NOAA New England Benthic Community Assessment, 2008

SUBMITTED TO:

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Silver Spring, Maryland 20910

PREPARED BY:

Barry A. Vittor & Associates, Inc.
8060 Cottage Hill Rd.
Mobile, Alabama 36695
(251) 633-6100
www.bvaenviro.com

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INTRODUCTION

The NOAA New England (NE) project was sampled during 2008. One aspect of this study 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 m^2) was used to collect duplicate bottom samples at each of 30 station locations. Samples were prescreened through 0.5 mm mesh sieves, by NOAA in the field and fixed in 10% formalin. The preserved sample fractions were transported to BVA's 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/Quality Control (QA/QC) reports for the NOAA NE samples are given in the Appendix.

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 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 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}.

BENTHIC COMMUNITY CHARACTERIZATION

Faunal Composition, Abundance, and Community Structure

Microsoft ™ Excel 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 16136 organisms, representing 339 taxa, were identified from the 30 stations (Table 1). Polychaetes were the most numerous organisms present representing 69.0% of the total assemblage, respectively. Polychaetes represented 38.9% of the total number of taxa followed by malacostracans (30.7%) and bivalves (13.3%) (Table 1). The percentage abundance of the major taxa at the 30 stations is given in Table 2 and Figure 1. An annelid assemblage was dominant at 28 of the 30 stations; Station 21 was dominated by a mixed assemblage of annelids and arthropods and Station ALT02 was dominated by an assemblage of annelids, mollusks and arthropods (Figure 1).

The dominant taxon collected from the 38 stations was the polychaete, *Exogone verugera* and represented 7.3% of the total. Other dominant taxa included the polychaete Families Maldanidae (LPIL), Sabellidae (LPIL), and the polychaete, *Chone* (LPIL) representing 6.9%, 6.3% and 6.0% of the total, respectively (Table 3). The most widely distributed taxon was the polychaete Family Maldanidae (LPIL) which was collected at 100% of the stations. The distribution of taxa representing > 5% of the total assemblage at each station is given in Table 4.

Station taxa richness and abundance data are summarized for the 30 stations in Table 5 and Figures 2 and 3. The number of mean number of taxa per station ranged from 11.0 at Station 1 to 76.5 at Station 7 (Table 5; Figure 2). Station mean densities ranged from 612.5 organisms·m^2 at Station 1 to 15500.0 organisms·m^2 at Station 2 (Table 5; Figure 3).

Taxa diversity and evenness for the 30 stations are given in Table 5 and Figures 4 and 5. Taxa diversity (H´) was > 2.5 at each station and ranged from 2.52 at Station 1 to 4.34 at Station 22 (Table 6; Figure 6). Taxa evenness (J´) ranged from 0.62 at Station 12 to 0.89 at Station 1 (Table 5; Figure 5).

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 overall abundance of major benthic macroinfaunal taxonomic groups for the NOAA NE stations, 2008.

Taxa	Total No. Taxa	% Total	Total No. Individuals	% Total
Annelida				
Oligochaeta	2	0.6	519	3.2
Polychaeta	132	38.9	11,131	69.0
Mollusca				
Aplacophora	1	0.3	2	0.0
Bivalvia	45	13.3	1,187	7.4
Gastropoda	19	5.6	106	0.7
Polyplacophora	1	0.3	2	0.0
Scaphopoda	1	0.3	7	0.0
Arthropoda				
Arachnida	1	0.3	62	0.4
Malacostraca	104	30.7	2,358	14.6
Ostracoda	5	1.5	27	0.2
Echinodermata				
Asteroidea	3	0.9	10	0.1
Echinoidea	2	0.6	37	0.2
Holothuroidea	4	1.2	17	0.1
Ophiuroidea	5	1.5	80	0.5
Other Taxa	14	4.1	591	3.7
Total	**339**		**16,136**	

Table 2. Summary of abundance of major benthic macroinfaunal taxonomic groups by station for the NOAA NE stations, 2008.

Station	Taxa	Total No. Taxa	% Total	Total No. Individuals	% Total
1	Annelida	13	76.5	41	83.7
	Mollusca	2	11.8	5	10.2
	Arthropoda	1	5.9	1	2.0
	Echinodermata	1	5.9	2	4.1
	Other Taxa	0	0.0	0	0.0
	Total	**17**		**49**	
2	Annelida	38	64.4	1043	84.1
	Mollusca	7	11.9	39	3.1
	Arthropoda	10	16.9	105	8.5
	Echinodermata	2	3.4	4	0.3
	Other Taxa	2	3.4	49	4.0
	Total	**59**		**1240**	
3	Annelida	41	52.6	267	63.4
	Mollusca	14	17.9	102	24.2
	Arthropoda	15	19.2	32	7.6
	Echinodermata	3	3.8	8	1.9
	Other Taxa	5	6.4	12	2.9
	Total	**78**		**421**	
4	Annelida	35	43.8	289	63.0
	Mollusca	17	21.3	52	11.3
	Arthropoda	24	30.0	57	12.4
	Echinodermata	1	1.3	4	0.9
	Other Taxa	3	3.8	57	12.4
	Total	**80**		**459**	
5	Annelida	29	48.3	177	69.7
	Mollusca	5	8.3	7	2.8
	Arthropoda	24	40.0	65	25.6
	Echinodermata	0	0.0	0	0.0
	Other Taxa	2	3.3	5	2.0
	Total	**60**		**254**	
6	Annelida	29	69.0	401	88.7
	Mollusca	3	7.1	18	4.0
	Arthropoda	7	16.7	15	3.3
	Echinodermata	1	2.4	3	0.7
	Other Taxa	2	4.8	15	3.3
	Total	**42**		**452**	

Table 2 continued:

Station	Taxa	Total No. Taxa	% Total	Total No. Individuals	% Total
7	Annelida	54	50.5	553	58.6
	Mollusca	17	15.9	138	14.6
	Arthropoda	26	24.3	146	15.5
	Echinodermata	4	3.7	25	2.7
	Other Taxa	6	5.6	81	8.6
	Total	**107**		**943**	
8	Annelida	25	51.0	554	86.7
	Mollusca	5	10.2	15	2.3
	Arthropoda	14	28.6	40	6.3
	Echinodermata	4	8.2	18	2.8
	Other Taxa	1	2.0	12	1.9
	Total	**49**		**639**	
9	Annelida	25	61.0	86	68.8
	Mollusca	7	17.1	27	21.6
	Arthropoda	5	12.2	6	4.8
	Echinodermata	3	7.3	4	3.2
	Other Taxa	1	2.4	2	1.6
	Total	**41**		**125**	
10	Annelida	20	54.1	208	84.6
	Mollusca	3	8.1	4	1.6
	Arthropoda	11	29.7	26	10.6
	Echinodermata	1	2.7	6	2.4
	Other Taxa	2	5.4	2	0.8
	Total	**37**		**246**	
11	Annelida	45	69.2	548	85.0
	Mollusca	9	13.8	26	4.0
	Arthropoda	10	15.4	70	10.9
	Echinodermata	0	0.0	0	0.0
	Other Taxa	1	1.5	1	0.2
	Total	**65**		**645**	
12	Annelida	47	52.2	702	85.6
	Mollusca	14	15.6	50	6.1
	Arthropoda	22	24.4	51	6.2
	Echinodermata	1	1.1	1	0.1
	Other Taxa	6	6.7	16	2.0
	Total	**90**		**820**	
13	Annelida	25	61.0	114	75.0
	Mollusca	9	22.0	21	13.8
	Arthropoda	7	17.1	17	11.2
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	**41**		**152**	

Table 2 continued:

Station	Taxa	Total No. Taxa	% Total	Total No. Individuals	% Total
14	Annelida	38	40.4	298	53.4
	Mollusca	18	19.1	61	10.9
	Arthropoda	30	31.9	165	29.6
	Echinodermata	3	3.2	9	1.6
	Other Taxa	5	5.3	25	4.5
	Total	**94**		**558**	
15	Annelida	41	46.6	561	80.6
	Mollusca	16	18.2	55	7.9
	Arthropoda	23	26.1	54	7.8
	Echinodermata	1	1.1	2	0.3
	Other Taxa	7	8.0	24	3.4
	Total	**88**		**696**	
16	Annelida	39	43.8	624	63.7
	Mollusca	11	12.4	62	6.3
	Arthropoda	31	34.8	252	25.7
	Echinodermata	3	3.4	16	1.6
	Other Taxa	5	5.6	26	2.7
	Total	**89**		**980**	
17	Annelida	26	72.2	119	75.3
	Mollusca	5	13.9	32	20.3
	Arthropoda	1	2.8	1	0.6
	Echinodermata	2	5.6	2	1.3
	Other Taxa	2	5.6	4	2.5
	Total	**36**		**158**	
18	Annelida	44	50.0	505	70.0
	Mollusca	18	20.5	151	20.9
	Arthropoda	21	23.9	59	8.2
	Echinodermata	2	2.3	2	0.3
	Other Taxa	3	3.4	4	0.6
	Total	**88**		**721**	
19	Annelida	28	47.5	210	71.2
	Mollusca	5	8.5	6	2.0
	Arthropoda	22	37.3	74	25.1
	Echinodermata	2	3.4	3	1.0
	Other Taxa	2	3.4	2	0.7
	Total	**59**		**295**	
20	Annelida	29	42.0	217	58.6
	Mollusca	18	26.1	76	20.5
	Arthropoda	17	24.6	47	12.7
	Echinodermata	1	1.4	2	0.5
	Other Taxa	4	5.8	28	7.6
	Total	**69**		**370**	

