Supplement:

Table S1. Measured total alkalinity (TA) and DIC used to calculate pH (Free scale) using CO_2SYS directly compared to the measured pH from the cores using HACH multiprobe meter with pH probe. Mean absolute difference was used to estimate uncertainty in pCO_2 calculations via CO_2SYS. Data used in a manuscript currently under review.

TA (μM)	DIC(μM)	pH (calculated)	pH (measured)	absolute difference
2141.19	1932.80	8.06	8.09	0.03
2197.35	1978.28	8.08	8.08	0.00
2143.33	1933.06	8.07	8.08	0.01
2240.94	2001.74	8.11	8.09	0.02
2166.91	2006.67	7.94	7.92	0.02
2209.33	2064.23	7.90	7.85	0.05
2148.92	1967.39	7.99	7.94	0.05
2257.76	2085.57	7.96	7.92	0.04
2170.53	1982.56	8.00	7.98	0.02
2198.29	2025.73	7.96	7.91	0.05
2143.47	1952.13	8.01	7.98	0.03
2237.67	2046.81	7.99	7.95	0.04
2192.08	1967.57	8.05	8.10	0.05
2183.91	1952.66	8.06	8.09	0.03
2178.07	1954.05	8.05	8.09	0.04
2219.11	1981.98	8.07	8.09	0.02
2213.20	2043.19	7.92	7.89	0.03
2194.63	2044.33	7.87	7.86	0.01
2216.06	2028.52	7.96	7.89	0.07
2232.28	2076.57	7.88	7.86	0.02
2203.72	2006.91	7.98	7.97	0.01
2185.34	2013.86	7.92	7.91	0.01
2173.92	1964.42	8.01	8.00	0.01
2225.09	2037.00	7.95	7.95	0.00
2198.59	2096.54	7.79	7.82	0.03
2258.32	2160.21	7.78	7.82	0.04
2233.00	2141.65	7.76	7.80	0.04
2200.45	2105.66	7.77	7.80	0.03
2541.41	2435.35	7.77	7.60	0.17
2290.22	2223.37	7.67	7.60	0.07
2243.17	2180.95	7.66	7.60	0.06
2220.31	2157.39	7.67	7.61	0.06
2493.40	2356.90	7.84	7.68	0.16
2261.24	2176.89	7.72	7.68	0.04
2234.05	2138.49	7.76	7.71	0.05
2204.96	2110.97	7.75	7.73	0.02

2227.68	2113.68	7.77	7.81	0.04
2234.09	2106.89	7.81	7.82	0.01
2205.53	2085.13	7.79	7.83	0.04
2250.33	2166.16	7.69	7.64	0.05
2341.82	2215.36	7.80	7.63	0.17
2256.07	2160.85	7.72	7.62	0.10
2225.33	2141.49	7.70	7.62	0.08
2242.14	2120.23	7.81	7.72	0.09
2346.98	2172.34	7.92	7.71	0.21
2255.08	2126.14	7.82	7.71	0.11
2258.32	2091.91	7.91	7.77	0.14
4477.45	4119.12	8.06	8.12	0.06
4344.54	4009.16	8.04	8.10	0.06
4465.28	4109.47	8.05	8.10	0.05
4394.50	4048.37	8.05	8.11	0.06
4339.08	4013.06	8.02	7.97	0.05
4222.14	3934.02	7.98	7.96	0.02
4359.09	4040.09	8.01	7.96	0.05
4298.21	3979.27	8.01	7.97	0.04
4318.94	3974.06	8.04	8.01	0.03
4216.27	3898.43	8.01	7.97	0.04
4339.12	4006.14	8.02	7.99	0.03
4280.18	3943.36	8.03	8.01	0.02
4291.14	3931.18	8.02	8.12	0.10
4284.22	3928.93	8.02	8.11	0.09
4266.35	3917.71	8.01	8.08	0.07
4422.70	3958.88	8.13	8.11	0.02
4218.32	3915.94	7.97	7.97	0.00
4205.44	3913.13	7.96	7.95	0.01
4187.63	3909.22	7.94	7.93	0.01
4317.32	4000.77	7.98	7.96	0.02
4187.10	3913.14	7.92	7.99	0.07
4190.22	3876.99	7.97	7.99	0.02
4422.61	3873.70	8.21	7.96	0.25
4310.09	3948.82	8.03	8.03	0.00
			Mean	**0.05**

Table S2. Overlapping mean control rates (±SD) in current and future-pCO_2 incubations for dark and light cycles. Units for dark and light rates (μmol-C or -O_2 m^{-2} h^{-1}) and net rates (mmol-C or -O_2 m^{-2} d^{-1}). Scaled means in Table S3 applied to significantly different means (*) only.

	Dark		Light		Net	
	Current	Future	Current	Future	Current	Future
DIC	**1199.89**	**1077.53**	**-860.79**	**-612.94**	**4.07**	**5.57**
	(±149.43)	(±230.56)	(±218.92)	(±121.31)	(±2.18)	(±2.35)
DOC	**-570.91**	**-549.43**	**610.01**	**580.51**	**0.47**	**0.36**
	(±86.07)	(±7.76)	(±60.25)	(±116.67)	(±0.92)	(±1.47)
O_2	**-1018.02***	**-787.07***	**700.20***	**525.47***		
	(±38.20)	(±16.23)	(±11.66)	(±51.03)		
P/R					**0.84**	**0.83**
					(±0.01)	(±0.04)

Table S3. Scaled means (± SD) for R and NPP rates (μmol-O_2 m^{-2} h^{-1}) under current and future-pCO_2 incubations. CON* is the overlapping control present both weeks (note: current control and CON current are the same).

	Actual R		Scaled R		Actual NPP		Scaled NPP	
Offset	**Current**	**Future**	**Current**	**Future**	**Current**	**Future**	**Current**	**Future**
Δ-3°C	**-858.9**	**-645.2**	**-761.5**	**-739.9**	**674.6**	**742.5**	**590.5**	**866.0**
	(±110.68)	(±54.7)	(±98.1)	(±62.8)	(±137.8)	(±138.9)	(±120.6)	(±162.0)
control	**-1018.0**	**-871.4**	**-902.5**	**-999.2**	**700.2**	**902.9**	**612.8**	**1053.0**
	(±38.2)	(±62.2)	(±33.9)	(±71.3)	(±11.7)	(±41.2)	(±10.2)	(±48.0)
Δ+3°C	**-1124.8**	**-895.9**	**-997.2**	**-1027.3**	**-182.0**	**465.5**	**-163.5**	**542.9**
	(±54.8)	(±68.5)	(±48.6)	(±78.5)	(±265.3)	(±219.9)	(±228.1)	(±256.4)
Δ+5°C	**-1315.8**	**-1024.4**	**-1166.4**	**-1174.7**	**-445.8**	**-515.8**	**-390.1**	**-601.6**
	(±85.1)	(±62.7)	(±75.5)	(±71.9)	(±110.8)	(±149.1)	(±96.9)	(±173.8)
CON*	**-1018.0**	**-787.1**	**-902.5**	**-902.5**	**700.2**	**525.5**	**612.8**	**612.8**
	(±38.2)	(±16.3)	(±33.9)	(±18.6)	(±11.7)	(±51.0)	(±10.2)	(±59.5)