

SAN FRANCISCO BAY, CALIFORNIA BENTHIC COMMUNITY ASSESSMENT, AUGUST 2001



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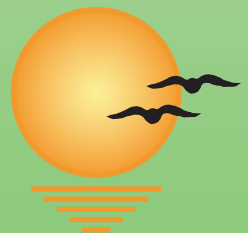
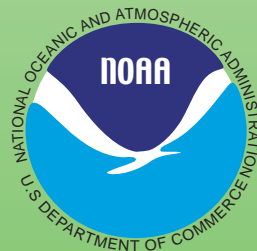


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INTRODUCTION

The San Francisco Bay in California was sampled during August 2001 to assess benthic habitat conditions. 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).

The 2001 San Francisco Bay sampling stations are indicated in Figure 1; location data for the 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 a bottom sample at 86 stations in San Francisco Bay, California. 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 BVA laboratory, 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 Quality Assurance/Quality Control (QA/QC) reports for the San Francisco Bay 2001 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 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 Shannon-Weaver Index (Pielou, 1966), according to the following formula:

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

where, S = the total number of taxa identified in the sample
(including LPILs),

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 for the 96 stations are given in Table 1 and Figure 2. Bottom salinities ranged from 4.00 at station 2-1 to >30 ppt at numerous stations in San Francisco Bay proper (Figure 2).

BENTHIC COMMUNITY CHARACTERIZATION

Faunal Composition, Abundance, and Community Structure

A total of 60,673 organisms, representing 194 taxa, was identified from the 96 stations (Table 2). Malacostracans were the most numerous organisms present and represented 56.2% of the total assemblage, followed in abundance by polychaetes (27.7%) and bivalves (9.7%). Polychaetes represented 51.0% of the total number of taxa followed by malacostracans (28.4%) and bivalves (10.3%) (Table 2). The percent abundance of the major taxa at the 96 stations is given in Table 3 and Figure 3.

The dominant taxon collected from the 96 San Francisco Bay stations was the amphipod, *Ampelisca abdita*, representing 34% of the total number of individuals identified (Table 4). The polychaete, *Exogone lourei*, (6.1%) and the oligochaete family, Tubificidae (5.3%) were the only other taxa representing greater than 5% of the total number of organisms identified (Table 4). *Ampelisca abdita* and tubificids were the most widely distributed taxa being found at more than 63% of the stations. The distribution of taxa representing >10% of the total assemblage at each station is given in Table 5.

Taxa richness (mean number of taxa per station) and density data are given in Table 6 and Figures 4, 5, 6 and 7. Taxa richness was extremely variable (2 taxa at station 1-3 to

46 taxa at station 22-5), but was generally correlated with bottom salinities (Figure 5). Densities were also variable and ranged from 50 organisms·m⁻² at station 6-5 to 117,425 organisms·m⁻² at station 16-3 (Table 6, Figures 6 and 7). Taxa diversity and evenness data are given in Table 6 and Figures 8 and 9. Taxa diversity (H') ranged from 0.12 at station 6-3 to 2.88 at station 37-3. Taxa evenness (J) ranged from 0.08 at station 6-3 to 1.0 at station 6-5.

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 station and water quality data for San Francisco Bay stations, August 2001.

Station	BVA Station	Date	Latitude	Longitude	Depth (m)	Temp (°C)	Salinity (ppt)	D.O. (mg/l)
1-1	1	8/30/01	38° 02.503	121° 50.566	7.0	22.0	5.00	7.22
1-3	2	8/30/01	38° 01.375	121° 48.953	9.8	22.5	4.10	7.20
2-1	3	8/28/01	38° 02.827	122° 53.250	14.6	21.7	4.00	7.27
2-3	4	8/30/01	38° 03.483	121° 51.865	8.8	21.5	6.60	7.62
3-2	5	8/28/01	38° 04.033	121° 55.986	1.8	21.5	6.40	7.05
4-1	6	8/26/01	38° 08.009	122° 03.168	2.1	21.8	9.70	6.78
4-3	7	8/26/01	38° 06.359	122° 01.954	2.4	21.0	11.80	6.93
5-3	8	8/28/01	38° 03.393	122° 02.708	1.2	21.1	13.30	6.56
5-4	9	8/28/01	38° 03.931	121° 57.872	4.0	21.6	10.20	6.91
6-2	10	8/24/01	38° 03.745	122° 06.572	6.1	20.1	12.30	6.94
6-3	11	8/24/01	38° 02.303	122° 07.653	13.4	20.2	13.80	7.15
6-5	12	8/28/01	38° 03.430	121° 58.676	10.7	21.4	11.70	7.18
7-2	13	8/26/01	38° 08.868	122° 04.132	2.1	21.4	10.50	5.93
7-3	14	8/26/01	38° 08.837	122° 03.543	9.1	21.7	10.10	6.44
7-5	15	8/26/01	38° 07.285	122° 04.051	3.4	20.5	10.80	6.78
8-2	16	8/24/01	38° 03.873	122° 11.345	1.2	20.4	17.00	6.30
9-1	17	8/24/01	38° 06.803	122° 16.697	6.1	20.0	20.90	6.08
9-3	18	8/24/01	38° 04.222	122° 14.947	3.4	20.5	21.80	6.62
10-2	19	8/24/01	38° 08.259	122° 16.482	6.1	20.1	12.3	6.94
11-2	20	8/22/01	38° 05.339	122° 28.401	1.5	20.8	26.30	5.80
11-4	21	8/10/01	38° 02.695	122° 23.223	3.4	19.9	24.10	6.72
11-5	22	8/24/01	38° 04.575	122° 18.965	1.5	20.3	25.30	6.29
12-2	23	8/10/01	38° 01.602	122° 24.089	6.7	20.0	25.40	6.61
12-3	24	8/29/01	37° 58.184	122° 25.000	15.9	17.8	30.30	6.60
13-2	25	8/22/01	38° 01.645	122° 21.236	5.2	19.7	28.30	6.24
13-3	26	8/29/01	37° 59.014	122° 24.529	1.2	18.5	29.70	6.65
14-2	27	8/10/01	38° 08.866	122° 31.978	5.2	23.6	26.70	5.09
14-3	28	8/10/01	38° 06.102	122° 27.186	1.2	22.6	26.00	6.75
15-2	29	8/30/01	37° 56.651	122° 27.949	3.7	17.9	29.80	6.50
16-2	30	8/11/01	37° 54.232	122° 24.086	8.2	17.4	31.20	5.83
16-3	31	8/28/01	37° 53.090	122° 25.296	13.4	17.3	30.90	6.55
17-3	32	8/11/01	37° 55.301	122° 23.619	2.4	19.6	31.40	7.41
18-2	33	8/11/01	37° 54.379	122° 23.885	11.9	17.9	30.90	6.29
18-3	34	8/11/01	37° 54.489	122° 23.378	10.1	18.7	31.49	6.83
19-1C	35	8/7/01	37° 55.307	122° 22.310	9.8	20.3	27.90	0.00
20-2	36	8/8/01	37° 53.879	127° 20.127	0.9	18.3	27.09	0.00
20-3	37	8/11/01	37° 52.563	122° 21.641	2.4	17.9	31.30	6.80
20-4	38	8/18/01	37° 51.360	122° 22.493	5.8	16.5	32.10	6.09
21-2	39	8/12/01	37° 48.881	122° 22.109	6.1	17.7	31.50	5.47
22-2	40	8/29/01	37° 52.055	122° 24.298	1.5	20.3	25.3	6.29
22-4	41	8/22/01	37° 49.236	122° 27.530	51.8	16.5	32.00	5.80
22-5	42	8/18/01	37° 49.932	122° 22.997	7.9	N/A	N/A	N/A
23-1	43	8/9/01	37° 53.003	122° 29.148	1.5	19.0	31.60	7.51
23-3	44	8/9/01	37° 52.207	122° 29.052	1.5	17.4	31.50	6.71
24-1	45	8/22/01	37° 48.625	122° 25.824	11.6	16.7	32.00	6.14

Table 1. Continued:

Station	BVA Station	Date	Latitude	Longitude	Depth (m)	Temp (°C)	Salinity (ppt)	D.O. (mg/l)
24-3	46	8/22/01	37° 48.593	122° 25.613	6.4	16.3	32.10	6.13
25-2	47	8/15/01	37° 48.151	122° 23.792	12.2	16.0	32.30	5.85
26-3	48	8/18/01	37° 45.779	122° 22.798	10.1	17.0	31.90	5.92
27-2	49	8/19/01	37° 43.091	122° 21.671	5.2	18.2	31.60	3.31
27-3	50	8/19/01	37° 42.715	122° 22.340	3.4	18.8	31.60	6.47
28-2	51	8/18/01	37° 47.723	122° 21.261	13.4	19.0	31.30	6.27
28-3	52	8/13/01	37° 46.587	122° 20.301	12.8	19.4	31.40	6.75
29-1	53	8/12/01	37° 46.813	122° 18.466	3.7	20.0	31.40	6.00
29-3	54	8/12/01	37° 46.566	122° 18.017	6.1	20.6	31.40	6.46
30-2	55	8/13/01	37° 45.272	122° 16.029	2.1	19.7	31.40	5.86
30-4	56	8/13/01	37° 43.742	122° 16.669	3.4	20.7	31.00	7.33
31-1	57	8/12/01	37° 49.281	122° 18.848	13.7	19.3	31.40	6.08
31-3	58	8/12/01	37° 48.246	122° 20.206	5.8	19.5	31.30	6.43
31-5	59	8/12/01	37° 48.081	122° 19.939	3.7	19.3	31.40	6.52
32-1	60	8/23/01	37° 47.616	122° 18.474	14.3	19.6	31.50	6.32
32-4	61	8/23/01	37° 46.542	122° 14.550	10.7	20.9	31.50	5.34
32-5	62	8/9/01	37° 45.059	122° 13.576	4.0	23.1	30.50	6.31
33-1	63	8/23/01	37° 46.670	122° 23.279	6.1	16.5	32.10	5.12
33-2	64	8/18/01	37° 46.391	122° 23.687	3.7	17.4	32.10	4.81
33-3	65	8/18/01	37° 44.834	122° 23.275	9.1	17.9	31.50	5.87
33-4	66	8/19/01	37° 43.247	122° 22.838	1.8	19.7	31.60	6.66
33-6	67	8/19/01	37° 43.063	122° 22.457	2.7	19.6	31.50	6.80
34-2	68	8/16/01	37° 38.009	122° 22.578	2.4	19.4	31.60	7.52
34-4	69	8/20/01	37° 34.810	122° 15.600	2.1	20.1	31.20	5.19
35-1	70	8/19/01	37° 41.863	122° 17.434	7.6	20.7	31.10	5.93
35-4	71	8/16/01	37° 37.672	122° 18.874	11.3	19.3	31.30	5.74
36-4	72	8/16/01	37° 36.581	122° 14.102	4.3	20.2	30.90	5.64
37-1	73	8/16/01	37° 34.357	122° 15.089	1.5	21.8	31.00	6.34
37-2	74	8/16/01	37° 33.716	122° 14.326	1.5	20.5	18.70	5.88
37-3	75	8/21/01	37° 32.734	122° 11.799	2.4	17.9	31.3	6.8
38-2	76	8/16/01	37° 34.423	122° 13.178	5.8	16.5	32.1	6.09
39-2	77	8/15/01	37° 35.513	122° 11.762	2.7	20.4	30.80	6.78
39-3	78	8/15/01	37° 31.648	122° 08.198	2.4	20.2	30.60	6.18
40-1	79	8/21/01	37° 31.982	122° 11.618	8.5	19.7	31.10	4.48
41-1	80	8/21/01	37° 29.245	122° 06.447	27.4	14.5	32	5.98
41-2	81	8/21/01	37° 28.818	122° 05.647	16.1	16.2	32.7	6
41-3	82	8/21/01	37° 28.540	122° 04.773	15.8	16	32.2	6.05
42-2	83	8/17/01	37° 29.301	122° 05.171	4.0	21.3	28.00	6.86
43-1	84	8/17/01	37° 27.999	122° 00.691	1.8	21.6	18.60	4.85
43-2	85	8/17/01	37° 27.637	122° 02.533	3.7	21.6	24.20	5.66
44-3	86	8/17/01	37° 26.442	122° 00.215	1.5	17.4	31.5	6.71
45-1	87	8/17/01	37° 28.502	122° 06.701	1.8	21.9	29.00	8.27
45-2	88	8/16/01	37° 34.061	122° 06.516	0.3	18.3	31.60	5.90
45-3	89	8/9/01	37° 52.811	122° 30.216	2.4	18.9	31.80	7.26
45-4	90	8/9/01	37° 52.765	122° 30.316	1.8	17.9	31.90	6.13

Table 1. Continued:

Station	BVA Station	Date	Latitude	Longitude	Depth (m)	Temp (°C)	Salinity (ppt)	D.O. (mg/l)
45-5	91	8/8/01	37° 50.336	122° 18.827	3.7	21.3	30.50	4.70
46-2	92	8/20/01	37° 32.851	122° 15.074	1.5	20.9	31.00	5.68
46-5	93	8/15/01	37° 30.858	122° 11.409	3.1	22.3	31.10	5.62
47-1	94	8/17/01	37° 26.818	122° 02.152	3.7	25.9	21.60	6.41
47-2	95	8/22/01	38° 00.966	122° 30.095	1.5	21.1	27.50	5.66
47-5A	96	8/9/01	37° 56.542	122° 31.233	17.1	22.6	29.49	6.18

Table 2. Summary of overall abundance of major benthic macroinfaunal taxonomic groups for San Francisco Bay, August 2001.

