

*The following supplement accompanies the article*

## **Effects of a future warmer ocean on the coexisting copepods *Calanus finmarchicus* and *C. glacialis* in Disko Bay, western Greenland**

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**Supplement.** Additional data

Table S1. *Calanus finmarchicus* and *C. glacialis*. Fecal pellet (FP) volume ( $\mu\text{m}^3$ ) calculated from the length and width assuming that their shapes were cylindrical,  $\pm$  CL. Fecal pellet volume was converted to carbon ( $C_{\text{FP}}$ ,  $\mu\text{g C pellet}^{-1}$ ) using a conversion factor of  $8.03 \times 10^{-8} \mu\text{g } \mu\text{m}^{-3}$  from Reigstad et al. (2005) for the fed treatment, and a conversion factor of  $4.75 \times 10^{-8} \mu\text{g } \mu\text{m}^{-3}$  from Seuthe et al. (2007) for the starved treatment. Mean  $\mu\text{g C pellet}^{-1}$  and the upper and lower CL are shown for all treatments. n = no. of fecal pellets measured in each experiment in each treatment

Temp. (°C)	Food (+/-)	n	Mean FP vol.( $\mu\text{m}^3$ )*10 <sup>5</sup>	+ 95% CL	-95% CL	$\mu\text{g C FP}^{-1}$	+ 95% CL	-95% CL	n	Mean FP vol.( $\mu\text{m}^3$ )*10 <sup>5</sup>	+ 95% CL	-95% CL	$\mu\text{g C FP}^{-1}$	+ 95% CL	-95% CL
<i>C. finmarchicus – pre-bloom</i>									<i>C. glacialis – pre-bloom</i>						
0	+	120	9.57	3.52	2.57	0.077	0.028	0.021	120	17.56	5.53	4.20	0.141	0.044	0.034
0	-	95	6.32	2.33	1.70	0.030	0.011	0.008	89	10.48	3.31	2.51	0.050	0.016	0.012
2.5	+	120	9.05	3.31	2.42	0.073	0.027	0.019	120	15.83	5.03	3.81	0.127	0.040	0.031
2.5	-	120	5.98	2.18	1.60	0.028	0.010	0.008	92	9.45	3.03	2.29	0.045	0.014	0.011
5	+	120	12.14	4.44	3.25	0.097	0.036	0.026	120	20.45	6.41	4.88	0.164	0.052	0.039
5	-	120	8.02	2.93	2.15	0.038	0.014	0.010	119	12.20	3.83	2.91	0.058	0.018	0.014
7.5	+	120	14.78	5.41	3.96	0.119	0.043	0.032	120	26.77	8.42	6.40	0.215	0.068	0.051
7.5	-	120	9.76	3.60	2.63	0.046	0.017	0.012	120	15.97	5.08	3.85	0.076	0.024	0.018
10	+	120	10.77	3.94	2.88	0.086	0.032	0.023	120	20.05	6.29	4.79	0.161	0.050	0.038
10	-	113	7.11	2.60	1.90	0.034	0.012	0.009	120	11.96	3.75	2.86	0.057	0.018	0.014
<i>C. finmarchicus – bloom</i>									<i>C. glacialis – bloom</i>						
0	+	90	18.26	6.69	4.89	0.147	0.054	0.039	90	27.27	8.58	6.53	0.219	0.069	0.052
0	-	90	12.06	4.44	3.24	0.057	0.021	0.015	90	16.27	5.14	3.91	0.077	0.024	0.019
2.5	+	90	17.27	6.32	4.63	0.139	0.051	0.037	90	24.59	7.75	5.89	0.197	0.062	0.047
2.5	-	90	11.40	4.18	3.06	0.054	0.020	0.015	90	14.67	4.67	3.55	0.070	0.022	0.017
5	+	90	23.17	8.48	6.21	0.186	0.068	0.050	90	31.75	9.99	7.60	0.255	0.080	0.061
5	-	90	15.29	5.61	4.11	0.073	0.027	0.020	90	18.95	5.97	4.54	0.090	0.028	0.022
7.5	+	90	28.21	10.47	7.64	0.226	0.084	0.061	90	41.57	13.31	10.08	0.334	0.107	0.081
7.5	-	60	18.62	6.99	5.08	0.088	0.033	0.024	60	24.81	8.03	6.07	0.118	0.038	0.029
10	+	90	20.54	7.52	5.50	0.165	0.060	0.044	90	31.14	9.79	7.45	0.250	0.079	0.060
10	-	90	13.56	4.98	3.64	0.064	0.024	0.017	90	18.58	5.85	4.45	0.088	0.028	0.021
<i>C. finmarchicus – post-bloom</i>									<i>C. glacialis – post-bloom</i>						
0	+	90	12.61	4.62	3.38	0.101	0.037	0.027	90	16.78	5.29	4.02	0.135	0.042	0.032
0	-	90	8.32	3.05	2.23	0.040	0.015	0.011	90	10.01	3.16	2.40	0.048	0.015	0.011
2.5	+	90	11.92	4.37	3.20	0.096	0.035	0.026	90	15.13	4.80	3.64	0.122	0.039	0.029
2.5	-	90	7.87	2.88	2.11	0.037	0.014	0.010	90	9.03	2.88	2.19	0.043	0.014	0.010
5	+	90	15.99	5.86	4.29	0.128	0.047	0.034	90	19.54	6.15	4.68	0.157	0.049	0.038
5	-	90	10.56	3.86	2.83	0.050	0.018	0.013	90	11.66	3.66	2.79	0.055	0.017	0.013
7.5	+	90	19.47	7.15	5.23	0.156	0.057	0.042	90	25.59	8.07	6.14	0.205	0.065	0.049
7.5	-	90	12.86	4.75	3.47	0.061	0.023	0.016	90	15.27	4.86	3.68	0.073	0.023	0.017
10	+	90	14.18	5.20	3.80	0.114	0.042	0.031	90	19.16	6.03	4.59	0.154	0.048	0.037
10	-	90	9.36	3.42	2.51	0.044	0.016	0.012	90	11.43	3.59	2.73	0.054	0.017	0.013