Table 2 continued:

Station	Taxa	Total No. Taxa	% Total	Total No. Individuals	% Total
21	Annelida	42	48.3	476	44.6
	Mollusca	9	10.3	19	1.8
	Arthropoda	29	33.3	565	52.9
	Echinodermata	3	3.4	3	0.3
	Other Taxa	4	4.6	5	0.5
	Total	**87**		**1068**	
22	Annelida	35	52.2	418	87.8
	Mollusca	14	20.9	27	5.7
	Arthropoda	14	20.9	24	5.0
	Echinodermata	3	4.5	6	1.3
	Other Taxa	1	1.5	1	0.2
	Total	**67**		**476**	
23	Annelida	47	66.2	921	89.1
	Mollusca	5	7.0	14	1.4
	Arthropoda	16	22.5	94	9.1
	Echinodermata	0	0.0	0	0.0
	Other Taxa	3	4.2	5	0.5
	Total	**71**		**1034**	
24	Annelida	38	43.2	299	69.5
	Mollusca	17	19.3	56	13.0
	Arthropoda	25	28.4	53	12.3
	Echinodermata	3	3.4	5	1.2
	Other Taxa	5	5.7	17	4.0
	Total	**88**		**430**	
25	Annelida	29	46.8	203	70.2
	Mollusca	17	27.4	57	19.7
	Arthropoda	14	22.6	25	8.7
	Echinodermata	1	1.6	1	0.3
	Other Taxa	1	1.6	3	1.0
	Total	**62**		**289**	
26	Annelida	34	60.7	465	65.4
	Mollusca	5	8.9	20	2.8
	Arthropoda	13	23.2	217	30.5
	Echinodermata	1	1.8	5	0.7
	Other Taxa	3	5.4	4	0.6
	Total	**56**		**711**	
29	Annelida	21	63.6	162	77.1
	Mollusca	7	21.2	30	14.3
	Arthropoda	4	12.1	15	7.1
	Echinodermata	0	0.0	0	0.0
	Other Taxa	1	3.0	3	1.4
	Total	**33**		**210**	

Table 2 continued:

Station	Taxa	Total No. Taxa	% Total	Total No. Individuals	% Total
ALT02	Annelida	30	36.6	141	45.8
	Mollusca	24	29.3	87	28.2
	Arthropoda	19	23.2	58	18.8
	Echinodermata	2	2.4	3	1.0
	Other Taxa	7	8.5	19	6.2
	Total	**82**		**308**	
ALT07	Annelida	20	48.8	257	71.0
	Mollusca	8	19.5	18	5.0
	Arthropoda	8	19.5	18	5.0
	Echinodermata	1	2.4	3	0.8
	Other Taxa	4	9.8	66	18.2
	Total	**41**		**362**	
ALT25	Annelida	32	50.8	791	77.9
	Mollusca	8	12.7	29	2.9
	Arthropoda	17	27.0	96	9.5
	Echinodermata	2	3.2	7	0.7
	Other Taxa	4	6.3	92	9.1
	Total	**63**		**1015**	

Table 3. Distribution and abundance of benthic macroinfaunal taxa for the NOAA NE stations, 2008.

Taxa	Phylum	Class	No of Individuals	% Total	Cumulative %	Station Occurrence	% Station Occurrence
Exogone verugera	Ann	Poly	1183	7.33	7.33	25	83
Maldanidae (LPIL)	Ann	Poly	1110	6.88	14.21	30	100
Sabellidae (LPIL)	Ann	Poly	1014	6.28	20.49	16	53
Chone (LPIL)	Ann	Poly	969	6.01	26.50	18	60
Axiothella mucosa	Ann	Poly	795	4.93	31.43	12	40
Prionospio steenstrupi	Ann	Poly	631	3.91	35.34	19	63
Parapionosyllis longicirrata	Ann	Poly	432	2.68	38.01	9	30
Unciola (LPIL)	Art	Mala	394	2.44	40.46	13	43
Exogone hebes	Ann	Poly	393	2.44	42.89	19	63
Tubificidae (LPIL)	Ann	Olig	312	1.93	44.83	21	70
Ampharetidae (LPIL)	Ann	Poly	298	1.85	46.67	25	83
Unciola inermis	Art	Mala	263	1.63	48.30	8	27
Aricidea (LPIL)	Ann	Poly	256	1.59	49.89	23	77
Anobothrus gracilis	Ann	Poly	254	1.57	51.46	22	73
Cirratulidae (LPIL)	Ann	Poly	222	1.38	52.84	26	87
Polygordius (LPIL)	Ann	Poly	208	1.29	54.13	12	40
Serpulidae (LPIL)	Ann	Poly	208	1.29	55.42	5	17
Enchytraeidae (LPIL)	Ann	Olig	207	1.28	56.70	7	23
Sphaerosyllis (LPIL)	Ann	Poly	207	1.28	57.98	13	43
Sipuncula (LPIL)	Sip	-	206	1.28	59.26	18	60
Eudorella hispida	Art	Mala	202	1.25	60.51	15	50
Erichthonius fasciatus	Art	Mala	186	1.15	61.66	10	33
Cirrophorus ilvana	Ann	Poly	179	1.11	62.77	14	47
Leptochelia (LPIL)	Art	Mala	164	1.02	63.79	11	37
Ascidiacea (LPIL)	Cho	Asci	156	0.97	64.76	18	60
Thyasira gouldii	Mol	Biva	150	0.93	65.69	14	47
Ninoe nigripes	Ann	Poly	147	0.91	66.60	13	43
Spionidae (LPIL)	Ann	Poly	143	0.89	67.48	22	73
Levinsenia gracilis	Ann	Poly	134	0.83	68.31	15	50
Nephtyidae (LPIL)	Ann	Poly	130	0.81	69.12	21	70
Glyceridae (LPIL)	Ann	Poly	122	0.76	69.87	15	50
Portlandia figida	Mol	Biva	118	0.73	70.61	10	33
Hemipodus roseus	Ann	Poly	112	0.69	71.30	12	40
Aoridae (LPIL)	Art	Mala	106	0.66	71.96	12	40
Nucula delphinodonta	Mol	Biva	100	0.62	72.58	15	50
Astarte crenata subequilater	Mol	Biva	97	0.60	73.18	11	37
Protodorvillea kefersteini	Ann	Poly	97	0.60	73.78	9	30
Terebellidae (LPIL)	Ann	Poly	96	0.59	74.37	16	53
Cerastoderma pinnulatum	Mol	Biva	94	0.58	74.96	11	37
Spio (LPIL)	Ann	Poly	91	0.56	75.52	17	57
Bivalvia (LPIL)	Mol	Biva	89	0.55	76.07	22	73
Ampelisca (LPIL)	Art	Mala	76	0.47	76.54	13	43
Galathowenia oculata	Ann	Poly	75	0.46	77.01	18	60
Actiniaria (LPIL)	Cni	Anth	73	0.45	77.46	10	33
Mediomastus californiensis	Ann	Poly	73	0.45	77.91	6	20
Astarte (LPIL)	Mol	Biva	71	0.44	78.35	12	40
Mediomastus (LPIL)	Ann	Poly	70	0.43	78.79	13	43
Crenella decussata	Mol	Biva	68	0.42	79.21	21	70
Aglaophamus circinata	Ann	Poly	66	0.41	79.62	18	60
Mayerella limicola	Art	Mala	66	0.41	80.03	12	40
Lumbrinerides acuta	Ann	Poly	65	0.40	80.43	5	17
Acari (LPIL)	Art	Arac	62	0.38	80.81	15	50

Table 3 continued:

Taxa	Phylum	Class	No of Individuals	% Total	Cumulative %	Station Occurrence	% Station Occurrence
Syllidae (LPIL)	Ann	Poly	62	0.38	81.20	16	53
Terebellides stroemi	Ann	Poly	61	0.38	81.58	13	43
Mysella planulata	Mol	Biva	59	0.37	81.94	8	27
Ophiuroidea (LPIL)	Ech	Ophi	57	0.35	82.29	13	43
Cyclocardia borealis	Mol	Biva	52	0.32	82.62	14	47
Euchone incolor	Ann	Poly	51	0.32	82.93	11	37
Prionospio (LPIL)	Ann	Poly	49	0.30	83.24	7	23
Spio limicola	Ann	Poly	49	0.30	83.54	5	17
Leptocheirus pinguis	Art	Mala	48	0.30	83.84	14	47
Cossura soyeri	Ann	Poly	47	0.29	84.13	15	50
Periploma papyratium	Mol	Biva	46	0.29	84.41	12	40
Erichthonius (LPIL)	Art	Mala	45	0.28	84.69	9	30
Harpinia propinqua	Art	Mala	43	0.27	84.96	15	50
Scalibregma inflatum	Ann	Poly	43	0.27	85.23	13	43
Syllides longocirrata	Ann	Poly	42	0.26	85.49	9	30
Ischyroceridae (LPIL)	Art	Mala	41	0.25	85.74	9	30
Phascolion strombi	Sip	-	37	0.23	85.97	12	40
Caulleriella sp. J	Ann	Poly	36	0.22	86.19	6	20
Unciola irrorata	Art	Mala	35	0.22	86.41	11	37
Aeginellidae (LPIL)	Art	Mala	34	0.21	86.62	10	33
Gastropoda (LPIL)	Mol	Gast	34	0.21	86.83	18	60
Molgula (LPIL)	Cho	Asci	33	0.20	87.04	1	3
Pholoe minuta	Ann	Poly	33	0.20	87.24	12	40
Owenia fusiformis	Ann	Poly	32	0.20	87.44	6	20
Goniada maculata	Ann	Poly	31	0.19	87.63	15	50
Tharyx acutus	Ann	Poly	31	0.19	87.82	7	23
Aricidea catherinae	Ann	Poly	30	0.19	88.01	7	23
Nuculana pernula	Mol	Biva	29	0.18	88.19	11	37
Nereis grayi	Ann	Poly	28	0.17	88.36	7	23
Paramphinome pulchella	Ann	Poly	28	0.17	88.53	11	37
Polycirrus (LPIL)	Ann	Poly	28	0.17	88.71	9	30
Echinarachnius parma	Ech	Echi	26	0.16	88.87	7	23
Lumbrineridae (LPIL)	Ann	Poly	26	0.16	89.03	11	37
Phoxocephalus holbolli	Art	Mala	26	0.16	89.19	9	30
Streptosyllis arenae	Ann	Poly	26	0.16	89.35	7	23
Capitellidae (LPIL)	Ann	Poly	25	0.15	89.51	12	40
Podoceridae (LPIL)	Art	Mala	25	0.15	89.66	11	37
Sphaerosyllis brevifrons	Ann	Poly	25	0.15	89.82	5	17
Crenella faba	Mol	Biva	24	0.15	89.97	2	7
Monticellina baptisteae	Ann	Poly	24	0.15	90.12	4	13
Aricidea cerrutii	Ann	Poly	23	0.14	90.26	5	17
Astarte montagui	Mol	Biva	23	0.14	90.40	3	10
Exogone (LPIL)	Ann	Poly	23	0.14	90.54	6	20
Hydrozoa (LPIL)	Cni	Hydr	23	0.14	90.69	4	13
Leptostylis longimana	Art	Mala	23	0.14	90.83	9	30
Amphipoda (LPIL)	Art	Mala	22	0.14	90.96	13	43
Brachiopoda (LPIL)	Bra	-	22	0.14	91.10	5	17
Campylaspis rubicunda	Art	Mala	22	0.14	91.24	8	27
Polynoidae (LPIL)	Ann	Poly	22	0.14	91.37	13	43
Dacrydium vitreum	Mol	Biva	21	0.13	91.50	8	27
Hippomedon serratus	Art	Mala	21	0.13	91.63	8	27
Rhynchocoela (LPIL)	Rhy	-	21	0.13	91.76	12	40
Eudorella (LPIL)	Art	Mala	20	0.12	91.89	7	23

Table 3 continued:

Taxa	Phylum	Class	No of Individuals	% Total	Cumulative %	Station Occurrence	% Station Occurrence
Lysianassidae (LPIL)	Art	Mala	20	0.12	92.01	9	30
Photis (LPIL)	Art	Mala	20	0.12	92.14	10	33
Crassicorophium crassicorne	Art	Mala	19	0.12	92.25	3	10
Pleurogonium spinosissimum	Art	Mala	19	0.12	92.37	10	33
Podocopida (LPIL)	Art	Ostr	19	0.12	92.49	10	33
Corophiidae (LPIL)	Art	Mala	18	0.11	92.60	3	10
Leptocheirus (LPIL)	Art	Mala	18	0.11	92.71	2	7
Pleusymtes glaber	Art	Mala	18	0.11	92.82	6	20
Bathyarca pectunculoides	Mol	Biva	17	0.11	92.93	7	23
Cirrophorus (LPIL)	Ann	Poly	17	0.11	93.03	5	17
Leitoscoloplos acutus	Ann	Poly	17	0.11	93.14	4	13
Ophelina acuminata	Ann	Poly	17	0.11	93.24	11	37
Scoletoma fragilis	Ann	Poly	17	0.11	93.35	12	40
Spiophanes (LPIL)	Ann	Poly	17	0.11	93.46	8	27
Aricidea quadrilobata	Ann	Poly	16	0.10	93.55	5	17
Clinocardium ciliatum	Mol	Biva	16	0.10	93.65	5	17
Proaeginina norvegica	Art	Mala	16	0.10	93.75	2	7
Campylaspis (LPIL)	Art	Mala	15	0.09	93.85	8	27
Dipolydora caulleryi	Ann	Poly	15	0.09	93.94	4	13
Microdeutopus (LPIL)	Art	Mala	15	0.09	94.03	2	7
Scoletoma (LPIL)	Ann	Poly	15	0.09	94.12	5	17
Dipolydora socialis	Ann	Poly	14	0.09	94.21	8	27
Flabelligeridae (LPIL)	Ann	Poly	14	0.09	94.30	4	13
Pleustidae (LPIL)	Art	Mala	14	0.09	94.39	5	17
Spiophanes kroeyeri	Ann	Poly	14	0.09	94.47	3	10
Yoldia (LPIL)	Mol	Biva	14	0.09	94.56	5	17
Apistobranchus tullbergi	Ann	Poly	13	0.08	94.64	6	20
Isaeidae (LPIL)	Art	Mala	13	0.08	94.72	4	13
Oedicerotidae (LPIL)	Art	Mala	13	0.08	94.80	6	20
Paraonidae (LPIL)	Ann	Poly	13	0.08	94.88	7	23
Tanaissus psammophilus	Art	Mala	13	0.08	94.96	2	7
Byblis (LPIL)	Art	Mala	12	0.07	95.04	6	20
Casco bigelowi	Art	Mala	12	0.07	95.11	5	17
Nephtys incisa	Ann	Poly	12	0.07	95.18	7	23
Unciola dissimilis	Art	Mala	12	0.07	95.26	2	7
Crenella (LPIL)	Mol	Biva	11	0.07	95.33	5	17
Echinoidea (LPIL)	Ech	Echi	11	0.07	95.40	3	10
Holothuroidea (LPIL)	Ech	Holo	11	0.07	95.46	4	13
Leitoscoloplos (LPIL)	Ann	Poly	11	0.07	95.53	5	17
Tole (LPIL)	Art	Mala	11	0.07	95.60	6	20
Typhlotanais (LPIL)	Art	Mala	11	0.07	95.67	3	10
Alvania pelagica	Mol	Gast	10	0.06	95.73	5	17
Chaetozone setosa	Ann	Poly	10	0.06	95.79	3	10
Notomastus latericeus	Ann	Poly	10	0.06	95.85	5	17
Nucula (LPIL)	Mol	Biva	10	0.06	95.92	5	17
Ophiura robusta	Ech	Ophi	10	0.06	95.98	6	20
Solariella (LPIL)	Mol	Gast	10	0.06	96.04	7	23
Tanaidacea (LPIL)	Art	Mala	10	0.06	96.10	5	17
Turridae (LPIL)	Mol	Gast	10	0.06	96.16	6	20
Amphiuridae (LPIL)	Ech	Ophi	9	0.06	96.22	2	7
Carditidae (LPIL)	Mol	Biva	9	0.06	96.28	6	20
Euchone elegans	Ann	Poly	9	0.06	96.33	3	10
Onuphidae (LPIL)	Ann	Poly	9	0.06	96.39	5	17

Table 3 continued:

Taxa	Phylum	Class	No of Individuals	% Total	Cumulative %	Station Occurrence	% Station Occurrence
Phyllodocidae (LPIL)	Ann	Poly	9	0.06	96.44	7	23
Sternaspis scutata	Ann	Poly	9	0.06	96.50	4	13
Aphelochaeta (LPIL)	Ann	Poly	8	0.05	96.55	5	17
Aricidea suecica	Ann	Poly	8	0.05	96.60	3	10
Ficopomatus miamiensis	Ann	Poly	8	0.05	96.65	4	13
Metatiron tropakis	Art	Mala	8	0.05	96.70	4	13
Metopella angusta	Art	Mala	8	0.05	96.75	3	10
Politolana haneyi	Art	Mala	8	0.05	96.80	4	13
Syllis sp. K	Ann	Poly	8	0.05	96.85	6	20
Cumacea (LPIL)	Art	Mala	7	0.04	96.89	4	13
Eurycope (LPIL)	Art	Mala	7	0.04	96.93	2	7
Maldane glebifex	Ann	Poly	7	0.04	96.98	3	10
Melinna cristata	Ann	Poly	7	0.04	97.02	4	13
Microdeutopus gryllotalpa	Art	Mala	7	0.04	97.06	1	3
Rissoidae (LPIL)	Mol	Gast	7	0.04	97.11	3	10
Scaphopoda (LPIL)	Mol	Scap	7	0.04	97.15	5	17
Scoloplos (LPIL)	Ann	Poly	7	0.04	97.19	4	13
Thyasiridae (LPIL)	Mol	Biva	7	0.04	97.24	2	7
Bryozoa (LPIL)	Bry	-	6	0.04	97.27	6	20
Crenella glandula	Mol	Biva	6	0.04	97.31	2	7
Ctenodiscus crispatus	Ech	Aste	6	0.04	97.35	4	13
Dipolydora (LPIL)	Ann	Poly	6	0.04	97.38	2	7
Leptognathia (LPIL)	Art	Mala	6	0.04	97.42	3	10
Lineidae (LPIL)	Rhy	Anop	6	0.04	97.46	4	13
Orchomenella pinguis	Art	Mala	6	0.04	97.50	2	7
Pandora (LPIL)	Mol	Biva	6	0.04	97.53	3	10
Phoxocephalidae (LPIL)	Art	Mala	6	0.04	97.57	6	20
Pista palmata	Ann	Poly	6	0.04	97.61	4	13
Syllis (LPIL)	Ann	Poly	6	0.04	97.65	3	10
Arcidae (LPIL)	Mol	Biva	5	0.03	97.68	3	10
Bathyarca (LPIL)	Mol	Biva	5	0.03	97.71	2	7
Calathura brachiata	Art	Mala	5	0.03	97.74	5	17
Corophium (LPIL)	Art	Mala	5	0.03	97.77	1	3
Hamineidae (LPIL)	Mol	Gast	5	0.03	97.80	2	7
Haminoea solitaria	Mol	Gast	5	0.03	97.83	1	3
Laonice cirrata	Ann	Poly	5	0.03	97.86	5	17
Monticellina (LPIL)	Ann	Poly	5	0.03	97.89	2	7
Natica clausa	Mol	Gast	5	0.03	97.92	4	13
Nephtys (LPIL)	Ann	Poly	5	0.03	97.95	4	13
Orchomene (LPIL)	Art	Mala	5	0.03	97.99	1	3
Pleurogonium (LPIL)	Art	Mala	5	0.03	98.02	3	10
Stenetriidae (LPIL)	Art	Mala	5	0.03	98.05	2	7
Stenothoidae (LPIL)	Art	Mala	5	0.03	98.08	4	13
Streblosoma spiralis	Ann	Poly	5	0.03	98.11	3	10
Syllis beneliahui	Ann	Poly	5	0.03	98.14	1	3
Travisia carnea	Ann	Poly	5	0.03	98.17	3	10
Ampelisca macrocephala	Art	Mala	4	0.02	98.20	1	3
Ampelisca spinipes	Art	Mala	4	0.02	98.22	2	7
Byblis serrata	Art	Mala	4	0.02	98.25	4	13
Cylindroleberididae (LPIL)	Art	Ostr	4	0.02	98.27	3	10
Deflexilodes (LPIL)	Art	Mala	4	0.02	98.30	1	3
Eunice unifrons	Ann	Poly	4	0.02	98.32	2	7
Goniadidae (LPIL)	Ann	Poly	4	0.02	98.35	4	13

Table 3 continued:

Taxa	Phylum	Class	No of Individuals	% Total	Cumulative %	Station Occurrence	% Station Occurrence
Heteromastus filiformis	Ann	Poly	4	0.02	98.37	1	3
Hiatella (LPIL)	Mol	Biva	4	0.02	98.39	1	3
Hippomedon (LPIL)	Art	Mala	4	0.02	98.42	2	7
Leptocheirus plumulosus	Art	Mala	4	0.02	98.44	2	7
Margarites olivacecus	Mol	Gast	4	0.02	98.47	2	7
Melita dentata	Art	Mala	4	0.02	98.49	2	7
Orbiniidae (LPIL)	Ann	Poly	4	0.02	98.52	1	3
Parougia caeca	Ann	Poly	4	0.02	98.54	4	13
Phyllodoce (LPIL)	Ann	Poly	4	0.02	98.57	4	13
Porifera (LPIL)	Por	-	4	0.02	98.59	2	7
Sphaerodoropsis minuta	Ann	Poly	4	0.02	98.62	4	13
Syllis alosae	Ann	Poly	4	0.02	98.64	2	7
Synopiidae (LPIL)	Art	Mala	4	0.02	98.67	4	13
Trochidae (LPIL)	Mol	Gast	4	0.02	98.69	3	10
Aeginina longicornis	Art	Mala	3	0.02	98.71	1	3
Americhelidium americanum	Art	Mala	3	0.02	98.73	1	3
Anomia simplex	Mol	Biva	3	0.02	98.75	2	7
Anthuridae (LPIL)	Art	Mala	3	0.02	98.77	3	10
Argissa hamatipes	Art	Mala	3	0.02	98.79	3	10
Asteroidea (LPIL)	Ech	Aste	3	0.02	98.80	3	10
Branchiomma nigromaculata	Ann	Poly	3	0.02	98.82	2	7
Desmosomatidae (LPIL)	Art	Mala	3	0.02	98.84	2	7
Diastylis polita	Art	Mala	3	0.02	98.86	3	10
Diastylis quadrispinosa	Art	Mala	3	0.02	98.88	2	7
Drilonereis longa	Ann	Poly	3	0.02	98.90	3	10
Eunice (LPIL)	Ann	Poly	3	0.02	98.92	2	7
Exogone sp. U	Ann	Poly	3	0.02	98.93	1	3
Haploops (LPIL)	Art	Mala	3	0.02	98.95	2	7
Harmothoe imbricata	Ann	Poly	3	0.02	98.97	3	10
Hesionidae (LPIL)	Ann	Poly	3	0.02	98.99	2	7
Melitidae (LPIL)	Art	Mala	3	0.02	99.01	2	7
Microdeutopus anomalus	Art	Mala	3	0.02	99.03	2	7
Montacutidae (LPIL)	Mol	Biva	3	0.02	99.05	1	3
Mysidae (LPIL)	Art	Mala	3	0.02	99.06	2	7
Mytilidae (LPIL)	Mol	Biva	3	0.02	99.08	3	10
Naticidae (LPIL)	Mol	Gast	3	0.02	99.10	3	10
Nucula tenuis	Mol	Biva	3	0.02	99.12	2	7
Nuculana (LPIL)	Mol	Biva	3	0.02	99.14	2	7
Nuculanidae (LPIL)	Mol	Biva	3	0.02	99.16	2	7
Ophiopholis aculeata	Ech	Ophi	3	0.02	99.18	2	7
Pectinaria gouldii	Ann	Poly	3	0.02	99.19	2	7
Phyllodoce maculata	Ann	Poly	3	0.02	99.21	3	10
Pista (LPIL)	Ann	Poly	3	0.02	99.23	3	10
Podarke obscura	Ann	Poly	3	0.02	99.25	2	7
Scoloplos armiger	Ann	Poly	3	0.02	99.27	1	3
Stenopleustes inermis	Art	Mala	3	0.02	99.29	2	7
Ampharete finmarchica	Ann	Poly	2	0.01	99.30	2	7
Anomia squamula	Mol	Biva	2	0.01	99.31	1	3
Anonyx liljeborgii	Art	Mala	2	0.01	99.32	2	7
Aplacophora (LPIL)	Mol	Apla	2	0.01	99.34	2	7
Aricidea finitima	Ann	Poly	2	0.01	99.35	2	7
Caudina arenata	Ech	Holo	2	0.01	99.36	2	7
Chiridotea arenicola	Art	Mala	2	0.01	99.37	1	3

Table 3 continued:

Taxa	Phylum	Class	No of Individuals	% Total	Cumulative %	Station Occurrence	% Station Occurrence
Colus pygmaeus	Mol	Gast	2	0.01	99.39	2	7
Cypridinidae (LPIL)	Art	Ostr	2	0.01	99.40	2	7
Deflexilodes intermedius	Art	Mala	2	0.01	99.41	2	7
Diastylidae (LPIL)	Art	Mala	2	0.01	99.42	2	7
Dorvilleidae (LPIL)	Ann	Poly	2	0.01	99.44	1	3
Eunicidae (LPIL)	Ann	Poly	2	0.01	99.45	2	7
Harmothoe (LPIL)	Ann	Poly	2	0.01	99.46	2	7
Hiatella arctica	Mol	Biva	2	0.01	99.47	2	7
Ischyrocerus anguipes	Art	Mala	2	0.01	99.49	1	3
Leptostylis (LPIL)	Art	Mala	2	0.01	99.50	2	7
Leptosynapta (LPIL)	Ech	Holo	2	0.01	99.51	1	3
Melphidippa sp. A	Art	Mala	2	0.01	99.52	2	7
Mercenaria mercenaria	Mol	Biva	2	0.01	99.54	1	3
Notomastus (LPIL)	Ann	Poly	2	0.01	99.55	2	7
Ophelia denticulata	Ann	Poly	2	0.01	99.56	1	3
Opheliidae (LPIL)	Ann	Poly	2	0.01	99.57	2	7
Pandora inornata	Mol	Biva	2	0.01	99.58	1	3
Phoronis (LPIL)	Pho	-	2	0.01	99.60	1	3
Polydora cornuta	Ann	Poly	2	0.01	99.61	2	7
Polyplacophora (LPIL)	Mol	Polyp	2	0.01	99.62	1	3
Pteriidae (LPIL)	Mol	Biva	2	0.01	99.63	1	3
Scoletoma acicularum	Ann	Poly	2	0.01	99.65	1	3
Scoletoma tenuis	Ann	Poly	2	0.01	99.66	1	3
Synaptidae (LPIL)	Ech	Holo	2	0.01	99.67	2	7
Syrrhoe crenulata	Art	Mala	2	0.01	99.68	1	3
Veneridae (LPIL)	Mol	Biva	2	0.01	99.70	2	7
Acteocina (LPIL)	Mol	Gast	1	0.01	99.70	1	3
Actinocythereis (LPIL)	Art	Ostr	1	0.01	99.71	1	3
Ampeliscidae (LPIL)	Art	Mala	1	0.01	99.71	1	3
Aonides paucibranchiata	Ann	Poly	1	0.01	99.72	1	3
Asterias (LPIL)	Ech	Aste	1	0.01	99.73	1	3
Autolytus (LPIL)	Ann	Poly	1	0.01	99.73	1	3
Caprella (LPIL)	Art	Mala	1	0.01	99.74	1	3
Chaetozone (LPIL)	Ann	Poly	1	0.01	99.75	1	3
Chiridotea (LPIL)	Art	Mala	1	0.01	99.75	1	3
Cuspidariidae (LPIL)	Mol	Biva	1	0.01	99.76	1	3
Cylichna gouldi	Mol	Gast	1	0.01	99.76	1	3
Dyopedos monacanthus	Art	Mala	1	0.01	99.77	1	3
Edotia montosa	Art	Mala	1	0.01	99.78	1	3
Ensis directus	Mol	Biva	1	0.01	99.78	1	3
Euphrosine borealis	Ann	Poly	1	0.01	99.79	1	3
Haminoea (LPIL)	Mol	Gast	1	0.01	99.80	1	3
Janiridae (LPIL)	Art	Mala	1	0.01	99.80	1	3
Lepeta caeca	Mol	Gast	1	0.01	99.81	1	3
Liocyma fluctuosa	Mol	Biva	1	0.01	99.81	1	3
Melinna maculata	Ann	Poly	1	0.01	99.82	1	3
Melita (LPIL)	Art	Mala	1	0.01	99.83	1	3
Melita nitida	Art	Mala	1	0.01	99.83	1	3
Metatiron (LPIL)	Art	Mala	1	0.01	99.84	1	3
Munna fabricii	Art	Mala	1	0.01	99.85	1	3
Myidae (LPIL)	Mol	Biva	1	0.01	99.85	1	3
Nemertea (LPIL)	Nem	-	1	0.01	99.86	1	3
Neptunea lyrata decemcostata	Mol	Gast	1	0.01	99.86	1	3

Table 3 continued:

Taxa	Phylum	Class	No of Individuals	% Total	Cumulative %	Station Occurrence	% Station Occurrence
Nereididae (LPIL)	Ann	Poly	1	0.01	99.87	1	3
Ochlesidae Genus A	Art	Mala	1	0.01	99.88	1	3
Ophiura (LPIL)	Ech	Ophi	1	0.01	99.88	1	3
Ostracoda (LPIL)	Art	Ostr	1	0.01	99.89	1	3
Pagurus (LPIL)	Art	Mala	1	0.01	99.89	1	3
Parametopella cypris	Art	Mala	1	0.01	99.90	1	3
Paranthuridae (LPIL)	Art	Mala	1	0.01	99.91	1	3
Petalosarsia declivis	Art	Mala	1	0.01	99.91	1	3
Pherusa (LPIL)	Ann	Poly	1	0.01	99.92	1	3
Podarkeopsis levifuscina	Ann	Poly	1	0.01	99.93	1	3
Propebela turricula	Mol	Gast	1	0.01	99.93	1	3
Pseudopolydora (LPIL)	Ann	Poly	1	0.01	99.94	1	3
Ptilanthura tenuis	Art	Mala	1	0.01	99.94	1	3
Rhamphobrachium atlanticum	Ann	Poly	1	0.01	99.95	1	3
Synopia (LPIL)	Art	Mala	1	0.01	99.96	1	3
Tellinidae (LPIL)	Mol	Biva	1	0.01	99.96	1	3
Thraciidae (LPIL)	Mol	Biva	1	0.01	99.97	1	3
Tryphosella nanoides	Art	Mala	1	0.01	99.98	1	3
Turbellaria (LPIL)	Pla	Turb	1	0.01	99.98	1	3
Turbonilla (LPIL)	Mol	Gast	1	0.01	99.99	1	3
Westwoodilla (LPIL)	Art	Mala	1	0.01	99.99	1	3
Westwoodilla caecula	Art	Mala	1	0.01	100.00	1	3

Taxa Key

Ann=Annelida
- Olig=Oligochaeta
- Poly=Polychaeta

Art=Arthropoda
- Arac=Arachnida
- Mala=Malacostraca
- Ostr=Ostracoda

Bra=Brachiopoda
Bry=Bryozoa
Cho=Chordata
- Asci=Ascidiacea

Cni=Cnidaria
- Anth=Anthozoa
- Hydr=Hydrozoa

Ech=Echinodermata
- Aste=Asteroidea
- Echi=Echinoidea
- Holo=Holothuroidea
- Ophi=Ophiuroidea

Mol=Mollusca
- Apla=Aplacophora
- Biva=Bivalvia
- Gast=Gastropoda
- Poly=Polyplacophora
- Scap=Scaphopoda

Nem=Nemertea
Pho=Phoronida
Pla=Platyhelminthes
- Turb=Turbellaria

Por=Porifera
Rhy=Rhynchocoela
- Anop=Anopla

Sip=Sipuncula

Table 4. Percentage abundance of dominant benthic macroinfaunal taxa (> 5% of the total) for the NOAA NE stations, 2008.

Taxa	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Annelida																			
Oligochaeta																			
Enchytraeidae (LPIL)											18.9								
Tubificidae (LPIL)						6.4		5.6		11.4									
Polychaeta																			
Ampharetidae (LPIL)			14.7										5.9						
Anobothrus gracilis			10.2															6.4	
Aricidea (LPIL)						5.5													
Axiothella mucosa		19.9				5.3					5.4								6.8
Chaetozone setosa	16.3																		
Chone (LPIL)				15.5			18.5					36.2			11.4				
Cirratulidae (LPIL)										7.3							6.3		
Cirrophorus ilvana											14.9								
Exogone hebes						6.9		10.2		33.3	5.9								5.8
Exogone verugera				10.9	39.0							12.4		5.0	10.1	16.3			5.1
Glyceridae (LPIL)						6.0													
Leitoscoloplos acutus																	5.7		
Levinsenia gracilis													27.0						
Maldanidae (LPIL)		22.4						7.5			12.1					8.9	5.1		11.9
Mediomastus californiensis																			
Ninoe nigripes									20.0				5.3				27.2	6.4	
Parapionosyllis longicirrata		9.0				16.2		14.2		8.1									
Polygordius (LPIL)		7.1				6.4													
Prionospio steenstrupi							9.7					6.7						20.4	6.8
Sabellidae (LPIL)			5.9	15.3			6.6					10.5		19.4	33.6	11.4			
Serpulidae (LPIL)						6.6		21.4						6.6					
Sphaerosyllis (LPIL)								5.2											
Spio limicola									8.8										5.1
Terebellides stroemi	20.4																5.1		
Arthropoda																			
Malacostraca																			
Aoridae (LPIL)											6.0								
Erichthonius fasciatus																5.3			
Eudorella hispida																8.8			
Leptochelia (LPIL)							6.6							12.7					
Unciola (LPIL)																			
Unciola inermis																			

Table 4 continued:

Taxa	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Chordata																			
Ascidiacea																			
Ascidiacea (LPIL)																			
Cnidaria																			
Anthozoa																			
Actiniaria (LPIL)																			
Mollusca																			
Bivalvia																			
Astarte (LPIL)																		5.3	
Nucula delphinodonta																			
Portlandia figida			13.3																
Thyasira gouldii									12.8								10.8	6.8	
Sipuncula																			
Sipuncula (LPIL)				11.5															

Table 4 continued:

Taxa	20	21	22	23	24	25	26	29	ALT02	ALT07	ALT25
Annelida											
Oligochaeta											
Enchytraeidae (LPIL)											
Tubificidae (LPIL)										9.1	
Polychaeta											
Ampharetidae (LPIL)					7.4			7.6			
Anobothrus gracilis					9.3	9.0		8.6			
Aricidea (LPIL)											
Axiothella mucosa				9.7			11.3				20.9
Chaetozone setosa											
Chone (LPIL)	7.3		21.8	11.4	6.7						
Cirratulidae (LPIL)								6.2			
Cirrophorus ilvana											
Exogone hebes										5.8	
Exogone verugera		9.1		26.4			6.0				
Glyceridae (LPIL)											
Leitoscoloplos acutus											
Levinsenia gracilis											
Maldanidae (LPIL)				11.9		7.3	8.0	14.3			18.1
Mediomastus californiensis		5.7									
Ninoe nigripes											
Parapionosyllis longicirrata							6.9			13.5	
Polygordius (LPIL)										10.8	
Prionospio steenstrupi	13.2				9.8	29.4		17.1			
Sabellidae (LPIL)	12.2		32.3		4.7				14.0		
Serpulidae (LPIL)											
Sphaerosyllis (LPIL)										6.9	
Spio limicola											
Terebellides stroemi											
Arthropoda											
Malacostraca											
Aoridae (LPIL)											
Erichthonius fasciatus		8.2									
Eudorella hispida											
Leptochelia (LPIL)											
Unciola (LPIL)		11.3					20.4				
Unciola inermis		15.7									

Table 4 continued:

Taxa	20	21	22	23	24	25	26	29	ALT02	ALT07	ALT25
Chordata											
Ascidiacea											
Ascidiacea (LPIL)										9.4	5.1
Cnidaria											
Anthozoa											
Actiniaria (LPIL)										6.6	
Mollusca											
Bivalvia											
Astarte (LPIL)											
Nucula delphinodonta						6.2			6.5		
Portlandia figida											
Thyasira gouldii								7.1			
Sipuncula											
Sipuncula (LPIL)											

Table 5. Summary of assemblage parameters for the NOAA NE stations, 2008.

Station	Rep	No. of Taxa	No. of Indvs	Density (nos/m^2)	Mean No. Taxa	Mean Density (nos/m^2)	Total No. Taxa	Total No. Individuals	H' Diversity ($\log_e$)	d Diversity ($\log_2$)	J' Pielou Evenness
1	1	12	26	650	11.0	612.5	17	49	2.52	3.64	0.89
	2	10	23	575							
2	1	32	256	6400	41.5	15500.0	59	1240	2.83	4.09	0.69
	2	51	984	24600							
3	1	53	227	5675	50.0	5262.5	79	421	3.42	4.94	0.79
	2	47	194	4850							
4	1	49	182	4550	55.5	5737.5	80	459	3.28	4.73	0.75
	2	62	277	6925							
5	1	34	141	3525	34.0	3175.0	60	254	2.96	4.28	0.72
	2	34	113	2825							
6	1	27	106	2650	32.5	5650.0	42	452	3.12	4.50	0.83
	2	38	346	8650							
7	1	75	380	9500	76.5	11787.5	107	943	3.51	5.06	0.75
	2	78	563	14075							
8	1	39	385	9625	37.0	7987.5	49	639	2.90	4.19	0.75
	2	35	254	6350							
9	1	36	109	2725	24.0	1562.5	41	125	3.11	4.48	0.84
	2	12	16	400							
10	1	26	126	3150	26.0	3075.0	37	246	2.65	3.83	0.73
	2	26	120	3000							
11	1	42	271	6775	43.5	8062.5	65	645	3.01	4.35	0.72
	2	45	374	9350							
12	1	64	416	10400	60.5	10250.0	90	820	2.79	4.02	0.62
	2	57	404	10100							
13	1	24	56	1400	28.0	1900.0	41	152	3.06	4.41	0.82
	2	32	96	2400							
14	1	56	223	5575	63.0	6975.0	94	558	3.51	5.07	0.77
	2	70	335	8375							
15	1	58	349	8725	59.5	8700.0	88	696	3.00	4.33	0.67
	2	61	347	8675							
16	1	69	426	10650	63.5	12250.0	89	980	3.35	4.83	0.75
	2	58	554	13850							
17	1	23	90	2250	23.5	1975.0	36	158	2.86	4.13	0.80
	2	24	68	1700							
18	1	69	422	10550	63.5	9012.5	89	721	3.47	5.00	0.77
	2	58	299	7475							
19	1	33	81	2025	38.5	3687.5	59	295	3.52	5.08	0.86
	2	44	214	5350							
20	1	37	106	2650	46.0	4625.0	69	370	3.55	5.12	0.84
	2	55	264	6600							
21	1	63	467	11675	60.0	13350.0	87	1068	3.28	4.73	0.73
	2	57	601	15025							
22	1	53	309	7725	44.0	6075.0	69	486	2.75	3.96	0.65
	2	35	177	4425							
23	1	45	473	11825	50.5	12925.0	71	1034	2.91	4.21	0.68
	2	56	561	14025							
24	1	60	204	5100	61.0	5375.0	88	430	3.76	5.43	0.84
	2	62	226	5650							
25	1	56	238	5950	40.0	3612.5	62	289	3.12	4.50	0.76
	2	24	51	1275							
26	1	40	307	7675	44.0	8887.5	56	711	3.09	4.45	0.77
	2	48	404	10100							
29	1	17	40	1000	23.0	2625.0	33	210	2.93	4.22	0.84
	2	29	170	4250							
ALT02	1	57	179	4475	53.5	3850.0	82	308	3.78	5.45	0.86
	2	50	129	3225							
ALT07	1	34	187	4675	32.5	4525.0	41	362	3.06	4.41	0.82
	2	31	175	4375							
ALT25	1	50	635	15875	45.0	12687.5	63	1015	2.98	4.30	0.72
	2	40	380	9500							

Figure 1. Assemblage composition for the NOAA NE stations, 2008.

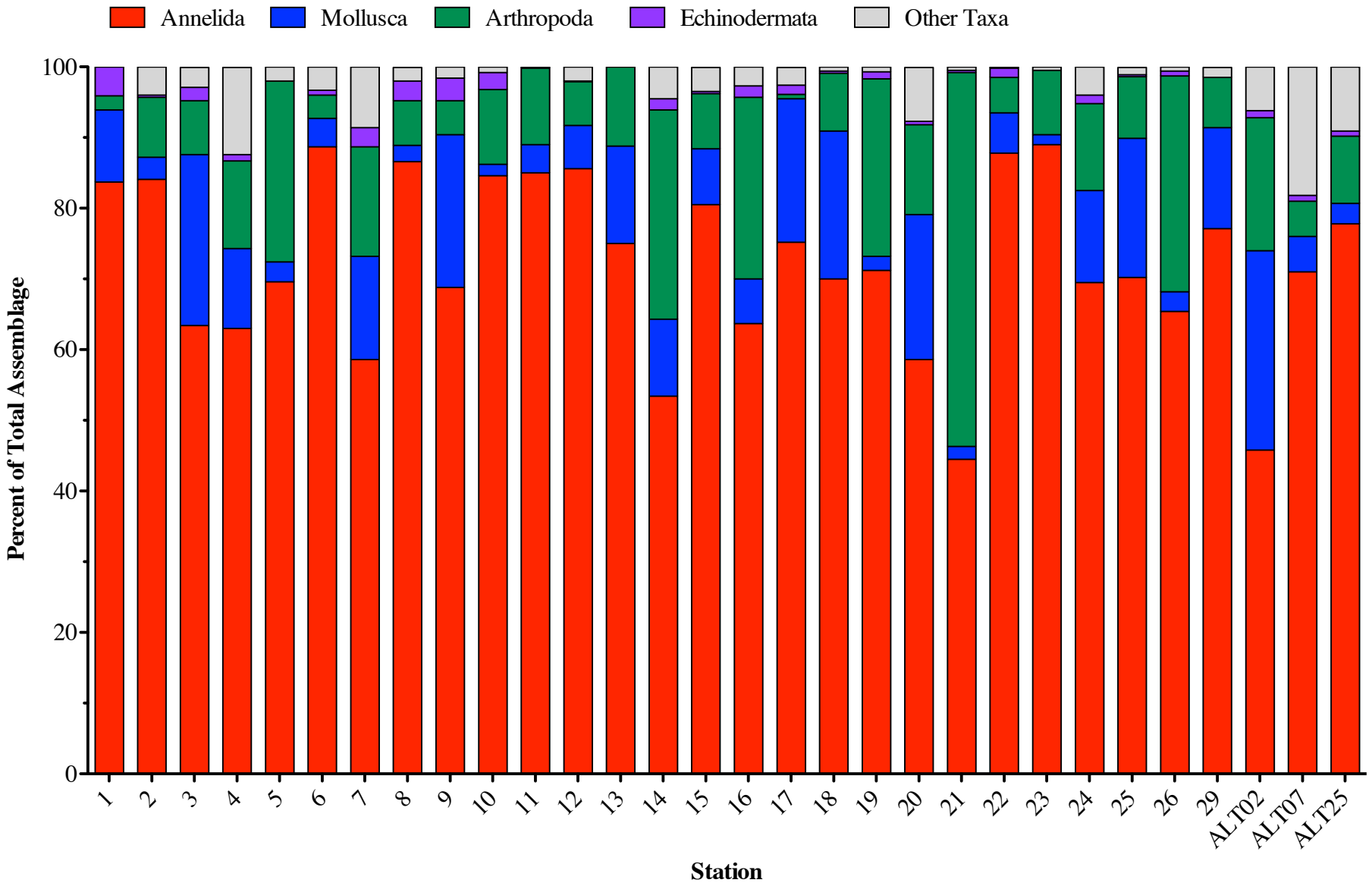


Figure 2. Taxa richness data for the NOAA NE stations, 2008.

