

FINAL REPORT

on

**RESULTS OF A SEASONAL SURVEY OF BENTHIC
MACROFAUNA FROM FOUR SITES IN CASCO BAY, MAINE**

Contract No. CON VENDOR 18ANON00929754

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to

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Augusta, Maine 04333**

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INTRODUCTION

The first systematic and comprehensive benthic assessment survey of Casco Bay was completed in April of 1980. This study, which involved over 50 stations from throughout the Bay, produced baselines of macrobenthic community structure, trace metals, PCB's, PAH's and other sediment parameters. Results of several aspects of this survey are available in the form of reports (Larsen, *et al.* 1983a) and publications (Larsen, *et al.* 1983b, 1983c, 1983d and Larsen, *et al.* 1984).

Based on the results of the Casco Bay survey, a benthic monitoring program was instituted in September 1980. Initially, the monitoring program was designed around quarterly sampling at six representative sites. Over the next four years funding realities caused a progressive reduction in both the number of sites and the frequency of sampling until the program was terminated at the end of 1984. Nevertheless, the program produced a 5-year time series of samples which is unprecedented in the Gulf of Maine region. These samples are archived at the Bigelow Laboratory for Ocean Sciences. The completion of the processing and analyzing of this time series is important because no estimates of seasonal or interannual variability presently exist for the macrobenthic communities of the northern Gulf of Maine. This information gap greatly limits the ability of scientists and managers to draw conclusions from any subsequent one-time or short-term surveys.

In December 1989, funding was received from the Maine Department of Environmental Protection to complete the processing of benthic macrofaunal samples from four representative Casco Bay sites over a complete seasonal cycle. This report presents the data resulting from this effort.

METHODS

In the summer of 1980, six sites in the Casco Bay region were selected for monitoring. After only two seasons, the two most offshore sites had to be abandoned owing to the impracticality of routinely occupying them with the vessel available to the program. Nevertheless,

four sites (13, 20, 29 and 51) in the Bay were sampled quarterly for one year and two sites, 20 and 29, were occupied systematically until September of 1984 (Fig. 1). Sampling dates and replication are presented in Table 1.

Table 1. Casco Bay monitoring sites and sampling dates. Table indicates the number of faunal replicates taken and, in parentheses, the number processed, if different, for this report.

<u>Date:</u>	9/80	12/80	4/81	7/81
13	5(3)	5(3)	5(3)	5(3)
20	5	5	5	5
29	5	5	5	5
51	5(3)	5(3)	5(3)	4(3)

Each station consisted of six 0.1m² Smith-McIntyre grabs, the first five used for faunal analysis and the sixth for sediment and chemical contaminant analysis (please see associated report). In July 1981 at site 51, equipment failure limited us to four replicate samples. The faunal samples were carefully sieved on nested 1.00 and 0.50mm screens, fixed in 5% formalin and preserved in 70% ethanol. All organisms were removed from the samples, identified and counted using a low-power dissecting microscope. All sample residues were examined by a supervisor to insure a complete recovery of organisms. Samples which had been archived for an extended period of time were rinsed on a 0.45mm screen to compensate for possible shrinkage by the preservative.

Sediment samples from the first three sampling dates were delivered to the National Marine Fisheries Service (NMFS), the initial contracting agency, for analysis. All subsequent sediment analyses were performed at the Bigelow Laboratory using standard methods.

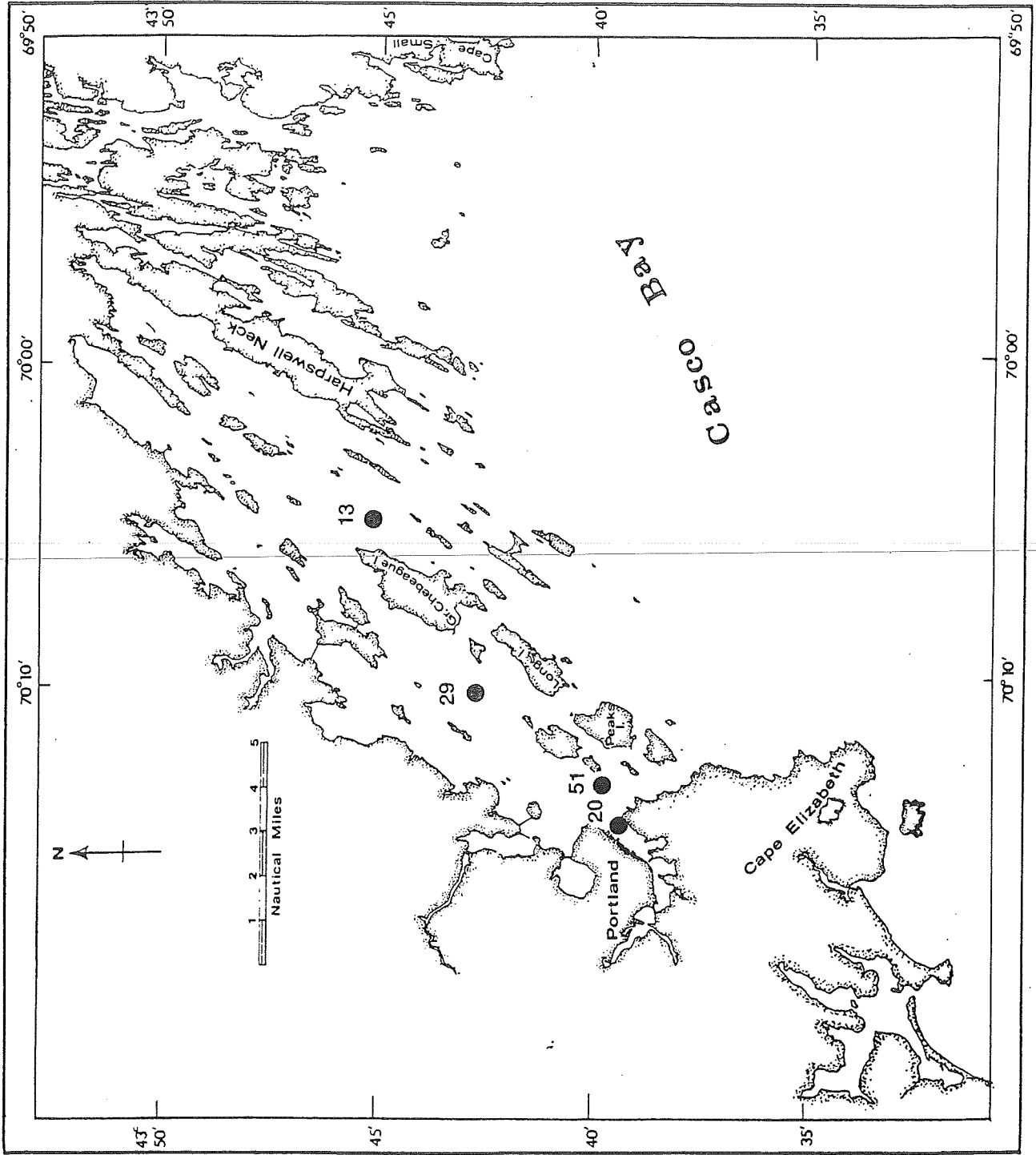


Fig. Casco Bay macrofaunal sampling sites.

RESULTS

All archived samples, with one exception, were in excellent shape. The cap on the jar containing the 0.5mm fraction of the second replicate from site 51 in April 1981 was slightly corroded with most of the preservative evaporated. This sample was excluded from the analysis.

Sediment data from the first three sampling periods are not presently available. NMFS personnel continue to seek either the data or the samples. All sediment data available from the entire monitoring period, which includes especially good coverage of sites 20 and 29, are presented in Fig. 2. Sediments at sites 20 and 29 appear to have remained fairly homogeneous over the five year monitoring period.

The macrofaunal data are presented in the Data Appendix. Those identifications which remain tentative are indicated with a question mark. Appropriate taxonomic experts have been contacted to confirm these identifications and updates will be available in due course.

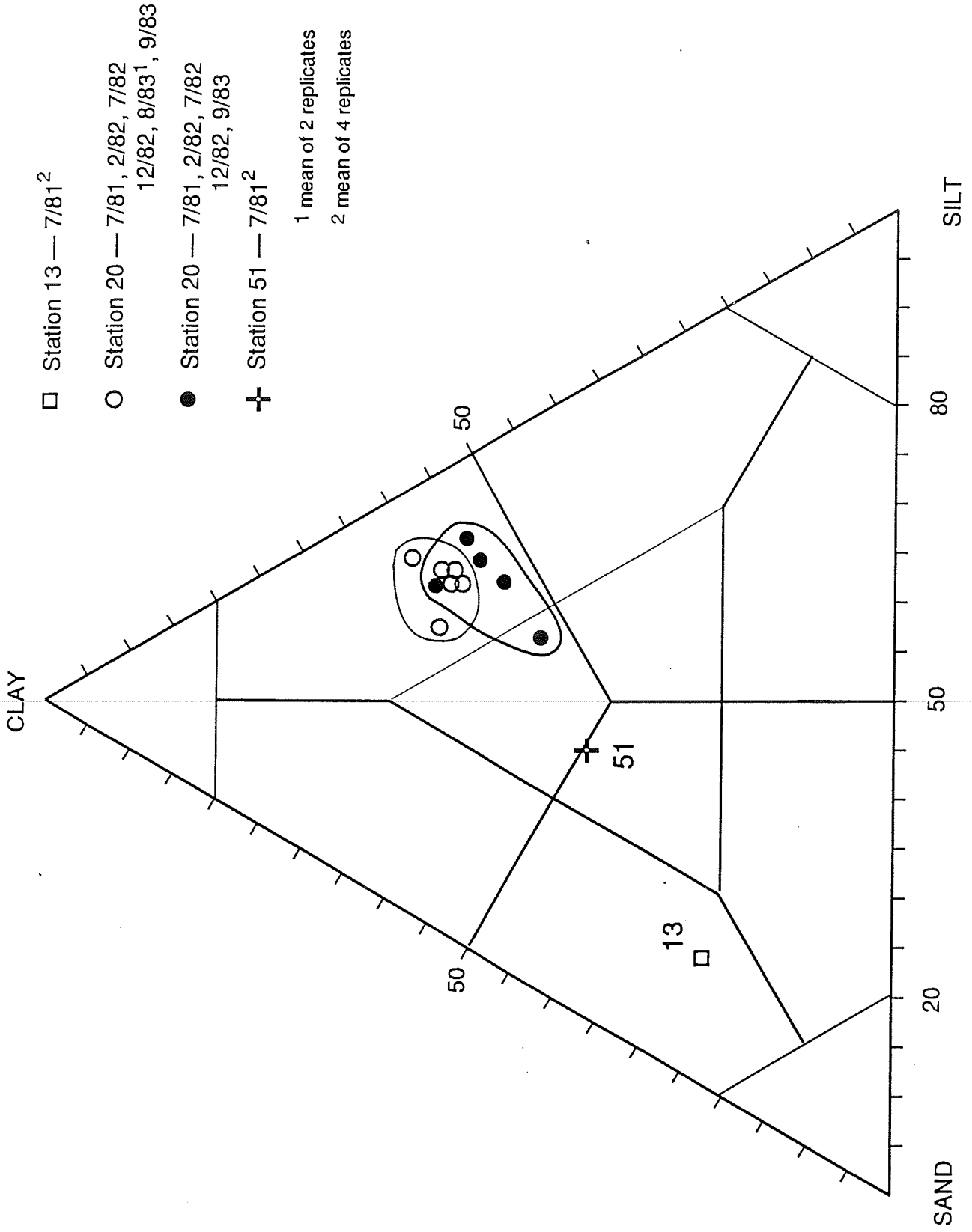


Figure 2. The distribution of sand, silt and clay at the Casco Bay macrofaunal sample sites.
All points are means of six values, except as noted.

BIBLIOGRAPHY

Larsen, P.F., A.C. Johnson and L.F. Doggett 1983a. Environmental benchmark studies in Casco Bay-Portland Harbor, Maine, April 1980. NOAA Technical Memorandum NMFS-F/NEC-19. 173pp.

Larsen, P. F., V. Zdanowicz, A.C. Johnson and L.F. Doggett. 1983b. Trace metals in New England marine sediments : Casco Bay, Maine in relation to other sites. *Chem. Ecol.* 1:191-200.

Larsen, P. F., D.F. Gadbois, A.C. Johnson and L.F. Doggett. 1983c. PCB monitoring in the Casco Bay region of the Gulf of Maine. *Mar. Poll. Bull.* 14:32.

Larsen, P. F., D.F. Gadbois, A.C. Johnson and L.F. Doggett. 1983d. Distribution of polycyclic aromatic hydrocarbons in the surficial sediments of Casco Bay, Maine. *Bull. Environ. Contam. Toxicol.* 30:530-535.

Larsen, P. F., D.F. Gadbois, A.C. Johnson and R.F. Maney. 1984. On the appearance of PCBs in the surficial sediments of Casco Bay, Maine. *Mar. Poll. Bull.* 15:452-453.

