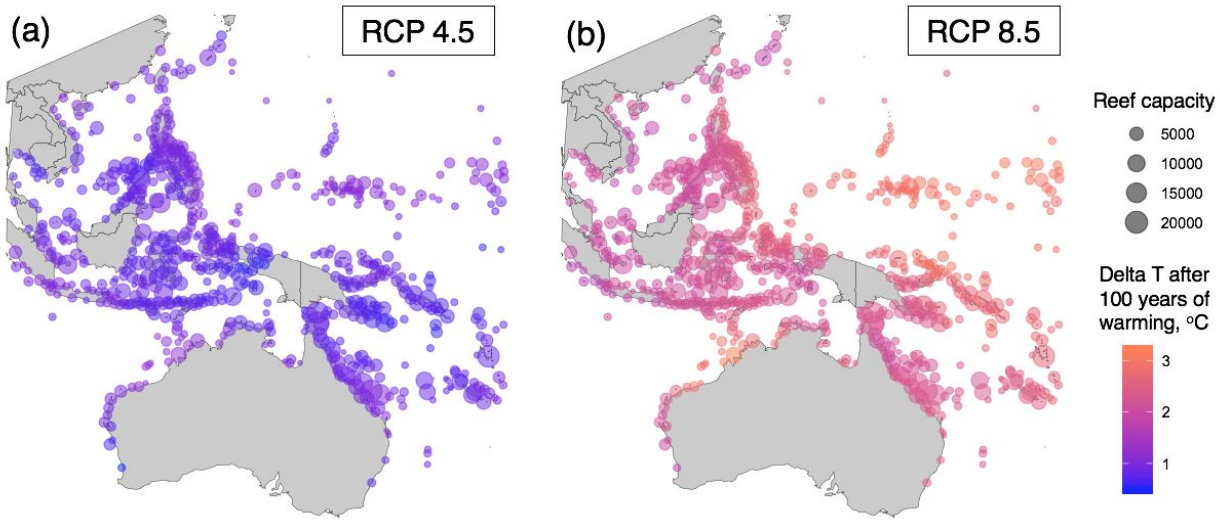

Figure S1. Modeled warming scenarios: (a) RCP 4.5 and (b) RCP 8.5. Colors indicate the amount of warming in 100 years, and size of points indicates the carrying capacity of each reef, in number of individuals (see legend).

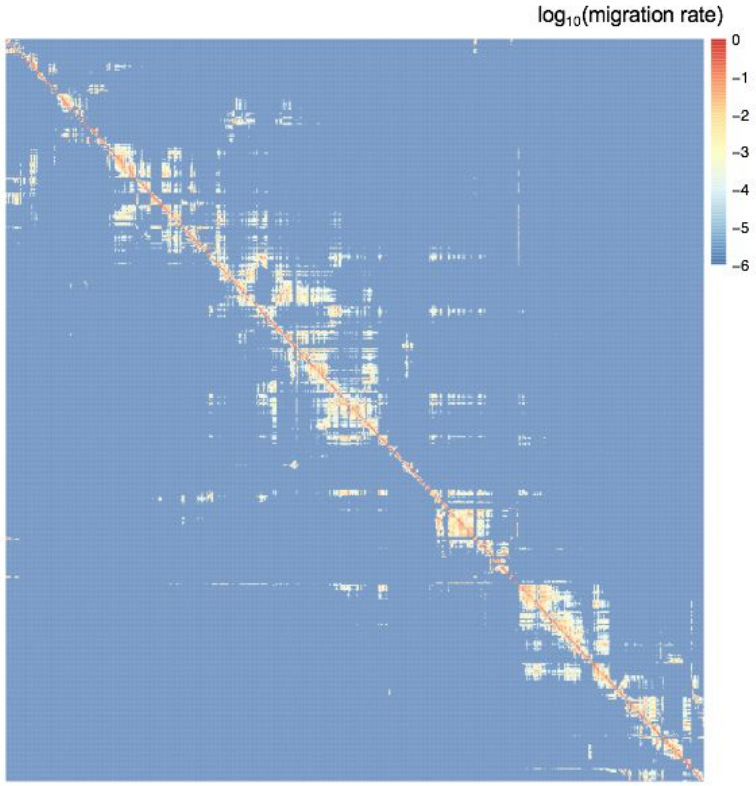

Figure S2. Migration matrix (rows - sources, columns - sinks). To enable log-transform of zero values, 1e-6 was added to all values for the generation of this figure (the actual smallest non-zero migration rate is 1e-5).

