Electronic Supplementary Material 3 (ESM3):
Model outputs for

Variation in susceptibility among three Caribbean coral species and their algal symbionts indicates the threatened *Acropora cervicornis* is particularly susceptible to elevated nutrients and heat stress

Ana M. Palacio-Castro, Caroline E. Dennison, Stephanie M. Rosales, Andrew C. Baker

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Table S6: Generalized linear mixed models used to test for differences in the photochemical efficiency (F_v/F_m) of corals exposed to nutrient treatments (A, N and N+P) at control temperature (days 1-78) and heat stress (days 90-113). Mixed-effects models were run with the lme4 1.1-17 package (Bates et al. 2015) for R 3.4.3 (R Core Team 2018). Each model included *nutrient* treatment, dominant *symbiont* type (except for *A. cervicornis* that hosted only one type), and *days* in the experiment as interacting fixed factors, as well as coral *genotype*, *fragment*, and *replicate* tank as random effects.

A. cervicornis F_v/F_m				
Fixed effects	**numDF**	**denDF**	**F-value**	**p-value**
Nutrient	2	120.5	19.6	<0.001
Days	16	1460.5	666.7	<0.001
Nutrient:Day	31	1460.6	69.3	<0.001
Random effects	**npar**	**logLik**	**AIC**	**Pr(>Chisq)**
Genotype	53	3541.1	-6899.2	<0.001
Fragment	53	3465.9	-6825.8	<0.001
Replicate (Tank)	53	3502.6	-6974.8	0.080
O. faveolata F_v/F_m				
Fixed effects	**numDF**	**denDF**	**F-value**	**p-value**
Nutrient	2	62.7	2.8	0.07
Day	8	50.5	50.5	<0.001
Symbiont	1	35.6	10.8	<0.001
Nutrient : Day	16	528	4.7	<0.001
Nutrient : Symbiont	2	62.7	1.3	0.27
Day: Symbiont	8	528	7.6	<0.001
Nutrient: Day: Symbiont	16	528	2.8	<0.001
Random effects	**npar**	**logLik**	**AIC**	**Pr(>Chisq)**
Genotype	57	1302.2	-2490.5	<0.001
Fragment	57	1273.0	-2432.0	<0.001
Replicate (Tank)	57	1311.5	-2509.1	1
S. siderea F_v/F_m				
Fixed effects	**numDF**	**denDF**	**F-value**	**p-value**
Nutrient	2	146.6	16.2	<0.001
Day	8	1220.3	261.5	<0.001
Symbiont	2	8.5	1.4	0.3
Nutrient : Day	16	1220.3	12.9	<0.001
Nutrient : Symbiont	4	146.6	9.9	<0.001
Day: Symbiont	16	1220.3	5.2	<0.001
Nutrient: Day: Symbiont	32	1220.3	1.2	0.2
Random effects	**npar**	**logLik**	**AIC**	**Pr(>Chisq)**
Genotype	84	2995.3	-5822.7	<0.001
Fragment	84	2975.1	5782.1	<0.001
Replicate (Tank)	84	3033.3	-5898.6	1

Table S7: Generalized linear mixed models used to test for differences in the Chlorophyll-*a* concentration in corals exposed to nutrient treatments (A, N and N+P) at control temperature (day 78) and heat stress (day 113). Mixed-effects models were run with the lme4 1.1-17 package (Bates et al. 2015) for R 3.4.3 (R Core Team 2018). Each model included *nutrient* treatment, dominant *symbiont* type (except for *A. cervicornis* that hosted only one type), and *day* in the experiment as interacting fixed factors, as well as coral *genotype*, and *replicate* tank as random effects.

