

Supplementary material

Text S1. Protocol used to extract the MPB from the sampled sediments.

To extract the MPB from the sediment, we used liquid silica (LUDOX HS-30). The sampled sediment was defrosted in a refrigerator, then 5 ml of homogenized sediment was placed into a 50 mL falcon (A) and 25 mL of LUDOX HS-30 were added. The falcon tubes were then mixed, placed into an ultrasound bath for 15 min and mixed again. After, they were centrifuged at 5000 rpm for 15 min at 10°C and the supernatant containing the MPB was placed into another falcon using a clean pipet (B). All the steps between A and B were repeated three times for each 50 ml falcon tube. In the end we had a new falcon tube containing a mix of MPB and liquid silica that we rinsed using MilliQ water and the dilution 3 MilliQ water for 1 supernatant. The falcon containing the supernatant and the MilliQ water was centrifuged at 3500 rpm for 10 min at 10°C, the resultant supernatant was removed and the rest was placed at -80°C until further processing.

Table S1. Carbon and nitrogen isotope ratios ($\delta^{13}\text{C}$ and $\delta^{15}\text{N}$), with the corresponding standard deviations (SD), of the different macroinvertebrate and vertebrate species sampled in the control, associated and engineered sediments in winter and summer. The relative biomass contribution of each species to the total biomass sampled in each sediment is indicated as % biom and the species accounting for more than 1% of the total biomass are in bold. The vertebrate species indicated in the engineered sediment section were sampled in the reef zone and were represented on the engineered and associated sediment isotopic biplots (Fig. 1). Some species were only sampled in the cores used for the isotopic analysis and not in the ones used for the biomass estimations. Hence, we could not estimate their biomass which is indicated by (-).

Control sediment	Winter					Summer				
	$\delta^{13}\text{C}$	SD	$\delta^{15}\text{N}$	SD	% biom	$\delta^{13}\text{C}$	SD	$\delta^{15}\text{N}$	SD	% biom
Polychaeta										
<i>Armandia polyopthalma</i>	-15.76	NA	12.23	NA	0.04	-15.80	NA	11.36	NA	(-)
<i>Caulleriella alata</i>	-17.53	0.38	10.17	0.19	(-)	-	-	-	-	<0.01
<i>Eumida sanguinea</i>	-16.83	0.47	13.51	0.32	0.04	-18.25	0.42	11.53	0.97	0.01
<i>Eunereis longissima</i>	-16.62	NA	10.78	NA	(-)	-15.58	NA	14.31	NA	0.09
<i>Glycera alba</i>	-14.84	1.02	14.13	0.11	0.10	-14.89	0.62	13.93	0.65	0.09
<i>Glycera tridactyla</i>	-14.90	0.33	14.07	0.33	(-)	-	-	-	-	-
<i>Goniadella bobrezkii</i>	-	-	-	-	<0.01	-16.36	NA	12.79	NA	<0.01
<i>Lanice conchilega</i>	-16.85	0.27	11.53	0.29	7.23	-17.26	0.42	11.23	0.31	12.35
<i>Magelona johnstoni</i>	-17.42	NA	9.76	NA	0.01	-	-	-	-	<0.01
<i>Malmgrenia arenicolae</i>	-17.84	NA	12.28	NA	0.09	-16.15	0.40	12.58	0.27	0.21
<i>Nephtys cirrosa</i>	-	-	-	-	1.34	-14.92	0.45	12.11	0.67	0.18
<i>Nephtys hombergii</i>	-15.09	0.68	12.24	0.62	1.05	-15.63	1.34	12.10	0.51	0.35
<i>Notomastus sp.</i>	-17.10	<0.01	9.43	0.28	0.28	-16.76	0.10	10.19	0.38	0.28
<i>Pholoe inornata</i>	-	-	-	-	-	-17.29	NA	11.52	NA	<0.01
<i>Phyllodoce mucosa</i>	-	-	-	-	-	-18.04	NA	10.11	NA	0.01
<i>Scolecopsis armiger</i>	-15.49	0.74	12.62	0.64	0.11	-16.21	0.85	11.08	1.36	0.01
<i>Sthenelais boa</i>	-15.49	0.44	13.35	0.95	(-)	-	-	-	-	-
Crustacea										
<i>Anapagurus sp.</i>	-18.80	NA	10.88	NA	0.03	-	-	-	-	-
<i>Carcinus maenas</i>	-17.39	0.87	11.34	0.67	1.19	-16.29	0.77	11.26	0.73	0.49
<i>Crangon crangon</i>	-13.34	0.43	13.33	0.20	<0.01	-13.36	0.48	12.53	0.35	<0.01
<i>Diogenes pugilator</i>	-16.93	0.80	8.92	0.45	<0.01	-20.08	2.54	9.20	0.90	<0.01
<i>Gammarus zaddachi</i>	-19.84	0.33	9.12	0.45	(-)	-	-	-	-	-
<i>Idotea linearis</i>	-17.89	0.64	9.31	0.26	(-)	-	-	-	-	-
<i>Lekanesphaera levii</i>	-16.67	4.34	6.19	0.72	0.06	-14.35	0.57	6.80	0.65	0.01
<i>Lekanesphaera rugicauda</i>	-	-	-	-	0.01	-15.08	NA	8.73	NA	<0.01
<i>Liocarcinus holsatus</i>	-	-	-	-	-	-17.12	1.50	10.86	0.57	<0.01
<i>Liocarcinus sp.</i>	-16.96	NA	10.78	NA	(-)	-	-	-	-	-
<i>Macropodia linaresi</i>	-21.56	NA	9.76	NA	(-)	-	-	-	-	-
<i>Nymphon gracile</i>	-19.82	NA	10.96	NA	(-)	-	-	-	-	-
<i>Palaemon serratus</i>	-	-	-	-	-	-16.42	0.86	12.87	0.17	<0.01
<i>Portunus latipes</i>	-	-	-	-	0.4	-14.01	1.13	10.78	1.07	0.03

