Appendix D

Supporting Data

2011 SBOO Stations

Macrobenthic Communities

Appendix D.1

SBOO two-way crossed ANOSIM results for benthic infauna (A = sediment type, B = depth stratum).

Global Test: Factor A

Tests for differences between depth strata (across all sediment types)

Sample statistic (Global R):	0.616
Significance level of sample statistic:	0.01%
Number of permutations:	9999
Number of permuted statistics greater than or equal to Global R:	0

Pairwise Tests: Factor A

Tests for pairwise differences between individual depths across all sediment types: r values (p values)

	Sand with coarse	Sand with fines	Coarse with sand	Sand with coarse and fines
Sand	0.305 (0.002)	0.433 (0.0001)	0.955 (0.01)	0.376 (0.015)
Sand with coarse		0.755 (0.0001)	0.836 (0.048)	0.964 (0.048)
Sand with fines			1 (0.008)	0.167 (0.300)
Coarse with sand				no test

Global Test: Factor B

Tests for differences between sediment types (across all depth strata)

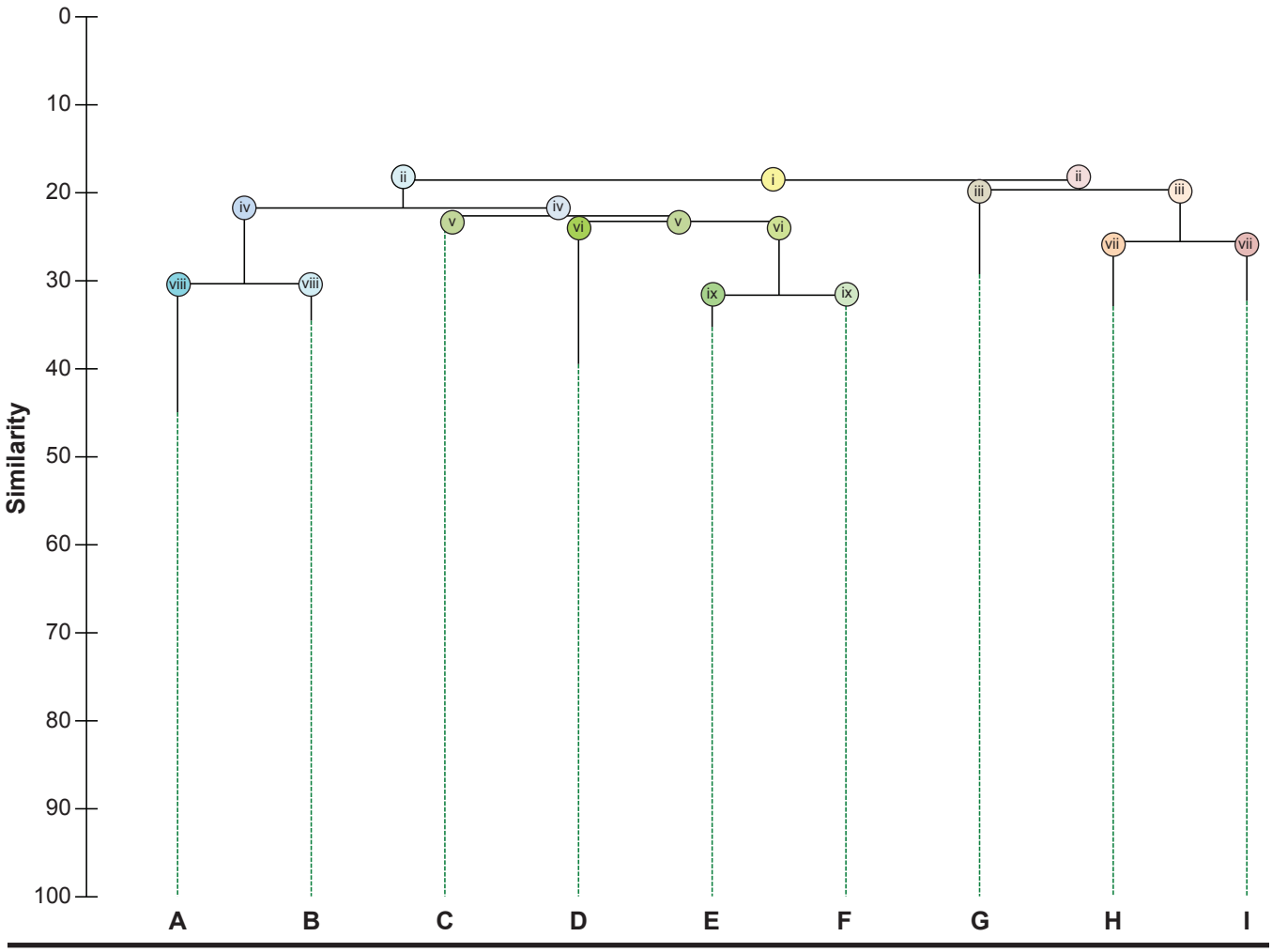
Sample statistic (Global R):	0.539
Significance level of sample statistic:	0.01%
Number of permutations:	9999
Number of permuted statistics greater than or equal to Global R:	0

