Supplement Table 1 Mortality raw data in %. pCO_2 values (μatm) are the means of the values measured at experimental start (see results section). A_T (total alkalinity) and pH_T values given here are those measured at the end of the experiment, Temperature (T), salinity (S). For additional information see Table 1.

Mortality

T (°C)	pCO_2 (μatm)	S	A_T (μmol kg^{-1})	pH_T	Replicate	Mortality (%)
3	230	34.7	2288	8.28	1	9.1
3	230	34.7	2288	8.28	2	18.2
3	230	34.7	2288	8.28	3	10
3	230	34.7	2288	8.28	4	20
3	230	34.7	2288	8.28	5	9.1
3	230	34.7	2288	8.28	6	9.1
3	350	34.7	2287	8	1	41.7
3	350	34.7	2287	8	2	25
3	350	34.7	2287	8	3	40
3	350	34.7	2287	8	4	27.3
3	350	34.7	2287	8	5	28.6
3	350	34.7	2287	8	6	27.3
3	750	34.7	2291	7.78	1	15.4
3	750	34.7	2291	7.78	2	5.9
3	750	34.7	2291	7.78	3	36.4
3	750	34.7	2291	7.78	4	10
3	750	34.7	2291	7.78	5	13.6
3	750	34.7	2291	7.78	6	10
3	1100	34.7	2296	7.62	1	27.8
3	1100	34.7	2296	7.62	2	41.7
3	1100	34.7	2296	7.62	3	30.8
3	1100	34.7	2296	7.62	4	45.5
3	1100	34.7	2296	7.62	5	43.8
3	1100	34.7	2296	7.62	6	21.4
5.5	230	34.7	2288	8.09	1	22.2
5.5	230	34.7	2288	8.09	2	80
5.5	230	34.7	2288	8.09	3	45
5.5	230	34.7	2288	8.09	4	53.8
5.5	230	34.7	2288	8.09	5	66.7
5.5	230	34.7	2288	8.09	6	41.7
5.5	350	34.7	2295	8.03	1	52.9
5.5	350	34.7	2295	8.03	2	76.9
5.5	350	34.7	2295	8.03	3	38.5
5.5	350	34.7	2295	8.03	4	36.4
5.5	350	34.7	2295	8.03	5	73.3
5.5	350	34.7	2295	8.03	6	47.4
5.5	750	34.7	2293	7.74	1	72.7
5.5	750	34.7	2293	7.74	2	15.6
5.5	750	34.7	2293	7.74	3	53.3
5.5	750	34.7	2293	7.74	4	75
5.5	750	34.7	2293	7.74	5	85.7
5.5	750	34.7	2293	7.74	6	55
5.5	1100	34.7	2299	7.63	1	100
5.5	1100	34.7	2299	7.63	2	80
5.5	1100	34.7	2299	7.63	3	53.3

5.5	1100	34.7	2299	7.63	4	38.5
5.5	1100	34.7	2299	7.63	5	54.5
5.5	1100	34.7	2299	7.63	6	35.3
8	230	34.7	2290	8.12	1	85.7
8	230	34.7	2290	8.12	2	61.5
8	230	34.7	2290	8.12	3	64.3
8	230	34.7	2290	8.12	4	78.6
8	230	34.7	2290	8.12	5	77.8
8	230	34.7	2290	8.12	6	33.3
8	350	34.7	2293	8	1	61.5
8	350	34.7	2293	8	2	100
8	350	34.7	2293	8	3	75
8	350	34.7	2293	8	4	27.3
8	350	34.7	2293	8	5	33.3
8	350	34.7	2293	8	6	70
8	750	34.7	2302	7.73	1	66.7
8	750	34.7	2302	7.73	2	61.5
8	750	34.7	2302	7.73	3	41.7
8	750	34.7	2302	7.73	4	52.9
8	750	34.7	2302	7.73	5	75
8	750	34.7	2302	7.73	6	94.1
8	1100	34.7	2305	7.58	1	64.3
8	1100	34.7	2305	7.58	2	66.7
8	1100	34.7	2305	7.58	3	90.9
8	1100	34.7	2305	7.58	4	83.3
8	1100	34.7	2305	7.58	5	83.3
8	1100	34.7	2305	7.58	6	95.8

Supplement Table 2 Shell growth data. pCO_2 values (μatm) are the means of the values measured at experimental start (see results section). A_T (total alkalinity) and pH_T values given here are those measured at the end of the experiment, Temperature (T), salinity (S). For additional information see Table 1.