A. cervicornis* Chlorophyll-*a				
Fixed effects	**numDF**	**denDF**	**F-value**	**p-value**
Nutrient	2	26	1.72	0.2
Day	1	26	29.5	<0.001
Nutrient:Day	1	26	3.5	<0.05
Random effects	**npar**	**logLik**	**AIC**	**Pr(>Chisq)**
Genotype	7	-42.2	98.4	1
Replicate (Tank)	7	-42.2	98.4	1
O. faveolata* Chlorophyll-*a				
Fixed effects	**numDF**	**denDF**	**F-value**	**p-value**
Nutrient	2	30.0	2.9	0.06
Day	1	30.0	71.5	<0.001
Symbiont	1	2.3	1.0	0.4
Nutrient : Day	2	30.0	5.4	0.01
Nutrient : Symbiont	2	30.0	0.3	0.7
Day: Symbiont	0	NA	NA	NA
Nutrient: Day: Symbiont	0	NA	NA	NA
Random effects	**npar**	**logLik**	**AIC**	**Pr(>Chisq)**
Genotype	10	0.3	19.4	<0.001
Replicate (Tank)	11	7.9	6.1	0.9
S. siderea* Chlorophyll-*a				
Fixed effects	**numDF**	**denDF**	**F-value**	**p-value**
Nutrient	2	57.6	6.2	<0.001
Day	1	57.4	216.5	<0.001
Symbiont	2	31.8	2.6	0.09
Nutrient : Day	2	57.9	2.2	0.1
Nutrient : Symbiont	4	57.3	0.4	0.8
Day: Symbiont	2	57.2	9.7	<0.001
Nutrient: Day: Symbiont	4	57.6	0.6	0.7
Random effects	**npar**	**logLik**	**AIC**	**Pr(>Chisq)**
none	21	-110.2	262.4	
Genotype	20	-119.9	279.8	<0.001
Replicate (Tank)	20	-110.2	260.4	1

Table S8: Generalized linear mixed models used to test for differences in the Symbiodiniaceae areal density (cells cm^{-2}) in corals exposed to nutrient treatments (A, N and N+P) at control temperature (day 78) and heat stress (day 113). Mixed-effects models were run with the lme4 1.1-17 package (Bates et al. 2015) for R 3.4.3 (R Core Team 2018). Each model included *nutrient* treatment, dominant *symbiont* type (except for *A. cervicornis* that hosted only one type), and *day* (temperature) in the experiment as interacting fixed factors, as well as coral *genotype*, and *replicate* tank as random effects.

***A. cervicornis Symbiodiniaceae* density**				
Fixed effects	**numDF**	**denDF**	**F-value**	**p-value**
Nutrient	2	23.8	0.14	0.87
Day	1	24.3	55.5	<0.001
Nutrient : Day	1	24.2	3.4	0.08
Random effects	**npar**	**logLik**	**AIC**	**Pr(>Chisq)**
Genotype	7	-43.2	100.3	0.07
Replicate (Tank)	7	-41.8	97.6	0.5
***O. faveolata Symbiodiniaceae* density**				
Fixed effects	**numDF**	**denDF**	**F-value**	**p-value**
Nutrient	2	30.0	1.0	0.4
Day	1	30.0	125.4	<0.001
Symbiont	1	2.2	0.2	0.7
Nutrient : Day	2	30.0	4.3	0.02
Nutrient : Symbiont	2	30.0	1.7	0.20
Random effects	**npar**	**logLik**	**AIC**	**Pr(>Chisq)**
Genotype	10	0.3	19.4	<0.001
Replicate (Tank)	11	7.9	6.1	0.9
***S. siderea Symbiodiniaceae* density**				
Fixed effects	**numDF**	**denDF**	**F-value**	**p-value**
Nutrient	2	58.6	1.8	0.2
Day	1	57.9	231.4	<0.001
Symbiont	1	8.2	0.3	0.7
Nutrient : Day	1	59.6	0.02	0.9
Nutrient : Symbiont	4	58.7	0.8	0.5
Day: Symbiont	2	58.1	27.3	<0.001
Nutrient: Day: Symbiont	4	59.2	0.2	0.9
Random effects	**npar**	**logLik**	**AIC**	**Pr(>Chisq)**
none	21	17.1	7.7	
Genotype	20	15.4	9.2	0.06
Replicate (Tank)	20	17.1	5.7	1

Table S9: Estimated photochemical efficiency (F_v/F_m) for *A. cervicornis* corals exposed to different nutrient treatments and subsequent heat stress. Pairwise comparisons between groups were obtained using Tukey's HSD test (α = 0.05). Stars in *N and *N+P denote the group of corals that were assigned to these treatments, but that were not exposed to elevated nutrients at the time of the measurement. Percentages of change in bold represent comparison among values that were significantly different based on the Tukey's HSD test.

