Table 8-1. Summary Biological Results for Borrow Area Infauna

Area / Data	BBA3 Dredged	BBA3 Undredged	BBA3 Total	BBA5	BBA6	Total
Total Taxa	244	242	294	272	287	391
Total Animals	82,738	33,692	116,430	53,417	95,875	265,722
Total Biomass (g)	1546.667	2306.307	3852.974	1625.492	5041.612	10520.078
Taxa/0.1m2	27.2	28.5	27.9	22.8	27.0	25.9
Abundance/m2	7050	3062	5056	2226	3994	3759
Biomass g/m2	128.889	192.192	160.541	67.729	210.067	146.112
Annelid g/m2	7.442	4.258	5.850	3.072	5.350	4.757
Crustacea g/m2	1.670	2.094	1.882	1.712	1.103	1.566
Mollusc g/m2	7.669	6.060	6.865	4.657	13.985	8.502
Echinoderm g/m2	111.476	179.081	145.278	57.735	187.640	130.218
Misc. g/m2	0.631	0.700	0.666	0.597	2.111	1.124
% Annelid Biomass	5.77	2.22	3.99	4.53	2.55	3.25
% Crustacean Biomass	1.30	1.09	1.19	2.53	0.52	1.07
% Mollusc Biomass	5.95	3.15	4.55	6.87	6.65	5.82
% Echinoderm Biomass	86.49	93.18	89.83	85.19	89.27	89.09
% Misc. Biomass	0.49	0.36	0.43	0.88	1.00	0.77

Table 8-2. Relative Abundance and Occurrence of Dominant Borrow Area Infauna

Area / Taxa	Total		BBA3 Dredged		BBA3 Undredged		BBA5		BBA6	
	Abund.	Occur.	Abund.	Occur.	Abund.	Occur.	Abund.	Occur.	Abund.	Occur.
Polygordius (LPIL)	35.54	69.86	60.18	69.17	11.31	65.83	16.06	67.50	33.66	74.58
Pseudunciola obliquua	9.61	100.00	6.64	100.00	9.63	100.00	19.11	100.00	6.86	100.00
Archiannelida (LPIL)	5.96	51.67	2.96	58.33	5.99	48.33	4.79	43.33	9.20	58.33
Tanaissus psammophilus	5.14	90.42	1.37	88.33	2.07	77.50	4.32	88.75	9.92	99.58
Spiophanes bombyx	4.40	67.78	4.23	75.00	0.74	80.00	1.38	67.08	7.52	58.75
Spisula solidissima	2.80	100.00	1.83	134.17	3.37	125.00	5.67	120.83	1.82	114.17
Tellina agilis	2.71	100.00	2.48	100.00	5.42	100.00	3.50	100.00	1.52	100.00
Echinarachnius parma	2.42	91.94	2.55	98.33	3.73	120.00	3.02	82.08	1.52	84.58
Magelona papillicornis	1.99	78.06	1.12	99.17	3.53	83.33	5.22	98.33	0.40	44.58
