

Chesapeake Bay Benthic Community Assessment, 2004 (Stations 18-21 and 27-60)

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TABLE OF CONTENTS

LIST OF TABLES..... 2

LIST OF FIGURES..... 3

INTRODUCTION 4

METHODS 5

Sample Collection And Handling..... 5

Macroinfaunal Sample Analysis 5

DATA ANALYSIS..... 6

Assemblage Structure..... 6

HABITAT CHARACTERISTICS..... 7

BENTHIC COMMUNITY CHARACTERIZATION 7

LITERATURE CITED 10

APPENDIX

LIST OF TABLES

Table 1. Summary of station location, water quality and sediment data for the Chesapeake Bay stations, 2004 (Stations 1-60).

Table 2. Summary of overall abundance of major benthic macroinfaunal taxonomic groups for the Chesapeake Bay stations, 2004 (Stations 18-21, 27-60).

Table 3. Summary of abundance of major benthic macroinfaunal taxonomic groups by station for the Chesapeake Bay stations, 2004 (Stations 18-21, 27-60).

Table 4. Distribution and abundance of benthic macroinfaunal taxa for the Chesapeake Bay stations, 2004 (Stations 18-21, 27-60).

Table 5. Percentage abundance of dominant benthic macroinfaunal taxa (>10% of the total) for the Chesapeake Bay stations, 2004 (Stations 18-21, 27-60).

Table 6. Summary of the benthic macroinfaunal data for the Chesapeake Bay stations, 2004 (Stations 18-21, 27-60).

LIST OF FIGURES

Figure 1. Water depth and salinity for the Chesapeake Bay stations, 2004 (Stations 18-21, 27-60).

Figure 2. Sediment composition for the Chesapeake Bay stations, 2004 (Stations 18-21, 27-60).

Figure 3. Sediment percent total organic carbon (TOC) for the Chesapeake Bay stations, 2004 (Stations 18-21, 27-60).

Figure 4. Distribution of major macroinvertebrate taxa for the Chesapeake Bay stations, 2004 (Stations 18-21, 27-60).

Figure 5. Taxa richness data for the Chesapeake Bay stations, 2004 (Stations 18-21, 27-60).

Figure 6. Taxa density data for the Chesapeake Bay stations, 2004 (Stations 18-21, 27-60).

Figure 7. Taxa diversity (H') data for the Chesapeake Bay stations, 2004 (Stations 18-21, 27-60).

Figure 8. Taxa evenness (J') data for the Chesapeake Bay stations, 2004 (Stations 18-21, 27-60).

INTRODUCTION

Chesapeake Bay was sampled during 2004. 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). Location data for the Chesapeake Bay estuary stations are given in Table 1.

METHODS

Sample Collection And Handling

A Young-modified Van Veen grab (area = 0.04 m²) was used to collect 3 replicate bottom samples at each of the 60 stations during 2004. Results for Stations 18-21 and 27-60 are reported here. 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.

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 labeled 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 Quality Assurance and Quality Control reports for the Chesapeake Bay samples are given in the Appendix.

Assemblage Structure

Several numerical indices were chosen for analysis and interpretation of the macroinfaunal data. 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 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 Shannon's Index (Pielou, 1966), according to the following formula:

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

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

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

p_i = the number of individuals of the i'th taxa divided by the total number of individuals in the sample.

Taxa diversity was calculated using \ln ; however, diversity may also be calculated using \log_2 . Both methods of calculating diversity are common in the scientific literature.

The taxa diversity calculated in this report using \ln , can be converted to \log_2 diversity by

multiplying the \ln taxa diversity by 1.4427. 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 the equitability in the fauna to the 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, $J' = H' / H'_{\max}$.

HABITAT CHARACTERISTICS

Water quality data are given for all 60 stations in Table 1 and water depth and salinity data for Stations 18-21 and 27-60 are plotted in Figure 1. Depths ranged from < 0.5 m at Station 60 to 6.7 m at Station 30. Salinities ranged from essentially freshwater at Stations 18-21 and 60 to estuarine at the remaining stations (Table 1, Figure 1).

Sediment texture and %TOC data for all 60 stations are given in Table 1 and data from Stations 18-21 and 27-60 are plotted in Figures 2 and 3. Sediment composition ranged from > 90% sand at Stations 40, 45-47, 53 and 60 to 96% silt+clay at Station 35. TOC ranged from < 0.1% at Stations 40, 45-57 and 53 to 12.3% at Station 31.

BENTHIC COMMUNITY CHARACTERIZATION

Microsoft TMExcel spreadsheets are being provided separately to NOAA which include: raw data on taxa abundance and density, a complete taxonomic listing with station abundance and occurrence, a major taxa table with overall taxa abundance, and an assemblage parameter table including data on number of taxa, density, taxa diversity and taxa evenness by station.

A total of 14863 organisms, representing 146 taxa, were identified from the 22 Chesapeake Bay stations (Table 2). Malacostracans were the most numerous organisms present representing 43.5% of the total assemblage, followed in abundance by polychaetes (28.5%) and oligochaetes (15.9%). Polychaetes represented 26.7% of the total number of taxa followed by malacostracans (24.7%), insects (13.7%), and bivalves (12.3%)(Table 2). The abundance of major taxa by station are given in Table 3 and Figure 4. Assemblage composition varied considerably between stations with polychaetes dominating at some stations (> 70% of the total at the Stations 27-29, 38, 41-44,48-52, 60), arthropods dominating (> 70% of the total) at Stations 21 and 54, and a mixed assemblage of polychaetes, mollusks and arthropods dominant at the remaining stations (Figure 4, Table 3).

The dominant taxon collected from the 22 Chesapeake Bay stations was the amphipod, *Apocorophium lacustre* which represented 22.3% of the total. The oligochaete family, Tubificidae (LPIL), the malacostracans, *Leptocheirus plumulosus* and *Gammarus tigrinus* and the polychaete, *Streblospio benedicti* were also abundant and represented 15.2%, 9.4%, 5.2 and 5.6% of the total individuals collected (Table 4). The Tubificidae were the most widely distributed taxon being found at 76% of the stations (Table 4). The distribution of dominant taxa representing > 10% of the total assemblage at each station is given in Table 5. Dominant taxa tended to follow salinity gradients with freshwater and euryhaline oligochaete taxa dominating at low salinity stations (< 3 ppt) and more estuarine fauna (polychaetes, amphipods) dominating at the higher salinity stations (Table 5).

Station taxa richness data are given in Table 6 and Figure 5. Taxa richness varied considerably between stations and ranged from 3.3 (SD = 0.6) at Station 51 to 28.3 (SD = 5.7) at Station 45 (Figure 5). Station density data are given in Table 6 and Figure 6. Station densities also exhibited considerable variation ranging from 266.7 organisms/m² (SD = 76.4) at Station 39 to 35416.7 organisms/m² (SD = 15589.5) at Station 21 (an *Apocorophium lacustre* mat).

Taxa diversity and evenness are given in Table 6 and Figures 7 and 8. Taxa diversity (H') ranged from 0.34 at Station 51 to 2.74 at Station 47 (Table 6, Figure 6). Taxa evenness (J') ranged from 0.21 at Station 51 to 0.89 at Station 39 (Table 6, Figure 7).

LITERATURE CITED

Pielou, E.C. 1966. The measurement of diversity in different types of biological collections. *Journal of Theoretical Biology* 13:131-144.

Table 1. Summary of station location, water quality and sediment data for the Chesapeake Bay stations, 2004 (Stations 1-60).