***Days* in the experiment (Phase)**	***Nutrient* Treatment**	**F_v/F_m Em mean**	**df**	**Lower CL**	**Upper CL**	**Tukey Group**	**% change respect ambient (same day)**	**% change respect baseline (Day 1)**	**% change respect control (Day 76)**
1 (Baseline)	A	0.61	10.28	0.60	0.63	G-L	NA	NA	NA
	*N	0.60	9.91	0.58	0.62	E-H	-1.8%	NA	NA
	*N+P	0.60	10.06	0.59	0.62	G-I	-1.1%	NA	NA
8 (Control)	A	0.61	10.28	0.59	0.63	G-K	NA	-0.3%	NA
	N	0.63	9.91	0.61	0.64	I-N	2.7%	**4.3%**	NA
	N+P	0.63	10.06	0.61	0.64	I-N	2.5%	3.3%	NA
14 (Control)	A	0.62	10.28	0.60	0.63	H-N	NA	1.1%	NA
	N	0.62	9.91	0.60	0.63	H-M	-0.5%	2.4%	NA
	N+P	0.63	10.06	0.61	0.64	J-N	1.5%	3.7%	NA
21 (Control)	A	0.61	10.28	0.59	0.62	G-J	NA	-1.0%	NA
	N	0.64	9.91	0.62	0.65	N	**5.5%**	**6.3%**	NA
	N+P	0.63	10.06	0.61	0.64	J-N	3.4%	**3.5%**	NA
28 (Control)	A	0.60	10.28	0.58	0.62	F-H	NA	-1.9%	NA
	N	0.63	9.91	0.62	0.65	K-N	**5.1%**	**5.0%**	NA
	N+P	0.64	10.06	0.62	0.65	M-N	**6.0%**	**5.2%**	NA
49 (Control)	A	0.58	10.28	0.56	0.59	0-E	NA	**-5.4%**	NA
	N	0.63	9.91	0.62	0.65	M-N	**9.7%**	**5.7%**	NA
	N+P	0.63	10.06	0.62	0.65	L-N	**9.7%**	**4.9%**	NA
65 (Control)	A	0.57	10.28	0.55	0.58	8-B	NA	**-7.2%**	NA
	N	0.60	9.91	0.58	0.61	E-H	**5.4%**	-0.3%	NA
	N+P	0.62	10.21	0.60	0.63	H-N	**8.7%**	2.1%	NA
71 (Control)	A	0.57	10.28	0.55	0.58	9-C	NA	**-7.0%**	NA
	N	0.61	10.37	0.60	0.63	G-K	**7.3%**	1.7%	NA
	N+P	0.59	10.21	0.57	0.61	B-G	3.8%	-2.4%	NA
76 (Control)	A	0.56	10.28	0.54	0.58	8-10	NA	**-8.5%**	NA
	N	0.60	10.54	0.58	0.62	E-H	**7.1%**	-0.1%	NA
	N+P	0.59	10.21	0.58	0.61	C-G	**5.7%**	-2.1%	NA

Table S9 (continuation): Estimated photochemical efficiency (F_v/F_m) for *A. cervicornis* corals exposed to different nutrient treatments and subsequent heat stress. Pairwise comparisons between groups were obtained using Tukey's HSD test (α = 0.05). Stars in *N and *N+P denote the group of corals that were assigned to these treatments, but that were not exposed to elevated nutrients at the time of the measurement. Percentages of change in bold represent comparison among values that were significantly different based on the Tukey's HSD test.