<i>Urothoe poseidonis</i>	-15.39	0.33	10.88	1.13	<0.01	-15.73	1.58	9.56	1.24	<0.01
Mollusca										
<i>Abra alba</i>	-16.18	0.60	8.61	0.19	0.02	-16.48	0.23	8.79	0.26	0.10
<i>Cerastoderma edule</i>	-18.03	0.82	9.97	0.56	79.88	-18.91	0.75	9.82	0.47	4.29
<i>Cerastoderma glaucum</i>	-	-	-	-	-	-18.25	NA	10.35	NA	0.03
<i>Crepidula fornicata</i>	-19.00	0.92	8.86	0.26	0.25	-	-	-	-	-
<i>Limecola balthica</i>	-15.35	0.30	9.36	0.45	4.43	-15.58	0.31	9.26	0.66	80.87
<i>Macomangulus tenuis</i>	-15.63	0.40	9.22	0.40	0.04	-15.78	0.33	9.31	0.41	0.19
<i>Mytilus cf. galloprovincialis</i>	-19.70	0.81	9.15	0.31	0.73	-19.87	0.55	9.28	0.57	0.15
<i>Mytilus edulis</i>	-20.20	0.32	9.62	0.19	0.01	-	-	-	-	<0.01
<i>Ruditapes philippinarum</i>	-18.98	0.38	9.04	0.09	0.14	-19.65	0.34	9.42	0.16	0.04
<i>Spisula solida</i>	-17.05	NA	9.73	NA	<0.01	-18.25	0.27	9.75	0.24	0.01
<i>Tritia reticulata</i>	-14.85	0.42	12.53	0.33	1.09	-14.83	0.37	12.50	0.34	0.15
<i>Venerupis corrugata</i>	-18.86	0.91	8.78	0.49	0.01	-20.04	0.10	9.74	0.24	<0.01
Anthozoa										
<i>Cereus pedunculatus</i>	-14.01	0.34	12.31	0.09	0.04	-	-	-	-	-
Other										
<i>Acrocnida spatulispina</i>	-	-	-	-	0.79	-16.09	NA	13.15	NA	(-)
<i>Amphipholis squamata</i>	-	-	-	-	-	-18.51	NA	9.03	NA	(-)
Vertebrata										
<i>Hippocampus hippocampus</i>	-17.77	0.33	11.82	0.11	<0.01	-	-	-	-	-
<i>Liza aurata</i>	-15.35	0.49	11.34	0.44	<0.01	-12.62	0.66	10.62	1.92	<0.01
<i>Liza ramada</i>	-16.30	NA	10.63	NA	<0.01	-	-	-	-	-
<i>Pleuronectes platessa</i>	-15.31	NA	12.64	NA	<0.01	-13.38	0.75	13.35	0.69	<0.01
<i>Pomatoschistus spp.</i>	-15.02	0.33	14.32	0.12	0.01	-15.76	0.37	14.05	0.38	<0.01
<i>Solea vulgaris</i>	-	-	-	-	-	-14.30	0.46	13.79	0.44	0.02
<i>Trachinus vipera</i>	-17.90	NA	13.27	NA	<0.01	-15.85	NA	13.37	NA	<0.01
<i>Triglia lucerna</i>	-	-	-	-	-	-13.42	0.18	13.87	0.26	<0.01
<i>Trisopterus luscus</i>	-14.47	0.69	10.68	1.21	0.12	-15.81	0.45	14.56	0.22	<0.01

Associated sediments	Winter					Summer				
	$\delta^{13}\text{C}$	SD	$\delta^{15}\text{N}$	SD	% biom	$\delta^{13}\text{C}$	SD	$\delta^{15}\text{N}$	SD	% biom
Polychaeta										
<i>Armandia polyophthalma</i>	-17.46	NA	9.92	NA	(-)	-	-	-	-	-
<i>Glycera alba</i>	-14.95	NA	13.64	NA	0.85	-16.01	0.18	13.51	0.65	0.15
<i>Goniadella bobrezkii</i>	-16.85	0.77	13.47	1.06	1.48	-16.93	0.59	14.05	0.72	0.46
<i>Lanice conchilega</i>	-18.20	NA	11.57	NA	(-)	-17.09	0.36	11.29	0.25	0.91
<i>Mediomastus fragilis</i>	-	-	-	-	0.9	-17.40	0.33	10.52	0.78	1.30
<i>Malmgrenia arenicolae</i>	-17.83	NA	12.50	NA	0.05	-15.19	NA	12.84	NA	0.04
<i>Nephtys cirrosa</i>	-	-	-	-	-	-15.22	NA	13.84	NA	0.36
<i>Nephtys hombergii</i>	-	-	-	-	-	-16.14	0.58	11.74	1.21	0.87
<i>Notomastus latericeus</i>	-16.58	0.27	10.84	0.00	0.03	-	-	-	-	0.1
<i>Orbinia sp.</i>	-	-	-	-	-	-17.23	NA	10.72	NA	(-)
<i>Perinereis cultrifera</i>	-14.69	0.86	11.92	0.37	0.55	-18.52	NA	12.43	NA	<0.01

