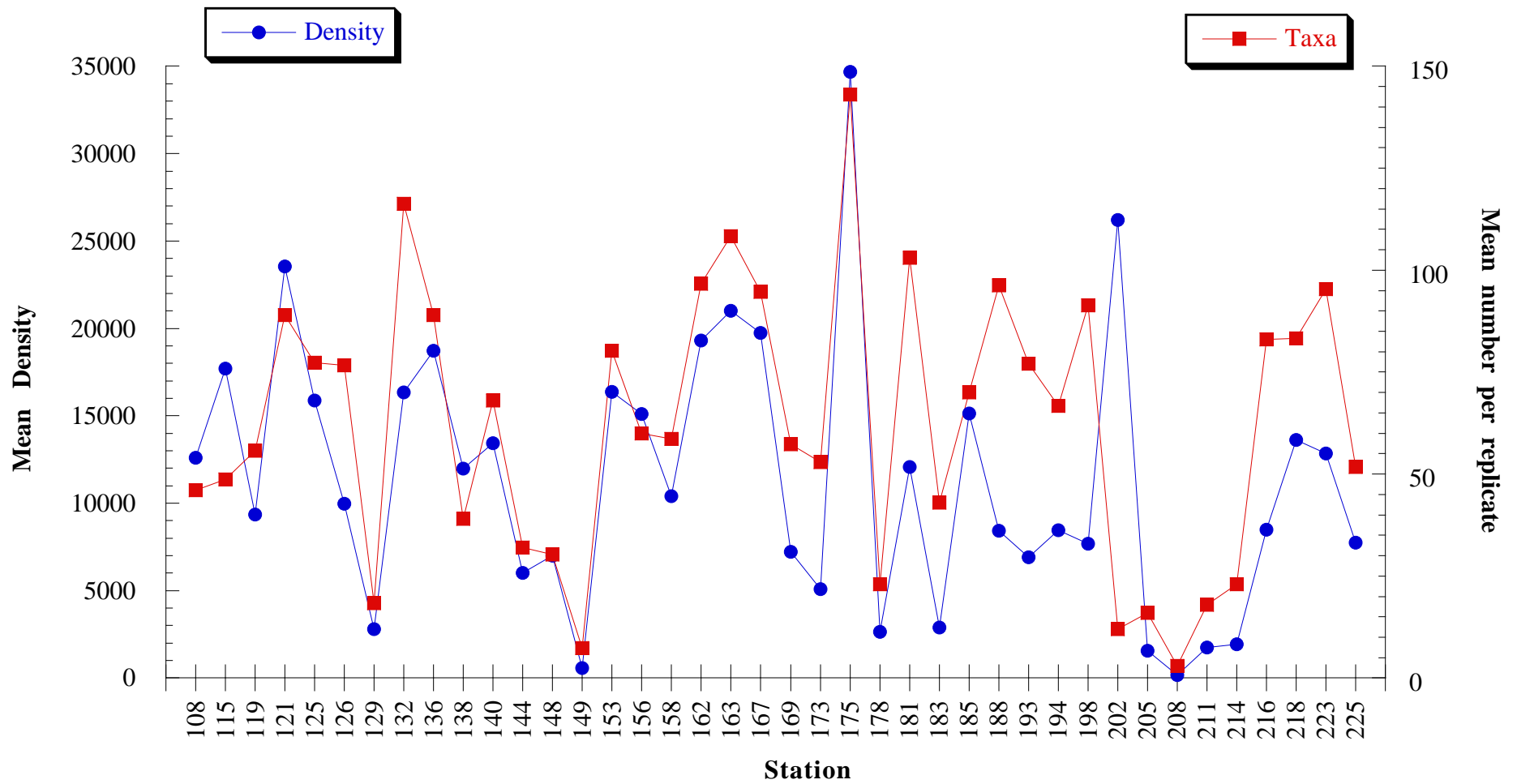


Figure 7. Mean macroinvertebrate densities versus the percent gravel/sand content of the sediment for the Biscayne Bay stations, June 1996

