Supplementary materials

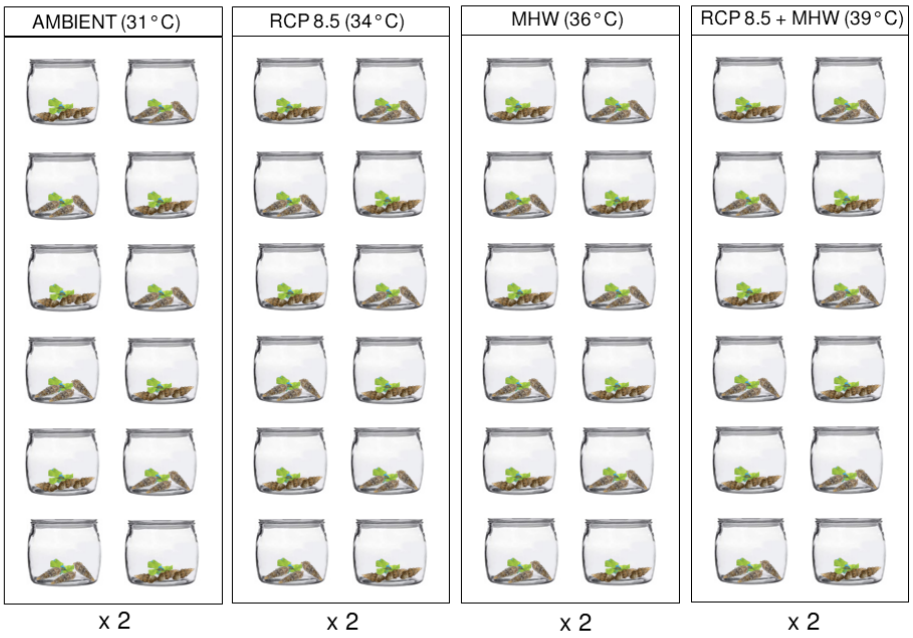

Fig. S1 Experimental set-up: four thermo-baths, each representing one of the four temperature treatments (AMBIENT, RCP 8.5, MHW and RCP 8.5 + MHW) and including 12 experimental units (glass jars). Within each thermo-bath, six jars included three individuals of *C. lividulum* and the other six jars included three individuals of *C. scabridum*. All the snails were provided with similar size pieces of *Ulva* sp. Two thermo-baths were randomly assigned to each temperature treatment

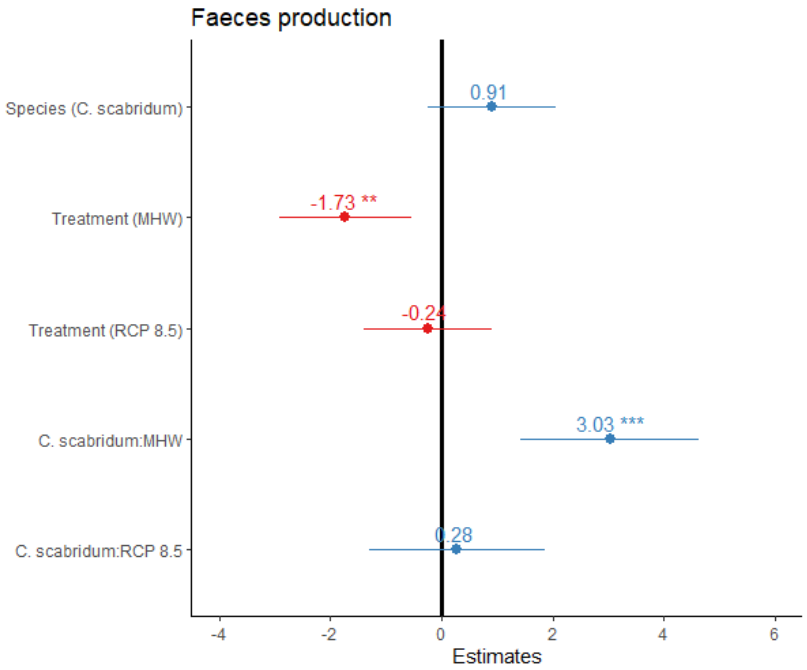

Fig. S2 Effect sizes of treatment, species and their interaction on faeces production of *C. lividulum* and *C. scabridum* exposed to three temperature treatments (AMBIENT, MHW and RCP 8.5) after eight-day exposure to the heatwave and two-week exposure to the RCP 8.5 scenario. Effect sizes (standardized mean difference) were estimated using linear mixed models. Effect sizes that do not overlap with zero are significant. Blue and red lines indicate positive and negative effects, respectively, on the response variable. Reference levels in the intercept are *C. lividulum* and ambient treatment. Error bars are 95% confidence intervals