Taxa	Total No. Taxa	% of Total	Total No. Individuals	% of Total
Annelida				
Oligochaeta	1	0.5	3,226	5.3
Polychaeta	99	51.0	16,805	27.7
Mollusca				
Bivalvia	20	10.3	5,903	9.7
Gastropoda	7	3.6	84	0.1
Arthropoda				
Insecta	2	1.0	4	0.0
Malacostraca	55	28.4	34,111	56.2
Echinodermata				
Ophiuroidea	1	0.5	7	0.0
Other Taxa	9	4.6	533	0.9
Total	194		60,673	

Table 3. Summary of abundance of major benthic macroinfaunal taxonomic groups by station for San Francisco Bay, August 2001.

Station	Phylum	No. of Taxa	% of Total	No. of Individuals	% of Total
1-1	Annelida	2	40.0	4	9.3
	Mollusca	3	60.0	39	90.7
	Arthropoda	0	0.0	0	0.0
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	5		43	
1-3	Arthropoda	1	50.0	1	25.0
	Mollusca	1	50.0	3	75.0
	Arthropoda	0	0.0	0	0.0
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	2		4	
2-1	Annelida	1	25.0	4	33.3
	Mollusca	2	50.0	7	58.3
	Arthropoda	1	25.0	1	8.3
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	4		12	
2-3	Annelida	2	50.0	16	76.2
	Mollusca	2	50.0	5	23.8
	Arthropoda	0	0.0	0	0.0
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	4		21	
3-2	Annelida	3	42.9	8	40.0
	Mollusca	2	28.6	9	45.0
	Arthropoda	2	28.6	3	15.0
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	7		20	
4-1	Annelida	3	42.9	18	32.1
	Mollusca	2	28.6	25	44.6
	Arthropoda	2	28.6	13	23.2
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	7		56	

Table 3. Continued:

Station	Phylum	No. of Taxa	% of Total	No. of Individuals	% of Total
4-3	Annelida	2	66.7	14	18.7
	Mollusca	1	33.3	61	81.3
	Arthropoda	0	0.0	0	0.0
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	3		75	
5-3	Annelida	4	36.4	5	0.9
	Mollusca	2	18.2	86	15.9
	Arthropoda	5	45.5	451	83.2
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	11		542	
5-4	Annelida	2	50.0	42	9.4
	Mollusca	1	25.0	401	89.3
	Arthropoda	1	25.0	6	1.3
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	4		449	
6-2	Annelida	5	71.4	85	50.6
	Mollusca	1	14.3	82	48.8
	Arthropoda	1	14.3	1	0.6
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	7		168	
6-3	Annelida	2	50.0	9	1.8
	Mollusca	1	25.0	481	98.0
	Arthropoda	1	25.0	1	0.2
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	4		491	
6-5	Annelida	0	0.0	0	0.0
	Mollusca	1	50.0	1	50.0
	Arthropoda	1	50.0	1	50.0
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	2		2	

Table 3. Continued:

Station	Phylum	No. of Taxa	% of Total	No. of Individuals	% of Total
7-2	Annelida	3	42.9	9	32.1
	Mollusca	2	28.6	14	50.0
	Arthropoda	2	28.6	5	17.9
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	7		28	
7-3	Annelida	3	60.0	16	3.2
	Mollusca	1	20.0	490	96.6
	Arthropoda	1	20.0	1	0.2
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	5		507	
7-5	Annelida	2	33.3	17	4.1
	Mollusca	2	33.3	373	90.1
	Arthropoda	1	16.7	22	5.3
	Echinodermata	0	0.0	0	0.0
	Other Taxa	1	16.7	2	0.5
	Total	6		414	
8-2	Annelida	8	53.3	126	27.2
	Mollusca	2	13.3	135	29.2
	Arthropoda	5	33.3	202	43.6
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	15		463	
9-1	Annelida	4	44.4	28	25.2
	Mollusca	2	22.2	5	4.5
	Arthropoda	3	33.3	78	70.3
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	9		111	
9-3	Annelida	6	54.5	62	13.1
	Mollusca	1	9.1	6	1.3
	Arthropoda	4	36.4	405	85.6
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	11		473	

Table 3. Continued:

Station	Phylum	No. of Taxa	% of Total	No. of Individuals	% of Total
10-2	Annelida	5	38.5	36	10.1
	Mollusca	3	23.1	50	14.0
	Arthropoda	5	38.5	271	75.9
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	13		357	
11-2	Annelida	6	54.5	320	40.7
	Mollusca	1	9.1	1	0.1
	Arthropoda	4	36.4	466	59.2
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	11		787	
11-4	Annelida	7	50.0	15	4.8
	Mollusca	4	28.6	26	8.3
	Arthropoda	3	21.4	274	87.0
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	14		315	
11-5	Annelida	9	64.3	26	29.9
	Mollusca	2	14.3	45	51.7
	Arthropoda	3	21.4	16	18.4
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	14		87	
12-2	Annelida	10	58.8	21	6.2
	Mollusca	3	17.6	6	1.8
	Arthropoda	3	17.6	308	90.9
	Echinodermata	0	0.0	0	0.0
	Other Taxa	1	5.9	4	1.2
	Total	17		339	
12-3	Annelida	19	57.6	102	5.2
	Mollusca	4	12.1	18	0.9
	Arthropoda	7	21.2	1,838	93.6
	Echinodermata	0	0.0	0	0.0
	Other Taxa	3	9.1	6	0.3
	Total	33		1,964	

Table 3. Continued:

Station	Phylum	No. of Taxa	% of Total	No. of Individuals	% of Total
13-2	Annelida	12	48.0	35	2.0
	Mollusca	3	12.0	5	0.3
	Arthropoda	9	36.0	1,716	97.7
	Echinodermata	0	0.0	0	0.0
	Other Taxa	1	4.0	1	0.1
	Total	25		1,757	
13-3	Annelida	3	50.0	6	66.7
	Mollusca	1	16.7	1	11.1
	Arthropoda	1	16.7	1	11.1
	Echinodermata	0	0.0	0	0.0
	Other Taxa	1	16.7	1	11.1
	Total	6		9	
14-2	Annelida	4	66.7	25	23.8
	Mollusca	1	16.7	79	75.2
	Arthropoda	1	16.7	1	1.0
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	6		105	
14-3	Annelida	7	53.8	150	72.1
	Mollusca	3	23.1	20	9.6
	Arthropoda	3	23.1	38	18.3
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	13		208	
15-2	Annelida	20	74.1	84	23.7
	Mollusca	0	0.0	0	0.0
	Arthropoda	7	25.9	270	76.3
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	27		354	
16-2	Annelida	15	57.7	97	11.5
	Mollusca	1	3.8	4	0.5
	Arthropoda	8	30.8	740	87.7
	Echinodermata	0	0.0	0	0.0
	Other Taxa	2	7.7	3	0.4
	Total	26		844	

Table 3. Continued:

Station	Phylum	No. of Taxa	% of Total	No. of Individuals	% of Total
16-3	Annelida	20	58.8	205	4.4
	Mollusca	2	5.9	83	1.8
	Arthropoda	9	26.5	4,400	93.7
	Echinodermata	0	0.0	0	0.0
	Other Taxa	3	8.8	9	0.2
	Total	34		4,697	
17-3	Annelida	20	64.5	254	34.8
	Mollusca	1	3.2	1	0.1
	Arthropoda	8	25.8	466	63.9
	Echinodermata	0	0.0	0	0.0
	Other Taxa	2	6.5	8	1.1
	Total	31		729	
18-2	Annelida	21	65.6	216	8.9
	Mollusca	1	3.1	11	0.5
	Arthropoda	7	21.9	2,188	90.4
	Echinodermata	0	0.0	0	0.0
	Other Taxa	3	9.4	6	0.2
	Total	32		2,421	
18-3	Annelida	12	46.2	308	62.9
	Mollusca	3	11.5	8	1.6
	Arthropoda	9	34.6	170	34.7
	Echinodermata	1	3.8	1	0.2
	Other Taxa	1	3.8	3	0.6
	Total	26		490	
19-1C	Annelida	19	76.0	163	49.1
	Mollusca	3	12.0	165	49.7
	Arthropoda	3	12.0	4	1.2
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	25		332	
20-2	Annelida	24	68.6	560	42.9
	Mollusca	1	2.9	1	0.1
	Arthropoda	9	25.7	744	57.0
	Echinodermata	0	0.0	0	0.0
	Other Taxa	1	2.9	1	0.1
	Total	35		1,306	

Table 3. Continued:

Station	Phylum	No. of Taxa	% of Total	No. of Individuals	% of Total
20-3	Annelida	19	63.3	372	21.0
	Mollusca	2	6.7	5	0.3
	Arthropoda	8	26.7	1,389	78.6
	Echinodermata	0	0.0	0	0.0
	Other Taxa	1	3.3	2	0.1
	Total	30		1,768	
20-4	Annelida	10	58.8	36	20.6
	Mollusca	2	11.8	5	2.9
	Arthropoda	4	23.5	120	68.6
	Echinodermata	0	0.0	0	0.0
	Other Taxa	1	5.9	14	8.0
	Total	17		175	
21-2	Annelida	16	84.2	161	55.7
	Mollusca	1	5.3	6	2.1
	Arthropoda	1	5.3	120	41.5
	Echinodermata	0	0.0	0	0.0
	Other Taxa	1	5.3	2	0.7
	Total	19		289	
22-2	Annelida	18	56.3	260	11.0
	Mollusca	5	15.6	56	2.4
	Arthropoda	7	21.9	2,052	86.5
	Echinodermata	0	0.0	0	0.0
	Other Taxa	2	6.3	5	0.2
	Total	32		2,373	
22-4	Annelida	5	41.7	18	52.9
	Mollusca	5	41.7	8	23.5
	Arthropoda	1	8.3	2	5.9
	Echinodermata	0	0.0	0	0.0
	Other Taxa	1	8.3	6	17.6
	Total	12		34	
22-5	Annelida	29	63.0	324	27.9
	Mollusca	3	6.5	34	2.9
	Arthropoda	9	19.6	738	63.6
	Echinodermata	0	0.0	0	0.0
	Other Taxa	5	10.9	64	5.5
	Total	46		1,160	

Table 3. Continued:

Station	Phylum	No. of Taxa	% of Total	No. of Individuals	% of Total
23-1	Annelida	15	62.5	496	91.2
	Mollusca	1	4.2	1	0.2
	Arthropoda	7	29.2	44	8.1
	Echinodermata	0	0.0	0	0.0
	Other Taxa	1	4.2	3	0.6
	Total	24		544	
23-3	Annelida	18	62.1	637	26.4
	Mollusca	1	3.4	2	0.1
	Arthropoda	9	31.0	1,773	73.4
	Echinodermata	0	0.0	0	0.0
	Other Taxa	1	3.4	2	0.1
	Total	29		2,414	
24-1	Annelida	20	55.6	138	27.2
	Mollusca	4	11.1	55	10.8
	Arthropoda	7	19.4	303	59.8
	Echinodermata	1	2.8	1	0.2
	Other Taxa	4	11.1	10	2.0
	Total	36		507	
24-3	Annelida	15	55.6	52	38.0
	Mollusca	5	18.5	40	29.2
	Arthropoda	2	7.4	25	18.2
	Echinodermata	1	3.7	2	1.5
	Other Taxa	4	14.8	18	13.1
	Total	27		137	
25-2	Annelida	15	50.0	778	34.9
	Mollusca	3	10.0	118	5.3
	Arthropoda	10	33.3	1,324	59.3
	Echinodermata	1	3.3	2	0.1
	Other Taxa	1	3.3	10	0.4
	Total	30		2,232	
26-3	Annelida	24	63.2	398	39.7
	Mollusca	3	7.9	15	1.5
	Arthropoda	10	26.3	584	58.3
	Echinodermata	0	0.0	0	0.0
	Other Taxa	1	2.6	5	0.5
	Total	38		1,002	

Table 3. Continued:

Station	Phylum	No. of Taxa	% of Total	No. of Individuals	% of Total
27-2	Annelida	18	60.0	475	81.9
	Mollusca	1	3.3	5	0.9
	Arthropoda	9	30.0	94	16.2
	Echinodermata	0	0.0	0	0.0
	Other Taxa	2	6.7	6	1.0
	Total	30		580	
27-3	Annelida	11	64.7	122	83.6
	Mollusca	2	11.8	3	2.1
	Arthropoda	3	17.6	17	11.6
	Echinodermata	0	0.0	0	0.0
	Other Taxa	1	5.9	4	2.7
	Total	17		146	
28-2	Annelida	21	67.7	152	17.7
	Mollusca	2	6.5	4	0.5
	Arthropoda	8	25.8	701	81.8
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	31		857	
28-3	Annelida	15	50.0	152	9.9
	Mollusca	6	20.0	26	1.7
	Arthropoda	7	23.3	1,361	88.3
	Echinodermata	0	0.0	0	0.0
	Other Taxa	2	6.7	2	0.1
	Total	30		1,541	
29-1	Annelida	16	69.6	625	68.6
	Mollusca	0	0.0	0	0.0
	Arthropoda	6	26.1	282	31.0
	Echinodermata	0	0.0	0	0.0
	Other Taxa	1	4.3	4	0.4
	Total	23		911	
29-3	Annelida	25	78.1	432	43.0
	Mollusca	2	6.3	42	4.2
	Arthropoda	5	15.6	530	52.8
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	32		1,004	