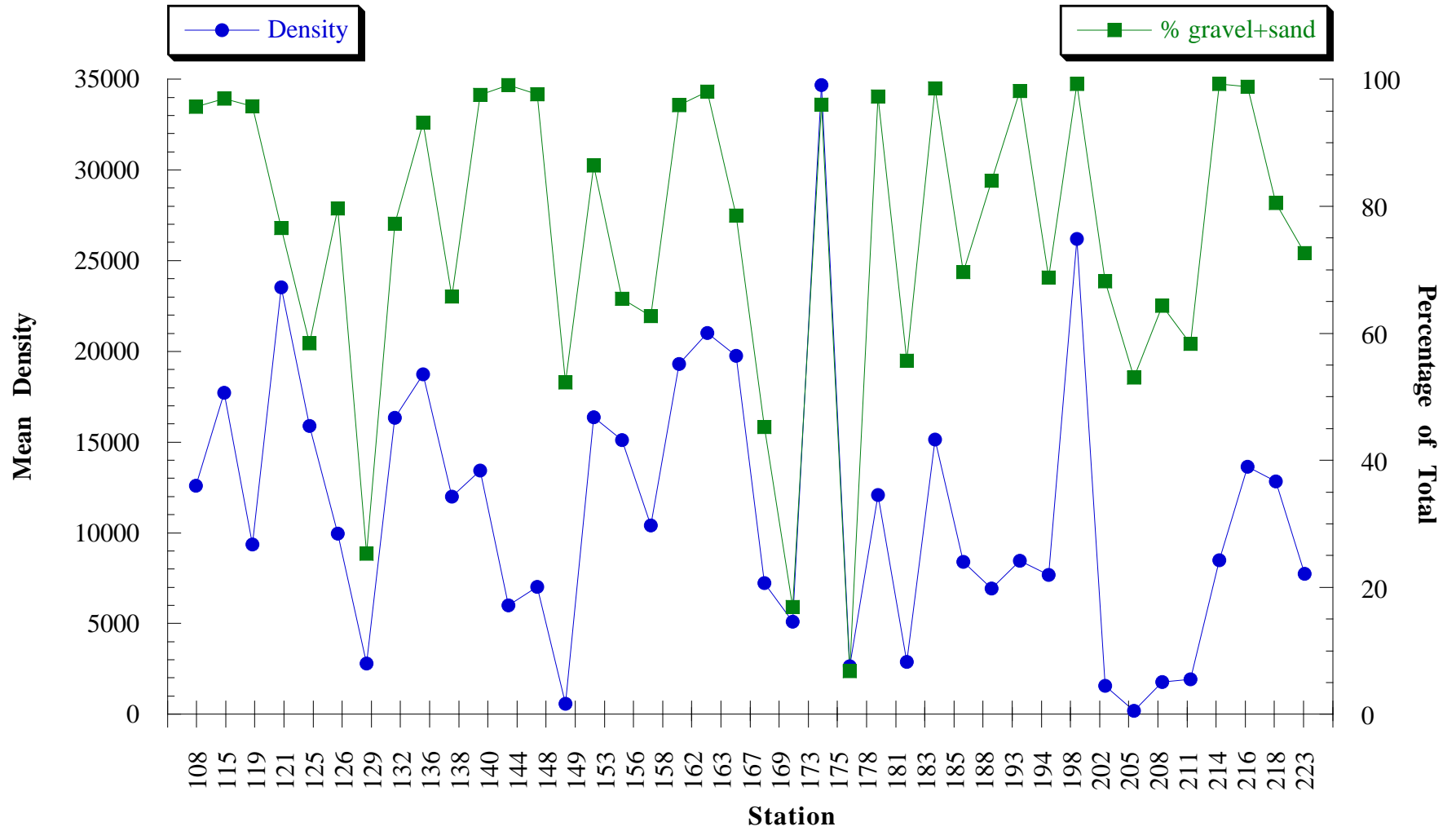
