

Pre-Columbian soil fertilization and current management maintain food resource availability in old-growth Amazonian forests

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Supplementary Materials

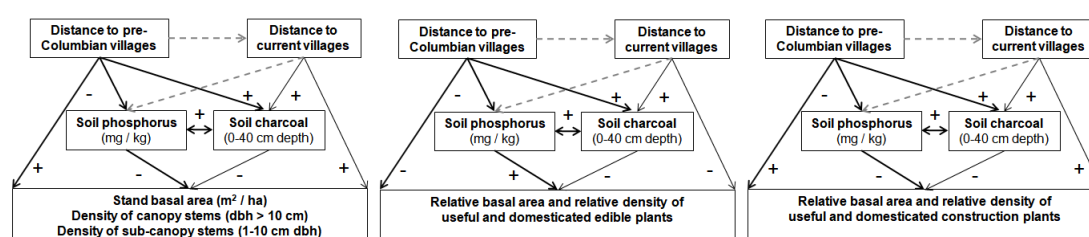


Fig. S1. Conceptual model showing how the distance from plots to pre-Columbian and current villages may affect forest soils (soil nutrients – total phosphorus) and fire events (soil charcoal), and how forest soils (total phosphorus), fires and distance to villages together may affect forest structure (left), forest food resources (middle) and forest construction resources (right). Black continuous arrows show hypothetically significant effects, grey dotted arrows show hypothetically less significant effects and two direction arrows show hypothetical correlations.

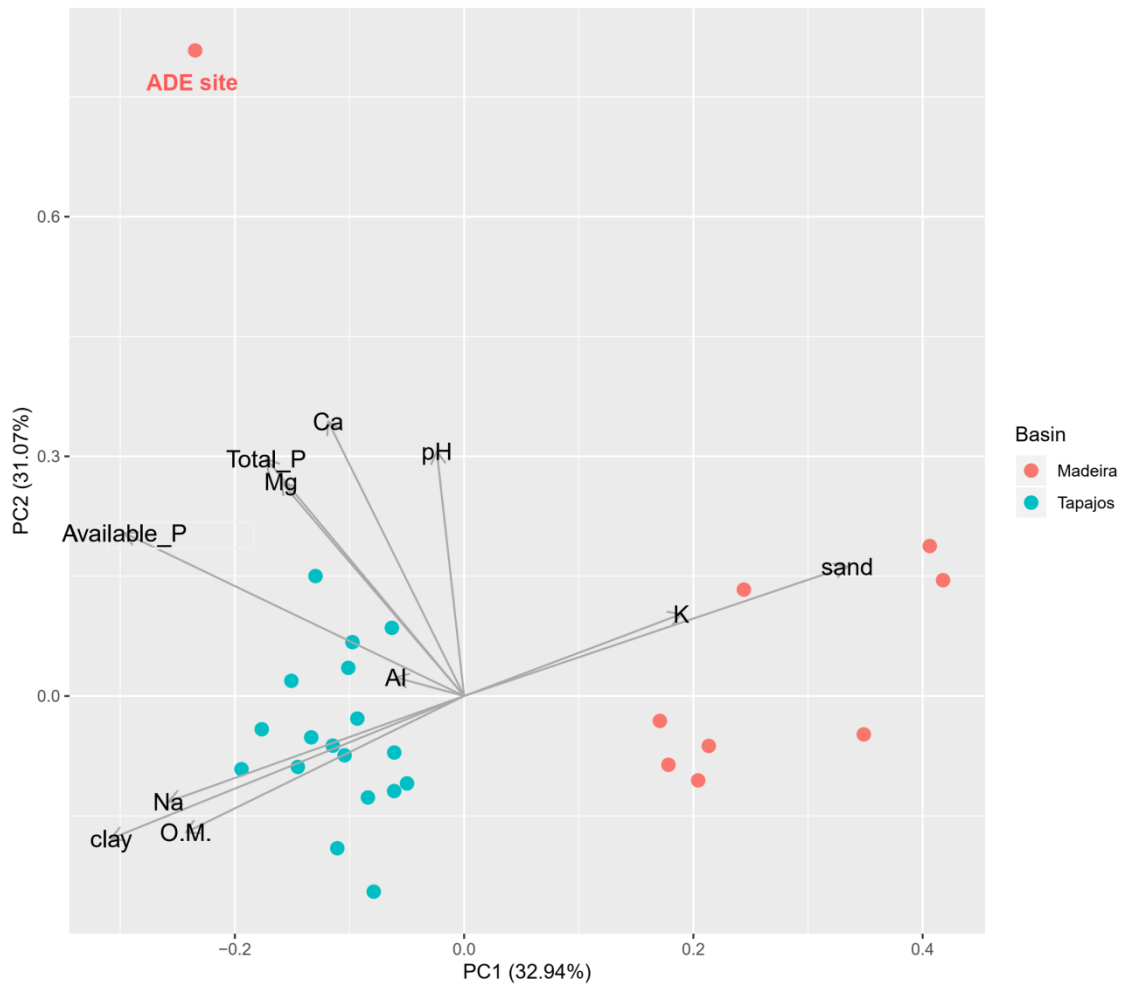


Fig. S2. Principal Component Analysis (PCA) of soil variables for plots in the Tapajós (blue dots = 18 plots) and Madeira basins (red dots = 9 plots). Arrows indicate the magnitude of the influence of the soil variables used and their angles are the relationships with each axis. The correlation matrix was used because variables were measured in different units.