Days in the experiment (Phase)	Nutrient Treatment	F_v/F_m Em mean	df	Lower CL	Upper CL	Tukey Group	% change respect ambient (same day)	% change respect baseline (Day 1)	% change respect control (Day 76)
84 (Ramp-up)	A	0.57	11.59	0.55	0.58	8-A	NA	**-7.5%**	1.0%
	N	0.59	12.65	0.57	0.61	A-G	4.3%	-1.7%	-1.6%
	N+P	0.60	12.02	0.58	0.62	D-H	**6.1%**	-0.8%	1.4%
89 (Ramp-up)	A	0.55	11.59	0.53	0.56	6-9	NA	**-10.5%**	-2.2%
	N	0.57	12.98	0.56	0.59	10-D	**5.0%**	**-4.3%**	-4.2%
	N+P	0.57	12.02	0.56	0.59	9-C	4.4%	**-5.6%**	**-3.5%**
92 (Heat)	A	0.56	11.59	0.54	0.57	7-10	NA	**-8.7%**	-0.3%
	*N	0.54	14.72	0.53	0.56	6-8	-3.0%	**-9.8%**	-9.7%
	*N+P	0.58	12.95	0.56	0.59	0-F	3.2%	**-4.8%**	-2.7%
96 (Heat)	A	0.56	11.59	0.54	0.57	7-0	NA	**-8.7%**	-0.2%
	*N	0.50	17.30	0.48	0.52	4	**-10.6%**	**-16.8%**	**-16.7%**
	*N+P	0.53	17.25	0.51	0.55	5-7	-4.8%	**-12.1%**	**-10.2%**
99 (Heat)	A	0.53	11.59	0.52	0.55	5-6	NA	**-12.9%**	**-4.8%**
	*N	0.41	19.16	0.39	0.42	3	**-23.8%**	**-32.4%**	**-32.3%**
	*N+P	0.48	19.12	0.47	0.50	4	**-9.1%**	**-19.9%**	**-18.2%**
103 (Heat)	A	0.51	11.59	0.50	0.53	4-5	NA	**-16.0%**	**-8.3%**
	*N	0.39	23.21	0.37	0.41	3	**-23.8%**	**-34.9%**	**-34.8%**
	*N+P	0.41	20.27	0.39	0.43	3	**-20.4%**	**-32.5%**	**-31.0%**
106 (Heat)	A	0.50	11.59	0.48	0.51	4	NA	**-18.8%**	**-11.3%**
	*N	0.30	38.20	0.28	0.32	1	**-38.7%**	**-49.3%**	**-49.2%**
	*N+P	0.35	27.27	0.33	0.37	2	**-30.1%**	**-42.6%**	**-41.3%**
110 (Heat)	A	0.40	11.59	0.38	0.42	3	NA	**-34.7%**	**-28.6%**
	*N	ND					NA	NA	NA
	*N+P	0.26	83.68	0.24	0.29	1	**-34.3%**	**-56.6%**	**-55.7%**

Table S10: Estimated photochemical efficiency (F_v/F_m) for *O. faveolata* exposed to different nutrient treatments and subsequent heat stress. Pairwise comparisons between groups were obtained using Tukey's HSD test (α = 0.05). Pairwise comparisons between groups were obtained using Tukey's HSD test (α = 0.05). Stars in *N and *N+P denote the group of corals that were assigned to these treatments, but that were not exposed to elevated nutrients at the time of the measurement. Percentages of change in bold represent comparison among values that were significantly different based on the Tukey's HSD test.

Days in the experiment (Phase)	Nutrient Treatment	F_v/F_m Em mean	df	Lower CL	Upper CL	Tukey Group	% change respect ambient (same day)	% change respect baseline (Day 1)
1 (Baseline)	A	0.51	4.29	0.47	0.54	H-P	NA	NA
	*N	0.51	4.29	0.48	0.55	M-Q	1.6%	NA
	*N+P	0.52	4.29	0.48	0.55	M-Q	2.3%	NA
8 (Control)	A	0.49	4.29	0.46	0.53	C-N	NA	-2.7%
	N	0.50	4.29	0.47	0.54	I-N	2.4%	-2.0%
	N+P	0.50	4.29	0.46	0.54	D-N	1.5%	-3.5%
14 (Control)	A	0.54	4.29	0.51	0.58	QR	NA	7.3%
	N	0.54	4.29	0.50	0.57	O-R	-1.5%	4.0%
	N+P	0.55	4.29	0.51	0.59	R	1.1%	6.1%
21 (Control)	A	0.48	4.29	0.44	0.51	A-I	NA	-5.8%
	N	0.49	4.29	0.45	0.53	C-M	2.5%	-5.0%
	N+P	0.49	4.29	0.46	0.53	C-N	3.7%	-4.5%
28 (Control)	A	0.49	4.29	0.46	0.53	C-N	NA	-2.7%
	N	0.52	4.29	0.48	0.56	N-R	5.5%	1.0%
	N+P	0.54	4.29	0.50	0.57	P-R	9.1%	3.8%
49 (Control)	A	0.45	4.29	0.42	0.49	8-B	NA	-10.4%
	N	0.49	4.29	0.46	0.53	C-N	8.7%	-4.2%
	N+P	0.50	4.29	0.47	0.54	G-O	11.1%	-2.7%
65 (Control)	A	0.50	4.29	0.46	0.54	E-N	NA	-1.1%
	N	0.48	4.29	0.44	0.52	B-L	-4.1%	-6.6%
	N+P	0.51	4.29	0.48	0.55	K-Q	2.6%	-0.8%
71 (Control)	A	0.47	4.29	0.43	0.50	0-D	NA	-7.6%
	N	0.47	4.29	0.44	0.51	A-H	1.5%	-7.7%
	N+P	0.45	4.29	0.41	0.48	7-A	-4.6%	-13.9%
76 (Control)	A	0.47	4.29	0.43	0.50	0-D	NA	-7.7%
	N	0.47	4.29	0.44	0.51	A-G	1.2%	-8.1%
	N+P	0.47	4.29	0.43	0.51	9-E	0.5%	-9.4%

