Supporting information

Supporting Information Table S1: Change in temperature (ΔT), precipitation (ΔP) and simulated biomass (ΔB) within the five regions in Amazonia for the period 2070-2100 relative to the baseline (1970-2000) under the climatology of the 24 climate models. CLIM+CO_2 denotes the scenario assuming the effects of CO_2 fertilization and drought buffering (SRES-A1B), CLIM only assumes no CO_2 effects (constant CO_2).

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Region	**Model name**	**bccr_bcm2_0**	**cccma_cgcm3_1**	**cccma_cgcm3_1_t63**	**cnrm_cm3**	**csiro_mk3_0**	**csiro_mk3_5**	**gfdl_cm2_0**	**gfdl_cm2_1**	**giss_aom**	**giss_model_e_h**	**giss_model_e_r**	**iap_fgoals1_0_g**	**ingv_echam4**	**inmcm3_0**	**ipsl_cm4**	**miroc3_2_hires**	**miroc3_2_medres**	**miub_echo_g**	**mpi_echam5**	**mri_cgcm2_3_2a**	**ncar_ccsm3_0**	**ncar_pcm1**	**ukmo_hadcm3**	**ukmo_hadgem1**
Eastern Amazonia																									
Δ T (°C)		2.4	3.3	3.5	2.8	2.1	3.8	3.2	3.1	1.9	2.4	2.3	2.3	2.8	2.6	3.2	4.0	3.8	3.5	3.7	2.1	2.9	1.9	4.6	3.5
Δ P (mm)		374.4	-314.0	-356.0	98.1	390.9	-978.4	-375.9	-339.5	2.3	358.1	292.3	-101.9	-226.8	319.2	1125.3	433.2	-249.6	-224.5	-282.5	42.8	-19.9	-63.7	-1197.7	-601.3
Δ B (kg C m^{-2})	clim+CO2	4.1	1.9	0.1	5.5	3.7	1.5	1.7	1.1	4.5	6.0	5.6	4.7	1.9	4.8	6.4	1.9	-0.1	2.1	1.1	3.2	3.6	5.0	-1.9	-0.2
	clim only	-0.6	-3.0	-4.8	0.1	-0.8	-0.9	-1.9	-3.0	-4.3	-2.5	-4.5	-3.2	-3.3	-0.9	-0.2	-3.0	-5.3	-3.3	-1.2	-2.9	-2.2	-1.7	-4.6	-4.9
Δ B (%)	clim+CO2	62.1	19.9	1.3	77.1	45.1	44.7	26.4	13.2	36.0	45.4	39.1	40.4	22.3	57.9	71.1	22.8	-0.7	26.4	16.2	29.9	41.9	50.4	-24.4	-1.8
	clim only	-9.3	-31.4	-46.9	1.4	-10.0	-26.3	-29.0	-37.0	-34.5	-18.9	-31.3	-27.6	-40.1	-11.3	-2.1	-35.8	-49.4	-40.5	-17.2	-26.7	-25.2	-17.2	-58.4	-52.9