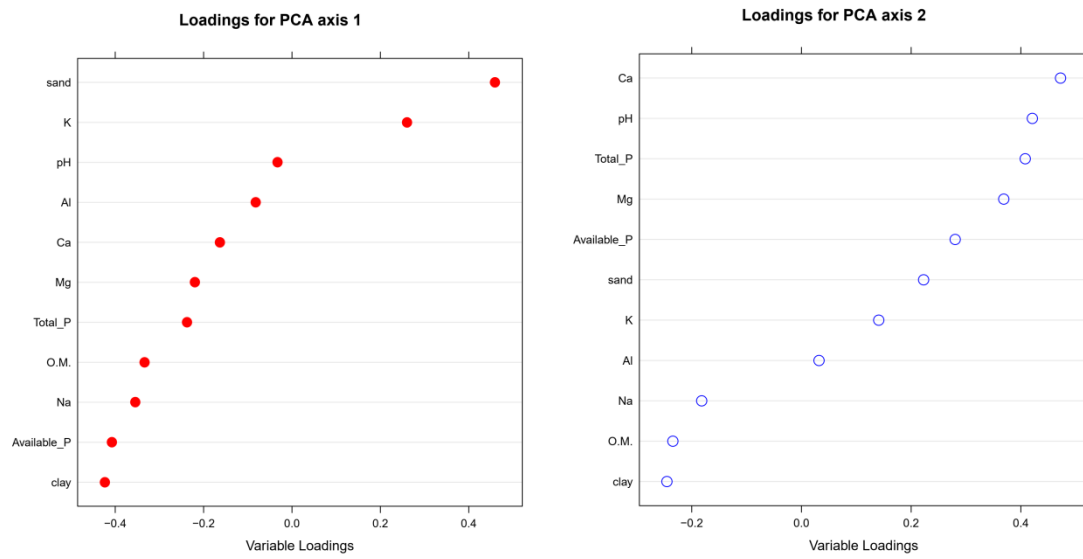


Fig. S3. Loading values of soil variables used in the Principal Component Analysis (PCA). Loading of the PCA axis 1 is in the left figure and PCA axis 2 in the right figure.

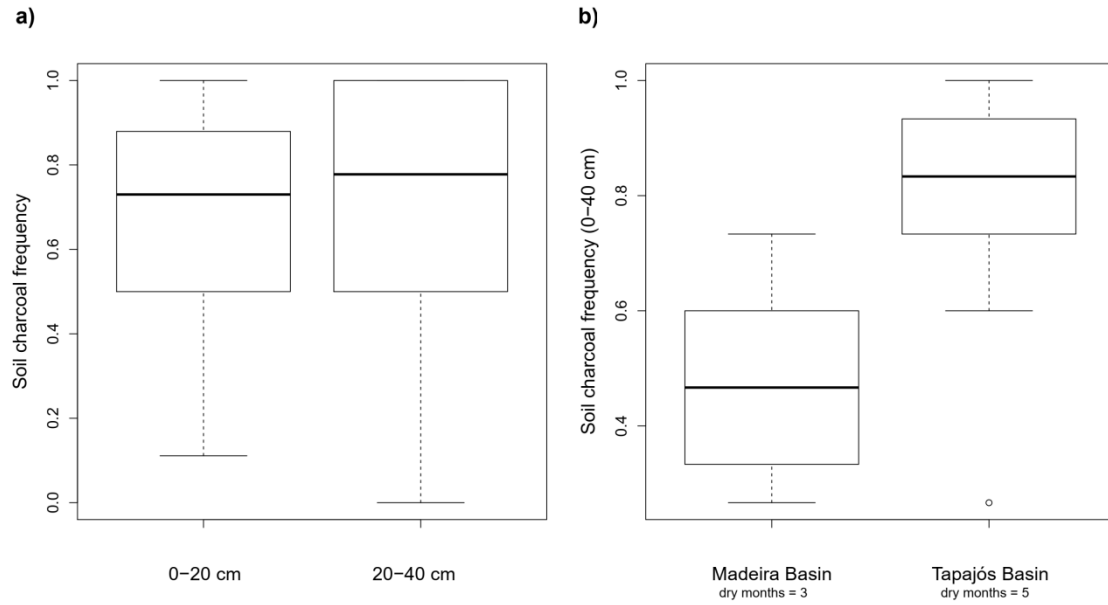
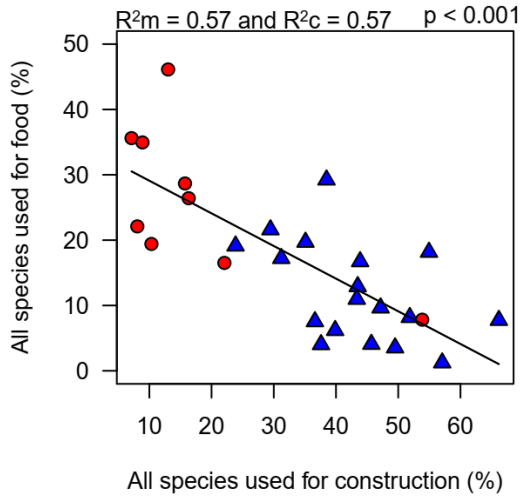
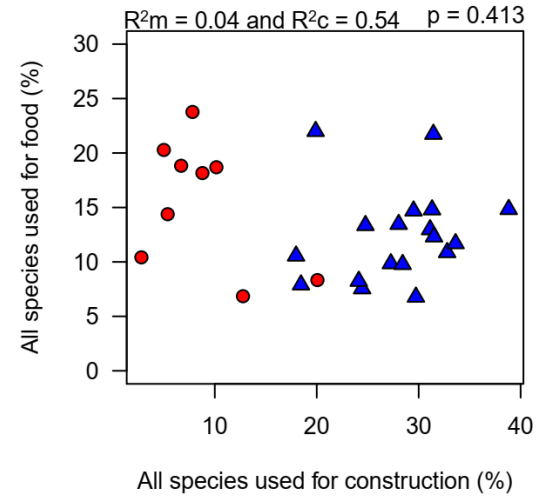


Fig. S4. a) The frequency of charcoal in the 0 to 20 cm and the 20 to 40 cm soil layers in the two basins (fixed-effects of linear mixed-model analyses is equal to $t = 3.49$ ($p = 0.002$) with basin considered a random factor, and **b)** the frequency of charcoal in the Madeira River ($N = 9$) and Tapajós River basins ($N = 18$). Rainfall seasonality was calculated as the maximum cumulative number of months with < 100 mm of rainfall using the monthly data from 1998 to 2004 from the Tropical Rainfall Measuring Mission (TRMM) satellite product 3B43 V6 at a 0.25° resolution (Kummerow et al. 1998). A minimum of three dry months occurs along the upper-middle Madeira and five dry months along the lower Tapajós. Charcoal is more common in the Tapajós forests that are exposed to longer dry seasons than in the Madeira forests.