DATA APPENDIX

STATION: 13
 DATE: Sep-80
 NUMBER OF SPECIES: 76
 DENSITY (m-2): 22906

SPECIES	Sep-80						TOTAL	CUM. TOT.	%	Cum. %
	13-1	13-2	13-3	13-4	13-5	13-5				
<i>Eudorella</i> spp.	580	719	510	443	950	3202	3202	27.98	27.98	
<i>Nephtys neotena</i>	517	913	507	497	487	2921	6123	25.52	53.50	
<i>Prionospio steenstrupi</i>	305	465	352	457	303	1882	8005	16.44	69.94	
<i>Oligochaeta</i>	192	109	132	192	112	737	8742	6.44	76.38	
<i>Mediomastus californiensis</i>	135	75	92	82	116	500	9242	4.37	80.75	
<i>Aricidea suecica</i>	83	110	26	94	21	334	9576	2.92	83.67	
<i>Aricidea catherinae</i>	20	25	82	50	80	257	9833	2.25	85.92	
<i>Diastylis sculpta</i>	10	74	23	33	63	203	10036	1.77	87.69	
<i>Arrhis</i> sp.?	35	44	22	3	67	171	10207	1.49	89.18	
<i>Scoloplos</i> spp.	48		25	19	25	117	10324	1.02	90.21	
<i>Nucula delphinodonta</i>	13	30	18	20	18	99	10423	0.87	91.07	
<i>Dyopedos monacanthus</i>	17	30	9	8	30	94	10517	0.82	91.89	
<i>Modiolous modiolus</i>	9	9	36	6	26	86	10603	0.75	92.64	
<i>Ninoo nigripes</i>	8	58	4	4	7	81	10684	0.71	93.35	
<i>Mayerella limicola</i>	15	25	5	8	27	80	10764	0.70	94.05	
<i>Orchomene pinguis</i>	7	26	7	10	24	74	10838	0.65	94.70	
<i>Parougia caecus</i>	7	19	8	11	16	61	10899	0.53	95.23	
Amphipod A	20	17	2	13	9	61	10960	0.53	95.76	
<i>Microphthalmus aberrans</i>		18	12		14	44	11004	0.38	96.15	
<i>Microphthalmus sczelkowitzii</i>	29			8		37	11041	0.32	96.47	
<i>Pleurogonium inerme</i>	7	8	5	6	3	29	11070	0.25	96.72	
<i>Photis pollex</i>	4	13	1	1	8	27	11097	0.24	96.96	
<i>Owenia fusiformis</i>	5	9	4	7	2	27	11124	0.24	97.20	
<i>Harpinia propinqua</i>		3	10	8	4	25	11149	0.22	97.41	
<i>Phylodoce mucosa</i>	3	5	7	8	1	24	11173	0.21	97.62	
<i>Leitoscoloplos acutus</i>			13		10	23	11196	0.20	97.82	
<i>Micrura</i> spp.	6	8	5		2	21	11217	0.18	98.01	

<i>Ensis directus</i>	5	4	4	1	5	19	11236	0.17	98.17
<i>Yoldia limatula</i>	2	4	6	1	5	18	11254	0.16	98.33
Orbiniidae spp.		8	8	3	8	16	11270	0.14	98.47
<i>Eteone longa</i>	2	3	4	3	2	14	11284	0.12	98.59
<i>Tharyx</i> spp.	3	5	2	3		13	11297	0.11	98.71
<i>Tetrastemma</i> spp.	3	2	7			12	11309	0.10	98.81
<i>Lumbrineris hebes</i>	2	1	2	4	2	11	11320	0.10	98.91
<i>Pholoe minuta</i>	2	1	1	1	5	10	11330	0.09	99.00
<i>Nephtys incisa</i>	2	1	2	1	4	10	11340	0.09	99.08
<i>Pherusa affinis</i>	1	2	2	1	2	8	11348	0.07	99.15
<i>Alvania carinata</i>		6	1		1	8	11356	0.07	99.22
<i>Thyasira flexuosa</i>		5		1	1	7	11363	0.06	99.28
<i>Argissa hamatipes</i>		1		1	4	6	11369	0.05	99.34
<i>Ampharete arctica</i>	4	1			1	6	11375	0.05	99.39
<i>Levinsenia gracilis</i>		1		2	2	5	11380	0.04	99.43
<i>Cerastoderma pinnulatum</i>	1	2		1	1	5	11385	0.04	99.48
Mysids - Unidentified				5		5	11390	0.04	99.52
<i>Leptostylis longimama</i>	1		1		2	4	11394	0.03	99.55
Cirratulidae spp.	2	3		1	1	4	11398	0.03	99.59
<i>Erythrope erythrothalma</i>				1	1	4	11402	0.03	99.62
<i>Neomysis americana</i>		2		1	1	4	11406	0.03	99.66
<i>Edwardsia elegans</i>	1	2	1			4	11410	0.03	99.69
<i>Hydrobia truncata</i>				4		4	11414	0.03	99.73
<i>Melita n. sp.</i>		1	3			4	11418	0.03	99.76
<i>Spio filicornis</i>		1		1	1	3	11421	0.03	99.79
<i>Phoronis</i> sp.					2	2	11423	0.02	99.81
<i>Tharyx dorsobranchialis</i>					2	2	11425	0.02	99.83
<i>Ampelisca abdita</i>					2	2	11427	0.02	99.84
<i>Oedicerus</i> sp.?					2	2	11429	0.02	99.86
<i>Pitar morrhuana</i>		1			1	2	11431	0.02	99.88
<i>Amphiporus</i> spp.		2				2	11433	0.02	99.90
<i>Caudina arenata</i>		1		1		2	11435	0.02	99.91
<i>Arctica islandica</i>				2		2	11437	0.02	99.93
<i>Nucula annulata</i>	1		1			2	11439	0.02	99.95

STATION: 13
 DATE: Dec-80
 NUMBER OF SPECIES: 69
 DENSITY (m-2): 16053

SPECIES	Dec-80				TOTAL	CUM.TOT.	%	Cum.%
	13-1	13-2	13-3	2007				
<i>Eudorella</i> spp.	13	879	1115	2007	2007	41.67	41.67	
<i>Nephtys neotena</i>	36	337	223	596	2603	12.38	54.05	
<i>Prionospio steenstrupi</i>	16	163	174	353	2956	7.33	61.38	
<i>Photis pollex</i>	21	71	80	172	3128	3.57	64.95	
<i>Oligochaeta</i>	102	43	26	171	3299	3.55	68.50	
<i>Nucula delphinodonta</i>	45	42	83	170	3469	3.53	72.03	
<i>Lumbrineris hebes</i>	90	12	56	158	3627	3.28	75.31	
<i>Phyllodoce mucosa</i>	5	55	69	129	3756	2.68	77.99	
<i>Polychaeta</i> spp.	103	13	11	127	3883	2.64	80.63	
<i>Aricidea catherinae</i>	52	28	38	118	4001	2.45	83.08	
<i>Harpinia propinqua</i>	2	22	61	85	4086	1.76	84.84	
<i>Modiolous modiolus</i>	28	24	24	76	4162	1.58	86.42	
<i>Diastylis sculpta</i>	18	32	18	68	4230	1.41	87.83	
<i>Alvania carinata</i>	12	13	33	58	4288	1.20	89.04	
<i>Pholoe minuta</i>	11	24	16	51	4339	1.06	90.10	
<i>Mediomastus californiensis</i>	26	4	17	47	4386	0.98	91.07	
<i>Orchomene pinguis</i>	5	6	35	46	4432	0.96	92.03	
<i>Ninoe nigripes</i>	8	17	17	42	4474	0.87	92.90	
<i>Lumbrineridae</i> spp.	25	1	6	32	4506	0.66	93.56	
<i>Ampelisca agassizi</i>			32	32	4538	0.66	94.23	
<i>Pleurogonium inerme</i>	8	3	15	26	4564	0.54	94.77	
<i>Argissa hamatipes</i>	2	6	14	22	4586	0.46	95.22	
<i>Oedicerus</i> sp.?		2	19	21	4607	0.44	95.66	
<i>Eteone longa</i>	5	9	3	17	4624	0.35	96.01	
<i>Sternaspis scutata</i>		9	8	17	4641	0.35	96.37	
<i>Crenella decussata</i>	8	3	5	16	4657	0.33	96.70	
<i>Scoloplos</i> spp.		9	6	15	4672	0.31	97.01	

<i>Cerianthus borealis</i>	12			12	4684	0.25	97.26
<i>Owenia fusiformis</i>	3			12	4696	0.25	97.51
<i>Metopella angusta</i>		9	2	12	4708	0.25	97.76
<i>Thyasira flexuosa</i>		10	5	10	4718	0.21	97.97
<i>Sphaerodoropsis minuta</i>		4	5	9	4727	0.19	98.15
<i>Yoldia limatula</i>	3	4	2	9	4736	0.19	98.34
<i>Mayerella limicola</i>		3	4	7	4743	0.15	98.48
<i>Micrura spp.</i>		5	1	6	4749	0.12	98.61
<i>Amphipod A</i>	1	2	3	6	4755	0.12	98.73
<i>Nucula annulata</i>	1	2	2	5	4760	0.10	98.84
<i>Tetrastemma spp.</i>		1	3	4	4764	0.08	98.92
<i>Levinsenia gracilis</i>	1		3	4	4768	0.08	99.00
<i>Lyonsia hyalina</i>			4	4	4772	0.08	99.09
<i>Nassarius trivittatus</i>	1	1	2	4	4776	0.08	99.17
<i>Pitar morrhuana</i>		1	3	4	4780	0.08	99.25
<i>Edotea triloba</i>	1	2	1	4	4784	0.08	99.34
<i>Apistobranchius tullbergi</i>		2	1	3	4787	0.06	99.40
<i>Nephtys incisa</i>		2	3	3	4790	0.06	99.46
<i>Oediceratidae sp.</i>	1	2		3	4793	0.06	99.52
<i>Tharyx acutus</i>	1		1	2	4795	0.04	99.56
<i>Cerastoderma pinnulatum</i>		1	1	2	4797	0.04	99.61
<i>Arrhis sp.?</i>	2			2	4799	0.04	99.65
<i>Amphiporus spp.</i>	1			1	4800	0.02	99.67
<i>Cerebratulus spp.</i>			1	1	4801	0.02	99.69
<i>Ophiura sarsi?</i>	1			1	4802	0.02	99.71
<i>Ampharete acutifrons</i>		1		1	4803	0.02	99.73
<i>Brada villosa</i>		1		1	4804	0.02	99.75
<i>Arctica islandica</i>			1	1	4805	0.02	99.77
<i>Cylichna gouldii</i>	1			1	4806	0.02	99.79
<i>Gastropoda</i>		1		1	4807	0.02	99.81
<i>Gemma gemma</i>			1	1	4808	0.02	99.83
<i>Lunatia triserata</i>			1	1	4809	0.02	99.85
<i>Mya arenaria</i>			1	1	4810	0.02	99.88
<i>Onchidoris aspera</i>	1			1	4811	0.02	99.90

Periploma papyratium
Retusa obtusa
Casco bigelowi
Dyopedos monacanthus
Meterythrops robusta
 Bryozoan
 Hydroid
Sertularia spp.

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 99.94
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STATION: 13
 DATE: Apr-81
 NUMBER OF SPECIES: 66
 DENSITY (m-2): 13877

SPECIES	Apr-81			TOTAL	CUM.TOT.	%	Cum.%
	13-1	13-2	13-3				
<i>Eudorella</i> spp.	577	505	623	1705	1705	40.96	40.96
<i>Nephtys neotena</i>	131	368	160	659	2364	15.83	56.79
<i>Polychaeta</i> spp.	42	81	168	291	2655	6.99	63.78
<i>Oligochaeta</i>	58	98	109	265	2920	6.37	70.14
<i>Nucula delphinodonta</i>	67	68	40	175	3095	4.20	74.35
<i>Photis pollex</i>	29	33	67	129	3224	3.10	77.44
<i>Harpinia propinqua</i>	28	24	32	84	3308	2.02	79.46
<i>Orchomene pinguis</i>	11	23	48	82	3390	1.97	81.43
<i>Alvania carinata</i>	22	27	24	73	3463	1.75	83.19
<i>Phylodoce mucosa</i>	6	50	6	62	3525	1.49	84.67
<i>Pleurogonium inerme</i>	25	19	17	61	3586	1.47	86.14
<i>Lumbrineris hebes</i>	16	17	26	59	3645	1.42	87.56
<i>Diastylis sculpta</i>	34	7	16	57	3702	1.37	88.93
<i>Ninoo nigripes</i>	17	20	14	51	3753	1.23	90.15
<i>Pholoe minuta</i>	8	16	20	44	3797	1.06	91.21
<i>Modiolous modiolus</i>	6	34	4	44	3841	1.06	92.27
<i>Orbiniidae</i> spp.	11	5	15	31	3872	0.74	93.01
<i>Sternaspis scutata</i>	7	11	13	31	3903	0.74	93.75
<i>Argissa hamatipes</i>	5	8	9	22	3925	0.53	94.28
<i>Mediomastus</i> sp.		2	18	20	3945	0.48	94.76
<i>Arrhis</i> sp.?	1	8	8	17	3962	0.41	95.17
<i>Eteone longa</i>	6	4	6	16	3978	0.38	95.56
<i>Ampelisca abdita</i>		1	15	16	3994	0.38	95.94
<i>Micrura</i> spp.	4	2	8	14	4008	0.34	96.28
<i>Levinsenia gracilis</i>	2	6	6	14	4022	0.34	96.61
<i>Mayerella limicola</i>	5	4	4	13	4035	0.31	96.93
<i>Sphaerodoropsis minuta</i>	1	7	4	12	4047	0.29	97.21