Station	Latitude	Longitude	Depth (m)	Temp. (°C)	Sal. (ppt)	D.O. (mg/L)	pH	% TOC	% Gravel	% Sand	% Silt Clay	USACE Description	Median Particle Size (phi)	Sorting Coefficient	% Moisture
1	39.24488	75.90886	0.75	25.24	0.04	8.41	7.30	4.45	0.00	8.52	91.48	Clayey Silt	6.270	2.360	65.48
2	39.24301	75.90886	1.65	25.49	0.05	8.18	6.86	0.13	0.42	98.91	0.67	Sand	1.531	0.599	20.03
3	39.24641	75.96747	1.02	25.91	0.01	7.86	6.92	0.89	3.04	69.62	27.33	Silty Sand	1.898	3.721	42.95
4	39.24130	75.98632	2.20	25.71	0.19	5.93	6.61	6.21	0.10	24.85	75.06	Clayey Silt	5.993	3.051	69.61
5	39.22372	76.03602	3.65	26.40	1.86	6.04	6.99	3.76	0.18	25.75	74.07	Clayey Silt	5.498	2.985	56.82
6	39.21958	76.04179	3.40	26.19	1.54	6.31	6.82	2.57	0.14	29.47	70.39	Clayey Silt	5.236	2.984	61.08
7	39.16993	76.03949	3.65	27.04	3.62	6.76	6.89	3.19	0.05	11.74	88.21	Silty Clay	7.145	2.742	65.63
8	39.13007	76.08490	2.33	27.41	6.48	6.81	6.93	0.37	0.27	84.27	15.46	Sand	1.586	1.521	28.42
9	39.10549	76.13089	2.30	26.98	7.49	5.90	6.89	1.92	0.00	38.93	61.06	Clayey Silt	5.073	3.406	57.39
10	39.11466	76.10500	1.86	26.49	7.23	5.37	6.75	2.76	0.17	37.22	62.60	Sandy Silt	4.503	2.603	62.81
11	39.12964	76.14998	2.81	28.33	7.16	7.53	6.54	2.52	0.00	9.84	90.16	Silty Clay	6.447	2.510	61.03
12	39.09189	76.18437	1.74	27.63	7.67	7.47	6.92	0.59	0.00	67.34	32.66	Silty Clay	3.528	3.247	34.73
13	39.06143	76.18710	3.88	26.29	9.42	4.99	7.00	2.71	0.00	22.05	77.95	Clayey Silt	5.724	2.792	62.87
14	39.01248	76.16880	3.57	26.61	9.01	7.22	7.25	0.53	0.00	67.35	32.65	Silty Sand	3.656	1.179	34.72
15	39.00001	76.18865	9.97	25.77	11.51	0.69	7.02	2.88	0.00	10.80	89.20	Silty Clay	6.364	2.382	61.15
16	38.63290	75.61717	1.87	28.15	0.05	4.54	6.44	4.63	0.00	78.34	21.66	Silty Sand	2.529	2.126	35.65
17	38.61403	75.64002	0.94	28.11	0.05	4.70	6.45	1.33	0.00	16.00	84.00	Sandy Silt	5.327	1.563	66.71
18	38.56479	75.62697	2.07	26.57	0.05	5.12	6.49	5.71	0.00	14.06	85.94	Sandy Silt	5.593	1.781	69.10
19	38.56596	75.68328	2.86	27.32	0.08	4.47	6.41	5.83	0.06	11.76	88.17	Sandy Silt	5.730	1.771	69.21
20	38.52796	75.75829	2.03	26.88	0.28	4.98	6.62	4.76	0.00	24.58	75.42	Sandy Silt	4.975	1.910	63.01
21	38.50361	75.77956	0.87	26.40	0.80	3.84	6.55	4.68	0.05	15.42	84.52	Clayey Silt	6.771	2.686	58.14
22	38.46410	75.81637	4.35	27.15	2.77	5.25	6.76	0.48	22.21	40.62	37.17	**	1.405	3.083	14.09
23	38.42144	75.84416	6.99	26.95	6.52	5.54	7.00	5.57	0.00	16.84	83.16	Clayey Silt	5.711	2.383	69.41
24	38.41413	75.84586	3.05	26.96	6.37	5.59	7.30	5.19	0.00	33.34	66.66	Sandy Silt	5.003	1.919	63.94
25	38.39504	75.84603	4.80	26.91	5.84	5.47	6.94	4.51	0.08	19.89	80.04	Sandy Silt	4.985	2.177	67.17
26	38.38326	75.84342	4.80		5.77	5.02	6.89	1.31	4.72	50.34	44.94	Silty Sand	2.392	2.174	22.76
27	38.34259	75.90637	1.44	25.85	7.19	6.77	7.59	2.65	0.00	28.26	71.74	Sandy Silt	5.086	2.743	57.16
28	38.32117	75.89910	1.92	26.08	7.34	6.60	7.59	3.29	0.00	10.21	89.79	Sandy Silt	5.324	1.841	58.70
29	38.30080	75.91433	2.44	25.93	10.77	6.23	7.72	2.79	0.00	12.10	87.90	Sandy Silt	5.159	1.842	54.39
30	38.27166	75.92824	6.68	26.35	13.22	4.99	7.73	1.75	0.00	36.65	63.35	Sandy Silt	5.030	3.052	55.17
31	38.17745	75.40126	1.13	22.73	0.20	4.96	5.87	12.30	0.00	36.92	63.08	Sandy Silt	5.004	2.381	79.88
32	38.14516	75.45106	4.00	23.33	0.02	4.51	5.93	1.58	4.48	77.42	18.11	Sand	1.542	2.617	33.97
33	38.09083	75.53176	3.34	26.44	0.04	4.38	6.50	0.73	0.00	84.47	15.53	Sand	1.929	1.296	31.29
34	38.06850	75.58608	2.98	25.86	0.04	3.65	6.38	6.83	0.00	28.67	71.33	Sandy Silt	5.555	2.508	65.44
35	38.03361	75.65825	1.23	26.46	0.05	3.47	6.47	3.36	0.00	4.00	96.00	Silty Clay	7.205	2.038	51.15
36	37.99801	75.62070	2.24	27.05	0.22	3.15	6.68	1.69	6.72	52.58	40.70	**	2.482	4.263	37.55
37	37.95761	75.73706	1.91	28.71	12.24	6.28	7.98	0.24	0.00	84.58	15.42	Sand	1.651	1.240	23.90

Table 1 continued:

Station	Latitude	Longitude	Depth (m)	Temp. (°C)	Sal. (ppt)	D.O. (mg/L)	pH	% TOC	% Gravel	% Sand	% Silt	% Clay	USACE Description	Median Particle Size (phi)	Sorting Coefficient	% Moisture
38	37.93086	75.75000	4.60	27.91	8.06	6.03	8.50	2.55	5.62	35.89	58.49		**	4.620	3.580	48.16
39	37.90869	75.77810	3.71	28.01	16.53	6.83	8.11	2.07	0.00	15.79	84.21		Clayey Silt	5.969	2.386	56.35
40	37.84986	75.71342	2.43	27.90	17.51	7.09	8.05	0.09	6.73	91.83	1.44		**	1.045	1.302	19.02
41	37.18370	76.41373	1.56	26.03	16.99	6.99	8.03	2.23	0.00	17.79	82.20		Clayey Silt	5.645	2.520	60.30
42	37.16400	76.40785	2.00	25.54	16.36	9.28	8.32	1.97	0.00	39.56	60.44		Sandy Silt	4.321	2.083	56.18
43	37.15467	76.41778	1.76	25.42	16.78	7.57	8.13	2.32	0.00	14.72	85.28		Clayey Silt	6.062	2.559	58.33
44	37.15704	76.37548	4.20	25.57	16.63	9.23	8.31	0.29	0.00	83.20	16.79		Sand	2.362	1.558	30.86
45	37.16973	76.32494	1.95	24.51	15.89	8.31	8.31	0.08	0.00	98.17	1.83		Sand	2.134	1.036	23.05
46	37.16088	76.29677	2.11	24.51	16.52	8.32	8.25	0.05	0.21	99.45	0.34		Sand	2.306	0.719	23.88
47	37.15071	76.28859	2.10	24.65	17.39	7.62	8.13	0.02	1.27	98.41	0.32		Sand	1.271	1.185	17.43
48	37.10110	76.31718	1.35	25.19	17.35	8.31	8.06	0.87	0.00	46.91	53.09		Silty Sand	4.123	2.261	39.78
49	37.09793	76.33121	1.81	24.86	17.38	8.32	8.06	0.53	0.00	63.41	36.60		Silty Sand	3.773	1.613	35.34
50	37.10650	76.35296	1.70	24.84	17.37	7.02	7.98	2.13	1.92	24.85	73.23		Sandy Silt	4.694	2.324	48.34
51	38.96833	76.56713	3.87	25.01	7.42	4.69	7.70	5.51	0.00	23.04	76.97		Silty Clay	6.599	3.178	74.15
52	38.10651	76.56153	4.08	25.15	7.60	5.03	7.68	4.97	0.00	54.53	45.48		Clayey Sand	3.651	3.872	71.34
53	38.94550	76.53320	0.91	24.88	7.75	6.57	7.96	0.08	0.00	99.18	0.82		Sand	1.783	0.676	23.48
54	38.92288	76.50910	4.23	25.10	7.26	5.69	7.89	2.71	0.00	19.05	80.95		Silty Clay	6.607	2.899	57.06
55	38.91191	76.48500	4.98	24.86	6.97	6.30	7.94	1.27	0.00	17.13	82.87		Clayey Silt	5.259	2.440	56.49
56	38.89989	76.47559	4.05	24.99	6.89	6.57	7.96	2.44	0.00	55.29	44.70		Silty Sand	3.766	2.105	43.69
57	38.89643	76.48396	4.15	24.93	6.92	6.49	7.95	1.99	0.00	9.16	90.84		Clayey Silt	5.365	2.437	51.04
58	38.86905	76.48818	4.68	24.82	6.98	6.42	7.92	0.91	0.00	41.17	58.83		Sandy Silt	4.290	2.384	38.32
59	38.87814	76.52139	2.56	25.38	7.51	6.91	8.18	2.27	0.00	17.66	82.34		Clayey Silt	5.632	2.799	59.53
60	38.88906	76.53062	0.47	26.44	7.73	11.46	8.73	0.16	0.53	98.02	1.45		Sand	2.217	0.754	25.98

**Too much gravel for textural description

Table 2. Summary of overall abundance of major benthic macroinfaunal taxonomic groups for the Chesapeake Bay stations, 2004 (Stations 18-21, 27-60).

Taxa	Total No. Taxa	% Total	Total No. Individuals	% Total
Annelida				
Oligochaeta	3	2.1	2,361	15.9
Polychaeta	39	26.7	4,238	28.5
Mollusca				
Bivalvia	18	12.3	905	6.1
Gastropoda	10	6.8	355	2.4
Arthropoda				
Insecta	20	13.7	215	1.4
Malacostraca	36	24.7	6,467	43.5
Ostracoda	7	4.8	83	0.6
Echinodermata				
Holothuroidea	2	1.4	18	0.1
Ophiuroidea	1	0.7	1	0.0
Other Taxa	10	6.8	220	1.5
Total	146		14,863	

Table 3. Summary of abundance of major benthic macroinfaunal taxonomic groups by station for the Chesapeake Bay stations, 2004 (Stations 18-21 and 27-60).

Station	Taxa	Total No. Taxa	% Total	Total No. Individuals	% Total
18	Annelida	2	16.7	55	48.7
	Mollusca	2	16.7	22	19.5
	Arthropoda	8	66.7	36	31.9
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	12		113	
19	Annelida	2	16.7	48	62.3
	Mollusca	4	33.3	14	18.2
	Arthropoda	6	50.0	15	19.5
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	12		77	
20	Annelida	3	20.0	600	61.4
	Mollusca	2	13.3	6	0.6
	Arthropoda	10	66.7	371	38.0
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	15		977	
21	Annelida	2	11.8	31	0.7
	Mollusca	2	11.8	67	1.6
	Arthropoda	12	70.6	4,151	97.7
	Echinodermata	0	0.0	0	0.0
	Other Taxa	1	5.9	1	0.0
	Total	17		4,250	
27	Annelida	5	35.7	635	80.5
	Mollusca	2	14.3	20	2.5
	Arthropoda	6	42.9	126	16.0
	Echinodermata	0	0.0	0	0.0
	Other Taxa	1	7.1	8	1.0
	Total	14		789	
28	Annelida	7	41.2	155	77.9
	Mollusca	4	23.5	28	14.1
	Arthropoda	4	23.5	13	6.5
	Echinodermata	0	0.0	0	0.0
	Other Taxa	2	11.8	3	1.5
	Total	17		199	

Table 3 continued:

Station	Taxa	Total No. Taxa	% Total	Total No. Individuals	% Total
29	Annelida	5	38.5	132	74.6
	Mollusca	4	30.8	27	15.3
	Arthropoda	3	23.1	9	5.1
	Echinodermata	0	0.0	0	0.0
	Other Taxa	1	7.7	9	5.1
	Total	13		177	
30	Annelida	7	38.9	107	43.5
	Mollusca	5	27.8	96	39.0
	Arthropoda	4	22.2	19	7.7
	Echinodermata	0	0.0	0	0.0
	Other Taxa	2	11.1	24	9.8
	Total	18		246	
31	Annelida	2	15.4	48	61.5
	Mollusca	3	23.1	9	11.5
	Arthropoda	8	61.5	21	26.9
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	13		78	
32	Annelida	2	11.1	168	39.3
	Mollusca	2	11.1	106	24.8
	Arthropoda	14	77.8	153	35.8
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	18		427	
33	Annelida	3	16.7	143	59.8
	Mollusca	3	16.7	34	14.2
	Arthropoda	12	66.7	62	25.9
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	18		239	
34	Annelida	1	12.5	76	68.5
	Mollusca	0	0.0	0	0.0
	Arthropoda	8	100.0	35	31.5
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	8		111	

