

Supporting Information

1. Variation in % overcalcified of detached coccoliths

Free coccoliths of *E. huxleyi* were counted in each sample. The free coccoliths were always more numerous than the coccospheres, which allowed for larger sample sizes (> 300 liths categorised) and therefore greater confidence in the percentage contribution of each morphotype to the total population. The trend identified (Supplementary Figure S1) is the same as found for the intact coccospheres (Figure 2, main text).

2. Statistics

In order to test for statistical significance of the summer-winter morphotype differences, summer and winter months were compared. For each month the data consisted of the % overcalcified values for all stations within the Bay of Biscay (44-46°N) where at least 5 cells were viewed. The three months December, February and March were chosen as representative of winter, the three months May, June and July as representative of summer:

December = {100, 82, 100, 88, 91, 91, 78}

February = {100, 96, 96, 97, 98, 98, 92}

March = {71, 74, 86, 88, 75, 94, 97}

May = {20, 5, 0, 31, 0, 0, 0}

June = {9, 0, 0, 0, 0, 0}

July = {0, 0, 0, 0, 0}

A one-tailed Student's t-test was used to test the null hypothesis that there was a similar or greater proportion of overcalcified morphotypes in the summer than in the winter. Each of the summer months was separately compared to each of the three winter months, leading to 3x3=9 tests in total. In each case the t-test clearly shows the null hypothesis to be falsified. There is a significantly greater proportion of overcalcified cells in each winter month than in each summer month ($p \ll 0.001$).

Supporting Tables S1 – S25

Table S1 – September 2008

DATE				LOCATION		COCCOLITHOPHORES						
year	month	day	time	Lat	lon	number counted	volume counted	concentration mean	standard error	95% confidence interval		% overcalcified
			(UTC)	(°N)	(°E)					lower	upper	
						(cells)	(mLitres)	(cells mL ⁻¹)	(cells mL ⁻¹)	(cells mL ⁻¹)	(cells mL ⁻¹)	(%)
2008	Sep	18	12:11	43.475	-3.128	8	0.929	8.6	3.0	2.5	14.7	0
2008	Sep	18	12:59	43.728	-3.214	1	1.115	0.9	0.9	0.0	2.7	
2008	Sep	18	14:02	44.040	-3.408	7	9.690	0.7	0.3	0.2	1.3	43
2008	Sep	18	15:02	44.351	-3.552	4	9.140	0.4	0.2	0.0	0.9	0
2008	Sep	18	16:03	44.663	-3.700	5	13.410	0.4	0.2	0.0	0.7	20
2008	Sep	18	17:01	44.963	-3.841	5	13.410	0.4	0.2	0.0	0.7	40
2008	Sep	18	18:00	45.263	-3.987	17	10.970	1.5	0.4	0.8	2.3	12
2008	Sep	18	19:02	45.579	-4.143	18	9.140	2.0	0.5	1.0	2.9	22
2008	Sep	18	20:03	45.900	-4.297	6	1.858	3.2	1.3	0.6	5.9	0
2008	Sep	18	21:03	46.209	-4.445	2	1.858	1.1	0.8	0.0	2.6	
2008	Sep	18	22:02	46.505	-4.592	39	1.858	21.0	3.4	14.3	27.7	0
2008	Sep	18	23:04	46.826	-4.766	24	1.858	12.9	2.6	7.6	18.2	0
2008	Sep	18	23:59	47.112	-4.902	13	0.752	17.3	4.8	7.7	26.9	0
2008	Sep	19	1:01	47.446	-5.061	20	1.579	12.7	2.8	7.0	18.3	0
2008	Sep	19	2:01	47.771	-5.211	31	1.951	15.9	2.9	10.2	21.6	0
2008	Sep	19	3:00	48.101	-5.373	51	1.858	27.5	3.8	19.8	35.1	0
2008	Sep	19	4:05	48.478	-5.414	65	1.858	35.0	4.3	26.3	43.7	0
2008	Sep	19	4:59	48.722	-5.092	50	1.858	26.9	3.8	19.3	34.5	0
2008	Sep	19	6:02	48.941	-4.609	26	1.579	16.5	3.2	10.0	22.9	0
2008	Sep	19	7:02	49.165	-4.176	28	1.858	15.1	2.8	9.4	20.8	7
2008	Sep	19	8:02	49.389	-3.747	15	1.393	10.8	2.8	5.2	16.3	0
2008	Sep	19	9:03	49.619	-3.305	19	1.579	12.0	2.8	6.5	17.6	26
2008	Sep	19	10:02	49.810	-2.857	48	1.951	24.6	3.6	17.5	31.7	0
2008	Sep	19	11:06	49.982	-2.319	48	1.393	34.4	5.0	24.5	44.4	46
2008	Sep	19	12:06	50.228	-1.919	33	1.393	23.7	4.1	15.4	31.9	64
2008	Sep	19	13:07	50.399	-1.438	31	1.208	25.7	4.6	16.4	34.9	45

Table S2 – October 2008

DATE				LOCATION		COCCOLITHOPHORES						
year	month	day	time	lat	lon	number	volume	concentration	standard	95% confidence interval		% overcalcified
			(UTC)	(°N)	(°E)	counted	counted	mean	error	lower	upper	
						(cells)	(mLitres)	(cells mL ⁻¹)	(cells mL ⁻¹)	(cells mL ⁻¹)	(cells mL ⁻¹)	(%)
2008	Oct	17	11:18	43.480	-3.123	9	1.622	5.55	1.8	1.8	9.2	11
2008	Oct	17	12:19	43.795	-3.250	1	1.920	0.52	0.5	0.0	1.6	
2008	Oct	17	14:21	44.416	-3.563	3	9.970	0.30	0.2	0.0	0.6	
2008	Oct	17	15:15	44.686	-3.704	3	11.856	0.25	0.1	0.0	0.5	
2008	Oct	17	16:19	45.005	-3.879	2	11.856	0.17	0.1	0.0	0.4	
2008	Oct	17	17:16	45.289	-4.033	17	17.710	0.96	0.2	0.5	1.4	12
2008	Oct	17	18:18	45.610	-4.206	11	17.448	0.63	0.2	0.3	1.0	27
2008	Oct	17	19:17	45.912	-4.375	8	18.693	0.43	0.2	0.1	0.7	25
2008	Oct	17	20:18	46.217	-4.542	1	3.201	0.31	0.3	0.0	0.9	
2008	Oct	17	21:18	46.521	-4.684	4	4.268	0.94	0.5	0.0	1.9	0
2008	Oct	17	22:15	46.818	-4.817	5	2.987	1.67	0.7	0.2	3.2	0
2008	Oct	17	23:15	47.128	-4.944	2	2.134	0.94	0.7	0.0	2.3	
2008	Oct	18	0:23	47.481	-5.085	6	2.080	2.88	1.2	0.5	5.2	0
2008	Oct	18	1:21	47.782	-5.242	74	2.134	34.68	4.0	26.6	42.7	7
2008	Oct	18	2:19	48.109	-5.358	20	1.115	17.94	4.0	9.9	26.0	10
2008	Oct	18	3:22	48.473	-5.401	61	2.561	23.82	3.1	17.7	29.9	5
2008	Oct	18	4:18	48.727	-5.084	20	0.929	21.53	4.8	11.9	31.2	0
2008	Oct	18	5:19	48.953	-4.634	10	0.929	10.76	3.4	4.0	17.6	0
2008	Oct	18	6:18	49.180	-4.204	27	2.774	9.73	1.9	6.0	13.5	11
2008	Oct	18	7:18	49.395	-3.789	3	1.301	2.31	1.3	0.0	5.0	
2008	Oct	18	8:16	49.598	-3.404	9	1.393	6.46	2.2	2.2	10.8	0
2008	Oct	18	9:16	49.800	-2.990	20	2.774	7.21	1.6	4.0	10.4	10
2008	Oct	18	10:15	49.926	-2.513	2	1.115	1.79	1.3	0.0	4.3	
2008	Oct	18	11:27	50.121	-1.943	2	2.561	0.78	0.6	0.0	1.9	
2008	Oct	18	12:22	50.297	-1.555	2	0.929	2.15	1.5	0.0	5.2	

Table S3 – November 2008

DATE				LOCATION		COCCOLITHOPHORES						
year	month	day	time	lat	lon	number	volume	concentration	standard	95% confidence interval		% overcalcified
			(UTC)	(°N)	(°E)	counted	counted	mean	error	lower	upper	
						(cells)	(mLitres)	(cells mL ⁻¹)	(cells mL ⁻¹)	(cells mL ⁻¹)	(cells mL ⁻¹)	(%)
2008	Nov	14	13:24	43.859	-3.298	2	1.115	1.8	1.3	0.0	4.3	
2008	Nov	14	14:17	44.130	-3.427	6	5.760	1.0	0.4	0.2	1.9	50
2008	Nov	14	15:19	44.446	-3.590	7	9.600	0.7	0.3	0.2	1.3	29
2008	Nov	14	16:19	44.746	-3.741	5	11.520	0.4	0.2	0.0	0.8	20
2008	Nov	14	17:17	45.035	-3.889	3	11.520	0.3	0.2	0.0	0.6	
2008	Nov	14	18:16	45.333	-4.049	3	11.520	0.3	0.2	0.0	0.6	
2008	Nov	14	19:17	45.636	-4.218	1	11.520	0.1	0.1	0.0	0.3	
2008	Nov	14	20:20	45.960	-4.383	5	13.450	0.4	0.2	0.0	0.7	100
2008	Nov	14	21:17	46.251	-4.518	3	2.787	1.1	0.6	0.0	2.3	
2008	Nov	14	22:18	46.569	-4.664	3	2.601	1.2	0.7	0.0	2.5	
2008	Nov	14	23:20	46.901	-4.819	6	2.787	2.2	0.9	0.4	3.9	0
2008	Nov	15	0:20	47.219	-4.963	8	2.415	3.3	1.2	1.0	5.7	75
2008	Nov	15	1:16	47.520	-5.104	5	2.415	2.1	0.9	0.2	3.9	40
2008	Nov	15	2:18	47.858	-5.268	15	2.415	6.2	1.6	3.0	9.4	80
2008	Nov	15	3:22	48.216	-5.426	7	2.601	2.7	1.0	0.7	4.7	0
2008	Nov	15	4:15	48.528	-5.375	6	2.601	2.3	0.9	0.4	4.2	0
2008	Nov	15	5:16	48.788	-4.959	12	2.322	5.2	1.5	2.2	8.2	25
2008	Nov	15	6:18	49.010	-4.502	11	2.601	4.2	1.3	1.7	6.8	36
2008	Nov	15	7:18	49.228	-4.074	13	2.601	5.0	1.4	2.2	7.8	61
2008	Nov	15	8:19	49.449	-3.647	0	2.601	0.0	0.0	0.0	0.0	
2008	Nov	15	9:18	49.655	-3.233	10	2.415	4.1	1.3	1.5	6.8	50
2008	Nov	15	10:18	49.851	-2.781	13	2.601	5.0	1.4	2.2	7.8	31
2008	Nov	15	11:17	49.979	-2.288	14	2.229	6.3	1.7	2.9	9.6	0
2008	Nov	15	12:21	50.196	-1.920	0	2.044	0.0	0.0	0.0	0.0	
2008	Nov	15	13:21	50.356	-1.537	11	2.973	3.7	1.1	1.5	5.9	45