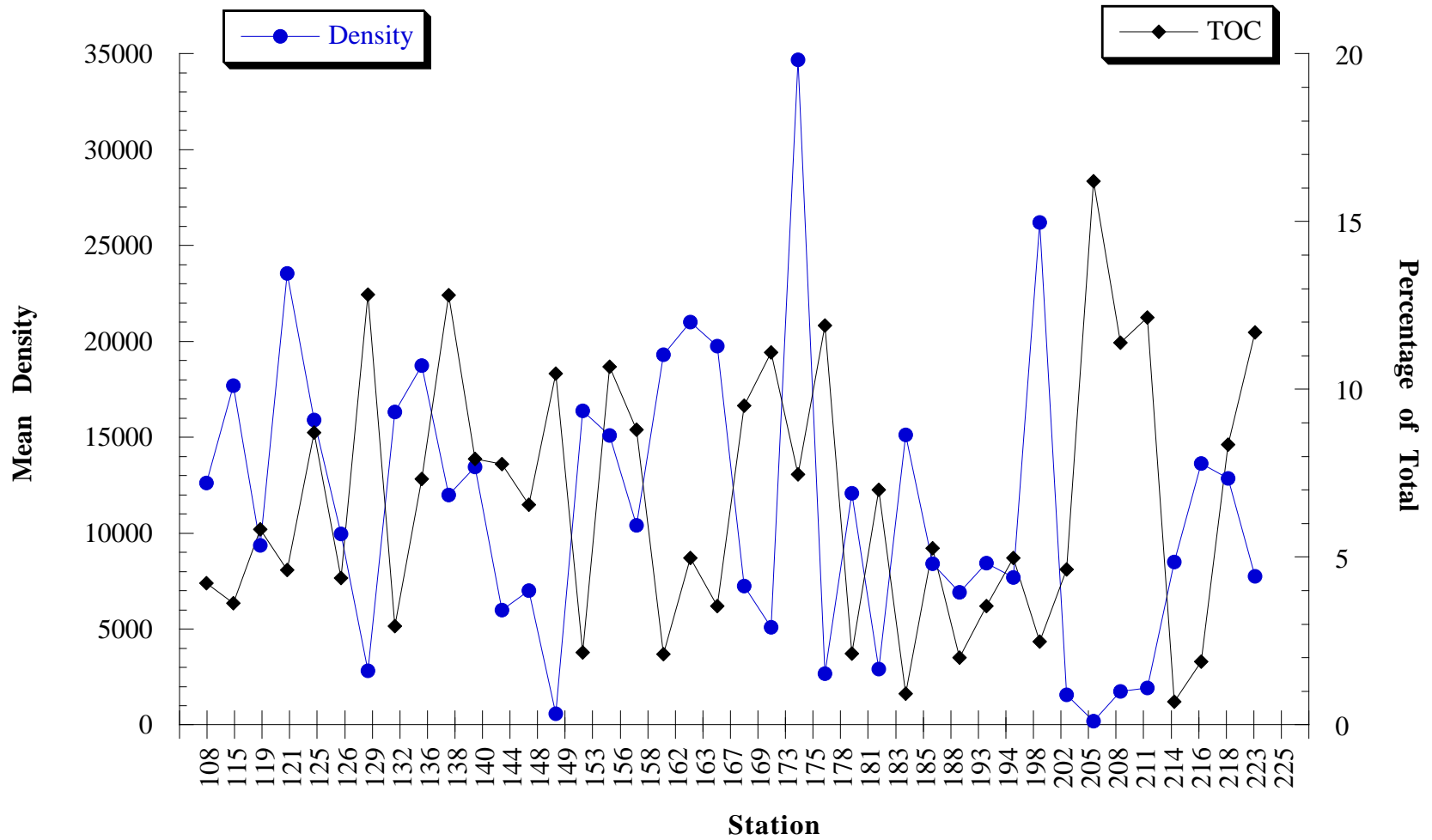


