

The following appendices accompany the article

Spatio-temporal changes in gut contents and stable isotopes in two deep Mediterranean pandalids: influence on the reproductive cycle

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Appendix 1. Mean size (CL mm), size range (CL mm), number of stomachs examined and **vacuity index** (%V, no. of empty stomachs expressed as a percentage of the total no. of stomachs analysed) for each haul by month and by area

Survey	Haul	Depth	Area	<i>Plesionika heterocarpus</i>				<i>Plesionika martia</i>			
				Mean size	Size range	stomachs	%V	Mean size	Size range	Stomachs	%V
IDEA0803	4	751	Cabrera	–	–	–	–	22.9	19.3–26.2	46	54.3
IDEA0803	5	659	Cabrera	15.1	13.9–16.8	4	25.0	21.4	17.6–24.6	45	57.8
IDEA0803	6	583	Cabrera	14.7	12.9–16	23	8.7	21.7	18.3–23.9	40	45.0
IDEA0803	9	350	Sóller	14.3	12.7–15.9	22	9.1	–	–	–	–
IDEA0803	10	734	Sóller	–	–	–	–	23.0	19.6–28.3	40	37.5
IDEA0803	11	650	Sóller	–	–	–	–	19.9	19.7–20.4	4	0.0
IDEA0803	12	581	Sóller	–	–	–	–	20.0	16.6–25.7	25	28.0
IDEA0903	4	752	Cabrera	–	–	–	–	22.3	17–24.8	24	12.5
IDEA0903	5	661	Cabrera	15.2	14.5–15.5	4	25.0	22.5	19.9–24.4	25	24.0
IDEA0903	6	584	Cabrera	15.5	14.3–17.3	22	4.5	21.6	18.8–24	21	4.8
IDEA0903	9	351	Sóller	15.1	13.3–16.9	20	0.0	–	–	–	–
IDEA0903	12	600	Sóller	–	–	–	–	20.0	18–21.9	25	20.0
IDEA1103	4	745	Cabrera	–	–	–	–	22.1	17.9–24.9	25	16.0
IDEA1103	5	663	Cabrera	15.2	12.7–16.4	26	34.6	21.9	19.7–23.9	27	25.9
IDEA1103	6	583	Cabrera	15.1	13.4–16.7	14	0.0	20.5	14.2–24.2	27	25.9
IDEA1103	9	356	Sóller	14.6	12.3–16	2	0.0	–	–	–	–
IDEA1103	10	734	Sóller	–	–	–	–	20.6	15.4–24.3	30	26.7
IDEA1103	11	734	Sóller	–	–	–	–	22.6	20.2–25.4	9	55.6
IDEA0204	4	749	Cabrera	–	–	–	–	23.3	21.2–25.7	32	37.5
IDEA0204	5	663	Cabrera	–	–	–	–	21.8	16.1–25	28	28.6
IDEA0204	6	576	Cabrera	–	–	–	–	21.6	17–25.2	24	25.0
IDEA0204	8	265	Sóller	13.4	11.3–15.6	21	4.8	–	–	–	–
IDEA0204	9	350	Sóller	16.3	15.1–18	26	19.2	–	–	–	–
IDEA0204	10	735	Sóller	–	–	–	–	21.7	14.6–24.5	32	31.3
IDEA0204	11	655	Sóller	–	–	–	–	19.4	16.6–22.5	28	39.3
IDEA0204	12	593	Sóller	–	–	–	–	20.0	17.1–23	25	20.0
IDEA0404	2	252	Cabrera	9.7	6.3–11.8	11	9.1	–	–	–	–
IDEA0404	3	334	Cabrera	13.0	10.7–14.7	21	9.5	–	–	–	–
IDEA0404	4	752	Cabrera	–	–	–	–	22.8	19.8–25	24	29.2
IDEA0404	5	657	Cabrera	–	–	–	–	21.3	17.8–24.3	19	47.4
IDEA0404	6	586	Cabrera	–	–	–	–	21.3	16.8–24.9	29	37.9
IDEA0404	9	345	Sóller	15.7	13–17.3	22	9.1	–	–	–	–
IDEA0404	10	605	Sóller	–	–	–	–	20.9	18.2–24.2	21	4.8
IDEA0604	3	352	Sóller	16.1	14.4–18.1	22	27.3	–	–	–	–
IDEA0604	4	601	Sóller	–	–	–	–	21.4	16.2–23.8	24	8.3
IDEA0604	5	730	Sóller	–	–	–	–	22.5	17.6–26.8	12	41.7
IDEA0604	9	343	Cabrera	12.5	9.1–14.2	7	14.3	–	–	–	–
IDEA0604	10	751	Cabrera	–	–	–	–	23.5	20.5–25.4	24	25.0
IDEA0604	11	662	Cabrera	–	–	–	–	21.5	18–24.9	17	35.3

