RSPB20070417

Electronic supplementary material A (table 2)
Species-specific data

List of study species together with taxonomical and growth form affiliation, and data source provenance (table 2). Also, scores of several estimated parameters and means of variables of interest to the study. β is the scaling exponent of the power relation of leaf mass and leaf area ($LM = \alpha LA^{\beta}$, calculated β and 95% CI limits are shown). R^2 is the goodness-of-fit of the RMA regression between (log)LA and (log)LM used to estimate β. Sample size is the number of leaves where LA and LM were measured separately. LM, LA and SLA (specific leaf area, LA/LM) are the arithmetic means of those variables for each species. LA_{VAR} is the ratio of LA of the largest to the smallest leaf of each species. SLA_{VAR} shows the proportional change of SLA that would occur across the range of observed leaf sizes of each species (based on the ratio of the largest to the smallest leaf) calculated from the RMA regression parameters (α and β) obtained for each species. Growth form categories: T, tree; S, shrub; V, vine; H, herb; G, grass. Leaf habit in parentheses: (d), deciduous; (e), evergreen; (sd), semi-deciduous. See table 1 for full reference of each data source.

Table 2. Electronic supplementary material A.

species	β(95% CI)	r^2	sample size per species	LM (g)	LA (cm^2)	SLA ($cm^2\ g^{-1}$)	LA_{VAR}	SLA_{VAR}	growth form	family	data source
Acer negundo	1.073 (0.946–1.219)	0.975	10	0.157	23.88	152.41	3.42	0.91	T(d)	*Sopindaceae*	Shipley
Acer platanoides	1.065(0.968–1.171)	0.939	30	0.178	39.54	221.82	30.11	0.80	T(d)	*Sapindaceae*	Roderick
Acer rubrum	1.134 (0.885–1.451)	0.906	10	0.033	10.02	303.39	2.85	0.87	T(d)	*Sapindaceae*	Reich2
Acer saccharum	1.19(0.982–1.442)	0.944	10	0.100	39.63	394.46	2.66	0.83	T(d)	*Sapindaceae*	Shipley
Alnus rhombifolia	1.14(1.045–1.243)	0.950	30	0.433	52.72	121.90	6.55	0.77	H(d)	*Rosaceae*	Reich4
Amelanchier ovalis	0.913 (0.836–0.997)	0.896	56	0.027	2.74	102.57	5.82	1.17	T(d)	*Betulaceae*	Roderick
Amorpha canescens	1.159 (0.863–1.556)	0.843	11	0.071	10.30	144.88	2.67	0.86	S(d)	*Rosaceae*	Milla1
Anaxagorea dolichocarpa	1.227(1.096–1.373)	0.955	18	0.387	47.75	123.31	3.04	0.78	S(d)	*Fabaceae*	Reich2
Andropogon gerardi	1.133 (0.952–1.348)	0.946	11	0.068	11.09	163.68	2.83	0.87	T(e)	*Annonaceae*	Baraloto
Arbutus unedo	1.11(1.008–1.221)	0.831	75	0.132	8.36	63.53	4.22	0.85	G(d)	*Poaceae*	Reich2
Aster azureus	0.817 (0.661–1.01)	0.920	11	0.044	10.86	248.31	6.86	1.42	S(e)	*Ericaceae*	Milla1
Aster lanceolatus	1.006(0.889–1.138)	0.977	10	0.018	3.69	204.64	2.86	0.99	H(d)	*Asteraceae*	Reich2
Bertholettia exrelsa	0.995(0.819–1.21)	0.932	11	3.027	240.99	79.62	3.98	1.01	H(d)	*Asteraceae*	Shipley