Figure 8. Mean macroinvertebrate densities versus percent sediment total organic carbon (TOC) for the Biscayne Bay stations, June 1996



with % silt + clay in the sediments and sediment TOC (Table 6; Figure 9). There were additional significant correlations between various physical and chemical parameters:

% gravel + sand was inversely correlated with % silt + clay and TOC; and % silt + clay was positively correlated with TOC (Table 6).

Taxa diversity and evenness are given in Table 1 and Figure 10. Taxa diversity (H') ranged from 0.41 at Station 202 to 4.65 at Station 198. Taxa evenness (J') values ranged from 0.14 at Station 202 to 0.89 at Station 198 (Table 1; Figure 10).

Cluster Analysis

Normal (stations) and inverse (species) cluster analyses were performed on the Biscayne Bay data set and displayed as dendrograms (Figures 11 and 12). Selection of the species included in the analyses was based on a minimum representation of 0.4% of total individuals which encompassed 55 taxa. These taxa accounted for 69.8% of the macroinfaunal assemblage collected.

Numerical clustering of the 40 stations can be interpreted at a five-group level. One group contained only Station 202 with a macroinfaunal assemblage dominated by the mollusc, *Tarebia granifera*; station 202 also had the lowest diversity and evenness of the 40 stations (Table 1; Figure 10). A second group contained only station 175 which had a mean density 25% higher than the next highest. A third group contained stations 115 and 185 characterized by the highest densities of the most abundant taxa in this study, *Caecum pulchellum*. A fourth group contained Stations 108, 167, 119, 148, 140, 138 and 121 and was characterized by high densities of *C. pulchellum* (Figure 11). The final group contained the remaining 29 stations with a mixed macroinfaunal assemblage.

Clustering of the 55 taxa at the 40 stations can be interpreted at a five-group level (Figure 12). Four of the five groups contained only one taxa each. One group included the taxon *Tarebia granifera* found in high numbers only at Station 202 (Figure 12; Table 2). A second group contained only *Fabricinuda trilobata* found in high densities at Stations 108, 125 and 175 (Figure

Figure 9. Mean number of macroinvertebrate taxa per replicate versus percent sediment total organic carbon (TOC) for the Biscayne Bay stations, June 1996.

