

2 **Table S1:** Full description of invertebrate taxa considered in this study, including: species codes (used for example in two-dimensional δ -spaces),
3 scientific names, ABEC details of calculation (E for mass energy in kJ.g^{-1} ; π the productivity in $\text{kJ.g}^{-1}.\text{y}^{-1}$; a coefficient of regeneration (R); a
4 coefficient of accessibility (A), both unitless; and the average biomass in g.1000 m^{-2}), respective ABEC groups, and HAC-based groups (basing
5 on their isotopic signatures). Additional codes were used for each habitat: ‘Amp.Ow.’ for *Amphiura/Owenia* habitat, ‘Hap.’ for *Haploops*
6 habitat, and ‘Stern.’ for *Sternaspis* habitat. ‘.CO’ for the Bay of Concarneau and ‘.VI’ for the Bay of Vilaine.
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Species ID	Species scientific names	ABEC					Average biomass (for habitat ABEC calculation)						ABEC-based group	HAC-based group					
		E	π	R	E. π .R	A	Amp.Ow.CO	Hap.CO	Stern.CO	Amp.Ow.VI	Hap.VI	Stern.VI		Amp.Ow.CO	Hap.CO	Stern.CO	Amp.Ow.VI	Hap.VI	Stern.VI
1	<i>Abra alba</i>	1,11	1,22	1,50	2,03	0,11	6,32	0,00	0,00	1,77	0,00	0,00	1	1	.	.	1	.	.
2	<i>Acanthocardia aculeata</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.
3	<i>Acanthocardia echinata</i>	2,22	0,99	1,00	2,19	1,00	6,53	0,00	0,00	0,12	0,00	197,50	1	1	.	.	1	.	1
4	<i>Acteon tornatilis</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
5	Actinaria	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
6	<i>Aequipecten opercularis</i>	.	.	.	.	.	.	.	.	.	.	.	.	1	1	1	1	1	.
7	<i>Alloteuthis subulata</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	2	2
8	<i>Alpheus macrocheles</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	2	.	.	.	.
9	Amphitrite sp.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.
10	<i>Acrocnida brachiata</i>	2,99	0,43	1,15	1,47	0,11	523,70	0,00	0,45	0,00	0,00	0,22	1	3	.	.	.	.	.
11	<i>Amphiura filiformis</i>	2,99	0,72	1,15	2,49	0,11	0,00	0,00	7,24	0,00	0,00	0,00	1	.	.	.	.	.	.
12	<i>Anomia ephippium</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
13	<i>Antalis vulgaris</i>	.	.	.	.	.	.	.	.	.	.	.	.	2	.	.	.	.	.
14	<i>Aphrodita aculeata</i>	2,55	2,49	1,20	7,62	0,11	80,03	78,84	66,49	46,07	1,73	13,96	2	2	.	2	2	2	2
15	<i>Aplysia punctata</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
16	<i>Aporrhais serresianus</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
17	<i>Aricia latreillii</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3	.
18	<i>Armina loveni</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1
19	<i>Asthenognathus atlanticus</i>	3,76	2,14	1,00	8,04	0,11	0,00	0,00	0,00	0,00	0,00	0,67	2	.	.	.	.	.	1