North-western Amazonia																									
Δ T (°C)		2.9	2.9	3.5	3.5	2.8	4.3	4.0	3.5	2.3	2.6	2.6	2.1	3.2	2.5	3.4	4.8	3.8	3.2	4.4	2.1	2.7	1.5	5.7	4.7
Δ P (mm)		14.5	235.5	7.0	-29.8	-274.0	-308.0	-307.2	-78.7	-6.4	280.4	300.5	57.6	-15.6	151.5	758.3	-145.4	597.5	534.5	-8.9	40.7	307.2	351.4	-667.8	-535.3
Δ B (kg C m^{-2})	clim+CO2	3.7	6.0	4.5	4.3	3.4	2.8	0.2	2.5	5.6	3.7	3.2	4.3	2.5	4.7	7.4	2.2	4.3	4.3	-0.4	4.5	5.5	6.8	-3.2	-0.9
	clim only	-3.5	-0.3	-1.8	-4.0	-1.7	-2.1	-2.3	-1.2	-1.0	-1.5	-3.5	-0.9	-3.7	-1.5	-1.2	-6.4	-3.3	-2.7	-8.6	-0.9	-2.3	0.6	-8.6	-8.1
Δ B (%)	clim+CO2	26.6	38.3	27.9	26.4	31.2	31.7	1.9	31.6	32.5	19.1	16.1	23.1	14.4	27.7	60.6	14.5	27.5	25.5	-2.7	24.5	37.0	49.6	-21.8	-6.0
	clim only	-25.5	-2.2	-11.0	-24.5	-15.4	-24.0	-25.8	-15.9	-5.8	-8.0	-17.7	-4.9	-20.8	-8.6	-9.6	-42.8	-21.6	-16.2	-52.1	-5.0	-15.4	4.8	-59.0	-52.9
Southern Amazonia																									
Δ T (°C)		2.6	3.2	3.6	3.1	2.6	4.7	4.1	3.7	2.7	3.0	2.7	2.3	3.1	2.9	4.0	5.7	4.5	3.1	4.4	2.4	3.0	1.8	4.8	3.9
Δ P (mm)		133.9	19.9	32.6	150.9	-72.3	-254.6	-362.0	-330.6	9.5	111.7	201.5	-3.7	14.2	35.6	35.3	-129.9	-227.0	248.9	-17.2	-11.7	143.6	149.3	-260.5	-41.3
Δ B (kg C m^{-2})	clim+CO2	4.4	3.9	3.9	3.8	2.3	1.8	1.3	0.4	1.8	4.8	4.3	5.3	3.1	2.8	1.6	0.5	1.8	4.4	1.2	4.9	3.7	3.9	-1.0	2.0
	clim only	-3.1	-2.8	-3.2	-2.8	-3.1	-2.7	-1.6	-2.7	-3.3	-2.7	-3.5	-4.4	-3.5	-3.4	-2.2	-3.9	-2.7	-3.4	-3.9	-3.9	-2.0	-2.1	-5.8	-4.5
Δ B (%)	clim+CO2	45.0	45.6	42.1	38.0	25.2	24.9	21.1	5.9	19.0	45.8	41.3	44.9	33.7	28.8	20.1	6.0	21.8	44.0	14.7	43.9	42.8	44.0	-10.0	20.8
	clim only	-32.1	-33.0	-34.6	-28.4	-33.9	-36.5	-25.5	-37.2	-34.5	-25.2	-33.3	-36.8	-37.5	-34.5	-27.1	-44.6	-32.6	-33.9	-46.8	-34.3	-22.7	-24.0	-58.8	-47.3