Table 3 continued:

Station	Taxa	Total No. Taxa	% Total	Total No. Individuals	% Total
35	Annelida	4	26.7	64	36.8
	Mollusca	1	6.7	1	0.6
	Arthropoda	10	66.7	109	62.6
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	15		174	
36	Annelida	5	35.7	337	56.4
	Mollusca	2	14.3	8	1.3
	Arthropoda	7	50.0	253	42.3
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	14		598	
37	Annelida	9	36.0	71	33.6
	Mollusca	12	48.0	115	54.5
	Arthropoda	2	8.0	11	5.2
	Echinodermata	0	0.0	0	0.0
	Other Taxa	2	8.0	14	6.6
	Total	25		211	
38	Annelida	20	57.1	421	89.6
	Mollusca	6	17.1	16	3.4
	Arthropoda	5	14.3	18	3.8
	Echinodermata	0	0.0	0	0.0
	Other Taxa	4	11.4	15	3.2
	Total	35		470	
39	Annelida	5	41.7	14	43.8
	Mollusca	3	25.0	12	37.5
	Arthropoda	2	16.7	3	9.4
	Echinodermata	0	0.0	0	0.0
	Other Taxa	2	16.7	3	9.4
	Total	12		32	
40	Annelida	18	54.5	173	56.4
	Mollusca	6	18.2	91	29.6
	Arthropoda	7	21.2	38	12.4
	Echinodermata	0	0.0	0	0.0
	Other Taxa	2	6.1	5	1.6
	Total	33		307	

Table 3 continued:

Station	Taxa	Total No. Taxa	% Total	Total No. Individuals	% Total
41	Annelida	5	50.0	123	93.9
	Mollusca	5	50.0	8	6.1
	Arthropoda	0	0.0	0	0.0
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	10		131	
42	Annelida	8	72.7	319	96.4
	Mollusca	3	27.3	12	3.6
	Arthropoda	0	0.0	0	0.0
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	11		331	
43	Annelida	5	71.4	289	95.7
	Mollusca	1	14.3	9	3.0
	Arthropoda	0	0.0	0	0.0
	Echinodermata	0	0.0	0	0.0
	Other Taxa	1	14.3	4	1.3
	Total	7		302	
44	Annelida	17	68.0	260	92.5
	Mollusca	0	0.0	0	0.0
	Arthropoda	7	28.0	20	7.1
	Echinodermata	0	0.0	0	0.0
	Other Taxa	1	4.0	1	0.4
	Total	25		281	
45	Annelida	19	42.2	248	63.3
	Mollusca	8	17.8	73	18.6
	Arthropoda	12	26.7	48	12.2
	Echinodermata	2	4.4	5	1.3
	Other Taxa	4	8.9	18	4.6
	Total	45		392	
46	Annelida	10	40.0	33	22.0
	Mollusca	4	16.0	60	40.0
	Arthropoda	5	20.0	25	16.7
	Echinodermata	1	4.0	8	5.3
	Other Taxa	5	20.0	24	16.0
	Total	25		150	

Table 3 continued:

Station	Taxa	Total No. Taxa	% Total	Total No. Individuals	% Total
47	Annelida	18	51.4	165	53.9
	Mollusca	5	14.3	66	21.6
	Arthropoda	5	14.3	32	10.5
	Echinodermata	2	5.7	6	2.0
	Other Taxa	5	14.3	37	12.1
	Total	35		306	
48	Annelida	11	61.1	74	83.1
	Mollusca	2	11.1	9	10.1
	Arthropoda	3	16.7	4	4.5
	Echinodermata	0	0.0	0	0.0
	Other Taxa	2	11.1	2	2.2
	Total	18		89	
49	Annelida	10	50.0	94	73.4
	Mollusca	3	15.0	15	11.7
	Arthropoda	4	20.0	12	9.4
	Echinodermata	0	0.0	0	0.0
	Other Taxa	3	15.0	7	5.5
	Total	20		128	
50	Annelida	9	60.0	66	82.5
	Mollusca	2	13.3	3	3.8
	Arthropoda	0	0.0	0	0.0
	Echinodermata	0	0.0	0	0.0
	Other Taxa	4	26.7	11	13.8
	Total	15		80	
51	Annelida	4	80.0	192	98.5
	Mollusca	0	0.0	0	0.0
	Arthropoda	1	20.0	3	1.5
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	5		195	
52	Annelida	5	62.5	57	79.2
	Mollusca	1	12.5	1	1.4
	Arthropoda	2	25.0	14	19.4
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	8		72	

Table 3 continued:

Station	Taxa	Total No. Taxa	% Total	Total No. Individuals	% Total
53	Annelida	4	30.8	92	35.0
	Mollusca	3	23.1	117	44.5
	Arthropoda	5	38.5	35	13.3
	Echinodermata	0	0.0	0	0.0
	Other Taxa	1	7.7	19	7.2
	Total	13		263	
54	Annelida	6	50.0	74	20.4
	Mollusca	3	25.0	21	5.8
	Arthropoda	3	25.0	267	73.8
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	12		362	
55	Annelida	5	38.5	170	41.5
	Mollusca	4	30.8	35	8.5
	Arthropoda	3	23.1	204	49.8
	Echinodermata	0	0.0	0	0.0
	Other Taxa	1	7.7	1	0.2
	Total	13		410	
56	Annelida	4	25.0	274	65.1
	Mollusca	5	31.3	45	10.7
	Arthropoda	5	31.3	100	23.8
	Echinodermata	0	0.0	0	0.0
	Other Taxa	2	12.5	2	0.5
	Total	16		421	
57	Annelida	6	46.2	135	38.7
	Mollusca	3	23.1	32	9.2
	Arthropoda	4	30.8	182	52.1
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	13		349	
58	Annelida	6	35.3	291	51.6
	Mollusca	6	35.3	51	9.0
	Arthropoda	4	23.5	221	39.2
	Echinodermata	0	0.0	0	0.0
	Other Taxa	1	5.9	1	0.2
	Total	17		564	

Table 3 continued:

Station	Taxa	Total No. Taxa	% Total	Total No. Individuals	% Total
59	Annelida	6	46.2	38	24.1
	Mollusca	2	15.4	20	12.7
	Arthropoda	4	30.8	96	60.8
	Echinodermata	0	0.0	0	0.0
	Other Taxa	1	7.7	4	2.5
	Total	13		158	
60	Annelida	5	41.7	327	80.9
	Mollusca	3	25.0	11	2.7
	Arthropoda	3	25.0	59	14.6
	Echinodermata	0	0.0	0	0.0
	Other Taxa	1	8.3	7	1.7
	Total	12		404	

Table 4. Distribution and abundance and of benthic macroinfaunal taxa for the Chesapeake Bay stations, 2004 (Stations 18-21, 27-60).

Taxa	Phylum	Class	No. of Individuals	% Total	Cumulative %	Station Occurrence	% Station Occurrence
<i>Apocorophium lacustre</i>	Art	Mala	3313	22.29	22.29	5	13
Tubificidae (LPIL)	Ann	Olig	2255	15.17	37.46	29	76
<i>Leptocheirus plumulosus</i>	Art	Mala	1397	9.40	46.86	18	47
<i>Streblospio benedicti</i>	Ann	Poly	830	5.58	52.45	23	61
<i>Gammarus tigrinus</i>	Art	Mala	771	5.19	57.63	7	18
<i>Heteromastus filiformis</i>	Ann	Poly	736	4.95	62.58	22	58
<i>Marenzelleria viridis</i>	Ann	Poly	607	4.08	66.67	19	50
<i>Paraprionospio pinnata</i>	Ann	Poly	424	2.85	69.52	12	32
<i>Mediomastus ambiseta</i>	Ann	Poly	387	2.60	72.13	13	34
<i>Nereis succinea</i>	Ann	Poly	381	2.56	74.69	18	47
<i>Cyathura polita</i>	Art	Mala	376	2.53	77.22	17	45
<i>Melita nitida</i>	Art	Mala	368	2.48	79.69	9	24
<i>Acteocina canaliculata</i>	Mol	Gast	237	1.59	81.29	13	34
<i>Tellina agilis</i>	Mol	Biva	228	1.53	82.82	18	47
<i>Polydora cornuta</i>	Ann	Poly	221	1.49	84.31	3	8
<i>Macoma balthica</i>	Mol	Biva	200	1.35	85.66	10	26
<i>Glycinde solitaria</i>	Ann	Poly	195	1.31	86.97	17	45
<i>Corbicula fluminea</i>	Mol	Biva	115	0.77	87.74	5	13
<i>Limnodrilus hoffmeisteri</i>	Ann	Olig	92	0.62	88.36	7	18
Rhynchocoela (LPIL)	Rhy	-	79	0.53	88.89	15	39
<i>Rangia cuneata</i>	Mol	Biva	77	0.52	89.41	12	32
<i>Gemma gemma</i>	Mol	Biva	72	0.48	89.89	3	8
Hydrobiidae (LPIL)	Mol	Gast	72	0.48	90.38	3	8
<i>Paraonis fulgens</i>	Ann	Poly	71	0.48	90.86	1	3
<i>Tellina</i> (LPIL)	Mol	Biva	64	0.43	91.29	6	16
<i>Phoronis</i> (LPIL)	Pho	-	62	0.42	91.70	8	21
Sphaeriidae (LPIL)	Mol	Biva	61	0.41	92.11	5	13
<i>Edotia triloba</i>	Art	Mala	60	0.40	92.52	13	34
<i>Pectinaria gouldii</i>	Ann	Poly	53	0.36	92.87	9	24
<i>Brania wellfleetensis</i>	Ann	Poly	49	0.33	93.20	5	13
<i>Coelotanytus</i> (LPIL)	Art	Inse	47	0.32	93.52	9	24
Bivalvia (LPIL)	Mol	Biva	45	0.30	93.82	15	39
<i>Candona</i> (LPIL)	Art	Ostr	45	0.30	94.13	5	13
<i>Hypereteone fauchaldi</i>	Ann	Poly	41	0.28	94.40	13	34
Actiniaria (LPIL)	Cni	Anth	36	0.24	94.64	8	21
<i>Cladotanytus</i> (LPIL)	Art	Inse	35	0.24	94.88	3	8
<i>Spiochaetopterus oculatus</i>	Ann	Poly	32	0.22	95.10	7	18
<i>Podarkeopsis levifuscina</i>	Ann	Poly	28	0.19	95.28	6	16
<i>Polypedilum halterale</i> group	Art	Inse	26	0.17	95.46	5	13
<i>Sphaeroma quadridentata</i>	Art	Mala	25	0.17	95.63	1	3
Chironomus (LPIL)	Art	Inse	22	0.15	95.77	5	13
<i>Leitoscoloplos</i> (LPIL)	Ann	Poly	22	0.15	95.92	5	13
Phyllodocidae (LPIL)	Ann	Poly	22	0.15	96.07	9	24
<i>Dipolydora socialis</i>	Ann	Poly	21	0.14	96.21	2	5
<i>Leitoscoloplos robustus</i>	Ann	Poly	21	0.14	96.35	9	24
<i>Leucon americanus</i>	Art	Mala	19	0.13	96.48	7	18
<i>Ampelisca verrilli</i>	Art	Mala	18	0.12	96.60	3	8
Gastropoda (LPIL)	Mol	Gast	18	0.12	96.72	4	11
<i>Haplocytheridea setipunctata</i>	Art	Ostr	18	0.12	96.84	1	3
<i>Capitella capitata</i>	Ann	Poly	17	0.11	96.96	1	3
Chironomidae (LPIL)	Art	Inse	17	0.11	97.07	7	18
<i>Cryptochironomus</i> (LPIL)	Art	Inse	17	0.11	97.19	7	18
<i>Leptosynapta tenuis</i>	Ech	Holo	17	0.11	97.30	3	8
<i>Ampelisca abdita</i>	Art	Mala	16	0.11	97.41	5	13