<i>Phoxcephalus holbolli</i>	1	7	1	9	4056	0.22	97.43
<i>Phoronis</i> sp.	1	3	4	8	4064	0.19	97.62
<i>Owenia fusiformis</i>	4	3		7	4071	0.17	97.79
<i>Casco bigelowi</i>	3		4	7	4078	0.17	97.96
<i>Dyopedos monacanthus</i>	1	1	5	7	4085	0.17	98.13
Amphipod A	1	2	3	6	4091	0.14	98.27
<i>Metopella angusta</i>	2	1	3	6	4097	0.14	98.41
<i>Crenella decussata</i>	2	4	1	5	4102	0.12	98.53
<i>Thyasira flexuosa</i>	1		3	5	4107	0.12	98.65
Lumbrineridae spp.			3	4	4111	0.10	98.75
<i>Nucula annulata</i>		4		4	4115	0.10	98.85
<i>Yoldia limatula</i>		4		4	4119	0.10	98.94
Unknown Amphipod		4		4	4123	0.10	99.04
<i>Tetrastemma</i> spp.	1		2	3	4126	0.07	99.11
<i>Nephtys incisa</i>	1	1	1	3	4129	0.07	99.18
<i>Cerastoderma pinnulatum</i>		1	2	3	4132	0.07	99.26
<i>Lyonsia hyalina</i>	2	1		3	4135	0.07	99.33
<i>Caudina arenata</i>		2		2	4137	0.05	99.38
Ampharetidae		2		2	4139	0.05	99.42
Cirratulidae spp.		1	1	2	4141	0.05	99.47
<i>Periploma papyratium</i>			2	2	4143	0.05	99.52
<i>Ampelisca agassizi</i>	1		1	2	4145	0.05	99.57
<i>Edotea triloba</i>	1	2		2	4147	0.05	99.62
<i>Oediceros</i> sp.?		1		2	4149	0.05	99.66
<i>Unciola inermis</i>			2	2	4151	0.05	99.71
<i>Cossura delta</i>		1		1	4152	0.02	99.74
<i>Lumbrineris fragilis</i>		1		1	4153	0.02	99.76
Gastropoda		1		1	4154	0.02	99.78
<i>Hydrobia truncata</i>			1	1	4155	0.02	99.81
<i>Macoma balthica</i>	1			1	4156	0.02	99.83
<i>Mytilus edulis</i>		1		1	4157	0.02	99.86
<i>Nassarius trivittatus</i>		1		1	4158	0.02	99.88
<i>Nucula tenuis</i>			1	1	4159	0.02	99.90
<i>Retusa obtusa</i>		1		1	4160	0.02	99.93

Corophium crassicorne

Melita n. sp.

Podoceridae?

Hydroid

Sertularia spp.

1	1	1	1
1			
+	+		+
+			

1

4161

99.95

1

4162

99.98

1

4163

100.00

0.02

0.02

0.02

STATION: 13
 DATE: Jul-81
 NUMBER OF SPECIES: 55
 DENSITY (m-2): 11113

SPECIES	Jul-81			TOTAL	CUM.TOT.	%	Cum. %
	13-1	13-2	13-3				
<i>Nephtys neotena</i>	302	123	341	766	766	22.98	22.98
<i>Eudorella</i> spp.	285	168	228	681	1447	20.43	43.40
<i>Diastylis sculpta</i>	119	199	96	414	1861	12.42	55.82
<i>Polychaeta</i> spp.	34	105	127	266	2127	7.98	63.80
<i>Oligochaeta</i>	95	55	99	249	2376	7.47	71.27
<i>Nucula delphinodonta</i>	57	57	41	155	2531	4.65	75.91
<i>Orchomene pinguis</i>	36	57	33	126	2657	3.78	79.69
<i>Harpinia propinqua</i>	38	18	9	65	2722	1.95	81.64
<i>Photis pollex</i>	17	30	18	65	2787	1.95	83.59
<i>Alvania carinata</i>	20	29	7	56	2843	1.68	85.27
<i>Mediomastus</i> sp.	6	30	18	54	2897	1.62	86.89
<i>Phyllococe mucosa</i>	13	28	11	52	2949	1.56	88.45
<i>Modiolus modiolus</i>	10	13	24	47	2996	1.41	89.86
<i>Nince nigripes</i>	11	20	15	46	3042	1.38	91.24
Orbiniidae spp.	10	4	29	43	3085	1.29	92.53
<i>Lumbrineris hebes</i>	12	19	11	42	3127	1.26	93.79
<i>Pleurogonium inerme</i>	8	18	5	31	3158	0.93	94.72
<i>Pholoe minuta</i>	11	8	7	26	3184	0.78	95.50
<i>Levinsenia gracilis</i>	9	7	3	19	3203	0.57	96.07
<i>Sternaspis scutata</i>	6	1	10	17	3220	0.51	96.58
<i>Dyopodos monacanthus</i>	5	4	5	14	3234	0.42	97.00
<i>Micrura</i> spp.	4		7	11	3245	0.33	97.33
<i>Phoronis</i> sp.	2		7	9	3254	0.27	97.60
<i>Eteone longa</i>	4	3	1	8	3262	0.24	97.84
Lumbrineridae spp.	2	2	2	6	3268	0.18	98.02
<i>Owenia fusiformis</i>	3		3	6	3274	0.18	98.20
<i>Ampelisca agassizi</i>	2	3	1	6	3280	0.18	98.38

<i>Mayerella limicola</i>	2	1	2	5	3285	0.15	98.53
<i>Bostrichobranchus pilularis</i>	2		2	4	3289	0.12	98.65
<i>Crenella decussata</i>		3	1	4	3293	0.12	98.77
<i>Yoldia limatula</i>	4			4	3297	0.12	98.89
<i>Nephtys incisa</i>	1		2	3	3300	0.09	98.98
<i>Sphaerodoropsis minuta</i>	1	1	1	3	3303	0.09	99.07
<i>Thyasira flexuosa</i>	2		1	3	3306	0.09	99.16
<i>Arrhis sp.?</i>	2		1	3	3309	0.09	99.25
<i>Corophium crassicornae</i>			3	3	3312	0.09	99.34
<i>Ophelina acuminata</i>	2			2	3314	0.06	99.40
<i>Mya arenaria</i>		1	1	2	3316	0.06	99.46
<i>Nucula annulata</i>	1	1		2	3318	0.06	99.52
<i>Metopella angusta</i>		2		2	3320	0.06	99.58
<i>Phoxocephalus holbolli</i>		2		2	3322	0.06	99.64
Unknown Amphipod	1	1		2	3324	0.06	99.70
<i>Cerebratulus spp.</i>	1			1	3325	0.03	99.73
<i>Tetrasemma spp.</i>		1		1	3326	0.03	99.76
Unid. Nemertean	1			1	3327	0.03	99.79
<i>Arctica islandica</i>	1			1	3328	0.03	99.82
Bivalve A	1			1	3329	0.03	99.85
<i>Periploma papyratium</i>			1	1	3330	0.03	99.88
<i>Pitar morrhuana</i>	1			1	3331	0.03	99.91
<i>Retusa obtusa</i>			1	1	3332	0.03	99.94
<i>Meterythrope robusta</i>			1	1	3333	0.03	99.97
<i>Oedicerus sp.?</i>			1	1	3334	0.03	100.00
Bryozoan			+				
Hydroid			+				
<i>Sertularia spp.</i>	+		+				

STATION: 20
 DATE: Sep-80
 NUMBER OF SPECIES: 76
 DENSITY (m-2): 27486

SPECIES	Sep-80					TOTAL	CUM.TOT.	%	Cum.%
	20-1	20-2	20-3	20-4	20-5				
<i>Oligochaeta</i>	876	832	415	358	955	3436	3436	25.00	25.00
<i>Prionospio steenstrupi</i>	568	718	482	486	207	2461	5897	17.91	42.91
<i>Aricidea catherinae</i>	219	270	117	145	1215	1966	7863	14.31	57.21
<i>Mediomastus californiensis</i>	292	303	59	83	713	1450	9313	10.55	67.77
<i>Nucula delphinodonta</i>	70	51	227	90	853	1291	10604	9.39	77.16
<i>Nephtys neotena</i>	57	303	3	118	714	1195	11799	8.70	85.85
<i>Lumbrineris hebes</i>	52	75	81	60	107	375	12174	2.73	88.58
<i>Mytilus edulis</i>	12	3	102	41	173	331	12505	2.41	90.99
<i>Phylodoce mucosa</i>	52	29	59	80		220	12725	1.60	92.59
<i>Ninoo nigripes</i>	31	22	28	26	51	158	12883	1.15	93.74
<i>Tharyx spp.</i>	46	7	35	24	27	139	13022	1.01	94.75
<i>Casco bigelowi</i>	11		41	38		90	13112	0.65	95.41
<i>Microphthalmus sczelkowi</i>	23	19	1	15		58	13170	0.42	95.83
<i>Meterythrops robusta</i>		2	3	3	49	57	13227	0.41	96.25
<i>Yoldia limatula</i>	5	7	9	16	16	53	13280	0.39	96.63
<i>Tetrastemma spp.</i>	11	6	17	4	11	49	13329	0.36	96.99
<i>Eudorella spp.</i>	12	3	19	9	1	44	13373	0.32	97.31
<i>Orchomene pinguis</i>	7	11	21	5		44	13417	0.32	97.63
<i>Diastylis sculpta</i>	2	8	18	4	1	33	13450	0.24	97.87
<i>Parougia caecus</i>	11	4	9	2	3	29	13479	0.21	98.08
<i>Mya arenaria</i>	3	4	9	8		24	13503	0.17	98.25
<i>Phoronis sp.</i>	17		3		1	21	13524	0.15	98.41
<i>Eteone longa</i>	10	5	1	2	3	21	13545	0.15	98.56
<i>Micrura spp.</i>	3	6	2	2	7	20	13565	0.15	98.70
<i>Pleurogonium inerme</i>	1	1	12	3		17	13582	0.12	98.83
<i>Scoloplos spp.</i>	1	2	2	5	6	16	13598	0.12	98.94
<i>Pholbe minuta</i>	1	1	7	2	3	14	13612	0.10	99.05

<i>Levinsenia gracilis</i>	4	3		5	12	13624	0.09	99.13
<i>Ampharete arctica</i>	1	1	5	2	9	13633	0.07	99.20
<i>Cerastoderma pinnulatum</i>	3	2	3		8	13641	0.06	99.26
<i>Nucula annulata</i>				6	6	13647	0.04	99.30
<i>Ampharete sp.</i>	1		5	2	5	13652	0.04	99.34
<i>Brada villosa</i>			2		5	13657	0.04	99.37
<i>Capitella spp.</i>			4	1	5	13662	0.04	99.41
<i>Nephtys incisa</i>		4	1		5	13667	0.04	99.45
<i>Ophelina acuminata</i>	2		1	2	5	13672	0.04	99.48
<i>Arrhis sp.?</i>		2	3		5	13677	0.04	99.52
<i>Photis pollex</i>	1	1	3		5	13682	0.04	99.56
<i>Pherusa affinis</i>		4	3		4	13686	0.03	99.59
<i>Harpinia propinqua</i>		1	3		4	13690	0.03	99.61
<i>Cerebratulus spp.</i>				2	3	13693	0.02	99.64
<i>Ampharete acutifrons</i>		1	1	1	3	13696	0.02	99.66
<i>Hartmania moorei</i>		2	1		3	13699	0.02	99.68
<i>Bivalvia</i>			2	1	3	13702	0.02	99.70
<i>Gastropoda</i>			1	2	3	13705	0.02	99.72
<i>Argissa hamatipes</i>	2		1		3	13708	0.02	99.75
<i>Anemone</i>	2		1		2	13710	0.01	99.76
<i>Edwardsia elegans</i>		1		1	2	13712	0.01	99.77
<i>Harmothoe imbricata</i>				2	2	13714	0.01	99.79
<i>Ensis directus</i>				1	2	13716	0.01	99.80
<i>Gemma gemma</i>	1	1		1	2	13718	0.01	99.82
<i>Pitar morrhuana</i>			1	1	2	13720	0.01	99.83
<i>Leptocheirus pinguis</i>		1		1	2	13722	0.01	99.85
<i>Anemone (Thenaria)</i>			1		1	13723	0.01	99.85
<i>Cerianthus borealis</i>		1			1	13724	0.01	99.86
<i>Holothurian juvenile</i>	1				1	13725	0.01	99.87
<i>Unid. Nemertean</i>			1		1	13726	0.01	99.88
<i>Aricidea suecica</i>		1			1	13727	0.01	99.88
<i>Exogone hebes</i>	1				1	13728	0.01	99.89
<i>Microphthalmus aberrans</i>				1	1	13729	0.01	99.90
<i>Nereis virens</i>				1	1	13730	0.01	99.91

Terebellid A	1			1	13731	0.01	99.91
<i>Arctica islandica</i>	1			1	13732	0.01	99.92
<i>Crenella decussata</i>		1		1	13733	0.01	99.93
<i>Macoma balthica</i>	1			1	13734	0.01	99.93
<i>Nassarius trivittatus</i>		1		1	13735	0.01	99.94
Amphipod A	1			1	13736	0.01	99.95
Crab zoea	1			1	13737	0.01	99.96
<i>Maera danae</i>			1	1	13738	0.01	99.96
<i>Mayerella limicola</i>		1		1	13739	0.01	99.97
<i>Neomysis americana</i>	1			1	13740	0.01	99.98
<i>Oxyurostylis smithi</i>		1		1	13741	0.01	99.99
<i>Phoxichilidium femoratum</i>			1	1	13742	0.01	99.99
Unknown Amphipod		1		1	13743	0.01	100.00
Hydroid							
<i>Sertularia</i> spp.							