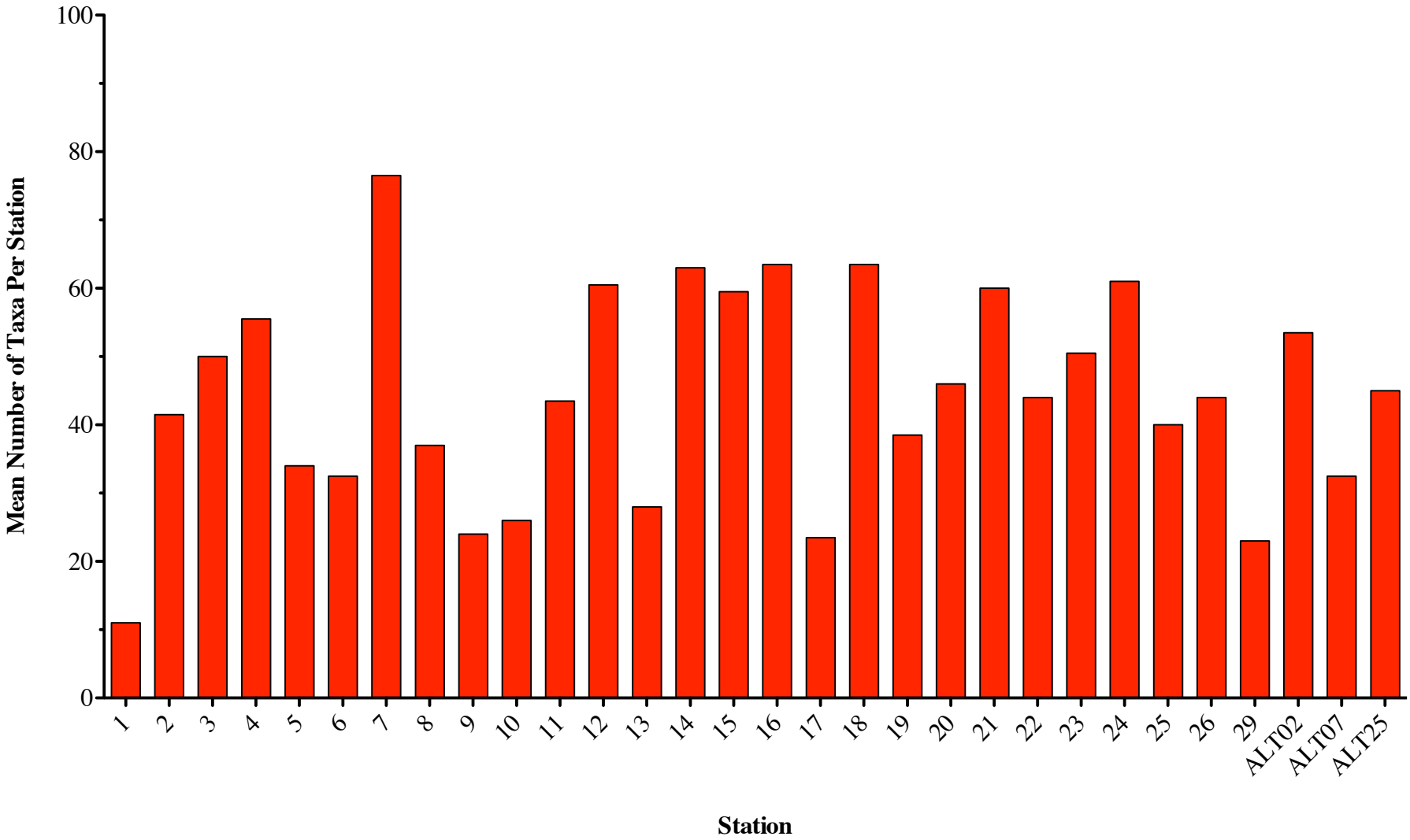


Figure 3. Taxa density data for the NOAA NE stations, 2008.

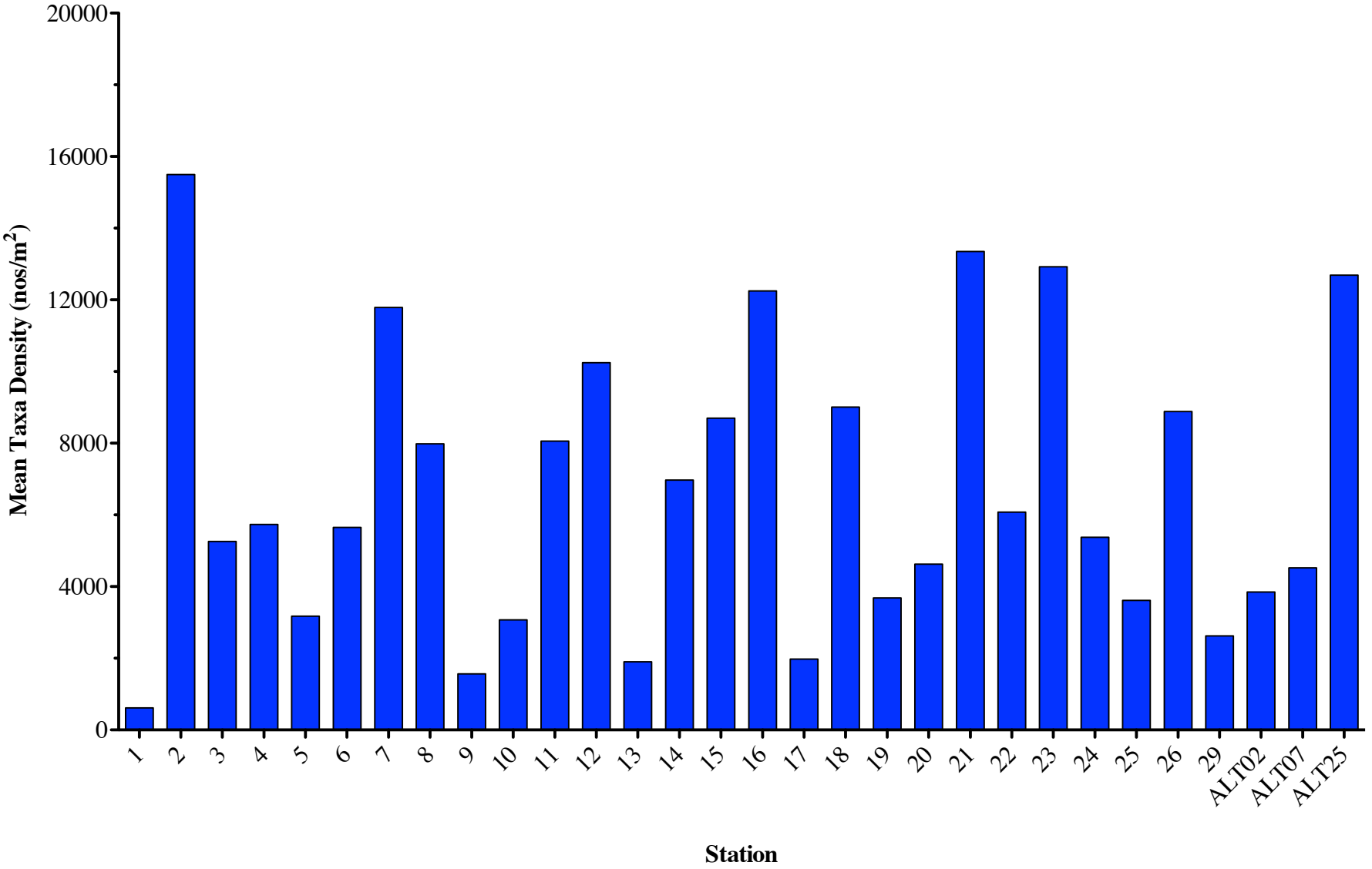


Figure 4. Taxa diversity (H') data for the NOAA NE stations, 2008.