Table S10 (continuation): Estimated photochemical efficiency (F_v/F_m) for *O. faveolata* exposed to different nutrient treatments and subsequent heat stress. Pairwise comparisons between groups were obtained using Tukey's HSD test (α = 0.05). Pairwise comparisons between groups were obtained using Tukey's HSD test (α = 0.05). Stars in *N and *N+P denote the group of corals that were assigned to these treatments, but that were not exposed to elevated nutrients at the time of the measurement. Percentages of change in bold represent comparison among values that were significantly different based on the Tukey's HSD test.

Days in the experiment (Phase)	Nutrient Treatment	F_v/F_m Em mean	df	Lower CL	Upper CL	Tukey Group	% change respect ambient (A) (same day)	% change respect baseline (day 1)	% change respect control (day 76)
84 (Ramp-up)	A	0.49	4.95	0.46	0.53	C-N	NA	-2.8%	5.4%
	N	0.49	4.95	0.46	0.53	C-N	0.2%	-4.2%	4.3%
	N+P	0.51	4.95	0.47	0.54	G-P	2.7%	-2.4%	7.7%
89 (Ramp-up)	A	0.48	4.95	0.44	0.51	10-K	NA	-5.6%	2.2%
	N	0.46	5.10	0.43	0.50	8-F	-2.8%	-9.7%	-1.7%
	N+P	0.49	4.95	0.45	0.53	C-N	2.6%	-5.3%	4.4%
92 (Heat)	A	0.52	5.10	0.48	0.55	L-R	NA	1.9%	10.4%
	*N	0.50	5.25	0.46	0.53	C-N	-3.6%	-3.3%	5.2%
	*N+P	0.50	5.10	0.46	0.53	C-N	-3.8%	-4.2%	5.7%
96 (Heat)	A	0.43	5.10	0.40	0.47	6-9	NA	-14.3%	-7.1%
	*N	0.44	5.25	0.40	0.47	7-0	0.9%	-14.9%	-7.4%
	*N+P	0.45	5.30	0.41	0.49	7-B	3.8%	-13.0%	-4.0%
99 (Heat)	A	0.43	5.10	0.40	0.47	5-9	NA	-14.4%	-7.2%
	*N	0.41	5.25	0.37	0.45	3-7	-5.5%	-20.4%	-13.4%
	*N+P	0.44	5.94	0.40	0.47	6-A	1.1%	-15.4%	-6.7%
103 (Heat)	A	0.41	5.10	0.37	0.45	3-7	NA	-18.8%	-12.1%
	*N	0.40	5.25	0.36	0.43	2-6	-3.2%	-22.7%	-15.9%
	*N+P	0.43	5.94	0.39	0.46	4-8	3.6%	-17.8%	-9.3%
106 (Heat)	A	0.38	5.25	0.34	0.41	1-3	NA	-25.3%	-19.0%
	*N	0.35	5.45	0.31	0.39	1	-7.6%	-32.0%	-26.0%
	*N+P	0.36	5.94	0.33	0.40	1-2	-3.8%	-29.8%	-22.5%
110 (Heat)	A	0.41	5.64	0.38	0.45	3-7	NA	-18.1%	-11.2%
	*N	0.35	5.65	0.32	0.39	1	**-15.2%**	**-31.7%**	**-25.6%**
	*N+P	0.39	5.94	0.35	0.43	1-5	-5.9%	-24.7%	-16.9%
113 (Heat)	A	0.42	6.23	0.39	0.46	4-8	NA	-16.3%	-9.3%
	N	0.37	5.94	0.33	0.40	1-2	**-13.8%**	**-29.0%**	**-22.7%**
	N+P	0.39	5.94	0.35	0.42	1-4	-8.7%	-25.3%	-17.6%

