Supplement of

Soil and Biomass Carbon Storage is Much Higher in Central American than Andean Montane Forests

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Supplementary Material

Tables S1-S5, and Figures S1-S5.

Table S1 Data use to compare AGB among other Neotropical studies. Aboveground biomass in Mg ha-1. EM: Studies that report ectomycorrhizal trees. y = presence; n = absence

Elevation (m asl)	Forest type	AGB	Country	Study	EM
880	lowland	231	Panama	This study	y
1100	montane	185.7	Panama	This study	y
1100	montane	311	Panama	This study	y
1155	montane	369.3	Panama	This study	y
1215	montane	264.7	Panama	This study	y
1330	montane	407.2	Panama	This study	y
1987	montane	386.9	Panama	This study	y
2248	montane	469.9	Panama	This study	y
2599	montane	576.9	Panama	This study	y
2923	montane	516.5	Panama	This study	y
100	lowland	180.87	Brazil	Alves et al., 2011	n
100	lowland	190.05	Brazil	Alves et al., 2011	n
100	lowland	210.81	Brazil	Alves et al., 2011	n
100	lowland	221.92	Brazil	Alves et al., 2011	n
400	lowland	223.72	Brazil	Alves et al., 2011	n
400	lowland	233.38	Brazil	Alves et al., 2011	n
400	lowland	257.07	Brazil	Alves et al., 2011	n
400	lowland	260.31	Brazil	Alves et al., 2011	n
1000	lowland	242.36	Brazil	Alves et al., 2011	n
1000	lowland	243.71	Brazil	Alves et al., 2011	n
1000	lowland	277.79	Brazil	Alves et al., 2011	n

1000	lowland	322.89	Brazil	Alves et al., 2011	n
41	lowland	225.28	Colombia	González-Caro et al., 2020	y
59	lowland	272.32	Colombia	González-Caro et al., 2020	y
128	lowland	218.6	Colombia	González-Caro et al., 2020	y
166	lowland	217.08	Colombia	González-Caro et al., 2020	y
167	lowland	201.52	Colombia	González-Caro et al., 2020	y
171	lowland	321.16	Colombia	González-Caro et al., 2020	y
190	lowland	181.08	Colombia	González-Caro et al., 2020	y
203	lowland	109.92	Colombia	González-Caro et al., 2020	y
232	lowland	296.6	Colombia	González-Caro et al., 2020	y
234	lowland	187.4	Colombia	González-Caro et al., 2020	y
234	lowland	200.56	Colombia	González-Caro et al., 2020	y
235	lowland	221.2	Colombia	González-Caro et al., 2020	y
241	lowland	124.04	Colombia	González-Caro et al., 2020	y
248	lowland	290.2	Colombia	González-Caro et al., 2020	y
250	lowland	160.28	Colombia	González-Caro et al., 2020	y
261	lowland	79.68	Colombia	González-Caro et al., 2020	y
265	lowland	280.04	Colombia	González-Caro et al., 2020	y
266	lowland	128.04	Colombia	González-Caro et al., 2020	y
266	lowland	394.12	Colombia	González-Caro et al., 2020	y
267	lowland	259.6	Colombia	González-Caro et al., 2020	y
272	lowland	223.32	Colombia	González-Caro et al., 2020	y
273	lowland	110.88	Colombia	González-Caro et al., 2020	y
276	lowland	175.56	Colombia	González-Caro et al., 2020	y
278	lowland	317.12	Colombia	González-Caro et al., 2020	y
279	lowland	267.32	Colombia	González-Caro et al., 2020	y
285	lowland	140	Colombia	González-Caro et al., 2020	y
288	lowland	162.56	Colombia	González-Caro et al., 2020	y
288	lowland	175.72	Colombia	González-Caro et al., 2020	y
296	lowland	97.36	Colombia	González-Caro et al., 2020	y
296	lowland	142	Colombia	González-Caro et al., 2020	y
296	lowland	265.76	Colombia	González-Caro et al., 2020	y
296	lowland	319.36	Colombia	González-Caro et al., 2020	y
299	lowland	203.6	Colombia	González-Caro et al., 2020	y
302	lowland	319.6	Colombia	González-Caro et al., 2020	y
304	lowland	128.52	Colombia	González-Caro et al., 2020	y
304	lowland	200.76	Colombia	González-Caro et al., 2020	y
304	lowland	321.96	Colombia	González-Caro et al., 2020	y
304	lowland	371.56	Colombia	González-Caro et al., 2020	y
312	lowland	223.76	Colombia	González-Caro et al., 2020	y
312	lowland	353.32	Colombia	González-Caro et al., 2020	y
314	lowland	373	Colombia	González-Caro et al., 2020	y
318	lowland	301.68	Colombia	González-Caro et al., 2020	y