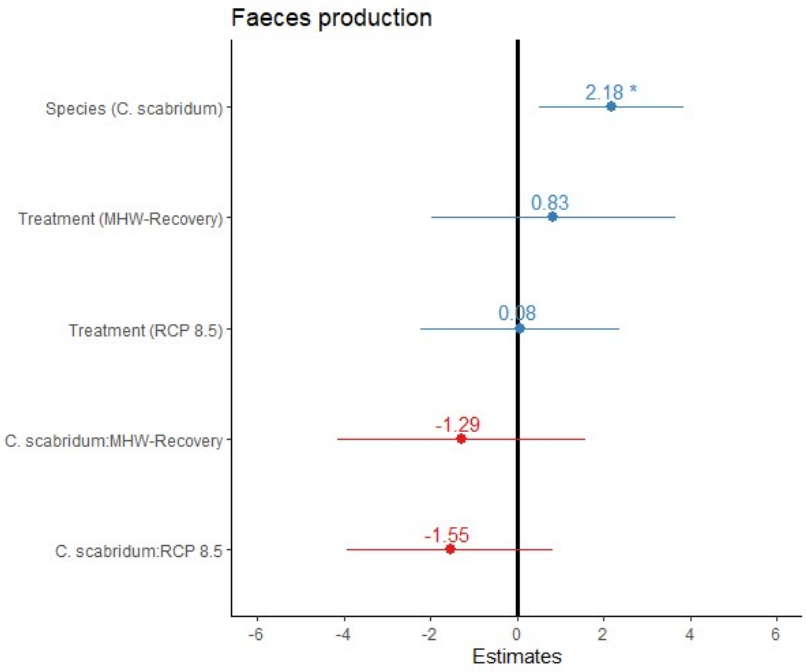

Fig. S3 Effect sizes of treatment, species and their interaction on faeces production of *C. lividulum* and *C. scabridum* exposed to three temperature treatments (AMBIENT, MHW and RCP 8.5) after eight days of recovery from MHW and after three-week exposure to the RCP 8.5 scenario. Effect sizes (standardized mean difference) were estimated using linear mixed models. Effect sizes that do not overlap with zero are significant. Blue and red lines indicate positive and negative effects, respectively, on the response variable. Reference levels in the intercept are: *C. lividulum* and ambient treatment. Error bars are 95% confidence intervals

Table S1 Linear mixed model on the variance of faecal matter production of *C. lividulum* and *C. scabridum* using temperature treatment, species and their interaction as predictors. Snails were exposed to three temperature treatments (AMBIENT, MHW and RCP 8.5). Measurements were taken after eight-day exposure to MHW and two-week exposure to the RCP 8.5 scenario. Numbers in bold indicate significant differences ($p < 0.05$)

Predictors	Estimates	CI	p
(Intercept: AMBIENT, *C. lividulum*)	1.95	1.13 – 2.77	**<0.001**
Species (*C. scabridum*)	0.91	-0.24 – 2.06	0.118
Treatment (MHW)	-1.73	-2.91 – -0.55	**0.005**
Treatment (RCP 8.5)	-0.24	-1.40 – 0.91	0.676
C. scabridum:MHW	3.03	1.42 – 4.64	**<0.001**
C. scabridum:RCP 8.5	0.28	-1.31 – 1.87	0.725
Random Effects			
σ^2	1.81		
$\tau_{00\ Tank}$	0.03		
ICC	0.02		
N_{Tank}	6		
Observations	69		
Marginal R^2 / Conditional R^2	0.450 / 0.460		
AIC	247.272		

Table S2 Post-hoc pairwise comparisons based on Estimated Marginal Means of faeces production of *C. lividulum* and *C. scabridum* under different temperature treatments. Snails were exposed to three temperature treatments (AMBIENT, MHW and RCP 8.5), after eight-day exposure to MHW and two-week exposure to the RCP 8.5 scenario. Contrasts are shown considering pairwise interactions between the three temperature treatments (AMBIENT, MHW and RCP 8.5, separately) and the two species (*C. lividulum* and *C. scabridum*). P values were adjusted through the Tukey-Kramer method. Numbers in bold indicate significant differences ($p < 0.05$)