Table 3. Continued:

Station	Phylum	No. of Taxa	% of Total	No. of Individuals	% of Total
30-2	Annelida	15	55.6	1,110	75.5
	Mollusca	4	14.8	8	0.5
	Arthropoda	6	22.2	210	14.3
	Echinodermata	0	0.0	0	0.0
	Other Taxa	2	7.4	142	9.7
	Total	27		1,470	
30-4	Annelida	17	73.9	95	62.9
	Mollusca	1	4.3	1	0.7
	Arthropoda	4	17.4	54	35.8
	Echinodermata	0	0.0	0	0.0
	Other Taxa	1	4.3	1	0.7
	Total	23		151	
31-1	Annelida	12	66.7	37	44.6
	Mollusca	2	11.1	19	22.9
	Arthropoda	3	16.7	26	31.3
	Echinodermata	1	5.6	1	1.2
	Other Taxa	0	0.0	0	0.0
	Total	18		83	
31-3	Annelida	14	77.8	95	80.5
	Mollusca	1	5.6	3	2.5
	Arthropoda	3	16.7	20	16.9
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	18		118	
31-5	Annelida	19	55.9	266	53.0
	Mollusca	3	8.8	7	1.4
	Arthropoda	9	26.5	213	42.4
	Echinodermata	0	0.0	0	0.0
	Other Taxa	3	8.8	16	3.2
	Total	34		502	
32-1	Annelida	11	61.1	90	67.2
	Mollusca	2	11.1	6	4.5
	Arthropoda	5	27.8	38	28.4
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	18		134	

Table 3. Continued:

Station	Phylum	No. of Taxa	% of Total	No. of Individuals	% of Total
32-4	Annelida	18	66.7	554	68.6
	Arthropoda	6	22.2	206	25.5
	Mollusca	3	11.1	48	5.9
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	27		808	
32-5	Annelida	20	66.7	308	45.4
	Mollusca	1	3.3	4	0.6
	Arthropoda	8	26.7	365	53.8
	Echinodermata	0	0.0	0	0.0
	Other Taxa	1	3.3	1	0.1
	Total	30		678	
33-1	Annelida	14	56.0	216	65.7
	Mollusca	2	8.0	8	2.4
	Arthropoda	6	24.0	100	30.4
	Echinodermata	0	0.0	0	0.0
	Other Taxa	3	12.0	5	1.5
	Total	25		329	
33-2	Annelida	13	65.0	159	94.1
	Mollusca	1	5.0	2	1.2
	Arthropoda	5	25.0	7	4.1
	Echinodermata	0	0.0	0	0.0
	Other Taxa	1	5.0	1	0.6
	Total	20		169	
33-3	Annelida	8	100.0	9	100.0
	Mollusca	0	0.0	0	0.0
	Arthropoda	0	0.0	0	0.0
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	8		9	
33-4	Annelida	12	66.7	149	43.4
	Mollusca	1	5.6	1	0.3
	Arthropoda	5	27.8	193	56.3
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	18		343	

Table 3. Continued:

Station	Phylum	No. of Taxa	% of Total	No. of Individuals	% of Total
33-6	Annelida	17	65.4	213	62.5
	Mollusca	1	3.8	4	1.2
	Arthropoda	7	26.9	123	36.1
	Echinodermata	0	0.0	0	0.0
	Other Taxa	1	3.8	1	0.3
	Total	26		341	
34-2	Annelida	14	70.0	242	90.3
	Mollusca	3	15.0	13	4.9
	Arthropoda	1	5.0	2	0.7
	Echinodermata	0	0.0	0	0.0
	Other Taxa	2	10.0	11	4.1
	Total	20		268	
34-4	Annelida	15	62.5	437	88.3
	Mollusca	4	16.7	25	5.1
	Arthropoda	3	12.5	16	3.2
	Echinodermata	0	0.0	0	0.0
	Other Taxa	2	8.3	17	3.4
	Total	24		495	
35-1	Annelida	18	72.0	144	50.5
	Mollusca	1	4.0	1	0.4
	Arthropoda	5	20.0	135	47.4
	Echinodermata	0	0.0	0	0.0
	Other Taxa	1	4.0	5	1.8
	Total	25		285	
35-4	Annelida	12	70.6	33	38.8
	Mollusca	3	17.6	27	31.8
	Arthropoda	1	5.9	11	12.9
	Echinodermata	0	0.0	0	0.0
	Other Taxa	1	5.9	14	16.5
	Total	17		85	
36-4	Annelida	9	64.3	59	88.1
	Mollusca	1	7.1	2	3.0
	Arthropoda	3	21.4	4	6.0
	Echinodermata	0	0.0	0	0.0
	Other Taxa	1	7.1	2	3.0
	Total	14		67	
37-1	Annelida	19	63.3	572	90.2
	Mollusca	5	16.7	13	2.1
	Arthropoda	5	16.7	31	4.9
	Echinodermata	0	0.0	0	0.0
	Other Taxa	1	3.3	18	2.8
	Total	30		634	

Table 3. Continued:

Station	Phylum	No. of Taxa	% of Total	No. of Individuals	% of Total
37-2	Annelida	18	60.0	822	96.0
	Mollusca	3	10.0	8	0.9
	Arthropoda	8	26.7	22	2.6
	Echinodermata	0	0.0	0	0.0
	Other Taxa	1	3.3	4	0.5
	Total	30		856	
37-3	Annelida	23	74.2	170	86.7
	Mollusca	3	9.7	9	4.6
	Arthropoda	5	16.1	17	8.7
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	31		196	
38-2	Annelida	5	62.5	40	81.6
	Mollusca	1	12.5	7	14.3
	Arthropoda	2	25.0	2	4.1
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	8		49	
39-2	Annelida	11	73.3	63	37.3
	Mollusca	1	6.7	5	3.0
	Arthropoda	2	13.3	98	58.0
	Echinodermata	0	0.0	0	0.0
	Other Taxa	1	6.7	3	1.8
	Total	15		169	
39-3	Annelida	12	85.7	139	93.3
	Mollusca	0	0.0	0	0.0
	Arthropoda	2	14.3	10	6.7
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	14		149	
40-1	Annelida	8	80.0	42	36.5
	Mollusca	0	0.0	0	0.0
	Arthropoda	2	20.0	73	63.5
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	10		115	

Table 3. Continued:

Station	Phylum	No. of Taxa	% of Total	No. of Individuals	% of Total
41-1	Annelida	11	55.0	138	6.8
	Mollusca	5	25.0	8	0.4
	Arthropoda	4	20.0	1,897	92.9
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	20		2,043	
41-2	Annelida	6	46.2	79	31.9
	Mollusca	3	23.1	5	2.0
	Arthropoda	4	30.8	164	66.1
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	13		248	
41-3	Annelida	6	54.5	251	36.2
	Mollusca	1	9.1	1	0.1
	Arthropoda	4	36.4	441	63.6
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	11		693	
42-2	Annelida	9	60.0	67	78.8
	Mollusca	2	13.3	8	9.4
	Arthropoda	3	20.0	7	8.2
	Echinodermata	0	0.0	0	0.0
	Other Taxa	1	6.7	3	3.5
	Total	15		85	
43-1	Annelida	4	50.0	92	90.2
	Mollusca	2	25.0	6	5.9
	Arthropoda	2	25.0	4	3.9
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	8		102	
43-2	Annelida	4	66.7	83	11.7
	Mollusca	1	16.7	2	0.3
	Arthropoda	1	16.7	626	88.0
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	6		711	

Table 3. Continued:

Station	Phylum	No. of Taxa	% of Total	No. of Individuals	% of Total
44-3	Annelida	4	36.4	38	19.7
	Mollusca	1	9.1	2	1.0
	Arthropoda	6	54.5	153	79.3
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	11		193	
45-1	Annelida	12	75.0	311	90.1
	Mollusca	0	0.0	0	0.0
	Arthropoda	3	18.8	33	9.6
	Echinodermata	0	0.0	0	0.0
	Other Taxa	1	6.3	1	0.3
	Total	16		345	
45-2	Annelida	11	57.9	99	32.4
	Mollusca	2	10.5	5	1.6
	Arthropoda	6	31.6	202	66.0
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	19		306	
45-3	Annelida	10	58.8	728	21.8
	Mollusca	3	17.6	1,840	55.2
	Arthropoda	4	23.5	766	23.0
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	17		3,334	
45-4	Annelida	7	50.0	351	48.3
	Mollusca	2	14.3	47	6.5
	Arthropoda	5	35.7	328	45.2
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	14		726	
45-5	Annelida	3	42.9	190	88.8
	Mollusca	2	28.6	12	5.6
	Arthropoda	2	28.6	12	5.6
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	7		214	

Table 3. Continued:

Station	Phylum	No. of Taxa	% of Total	No. of Individuals	% of Total
46-2	Annelida	9	56.3	312	36.6
	Arthropoda	5	31.3	508	59.6
	Mollusca	2	12.5	33	3.9
	Echinodermata	0	0.0	0	0.0
	Other Taxa	0	0.0	0	0.0
	Total	16		853	
46-5	Annelida	11	57.9	981	56.6
	Mollusca	2	10.5	623	35.9
	Arthropoda	5	26.3	127	7.3
	Echinodermata	0	0.0	0	0.0
	Other Taxa	1	5.3	3	0.2
	Total	19		1,734	
47-1	Annelida	14	60.9	552	90.8
	Mollusca	0	0.0	0	0.0
	Arthropoda	6	26.1	16	2.6
	Echinodermata	0	0.0	0	0.0
	Other Taxa	3	13.0	40	6.6
	Total	23		608	
47-2	Annelida	17	73.9	590	76.8
	Mollusca	1	4.3	1	0.1
	Arthropoda	4	17.4	137	17.8
	Echinodermata	0	0.0	0	0.0
	Other Taxa	1	4.3	40	5.2
	Total	23		768	
47-5A	Annelida	19	65.5	391	70.7
	Mollusca	1	3.4	1	0.2
	Arthropoda	7	24.1	157	28.4
	Echinodermata	0	0.0	0	0.0
	Other Taxa	2	6.9	4	0.7
	Total	29		553	

Table 4. Distribution and abundance of taxa for the San Francisco Bay, stations, August 2001.