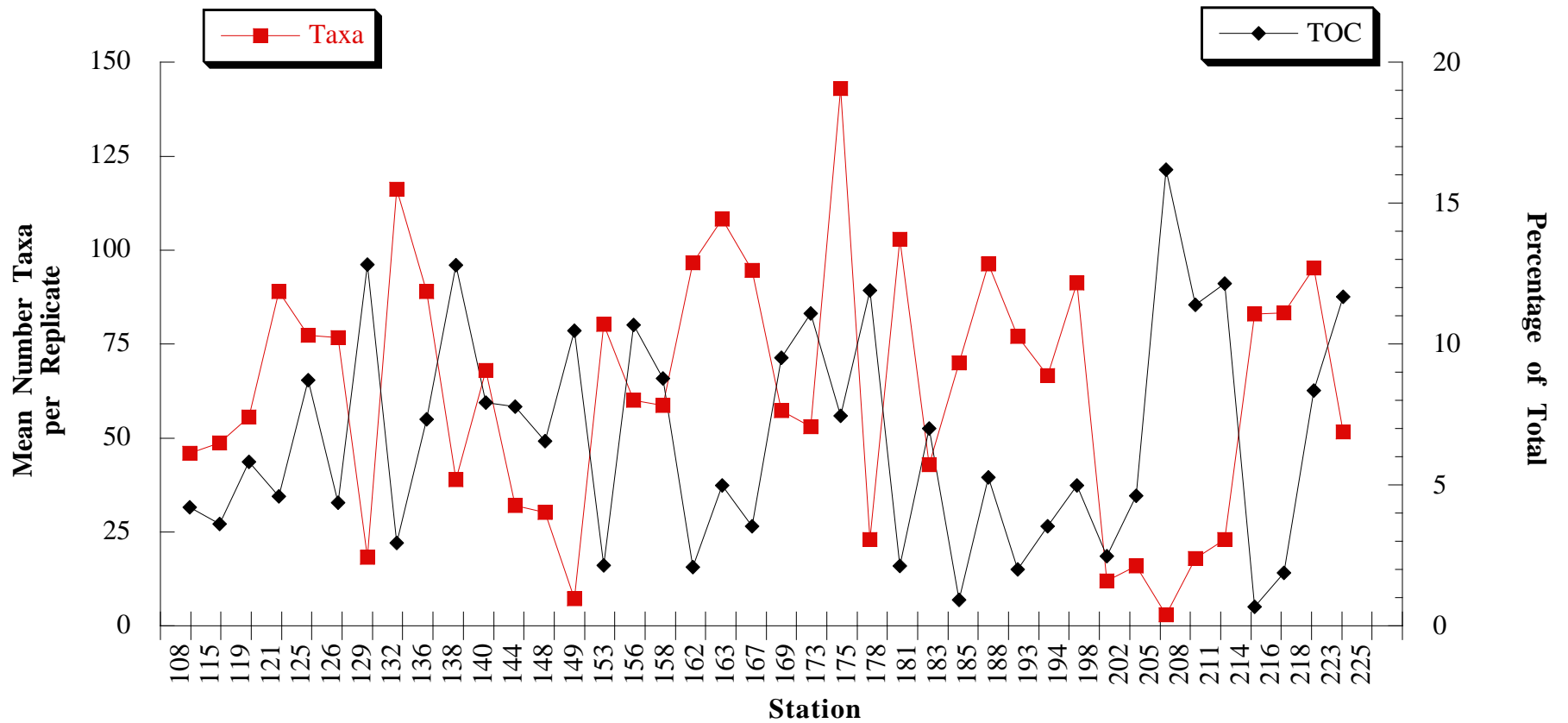
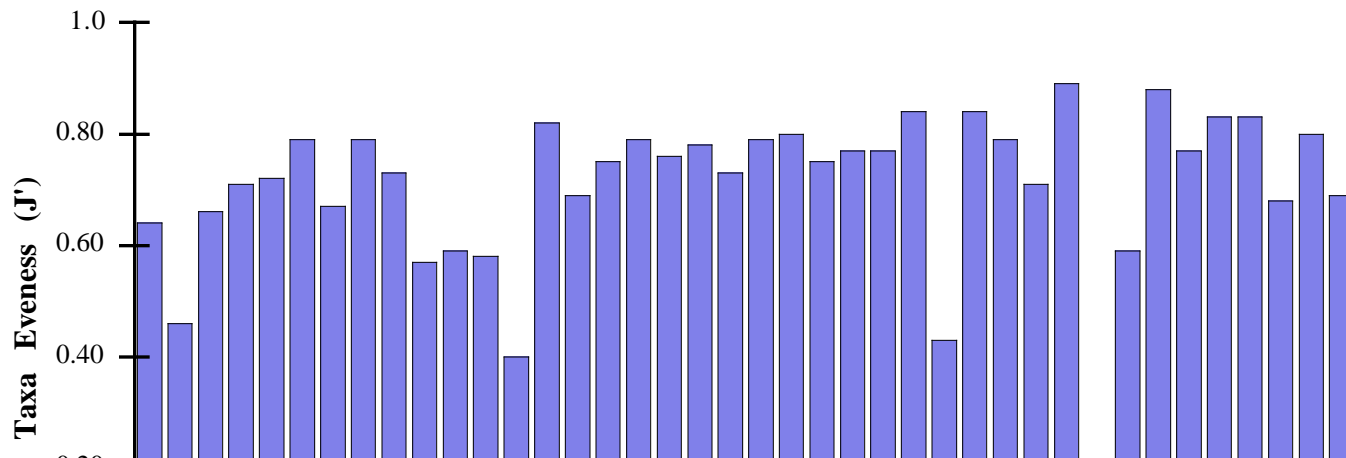
