

Supplementary material

Seasonal Upwelling Conditions Modulate the Calcification Response of a Tropical Scleractinian Coral

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Figures



Figure S1. Experimental design in Chengue bay. A) incubation chambers within the pendant table-type design, B) fragment close-up showing the natural appearance of the extend polyps during incubation trials, and C) deployment of the chamber by divers.



Figure S2. Coral reef in Chengue bay where the main growth of *M. auretenra* were found.

Tables

Table S1. Raw data for each of the incubation fragments (replicates). Temperature (Temp) in celcius, salinity (Sal) in practical salinity units (PSU), chamber volume (net), fragment volume, depth (meters) and incubation time (minutes).

Date	Fragment	Temp (°C)	Sal (PSU)	Chamber vol. (ml)	Fragment vol. (cm ³)	Depth (m)	Incubation time (min)
12.02.2020	C-1	28.68	33.0	880	0	12.6	145
12.02.2020	MA-1	28.84	33.4	802	28	12.6	149
12.02.2020	MA-2	29.49	33.4	800	30	12.6	169
12.02.2020	MA-3	29.27	33.3	800	30	12.6	162
12.02.2020	MA-4	29.02	33.3	790	35	12.6	155
12.02.2020	MA-5	28.52	33.6	810	25	12.6	129
12.03.2020	MA-6	28.91	33.4	785	45	13.3	152
12.03.2020	MA-7	28.94	33.5	790	40	13.3	154
12.03.2020	MA-8	28.82	33.4	800	30	13.3	130
12.03.2020	MA-9	29.11	33.2	800	30	13.3	159
12.03.2020	C-2	28.78	33.5	870	0	13.3	122
12.03.2020	MA-10	28.68	33.5	795	40	13.3	120
02.17.2021	C-3	26.63	36.0	830	0	12	145
02.17.2021	MA-11	26.63	35.7	783	47	12	138
02.17.2021	MA-12	26.64	35.9	790	40	12	155
02.17.2021	MA-13	26.63	35.8	783	47	12	169
02.17.2021	MA-14	26.63	35.8	785	40	12	159
02.17.2021	MA-15	26.68	36.1	803	32	12	130
02.19.2021	SK-C-1	26.01	35.8	880	0	13.5	208
02.19.2021	SK-1	26.01	36.1	808	22	13.5	199
02.19.2021	SK-2	26.01	36.3	820	10	13.5	202
02.19.2021	SK-3	26.01	36.1	817	13	13.5	196
02.19.2021	SK-4	26.01	36.1	811	14	13.5	205
02.19.2021	SK-5	24.84	36.3	825	10	13.5	192
03.17.2021	MA-16	24.84	35.0	780	50	12	151
03.17.2021	MA-17	24.84	35.1	788	42	12	160
03.17.2021	C-3	24.84	35.7	875	0	12	179
03.17.2021	MA-18	24.84	35.6	790	40	12	148
03.17.2021	MA-19	24.84	35.7	790	35	12	167
03.17.2021	MA-20	24.56	36.0	795	40	12	173
03.19.2021	SK-C-1	24.56	36.3	880	0	11	222
03.19.2021	SK-2	24.56	36.3	808	22	11	228
03.19.2021	SK-3	24.56	36.3	820	10	11	225
03.19.2021	SK-4	24.55	36.3	817	13	11	222
03.19.2021	SK-5	24.56	36.3	811	14	11	221
03.19.2021	SK-6	26.12	36.3	825	10	11	215

05.14.2021	MA-21	26.12	35.9	778	52	13.5	192
05.14.2021	MA-22	26.12	35.7	781	49	13.5	140
05.14.2021	MA-23	26.12	35.9	791	39	13.5	152
05.14.2021	C-4	26.12	36.4	870	0	13.5	157
05.14.2021	MA-24	26.12	36.1	780	45	13.5	162
05.14.2021	MA-25	26.12	36.0	798	37	13.5	145

Table S2. Raw data for each of the incubation fragments (replicates). Total alkalinity (A_T - $\mu\text{mol CaCO}_3 \text{ m}^2 \text{ h}^{-1}$) initial (i) and final (f), dissolved inorganic carbon (DIC - $\mu\text{mol CaCO}_3 \text{ m}^2 \text{ h}^{-1}$) initial (i) and final (f), net calcification (G - $\mu\text{mol CaCO}_3 \text{ m}^2 \text{ h}^{-1}$) and net dissolution ($\mu\text{mol CaCO}_3 \text{ m}^2 \text{ h}^{-1}$).