329	lowland	122.32	Colombia	González-Caro et al., 2020	y
330	lowland	265.52	Colombia	González-Caro et al., 2020	y
338	lowland	242.44	Colombia	González-Caro et al., 2020	y
349	lowland	137.4	Colombia	González-Caro et al., 2020	y
359	lowland	126.92	Colombia	González-Caro et al., 2020	y
449	lowland	279.04	Colombia	González-Caro et al., 2020	y
473	lowland	344.04	Colombia	González-Caro et al., 2020	y
510	lowland	241.16	Colombia	González-Caro et al., 2020	y
586	lowland	167.92	Colombia	González-Caro et al., 2020	y
691	lowland	217.4	Colombia	González-Caro et al., 2020	y
749	lowland	214.36	Colombia	González-Caro et al., 2020	y
764	lowland	232	Colombia	González-Caro et al., 2020	y
772	lowland	280.04	Colombia	González-Caro et al., 2020	y
928	lowland	285.8	Colombia	González-Caro et al., 2020	y
941	lowland	230.68	Colombia	González-Caro et al., 2020	y
960	lowland	250.2	Colombia	González-Caro et al., 2020	y
972	lowland	383.6	Colombia	González-Caro et al., 2020	y
977	lowland	191.48	Colombia	González-Caro et al., 2020	y
1037	montane	286.08	Colombia	González-Caro et al., 2020	y
1065	montane	313.44	Colombia	González-Caro et al., 2020	y
1068	montane	324.8	Colombia	González-Caro et al., 2020	y
1119	montane	297.84	Colombia	González-Caro et al., 2020	y
1370	montane	283.84	Colombia	González-Caro et al., 2020	y
1412	montane	315.48	Colombia	González-Caro et al., 2020	y
1414	montane	192.8	Colombia	González-Caro et al., 2020	y
1483	montane	295.4	Colombia	González-Caro et al., 2020	y
1642	montane	380.44	Colombia	González-Caro et al., 2020	y
1658	montane	625.04	Colombia	González-Caro et al., 2020	y
1663	montane	421.28	Colombia	González-Caro et al., 2020	y
1701	montane	561.48	Colombia	González-Caro et al., 2020	y
1740	montane	225.24	Colombia	González-Caro et al., 2020	y
1793	montane	561.96	Colombia	González-Caro et al., 2020	y
1800	montane	246.16	Colombia	González-Caro et al., 2020	y
1810	montane	245.88	Colombia	González-Caro et al., 2020	y
1848	montane	398.88	Colombia	González-Caro et al., 2020	y
1903	montane	209.64	Colombia	González-Caro et al., 2020	y
1937	montane	493.32	Colombia	González-Caro et al., 2020	y
1949	montane	589.12	Colombia	González-Caro et al., 2020	y
2013	montane	211.4	Colombia	González-Caro et al., 2020	y
2027	montane	173.08	Colombia	González-Caro et al., 2020	y
2056	montane	177	Colombia	González-Caro et al., 2020	y
2083	montane	185.36	Colombia	González-Caro et al., 2020	y
2111	montane	264.28	Colombia	González-Caro et al., 2020	y

2314	montane	193.92	Colombia	González-Caro et al., 2020	y
2364	montane	136.4	Colombia	González-Caro et al., 2020	y
2527	montane	358.48	Colombia	González-Caro et al., 2020	y
2646	montane	272.36	Colombia	González-Caro et al., 2020	y
2647	montane	160.76	Colombia	González-Caro et al., 2020	y
2802	montane	98.12	Colombia	González-Caro et al., 2020	y
2928	montane	218.56	Colombia	González-Caro et al., 2020	y
115	lowland	297	Costa Rica	Hofhansl et al., 2020	n
210	lowland	240	Costa Rica	Hofhansl et al., 2020	n
253	lowland	224	Costa Rica	Hofhansl et al., 2020	n
315	lowland	370	Costa Rica	Hofhansl et al., 2020	n
355	lowland	267	Costa Rica	Hofhansl et al., 2020	n
100	lowland	182.9	Costa Rica	Clark et al., 2002	n
101	lowland	160.5	Costa Rica	Clark et al., 2002	n
102	lowland	186.1	Costa Rica	Clark et al., 2002	n
1240	montane	159	Costa Rica	Tanner et al., 2016	n
1490	montane	457	Costa Rica	Tanner et al., 2016	n
100	lowland	278	Costa Rica	Lieberman et al 1996	n
300	lowland	325	Costa Rica	Lieberman et al 1996	n
500	lowland	261	Costa Rica	Lieberman et al 1996	n
750	lowland	346	Costa Rica	Lieberman et al 1996	n
1000	lowland	261	Costa Rica	Lieberman et al 1996	n
1250	montane	145	Costa Rica	Lieberman et al 1996	n
1500	montane	215	Costa Rica	Lieberman et al 1996	n
1750	montane	268	Costa Rica	Lieberman et al 1996	n
2000	montane	271	Costa Rica	Lieberman et al 1996	n
2300	montane	349	Costa Rica	Lieberman et al 1996	n
2600	montane	362	Costa Rica	Lieberman et al 1996	n
1050	montane	285.1	Ecuador	Moser et al., 2008	n
1540	montane	167.1	Ecuador	Moser et al., 2008	n
1890	montane	169.6	Ecuador	Moser et al., 2008	n
2380	montane	98.92	Ecuador	Moser et al., 2008	n
3060	montane	103.4	Ecuador	Moser et al., 2008	n
171	lowland	281	Panama	Chave et al., 2003	n
120	lowland	130	Peru	Malhi et al., 2017	n
150	lowland	89	Peru	Malhi et al., 2017	n
215	lowland	112	Peru	Malhi et al., 2017	n
223	lowland	142	Peru	Malhi et al., 2017	n
595	lowland	97	Peru	Malhi et al., 2017	n
848	lowland	67	Peru	Malhi et al., 2017	n
1000	lowland	92	Peru	Malhi et al., 2017	n
1527	montane	107	Peru	Malhi et al., 2017	n
1776	montane	144.3	Peru	Malhi et al., 2017	n