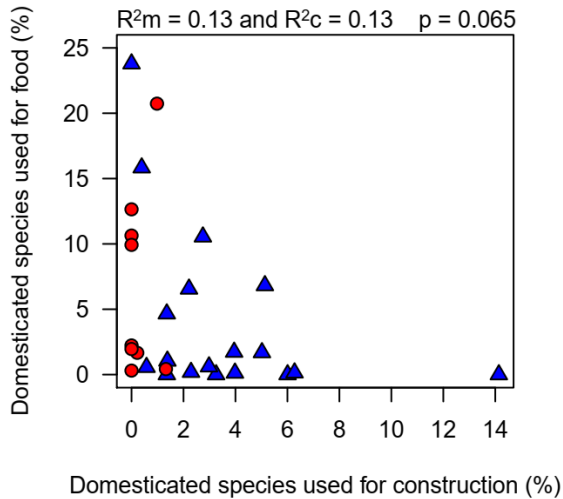
a) Relative Basal Area



b) Relative Density



c) Relative Basal Area



d) Relative Density

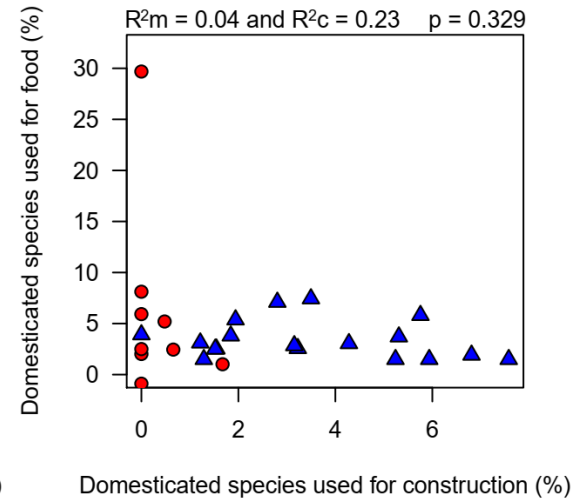


Fig. S5. Relationships between the relative basal area (**a, c**) and density (**b, d**) of domesticated species used for food and construction. Blue triangles are forest plots in the Tapajós River basin ($N = 18$) and red dots are forest plots located in the Madeira River basin ($N = 9$). Fitted line in A indicates significant fixed-effects of linear mixed-model analysis: $\text{lme}(\text{rel. basal area of all food species} \sim \text{rel. basal area of all construction species} + (1 \mid \text{Basin}))$. Note that all species were domesticated for food, but some are currently used for construction.

Table S1. List of the 20 useful plant species with the highest basal area in the 27 forest plots of the Madeira River and Tapajós River basins. One useful plant can refer to more than one scientific species (sometimes more than one genus) and were classified based on local knowledge. The relative basal area and density are shown as percentages of the total basal area and total density (all stems with dbh $\geq$ 1 cm measured). The categories of management are described per species as managed (Man.), cultivated (Cult.) and domesticated (Dom.). The most cited use (described by a number of information equalling more than a half of all informants) is presented. Domesticated species were classified according to Levis et al. (2017).

Tapajós River Basin							
Scientific names	Local names	Basal Area (%)	Density (%)	Man.	Cult.	Dom.	Most cited use
<i>Erismia uncinatum</i>	cedro guaruba; guaruba	12.4	2.7	yes	yes	no	Construction
<i>Tachigali eriopetala</i>	tachí; tachí vermelho	9.7	6.8	no	no	no	Construction
<i>T. micropetala</i>	tachí; tachí preto/ branco						
<i>Attalea speciosa</i>	babaçu	3.1	3.3	yes	yes	no	Food
<i>Caryocar villosum</i>	piquiá	3.1	0.1	yes	yes	incipient	Food, Medicine
<i>Virola venosa</i>	ucuúba, ucuúba da terra-firme	2.7	2.8	yes	no	no	Construction
<i>Chamaecrista apoucouita</i>	coração-de-nego; muirapixuna; mirapixuna	2.4	1.3	yes	no	no	Construction
<i>Lecythis</i> spp.	sapucaia; castanha sapucaia	2.3	0.4	yes	no	no	Food
<i>Eschweilera</i> spp.	murrão branco	2.3	2.2	no	no	no	Fiber for canoes
<i>Lecythis prancei</i>	jarana branca	1.9	0.6	yes	no	no	Construction
<i>Dipteryx odorata</i>	cumarú	1.9	0.4	yes	yes	incipient	Medicine
<i>Hymenaea courbaril</i>	jatobá	1.6	0.3	yes	yes	incipient	Construction
<i>Couratari stellata</i>	tauarí	1.6	1.5	yes	yes	no	Manufacture
<i>Lecythis lurida</i>	jarana	1.5	0.6	yes	yes	no	Construction
<i>Aspidosperma oblongum</i>	carapanaúba	1.4	0.3	yes	no	no	Medicine
<i>Vochysia obidensis</i>	cedrorana	1.3	0.3	yes	yes	no	Construction
<i>Dialium guianense</i>	pororoca; jutaí pororoca	1.2	0.6	no	no	no	Food
<i>Terminalia amazonia</i>	mirindiba; cuiarana	1.1	0.4	yes	no	no	Game attractive
<i>Mezilaurus itauba</i>	itaúba	1.0	0.3	yes	yes	no	Construction

<i>Jacaranda copaia</i>	parapara	1.0	0.4	yes	no	no	Firewood
Fabaceae (<i>Indet</i>)	sucupira	1.0	0.5	yes	no	no	Construction
<i>Bertholletia excelsa</i>	castanha do par,						
	castanha	1.0	0.2	yes	yes	incipient	Food
All species		55.5	25.8				