Betula nana	0.982 (0.788–1.222)	0.801	20	0.005	0.55	120.23	2.21	0.89	T(e)	*Lecytnidaceae*	Reich3
Betula alleghaniensis	1.151 (0.974–1.359)	0.958	10	0.059	26.85	454.99	6.00	0.85	T(d)	*Betulaceae*	Shipley
Betula jacquemontii	1.089(0.999–1.188)	0.950	30	0.318	37.33	117.22	2.25	1.01	T(d)	*Betulaceae*	Roderick
Betula pendula	1.248(1.116–1.397)	0.820	59	0.059	7.38	125.31	2.67	0.78	S(d)	*Betulaceae*	Kudo
Betula populifolia	0.843(0.668–1.066)	0.916	10	0.069	10.79	157.40	4.68	1.27	T(d)	*Betulaceae*	Niinemets
Bistorta bistortoides	1.094 (1.014–1.18)	0.967	26	0.124	14.66	118.30	6.53	0.84	T(d)	*Betulaceae*	Shipley
Bonafousla disticha	1.07(0.804–1.425)	0.852	11	0.339	49.77	146.89	2.53	0.94	H(d)	*Polygonaceae*	Reich4
Brachychiton megaphyllus	0.997 (0.868–1.144)	0.932	18	2.692	275.42	102.33	6.50	1.01	T(e)	*Apocynaceae*	Baraloto
Bromus erectus	0.939 (0.907–0.974)	0.946	168	0.066	15.07	229.09	22.20	1.21	T(d)	*Malvaceae*	Prior
Buchanania obovata	1.145(1.003–1.308)	0.937	18	2.377	144.54	60.81	4.25	0.81	G(d)	*Poaceae*	Roumet
Bupleurum fruticosum	1.088 (1.049–1.128)	0.977	72	0.076	5.35	70.31	10.99	0.81	T(sd)	*Anacardiaceae*	Prior
Buxus sempervirens	1.224 (1.133–1.322)	0.891	75	0.020	1.27	63.97	2.83	0.79	S(e)	*Apiaceae*	Milla1
Callistemon viminalis	0.893 (0.79–1.009)	0.942	19	0.105	8.77	83.37	4.26	1.17	S(e)	*Buxaceae*	Milla1
Caraipa heterocarpa	1.055(0.926–1.201)	0.843	40	0.313	45.71	146.22	9.36	0.64	T(e)	*Myrtaceae*	Roderick
Carpinus caroliniana	1.203(1.114–1.3)	0.855	98	0.044	10.23	230.67	4.81	0.92	T(d)	*Betulaceae*	Williams-Liner
Cassandra calyculata	1.245(0.935–1.658)	0.873	10	0.021	2.06	99.54	2.18	0.83	T(e)	*Clusiaceae*	Reich1
Cassipourea guianensis	1.129 (1.032–1.236)	0.973	17	0.298	38.11	127.94	10.74	0.74	S(e)	*Ericaceae*	Shipley
Cecropia ficfolia	1.157 (1.05–1.276)	0.881	52	1.671	233.35	139.64	5.67	0.76	T(e)	*Rhizophoraceae*	Baraloto
Centaurea nigra	1.113(0.935–1.326)	0.954	10	0.015	2.75	181.55	2.34	0.91	T(e)	*Moraceae*	Reich1
Cercis occidentalis	0.901 (0.774–1.049)	0.845	30	0.113	17.66	155.96	3.29	1.13	H(d)	*Asteraceae*	Shipley
Cirmamomum effusum	1.14(1.048–1.241)	0.823	99	0.272	34.04	125.03	6.62	0.77	T(d)	*Fabaceae*	Roderick
Clethra mexicana	0.988 (0.938–1.039)	0.935	99	0.664	63.39	95.50	32.22	1.04	T(e)	*Lauraceae*	Williams-Liner
Clidemia sericea	1.141 (0.975–1.334)	0.905	19	0.535	68.39	127.94	3.59	0.84	T(d)	*Clethraceae*	Williams-Liner
Cochlospermum fraseri	1.075(0.935–1.237)	0.930	18	0.468	77.98	166.72	3.14	0.92	T(e)	*Melastomataceae*	Reich1
Comandra richardsiana	1.147 (0.843–1.561)	0.853	10	0.004	0.84	202.77	5.35	0.78	T(d)	*Bixaceae*	Prior
Convolvulus mauritanicus	1.183 (1.028–1.361)	0.868	30	0.009	2.01	231.74	2.73	0.83	H(d)	*Santalaceae*	Reich2

(*Continued.*)

Table 2. (*Continued.*) Electronic supplementary material A.