Table S11: Estimated photochemical efficiency (F_v/F_m) for *S. siderea* corals exposed to different nutrient treatments and subsequent heat stress. Pairwise comparisons between groups were obtained using Tukey's HSD test ($\alpha = 0.05$). Stars in *N and *N+P denote the group of corals that were assigned to these treatments, but that were not exposed to elevated nutrients at the time of the measurement. Percentages of change in bold represent comparison among values that were significantly different based on the Tukey's HSD test.

Days in the experiment (Phase)	Nutrient Treatment	F_v/F_m Em mean	df	Lower CL	Upper CL	Tukey Group	% change respect ambient (A) (same day)	% change respect baseline (Day 1)
1 (Baseline)	A	0.47	22.59	0.45	0.49	B-H	NA	NA
	* N	0.44	22.18	0.42	0.46	9-C	-5.4%	NA
	* N+P	0.46	23.03	0.44	0.48	A-G	-1.6%	NA
8 (Control)	A	0.49	22.59	0.48	0.51	G-L	NA	5.9%
	N	0.50	22.18	0.48	0.52	H-L	0.7%	12.8%
	N+P	0.53	23.03	0.51	0.55	K-M	6.5%	14.6%
14 (Control)	A	0.55	22.59	0.53	0.57	M	NA	**18.0%**
	N	0.55	22.18	0.53	0.57	M	-0.7%	**23.9%**
	N+P	0.56	23.03	0.54	0.57	M	0.8%	**20.9%**
21 (Control)	A	0.49	22.59	0.47	0.51	F-K	NA	4.9%
	N	0.51	22.18	0.49	0.52	I-L	3.3%	**14.5%**
	N+P	0.52	23.03	0.50	0.54	J-M	7.0%	**14.0%**
28 (Control)	A	0.53	22.59	0.51	0.55	L-M	NA	**13.6%**
	N	0.55	22.18	0.53	0.57	M	3.9%	**24.9%**
	N+P	0.55	23.03	0.53	0.57	M	3.5%	**19.5%**
49 (Control)	A	0.49	22.59	0.47	0.51	E-J	NA	4.4%
	N	0.49	22.18	0.47	0.51	G-J	0.3%	**10.8%**
	N+P	0.49	23.03	0.47	0.51	E-I	-0.3%	5.8%
65 (Control)	A	0.49	23.01	0.47	0.51	G-K	NA	5.4%
	N	0.45	22.18	0.43	0.47	0-D	-9.3%	1.0%
	N+P	0.48	23.46	0.46	0.50	D-I	-2.0%	5.0%
71 (Control)	A	0.48	23.01	0.46	0.50	D-I	NA	3.1%
	N	0.46	22.18	0.44	0.48	A-G	-4.4%	4.3%
	N+P	0.47	23.03	0.46	0.49	C-I	-1.4%	3.3%
76 (Control)	A	0.48	23.01	0.46	0.50	D-I	NA	3.3%
	N	0.46	22.18	0.44	0.48	A-H	-4.1%	4.8%
	N+P	0.47	23.03	0.45	0.49	C-I	-2.0%	2.9%

Table S11 (continuation): Estimated photochemical efficiency (F_v/F_m) in *S. siderea* corals exposed to different nutrient treatments and subsequent heat stress. Pairwise comparisons between groups were obtained using Tukey's HSD test (α = 0.05). Stars in *N and *N+P denote the group of corals that were assigned to these treatments, but that were not exposed to elevated nutrients at the time of the measurement. Percentages of change in bold represent comparison among values that were significantly different based on the Tukey's HSD test.