Taxon Name	Phylum	Class	No. of Individuals	% of Total	Cumulative %	Station Occurrence	% Station Occurrence
<i>Ampelisca abdita</i>	Art	Mala	20654	34.042	34.04	60	63
<i>Exogone lourei</i>	Ann	Poly	3723	6.136	40.18	33	34
Tubificidae (LPIL)	Ann	Olig	3226	5.317	45.49	84	88
<i>Photis brevipes</i>	Art	Mala	2669	4.399	49.89	14	15
<i>Gemma gemma</i>	Mol	Biva	2465	4.063	53.96	5	5
<i>Potamocorbula amurensis</i>	Mol	Biva	2375	3.914	57.87	27	28
<i>Streblospio benedicti</i>	Ann	Poly	2309	3.806	61.68	28	29
<i>Sinocorophium alienense</i>	Art	Mala	1813	2.988	64.66	23	24
<i>Monocorophium acherusicum</i>	Art	Mala	1605	2.645	67.31	31	32
<i>Leptocheilia dubia</i>	Art	Mala	1451	2.392	69.70	19	20
<i>Eudorella pacifica</i>	Art	Mala	1271	2.095	71.80	20	21
<i>Mediomastus californiensis</i>	Ann	Poly	1243	2.049	73.85	37	39
<i>Pseudopolydora diopatra</i>	Ann	Poly	1201	1.979	75.82	36	38
<i>Euchone limnicola</i>	Ann	Poly	1158	1.909	77.73	42	44
<i>Grandidierella japonica</i>	Art	Mala	1151	1.897	79.63	33	34
<i>Polycirrus</i> sp. P	Ann	Poly	897	1.478	81.11	13	14
<i>Sinocorophium sinense</i>	Art	Mala	712	1.174	82.28	16	17
<i>Schistomeringos annulata</i>	Ann	Poly	698	1.150	83.43	47	49
Bivalvia (LPIL)	Mol	Biva	693	1.142	84.57	56	58
<i>Typosyllis nipponica</i>	Ann	Poly	589	0.971	85.55	39	41
<i>Heteromastus filiformis</i>	Ann	Poly	567	0.935	86.48	37	39
<i>Nippoleucon himumensis</i>	Art	Mala	559	0.921	87.40	31	32
<i>Monocorophium insidiosum</i>	Art	Mala	531	0.875	88.28	13	14
<i>Sabaco americanus</i>	Ann	Poly	445	0.733	89.01	32	33
<i>Ampelisca</i> (LPIL)	Art	Mala	402	0.663	89.67	15	16
<i>Dipolydora socialis</i>	Ann	Poly	319	0.526	90.20	25	26
<i>Nereis succinea</i>	Ann	Poly	305	0.503	90.70	27	28
<i>Harmothoe imbricata</i>	Ann	Poly	301	0.496	91.20	44	46
<i>Cossura candida</i>	Ann	Poly	299	0.493	91.69	5	5
<i>Sphaerosyllis californiensis</i>	Ann	Poly	291	0.480	92.17	30	31
Corophiidae (LPIL)	Art	Mala	282	0.465	92.63	10	10
Actiniaria (LPIL)	Cni	Anth	251	0.414	93.05	23	24
<i>Cirriformia spirabrancha</i>	Ann	Poly	227	0.374	93.42	25	26
<i>Glycinde armigera</i>	Ann	Poly	212	0.349	93.77	47	49
<i>Americorophium stimpsoni</i>	Art	Mala	198	0.326	94.10	1	1
<i>Caprella californica</i>	Art	Mala	186	0.307	94.40	15	16
<i>Glycinde picta</i>	Ann	Poly	171	0.282	94.69	45	47
<i>Amaeana occidentalis</i>	Ann	Poly	170	0.280	94.97	27	28
<i>Capitella capitata</i>	Ann	Poly	170	0.280	95.25	23	24
<i>Paranthura elegans</i>	Art	Mala	147	0.242	95.49	28	29
<i>Polydora cornuta</i>	Ann	Poly	136	0.224	95.71	19	20
<i>Nephtys cornuta</i>	Ann	Poly	126	0.208	95.92	22	23
<i>Cossura</i> (LPIL)	Ann	Poly	122	0.201	96.12	14	15
<i>Nebalia pugettensis</i>	Art	Mala	109	0.180	96.30	1	1
<i>Heteromastus</i> (LPIL)	Ann	Poly	101	0.166	96.47	20	21
Ascidacea (LPIL)	Cho	Asci	95	0.157	96.62	10	10
<i>Pectinaria californiensis</i>	Ann	Poly	95	0.157	96.78	7	7
<i>Marenzelleria viridis</i>	Ann	Poly	91	0.150	96.93	10	10
Mytilidae (LPIL)	Mol	Biva	81	0.134	97.06	19	20
<i>Tharyx parvus</i>	Ann	Poly	78	0.129	97.19	11	11
<i>Scoletoma tetraura</i>	Ann	Poly	76	0.125	97.32	6	6
Caprellidae (LPIL)	Art	Mala	69	0.114	97.43	3	3
Cirratulidae (LPIL)	Ann	Poly	65	0.107	97.54	16	17
<i>Musculista senhousia</i>	Mol	Biva	64	0.105	97.64	13	14
Rhynchozoa (LPIL)	Rhy	-	61	0.101	97.75	15	16
Anthozoa (LPIL)	Cni	Anth	60	0.099	97.84	5	5
<i>Macoma balthica</i>	Mol	Biva	56	0.092	97.94	6	6
<i>Leitoscoloplos pugettensis</i>	Ann	Poly	52	0.086	98.02	22	23

Table 4. Continued:

Taxon Name	Phylum	Class	No. of Individuals	% of Total	Cumulative %	Station Occurrence	% Station Occurrence
<i>Malmgreniella macginitiei</i>	Ann	Poly	45	0.074	98.10	9	9
<i>Armandia brevis</i>	Ann	Poly	42	0.069	98.17	16	17
<i>Mysella tumida</i>	Mol	Biva	42	0.069	98.23	4	4
<i>Caprella</i> (LPIL)	Art	Mala	41	0.068	98.30	8	8
<i>Hypereteone lighti</i>	Ann	Poly	41	0.068	98.37	7	7
Hydrozoa (LPIL)	Cni	Hydr	37	0.061	98.43	13	14
<i>Chaetozone lunula</i>	Ann	Poly	29	0.048	98.48	13	14
Terebellidae (LPIL)	Ann	Poly	29	0.048	98.53	8	8
Capitellidae (LPIL)	Ann	Poly	27	0.045	98.57	10	10
Yoldiidae (LPIL)	Mol	Biva	27	0.045	98.62	5	5
<i>Spiophanes berkeleyorum</i>	Ann	Poly	26	0.043	98.66	5	5
Eunicidae (LPIL)	Ann	Poly	25	0.041	98.70	4	4
<i>Photis</i> (LPIL)	Art	Mala	24	0.040	98.74	2	2
Aoridae (LPIL)	Art	Mala	23	0.038	98.78	3	3
<i>Crepidula fornicata</i>	Mol	Gast	23	0.038	98.81	4	4
<i>Atylus</i> sp. B	Art	Mala	22	0.036	98.85	2	2
Lineidae (LPIL)	Rhy	Anop	22	0.036	98.89	8	8
Montacutidae (LPIL)	Mol	Biva	21	0.035	98.92	1	1
<i>Pinnixa</i> (LPIL)	Art	Mala	21	0.035	98.96	6	6
<i>Aglaja</i> (LPIL)	Mol	Gast	20	0.033	98.99	12	13
<i>Odostomia</i> (LPIL)	Mol	Gast	20	0.033	99.02	1	1
<i>Capitella</i> (LPIL)	Ann	Poly	18	0.030	99.05	9	9
<i>Nuculana taphria</i>	Mol	Biva	18	0.030	99.08	3	3
Phyllodocidae (LPIL)	Ann	Poly	18	0.030	99.11	12	13
Sabellidae (LPIL)	Ann	Poly	18	0.030	99.14	10	10
<i>Synidotea laticauda</i>	Art	Mala	18	0.030	99.17	9	9
Gastropoda (LPIL)	Mol	Gast	17	0.028	99.20	8	8
<i>Monocorophium</i> (LPIL)	Art	Mala	16	0.026	99.23	6	6
<i>Mya arenaria</i>	Mol	Biva	15	0.025	99.25	8	8
<i>Nereis</i> (LPIL)	Ann	Poly	15	0.025	99.27	6	6
<i>Sinocorophium</i> (LPIL)	Art	Mala	15	0.025	99.30	1	1
<i>Dulichella appendiculata</i>	Art	Mala	14	0.023	99.32	2	2
<i>Cirratulus spectabilis</i>	Ann	Poly	13	0.021	99.34	2	2
<i>Spiophanes kroeyeri</i>	Ann	Poly	13	0.021	99.37	5	5
<i>Yoldia</i> (LPIL)	Mol	Biva	13	0.021	99.39	2	2
<i>Ampithoe valida</i>	Art	Mala	12	0.020	99.41	3	3
<i>Lysidice ninetta</i>	Ann	Poly	12	0.020	99.43	3	3
<i>Polycirrus</i> (LPIL)	Ann	Poly	12	0.020	99.45	2	2
<i>Callianassa californiensis</i>	Art	Mala	11	0.018	99.46	2	2
<i>Heteromastus filobranchus</i>	Ann	Poly	11	0.018	99.48	6	6
<i>Heteropodarke heteromorpha</i>	Ann	Poly	11	0.018	99.50	1	1
<i>Monocorophium tuberculatum</i>	Art	Mala	11	0.018	99.52	3	3
<i>Pseudopolydora</i> (LPIL)	Ann	Poly	11	0.018	99.54	6	6
<i>Veneropsis philippinarum</i>	Mol	Biva	11	0.018	99.55	4	4
<i>Corbicula fluminea</i>	Mol	Biva	10	0.016	99.57	1	1
<i>Gnorimosphaeroma oregonense</i>	Art	Mala	10	0.016	99.59	4	4
Maldanidae (LPIL)	Ann	Poly	10	0.016	99.60	8	8
<i>Hypereteone fauchaldi</i>	Ann	Poly	9	0.015	99.62	4	4
<i>Chone duneri</i>	Ann	Poly	8	0.013	99.63	5	5
<i>Corophium</i> (LPIL)	Art	Mala	8	0.013	99.65	3	3
<i>Eudorella</i> (LPIL)	Art	Mala	8	0.013	99.66	1	1
<i>Leitoscoloplos</i> (LPIL)	Ann	Poly	8	0.013	99.67	4	4
<i>Leptochelia</i> (LPIL)	Art	Mala	8	0.013	99.69	1	1
<i>Tenonia priops</i>	Ann	Poly	8	0.013	99.70	4	4
<i>Americhelidium shoemakeri</i>	Art	Mala	7	0.012	99.71	3	3
<i>Capitella ovincola</i>	Ann	Poly	7	0.012	99.72	2	2
<i>Nephtys caecoides</i>	Ann	Poly	7	0.012	99.73	5	5
Ophiuroidea (LPIL)	Ech	Ophi	7	0.012	99.74	5	5
<i>Platynereis bicanaliculata</i>	Ann	Poly	6	0.010	99.75	4	4
<i>Apoprionospio pygmaea</i>	Ann	Poly	5	0.008	99.76	2	2

Table 4. Continued:

Taxon Name	Phylum	Class	No. of Individuals	% of Total	Cumulative %	Station Occurrence	% Station Occurrence
<i>Chaetozone spinosa</i>	Ann	Poly	5	0.008	99.77	1	1
<i>Spiophanes</i> (LPIL)	Ann	Poly	5	0.008	99.78	3	3
Syllidae (LPIL)	Ann	Poly	5	0.008	99.79	2	2
<i>Tubulanus</i> (LPIL)	Rhy	Anop	5	0.008	99.80	3	3
<i>Glycinde</i> (LPIL)	Ann	Poly	4	0.007	99.80	4	4
<i>Prionospio lighti</i>	Ann	Poly	4	0.007	99.81	2	2
Ampharetidae (LPIL)	Ann	Poly	3	0.005	99.81	3	3
<i>Amphiglena</i> sp. A	Ann	Poly	3	0.005	99.82	2	2
<i>Collembola</i> (LPIL)	Art	Inse	3	0.005	99.82	1	1
<i>Cossura pygodactylata</i>	Ann	Poly	3	0.005	99.83	2	2
<i>Listriella diffusa</i>	Art	Mala	3	0.005	99.83	2	2
<i>Macoma expansa</i>	Mol	Biva	3	0.005	99.84	1	1
Melitidae (LPIL)	Art	Mala	3	0.005	99.84	3	3
<i>Munnogonium tillerae</i>	Art	Mala	3	0.005	99.85	2	2
<i>Pholoe glabra</i>	Ann	Poly	3	0.005	99.85	2	2
<i>Pinnixa occidentalis</i>	Art	Mala	3	0.005	99.86	2	2
<i>Podarkeopsis glabra</i>	Ann	Poly	3	0.005	99.86	3	3
<i>Sphaerosyllis ranunculus</i>	Ann	Poly	3	0.005	99.87	1	1
Spionidae (LPIL)	Ann	Poly	3	0.005	99.87	3	3
Tellinidae (LPIL)	Mol	Biva	3	0.005	99.88	2	2
<i>Terebella ehrenbergi</i>	Ann	Poly	3	0.005	99.88	2	2
<i>Trachycardium quadragenarium</i>	Mol	Biva	3	0.005	99.89	3	3
Ampithoidae (LPIL)	Art	Mala	2	0.003	99.89	1	1
<i>Aphelochaeta monilaris</i>	Ann	Poly	2	0.003	99.89	1	1
<i>Caulleriella</i> sp. S	Ann	Poly	2	0.003	99.90	2	2
<i>Hemigrapsus oregonensis</i>	Art	Mala	2	0.003	99.90	1	1
<i>Lysidice</i> (LPIL)	Ann	Poly	2	0.003	99.90	1	1
<i>Mediomastus</i> (LPIL)	Ann	Poly	2	0.003	99.91	1	1
<i>Olivella</i> (LPIL)	Mol	Gast	2	0.003	99.91	1	1
<i>Pacificanthomysis nephrophthalma</i>	Art	Mala	2	0.003	99.91	1	1
<i>Prionospio</i> (LPIL)	Ann	Poly	2	0.003	99.92	2	2
<i>Prionospio steenstrupi</i>	Ann	Poly	2	0.003	99.92	1	1
<i>Pseudopolydora paucibranchiata</i>	Ann	Poly	2	0.003	99.92	1	1
<i>Rhepoxynius menziesi</i>	Art	Mala	2	0.003	99.93	1	1
<i>Sphaerosyllis</i> (LPIL)	Ann	Poly	2	0.003	99.93	2	2
<i>Streblosoma crassibranchia</i>	Ann	Poly	2	0.003	99.93	1	1
<i>Aricidea horikoshi</i>	Ann	Poly	1	0.002	99.94	1	1
Calypttraeidae (LPIL)	Mol	Gast	1	0.002	99.94	1	1
<i>Caprella</i> sp. D	Art	Mala	1	0.002	99.94	1	1
<i>Chaetozone hedgpethi</i>	Ann	Poly	1	0.002	99.94	1	1
<i>Chione californiensis</i>	Mol	Biva	1	0.002	99.94	1	1
Cnidaria (LPIL)	Cni	-	1	0.002	99.94	1	1
Cumacea (LPIL)	Art	Mala	1	0.002	99.95	1	1
<i>Cumella</i> (LPIL)	Art	Mala	1	0.002	99.95	1	1
<i>Diastylis</i> (LPIL)	Art	Mala	1	0.002	99.95	1	1
Diptera (LPIL)	Art	Inse	1	0.002	99.95	1	1
<i>Dirona albolineata</i>	Mol	Gast	1	0.002	99.95	1	1
<i>Eteone leptotes</i>	Ann	Poly	1	0.002	99.95	1	1
<i>Gitana calitemplado</i>	Art	Mala	1	0.002	99.96	1	1
Hesionidae (LPIL)	Ann	Poly	1	0.002	99.96	1	1
<i>Lamprops quadriplicata</i>	Art	Mala	1	0.002	99.96	1	1
<i>Lepidasthenia berkeleyae</i>	Ann	Poly	1	0.002	99.96	1	1
<i>Macoma</i> (LPIL)	Mol	Biva	1	0.002	99.96	1	1
<i>Magelona sacculata</i>	Ann	Poly	1	0.002	99.96	1	1
<i>Melinna oculata</i>	Ann	Poly	1	0.002	99.97	1	1
<i>Melita</i> (LPIL)	Art	Mala	1	0.002	99.97	1	1
<i>Melita dentata</i>	Art	Mala	1	0.002	99.97	1	1
<i>Munna</i> (LPIL)	Art	Mala	1	0.002	99.97	1	1
<i>Myxicola infundibulum</i>	Ann	Poly	1	0.002	99.97	1	1
<i>Nephtys californiensis</i>	Ann	Poly	1	0.002	99.97	1	1