Madeira River Basin

Scientific names	Local names	Basal Area	Density	Man.	Cult.	Dom.	Most cited use
<i>Ceiba pentandra</i>	sumama;						
	samama	11.2	0.1	yes	yes	no	Construction
Moraceae (11 spp.)	pama;						
	pamagrande	4.5	4.8	yes	yes	no	Food
<i>Bertholletia excelsa</i>	castanha	4.4	0.3	yes	yes	incipient	Food
<i>Cariniana micrantha</i>	castanha sapucaia	3.7	0.3	yes	no	no	Food
Sapotaceae (25 spp.)	abiu	3.6	4.4	yes	no	no	Food
Annonaceae (10 spp.)	envira	3.5	6.3	yes	no	no	Manufacture
Lecythidaceae (5 spp.)	envira						
<i>Protium</i> (5 spp.)	breu branco	2.3	2.8	yes	no	no	Manufacture
<i>Attalea speciosa</i>	babau	2.2	4.5	yes	yes	no	Food
Burseraceae (18 spp.)	breu; breu grande	1.7	5.3				
Sapindaceae (4 spp.)	breu; breu grande						
<i>Trichilia schomburgkii</i>	breu; breu grande						
<i>Micropholis guyanensis</i> ;							
<i>M. venulosa</i>	caramuri	1.6	1.6	no	no	no	Food
<i>Pouteria opposita</i>	caramuri						
<i>Swietenia macrophylla</i>	cedro agoano;						
	mogno	1.5	0.1	no	no	no	Construction
<i>Caryocar villosum</i>	piqui	1.4	0.1	yes	yes	incipient	Food
<i>Theobroma subincanum</i>	cupu; cupuau do						
	mato	1.1	0.7	yes	no	incipient	Food
<i>Theobroma obovatum</i>	cupu; cupuau do						
	mato						
<i>Theobroma microcarpum</i>	cupu; cupuau do						
	mato						
<i>Chrysobalanaceae</i> (17 spp.)	macucu	1.1	3.1	no	no	no	Construction
<i>Caryocar glabrum</i>							Game
	piquiarana	1.0	0.1	yes	yes	incipient	attractive
<i>Aspidosperma schultesii</i>							Medicine,
	carapanaba	0.9	0.3	no	no	no	Manufacture
<i>Couratari stellata</i>	tauar	0.9	0.5	yes	yes	no	Construction
<i>Cecropia sciadophylla</i>	embaba	0.8	1.1	no	no	no	Game

							attraction
<i>Pourouma</i> (5 spp.)	embaúba						
<i>Inga</i> spp.	ingá xixica; ingá						
	de macaco	0.8	0.9	yes	yes	no	Food
<i>Hymenolobium modestum</i>	angelim	0.8	0.2	yes	yes	no	Construction
All species		49.2	37.4				

Table S2. Results of the structural equation models that test the direct and indirect effects of ancient and current management on forest structure and forest composition variables. The regression coefficients (Coef.), standardized coefficients (Std.Coef.), standard errors (SE), and p-values are given for all regression models. The variations explained only by the fixed effects (marginal R^2) and together with random effects (conditional R^2) are given in the mixed-models. Basin (Tapajós and Madeira) was included as a random factor. Total phosphorus was log-transformed ($\log_{10} + 1$).

Analyses	Response Variable	Predictor variable	Coef.	Std. Coef.	SE	p-value
Mixed-model	Total Phosphorus (P)	Distance to pre-Columbian villages	-0.11	-0.75	0.03	0.001
		Distance to current villages	0.00	0.10	0.01	0.586
R² conditional			0.30			
R² marginal			0.65			
Mixed-model	Soil charcoal (0-40 cm)	Distance to pre-Columbian villages	0.01	0.05	0.04	0.797
		Distance to current villages	-0.02	-0.31	0.01	0.056
R² conditional			0.66			
R² marginal			0.05			
Mixed-model	Distance to current villages	Distance to pre-Columbian villages	0.76	0.18	0.91	0.409
			0.32			
R² conditional			0.03			
R² marginal						
		Total P	-0.34			0.260
Correlation	Soil charcoal					
	Stand basal area	Total P	19.53	0.46	9.07	0.043
Mixed-model	(m²/ ha)	Distance to pre-Columbian villages	-0.88	-0.14	1.51	0.566
		Distance to current villages	-0.35	-0.23	0.27	0.216
		Soil charcoal	-7.59	-0.28	5.95	0.216
			0.46			
R² conditional			0.35			
R² marginal						
Mixed-model	Density of sub-canopy individuals (m²/ ha)	Total P	-2195.42	-0.19	2260.34	0.343
		Distance to pre-Columbian villages	768.87	0.45	366.68	0.048
		Distance to current villages	-13.02	-0.03	65.69	0.845
		Soil charcoal	-1454.38	-0.20	1438.12	0.323
R² conditional			0.44			
R² marginal			0.39			
Mixed-model	Density of canopy individuals (m²/ ha)	Total P	-35.31	-0.07	121.02	0.773
		Distance to pre-Columbian villages	-15.34	-0.20	21.15	0.476
		Distance to current villages	1.60	0.09	3.77	0.676
		Soil charcoal	-35.34	-0.11	83.82	0.678
R² conditional			0.53			
R² marginal			0.02			

Mixed-model	Rel. basal area of species used for food	Total P	-27.70	-0.36	15.46	0.088
		Distance to pre-Columbian villages	-0.80	-0.07	2.72	0.771
		Distance to current villages	-0.37	-0.14	0.48	0.450
		Soil charcoal	1.13	0.02	10.79	0.918
		R² conditional	0.65			
	R² marginal		0.08			
Mixed-model	Rel. basal area of species used for construction	Total P	47.93	0.41	16.90	0.010
		Distance to pre-Columbian villages	0.38	0.02	3.01	0.900
		Distance to current villages	-0.21	-0.05	0.54	0.701
		Soil charcoal	-16.83	-0.23	11.95	0.174
		R² conditional	0.88			
	R² marginal		0.01			
Mixed-model	Rel. basal area of domesticated species used for food	Total P	7.55	0.16	11.87	0.532
		Distance to pre-Columbian villages	0.86	0.13	1.86	0.648
		Distance to current villages	-0.31	-0.19	0.33	0.363
		Soil charcoal	-3.51	-0.12	7.25	0.633
		R² conditional	0.08			
	R² marginal		0.08			
Mixed-model	Rel. basal area of domesticated species used for construction	Total P	0.19	0.01	4.00	0.962
		Distance to pre-Columbian villages	-0.24	-0.08	0.63	0.709
		Distance to current villages	0.46	0.63	0.11	0.001
		Soil charcoal	4.26	0.32	2.44	0.095
		R² conditional	0.46			
	R² marginal		0.46			
Mixed-model	Rel. density of species used for food	Total P	11.31	0.25	8.65	0.205
		Distance to pre-Columbian villages	2.68	0.41	1.44	0.077
		Distance to current villages	-0.34	-0.21	0.26	0.203
		Soil charcoal	-6.41	-0.23	5.69	0.272
		R² conditional	0.44			
	R² marginal		0.32			
Mixed-model	Rel. density of species used for construction	Total P	-13.19	-0.18	9.34	0.172
		Distance to pre-Columbian villages	-2.20	-0.21	1.66	0.200
		Distance to current villages	0.26	0.10	0.30	0.396
		Soil charcoal	-9.45	-0.21	6.61	0.168
		R² conditional	0.87			