Shell growth

T (°C)	pCO_2 (μatm)	S	A_T (μmol kg^{-1})	pH_T	Replicate	Increment /diameter (μm)	diameter (μm)
3	230	34.7	2288	8.28	1	0.67	770.96
3	230	34.7	2288	8.28	2	0.54	645.74
3	230	34.7	2288	8.28	3	0.69	820.12
3	230	34.7	2288	8.28	4	0.59	812.32
3	230	34.7	2288	8.28	5	0.77	630.99
3	230	34.7	2288	8.28	6	0.84	752.42
3	350	34.7	2287	8	1	0.71	676.1
3	350	34.7	2287	8	2	0.71	732
3	350	34.7	2287	8	3	0.53	722.78
3	350	34.7	2287	8	4	0.73	644.68
3	350	34.7	2287	8	5	0.75	728.35
3	350	34.7	2287	8	6	0.7	792.44
3	750	34.7	2291	7.78	1	0.62	768.62
3	750	34.7	2291	7.78	2	0.54	789.75
3	750	34.7	2291	7.78	3	0.63	645.72
3	750	34.7	2291	7.78	4	0.8	687.18
3	750	34.7	2291	7.78	5	0.68	734.04
3	750	34.7	2291	7.78	6	0.75	777.63
3	1100	34.7	2296	7.62	1	0.8	739.6
3	1100	34.7	2296	7.62	2	0.5	799.9
3	1100	34.7	2296	7.62	3	0.5	579.22
3	1100	34.7	2296	7.62	4	0.72	529.19
3	1100	34.7	2296	7.62	5	0.73	614.66
5.5	230	34.7	2288	8.09	1	0.81	785.93
5.5	230	34.7	2288	8.09	2	0.86	789.09
5.5	230	34.7	2288	8.09	3	0.65	773.15
5.5	230	34.7	2288	8.09	4	0.79	780.76
5.5	230	34.7	2288	8.09	5	0.72	753.53
5.5	230	34.7	2288	8.09	6	0.74	764.14
5.5	350	34.7	2295	8.03	1	0.78	649.15
5.5	350	34.7	2295	8.03	2	0.84	681.45
5.5	350	34.7	2295	8.03	3	0.83	622.5
5.5	350	34.7	2295	8.03	4	0.84	746.41
5.5	350	34.7	2295	8.03	5	0.73	712.12
5.5	350	34.7	2295	8.03	6	0.63	740.78
5.5	750	34.7	2293	7.74	1	0.69	839.6
5.5	750	34.7	2293	7.74	2	0.72	764.29
5.5	750	34.7	2293	7.74	3	0.75	647.87
5.5	750	34.7	2293	7.74	4	0.73	703.36
5.5	750	34.7	2293	7.74	5	0.6	730.23
5.5	750	34.7	2293	7.74	6	0.62	781.22

5.5	1100	34.7	2299	7.63	1	0.69	688.38
5.5	1100	34.7	2299	7.63	2	0.42	666.68
5.5	1100	34.7	2299	7.63	3	0.44	738.22
5.5	1100	34.7	2299	7.63	4	0.52	688.73
5.5	1100	34.7	2299	7.63	5	0.66	720.53
8	230	34.7	2290	8.12	1	0.69	847.68
8	230	34.7	2290	8.12	2	0.74	723.88
8	230	34.7	2290	8.12	3	0.83	806.89
8	230	34.7	2290	8.12	4	0.63	742.32
8	230	34.7	2290	8.12	5	0.77	773.77
8	230	34.7	2290	8.12	6	0.73	794.47
8	350	34.7	2293	8	1	0.57	782.02
8	350	34.7	2293	8	2	0.7	805.54
8	350	34.7	2293	8	3	0.85	704.69
8	350	34.7	2293	8	4	0.87	804.38
8	350	34.7	2293	8	5	0.71	830.84
8	350	34.7	2293	8	6	0.77	606.37
8	750	34.7	2302	7.73	1	0.67	793.31
8	750	34.7	2302	7.73	2	0.72	737.34
8	750	34.7	2302	7.73	3	0.64	795.42
8	750	34.7	2302	7.73	4	0.66	722
8	750	34.7	2302	7.73	5	0.54	766.77
8	750	34.7	2302	7.73	6	0.7	669.38
8	1100	34.7	2305	7.58	1	0.73	660.36
8	1100	34.7	2305	7.58	2	0.66	752.96
8	1100	34.7	2305	7.58	3	0.75	691.11
8	1100	34.7	2305	7.58	4	0.66	668.06
8	1100	34.7	2305	7.58	5	0.78	713.52

Supplement Table 3 Shell degradation raw scores (means per replicate). pCO_2 values (μatm) are the means of the values measured at experimental start (see results section). A_T (total alkalinity) and pH_T values given here are those measured at the end of the experiment, Temperature (T), salinity (S). For additional information see Table 1.