20	<i>Asterias rubens</i>	.	.	.	.	.	.	.	.	.	.	.	.	3	3	.	3	.	3
21	<i>Astropecten irregularis irregularis</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
22	<i>Atelecyclus rotundatus</i>	3,76	4,29	1,00	16,13	1,00	0,00	1528,05	0,00	0,00	6,96	0,00	3	.	2	.	.	3	.
23	<i>Buccinum undatum</i>	.	.	.	.	.	.	.	.	.	.	.	.	3	.	2	4	3	.
24	<i>Cancer pagurus</i>	.	.	.	.	.	.	.	.	.	.	.	.	2	.	2	.	.	.
25	<i>Cereus pedunculatus</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2
26	<i>Chaetopterus variopedatus</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1	.	1	.
27	<i>Chamelea gallina</i>	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.
28	<i>Chamelea striatula</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
29	<i>Chlamys varia</i>	5,05	0,29	1,00	1,47	1,00	119,15	0,00	0,00	0,00	0,00	0,00	1	.	.	.	.	.	.
30	<i>Ascidia sp.</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	.	.	.
31	<i>Conilera cylindracea</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	2	.	.	1	.
32	<i>Corbula gibba</i>	1,02	1,45	1,50	2,23	0,11	0,68	0,00	2,58	0,00	0,00	0,00	1	.	.	1	.	.	.
33	<i>Crangon crangon</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
34	<i>Crepidula fornicata</i>	.	.	.	.	.	.	.	.	.	.	.	.	1	1	.	.	1	.
35	<i>Phaxas pellucidus</i>	2,00	1,73	1,50	5,20	0,11	0,30	0,00	0,00	1,77	0,00	0,00	2	1	.	.	1	.	.
36	<i>Euclymene sp.</i>	3,23	1,92	1,20	7,45	0,11	0,00	12,38	0,00	0,00	0,00	0,00	2	2	1	2	.	.	.
37	<i>Eunice vittata</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	2	.	.	.	.
38	<i>Eurynome aspera</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.
39	Flabelligeridae	5,10	1,74	1,20	10,63	0,11	0,00	64,82	0,36	0,00	0,36	0,00	3	.	3	.	.	.	.
40	Sabellidae	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
41	Terebellidae	4,11	1,23	1,20	6,05	0,11	0,00	0,00	0,00	0,00	0,89	0,00	2	.	.	.	.	.	.
42	<i>Galathea dispersa</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.
43	<i>Glycera sp.</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	2	2	.	2	.
44	<i>Haploops nirae</i>	3,64	2,87	1,00	10,44	0,11	34,10	0,00	2,40	0,00	1430,68	0,00	3	.	1	1	.	4	.
45	<i>Henricia oculata</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	3	.	.	.	.
46	<i>Inachus dorsettensis</i>	3,76	2,57	1,00	9,66	1,00	2,04	10272,67	352,85	28,77	34,22	1,09	3	.	2	2	3	3	.

47	<i>Leptopentacta elongata</i>	.	.	.	.	.	.	.	.	.	.	.	.	3	.	.	.	.	3
48	<i>Limea lascombi</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
49	<i>Limopsis minuta</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
50	<i>Liocarcinus navigator</i>	3,40	1,13	1,00	3,84	1,00	0,00	0,00	0,00	3,97	0,48	96,59	1	.	.	.	.	3	.
51	<i>Liocarcinus vernalis</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3	.	.
52	<i>Liocarcinus depurator</i>	3,40	0,49	1,00	1,66	1,00	0,00	150,89	0,00	0,00	3,35	0,00	1	.	2	.	.	.	.
53	<i>Liocarcinus holsatus</i>	3,40	0,79	1,00	2,68	1,00	0,00	240,56	0,00	4,13	0,00	0,00	1	.	.	.	3	.	2	
54	<i>Liocarcinus pusillus</i>	3,40	2,29	1,00	7,80	1,00	1,36	665,20	10,47	0,00	0,00	0,00	2	3	1	1	.	.	.	
55	<i>Luidia ciliaris</i>	.	.	.	.	.	.	.	.	.	.	.	.	3	.	.	.	.	.
56	<i>Lumbrineris tetraura</i>	5,84	1,89	1,20	13,24	0,11	0,00	66,74	0,84	0,00	0,00	0,00	3	.	2	2	.	.	.	
57	<i>Lutraria magna</i>	1	.
58	<i>Lyonsia norvegica</i>	.	.	.	.	.	.	.	.	.	.	.	.	1	1	1	.	.	.
59	<i>Macropodia rostrata</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	3	.	.
60	<i>Maja brachydactyla</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
61	<i>Maldane glebifex</i>	3,23	1,63	1,20	6,30	0,11	22,04	0,00	22,04	0,00	0,85	0,00	2	2	.	2	.	.	.	
62	<i>Marthasterias glacialis</i>	.	.	.	.	.	.	.	.	.	.	.	.	3	.	3	3	.	.
63	Porifera	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
64	<i>Munida rugosa</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
65	<i>Mysia undata</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
66	<i>Nassarius reticulatus</i>	1,194	0,76	1,00	0,91	1,00	18,34	0,47	15,51	32,68	59,12	3,65	1	2	2	2	2	3	2	
67	<i>Natatolana neglecta</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	2	.	.	.	.
68	<i>Necora puber</i>	.	.	.	.	.	.	.	.	.	.	.	.	2	.	.	.	3	.
69	Nemertina sp.	5,19	2,60	1,00	13,48	0,11	0,00	0,01	0,00	0,00	0,00	0,00	3	.	.	.	.	1	.
70	<i>Nereis pelagica</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	2	.	.	3	.
71	<i>Notomastus latericeus</i>	2,97	1,06	1,20	3,76	0,11	0,00	0,00	0,00	0,00	0,00	0,00	1	.	.	.	.	.	.
72	<i>Nucula sulcata</i>	1,152	1,63	1,50	2,81	0,11	0,00	14,41	0,00	0,20	0,29	46,39	1	.	1	.	.	.	1	
73	Discodoris sp.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3	.	.	.

