The following appendices accompany the article:

Metabolism of mesopelagic and bathypelagic copepods in the western North Pacific Ocean

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Appendix 1. Respiration rates, body mass (carbon and nitrogen), stage/sex (M: male, F: female), myelinated sheath (P: present or A: absent), and feeding type (C: carnivore, D: detritivore; S: suspension feeder) of pelagic copepods from 3 bathymetric levels in the western subarctic Pacific. Respiration data were converted to specific respiration (SR) as the fraction of body C respired daily at each habitat temperature, and to adjusted metabolic rate (AMR) as the rate adjusted to 1 mg body N and at 1°C. For 'upper-bathypelagic' copepods, the number associated with 'p' in parentheses in the column 'n' denotes the replicates of pressurized experiments at 100 atm. Values are mean ± SD with the number of datasets in parentheses. See text for details

Copepods	Stage/ sex	Feeding type	Myelinated sheath	Sampling date (mo/yr)	*T* (°C)	n	Respiration rate ($\mu l\ O_2\ ind.^{-1}\ h^{-1}$)		Body mass (mg C)		Body mass (mg N)		SR (% d^{-1})		AMR at 1°C ($\mu l\ O_2\ mg\ N^{-0.8}\ h^{-1}$)	
							Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Mesopelagic (500–1000 m)																
Pachyptilus pacificus	C6F	C	A	Jun-03	3	1	0.46		0.892		0.129		0.65		2.07	
Lucicutia bicornuta	C6M	S	A	Jun-03	3	1	0.12		0.253		0.05		0.6		1.16	
Lucicutia grandis	C5F	S	A	Jun-04	3	1	0.11		0.188		0.032		0.75		1.54	
Metridia asymmetrica	C6F	S	A	Mar-03	3	2	0.18	0	0.242	0.008	0.033	0.001	0.9	0.04	2.32	0.08
Metridia curticauda	C6F	S	A	Jun-03	3	1	0.14		0.27		0.034		0.65		1.84	
Metridia okhotensis	C6F	S	A	Oct-03	3	8	0.29	0.05	0.429	0.064	0.05	0.007	0.85	0.1	2.81	0.36
Pleuromamma scutullata	C6M	S	A	Jun-03	3	6	0.32	0.11	0.251	0.014	0.067	0.004	1.57	0.49	2.39	0.77
	C6F	S	A	Jun-03	3	2	0.28	0.13	0.218	0.001	0.031	0	1.58	0.73	3.86	1.79
Pleuromamma xiphias	C6F	S	A	Jun-03	3	4	0.47	0.06	0.241	0.007	0.067	0.002	2.45	0.34	3.57	0.49
Candacia columbiae	C6M	C	A	Jun-03	3	1	0.23		0.179		0.05		1.61		2.21	
Aetideopsis rostrata	C5M	S	P	Jun-03	3	1	0.4		0.335		0.08		1.48		2.61	
Chiridius pacificus	C6F	S	P	Jun-03	3	2	0.42	0.19	0.316	0.117	0.08	0.03	1.62	0.13	2.7	0.43
Chirundina streetsi	C6F	S	P	Jun-03	3	2	0.78	0.04	0.538	0.025	0.158	0.007	1.82	0.19	2.99	0.28
Euchirella brevis	C6F	S	P	Jun-03	3	2	0.51	0.32	0.506	0.033	0.084	0.006	1.29	0.88	3.31	2.21
Euchirella galeata	C6F	S	P	Jun-03	3	1	1.14		1.126		0.28		1.26		2.75	
Euchirella messinensis	C6F	S	P	Jun-03	3	2	1.03	0.51	0.863	0.393	0.215	0.098	1.47	0.07	3.02	0.43
Euchirella rostrata	C6F	S	P	Jun-03	3	4	0.55	0.15	0.455	0.044	0.086	0.008	1.53	0.45	3.46	0.98
Euchirella truncata	C4M	S	P	Jun-03	3	1	0.09		0.241		0.054		0.44		0.77	