This page intentionally left blank

Appendix D.2

Delineation of cluster groups (see Figure 5.4) by species exclusivity (i.e., species that occur solely in each supported clade versus species that occur in multiple non-related clades). Roman numerals and colored circles in dendrogram (below) correspond to numbers and colors delineating each SIMPROF-supported split featured in the appendix (following pages). Inner = inner shelf (5−30 m), mid = mid-shelf (30−120 m). S = sand, Sc = sand with coarse, Sf = sand with fines, Scf = sand with coarse and fines, Cs = coarse with sand. CG = cluster group.

	# grabs (*n*)				Depth				Fines			
CG	**invert**	**sed.**	**nearfield**	**stratum**	**mean**	**min**	**max**	**Sed.**	**mean**	**min**	**max**	**depth/sediment exceptions**
A	4	2	0	mid	55	55	55	Scf	22.3	21.3	23.3	—
B	5	3	0	mid	59	55	60	S	9.0	8.6	9.7	—
C	4	2	0	inner	20	19	21	S	9.0	8.8	9.3	—
D	2	1	0	inner	18	18	18	S	5.4	5.4	5.4	—
E	35	16	11	inner	30	28	38	Sf	13.5	0.0	29.4	Sf/mid = 1, S/inner = 1, S/mid = 1, Sc/inner = 1
F	15	7	0	inner	19	19	21	S	15.8	7.9	33.8	Sf = 2
G	3	3	0	inner	26	19	38	Cs	9.2	0.5	25.6	Sf/mid = 1
H	14	6	0	mid	47	38	55	Sc	4.3	0.0	10.8	Sf = 1, S = 2
I	26	12	5	inner	28	18	36	varied	1.7	0.0	4.8	S/mid = 4, Sc/inner = 4, S/inner = 2, Sc/mid = 1, Cs/inner = 1



Appendix D.2 *continued*

(i.) Species occurring in all cluster groups

Cluster groups	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**
Aricidea (*Acmira*) *catherinae*	3.3	1.4	0.3	0.5	2.9	0.5	0.3	0.07	0.04
Leptochelia dubia	9.8	2.6	0.8	1.0	1.9	0.6	1.0	3.5	0.27
Lineidae	2.5	1.6	0.8	0.5	2.5	1.5	1.3	0.79	1.58
Lumbrineris lingulata	8.3	4.0	0.3	0.5	0.5	0.5	11.3	1	0.38
Paranemertes californica	0.5	0.2	0.5	0.5	1.0	0.8	1.0	0.57	0.04
Prionospio (*Prionospio*) *jubata*	15.5	5.0	2.0	1.5	13.0	2.3	2.3	2	3.08
Scoloplos armiger Cmplx	1.0	7.8	0.5	3.0	4.0	1.1	0.7	1.29	5.69
Spiophanes berkeleyorum	2.5	0.2	0.3	1.0	4.1	1.3	0.3	0.29	0.31
Spiophanes norrisi	57.0	14.2	1.3	11.0	43.7	21.9	61.7	42.64	196.27
Tiron biocellata	1.0	0.2	1.3	2.0	0.6	0.3	0.3	0.14	0.04

(ii.) Species delineating the separation of cluster groups A, B, C, D, E, and F from cluster groups G, H, and I (18.57% similarity)

Cluster groups	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**
Typosyllis sp SD1	0.0	0.0	0.0	0.0	0.0	0.0	9.3	4.43	0.27
Micranellum crebricinctum	0.0	0.0	0.0	0.0	0.0	0.0	2.7	0.29	0.38
Cnemidocarpa rhizopus	0.0	0.0	0.0	0.0	0.0	0.0	2.3	2	0.38
Sipunculus nudus	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.07	0.19

(iii.) Species delineating the separation of cluster group G from cluster groups H and I (19.67% similarity)

Cluster groups	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**
Aricidea (*Acmira*) *cerrutii*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.79	0.15
Clymenella sp A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.36	0.31
Aphelochaeta sp SD5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.29	0.42
Clymenella complanata	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.29	0.08
additional 5 taxa (<0.15)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	x	x
Saccocirrus sp	0.0	0.0	0.0	0.0	0.0	0.0	76.0	0.0	0.0
Pareurythoe californica	0.0	0.0	0.0	0.0	0.0	0.0	27.7	0.0	0.0
Eulalia sp SD1	0.0	0.0	0.0	0.0	0.0	0.0	6.0	0.0	0.0
Leptoplanidae	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Typosyllis sp SD6	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.0	0.0
Dorvillea (*Schistomeringos*) sp	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0
Microphthalmus sp	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0
Polygordius sp	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0
Rhabdocoela sp A	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
additional 11 taxa (<0.68)	0.0	0.0	0.0	0.0	0.0	0.0	x	0.0	0.0