<i>Saccocirrus papillocercus</i>	-20.19	NA	10.22	NA	<0.01	-	-	-	-	2.16
<i>Spirobranchus lamarckii</i>	-19.14	0.62	10.49	0.57	0.43	-20.45	0.44	10.72	0.30	0.16
<i>Websterinereis glauca</i>	-	-	-	-	-	-15.91	1.13	13.60	1.24	<0.01
Crustacea										
<i>Athanas nitescens</i>	-	-	-	-	0.05	-17.34	NA	12.85	NA	(-)
<i>Carcinus maenas</i>	-16.85	0.94	11.14	1.10	2.07	-16.74	0.86	10.61	1.19	0.61
<i>Crangon crangon</i>	-13.18	0.58	12.97	0.57	0.02	-13.09	0.59	12.96	0.23	<0.01
<i>Lekanesphaera levii</i>	-17.73	1.60	7.40	0.77	0.53	-18.65	1.18	6.54	1.19	0.55
<i>Lekanesphaera rugicauda</i>	-	-	-	-	0.03	-19.38	NA	3.30	NA	0.10
<i>Liocarcinus holsatus</i>	-18.72	NA	11.78	NA	(-)	-18.29	NA	11.79	NA	<0.01
<i>Macropodia parva</i>	-	-	-	-	-	-20.63	0.37	10.24	0.63	<0.01
<i>Melita palmata</i>	-	-	-	-	0.05	-22.12	1.33	8.96	0.46	<0.01
<i>Palaemon serratus</i>	-15.81	1.11	12.56	0.32	0.01	-15.58	0.44	13.18	0.43	<0.01
<i>Processa edulis</i>	-19.05	NA	11.92	NA	<0.01	-	-	-	-	-
Mollusca										
<i>Abra alba</i>	-	-	-	-	<0.01	-16.83	NA	8.70	NA	0.02
<i>Cerastoderma edule</i>	-17.53	1.28	9.50	0.15	0.29	-19.50	0.28	9.60	0.20	0.06
<i>Cirriformia tentaculata</i>	-16.84	0.35	10.47	0.56	15.11	-18.56	0.78	11.47	1.06	7.14
<i>Crepidula fornicata</i>	-19.38	1.65	9.15	0.50	59.00	-19.77	1.36	8.85	0.31	61.95
<i>Limecola balthica</i>	-15.47	0.64	9.58	0.56	<0.01	-15.73	0.32	9.16	0.29	0.90
<i>Magallana gigas</i>	-	-	-	-	-	-18.26	0.49	10.74	0.38	1.86
<i>Mytilus cf. galloprovincialis</i>	-18.97	0.56	9.47	0.29	0.68	-19.61	NA	9.45	NA	0.90
<i>Nucella lapilus</i>	-16.20	NA	10.98	NA	0.17	-	-	-	-	-
<i>Ocenebra erinaceus</i>	-	-	-	-	0.03	-16.92	0.39	11.68	0.69	0.05
<i>Polititapes rhomboides</i>	-18.20	0.01	10.08	0.15	0.18	-	-	-	-	-
<i>Ruditapes decussatus</i>	-	-	-	-	0.76	-19.70	0.42	9.70	0.81	3.95
<i>Ruditapes philippinarum</i>	-18.55	0.46	9.57	0.27	2.62	-20.03	0.80	9.53	0.55	9.94
<i>Spisula solida</i>	-17.43	0.54	9.14	0.39	0.57	-18.44	1.06	9.15	0.13	0.12
<i>Steromphala umbilicalis</i>	-15.77	4.53	10.74	0.68	0.06	-	-	-	-	-
<i>Tritia reticulata</i>	-15.88	1.42	12.50	0.51	0.11	-16.09	0.30	12.61	0.34	0.80
<i>Venerupis corrugata</i>	-18.58	1.42	9.52	0.54	1.01	-19.75	0.70	9.70	0.56	0.38
<i>Venus verrucosa</i>	-	-	-	-	-	-19.23	0.34	10.37	0.47	0.20
Anthozoa										
<i>Cereus pedunculatus</i>	-15.55	0.98	11.58	1.13	4.91	-16.80	0.76	12.74	0.37	0.38
Sipuncula										
<i>Golfingia elongata</i>	-14.92	NA	10.22	NA	0.18	-	-	-	-	-
<i>Golfingia vulgaris</i>	-15.09	0.49	10.73	0.71	5.99	-15.65	0.46	9.82	0.70	2.63
<i>Nephasoma minutum</i>	-	-	-	-	0.12	-16.58	NA	11.18	NA	0.03
Ascidacea										
<i>Styela clava</i>	-	-	-	-	-	-23.27	NA	9.69	NA	(-)

