

Species-specific grazing and significant trophic impacts by two species of copepod nauplii, *Parvocalanus crassirostris* and *Bestiolina similis*

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Table S1. Mean percent reduction of each prey size group (range in μm) from the final time point relative to the initial concentrations of prey (Coulter Counter particle counts). Negative values indicate growth relative to the initial community. **Bold** values indicate where there was a 20% decrease or increase in prey type or size, relative to initials. Underlined values indicate where the difference between control and treatment prey growth rate was significant (*t-test*, $p < 0.05$). Note that little debris was seen in the samples (using microscopy), so the particle counts quantify primarily living autotrophic and heterotrophic cells.

	Particle Counts (autotrophs + heterotrophs)				
	2-5	5-10	10-15	15-20	20-35
E1 (27 May)					
<i>P. crassirostris</i>	15.1	40.5	-2.7	-3.1	-11.9
<i>B. similis</i>	20.0	33.5	5.4	22.2	-3.6
E2 (29 May)					
<i>P. crassirostris</i>	15.0	<u>25.0</u>	21.8	15.1	13.2
<i>B. similis</i>	13.7	19.3	<u>15.3</u>	19.3	<u>12.8</u>
E3 (31 May)					
<i>P. crassirostris</i>	17.9	30.1	-16.4	-20.1	-103.0
<i>B. similis</i>	15.8	32.6	7.8	-10.7	-39.0
E4 (3 June)					
<i>P. crassirostris</i>	<u>14.7</u>	22.7	-8.5	-33.7	-1.2
<i>B. similis</i>	12.1	22.7	4.9	3.0	<u>23.8</u>
E5 (5 June)					
<i>P. crassirostris</i>	12.2	13.3	-9.8	1.1	-12.7
<i>B. similis</i>	12.4	19.5	-4.6	11.8	28.7

Table S2. Mean percent reduction of each prey type (size range in μm) from the final time point relative to the initial concentrations of prey based on cell abundance or reduction in Chlorophyll (Chl) *a*. Autotroph abundances are from epifluorescence microscopy only, whereas photosynthetic eukaryote (PEUK) data are from flow cytometry and heterotroph abundance is from epifluorescence and inverted microscopy. Negative values indicate prey growth relative to the initial community. **Bold** values indicate where there was a $\geq 20\%$ decrease or increase in prey type or size, relative to initials. Underlined values indicate where the difference between control and treatment prey growth rate was significant (*t*-test, $p < 0.05$). – indicates no data.

	Chl <i>a</i> [#]	PEUK	Autotrophs			Heterotrophs		
			2-5	5-10	>10	2-5	5-10	>10
E1 (27 May)								
<i>P. crassirostris</i>	<u>39.5</u>	<u>9.1</u>	-	-	-	-	-	-
<i>B. similis</i>	<u>34.5</u>	<u>17.7</u>	-	-	-	-	-	-
E2 (29 May)								
<i>P. crassirostris</i>	-20.8	8.4	-13.0	47.8	-3.5	-31.2	52.5	-13.0
<i>B. similis</i>	-22.0	8.8	50.5	87.9	9.8	-157.7	79.8	67.5
E3 (31 May)								
<i>P. crassirostris</i>	<u>36.5</u>	2.9	9.6	88.5	-67.4	-157.4	82.2	-95.0
<i>B. similis</i>	<u>20.5</u>	-4.3	-1.5	90.4	-165.1	-157.4	82.2	-210.0
E4 (3 June)								
<i>P. crassirostris</i>	<u>20.4</u>	-5.5	22.2	83.2	13.4	-50.2	87.7	-163.3
<i>B. similis</i>	<u>22.6</u>	-2.0	-22.1	73.8	29.9	-67.9	49.2	-320.0
E5 (5 June)								
<i>P. crassirostris</i>	4.7	10.3	-61.1	54.5	55.6	8.8	59.5	74.3
<i>B. similis</i>	<u>4.5</u>	2.1	-12.0	67.4	70.0	-51.4	84.9	41.9

Table S3. Phytoplankton mortality rates (*m*) and the coefficient of determination (r^2) for the linear regressions of net growth rate (i.e., net growth rate = gross growth rate – mortality rate) as a function of dilution factor for each experiment (Expt). Data were obtained from parallel 24 h seawater dilution experiments to obtain microzooplankton community mortality rates, from differences in initial and final samples of Chl *a* (total phytoplankton community) and photosynthetic eukaryotes (PEUK, measured by flow cytometry).