Oligochaeta (LPIL)	1.88	50.69	0.30	34.17	0.77	45.00	2.80	52.08	3.11	60.42
Acanthohaustorius millsi	1.61	34.31	0.64	42.50	5.16	70.83	3.70	42.92	0.04	3.33
Rhepoxynius hudsoni	1.60	86.53	1.44	100.00	3.58	100.00	2.66	83.75	0.45	61.67
Nucula proxima	1.58	38.06	0.15	33.33	6.91	50.00	1.13	27.08	1.20	45.42
Protohaustorius wigleyi	1.48	59.03	0.84	65.00	2.75	70.83	2.31	58.33	1.12	50.83
Rhynchocoela (LPIL)	1.16	83.61	1.00	82.50	1.08	85.83	0.94	66.67	1.44	100.00
Cirratulidae (LPIL)	1.07	49.31	1.68	51.67	0.94	49.17	0.49	35.00	0.90	62.50
Caulleriella killariensis	0.98	85.42	0.84	107.50	1.88	104.17	1.07	76.67	0.74	73.75
Asabellides oculata	0.94	21.39	0.58	32.50	0.36	27.50	0.19	10.83	1.86	23.33
Protohaustorius sp. B	0.86	28.33	0.41	29.17	1.94	38.33	1.71	35.00	0.38	16.25
Nepthytidae (LPIL)	0.68	54.86	0.37	53.33	0.98	62.50	1.09	46.25	0.60	60.42
Ampharetidae (LPIL)	0.59	17.22	0.22	30.00	3.67	25.00	0.10	9.58	0.09	14.58
Nephtys picta	0.53	42.92	0.25	42.50	0.67	51.67	0.81	36.25	0.56	45.42
Aricidea wassi	0.52	52.78	0.12	44.17	1.14	68.33	1.05	55.83	0.35	46.25
Aricidea catherinae	0.50	46.11	0.19	43.33	1.44	62.50	0.60	38.33	0.38	47.08
Acanthohaustorius similis	0.47	13.33	0.36	22.50	0.82	18.33	1.16	17.92	0.06	1.67
Tharyx acutus	0.45	17.92	0.32	13.33	1.25	19.17	0.12	17.50	0.47	20.00
Haustoriidae (LPIL)	0.44	42.36	0.15	43.33	0.99	65.83	0.98	44.58	0.20	27.92
Sigalion arenicola	0.41	74.58	0.25	80.00	0.47	69.17	0.76	85.42	0.32	63.75
Edotia triloba	0.40	50.14	0.42	60.00	0.57	57.50	0.47	45.00	0.29	46.67
Anthozoa (LPIL)	0.40	20.56	0.12	14.17	1.17	27.50	0.54	17.92	0.28	22.92
Pseudoleptocuma minor	0.39	60.69	0.20	56.67	0.72	74.17	0.54	54.58	0.36	62.08
Scoletoma acicularum	0.38	51.39	0.38	50.00	0.30	50.00	0.23	33.33	0.49	70.83
Exogene hebes	0.34	32.22	0.00	2.50	0.04	7.50	0.18	23.33	0.83	68.33
Chiridotea tuftsi	0.31	38.19	0.24	55.00	1.14	74.17	0.38	38.75	0.04	11.25
Nephtys bucera	0.21	42.08	0.11	44.17	0.28	33.33	0.18	27.50	0.30	60.00