Table S2. *Calanus finmarchicus* and *C. glacialis*. Average egg (EP) and fecal pellet (FP) production (no. fem.<sup>-1</sup> d<sup>-1</sup>) during the 3 bloom phases for all temperatures and food treatments after the lag phase until end of experiment (see Fig. 4 in the main text)

Temp	Food	EP	FP	EP	FP
°C	+/-	<i>C. finmarchicus</i> – pre-bloom		<i>C. glacialis</i> – pre-bloom	
0	+	0.9 ± 0.5	5.9 ± 1.5	6.0 ± 1.3	8.3 ± 1.9
0	-	0.2 ± 0.2	2.6 ± 0.5	2.2 ± 0.6	3.2 ± 0.4
2.5	+	3.4 ± 1.0	8.6 ± 1.8	15.8 ± 5.1	8.1 ± 0.9
2.5	-	0.3 ± 0.2	4.8 ± 0.9	5.4 ± 0.6	2.9 ± 1.2
5	+	2.1 ± 3.0	7.1 ± 1.5	21 ± 6.5	12.9 ± 2.1
5	-	2.1 ± 0.8	5.2 ± 1.0	5.6 ± 1.3	4.8 ± 1.0
7.5	+	10.2 ± 1.7	10.8 ± 2.7	18.4 ± 2.5	14.0 ± 1.6
7.5	-	5.6 ± 1.7	5.9 ± 1.1	7.3 ± 0.8	6.4 ± 0.9
10	+	12.6 ± 1.1	10.9 ± 1.3	12.3 ± 1.3	13.0 ± 2.1
10	-	5.6 ± 1.6	4.7 ± 1.2	7.9 ± 0.9	5.9 ± 0.8
		<i>C. finmarchicus</i> – bloom		<i>C. glacialis</i> – bloom	
0	+	3.0 ± 0.3	41.5 ± 4.7	12.9 ± 2.2	58.9 ± 6.3
0	-	1.0 ± 0.2	26.4 ± 9.9	4.5 ± 0.8	23.6 ± 6.9
2.5	+	11.1 ± 1.9	60.7 ± 5.2	25.9 ± 2.2	67.4 ± 7.7
2.5	-	1.2 ± 0.3	25.8 ± 6.4	5.4 ± 1.1	16.0 ± 5.2
5	+	12.3 ± 1.7	66.7 ± 7.0	27.6 ± 2.6	76.2 ± 7.8
5	-	1.9 ± 0.3	22.1 ± 5.0	9.2 ± 1.7	37.6 ± 8.2
7.5	+	36.1 ± 3.9	90.9 ± 10.0	43.1 ± 2.9	80.2 ± 8.4
7.5	-	7.4 ± 1.9	29.8 ± 11.2	8.5 ± 1.1	23.0 ± 5.4
10	+	74.0 ± 6.5	133.0 ± 16.7	42.6 ± 3.7	98.4 ± 10.0
10	-	5.7 ± 1.9	25.7 ± 5.8	5.6 ± 0.9	16.2 ± 3.8
		<i>C. finmarchicus</i> – post-bloom		<i>C. glacialis</i> – post-bloom	
0	+	5.0 ± 1.2	16.5 ± 1.5	3.4 ± 0.2	15.7 ± 1.4
0	-	1.5 ± 0.4	6.8 ± 1.0	3.1 ± 0.8	4.7 ± 1.0
2.5	+	5.6 ± 1.0	20.7 ± 2.2	5.2 ± 1.1	14.8 ± 1.9
2.5	-	3.3 ± 1.0	6.2 ± 1.2	6.1 ± 1.8	4.9 ± 1.7
5	+	5.4 ± 0.7	23.6 ± 2.5	7.3 ± 1.7	17.2 ± 2.7
5	-	4.4 ± 1.0	9.7 ± 1.4	9.5 ± 0.9	10.7 ± 1.8
7.5	+	8.1 ± 0.8	24.8 ± 3.6	8.7 ± 1.7	23.2 ± 2.8
7.5	-	4.7 ± 1.1	6.8 ± 1.5	8.2 ± 1.1	5.8 ± 0.9
10	+	7.1 ± 1.0	17.0 ± 2.3	6.8 ± 1.0	13.7 ± 2.6
10	-	7.5 ± 1.4	10.2 ± 1.7	6.6 ± 0.5	7.2 ± 3.4