Table 4. Continued:

Taxon Name	Phylum	Class	No. of Individuals	% of Total	Cumulative %	Station Occurrence	% Station Occurrence
Nereididae (LPIL)	Ann	Poly	1	0.002	99.98	1	1
<i>Nereis diversicolor</i>	Ann	Poly	1	0.002	99.98	1	1
<i>Notomastus</i> (LPIL)	Ann	Poly	1	0.002	99.98	1	1
<i>Oxyurostylis pacifica</i>	Art	Mala	1	0.002	99.98	1	1
<i>Paleanotus bellis</i>	Ann	Poly	1	0.002	99.98	1	1
<i>Paraphoxus milleri</i>	Art	Mala	1	0.002	99.98	1	1
<i>Parapleustes</i> (LPIL)	Art	Mala	1	0.002	99.99	1	1
<i>Paraprionospio pinnata</i>	Ann	Poly	1	0.002	99.99	1	1
<i>Phoronis</i> (LPIL)	Pho	–	1	0.002	99.99	1	1
<i>Pista wui</i>	Ann	Poly	1	0.002	99.99	1	1
<i>Poecilochaetus johnsoni</i>	Ann	Poly	1	0.002	99.99	1	1
<i>Protomedeia</i> (LPIL)	Art	Mala	1	0.002	99.99	1	1
<i>Sigambra tentaculata</i>	Ann	Poly	1	0.002	100.00	1	1
<i>Siliqua</i> (LPIL)	Mol	Biva	1	0.002	100.00	1	1
<i>Spiochaetopterus oculatus</i>	Ann	Poly	1	0.002	100.00	1	1
<i>Spiophanes bombyx</i>	Ann	Poly	1	0.002	100.00	1	1

Taxa Key

Ann = Annelida

Olig = Oligochaeta

Poly = Polychaeta

Art = Arthropoda

Inse = Insecta

Mala = Malacostraca

Cho = Chordata

Asci = Ascidiacea

Cni = Cnidaria

Anth = Anthozoa

Hydr = Hydrozoa

Ech = Echinodermata

Ophi = Ophiuroidea

Mol = Mollusca

Biva = Bivalvia

Gast = Gastropoda

Pho = Phoronida

Rhy = Rhynchocoela

Anop = Anopla

Table 5. Continued:

Taxa	14-2	14-3	15-2	16-2	16-3	17-3	18-2	18-3	19-1C	20-2	20-3	20-4	21-2
Amelida													
Oligochaeta													
Tubificidae (LPIL)													
Polychaeta													
<i>Aporionospio pygmaea</i>								24.9					27.3
<i>Capitella</i> (LPIL)								23.3					
<i>Capitella capitata</i>													
Cirratulidae (LPIL)													
<i>Cirriformia spirabrancha</i>													
<i>Cossura candida</i>													
<i>Euchone limnicola</i>													
<i>Exogone laurei</i>													
<i>Glycinde</i> (LPIL)													
<i>Glycinde picta</i>													
<i>Harmothoe imbricata</i>													
<i>Heteromastus</i> (LPIL)													
<i>Heteromastus filiformis</i>		16.3											
<i>Marenzelleria viridis</i>													
<i>Mediomastus californiensis</i>												12.0	
<i>Nephtys caecoides</i>													
<i>Nereis succinea</i>													
<i>Pectinaria californiensis</i>													
<i>Polycirrus</i> sp. P													
<i>Pseudopolydora diopatra</i>													
<i>Sabaco americanus</i>													
<i>Schistomeringos annulata</i>													
<i>Streblospio benedicti</i>	15.2	45.2											
<i>Tharyx parvus</i>													
<i>Typosyllis nipponica</i>										12.5			

Table 5. Continued:

Taxa	22-2	22-4	22-5	23-1	23-3	24-1	24-3	25-2	26-3	27-2	27-3	28-2	28-3
Arthropoda													
Malacostraca													
<i>Americorophium stimpsoni</i>													
<i>Ampelisca</i> (LPIL)													
<i>Ampelisca abdita</i>	57.0		56.2		36.0	25.8		24.6				76.0	84.6
Cumacea (LPIL)													
<i>Eudorella pacifica</i>						24.1	17.5	13.4					
<i>Grandiderella japonica</i>													
<i>Lamprops quadruplicata</i>													
<i>Leptochelia dubia</i>					19.8								
<i>Monocorophium acherusicum</i>													
<i>Monocorophium insidiosum</i>													
<i>Nebalia pugettensis</i>													
<i>Nippoleucon himmense</i>													
<i>Photis brevipes</i>													
<i>Sinocorophium alienense</i>	12.5							12.7					
<i>Sinocorophium sinense</i>									31.0	10.3			
Cnidaria													
Anthozoa													
Aciniaria (LPIL)													
Hydrozoa													
Hydrozoa (LPIL)													
Mollusca													
Bivalvia													
Bivalvia (LPIL)													
<i>Corbicula fluminea</i>							24.8						
<i>Gemma gemma</i>													
<i>Musculista senhousia</i>													
<i>Nuculana taphria</i>													
<i>Potamocorbula amurensis</i>													
<i>Stiqua</i> (LPIL)													
Rhynchocoela													
Rhynchocoela (LPIL)							26.1						

Table 5. Continued:

Taxa	33-4	33-6	34-2	34-4	35-1	35-4	36-4	37-1	37-2	37-3	38-2	39-2	39-3
Amelida													
Oligochaeta													
Tubificidae (LPIL)	27.3	35.8	63.4										
Polychaeta													
<i>Aporionospio pygmaea</i>													
<i>Capitella</i> (LPIL)				14.5									
<i>Capitella capitata</i>													
Cirratulidae (LPIL)													
<i>Cirriformia spirabrancha</i>													
<i>Cossura candida</i>													
<i>Euchone limnicola</i>													
<i>Exogone laurei</i>					26.7				18.9	10.2			
<i>Glycinde</i> (LPIL)													
<i>Glycinde picta</i>													
<i>Harmothoe imbricata</i>							10.4						
<i>Heteromastus</i> (LPIL)													
<i>Heteromastus filiformis</i>													
<i>Marenzelleria viridis</i>													
<i>Mediomastus californiensis</i>													
<i>Nephtys caecoides</i>													
<i>Nereis succinea</i>													
<i>Pectinaria californiensis</i>													
<i>Polycirrus</i> sp. P													
<i>Pseudopolydora diopatra</i>				43.2					53.7	16.8			
<i>Sabaco americana</i>							35.8		62.3	11.7	34.7	14.2	20.1
<i>Schistomeringos annulata</i>			10.4										
<i>Streblospio benedicti</i>													
<i>Tharyx parvus</i>							16.4						
<i>Typosyllis nipponica</i>											32.7		46.3

Table 5. Continued:

Taxa	46-2	46-5	47-1	47-2	47-5A
Amelita					
Oligochaeta					
Tubificidae (LPIL)		22.6	15.5	25.1	
Polychaeta					
<i>Aporionospio pygmaea</i>					
<i>Capitella</i> (LPIL)					
<i>Capitella capitata</i>					
Cirratulidae (LPIL)					
<i>Cirriformia spirabrancha</i>					
<i>Cossura candida</i>					
<i>Euchone limnicola</i>					24.6
<i>Exogone laurei</i>			61.3	46.9	
<i>Glycinde</i> (LPIL)					
<i>Glycinde picta</i>					
<i>Harmothoe imbricata</i>					
<i>Heteromastus</i> (LPIL)					
<i>Heteromastus filiformis</i>					
<i>Marenzelleria viridis</i>					
<i>Mediomastus californiensis</i>					
<i>Nephtys caecoides</i>					
<i>Nereis succinea</i>					
<i>Pectinaria californiensis</i>					
<i>Polycirrus</i> sp. P					
<i>Pseudopolydora diopatra</i>					16.8
<i>Sabaco americanus</i>					
<i>Schistomeringos annulata</i>					
<i>Streblospio benedicti</i>	20.4	30.1			12.5
<i>Tharyx parvus</i>					
<i>Typosyllis nipponica</i>					

Table 5. Continued:

Taxa	46-2	46-5	47-1	47-2	47-5A
Arthropoda					
Malacostraca					
<i>Americorophium stimpsoni</i>					
<i>Ampelisca</i> (LPIL)					
<i>Ampelisca abdita</i>					
Cumacea (LPIL)					
<i>Eudorella pacifica</i>					
<i>Grandiderella japonica</i>	19.3				10.7
<i>Lamprops quadruplicata</i>					
<i>Leptochelia dubia</i>					
<i>Monocorophium acherusicum</i>		23.0			
<i>Monocorophium insidiosum</i>					
<i>Nebalia pugettensis</i>					
<i>Nippoleucon himmense</i>	10.4			14.2	
<i>Photis brevipes</i>					
<i>Sinocorophium alienense</i>					
<i>Sinocorophium sinense</i>					
Cnidaria					
Anthozoa					
Aciniaria (LPIL)					
Hydrozoa					
Hydrozoa (LPIL)					
Mollusca					
Bivalvia					
Bivalvia (LPIL)					
<i>Corbicula fluminea</i>					
<i>Gemma gemma</i>		35.9			
<i>Musculista senhousia</i>					
<i>Nuculana taphria</i>					
<i>Potamocorbula amurensis</i>					
<i>Stiqua</i> (LPIL)					
Rhynchocoela					
Rhynchocoela (LPIL)					

Table 6. Summary of the benthic macroinfaunal data for the San Francisco Bay stations, August 2001.

Station	Rep	Taxa	Indvs	Density	H' Diversity	J' Evenness
1-1	1	5	43	1075	1.10	0.68
1-3	1	2	4	100	0.56	0.81
2-1	1	4	12	300	1.29	0.93
2-3	1	4	21	525	1.00	0.72
3-2	1	7	20	500	1.73	0.89
4-1	1	7	56	1400	1.54	0.79
4-3	1	3	75	1875	0.58	0.53
5-3	1	11	542	13550	1.10	0.46
5-4	1	4	449	11225	0.39	0.28
6-2	1	7	168	4200	1.33	0.68
6-3	1	4	491	12275	0.12	0.08
6-5	1	2	2	50	0.69	1.00
7-2	1	7	28	700	1.51	0.78
7-3	1	5	507	12675	0.18	0.11
7-5	1	6	414	10350	0.67	0.37
8-2	1	15	463	11575	2.05	0.76
9-1	1	9	111	2775	1.18	0.54
9-3	1	11	473	11825	0.76	0.32
10-2	1	13	357	8925	1.72	0.67
11-2	1	11	787	19675	1.15	0.48
11-4	1	14	315	7875	1.09	0.41
11-5	1	14	87	2175	1.90	0.72
12-2	1	17	339	8475	1.39	0.49
12-3	1	33	1964	49100	0.76	0.22
13-2	1	25	1757	43925	0.45	0.14
13-3	1	6	9	225	1.68	0.94
14-2	1	6	105	2625	0.83	0.46
14-3	1	13	208	5200	1.71	0.67
15-2	1	27	354	8850	1.51	0.46
16-2	1	26	844	21100	2.22	0.68
16-3	1	34	4697	117425	1.49	0.42