species	β(95% CI)	r^2	sample size per species	LM (g)	LA (cm^2)	SLA ($cm^2\,g^{-1}$)	LA_{VAR}	SLA_{VAR}	growth form	family	data source
Cordia sagotii	0.956 (0.77–1.186)	0.928	10	1.820	216.77	119.12	4.39	1.07	H(d)	*Convolvulaceae*	Roderick
Cordia sp.	1.269 (0.981–1.641)	0.864	12	1.409	176.20	125.03	7.67	0.58	T(e)	*Boraginaceae*	Baraloto
Cornus stolonifera	1.313 (1.125–1.532)	0.964	10	0.130	25.00	192.75	3.30	0.69	T(e)	*Boraginaceae*	Baraloto
Crudia bracteata	1.004 (0.883–1.142)	0.949	16	0.150	26.61	177.83	4.55	0.99	S(d)	*Cornaceae*	Shipley
Cupania scrobiculata	1.211 (0.949–1.546)	0.878	12	0.425	44.06	103.75	2.59	0.82	T(e)	*Fabaceae*	Baraloto
Dactylis glomerate	1.002 (0.977–1.027)	0.973	169	0.101	27.10	269.15	53.27	0.99	T(e)	*Sapindaceae*	Baraloto
Diapensia lapponica	1.002(0.811–1.239)	0.932	10	0.001	0.07	60.95	2.13	1.00	G(d)	*Poaceae*	Roumet
Empetrum hermaphroditum	1.038 (0.854–1.261)	0.843	20	0.001	0.04	60.12	1.87	0.98	S(e)	*Diapensiaceae*	Kudo
Eperua falcata	1.028 (0.926–1.142)	0.901	39	0.244	39.08	159.96	5.06	0.96	S(e)	*Ericaceae*	Kudo
Eperua grandiflora	0.961 (0.741–1.247)	0.807	15	0.527	69.02	130.92	2.05	1.03	T(e)	*Fabaceae*	Baraloto
Eperua leucantha	1.103 (1.018–1.196)	0.945	37	0.447	63.24	141.58	5.71	0.84	T(e)	*Fabaceae*	Baraloto
Eperua purpurea	1.077 (0.988–1.173)	0.960	25	0.232	38.99	167.88	4.88	0.89	T(e)	*Fabaceae*	Reich1
Erythrina poeppigiana	1.278 (1.088–1.501)	0.947	12	0.334	68.39	204.64	3.20	0.98	T(e)	*Fabaceae*	Reich1
Erythrophleum chlorostachys	1.019 (0.845–1.23)	0.873	18	0.206	20.75	100.69	3.21	0.72	T(sd)	*Fabaceae*	Prior
Eschweilera coriacea	1.107 (0.992–1.236)	0.831	58	1.164	129.72	111.43	4.77	0.85	T(e)	*Fabaceae*	Reich3
Eschweilera sagotiana	1.109(1–1.231)	0.863	53	1.371	127.94	93.33	4.32	0.85	T(e)	*Lecythidaceae*	Baraloto
Eucalyptus foelscheana	1.056 (0.959–1.162)	0.967	18	1.782	80.91	45.39	14.32	0.92	T(e)	*Lecytnidaceae*	Baraloto
Eucalyptus tetrodonta	1.071 (0.894–1.284)	0.881	18	1.462	80.91	55.34	5.83	0.91	T(e)	*Myrtaceae*	Roderick
Eucalyptus ficifolia	1.032 (0.877–1.215)	0.829	29	0.322	25.70	79.80	4.79	0.68	T(e)	*Myrtaceae*	Prior
Eucalyptus pauciflora	1.242 (1.121–1.377)	0.929	30	0.583	26.00	44.57	2.84	0.93	T(e)	*Myrtaceae*	Roderick
Fabaceae sp1	1.235(1.101–1.384)	0.899	34	1.180	155.60	131.83	3.17	0.76	T(e)	*Myrtaceae*	Prior
Ficus racemosa	1.166 (0.952–1.427)	0.852	18	0.454	69.18	152.41	2.81	0.84	T(e)	*Fabaceae*	Reich1
Ficus scobina	0.911 (0.726–1.142)	0.815	18	0.310	37.76	121.62	2.53	1.09	T(sd)	*Moraceae*	Prior
Fraxinus americana	1.206 (1.083–1.343)	0.983	10	0.061	27.80	458.14	6.30	0.68	T(sd)	*Moraceae*	Prior
Geum macrophyllum	0.955(0.776–1.175)	0.822	20	0.023	8.20	363.92	8.86	1.10	T(d)	*Oleaceae*	Shipley
Geum rosii	1.061 (0.895–1.259)	0.864	22	0.050	4.20	83.95	3.58	0.93	H(d)	*Rosaceae*	Shipley
Ginkgo biloba	1.002 (0.918–1.093)	0.949	30	0.162	20.37	125.60	9.35	1.00	T(d)	*Ginkgoaceae*	Roderick
Goupia glabra	1.401 (1.28–1.534)	0.958	24	0.659	83.75	127.06	5.13	0.52	T(e)	*Celastraceae*	Reich1
Hedera helix	1.025(0.947–-1.109)	0.959	30	0.115	24.49	213.80	23.81	0.92	V(e)	*Araliaceae*	Roderick
Henriettella flavescens	1.122 (1.009–1.247)	0.863	51	0.641	81.28	126.77	4.58	0.83	T(e)	*Melastomataceae*	Baraloto
Hevea brasiliensis	1.764 (1.323–2.352)	0.829	12	0.319	42.07	131.83	2.12	0.56	T(e)	*Eupnorbiaceae*	Reich3
Hieracium aurantiacum	1.061 (0.754–1.494)	0.817	10	0.022	8.83	396.28	3.74	0.92	H(d)	*Asteraceae*	Shipley
Hypericum calycinum	0.939 (0.869–1.016)	0.959	30	0.100	8.67	86.30	2.93	1.07	H(d)	*Clusiaceae*	Roderick
Impatiens pallida	1.16(0.89–1.511)	0.892	10	0.019	15.14	803.53	2.69	0.85	H(d)	*Balsaminaceae*	Shipley
Inga sp4	1.014 (0.898–1.144)	0.856	42	0.361	43.85	121.34	4.37	0.98	T(e)	*Fabaceae*	Baraloto
Inga stipularis	1.026 (0.963–1.094)	0.963	39	0.589	58.75	99.77	4.87	0.96	T(e)	*Fabaceae*	Baraloto
Iryanthera hostmannii	1.323 (1.167–1.501)	0.906	27	0.558	61.24	109.65	4.31	0.62	T(e)	*Myristicaceae*	Baraloto
Iryanthera sagotiana	0.995(0.899–1.101)	0.874	51	0.316	39.45	124.74	5.48	1.01	T(e)	*Myristicaceae*	Baraloto
Jacaranda copaia	1.505(1.267–1.788)	0.870	21	0.105	20.65	197.24	6.33	0.39	T(e)	*Bignoniaceae*	Baraloto