Appendix 2. Diet composition in terms of percentage by weight (%W) and percentage by number (%N) of *Plesionika* spp. by group (seasons) based on the aggregation of MDS analysis. Diversity index (H'), Evenness (J') and Species Richness (d) are also given

Taxon	— <i>Plesionika heterocarpus</i> —				— <i>Plesionika martia</i> —					
	Aug–Sep–Nov		Feb–Apr–Jun		Aug–Sep		Nov–Feb		Apr–Jun	
	%W	%N	%W	%N	%W	%N	%W	%N	%W	%N
PORIFERA	0.71	1.84	0.08	0.37	0.51	1.08	0.05	0.23	0.01	0.38
CNIDARIA										
<i>Chelophyes appendiculata</i>	7.22	5.21	5.56	3.37	4.77	3.46	1.21	1.83	0.74	1.53
Unidentified Cnidaria	1.59	1.53	7.62	0.75	0.68	0.65	0.93	1.83	1.17	0.77
CTENOPHORA										
Unidentified Ctenophora	–	–	–	–	–	–	–	–	0.16	0.38
POLYCHAETA										
<i>Glycera</i> sp.	–	–	0.79	0.75	0.63	0.22	–	–	–	–
<i>Hyalinoecia</i> sp.	–	–	0.58	0.37	–	–	–	–	–	–
<i>Lumbrineris</i> sp.	1.48	0.31	0.22	0.37	–	–	–	–	–	–
<i>Melinna palmata</i>	0.63	0.31	–	–	–	–	–	–	–	–
<i>Nephtys</i> sp.	0.39	0.31	–	–	0.00	0.00	–	–	–	–
Nephtyidae	0.05	0.31	–	–	0.41	0.43	–	–	–	–
Aphroditidae	1.31	0.31	–	–	–	–	–	–	–	–
Dorvilleidae	0.86	0.31	–	–	–	–	–	–	–	–
Eunicidae	0.20	0.31	0.26	0.37	–	–	–	–	–	–
Nereidae	0.47	0.31	–	–	–	–	–	–	–	–
Unidentified Polychaeta	10.65	7.06	0.42	1.87	0.13	0.43	–	–	0.01	0.38
CRUSTACEA										
Decapoda										
Natantia										
<i>Acanthephyra</i> sp.	–	–	–	–	–	–	1.78	1.14	–	–
<i>Pasiphaea sivado</i>	20.73	11.04	1.94	1.50	0.23	0.43	1.07	0.23	0.07	0.38
<i>Pasiphaea multidentata</i>	–	–	–	–	–	–	0.41	0.46	–	–
<i>Pasiphaea</i> sp.	–	–	–	–	0.83	1.51	6.43	1.37	1.32	0.38
<i>Chlorotocus crassicornis</i>	–	–	–	–	0.04	0.22	–	–	–	–
<i>Plesionika giglioli</i>	–	–	–	–	0.03	0.22	–	–	–	–
<i>Sergestes arcticus</i>	–	–	–	–	1.31	0.43	0.42	0.23	–	–
<i>Sergia robusta</i>	–	–	–	–	0.41	0.43	4.90	0.91	4.98	0.77
Sergestidae	–	–	0.23	0.37	0.18	0.43	–	–	0.51	0.77
Crangonidae	–	–	–	–	1.39	0.38	–	–	–	–
Unidentified Natantia	0.38	0.31	1.60	0.37	0.36	1.08	1.20	1.60	4.04	4.21
<i>Calocaris macandreae</i>	0.31	0.31	0.36	0.37	0.88	0.65	0.12	0.23	–	–
<i>Munida intermedia</i>	0.04	0.43	0.24	0.23	–	–	–	–	–	–
Unidentified Brachyura	–	–	0.88	0.68	–	–	–	–	–	–
Decapoda larvae	0.07	0.31	–	–	–	–	1.82	0.46	–	–
Unidentified Decapoda	0.22	0.31	0.32	1.12	0.11	0.43	0.79	0.23	0.65	0.38
Euphausiacea										
<i>Euphausia brevis</i>	–	–	0.45	0.37	–	–	–	–	–	–
<i>Euphausia kronii</i>	0.93	1.23	1.67	1.12	0.44	0.22	0.72	0.68	0.08	0.77
<i>Euphausia hemigibba</i>	–	–	–	–	–	–	–	–	0.54	0.77
<i>Meganyctiphanes norvegica</i>	1.26	0.92	14.79	7.12	2.21	2.81	7.26	5.71	19.36	10.73
<i>Nematoscelis megalops</i>	–	–	–	–	–	–	1.48	0.91	0.00	0.00
<i>Nictyphanes couchii</i>	–	–	2.92	1.87	–	–	0.45	0.23	0.36	1.53
<i>Stylocheiron maximum</i>	–	–	–	–	–	–	0.89	0.23	0.17	0.38
<i>Thysanoessa gregaria</i>	–	–	–	–	–	–	0.17	0.23	–	–
<i>Thysanopoda aequalis</i>	1.09	0.31	–	–	0.03	0.43	–	–	–	–
Unidentified Euphausiacea	3.72	4.29	26.77	19.85	2.01	5.62	5.16	10.50	9.94	14.56
Amphipoda										
Hyperidea										
<i>Anchilomera blossevillei</i>	–	–	–	–	–	–	0.02	0.23	–	–
<i>Euprimno macropus</i>	–	–	–	–	0.19	0.22	–	–	–	–
<i>Scina</i> sp.	0.62	0.31	–	–	–	–	0.26	0.23	–	–
<i>Scina borealis</i>	1.34	0.92	–	–	–	–	–	–	–	–
<i>Scina crassicornis</i>	0.61	0.31	2.63	0.37	0.03	0.22	–	–	–	–
<i>Phronima sedentaria</i>	–	–	–	–	3.77	3.67	1.63	1.14	3.90	2.30
<i>Phronimella elongata</i>	3.38	2.76	1.84	2.25	0.16	0.22	–	–	–	–
<i>Phrosina semilunata</i>	–	–	–	–	6.51	4.75	6.22	7.08	5.40	3.45
<i>Vibilia armata</i>	1.50	0.92	0.53	0.37	2.39	1.08	1.10	0.91	0.23	0.77
Unidentified Hyperidea	7.60	5.52	2.39	3.00	13.60	8.42	2.53	5.02	1.78	2.68
Unidentified Amphipoda	0.73	0.92	–	–	0.17	0.22	0.09	0.68	0.52	0.38