R² marginal			0.03			
Mixed-model	Rel. density of domesticated species used for food	Total P				<
			38.37	0.94	4.09	0.001
		Distance to pre-Columbian villages	2.09	0.35	0.64	0.004
		Distance to current villages	-0.20	-0.14	0.11	0.093
		Soil charcoal	-4.05	-0.16	2.50	0.120
R² conditional			0.84			
R² marginal			0.84			
Mixed-model	Rel. density of domesticated species used for construction	Total P	-1.46	-0.09	2.72	0.597
		Distance to pre-Columbian villages	-0.32	-0.14	0.46	0.495
		Distance to current villages	0.34	0.59	0.08	0.001
		Soil charcoal	1.44	0.14	1.83	0.440
R² conditional			0.57			
R² marginal			0.40			

Table S3. Results of the structural equation models that test the direct and indirect effects of ancient and current management on forest structure and forest composition variables excluding the forest plot located on the ADE site. The regression coefficients (Coef.), standardized coefficients (Std.Coef.), standard error (SE), and p-values are given for all regression models. The variations explained only by the fixed effects (marginal R^2) and together with random effects (conditional R^2) are given in the mixed-models. Basin was included as a random factor.

Analyses	Response Variable	Predictor variable	Coef.	Std. Coef.	SE	p- value
Mixed-model	Total Phosphorus (P)	Distance to pre-Columbian villages	-14.65	-0.48	5.5	0.014
		Distance to current villages	-0.70	-0.10	0.04	0.582
		R² conditional	0.23			
		R² marginal	0.23			
Mixed-model	Soil charcoal (0-40 cm)	Distance to pre-Columbian villages	-0.01	-0.08	0.04	0.705
		Distance to current villages	-0.01	-0.29	0.01	0.095
		R² conditional	0.66			
		R² marginal	0.05			
Mixed-model	Distance to current villages	Distance to pre-Columbian villages	1.32	0.30	1.07	0.229
		R² conditional	0.48			
		R² marginal	0.06			
Correlation	Soil charcoal	Total P	0.14			0.390
Mixed-model	Stand basal area (m²/ ha)	Total P	-0.02	-0.11	0.03	0.525
		Distance to pre-Columbian villages	-0.60	-0.43	1.47	0.684
		Distance to current villages	-0.50	-0.14	0.26	0.066
		Soil charcoal	-9.22	-0.41	5.76	0.125
		R² conditional	0.57			
		R² marginal	0.14			
Mixed-model	Density of sub-canopy individuals (m²/ ha)	Total P	-1.18	-0.02	10.4	0.910
		Distance to pre-Columbian villages	733	0.42	390	0.075
		Distance to current villages	-1.75	-0.01	69.2	0.980
		Soil charcoal	-1317	-0.17	1520	0.396
		R² conditional	0.41			
		R² marginal	0.28			

Mixed-model	Density of canopy individuals (m²/ ha)	Total P	-0.39	-0.15	0.54	0.474
		Distance to pre-Columbian villages	-16.30	-0.21	21.6	0.460
		Distance to current villages	1.02	0.05	3.85	0.793
		Soil charcoal	-39.44	-0.11	84.6	0.646
		R² conditional	0.48			
	R² marginal		0.02			
Mixed-model	Rel. basal area of species used for food	Total P	-0.02	-0.05	0.07	0.748
		Distance to pre-Columbian villages	-0.67	-0.05	2.81	0.813
		Distance to current villages	-0.31	-0.11	0.50	0.534
		Soil charcoal	1.68	0.03	11.0	0.880
		R² conditional	0.65			
	R² marginal		0.01			
Mixed-model	Rel. basal area of species used for construction	Total P	-0.03	-0.06	0.07	0.646
		Distance to pre-Columbian villages	0.38	0.02	3.03	0.900
		Distance to current villages	-0.32	-0.07	0.54	0.561
		Soil charcoal	-17.47	-0.23	11.8	0.156
		R² conditional	0.89			
	R² marginal		0.02			
Mixed-model	Rel. basal area of domesticated species used for food	Total P	0.01	0.04	0.05	0.868
		Distance to pre-Columbian villages	0.77	0.11	1.95	0.694
		Distance to current villages	-0.30	-0.19	0.34	0.379
		Soil charcoal	-2.51	-0.11	7.55	0.659
		R² conditional	0.06			
	R² marginal		0.06			
Mixed-model	Rel. basal area of domesticated species used for construction	Total P	0.01	-0.06	0.01	0.376
		Distance to pre-Columbian villages	-0.08	-0.02	0.64	0.894
		Distance to current	0.47	0.07	0.11	0.001

		villages				
		Soil charcoal	3.97	0.23	2.48	0.125
R² conditional			0.47			
R² marginal			0.47			
Mixed-model	Rel. density of species used for food	Total P	-0.07	-0.05	0.03	0.045
		Distance to pre-Columbian villages	2.71	-0.05	1.44	0.074
		Distance to current villages	-0.11	-0.11	0.25	0.407
		Soil charcoal	5.24	0.03	5.65	0.365
R² conditional			0.53			
R² marginal			0.24			
Mixed-model	Rel. density of species used for construction	Total P	-0.01	-0.01	0.04	0.930
		Distance to pre-Columbian villages	-2.25	-0.21	1.69	0.198
		Distance to current villages	0.30	0.12	0.30	0.333
		Soil charcoal	-9.29	-0.20	6.66	0.178
R² conditional			0.85			
R² marginal			0.03			
Mixed-model	Rel. density of domesticated species used for food	Total P	0.03	0.04	0.01	0.033
		Distance to pre-Columbian villages	1.64	0.11	0.48	0.002
		Distance to current villages	-0.19	-0.19	0.08	0.029
		Soil charcoal	-2.51	-0.11	1.86	0.192
R² conditional			0.56			
R² marginal			0.56			
Mixed-model	Rel. density of domesticated species used for construction	Total P	0.01	0.04	0.01	0.786
		Distance to pre-Columbian villages	-0.32	-0.13	0.47	0.493
		Distance to current villages	0.34	0.62	0.08	0.001
		Soil charcoal	1.57	0.14	1.83	0.401
R² conditional			0.56			
R² marginal			0.44			

Table S4. Stand basal area and density of stems of 27 forest plots located in the Tapajós River and Madeira River basins, and their distances from pre-Columbian (ADE) and current villages (current) in kilometers. Stand basal area (BA) and density (Dens dbh ≥ 10) of all live stems with dbh ≥ 30 and 10 cm were estimated for 1-hectare plots based on information from 0.5-ha and 0.25-ha subplots, and density of all live stems with dbh ≥ 1 cm (Dens dbh ≥ 1) were estimated for 1-hectare plots based on information from 0.01-ha subplots. The percentages of basal area and density in the forest plots for useful species (use) and domesticated species (dom), and species used for food (f) and construction materials (c) are presented. Domesticated species were classified according to Levis et al. (2017).