Shell degradation

						Category				
T (°C)	pCO_2 (μatm)	S	A_T (μmol kg^{-1})	pH_T	Replicate	Milky	Brownish	Scars	Corrosion	Perforations
3	230	34.7	2288	8.28	1	1.33	0.44	1.44	0.44	0
3	230	34.7	2288	8.28	2	1	0.33	1.63	1	0
3	230	34.7	2288	8.28	3	0.5	0.03	0.88	0	0
3	230	34.7	2288	8.28	4	1	0.1	0.6	0	0
3	230	34.7	2288	8.28	5	0.56	0	1.56	0.67	0
3	230	34.7	2288	8.28	6	0.91	0	1.27	0	0
3	350	34.7	2287	8	1	0.88	0.38	1.75	1	0
3	350	34.7	2287	8	2	1	0.33	1.33	1	0
3	350	34.7	2287	8	3	0.56	0	1.22	0.89	0
3	350	34.7	2287	8	4	0.86	0	1.14	0.86	0
3	350	34.7	2287	8	5	0.89	0	1.56	1	0
3	350	34.7	2287	8	6	0.83	0.17	1.67	1	0
3	750	34.7	2291	7.78	1	1	1	2	0.25	0
3	750	34.7	2291	7.78	2	1.92	1.33	2	1.75	0.33
3	750	34.7	2291	7.78	3	2	1.6	1.6	1.6	0
3	750	34.7	2291	7.78	4	2	1.33	1.67	1.83	0.17
3	750	34.7	2291	7.78	5	1.88	1.75	1.88	1.63	0
3	750	34.7	2291	7.78	6	1.7	0.7	1.9	1.8	0
3	1100	34.7	2296	7.62	1	2.25	2.13	2.25	2.38	1.13
3	1100	34.7	2296	7.62	2	2	1.4	2	2.6	1.4
3	1100	34.7	2296	7.62	3	2.5	2.25	2	2.75	1
3	1100	34.7	2296	7.62	4	2.25	2.75	2.5	2.75	0.75
3	1100	34.7	2296	7.62	5	2.5	2.5	2	2.5	0.5
3	1100	34.7	2296	7.62	6	2.13	2.13	2.13	2.25	0.75
5.5	230	34.7	2288	8.09	1	1	0.5	1.33	0.5	0
5.5	230	34.7	2288	8.09	2	1	0	0.67	0	0
5.5	230	34.7	2288	8.09	3	1	0	1.25	0.5	0
5.5	230	34.7	2288	8.09	4	1	1	0.4	0	0
5.5	230	34.7	2288	8.09	5	1	0	1.25	0	0
5.5	230	34.7	2288	8.09	6	1	0.4	0.6	0	0
5.5	350	34.7	2295	8.03	1	1	0.25	2	1	0
5.5	350	34.7	2295	8.03	2	1	0	1.5	1	0
5.5	350	34.7	2295	8.03	3	1	0	1	1	0
5.5	350	34.7	2295	8.03	4	1	0	1	0.22	0
5.5	350	34.7	2295	8.03	5	1	0	1.29	0.71	0
5.5	350	34.7	2295	8.03	6	1	0.14	1.86	0.86	0
5.5	750	34.7	2293	7.74	1	1.8	1.2	2.2	2	0
5.5	750	34.7	2293	7.74	2	1.2	0.6	1.6	1.4	0
5.5	750	34.7	2293	7.74	3	1	0	2	2	0
5.5	750	34.7	2293	7.74	4	1	0	2	1.5	0.5
5.5	750	34.7	2293	7.74	5	2	1	2	2	0
5.5	750	34.7	2293	7.74	6	2.25	1.75	2	2	0

5.5	1100	34.7	2299	7.63	1	2.67	2.67	2.33	3	0.67
5.5	1100	34.7	2299	7.63	2	2.67	2	2	2.33	0.33
5.5	1100	34.7	2299	7.63	3	3.2	3.8	3	3	0.2
5.5	1100	34.7	2299	7.63	4	2	2	2.5	2.5	0
5.5	1100	34.7	2299	7.63	5	2.33	2.33	2.33	2.33	0
5.5	1100	34.7	2299	7.63	6	3	2.67	2.33	3	0
8	230	34.7	2290	8.12	1	1	0	1	0.5	0
8	230	34.7	2290	8.12	2	1	0	0.6	0	0
8	230	34.7	2290	8.12	3	1	0	1	0.33	0
8	230	34.7	2290	8.12	4	1	0	1	0	0
8	230	34.7	2290	8.12	5	1	0.25	0.75	0.25	0
8	350	34.7	2293	8	1	1	0	1.33	1	0
8	350	34.7	2293	8	2	1	0	0	0	0
8	350	34.7	2293	8	3	1	0	0.71	0	0
8	350	34.7	2293	8	4	1	0.14	1	0.29	0
8	350	34.7	2293	8	5	0.83	0	0.5	0	0
8	350	34.7	2293	8	6	1.5	1	1	0	0
8	750	34.7	2302	7.73	1	1.25	0.25	2	1.25	0
8	750	34.7	2302	7.73	2	1.4	0.4	2	2	0
8	750	34.7	2302	7.73	3	2	1.67	2	1.67	0
8	750	34.7	2302	7.73	4	1.71	1.5	2	2.07	0
8	750	34.7	2302	7.73	5	2.25	1.75	1.75	2.25	0
8	750	34.7	2302	7.73	6	1.4	0	1.8	1.6	0
8	1100	34.7	2305	7.58	1	3	2	2	3	1
8	1100	34.7	2305	7.58	2	2	3	2	3	0
8	1100	34.7	2305	7.58	3	3	2.5	2.75	3	0
8	1100	34.7	2305	7.58	4	3.5	3.5	2.5	3.5	0
8	1100	34.7	2305	7.58	5	2	1	2	2	0
8	1100	34.7	2305	7.58	6	1.75	1.75	2	2.25	0