Engineered sediment	Winter					Summer				
	$\delta^{13}\text{C}$	SD	$\delta^{15}\text{N}$	SD	% biom	$\delta^{13}\text{C}$	SD	$\delta^{15}\text{N}$	SD	% biom
Polychaeta										
<i>Audomimia tentaculata</i>	-17.16	NA	10.31	NA	(-)	-	-	-	-	-

<i>Eulalia ornata</i>	-	-	-	-	<0.01	-16.66	0.14	12.46	0.32	0.03
<i>Eulalia viridis</i>	-16.30	0.85	14.31	0.93	0.09	-17.16	1.55	13.72	1.32	0.21
<i>Eumida sanguinea</i>	-	-	-	-	<0.01	-16.84	0.31	13.35	0.50	0.01
<i>Malmgrenia arenicolae</i>	-	-	-	-	-	-15.65	NA	12.52	NA	(-)
<i>Mediomastus fragilis</i>	-	-	-	-	<0.01	-16.70	NA	10.77	NA	<0.01
<i>Nephtys hombergii</i>	-	-	-	-	-	-15.34	NA	12.58	NA	(-)
<i>Odontosyllis ctenostoma</i>	-19.89	0.51	10.88	0.88	<0.01	-20.08	0.63	11.28	0.12	0.02
<i>Perinereis cultrifera</i>	-15.61	1.32	11.61	0.83	0.38	-17.74	1.74	12.09	0.54	0.35
<i>Phyllodoce laminosa</i>	-	-	-	-	<0.01	-16.43	0.20	13.31	0.47	0.43
<i>Sabellaria alveolata</i>	-17.09	0.55	10.54	0.65	57.85	-17.23	0.48	10.19	0.52	22.66
<i>Serpula vermicularis</i>	-21.37	NA	9.21	NA	(-)	-	-	-	-	-
<i>Spirobranchus lamarckii</i>	-19.88	0.72	10.85	0.71	0.01	-20.03	0.95	11.30	0.24	0.05
<i>Syllis gracilis</i>	-16.91	NA	13.32	NA	<0.01	-	-	-	-	<0.01
Crustacea										
<i>Carcinus maenas</i>	-17.22	0.71	10.98	0.53	0.04	-17.39	1.23	10.72	0.88	1.37
<i>Corophium volutator</i>	-18.23	1.10	7.05	0.76	<0.01	-	-	-	-	-
<i>Corophium sp.</i>	-	-	-	-	-	-18.58	0.53	7.25	0.44	0.03
<i>Crangon crangon</i>	-13.18	0.58	12.97	0.58	<0.01	-13.09	0.59	12.96	0.23	<0.01
<i>Diogenes pugilator</i>	-	-	-	-	-	-18.07	NA	11.05	NA	<0.01
<i>Gnathia maxillaris</i>	-17.92	0.77	10.97	2.97	<0.01	-16.54	NA	12.85	NA	0.01
<i>Jassa ocia</i>	-18.52	NA	9.11	NA	<0.01	-	-	-	-	<0.01
<i>Lekanesphaera levii</i>	-18.65	1.58	6.91	1.00	0.25	-19.50	1.81	7.71	0.94	<0.01
<i>Liocarcinus holsatus</i>	-18.72	NA	11.78	NA	(-)	-18.29	NA	11.79	NA	<0.01
<i>Macropodia parva</i>	-	-	-	-	-	-20.63	0.37	10.24	0.63	<0.01
<i>Melita palmata</i>	-19.06	0.64	10.48	0.67	0.02	-22.46	0.59	10.10	0.86	<0.01
<i>Palaemon serratus</i>	-15.81	1.11	12.56	0.32	<0.01	-15.58	0.44	13.18	0.43	<0.01
<i>Porcellana platycheles</i>	-19.28	1.73	8.89	0.78	4.49	-19.95	1.61	9.39	0.45	19.38
<i>Processa edulis</i>	-19.05	NA	11.92	NA	<0.01	-	-	-	-	-
Mollusca										
<i>Cerastoderma edule</i>	-18.23	0.45	9.96	0.08	0.01	-	-	-	-	0.03
<i>Crepidula fornicata</i>	-19.16	1.31	9.01	0.37	1.87	-19.58	1.07	8.81	0.38	0.74
<i>Gibbula tumida</i>	-15.80	1.34	11.57	1.12	(-)	-	-	-	-	-
<i>Littorina littorea</i>	-14.74	1.46	9.98	0.49	0.07	-15.02	1.32	10.98	0.52	0.02
<i>Magallana gigas</i>	-18.03	0.54	10.51	0.68	31.95	-18.82	0.73	10.57	0.65	49.21
<i>Mytilus cf. galloprovincialis</i>	-18.97	1.03	9.14	0.76	0.19	-19.63	0.75	9.22	0.46	1.06
<i>Nucella lapillus</i>	-18.22	1.61	11.90	0.80	0.52	-17.37	0.92	11.93	0.46	0.50
<i>Ocenebra erinaceus</i>	-16.20	0.37	11.11	0.78	0.03	-16.78	0.96	11.47	0.52	<0.01
<i>Ostrea edulis</i>	-18.92	NA	10.00	NA	0.04	-19.62	NA	10.29	NA	0.37
<i>Phorcus lineatus</i>	-	-	-	-	-	-14.51	NA	11.50	NA	<0.01
<i>Polititapes rhomboides</i>	-20.60	NA	9.74	NA	<0.01	-	-	-	-	-
<i>Ruditapes philippinarum</i>	-18.33	0.28	9.80	0.30	0.04	-18.37	NA	11.02	NA	0.22
<i>Steromphala cineraria</i>	-13.65	0.30	10.94	0.96	<0.01	-15.66	0.71	11.92	0.23	<0.01
<i>Steromphala umbilicalis</i>	-13.90	0.72	10.68	0.56	0.31	-13.91	0.58	11.22	0.48	0.35
<i>Tritia reticulata</i>	-15.15	0.68	11.72	0.66	0.01	-15.16	NA	12.58	NA	<0.01
<i>Venerupis corrugata</i>	-19.09	1.10	9.88	0.60	0.03	-20.46	1.01	9.94	0.55	0.39