STATION: 20
 DATE: Dec-80
 NUMBER OF SPECIES: 41
 DENSITY (m-2): 3092

SPECIES	Dec-80					TOTAL	CUM.TOT.	%	Cum.%
	20-1	20-2	20-3	20-4	20-5				
<i>Eudorella</i> spp.	160	200	190	53	23	626	626	40.49	40.49
<i>Mytilus edulis</i>	166	24	20	23	14	247	873	15.98	56.47
<i>Nucula delphinodonta</i>	131	43	26	19	20	239	1112	15.46	71.93
<i>Nephtys neotena</i>	2	50	14	18	6	90	1202	5.82	77.75
<i>Diastylis sculpta</i>	19	17	29	10	5	80	1282	5.17	82.92
<i>Lumbrineris hebes</i>	6	12	17	11	3	49	1331	3.17	86.09
<i>Aricidea catherinae</i>		4	32	5	1	42	1373	2.72	88.81
<i>Photis pollex</i>	6	2	16	9	2	35	1408	2.26	91.07
<i>Phyllodoce</i> sp.	2	5	13		2	22	1430	1.42	92.50
<i>Oligochaeta</i>	5		5	8	2	20	1450	1.29	93.79
<i>Ninoo nigripes</i>	12	5	1		1	19	1469	1.23	95.02
<i>Mya arenaria</i>	3	2	3		1	9	1478	0.58	95.60
<i>Argissa hamatipes</i>	1	3	1	2	1	8	1486	0.52	96.12
<i>Tellina agilis</i>		2	1	1	3	7	1493	0.45	96.57
<i>Oedicerus</i> sp.?		4	2		1	7	1500	0.45	97.02
<i>Tetrastemma</i> spp.	2	3				5	1505	0.32	97.35
<i>Pleurogonium inerme</i>		3	1			4	1509	0.26	97.61
<i>Pholoe minuta</i>		2			1	3	1512	0.19	97.80
<i>Prionospio steenstrupi</i>	1	2				3	1515	0.19	97.99
<i>Sphaerodoropsis minuta</i>			3			3	1518	0.19	98.19
<i>Nucula annulata</i>	2	1				3	1521	0.19	98.38
<i>Mediomastus californiensis</i>		1	1			2	1523	0.13	98.51
<i>Nephtys incisa</i>	2					2	1525	0.13	98.64
<i>Levinsenia gracilis</i>	1	1				2	1527	0.13	98.77
<i>Bivalvia</i>		1	1			2	1529	0.13	98.90
<i>Modiolous modiolus</i>	2					2	1531	0.13	99.03
<i>Yoldia limatula</i>		1			1	2	1533	0.13	99.16

<i>Leptognatha caeca</i>	1	1	1	1535	0.13	99.29
Anemone	1	1	1	1536	0.06	99.35
<i>Micrura spp.</i>		1		1537	0.06	99.42
<i>Capitella spp.</i>	1			1538	0.06	99.48
<i>Eteone longa</i>	1			1539	0.06	99.55
<i>Eteone sp.</i>			1	1540	0.06	99.61
<i>Cerastoderma pinnulatum</i>	1			1541	0.06	99.68
<i>Crenella decussata</i>	1			1542	0.06	99.74
<i>Thyasira sp.</i>	1			1543	0.06	99.81
Amphipod A			1	1544	0.06	99.87
<i>Arrhis sp.?</i>	1			1545	0.06	99.94
<i>Edotea triloba</i>			1	1546	0.06	100.00
Hydroid						
<i>Sertularia spp.</i>	+	+	+			

STATION: 20
 DATE: Apr-81
 NUMBER OF SPECIES: 48
 DENSITY (m-2): 3498

SPECIES	Apr-81					TOTAL	CUM. TOT.	%	Cum. %
	20-1	20-2	20-3	20-4	20-5				
<i>Nucula delphinodonta</i>	59	103	171	170	14	517	517	29.56	29.56
<i>Oligochaeta</i>	42	163	24	38	3	270	787	15.44	45.00
<i>Mytilus edulis</i>	48	22	30	59	43	202	989	11.55	56.55
<i>Nephtys neotena</i>	51	15	48	44	14	172	1161	9.83	66.38
<i>Aricidea catherinae</i>	17	87	14	35	7	160	1321	9.15	75.53
<i>Eudorella spp.</i>	6	33	37	22	3	101	1422	5.77	81.30
<i>Lumbrineris hebes</i>	9	26	25	31	3	94	1516	5.37	86.68
<i>Ninoe nigripes</i>	1	33	3	3		40	1556	2.29	88.97
<i>Prionospio steenstrupi</i>		8	7	9		24	1580	1.37	90.34
<i>Gemma gemma</i>		6	6	4	2	18	1598	1.03	91.37
<i>Hydrobia truncata</i>		6	6	5	1	18	1616	1.03	92.40
<i>Mya arenaria</i>	8		4	1	3	16	1632	0.91	93.31
<i>Levinsenia gracilis</i>		10		1		11	1643	0.63	93.94
<i>Phyllodoce sp.</i>	4	1	4	1	1	11	1654	0.63	94.57
<i>Diastylis sculpta</i>	2		5	1	2	10	1664	0.57	95.14
<i>Mediomastus californiensis</i>		6	1			7	1671	0.40	95.54
<i>Scoloplos spp.</i>		1	4	1	1	7	1678	0.40	95.94
<i>Yoldia limatula</i>	2		3	2		7	1685	0.40	96.34
<i>Tetrastemma spp.</i>		4		1	1	6	1691	0.34	96.68
<i>Orchomene pinguis</i>			1	4	1	6	1697	0.34	97.03
<i>Eteone longa</i>	1	2	2			5	1702	0.29	97.31
<i>Lunatia heros</i>	3			1		4	1706	0.23	97.54
<i>Pleurogonium inerme</i>	3				1	4	1710	0.23	97.77
<i>Photis pollex</i>	1			2	1	4	1714	0.23	98.00
<i>Micrura spp.</i>		1	1	1		3	1717	0.17	98.17
<i>Nephtys incisa</i>		1	2			3	1720	0.17	98.34
<i>Nassarius trivittatus</i>			2		1	3	1723	0.17	98.51

<i>Periploma fragile</i>				1			3	1726	0.17	98.68
<i>Ampharete</i> sp.					2		2	1728	0.11	98.80
<i>Tharyx acutus</i>	2						2	1730	0.11	98.91
<i>Tellina agilis</i>	1			1			2	1732	0.11	99.03
<i>Argissa hamatipes</i>	1				1		2	1734	0.11	99.14
<i>Cerianthus borealis</i>				1			1	1735	0.06	99.20
<i>Ampharete arctica</i>			1				1	1736	0.06	99.26
<i>Fabricia sabella</i>				1			1	1737	0.06	99.31
<i>Nereis virens</i>	1						1	1738	0.06	99.37
Gastropoda							1	1739	0.06	99.43
<i>Macoma balthica</i>					1		1	1740	0.06	99.49
<i>Modiolous modiolus</i>					1		1	1741	0.06	99.54
<i>Nucula annulata</i>						1	1	1742	0.06	99.60
<i>Corophium crassicornae</i>	1						1	1743	0.06	99.66
<i>Diastylis polita</i>	1						1	1744	0.06	99.71
<i>Dyopedos monacanthus</i>							1	1745	0.06	99.77
<i>Edotea triloba</i>				1			1	1746	0.06	99.83
<i>Leptognatha caeca</i>					1		1	1747	0.06	99.89
<i>Neomysis americana</i>					1		1	1748	0.06	99.94
<i>Phoxocephalus holbolli</i>					1		1	1749	0.06	100.00
<i>Sertularia</i> spp.	+			+			+			

STATION: 20
 DATE: Jul-81
 NUMBER OF SPECIES: 64
 DENSITY (m-2): 5518

SPECIES	Jul-81							TOTAL	CUM.TOT.	%	Cum.%
	20-1	20-2	20-3	20-4	20-5	20-6	20-7				
<i>Nucula delphinodonta</i>	147	288	169	19	49			672	672	24.36	24.36
<i>Oligochaeta</i>	30	23	311	4	45			413	1085	14.97	39.33
<i>Diastylis sculpta</i>	24	87	14	39	73			237	1322	8.59	47.92
<i>Nephtys neotena</i>	33	51	94	5	15			198	1520	7.18	55.09
<i>Mya arenaria</i>	32	35	31	30	52			180	1700	6.52	61.62
<i>Aricidea catherinae</i>	45	15	77	5	16			158	1858	5.73	67.34
<i>Lumbrineris hebes</i>	66	29	33	7	12			147	2005	5.33	72.67
<i>Phyllodoce sp.</i>	10	15	9	48	20			102	2107	3.70	76.37
<i>Ophelina acuminata</i>	8	4	55	14	20			101	2208	3.66	80.03
<i>Ensis directus</i>	1	1	55	22	9			88	2296	3.19	83.22
<i>Prionospio steenstrupi</i>	2		44					46	2342	1.67	84.89
<i>Mytilus edulis</i>	32	3	9	2				46	2388	1.67	86.55
<i>Eudorella spp.</i>	6	11	6	16	4			43	2431	1.56	88.11
<i>Mediomastus californiensis</i>	1	1	40					42	2473	1.52	89.63
<i>Orchomene pinguis</i>	8	10		6	7			31	2504	1.12	90.76
<i>Phyllodoce mucosa</i>			30					30	2534	1.09	91.84
<i>Ninoe nigripes</i>	13	4	1	3	5			26	2560	0.94	92.79
<i>Scotoplos spp.</i>	2	1	11	3	1			18	2578	0.65	93.44
<i>Capitella spp.</i>			16					16	2594	0.58	94.02
<i>Brada villosa</i>			14	1				15	2609	0.54	94.56
<i>Photis pollex</i>	3	5	1	1	3			13	2622	0.47	95.03
<i>Edwardsia elegans</i>	5		1	3	3			12	2634	0.43	95.47
<i>Eteone longa</i>	2		9	1				12	2646	0.43	95.90
<i>Tellina agilis</i>	10							10	2656	0.36	96.27
<i>Tetrastemma spp.</i>	2		1	5				8	2664	0.29	96.56
<i>Ampharete arctica</i>		2	5	1				8	2672	0.29	96.85
<i>Bivalvia</i>	8							8	2680	0.29	97.14

<i>Tharyx acutus</i>				6	2686	0.22	97.35
<i>Nassarius trivittatus</i>	1			6	2692	0.22	97.57
<i>Pholoe minuta</i>	3	1	1	5	2697	0.18	97.75
<i>Trochochaeta multisetosa</i>				5	2702	0.18	97.93
<i>Cerastoderma pinnulatum</i>	3	1		5	2707	0.18	98.12
<i>Oxyurostylis smithi</i>	3	3	2	5	2712	0.18	98.30
<i>Parougia caecus</i>				4	2716	0.14	98.44
Polynoidea	2	1		3	2719	0.11	98.55
<i>Yoldia limatula</i>	1	1	1	3	2722	0.11	98.66
<i>Dyopedos monacanthus</i>	3	3		3	2725	0.11	98.77
<i>Meterythrops robusta</i>	2	2		3	2728	0.11	98.88
<i>Pleurogonium inerme</i>	1	1	1	3	2731	0.11	98.99
<i>Micrura</i> spp.				2	2733	0.07	99.06
<i>Microphthalmus aberrans</i>	1	1		2	2735	0.07	99.13
<i>Nephtys incisa</i>	1	1		2	2737	0.07	99.20
<i>Gemma gemma</i>	1	1	1	2	2739	0.07	99.28
<i>Nucula annulata</i>	2	2		2	2741	0.07	99.35
<i>Argissa hamatipes</i>	1	1	1	2	2743	0.07	99.42
Anemone				1	2744	0.04	99.46
<i>Bostrichobranchus pilularis</i>				1	2745	0.04	99.49
<i>Cerebratulus</i> spp.				1	2746	0.04	99.53
<i>Eteone</i> sp.	1	1		1	2747	0.04	99.57
<i>Harmothoe extenuata</i>				1	2748	0.04	99.60
<i>Nereis</i> sp.				1	2749	0.04	99.64
<i>Nereis virens</i>	1	1		1	2750	0.04	99.67
<i>Polydora socialis</i>				1	2751	0.04	99.71
<i>Sphaerodoropsis minuta</i>	1	1		1	2752	0.04	99.75
<i>Diaphana minuta</i>				1	2753	0.04	99.78
<i>Hydrobia truncata</i>				1	2754	0.04	99.82
<i>Pitar morrhuana</i>	1			1	2755	0.04	99.86
<i>Ampelisca abdita</i>				1	2756	0.04	99.89
<i>Ampelisca</i> sp.	1			1	2757	0.04	99.93
<i>Leptocheirus pinguis</i>				1	2758	0.04	99.96
Mite				1	2759	0.04	100.00

Hydroid
Sertularia spp.