Table S4 – December 2008

DATE				LOCATION		COCCOLITHOPHORES						
year	month	day	time	lat	lon	number	volume	concentration	standard	95% confidence interval		% overcalcified
			(UTC)	(°N)	(°E)	counted	counted	mean	error	lower	upper	
						(cells)	(mLitres)	(cells mL ⁻¹)	(cells mL ⁻¹)	(cells mL ⁻¹)	(cells mL ⁻¹)	(%)
2008	Dec	19	12:43	43.401	-3.089	1	0.464	2.2	2.2	0.0	6.5	
2008	Dec	19	13:33	43.637	-3.187	2	1.858	1.1	0.8	0.0	2.6	
2008	Dec	19	14:28	43.901	-3.323	5	1.384	3.6	1.6	0.4	6.8	100
2008	Dec	19	15:05	44.075	-3.414	21	1.858	11.3	2.5	6.4	16.2	100
2008	Dec	19	16:04	44.355	-3.557	22	17.117	1.3	0.3	0.7	1.8	82
2008	Dec	19	17:04	44.648	-3.692	19	1.858	10.2	2.3	5.5	14.9	100
2008	Dec	19	18:04	44.930	-3.823	16	7.020	2.3	0.6	1.1	3.4	87
2008	Dec	19	18:58	45.191	-3.943	32	1.858	17.2	3.0	11.1	23.3	91
2008	Dec	19	20:01	45.502	-4.083	11	3.716	3.0	0.9	1.2	4.7	91
2008	Dec	19	21:03	45.799	-4.214	9	1.858	4.8	1.6	1.6	8.1	78
2008	Dec	19	22:02	46.083	-4.352	2	1.858	1.1	0.8	0.0	2.6	
2008	Dec	19	23:04	46.378	-4.492	8	1.858	4.3	1.5	1.3	7.4	50
2008	Dec	20	0:04	46.660	-4.638	12	3.716	3.2	0.9	1.4	5.1	92
2008	Dec	20	1:05	46.947	-4.794	5	1.858	2.7	1.2	0.3	5.1	60
2008	Dec	20	2:03	47.224	-4.934	2	1.858	1.1	0.8	0.0	2.6	
2008	Dec	20	2:59	47.495	-5.062	1	1.858	0.5	0.5	0.0	1.6	
2008	Dec	20	4:03	47.810	-5.205	4	1.858	2.2	1.1	0.0	4.3	100
2008	Dec	20	6:01	48.392	-5.456	3	1.858	1.6	0.9	0.0	3.5	
2008	Dec	20	7:01	48.671	-5.209	2	1.858	1.1	0.8	0.0	2.6	
2008	Dec	20	8:04	48.892	-4.779	2	1.858	1.1	0.8	0.0	2.6	
2008	Dec	20	9:00	49.085	-4.383	9	1.858	4.8	1.6	1.6	8.1	67
2008	Dec	20	10:02	49.288	-3.940	6	1.858	3.2	1.3	0.6	5.9	67
2008	Dec	20	11:00	49.492	-3.539	2	1.858	1.1	0.8	0.0	2.6	
2008	Dec	20	12:01	49.687	-3.087	1	1.858	0.5	0.5	0.0	1.6	
2008	Dec	20	13:01	49.881	-2.629	2	1.858	1.1	0.8	0.0	2.6	
2008	Dec	20	13:59	50.042	-2.134	0	1.858	0.0	0.0	0.0	0.0	
2008	Dec	20	15:05	50.307	-1.698	1	1.858	0.5	0.5	0.0	1.6	

Table S5 – February 2009

DATE				LOCATION		COCCOLITHOPHORES						
year	month	day	time	lat	lon	number counted	volume counted	concentration mean	standard error	95% confidence interval		% overcalcified
			(UTC)	(°N)	(°E)	(cells)	(mLitres)	(cells mL ⁻¹)	(cells mL ⁻¹)	(cells mL ⁻¹)	(cells mL ⁻¹)	(%)
2009	Feb	19	11:03	48.455	-5.433	6	1.115	2.2	1.0	9.8	5.4	100
2009	Feb	19	11:28	48.355	-5.469	0	0.929	0.0	0.0	0.0	0.0	
2009	Feb	19	12:00	48.225	-5.442	5	0.929	5.4	2.4	0.6	10.2	100
2009	Feb	19	12:29	48.112	-5.379	4	0.929	4.3	2.2	0.0	8.6	100
2009	Feb	19	13:00	47.993	-5.318	30	0.836	35.9	6.6	22.8	49.0	93
2009	Feb	19	13:33	47.862	-5.255	19	0.929	20.5	4.7	11.1	29.8	95
2009	Feb	19	14:01	47.752	-5.204	7	0.464	15.1	5.7	3.7	26.5	86
2009	Feb	19	14:33	47.629	-5.139	10	0.929	10.8	3.4	4.0	17.6	100
2009	Feb	19	15:12	47.476	-5.063	3	1.301	2.3	1.3	0.0	5.0	
2009	Feb	20	12:11	43.461	-3.107	6	0.650	9.2	3.8	1.7	16.8	83
2009	Feb	20	13:12	43.784	-3.254	27	0.929	29.1	5.6	17.9	40.3	93
2009	Feb	20	14:08	44.078	-3.396	19	0.929	20.5	4.7	11.1	29.8	100
2009	Feb	20	15:04	44.366	-3.541	24	0.929	25.8	5.3	15.3	36.4	96
2009	Feb	20	16:01	44.657	-3.690	51	1.858	27.5	3.8	19.8	35.1	96
2009	Feb	20	17:00	44.961	-3.831	35	1.858	18.8	3.2	12.5	25.2	97
2009	Feb	20	17:59	45.259	-3.979	45	1.858	24.2	3.6	17.0	31.4	98
2009	Feb	20	18:57	45.548	-4.127	42	1.858	22.6	3.5	15.6	29.6	98
2009	Feb	20	20:05	45.896	-4.287	38	1.858	20.5	3.3	13.8	27.1	92
2009	Feb	20	21:02	46.194	-4.438	11	1.858	5.9	1.8	2.4	9.5	100
2009	Feb	20	22:02	46.500	-4.590	32	1.858	17.2	3.0	11.1	23.3	91
2009	Feb	20	23:03	46.811	-4.735	29	1.858	15.6	2.9	9.8	21.4	97
2009	Feb	21	0:06	47.144	-4.863	29	1.858	15.6	2.9	9.8	21.4	86
2009	Feb	21	1:09	47.455	-5.048	7	0.929	7.5	2.8	1.8	13.2	100
2009	Feb	21	1:32	47.573	-5.110	3	0.929	3.2	1.9	0.0	7.0	
2009	Feb	21	2:01	47.725	-5.190	4	0.929	4.3	2.2	0.0	8.6	75
2009	Feb	21	2:34	47.892	-5.279	19	0.929	20.5	4.7	11.1	29.8	84
2009	Feb	21	3:04	48.044	-5.351	15	0.929	16.1	4.2	7.8	24.5	73
2009	Feb	21	3:33	48.197	-5.422	16	0.650	24.6	6.2	12.3	36.9	87
2009	Feb	21	4:05	48.369	-5.428	5	1.301	3.8	1.7	0.4	7.3	100
2009	Feb	21	5:02	48.635	-5.244	3	1.301	2.3	1.3	0.0	5.0	
2009	Feb	21	6:02	48.839	-4.872	6	1.486	4.0	1.6	0.7	7.3	83
2009	Feb	21	6:59	49.036	-4.522	9	1.672	5.4	1.8	1.8	9.0	100
2009	Feb	21	8:04	49.256	-4.100	1	1.672	0.6	0.6	0.0	1.8	
2009	Feb	21	9:02	49.432	-3.713	1	1.858	0.5	0.5	0.0	1.6	

2009	Feb	21	10:01	49.637	-3.338	3	1.858	1.6	0.9	0.0	3.5	
2009	Feb	21	11:02	49.803	-2.912	2	1.672	1.2	0.8	0.0	2.9	
2009	Feb	21	12:07	49.932	-2.427	2	1.672	1.2	0.8	0.0	2.9	
2009	Feb	21	13:05	50.098	-2.042	2	1.672	1.2	0.8	0.0	2.9	

Table S6 – March 2009

DATE				LOCATION		COCCOLITHOPHORES						
year	month	day	time	lat	lon	number counted	volume counted	concentration mean	standard error	95% confidence interval		% overcalcified
			(UTC)	(°N)	(°E)	(cells)	(mLitres)	(cells mL ⁻¹)	(cells mL ⁻¹)	(cells mL ⁻¹)	(cells mL ⁻¹)	(%)
2009	Mar	23	11:12	48.403	-5.416	9	0.913	9.9	3.3	3.3	16.4	67
2009	Mar	23	13:08	43.679	-3.140	383	0.925	414.0	21.2	371.7	456.4	58
2009	Mar	23	14:05	43.980	-3.290	110	0.900	122.2	11.7	98.9	145.5	53
2009	Mar	23	15:03	44.292	-3.448	307	0.244	1260.0	71.9	1116.2	1403.8	71
2009	Mar	23	15:03	44.292	-3.448	315	0.256	1230.3	69.3	1091.7	1368.9	74
2009	Mar	23	16:00	44.595	-3.607	326	0.660	494.0	27.4	439.3	548.7	86
2009	Mar	23	17:02	44.905	-3.772	305	0.798	382.3	21.9	338.5	426.1	88
2009	Mar	23	18:01	45.207	-3.929	312	1.350	231.0	13.1	204.9	257.2	75
2009	Mar	23	19:02	45.522	-4.083	311	1.015	306.5	17.4	271.7	341.3	94
2009	Mar	23	20:15	45.893	-4.265	167	1.208	138.3	10.7	116.9	159.7	97
2009	Mar	23	21:12	46.186	-4.416	164	1.278	128.4	10.0	108.3	148.4	96
2009	Mar	23	22:08	46.473	-4.555	107	1.192	89.8	8.7	72.4	107.1	98
2009	Mar	23	23:08	46.774	-4.693	209	1.203	173.8	12.0	149.8	197.8	95
2009	Mar	24	0:05	47.052	-4.851	109	0.991	110.0	10.5	88.9	131.0	93
2009	Mar	24	1:05	47.358	-4.973	88	0.925	95.1	10.1	74.8	115.4	94
2009	Mar	24	2:06	47.653	-5.154	16	0.921	17.4	4.3	8.7	26.1	19
2009	Mar	24	3:06	47.938	-5.306	8	0.917	8.7	3.1	2.6	14.9	62
2009	Mar	24	4:02	48.213	-5.385	25	1.110	22.5	4.5	13.5	31.5	60
2009	Mar	24	5:03	48.515	-5.415	56	1.070	52.3	7.0	38.3	66.3	43
2009	Mar	24	6:01	48.721	-5.089	20	1.375	14.5	3.3	8.0	21.0	95
2009	Mar	24	7:00	48.913	-4.730	10	1.381	7.2	2.3	2.7	11.8	50
2009	Mar	24	8:08	49.113	-4.346	4	1.388	2.9	1.4	0.0	5.8	100
2009	Mar	24	9:02	49.280	-4.031	1	1.301	0.8	0.8	0.0	2.3	
2009	Mar	24	10:02	49.461	-3.664	9	1.301	6.9	2.3	2.3	11.5	89
2009	Mar	24	11:03	49.637	-3.277	1	1.295	0.8	0.8	0.0	2.3	
2009	Mar	24	12:05	49.822	-2.871	18	1.375	13.1	3.1	6.9	19.3	44
2009	Mar	24	13:08	49.933	-2.428	5	1.369	3.7	1.6	0.4	6.9	100
2009	Mar	24	14:04	50.083	-2.064	2	1.203	1.7	1.2	0.0	4.0	
2009	Mar	24	15:01	50.274	-1.720	4	1.008	4.0	2.0	0.0	7.9	0
2009	Mar	24	16:04	50.456	-1.286	0	0.913	0.0	0.0	0.0	0.0	