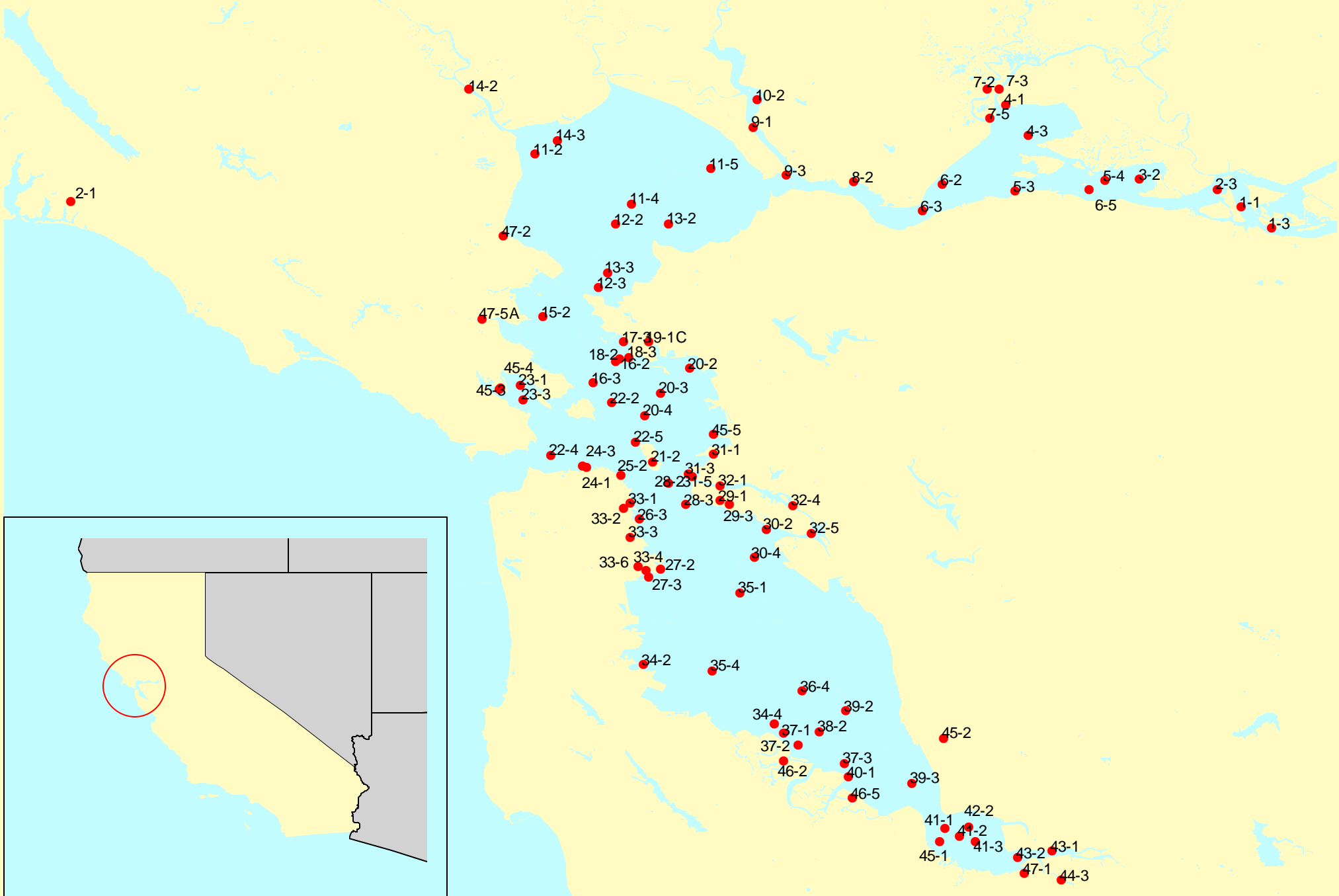
Table 6. Continued:

Station	Rep	Taxa	Indvs	Density	H' Diversity	J' Evenness
17-3	1	31	729	18225	2.32	0.68
18-2	1	32	2421	60525	1.33	0.38
18-3	1	26	490	12250	2.12	0.65
19-1C	1	25	332	8300	1.99	0.62
20-2	1	35	1306	32650	2.24	0.63
20-3	1	30	1768	44200	1.65	0.48
20-4	1	17	175	4375	1.54	0.54
21-2	1	19	289	7225	1.83	0.62
22-2	1	32	2373	59325	1.52	0.44
22-4	1	12	34	850	2.11	0.85
22-5	1	46	1160	29000	1.85	0.48
23-1	1	24	544	13600	1.27	0.40
23-3	1	29	2414	60350	1.89	0.56
24-1	1	36	507	12675	2.41	0.67
24-3	1	27	137	3425	2.58	0.78
25-2	1	30	2232	55800	2.23	0.66
26-3	1	38	1002	25050	2.45	0.67
27-2	1	30	580	14500	2.54	0.75
27-3	1	17	146	3650	2.02	0.71
28-2	1	31	857	21425	1.11	0.32
28-3	1	30	1541	38525	0.85	0.25
29-1	1	23	911	22775	1.37	0.44
29-3	1	32	1004	25100	2.13	0.61
30-2	1	27	1470	36750	2.04	0.62
30-4	1	23	151	3775	2.26	0.72
31-1	1	18	83	2075	2.35	0.81
31-3	1	18	118	2950	2.24	0.77
31-5	1	34	502	12550	2.33	0.66
32-1	1	18	134	3350	2.15	0.74
32-4	1	27	808	20200	2.53	0.77
32-5	1	30	678	16950	1.72	0.50
33-1	1	25	329	8225	2.45	0.76

Table 6. Continued:

Station	Rep	Taxa	Indvs	Density	H' Diversity	J' Evenness
33-2	1	20	169	4225	1.71	0.57
33-3	1	7	8	200	1.91	0.98
33-4	1	19	344	8600	2.07	0.70
33-6	1	26	341	8525	2.28	0.70
34-2	1	20	268	6700	1.56	0.52
34-4	1	24	495	12375	2.02	0.64
35-1	1	25	285	7125	1.98	0.61
35-4	1	17	85	2125	2.44	0.86
36-4	1	14	67	1675	2.09	0.79
37-1	1	30	634	15850	1.73	0.51
37-2	1	30	856	21400	1.78	0.52
37-3	1	31	196	4900	2.88	0.84
38-2	1	8	49	1225	1.58	0.76
39-2	1	15	169	4225	1.59	0.59
39-3	1	14	149	3725	1.77	0.67
40-1	1	10	115	2875	1.24	0.54
41-1	1	20	2043	51075	0.47	0.16
41-2	1	13	248	6200	1.30	0.51
41-3	1	11	693	17325	1.16	0.48
42-2	1	15	85	2125	1.79	0.66
43-1	1	8	102	2550	1.26	0.61
43-2	1	6	711	17775	0.48	0.27
44-3	1	11	193	4825	1.28	0.53
45-1	1	16	345	8625	1.09	0.39
45-2	1	19	306	7650	1.86	0.63
45-3	1	17	3334	83350	1.45	0.51
45-4	1	14	726	18150	1.31	0.50
45-5	1	7	214	5350	0.84	0.43
46-2	1	16	853	21325	2.06	0.74
46-5	1	19	1734	43350	1.53	0.52
47-1	1	23	608	15200	1.43	0.46
47-2	1	23	768	19200	1.56	0.50
47-5A	1	29	553	13825	2.37	0.70

Figure 1. Locations of the San Francisco Bay stations, August 2001.



10 0 10 20 Miles



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Figure 2. Bottom salinity the San Francisco Bay stations, August 2001.

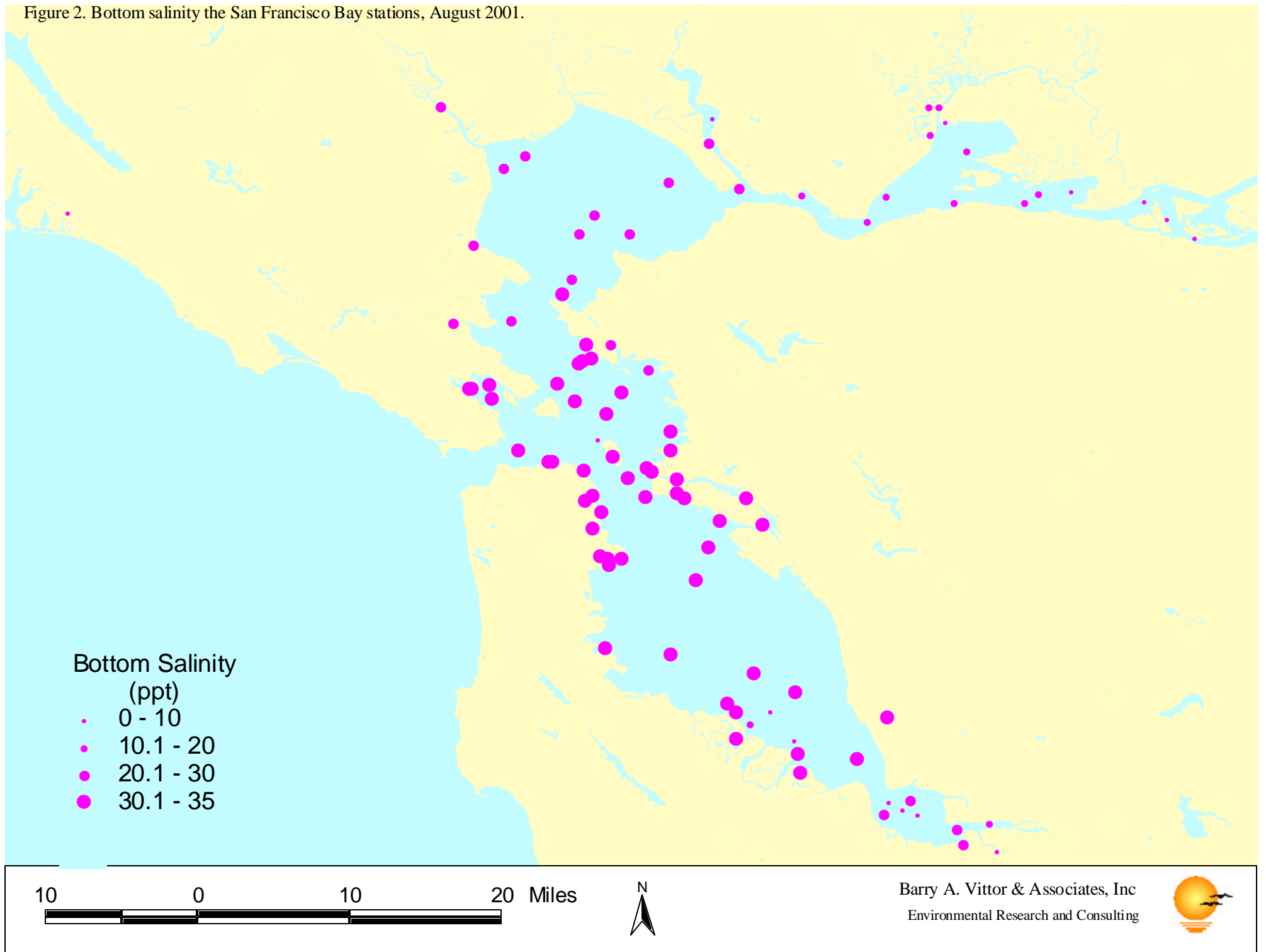


Figure 3. Distribution and abundance of dominant taxa for the San Francisco Bay stations, August 2000.

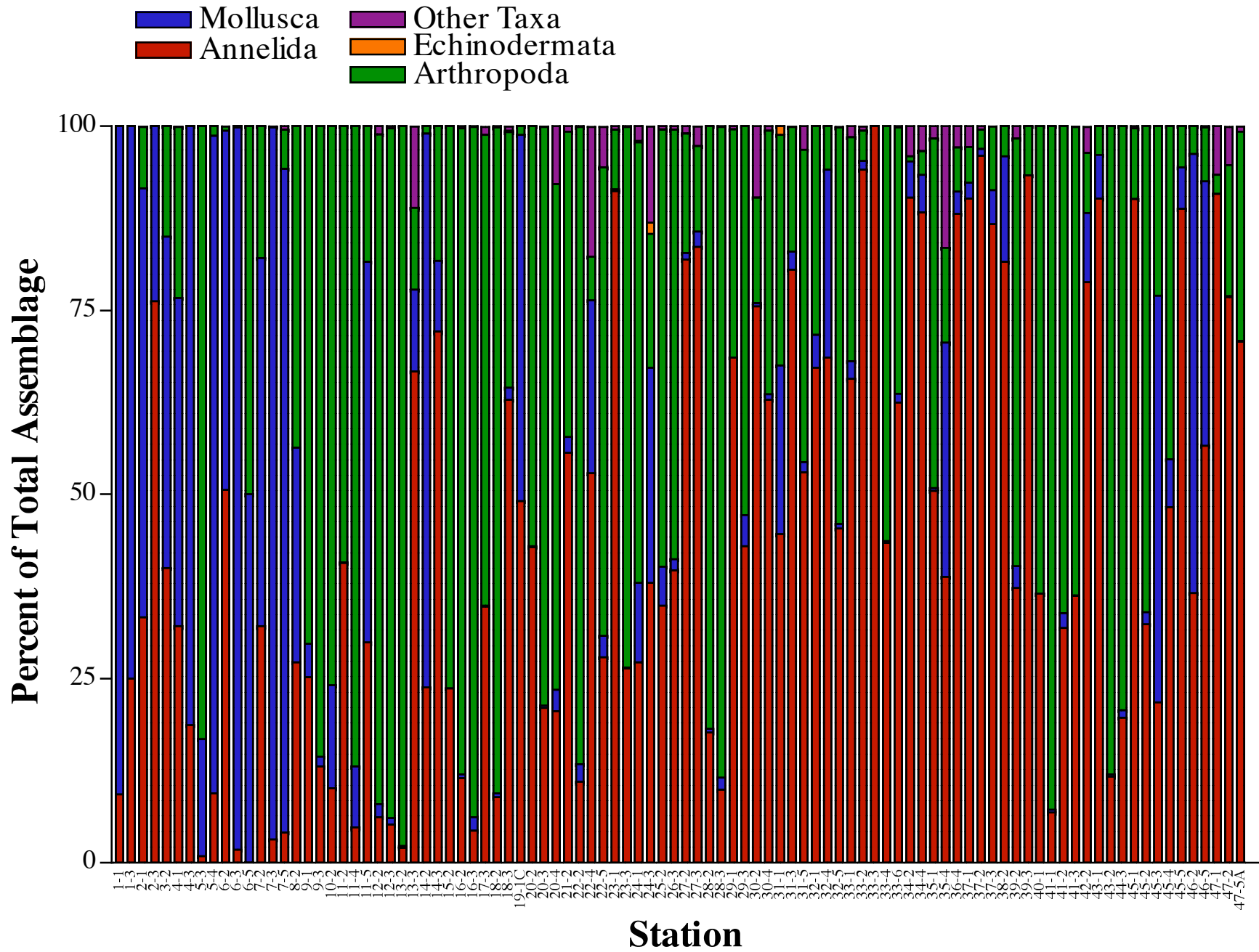


Figure 4. Taxa richness for the San Francisco Bay stations, August 2001.