Gaidius brevispinus	C6F	S	P	Mar-03	3	1	0.43		0.439		0.077		1.23		2.93	
	C6F	S	P	Jun-03	3	3	0.36	0.21	0.419	0.003	0.104	0.001	1.07	0.62	1.92	1.1
Gaidius robustus	C4F	S	P	Jun-03	3	1	0.23		0.18		0.041		1.58		2.56	
Gaidius tenuispinus	C5F	S	P	Jun-03	3	1	0.77		0.624		0.117		1.54		3.73	
	C6F	S	P	Jun-03	3	3	0.25	0.01	0.197	0.01	0.053	0.003	1.59	0.05	2.3	0.07
Gaidius variabilis	C5M	S	P	Jun-03	3	1	0.24		0.223		0.051		1.33		2.23	
	C5F	S	P	Jun-03	3	1	0.23		0.13		0.034		2.15		2.93	
	C6F	S	P	Jun-03	3	5	0.3	0.06	0.243	0.019	0.055	0.004	1.51	0.21	2.62	0.37
Pseudochirella pacifica	C5M	S	P	Jun-03	3	1	0.49		0.296		0.071		2.05		3.53	
Pseudochirella spinifera	C5M	S	P	Mar-03	3	1	0.58		0.923		0.125		0.79		2.68	
	C5M	S	P	Jun-03	3	1	0.63		0.687		0.109		1.15		3.24	
Undeuchaeta plumosa	C6F	S	P	Jun-03	3	1	1.27		1.696		0.322		0.94		2.74	
Paraeuchaeta barbata	C6F	C	P	Jun-03	3	1	0.7		2.394		0.246		0.37		1.88	
Paraeuchaeta birostrata	C5M	C	P	Mar-03	3	1	0.37		0.762		0.095		0.6		2.1	
	C5F	C	P	Mar-03	3	1	0.45		1.038		0.131		0.54		1.98	
	C6F	C	P	Jun-03	3	3	0.79	0.13	2.834	0.255	0.363	0.033	0.35	0.06	1.56	0.25
Paraeuchaeta brevirostris	C6F	C	P	Mar-03	3	1	1.01		2.877		0.357		0.44		2	
Paraeuchaeta elongata	C4M	C	P	Jun-03	3	2	0.18	0.02	0.407	0.024	0.052	0.003	0.54	0.08	1.64	0.23
	C4F	C	P	Jun-03	3	1	0.24		0.55		0.066		0.55		1.87	
	C5M	C	P	Mar-03	3	1	0.31		0.66		0.079		0.59		2.08	
	C5M	C	P	Jun-03	3	1	0.26		0.684		0.096		0.48		1.48	
	C5F	C	P	Mar-03	3	1	0.29		0.653		0.083		0.55		1.82	
	C5F	C	P	Jun-03	3	1	0.55		1.383		0.174		0.5		1.94	
	C6F	C	P	Mar-03	3	3	0.84	0.14	3.412	0.246	0.384	0.028	0.31	0.05	1.58	0.27
	C6F	C	P	Jun-03	3	3	1.03	0.5	0.999	0.144	0.185	0.027	1.24	0.45	3.37	1.29
Paraeuchaeta modesta	C6F	C	P	Jun-03	3	3	1.08	0.09	2.271	0.883	0.287	0.112	0.66	0.24	2.75	0.81
Paraeuchaeta orientalis	C6F	C	P	Mar-03	3	1	1.62		4.723		0.529		0.43		2.34	
Paraeuchaeta pseudotumidula	C6M	C	P	Jun-03	3	2	0.54	0.17	1.331	0.589	0.171	0.076	0.6	0.42	2.21	1.39
	C6F	C	P	Jun-03	3	1	0.8		1.543		0.173		0.64		2.82	
Paraeuchaeta rubra	C5M	C	P	Jun-03	3	1	0.49		1.143		0.132		0.54		2.16	
	C6F	C	P	Jun-03	3	2	0.58	0.29	1.959	0.166	0.273	0.023	0.38	0.21	1.45	0.81
Amallothrix valida	C5M	D	P	Jun-03	3	1	0.28		0.384		0.055		0.91		2.49	
	C6F	D	P	Jun-03	3	1	0.56		0.416		0.094		1.68		3.24	
Mixtocalanus robstus	C6F	D	P	Jun-03	3	1	0.77		0.475		0.112		2.03		3.88	
Scaphocalanus medius	C6F	D	P	Jun-03	3	1	0.41		0.609		0.079		0.84		2.73	
Spinocalanus stellatus	C6F	S	P	Jun-03	3	1	0.5		0.356		0.059		1.76		4.21	
Grand mean							**0.52**		**0.879**		**0.13**		**1.05**		**2.49**	
SD							**0.33**		**0.93**		**0.108**		**0.56**		**0.74**	
N							**54**		**54**		**54**		**54**		**54**	
Upper bathypelagic (1000–2000 m)																
Pachyptilus pacificus	C6F	C	A	Jun-02	2	3	0.15	0.01	1.125	0.217	0.182	0.035	0.17	0.04	0.57	0.12
Lucicutia bicornuta	C6F	S	A	Jun-03	2	1	0.25		0.537		0.075		0.57		1.83	