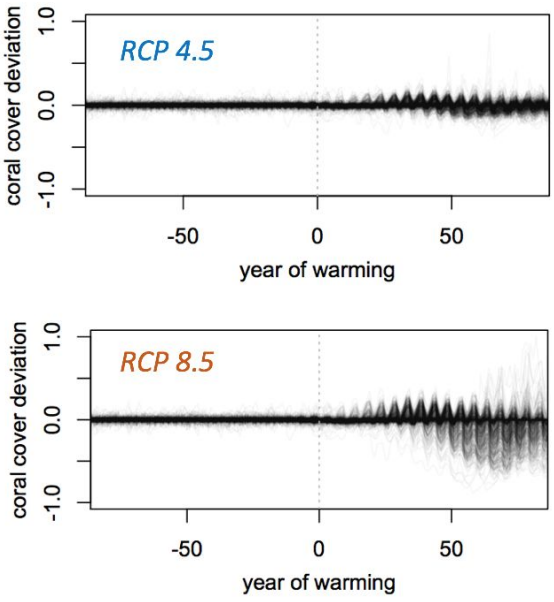

Figure S3. Coral cover changes (i.e, mortality-recovery cycles) in response to sinusoidal temperature fluctuations intensify during warming. Lines for all 680 populations are overlaid; each line shows deviation of the coral cover value relative to the smoothed mean (so a deviation of -1.0 would represent local extinction, and +1.0 would represent a doubling of coral cover).

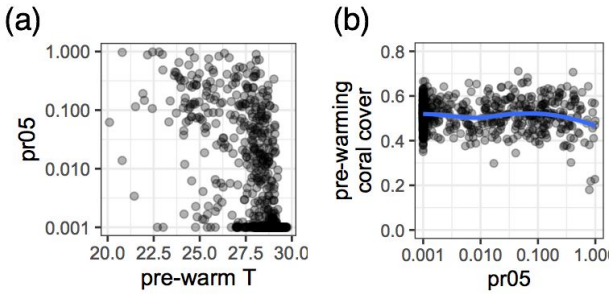

Figure S4. Relationship of pr05 with pre-warming reef temperature (a) and pre-warming coral cover (b). The line on panel b is from loess smoothing.

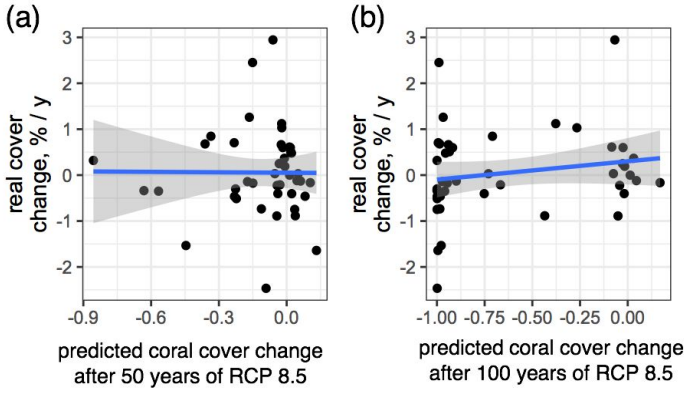

Figure S5. Relationship between model-predicted coral cover responses after 50 (a) and 100 (b) years of warming and actual coral cover change over 15 years across the turn of the century (Bruno & Selig, 2007). The *x*-axis values are predicted coral cover change relative to the pre-warming level. Neither of these correlations is statistically significant. Lines are linear regressions, grey areas are 95% confidence intervals of the linear fits.