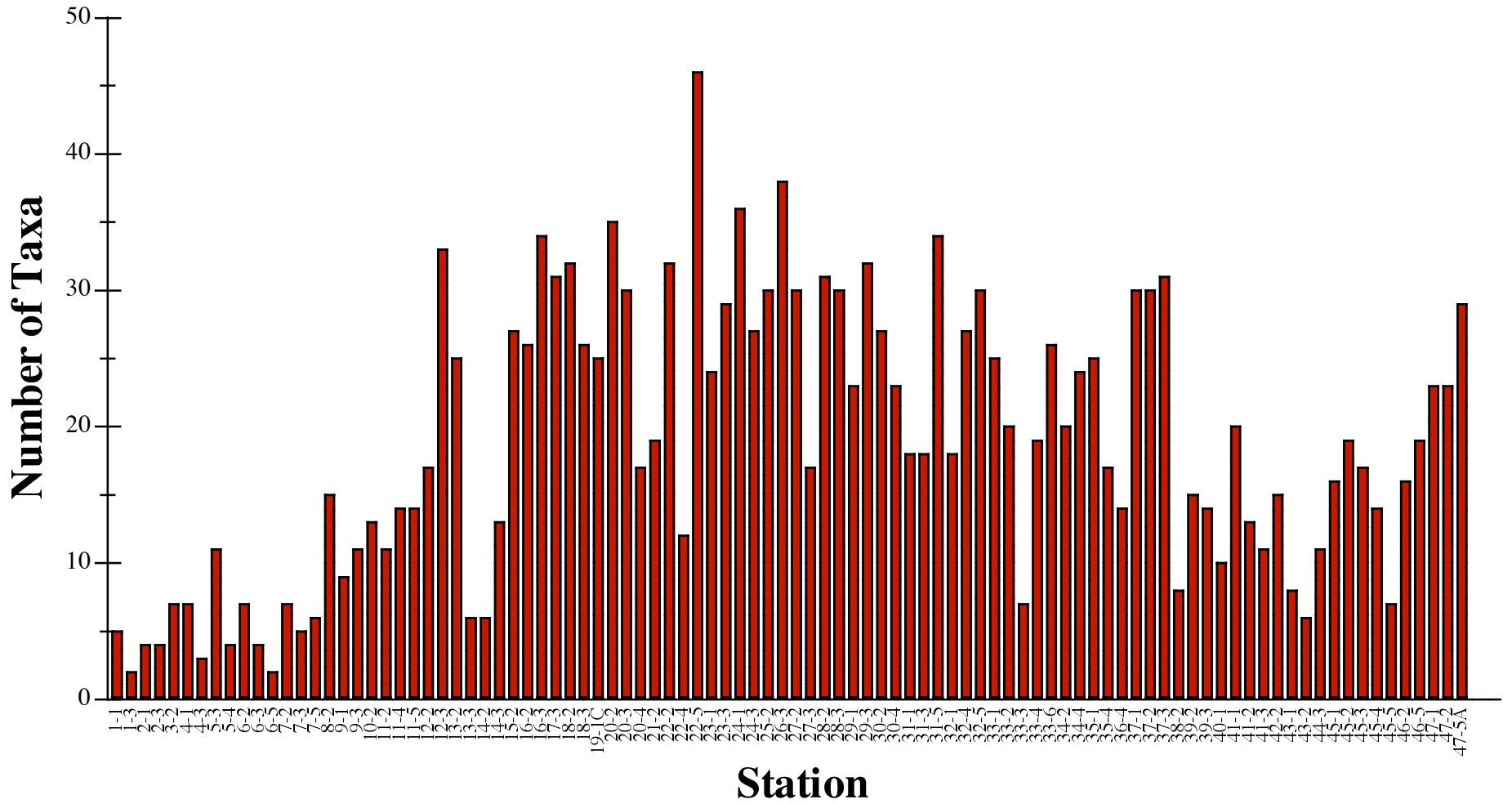
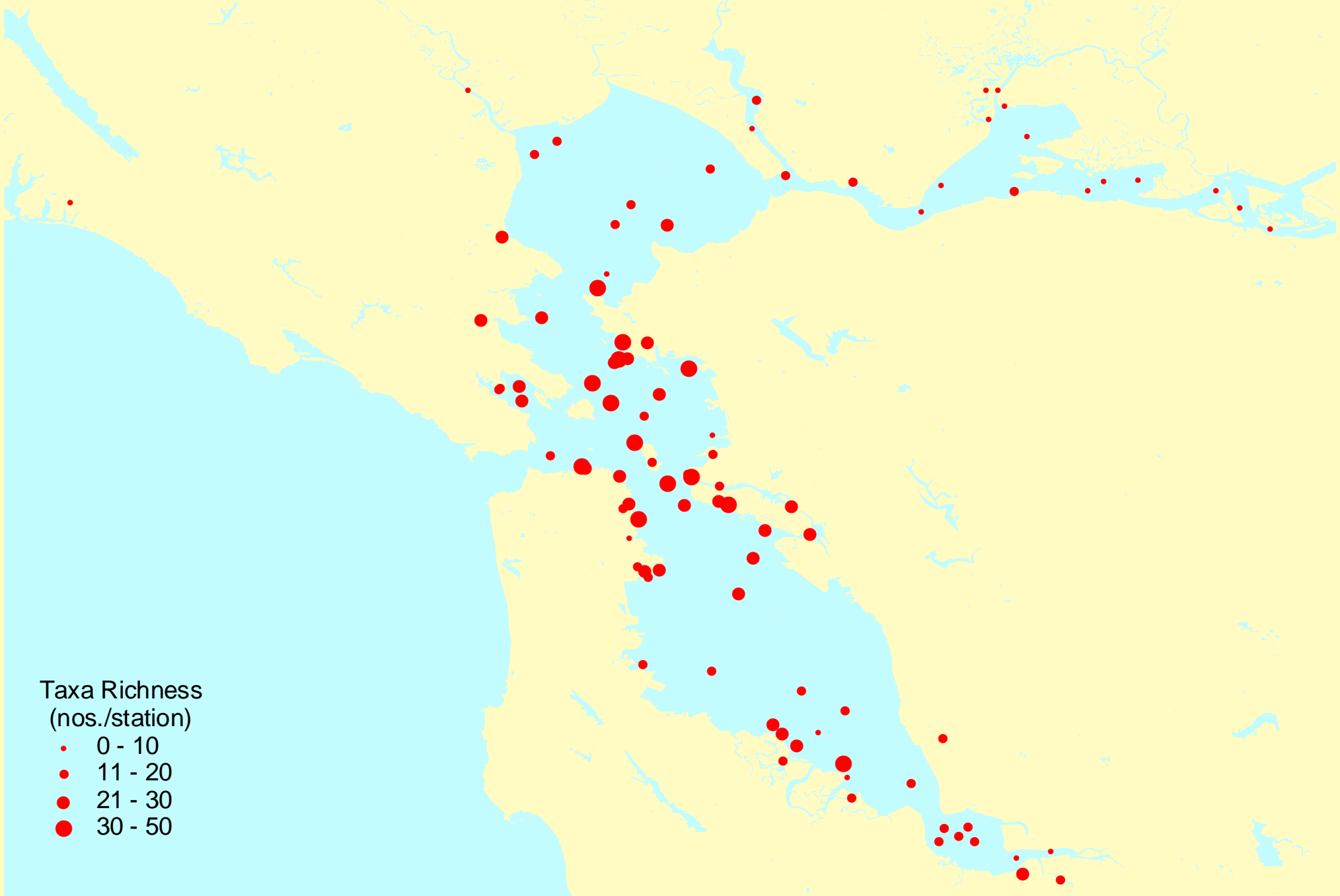


Figure 5. Taxa richness for the San Francisco Bay stations, August 2001.



Taxa Richness
(nos./station)

- 0 - 10
- 11 - 20
- 21 - 30
- 30 - 50

10 0 10 20 Miles



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Figure 6. Taxa density data for the San Francisco Bay stations, August 2001.

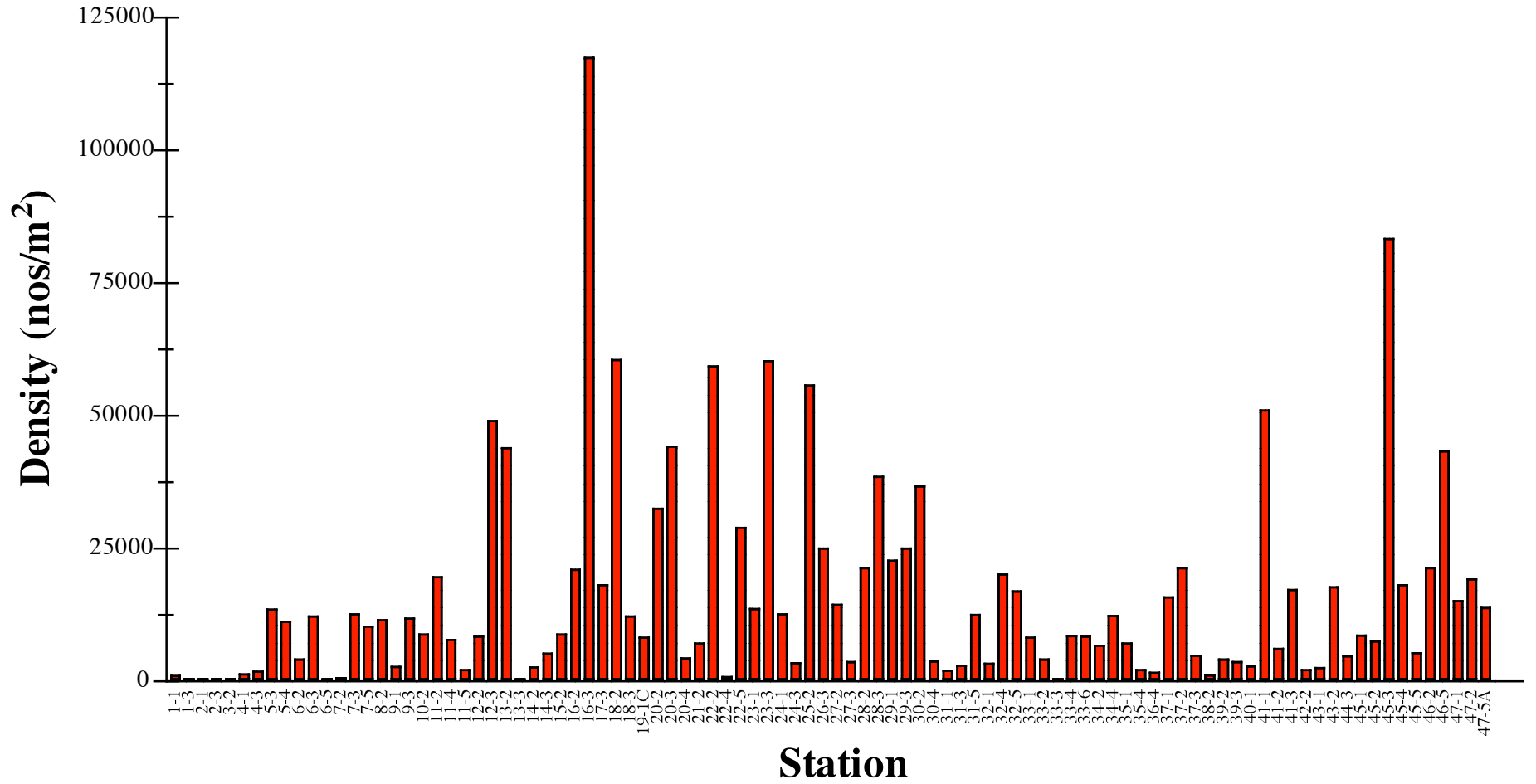
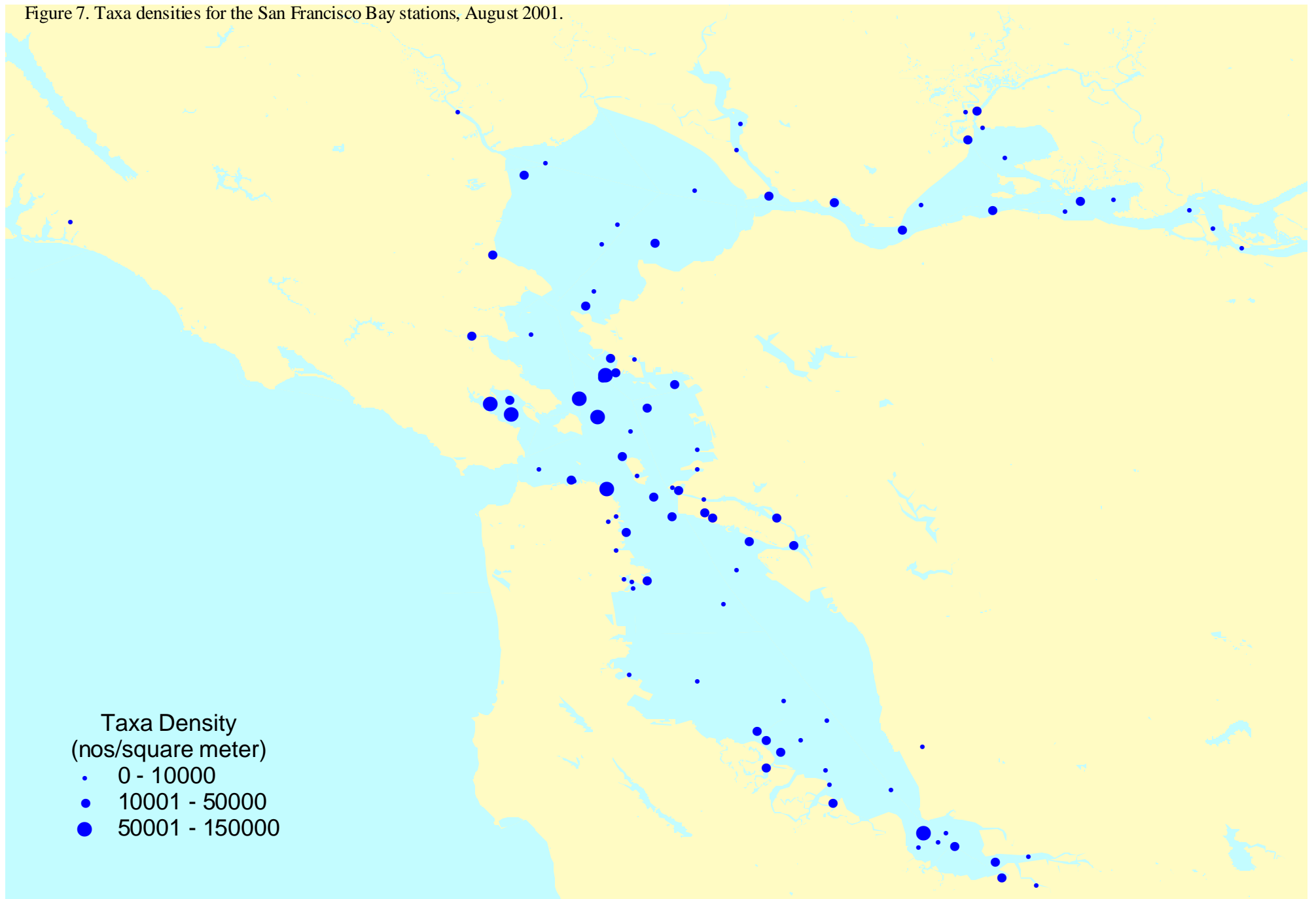