Lucicutia grandis	C6M	S	A	Mar-04	2	1	0.41		1.19		0.19		0.43		1.44	
Lucicutia pacifica	C6F	S	A	Jun-02	2	1	0.27		0.853		0.131		0.39		1.27	
	C6F	S	A	Jun-03	2	1	0.45		0.77		0.119		0.73		2.31	
Metridia asymmetrica	C6F	S	A	Jun-02	2	2	0.05	0.01	0.189	0.037	0.027	0.005	0.3	0.01	0.76	0.02
	C6F	S	A	Jun-03	2	1	0.08		0.162		0.025		0.59		1.37	
Metridia curticauda	C6F	S	A	Jun-03	2	1	0.07		0.471		0.073		0.18		0.5	
Metridia ornata	C6F	S	A	Jun-02	2	1	0.24		1.465		0.232		0.2		0.72	
Aetideopsis rostrata	C5M	S	P	Jun-02	2	2	0.42	0.16	0.678	0.437	0.106	0.068	0.84	0.21	2.47	0.28
	C5F	S	P	Jun-02	2	1	0.12		0.369		0.058		0.41		1.11	
Bradyidius pacificus	C5M	S	P	Mar-04	2	1	0.23		0.451		0.078		0.62		1.62	
Euchirella rostrata	C6F	S	P	Jun-02	2	7	0.24	0.04	0.356	0.051	0.09	0.013	0.85	0.14	1.56	0.24
	C6F	S	P	Jun-03	2	1	0.51		0.344		0.103		1.85		2.94	
Gaidius brevispinus	C6F	S	P	Jun-02	2	2	0.27	0.02	0.438	0.074	0.102	0.017	0.76	0.08	1.55	0.11
Gaidius variabilis	C6F	S	P	Jun-02	2	2	0.19	0.12	0.297	0.164	0.067	0.037	0.79	0.07	1.5	0.31
	C6F	S	P	Mar-04	2	3 (2p)	0.3	0.23	0.43	0.126	0.1	0.029	0.88	0.58	1.77	1.2
Pseudochirella pacifica	C5M	S	P	Mar-04	2	1	0.43		0.312		0.055		1.72		0.59	
	C5F	S	P	Jun-02	2	2	0.51	0.03	1.05	0.08	0.15	0.011	0.61	0.01	2.19	0.01
	C5F	S	P	Mar-04	2	2 (1p)	0.6	0.16	0.925	0.064	0.145	0.01	0.82	0.28	2.65	0.86
Pseudochirella polyspina	C6F	S	P	Jun-02	2	2	0.85	0.04	1.167	0.18	0.262	0.04	0.92	0.14	2.34	0.28
	C6F	S	P	Mar-04	2	4 (4p)	0.65	0.09	1.623	0.19	0.291	0.034	0.51	0.12	1.64	0.34
Pseudochirella spinifera	C5F	S	P	Jun-02	2	1	0.42		0.977		0.147		0.54		1.83	
	C6M	S	P	Jun-04	2	1	0.18		0.64		0.108		0.34		0.97	
	C6M	S	P	Mar-02	2	2 (1p)	0.29	0.23	0.837	0.296	0.102	0.036	0.4	0.2	1.58	0.9
Undeuchaeta major	C6F	S	P	Jun-02	2	1	0.83		1.745		0.271		0.6		2.21	
	C6F	S	P	Mar-04	2	1 (1p)	0.71		1.241		0.258		0.71		1.95	
Undeuchaeta plumosa	C6F	S	P	Jun-02	2	2	1.13	0.24	1.449	0.349	0.275	0.066	0.97	0.03	2.95	0.05
Paraeuchaeta birostrata	C5M	C	P	Mar-04	2	2 (2p)	0.34	0.05	2.156	0.85	0.279	0.11	0.21	0.11	0.94	0.42
	C6M	C	P	Mar-04	2	3 (1p)	0.6	0.25	1.521	0.159	0.187	0.019	0.5	0.26	2.18	1.07
	C6M	C	P	Jun-02	2	4	0.35	0.13	1.488	0.27	0.185	0.033	0.32	0.18	1.34	0.71
	C6F	C	P	Jun-02	2	4	0.49	0.08	2.387	0.896	0.299	0.112	0.28	0.11	1.29	0.4
	C6F	C	P	Mar-04	2	2 (1p)	0.81	0.23	2.648	0.819	0.34	0.105	0.38	0.01	1.78	0.07
Paraeuchaeta brevirostris	C6F	C	P	Mar-04	2	1 (1p)	0.67		2.866		0.365		0.29		1.4	
Paraeuchaeta elongata	C5M	C	P	Jun-02	2	4	0.45	0.11	1.369	0.223	0.173	0.028	0.42	0.1	1.72	0.41
	C5F	C	P	Jun-02	2	2	0.74	0.44	1.124	0.157	0.188	0.026	0.87	0.61	2.75	1.89
Paraeuchaeta pseudotumidula	C6F	C	P	Mar-04	2	1	0.63		1.712		0.215		0.46		2.02	
Paraeuchaeta rubra	C5M	C	P	Mar-04	2	2 (1p)	0.25	0.19	1.275	0.708	0.157	0.087	0.29	0.14	1.14	0.44
	C5F	C	P	Mar-04	2	3 (1p)	0.39	0.15	1.299	0.443	0.17	0.058	0.37	0.02	1.49	0.21
	C6M	C	P	Jun-02	2	1	0.24		1.096		0.124		0.27		1.18	
	C6F	C	P	Jun-02	2	2	0.66	0.22	2.261	0.004	0.293	0.001	0.36	0.12	1.65	0.55
Cornucalanus indicus	C5F	D	P	Jun-02	2	1	0.96		1.818		0.299		0.66		2.36	
	C6F	D	P	Mar-04	2	1 (1p)	1.02		3.812		0.549		0.33		1.53	
Onchocalanus magnus	C5F	D	P	Jun-03	2	1	0.98		3.971		0.479		0.31		1.65	
	C6F	D	P	Jun-02	2	1	1.13		2.827		0.421		0.5		2.11	
Amallothrix inornata	C6M	D	P	Jun-03	2	1	0.17		0.291		0.042		0.71		1.96	
	C5M	D	P	Mar-04	2	1	0.36		0.553		0.066		0.82		2.98	
	C6F	D	P	Mar-04	2	2 (1p)	0.21	0.16	0.522	0.315	0.076	0.046	0.48	0.1	1.48	0.48
Amallothrix paravalida	C6F	D	P	Mar-04	2	1	0.26		0.369		0.047		0.88		2.8	