+	+
+	+

STATION: 20
 DATE: Feb-82
 NUMBER OF SPECIES: 45
 DENSITY (m-2): 1274

SPECIES	Feb-82					TOTAL	CUM. TOT.	%	Cum. %
	20-1	20-2	20-3	20-4	20-5				
<i>Nucula delphinodonta</i>	16	42	24	43	46	171	171	26.84	26.84
<i>Eudorella</i> spp.	32	14	35	9	21	111	282	17.43	44.27
<i>Lumbrineris hebes</i>	32	7	35	12	8	94	376	14.76	59.03
<i>Mytilus edulis</i>	17	14	16	19	5	71	447	11.15	70.17
<i>Nephtys neotena</i>	10		12	3	5	30	477	4.71	74.88
<i>Ninoo nigripes</i>	16	6	4	1	2	29	506	4.55	79.43
<i>Aricidea</i> sp.			11	6	3	20	526	3.14	82.57
<i>Yoldia limatula</i>	1	4	4	1	3	13	539	2.04	84.62
<i>Mya arenaria</i>	3	2	4	3		12	551	1.88	86.50
<i>Hydrobia truncata</i>		2	9			11	562	1.73	88.23
<i>Oligochaeta</i>	4		1		4	9	571	1.41	89.64
<i>Photis pollex</i>	3	3		1		7	578	1.10	90.74
<i>Diastylis sculpta</i>	2	1	2	1		6	584	0.94	91.68
<i>Ampharete</i> sp.		2			3	5	589	0.78	92.46
<i>Aricidea catherinae</i>	1		3			4	593	0.63	93.09
<i>Eteone longa</i>		1	1	1	1	4	597	0.63	93.72
<i>Nephtys incisa</i>			2	1		3	600	0.47	94.19
<i>Pitar morrhuana</i>		1		1	1	3	603	0.47	94.66
<i>Micrura</i> spp.			1	1		2	605	0.31	94.98
Flabelligeridae			2			2	607	0.31	95.29
<i>Nereis virens</i>		1		1		2	609	0.31	95.60
<i>Levinsenia gracilis</i>				1	1	2	611	0.31	95.92
<i>Cerastoderma pinnulatum</i>		1		1		2	613	0.31	96.23
<i>Nassarius trivittatus</i>			2			2	615	0.31	96.55
<i>Meterythrope robusta</i>	1		1			2	617	0.31	96.86
Holothurian	1					1	618	0.16	97.02
<i>Tetrastemma</i> spp.				1		1	619	0.16	97.17

Unid. Nemertean	1			1	620	0.16	97.33
<i>Ampharete arctica</i>	1				621	0.16	97.49
<i>Hartmania moorei</i>		1			622	0.16	97.65
Nephtyidae	1				623	0.16	97.80
<i>Ophelina acuminata</i>			1		624	0.16	97.96
<i>Owenia fusiformis</i>		1			625	0.16	98.12
<i>Pista maculata</i>				1	626	0.16	98.27
<i>Gemma gemma</i>			1		627	0.16	98.43
<i>Modiolous modiolus</i>				1	628	0.16	98.59
<i>Nucula annulata</i>			1		629	0.16	98.74
<i>Periploma fragile</i>	1				630	0.16	98.90
<i>Tellina agilis</i>				1	631	0.16	99.06
<i>Arrhis</i> sp.?	1				632	0.16	99.22
<i>Casco</i> bigelowi				1	633	0.16	99.37
Mite	1				634	0.16	99.53
<i>Pleurogonium inerme</i>				1	635	0.16	99.69
<i>Orchomene pinguis</i>		1			636	0.16	99.84
<i>Philoscia vittata</i>		1			637	0.16	100.00

STATION: 29
 DATE: Sep-80
 NUMBER OF SPECIES: 87
 DENSITY (m-2): 18714

SPECIES	Sep-80							TOTAL	CUM.TOT.	%	Cum.%
	29-1	29-2	29-3	29-4	29-5	29-6	29-7				
<i>Prionospio steenstrupi</i>	895	828	29	800	1154			3706	3706	39.61	39.61
<i>Aricidea catherinae</i>	285	309	148	187	378			1307	5013	13.97	53.57
<i>Eudorella</i> spp.	131	224	44	558	206			1163	6176	12.43	66.00
<i>Oligochaeta</i>	181	100	39	56	193			569	6745	6.08	72.09
<i>Mediomastus californiensis</i>	132	126	42	89	167			556	7301	5.94	78.03
<i>Nucula delphinodonta</i>	98	86	23	36	54			297	7598	3.17	81.20
<i>Aricidea suecica</i>	67	27	25	36	31			186	7784	1.99	83.19
<i>Nephtys neotena</i>	62	21	1	26	52			162	7946	1.73	84.92
<i>Scoloplos</i> spp.	27	20	20	44	35			146	8092	1.56	86.48
<i>Nincea nigripes</i>	16	37	11	18	28			110	8202	1.18	87.66
<i>Phyllodoce mucosa</i>	10	32	7	38	5			92	8294	0.98	88.64
<i>Spio filicornis</i>	12	18	13	28	13			84	8378	0.90	89.54
Terebellid A	1	25	12	40	5			83	8461	0.89	90.42
<i>Lumbrineris hebes</i>	7	35	5	11	22			80	8541	0.85	91.28
<i>Levinsenia gracilis</i>	11	18	14	14	22			79	8620	0.84	92.12
Amphipod A	4	1		47	10			62	8682	0.66	92.79
<i>Parougia caecus</i>	14	18	5	8	7			52	8734	0.56	93.34
<i>Dyopodos monacanthus</i>	6	2	5	30	2			45	8779	0.48	93.82
<i>Ampharete acutifrons</i>	2	10	2	16	8			38	8817	0.41	94.23
<i>Diastylis sculpta</i>	4	4	3	21	3			35	8852	0.37	94.60
<i>Mayerella limicola</i>	9	3	3	14	5			34	8886	0.36	94.97
<i>Tharyx</i> spp.	10		7	7	5			29	8915	0.31	95.28
<i>Mytilus edulis</i>	1		2	22	3			28	8943	0.30	95.58
<i>Neomysis americana</i>	6	8		14				28	8971	0.30	95.87
<i>Potamilla neglecta</i>	9	13	1	4				27	8998	0.29	96.16
<i>Melita n. sp.</i>		1		14	10			25	9023	0.27	96.43
<i>Nephtys incisa</i>	5	3	2	9	4			23	9046	0.25	96.68

<i>Arrhis</i> sp.?	1	7	15	23	9069	0.25	96.92
<i>Ampharete arctica</i>	5	7		21	9090	0.22	97.15
<i>Pleurogonium inerme</i>	2		13	21	9111	0.22	97.37
<i>Micrura</i> spp.	1	3	7	20	9131	0.21	97.58
<i>Pholoe minuta</i>	3	1	6	18	9149	0.19	97.78
<i>Meterythrops robusta</i>	2	2		15	9164	0.16	97.94
<i>Tetrastemma</i> spp.	1	10	4	12	9176	0.13	98.07
<i>Thyasira flexuosa</i>	2	4	1	12	9188	0.13	98.19
Unid. Nemertean	1		1	10	9198	0.11	98.30
<i>Ampharete</i> sp.		8		10	9208	0.11	98.41
Ampharetidae	9	2		10	9218	0.11	98.51
Sabellid B		4		10	9228	0.11	98.62
<i>Photis pollex</i>	2	2	1	8	9236	0.09	98.71
<i>Eteone longa</i>	1	1	2	7	9243	0.07	98.78
<i>Cerastoderma pinnulatum</i>	2	1	3	7	9250	0.07	98.86
<i>Cylichna gouldii</i>	2	1	3	7	9257	0.07	98.93
<i>Yoldia limatula</i>	2	1	3	7	9264	0.07	99.01
<i>Owenia fusiformis</i>	1	1	1	6	9270	0.06	99.07
<i>Sabella penicillis</i>	2	1	4	6	9276	0.06	99.13
<i>Erythrops erythrophthalma</i>	2	2	2	6	9282	0.06	99.20
<i>Capitella</i> spp.	2	1		5	9287	0.05	99.25
<i>Diplocirrus hirsutus</i>		1	2	5	9292	0.05	99.31
<i>Mya arenaria</i>	1	1	1	5	9297	0.05	99.36
<i>Orchomene pinguis</i>		3		5	9302	0.05	99.41
<i>Microphthalmus aberrans</i>	4	5		4	9306	0.04	99.45
<i>Nucula annulata</i>	1	1		4	9310	0.04	99.50
<i>Eteone flava</i>	1			3	9313	0.03	99.53
<i>Harpinia propinqua</i>	1		1	3	9316	0.03	99.56
<i>Bostrichobranchus pilularis</i>	2		2	2	9318	0.02	99.58
<i>Edwardsia elegans</i>	1	1		2	9320	0.02	99.60
<i>Apistobranchus tulbergi</i>	1	1		2	9322	0.02	99.63
<i>Cossura longocirrata</i>	2			2	9324	0.02	99.65
<i>Hartmania moorei</i>	1	1		2	9326	0.02	99.67
<i>Pherusa affinis</i>		2		2	9328	0.02	99.69

<i>Scalibregma inflatum</i>						2						2	9330	0.02	99.71	
<i>Ensis directus</i>											1	2	9332	0.02	99.73	
<i>Nassarius trivittatus</i>											1	2	9334	0.02	99.75	
<i>Leptostylis longimama</i>											1	2	9336	0.02	99.78	
<i>Cerebratulus spp.</i>						1						1	9337	0.01	99.79	
<i>Tetrastemma elegans</i>											1	1	9338	0.01	99.80	
<i>Aricidea quadrilobata</i>											1	1	9339	0.01	99.81	
<i>Asabellides oculata</i>											1	1	9340	0.01	99.82	
<i>Eusyllis lamalligera</i>							1					1	9341	0.01	99.83	
<i>Goniada maculata</i>											1	1	9342	0.01	99.84	
<i>Harmothoe extenuata</i>							1					1	9343	0.01	99.85	
<i>Heteromastus fiiiformis</i>						1						1	9344	0.01	99.86	
<i>Lumbrineris fragilis</i>											1	1	9345	0.01	99.87	
<i>Maldane sarsi</i>						1						1	9346	0.01	99.88	
<i>Microphthalmus szcelkowitzii</i>											1	1	9347	0.01	99.89	
<i>Ophelina acuminata</i>											1	1	9348	0.01	99.90	
<i>Phyllodoce groenlandica</i>									1			1	9349	0.01	99.91	
<i>Polydora quadrilobata</i>						1						1	9350	0.01	99.93	
<i>Sphaerodoropsis minuta</i>						1						1	9351	0.01	99.94	
<i>Sternaspis scutata</i>											1	1	9352	0.01	99.95	
<i>Tharyx dorsobranchialis</i>									1			1	9353	0.01	99.96	
<i>Macoma balthica</i>											1	1	9354	0.01	99.97	
<i>Periploma fragile</i>											1	1	9355	0.01	99.98	
<i>Argissa hamatipes</i>											1	1	9356	0.01	99.99	
<i>Oxyurostylis smithi</i>											1	1	9357	0.01	100.00	
<i>Sertularia spp.</i>												1				100.00

STATION: 29
 DATE: Dec-80
 NUMBER OF SPECIES: 68
 DENSITY (m-2): 11670

SPECIES	Dec-80					TOTAL	CUM.TOT.	%	Cum.%
	29-1	29-2	29-3	29-4	29-5				
<i>Eudorella</i> spp.	497	427	593	624	215	2356	40.38	40.38	
<i>Aricidea catherinae</i>	303	33	232	243	213	1024	17.55	57.93	
<i>Nucula delphinodonta</i>	158	24	189	66	61	498	8.53	66.46	
<i>Oligochaeta</i>	156	15	106	34	120	431	7.39	73.85	
<i>Nephtys neotena</i>	58	61	107	95	50	371	6.36	80.21	
<i>Prionospio steenstrupi</i>	133		40	135	10	318	5.45	85.66	
<i>Ninoe nigripes</i>	42	11	38	19	21	131	2.25	87.90	
<i>Scoloplos</i> spp.	17	4	50	23	11	105	1.80	89.70	
<i>Levinsenia gracilis</i>	18	18	11	18	15	80	1.37	91.07	
<i>Lumbrineris hebes</i>	25	17	17	10	5	74	1.27	92.34	
<i>Mytilus edulis</i>	25	6	4	16	12	63	1.08	93.42	
<i>Mediomastus californiensis</i>	36		12	11	2	61	1.05	94.46	
<i>Diastylis sculpta</i>	4	6	5	22	5	42	0.72	95.18	
<i>Argissa hamatipes</i>	4	11	4	3	4	26	0.45	95.63	
<i>Aricidea suecica</i>	8		14	2		24	0.41	96.04	
<i>Oedicerus</i> sp.?	3	3		12	3	21	0.36	96.40	
<i>Nephtys incisa</i>	6	3	4	4	3	20	0.34	96.74	
<i>Micrura</i> spp.	6	2	4	4	1	17	0.29	97.04	
<i>Yoldia limatula</i>	4	1	1	3	4	13	0.22	97.26	
<i>Photis pollex</i>	1	2	5	1	2	11	0.19	97.45	
Ampharetidae	5	5				10	0.17	97.62	
<i>Cerastoderma pinnulatum</i>	3	5		1	1	10	0.17	97.79	
<i>Arrhis</i> sp.?		3	4	2	1	10	0.17	97.96	
<i>Eteone longa</i>			2	2	4	8	0.14	98.10	
<i>Tharyx</i> spp.	2		1	1	4	8	0.14	98.23	
<i>Pholoe minuta</i>	1	1	1	3	1	7	0.12	98.35	
Amphipod A	1	1		5		7	0.12	98.47	