Date	Fragment	A_T (i)	A_T (f)	DIC (i)	DIC (f)	Net calcification (G)	Net dissolution
12.02.2020	C-1	2369.5	2370.2	2042.05	2043.50	-----	-----
12.02.2020	MA-1	2369.5	2302.6	2042.05	1936.81	35.00	-----
12.02.2020	MA-2	2369.5	2318.3	2042.05	1948.02	25.76	-----
12.02.2020	MA-3	2369.5	2301.7	2042.05	1928.36	26.26	-----
12.02.2020	MA-4	2369.5	2266.2	2042.05	1899.11	22.23	-----
12.02.2020	MA-5	2369.5	2321.3	2042.05	1975.06	29.23	-----
12.03.2020	MA-6	2364.6	2273	2051.51	1853.77	15.44	-----
12.03.2020	MA-7	2364.6	2274.6	2051.51	1850.55	26.76	-----
12.03.2020	MA-8	2364.6	2342.7	2051.51	1968.49	23.49	-----
12.03.2020	MA-9	2364.6	2359	2051.51	1965.19	8.48	-----
12.03.2020	C-2	2364.6	2374.9	2051.51	2050.65	-----	-----
12.03.2020	MA-10	2364.6	2329	2051.51	1956.73	25.57	-----
02.17.2021	C-3	2393.8	2384.8	2069.42	2068.70	-----	-----
02.17.2021	MA-11	2393.8	2284.3	2069.42	1890.01	24.36	-----
02.17.2021	MA-12	2393.8	2292.6	2069.42	1868.26	23.54	-----
02.17.2021	MA-13	2393.8	2216.3	2069.42	1822.14	34.04	-----
02.17.2021	MA-14	2393.8	2303.7	2069.42	1909.22	24.45	-----
02.17.2021	MA-15	2393.8	2347.1	2069.42	1963.44	19.51	-----
02.19.2021	SK-C-1	2391.2	2390.3	2075.15	2080.40	-----	-----
02.19.2021	SK-1	2391.2	2373.3	2075.15	2082.97	-----	6.98
02.19.2021	SK-2	2391.2	2397	2075.15	2081.04	-----	-1.75
02.19.2021	SK-3	2391.2	2373	2075.15	2076.00	-----	7-12
02.19.2021	SK-4	2391.2	2396.3	2075.15	2083.58	-----	-2.06
02.19.2021	SK-5	2391.2	2380.4	2075.15	2080.84	-----	4.97
03.17.2021	MA-16	2425.5	2231.9	2115.74	1970.33	51.82	-----
03.17.2021	MA-17	2425.5	2254.4	2115.74	1839.07	33.11	-----
03.17.2021	C-3	2425.5	2426.1	2115.74	2115.23	-----	-----
03.17.2021	MA-18	2425.5	2181.9	2115.74	1789.35	56.83	-----
03.17.2021	MA-19	2425.5	2281.3	2115.74	1873.88	33.71	-----
03.17.2021	MA-20	2425.5	2245.1	2115.74	1887.71	33.34	-----
03.19.2021	SK-C-1	2415.7	2415.3	2143.85	2120.78	-----	-----
03.19.2021	SK-2	2415.7	2423.9	2143.85	2137.925	-----	-20.63
03.19.2021	SK-3	2415.7	2439.5	2143.85	2151.75	-----	-5.30
03.19.2021	SK-4	2415.7	2467.8	2143.85	2133.53	-----	-3.41
03.19.2021	SK-5	2415.7	2432.1	2143.85	2128.83	-----	-7.79
03.19.2021	SK-6	2415.7	2395.8	2143.85	2148.74	-----	9.19
05.14.2021	MA-21	2414.2	2223.1	2094.70	1834.73	34.80	-----
05.14.2021	MA-22	2414.2	2264.8	2094.70	1918.95	39.11	-----
05.14.2021	MA-23	2414.2	2307.4	2094.70	1965.78	36.01	-----
05.14.2021	C-4	2414.2	2419.6	2094.70	2091.79	-----	-----
05.14.2021	MA-24	2414.2	2326.4	2094.70	1877.7	21.26	-----
05.14.2021	MA-25	2414.2	2325.1	2094.70	1951.32	31.26	-----