Basin	Dist. ADE (km)	Dist. Current (km)	BA (m ² /ha)	Dens dbh ≥ 10	Dens dbh ≥ 1	BA use (%)	BA f (%)	BA c (%)	Dens use (%)	Dens f (%)	Dens c (%)	BA dom (%)	Dens dom (%)
Madeira	0.0	7.0	48	558	2958	67	8	54	40	18	5	11	33
	0.8	0.9	27	512	5412	60	29	16	51	22	10	2	4
	1.4	4.1	27	512	4412	60	36	7	58	27	8	13	7
	1.9	9.1	25	658	8958	48	19	10	60	10	13	4	2
	2.3	3.9	22	500	6700	62	22	8	67	14	3	9	5
	2.5	5.2	34	478	5378	66	46	13	54	21	9	2	4
	2.7	10.4	25	608	6308	49	17	22	63	12	20	2	5
	4.0	5.5	26	520	9820	61	26	16	63	23	5	11	10
	4.1	7.6	24	418	6018	77	35	9	67	22	7	23	9
Mean	2.2	6.0	29	529	6218	61	26	17	58	19	9	8	9
Tapajós	0.4	3.8	30	330	3430	84	29	38	58	7	27	24	2
	0.5	11.0	27	470	5170	76	18	55	50	9	34	13	7
	0.5	15.4	23	396	4196	66	8	37	56	12	31	14	8
	0.6	3.3	32	466	4066	62	4	49	33	5	18	1	1
	0.6	7.0	26	572	5072	66	13	43	53	10	31	7	10
	0.8	5.0	34	494	5694	63	10	47	50	8	33	2	3
	0.9	13.8	33	452	2152	58	22	29	37	10	25	15	9
	0.9	5.2	24	388	2988	67	20	35	55	19	31	8	4
	1.0	14.9	25	444	4844	65	17	44	44	4	30	13	5
	1.0	5.2	24	434	2834	69	19	24	52	7	18	20	5
	1.2	6.2	42	412	4312	85	8	66	60	12	39	1	6
	1.2	12.4	26	394	4894	71	1	57	44	7	28	4	3
	1.3	4.4	26	428	3428	61	4	46	42	10	28	7	8
	1.3	7.8	36	458	5458	63	6	40	38	4	24	6	5
	1.5	5.8	31	514	4414	66	11	43	38	5	24	6	6
	1.5	14.1	30	438	5038	78	8	52	47	9	32	3	6
	1.7	13.2	28	372	5672	70	17	31	47	19	20	17	8
	1.7	13.1	20	556	3556	59	4	38	48	12	29	10	10
Mean	1.0	9.0	29	445	4290	68	12	43	47	9	28	9	6

Table S5. List of the plant species used for food and construction in the 27 forest plots of the Madeira River and Tapajós River basins. One useful plant can refer to more than one scientific species (sometimes more than one genus) and were classified based on local knowledge. The categories of management are described per species as managed (Man.), cultivated (Cult.) and domesticated (Dom.). Domesticated species were classified according to Levis et al. (2017).

Tapajós River Basin					
Scientific names	Local names	Man.	Cult.	Dom.	Most cited use
<i>Pouteria caimito</i> (Ruiz & Pav.) Radlk.;	abiu	no	no	yes	Construction
<i>Pouteria Freitasii</i> T.D.Penn.					
<i>Pouteria manausensis</i> (Aubrév. & Pellegr.) T.D.Penn.	abiu guajará	no	no	no	Construction
<i>Pouteria macrophylla</i> (Lam.) Eyma	abiurana; abiu vermelho	no	no	yes	Construction
<i>Apuleia leiocarpa</i> (Vogel) J.F.Macbr.	amarelão; garapera	yes	no	no	Construction
<i>Symphonia globulifera</i> L.f.	ananí	yes	no	no	Construction
<i>Zygia racemosa</i> (Ducke) Barneby & J.W.Grimes	angelim	yes	no	no	Construction
<i>Minquartia guianensis</i> Aubl.	aquariquara; quariquari	yes	no	no	Construction
<i>Eugenia patrisii</i> Vahl	araça	no	no	no	Food
<i>Attalea speciosa</i> Mart. Ex Spreng.	babaçu	yes	yes	no	Food
<i>Oenocarpus bacaba</i> Mart.;	bacaba	yes	yes	yes	Food
<i>Oenocarpus distichus</i> Mart.					
<i>Platonia insignis</i> Mart.;	bacurí	yes	no	yes	Construction
<i>Garcinia madruno</i> (Kunth) Hammel;					
<i>Garcinia macrophylla</i> Mart.					
<i>Theobroma speciosum</i> Willd. ex Spreng.	cacau do mato; cacau selvagem	yes	yes	yes	Food
<i>Herrania mariaae</i> (Mart.) Decne. ex Goudot	cacauí; cacau carambola	yes	no	no	Food
<i>Bertholletia excelsa</i> Bonpl.	castanha do pará, castanha	yes	yes	yes	Food
<i>Erismia uncinatum</i> Warm.	cedro guaruba; guaruba	yes	yes	no	Construction
<i>Vochysia obidensis</i> Ducke	cedrorana	yes	yes	no	Construction
<i>Chamaecrista apoucouita</i> (Aubl.) H.S.Irwin & Barneby	coração-de-nego; muirapixuna;	yes	no	no	Construction
<i>Goupia glabra</i> Aubl.	mirapixuna				
<i>Pouteria filipes</i> Aubl.;	cupiúba	no	no	no	Construction
<i>Pradosia surinamensis</i> (Eyma) T.D.Penn.	cutite; abiu felpudo	no	no	no	Food
Annonaceae	envira	no	no	no	Construction
<i>Annona exsucca</i> DC.;	envira preta	yes	no	no	Construction
<i>Guatteria megalophylla</i> Diels;					
<i>Duguetia pycnastera</i> Sandwith aff.					
<i>Stryphnodendron coriaceum</i> Benth.	fava	no	no	no	Construction
Fabaceae	fava amargosa; fava margosa	no	no	no	Construction
<i>Pseudopiptadenia cf. suaveolens</i> (Miq.) J.W.Grimes	fava bolacha; fava timbaúba;	yes	no	no	Construction
	timbaúba; orelha de nego				