Pycnogonida										
<i>Achelia echinata</i>	-19.02	0.27	10.83	0.99	<0.01	-	-	-	-	-
<i>Achelia simplex</i>	-18.97	0.23	10.73	0.24	<0.01	-	-	-	-	-
<i>Achelia spp.</i>	-	-	-	-	-	-19.89	0.29	10.44	0.39	0.15
Anthozoa										
<i>Actinia equina</i>	-15.47	0.66	12.44	0.79	(-)	-16.57	3.22	12.33	0.74	0.11
<i>Anemonia viridis</i>	-16.33	NA	14.88	NA	(-)	-	-	-	-	-
<i>Cereus pedunculatus</i>	-15.76	0.50	12.30	1.27	0.34	-16.30	1.40	12.66	0.39	0.35
<i>Polyclinum aurantium</i>	-22.00	NA	9.35	NA	0.05	-	-	-	-	-
Asciacea										
<i>Ascidia sp.</i>	-	-	-	-	-	-21.31	NA	11.41	NA	(-)
<i>Molgula sp.</i>	-	-	-	-	-	-21.81	0.08	10.22	0.31	<0.01
<i>Styela clava</i>	-	-	-	-	0.14	-23.57	0.49	10.75	0.22	0.19
Other										
<i>Bryozoa</i>	-	-	-	-	-	-20.59	NA	8.97	NA	(-)
<i>Collembola</i>	-	-	-	-	<0.01	-14.27	NA	6.98	NA	<0.01
<i>Nematoda</i>	-15.54	0.39	14.96	0.97	<0.01	-17.06	0.71	14.82	0.15	0.06
<i>Nemerte</i>	-16.58	0.93	12.69	0.50	0.20	-15.40	0.85	12.69	0.37	0.25
Sipuncula										
<i>Golfingia elongata</i>	-15.41	0.56	10.24	0.85	<0.01	-16.21	0.26	11.42	0.72	0.02
<i>Golfingia vulgaris</i>	-14.85	0.75	10.43	0.75	0.38	-15.53	0.70	9.90	0.94	0.56
<i>Nephasoma minutum</i>	-	-	-	-	0.02	-16.33	0.68	10.23	0.65	0.07
Vertebrata										
<i>Callionymus lyra</i>	-16.37	NA	13.32	NA	(-)	-18.05	NA	13.14	NA	<0.01
<i>Ciliata mustela</i>	-18.46	1.32	13.53	0.07	(-)	-	-	-	-	-
<i>Hippocampus hippocampus</i>	-19.02	NA	14.28	NA	(-)	-	-	-	-	-
<i>Lipophrys pholis (ES)</i>	-17.36	NA	13.64	NA	(-)	-16.58	0.50	14.40	0.21	0.06
<i>Liza aurata</i>	-15.35	3.30	11.56	0.39	(-)	-	-	-	-	-
<i>Liza ramada</i>	-13.98	1.54	11.16	0.06	(-)	-	-	-	-	-
<i>Pleuronectes platessa</i>	-13.93	NA	12.52	NA	(-)	-15.42	1.02	12.15	0.31	<0.01
<i>Pomatoschistus sp.</i>	-15.29	1.14	14.14	0.43	(-)	-16.19	0.57	13.97	0.42	<0.01
<i>Raja undulata</i>	-16.88	NA	14.84	NA	(-)	-	-	-	-	-
<i>Scophthalmus rhombus</i>	-16.41	NA	14.03	NA	(-)	-	-	-	-	-
<i>Solea vulgaris</i>	-14.69	1.33	13.52	0.40	<0.01	-14.16	0.71	13.49	0.59	<0.01
<i>Trachinus vipera</i>	-17.85	NA	13.13	NA	<0.01	-	-	-	-	-
<i>Trisopterus luscus</i>	-18.30	0.11	14.21	0.13	<0.01	-15.99	0.76	15.18	0.50	<0.01

Table S2. Estimated contributions of the two (control site) or three (Reef site) main food sources, particulate organic matter (POM), microphytobenthos (MPB) and green algae from the genus *Ulva* (ULV), for the primary consumers present in the control, associated (AS) and engineered (ES) sediments in winter (W) and summer (S) using the Stable Isotope Mixing Model in R (simmr). The mean contribution \pm the standard deviation of the mean contribution followed by the 97.5% confidence interval are indicated. The sum of the pelagic (POM) and benthic (MPB for the control site and MPB + ULV for the reef site) mean contributions is also indicated. The mixing model was run for species for which we had at least three replicate samples by sediment type and season, identified as n in the table. The species accounting for more than 1% of the total biomass in each sediment type (Sed) in winter and/or summer are designated by * for the CS and AS and # for the ES.