Days in the experiment (Phase)	Nutrient Treatment	F_v/F_m Em mean	df	Lower CL	Upper CL	Tukey Group	% change respect ambient (A) (same day)	% change respect Baseline (Day 1)	% change respect Control (day 76)
84 (Ramp- up)	A	0.47	31.95	0.45	0.49	B-I	NA	0.5%	-2.7%
	N	0.43	30.17	0.41	0.45	8-B	-7.8%	-2.1%	-6.6%
	N+P	0.47	31.05	0.45	0.49	B-I	0.0%	2.1%	-0.7%
89 (Ramp- up)	A	0.44	31.95	0.42	0.46	9-C	NA	-5.8%	-8.9%
	N	0.43	30.17	0.41	0.45	7-A	-3.2%	-3.6%	-8.0%
	N+P	0.42	31.05	0.40	0.44	6-A	-3.6%	-7.8%	-10.4%
92 (Heat)	A	0.45	31.95	0.43	0.47	9-E	NA	-3.9%	-7.0%
	* N	0.45	30.17	0.43	0.47	0-F	0.3%	1.9%	-2.8%
	* N+P	0.45	31.05	0.43	0.47	9-E	-0.3%	-2.7%	-5.4%
96 (Heat)	A	0.38	31.95	0.36	0.40	1-5	NA	-19.5%	**-22.1%**
	* N	0.42	30.17	0.40	0.44	5-0	11.2%	-5.4%	**-9.7%**
	* N+P	0.39	31.05	0.37	0.41	2-8	4.6%	-14.5%	**-16.8%**
99 (Heat)	A	0.38	31.95	0.35	0.40	1-5	NA	-19.6%	**-22.1%**
	* N	0.41	30.17	0.39	0.43	3-0	9.1%	-7.2%	**-11.4%**
	* N+P	0.38	31.05	0.36	0.40	1-5	0.8%	-17.6%	**-19.9%**
103 (Heat)	A	0.35	31.95	0.33	0.37	1-2	NA	-24.3%	**-26.7%**
	* N	0.41	30.17	0.39	0.43	3-9	**15.0%**	-8.0%	**-12.2%**
	* N+P	0.37	31.05	0.35	0.39	1-3	4.1%	-20.0%	**-22.2%**
106 (Heat)	A	0.34	31.95	0.32	0.36	1	NA	-26.7%	**-29.0%**
	* N	0.37	30.17	0.35	0.39	1-4	8.7%	-15.8%	**-19.6%**
	* N+P	0.34	31.05	0.32	0.36	1	0.0%	-25.5%	**-27.6%**
110 (Heat)	A	0.37	31.95	0.35	0.39	1-4	NA	-20.5%	**-23.0%**
	* N	0.41	30.17	0.39	0.43	4-10	10.7%	-6.9%	**-11.2%**
	* N+P	0.38	31.05	0.36	0.40	1-6	3.0%	-16.8%	**-19.1%**
113 (Heat)	A	0.37	31.95	0.35	0.39	1-4	NA	-20.1%	**-22.7%**
	* N	0.42	30.17	0.40	0.44	5-10	**12.2%**	-5.3%	**-9.6%**
	* N+P	0.38	31.05	0.36	0.40	1-7	2.7%	-16.6%	**-19.0%**

Table S12: Estimated chlorophyll-*a* content (μg cm^{-2}) before and after heat stress in *A. cervicornis*, *O. faveolata* and *S. siderea* exposed to different nutrient treatments. Pairwise comparisons between groups were obtained using Tukey's HSD test (α = 0.05). Stars in *N and *N+P denote the group of corals that were assigned to these treatments, but that were not exposed to elevated nutrients at the time of the measurement. Percentages of change in bold represent comparison among values that were significantly different based on the Tukey's HSD test. Each coral species was evaluated separately (Tukey groups compare values inside each species, but not across species).

Coral species	Days in the experiment	Nutrient Treatment	Estimated Mean	SE	n	Tukey Group	% change respect ambient (A) (same day)	% change respect control (day 78)
A.cer	78 (Control)	A	3.58	0.4	7	2	NA	NA
		N	5.12	0.37	8	3	**43.1%**	NA
		N+P	4.97	0.40	8	3	**38.9%**	NA
	113 (Heat)	A	1.35	0.37	8	1	NA	**-62.2%**
		* N	ND	NA	0	NA	NA	NA
		* N+P	0.42	1.05	1	1-2	-68.9%	**-91.5%**
O.fav	78 (Control)	A	3.82	0.63	8	2	NA	NA
		N	5.69	0.63	8	3	**49.2%**	NA
		N+P	5.90	0.63	8	3	**54.6%**	NA
	113 (Heat)	A	2.29	0.68	6	12	NA	-40.0%
		* N	1.52	0.68	6	1	-33.5%	**-73.2%**
		* N+P	2.77	0.71	5	12	20.8%	**-53.1%**
S.sid	78 (Control)	A	4.49	0.45	14	3	NA	NA
		N	5.37	0.46	14	4	**19.77%**	NA
		N+P	5.36	0.46	13	4	**19.6%**	NA
	113 (Heat)	A	0.81	0.46	14	1	NA	**-81.9%**
		* N	1.69	0.47	14	2	**108.6%**	**-68.4%**
		* N+P	1.69	0.46	14	2	**108.2%**	**-68.5%**

