

Supplementary Materials for “Risks to coral reefs from ocean carbonate chemistry changes in recent earth system model projections”

K L Ricke, J C Orr, K Schneider, K Caldeira

Figure S1. Percentage of coral reefs surrounded by open ocean waters above aragonite saturation thresholds as a function of time in three RCP scenarios for aragonite saturation thresholds ($\Omega_{a,crit}$) of 3.5, 3.25 and 3. Panels show RCP emissions scenarios 8.5, 6.0, 4.5 and 2.6 with individual models displayed by the colors designated at top right.

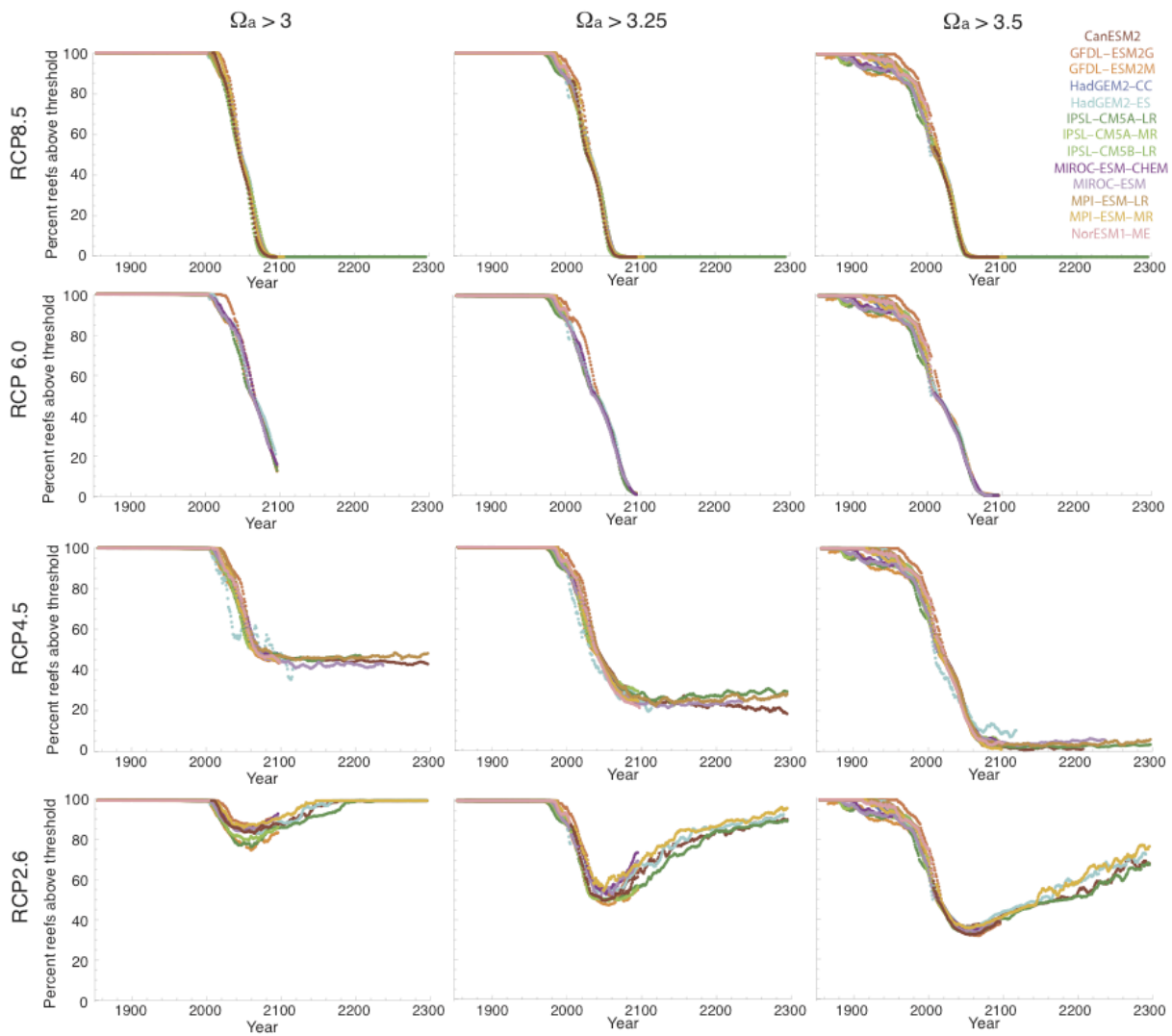


Figure S2. Percentage of coral reefs surrounded by open ocean waters above aragonite saturation thresholds as a function of atmospheric CO₂ concentration displayed for aragonite saturation thresholds ($\Omega_{a,crit}$) of 3.5, 3.25 and 3. The results for individual models are displayed by the colors designated at top right.

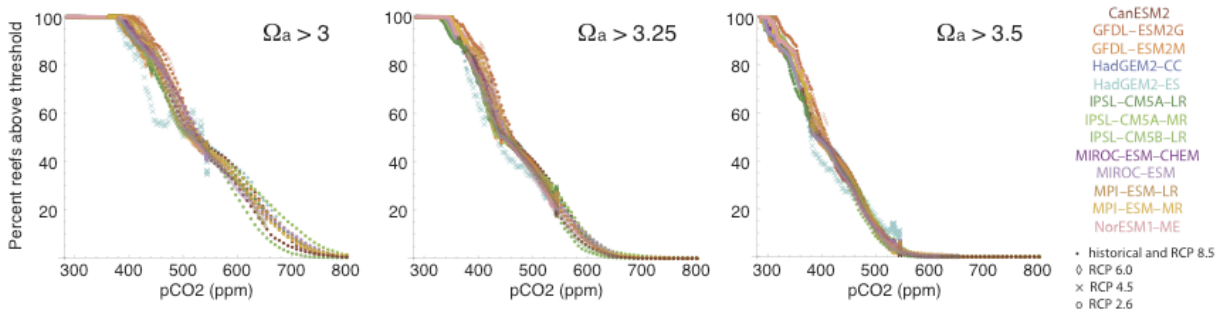


Table S1. Earth System Models included in the analysis and data available by scenario and year.

Modeling Group	Model Name	Historical	RCP 2.6	RCP 4.5	RCP 6.0	RCP 8.5