Expt	Chl <i>a</i>		PEUK	
	<i>m</i>	r^2	<i>m</i>	r^2
E2 (29 May)	0.59	0.84	0.35	0.79
E3 (31 May)	0.18	0.16	0.22	0.25
E4 (3 June)	0.64	0.75	0.04	0.01
E5 (5 June)	0.39	0.88	0.04	0.07

Table S4. *Parvocalanus crassirostris* and *Bestiolina similis* percent grazing impacts (% of initial biomass removed by *in-situ* population day^{-1} , $\% \text{ d}^{-1}$) and ingestion rates (*I*) on chlorophyll *a* (Chl *a I*; $\text{ng chl nauplius}^{-1} \text{ h}^{-1}$), photosynthetic eukaryotes (PEUKS *I*; $\text{ng C nauplius}^{-1} \text{ h}^{-1}$), and ciliates ($2\text{-}35 \mu\text{m ciliates}^? I$; $\text{ng C nauplius}^{-1} \text{ h}^{-1}$) in each experiment (E1-E5). *I* for Chl *a* and PEUKS is the corrected rate. Also shown are the mean (E1-E5) ingestion rates for each species on a given prey type. – indicates negative ingestion rate. n.d. indicates no data available. Error is \pm standard error. Experimental Days: E1 = 27 May, E2 = 29 May, E3 = 31 May, E4 = 3 June, E5 = 5 June.

		Chl <i>a</i>		PEUKS		Ciliates			
		<i>I</i>	$\% \text{ d}^{-1}$	<i>I</i>	$\% \text{ d}^{-1}$	<i>I</i>	$\% \text{ d}^{-1}$		
<i>Parvocalanus crassirostris</i>	E1	0.10	(± 0.01)	0.6	-	n.d.	n.d.		
	E2	-			4.54	(± 1.07)	0.7	0.16	1.3
	E3	0.30	(± 0.04)	8.5	3.32	(± 0.60)	2.1	0.30	10.2
	E4	0.06	(± 0.05)	0.8	-			0.42	4.6
	E5	0.48	(± 0.02)	12.9	5.71	(± 1.30)	3.7	0.17	4.7
	Mean	0.24	(± 0.05)		4.52	(± 0.40)		0.26	(± 0.06)
<i>Bestiolina similis</i>	E1	0.02	(± 0.04)	0	2.64	(± 0.67)	0.3		
	E2	-			4.63	(± 0.21)	0.1	0.04	0
	E3	0.10	(± 0.01)	0.7	-			-	
	E4	0.17	(± 0.03)	0.3	0.62	(± 0.47)	0.03	0.08	0.1
	E5	0.45	(± 0.01)	1.1	-			0.80	2.0
	Mean	0.18	(± 0.05)		2.63	(± 0.67)		0.23	(± 0.19)

Table S5. Ingestion rates (I , ng C nauplius⁻¹ h⁻¹) and percent grazing impacts (as % of initial biomass removed by *in-situ* population day⁻¹) on the standing stocks of prey types (EPI) by *Parvocalanus crassirostris* and *Bestiolina similis* in each experiment (E2-E5). Total ingestion rate for each experiment (Total I , ng C nauplius⁻¹ h⁻¹) and the mean ingestion rate by each species on a given prey type (\pm standard error) are also reported. – indicates negative ingestion rate. Prey quantified by epifluorescence microscopy. Experimental Days: E1 = 27 May, E2 = 29 May, E3 = 31 May, E4 = 3 June, E5 = 5 June.

	2-5 Aut		5-10 Aut		>10 Aut		2-5 Het		5-10 Het		>10 Het		Total I	
	I	% d ⁻¹	I	% d ⁻¹	I	% d ⁻¹	I	% d ⁻¹	I	% d ⁻¹	I	% d ⁻¹		
<i>Parvocalanus crassirostris</i>	E2	-	-	4.40	2.6	0.02	0.1	-	-	-	-	-	-	4.41
	E3	14.15	67.9	-	-	-	-	8.09	38.8	-	-	0.001	0.1	22.24
	E4	-	-	40.11	29.4	0.08	1.7	21.32	57.8	83.85	61.4	0.03	0.7	145.39
	E5	-	-	17.01	45.0	0.23	7.5	31.54	255.4	-	-	0.09	3.1	48.87
	Mean	14.15	-	20.50	(±6.04)	0.11	(±0.04)	20.32	(±3.92)	83.85	-	0.04	(±0.02)	
<i>Bestiolina similis</i>	E2	2.54	0.7	25.07	2.0	0.24	0.3	-	-	11.93	1.0	0.29	0.3	40.07
	E3	6.10	7.5	-	-	-	-	6.07	7.5	-	-	-	-	12.18
	E4	-	-	12.26	1.2	0.81	2.2	15.29	5.4	35.56	3.4	-	-	63.93
	E5	7.03	5.1	23.42	5.5	1.54	4.5	7.36	5.3	11.28	2.7	0.46	1.3	51.09
	Mean	5.23	(±0.79)	20.25	(±2.32)	0.86	(±0.22)	9.58	(±1.66)	19.59	(±4.61)	0.38	(±0.06)	

