

Table 1S – Degree of correlation of depth with biotic and abiotic factors and diversity. Bolded values are considered significant.

Test	Coefficient		Corrected	
	Pearson's	Spearman's	df	P
Relative Water Flow	-0.837	-0.912	9.789	< 0.001
All coral combined	-0.548	-0.402	24.951	0.003
<i>Porites compressa</i> (PCO)	-0.625	-0.550	19.561	0.002
<i>Montipora</i> sp. (MSP)	0.168	0.316	49.622	0.237
<i>Pocillopora damicornis</i> (PDA)	-0.164	-0.303	58.867	0.207
Other coral (OCOR)	-0.086	0.027	56.913	0.519
All macroalgae combined	-0.344	-0.416	29.825	0.055
<i>Dictyosphaeria</i> sp. (DSP)	-0.120	-0.132	72.709	0.306
<i>Eucheuma</i> sp. and <i>Kappaphycus</i> sp. (EKSP)	-0.308	-0.532	29.580	0.089
Other Macroalgae	-0.068	-0.213	87.026	0.526
All abiotic substrates combined	0.621	0.481	23.953	< 0.001
Dead coral with algae (DCA)	-0.189	-0.189	54.562	0.161
Recently dead coral (RDC)	-0.097	0.223	84.304	0.373
Rubble (RUB)	0.564	0.524	33.448	< 0.001
Sand (SAN)	0.744	0.690	15.917	< 0.001
Other invertebrates (OINV)	0.448	0.346	30.101	0.010
Unknown (UNK)	-0.127	-0.031	54.259	0.350
Shannon Diversity Index	-0.280	-0.225	32.998	0.103

Table 2S – Percent of the variance by environmental variables (i.e., depth and/or substrate), location, and shared (environmental variables and location) in the regression of; (1) temperature on depth, (2) temperature on location, (3) temperature on depth and location, (4) temperature on substrate and depth, and (5) temperature on substrate, depth, and location. Dominant factors are bolded.

Index	Data Set									
	Two Years		Summer 2008		Summer 2009	Winter 2008	Winter 2009			
Relative Hotspots	location 19.1		location 13.1		location 29.5	location 35.4	location 15.7			
Relative Coldspots	depth	2.1	depth	5.4	location 28.9	location 39.9	location 17.4			
	location 29.6		location 38.2							
Relative Hothours	location 28.1		depth	11.4	location 30.9	location 48.9	location 9.3			
			location 33.9	shared 0.0						
Relative Coldhours	depth	24.1	depth	23.1	depth	9.7	depth	19.2	depth	20.5
	location	4.6	location	15.2	location	17.9	location	5.8	location	6.7
	shared 61.9		shared 39.4		shared 49.6		shared 57.2		shared 49.1	
Overall Average	NA		depth	7.1	depth	2.3	location 39.7	location 17.5		
			location 17.0	shared 7.2	location 34.9	shared 1.9				
Average Daily Minimum	NA		location 25.9		location 36.4		depth	4.2	depth	4.1
							location 24.6	shared 20.9	location 19.6	shared 10.9
Average Daily Maximum	NA		depth 21.4		depth	8.7	depth	11.3	depth 21.5	
			location	10.1	location 25.4		location 33.4			
			shared	15.7	shared	15.1	shared	19.2		
Average Daily Range	NA		depth	24.0	substrate and depth 68.9		depth	19.4	depth 75.5	
			location	9.7			location	9.9	shared 57.6	
Total Heating Hours	NA		depth	14.3	substrate and depth 25.9		NA	NA		
			location	15.4	location				21.2	
			shared 15.8		shared				21.0	