North-eastern Brazil																									
Δ T (°C)		2.3	2.8	3.0	2.8	2.2	3.4	2.9	2.7	1.9	2.4	2.3	2.1	2.6	2.2	3.5	4.5	3.6	2.9	3.4	2.3	2.5	1.7	3.1	2.8
Δ P (mm)		94.8	-67.9	-13.1	155.9	-10.3	-297.9	-182.2	-180.4	71.0	91.9	75.0	-92.2	-98.7	21.1	376.4	-93.1	-233.2	-104.2	-44.2	-71.4	-15.4	-46.3	-472.0	114.6
Δ B (kg C m^{-2})	clim+CO2	4.8	2.6	2.8	4.6	2.2	0.7	1.3	1.3	4.6	4.2	4.4	3.5	2.4	1.9	4.3	1.6	0.6	2.2	2.5	2.2	3.4	3.6	-1.1	3.0
	clim only	0.0	-1.6	-1.2	0.0	-0.7	-1.0	-1.5	-1.8	-0.8	-2.3	-1.5	-2.1	-1.8	-1.0	0.1	-1.8	-2.1	-2.3	-0.3	-1.0	-1.1	-0.8	-2.8	0.0
Δ B (%)	clim+CO2	81.2	40.0	44.2	69.6	37.7	25.8	26.8	22.4	59.2	49.8	58.2	47.7	37.5	33.4	78.3	28.0	10.3	31.4	45.0	31.7	51.0	53.7	-22.5	61.6
	clim only	0.2	-23.8	-19.3	0.7	-12.7	-38.5	-29.8	-30.5	-10.0	-27.1	-19.9	-28.9	-28.6	-17.8	1.1	-32.6	-34.8	-34.0	-4.6	-13.9	-17.0	-11.7	-57.3	-0.7
Southern Brazil																									
Δ T (°C)		2.4	2.8	3.3	2.7	2.0	2.8	2.8	3.2	2.4	2.1	1.9	1.9	2.2	2.9	4.4	3.8	2.7	2.5	3.1	1.9	2.5	1.7	3.7	3.4
Δ P (mm)		91.2	53.5	104.0	152.6	61.0	385.0	9.5	-283.9	-4.1	156.5	336.6	118.1	235.4	-144.1	-293.5	9.2	-46.3	203.1	209.8	249.7	169.6	70.7	84.6	9.0
Δ B (kg C m^{-2})	clim+CO2	2.9	2.8	2.8	5.0	3.5	2.6	1.7	1.7	4.2	4.7	5.1	6.0	3.8	2.8	2.2	1.3	2.1	3.5	1.5	4.9	4.2	4.1	1.5	2.8
	clim only	-3.2	-2.7	-2.7	-0.7	-1.4	-1.0	-1.3	-1.3	-1.6	0.1	0.3	0.8	-1.9	-2.3	-1.6	-3.6	-2.7	-2.0	-3.0	-1.0	-1.0	0.2	-4.2	-3.0
Δ B (%)	clim+CO2	23.7	24.2	25.2	50.8	33.1	29.3	23.4	27.0	37.9	45.0	49.6	52.8	33.6	26.8	31.3	11.2	18.7	31.2	14.6	42.3	39.9	46.4	12.1	25.0
	clim only	-26.6	-23.4	-23.7	-7.5	-13.3	-10.8	-17.3	-20.0	-14.6	1.0	2.9	6.8	-16.5	-22.7	-22.1	-30.6	-24.4	-17.6	-28.3	-8.1	-9.8	2.1	-34.5	-27.1

