

Ecography

ECOG-04870

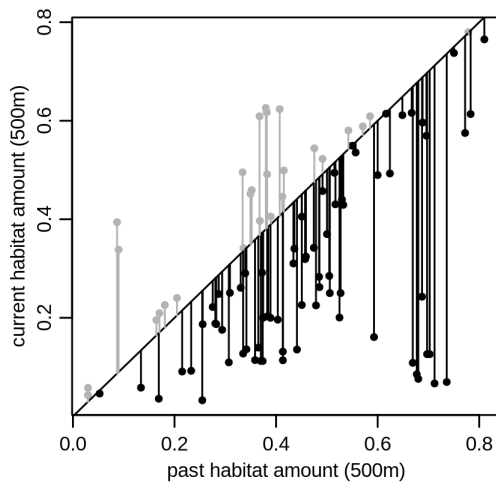
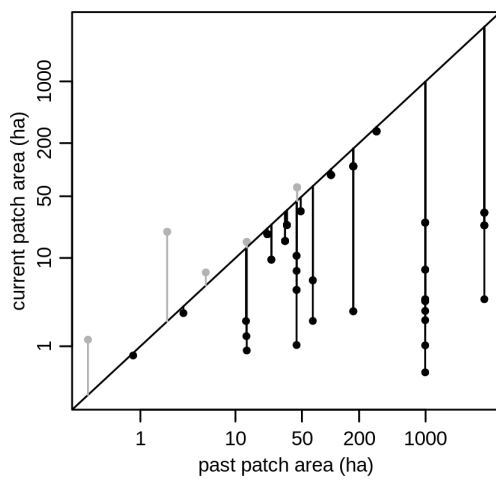
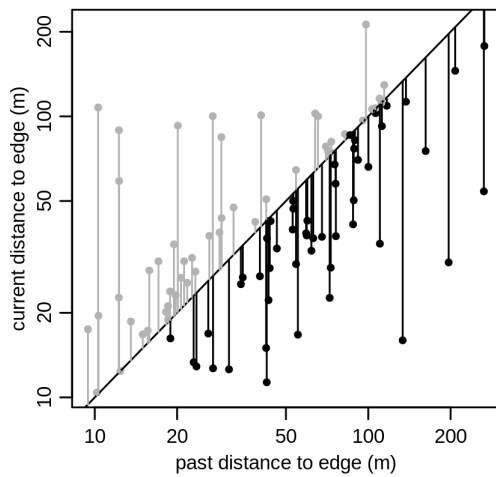
Blanchard, G., Birnbaum, P. and Munoz, F. 2020. Extinction-immigration dynamics lag behind environmental filtering in shaping the composition of tropical dry forests within a changing landscape. – *Ecography* doi: 10.1111/ecog.04870

Supplementary material

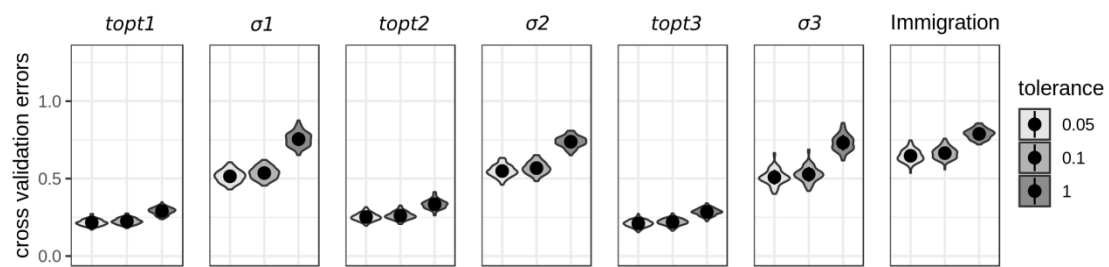
Appendix 1 : AICc (Akaike information criterion corrected for sample size) of linear regression between community species richness and habitat amount within different buffers around communities, for past and present landscape. Buffers providing the lowest AICc were selected.

Buffers (m)	AICc (Past landscape)	AICc (Present landscape)
250	535.25	545.96
500	529.43	546.99
1000	535.74	548.54
2000	544.06	550.55

Appendix 2. Comparison of distance to edge (a), patch area (b) and habitat amount within a 500m buffer derived from past (1954) and recent (2012) landscape structure for the 100 sampled communities. Grey points and segments represent positive shifts while black points and segments represent negative shifts from the $y=1$ line.