(iv.) Species delineating the separation of cluster groups A and B from cluster groups C, D, E, and F (21.73% similarity)

Cluster groups	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**
Aphelochaeta williamsae	5.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Euchone incolor	2.8	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aphelochaeta sp SD13	2.3	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Proclea sp A	2.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Eclysippe trilobata	0.5	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Eusyllis habei	0.5	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chiridota sp	0.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
additional 5 taxa (<0.25)	x	x	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Neotrypaea sp	0.0	0.0	0.3	2.0	0.1	0.1	0.0	0.0	0.0

Appendix D.2 *continued*

(v.) Species delineating the separation of cluster group C from cluster groups D, E, and F (22.64% similarity)

Cluster groups	A	B	C	D	E	F	G	H	I
Travisia gigas	0.0	0.0	0.0	0.5	0.1	0.1	0.0	0.0	0.0
Nassariidae	0.0	0.0	0.0	0.5	0.0	0.1	0.0	0.0	0.0
Naticidae	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
Rutiderma rostratum	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
additional 7 taxa (<0.25)	0.0	0.0	x	0.0	0.0	0.0	0.0	0.0	0.0

(vi.) Species delineating the separation of cluster group D from cluster groups E and F (23.26% similarity)

Cluster groups	A	B	C	D	E	F	G	H	I
Lamprops quadriplicatus	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
Terebra pedroana	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
Ampelisca cristata microdentata	0.0	0.0	0.0	0.0	2.3	0.6	0.0	0.0	0.0
Monticellina tesselata	0.0	0.0	0.0	0.0	1.7	0.1	0.0	0.0	0.0
Neosabellaria cementarium	0.0	0.0	0.0	0.0	1.7	0.1	0.0	0.0	0.0
Metasychis disparidentatus	0.0	0.0	0.0	0.0	1.1	1.2	0.0	0.0	0.0
Chaetozone corona	0.0	0.0	0.0	0.0	0.6	0.5	0.0	0.0	0.0
Glycera macrobranchia	0.0	0.0	0.0	0.0	0.5	0.6	0.0	0.0	0.0
Typosyllis farallonensis	0.0	0.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0
Hamatoscalpellum californicum	0.0	0.0	0.0	0.0	0.4	0.1	0.0	0.0	0.0
Naineris uncinata	0.0	0.0	0.0	0.0	0.3	0.3	0.0	0.0	0.0
additional 27 taxa (<0.25)	0.0	0.0	0.0	0.0	x	x	0.0	0.0	0.0

(vii.) Species delineating the separation of cluster groups H and I (25.55% similarity)

Cluster groups	A	B	C	D	E	F	G	H	I
Lirobarleeia kelseyi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.79	0.0
Lytechinus pictus	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.64	0.0
Megaluropidae sp A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.64	0.0
Cirrophorus branchiatus	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.36	0.0
Cyclocardia ventricosa	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.36	0.0
Entodesma navicula	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.36	0.0
Solariella peramabilis	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.36	0.0
Flabelligera infundibularis	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.29	0.0
Laticorophium baconi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.29	0.0
additional 26 taxa (<0.22)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	x	0.0
Blepharipoda occidentalis	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.42
Modiolus neglectus	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.38
Aoridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.27
additional 35 taxa (<0.20)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	x

Appendix D.2 *continued*

(viii.) Species delineating the separation of cluster groups A and B (30.35% similarity)

Cluster groups	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**
Aphelochaeta tigrina	4.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Clymenura gracilis	4.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Streblosoma sp SD1	3.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Nuculana hamata	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gymnonereis crosslandi	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Photis bifurcata	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cardiomya pectinata	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cirratulus sp	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dougaloplus sp A	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Eulalia californiensis	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Thyasira flexuosa	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
additional 39 taxa (≤0.75)	x	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aricidea (*Allia*) *antennata*	0.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Polycirrus sp SD3	0.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tritella pilimana	0.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
additional 21 taxa (≤0.80)	0.0	x	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(ix.) Species delineating the separation of cluster groups E and F (31.66% similarity)

Cluster groups	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**
Caprella penantis	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0
additional 74 taxa (<0.25)	0.0	0.0	0.0	0.0	x	0.0	0.0	0.0	0.0
Astyris gausapata	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0
additional 14 taxa (<0.25)	0.0	0.0	0.0	0.0	0.0	x	0.0	0.0	0.0