Control site					Reef site								
Species	n	Sea	POM / Pelagic	MPB / Benthic	Species	n	Sea	Sed	POM	MPB	ULV	Pelagic	Benthic
CEDU*	51	W	28.0 \pm 3.5 (20.9-34.7)	72.0 \pm 3.5 (65.3-79.1)	CEDU	3	W	AS	29.3 \pm 14.8 (5.3-62.6)	44.9 \pm 19.7 (8.4-81.8)	25.8 \pm 13.7 (4.8-56.8)	29.3	70.7
	41	S	42.9 \pm 3.7 (35.6-50.0)	57.1 \pm 3.7 (50.0-64.4)		5	S	AS	53.6 \pm 10.2 (30.5-72.1)	26.2 \pm 12.9 (5.2-55.5)	20.2 \pm 8.1 (5.3-37.0)	53.6	46.4
CFOR	10	W	44.1 \pm 7.6 (29.0-59.1)	55.9 \pm 7.6 (40.9-71.0)	CFOR*#	39	W	AS	50.7 \pm 4.8 (41.2-60.2)	39.5 \pm 6.3 (26.8-51.6)	9.8 \pm 3.3 (3.5-16.5)	50.7	49.3
						47	W	ES	47.4 \pm 3.5 (40.3-54.2)	45.3 \pm 4.9 (35.4-54.7)	7.3 \pm 2.7 (2.6-13.1)	47.4	52.6
						47	S	AS	56.7 \pm 3.8 (49.3-64.1)	38.4 \pm 4.7 (28.8-47.3)	4.9 \pm 2.3 (1.2-10.0)	56.7	43.3
						38	S	ES	54.6 \pm 3.7 (47.3-61.8)	40.1 \pm 4.9 (30.0-49.2)	5.3 \pm 2.4 (1.5-10.7)	54.6	45.4
LCON*	4	W	23.9 \pm 14.3 (3.7-59.7)	76.1 \pm 14.3 (40.3-96.3)	LCON	3	S	AS	22.5 \pm 10.3 (5.0-44.0)	24.9 \pm 15.8 (3.4-65.4)	52.6 \pm 14.7 (17.4-78.2)	22.5	77.5
	6	S	16.5 \pm 9.3 (2.9-37.2)	83.5 \pm 9.3 (62.8-97.1)									
LLEV	3	W	40.9 \pm 24.8 (4.7-90.6)	59.1 \pm 24.8 (9.4-95.3)	LLEV	10	W	AS	21.9 \pm 10.7 (3.9-44.3)	68.6 \pm 14.9 (33.6-91.9)	9.5 \pm 7.7 (1.2-29.8)	21.9	78.1
						26	W	ES	38.2 \pm 6.5 (25.3-51.0)	56.6 \pm 8.2 (38.5-71.5)	5.2 \pm 3.6 (0.9-14.4)	38.2	61.8