1885	montane	64.22	Peru	Malhi et al., 2017	n
2020	montane	50.65	Peru	Malhi et al., 2017	n
2758	montane	88.52	Peru	Malhi et al., 2017	n
2863	montane	65.03	Peru	Malhi et al., 2017	n
3044	montane	59.08	Peru	Malhi et al., 2017	n
3045	montane	81.32	Peru	Malhi et al., 2017	n
3537	montane	81.9	Peru	Malhi et al., 2017	n
800	lowland	70	Venezuela	Delaney et al., 1997	n
1400	montane	173	Venezuela	Delaney et al., 1997	n
1500	montane	148	Venezuela	Delaney et al., 1997	n
2136	montane	157	Venezuela	Delaney et al., 1997	n
2500	montane	179	Venezuela	Delaney et al., 1997	n
50	lowland	47.66	Venezuela	Vilanova et al., 2018	n
60	lowland	70.749	Venezuela	Vilanova et al., 2018	n
100	lowland	96.122	Venezuela	Vilanova et al., 2018	n
105	lowland	183.288	Venezuela	Vilanova et al., 2018	n
105	lowland	201.301	Venezuela	Vilanova et al., 2018	n
138	lowland	135.579	Venezuela	Vilanova et al., 2018	n
140	lowland	150.246	Venezuela	Vilanova et al., 2018	n
140	lowland	151.633	Venezuela	Vilanova et al., 2018	n
141	lowland	113.5	Venezuela	Vilanova et al., 2018	n
142	lowland	77.786	Venezuela	Vilanova et al., 2018	n
143	lowland	102.64	Venezuela	Vilanova et al., 2018	n
144	lowland	206.23	Venezuela	Vilanova et al., 2018	n
165	lowland	80.404	Venezuela	Vilanova et al., 2018	n
168	lowland	114.254	Venezuela	Vilanova et al., 2018	n
169	lowland	150.581	Venezuela	Vilanova et al., 2018	n
171	lowland	115.821	Venezuela	Vilanova et al., 2018	n
173	lowland	117.096	Venezuela	Vilanova et al., 2018	n
176	lowland	113.483	Venezuela	Vilanova et al., 2018	n
180	lowland	133.051	Venezuela	Vilanova et al., 2018	n
180	lowland	174.418	Venezuela	Vilanova et al., 2018	n
220	lowland	234.506	Venezuela	Vilanova et al., 2018	n
220	lowland	237.089	Venezuela	Vilanova et al., 2018	n
244	lowland	266.224	Venezuela	Vilanova et al., 2018	n
283	lowland	128.517	Venezuela	Vilanova et al., 2018	n
312	lowland	226.454	Venezuela	Vilanova et al., 2018	n
316	lowland	125.518	Venezuela	Vilanova et al., 2018	n
318	lowland	225.897	Venezuela	Vilanova et al., 2018	n
350	lowland	144.203	Venezuela	Vilanova et al., 2018	n
366	lowland	156.565	Venezuela	Vilanova et al., 2018	n
380	lowland	81.251	Venezuela	Vilanova et al., 2018	n
404	lowland	136.338	Venezuela	Vilanova et al., 2018	n

760	lowland	204.805	Venezuela	Vilanova et al., 2018	n
1000	lowland	176.848	Venezuela	Vilanova et al., 2018	n
1150	montane	237.27	Venezuela	Vilanova et al., 2018	n
1320	montane	257.185	Venezuela	Vilanova et al., 2018	n
1500	montane	159.029	Venezuela	Vilanova et al., 2018	n
2040	montane	205.316	Venezuela	Vilanova et al., 2018	n
2060	montane	204.674	Venezuela	Vilanova et al., 2018	n
2310	montane	136.293	Venezuela	Vilanova et al., 2018	n
2312	montane	140.132	Venezuela	Vilanova et al., 2018	n
2318	montane	173.818	Venezuela	Vilanova et al., 2018	n
2320	montane	113.619	Venezuela	Vilanova et al., 2018	n
2321	montane	190.334	Venezuela	Vilanova et al., 2018	n
2421	montane	224.87	Venezuela	Vilanova et al., 2018	n
2430	montane	184.798	Venezuela	Vilanova et al., 2018	n
2430	montane	179.899	Venezuela	Vilanova et al., 2018	n
2449	montane	170.767	Venezuela	Vilanova et al., 2018	n
2450	montane	154.846	Venezuela	Vilanova et al., 2018	n
2450	montane	185.327	Venezuela	Vilanova et al., 2018	n
2452	montane	171.071	Venezuela	Vilanova et al., 2018	n

Table S2. Linear regressions for carbon pools with environmental factors.