Amallothrix valida	C5F	D	P	Mar-04	2	1 (1p)	0.32		0.568		0.075		0.6		2.25	
	C6F	D	P	Jun-02	2	1	0.29		0.66		0.079		0.63		2.13	
Lophothrix frontalis	C6F	D	P	Jun-02	2	1	0.92		1.451		0.303		0.79		2.24	
	C6F	D	P	Mar-04	2	1	0.61		0.797		0.128		0.95		2.93	
Scaphocalanus magnus	C6F	D	P	Mar-04	2	4 (1p)	0.44	0.13	0.596	0.117	0.116	0.023	0.91	0.16	2.27	0.44
Scaphocalanus medius	C6F	D	P	Mar-04	2	2 (1p)	0.26	0.02	0.683	0.192	0.08	0.022	0.49	0.11	1.89	0.3
Scottocalanus securifrons	C6F	D	P	Jun-03	2	1	0.54		0.716		0.163		0.94		2.14	
Bathycalanus bradyi	C6F	S	P	Mar-05	2	1	4.17		21.8		2.38		0.24		1.94	
Grand mean							**0.53**		**1.522**		**0.212**		**0.6**		**1.78**	
SD							**0.56**		**2.864**		**0.314**		**0.33**		**0.63**	
N							**57**		**57**		**57**		**57**		**57**	
Lower bathypelagic (2000–3000 m)																
Euaugaptilus parabullifer	C6F	C	A	Mar-04	1.5	1	0.13		0.885		0.213		0.18		0.42	
Euaugaptilus pseudaffinis	C6F	C	A	Mar-03	1.5	1	0.2		0.884		0.127		0.28		1.02	
Pachyptilus pacificus	C6F	C	A	Mar-03	1.5	1	0.14		1.22		0.188		0.14		0.5	
Heterostylites major	C6F	C	A	Mar-04	1.5	1	0.16		0.228		0.049		0.89		1.75	
Lucicutia ellipsoidalis	C6F	S	A	Mar-03	1.5	1	0.27		0.412		0.049		0.82		2.92	
Lucicutia grandis	C6M	S	A	Mar-04	1.5	1	0.16		0.877		0.094		0.22		1.01	
	C6F	S	A	Mar-03	1.5	1	0.24		0.717		0.093		0.41		1.54	
Lucicutia longifurca	C5	S	A	Mar-03	1.5	1	0.12		0.6		0.095		0.25		0.78	
	C6M	S	A	Mar-04	1.5	1	0.29		0.913		0.092		0.4		1.9	
Lucicutia pacifica	C6F	S	A	Mar-03	1.5	1	0.27		0.856		0.132		0.4		1.32	
Metridia asymmetrica	C6F	S	A	Mar-03	1.5	3	0.08	0.01	0.231	0.018	0.032	0.002	0.45	0.07	1.27	0.17
	C6F	S	A	Dec-03	1.5	2	0.14	0	0.251	0.046	0.037	0.003	0.69	0.14	1.86	0.13
Metridia ornata	C5F	S	A	Mar-03	1.5	2	0.4	0.01	0.931	0.503	0.162	0.088	0.63	0.35	1.86	0.86
	C6M	S	A	Mar-03	1.5	2	0.22	0.07	0.422	0.04	0.072	0.007	0.67	0.27	1.79	0.69
	C6M	S	A	Dec-03	1.5	1	0.19		0.402		0.063		0.59		1.69	
	C6F	S	A	Mar-03	1.5	1	0.28		0.646		0.102		0.53		1.66	
Gaetanus paracurvicornis	C6F	S	P	Mar-04	1.5	1	0.22		0.343		0.069		0.81		1.82	
Gaidius robustus	C5M	S	P	Mar-03	1.5	1	0.25		0.301		0.068		1.04		2.08	
	C5M	S	P	Dec-03	1.5	1	0.79		2.17		0.209		0.45		2.65	
	C5M	S	P	Mar-04	1.5	1	0.35		0.463		0.104		0.93		2.04	
	C6F	S	P	Mar-04	1.5	1	1.32		3.494		0.672		0.47		1.76	
Gaidius variabilis	C5F	S	P	Mar-03	1.5	2	0.26	0.12	0.416	0.162	0.085	0.033	0.78	0.05	1.79	0.27
	C6F	S	P	Mar-03	1.5	1	0.16		0.738		0.102		0.26		0.93	
Pseudochirella pacifica	C5	S	P	Mar-03	1.5	1	1.5		2.151		0.331		0.87		3.5	
	C6F	S	P	Mar-03	1.5	2	1	0.43	1.24	0.196	0.309	0.049	0.99	0.27	2.43	0.75
Pseudochirella polyspina	C5F	S	P	Mar-03	1.5	1	0.16		0.589		0.07		0.33		1.27	
	C6F	S	P	Mar-03	1.5	4	0.89	0.2	1.337	0.126	0.256	0.024	0.82	0.12	2.52	0.42
	C6F	S	P	Dec-03	1.5	1	1.76		2.019		0.452		1.09		3.21	
	C6F	S	P	Mar-04	1.5	1	0.92		1.251		0.261		0.92		2.61	
Pseudochirella spinifera	C5M	S	P	Mar-03	1.5	1	0.94		2.202		0.235		0.53		2.88	
Undeuchaeta major	C5F	S	P	Mar-04	1.5	1	0.08		0.21		0.045		0.49		0.95	
Paraeuchaeta birostrata	C6M	C	P	Mar-03	1.5	1	0.56		1.297		0.148		0.53		2.48	
	C6F	C	P	Mar-03	1.5	1	1.79		4.917		0.774		0.45		2.12	
Paraeuchaeta pseudotumidula	C6F	C	P	Dec-03	1.5	1	0.31		0.702		0.09		0.55		2.06	