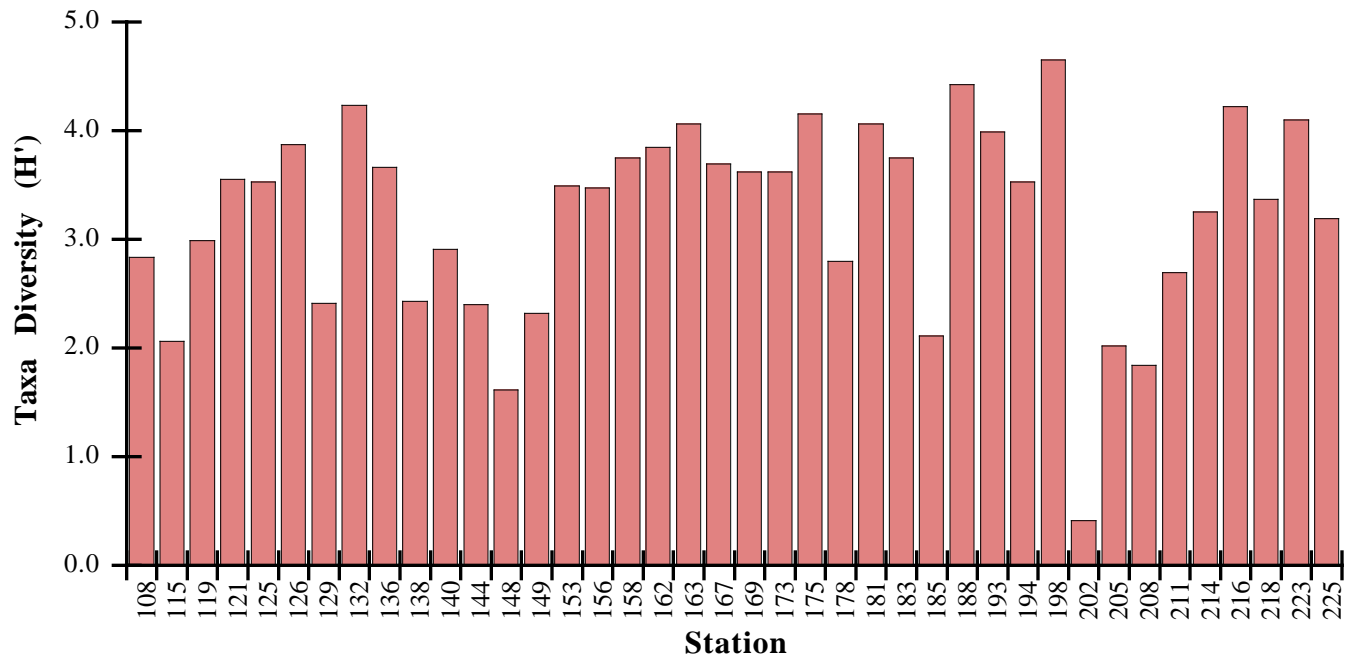