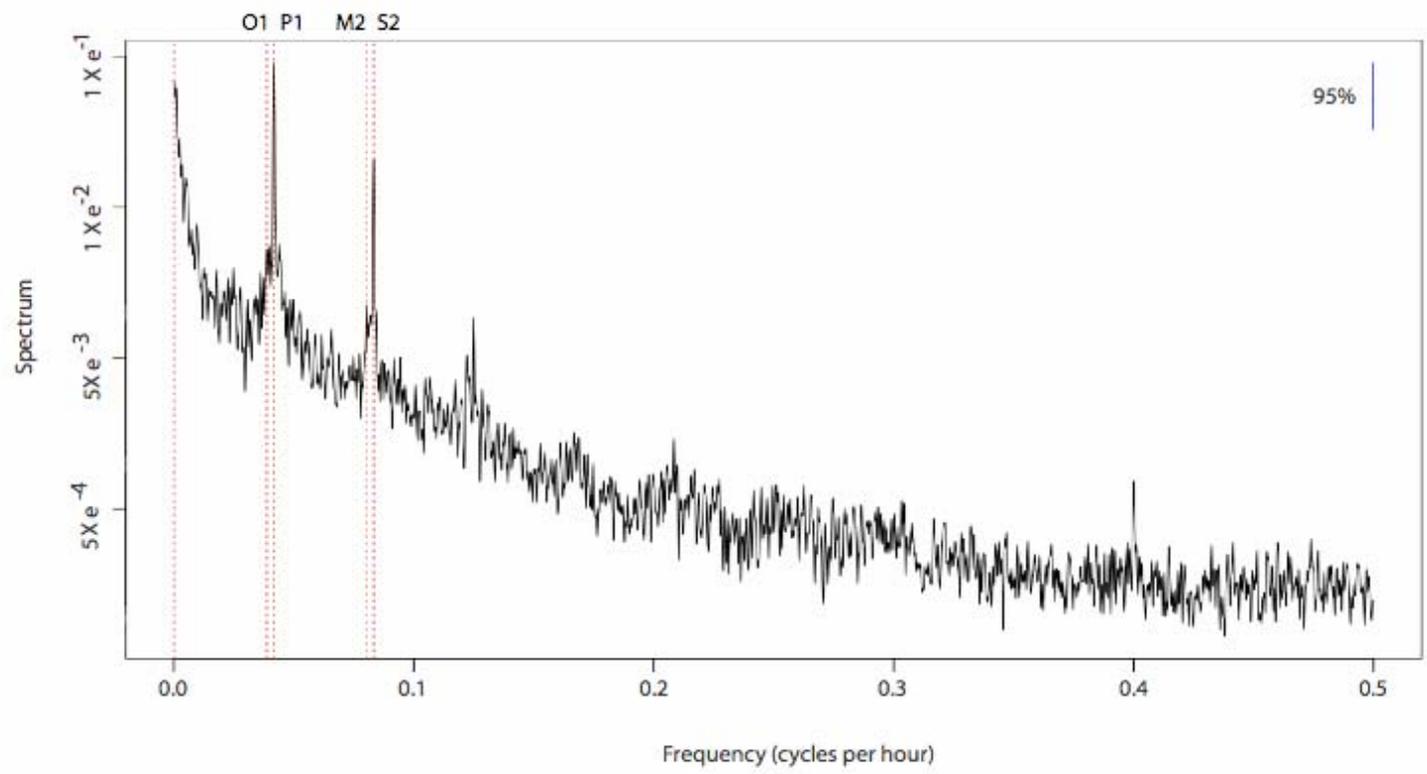
Supplemental Figure Legends

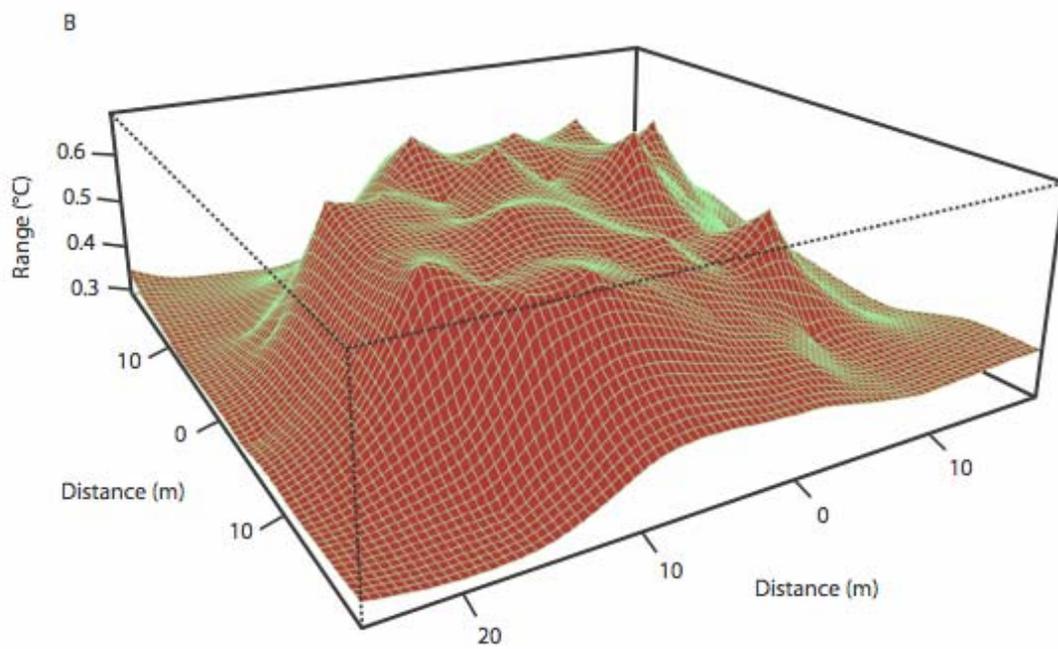
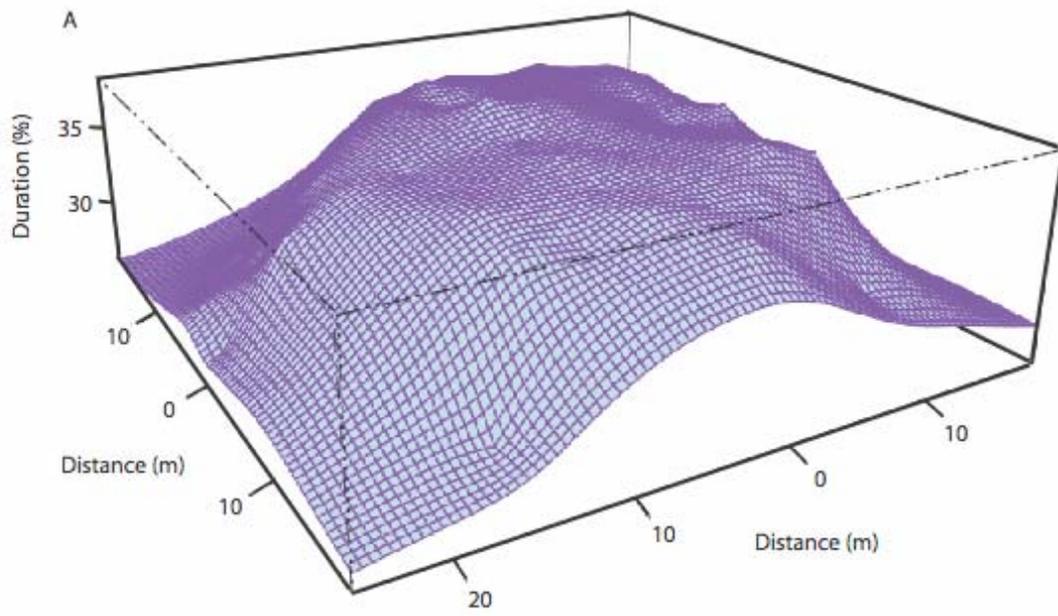
Figure 1S – Fourier transform scaled periodogram of the standard deviation in temperature for the two years of data. Principal frequencies are marked with vertical, dashed lines and correspond to seasonal (365 days), lunar (O1, 24.83 hours), solar (P1, 24 hours), lunar semi-diurnal (M2, 12.42 hours), and solar semi-diurnal (S2, 12 hours). Other peaks between 0.1 and 0.2 cycles per hour are likely echoes of O1 and P1. Scale bar in the upper right corner is the 95% confidence limit.