Paraeuchaeta rubra	C5M	C	P	Mar-03	1.5	1	0.27	1.632	0.175	0.21	1.05
	C5F	C	P	Mar-03	1.5	1	0.26	1.245	0.149	0.26	1.17
	C6F	C	P	Dec-03	1.5	1	0.84	2.843	0.339	0.37	1.93
Xanthocalanus kurilensis	C6F	D	P	Dec-03	1.5	1	0.11	0.579	0.094	0.24	0.7
Amallothrix inornata	C6F	D	P	Mar-03	1.5	1	0.43	0.391	0.084	1.38	3.03
	C6F	D	P	Mar-04	1.5	1	0.37	0.546	0.107	0.84	2.13
Scaphocalanus affinis	C5F	D	P	Mar-04	1.5	1	0.5	1.649	0.143	0.38	2.3
	C6F	D	P	Mar-04	1.5	1	0.37	0.823	0.137	0.57	1.77
Scolecithricella sp.	C6F	D	P	Dec-03	1.5	1	0.13	0.229	0.038	0.74	1.78
Scottocalanus securifrons	C6F	D	P	Mar-04	1.5	1	1.16	3.141	0.486	0.46	2
Bathycalanus bradyi	C6F	S	P	Feb-04	1.5	1	1.26	9.934	1.195	0.16	1.06
	C6F	S	P	Feb-04	1.5	1	1.05	4.986	0.915	0.26	1.09
Spinocalanus magnus	C6F	S	P	Mar-04	1.5	1	0.23	0.52	0.061	0.56	2.1
Grand mean							**0.5**	**1.379**	**0.209**	**0.56**	**1.8**
SD							**0.46**	**1.696**	**0.241**	**0.29**	**0.72**
N							**47**	**47**	**47**	**47**	**47**

Appendix 2. Electron transport system (ETS) activities assayed at 10 ºC, body mass (protein), stage/sex (M: male, F: female), feeding type (C: carnivore; D: detrivore; S: suspension feeder) and presence (P)/absence (A) of myelinated sheath of pelagic copepods from 4 bathymetric levels in the western Pacific Ocean. ETS activities were adjusted to the activities of the specimens with 1 mg protein, and with 1 mg body N at 1ºC. Values are mean ± SD on n replicates. See text for details