	AGB		D_CWD		S_CWD		Soil C	
Variable	r	P	r	P	r	P	r	P
BD	0.16	0.13	0.05	0.253	-0.08	0.614	0.02	0.305
pH	0.09	0.204	-0.06	0.508	0.15	0.141	0.15	0.143
ResinP‡	0.71	0.001*	0.3	0.055 *	0.03	0.287	0.39	0.03*
NH4‡	0.1	0.194	-0.12	0.918	-0.04	0.47	-0.08	0.598
NO3‡	-0.11	0.779	-0.05	0.498	-0.11	0.801	-0.12	0.928
Al§	-0.07	0.554	-0.12	0.989	-0.07	0.54	0.06	0.243
Ca§	-0.02	0.413	-0.1	0.725	0	0.352	0.24	0.084
Fe§	0.14	0.149	-0.05	0.498	-0.11	0.779	0.02	0.308
K§	0.02	0.292	-0.09	0.67	0.31	0.054	0	0.33
Mg§	-0.12	0.873	-0.1	0.725	-0.05	0.488	-0.05	0.479
Mn§	-0.1	0.716	0.04	0.263	-0.07	0.569	0.14	0.15
Na§	-0.07	0.566	0.5	0.012*	0	0.334	0	0.342
ECEC§	-0.08	0.582	-0.12	0.928	0	0.366	0.12	0.171
Total.N †	-0.04	0.452	-0.11	0.757	-0.11	0.805	0.12	0.17
Total.P †	-0.02	0.4	-0.1	0.731	0	0.357	-0.01	0.38
MAT	0.76	0*	0.68	0.001*	0	0.361	0.77	0*
MAP	0.16	0.13	0.2	0.107	0.22	0.093	-0.02	0.403
MPwe	-0.12	0.976	-0.08	0.595	-0.08	0.586	-0.02	0.392
MPdry	0.22	0.093	0.39	0.03*	-0.01	0.378	0.41	0.025*
MDR	0.49	0.013*	0.12	0.173	0.06	0.233	0.31	0.054
ISO	0.1	0.184	0.31	0.053	-0.1	0.728	0.29	0.061
TS	0.08	0.216	0.3	0.058	-0.09	0.66	0.25	0.078

MATmax	0.76	0*	0.68	0.001*	0	0.359	0.77	0*
MATmin	0.76	0*	0.68	0.001*	0	0.351	0.77	0*
MATvar	0.56	0.007*	0.5	0.012*	0.01	0.321	0.74	0*
WC	0.36	0.039*	0.13	0.16	-0.11	0.802	0.41	0.025*

Table S3. Correlation between variables used for the SEM analysis.

	MAT	ResinP‡	NH4‡	Soil paraments	Climate parameter	% EM	AGB	DCWD	Soil C
ResinP‡	-0.89***								
NH4‡	-0.21	0.43							
Soil paraments	-0.95***	0.89***	0.14						
Climate parameter	0.17	-0.29	-0.60	0.0					
% EM	-0.76*	0.79**	0.31	0.73*	0.0				
AGB	-0.85***	0.87**	0.45	0.81**	-0.36	0.74*			
DCWD	-0.89**	0.62	-0.04	0.80**	-0.08	0.70*	0.72*		
Soil C	-0.89***	0.68*	0.19	0.86**	-0.11	0.54	0.71*	0.81**	

Table S4. Environmental characteristics of ten 1ha plots along an elevational gradient in Panama. Soil data are means (±1 SE) of 13 samples of 0-10 cm depth per plot. Superscripts report significant differences among sites, based on one-way ANOVA. Climate data from the CHELSA database.