Table 4 continued:

Taxa	Phylum	Class	No. of Individuals	% Total	Cumulative %	Station Occurrence	% Station Occurrence
<i>Microprotopus raneyi</i>	Art	Mala	15	0.10	97.51	2	5
Enchytraeidae (LPIL)	Ann	Olig	14	0.09	97.60	2	5
<i>Scolecopsis texana</i>	Ann	Poly	14	0.09	97.70	4	11
Turbellaria (LPIL)	Pla	Turb	14	0.09	97.79	6	16
<i>Acanthohaustorius millsii</i>	Art	Mala	13	0.09	97.88	2	5
<i>Branchiostoma</i> (LPIL)	Cho	Lept	12	0.08	97.96	2	5
<i>Procladius</i> (LPIL)	Art	Inse	11	0.07	98.04	4	11
<i>Loimia viridis</i>	Ann	Poly	10	0.07	98.10	3	8
<i>Parasterope pollex</i>	Art	Ostr	10	0.07	98.17	4	11
<i>Listriella barnardi</i>	Art	Mala	9	0.06	98.23	3	8
<i>Mulinia lateralis</i>	Mol	Biva	9	0.06	98.29	2	5
<i>Nereis</i> (LPIL)	Ann	Poly	9	0.06	98.35	1	3
<i>Oxyurostylis smithi</i>	Art	Mala	9	0.06	98.41	3	8
<i>Geukensia demissa</i>	Mol	Biva	8	0.05	98.47	4	11
<i>Sigambra tentaculata</i>	Ann	Poly	8	0.05	98.52	2	5
Tellinidae (LPIL)	Mol	Biva	8	0.05	98.57	5	13
<i>Ablabesmyia</i> (LPIL)	Art	Inse	7	0.05	98.62	2	5
Ceratopogonidae (LPIL)	Art	Inse	7	0.05	98.67	2	5
<i>Listriella clymenellae</i>	Art	Mala	7	0.05	98.71	1	3
Oedicerotidae (LPIL)	Art	Mala	7	0.05	98.76	2	5
<i>Parapionosyllis longicirrata</i>	Ann	Poly	7	0.05	98.81	1	3
<i>Ilyanassa trivittata</i>	Mol	Gast	6	0.04	98.85	2	5
Mactridae (LPIL)	Mol	Biva	6	0.04	98.89	1	3
<i>Rhepoxynius hudsoni</i>	Art	Mala	6	0.04	98.93	1	3
<i>Rictaxis punctostriatus</i>	Mol	Gast	6	0.04	98.97	2	5
Ascidiacea (LPIL)	Cho	Asci	5	0.03	99.00	1	3
<i>Einfeldia</i> (LPIL)	Art	Inse	5	0.03	99.04	2	5
Nereididae (LPIL)	Ann	Poly	5	0.03	99.07	4	11
Ostracoda (LPIL)	Art	Ostr	5	0.03	99.11	3	8
<i>Paralauterborniella nigrohalterali</i>	Art	Inse	5	0.03	99.14	2	5
<i>Tubulanus</i> (LPIL)	Rhy	Anop	5	0.03	99.17	4	11
<i>Turbonilla</i> (LPIL)	Mol	Gast	5	0.03	99.21	2	5
<i>Axarus</i> (LPIL)	Art	Inse	4	0.03	99.23	1	3
<i>Bathyporeia parkeri</i>	Art	Mala	4	0.03	99.26	1	3
<i>Clymenella torquata</i>	Ann	Poly	4	0.03	99.29	1	3
<i>Crepidula fornicata</i>	Mol	Gast	4	0.03	99.31	1	3
<i>Melita</i> (LPIL)	Art	Mala	4	0.03	99.34	1	3
<i>Mysella planulata</i>	Mol	Biva	4	0.03	99.37	1	3
Odostomia (LPIL)	Mol	Gast	4	0.03	99.39	3	8
Xanthidae (LPIL)	Art	Mala	4	0.03	99.42	2	5
<i>Americamysis almyra</i>	Art	Mala	3	0.02	99.44	2	5
<i>Ampelisca</i> (LPIL)	Art	Mala	3	0.02	99.46	2	5
<i>Balanoglossus</i> (LPIL)	Hem	Ente	3	0.02	99.48	1	3
<i>Epoicocladius</i> (LPIL)	Art	Inse	3	0.02	99.50	1	3
<i>Glycera dibranchiata</i>	Ann	Poly	3	0.02	99.52	2	5
<i>Leptochelia</i> (LPIL)	Art	Mala	3	0.02	99.54	1	3
Lineidae (LPIL)	Rhy	Anop	3	0.02	99.56	3	8
<i>Nereis acuminata</i>	Ann	Poly	3	0.02	99.58	1	3
Sabellidae (LPIL)	Ann	Poly	3	0.02	99.60	3	8
<i>Spisula solidissima</i>	Mol	Biva	3	0.02	99.62	3	8
<i>Tanytarsus</i> (LPIL)	Art	Inse	3	0.02	99.64	2	5
Aeginellidae (LPIL)	Art	Mala	2	0.01	99.66	1	3
<i>Ameroculodes edwardsi</i>	Art	Mala	2	0.01	99.67	1	3
Capitellidae (LPIL)	Ann	Poly	2	0.01	99.68	1	3
<i>Cerapus tubularis</i>	Art	Mala	2	0.01	99.70	2	5

Table 4 continued:

Taxa	Phylum	Class	No. of Individuals	% Total	Cumulative %	Station Occurrence	% Station Occurrence
<i>Cirrophorus</i> (LPIL)	Ann	Poly	2	0.01	99.71	1	3
Cyprididae (LPIL)	Art	Ostr	2	0.01	99.72	1	3
<i>Haminoea succinea</i>	Mol	Gast	2	0.01	99.74	1	3
<i>Haplocytheridea</i> (LPIL)	Art	Ostr	2	0.01	99.75	2	5
<i>Hobsonia florida</i>	Ann	Poly	2	0.01	99.76	1	3
<i>Monoculodes</i> sp. G	Art	Mala	2	0.01	99.78	2	5
<i>Pisidium</i> (LPIL)	Mol	Biva	2	0.01	99.79	1	3
<i>Spiophanes bombyx</i>	Ann	Poly	2	0.01	99.80	2	5
<i>Amphioplus abditus</i>	Ech	Ophi	1	0.01	99.81	1	3
Amphipoda (LPIL)	Art	Mala	1	0.01	99.82	1	3
<i>Callinectes sapidus</i>	Art	Mala	1	0.01	99.83	1	3
<i>Capitella jonesi</i>	Ann	Poly	1	0.01	99.83	1	3
<i>Chaoborus</i> (LPIL)	Art	Inse	1	0.01	99.84	1	3
<i>Chiridotea tuftsi</i>	Art	Mala	1	0.01	99.85	1	3
<i>Cryptotendipes</i> (LPIL)	Art	Inse	1	0.01	99.85	1	3
<i>Cyathura burbancki</i>	Art	Mala	1	0.01	99.86	1	3
<i>Cymadusa compta</i>	Art	Mala	1	0.01	99.87	1	3
<i>Eusarsiella texana</i>	Art	Ostr	1	0.01	99.87	1	3
Gammaridae (LPIL)	Art	Mala	1	0.01	99.88	1	3
<i>Glycera robusta</i>	Ann	Poly	1	0.01	99.89	1	3
Holothuroidea (LPIL)	Ech	Holo	1	0.01	99.89	1	3
Hydrozoa (LPIL)	Cni	Hydr	1	0.01	99.90	1	3
<i>Malmgreniella taylori</i>	Ann	Poly	1	0.01	99.91	1	3
<i>Mercenaria mercenaria</i>	Mol	Biva	1	0.01	99.91	1	3
<i>Monoculodes</i> (LPIL)	Art	Mala	1	0.01	99.92	1	3
Mytilidae (LPIL)	Mol	Biva	1	0.01	99.93	1	3
Nephtyidae (LPIL)	Ann	Poly	1	0.01	99.93	1	3
<i>Parahesion luteola</i>	Ann	Poly	1	0.01	99.94	1	3
<i>Paramphinome</i> sp. B	Ann	Poly	1	0.01	99.95	1	3
<i>Polypedilum</i> (LPIL)	Art	Inse	1	0.01	99.95	1	3
<i>Polypedilum tritum</i>	Art	Inse	1	0.01	99.96	1	3
<i>Ptilanthura tenuis</i>	Art	Mala	1	0.01	99.97	1	3
<i>Pyramidella</i> (LPIL)	Mol	Gast	1	0.01	99.97	1	3
<i>Rhithropanopeus harrisi</i>	Art	Mala	1	0.01	99.98	1	3
<i>Stenochironomus</i> (LPIL)	Art	Inse	1	0.01	99.99	1	3
<i>Stictochironomus</i> (LPIL)	Art	Inse	1	0.01	99.99	1	3
<i>Tagelus</i> (LPIL)	Mol	Biva	1	0.01	100.00	1	3