<i>Pseudopiptadenia cf. suaveolens</i> (Miq.) J.W.Grimes	fava branca	no	no	no	Construction
<i>Enterolobium schomburgkii</i> (Benth.) Benth.	fava orelha-de-macaco; fava bolachinha	yes	no	no	Construction
<i>Attalea maripa</i> (Aubl.) Mart.	inajá	yes	yes	yes	Food
<i>Inga alba</i> (Sw.) Willd.;	ingá	no	no	no	Food
<i>Inga cayennensis</i> Sagot ex Benth.;					
<i>Inga brachystachys</i> Ducke					
<i>Inga grandiflora</i> Ducke	ingá peludo	no	no	no	Food
<i>Handroanthus serratifolius</i> (Vahl) S.Grose	ipê amarelo	yes	yes	no	Construction
<i>Mezilaurus itauba</i> (Meisn.) Taub. ex Mez	itaúba; itaúba amarela; itaúba vermelha	yes	yes	no	Construction
<i>Lecythis lurida</i> (Miers) S.A.Mori	jarana	yes	yes	no	Construction
<i>Lecythis prancei</i> S.A.Mori	jarana branca	yes	no	no	Construction
<i>Hymenaea courbaril</i> L.	jatobá	yes	yes	yes	Construction
<i>Hymenaea parvifolia</i> Huber	jutaí	yes	yes	no	Food
<i>Ocotea cujumar</i> Mart.;	louro	yes	no	no	Construction
<i>Ocotea nitida</i> cf. (Meisn.) Rohwer; <i>Licaria martiniana</i> (Mez) Kosterm.;					
<i>Rhodostemonodaphne peneia</i> cf. Madriñán					
<i>Licaria martiniana</i> (Mez) Kosterm.	louro bosta	yes	yes	no	Construction
<i>Licaria martiniana</i> (Mez) Kosterm.	louro itaúba	yes	yes	no	Construction
<i>Ocotea cujumar</i> Mart.;	louro preto	no	no	no	Construction
<i>Ocotea nítida</i> (Meisn.) Rohwer					
<i>Ocotea percurrans</i> Vicent.;	louro rosa	yes	no	no	Construction
<i>Licaria armeniaca</i> (Nees) Kosterm.					
<i>Manilkara elata</i> (Allemão ex Miq.) Monach.	maçaranduba	yes	no	yes	Construction
<i>Jacaratia spinosa</i> (Aubl.) A.DC.	mamãoí	yes	no	no	Food
<i>Astronium lecointei</i> Ducke	maracatiara	yes	yes	no	Construction
-	maracatiara amarela	no	no	no	Construction
<i>Astronium lecointei</i> Ducke	maracatiara preta; maracatiara bordada	no	no	no	Construction
<i>Simarouba amara</i> Aubl.	marupá	no	no	no	Construction
<i>Alexa grandiflora</i> Ducke	melancieira	yes	yes	no	Construction
<i>Eschweilera collina</i> Eyma;	morirão; murrão	yes	no	no	Construction
<i>Eschweilera pedicellata</i> (Rich.) S.A.Mori					
<i>Pachira insignis</i> (Sw.) Savigny	munguba	yes	yes	no	Construction
<i>Swartzia acuminata</i> Willd.ex Vogel	paracutá	no	no	no	Food
<i>Caryocar villosum</i> (Aubl.) Pers.	piquiá	yes	yes	yes	Food
<i>Talisia marleneana</i> (Guarim) Acev.- Rodr.	pitomba	no	no	no	Food
<i>Dialium guianense</i> (Aubl.) Sandwith	pororoca; jutaí pororoca	no	no	no	Construction
<i>Lecythis</i> spp.	sapucaia; castanha sapucaia	yes	no	no	Food
-	sapupira	yes	yes	no	Construction

<i>Casearia javitensis</i> Kunth;	sete anos	no	no	no	Construction
<i>Miconia</i> spp.					
Fabaceae	sucupira	yes	yes	no	Construction
<i>Tachigali eriopetala</i> (Ducke) L.G.Silva & H.C.Lima;	tachí; tachí preto; tachí branco; tachí vermelho	no	no	no	Construction
<i>T. micropetala</i> (Ducke) Zarucchi & Pipoly					
<i>Bagassa guianensis</i> Aubl.	tatajuba	yes	yes	no	Construction
<i>Virola venosa</i> (Benth.) Warb.	ucuúba, ucuúba da terra-firme	yes	no	no	Construction
<i>Endopleura uchi</i> (Huber) Cuatrec.	uxí liso	yes	yes	no	Food