Figure 7. Taxa densities for the San Francisco Bay stations, August 2001.



Taxa Density
(nos/square meter)

- 0 - 10000
- 10001 - 50000
- 50001 - 150000

10 0 10 20 Miles



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Figure 8. Taxa diversity (H') data for the San Francisco Bay stations, August 2001.

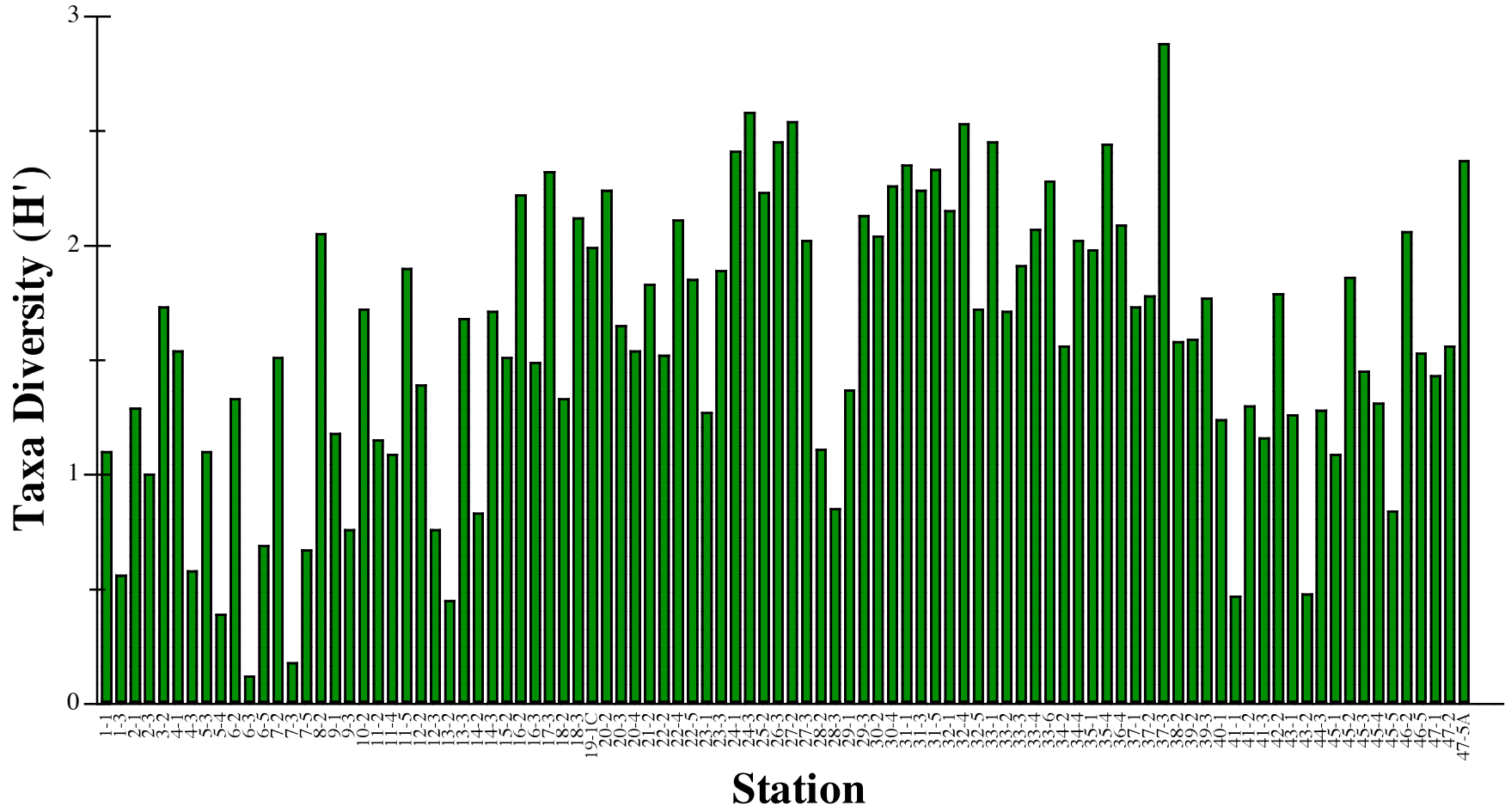
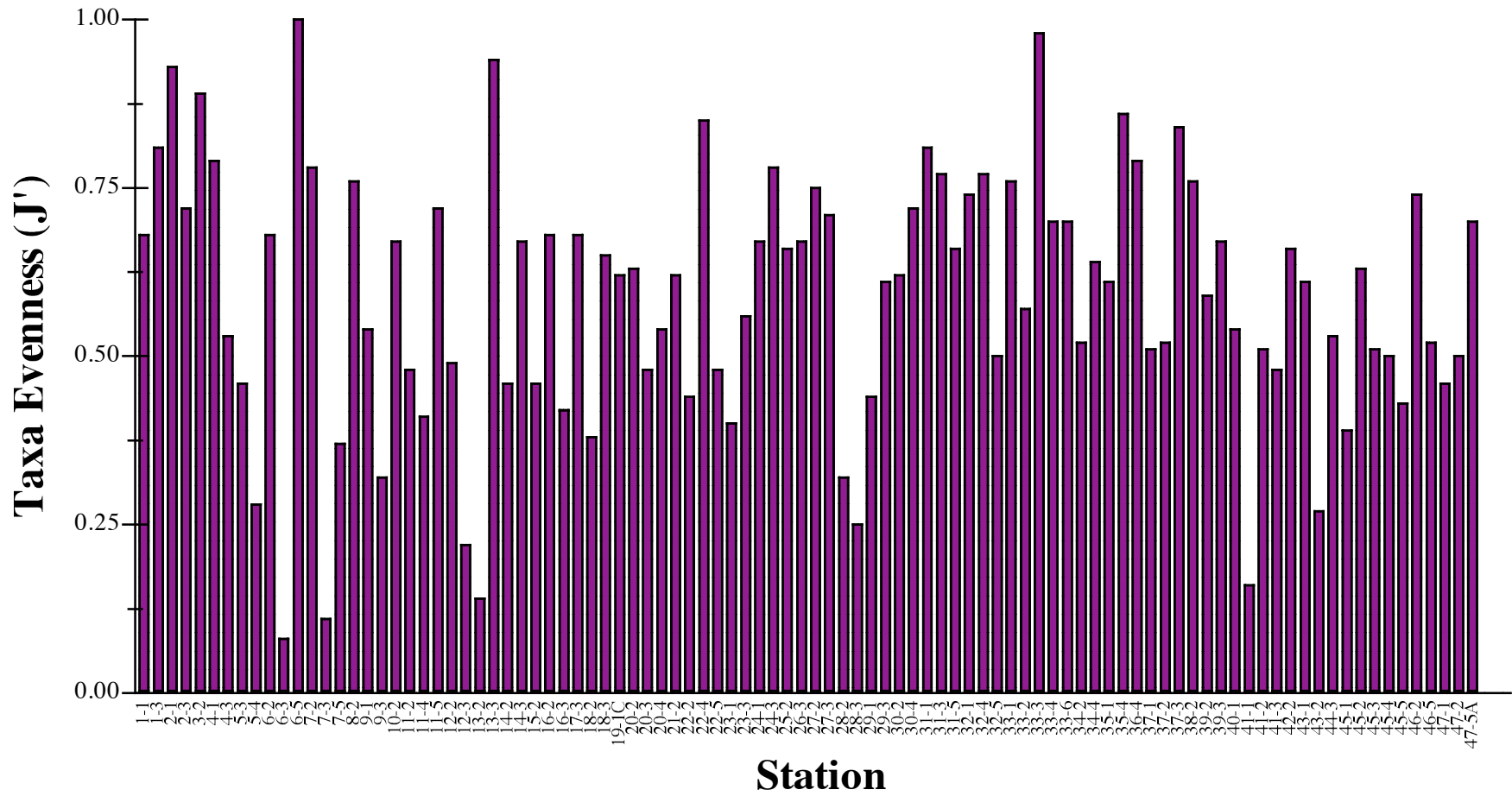


Figure 9. Taxa evenness (J') data for the San Francisco Bay stations, August 2001.



QUALITY ASSURANCE STATEMENT

Client/Project **NOAA**

Work Assignment Title **San Francisco Bay 2001**

Work Assignment Number

Task Number **Opt 1-8**

Description of Data Set or Deliverable: **96 Benthic macroinvertebrate samples collected August, 2001; 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-San Francisco Bay 2001

Task Number DO Opt 1-8

Sorting Results:	Sample #	% Accuracy
	33-4	100%
	10-2	100%
	3-2	100%
	7-2	100%
	43-1	100%
	45-5	100%
	31-3	100%
	44-3B	100%
	23-1	100%
	41-2	100%
	35-4	100%

Taxonomy Results:	Sample #	Taxa	% Accuracy
	37-2	Crust./Moll.	100%
	18-3	Crust./Moll.	99%
	29-1	Crust./Moll.	99%
	20-2	Crust./Moll.	99%
	4-3	Crust./Moll.	100%
	31-1	Crust./Moll.	100%
	43-1	Crust./Moll.	100%
	11-4	Crust./Moll.	98%
	24-3	Crust./Moll.	99%
	33-2	Crust./Moll.	100%
	46-2	Poly./Misc.	99%
	8-2	Poly./Misc.	99%
	39-2	Poly./Misc.	97%
	33-2	Poly./Misc.	100%
	6-2	Poly./Misc.	99%
	19-1C	Poly./Misc.	99%
	26-3	Poly./Misc.	98%
	30-4	Poly./Misc.	100%
	38-2	Poly./Misc.	100%
	15-2	Poly./Misc.	96%

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

Signature of QA Officer or Reviewer

Date