*Taxa in **bold** excluded from final analyses (see text)

Table 8-3. Offshore Borrow Area Anova Results

Abundance

Source	DF	Sum of Squares	F Ratio	Prob > F
Area	3	0.9110	3.1061	0.0397
Date	11	2.0825	1.9364	0.0703
Area X Date	33	29.7563	9.2229	<.0001
Error	672	65.7002		

Biomass

Source	DF	Sum of Squares	F Ratio	Prob > F
Area	3	5.59992	4.033	0.0151
Date	11	5.43524	1.0676	0.4151
Area X Date	33	127.12773	8.3232	<.0001
Error	672	311.03111		

Taxa Richness

Source	DF	Sum of Squares	F Ratio	Prob > F
Area	3	516.7037	4.4963	0.0094
Date	11	1697.2628	4.0280	0.0009
Area X Date	33	7504.3344	5.9365	<.0001
Error	672	25741.6840		

Table 8-4. Selected Tukey Test Results for Abundance, Biomass, and Taxa Richness

Abundance

	Site	BBA3N	BBA3D	BBA5	BBA6
94 May	BBA3N	-	-	-	-
	BBA3D	-	-	-	-
	BBA5	-	-	-	-
	BBA6	-	-	-	-
95 May	BBA3N	-	-	-	-
	BBA3D	-	-	-	-
	BBA5	-	-	-	-
	BBA6	-	-	-	-
95 Sept	BBA3N	-	-	-	-
	BBA3D	-	-	-	-
	BBA5	-	-	-	-
	BBA6	-	-	-	-
96 May	BBA3N	-	-	-	-
	BBA3D	-	-	-	-
	BBA5	-	-	-	-
	BBA6	-	-	-	-
96 Sept	BBA3N	-	-	-	-
	BBA3D	-	-	-	-
	BBA5	-	-	-	-
	BBA6	-	-	-	-
97 May	BBA3N	-	-	-	-
	BBA3D	-	-	-	-
	BBA5	-	-	-	-
	BBA6	-	-	-	-
97 Sept	BBA3N	-	-	-	X
	BBA3D	-	-	-	X
	BBA5	-	-	-	X
	BBA6	X	X	X	-
98 May	BBA3N	-	X	-	-
	BBA3D	X	-	X	-
	BBA5	-	X	-	-
	BBA6	-	-	-	-
98 Sept	BBA3N	-	-	-	-
	BBA3D	-	-	-	-
	BBA5	-	-	-	-
	BBA6	-	-	-	-
99 May	BBA3N	-	-	-	-
	BBA3D	-	-	X	X
	BBA5	-	X	-	-
	BBA6	-	X	-	-
99 Sept	BBA3N	-	-	X	-
	BBA3D	-	-	X	-
	BBA5	X	X	-	X
	BBA6	-	-	X	-
00 May	BBA3N	-	X	-	-
	BBA3D	X	-	X	X
	BBA5	-	X	-	-
	BBA6	-	X	-	-

Biomass

	Site	BBA3N	BBA3D	BBA5	BBA6
94 May	BBA3N	-	-	-	-
	BBA3D	-	-	-	-
	BBA5	-	-	-	-
	BBA6	-	-	-	-
95 May	BBA3N	-	-	-	-
	BBA3D	-	-	-	-
	BBA5	-	-	-	-
	BBA6	-	-	-	-
95 Sept	BBA3N	-	-	-	-
	BBA3D	-	-	-	-
	BBA5	-	-	-	-
	BBA6	-	-	-	-
96 May	BBA3N	-	-	-	-
	BBA3D	-	-	-	-
	BBA5	-	-	-	-
	BBA6	-	-	-	-
96 Sept	BBA3N	-	-	-	-
	BBA3D	-	-	-	-
	BBA5	-	-	-	X
	BBA6	-	-	X	-
97 May	BBA3N	-	-	-	-
	BBA3D	-	-	-	-
	BBA5	-	-	-	X
	BBA6	-	-	X	-
97 Sept	BBA3N	-	-	-	X
	BBA3D	-	-	-	X
	BBA5	-	-	-	X
	BBA6	X	X	X	-
98 May	BBA3N	-	-	-	-
	BBA3D	-	-	-	-
	BBA5	-	-	-	-
	BBA6	-	-	-	-
98 Sept	BBA3N	-	-	-	-
	BBA3D	-	-	-	-
	BBA5	-	-	-	-
	BBA6	-	-	-	-
99 May	BBA3N	-	-	-	-
	BBA3D	-	-	-	-
	BBA5	-	-	-	-
	BBA6	-	-	-	-
99 Sept	BBA3N	-	-	X	-
	BBA3D	-	-	X	-
	BBA5	X	X	-	X
	BBA6	-	-	X	-
00 May	BBA3N	-	-	X	-
	BBA3D	-	-	X	-
	BBA5	X	X	-	X
	BBA6	-	-	X	-

