

## Warm microhabitats drive both increased respiration and growth rates of intertidal consumers

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### Supplemental Tables

Table S1. Dry tissue mass (mg) distributions of limpets used in the aerial and aquatic respiration trials (n = 12 per species per temperature).

Species	Mean dry tissue mass, mg ( $\pm$ 1SD)	Minimum tissue mass, mg	Maximum tissue mass, mg
<i>L. scabra</i>	23.1 ( $\pm$ 9)	6.8	49.1
<i>L. austrodigitalis</i>	29.0 ( $\pm$ 10)	12.0	63.7
<i>L. limatula</i>	43.0 ( $\pm$ 20)	11.2	117.5
<i>L. pelta</i>	32.5 ( $\pm$ 11)	12.3	69.7

Table S2. Results of generalized least squares model of log-transformed dark-adapted algal fluorescence values ( $F_0$ ) versus average daily maximum temperature and limpet species (including the No Grazer treatment). The model included an AR(1) correlation structure for the Date of each reading ( $\phi = 0.23$ ).

	numDf	denomDF	<i>F</i>	<i>P</i>
Intercept	1	350	21,225.4	< 0.001
Avg. daily maximum temperature	1	350	104.3	< 0.001
Species	4	350	80.8	< 0.001
Avg. daily maximum $\times$ Species	4	350	1.89	0.111

Table S3. Treatment contrast coefficient estimates for the generalized least squares model of  $\log_e$ -transformed dark-adapted algal fluorescence values ( $F_0$ ) versus average daily maximum temperature and limpet species (including the No Grazer treatment). The No Grazer treatment is the reference level.

Coefficient	Estimate	Std. Error	<i>t</i> -value	<i>P</i>
Intercept	6.422	0.327	19.73	<0.001
Average daily maximum temperature	-0.100	0.019	-5.32	<0.001
<i>L. scabra</i>	-0.722	0.425	-1.70	0.091
<i>L. austrodigitalis</i>	-1.402	0.446	-3.15	0.002
<i>L. limatula</i>	-0.411	0.442	-0.93	0.353
<i>L. pelta</i>	-0.746	0.434	-1.72	0.086
Avg. daily max. × <i>L. scabra</i>	-0.013	0.024	-0.52	0.607
Avg. daily max. × <i>L. austrodigitalis</i>	0.043	0.026	1.67	0.097
Avg. daily max. × <i>L. limatula</i>	-0.010	0.026	-0.39	0.698
Avg. daily max. × <i>L. pelta</i>	-0.015	0.025	-0.58	0.565

Table S4. Coefficients for regressions of the form  $Y = \alpha X^\beta c$  for limpet dry tissue mass or shell mass (mg) versus shell projected area (mm<sup>2</sup>) when viewed from overhead.  $R^2$  for linear fits to log transformed data are given, along with sample size *n* for each species.

Species	Dry tissue mass			Shell mass			n
	$\alpha$	$\beta$	$R^2$	$\alpha$	$\beta$	$R^2$	
<i>L. scabra</i>	0.0435	1.36	0.75	0.100	1.62	0.87	247
<i>L. austrodigitalis</i>	0.0376	1.41	0.83	0.132	1.55	0.80	242
<i>L. limatula</i>	0.0350	1.40	0.90	0.103	1.56	0.87	227
<i>L. pelta</i>	0.1100	1.21	0.85	0.177	1.46	0.88	245

Table S5. Treatment contrast coefficient estimates for the linear mixed effects model of limpet growth rate ( $\text{mg day}^{-1}$ ) with average daily maximum temperature during each census period,  $\log_e$ -transformed algal density ( $F_0$ ) at the beginning of each census period, and limpet species as fixed factors. The random effects included  $\log_e$ -transformed  $F_0$ , an effect for plate (standard deviation of intercept = 2.23,  $\log(F_0) = 0.60$ ), and for individual limpets nested within plates to account for the repeated measures of limpets through time (standard deviation of intercept = 0.99,  $\log(F_0) = 0.28$ , residual = 0.74). First order autocorrelation among the repeated limpet measures through time is accounted for using an AR(1) autoregressive correlation structure ( $\phi = 0.22$ ). The estimate for *L. scabra* is the reference level in the model. The model was fit using the *nlme* package (Pinheiro and Bates, 2000).

Coefficient	Std.				
	Estimate	Error	df	t-value	P
Intercept	8.865	2.508	671	3.535	<0.001
Average daily maximum temperature, °C	-0.847	0.133	671	-6.382	<0.001
Log( $F_0$ )	-3.402	0.650	671	-5.231	<0.001
<i>L. austrodigitalis</i>	-8.846	4.056	44	-2.181	0.035
<i>L. limatula</i>	-3.350	4.245	44	-0.789	0.434
<i>L. pelta</i>	-4.779	4.293	44	-1.113	0.272
Avg. daily max. $\times$ Log( $F_0$ )	0.300	0.035	671	8.684	<0.001
Avg. daily max. $\times$ <i>L. austrodigitalis</i>	0.785	0.219	671	3.581	<0.001
Avg. daily max. $\times$ <i>L. limatula</i>	0.435	0.233	671	1.868	0.062
Avg. daily max. $\times$ <i>L. pelta</i>	0.569	0.242	671	2.352	0.019
Log( $F_0$ ) $\times$ <i>L. austrodigitalis</i>	3.085	1.040	671	2.966	0.003
Log( $F_0$ ) $\times$ <i>L. limatula</i>	1.802	1.053	671	1.711	0.088
Log( $F_0$ ) $\times$ <i>L. pelta</i>	1.948	1.150	671	1.694	0.091
Avg. daily max. $\times$ Log( $F_0$ ) $\times$ <i>L. austrodigitalis</i>	-0.255	0.057	671	-4.504	<0.001
Avg. daily max. $\times$ Log( $F_0$ ) $\times$ <i>L. limatula</i>	-0.178	0.059	671	-3.018	0.003
Avg. daily max. $\times$ Log( $F_0$ ) $\times$ <i>L. pelta</i>	-0.197	0.066	671	-2.983	0.003