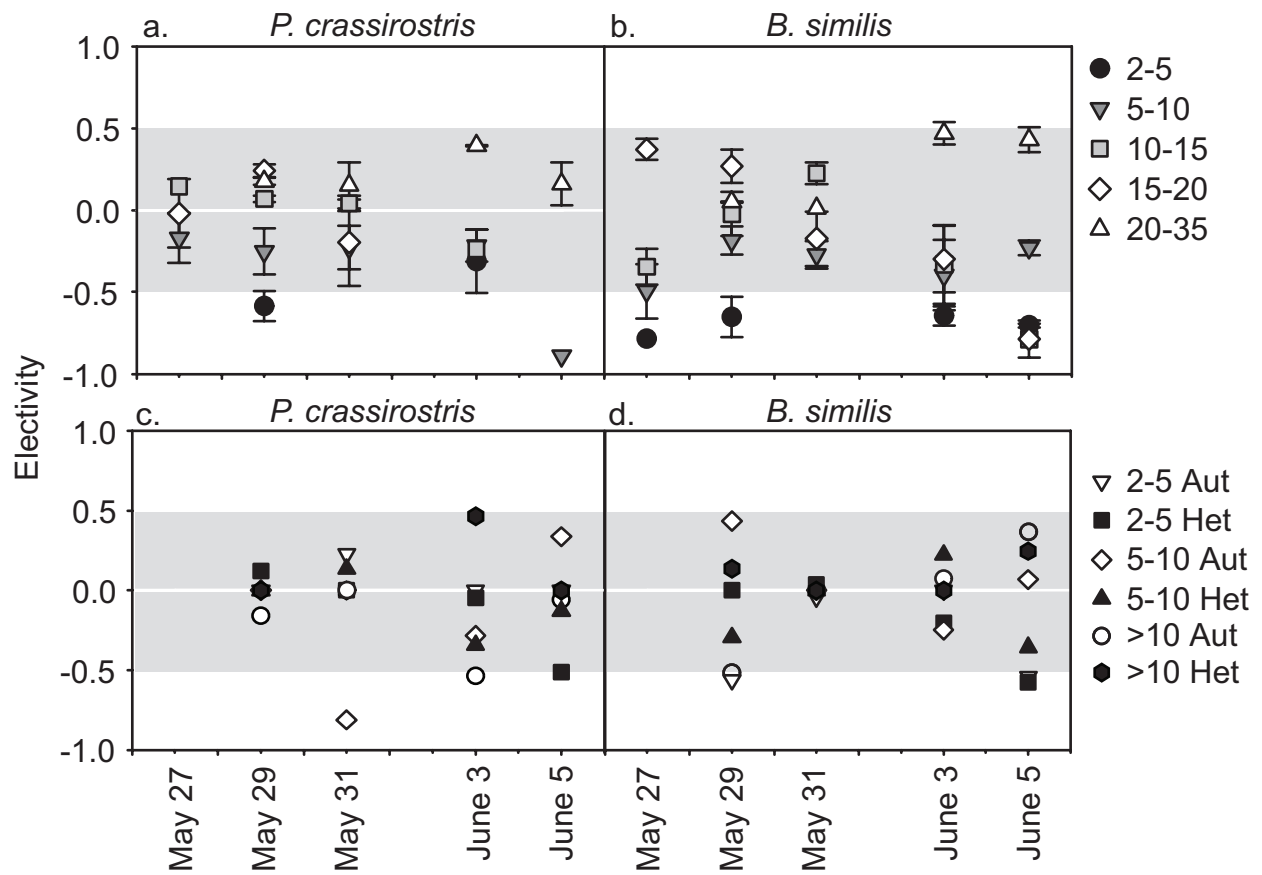


Figure S1. Electivity index of grazing by nauplii of each species over the experimental days. *Parvocalanus crassirostris* (left) and *Bestiolina similis* (right) electivity on (a, b) prey size groups (μm) and (c, d) on prey types. Area outside of the shaded grey region indicates the area of strong positive ($E > 0.5$) or strong negative ($E < -0.5$) electivity of a prey group (Vanderploeg & Scavia, 1979). Error is \pm standard error. Experimental Days: E1 = 27 May, E2 = 29 May, E3 = 31 May, E4 = 3 June, E5 = 5 June.