Figure 2S – Ordinary kriging interpolation of the proportion of two-year data set that were Coldhours (A) and the average daily temperature range for Winter 2008 (B).

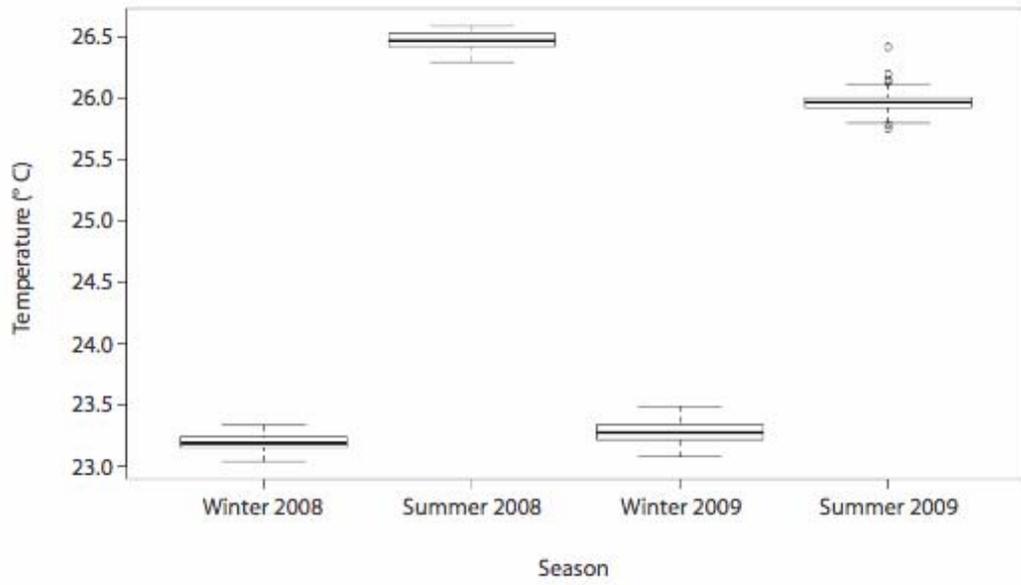
Figure 3S – Tukey boxplots of the seasonal and annual variation seen in average daily minimum (A) and maximum (B) temperatures. The rectangle represents the interquartile range (i.e., the 25th percentile, median, and 75th percentile), the “whiskers” represent all values that are within 1.5 times the interquartile range, and the open circles represent outliers, defined as data points that lie outside the whiskers.

Figure 4S – Tukey boxplots of the seasonal and annual variation in percent of time sites spent as Hothours (A) and Coldhours (B). The rectangle represents the interquartile range (i.e., the 25th percentile, median, and 75th percentile), the “whiskers” represent all values that are within 1.5 times the interquartile range, and the open circles represent outliers, defined as data points that lie outside the whiskers.





A



B