<i>Melita n. sp.</i>			4	3	7	5753	0.12	98.59
<i>Ampharete sp.</i>			1	6	6	5759	0.10	98.70
<i>Sphaerodoropsis minuta</i>	1	2	1	1	5	5764	0.09	98.78
<i>Pitar morrhuana</i>		1	1	1	5	5769	0.09	98.87
<i>Orchomene pinguis</i>		2	1	2	5	5774	0.09	98.95
Owenidae		4			4	5778	0.07	99.02
<i>Nassarius trivittatus</i>	2	1		1	4	5782	0.07	99.09
<i>Nucula annulata</i>	3		1		4	5786	0.07	99.16
<i>Ampelisca agassizi</i>				4	4	5790	0.07	99.23
<i>Phyllodoce sp.</i>	3				3	5793	0.05	99.28
<i>Mulinea lateralis</i>	3				3	5796	0.05	99.33
<i>Leptocheirus pinguis</i>		2	1		3	5799	0.05	99.38
<i>Meterythrops robusta</i>		2		1	3	5802	0.05	99.43
<i>Caudina arenata</i>			1	1	2	5804	0.03	99.47
<i>Tetrastemma spp.</i>	1				2	5806	0.03	99.50
<i>Modiolous modiolus</i>	1	1		1	2	5808	0.03	99.54
<i>Periploma fragile</i>	2				2	5810	0.03	99.57
<i>Thyasira flexuosa</i>	2				2	5812	0.03	99.61
<i>Casco bigelowi</i>	1		1		2	5814	0.03	99.64
<i>Havelockia scabra</i>			1		1	5815	0.02	99.66
<i>Ampharete acutifrons</i>				1	1	5816	0.02	99.67
<i>Ampharete arctica</i>			1		1	5817	0.02	99.69
<i>Eteone sp.</i>	1				1	5818	0.02	99.71
<i>Hartmania moorei</i>				1	1	5819	0.02	99.73
<i>Owenia fusiformis</i>				1	1	5820	0.02	99.74
Phyllodoceidae			1		1	5821	0.02	99.76
<i>Scolecopides viridis</i>			1		1	5822	0.02	99.78
<i>Spio filicornis</i>	1				1	5823	0.02	99.79
<i>Spirobis borealis</i>				1	1	5824	0.02	99.81
Bivalvia	1				1	5825	0.02	99.83
<i>Cylichna gouldii</i>				1	1	5826	0.02	99.85
<i>Haminoea solitaria</i>				1	1	5827	0.02	99.86
<i>Lunatia heros</i>	1				1	5828	0.02	99.88
<i>Macoma balthica</i>				1	1	5829	0.02	99.90

<i>Ampelisca</i> sp.	1	5830	0.02	99.91
<i>Harpinia propinqua</i>	1	5831	0.02	99.93
<i>Leptostylis ampullacea</i>	1	5832	0.02	99.95
<i>Leptostylis longimama</i>	1	5833	0.02	99.97
<i>Metopella angusta</i>	1	5834	0.02	99.98
Oediceratidae sp.	+	5835	0.02	100.00
<i>Sertularia</i> spp.	+			

STATION: 29
 DATE: Apr-81
 NUMBER OF SPECIES: 69
 DENSITY (m-2): 7270

SPECIES	Apr-81					TOTAL	CUM.TOT.	%	Cum.%
	29-1	29-2	29-3	29-4	29-5				
<i>Eudorella</i> spp.	275	268	312	256	142	1253	1253	34.47	34.47
<i>Aricidea catherinae</i>	126	248	83	63	49	569	1822	15.65	50.12
<i>Nucula delphinodonta</i>	61	166	64	137	73	501	2323	13.78	63.91
<i>Oligochaeta</i>	40	81	27	64	39	251	2574	6.91	70.81
<i>Ninoe nigripes</i>	43	39	18	46	28	174	2748	4.79	75.60
<i>Scoloplos</i> spp.	46	29	31	8	17	131	2879	3.60	79.20
<i>Nephtys neotena</i>	10	20	23	34	18	105	2984	2.89	82.09
<i>Lumbrineris hebes</i>	20	15	10	21	12	78	3062	2.15	84.24
<i>Prionospio steenstrupi</i>	32	12		11	23	78	3140	2.15	86.38
<i>Dyopedos monacanthus</i>	23	10	15	11	14	73	3213	2.01	88.39
<i>Levinsenia gracilis</i>	5	22	12	22	6	67	3280	1.84	90.23
<i>Mytilus edulis</i>	6	17	4	3	9	39	3319	1.07	91.31
<i>Aricidea suecica</i>	18	7	1		9	35	3354	0.96	92.27
<i>Diastylis sculpta</i>	3	1	1	9	5	19	3373	0.52	92.79
<i>Orchomene pinguis</i>	6	1	1	2	9	19	3392	0.52	93.31
<i>Micrura</i> spp.	8	5	4			17	3409	0.47	93.78
<i>Mediomastus californiensis</i>	2	9			4	15	3424	0.41	94.20
<i>Pholoe minuta</i>	5	4	3	1	1	14	3438	0.39	94.58
<i>Oedicerus</i> sp.?	7	2	2	2		13	3451	0.36	94.94
<i>Melita</i> n. sp.	6	1	4	1		12	3463	0.33	95.27
<i>Photis pollex</i>	5	1	2	2	2	12	3475	0.33	95.60
<i>Nephtys incisa</i>	3	1		2	4	10	3485	0.28	95.87
Amphipod A	3	1	4	2	2	10	3495	0.28	96.15
<i>Arrhis</i> sp.?	6	1	1	2		10	3505	0.28	96.42
<i>Pleurogonium inerme</i>	5		4	1		10	3515	0.28	96.70
<i>Ampharete</i> sp.		5			3	8	3523	0.22	96.92
<i>Phylodoce mucosa</i>			8			8	3531	0.22	97.14

<i>Sphaerodoropsis minuta</i>	1	2	3	1	1	1	8	3539	0.22	97.36
<i>Argissa hamatipes</i>	1	3	1	1	1	2	8	3547	0.22	97.58
<i>Cerastoderma pinnulatum</i>	3	1	1	2	2		7	3554	0.19	97.77
<i>Ampharete arctica</i>	3		1	2	2		6	3560	0.17	97.94
<i>Nassarius trivittatus</i>					5	1	6	3566	0.17	98.10
<i>Leptocheirus pinguis</i>	3					2	5	3571	0.14	98.24
<i>Tetrastemma</i> spp.	2	1				1	4	3575	0.11	98.35
<i>Eteone longa</i>		1			2	1	4	3579	0.11	98.46
<i>Tharyx</i> spp.	2				1	1	4	3583	0.11	98.57
<i>Micronephthys minuta?</i>	3						3	3586	0.08	98.65
Owenidae		1	1			1	3	3589	0.08	98.73
<i>Mya arenaria</i>	1	1	1				3	3592	0.08	98.82
<i>Nucula annulata</i>			1				3	3595	0.08	98.90
<i>Periploma fragile</i>					2	1	3	3598	0.08	98.98
<i>Thyasira flexuosa</i>	2		1				3	3601	0.08	99.06
<i>Mayerella limicola</i>	1	1	1				3	3604	0.08	99.15
<i>Caudina arenata</i>		2					2	3606	0.06	99.20
<i>Spio filicornis</i>		2					2	3608	0.06	99.26
<i>Pitar morrhuana</i>	1				1		2	3610	0.06	99.31
<i>Yoldia limatula</i>		1				1	2	3612	0.06	99.37
<i>Casco bigelowi</i>			1			1	2	3614	0.06	99.42
<i>Meterothrops robusta</i>			1				2	3616	0.06	99.48
<i>Metopella angusta</i>			1				2	3618	0.06	99.53
<i>Bostrichobranchus pilularis</i>				2	1		1	3619	0.03	99.56
<i>Havelockia scabra</i>				1		1	1	3620	0.03	99.59
Ampharetidae				1			1	3621	0.03	99.61
<i>Brada villosa</i>						1	1	3622	0.03	99.64
<i>Eteone flava</i>							1	3623	0.03	99.67
<i>Hartmania moorei</i>	1					1	1	3624	0.03	99.70
<i>Owenia fusiformis</i>					1		1	3625	0.03	99.72
Polynoidae			1				1	3626	0.03	99.75
<i>Protomystides</i> sp.?					1		1	3627	0.03	99.78
<i>Sternaspis scutata</i>						1	1	3628	0.03	99.81
Unknown Polychaete A	1						1	3629	0.03	99.83

Bivalvia				1		3630	0.03	99.86
Gastropoda	1					3631	0.03	99.89
<i>Modiolus modiolus</i>	1					3632	0.03	99.92
<i>Erythrogs erythrothalma</i>			1			3633	0.03	99.94
<i>Harpinia propinqua</i>		1				3634	0.03	99.97
<i>Leptostylis longimama</i>					1	3635	0.03	100.00
Hydroid								
<i>Sertularia</i> spp.		+		+	+			

STATION: 29
 DATE: Jul-81
 NUMBER OF SPECIES: 82
 DENSITY (m-2): 6430

SPECIES	Jul-81							TOTAL	CUM.TOT.	%	Cum.%
	29-1	29-2	29-3	29-4	29-5	29-6	29-7				
<i>Aricidea catherinae</i>	34	34	74	481	102			725	22.55	22.55	
<i>Prionospio steenstrupi</i>	3	4	15	374	13			409	12.72	35.27	
<i>Nucula delphinodonta</i>	57	16	90	122	43			328	14.62	45.47	
<i>Eudorella</i> spp.	13	117	105	18	36			289	17.51	54.46	
<i>Oligochaeta</i>	8	5	20	212	8			253	7.87	62.33	
<i>Lumbrineris hebes</i>	10	13	8	61	38			130	21.34	66.38	
<i>Nephtys neotena</i>	4	16	34	47	28			129	22.63	70.39	
<i>Ninoe nigripes</i>	27	9	31	13	10			90	23.53	73.19	
<i>Mediomastus californiensis</i>		10	3	66	8			87	24.40	75.89	
<i>Levinsenia gracilis</i>	11	7	13	36	13			80	25.20	78.38	
<i>Scoloplos</i> spp.	1	3	6	48	10			68	25.88	80.50	
<i>Aricidea suecica</i>			1	52	14			67	26.55	82.58	
<i>Orchomene pinguis</i>		2	37	12	4			55	27.10	84.29	
<i>Spio filicornis</i>		3		46				49	27.59	85.82	
<i>Dyopedos monacanthus</i>	1	6	10	11	14			42	28.01	87.12	
<i>Parorgia caecus</i>	3		5	39				39	28.40	88.34	
<i>Tharyx</i> spp.				16	7			31	28.71	89.30	
<i>Mytilus edulis</i>	10	10	6	2	1			29	29.00	90.20	
<i>Diastylis sculpta</i>	2	6	4	8	8			28	29.28	91.07	
<i>Phylodoce mucosa</i>				20				20	29.48	91.70	
<i>Phylodoce</i> sp.		12			3			15	29.63	92.16	
<i>Nephtys incisa</i>	5	3	3	1	2			14	29.77	92.60	
<i>Photis pollex</i>	1	1	3	5	4			14	29.91	93.03	
<i>Cylichna gouldii</i>	1	1	2	4	5			13	30.04	93.44	
<i>Arrhis</i> sp.?			1	3	9			13	30.17	93.84	
<i>Ophelina acuminata</i>		4		8				12	30.29	94.21	
<i>Mayerella limicola</i>	1	1	3	4	3			12	30.41	94.59	

<i>Pleurogonium inerme</i>	1		1	7	3	12	3053	0.37	94.96
Amphipod A		1	4	5		11	3064	0.34	95.30
<i>Micrura</i> spp.	2	2	3			10	3074	0.31	95.61
Phyllocodidae	3		7			10	3084	0.31	95.93
<i>Tetrastemma</i> spp.				9		9	3093	0.28	96.21
<i>Melita</i> n. sp.	2		1	6		9	3102	0.28	96.49
<i>Trochochaeta multisetosa</i>				8		8	3110	0.25	96.73
<i>Pholoe minuta</i>		2	1	4		7	3117	0.22	96.95
<i>Ensis directus</i>				6	1	7	3124	0.22	97.17
<i>Eteone longa</i>		1	5	5		6	3130	0.19	97.36
<i>Thyasira flexuosa</i>	1			5		6	3136	0.19	97.54
<i>Casco bigelowi</i>	3	1	1			5	3141	0.16	97.70
<i>Potamilla neglecta</i>				4		4	3145	0.12	97.82
<i>Yoldia limatula</i>		2	1	1	1	4	3149	0.12	97.95
<i>Argissa hamatipes</i>		1	2	3		4	3153	0.12	98.07
Bivalvia		2	1			3	3156	0.09	98.16
<i>Tellina agilis</i>		2				3	3159	0.09	98.26
<i>Erythrope erythrophthalmia</i>			1			3	3162	0.09	98.35
<i>Harpinia propinqua</i>		2	2		2	3	3165	0.09	98.44
<i>Caudina arenata</i>	1		1	1		2	3167	0.06	98.51
Unid. Nemertean	1		1			2	3169	0.06	98.57
<i>Ampharete arctica</i>				2		2	3171	0.06	98.63
<i>Ampharete</i> sp.	1		1			2	3173	0.06	98.69
<i>Brada villosa</i>				2		2	3175	0.06	98.76
Dorvilleidae					2	2	3177	0.06	98.82
<i>Exogone hebes</i>				2		2	3179	0.06	98.88
<i>Hartmania moorei</i>	1	1		2		2	3181	0.06	98.94
<i>Heteromastus filiformis</i>				2		2	3183	0.06	99.00
<i>Mya arenaria</i>	1		1			2	3185	0.06	99.07
<i>Nassarius trivittatus</i>		2				2	3187	0.06	99.13
<i>Pitar morrhuana</i>	1				1	2	3189	0.06	99.19
<i>Leptocheirus pinguis</i>				2		2	3191	0.06	99.25
<i>Meterythrope robusta</i>	1				1	2	3193	0.06	99.32
<i>Neomysis americana</i>				2		2	3195	0.06	99.38