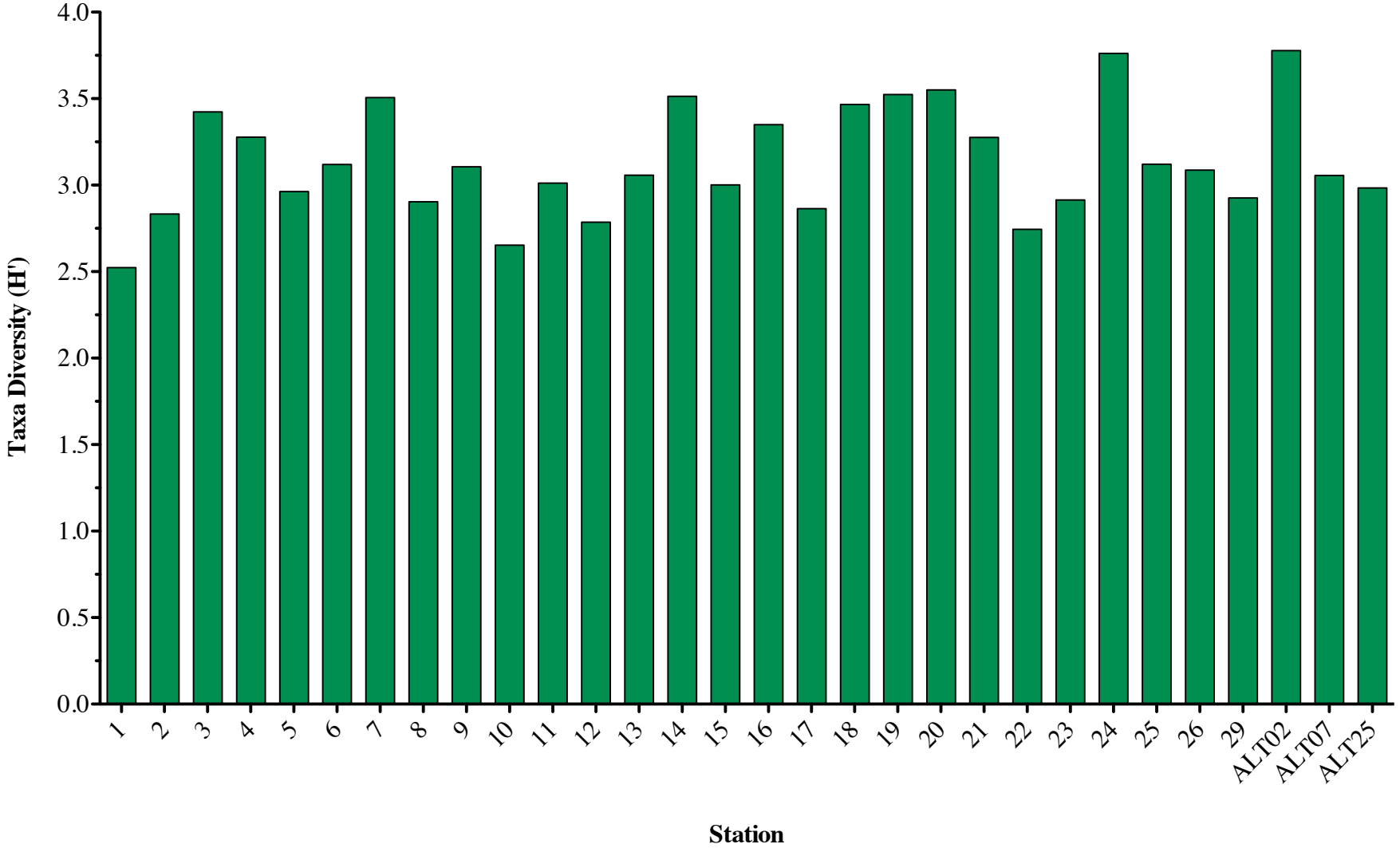
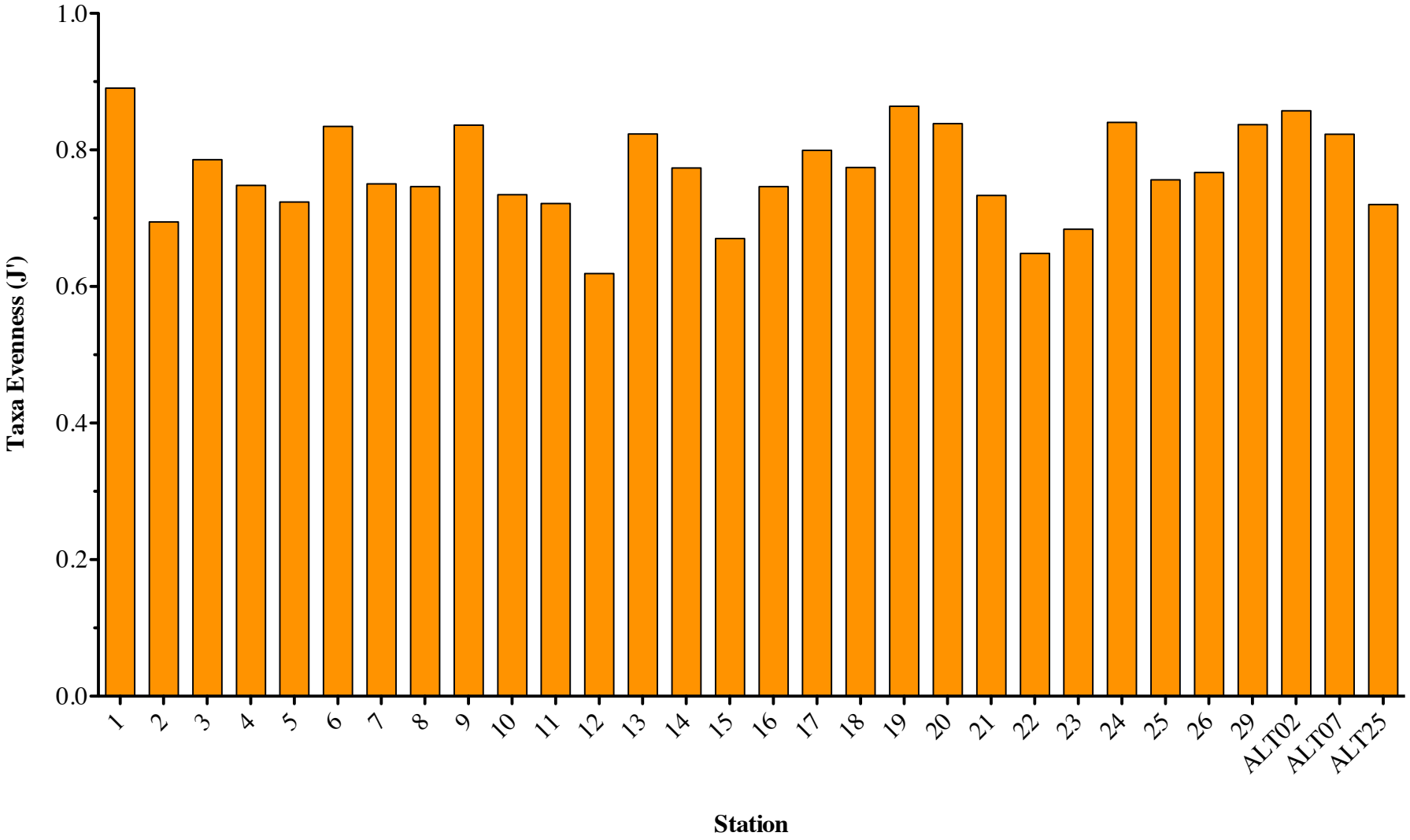


Figure 5. Taxa evenness (J') data for the NOAA NE stations, 2008.



APPENDIX

QUALITY ASSURANCE STATEMENT

Client/Project: NOAA

Work Assignment Title: New England 2008

Work Assignment Number Task Number: 002

Description of Data Set or Deliverable: 60 Benthic macroinvertebrate samples collected in 2008; Young Dredge grabs.

Description of audit and review activities: Judged accuracy rates were well above standard levels for taxonomy. Laboratory QC reports were completed.

Copies of QC results follow (see attachment.) All taxonomic data were entered into the 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

Barry A Vittor 12-15-09

Signature of QA Officer or Reviewer Date

Carl McVoy 12/15/09

Signature of Project Manager Date

QUALITY CONTROL REWORKS

Project: NOAA - New England 2008
Task Number: 2

Sorting Results:	Sample #	% Accuracy
N/A	N/A	N/A

Taxonomy Results:	Sample #	Taxa	% Accuracy
	NE08013-1	Crust./Moll.	100%
	NE08017-1	Crust./Moll.	100%
	NE08025-2	Crust./Moll.	100%
	NE08013-1	Crust./Moll.	95%
	NE08017-2	Crust./Moll.	100%
	NE08002-1	Crust./Moll.	100%
	NE08006-1	Annelida	100%
	NE08014-1	Annelida	97%
	NE08009-1	Annelida	97%
	NE08001-2	Annelida	100%
	NE08018-2	Annelida	98%
	NE08021-2	Annelida	98%
	NE08007-2	Annelida	97%

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

Barry A. Vittor 12-15-09

Signature of QA Officer or Reviewer Date