Plot	PaloSeco	Alto Frio	ChorroA	HondaA	Samudio	Hornito	Mirador	CasaA	Quetzal	Copete
Plot code	PS	AF	CA	HA	SAM	HOR	MIR	CASA	QUE	COP
Edaphic										
BD	0.41±0.03^{cde}	0.65±0.02^{ab}	0.12±0.01^{f}	0.29±0.02^{def}	0.39±0.0^{cde}	0.25±0.02^{ef}	0.43±0.03^{cb}	0.74±0.04^{a}	0.54±0.05^{bc}	0.51±0.05^{bc}
pH	4.37±0.09^{cde}	5.6±0.06ab	3.67±0.08^{e}	3.58±0.05^{3}	4.18±0.13^{de}	5.03±0.18^{bcd}	5.98±0.11^{a}	5.0±0.15^{bc}	5.08±0.19^{bc}	4.81±0.14^{cd}
ResinP‡	0.43±0.06^{d}	1.39±0.13^{cd}	0.08±0.02^{d}	0.22±0.05^{d}	0.41±0.08^{d}	2.22±0.15^{bcd}	3.67±0.33^{bc}	7.01±1.08^{a}	6.51±0.93^{a}	4.57±0.67^{ab}
NH_4‡	0.78±0.06^{b}	3.75±0.66^{a}	0.81±0.06^{b}	2.24±0.46^{ab}	0.63±0.1^{b}	1.81±0.25^{ab}	1.8±0.2^{ab}	2.81±1.09^{ab}	2.58±0.26^{ab}	1.29±0.25^{b}
NO_3‡	0.81±0.12^{cd}	2.56±0.23^{a}	0.2±0.06^{d}	1.19±0.29^{bcd}	1.17±0.14^{bcd}	1.18±0.17^{bcd}	1.55±0.13^{bc}	0.23±0.15^{d}	1.96±0.4^{ab}	0.28±0.13^{d}
Al§	1.1±0.15^{ab}	0.03±0.0^{c}	0.82±0.13^{abc}	1.13±0.13^{ab}	1.59±0.3^{a}	0.48±0.22^{abc}	0.06±0.01^{c}	1.31±0.19^{a}	0.44±0.15^{bc}	0.8±0.18^{abc}
Ca§	1.08±0.2^{c}	8.47±0.28^{b}	0.54±0.13^{c}	0.04±0.0^{c}	1.12±0.15^{c}	4.93±0.74^{bc}	16.33±0.96^{a}	2.44±0.42^{c}	7.02±1.24^{b}	3.55±1.11^{bc}
Fe§	0.01±0.0^{bc}	<0.01^{c}	0.05±0.0^{ab}	0.02±0.0^{abc}	0.06±0.02^{a}	<0.01^{c}	<0.01^{c}	0.02±0.0 ^{bc}	0.01±0.0^{bc}	0.01±0.0^{c}
K§	0.06±0.0^{ab}	0.12±0.0^{ab}	0.07±0.0^{ab}	0.02±0.0^{b}	0.07±0.0^{ab}	0.18±0.01^{a}	0.16±0.02^{a}	0.11 0±0.02^{ab}	0.1±0.01^{ab}	0.11±0.01^{ab}
Mg§	0.33±0.03^{bc}	2.29±0.14^{a}	0.28±0.03^{bc}	0.04±0.0^{c}	0.32±0.03^{bc}	1.01±0.14^{b}	1.96±0.25^{a}	0.44±0.04^{bc}	0.77±0.1^{bc}	0.41±0.1^{bc}
Mn§	0.19±0.05^{bc}	0.42±0.06^{b}	0.01±0.0^{c}	<0.01^{c}	0.14±0.04^{c}	0.71±0.1^{a}	<0.01^{c}	<0.0^{c}	0.02±0.0^{c}	0.01±0.0^{c}
Na§	0.04±0.0 ^{b}	0.02±0.0 ^{b}	0.03±0.0 ^{b}	0.01±0.0 ^{b}	0.05±0.0 ^{b}	0.03±0.0 ^{b}	0.01±0.0 ^{b}	0.02±0 ^{b}	0.02±0.0 ^{b}	0.11±0.01^{a}
ECEC§	2.83±0.17^{d}	11.37±0.36^{b}	1.82±0.07^{d}	1.29±0.14^{d}	3.37±0.13^{cd}	7.39±0.69^{bcd}	18.47±1.16^{a}	3.03±0.45^{b}	7.93±1.34^{bc}	4.2±1.19^{cd}
TEB§	1.52±0.23^{d}	10.91±0.33^{b}	0.93±0.16^{d}	0.13±0.0^{d}	1.57±0.18^{d}	6.17±0.87^{bcd}	18.55±1.15^{a}	4.37±0.33^{cd}	8.41±1.23^{bc}	5.03±1.13^{cd}
Total N†	2.28±0.23^{cd}	4.71±0.22^{a}	1.76±0.15^{d}	2.91±0.19^{bc}	3.6±0.17^{b}	2.86±0.13^{bc}	5.51±0.25^{bc}	3.2±0.2^{bc}	3.66±0.25^{b}	2.98±0.29^{bc}
Total P*	369.21±23.2^{ab}	503.02±27.02^{a}	57.16±8.64^{d}	180.6±11.3^{cd}	269.11±9.8^{bc}	280.1±20.1^{bc}	512.34±42.01^{a}	371.82±44.7^{ab}	376.73±54.6^{ab}	276.1±60.5^{bc}
Climate										
MAT	20.8	19.4	19.4	18.9	18.5	18.1	14.4	13.9	10.9	10.9
MAP	2972	2901	2573	2708	3142	3024	2948	2937	3102	3102
MPwe	367	447	326	343	393	439	345	343	365	365

MPdry	71	31	51	54	58	38	90	89	88	88
MDR	43	42	43	43	43	42	42	42	42	42
ISO	605	592	601	603	600	595	607	606	608	608
TS	48.2	53.3	49.6	49.3	50.1	52.1	47.8	47.9	47.2	47.2
MTmax	25	23.6	23.6	23.1	22.7	22.3	18.4	17.9	14.9	14.9
MTmin	17.8	16.5	16.4	16	15.6	15.1	11.5	11	8	8
MATvar	7.1	7.1	7.1	7.1	7.1	7.1	6.9	6.9	6.9	6.9
WC	0	-0.62	-1.66	-75.16	-1.66	-42.16	-225.08	-225.08	-117.83	-117.8

‡units μg cm^{-3}; §units C_M L^{-1}; †units mg cm^{-3}; *units μg cm^{-3}

Table S5. Correlations of soil and climate variables with elevation.