74	<i>Ophiocomina nigra</i>	1,95	0,57	1,00	1,11	1,00	0,00	0,00	688,36	0,00	0,00	0,00	1	.	.	2	.	.	.
75	<i>Ophiocotrix fragilis</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
76	<i>Ophiura albida</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
77	<i>Ophiura ophiura</i>	2,04	1,19	1,00	2,42	1,00	4,90	0,00	0,00	110,60	25,58	308,96	1	3	.	.	3	.	3
78	Orbiniidae	2,06	1,36	1,20	3,37	0,11	0,00	19,18	0,00	0,00	0,00	0,00	1	.	2	.	.	.	.
79	<i>Owenia fusiformis</i>	5,18	1,63	1,20	10,15	0,11	0,00	0,00	2,03	0,00	0,00	0,00	3	.	.	1	.	.	.
80	<i>Pagurus bernhardus</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
81	<i>Pagurus prideaux</i>	.	.	.	.	.	.	.	.	.	.	.	.	2	2	.	.	3	.
82	<i>Pandalina brevisrostris</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	2	2	.	2	.
83	<i>Pectinaria koreni</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3	.	.	.
84	<i>Pecten maximus</i>	.	.	.	.	.	.	.	.	.	.	.	.	1	3	1	.	.	.
85	<i>Pherusa</i> sp.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1	.	.	.
86	<i>Philocheras sculptus</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
87	<i>Philocheras trispinosus</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	2	.	2	.	2
88	<i>Philine aperta</i>	1,30	1,66	1,00	2,16	1,00	45,95	4,80	5,26	17,54	2,70	20,66	1	3	3	3	4	.	1
89	<i>Pisidia longicornis</i>	6,69	3,38	1,00	22,62	1,00	0,00	0,00	0,00	0,00	3,13	0,00	3	.	.	.	.	4	.
90	<i>Pododesmus squama</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.
91	<i>Pontophilus spinosus</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	2	.	.	.	.
92	<i>Pontobdella muricata</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	2	.	.	.	.
93	<i>Psammechinus miliaris</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
94	Sabellidae	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	2
95	<i>Sagartia</i> sp.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2
96	<i>Sepia officinalis</i>	.	.	.	.	.	.	.	.	.	.	.	.	2	.	.	2	.	.
97	<i>Sepiola atlantica</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
98	<i>Sipunculus</i> sp.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.
99	<i>Sipunculus nudus</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	.	.	.
100	<i>Spisula elliptica</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

101	<i>Spisula subtruncata</i>	1,89	1,63	1,50	4,63	0,11	6,15	1,00	5,69	2,36	0,00	0,00	2	1	3	1	1	.	.
102	<i>Sternopsis scutata</i>	3,13	1,55	1,20	5,85	0,11	0,00	52,89	5,62	2,95	0,04	45,25	2	.	1	1	1	.	1
103	<i>Sthenelais boa</i>	.	.	.	.	.	.	.	.	.	.	.	.	2	2	.	.	.	.
104	<i>Politapes rhomboides</i>	0,85	0,50	1,50	0,63	0,11	0,00	3271,71	0,00	0,00	52,71	0,00	1	.	1	1	.	.	.
105	<i>Tellina fabula</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
106	<i>Terebellides stroemi</i>	4,20	1,75	1,20	8,84	0,11	0,00	31,78	0,00	0,24	0,00	0,00	3	.	1	.	.	.	.
107	<i>Thracia pubescens</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
108	<i>Thyone fusus</i>	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.
109	<i>Timoclea ovata</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.
110	<i>Turritella communis</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
111	Paguridae sp	2,83	2,49	1,00	7,05	1,00	0,00	1921,41	13,24	19,31	21,03	8,64	2	1	1	1	5	1	1
112	<i>Virgularia mirabilis</i>	5	.	1
113	<i>Xantho pilipes</i>	2