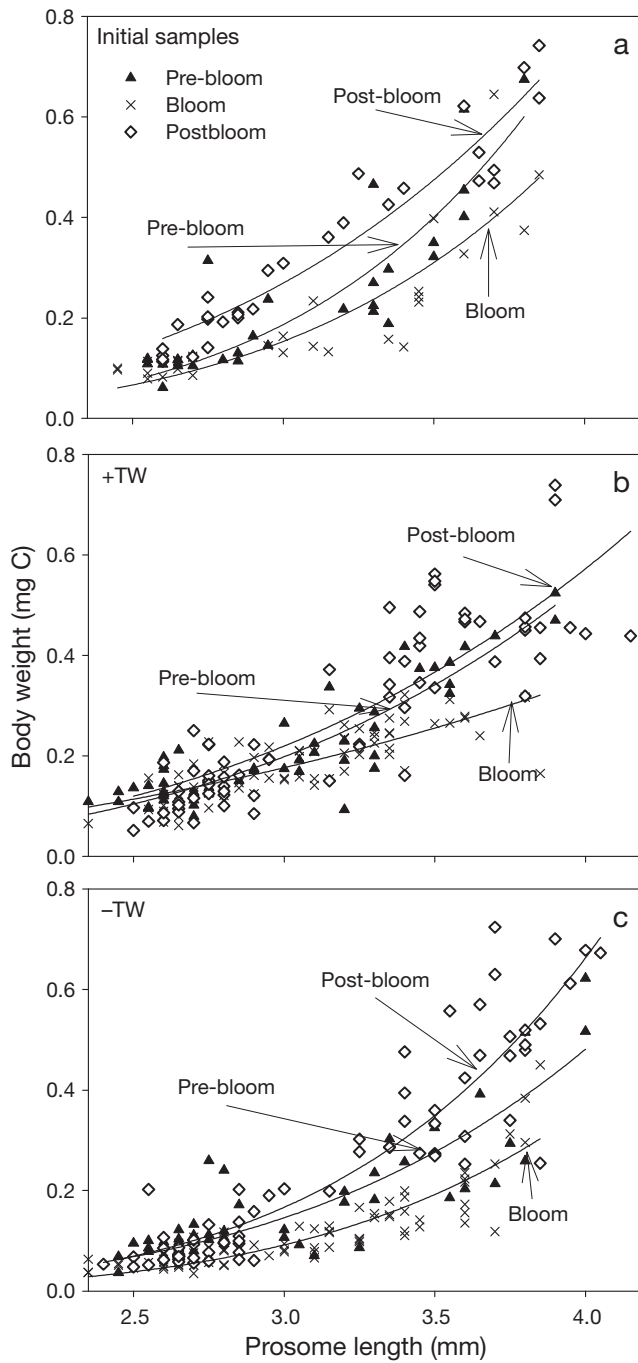


Fig. S1. *Calanus finmarchicus* and *C. glacialis*. Relationships between body weight (mg C) and prosome length (mm) in females of both species combined. Relation for the initial samples, when food (the diatom *Thalassiosira weissflogii*) was available (+TW) and when food was absent (-TW), during the 3 phases of the bloom: pre-bloom (triangles), bloom (crosses), and post-bloom (diamonds). All temperatures are included. Each relation is described by a power function