Taxa Key

Ann=Annelida

Olig=Oligochaeta

Poly=Polychaeta

Art=Arthropoda

Inse=Insecta

Mala=Malacostraca

Ostr=Ostracoda

Cho=Chordata

Asci=Ascidacea

Lept=Leptocardia

Cni=Cnidaria

Anth=Anthozoa

Hydr=Hydrozoa

Ech=Echinodermata

Holo=Holothuroidea

Ophi=Ophiuroidea

Hem=Hemichordata

Ente=Enteropneusta

Mol=Mollusca

Biva=Bivalvia

Gast=Gastropoda

Pho=Phoronida

Pla=Platyhelminthes

Turb=Turbellaria

Rhy=Rhynchocoela

Anop=Anopla

Table 5 continued:

Taxa	58	59	60
Annelida			
Oligochaeta			
<i>Limnodrilus hoffmeisteri</i>			
Tubificidae (LPIL)			
Polychaeta			
<i>Dipolydora socialis</i>			
<i>Glycinde solitaria</i>			
<i>Heteromastus filiformis</i>	30.7		10.1
<i>Marenzelleria viridis</i>			57.7
<i>Mediomastus ambiseta</i>			
<i>Nereis succinea</i>	15.8		
<i>Paraonis fulgens</i>			
<i>Paraprionospio pinnata</i>			
<i>Polydora cornuta</i>			
<i>Streblospio benedicti</i>			
Arthropoda			
Insecta			
<i>Chironomus</i> (LPIL)			
<i>Coelotanypus</i> (LPIL)			
Malacostraca			
<i>Apocorophium lacustre</i>			
<i>Cyathura polita</i>		39.9	10.9
<i>Gammarus tigrinus</i>			
<i>Leptocheirus plumulosus</i>	35.5	13.3	
<i>Melita nitida</i>			
Ostracoda			
<i>Candona</i> (LPIL)			
Mollusca			
Bivalvia			
<i>Corbicula fluminea</i>			
<i>Gemma gemma</i>			
<i>Macoma balthica</i>			
<i>Rangia cuneata</i>			
<i>Tellina</i> (LPIL)			
<i>Tellina agilis</i>			
Gastropoda			
<i>Acteocina canaliculata</i>			
Phoronida			
<i>Phoronis</i> (LPIL)			

Table 6. Summary of the benthic macroinfaunal data for the Chesapeake Bay stations 2004 (Stations 18-21, 27-60).

Station	Rep	No. of Taxa	No. of Indvs	Density (no/m ²)	Mean No. Taxa	Taxa (SD)	Mean Density	Density (SD)	H' Diversity	J' Evenness
18	A	6	26	650	8.0	1.7	941.7	267.3	1.75	0.70
	B	9	40	1000						
	C	9	47	1175						
19	A	7	15	375	7.3	1.5	641.7	340.3	1.68	0.68
	B	6	21	525						
	C	9	41	1025						
20	A	9	280	7000	9.7	1.2	8141.7	1765.3	1.33	0.49
	B	9	290	7250						
	C	11	407	10175						
21	A	6	2018	50450	10.0	3.5	35416.7	15589.5	0.89	0.32
	B	12	1459	36475						
	C	12	773	19325						
27	A	11	267	6675	10.7	0.6	6575.0	1827.1	0.94	0.36
	B	11	188	4700						
	C	10	334	8350						
28	A	14	85	2125	11.0	2.6	1658.3	702.8	1.29	0.46
	B	9	34	850						
	C	10	80	2000						
29	A	10	49	1225	9.3	3.1	1475.0	454.8	1.45	0.57
	B	6	48	1200						
	C	12	80	2000						
30	A	15	79	1975	12.7	2.1	2050.0	294.7	2.17	0.75
	B	11	95	2375						
	C	12	72	1800						
31	A	6	9	225	8.0	2.0	650.0	384.9	1.84	0.72
	B	10	39	975						
	C	8	30	750						
32	A	11	98	2450	11.3	0.6	3558.3	1241.6	1.88	0.65
	B	11	196	4900						
	C	12	133	3325						
33	A	17	175	4375	9.7	7.5	1991.7	2069.5	1.77	0.61
	B	10	38	950						
	C	2	26	650						
34	A	1	2	50	4.7	3.2	925.0	819.7	1.07	0.49
	B	6	42	1050						
	C	7	67	1675						
35	A	13	74	1850	11.0	2.6	1450.0	360.6	2.26	0.83
	B	12	46	1150						
	C	8	54	1350						
36	A	9	211	5275	9.0	1.0	4983.3	1459.5	1.63	0.62
	B	8	136	3400						
	C	10	251	6275						
37	A	15	63	1575	16.0	1.0	1758.3	166.5	2.56	0.79
	B	17	72	1800						
	C	16	76	1900						
38	A	22	110	2750	18.7	7.6	3916.7	3859.6	2.05	0.58
	B	10	31	775						
	C	24	329	8225						
39	A	8	14	350	6.0	2.6	266.7	76.4	2.20	0.89
	B	7	10	250						
	C	3	8	200						
40	A	22	99	2475	21.3	0.6	2558.3	144.3	2.68	0.77
	B	21	99	2475						
	C	21	109	2725						
41	A	4	29	725	6.0	3.5	1091.7	550.8	1.24	0.54
	B	4	33	825						
	C	10	69	1725						
42	A	7	143	3575	6.7	1.5	2758.3	1067.8	1.21	0.51
	B	5	126	3150						
	C	8	62	1550						

Table 6 continued:

Station	Rep	No. of Taxa	No. of Indvs	Density (no/m ²)	Mean No. Taxa	Taxa (SD)	Mean Density	Density (SD)	H' Diversity	J' Evenness
43	A	6	99	2475	5.7	1.5	2516.7	463.9	0.98	0.50
	B	7	120	3000						
	C	4	83	2075						
44	A	18	104	2600	15.0	2.6	2341.7	1208.4	2.18	0.68
	B	14	136	3400						
	C	13	41	1025						
45	A	33	132	3300	28.3	5.7	3266.7	376.1	2.61	0.68
	B	30	145	3625						
	C	22	115	2875						
46	A	19	92	2300	14.3	4.0	1250.0	921.6	2.59	0.80
	B	12	35	875						
	C	12	23	575						
47	A	23	90	2250	22.3	1.2	2550.0	360.6	2.74	0.77
	B	23	118	2950						
	C	21	98	2450						
48	A	9	35	875	9.3	1.5	741.7	252.9	1.88	0.65
	B	8	18	450						
	C	11	36	900						
49	A	10	35	875	11.7	1.5	1066.7	232.3	2.07	0.69
	B	12	53	1325						
	C	13	40	1000						
50	A	11	29	725	10.3	0.6	666.7	101.0	2.18	0.80
	B	10	29	725						
	C	10	22	550						
51	A	4	89	2225	3.3	0.6	1625.0	587.9	0.34	0.21
	B	3	64	1600						
	C	3	42	1050						
52	A	5	30	750	4.7	2.5	600.0	259.8	1.21	0.58
	B	7	30	750						
	C	2	12	300						
53	A	9	95	2375	8.7	0.6	2191.7	669.1	1.64	0.64
	B	8	58	1450						
	C	9	110	2750						
54	A	8	96	2400	9.0	1.7	3016.7	625.2	1.57	0.63
	B	8	120	3000						
	C	11	146	3650						
55	A	11	149	3725	10.0	1.0	3416.7	281.0	1.79	0.70
	B	9	127	3175						
	C	10	134	3350						
56	A	11	120	3000	10.7	0.6	3508.3	500.2	1.64	0.59
	B	10	160	4000						
	C	11	141	3525						
57	A	9	103	2575	9.7	0.6	2908.3	945.2	1.88	0.73
	B	10	87	2175						
	C	10	159	3975						
58	A	15	203	5075	11.3	3.2	4700.0	760.3	1.70	0.60
	B	9	208	5200						
	C	10	153	3825						
59	A	11	58	1450	10.3	1.2	1316.7	170.2	2.02	0.79
	B	9	45	1125						
	C	11	55	1375						
60	A	9	158	3950	9.0	0.0	3366.7	527.0	1.50	0.60
	B	9	129	3225						
	C	9	117	2925						

Figure 1. Water depth and salinity for the Chesapeake Bay stations, 2004 (Stations 18-21, 27-60).