Table S7 – April 2009

DATE				LOCATION		COCCOLITHOPHORES						
year	month	day	time	lat	lon	number	volume	concentration	standard	95% confidence interval		% overcalcified
			(UTC)	(°N)	(°E)	counted	counted	mean	error	lower	upper	
						(cells)	(mLitres)	(cells mL ⁻¹)	(cells mL ⁻¹)	(cells mL ⁻¹)	(cells mL ⁻¹)	(%)
2009	Apr	19	9:36	48.311	-5.407	35	0.733	47.7	8.1	31.6	63.9	0
2009	Apr	20	13:00	43.973	-3.345	250	0.925	270.3	17.1	236.1	304.4	4
2009	Apr	20	14:03	44.292	-3.507	303	0.925	327.6	18.8	289.9	365.2	4
2009	Apr	20	15:10	44.640	-3.688	71	0.917	77.4	9.2	59.1	95.8	21
2009	Apr	20	16:06	44.941	-3.836	179	0.740	241.9	18.1	205.7	278.0	1
2009	Apr	20	17:05	45.255	-3.996	281	0.740	379.7	22.7	334.4	425.0	11
2009	Apr	20	18:07	45.578	-4.168	143	0.925	154.6	12.9	128.7	180.4	71
2009	Apr	20	19:01	45.862	-4.310	277	0.833	332.7	20.0	292.7	372.7	35
2009	Apr	20	20:33	46.353	-4.536	178	0.553	322.1	24.1	273.9	370.4	63
2009	Apr	20	21:12	46.556	-4.626	73	0.368	198.2	23.2	151.8	244.6	67
2009	Apr	20	22:08	46.852	-4.753	50	0.740	67.6	9.6	48.5	86.7	44
2009	Apr	20	23:03	47.147	-4.884	19	0.913	20.8	4.8	11.3	30.4	0
2009	Apr	21	0:01	47.449	-5.033	124	0.925	134.0	12.0	110.0	158.1	2
2009	Apr	21	2:03	48.081	-5.351	59	0.724	81.5	10.6	60.3	102.8	36
2009	Apr	21	3:09	48.441	-5.419	23	0.836	27.5	5.7	16.0	39.0	56
2009	Apr	21	4:03	48.683	-5.179	58	0.700	82.8	10.9	61.1	104.6	84
2009	Apr	21	5:07	48.909	-4.777	11	0.724	15.2	4.6	6.0	24.4	82
2009	Apr	21	6:06	49.107	-4.397	3	0.727	4.1	2.4	0.0	8.9	
2009	Apr	21	10:04	49.786	-2.895	0	0.909	0.0	0.0	0.0	0.0	
2009	Apr	21	11:04	49.908	-2.501	18	0.929	19.4	4.6	10.2	28.5	50
2009	Apr	21	12:01	50.013	-2.117	2	0.921	2.2	1.5	0.0	5.2	
2009	Apr	21	13:00	50.195	-1.736	3	1.105	2.7	1.6	0.0	5.8	
2009	Apr	21	14:03	50.410	-1.326	0	1.095	0.0	0.0	0.0	0.0	

Table S8 – May 2009

DATE				LOCATION		COCCOLITHOPHORES						
year	month	day	time	lat	lon	number	volume	concentration	standard	95% confidence interval		% overcalcified
			(UTC)	(°N)	(°E)	counted	counted	mean	error	lower	upper	
						(cells)	(mLitres)	(cells mL ⁻¹)	(cells mL ⁻¹)	(cells mL ⁻¹)	(cells mL ⁻¹)	(%)
2009	May	15	11:36	43.527	-3.140	11	0.929	11.8	3.6	4.7	19.0	9
2009	May	15	12:33	43.803	-3.256	10	0.929	10.8	3.4	4.0	17.6	0
2009	May	15	13:33	44.053	-3.369	10	0.929	10.8	3.4	4.0	17.6	20
2009	May	15	14:40	44.364	-3.521	20	0.929	21.5	4.8	11.9	31.2	5
2009	May	15	15:34	44.689	-3.654	10	1.665	6.0	1.9	2.2	9.8	0
2009	May	15	16:32	44.916	-3.781	39	5.970	6.5	1.0	4.4	8.6	31
2009	May	15	17:31	45.202	-3.928	5	0.372	13.5	6.0	1.4	25.5	0
2009	May	15	18:33	45.499	-4.063	14	5.610	2.5	0.7	1.2	3.8	0
2009	May	15	19:29	45.789	-4.201	36	1.184	30.4	5.1	20.3	40.5	0
2009	May	15	20:29	46.081	-4.336	36	0.276	130.3	21.7	86.9	173.7	23
2009	May	15	21:29	46.385	-4.554	115	0.929	123.8	11.5	100.7	146.8	1
2009	May	15	22:35	46.707	-4.627	212	0.929	228.2	15.7	196.8	259.5	4
2009	May	15	23:38	46.990	-4.761	36	0.929	38.7	6.5	25.8	51.7	6
2009	May	16	0:35	47.269	-4.928	22	0.929	23.7	5.0	13.6	33.8	0
2009	May	16	1:33	47.553	-5.104	65	0.929	70.0	8.7	52.6	87.3	0
2009	May	16	2:29	47.830	-5.250	128	0.929	137.8	12.2	113.4	162.1	14
2009	May	16	3:33	48.162	-5.375	165	1.110	148.6	11.6	125.5	171.8	13
2009	May	16	4:31	48.474	-5.411	111	0.921	120.5	11.4	97.7	143.4	32
2009	May	16	5:34	48.735	-5.071	92	1.842	50.0	5.2	39.5	60.4	61
2009	May	16	5:34	48.735	-5.071	123	1.858	66.2	6.0	54.3	78.1	36
2009	May	16	5:34	48.735	-5.071	92	1.842	50.0	5.2	39.5	60.4	30
2009	May	16	5:34	48.735	-5.071	97	1.842	52.7	5.3	42.0	63.4	23
2009	May	16	6:31	48.936	-4.679	50	1.658	30.2	4.3	21.6	38.7	60
2009	May	16	7:30	49.149	-4.256	21	1.302	16.1	3.5	9.1	23.2	76
2009	May	16	8:00	49.347	-3.856	32	1.665	19.2	3.4	12.4	26.0	44
2009	May	16	9:31	49.570	-3.429	7	1.859	3.8	1.4	0.9	6.6	14
2009	May	16	10:32	49.752	-2.965	7	1.388	5.0	1.9	1.2	8.9	29
2009	May	16	11:33	49.912	-2.520	14	1.197	11.7	3.1	5.4	17.9	29
2009	May	16	12:33	50.130		0	0.929	0.0	0.0	0.0	0.0	
2009	May	16	13:37	50.318	-1.590	0	0.925	0.0	0.0	0.0	0.0	
2009	May	16	14:33	50.494	-1.171	5	0.921	5.4	2.4	0.6	10.3	0

Table S9 – June 2009

DATE				LOCATION		COCCOLITHOPHORES						
year	month	day	time	lat	lon	number	volume	concentration	standard	95% confidence interval		% overcalcified
			(UTC)	(°N)	(°E)	counted	counted	mean	error	lower	upper	
						(cells)	(mLitres)	(cells mL ⁻¹)	(cells mL ⁻¹)	(cells mL ⁻¹)	(cells mL ⁻¹)	(%)
2009	June	18	12:18	43.567	-3.182	33	1.205	27.4	4.8	17.9	36.9	0
2009	June	18	13:22	43.903	-3.281	1	1.205	0.8	0.8	0.0	2.5	
2009	June	18	14:16	44.180	-3.433	11	3.790	2.9	0.9	1.2	4.7	9
2009	June	18	15:17	44.482	-3.607	11	3.790	2.9	0.9	1.2	4.7	0
2009	June	18	16:15	44.790	-3.751	5	1.205	4.2	1.9	0.4	7.9	0
2009	June	18	17:17	45.113	-3.915	8	4.540	1.8	0.6	0.5	3.0	0
2009	June	18	18:17	45.422	-4.073	6	4.540	1.3	0.5	0.2	2.4	0
2009	June	18	19:15	45.727	-4.223	12	1.205	10.0	2.9	4.2	15.7	0
2009	June	18	20:23	46.067	-4.403	3	1.205	2.5	1.4	0.0	5.4	
2009	June	18	21:18	46.341	-4.546	6	1.205	5.0	2.0	0.9	9.0	0
2009	June	18	22:22	46.661	-4.707	0	1.205	0.0	0.0	0.0	0.0	
2009	June	19	23:23	46.960	-4.847	5	0.843	5.9	2.7	0.6	11.2	0
2009	June	19	0:18	47.234	-4.976	4	0.723	5.5	2.8	0.0	11.1	0
2009	June	19	1:23	47.544	-5.112	5	0.723	6.9	3.1	0.7	13.1	20
2009	June	19	2:20	47.809	-5.248	7	0.723	9.7	3.7	2.4	17.0	0
2009	June	19	3:18	48.073	-5.358	18	1.205	14.9	3.5	7.9	22.0	6
2009	June	19	4:19	48.367	-5.423	14	1.446	9.7	2.6	4.5	14.9	0
2009	June	19	5:19	48.629	-5.244	4	1.566	2.6	1.3	0.0	5.1	0
2009	June	19	6:19	48.817	-4.882	39	1.205	32.4	5.2	22.0	42.7	0
2009	June	19	7:15	49.013	-4.556	46	1.205	38.2	5.6	26.9	49.4	0
2009	June	19	8:17	49.217	-4.181	4	1.205	3.3	1.7	0.0	6.6	0
2009	June	19	9:17	49.425	-3.823	4	1.205	3.3	1.7	0.0	6.6	0
2009	June	19	10:17	49.630	-3.449	128	1.205	106.2	9.4	87.5	125.0	2
2009	June	19	11:25	49.806	-2.964	147	1.205	122.0	10.1	101.9	142.1	1
2009	June	19	12:19	49.913	-2.548	82	0.964	85.1	9.4	66.3	103.9	4
2009	June	19	13:21	50.067	-2.084	42	1.205	34.9	5.4	24.1	45.6	5
2009	June	19	14:17	50.255	-1.689	53	1.205	44.0	6.0	31.9	56.1	2
2009	June	19	15:17	50.431	-1.226	28	1.205	23.2	4.4	14.5	32.0	0