Electronic supplementary material A.

species	β(95% CI)	r^2	sample size per species	LM (g)	LA (cm^2)	SLA ($cm^2\ g^{-1}$)	LA_{VAR}	SLA_{VAR}	growth form	family	data source
Kalmia augustifolia	0.778 (0.626–0.968)	0.927	10	0.031	2.84	92.47	2.31	1.20	S(e)	*Ericaceae*	Shipley
Lecythis chartacea	1.09(0.97–1.226)	0.972	12	0.364	61.38	168.66	3.28	0.90	T(e)	*Lecythidaceae*	Baraloto
Lecythis idatimon	0.978 (0.88–1.087)	0.951	21	0.502	54.45	108.39	6.45	1.04	T(e)	*Lecythidaceae*	Baraloto
Lespedeza capitata	0.952 (0.745–1.216)	0.846	14	0.035	4.44	127.64	3.46	1.06	H(d)	*Fabaceae*	Reich2
Licania membranacea	0.92 (0.831–1.019)	0.890	45	0.532	50.82	95.50	10.85	1.21	T(e)	*Chrysobalanaceae*	Baraloto
Licania heteromorpha	1.118(1.003–1.246)	0.912	33	0.582	60.95	104.71	4.91	0.83	T(e)	*Chrysobalanaceae*	Reich1
Liquidambar styraciflua	1.018(0.981–1.057)	0.967	95	0.114	26.98	236.05	26.30	0.94	T(d)	*Hamamelidaceae*	Williams-Liner
Lonicera implexa	1.218 (1.091–1.361)	0.890	39	0.060	4.22	70.15	3.94	0.74	V(e)	*Caprifoliaceae*	Milla1
Lythrum salicaria	1.407 (1.037–1.908)	0.856	10	0.018	3.14	171.40	2.18	0.73	H(d)	*Lythraceae*	Shipley
Magnolia schiedeana	1.159(1.091–1.233)	0.908	99	0.676	66.07	97.72	5.50	0.76	T(e)	*Magnoliaceae*	Williams-Liner
Maianthemum canadense	1.154 (1.012–1.316)	0.960	13	0.034	11.80	349.14	8.66	0.72	H(d)	*Liliaceae*	Reich2
Manihot esculenta	0.991 (0.841–1.167)	0.918	16	0.358	87.10	243.22	2.52	1.01	S(e)	*Eupnorbiaceae*	Reich1
Melaleuca viridifolia	0.933 (0.806–1.078)	0.924	18	0.501	21.63	43.15	5.22	0.79	T(d)	*Meliaceae*	Roderick
Melia azedarach	1.139 (1.019–1.272)	0.918	30	0.045	8.51	187.93	6.22	1.13	T(e)	*Myrtaceae*	Prior
Miconia dispar	0.821 (0.623–1.081)	0.824	13	2.415	224.91	93.11	4.94	1.33	T(e)	*Melastomataceae*	Reich1
Miconia tschudyoides	1.196(1.108–1.291)	0.926	53	1.202	143.22	119.12	5.56	0.98	T(e)	*Sapotaceae*	Reich1
Micrandra sprucei	1.213 (1.057–1.393)	0.847	35	1.205	102.80	85.31	4.97	0.71	T(e)	*Eupnorbiaceae*	Reich1
Micropholis magueirei	1.014(0.908–1.132)	0.905	34	1.057	82.99	78.52	14.06	0.60	T(e)	*Melastomataceae*	Baraloto
Myrtacea sp5	0.844 (0.747–0.954)	0.900	30	0.351	56.89	162.18	3.61	1.22	T(e)	*Myrtaceae*	Baraloto