Appendix 2 (continued)

Taxon	— <i>Plesionika heterocarpus</i> —				— <i>Plesionika martia</i> —					
	Aug–Sep–Nov		Feb–Apr–Jun		Aug–Sep		Nov–Feb		Apr–Jun	
	%W	%N	%W	%N	%W	%N	%W	%N	%W	%N
Isopoda										
<i>Natatolana borealis</i>	1.12	0.61	1.69	0.75	1.49	0.22	0.38	0.23	0.78	0.77
Cirolanidae	0.18	0.61	0.58	0.37	0.96	1.30	0.22	0.23	–	–
Flabellifera	1.19	1.53	–	–	–	–	–	–	–	–
<i>Gnathia</i> sp.	0.92	0.31	0.14	0.37	0.55	0.43	0.48	0.46	–	–
Unidentified Isopoda	1.69	2.46	–	–	–	–	–	–	–	–
Copepoda	0.01	0.31	0.78	3.00	0.02	0.22	0.01	0.46	0.004	0.38
Mysidacea										
<i>Paramblyops rostrata</i>	–	–	–	–	0.08	0.22	–	–	–	–
Unidentified Mysidacea	0.57	2.76	0.77	2.25	1.37	1.94	0.21	1.14	0.22	1.15
Ostracoda	0.05	0.31	0.07	0.37	0.00	0.22	0.47	0.68	–	–
<i>Cythere</i> sp.	0.05	0.31	–	–	–	–	–	–	–	–
Cyprinidae	0.21	0.31	–	–	–	–	–	–	–	–
Unidentified Ostracoda	0.05	0.31	0.07	0.37	0.00	0.22	0.47	0.68	–	–
Tanaidacea										
<i>Apseudes spinosus</i>	0.43	0.31	–	–	0.79	0.65	–	–	–	–
Apseudidae	2.79	3.07	–	–	0.46	0.43	–	–	0.02	0.38
Unidentified Tanaidacea	3.39	1.54	–	–	–	–	–	–	–	–
Pycnogonida	–	–	–	–	–	–	0.15	0.23	–	–
Unidentified Crustacea	1.56	3.37	2.48	3.00	0.43	1.30	1.28	1.60	0.60	2.68
MOLLUSCA										
Bivalvia										
Unidentified Bivalvia	0.71	2.76	–	–	0.05	1.08	0.01	0.46	0.02	0.38
Gastropoda										
<i>Clio pyramidata</i>	0.12	0.31	–	–	0.30	0.65	–	–	–	–
<i>Cymbulia peroni</i>	–	–	0.02	0.37	–	–	1.31	0.68	0.55	1.53
Unidentified Thecosomata	0.75	0.92	0.09	0.75	–	–	0.93	0.23	–	–
Unidentified Heteropoda	–	–	–	–	0.36	0.22	1.43	–	–	–
Pelagic gastropods	0.12	0.61	3.61	2.62	1.88	2.38	3.22	7.53	0.003	0.38
Unidentified Gastropoda	0.13	1.23	0.18	0.75	0.08	2.81	1.33	0.46	–	–
Cephalopoda										
<i>Histioteuthis</i> sp.	–	–	–	–	–	–	0.07	1.14	–	–
<i>Abralia verany</i>	–	–	–	–	0.27	0.22	–	–	–	–
Unidentified Cephalopoda	0.46	0.31	–	–	1.29	1.08	2.40	–	–	–
ECHINODERMATA										
Echinoidea	1.52	1.84	0.06	2.25	0.14	0.65	0.01	0.23	–	–
Holoturoidea	0.51	7.98	0.20	6.37	0.09	1.73	0.06	2.74	0.03	1.15
<i>Cucumaria</i> sp.	0.49	1.53	–	–	0.02	0.22	–	–	–	–
Elpidiidae	0.17	0.92	0.09	0.37	–	–	–	–	–	–
<i>Holoturia</i> sp.	0.12	0.31	–	–	–	–	–	–	–	–
<i>Lapidoplax</i> sp.	0.09	0.31	–	–	0.11	0.22	–	–	–	–
TUNICATA										
<i>Iasis zonaria</i>	0.42	0.31	–	–	8.06	1.73	1.80	0.46	11.79	0.38
Salpidae	1.65	0.31	4.11	3.00	24.77	9.50	20.56	8.22	2.79	5.36
<i>Pyrosoma atlantica</i>	–	–	–	–	–	–	–	–	6.88	1.15
OSTEICHTHYES										
<i>Argyropelecus hemygimnus</i>	–	–	–	–	–	–	0.75	1.14	3.58	1.53
<i>Benthoosema glaciale</i>	–	–	0.13	0.37	0.34	0.43	–	–	0.04	0.77
<i>Hygophum</i> sp.	–	–	–	–	–	–	–	–	1.05	0.38
<i>Diaphus</i> sp.	–	–	–	–	–	–	–	–	0.73	0.38
<i>Notoscopelus elongatus</i>	–	–	–	–	0.42	0.22	–	–	0.02	0.38
Myctophidae	0.06	0.31	1.21	0.37	0.65	1.30	4.04	1.37	0.41	1.92
<i>Cyclothone braueri</i>	0.30	0.31	–	–	0.48	1.51	1.94	0.91	1.26	0.38
<i>Chauliodus sloanei</i>	–	–	–	–	0.02	0.22	0.26	0.23	0.41	0.38
<i>Stomias boa</i>	0.27	0.31	–	–	0.47	0.22	0.08	0.23	1.11	2.68
Stomiiformes	0.19	0.31	0.08	0.37	0.70	2.59	1.90	2.51	–	–
Mesopelagic fishes	–	–	–	–	0.68	0.22	–	–	0.42	0.38
Benthic fishes	–	–	–	–	–	–	0.16	0.23	–	–
Scales	1.66	–	3.24	–	0.36	–	0.38	–	0.14	–
Fish eggs	–	–	0.03	0.37	–	–	–	–	–	–
Unidentified Osteichthyes	3.66	2.76	1.65	3.75	3.96	9.29	0.58	4.34	2.94	4.98