Table S13: Estimated Symbiodiniaceae areal density (Symbiodiniaceae cells cm^{-2}) before and after heat stress in *A. cervicornis*, *O. faveolata* and *S. siderea* exposed to different nutrient treatments. Pairwise comparisons between groups were obtained using Tukey's HSD test ($\alpha = 0.05$). Stars in *N and *N+P denote the group of corals that were assigned to these treatments, but that were not exposed to elevated nutrients at the time of the measurement. Percentages of change in bold represent comparison among values that were significantly different based on the Tukey's HSD test. Each coral species was evaluated in a separated model (Tukey groups compare values inside each species, but not across species). ND: No data collected due coral mortality.

Coral species	Days in the experiment (Temperature)	Nutrient Treatment	Estimated Mean	SE	n	Tukey Group	% change respect ambient (A) (same day)	% change respect control (day 78)
A.cer	78 (Control)	A	4.1	0.5	7	2	NA	NA
		N	4.8	0.5	8	2	18.1%	NA
		N+P	5.3	0.5	8	2	29.7%	NA
	113 (Heat)	A	1.1	0.5	8	1	NA	**-73.9%**
		* N	ND	NA	0	NA	NA	NA
		* N+P	0.3	1.01	1	1	-73.5%	**-94.7%**
O.fav	78 (Control)	A	1.56	0.17	8	2	NA	NA
		N	1.97	0.17	8	2	26.3%	NA
		N+P	2.01	0.17	8	2	28.8%	NA
	113 (Heat)	A	0.77	0.20	6	1	NA	**-50.6%**
		* N	0.59	0.20	6	1	-23.4%	**-70.1%**
		* N+P	0.82	0.21	5	1	6.5%	**-59.2%**
S.sid	78 (Control)	A	1.20	0.09	14	2	NA	NA
		N	1.42	0.09	14	2	17.8%	NA
		N+P	1.40	0.10	13	2	16.5%	NA
	113 (Heat)	A	0.36	0.09	14	1	NA	**-70.3%**
		* N	0.54	0.09	14	1	52.5%	**-61.6%**
		* N+P	0.42	0.09	14	1	19.1%	**-69.7%**

Table S14: Estimated Chlorophyll-*a* concentration and Symbiodiniaceae areal density (Symbiodiniaceae cells cm^{-2}) before and after heat stress in *S. siderea*. Pairwise comparisons between groups were obtained using Tukey's HSD test ($\alpha = 0.05$). Percentages of change in bold represent comparison among values that were significantly different based on the Tukey's HSD test.

Days in the experiment (Temperature)	Dominant symbiont	Estimated Mean	SE	Tukey Group	% change respect control (day 78)
Chlorophyll-*a*					
78 (Control)	*Cladocopium* C3	6.78	0.66	4	NA
	Cladocopium C1	3.93	0.63	2-3	NA
	D. trenchii	4.38	0.49	3	NA
113 (Heat)	*Cladocopium* C3	1.61	0.69	1-2	**-73.3%**
	Cladocopium C1	1.04	0.62	1	**-73.6%**
	D. trenchii	1.51	0.47	1	**-65.5%**
Sybiodiniaceae areal density (cells cm^{-2})					
78 (Control)	*Cladocopium* C3	1.34	0.07	4	NA
	Cladocopium C1	1.07	0.07	3-4	NA
	D. trenchii	1.06	0.05	3	NA
113 (Heat)	*Cladocopium* C3	0.43	0.07	1-2	**-68.0%**
	Cladocopium C1	0.60	0.07	1	**-44.1%**
	D. trenchii	0.72	0.05	1	**-32.4%**