Neea obovata	1.03(0.921–1.151)	0.894	37	0.231	22.65	97.95	14.47	0.92	T(e)	*Nyctaginaceae*	Reich1
Ocotea costulata	0.874 (0.785–0.974)	0.924	29	0.557	77.27	138.68	5.58	1.24	T(e)	*Lauraceae*	Reich1
Ostrya virginiana	1.1 (0.915–-1.323)	0.948	10	0.050	26.55	528.45	3.12	0.89	T(d)	*Betulaceae*	Shipley
Palicourea guianensis	1.039 (0.973–1.109)	0.968	33	1.023	143.88	140.60	22.18	0.89	T(e)	*Rtibiaceae*	Baraloto
Panicum praecocious	1.063 (0.978–1.154)	0.988	11	0.007	2.22	308.32	5.43	0.90	G(d)	*Poaceae*	Reich2
Parthenocissus quinquefolia	1.04(0.826–1.31)	0.891	12	0.090	45.60	505.82	5.76	0.93	V(d)	*Vitaceae*	Reich2
Paspalum virgatum	1.277(1.027–1.587)	0.891	13	0.270	34.12	126.47	2.48	0.61	V(e)	*Passifloraceae*	Reich3
Passiflora edulis	1.546 (1.205–1.984)	0.823	15	0.422	92.04	218.27	2.54	0.77	G(e)	*Poaceae*	Reich3
Pedicularis lapponica	1.228 (1.058–1.425)	0.909	20	0.006	0.69	109.14	3.35	0.76	H(d)	*Scrophulariaceae*	Kudo
Pistacia lentiscus	1.138 (1.058–1.223)	0.903	75	0.028	1.54	55.85	3.44	0.84	S(e)	*Anacardiaceae*	Milla1
Pistacia terebinthus	1.121 (1.027–1.225)	0.857	75	0.079	6.84	86.50	3.95	0.85	S(d)	*Anacardiaceae*	Milla1
Planchonia careya	0.874 (0.708–1.079)	0.840	18	0.552	66.07	119.67	2.98	1.15	T(d)	*Lecythidaceae*	Prior
Pogonophora schomburgkiana	0.937 (0.797–1.101)	0.886	21	0.352	50.12	142.23	5.59	1.11	T(e)	*Euphorbiaceae*	Baraloto
Polygonum sagittatum	0.927 (0.768–1.12)	0.946	10	0.009	6.00	665.27	3.66	1.10	H(d)	*Polygonaceae*	Shipley
Populus nigra	1.022(1.002–1.043)	0.997	30	0.116	20.28	174.58	23.09	0.93	T(d)	*Salicaceae*	Roderick
Populus tremula	1.172 (1.111–1.236)	0.904	133	0.278	32.14	115.61	6.30	0.73	T(d)	*Salicaceae*	Niinemets
Populus tremuloides	1.057 (0.818–1.366)	0.899	10	0.210	27.67	131.52	2.74	0.94	T(d)	*Salicaceae*	Shipley
Pradosia cochlearia	1.172 (1.024–1.342)	0.911	23	0.175	26.24	149.97	3.04	0.83	T(e)	*Sapotaceae*	Baraloto
Protium opacum	1.354 (1.178–1.556)	0.824	39	1.197	153.82	128.53	3.12	0.67	T(e)	*Burseraceae*	Baraloto
Protium sp1	1.266 (1.08–1.485)	0.809	33	0.830	101.86	122.74	3.46	0.72	T(e)	*Btirseraceae*	Reich1
Protium sp2	1.175(1.012–1.364)	0.885	24	0.703	74.13	105.44	7.19	0.71	T(e)	*Burseraceae*	Reich1

(*Continued.*)

Electronic supplementary material A.