	3	S	34.2 ± 24.7 (3.0-88.7)	65.8 ± 24.7 (11.3-97.0)		5	S	AS	41.9 ± 14.2 (11.2-69.8)	38.9 ± 19.3 (6.4-78.9)	19.2 ± 12.1 (2.7-46.2)	41.9	58.1
						19	S	ES	56.7 ± 9.0 (39.2-74.7)	37.6 ± 10.3 (16.6-56.7)	5.7 ± 3.9 (1.0-15.7)	56.7	43.3
LBAL*	45	W	2.8 ± 1.6 (0.6-6.7)	97.2 ± 1.6 (93.9-99.4)	LBAL								
	37	S	3.6 ± 2.1 (0.7-8.5)	96.4 ± 2.1 (91.5-99.3)		5	S	AS	12.9 ± 9.7 (2.0-39.8)	62.5 ± 18.2 (18.8-90.1)	24.6 ± 16.1 (3.7-68.0)	12.9	87.1
McfGAL	21	W	54.6 ± 4.9 (45.6-64.3)	45.4 ± 4.9 (35.7-54.4)	McfGAL#	4	W	AS	46.1 ± 12.2 (17.9-69.3)	33.1 ± 15.5 (6.2-67.3)	20.8 ± 9.3 (4.6-40.2)	46.1	53.9
						33	W	ES	46.5 ± 4.1 (38.5-54.3)	43.3 ± 6.2 (30.7-55.0)	10.2 ± 3.6 (3.5-17.7)	46.5	53.5
	8	S	58.9 ± 8.7 (41.0-75.8)	41.1 ± 8.7 (24.2-59.0)		26	S	ES	56.7 ± 4.0 (48.9-64.5)	30.6 ± 6.4 (17.9-42.8)	12.7 ± 4.0 (5.2-20.7)	56.7	43.3
RPHI	3	W	44.9 ± 17.1 (10.8-79.9)	55.1 ± 17.1 (20.1-89.2)	RPHI*	5	W	AS	41.0 ± 10.2 (18.8-60.5)	35.5 ± 14.6 (8.9-66.1)	23.5 ± 9.0 (6.8-41.6)	41	59
						3	W	ES	37.1 ± 13.6 (9.5-63.1)	35.2 ± 17.8 (5.7-73.5)	27.7 ± 11.9 (5.9-51.9)	37.1	62.9
	6	S	54.1 ± 10.5 (32.5-74.5)	45.9 ± 10.5 (25.5-67.5)		14	S	AS	63.7 ± 5.5 (52.4-74.4)	19.5 ± 8.2 (5.0-36.4)	16.8 ± 5.6 (5.9-27.6)	63.7	36.3
SSOL					SSOL	11	W	AS	24.3 ± 6.5 (10.8-36.4)	58.7 ± 9.6 (40.1-77.3)	17.0 ± 6.3 (5.2-30.2)	24.3	75.7
	11	S	32.7 ± 7.5 (17.4-47.1)	67.3 ± 7.5 (52.9-82.6)		5	S	AS	38 ± 12.0 (12.8-61.0)	45.5 ± 15.8 (13.7-75.7)	16.5 ± 8.4 (3.4-36.1)	38	62
VCOR	4	W	42.6 ± 14.7 (13.4-73.6)	57.4 ± 14.7 (26.4-86.6)	VCOR*	8	W	AS	40.6 ± 10.3 (19.3-59.8)	39.7 ± 14.0 (12.7-67.7)	19.7 ± 7.7 (6.0-35.7)	40.6	59.4
						12	W	ES	51.3 ± 6.3 (38.0-62.5)	22.1 ± 9.4 (5.8-42.2)	26.6 ± 6.3 (13.8-38.6)	51.3	48.7
	4	S	59.1 ± 14.9 (26.0-87.3)	40.9 ± 14.9 (12.7-74.0)		4	S	AS	54.8 ± 13.5 (21.3-77.8)	25.1 ± 14.5 (4.2-59.9)	20.1 ± 9.4 (4.5-40.1)	54.8	45.2
						23	S	ES	70.3 ± 3.9 (62.1-77.6)	8.7 ± 4.7 (1.8-19.5)	21.0 ± 4.1 (12.4-28.7)	70.3	29.7

AALB	9	W	12.7 ± 7.3 (2.4-30.2)	87.3 ± 7.3 (69.8-97.6)	ACHspp	9	W	ES	49.5 ± 5.5 (38.6-59.8)	12.1 ± 7.4 (2.2-30.7)	38.4 ± 6.6 (23.5-49.9)	49.5	50.5
	9	S	14.4 ± 7.3 (2.9-31.2)	85.6 ± 7.3 (68.8-97.1)		8	S	ES	59.4 ± 6.9 (43.8-71.7)	12.5 ± 7.5 (2.3-30.4)	28.1 ± 6.9 (13.4-40.9)	59.4	40.6
CALA	4	W	26.2 ± 14.8 (4.6-63.9)	73.8 ± 14.8 (36.1-95.4)	CTEN*	3	W	AS	21.7 ± 10.8 (4.6-46.0)	33.7 ± 17.2 (5.9-71.8)	44.6 ± 14.8 (14.2-72.8)	21.7	78.3
GZAD	6	W	56.8 ± 10.5 (36.0-77.5)	43.2 ± 10.5 (22.5-64.0)		8	S	AS	42.8 ± 7.5 (25.1-55.7)	14.2 ± 10.5 (2.0-42.2)	43.0 ± 10.5 (20.2-62.0)	42.8	57.2
MTEN	12	W	8.2 ± 5.2 (1.4-20.9)	91.8 ± 5.2 (79.1-98.6)	CVOL	3	W	ES	36.4 ± 16.8 (6.8-72.4)	39.8 ± 21.6 (5.4-83.7)	23.8 ± 15.8 (2.8-59.4)	36.4	63.6
	9	S	10.6 ± 7.1 (1.8-28.3)	89.4 ± 7.1 (71.7-98.2)		5	S	ES	41.8 ± 12.1 (14.7-66.1)	39.2 ± 17.9 (6.7-76.5)	19.0 ± 11.7 (2.4-44.6)	41.8	58.2
NLAT	3	W	26.8 ± 19.1 (3.5-78.5)	73.2 ± 19.1 (21.5-96.5)	GUMB	35	W	ES	3.2 ± 2.0 (0.6-8.2)	41.7 ± 4.9 (31.6-50.7)	55.1 ± 4.6 (46.5-64.8)	3.2	96.8
SARM	3	W	27.9 ± 22.6 (2.7-86.4)	72.1 ± 22.6 (13.6-97.3)		30	S	ES	2.8 ± 1.8 (0.5-7.5)	25.6 ± 6.3 (12.0-36.6)	71.6 ± 6.2 (60.7-85.5)	2.8	97.2
	3	S	26.8 ± 21.0 (3.1-82.5)	73.2 ± 21.0 (17.5-96.9)	GVUL#	16	W	ES	4.1 ± 2.7 (0.8-11.0)	42.7 ± 8.8 (23.1-58.7)	53.2 ± 8.5 (38.0-72.0)	4.1	95.9
UROsp	4	W	20.8 ± 18.9 (2.1-74.3)	79.2 ± 18.9 (25.7-97.9)		18	S	ES	4.4 ± 2.3 (1.0-10.0)	56.1 ± 9.0 (36.1-71.8)	39.5 ± 8.5 (24.5-58.4)	4.4	95.6
	4	S	23.3 ± 19.7 (2.4-78.1)	76.7 ± 19.7 (21.9-97.6)	LLIT	13	W	ES	9.3 ± 6.6 (1.5-26.4)	55.8 ± 9.4 (35.5-72.9)	34.9 ± 7.1 (21.2-49.2)	9.3	90.7
						10	S	ES	8.0 ± 5.2 (1.3-20.8)	28.0 ± 10.1 (8.2-46.9)	64.0 ± 9.2 (47.7-83.5)	8	92
					MGIG*#	21	W	ES	38.2 ± 3.6 (31.1-45.3)	17.9 ± 6.1 (6.6-29.8)	43.9 ± 4.2 (35.5-52.2)	38.2	61.8
						3	S	AS	34.8 ± 12.7 (8.2-58.8)	26.4 ± 16.2 (3.9-65.0)	38.8 ± 13.7 (11.0-65.8)	34.8	65.2
						32	S	ES	50.0 ± 2.8 (44.5-55.4)	8.6 ± 3.9 (2.3-17.3)	41.4 ± 3.2 (34.8-47.4)	50	50
					MFRA*	5	S	AS	27.5 ± 8.6 (9.8-44.1)	28.0 ± 13.9 (5.9-58.8)	44.5 ± 10.4 (21.3-62.9)	27.5	72.5