Variable	r	P	Variable	r	P
BD	0.49	0.1492	MAT	-0.99	<0.001***
pH	0.41	0.2339	MAP	0.48	0.1636
ResinP‡	0.88	0.0008***	MPwe	-0.26	0.4635
NH4‡	0.19	0.6061	MPdry	0.77	0.0092**
NO3‡	-0.16	0.6685	MDR	-0.67	0.0331*
Al§	-0.14	0.6904	ISO	0.66	0.0381*
Ca§	0.31	0.3847	TS	-0.65	0.0429*
Fe§	-0.3	0.408	MTmax	-0.99	<0.001***
K§	0.34	0.3372	MTmin	-0.99	<0.001***
Mg§	0	0.9948	MATvar	-0.93	<0.001***
Mn§	-0.41	0.2369	WC	-0.72	0.0196*
Na§	0.43	0.2113	A. Cloud	-0.51	0.133
ECEC§	0.19	0.5913			
Total.N †	0.23	0.518	EM %	0.80	0.005**
Total.P †	0.22	0.532			

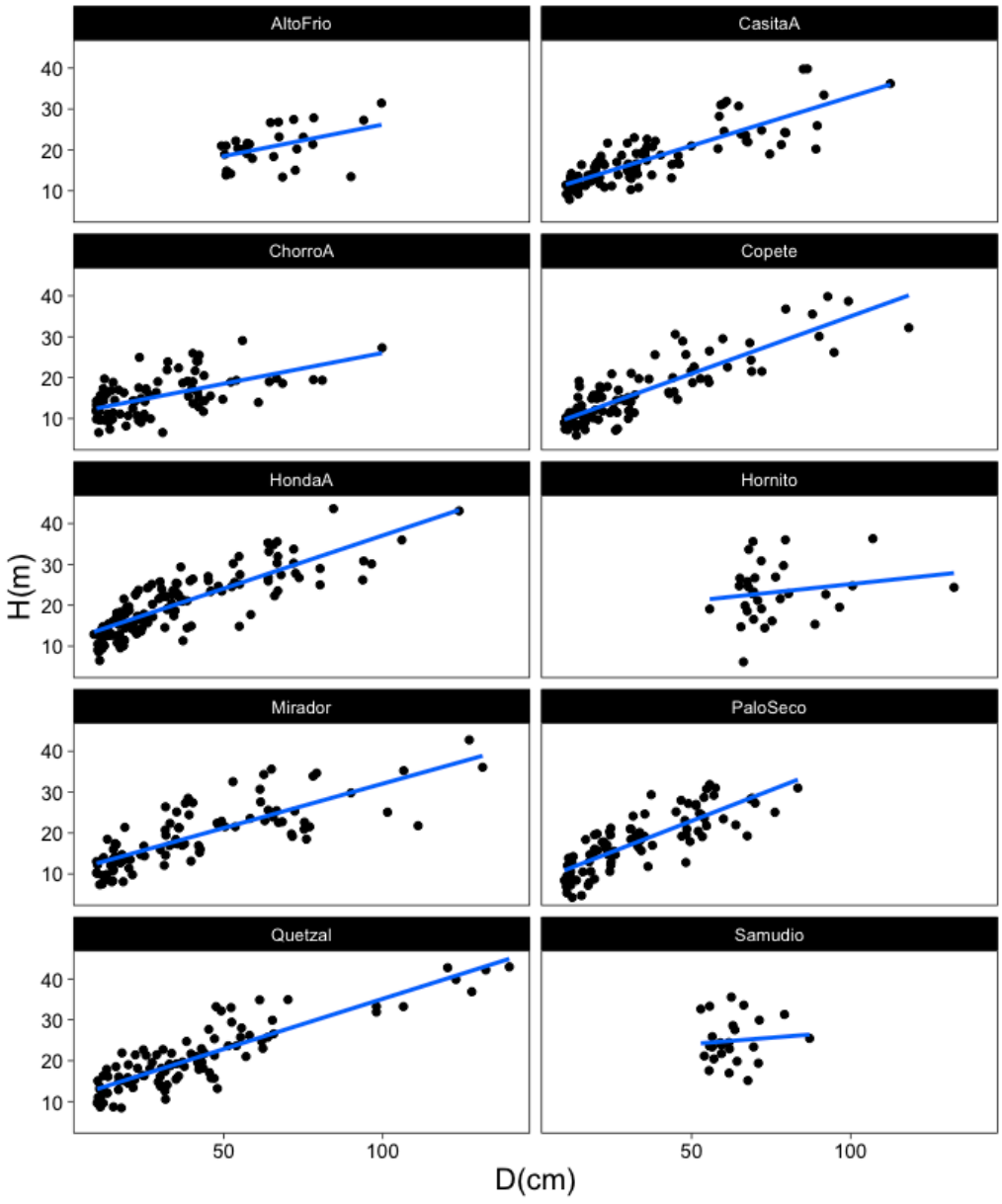

Figure S1. Data used to estimate heigh by plot height-diameter model using a power model.

Line represents the model log 1 (H=a+b∗D)).