Copepods	Stage/ sex	Feeding type	Myelinated sheath	Sampling date (mo/yr)	n	Protein (mg)		ETS activity at:					
								10ºC				1ºC	
								($\mu l\ O_2\ ind.^{-1}\ h^{-1}$)		($\mu l\ O_2\ prot.^{-0.8}\ h^{-1}$)		($\mu l\ O_2\ mg\ N^{-0.8}\ h^{-1}$)	
						Mean	SD	Mean	SD	Mean	SD	Mean	SD
Epipelagic (0–250 m)													
Metridia pacifica	C6F	S	A	Feb-03	36	0.07	0.03	0.33	0.09	2.89	0.68	5.6	1.31
Metridia pacifica	C6F	S	A	May-04	3	0.18	0.01	0.83	0.08	3.22	0.29	6.25	0.56
Pleuromamma abdominalis	C6F	S	A	May-04	5	0.18	0.04	0.55	0.11	2.1	0.39	4.08	0.76
Pleuromamma scutullata	C6F	S	A	May-04	5	0.19	0.01	1.21	0.39	4.54	1.53	8.82	2.97
Pleuromamma xiphias	C6F	S	A	May-04	2	0.27	0.01	0.97	0.19	2.76	0.51	5.36	0.99
Candacia bippinata	C6F	C	A	Feb-03	4	0.46	0.13	3.25	1.16	5.97	1.77	11.6	3.43
Candacia bipinnata	C6F	C	A	May-04	5	0.12	0.06	0.52	0.23	2.72	1.02	5.28	1.98
Candacia columbiae	C6F	C	A	May-04	7	0.29	0.03	2.33	0.31	6.34	0.81	12.32	1.58
Gaetatus simplex	C6F	S	P	May-04	8	0.25	0.02	1.22	0.37	3.73	1.12	7.25	2.17
Euchaeta marina	C6F	C	P	May-04	4	0.18	0.04	0.53	0.14	2.15	0.67	4.17	1.29
Paraeuchaeta elongata	C6M	C	P	May-04	4	0.52	0.04	2.35	0.23	3.99	0.44	7.74	0.85
Paraeuchaeta elongata	C6F	C	P	May-04	4	1.26	0.23	4.46	0.98	3.68	0.72	7.15	1.39
Eucalanus bungii	C6F	S	P	May-04	5	0.26	0.04	1.26	0.14	3.67	0.3	7.22	0.63
Neocalanus cristatus	C5	S	P	Aug-02	4	1.17	0.13	2.61	0.19	2.29	0.17	4.45	0.33
Neocalanus cristatus	C5	S	P	May-04	3	2.46	0.77	7.42	3.68	3.51	1.49	6.83	2.9
Neocalanus plumchrus	C5	S	P	Aug-02	6	0.26	0.1	0.59	0.35	1.69	0.92	3.28	1.79
Neocalanus plumchrus	C5	S	P	May-04	4	0.22	0.06	1.75	0.46	5.81	1.26	11.28	2.45
Grand mean						**0.49**		**1.89**		**3.59**		**6.98**	
SD						**0.61**		**1.82**		**1.39**		**2.7**	
N						**17**		**17**		**17**		**17**	