Madeira River Basin

Scientific names	Local names	Man.	Cult.	Dom.	Most cited use
Sapotaceae (25 spp.)	abiu	yes	no	no	Food
<i>Pouteria macrophylla</i> (Lam.) Eyma	abiu	yes	no	yes	Food
<i>Pouteria caimito</i> (Ruiz & Pav.) Radlk.	abiu	yes	no	yes	Food
<i>Pradosia surinamensis</i> (Eyma) T.D.Penn.	abiurana; abiu pequeno	yes	no	no	Food
<i>Euterpe precatoria</i> Mart.	açaí	yes	yes	yes	Food
<i>Minquartia guianensis</i> Aubl.	acariquara	yes	no	no	Construction
<i>Garcinia</i> sp.	anani	yes	no	no	Construction
<i>Hymenolobium modestum</i> Ducke	angelim	yes	yes	no	Construction
<i>Iryanthera</i> sp.	apunã	yes	no	no	Construction
<i>Licania egleri</i> Prance	azeitona	yes	yes	no	Food
<i>Attalea speciosa</i> Mart. ex Spreng.	babaçu	yes	yes	no	Food
<i>Oenocarpus bacaba</i> Mart.	bacaba	yes	yes	yes	Food
<i>Garcinia macrophylla</i> Mart.	bacurí	yes	no	yes	Food
<i>Annona cuspidata</i> (Mart.) H.Rainer	biribá do mato	yes	yes	no	Food
<i>Bactris acanthocarpa</i> Mart.	bombom de índio; marajá	yes	no	no	Food
Burseraceae (18 spp.);	breu; breu grande	yes	no	no	Food
Sapindaceae (4 spp.);					
<i>Trichilia schomburgkii</i> C.DC.					
<i>Theobroma speciosum</i> Willd. ex Spreng.	cacau do mato	yes	yes	yes	Food
<i>Theobroma sylvestre</i> Mart.	cacau jacaré	yes	no	no	Food
<i>Micropholis guyanensis</i> (A.DC.) Pierre;	caramuri	no	no	no	Construction
<i>Micropholis venulosa</i> (Mart. & Eichler) Pierre;					
<i>Pouteria opposita</i> (Ducke) T.D.Penn.					
<i>Pouteria peruviana</i> (Aubrév.) Bernardi	cariuba	yes	yes	no	Construction
<i>Bertholletia excelsa</i> Bonpl.	castanha	yes	yes	yes	Food
<i>Lecythis holcogyne</i> (Sandwith) S.A.Mori	castanha sapucaia	yes	no	no	Food
<i>Erismia bicolor</i> Ducke	cedrinho	yes	no	no	Construction
<i>Cedrela odorata</i> L.	cedro; cedro vermelho; cedro rosa	yes	yes	no	Construction
<i>Goupia glabra</i> Aubl.	copiuba	no	no	no	Construction

<i>Theobroma microcarpum</i> Mart.;	cupuí; cupuaçu do mato	yes	no	no	Food
<i>Theobroma obovatum</i> Klotzsch ex Bernoulli					
<i>Theobroma subincanum</i> Mart.	-	no	no	yes	Food
<i>Amphiodon effusus</i> Huber	fava	yes	no	no	Construction
<i>Apuleia leiocarpa</i> (Vogel) J.F.Macbr.	garapeira	yes	no	no	Construction
Fabaceae (<i>Inga</i> - 5 spp)	ingá cururu; ingá grande; ingá chichica; ingá de macaco; ingá do mato; curuça	yes	yes	no	Food
<i>Mezilaurus itauba</i> (Meisn.) Taub. ex Mez	itaúba	yes	yes	no	Construction
<i>Cariniana</i> sp.	jequitiba	yes	no	no	Construction
5 spp. Lauraceae	louro	yes	no	no	Construction
<i>Couepia bracteosa</i> Benth.	louro	yes	no	yes	Construction
<i>Licaria</i> sp.; <i>Persea</i> sp.	louro abacate; louro amarelo	yes	no	no	Construction
<i>Rhodostemonodaphne sordida</i> Madriñán	louro aritú; louro pimenta	yes	no	no	Construction
<i>Licaria macrophylla</i> (A.C.Sm.) Kosterm.	louro cheiroso	yes	no	no	Construction
<i>Ocotea rhodophylla</i> Vicent.	louro itaúba	yes	yes	no	Construction
-	louro podre; louro bosta	yes	yes	no	Construction
<i>Ocotea cujumarum</i> Mart.;	louro preto	no	no	no	Construction
<i>Licaria rodriguesii</i> Kurz;					
<i>Ocotea rhodophylla</i> Vicent.					
<i>Cariniana micrantha</i> Ducke	mandioqueiro	yes	no	no	Construction
<i>Perebea guianensis</i> Aubl.;	mão de cachorro	yes	yes	no	Food
<i>Perebea mollis</i> (Poepp. & Endl.) Huber					
<i>Astronium lecointei</i> Ducke	maracatiara	yes	no	no	Construction
<i>Simarouba amara</i> Aubl.	marupá	yes	yes	no	Construction
<i>Manilkara elata</i> (Allemão ex Miq.) Monach.	massaranduba	yes	no	yes	Construction
<i>Pseudolmedia laevis</i> (Ruiz & Pav.) J.F.Macbr.;	miratinga	yes	yes	no	Construction
<i>Pseudolmedia laevigata</i> Trécul					
<i>Swietenia macrophylla</i> King	mogno	no	no	no	Construction
<i>Brosimum lactescens</i> (S.Moore) C.C.Berg;	pama de índio;	yes	no	no	Food
<i>Pseudolmedia laevis</i> (Ruiz & Pav.) J.F.Macbr.	pama pequena				
Moraceae (11 spp.)	pama; pama grande	yes	yes	no	Food
<i>Oenocarpus bataua</i> Mart.	pataua	yes	yes	yes	Food
<i>Socratea exorrhiza</i> (Mart.) H.Wendl.	paxiúba barriguda	yes	no	no	Construction
<i>Trymatococcus amazonicus</i> Poepp. & Endl.;	pé de jaboti	yes	no	no	Food
<i>Helicostylis scabra</i> (J.F.Macbr.) C.C.Berg.					
<i>Aspidosperma desmanthum</i> Benth. ex Müll.Arg.	peroba	no	no	no	Construction
<i>Caryocar villosum</i> (Aubl.) Pers.	piquiá	yes	yes	yes	Food
<i>Diospyros artanthifolia</i> Mart.	pitomba	yes	no	no	Food

<i>Alibertia</i> sp.	puruí	yes	no	no	Food
<i>Eschweilera micrantha</i> (O.Berg) Miers;	ripeira	no	no	no	Construction
<i>Eschweilera atropetiolata</i> S.A.Mori					
<i>Ceiba pentandra</i> (L.) Gaertn.	samaúma	yes	yes	no	Construction
<i>Couma utilis</i> (Mart.) Müll.Arg.	sorvinha	yes	no	yes	Food
<i>Bowdichia</i> sp.; <i>Swartzia</i>	sucuripa	yes	no	no	Construction
<i>latifolia</i> Benth.					
<i>Spondias mombin</i> L.	taperebá	yes	no	yes	Food
<i>Couratari stellata</i> A.C.Sm.;	tauari	yes	yes	no	Construction
<i>Couratari</i> sp.					
<i>Astrocaryum aculeatum</i> G.Mey.	tucumã	yes	yes	yes	Food
<i>Endopleura uchi</i> (Huber) Cuatrec.	uxí liso	yes	no	yes	Food
<i>Duquetia calycina</i> Benoist;	varejão	yes	no	no	Construction
<i>Oxandra xylopioides</i> Diels					