<i>Oedicerus</i> sp.?			2	3197	0.06	99.44
<i>Bostrichobranchnus pilularis</i>	1		1	3198	0.03	99.47
<i>Phascolopsis gouldii</i>		1	1	3199	0.03	99.50
<i>Ampharete acutifrons</i>		1	1	3200	0.03	99.53
<i>Antinoella sarsi</i>		1	1	3201	0.03	99.56
<i>Capitella</i> spp.			1	3202	0.03	99.60
<i>Clymenella torquata</i>	1		1	3203	0.03	99.63
<i>Lumbrineris fragilis</i>		1	1	3204	0.03	99.66
<i>Microphthalmus aberrans</i>			1	3205	0.03	99.69
<i>Microphthalmus</i> sp.		1	1	3206	0.03	99.72
Owenidae			1	3207	0.03	99.75
Polychaeta spp.	1		1	3208	0.03	99.78
<i>Arctica islandica</i>			1	3209	0.03	99.81
Gastropoda			1	3210	0.03	99.84
<i>Modiolous modiolus</i>			1	3211	0.03	99.88
<i>Nucula annulata</i>	1		1	3212	0.03	99.91
<i>Ampelisca agassizi</i>		1	1	3213	0.03	99.94
<i>Corophium crassicorne</i>			1	3214	0.03	99.97
<i>Unciola irrorata</i>		1	1	3215	0.03	100.00
Hydroid						
<i>Sertularia</i> spp.						

STATION: 29
 DATE: Feb-82
 NUMBER OF SPECIES: 55
 DENSITY (m-2): 5106

SPECIES	Feb-82					TOTAL	CUM.TOT.	%	Cum.%
	29-1	29-2	29-3	29-4	29-5				
<i>Eudorella</i> spp.	96	234	328	226	180	1064	1064	41.68	41.68
<i>Nucula delphinodonta</i>	43	98	236	159	209	745	1809	29.18	70.86
<i>Ninoo nigripes</i>	26	49	54	55	33	217	2026	8.50	79.36
<i>Nephtys neotena</i>	1	10	6	10	52	79	2105	3.09	82.45
<i>Aricidea</i> sp.	10		9	35	23	77	2182	3.02	85.47
<i>Lumbrineris hebes</i>	13	10	17	7	15	62	2244	2.43	87.90
<i>Levinsenia gracilis</i>		25	6	14	16	61	2305	2.39	90.29
<i>Mytilus edulis</i>	14	3	4	7	13	41	2346	1.61	91.89
<i>Diastylis sculpta</i>	1	10	11	8	6	36	2382	1.41	93.30
<i>Ampharete</i> sp.		28	1			29	2411	1.14	94.44
<i>Photis pollex</i>	2	2	4	6	1	15	2426	0.59	95.03
<i>Nassarius trivittatus</i>	4	3	1	2	1	11	2437	0.43	95.46
<i>Nephtys incisa</i>	4				4	8	2445	0.31	95.77
<i>Mya arenaria</i>	4	2	1		1	8	2453	0.31	96.08
<i>Pitar morrhuana</i>	1	1	3	1	2	8	2461	0.31	96.40
<i>Yoldia limatula</i>		2	2	3		7	2468	0.27	96.67
<i>Pholoe minuta</i>		1	1		4	6	2474	0.24	96.91
<i>Melita n. sp.</i>		2	2	1	1	6	2480	0.24	97.14
<i>Periploma fragile</i>				1	4	5	2485	0.20	97.34
<i>Arctica islandica</i>	3	1				4	2489	0.16	97.49
<i>Bivalvia</i>			2	2		4	2493	0.16	97.65
<i>Modiolous modiolus</i>	1	1		1	1	4	2497	0.16	97.81
<i>Nucula annulata</i>	2		1		1	4	2501	0.16	97.96
<i>Oedicerus</i> sp.?		1		3		4	2505	0.16	98.12
<i>Caudina arenata</i>	1		1		1	3	2508	0.12	98.24
<i>Micrura</i> spp.					3	3	2511	0.12	98.35
<i>Aricidea catherinae</i>		1			2	3	2514	0.12	98.47

<i>Dyopedos monacanthus</i>	1	2		3	2517	0.12	98.59
<i>Harpinia propinqua</i>	1	2		3	2520	0.12	98.71
<i>Ampharete arctica</i>		2		2	2522	0.08	98.79
<i>Eteone longa</i>		1	1	2	2524	0.08	98.86
<i>Lumbrineris fragilis</i>			2	2	2526	0.08	98.94
Nephtyidae				2	2528	0.08	99.02
Owenidae			1	2	2530	0.08	99.10
Phyllodocidae		2		2	2532	0.08	99.18
Sigalionidae			2	2	2534	0.08	99.26
<i>Pleurogonium inerme</i>		1	1	2	2536	0.08	99.33
<i>Neomysis americana</i>	1	1		2	2538	0.08	99.41
<i>Tetrasomma spp.</i>		1		1	2539	0.04	99.45
Maldanidae			1	1	2540	0.04	99.49
Nereidae			1	1	2541	0.04	99.53
Oligochaeta		1		1	2542	0.04	99.57
<i>Scoloplos spp.</i>				1	2543	0.04	99.61
<i>Sphaerodoropsis minuta</i>	1		1	1	2544	0.04	99.65
<i>Cerastoderma pinnulatum</i>			1	1	2545	0.04	99.69
<i>Lyonsia hyalina</i>	1			1	2546	0.04	99.73
<i>Tellina agilis</i>			1	1	2547	0.04	99.76
Amphipod A				1	2548	0.04	99.80
<i>Arrhis sp.?</i>		1		1	2549	0.04	99.84
<i>Campylapis rubicunda</i>				1	2550	0.04	99.88
<i>Orchomene pinguis</i>		1		1	2551	0.04	99.92
<i>Pontogeneia inermis</i>		1		1	2552	0.04	99.96
Unknown Amphipod		1		1	2553	0.04	100.00
Hydroid							
<i>Sertularia spp.</i>			+				

STATION: 51
 DATE: Sep-80
 NUMBER OF SPECIES: 86
 DENSITY (m-2): 30310

SPECIES	Sep-80				TOTAL	CUM. TOT.	%	Cum. %
	51-1	51-3	51-5	51-5				
<i>Prionospio steenstrupi</i>	2122	1046	2071	2071	5239	5239	57.74	57.74
<i>Aricidea catherinae</i>	244	361	136	136	741	5980	8.17	65.90
<i>Mediomastus californiensis</i>	135	212	153	153	500	6480	5.51	71.41
<i>Lumbrineris hebes</i>	48	145	159	159	352	6832	3.88	75.29
<i>Oligochaeta</i>	187	140	11	11	338	7170	3.72	79.02
<i>Eudorella</i> spp.	36	59	202	202	297	7467	3.27	82.29
<i>Phyllodoce mucosa</i>	87	70	67	67	224	7691	2.47	84.76
<i>Diastylis sculpta</i>	24	45	100	100	169	7860	1.86	86.62
<i>Nephtys neotena</i>	33	53	71	71	157	8017	1.73	88.35
<i>Modiolous modiolus</i>	133	2	17	17	152	8169	1.68	90.03
<i>Ninoo nigripes</i>	18	26	43	43	87	8256	0.96	90.99
Lumbrineridae spp.	66				66	8322	0.73	91.71
<i>Nucula delphinodonta</i>	20	11	33	33	64	8386	0.71	92.42
<i>Orchomene pinguis</i>	23	21	19	19	63	8449	0.69	93.11
<i>Scoloplos</i> spp.	2	27	11	11	40	8489	0.44	93.55
<i>Tharyx</i> spp.	2	17	17	17	36	8525	0.40	93.95
<i>Yoldia limatula</i>	20	2	12	12	34	8559	0.37	94.32
<i>Mya arenaria</i>	13	6	11	11	30	8589	0.33	94.66
<i>Eteone longa</i>	7	5	17	17	29	8618	0.32	94.97
<i>Pleurogonium inerme</i>	6	7	14	14	27	8645	0.30	95.27
<i>Phoxocephalus holbolli</i>	5	10	11	11	26	8671	0.29	95.56
<i>Photis pollex</i>	9	8	8	8	25	8696	0.28	95.83
<i>Capitella</i> spp.	14	7	3	3	24	8720	0.26	96.10
<i>Argissa hamatipes</i>	4	5	15	15	24	8744	0.26	96.36
<i>Edwardsia elegans</i>	11	5	6	6	22	8766	0.24	96.61
<i>Micrura</i> spp.	13	1	8	8	22	8788	0.24	96.85
<i>Ampharete arctica</i>	11	3	8	8	22	8810	0.24	97.09

<i>Parugia caecus</i>	3	16	19	8829	0.21	97.30
<i>Tetrastemma</i> spp.	5	9	18	8847	0.20	97.50
<i>Nephtys incisa</i>	6	3	15	8862	0.17	97.66
<i>Pholoe minuta</i>	8	4	13	8875	0.14	97.81
<i>Arctica islandica</i>	4	2	12	8887	0.13	97.94
<i>Cerastoderma pinnulatum</i>	4	3	12	8899	0.13	98.07
<i>Lyonsia hyalina</i>	3	2	11	8910	0.12	98.19
<i>Paroedicerus lynceus?</i>	11		11	8921	0.12	98.31
<i>Microphthalmus sczelkowitzii</i>			9	8930	0.10	98.41
<i>Ophelina acuminata</i>		9	9	8939	0.10	98.51
<i>Casco bigelowi</i>	5	1	8	8947	0.09	98.60
<i>Dyopedos monacanthus</i>	7	1	8	8955	0.09	98.69
<i>Unciola irrorata</i>	2	4	8	8963	0.09	98.78
<i>Nassarius trivittatus</i>	2	5	7	8970	0.08	98.85
<i>Harpinia propinqua</i>	4	3	7	8977	0.08	98.93
<i>Cirratulidae</i> spp.	6		6	8983	0.07	99.00
<i>Tharyx acutus</i>	6		6	8989	0.07	99.06
<i>Tharyx dorsobranchialis</i>	6		6	8995	0.07	99.13
<i>Ampelisca agassizi</i>	3	3	6	9001	0.07	99.20
<i>Meterythrops robusta</i>	1	1	6	9007	0.07	99.26
<i>Microphthalmus aberrans</i>		4	5	9012	0.06	99.32
<i>Owenia fusiformis</i>	2	2	5	9017	0.06	99.37
<i>Levinsenia gracilis</i>	2	3	5	9022	0.06	99.43
<i>Crenella decussata</i>	2	1	5	9027	0.06	99.48
<i>Pitar morrhuana</i>	1	4	5	9032	0.06	99.54
<i>Amphipod</i> A		5	5	9037	0.06	99.59
<i>Potamilla neglecta</i>		4	4	9041	0.04	99.64
<i>Arrhis</i> sp.?	3	1	4	9045	0.04	99.68
<i>Edotea triloba</i>	2	2	4	9049	0.04	99.72
<i>Cerianthus borealis</i>	3	3	3	9052	0.03	99.76
<i>Ampharete acutifrons</i>		3	3	9055	0.03	99.79
<i>Harmothoe imbricata</i>	2	1	3	9058	0.03	99.82
<i>Terebellid</i> A	1	2	3	9061	0.03	99.86
<i>Corophium crassicornes</i>		2	3	9064	0.03	99.89