Mesopelagic (500–1000m)													
Centraugaptilus procellus		C	A	May-02	1	0.95		0.7		0.73		1.42	
Heterohabdus pacificus	C6F	C	A	May-02	1	0.2		0.42		1.52		2.94	
Heterohabdus papilliger	C6F	C	A	May-02	1	0.08		0.23		1.82		3.53	
Heterostylites major	C6F	C	A	May-02	1	0.3		0.66		1.76		3.42	
Heterostylites sp.	C6F	C	A	May-02	1	0.11		0.14		0.83		1.61	
Metridia asymetrica	C6F	S	A	May-02	2	0.12	0.02	0.15	0.01	0.84	0.07	1.64	0.14
Pleuromamma abdominalis	C6F	S	A	May-02	1	0.32		1.12		2.83		5.49	
Pleuromamma scatulata	C6F	S	A	May-02	2	0.07	0.03	0.2	0.01	1.68	0.19	3.27	0.37
Pleuromamma xiphias	C6F	S	A	May-02	1	0.18		0.28		1.15		2.23	
Aetideopsis rostrata	C6F	S	P	May-02	2	0.47	0.14	1.59	0.03	2.89	0.12	5.61	0.23
Aetideus pacificus	C6F	S	P	May-02	1	0.72		3.88		5.04		9.79	
Aetideus sp.	C6F	S	P	May-02	1	0.56		2.7		4.29		8.34	
Euchirella rostrata	C6F	S	P	May-02	2	1.81	1.4	5.38	5.81	2.95	2.95	5.73	5.73
Gaetanus simplex	C6F	S	P	May-02	2	0.35	0.06	1.57	0.07	3.58	0.04	6.96	0.07
Gaetanus sp.	C6F	S	P	May-02	1	0.25		2		6.06		11.76	
Gaidius variabilis	C6F	S	P	May-02	1	0.65		2.34		3.32		6.45	
Pseudochirella spinifera	C5M	S	P	May-02	1	0.46		1.33		2.49		4.84	
Undeuchaeta plumosa	C6F	S	P	May-02	1	0.94		2.22		2.33		4.53	
Euchaeta marina	C6F	C	P	May-02	1	0.34		1.03		2.48		4.82	
Paraeuchaeta barbata	C6F	C	P	May-02	3	0.61	0.39	1.73	0.63	2.57	1.11	5	2.15
Paraeuchaeta birostrata	C6F	C	P	May-02	3	0.9	0.45	2.24	1.23	2.28	0.92	4.42	1.79
Paraeuchaeta elongata	C5M	C	P	May-02	1	0.78		2.91		3.54		6.89	
Paraeuchaeta elongata	C6F	C	P	May-02	3	1.09	0.53	4.34	1.62	3.91	1.24	7.6	2.41
Paraeuchaeta rubra	C5M	C	P	May-02	1	0.87		1.43		1.6		3.1	
Xanthocalanus media	C6F	D	P	May-02	1	0.89		3.56		3.93		7.63	
Amallothrix inornata	C6F	D	P	May-02	1	0.55		2.76		4.46		8.66	
Scaphocalanus affinis	C5	D	P	May-02	1	1.03		2.19		2.14		4.17	
Scaphocalanus affinis	C6M	D	P	May-02	1	0.56		2.74		4.36		8.46	
Grand mean						**0.58**		**1.85**		**2.76**		**5.37**	
SD						**0.4**		**1.36**		**1.35**		**2.62**	
N						**28**		**28**		**28**		**28**	
Upper bathypelagic (1000–2000 m)													
Heterorhabdus pacificus	C6F	C	A	Dec-02	2	0.24	0.04	0.94	0.71	2.86	2.1	5.56	4.09
Heterorhabdus tanneri	C5	C	A	Dec-02	4	0.18	0.03	0.8	0.25	3.15	0.93	6.11	1.81
Heterorhabdus tanneri	C6F	C	A	Dec-02	2	0.22	0.07	0.56	0.61	1.93	2.13	3.75	4.14
Heterostylites major	C5	C	A	Dec-02	1	0.25		0.37		1.14		2.22	
Metridia asymmetrica	C6F	S	A	Dec-02	1	0.17		0.3		1.27		2.46	
Euchirella messinensis	C5	S	P	Dec-02	2	0.37	0.17	1.06	0.12	2.34	0.47	4.54	0.91
Euchirella messinensis	C6F	S	P	Dec-02	1	0.25		1.6		4.94		9.59	
Gaidius brevispinus	C6F	S	P	Dec-02	2	0.58	0	1.24	0.18	1.91	0.27	3.71	0.52
Gaidius robustus	C6F	S	P	Dec-02	1	4.43		9.15		2.78		5.41	
Gaidius variabilis	C4	S	P	Dec-02	3	0.14	0.05	0.35	0.05	1.68	0.36	3.27	0.69
Gaidius variabilis	C5F	S	P	Dec-02	2	0.26	0.05	0.7	0.08	2.04	0.16	3.97	0.31
Pseudochirella pacifica	C6F	S	P	Dec-02	1	0.33		2.42		5.88		11.43	