Table S10 – July 2009

DATE				LOCATION		COCCOLITHOPHORES						
year	month	day	time	lat	lon	number	volume	concentration	standard	95% confidence interval		% overcalcified
			(UTC)	(°N)	(°E)	counted	counted	mean	error	lower	upper	
						(cells)	(mLitres)	(cells mL ⁻¹)	(cells mL ⁻¹)	(cells mL ⁻¹)	(cells mL ⁻¹)	(%)
2009	July	15	12:36	43.605	-3.166	1	0.921	1.1	1.1	0.0	3.3	
2009	July	15	13:34	43.887	-3.272	3	0.925	3.2	1.9	0.0	7.0	
2009	July	15	14:34	44.170	-3.405	5	3.500	1.4	0.6	0.2	2.7	0
2009	July	15	15:31	44.447	-3.506	4	3.450	1.2	0.6	0.0	2.3	25
2009	July	15	16:31	44.737	-3.625	9	3.500	2.6	0.9	0.9	4.3	0
2009	July	15	17:30	45.030	-3.750	7	0.929	7.5	2.8	1.8	13.2	0
2009	July	15	18:30	45.322	-3.895	8	3.510	2.3	0.8	0.7	3.9	0
2009	July	15	19:36	45.633	-4.079	2	1.790	1.1	0.8	0.0	2.7	
2009	July	15	20:36	45.931	-4.251	7	1.760	4.0	1.5	1.0	7.0	0
2009	July	15	21:35	46.223	-4.415	2	0.921	2.2	1.5	0.0	5.2	
2009	July	15	22:36	46.526	-4.574	4	0.929	4.3	2.2	0.0	8.6	0
2009	July	15	23:37	46.828	-4.751	10	0.925	10.8	3.4	4.0	17.6	0
2009	July	16	0:33	47.109	-4.912	21	0.929	22.6	4.9	12.7	32.5	0
2009	July	16	1:32	47.405	-5.075	14	0.925	15.1	4.0	7.0	23.2	0
2009	July	16	2:38	47.744	-5.256	2	0.925	2.2	1.5	0.0	5.2	
2009	July	16	3:30	48.014	-5.364	26	1.278	20.3	4.0	12.4	28.3	0
2009	July	16	4:30	48.341	-5.414	28	1.278	21.9	4.1	13.6	30.2	0
2009	July	16	5:31	48.631	-5.255	124	1.260	98.4	8.8	80.7	116.1	0
2009	July	16	6:32	48.854	-4.872	176	1.301	135.3	10.2	114.9	155.7	0
2009	July	16	7:35	49.091	-4.472	307	0.611	502.3	28.7	445.0	559.6	0
2009	July	16	8:35	49.308	-4.084	311	0.636	489.0	27.7	433.6	544.5	0
2009	July	16	9:35	49.470	-3.635	332	0.099	3349.8	183.8	2982.1	3717.5	0
2009	July	16	10:35	49.687	-3.231	168	0.929	180.8	13.9	152.9	208.7	0
2009	July	16	11:39	49.881	-2.768	87	0.892	97.5	10.5	76.6	118.4	3
2009	July	16	12:35	49.979	-2.291	10	0.917	10.9	3.4	4.0	17.8	30
2009	July	16	13:35	50.194	-1.855	44	0.925	47.6	7.2	33.2	61.9	14
2009	July	16	14:32	50.408	-1.454	13	0.925	14.1	3.9	6.3	21.8	0

Table S11 – August 2009

DATE				LOCATION		COCCOLITHOPHORES						
year	month	day	time	lat	lon	number	volume	concentration	standard	95% confidence interval		% overcalcified
			(UTC)	(°N)	(°E)	counted	counted	mean	error	lower	upper	
						(cells)	(mLitres)	(cells mL ⁻¹)	(cells mL ⁻¹)	(cells mL ⁻¹)	(cells mL ⁻¹)	(%)
2009	Aug	14	12:31	43.571	-3.170	0	1.205	0.0	0.0	0.0	0.0	
2009	Aug	14	13:33	43.876	-3.322	1	1.446	0.7	0.7	0.0	2.1	
2009	Aug	14	14:32	44.189	-3.487	4	4.540	0.9	0.4	0.0	1.8	0
2009	Aug	14	15:31	44.494	-3.639	1	3.790	0.3	0.3	0.0	0.8	
2009	Aug	14	16:32	44.813	-3.761	0	4.650	0.0	0.0	0.0	0.0	
2009	Aug	14	17:39	45.158	-3.924	4	3.790	1.1	0.5	0.0	2.1	0
2009	Aug	14	18:36	45.451	-4.066	0	2.070	0.0	0.0	0.0	0.0	
2009	Aug	14	19:28	45.720	-4.198	4	3.790	1.1	0.5	0.0	2.1	75
2009	Aug	14	20:34	46.062	-4.369	14	1.205	11.6	3.1	5.4	17.8	14
2009	Aug	14	21:33	46.369	-4.515	23	1.205	19.1	4.0	11.1	27.1	0
2009	Aug	14	22:32	46.674	-4.676	55	1.205	45.7	6.2	33.3	58.0	0
2009	Aug	14	23:30	46.965	-4.827	58	1.446	40.1	5.3	29.6	50.7	9
2009	Aug	15	0:33	47.285	-4.993	87	1.279	68.0	7.3	53.4	82.6	0
2009	Aug	15	1:33	47.591	-5.172	22	1.446	15.2	3.2	8.7	21.7	0
2009	Aug	15	2:29	47.879	-5.332	54	1.446	37.4	5.1	27.2	47.5	50
2009	Aug	15	3:29	48.192	-5.414	30	1.446	20.8	3.8	13.2	28.3	10
2009	Aug	15	4:30	48.510	-5.382	12	1.205	10.0	2.9	4.2	15.7	0
2009	Aug	15	5:30	48.736	-5.034	57	1.205	47.3	6.3	34.8	59.8	12
2009	Aug	15	6:31	48.939	-4.628	21	1.205	17.4	3.8	9.8	25.0	9
2009	Aug	15	7:33	49.158	-4.222	23	1.205	19.1	4.0	11.1	27.1	22
2009	Aug	15	8:33	49.371	-3.825	12	1.205	10.0	2.9	4.2	15.7	0
2009	Aug	15	9:33	49.577	-3.402	19	1.205	15.8	3.6	8.5	23.0	0
2009	Aug	15	10:33	49.803	-3.019	70	1.205	58.1	6.9	44.2	72.0	1
2009	Aug	15	11:33	49.919	-2.526	6	1.205	5.0	2.0	0.9	9.0	67
2009	Aug	15	12:29	50.093	-2.095	5	1.446	3.5	1.5	0.4	6.6	0
2009	Aug	15	13:31	50.312	-1.649	27	1.566	17.2	3.3	10.6	23.9	18
2009	Aug	15	14:34	50.509	-1.142	34	1.205	28.2	4.8	18.5	37.9	21

Table S12 – September 2009

DATE				LOCATION		COCCOLITHOPHORES						
year	month	day	time	lat	lon	number counted	volume counted	concentration mean	standard error	95% confidence interval		% overcalcified
			(UTC)	(°N)	(°E)	(cells)	(mLitres)	(cells mL ⁻¹)	(cells mL ⁻¹)	(cells mL ⁻¹)	(cells mL ⁻¹)	(%)
2009	Sep	16	12:31:00	43.581	-3.154	0	1.205	0.0	0.0	0.0	0.0	
2009	Sep	16	13:02:00	47.923	-5.299	6	1.024	5.9	2.4	1.1	10.6	0
2009	Sep	16	13:33:00	43.887	-3.293	0	1.205	0.0	0.0	0.0	0.0	
2009	Sep	16	14:35:00	44.215	-3.450	2	1.205	1.7	1.2	0.0	4.0	
2009	Sep	16	15:31:00	44.491	-3.593	1	1.205	0.8	0.8	0.0	2.5	
2009	Sep	16	16:30:00	44.799	-3.750	0	1.205	0.0	0.0	0.0	0.0	
2009	Sep	16	17:30:00	45.098	-3.896	1	1.205	0.8	0.8	0.0	2.5	
2009	Sep	16	18:30:00	45.359	-4.071	1	1.205	0.8	0.8	0.0	2.5	
2009	Sep	16	19:34:00	45.684	-4.316	3	1.205	2.5	1.4	0.0	5.4	
2009	Sep	16	20:34:00	45.966	-4.517	1	1.205	0.8	0.8	0.0	2.5	
2009	Sep	16	21:33:00	46.259	-4.681	5	1.205	4.2	1.9	0.4	7.9	40
2009	Sep	16	22:33:00	46.555	-4.805	1	1.205	0.8	0.8	0.0	2.5	
2009	Sep	16	23:32:00	46.860	-4.900	1	1.205	0.8	0.8	0.0	2.5	
2009	Sep	17	0:33:00	47.165	-4.978	0	1.205	0.0	0.0	0.0	0.0	
2009	Sep	17	1:35:00	47.459	-5.079	20	1.205	16.6	3.7	9.2	24.0	40
2009	Sep	17	2:31:00	47.732	-5.263	12	1.205	10.0	2.9	4.2	15.7	25
2009	Sep	17	3:31:00	48.009	-5.396	13	1.205	10.8	3.0	4.8	16.8	0
2009	Sep	17	4:30:00	48.389	-5.416	9	1.205	7.5	2.5	2.5	12.5	44
2009	Sep	17	5:31:00	48.597	-5.314	15	1.205	12.5	3.2	6.0	18.9	47
2009	Sep	17	6:29:00	48.769	-5.000	4	1.205	3.3	1.7	0.0	6.6	0
2009	Sep	17	7:34:00	48.958	-4.654	8	1.205	6.6	2.3	1.9	11.3	50
2009	Sep	17	9:02:00	49.124	-4.326	16	1.205	13.3	3.3	6.6	19.9	19
2009	Sep	17	9:34:00	49.301	-4.002	36	1.205	29.9	5.0	19.9	39.8	47
2009	Sep	17	10:33:00	49.470	-3.670	8	1.205	6.6	2.3	1.9	11.3	38
2009	Sep	17	11:31:00	49.535	-3.495	33	1.205	27.4	4.8	17.9	36.9	39
2009	Sep	17	12:36:00	49.768	-2.943	17	1.205	14.1	3.4	7.3	21.0	12
2009	Sep	17	13:35:00	49.890	-2.575	12	1.205	10.0	2.9	4.2	15.7	58
2009	Sep	17	14:37:00	50.050	-2.216	26	1.205	21.6	4.2	13.1	30.0	38
2009	Sep	17	15:32:00	50.225	-1.901	6	1.205	5.0	2.0	0.9	9.0	83
2009	Sep	17	16:32:00	50.376	-1.463	22	1.205	18.3	3.9	10.5	26.0	36