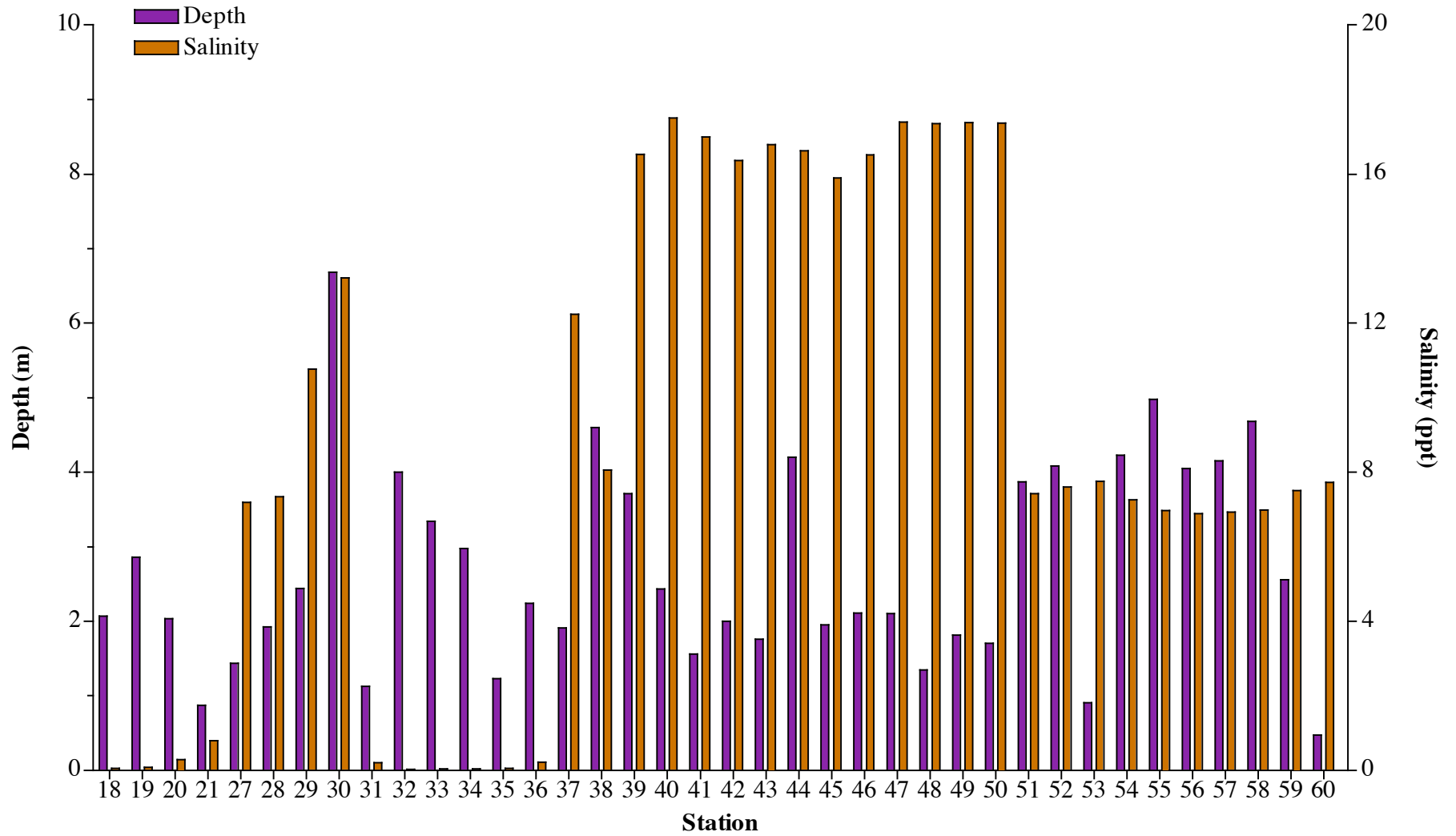


Figure 2. Sediment composition for the Chesapeake Bay stations, 2004 (Stations 18-21, 27-60).

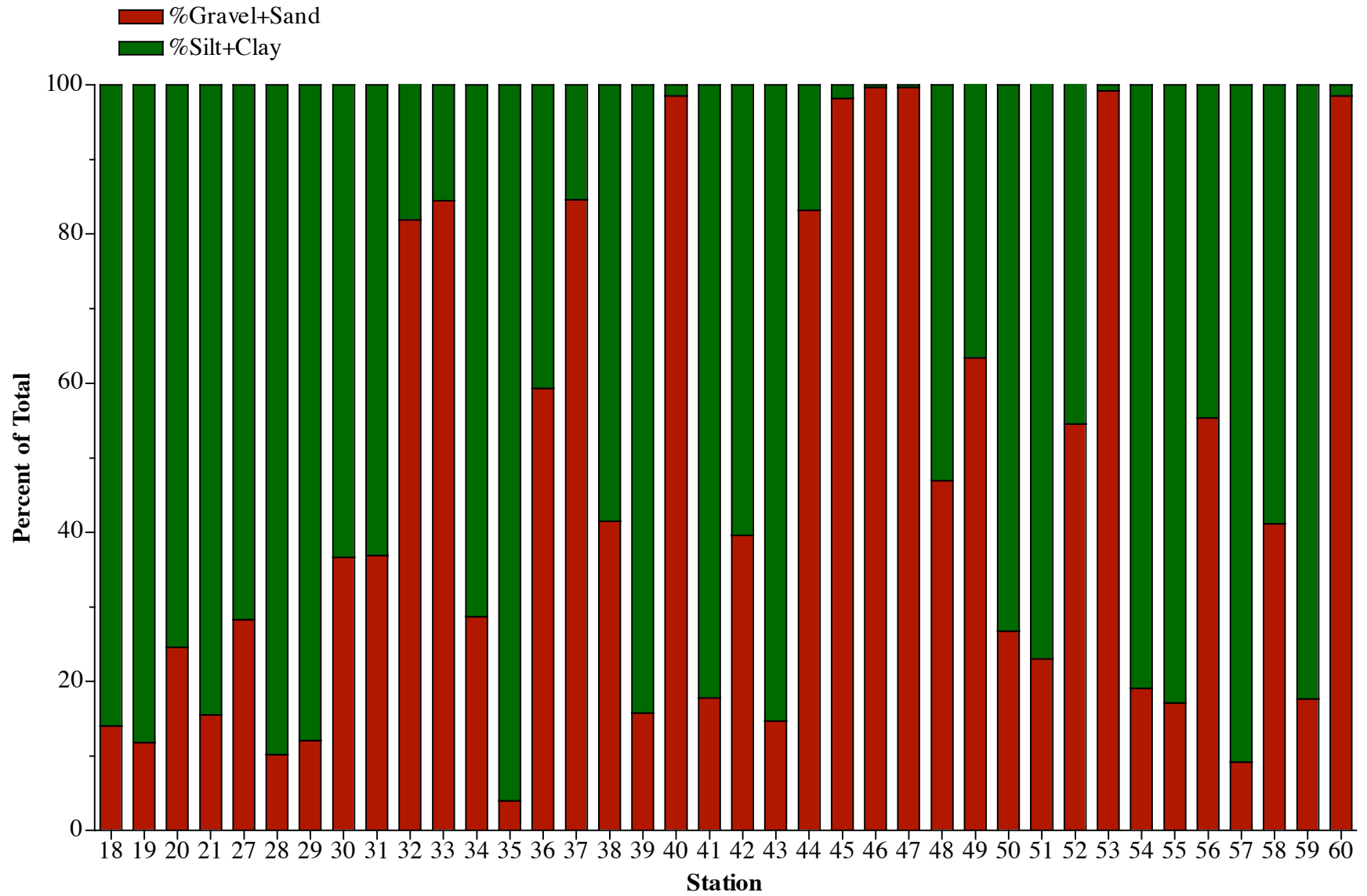


Figure 3. Sediment percent total organic carbon (TOC) for the Chesapeake Bay stations, 2004 (Stations 18-21, 27-60).

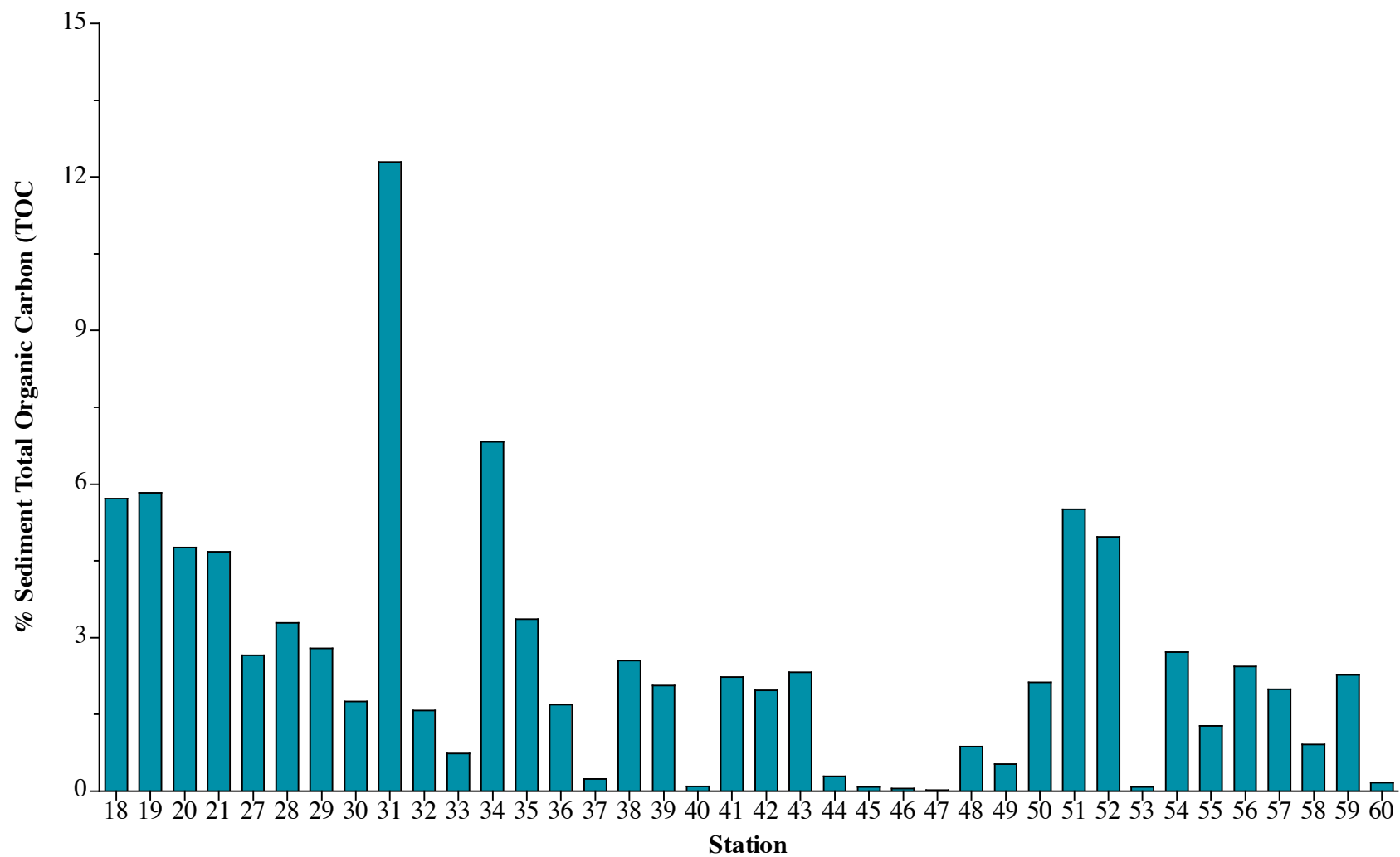


Figure 4. Distribution of major macroinvertebrate taxa for the Chesapeake Bay stations, 2004.