Contrast	Estimate	SE	df	*t*	p
AMBIENT *C. lividulum* - MHW *C. lividulum*	1.7307	0.592	9.49	2.924	**0.0283**
AMBIENT *C. lividulum* - RCP 8.5 *C. lividulum*	0.2437	0.579	8.85	0.421	0.9977
MHW *C. lividulum* - RCP 8.5 *C. lividulum*	-1.4870	0.592	9.49	-2.512	0.2115
AMBIENT *C. scabridum* - MHW *C. scabridum*	1.3010	0.608	10.15	-2.139	0.3403
AMBIENT *C. scabridum* - RCP 8.5 C. scabridum	-0.0373	0.608	10.15	-0.061	1.0000
MHW *C. scabridum* - RCP 8.5 *C. scabridum*	1.2637	0.579	8.85	2.181	0.3315
AMBIENT *C. lividulum* - AMBIENT *C. scabridum*	-0.912	0.579	60.9	-1.575	0.6177
AMBIENT *C. lividulum* - MHW *C. scabridum*	-2.2130	0.579	8.85	-3.819	**0.0350**
AMBIENT *C. lividulum* - RCP 8.5 *C. scabridum*	0.9494	0.579	8.85	-1.638	0.5970
MHW *C. lividulum* - AMBIENT *C. scabridum*	-2.6427	0.620	10.81	-4.262	**0.0132**
MHW *C. lividulum* - MHW *C. scabridum*	-3.9437	0.562	60.20	-7.020	**<0.0001**
MHW *C. lividulum* - RCP 8.5 *C. scabridum*	-2.6800	0.592	9.49	-4.528	**0.0114**
RCP 8.5 *C. lividulum* - AMBIENT *C. scabridum*	-1.1558	0.608	10.15	-1.900	0.4528
RCP 8.5 *C. lividulum* - MHW *C. scabridum*	-2.4567	0.579	8.85	-4.240	**0.0195**
RCP 8.5 *C. lividulum* - RCP 8.5 *C. scabridum*	-1.1931	0.549	60.00	-2.174	0.2649

Table S3 Linear mixed model on the variance of faecal matter production of *C. lividulum* and *C. scabridum* using temperature treatment, species and their interaction as predictors. Snails were exposed to three temperature treatments (AMBIENT, MHW-Recovery and RCP 8.5). Measurements were taken after eight days of recovery from MHW and after three-week exposure to the RCP 8.5 scenario. Numbers in bold indicate significant differences ($p < 0.05$)

Predictors	Estimates	CI	p
(Intercept: AMBIENT, *C. lividulum*)	1.45	-0.16 – 3.06	0.076
Species (*C. scabridum*)	2.18	0.51 – 3.84	**0.011**
Treatment (MHW-Recovery)	0.83	-1.99 – 3.65	0.558
Treatment (RCP 8.5)	0.08	-2.23 – 2.38	0.947
C. scabridum:MHW-Recovery	-1.29	-4.17 – 1.59	0.374
C. scabridum:RCP 8.5	-1.55	-3.93 – 0.83	0.197
Random Effects			
σ^2	4.13		
$\tau_{00\ Tank}$	0.60		
ICC	0.13		
$N_{\ Tank}$	6		
Observations	63		
Marginal R^2 / Conditional R^2	0.133 / 0.243		
AIC	275.115		

Table S4 Post-hoc pairwise comparisons based on Estimated Marginal Means of faeces production of *C. lividulum* and *C. scabridum* under different temperature treatments. Snails were exposed to three temperature treatments (AMBIENT, MHW-Recovery and RCP 8.5), after eight days of recovery from MHW and after three-week exposure to the RCP 8.5 scenario. Contrasts are shown within the group "Species" (*C. lividulum* and *C. scabridum*, separately) considering pairwise interactions between the three temperature treatments, and within the group "Treatment" (AMBIENT, MHW-Recovery and RCP 8.5, separately) considering the interactions between the two species. P values were adjusted through the Tukey-Kramer method. Numbers in bold indicate significant differences ($p < 0.05$)

Contrast	Estimate	SE	df	*t*	p
Species: *C. lividulum*					
AMBIENT – MHW_Recovery	-0.8297	1.41	11.14	-0.590	0.8283
AMBIENT - RCP 8.5	-0.0774	1.15	5.20	-0.067	0.9975
MHW_ Recovery - RCP 8.5	0.7523	1.42	11.45	0.530	0.8582
Species: *C. scabridum*					
AMBIENT – MHW_Recovery	0.4591	1.14	4.96	0.404	0.9154
AMBIENT - RCP 8.5	1.4719	1.14	4.96	1.295	0.4565
MHW _Recovery- RCP 8.5	1.0128	1.14	4.96	0.891	0.6685
Treatment: AMBIENT					
C. lividulum - *C. scabridum*	-2.176	0.83	54.0	-2.623	**0.0113**
Treatment: MHW_Recovery					
C. lividulum - *C. scabridum*	-0.888	1.17	54.0	-0.756	0.4528
Treatment: RCP 8.5					
C. lividulum - *C. scabridum*	-0.627	0.85	54.1	-0.738	0.4636