Table S13 – October 2009

DATE				LOCATION		COCCOLITHOPHORES						
year	month	day	time	lat	lon	number counted	volume counted	concentration mean	standard error	95% confidence interval		% overcalcified
			(UTC)	(°N)	(°E)	(cells)	(mLitres)	(cells mL ⁻¹)	(cells mL ⁻¹)	(cells mL ⁻¹)	(cells mL ⁻¹)	(%)
2009	Oct	16	12:07:00	43.676	-3.216	6	1.205	5.0	2.0	0.9	9.0	50
2009	Oct	16	13:05:00	43.979	-3.351	2	1.205	1.7	1.2	0.0	4.0	
2009	Oct	16	14:10:00	44.307	-3.494	1	1.205	0.8	0.8	0.0	2.5	
2009	Oct	16	15:04:00	44.595	-3.635	2	1.205	1.7	1.2	0.0	4.0	
2009	Oct	16	16:04:00	44.899	-3.785	7	1.205	5.8	2.2	1.4	10.2	14
2009	Oct	16	17:04:00	45.204	-3.936	2	1.205	1.7	1.2	0.0	4.0	
2009	Oct	16	18:05:00	45.513	-4.096	5	1.205	4.2	1.9	0.4	7.9	40
2009	Oct	16	19:01:00	45.799	-4.224	4	1.205	3.3	1.7	0.0	6.6	25
2009	Oct	16	20:00:00	46.100	-4.374	2	1.205	1.7	1.2	0.0	4.0	
2009	Oct	16	21:00:00	46.399	-4.527	3	1.205	2.5	1.4	0.0	5.4	
2009	Oct	16	22:00:00	46.701	-4.665	2	1.205	1.7	1.2	0.0	4.0	
2009	Oct	16	23:03:00	47.030	-4.846	5	1.205	4.2	1.9	0.4	7.9	80
2009	Oct	17	0:05:00	47.349	-5.026	1	1.205	0.8	0.8	0.0	2.5	
2009	Oct	17	1:04:00	47.661	-5.167	11	1.205	9.1	2.8	3.6	14.6	64
2009	Oct	17	2:06:00	47.983	-5.313	46	1.205	38.2	5.6	26.9	49.4	76
2009	Oct	17	3:04:00	48.327	-5.394	147	1.205	122.0	10.1	101.9	142.1	78
2009	Oct	17	4:04:00	48.642	-5.247	35	1.205	29.1	4.9	19.2	38.9	63
2009	Oct	17	5:04:00	48.854	-4.838	12	1.205	10.0	2.9	4.2	15.7	83
2009	Oct	17	6:05:00	49.064	-4.449	62	1.205	51.5	6.5	38.4	64.5	68
2009	Oct	17	7:01:00	49.256	-4.098	38	1.205	31.5	5.1	21.3	41.8	66
2009	Oct	17	8:00:00	49.458	-3.738	5	1.205	4.2	1.9	0.4	7.9	60
2009	Oct	17	9:02:00	49.672	-3.366	3	1.205	2.5	1.4	0.0	5.4	
2009	Oct	17	10:01:00	49.831	-2.965	133	1.205	110.4	9.6	91.2	129.5	83
2009	Oct	17	11:03:00	49.921	-2.504	29	1.205	24.1	4.5	15.1	33.0	93
2009	Oct	17	12:06:00	50.075	-2.131	14	1.205	11.6	3.1	5.4	17.8	93
2009	Oct	17	13:06:00	50.232	-1.801	24	1.205	19.9	4.1	11.8	28.1	71
2009	Oct	17	14:08:00	50.402	-1.448	32	1.205	26.6	4.7	17.2	36.0	63
2009	Oct	17	15:03:00	50.551	-1.110	22	1.205	18.3	3.9	10.5	26.0	77

Table S14 – November 2009

DATE				LOCATION		COCCOLITHOPHORES						
year	month	day	time	lat	lon	number counted	volume counted	concentration mean	standard error	95% confidence interval		% overcalcified
			(UTC)	(°N)	(°E)	(cells)	(mLitres)	(cells mL ⁻¹)	(cells mL ⁻¹)	(cells mL ⁻¹)	(cells mL ⁻¹)	(%)
2009	Nov	19	9:47:00	48.927	-4.784	4	1.205	3.3	1.7	0.0	6.6	100
2009	Nov	19	13:51:00	48.516	-5.394	8	1.205	6.6	2.3	1.9	11.3	88
2009	Nov	19	14:59:00	48.280	-5.436	13	1.205	10.8	3.0	4.8	16.8	92
2009	Nov	19	16:28:00	47.937	-5.279	8	1.205	6.6	2.3	1.9	11.3	88
2009	Nov	19	17:31:00	47.631	-5.121	9	1.205	7.5	2.5	2.5	12.5	100
2009	Nov	19	18:48:00	47.250	-4.945	8	1.205	6.6	2.3	1.9	11.3	88
2009	Nov	19	19:51:00	46.962	-4.781	7	1.205	5.8	2.2	1.4	10.2	100
2009	Nov	19	22:01:00	46.328	-4.490	6	1.205	5.0	2.0	0.9	9.0	100
2009	Nov	19	23:03:00	46.013	-4.338	4	1.205	3.3	1.7	0.0	6.6	100
2009	Nov	20	13:17:00	43.570	-3.141	3	1.205	2.5	1.4	0.0	5.4	
2009	Nov	20	14:19:00	43.878	-3.280	11	1.205	9.1	2.8	3.6	14.6	100
2009	Nov	20	15:19:00	44.172	-3.417	10	1.205	8.3	2.6	3.1	13.5	100
2009	Nov	20	16:18:00	44.464	-3.548	14	1.205	11.6	3.1	5.4	17.8	86
2009	Nov	20	17:14:00	44.733	-3.677	0	1.205	0.0	0.0	0.0	0.0	
2009	Nov	20	18:15:00	45.033	-3.805	4	1.205	3.3	1.7	0.0	6.6	100
2009	Nov	20	19:15:00	45.324	-3.952	9	1.205	7.5	2.5	2.5	12.5	100
2009	Nov	20	20:13:00	45.609	-4.101	12	1.205	10.0	2.9	4.2	15.7	100
2009	Nov	21	8:36:00	49.209	-4.161	9	1.205	7.5	2.5	2.5	12.5	78
2009	Nov	21	9:38:00	49.425	-3.756	8	1.205	6.6	2.3	1.9	11.3	75
2009	Nov	21	10:30:00	49.628	-3.437	18	1.205	14.9	3.5	7.9	22.0	78
2009	Nov	21	11:30:00	49.814	-3.011	24	1.205	19.9	4.1	11.8	28.1	83
2009	Nov	21	12:33:00	49.915	-2.501	19	1.205	15.8	3.6	8.5	23.0	95
2009	Nov	21	13:29:00	50.077	-2.096	8	1.205	6.6	2.3	1.9	11.3	100
2009	Nov	21	14:31:00	50.270	-1.701	13	1.205	10.8	3.0	4.8	16.8	100
2009	Nov	21	15:30:00	50.436	-1.324	8	1.205	6.6	2.3	1.9	11.3	75

Table S15 – December 2009

DATE				LOCATION		COCCOLITHOPHORES						
year	month	day	time	lat	lon	number counted	volume counted	concentration mean	standard error	95% confidence interval		% overcalcified
			(UTC)	(°N)	(°E)	(cells)	(mLitres)	(cells mL ⁻¹)	(cells mL ⁻¹)	(cells mL ⁻¹)	(cells mL ⁻¹)	(%)
2009	Dec	10	9:04:19	49.240	-4.090	0	0.540	0.0	0.0	0.0	0.0	
2009	Dec	10	10:22:13	49.027	-4.509	2	0.515	3.9	2.7	0.0	9.4	
2009	Dec	10	11:32:56	48.815	-4.907	3	0.540	5.6	3.2	0.0	12.0	
2009	Dec	10	13:57:04	48.211	-5.414	3	0.765	3.9	2.3	0.0	8.5	
2009	Dec	10	15:11:31	47.826	-5.253	2	0.622	3.2	2.3	0.0	7.8	
2009	Dec	10	16:17:02	47.502	-5.088	2	0.765	2.6	1.8	0.0	6.3	
2009	Dec	10	17:15:39	47.216	-4.946	4	0.816	4.9	2.5	0.0	9.8	100
2009	Dec	10	18:14:50	46.932	-4.791	7	0.913	7.7	2.9	1.9	13.5	71
2009	Dec	10	19:34:54	46.545	-4.590	5	1.055	4.7	2.1	0.5	9.0	100
2009	Dec	11	12:05:54	43.423	-3.103	2	1.147	1.7	1.2	0.0	4.2	
2009	Dec	11	13:07:58	43.744	-3.249	3	0.928	3.2	1.9	0.0	7.0	
2009	Dec	11	14:10:28	44.068	-3.396	8	0.668	12.0	4.2	3.5	20.4	100
2009	Dec	11	15:04:28	44.347	-3.526	5	0.500	10.0	4.5	1.1	19.0	100
2009	Dec	11	16:06:14	44.656	-3.709	8	0.510	15.7	5.5	4.6	26.8	100
2009	Dec	11	17:10:45	44.977	-3.908	20	1.147	17.4	3.9	9.6	25.2	95
2009	Dec	11	18:16:42	45.294	-4.131	11	0.663	16.6	5.0	6.6	26.6	100
2009	Dec	11	19:17:46	45.568	-4.387	5	0.673	7.4	3.3	0.8	14.1	100
2009	Dec	11	20:11:54	45.812	-4.616	5	0.948	5.3	2.4	0.6	10.0	100
2009	Dec	12	8:40:25	49.201	-4.231	1	0.372	2.7	2.7	0.0	8.1	
2009	Dec	12	9:44:47	49.414	-3.856	1	0.270	3.7	3.7	0.0	11.1	
2009	Dec	12	10:44:15	49.613	-3.554	1	0.291	3.4	3.4	0.0	10.3	
2009	Dec	12	11:44:53	49.756	-3.146	2	0.250	8.0	5.7	0.0	19.3	
2009	Dec	12	12:47:23	49.875	-2.700	0	0.204	0.0	0.0	0.0	0.0	
2009	Dec	12	13:47:08	50.005	-2.275	1	0.219	4.6	4.6	0.0	13.7	
2009	Dec	12	14:44:27	50.204	-1.918	2	0.291	6.9	4.9	0.0	16.6	
2009	Dec	12	15:41:11	50.368	-1.496	0	0.520	0.0	0.0	0.0	0.0	

Table S16 – February 2010

DATE				LOCATION		COCCOLITHOPHORES						
year	month	day	time	lat	lon	number counted	volume counted	concentration mean	standard error	95% confidence interval		% overcalcified
			(UTC)	(°N)	(°E)	(cells)	(mLitres)	(cells mL ⁻¹)	(cells mL ⁻¹)	(cells mL ⁻¹)	(cells mL ⁻¹)	(%)
2010	Feb	16	9:33:33	48.622	-5.263	2	0.296	6.8	4.8	0.0	16.3	
2010	Feb	16	11:56:59	48.035	-5.346	0	0.260	0.0	0.0	0.0	0.0	
2010	Feb	16	16:04:13	47.100	-4.852	7	0.464	15.1	5.7	3.7	26.5	100
2010	Feb	17	12:50:15	43.577	-3.177	5	1.147	4.4	1.9	0.5	8.3	40
2010	Feb	17	13:50:27	43.900	-3.298	8	0.851	9.4	3.3	2.8	16.0	75
2010	Feb	17	14:47:20	44.196	-3.419	4	0.785	5.1	2.5	0.0	10.2	100
2010	Feb	17	15:58:19	44.559	-3.597	10	0.755	13.3	4.2	4.9	21.6	90
2010	Feb	17	16:55:55	44.851	-3.743	8	0.591	13.5	4.8	4.0	23.1	88
2010	Feb	17	17:59:25	45.173	-3.910	2	0.474	4.2	3.0	0.0	10.2	
2010	Feb	17	20:00:06	45.797	-4.222	1	0.280	3.6	3.6	0.0	10.7	
2010	Feb	17	21:01:35	46.114	-4.380	1	0.286	3.5	3.5	0.0	10.5	
2010	Feb	17	22:00:03	46.397	-4.562	2	0.286	7.0	5.0	0.0	16.9	
2010	Feb	17	22:59:31	46.711	-4.700	2	0.240	8.3	5.9	0.0	20.2	
2010	Feb	18	0:07:12	47.071	-4.859	0	0.235	0.0	0.0	0.0	0.0	
2010	Feb	18	1:05:40	47.381	-4.995	4	0.561	7.1	3.6	0.0	14.3	100
2010	Feb	18	3:04:19	48.007	-5.328	12	0.663	18.1	5.2	7.7	28.6	92
2010	Feb	18	4:09:16	48.375	-5.420	7	0.775	9.0	3.4	2.2	15.9	100
2010	Feb	18	5:04:08	48.653	-5.188	4	0.678	5.9	2.9	0.0	11.8	100
2010	Feb	18	6:01:09	48.871	-4.763	9	0.530	17.0	5.7	5.7	28.3	100
2010	Feb	18	7:00:20	49.096	-4.324	9	0.454	19.8	6.6	6.6	33.1	100
2010	Feb	18	8:02:07	49.332	-3.876	0	0.229	0.0	0.0	0.0	0.0	
2010	Feb	18	9:00:09	49.549	-3.456	2	0.255	7.8	5.5	0.0	18.9	
2010	Feb	18	10:03:22	49.803	-3.024	1	0.291	3.4	3.4	0.0	10.3	
2010	Feb	18	11:00:23	49.924	-2.521	2	0.194	10.3	7.3	0.0	24.9	
2010	Feb	18	12:03:53	50.097	-1.987	0	0.291	0.0	0.0	0.0	0.0	
2010	Feb	18	13:02:30	50.323	-1.583	1	0.296	3.4	3.4	0.0	10.1	