Supporting Information Table S2: Comparison of plot measurements and simulated gridcell values.

Plot measurements						Simulated gridcells		
Longitude	**Latitude**	**Site**	**Reference**	**Biomass (Mg dry weight ha^{-1})**	**Biomass (kg C m^{-2})[a]**	**Longitude**	**Latitude**	**Biomass (kg C m^{-2})**
Eastern Amazonia								
-51.53	-1.7	CAX-01	Baker2004	378.7	18.9	-51.75	-1.75	8.4
-51.53	-1.7	CAX-02	Baker2004	364.6	18.2			
-52.05	-1	JRI-01	Baker2004	387.1	19.4	-52.25	-1.25	8.1
-54.94	-3.31	TAP-01	Baker2004	296.1	14.8			
-54.94	-3.31	TAP-02	Baker2004	373.8	18.7	-54.75	-3.25	8.8
-54.94	-3.31	TAP-03	Baker2004	377.3	18.9			
-53.5	-2.5		Houghton2001	309.0	15.5	-53.75	-2.75	8.2
-50.75	-2.25		Houghton2001	400.0	20.0	-50.75	-2.25	9.2
-48.5	-2.5		Houghton2001	337.0	16.9	-48.75	-2.75	10.0
-47.35	-3.63		Houghton2001	253.0	12.7	-47.25	-3.75	9.3
-46.5	-1.25		Houghton2001	221.0	11.1	-46.75	-1.25	9.5
-47.5	-4.88		Houghton2001	95.0	4.8	-47.75	-4.75	7.7
-47.51	-2.98		Houghton2001	264.0	13.2	-47.75	-2.75	10.7
-47.31	-1.1		Houghton2001	267.0	13.4	-47.25	-1.25	9.7
-47	-3		Houghton2001	306.0	15.3	-47.25	-3.25	9.6
-53	-1		Houghton2001	413.0	20.7	-53.25	-1.25	8.4
-49.44	-3.42		Houghton2001	326.0	16.3	-49.25	-3.25	9.4
-49	-4.5		Houghton2001	268.0	13.4	-49.25	-4.75	7.5
-45.97	-3.1	BAL-01	Malhi2006	294.0	14.7	-45.75	-3.25	7.5
-45.97	-3.1	BAL-02	Malhi2006	273.4	13.7			
-46.33	-2.67	BAL-03	Malhi2006	327.5	16.4	-46.25	-2.75	8.9
-46.33	-2.67	BAL-04	Malhi2006	373.0	18.6			
-51.62	0.17	CAI-01	Malhi2006	382.7	19.1	-51.75	0.25	9.0
-48.45	-1.45	MBO-01	Malhi2006	301.2	15.1	-48.25	-1.25	10.6
-52.6	-4.75	XIN-02	Malhi2006	237.9	11.9	-52.75	-4.75	9.0
-51.67	-3.48	XIN-03	Malhi2006	300.6	15.0			
-51.67	-3.48	XIN-04	Malhi2006	349.6	17.5	-51.75	-3.25	8.9
-51.67	-3.48	XIN-05	Malhi2006	307.5	15.4			
North-western Amazonia								
-60	-2.4	BDF-01	Baker2004	378.7	18.9			
-60	-2.4	BDF-13	Baker2004	342.2	17.1	-60.25	-2.25	10.2
-60	-2.4	BDF-14	Baker2004	356.1	17.8			
-61.11	1.47		Houghton2001	228.0	11.4	-61.25	1.25	10.1
-72.36	-0.63		Houghton2001	343.0	17.2	-72.25	-0.75	18.3
-60.8	-2.5		Houghton2001	249.0	12.5	-60.75	-2.75	10.1
-60	-2.4	BDF-02	Malhi2006	325.6	16.3	-60.25	-2.25	10.2
-60	-3	DUC-01	Malhi2006	272.7	13.6	-60.25	-3.25	10.1
-62	-2.5	JAU-01	Malhi2006	411.6	20.6			
-62	-2.5	JAU-02	Malhi2006	360.0	18.0	-62.25	-2.75	12.7
-62	-2.5	JAU-03	Malhi2006	414.9	20.7			
-62	-2.5	JAU-04	Malhi2006	441.3	22.1			
-66.37	-4.3	JUR-01	Malhi2006	360.5	18.0	-66.25	-4.25	15.4
-66.58	-4.95	JUR-03	Malhi2006	324.9	16.2	-66.75	-4.75	15.2
-66.17	-4.67	JUR-04	Malhi2006	315.9	15.8	-66.25	-4.75	15.6
-61.25	-1.75	MAE-01	Malhi2006	307.6	15.4	-61.25	-1.75	12.3
-65.27	-4.85	URU-01	Malhi2006	353.9	17.7	-65.25	-4.75	15.2
-67.05	1.93	SCR-01	Malhi2006	300.6	15.0	-67.25	1.75	18.2

Southern Amazonia								
-61.48	-14.53	CRP-02	Baker2004	233.8	11.7	-61.25	-14.75	8.5
-60.85	-14.6	LFB-02	Baker2004	285.0	14.2	-60.75	-14.75	9.4
-61.13	-14.4	LSL-01	Baker2004	173.3	8.7	-61.25	-14.25	9.0
-61.13	-14.4	LSL-02	Baker2004	203.6	10.2			
-61.8	-16.55		Houghton2001	202.0	10.1	-61.75	-16.75	8.3
-62.75	-14.55	PER-01	Malhi2006	242.5	12.1	-62.75	-14.75	9.0

[a]Dry mass was converted to vegetation carbon by dividing the original numbers by 2 (Larcher 2001) and converted to kg C m^{-2}.

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