Figure 10. Taxa diversity (H') and taxa evenness (J') for the Biscayne Bay stations, June 1996.



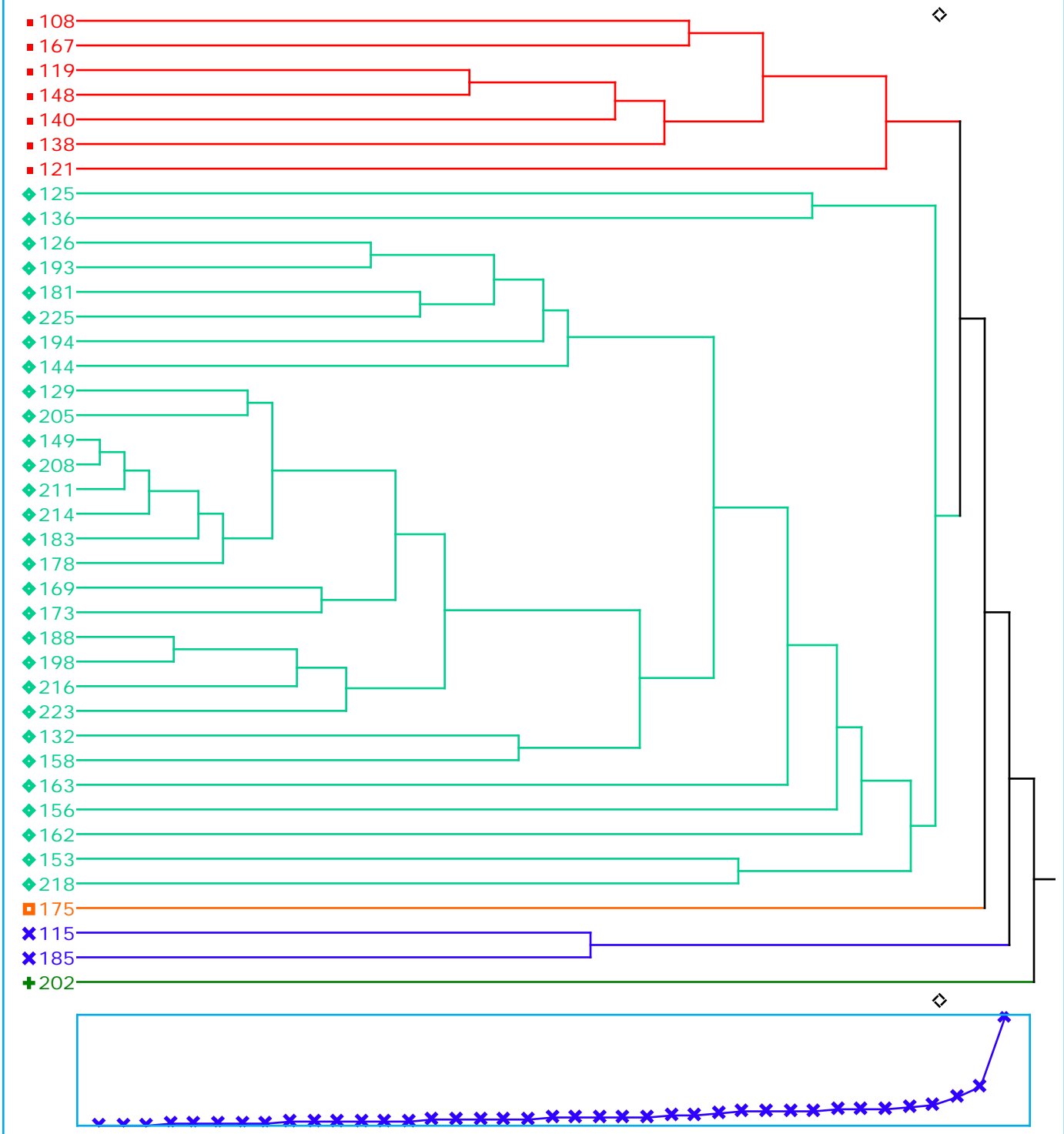


Figure 11. Normal (station) classification analysis for the Biscayne Bay stations, June 1996.