Canadian Centre for Climate Modelling and Analysis	CanESM2	1850-2005	2006-2300	2006-2300		2006-2100
NOAA Geophysical Fluid Dynamics Laboratory	GFDL-ESM2G	1861-2005	2006-2100	2006-2100	2006-2100	2006-2100
	GFDL-ESM2M	1861-2005	2006-2100	2006-2100	2006-2100	2006-2100
Met Office Hadley Centre	HadGEM2-CC	1860-2004		2006-2098		
	HadGEM2-ES	1860-2005	2006-2295	2006-2120*	2006-2098	2006-2207**
Institut Pierre-Simon Laplace	IPSL-CM5A-LR	1850-2005	2006-2300	2006-2300	2006-2100	2006-2300
	IPSL-CM5A-MR	1850-2005	2006-2100	2006-2100		2006-2100
	IPSL-CM5B-LR	1850-2005				2006-2100
Japan Agency for Marine-Earth Science and Technology, Atmosphere and Ocean Research Institute (The University of Tokyo), and National Institute for Environmental Studies	MIROC-ESM	1850-1955	2006-2100	2006-2100	2006-2100	2006-2090
	MIROC-ESM-CHEM	1850-2005	2006-2100	2006-2240	2006-2090	2006-2100
Max-Planck-Institut für Meteorologie	MPI-ESM-LR	1850-1999	2006-2300	2006-2300		2006-2110
	MPI-ESM-MR	1850-2005	2006-2100	2006-2100		2006-2100
Norwegian Climate Centre	NorESM1-ME	1850-2005		2006-2102		

* Missing Value Years: 2046

** Missing Value Years: 2016, 2027, 2069, 2093, 2099, 2100