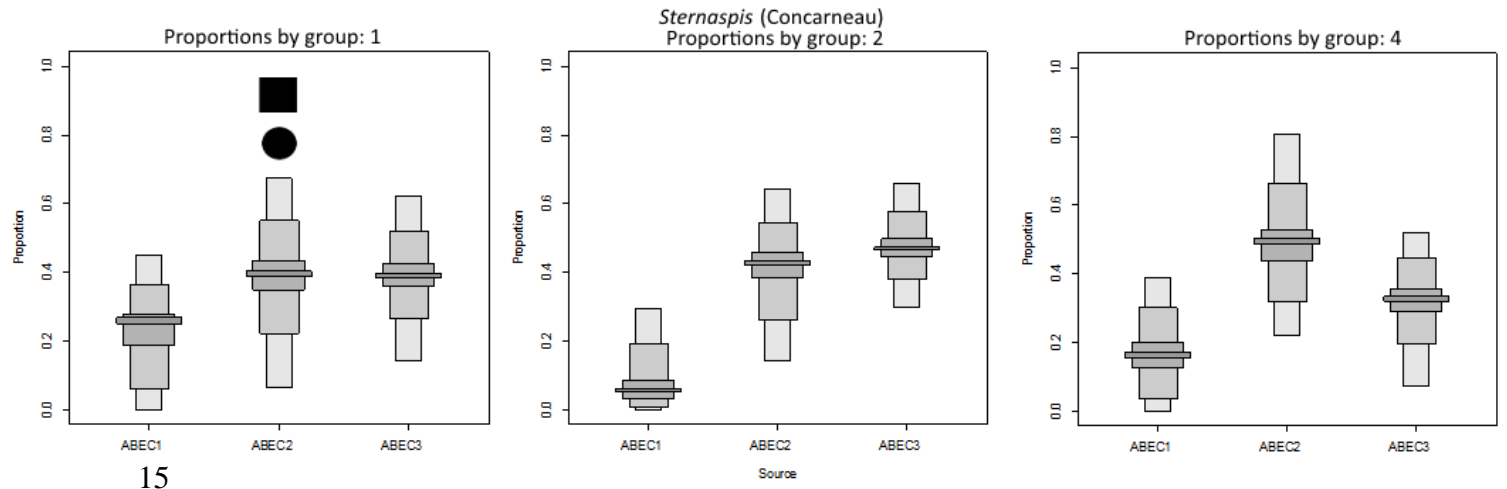
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10 **Table S2:** Full description of fish species considered in this study, including: species codes (used for example in two-dimensional δ -spaces),
 11 scientific names, size limit in cm (when a filter was needed), and mobility group. Codes definition was: 1 for species moving up to 100 m; 2 for
 12 species moving between 100 m and 1 km; 3 for species moving between 1 and 10 km; or 4 for species moving over 10 km in about 3 weeks.
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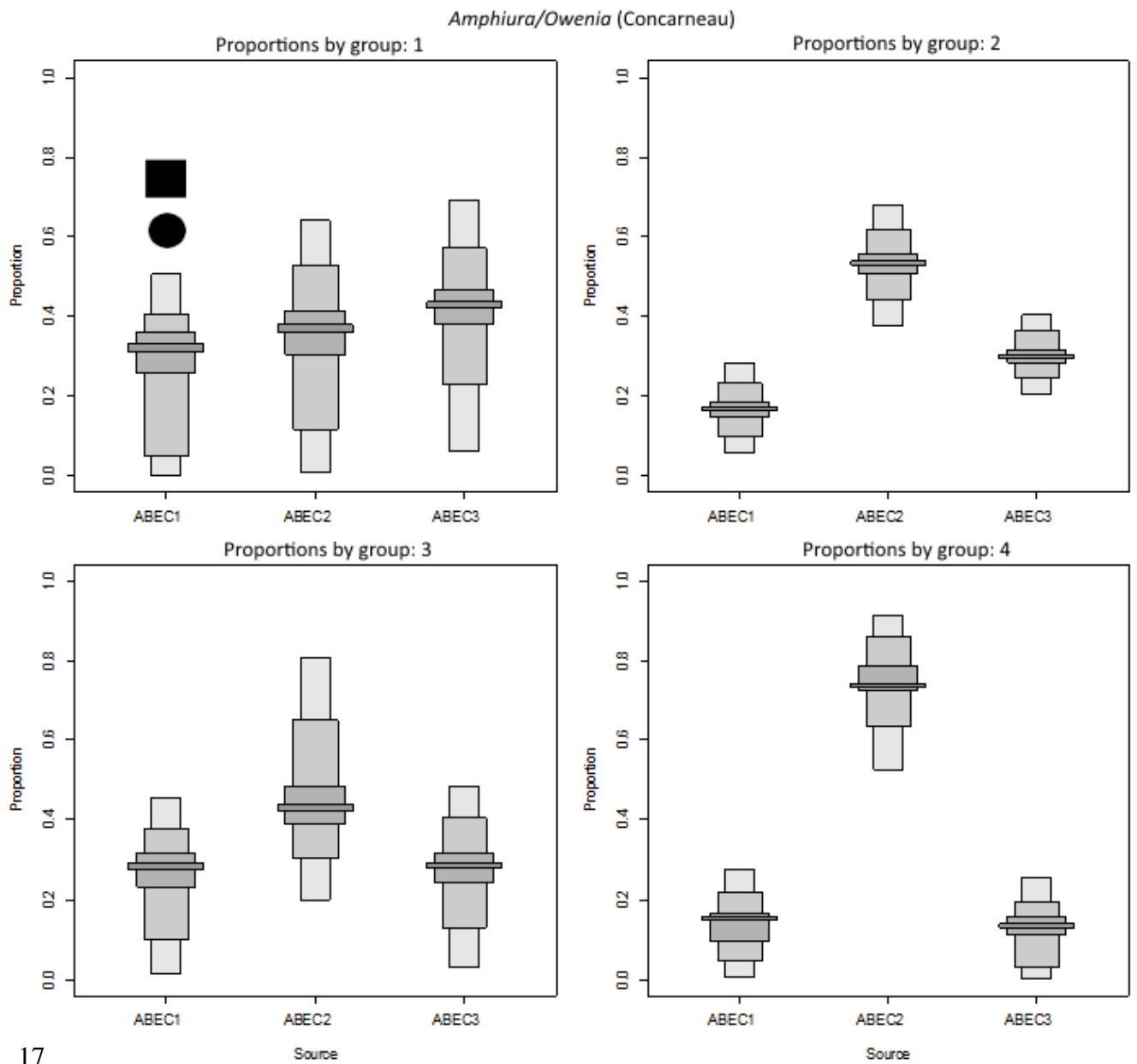
Species ID	Species scientific names	Size limits	Mobility groups
F1	<i>Aphia minuta</i>	/	2
F2	<i>Arnoglossus laterna</i>	/	3
F3	<i>Atherina presbyter</i>	/	4
F4	<i>Buglossidium luteum</i>	11	3
F5	<i>Callionymus lyra</i>	8	2
F6	<i>Ciliata mustela</i>	/	1
F7	<i>Ctenolabrus rupestris</i>	/	1
F8	<i>Dicologlossa cuneata</i>	7	3
F9	<i>Diplecogaster bimaculata bimaculata</i>	4	1
F10	<i>Engraulis encrasicolus</i>	/	4
F11	<i>Gobius niger</i>	10	1
F12	<i>Gobius spp.</i>	NA	NA
F13	<i>Gaidropsarus vulgaris</i>	/	3
F14	<i>Labrus bergylta</i>	/	3
F15	<i>Lepidorhombus whiffiagonis</i>	8	3
F16	<i>Lophius piscatorius</i>	/	3
F17	<i>Merlangius merlangus</i>	16	4
F18	<i>Merluccius merluccius</i>	excluded	4
F19	<i>Pleuronectes platessa</i>	/	3
F20	<i>Pomatoschistus minutus</i>	5	2
F21	<i>Scyliorhinus canicula</i>	excluded	4
F22	<i>Solea senegalensis</i>	20	3