species	β(95% CI)	r^2	sample size per species	LM (g)	LA (cm^2)	SLA ($cm^2\ g^{-1}$)	LA_{VAR}	SLA_{VAR}	growth form	family	data source
Protium sp3	1.019 (0.944–1.101)	0.956	33	0.908	79.43	87.50	3.96	0.97	T(e)	*Burseraceae*	Reich1
Quercus ilex	1.15(1.069–1.237)	0.903	75	0.057	2.87	50.12	3.71	0.91	S(e)	*Fagaceae*	Milla1
Quercus xalapensis	1.07(1.02–1.123)	0.943	100	0.141	19.54	138.68	9.15	0.57	T(d)	*Fagaceae*	Reich2
Quercus coccifera	1.069 (0.988–1.157)	0.885	75	0.029	1.45	50.58	2.86	0.85	S(e)	*Fagaceae*	Milla1
Quercus ellipsoidalis	1.257 (1.076–1.469)	0.932	15	0.256	44.36	172.98	11.47	0.84	T(d)	*Fagaceae*	Williams-Liner
Retiniphyllum truncatum	1.077 (0.98–1.183)	0.918	40	0.376	30.76	81.85	4.17	0.90	T(e)	*Rtibiaceae*	Reich1
Rhamnus alaternus	1.201 (1.081–1.334)	0.871	49	0.044	4.14	93.11	3.38	0.78	S(e)	*Rtiamnaceae*	Castro-Dlez
Rhodognaphalopsis humilis	0.984 (0.854–1.134)	0.922	19	0.415	28.91	69.66	5.72	1.03	T(e)	*Malvaceae*	Reich1
Rhus typhina	1.249 (1.065–1.465)	0.961	10	0.072	11.75	164.06	2.16	0.83	S(d)	*Anacardiaceae*	Shipley
Rinorea amapensis	0.974(0.854–1.111)	0.817	45	0.162	29.72	183.65	3.26	1.03	T(e)	*Violaceae*	Baraloto
Rubus allegheniensis	1.054 (0.975–1.14)	0.992	9	0.059	25.35	431.52	2.85	0.94	S(d)	*Rosaceae*	Shipley
Rubus idaeus	1.143 (0.809–1.616)	0.813	10	0.044	15.78	357.27	1.84	0.92	S(d)	*Rosaceae*	Shipley
Rudbeckla hirta	1.309 (1.053–1.629)	0.927	10	0.015	2.54	165.58	4.26	0.64	H(d)	*Asteraceae*	Shipley
Ryania pyrifera	0.782 (0.641–0.954)	0.857	18	0.414	56.49	136.46	4.03	1.35	T(e)	*Salicaceae*	Baraloto
Sagotia brachysepala	1.354 (1.131–1.622)	0.934	12	0.478	79.25	165.96	6.98	0.50	T(e)	*Euphorbiaceae*	Baraloto
Salix herbacea	1.133 (1.014–1.267)	0.949	20	0.008	0.88	109.40	3.11	0.78	T(d)	*Salicaceae*	Roderick
Salix babylonica	1.216 (1.108–1.335)	0.941	30	0.057	8.83	154.17	2.32	0.89	S(d)	*Salicaceae*	Kudo
Saxifraga canaliculata	1.452 (1.239–1.701)	0.805	34	0.002	0.17	72.95	2.67	0.64	S(e)	*Saxijragaceae*	Mllla2
Schizachyrium scoparium	0.994 (0.708–1.396)	0.820	10	0.025	4.43	176.60	2.06	1.00	G(e)	*Poaceae*	Reich2
Solanum crinitum	1.359 (1.152–1.603)	0.909	17	0.743	113.50	152.76	1.66	0.87	H(d)	*Asteraceae*	Shipley
Solidago canadensis	1.273 (1.037–1.564)	0.936	10	0.018	2.49	136.77	6.23	0.52	T(e)	*Solanaceae*	Reich3
Sorghastrum nutans	1.006 (0.794–1.276)	0.855	14	0.060	10.16	170.22	6.41	0.99	G(d)	*Poaceae*	Reich2
Sterculia pruriens	1 (0.904–1.105)	0.909	39	5.284	636.80	120.50	11.91	1.00	T(e)	*Malvaceae*	Baraloto
Symphonia globulifera	0.94(0.82–1.078)	0.962	12	0.244	35.97	147.23	3.07	1.07	T(e)	*Clusiaceae*	Baraloto
Symphonia sp1	1.034 (0.898–1.191)	0.809	41	0.186	25.94	139.32	3.08	0.96	T(e)	*Clusiaceae*	Baraloto
Syzygium suborbiculare	0.966 (0.796–1.174)	0.863	18	0.822	59.98	72.95	3.77	1.05	T(sd)	*Myrtaceae*	Prior
Tapura guianensis	1.157 (0.999–1.339)	0.828	35	0.402	45.81	114.02	5.81	0.76	T(e)	*Dichapetalaceae*	Baraloto
Taraxacum laevigatum	1.106 (0.966–1.265)	0.973	10	0.027	13.52	503.50	2.37	0.91	H(d)	*Asteraceae*	Shlpley2
Terminalia ferdinandiana	1.104 (0.993-–1.227)	0.960	18	1.169	115.61	98.86	2.91	0.89	T(d)	*Combretaceae*	Prior
Turpinia insignis	1.108 (1.078–1.139)	0.982	98	0.230	26.49	115.08	17.36	0.73	T(e)	*Staphyleaceae*	Williams-Liner
Unonopsis stipitata	1.334 (1.187–1.499)	0.955	17	0.640	86.10	134.59	20.04	0.37	T(e)	*Annonaceae*	Baraloto
Vaccinium vitisidaea	0.97(0.802–1.174)	0.850	20	0.004	0.20	51.64	2.72	0.86	S(d)	*Ericaceae*	Reich4
Vaccinium myrtillus	1.156 (0.913–1.462)	0.843	15	0.019	3.42	177.42	3.74	1.04	S(e)	*Ericaceae*	Kudo
Viburnum tinus	1.167 (1.067–1.277)	0.957	25	0.163	16.75	103.04	3.02	0.83	S(e)	*Caprifoliaceae*	Castro-Dlez
Vinca minor	1.208 (1.087–1.342)	0.926	30	0.031	6.28	204.17	7.67	0.65	H(e)	*Apocynaceae*	Roderick
Virola michelii	1.174 (1.024–1.347)	0.830	39	0.353	62.66	177.42	4.88	0.76	T(e)	*Myristicaceae*	Baraloto
Vismia lauriformis	1.11(0.977–1.26)	0.811	49	0.836	86.90	103.99	8.23	0.79	T(e)	*Clusiaceae*	Reich1
Wrightia pubescens	0.776 (0.647–0.932)	0.880	18	0.134	25.88	192.75	2.34	1.21	T(d)	*Apocynaceae*	Prior
Xanthostemon paradoxus	1.236 (1.078–1.418)	0.933	18	1.349	98.86	73.28	2.79	0.78	T(sd)	*Myrtaceae*	Prior