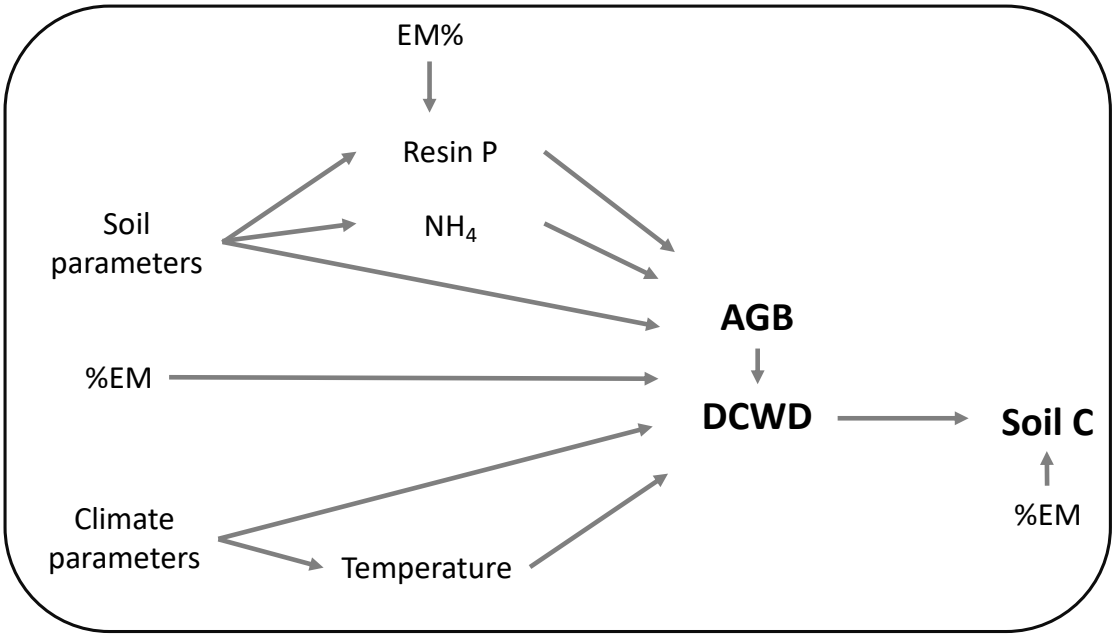

Figure S2. *A priori* structural equation model based on predicted relationships among environmental variables to evaluate the effect of environmental and edaphic variables on the different carbon pools in a montane forest.

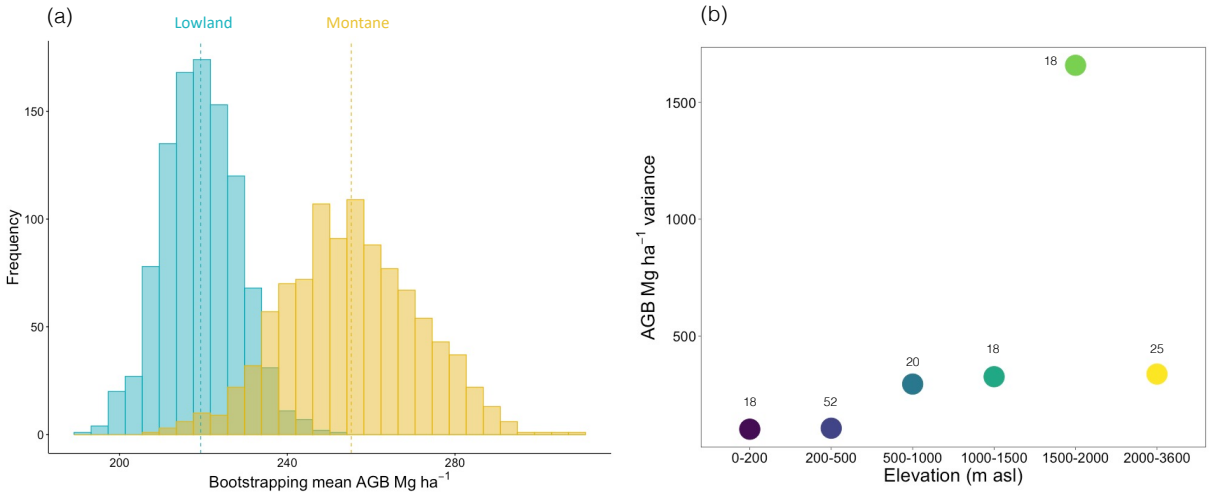

Figure S3. Variation in AGB by bootstrapping the mean AGB of 212 plots across twelve studies in Neotropical forests. Variation in AGB (a) between lowland forests and Montane forests and (b) across elevation categories. Numbers above data points represent the number of plots in each elevation category. Distributions were assessed by bootstrapping of 1000 resamples.