Table S17 – March 2010

DATE				LOCATION		COCCOLITHOPHORES						
year	month	day	time	lat	lon	number counted	volume counted	concentration mean	standard error	95% confidence interval		% overcalcified
			(UTC)	(°N)	(°E)	(cells)	(mLitres)	(cells mL ⁻¹)	(cells mL ⁻¹)	lower	upper	(%)
										(cells mL ⁻¹)	(cells mL ⁻¹)	
2010	Mar	16	12:43:47	47.711	-5.163	6	0.535	11.2	4.6	2.1	20.4	100
2010	Mar	16	15:00:09	47.209	-4.912	4	0.635	6.3	3.2	0.0	12.6	38
2010	Mar	17	13:06:14	43.739	-3.228	8	0.989	8.1	2.9	2.4	13.8	100
2010	Mar	17	15:07:03	44.399	-3.530	8	1.331	6.0	2.1	1.8	10.3	100
2010	Mar	17	16:00:46	44.685	-3.670	13	0.887	14.7	4.1	6.5	22.8	50
2010	Mar	17	17:16:31	45.094	-3.867	4	0.994	4.0	2.0	0.0	8.0	80
2010	Mar	17	18:03:01	45.349	-3.989	5	0.887	5.6	2.5	0.6	10.7	80
2010	Mar	17	19:00:29	45.661	-4.138	5	0.834	6.0	2.7	0.6	11.4	0
2010	Mar	17	20:04:08	46.003	-4.302	13	0.956	13.6	3.8	6.1	21.1	93
2010	Mar	17	21:02:27	46.315	-4.451	14	1.017	13.8	3.7	6.4	21.1	100
2010	Mar	17	22:02:12	46.638	-4.619	5	1.346	3.7	1.7	0.4	7.0	100
2010	Mar	18	0:04:19	47.296	-4.985	7	1.032	6.8	2.6	1.7	11.9	100
2010	Mar	18	1:03:48	47.625	-5.148	9	0.512	17.6	5.9	5.9	29.3	50
2010	Mar	18	1:58:13	47.939	-5.270	5	0.528	9.5	4.2	1.0	18.0	
2010	Mar	18	3:04:36	48.331	-5.418	2	1.721	1.2	0.8	0.0	2.8	100
2010	Mar	18	4:02:21	48.646	-5.226	0	0.398	0.0	0.0	0.0	0.0	
2010	Mar	18	5:03:16	48.891	-4.781	1	0.421	2.4	2.4	0.0	7.1	
2010	Mar	18	6:04:11	49.119	-4.323	0	0.344	0.0	0.0	0.0	0.0	
2010	Mar	18	7:03:56	49.335	-3.871	2	0.558	3.6	2.5	0.0	8.6	
2010	Mar	18	8:02:59	49.544	-3.455	0	0.658	0.0	0.0	0.0	0.0	
2010	Mar	18	10:01:21	49.868	-2.681	10	0.398	25.1	8.0	9.2	41.1	100
2010	Mar	18	11:01:41	49.990	-2.255	0	0.543	0.0	0.0	0.0	0.0	
2010	Mar	18	12:09:39	50.179	-1.851	1	0.433	2.3	2.3	0.0	6.9	
2010	Mar	18	13:06:40	50.319	-1.559	3	0.561	5.3	3.1	0.0	11.5	
2010	Mar	18	14:04:08	50.440	-1.320	1	0.887	1.1	1.1	0.0	3.4	

Table S18 – April 2010

DATE				LOCATION		COCCOLITHOPHORES						
year	month	day	time	lat	lon	number counted	volume counted	concentration mean	standard error	95% confidence interval		% overcalcified
			(UTC)	(°N)	(°E)	(cells)	(mLitres)	(cells mL ⁻¹)	(cells mL ⁻¹)	(cells mL ⁻¹)	(cells mL ⁻¹)	(%)
2010	Apr	13	8:04:08	48.699	-5.148	5	0.454	11.0	4.9	1.2	20.9	100
2010	Apr	13	12:28:39	47.651	-4.600	14	0.571	24.5	6.6	11.4	37.6	43
2010	Apr	13	13:50:10	47.395	-4.154	10	0.449	22.3	7.0	8.2	36.4	60
2010	Apr	14	11:02:41	43.379	-3.078	3	1.147	2.6	1.5	0.0	5.6	
2010	Apr	14	12:05:20	43.710	-3.219	9	0.464	19.4	6.5	6.5	32.3	11
2010	Apr	14	13:03:56	44.032	-3.368	22	1.147	19.2	4.1	11.0	27.4	45
2010	Apr	14	14:03:07	44.352	-3.512	21	1.147	18.3	4.0	10.3	26.3	52
2010	Apr	14	14:58:51	44.648	-3.653	13	1.147	11.3	3.1	5.0	17.6	77
2010	Apr	14	15:56:01	44.949	-3.802	14	0.918	15.3	4.1	7.1	23.4	64
2010	Apr	14	16:57:39	45.276	-3.966	18	0.433	41.5	9.8	22.0	61.1	0
2010	Apr	14	17:58:08	45.590	-4.128	23	0.551	41.8	8.7	24.4	59.2	91
2010	Apr	14	19:07:06	45.948	-4.310	28	0.245	114.4	21.6	71.2	157.7	75
2010	Apr	14	20:04:25	46.241	-4.460	13	0.362	35.9	10.0	16.0	55.8	100
2010	Apr	14	21:05:11	46.563	-4.605	10	1.147	8.7	2.8	3.2	14.2	0
2010	Apr	14	22:06:58	46.893	-4.765	4	1.147	3.5	1.7	0.0	7.0	75
2010	Apr	14	23:02:50	47.194	-4.917	10	1.147	8.7	2.8	3.2	14.2	70
2010	Apr	15	0:03:10	47.521	-5.081	12	0.749	16.0	4.6	6.8	25.3	50
2010	Apr	15	1:03:39	47.853	-5.253	5	0.255	19.6	8.8	2.1	37.2	60
2010	Apr	15	2:02:07	48.173	-5.424	9	0.393	22.9	7.6	7.6	38.2	67
2010	Apr	15	2:58:51	48.502	-5.408	19	0.729	26.1	6.0	14.1	38.0	74
2010	Apr	15	3:55:35	48.739	-5.042	7	0.382	18.3	6.9	4.5	32.1	86
2010	Apr	15	4:56:56	48.966	-4.614	1	0.474	2.1	2.1	0.0	6.3	
2010	Apr	15	6:01:44	49.199	-4.156	0	1.147	0.0	0.0	0.0	0.0	
2010	Apr	15	7:05:14	49.427	-3.717	1	0.744	1.3	1.3	0.0	4.0	
2010	Apr	15	8:03:33	49.637	-3.320	0	1.147	0.0	0.0	0.0	0.0	
2010	Apr	15	9:05:28	49.843	-2.883	14	0.556	25.2	6.7	11.7	38.7	86
2010	Apr	15	10:03:39	49.934	-2.384	13	0.270	48.1	13.3	21.4	74.8	92
2010	Apr	15	11:06:17	50.146	-1.945	4	0.637	6.3	3.1	0.0	12.6	75
2010	Apr	15	12:02:53	50.341	-1.577	1	0.928	1.1	1.1	0.0	3.2	
2010	Apr	15	13:00:12	50.495	-1.197	0	1.147	0.0	0.0	0.0	0.0	

Table S19 – May 2010

DATE				LOCATION		COCCOLITHOPHORES						
year	month	day	time	lat	lon	number counted	volume counted	concentration mean	standard error	95% confidence interval		% overcalcified
			(UTC)	(°N)	(°E)	(cells)	(mLitres)	(cells mL ⁻¹)	(cells mL ⁻¹)	(cells mL ⁻¹)	(cells mL ⁻¹)	(%)
2010	May	12	11:15:48	43.457	-3.116	12	0.994	12.1	3.5	5.1	19.0	25
2010	May	12	12:23:02	43.809	-3.286	78	0.076	1024.3	115.7	792.8	1255.8	
2010	May	12	14:28:11	44.467	-3.566	10	1.300	7.7	2.4	2.8	12.6	10
2010	May	13	13:27:07	50.469	-1.324	5	0.918	5.4	2.4	0.6	10.3	40