Electronic supplementary material B
Statistics to calculate the effects of growth form, ecosystem of origin and phylogeny on beta scores

To investigate whether β differs between growth forms, we divided our set of species into trees, vines, shrubs, forbs and grasses, and each group was subsequently split into evergreen and deciduous leaf habit type. Owing to significant heteroscedasticity and unbalanced sample size between groups, we used a parameter-free Kruskal–Wallis ranks analysis to compare scaling exponents among growth forms. Similarly, we grouped our dataset as a function of the ecosystem of origin (wetlands, tundra-alpine, tropical seasonal forest, tropical rainforest, temperate forest, mediterranean shrublands or gardens) and compared the scaling exponents of each habitat by a Kruskal–Wallis test. All other statistics were performed with SPSS v.13.0.

Species are not independent observations and are related to each other through shared ancestry. To investigate the effect of common ancestry on β scores we proceeded as follows. Nomenclature and family affiliation of our study species were checked against the Missouri Botanical Garden's VAST nomenclatural database (W3Tropicos, http://mobot.mobot.org/W3T/Search/vast.html). We then built a pruned phylogenetic tree of the seed plants with the study species as terminal tips using the maximally resolved seed plant tree available in Phylomatic (http://www.phylodiversity.net/phylomatic/). The resulting tree lacks an estimation of accurate distances between related nodes (i.e. assumes equal branch lengths) assuming equal branch lengths can result in biased estimates of phylogenetic distances between taxa when intervening terminal taxa are missing. Although phylogenetic independent contrasts are robust to the equal branch lengths assumption, phylogenetic signal tests are not (Ackerly 2000). Thus, we calibrated the tree by dating the nodes with the Branch Length ADJustment function (BLADJ) of the PHYLOCOM package (Webb et al. 2006). BLADJ assigns branch lengths on the basis of clade age estimates (Wikstrom et al. 2001), with undated nodes assigned equal branch lengths between nodes for which age estimates are available. We thus obtained a node-dated tree, calibrated in millions of years, which was used as the input tree in a phylogenetic signal analysis.

