SUPPLEMENTARY INFORMATION

Table S1. Number of mussels tested (*n*) each Week, based on Round and Zone

Week	Round 1		Round 2		Round 3		Overall	
	High Zone	Low Zone	High Zone	Low Zone	High Zone	Low Zone	High Zone	Low Zone
0	15	12	10	11	12	12	37*	35*
1	5	--	6	12	--	--	11	12
2	5	6	6	6	--	--	11	12
3	10	--	--	12	--	--	10	12
4	--	--	--	--	11	11	11	11
5	--	--	--	--	12	11	12	11
6	5	6	6	6	--	--	11	12
7	--	--	--	--	10	10	10	10
8	6	5	6	6	--	--	12	11
Overall	46	29	34	53	45	44	125	126

Note: Data represent the sample sizes (*n*) of mussels tested each week during each of the three Rounds of 8 weeks of constant submersion (*n*=251 total mussels), including a baseline week (Week 0); data are separated by Zone (High or Low) for further clarity. Since only 6 mussels could be tested at any given time, and trials lasted ~4 hours total, we could not test all mussels from both zones in the same week for 8 consecutive weeks. Thus, for practical purposes, testing was split up across three different Rounds that were each 8 weeks long. For the regression analyses where a mean change score was calculated, each individual's value was subtracted from the Week 0 mean value (of all 12 mussels), that was specific to that individual's testing Round and Zone. *****Indicates that data from 12 mussels from each the high- and low-zone sites were randomly selected (from all three Rounds) to be used as the baseline group (Week 0) for the ANOVA analyses so that sample sizes were similar across the 9 weeks.

Table S2. Mussel morphometric data separated by Zone and Week

Week	Zone	Sample Size (*n*)	Body Mass (g)	Shell Height (mm)	Shell Length (mm)	Shell Width (mm)	Gonad mass (% total dry mass)
0	High	12	25.37±5.27	25.84±2.06	59.40±4.62	25.99±2.57	14.1±1.70
	Low	12	22.50±4.34	27.77±2.40	61.67±6.30	24.54±2.21	17.4±5.93
1	High	11	23.16±7.89	24.58±2.38	58.23±5.17	24.41±3.19	11.3±3.67
	Low	12	23.24±7.43	27.40±2.91	59.88±7.52	23.72±2.72	11.4±3.50
2	High	11	21.96±7.53	25.16±1.55	58.56±5.10	25.19±2.63	13.7±2.69
	Low	12	23.05±4.38	28.06±2.18	60.22±4.03	23.94±2.42	13.1±4.58
3	High	10	24.71±5.68	23.36±3.43	56.83±3.20	25.52±2.06	15.3±3.33
	Low	12	22.90±6.89	27.34±2.26	62.03±5.67	23.68±3.09	11.3±2.88
4	High	11	33.30±8.68	27.96±2.45	65.03±5.28	28.23±3.47	12.1±2.56
	Low	11	27.17±7.27	28.79±1.91	65.25±6.10	25.31±2.63	9.5±2.43
5	High	12	35.40±8.46	28.41±2.22	66.63±6.14	27.00±2.98	11.2±3.01
	Low	11	27.02±7.45	28.35±2.12	65.64±5.48	25.82±2.62	12.0±2.44
6	High	11	26.61±7.57	24.74±2.47	57.51±5.58	25.30±2.74	15.8±4.31
	Low	12	19.77±5.18	25.97±1.58	57.25±5.01	22.74±2.18	12.4±3.33
7	High	10	33.56±9.81	27.79±1.60	64.67±5.16	26.88±3.64	12.4±5.89
	Low	10	23.38±3.89	26.97±2.01	62.43±5.04	23.85±1.74	11.3±3.30
8	High	12	22.79±5.88	24.65±1.77	56.71±5.67	23.41±1.66	14.7±3.82
	Low	11	22.77±6.64	27.68±3.14	59.15±5.79	23.69±2.75	12.1±4.67
Overall	High	100	27.41±8.75*	26.01±2.62*	60.63±6.29	25.77±3.09*	13.4±3.79
	Low	103	23.47±6.25	27.58±2.37	61.43±6.09	24.15±2.58	12.3±4.24

Note: Data are mean±s.d. *Indicates a significant main effect of Zone overall (all *P*<0.05). No significant interaction effects (Zone by Week) existed for any variables (see Table S4 for details). There was a significant main effect of Week for the following variables (all *P*<0.05): body mass (Week 4 significantly differed from Weeks 1, 2, 6, & 8; and Week 5 significantly differed from Weeks 0-3, 6 & 8); shell length (Week 4 significantly differed from Weeks 1, 2, 6, & 8; Week 5 significantly differed from Weeks 0-3, 6, 8; and Week 7 significantly differed from Weeks 6 & 8); shell height (Weeks 4 & 5 significantly differed from Week 6); shell width (Week 4 significantly differed from Weeks 1 & 8, and Week 5 significantly differed from Week 8); gonad mass (Week 0 significantly differed from Weeks 1, 4, 5 & 7). However, none of the weekly differences in these variables appeared to affect cardiac thermal performance (see Results). See Table S4 for degrees of freedom, *F* values, and *P* values for all ANOVA analyses.

