

Supplementary material

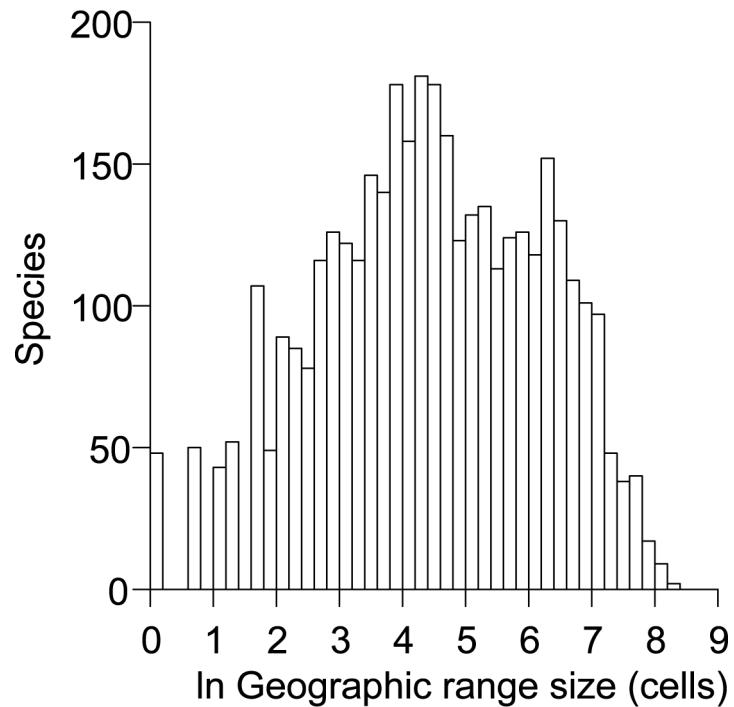


Figure S1. Range size frequency distribution of the 3837 species of New World birds used in the analysis.

A)

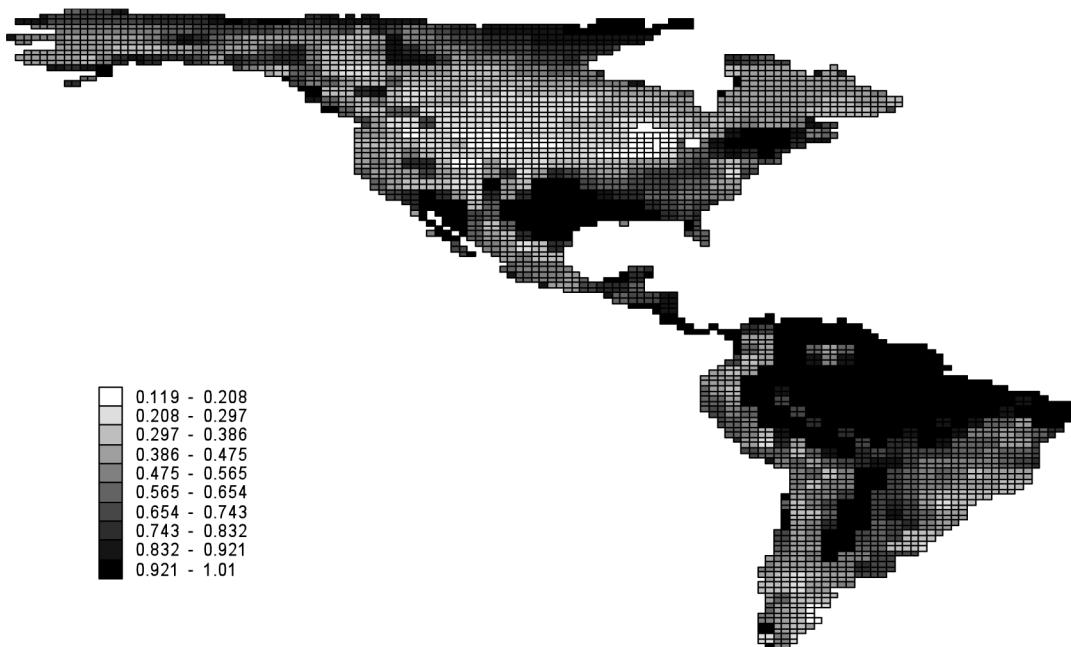


B)



Figure S2. Turnover maps of New World birds under climate change, using CCSM3 AOGCM, for BIOCLIM (A) and Random Forest (B).

A)



B)



Figure S3. Turnover maps of New World birds under climate change, using MIROC AOGCM, for BIOCLIM (A) and Random Forest (B). Comparison with Fig. S1 above shows that whereas BIOCLIM map is different when using CCSM3 and MIROC, maps by Random Forest are quite the same (which explains the interaction found for SDM and AOGCM – see also Fig. 4 in the main text).