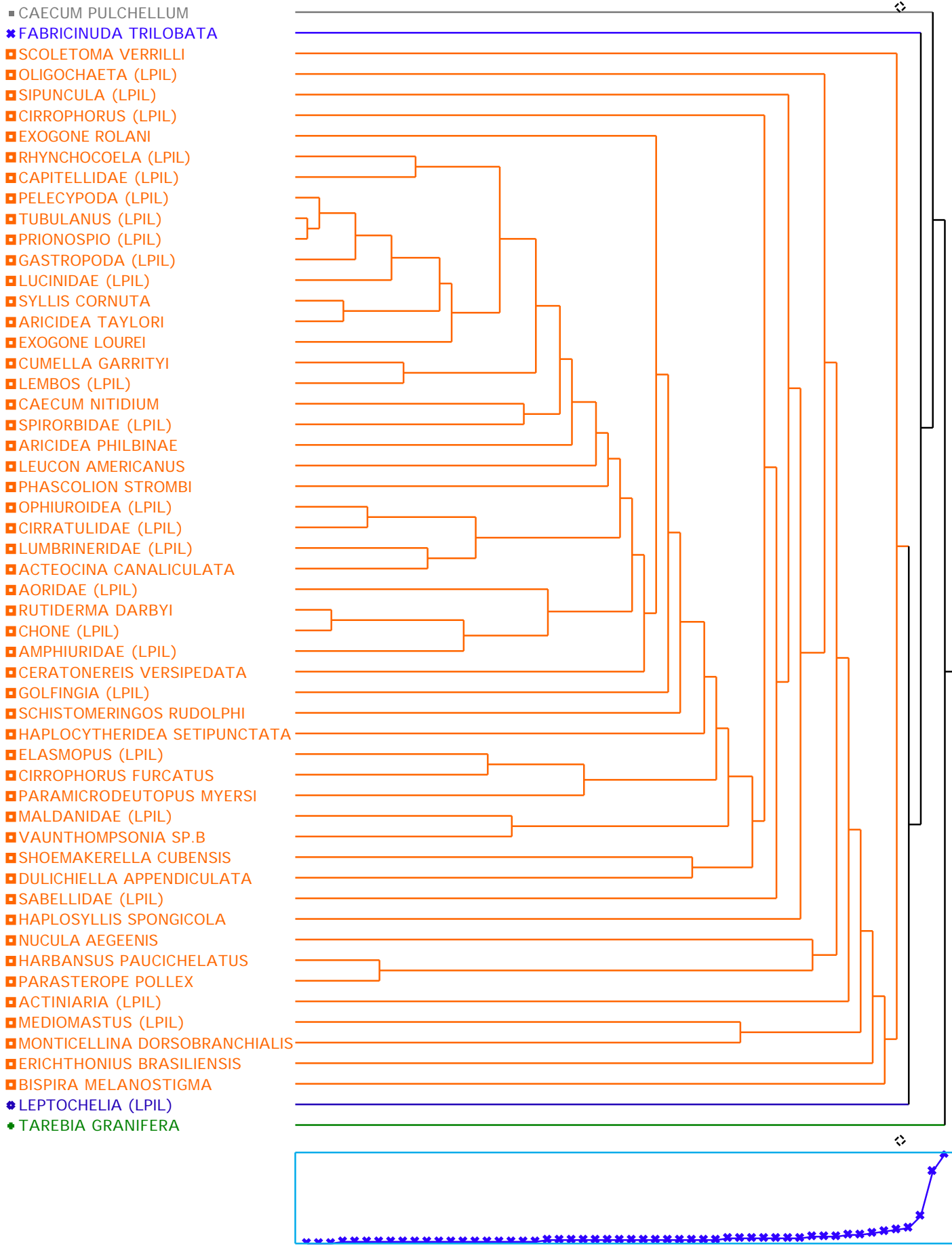


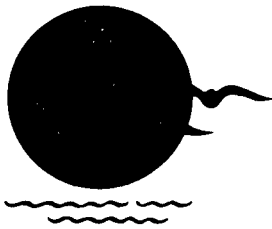
Figure 12. Inverse (taxa) classification analysis for the Biscayne Bay stations, June 1996

12). A third group consisted only of *Leptochelia* (LPIL) a large genus well represented in southern Florida which also accounted for nearly 3% of the total individuals collected (Figure 12; Table 2). A fourth group consisted only of *Ceacum pulchellum* (Figure 12), and was the most abundant taxa collected in the 1996 sampling effort, accounting for 16.9% of all individuals and occurring at 87.5% of stations (Table 2). The remaining 51 taxa fell into one large group containing a diverse array of taxa collected across the 40 stations (Figure 12).

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APPENDIX



BARRY A. VITTOR & ASSOCIATES, INC.

ENVIRONMENTAL RESEARCH & CONSULTING

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QUALITY ASSURANCE STATEMENT

Client/Project: NOAA

Work Assignment Title: Biscayne Bay 1996

Work Assignment Number: BB 96 MR

Task Number: 5

Description of Data Set or Deliverable: 123 Benthic macroinvertebrate samples collected in May and June of 1996; Young Dredge grabs.

Description of audit and review activities: Judged accuracy rates were well above standard levels for sorting and taxonomy. Laboratory QC reports were completed. Copies of reports and QC results follow (see attachment). All taxonomic data were entered into computer and printed. This list was checked for accuracy against original taxonomic data sheets.

Description of outstanding issues or deficiencies which may affect data quality: None

8/11/97

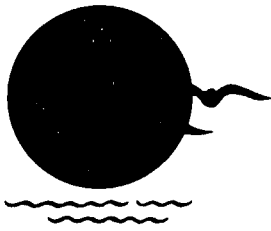
Signature of QA Officer or Reviewer

Date

Aug. 12, 1997

Signature of Project Manager

Date



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QUALITY CONTROL REWORKS

Client/Project: NOAA

Work Assignment Title: Biscayne Bay 1996

Work Assignment Number: BB 96 MR

Task Number: 5

Sorting Results:

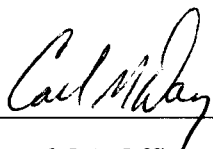
Sample #	% Accuracy
111-001	100%
111-002	100%
173-001	100%
178-001	100%
149-002	100%
163-002	100%
208-002	100%
125-001	100%
136-002	100%
136-001	97%

Taxonomy Results:

Sample #	Taxa	% Accuracy
214-002	Crust./Moll.	100%
175-003	Crust./Moll.	97%
115-001	Crust./Moll.	96.6%
169-002	Crust./Moll.	96.4%
181-001	Crust./Moll.	95%
202-002	Crust./Moll.	99%
129-003	Crust./Moll.	96%
198-002	Crust./Moll.	97%
181-002	Crust./Moll.	97%
193-003	Crust./Moll.	95%
202-003	Crust./Moll.	98%
149-002	Crust./Moll.	100%
132-002	Poly./Misc.	98%
125-001	Poly./Misc.	98.5%
183-001	Poly./Misc.	97.5%
214-003	Poly./Misc.	97.5%
148-001	Poly./Misc.	96.9%
158-001	Poly./Misc.	100%
132-001	Poly./Misc.	98.9%

Sample #	Taxa	% Accuracy
121-002	Poly./Misc.	99.7%
129-002	Poly./Misc.	100%
225-001	Poly./Misc.	97.6%
121-003	Poly./Misc.	99.7%
163-001	Poly./Misc.	98.7%

Description of outstanding issues or deficiencies which may affect data quality: None



8/11/97

Signature of QA Officer or Reviewer

Date