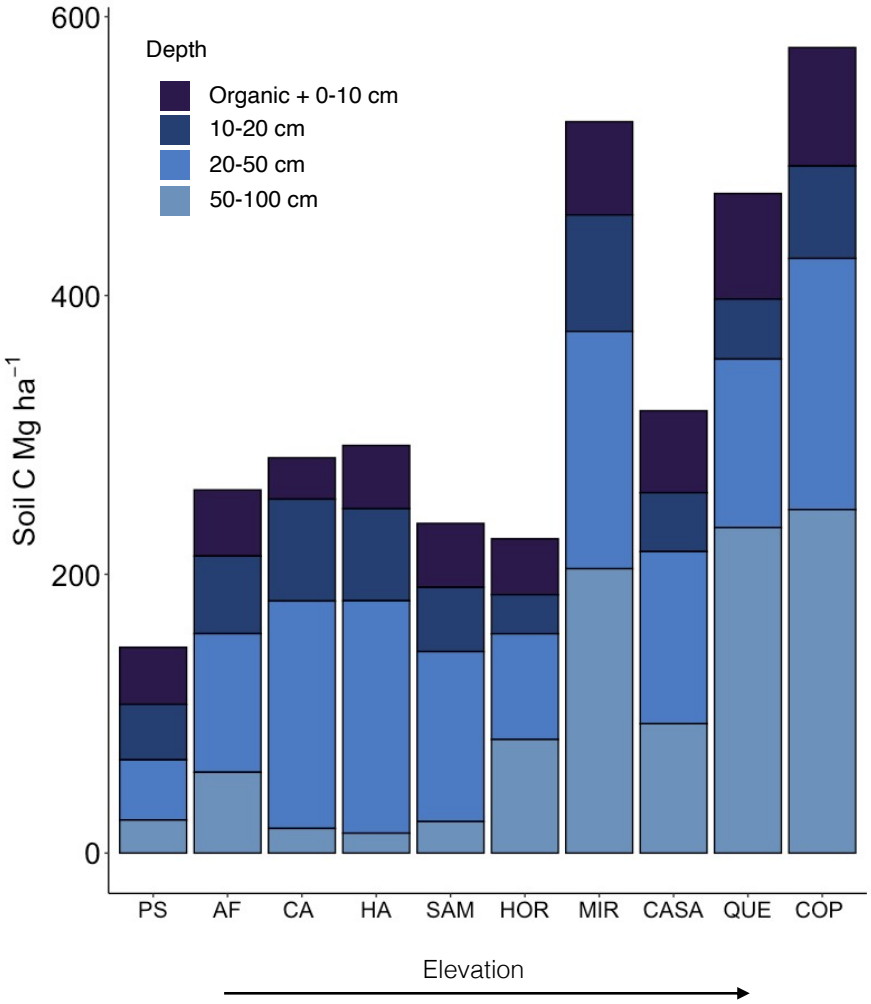

Figure S4. Variation in soil C at different depths among ten 1-ha plots in western Panama.

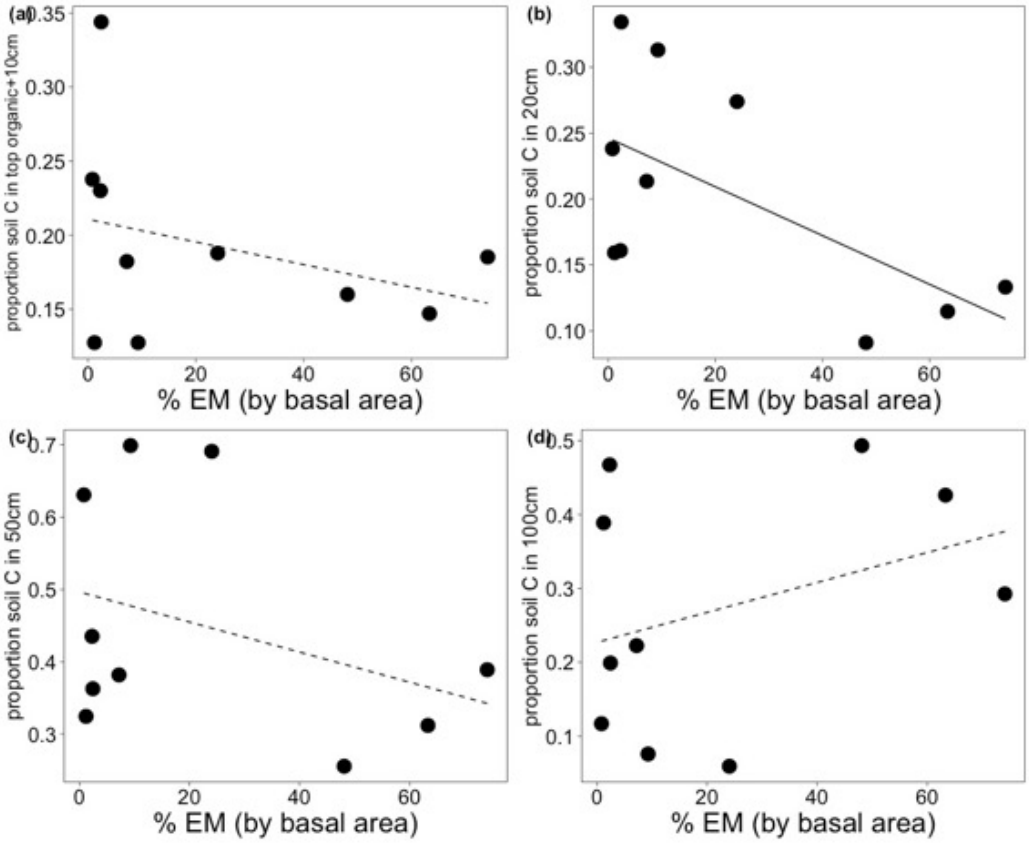

Figure S5. Relationship between percent of basal area contributed by EM associated tree species and soil C accumulation for ten 1-ha plots. Each point represents plot soil C at each depth. Solid line represents a significant basal area effect.