Table S3. Absolute critical and flatline temperature data separated by Zone and Week

Week	Zone	T_{crit} (°C)	T_{flat} (°C)	$T_{flat} - T_{crit}$ Difference (°C)
0	High	39.09±2.13	40.55±1.10	1.46±1.87
	Low	36.79±2.31	40.32±1.74	3.51±2.70
1	High	39.16±1.32	41.07±0.70	1.54±0.89
	Low	37.87±1.33	40.47±0.94	2.59±1.46
2	High	38.63±1.13	40.16±1.29	1.55±0.91
	Low	38.03±1.08	40.84±0.70	2.82±0.94
3	High	37.74±1.57	40.07±1.33	2.33±2.46
	Low	35.29±2.65	39.81±0.83	4.53±2.31
4	High	38.43±1.49	40.74±1.75	2.32±1.31
	Low	37.86±1.66	40.61±0.81	2.69±2.08
5	High	38.51±1.92	40.66±1.67	2.17±1.26
	Low	36.53±3.00	41.22±1.49	4.90±2.28
6	High	38.20±1.19	40.06±0.95	1.75±1.43
	Low	36.40±2.24	39.56±1.37	3.19±2.82
7	High	38.51±1.43	40.81±0.63	2.30±1.74
	Low	37.90±2.56	41.28±1.77	3.41±2.28
8	High	38.19±2.00	40.13±1.23	1.98±1.48
	Low	37.71±2.29	39.87±1.63	2.30±1.48
Overall	High	38.50±1.62*	40.47±1.25	1.93±1.52
	Low	37.13±2.29	40.40±1.37	3.31±2.19*

Note: Data are means±s.d. T_{crit} is critical temperature, and T_{flat} is flatline temperature. ***Indicates a main effect of Zone overall ($P<0.05$). T_{crit} in Week 1 was significantly higher than Week 3 ($P<0.05$). There were no other significant Zone by Week interaction effects, or significant main effects of Zone or Week (all $P>0.05$). We were unable to identify the T_{flat} for six out of the 203 mussels, so the overall sample size is 197 individuals for T_{flat} and the $T_{flat} - T_{crit}$ difference. See Table S4 for specific degrees of freedom, F values, and P values for the ANOVA analyses.

Table S4. ANOVA statistical analyses for each variable.

Variable	Main effect of Zone F and P values	Main effect of Week F and P values	Zone by Week interaction F and P values
Body mass	F=16.40, P<0.0001*	F=5.77, P<0.0001*	F=1.98, P=0.051
Shell Length	F=1.84, P=0.18	F=7.37, P<0.0001*	F=0.679, P=0.71
Shell Width	F=16.67, P<0.0001*	F=3.68, P<0.001*	F=0.89, P=0.53
Shell Height	F=28.27, P<0.0001*	F=5.38, P<0.0001*	F=2.39, P=0.018†
Gonad mass	F=4.63, P=0.03†	F=4.04, P<0.001*	F=2.20, P=0.028†
Heating Rate	F=0.09, P=0.76	F=1.35, P=0.22	F=0.65, P=0.73
T_{crit}	F=24.08, P<0.0001*	F=2.27, P=0.02*	F=0.96, P=0.47
T_{flat}	F=0.03, P=0.87	F=2.67, P=0.01†	F=0.75, P=0.64
T_{flat}—T_{crit} **difference**	F=27.6, P<0.0001*	F=1.87, P=0.07	F=1.06, P=0.39
Maximum HR	F=0.05, P=0.83	F=2.52, P=0.01†	F=0.45, P=0.87
Resting HR	F=0.02, P=0.89	F=2.34, P=0.02†	F=1.79, P=0.08
Total HR Range	F=0.23, P=0.63	F=1.37, P=0.21	F=1.06, P=0.39

Note: Data represent the F and P values for each of the ANOVA analyses for each of variables (listed in the left-hand column), regarding the main effect of zone (degrees of freedom = 1), main effect of Week (degrees of freedom = 8), and the Zone by Week interaction effects (degrees of freedom = 8). A two-way, between-between ANOVA (2-Zone by 9-Week) was run for each of the variables, and a P<0.05 indicated significance. †Indicates no significant (meaningful) post-hoc differences when using a Bonferroni correction. *Indicates significant post-hoc differences; see Tables S1 & S2, along with the Results section for details about actual values and post-hoc differences. T_{crit} is critical temperature, and T_{flat} is flatline temperature.