Taxa

	Site	BBA3N	BBA3D	BBA5	BBA6
94 May	BBA3N	-	-	-	-
	BBA3D	-	-	-	-
	BBA5	-	-	-	-
	BBA6	-	-	-	-
95 May	BBA3N	-	-	-	-
	BBA3D	-	-	-	-
	BBA5	-	-	-	-
	BBA6	-	-	-	-
95 Sept	BBA3N	-	-	-	-
	BBA3D	-	-	-	-
	BBA5	-	-	-	-
	BBA6	-	-	-	-
96 May	BBA3N	-	-	-	-
	BBA3D	-	-	-	-
	BBA5	-	-	-	-
	BBA6	-	-	-	-
96 Sept	BBA3N	-	-	-	-
	BBA3D	-	-	-	-
	BBA5	-	-	-	-
	BBA6	-	-	-	-
97 May	BBA3N	-	-	-	-
	BBA3D	-	-	-	-
	BBA5	-	-	-	-
	BBA6	-	-	-	-
97 Sept	BBA3N	-	-	-	X
	BBA3D	-	-	-	-
	BBA5	-	-	-	X
	BBA6	X	-	X	-
98 May	BBA3N	-	-	-	-
	BBA3D	-	-	-	-
	BBA5	-	-	-	-
	BBA6	-	-	-	-
98 Sept	BBA3N	-	-	-	-
	BBA3D	-	-	-	-
	BBA5	-	-	-	-
	BBA6	-	-	-	-
99 May	BBA3N	-	-	-	-
	BBA3D	-	-	-	-
	BBA5	-	-	-	-
	BBA6	-	-	-	-
99 Sept	BBA3N	-	-	X	-
	BBA3D	-	-	X	-
	BBA5	X	X	-	X
	BBA6	-	-	X	-
00 May	BBA3N	-	-	X	-
	BBA3D	-	-	X	-
	BBA5	X	X	-	X
	BBA6	-	-	X	-

*X = significant difference, - = No Significant difference, BBA3D= Dredged, BBA3N = Undredged

Table 8-5. Offshore Nonmetric Dimensional Scaling Test Results

Stress in relation to dimensionality

	Stress in real data (40 runs)			Stress in randomized data, (Monte Carlo test-50 runs)			
Axes	Minimum	Mean	Maximum	Minimum	Mean	Maximum	p
1	34.198	43.901	56.489	41.956	51.392	56.505	0.0196
2	17.177	19.128	24.823	25.082	27.533	30.887	0.0196
3	11.261	11.346	12.681	17.365	19.139	21.012	0.0196

Table 8-6. Offshore Nonmetric Dimensional Scaling Test Results

Coefficients of determination for correlations between ordination distances and distances in original n-dimensional space

	R	Squared
Axis	Increment	Cumulative
1	0.456	0.456
2	0.051	0.507
3	0.331	0.838

Table 8-7. Correlations Between Taxa and MDS Axes*

Taxa	Axis 1	Axis 2	Axis 3
Acanthohaustorius millsi	**-0.450**	0.042	**0.669**
Acanthohaustorius similis	**0.605**	-0.286	-0.343
Anthozoa (LPIL)	**0.542**	-0.233	-0.390
Aricidea catherinae	0.071	-0.176	-0.185
Aricidea wassi	0.128	0.151	0.225
Asabellides oculata	-0.247	**-0.794**	**-0.489**
Caulleriella killariensis	**-0.567**	-0.064	-0.008
Chiridotea tuftsi	0.055	-0.179	0.361
Echinarachnius parma	-0.214	-0.297	-0.236
Edotia triloba	-0.006	-0.314	-0.356
Exogene hebes	0.007	0.396	-0.373
Magelona papillicornis	0.228	**0.435**	**0.431**
Nephtys bucera	-0.301	0.244	-0.300
Nephtys picta	-0.058	**-0.524**	-0.269
Nucula proxima	-0.112	-0.265	-0.055
Oligochaeta (LPIL)	0.226	**0.664**	0.227
Polygordius (LPIL)	**-0.862**	0.115	-0.065
Protohaustorius sp. B	-0.041	**0.497**	**0.820**
Protohaustorius wigleyi	0.122	**-0.474**	**-0.573**
Pseudoleptocuma minor	-0.180	-0.075	-0.365
Pseudunciola obliquua	0.348	0.219	0.331
Rhepoxynius hudsoni	0.197	-0.049	**0.605**
Rhynchocoela (LPIL)	**-0.611**	-0.050	-0.086
Scoletoma acicularum	**-0.431**	-0.312	**-0.407**
Sigalion arenicola	0.042	0.235	0.373
Spiophanes bombyx	**-0.510**	-0.043	-0.314
Spisula solidissima	0.174	0.147	0.371
Tanaissus psammophilus	0.388	**0.554**	-0.035
Tellina agilis	**-0.464**	**-0.588**	-0.251
Tharyx acutus	-0.049	**-0.640**	**-0.472**

*Values in bold considered to be signfiicant correlations