STATION: 51
 DATE: Dec-80
 NUMBER OF SPECIES: 64
 DENSITY (m-2): 9070

SPECIES	Dec-80				TOTAL	CUM.TOT.	%	Cum.%
	51-1	51-2	51-3	51-3				
<i>Eudorella</i> spp.	173	141	235	549	549	20.18	20.18	
<i>Modiolous modiolus</i>	318	41	150	509	1058	18.71	38.88	
<i>Lumbrineris hebes</i>	87	171	67	325	1383	11.94	50.83	
<i>Nucula delphinodonta</i>	116	50	55	221	1604	8.12	58.95	
Lumbrineridae spp.	125	67	22	214	1818	7.86	66.81	
<i>Ninoe nigripes</i>	39	54	27	120	1938	4.41	71.22	
<i>Nephtys neotena</i>	13	65	27	105	2043	3.86	75.08	
<i>Diastylis sculpta</i>	55	12	7	74	2117	2.72	77.80	
<i>Polychaeta</i> spp.	16	51		67	2184	2.46	80.26	
<i>Phylodoce mucosa</i>	45	6	13	64	2248	2.35	82.62	
<i>Prionospio steenstrupi</i>	15	13	29	57	2305	2.09	84.71	
<i>Orchomene pinguis</i>	11	1	28	40	2345	1.47	86.18	
<i>Phoxocephalus holbolli</i>	13	8	18	39	2384	1.43	87.61	
<i>Photis pollex</i>	19	1	14	34	2418	1.25	88.86	
<i>Mediomastus californiensis</i>	17	9		26	2444	0.96	89.82	
<i>Aricidea catherinae</i>	11	7	1	19	2463	0.70	90.52	
<i>Pholoe minuta</i>	15	1	2	18	2481	0.66	91.18	
<i>Crenella decussata</i>	14	1	2	17	2498	0.62	91.80	
<i>Casco bigelowi</i>	7	1	9	17	2515	0.62	92.43	
<i>Pitar morrhua</i>	7	7	2	16	2531	0.59	93.02	
<i>Argissa hamatipes</i>	1	4	11	16	2547	0.59	93.61	
<i>Mya arenaria</i>	7	2	6	15	2562	0.55	94.16	
<i>Yoldia limatula</i>	11	1	3	15	2577	0.55	94.71	
<i>Arcica islandica</i>	9	3	2	14	2591	0.51	95.22	
<i>Eteone longa</i>	3	9	1	13	2604	0.48	95.70	
Bivalvia	9	2	2	13	2617	0.48	96.18	
<i>Nassarius trivittatus</i>	9	2		11	2628	0.40	96.58	

<i>Cerastoderma pinnulatum</i>	6	1	3	10	2638	0.37	96.95
<i>Lyonsia hyalina</i>	8	4	1	9	2647	0.33	97.28
<i>Nephtys incisa</i>	1	4	1	6	2653	0.22	97.50
<i>Pleurogonium inerme</i>	6	4		6	2659	0.22	97.72
<i>Micrura spp.</i>	1	4		5	2664	0.18	97.91
<i>Edotea triloba</i>	3		2	5	2669	0.18	98.09
<i>Tetrastemma spp.</i>	3	1		4	2673	0.15	98.24
<i>Bostrichobranchus pilularis</i>	3			3	2676	0.11	98.35
<i>Cerebratulus spp.</i>	2	1		3	2679	0.11	98.46
<i>Cerianthus borealis</i>	1	2		3	2682	0.11	98.57
<i>Ampelisca agassizi</i>	1	2		3	2685	0.11	98.68
<i>Harpinia propinqua</i>	3			3	2688	0.11	98.79
<i>Edwardsia elegans</i>	1	1		2	2690	0.07	98.86
<i>Phascolopsis gouldii</i>	1	1		2	2692	0.07	98.93
<i>Ampharete sp.</i>		2		2	2694	0.07	99.01
<i>Oligochaeta</i>		1	1	2	2696	0.07	99.08
<i>Owenia fusiformis</i>	1	1		2	2698	0.07	99.15
<i>Scoloplos spp.</i>			2	2	2700	0.07	99.23
<i>Astarte undata</i>	1		1	2	2702	0.07	99.30
<i>Periploma papyratium</i>	1	1		2	2704	0.07	99.38
<i>Corophium crassicornae</i>	2			2	2706	0.07	99.45
<i>Haploops fundiensis</i>	1	2		2	2708	0.07	99.52
Holothurian				1	2709	0.04	99.56
<i>Ampharete acutifrons</i>		1		1	2710	0.04	99.60
<i>Asychis elongata</i>			1	1	2711	0.04	99.63
<i>Nereis virens</i>			1	1	2712	0.04	99.67
<i>Ophelina acuminata</i>	1			1	2713	0.04	99.71
<i>Sternaspis scutata</i>			1	1	2714	0.04	99.74
<i>Lunatia triserata</i>	1		1	1	2715	0.04	99.78
<i>Nucula annulata</i>			1	1	2716	0.04	99.82
<i>Pandora gouldiana</i>		1		1	2717	0.04	99.85
<i>Meterythrope robusta</i>			1	1	2718	0.04	99.89
<i>Phoxichilidium femoratum</i>			1	1	2719	0.04	99.93
<i>Unciola irrorata</i>		1		1	2720	0.04	99.96

STATION: 51
 DATE: Apr-81
 NUMBER OF SPECIES: 52
 DENSITY (m-2): 7650

SPECIES	Apr-81				TOTAL	CUM.TOT.	%	Cum.%
	51-1	51-3	51-5	51-5				
<i>Polychaeta</i> spp.	12	196	215	423	423	18.43	18.43	
<i>Lumbrineridae</i> spp.	16	216	75	307	730	13.38	31.81	
<i>Eudrella</i> spp.	19	141	66	226	956	9.85	41.66	
<i>Ninoe nigripes</i>	30	145	36	211	1167	9.19	50.85	
<i>Lumbrineris hebes</i>	15	68	113	196	1363	8.54	59.39	
<i>Modiolous modiolus</i>	76	50	44	170	1533	7.41	66.80	
<i>Nucula delphinodonta</i>	12	36	91	139	1672	6.06	72.85	
<i>Nephtys neotena</i>	8	25	88	121	1793	5.27	78.13	
<i>Aricidea catherinae</i>	2	67	13	82	1875	3.57	81.70	
<i>Photis pollex</i>	20	12	32	64	1939	2.79	84.49	
<i>Oligochaeta</i>	2	17	24	43	1982	1.87	86.36	
<i>Phylodoce mucosa</i>	1	13	21	35	2017	1.53	87.89	
<i>Pleurogonium inerme</i>	12	9	9	30	2047	1.31	89.19	
<i>Orchomene pinguis</i>	13	4	10	27	2074	1.18	90.37	
<i>Levinsenia gracilis</i>	5		19	24	2098	1.05	91.42	
<i>Phoxocephalus holbolli</i>		10	12	22	2120	0.96	92.37	
<i>Mediomastus</i> sp.	1	16	3	20	2140	0.87	93.25	
<i>Eteone longa</i>	1	13	5	19	2159	0.83	94.07	
<i>Pitar morrhuana</i>		12	6	18	2177	0.78	94.86	
<i>Diastylis sculpta</i>	7	3	7	17	2194	0.74	95.60	
<i>Argissa hamatipes</i>	3	5	5	13	2207	0.57	96.17	
<i>Nassarius trivittatus</i>	3		5	8	2215	0.35	96.51	
<i>Yoldia limatula</i>		1	7	8	2223	0.35	96.86	
<i>Ampharetidae</i>		5	2	7	2230	0.31	97.17	
<i>Hydrobia truncata</i>	2	1	4	7	2237	0.31	97.47	
<i>Cerianthus borealis</i>	1	3	2	6	2243	0.26	97.73	
<i>Nephtys incisa</i>	2		4	6	2249	0.26	98.00	

<i>Mya arenaria</i>				6	2255	0.26	98.26
<i>Micrura spp.</i>	2			4	2259	0.17	98.43
<i>Periploma papyratium</i>	1	2		4	2263	0.17	98.61
<i>Arctica islandica</i>		3		3	2266	0.13	98.74
<i>Casco bigelowi</i>		3		3	2269	0.13	98.87
Orbiniidae spp.		3	2	2	2271	0.09	98.95
<i>Sphaerodoropsis minuta</i>	1		1	2	2273	0.09	99.04
Bivalvia		2		2	2275	0.09	99.13
<i>Crenella decussata</i>		1	1	2	2277	0.09	99.22
<i>Pandora gouldiana</i>		2		2	2279	0.09	99.30
<i>Oedicerus sp.?</i>		2		2	2281	0.09	99.39
Anemone			1	1	2282	0.04	99.43
<i>Bostrichobranchus pilularis</i>		1		1	2283	0.04	99.48
<i>Cerebratulus spp.</i>			1	1	2284	0.04	99.52
<i>Edwardsia elegans</i>	1			1	2285	0.04	99.56
Mite	1			1	2286	0.04	99.61
<i>Phascolopsis gouldii</i>			1	1	2287	0.04	99.65
<i>Asychis elongata</i>		1		1	2288	0.04	99.69
<i>Lumbrineris fragilis</i>		1		1	2289	0.04	99.74
Maldanidae		1		1	2290	0.04	99.78
<i>Prionospio steenstrupi</i>	1			1	2291	0.04	99.83
<i>Ampelisca agassizi</i>		1		1	2292	0.04	99.87
<i>Edotea triloba</i>		1		1	2293	0.04	99.91
<i>Unciola sp.</i>		1		1	2294	0.04	99.96
Unknown Amphipod		1		1	2295	0.04	100.00

STATION: 51

DATE: Jul-81

NUMBER OF SPECIES: 60

DENSITY (m-2): 7887

SPECIES	Jul-81			TOTAL	CUM.TOT.	%	Cum.%
	51-1	51-2	51-3				
<i>Polychaeta</i> spp.	267	72	107	446	446	18.85	18.85
<i>Lumbrineris hebes</i>	159	72	54	285	731	12.05	30.90
Lumbrineridae spp.	69	74	85	228	959	9.64	40.53
<i>Ninoe nigripes</i>	88	29	70	187	1146	7.90	48.44
<i>Ophelina acuminata</i>	10	91	46	147	1293	6.21	54.65
<i>Diastylis sculpta</i>	5	14	105	124	1417	5.24	59.89
<i>Nucula delphinodonta</i>	43	45	29	117	1534	4.95	64.84
<i>Nephtys neotena</i>	44	34	21	99	1633	4.18	69.02
<i>Phyllodoce mucosa</i>	41	16	36	93	1726	3.93	72.95
Oligochaeta	37	25	11	73	1799	3.09	76.04
<i>Aricidea catherinae</i>	37	7	24	68	1867	2.87	78.91
<i>Mediomastus</i> sp.	48	17	3	68	1935	2.87	81.78
<i>Modiolous modiolus</i>	20	13	23	56	1991	2.37	84.15
<i>Orchomene pinguis</i>	7	2	43	52	2043	2.20	86.35
<i>Dyopodos monacanthus</i>	8	11	27	46	2089	1.94	88.29
<i>Photis pollex</i>	9	8	25	42	2131	1.78	90.07
<i>Eudorella</i> spp.	5	9	17	31	2162	1.31	91.38
<i>Eteone longa</i>	7	7	9	23	2185	0.97	92.35
<i>Pholoe minuta</i>	3	2	9	14	2199	0.59	92.94
Polynoidae	3	5	6	14	2213	0.59	93.53
<i>Pitar morrhuaana</i>	5	6	3	14	2227	0.59	94.13
<i>Phoxocephalus holbolli</i>	10	2	2	14	2241	0.59	94.72
<i>Casco bigelowi</i>	3	5	5	13	2254	0.55	95.27
<i>Lyonsia hyalina</i>	1	1	8	10	2264	0.42	95.69
<i>Crenella decussata</i>	5	2	2	9	2273	0.38	96.07
<i>Micrura</i> spp.		5	2	7	2280	0.30	96.37
Unid. Nemertean	3	1	3	7	2287	0.30	96.66

<i>Nassarius trivittatus</i>	2	1	3
<i>Pontogeneia inermis</i>		6	
<i>Mya arenaria</i>		3	2
<i>Periploma papyratum</i>		2	3
Anemone	2		2
<i>Cerastoderma pinnulatum</i>	1	1	2
<i>Pleurogonium inermis</i>	1	1	2
<i>Tetraostemma spp.</i>	2	1	
Ampharetidae	2	1	
Cirratulidae spp.	2		1
<i>Nephtys incisa</i>	3		
<i>Levinsenia gracilis</i>		1	2
<i>Prionospio steenstrupi</i>	3		
Amphipod B			3
<i>Cerianthus borealis</i>			2
<i>Gemma gemma</i>			2
<i>Periploma fragile</i>	2		
<i>Yoldia limatula</i>		2	
<i>Argissa hamatipes</i>	2		
<i>Mayerella limicola</i>		1	1
<i>Unciola irrorata</i>		2	
<i>Bostrichobranchus pilularis</i>			1
<i>Cerebratulus spp.</i>			1
Mite			
<i>Pherusa affinis</i>	1		
<i>Astarte sp.</i>		1	
<i>Nucula annulata</i>	1		
<i>Tellina agilis</i>	1		
<i>Ampelisca agassizi</i>	1		
Amphipod C			1
<i>Edotea triloba</i>	1		
Hydroid			
<i>Sertularia spp.</i>		+	+

6	2293	0.25	96.91
6	2299	0.25	97.17
5	2304	0.21	97.38
5	2309	0.21	97.59
4	2313	0.17	97.76
4	2317	0.17	97.93
4	2321	0.17	98.10
3	2324	0.13	98.22
3	2327	0.13	98.35
3	2330	0.13	98.48
3	2333	0.13	98.61
3	2336	0.13	98.73
3	2339	0.13	98.86
3	2342	0.13	98.99
2	2344	0.08	99.07
2	2346	0.08	99.15
2	2348	0.08	99.24
2	2350	0.08	99.32
2	2352	0.08	99.41
2	2354	0.08	99.49
2	2356	0.08	99.58
1	2357	0.04	99.62
1	2358	0.04	99.66
1	2359	0.04	99.70
1	2360	0.04	99.75
1	2361	0.04	99.79
1	2362	0.04	99.83
1	2363	0.04	99.87
1	2364	0.04	99.92
1	2365	0.04	99.96
1	2366	0.04	100.00