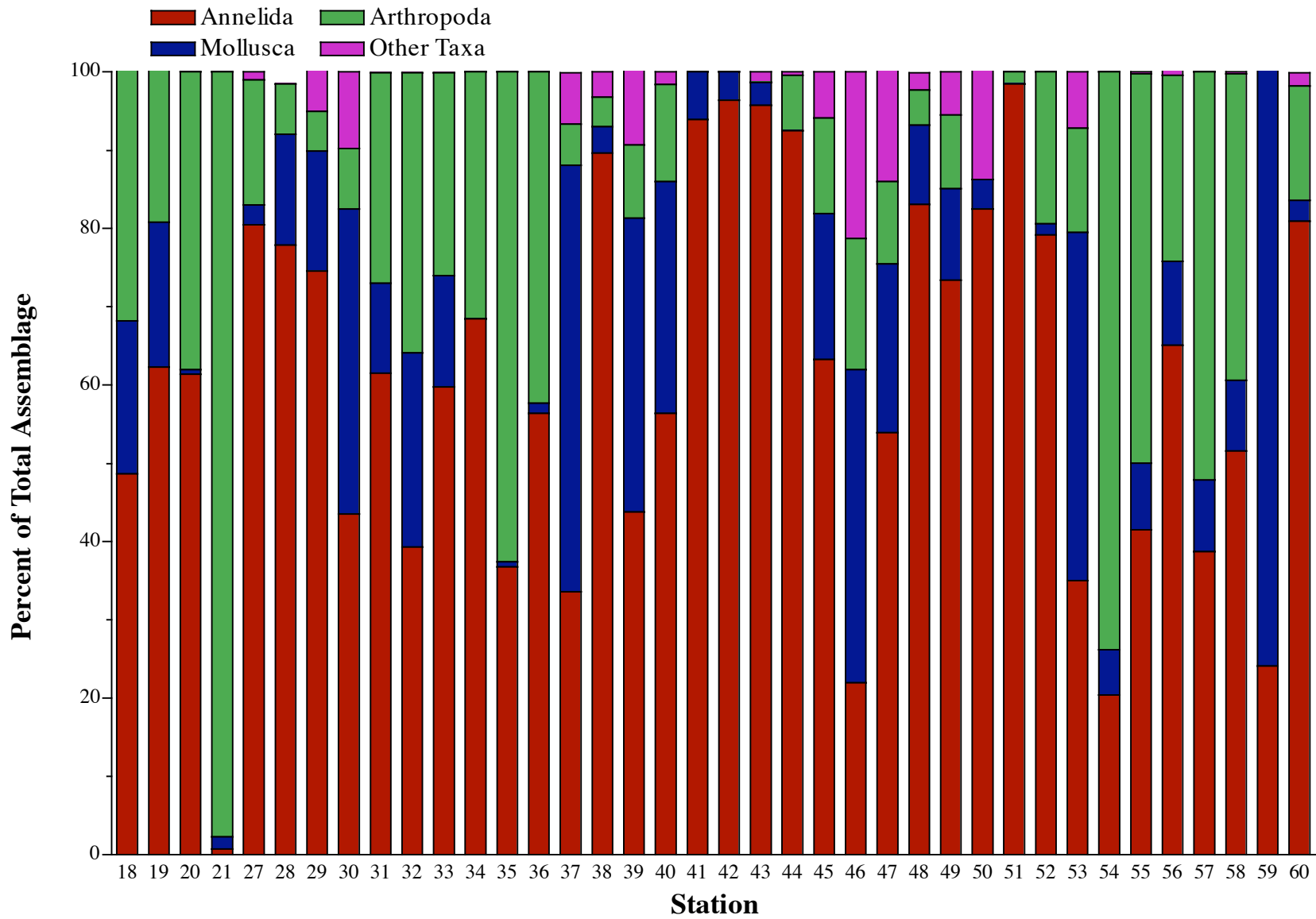


Figure 5. Taxa richness data for the Chesapeake Bay stations, 2004 (Stations 18-21, 27-60).

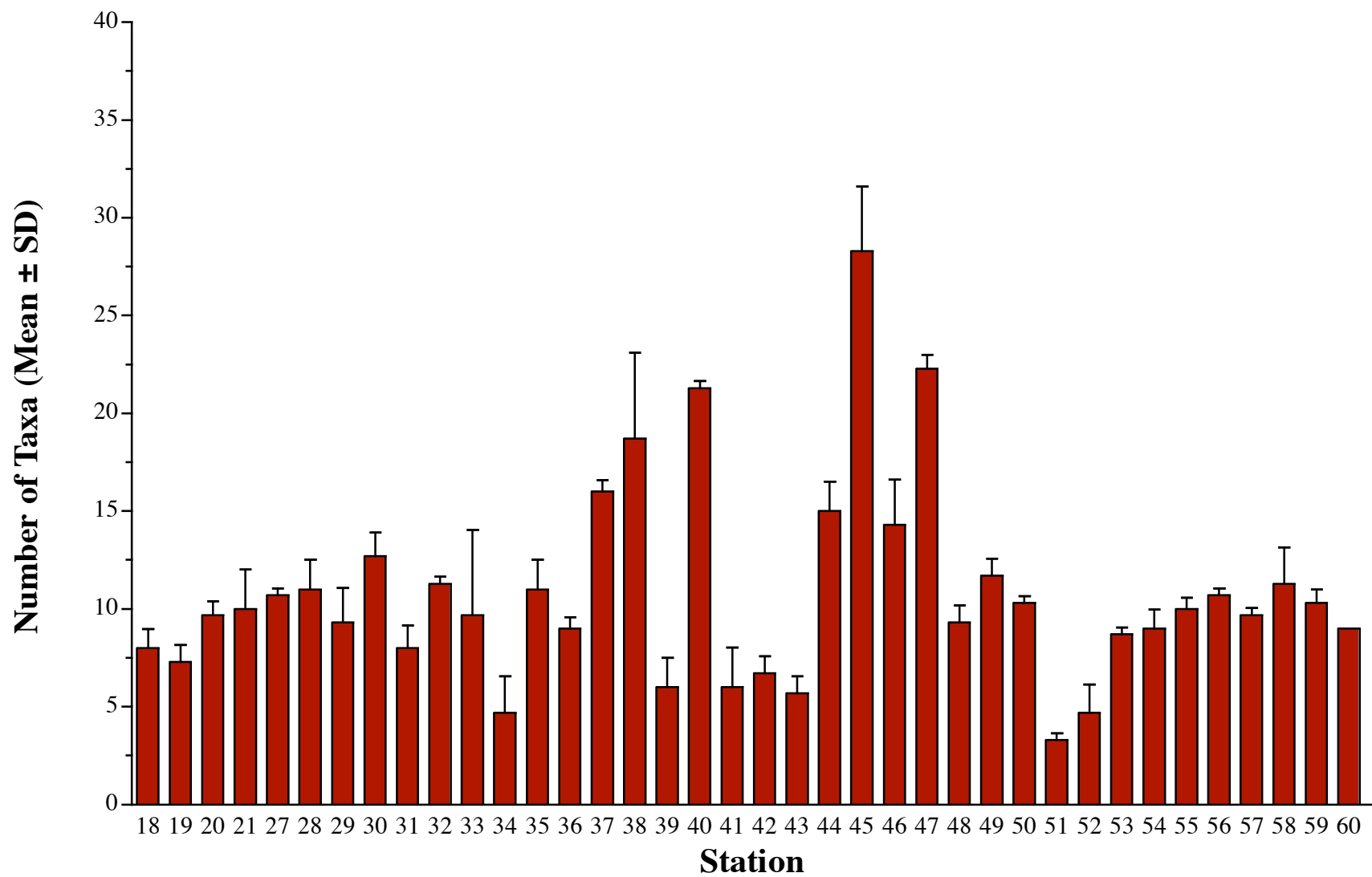


Figure 6. Taxa density data for the Chesapeake Bay stations, 2004 (Stations 18-21, 27-60).

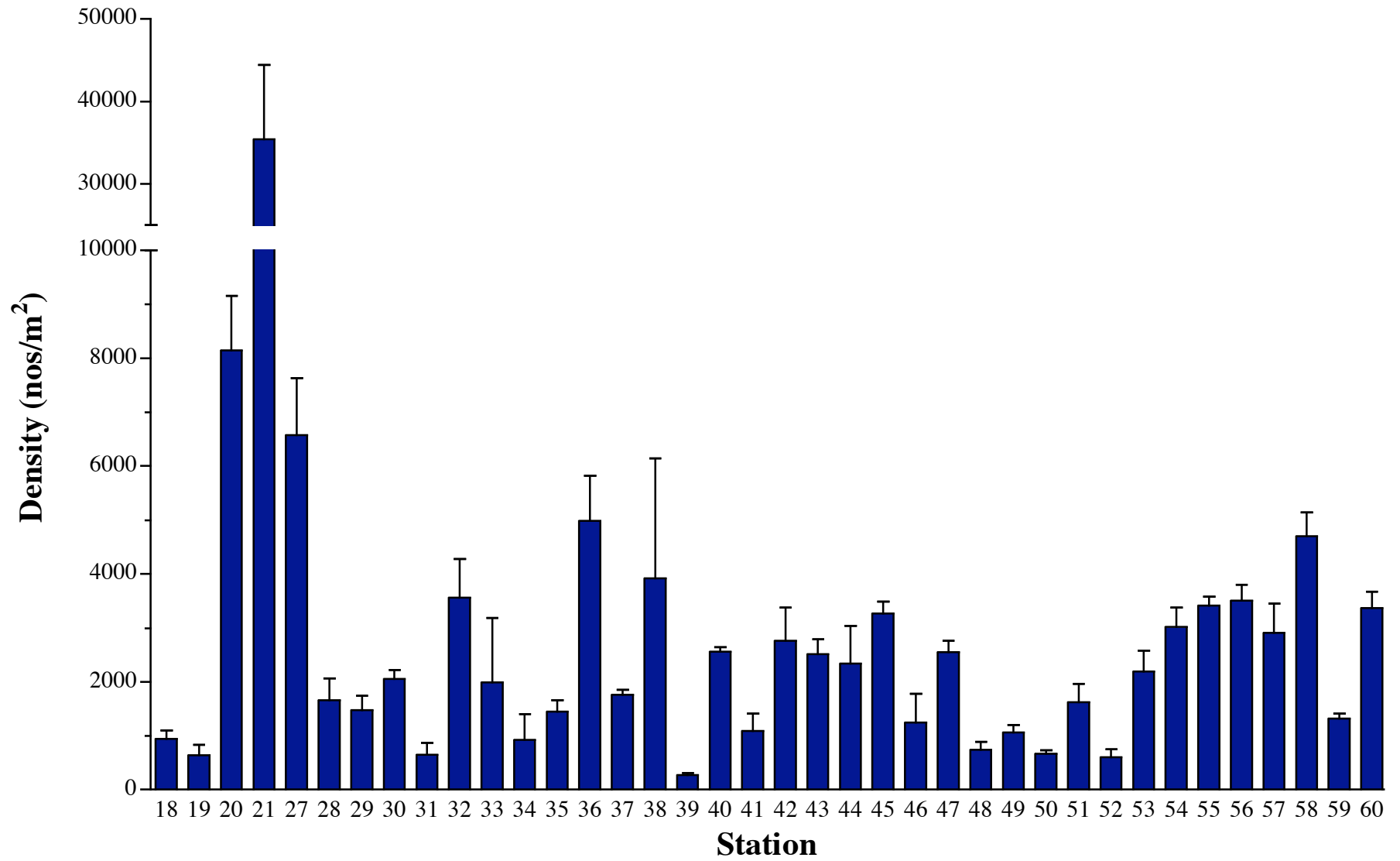


Figure 7. Taxa diversity (H') data for the Chesapeake Bay stations, 2004 (Stations 18-21, 27-60).