To test for phylogenetic inertia in the evolution of β scores, we used the analysis of traits (AOT) module of PHYLOCOM. AOT calculates divergence–convergence degree at each internal node of the tree. Trait means of daughter nodes are computed from the arithmetic mean of the tips of the tree that are linked by ancestry to the daughter node. Then the standard deviation between trait means of daughter nodes is used as a proxy of the degree of divergence at the focal node (i.e. divergence size). High standard deviations between daughter node arithmetic means indicate divergence, whereas the opposite indicates phylogenetic conservatism at that particular bifurcation. Significance of divergence size is estimated by randomly permuting trait values across the tips of the phylogeny. In total, 10 000 randomizations were conducted, and the placement of each node-level divergence size score within the distribution of the scores of the 10 000 randomizations was used to qualify divergence size at each node as either significant divergence (node-level divergence size at the 5% higher tail of the 10 000 values), significant conservatism (node-level divergence size at the 5% lower tail of the 10 000 values) or nonsignificant change. AOT computes tree-wide conservatism by averaging the node-level scores of divergence size, and tests its statistical significance as explained above. Phylogenetic uncertainty and the presence of polytomies in the input tree may cause biases in phylogenetically explicit analyses. Therefore, although AOT procedures are assumed to be robust to the presence of 'soft' polytomies (Webb et al. 2006), we resolved polytomies in the tree by randomly generating 100 fully resolved trees using MESQUITE (Maddison & Maddison 2006). We then re-sampled 50 of the 100 fully resolved trees randomly and run AOT again separately for each of those 50 trees. This allowed us to check the robustness to phylogenetic uncertainty of our tree-wide conservatism estimate.

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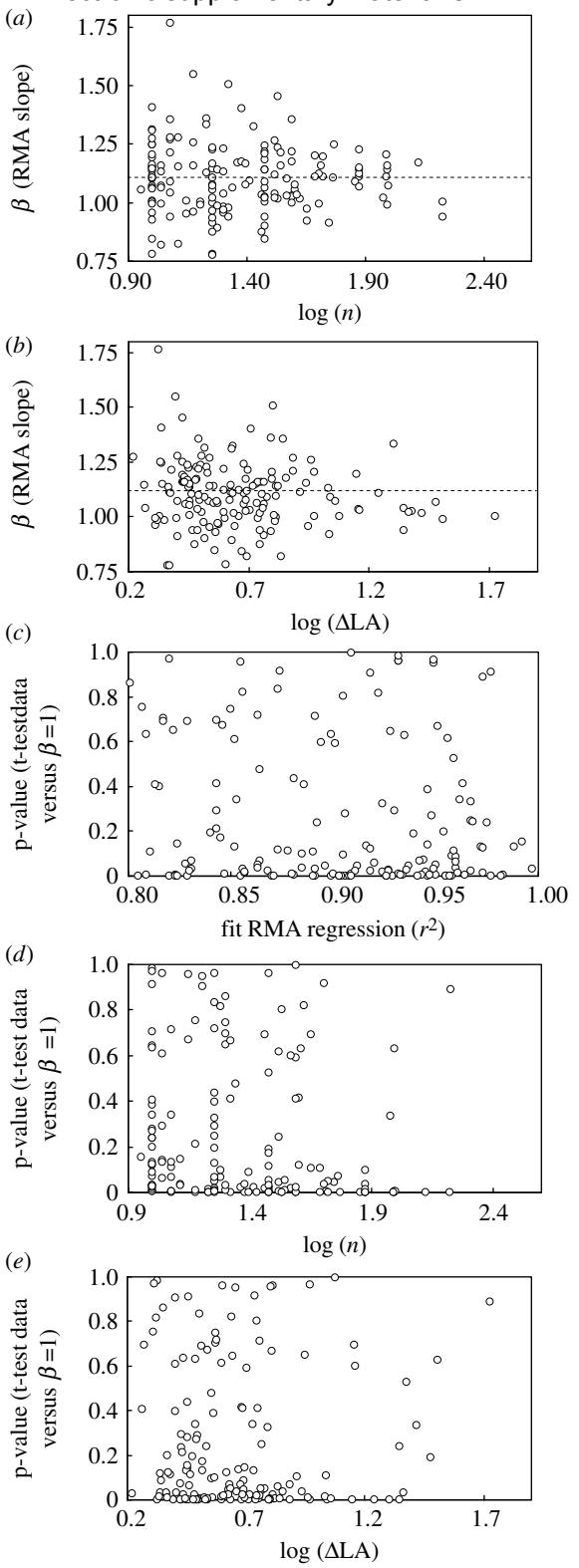

Figure 5. Scatter plots of the β RMA slope, and p value of the likelihood ratio test against $\beta = 1$, against log-scaled sample size (n), range of leaf area variation (ΔLA) and goodness of fit (r^2). Dots are species. Reference line in (*a*) and (*b*): $\beta = 1.10$ (mean β of the 157 species). No simple regression model explained a significant fraction of any scatter.