Table S20 – June 2010

DATE				LOCATION		COCCOLITHOPHORES						
year	month	day	time	lat	lon	number	volume	concentration	standard	95% confidence interval		%
			(UTC)	(°N)	(°E)	counted	counted	mean	error	lower	upper	overcalcified
						(cells)	(mLitres)	(cells mL ⁻¹)	(cells mL ⁻¹)	(cells mL ⁻¹)	(cells mL ⁻¹)	(%)
2010	Jun	16	8:09:45	48.935	-4.694	10	0.817	12.2	3.9	4.5	20.0	50
2010	Jun	17	12:23:46	43.614	-3.162	7	1.331	5.3	2.0	1.3	9.2	0
2010	Jun	17	13:22:48	43.879	-3.326	7	1.147	6.1	2.3	1.5	10.7	14
2010	Jun	17	14:22:08	44.189	-3.451	4	1.147	3.5	1.7	0.0	7.0	0
2010	Jun	17	15:31:32	44.548	-3.620	2	1.985	1.0	0.7	0.0	2.4	
2010	Jun	17	17:15:39	45.088	-3.895	0	1.721	0.0	0.0	0.0	0.0	
2010	Jun	17	18:19:09	45.419	-4.067	4	1.147	3.5	1.7	0.0	7.0	0
2010	Jun	17	19:32:53	45.790	-4.249	6	0.714	8.4	3.4	1.5	15.3	0
2010	Jun	17	20:31:03	46.102	-4.387	7	0.841	8.3	3.1	2.0	14.6	0
2010	Jun	17	21:31:41	46.419	-4.536	6	0.775	7.7	3.2	1.4	14.1	17
2010	Jun	17	22:25:41	46.687	-4.678	7	0.704	9.9	3.8	2.4	17.5	0
2010	Jun	17	23:35:23	47.028	-4.850	2	0.608	3.3	2.3	0.0	7.9	
2010	Jun	18	1:39:13	47.652	-5.165	4	0.228	17.6	8.8	0.0	35.2	0
2010	Jun	18	2:43:52	47.979	-5.315	6	0.428	14.0	5.7	2.6	25.4	17
2010	Jun	18	4:05:40	48.435	-5.406	7	0.232	30.2	11.4	7.4	53.1	0
2010	Jun	18	5:10:11	48.703	-5.126	3	0.653	4.6	2.7	0.0	9.9	
2010	Jun	18	6:10:39	48.911	-4.712	3	0.505	5.9	3.4	0.0	12.8	
2010	Jun	18	7:00:20	49.095	-4.374	15	0.602	24.9	6.4	12.1	37.8	60
2010	Jun	18	7:59:48	49.306	-3.959	4	1.147	3.5	1.7	0.0	7.0	50
2010	Jun	18	9:00:35	49.526	-3.534	1	1.147	0.9	0.9	0.0	2.6	
2010	Jun	18	10:00:37	49.729	-3.106	0	1.147	0.0	0.0	0.0	0.0	
2010	Jun	18	11:08:10	49.908	-2.573	28	0.770	36.4	6.9	22.6	50.1	46
2010	Jun	18	12:40:02	50.230	-1.907	21	0.331	63.4	13.8	35.7	91.0	43
2010	Jun	16	11:02:33	48.234	-5.422	1	0.433	2.3	2.3	0.0	6.9	
2010	Jun	16	11:02:33	48.234	-5.422	5	0.495	10.1	4.5	1.1	19.2	40
2010	Jun	16	13:59:31	47.343	-5.228	0	0.350	0.0	0.0	0.0	0.0	
2010	Jun	16	13:59:31	47.343	-5.228	1	0.475	2.1	2.1	0.0	6.3	
2010	Jun	16	13:59:31	47.343	-5.228	2	0.356	5.6	4.0	0.0	13.6	
2010	Jun	16	13:59:31	47.343	-5.228	0	0.338	0.0	0.0	0.0	0.0	
2010	Jun	16	23:24:00	44.988	-3.894	1	2.294	0.4	0.4	0.0	1.3	
2010	Jun	16	23:24:00	44.988	-3.894	1	2.294	0.4	0.4	0.0	1.3	
2010	Jun	16	23:24:00	44.988	-3.894	1	2.294	0.4	0.4	0.0	1.3	
2010	Jun	16	23:24:00	44.988	-3.894	1	1.147	0.9	0.9	0.0	2.6	
2010	Jun	16	23:24:00	44.988	-3.894	0	1.147	0.0	0.0	0.0	0.0	

Table S21 – July 2010

DATE				LOCATION		COCCOLITHOPHORES						% overcalcified
year	month	day	time	lat	lon	number counted	volume counted	concentration mean	standard error	95% confidence interval		
			(UTC)	(°N)	(°E)					lower	upper	
						(cells)	(mLitres)	(cells mL ⁻¹)	(cells mL ⁻¹)	(cells mL ⁻¹)	(cells mL ⁻¹)	(%)
2010	Jul	13	9:25:47	48.660	-5.190	9	0.184	49.0	16.3	16.3	81.7	0
2010	Jul	13	14:56:24	47.270	-5.420	4	0.510	7.8	3.9	0.0	15.7	0
2010	Jul	13	15:58:36	46.988	-5.377	4	0.790	5.1	2.5	0.0	10.1	0
2010	Jul	13	19:03:13	46.180	-5.003	1	1.147	0.9	0.9	0.0	2.6	
2010	Jul	14	12:29:48	43.531	-3.154	4	1.147	3.5	1.7	0.0	7.0	0
2010	Jul	14	17:37:49	45.005	-3.547	4	1.050	3.8	1.9	0.0	7.6	0
2010	Jul	14	18:30:23	45.262	-3.601	4	1.147	3.5	1.7	0.0	7.0	0
2010	Jul	15	9:53:00	49.026	-4.521	12	0.270	44.4	12.8	18.8	70.1	0
2010	Jul	15	10:56:47	49.228	-4.146	9	0.841	10.7	3.6	3.6	17.8	11
2010	Jul	15	12:00:52	49.445	-3.750	4	1.147	3.5	1.7	0.0	7.0	0
2010	Jul	15	12:39:10	49.579	-3.513	1	0.459	2.2	2.2	0.0	6.5	
2010	Jul	15	13:15:45	49.687	-3.289	1	0.459	2.2	2.2	0.0	6.5	
2010	Jul	15	14:05:43	49.828	-2.953	0	0.918	0.0	0.0	0.0	0.0	
2010	Jul	15	14:58:34	49.911	-2.569	2	1.147	1.7	1.2	0.0	4.2	
2010	Jul	15	15:57:36	50.034	-2.219	12	0.336	35.7	10.3	15.1	56.3	0
2010	Jul	15	16:45:24	50.153	-1.912	7	0.245	28.6	10.8	7.0	50.2	0
2010	Jul	13	7:31:18	49.030	-4.560	6	0.398	15.1	6.2	2.8	27.4	0
2010	Jul	13	8:30:55	48.840	-4.890	6	0.104	57.7	23.6	10.6	104.8	0
2010	Jul	13	8:30:55	48.840	-4.890	7	0.113	61.8	23.4	15.1	108.6	0
2010	Jul	13	8:30:55	48.840	-4.890	17	0.117	145.0	35.2	74.7	215.3	0
2010	Jul	13	8:30:55	48.840	-4.890	4	0.105	38.3	19.1	0.0	76.5	0
2010	Jul	13	10:27:33	48.390	-5.420	4	0.633	6.3	3.2	0.0	12.6	0
2010	Jul	13	10:27:33	48.390	-5.420	3	0.590	5.1	2.9	0.0	10.9	
2010	Jul	13	11:54:58	48.100	-5.520	3	1.045	2.9	1.7	0.0	6.2	
2010	Jul	13	13:59:05	47.539	-5.446	1	0.948	1.1	1.1	0.0	3.2	
2010	Jul	13	17:00:58	46.715	-5.347	0	1.147	0.0	0.0	0.0	0.0	
2010	Jul	14	13:30:00	43.824	-3.286	4	1.529	2.6	1.3	0.0	5.2	0
2010	Jul	14	13:30:00	43.824	-3.286	2	1.231	1.6	1.1	0.0	3.9	
2010	Jul	14	14:34:31	44.138	-3.390	8	1.147	7.0	2.5	2.0	11.9	0
2010	Jul	14	14:34:31	44.138	-3.390	1	0.574	1.7	1.7	0.0	5.2	
2010	Jul	14	14:34:31	44.138	-3.390	2	0.574	3.5	2.5	0.0	8.4	
2010	Jul	14	15:31:06	44.489	-3.434	3	1.137	2.6	1.5	0.0	5.7	
2010	Jul	14	16:29:34	44.684	-3.484	4	1.147	3.5	1.7	0.0	7.0	0

Table S22 – Summer 2006

DATE				LOCATION		COCCOLITHOPHORES						
year	month	day	time	lat	lon	number counted	volume counted	concentration mean	standard error	95% confidence interval		% overcalcified
			(UTC)	(°N)	(°E)	(cells)	(mLitres)	(cells mL ⁻¹)	(cells mL ⁻¹)	lower (cells mL ⁻¹)	upper (cells mL ⁻¹)	(%)
2006	April	12	03:03:00	43.94	-3.38	50	0.219	228.0	32.2	163.5	292.5	48
2006	April	12	01:05:00	44.38	-3.65	3	0.219	13.7	7.9	0.0	29.5	
2006	April	11	23:07:00	44.68	-4.14	2	0.219	9.1	6.4	0.0	22.0	
2006	April	11	21:00:00	45.20	-4.46	10	0.292	34.2	10.8	12.6	55.8	0
2006	April	11	19:03:00	45.68	-4.79	3	0.292	10.3	5.9	0.0	22.1	
2006	April	11	17:04:00	46.16	-5.12	0	0.292	0.0	0.0	0.0	0.0	
2006	April	11	15:07:00	46.66	-5.31	3	0.292	10.3	5.9	0.0	22.1	
2006	April	11	13:04:00	47.24	-5.35	7	0.292	23.9	9.0	5.8	42.0	0
2006	April	11	11:04:00	47.82	-5.39	22	0.292	75.2	16.0	43.2	107.3	0
2006	April	11	08:58:00	48.43	-5.45	3	0.292	10.3	5.9	0.0	22.1	
2006	April	11	07:08:00	48.87	-4.89	6	0.731	8.2	3.4	1.5	14.9	0
2006	April	11	05:09:00	49.27	-4.22	5	0.731	6.8	3.1	0.7	13.0	0
2006	April	11	02:01:00	49.88	-3.05	5	0.731	6.8	3.1	0.7	13.0	0
2006	April	10	23:02:00	50.37	-1.60	0	0.731	0.0	0.0	0.0	0.0	
2006	April	10	21:05:00	50.76	-1.09	0	0.731	0.0	0.0	0.0	0.0	
2006	May	12	03:05:00	43.97	-3.46	950	1.097	866.4	28.1	810.1	922.6	0
2006	May	12	01:02:00	44.60	-3.87	630	1.462	430.9	17.2	396.6	465.2	0
2006	May	11	23:08:00	45.06	-4.17	450	1.462	307.8	14.5	278.8	336.8	6.2
2006	May	11	21:04:00	45.52	-4.54	884	1.316	671.8	22.6	626.6	717.0	0
2006	May	11	19:04:00	45.98	-4.89	397	1.462	271.5	13.6	244.3	298.8	0
2006	May	11	17:01:00	46.49	-5.23	542	1.462	370.7	15.9	338.9	402.6	0
2006	May	11	15:07:00	46.95	-5.43	574	1.608	356.9	14.9	327.1	386.7	0
2006	May	11	13:02:00	47.46	-5.45	93	1.462	63.6	6.6	50.4	76.8	0
2006	May	11	11:03:00	47.93	-5.47	206	1.170	176.1	12.3	151.6	200.7	0
2006	May	11	09:01:00	48.49	-5.46	115	2.003	57.4	5.4	46.7	68.1	0
2006	May	11	07:01:00	48.95	-4.71	17	1.023	16.6	4.0	8.6	24.7	0
2006	May	11	05:02:00	49.31	-3.97	19	2.719	7.0	1.6	3.8	10.2	0
2006	May	11	03:06:00	49.73	-3.44	94	2.559	36.7	3.8	29.2	44.3	0
2006	May	11	01:08:00	50.05	-2.66	5	1.097	4.6	2.0	0.5	8.6	0
2006	May	10	23:14:00	50.35	-1.72	0	1.316	0.0	0.0	0.0	0.0	
2006	May	10	21:13:00	50.70	-0.97	8	1.023	7.8	2.8	2.3	13.3	0
2006	June	14	13:01:00	43.79	-3.32	32	1.462	21.9	3.9	14.1	29.6	0
2006	June	14	15:01:00	44.39	-3.67	33	1.462	22.6	3.9	14.7	30.4	0