MPAL	16	W	ES	52.2 ± 4.0 (44.1-59.9)	10.7 ± 5.4 (2.4-23.2)	37.1 ± 4.6 (27.6-45.4)	52.2	47.8
	4	S	ES	60.7 ± 23.3 (10.8-93.2)	19.7 ± 16.9 (1.9-65.4)	19.6 ± 13.9 (2.0-51.5)	60.7	39.3
PCUL	19	W	ES	7.9 ± 3.7 (1.9-16.1)	15 ± 6.8 (3.3-29.1)	77.1 ± 5.7 (65.6-88.1)	7.9	92.1
	9	S	ES	19.5 ± 8.8 (3.8-38.4)	10.4 ± 7.5 (1.6-28.9)	70.1 ± 10.2 (47.0-86.8)	19.5	80.5
PPLA#	33	W	ES	50.1 ± 5.9 (38.1-61.8)	44.3 ± 7.1 (30.0-57.8)	5.6 ± 2.7 (1.3-11.6)	50.1	49.9
	51	S	ES	59.8 ± 4.5 (50.9-68.4)	25.8 ± 5.9 (13.8-37.4)	14.4 ± 3.3 (7.9-20.8)	59.8	40.2
SALV#	40	W	ES	24.1 ± 2.6 (18.8-29.2)	28.0 ± 4.7 (19.1-37.6)	47.9 ± 3.2 (41.8-54.0)	24.1	75.9
	54	S	ES	24.8 ± 2.2 (20.4-29.2)	35.2 ± 3.8 (27.6-42.6)	40.0 ± 2.6 (34.9-45.1)	24.8	75.2
SLAM	4	W	AS	46.5 ± 12.4 (15.8-67.9)	21.7 ± 13.7 (3.2-54.7)	31.8 ± 11.2 (9.4-54.0)	46.5	53.5
	7	W	ES	57.9 ± 10.2 (31.9-73.8)	12.7 ± 8.9 (1.9-35.1)	29.4 ± 10.4 (9.1-52.0)	57.9	42.1
	3	S	AS	49.2 ± 21.2 (7.4-83.1)	22.3 ± 15.9 (2.7-63.8)	28.5 ± 16.7 (3.7-65.3)	49.2	50.8
	8	S	ES	52.0 ± 16.0 (15.8-74.7)	11.8 ± 8.3 (1.7-32.9)	36.2 ± 15.7 (9.5-67.0)	52	48

Sea: season, CEDU: *Cerastoderma edule*, CFOR: *Crepidula fornicata*, LCON: *Lanice conchilega*, LLEV: *Lekanesphaera levii*, LBAL: *Limecola balthica*, McfGAL: *Mytilus* cf. *galloprovincialis*, RPHI: *Ruditapes philippinarum*, SSOL: *Spisula solida*, VCOR: *Venerupis corrugata*, AALB: *Abra alba*, CALA: *Caulleriella alata*, GZAD: *Gammarus zaddachi*, MTEN: *Macomangulus tenuis*, NLAT: *Notomastus latericeus*, SARM: *Scoloplos armiger*, UROsp: *Urothoe* sp., ACHspp: *Achelia* spp., CTEN: *Cirriiformia tentaculata*, CVOL: *Corophium volutator*, SUMB: *Steromphala umbilicalis*, GVUL: *Golfingia vulgaris*, LLIT: *Littorina littorea*, MGIG: *Magallana gigas*, MFRA: *Mediomastus fragilis*, MPAL: *Melita palmata*, PCUL: *Perinereis cultrifera*, PPLA: *Porcellana platycheles*, SALV: *Sabellaria alveolata*, SLAM: *Spirobranchus lamarckii*.