F23	<i>Solea solea</i>	17	3
F24	<i>Sprattus sprattus</i>	10	4
F25	<i>Syngnathus acus</i>	/	1
F26	<i>Syngnathus rostellatus</i>	/	1
F27	<i>Trachurus trachurus</i>	14	4
F28	<i>Trisopterus luscus</i>	17	4
F29	<i>Trisopterus minutus</i>	12	4
F30	<i>Zeus faber</i>	10	3



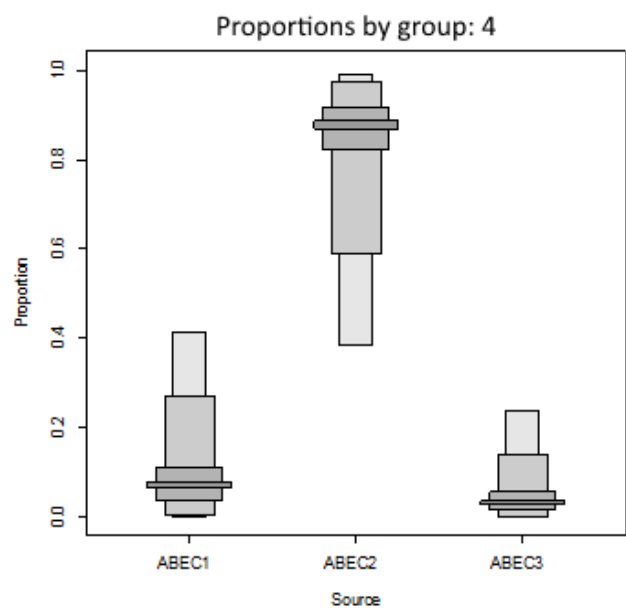
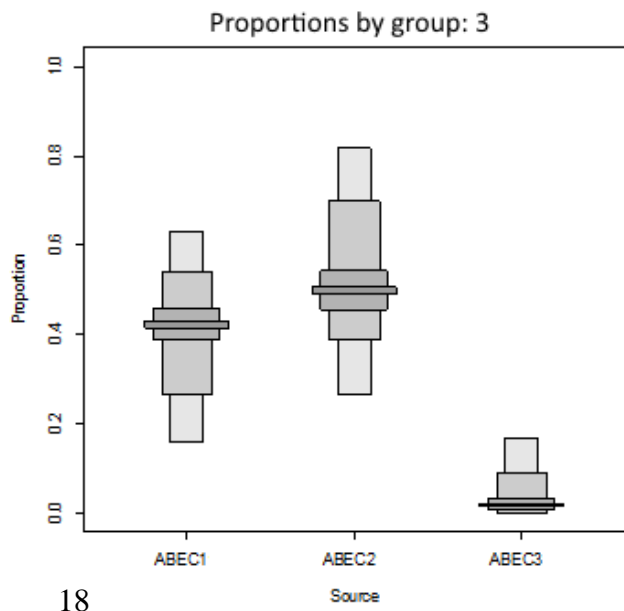
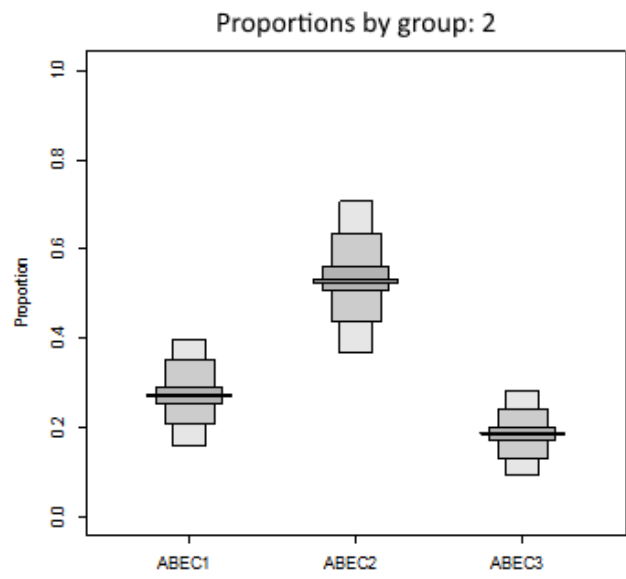
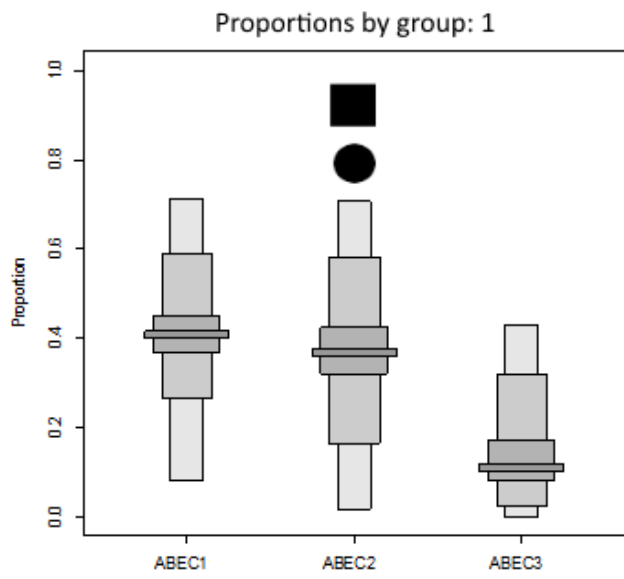
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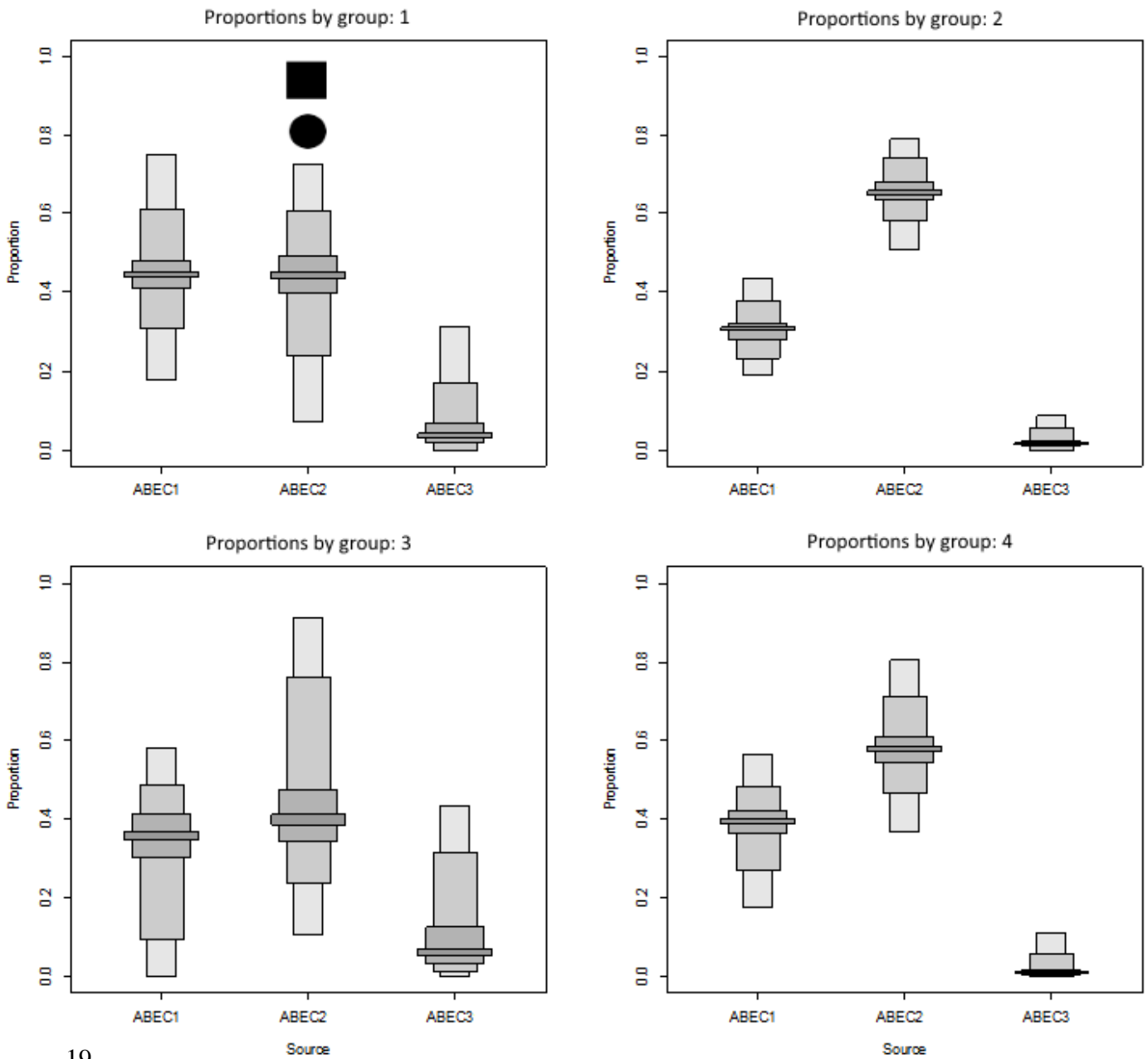