2006	June	14	17:00:00	44.99	-3.94	27	1.170	23.1	4.4	14.2	32.0	0
2006	June	14	19:00:00	45.60	-4.22	17	1.170	14.5	3.5	7.5	21.6	0
2006	June	14	21:05:00	46.24	-4.51	13	1.170	11.1	3.1	4.9	17.3	0
2006	June	14	23:04:00	46.84	-4.80	12	1.272	9.4	2.7	4.0	14.9	0
2006	June	15	01:03:00	47.45	-5.09	14	1.170	12.0	3.2	5.6	18.4	0
2006	June	15	03:03:00	48.09	-5.37	93	1.462	63.6	6.6	50.4	76.8	0
2006	June	15	04:59:00	48.68	-5.15	102	1.754	58.1	5.8	46.6	69.6	0
2006	June	15	07:00:59	49.12	-4.27	62	1.462	42.4	5.4	31.6	53.2	0
2006	June	15	09:00:00	49.54	-3.40	2	1.023	2.0	1.4	0.0	4.7	
2006	June	15	11:28:00	50.00	-2.24	1	1.170	0.9	0.9	0.0	2.6	
2006	June	15	13:23:00	50.38	-1.37	3	1.023	2.9	1.7	0.0	6.3	
2006	July	11	03:59:00	43.69	-3.31	5	1.754	2.8	1.3	0.3	5.4	0
2006	July	11	02:03:00	44.15	-3.61	10	1.462	6.8	2.2	2.5	11.2	0
2006	July	11	00:04:00	44.61	-3.93	9	1.462	6.2	2.1	2.1	10.3	14
2006	July	10	22:02:00	45.08	-4.27	4	1.462	2.7	1.4	0.0	5.5	14
2006	July	10	20:02:00	45.55	-4.60	7	1.462	4.8	1.8	1.2	8.4	14
2006	July	10	17:59:00	46.05	-4.94	8	1.901	4.2	1.5	1.2	7.2	0
2006	July	10	15:58:00	46.57	-5.45	12	2.193	5.5	1.6	2.3	8.6	0
2006	July	10	13:02:00	47.43	-5.52	400	1.608	248.7	12.4	223.8	273.6	0
2006	July	10	12:04:00	47.70	-5.53	471	1.462	322.1	14.8	292.5	351.8	0
2006	July	10	10:01:00	48.27	-5.47	306	1.462	209.3	12.0	185.4	233.2	0
2006	July	10	08:00:00	48.76	-5.04	510	1.462	348.8	15.4	317.9	379.7	0
2006	July	10	05:59:00	49.11	-4.34	105	1.828	57.5	5.6	46.2	68.7	0
2006	July	10	03:59:00	49.45	-3.68	13	2.193	5.9	1.6	2.6	9.2	0
2006	July	10	02:19:00	49.84	-3.16	7	1.462	4.8	1.8	1.2	8.4	0
2006	July	9	23:57:00	50.22	-2.02	52	1.462	35.6	4.9	25.7	45.4	0
2006	July	9	22:01:00	50.56	-1.13	8	1.023	7.8	2.8	2.3	13.3	0

Table S23 – Summer 2007

DATE				LOCATION		COCCOLITHOPHORES						
year	month	day	time	lat	lon	number counted	volume counted	concentration mean	standard error	95% confidence interval		% overcalcified
			(UTC)	(°N)	(°E)	(cells)	(mLitres)	(cells mL ⁻¹)	(cells mL ⁻¹)	(cells mL ⁻¹)	(cells mL ⁻¹)	(%)
2007	May	10	03:00:52	43.98	-3.49	191	1.835	104.1	7.5	89.0	119.2	1.6
2007	May	9	23:02:59	45.17	-3.92	145	1.090	133.0	11.0	110.9	155.1	5.5
2007	May	9	21:02:01	45.76	-4.18	50	1.658	30.1	4.3	21.6	38.7	18
2007	May	9	14:59:25	47.44	-5.02	96	1.845	52.0	5.3	41.4	62.6	25
2007	May	9	11:03:50	48.50	-5.43	35	0.951	36.8	6.2	24.3	49.2	14.3
2007	May	25	13:30:00	43.92	-3.29	142	0.651	218.1	18.3	181.5	254.7	10.6
2007	May	24	13:59:57	47.24	-5.47	179	0.895	199.9	14.9	170.0	229.8	32.4
2007	May	24	12:00:00	47.88	-5.45	201	0.762	263.9	18.6	226.7	301.1	18.9
2007	May	26	08:00:06	49.13	-4.28	101	0.909	111.1	11.1	89.0	133.2	62.4
2007	May	26	10:00:03	49.53	-3.51	191	0.899	212.4	15.4	181.7	243.2	3.1
2007	June	156	14:41:43	46.81	-5.40	25	0.929	26.9	5.4	16.1	37.7	24
2007	June	156	12:41:02	47.43	-5.43	109	0.915	119.1	11.4	96.3	141.9	11.9
2007	June	156	10:03:39	48.21	-5.41	319	0.390	817.4	45.8	725.9	909.0	0
2007	June	156	06:04:11	49.11	-4.44	136	1.089	124.9	10.7	103.5	146.3	23.5
2007	July	193	02:02:24	44.27	-3.66	4	1.309	3.1	1.5	0.0	6.1	0
2007	July	192	10:11:34	48.34	-5.44	202	1.376	146.8	10.3	126.1	167.4	1
2007	July	192	08:03:42	48.81	-4.94	359	0.434	827.9	43.7	740.5	915.3	3.9
2007	July	192	06:01:44	49.21	-4.15	305	0.074	4103.1	234.9	3633.2	4573.0	0.3

Table S24 – May 2008 Biscay shelf edge

Date	Station ID	Lat (°N)	Long (°W)	Vol. filtered (mL)	E. huxleyi cells counted			% overcalcified
					Type A normal	Type A overcalcified	Other morphotype	
07.05.08	1	48.50	6.00	500	0	0	0	
08.05.08	2	47.80	6.90	500	5	0	0	0
10.05.08	5	48.20	7.59	500	42	0	3	0
22.05.08	5BIS	48.20	7.60	500	23	0	2	0
09.05.08	6	47.90	7.91	500	10	24	2	67
11.05.08	8	48.50	8.50	500	61	0	6	0

Samples courtesy of Lei Chou and colleagues (Université libre de Bruxelles) and enumerated by F. Sardenne.

Table S25 – Monthly averaged carbonate system parameters for the Bay of Biscay from 2008 to 2009

Month	DIC	TA	pH	fCO ₂ (µatm)	pCO ₂ (µatm)	HCO ₃ ⁻ (mmol/kgSW)	CO ₃ ²⁻ (mmol/kgSW)	CO ₂ (mmol/kgSW)	B Alk (mmol/kgSW)	OH ⁻ (mmol/kgSW)	P Alk (mmol/kgSW)	Si Alk (mmol/kgSW)	Revelle	ΩCa	ΩAr	xCO ₂ (dry at 1 atm) (ppm)
Sep-08	2067.9	2348.3	8.094	354.7	356.0	1856.4	199.5	11.9	88.5	4.2	0.1	0.0	10.152	4.74	3.07	363.5
Oct-08	2075.6	2353.0	8.101	349.1	350.3	1866.2	197.4	12.0	88.0	3.9	0.0	0.0	10.236	4.69	3.03	357.3
Nov-08	2093.4	2361.4	8.115	336.8	338.0	1890.2	190.8	12.4	86.2	3.3	0.1	0.0	10.482	4.52	2.91	343.9
Dec-08	2120.5	2349.9	8.080	368.6	370.0	1941.0	164.9	14.6	76.5	2.4	0.3	0.1	11.392	3.90	2.50	375.5
Feb-09	2136.7	2348.9	8.068	380.4	381.9	1967.7	153.3	15.8	72.2	2.0	0.5	0.1	11.890	3.63	2.32	387.0
Mar-09		2347.5														
Apr-09	2110.3	2350.0	8.101	348.5	349.8	1925.1	171.4	13.8	79.5	2.5	0.0	0.0	11.128	4.07	2.60	355.0
May-09	2083.4	2345.5	8.132	320.1	321.3	1885.3	185.8	12.3	85.7	2.9	0.0	0.0	10.585	4.41	2.83	326.3
Jun-09	2064.8	2345.3	8.087	361.0	362.2	1853.1	199.7	12.0	88.3	4.3	0.0	0.0	10.136	4.75	3.08	370.1
Jul-09	2046.2	2344.1	8.098	350.5	351.6	1823.0	212.0	11.1	92.0	5.1	0.0	0.0	9.798	5.07	3.30	360.1
Aug-09	2066.8	2349.2	8.060	389.3	390.6	1852.3	202.3	12.2	87.3	4.9	0.0	0.0	10.087	4.83	3.15	400.4

Supporting Figure S1

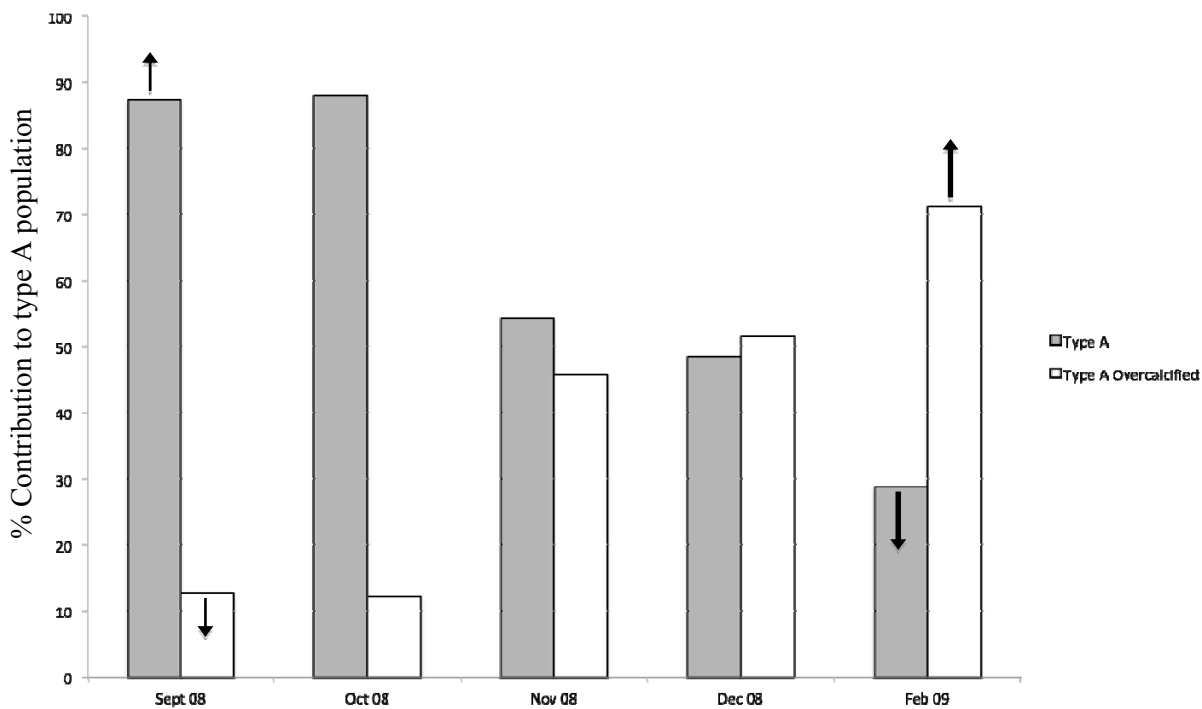


Figure S1. Variation in morphotype dominance of detached coccoliths by month. Counts are summed over all stations for the deep water in the Bay of Biscay (44°-46°N). Once 300 coccoliths of either morphotype had been counted in a set of images, no further counting was conducted for that morphotype, but counting of the other morphotype was continued. This led to a maximum estimate for the % overcalcified in September (% is no higher than the value shown), and a minimum estimate in February (% is at least as high as the value shown), as indicated by the arrows on the plot.