Appendix 2 (continued)

Taxon	— <i>Plesionika heterocarpus</i> —				— <i>Plesionika martia</i> —					
	Aug–Sep–Nov		Feb–Apr–Jun		Aug–Sep		Nov–Feb		Apr–Jun	
	%W	%N	%W	%N	%W	%N	%W	%N	%W	%N
CONDROICHTHYES										
Unidentified Chondrichthyes	–	–	–	–	0.34	0.22	–	–	–	–
Others										
Chaetognatha	0.14	1.23	1.99	9.36	0.26	1.08	0.17	0.46	0.003	0.77
Foraminifera	1.23	–	2.14	–	0.22	–	0.80	–	0.40	–
<i>Globigerina</i> sp	0.30	–	0.05	–	0.64	–	0.01	–	0.20	–
Vegetal remains	–	–	0.03	–	0.01	–	0.02	–	1.08	–
Debris	0.52	–	0.01	–	0.39	–	0.14	–	0.64	–
Benthic remains	–	–	–	–	0.01	–	–	–	0.01	–
Inorganic material	0.04	–	–	–	3.39	–	0.15	–	5.14	–
Unidentified material	–	–	0.60	–	–	–	1.81	–	–	–
<hr/>										
	— <i>Plesionika heterocarpus</i> —				— <i>Plesionika martia</i> —					
	Aug–Sep–Nov		Feb–Apr–Jun		Aug–Sep		Nov–Feb		Apr–Jun	
Number of species (S)	72		51		73		67		53	
Species richness (d)	15.42		10.86		15.63		14.34		11.29	
Evenness (J')	0.77		0.72		0.71		0.81		0.74	
Diversity (H')	3.29		2.82		3.03		3.42		2.95	
Dominance (1–λ')	0.93		0.89		0.92		0.96		0.93	