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Sternaspis (Vilaine)



Amphiura/Owenia (Vilaine)



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21 **Figure S1:** Contribution of the ABEC groups to the diets of predators in *Sternaspis*

22 and *Amphiura/Owenia* habitats of the Bay of Concarneau and the Bay of Vilaine,

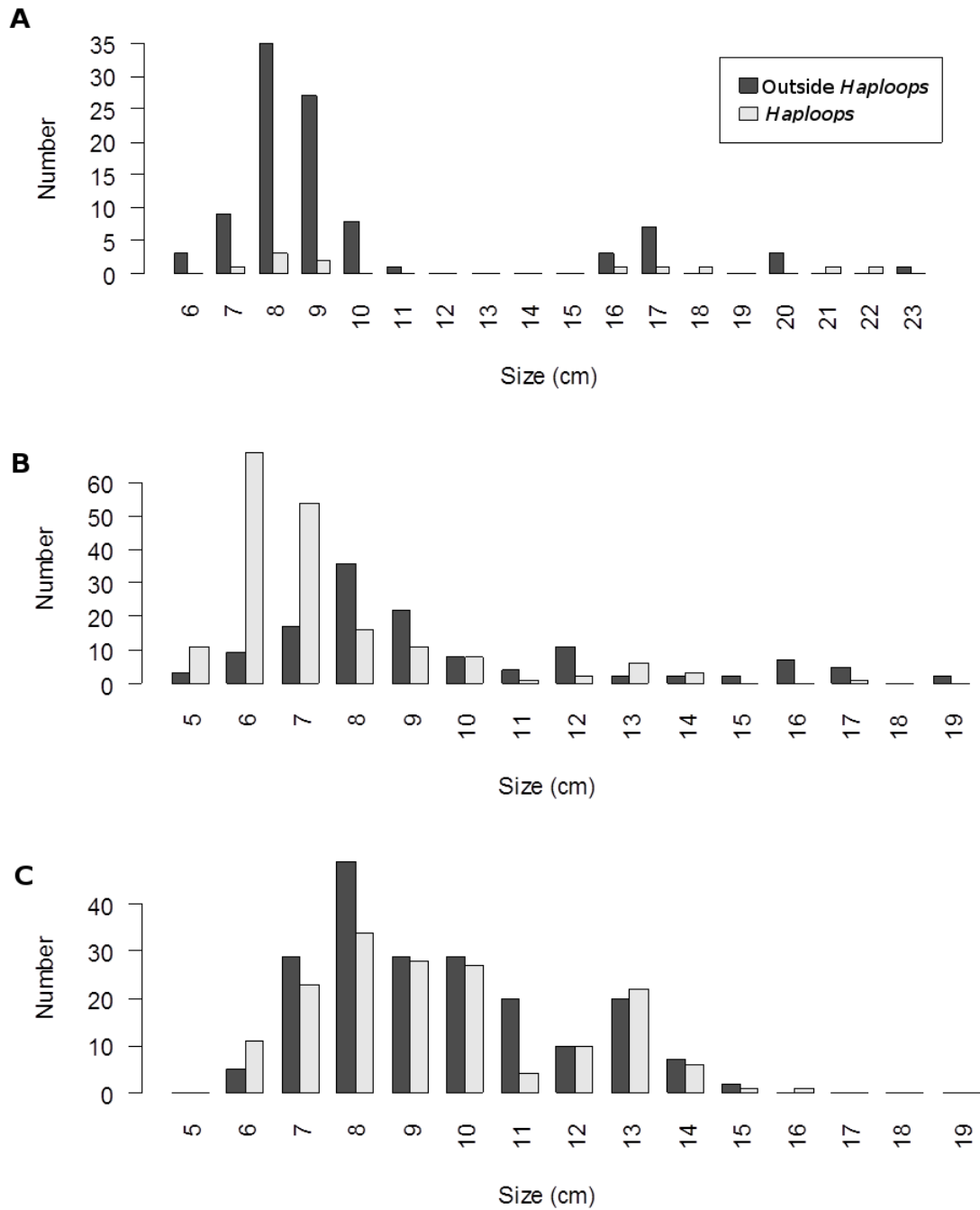
23 using SIAR mixing model. Box plots illustrate the 25th, 50th and 75th percentiles; the

24 whiskers indicate the 10th and 90th percentiles. The details of ABEC-based sources'

25 compositions (i.e. ABEC groups 1 to 3) are given in the Appendix Table S1. From top

26 left to bottom are displayed the results for: Mobility group 1 (up to 100 m), mobility

27 group 2 (between 100 m and 1 km), and mobility group 4 (above 10 km). The black
28 circle indicates the ABEC source associated to the highest accessible biomass and the
29 black square indicates the source with the highest energetic supply ($E_i \times \pi_i \times R_i$).
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33 **Figure S2:** Size spectra per mobility groups: **A.** Mobility group 3 (between 1 and 10

34 km) for the Bay of Concarneau only. **B.** Mobility group 4 (above 10 km) for the Bay

35 of Concarneau. **C.** Mobility group 4 for the Bay of Vilaine. Each size spectrum

36 considered the individuals of *Haploops* habitat (in white), and outside *Haploops*

37 habitats together (in black).