Undeuchaeta major	C5	S	P	Dec-02	1	0.42		0.89		1.79		3.47	
Paraeuchaeta birostrata	C4F	C	P	Dec-02	1	0.35		0.22		0.51		0.99	
Paraeuchaeta birostrata	C5M	C	P	Dec-02	1	0.82		0.54		0.64		1.25	
Paraeuchaeta birostrata	C5F	C	P	Dec-02	2	0.91	0.17	0.83	0.35	0.9	0.35	1.74	0.67
Paraeuchaeta birostrata	C6F	C	P	Dec-02	7	1.7	0.41	1.7	0.2	1.11	0.16	2.16	0.31
Paraeuchaeta elongata	C5F	C	P	Dec-02	4	0.7	0.25	0.82	0.32	1.07	0.35	2.07	0.68
Paraeuchaeta elongata	C6M	C	P	Dec-02	1	0.73		0.88		1.13		2.2	
Scaphocalanus magnus	C5	D	P	Dec-02	1	1.29		0.5		0.41		0.79	
Scaphocalanus magnus	C6F	D	P	Dec-02	3	0.65	0.07	1.57	0.21	2.22	0.29	4.32	0.56
Grand mean						**0.71**		**1.31**		**1.99**		**3.86**	
SD						**0.94**		**1.88**		**1.38**		**2.68**	
N						**21**		**21**		**21**		**21**	
Lower bathypelagic (2000–3000 m)													
Augaptilus cornutus	C6F	C	A	Feb-03	1	0.46		0.25		0.47		0.92	
Euaugaptilus graciloides	C6F	C	A	Feb-03	1	0.49		1.22		2.16		4.2	
Euaugaptilus mixtus	C6F	C	A	Feb-03	1	0.4		0.56		1.16		2.25	
Euaugaptilus parabullifer	C6F	C	A	Feb-03	2	0.45	0.04	0.74	0.33	1.39	0.64	2.71	1.24
Euaugaptilus pseudaffinis	C4	C	A	Feb-03	1	0.06		0.03		0.32		0.61	
Euaugaptilus similis	C6F	C	A	Feb-03	2	0.26	0.06	0.4	0.15	1.21	0.52	2.34	1.01
Lucicutia bicornuta	C6M	S	A	Feb-03	1	0.25		0.55		1.68		3.26	
Lucicutia bicornuta	C6F	S	A	Feb-03	1	0.67		2.46		3.39		6.58	
Lucicutia grandis	C5	S	A	Feb-03	2	0.3	0.07	0.65	0.12	1.69	0.38	3.29	0.74
Lucicutia longifurca	C6F	S	A	Feb-03	2	0.46	0.22	1.38	0.2	2.55	0.62	4.96	1.2
Lucicutia pacifica	C6F, C5M	S	A	Feb-03	1	0.21		0.12		0.42		0.82	
Metridia asymmetrica	C6F	S	A	Mar-03	3	0.1	0.01	0.1	0.08	0.64	0.5	1.24	0.97
Metridia ornata	C6M	S	A	Mar-03	2	0.55	0.49	0.68	0.53	0.97	0.61	1.89	1.18
Metridia sp.		S	A	Mar-03	2	0.2	0.11	0.29	0.04	1.02	0.03	1.98	0.06
Aetideopsis rostrata	C6F	S	P	Feb-03	1	0.26		0.35		1.01		1.96	
Bradyidius pacificus	C6F	S	P	Feb-03	1	0.3		1.33		3.45		6.7	
Chiridius pacificus	C6M	S	P	Feb-03	1	0.25		0.9		2.76		5.36	
Gaidius robustus	C6F	S	P	Feb-03	2	1.16	0.56	2.49	0.47	2.16	0.19	4.2	0.37
Pseudochirella polyspina	C6F	S	P	Feb-03	2	1.32	0.03	2.82	0.52	2.26	0.43	4.4	0.83
Paraeuchaeta birostrata	C5M	C	P	Mar-03	2	0.52	0.26	0.9	0.52	1.45	0.7	2.81	1.37
Paraeuchaeta birostrata	C6F	C	P	Mar-03	5	1.47	0.21	1.86	0.28	1.37	0.21	2.66	0.41
Paraeuchaeta orientalis	C5M	C	P	Feb-03	1	1.1		0.97		0.9		1.75	
Paraeuchaeta orientalis	C6F	C	P	Feb-03	1	1.21		1.54		1.33		2.58	
Paraeuchaeta pseudotumidula	C6M	C	P	Feb-03	1	0.27		0.81		2.34		4.55	
Paraeuchaeta pseudotumidula	C6F	C	P	Feb-03	1	0.25		0.73		2.23		4.32	
Paraeuchaeta sp.		C	P	Mar-03	2	2.15	0.97	2.35	0.28	1.27	0.27	2.46	0.52
Amallothrix inornata	C5	D	P	Feb-03	1	0.13		0.21		1.04		2.01	
Amallothrix inornata	C6F	D	P	Feb-03	1	0.16		0.77		3.36		6.53	
Scaphocalanus magnus	C6F	D	P	Feb-03	2	0.24	0.17	1.58	0.07	4.85	0.99	9.43	1.92
Spinocalanus magunus	C6F,C5	S	P	Feb-03	1	0.09		0.31		2.08		4.05	
Spinocalanus spinipes	C6M,C6F	S	P	Feb-03	1	0.12		0.82		4.44		8.63	
Grand mean						**0.51**		**0.97**		**1.85**		**3.6**	
SD						**0.49**		**0.76**		**1.14**		**2.21**	
N						**31**		**31**		**31**		**31**	

Appendix 3. Definitions of dummy variables. Depth is categorized into epipelagic, mesopelagic, upper-bathypelagic and lower-bathypelagic zones, and the independent variables *E* (only for the analysis of the electron transport system [EST]), *UB, LB* were defined as dummy variables as in Table A1. The stage/sex was categorized into Category 5 (for ETS) or Category 5 male and Category 5 female (for the adjusted metabolic rate [AMR]), Category 6 female, Category 6 male and dummy variables *C5, C5M, C5F, C6F* are defined in Table A2. The dummy variable *P* was defined as 1 when myelinated sheath was present and as 0 when absent. Feeding types were categorized as carnivore, detritivore and suspension feeder, and dummy variables *D, and S* are defined in Table 3

Table A1. Definition of dummy variables on depth

Depth category	*E*	*UB*	*LB*
Epipelagic	1	0	0
Mesopelagic	0	0	0
Upper-bathypelagic	0	1	0
Lower-bathypelagic	0	0	1

Table A2. Definition of dummy variables on stage

Stage category	*C5*	*C5M*	*C5F*	*C6F*
Category 5	1	0	0	0
Category 5 male	0	1	0	0
Category 5 female	0	0	1	0
Category 6 male	0	0	0	0
Category 6 female	0	0	0	1

Table A3. Definition of dummy variables on feeding type

Feeding type	*D*	*S*
Carnivore	0	0
Detritivore	1	0
Suspension feeder	0	1