Table S1. Median, minimum, maximum and standard deviation for True Skill Statistics (TSS) for the 3837 species of New World birds, for different AOGCMs and SDMs (for the A1 scenario). Because of lack of fit, turnover was calculated for slightly different number of species (species count and % in respect to total number of species).

		Median	Min	Max	SD	Species count	%spp.
CCSM3	BIOCLIM	0.835	0.446	1.000	0.081	3836	0.9997
	EUCLID	0.741	0.474	0.900	0.080	3788	0.9872
	MAHAL	0.828	0.460	0.997	0.066	3589	0.9354
	GLM	0.519	0.454	0.897	0.105	3589	0.9354
	MAXENT	0.821	0.498	0.999	0.114	3836	0.9997
	RF	0.872	0.500	0.998	0.143	3834	0.9992
	GARP	0.685	0.500	0.858	0.058	3836	0.9997
CSIRO	BIOCLIM	0.824	0.438	1.000	0.089	3836	0.9997
	EUCLID	0.742	0.468	0.946	0.090	3788	0.9872
	MAHAL	0.815	0.462	0.999	0.075	3589	0.9354
	GLM	0.562	0.457	0.851	0.109	3589	0.9354
	MAXENT	0.817	0.474	0.992	0.112	3836	0.9997
	RF	0.871	0.500	0.999	0.143	3835	0.9995
	GARP	0.673	0.512	0.951	0.060	3836	0.9997
HadCM3	BIOCLIM	0.836	0.453	1.000	0.085	3836	0.9997
	EUCLID	0.747	0.459	0.918	0.081	3788	0.9872
	MAHAL	0.827	0.483	0.998	0.069	3589	0.9354
	GLM	0.556	0.458	0.878	0.104	3589	0.9354
	MAXENT	0.823	0.498	0.990	0.114	3836	0.9997
	RF	0.863	0.500	0.998	0.141	3833	0.9990
	GARP	0.688	0.492	0.895	0.058	3836	0.9997
ECHAM	BIOCLIM	0.847	0.469	1.000	0.083	3836	0.9997
	EUCLID	0.757	0.478	0.963	0.082	3788	0.9872
	MAHAL	0.840	0.489	0.999	0.072	3589	0.9354
	GLM	0.555	0.455	0.853	0.106	3589	0.9354
	MAXENT	0.829	0.469	0.999	0.117	3836	0.9997
	RF	0.872	0.500	1.000	0.143	3836	0.9997
	GARP	0.692	0.516	0.892	0.058	3836	0.9997
MIROC	BIOCLIM	0.833	0.448	1.000	0.086	3836	0.9997
	EUCLID	0.752	0.467	0.920	0.090	3788	0.9872
	MAHAL	0.827	0.470	0.998	0.072	3589	0.9354
	GLM	0.567	0.454	0.877	0.106	3589	0.9354
	MAXENT	0.818	0.500	0.995	0.113	3836	0.9997
	RF	0.870	0.500	1.000	0.143	3833	0.9990
	GARP	0.680	0.514	0.888	0.057	3836	0.9997

Table S2. Median, minimum and maximum values of turnover across New World, for different AOGCMs and SDMs (for the A1 scenario) (see also Fig. 4 in the main text).

AOGCM	SDM	Median	Min	Max
CCSM3	BIOCLIM	0.490	0.119	1.000
	EUCLID	0.344	0.087	0.770
	MAHAL	0.394	0.169	0.394
	GLM	0.086	0.010	0.425
	MAXENT	0.155	0.038	0.508
	RF	0.147	0.016	0.578
	GARP	0.519	0.184	0.891
CSIRO	BIOCLIM	0.378	0.000	1.000
	EUCLID	0.271	0.073	0.775
	MAHAL	0.304	0.131	0.964
	GLM	0.081	0.003	0.331
	MAXENT	0.118	0.018	0.433
	RF	0.125	0.012	0.563
	GARP	0.505	0.162	0.883
HadCM3	BIOCLIM	0.580	0.133	1.000
	EUCLID	0.423	0.132	0.961
	MAHAL	0.492	0.174	0.492
	GLM	0.127	0.020	0.453
	MAXENT	0.184	0.044	0.525
	RF	0.170	0.022	0.607
	GARP	0.562	0.219	0.918
ECHAM	BIOCLIM	0.365	0.082	1.000
	EUCLID	0.322	0.103	0.955
	MAHAL	0.328	0.089	1.000
	GLM	0.104	0.006	0.293
	MAXENT	0.117	0.026	0.494
	RF	0.125	0.009	0.550
	GARP	0.557	0.194	0.936
MIROC	BIOCLIM	0.812	0.103	1.000
	EUCLID	0.519	0.109	0.972
	MAHAL	0.668	0.213	1.000
	GLM	0.194	0.033	0.528
	MAXENT	0.597	0.030	0.543
	RF	0.562	0.011	0.498
	GARP	0.941	0.194	0.936