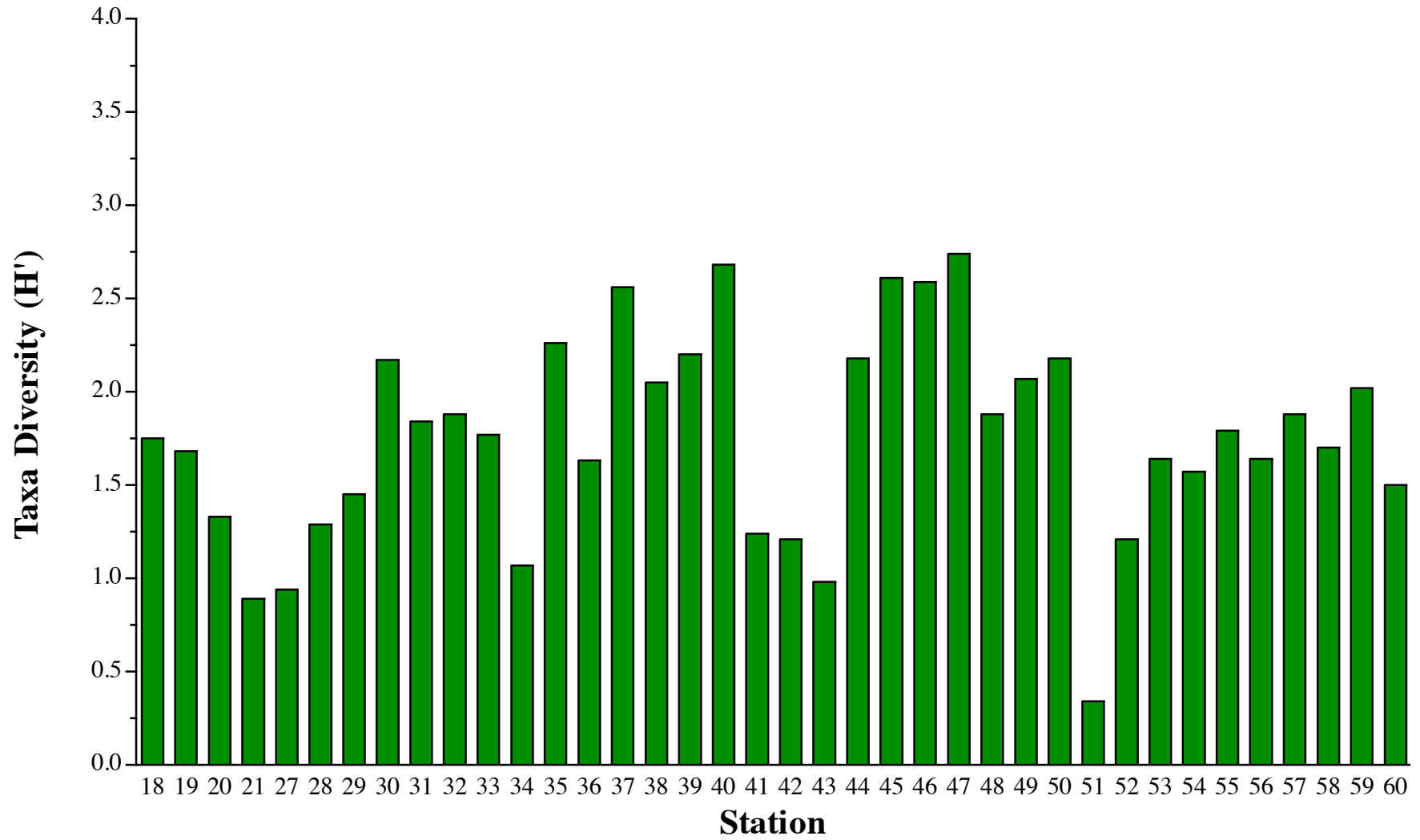
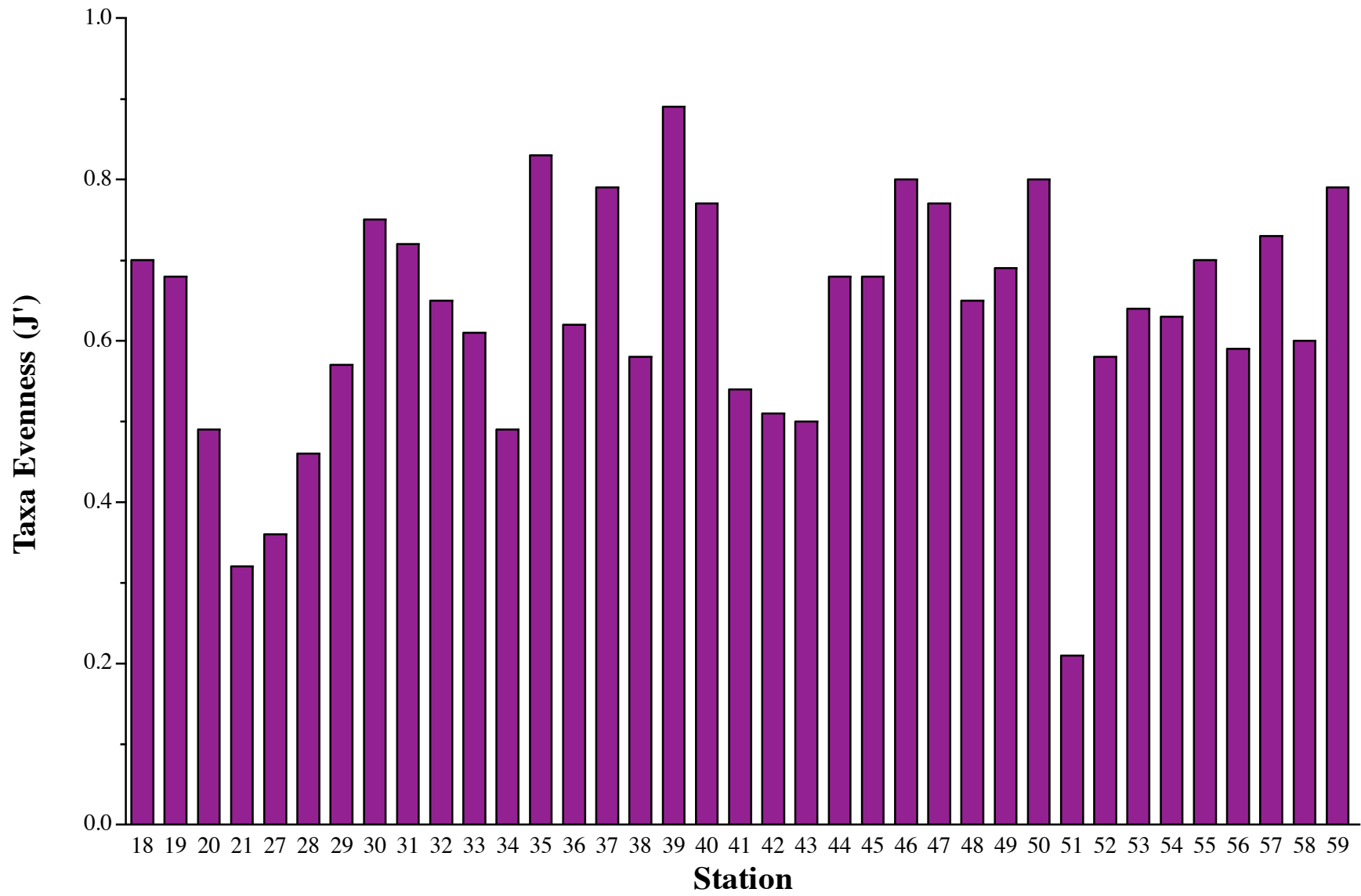


Figure 8. Taxa evenness (J') data for the Chesapeake Bay stations, 2004 (Stations 18-21, 27-60).



APPENDICES

QUALITY ASSURANCE STATEMENT

Client/Project: NOAA

Work Assignment Title: Chesapeake Bay-2004

Task Number: 003

Description of Data Set or Deliverable: 114 Benthic macroinvertebrate samples collected in 2004; 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 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

Signature of QA Officer or Reviewer

Date



Signature of Project Manager

Date

QUALITY CONTROL REWORKS

Client/Project NOAA - Task Order 3 - Chesapeake Bay
Task Number 3

Sorting Results:	Sample #	% Accuracy
	CB04-54-2	100%
	CB04-60-1	100%
	CB04-43-1	100%
	CB04-53-3	100%
	CB04-52-2	100%
	CB04-39-2	100%
	CB04-41-1	100%
	CB04-43-2	100%
	CB04-51-2	100%
	CB04-54-1	100%
	CB04-55-1	100%
	CB04-19-1	100%

Taxonomy Results:	Sample #	Taxa	% Accuracy
	CB04-36-3	Crust./Moll.	100%
	CB04-19-1	Crust./Moll.	100%
	CB04-27-1	Crust./Moll.	96%
	CB04-30-2	Crust./Moll.	98%
	CB04-33-1	Crust./Moll.	100%
	CB04-37-3	Crust./Moll.	96%
	CB04-42-1	Crust./Moll.	100%
	CB04-450-1	Crust./Moll.	100%
	CB04-55-5	Crust./Moll.	98%
	CB04-60-2	Crust./Moll.	100%
	CB04-49-1	Crust./Moll.	100%
	CB04-27-1	Annelida	99%
	CB04-29-1	Annelida	97%
	CB04-35-1	Annelida	100%
	CB04-37-1	Annelida	100%
	CB04-38-3	Annelida	100%
	CB04-48-3	Annelida	100%
	CB04-51-1	Annelida	99%
	CB04-56-1	Annelida	98%
	CB04-58-1	Annelida	100%
	CB04-59-1	Annelida	100%
	CB04-42-2	Annelida	99%

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

Signature of QA Officer or Reviewer

Date