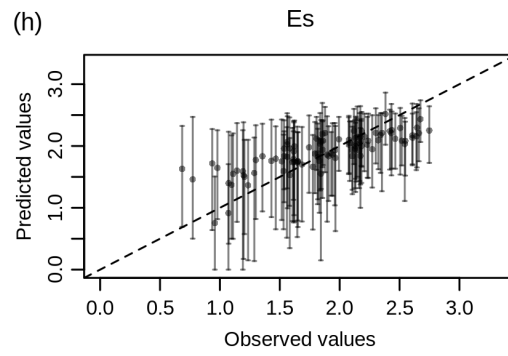
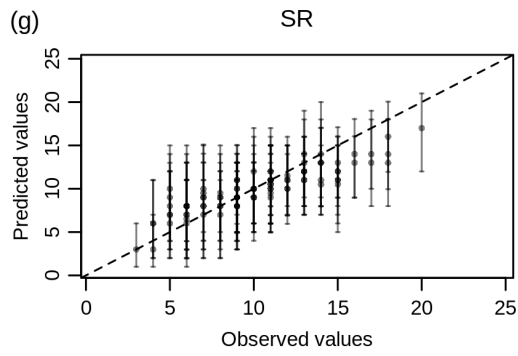
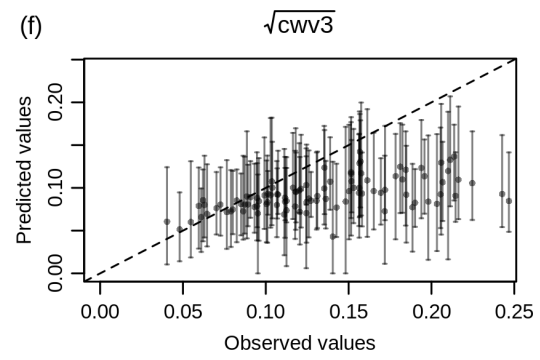
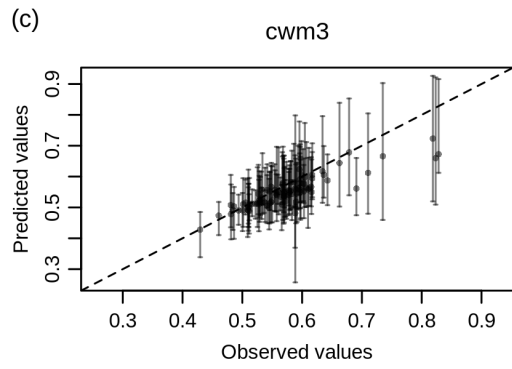
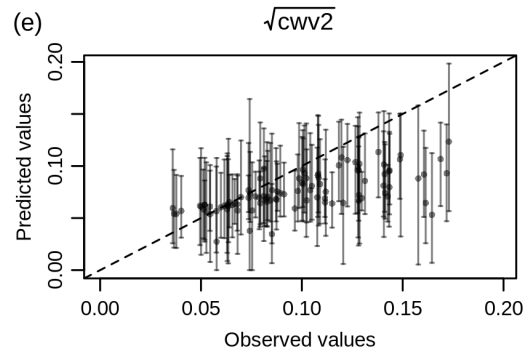
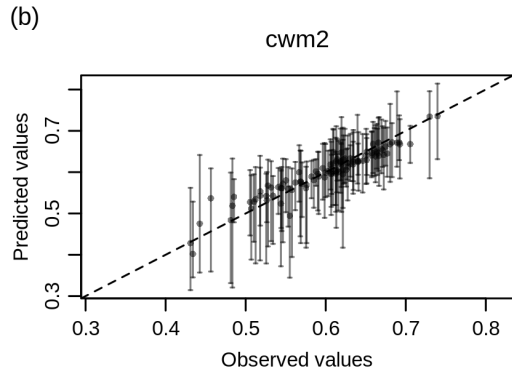
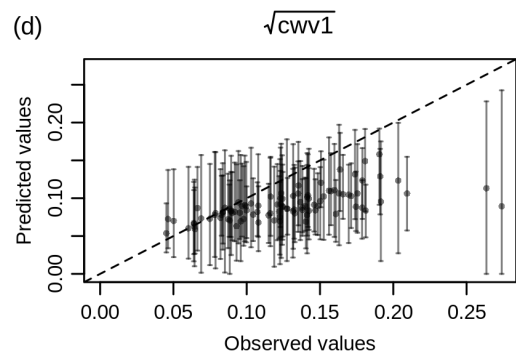
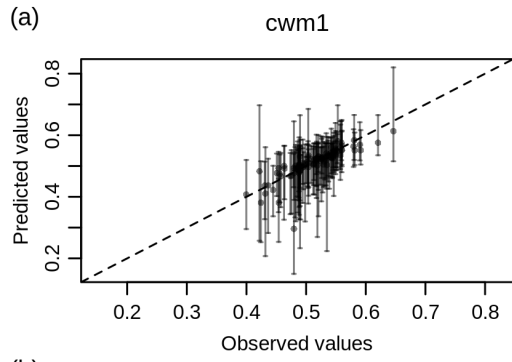
Appendix 3. Distributions of cross-validation errors for the seven parameters estimated with ABC for 100 communities. Cross validation was performed with for level of tolerance rate (0.01, 0.05, 0.1 and 1). A tolerance of 0.1 were finally used for the estimation of parameters with ABC.



Appendix 4. Pearson correlation between observed summary statistics (community weighted means, $cwm1$, $cwm2$, $cwm3$; community weighted variances, $cwv1$, $cwv2$, $cwv3$; species richness, SR; Shannon diversity, ES) and parameter estimates of the assembly model (optimal trait values, $topt1$, $topt2$, $topt3$; standard deviations, $\sigma1$, $\sigma2$, $\sigma3$; log-transformed immigration, $\log(I)$). (*: p-value < 0.05; **: p-value < 0.01; ***: p-value < 0.001).

	cwm1	cwm2	cwm3	cwv1	cwv2	cwv3	SR	ES
<i>topt1</i>	0.92 ***	-0.16	-0.14	-0.48 ***	-0.03	0.13	0.08	0.03
<i>topt2</i>	-0.05	0.92 ***	-0.02	0.1	-0.52 ***	-0.45 ***	-0.21	-0.27
<i>topt3</i>	0.03	0.11	0.85 ***	0.21	0.24	0.03	-0.35 *	-0.35 *
$\sigma1$	-0.15	0.11	-0.12	0.46 ***	0.09	0.08	0.36 *	0.36 *
$\sigma2$	0.13	-0.12	-0.17	-0.29	0.4 **	0.09	0.35 *	0.39 **
$\sigma3$	0.15	-0.27	-0.14	-0.14	0.39 **	0.47 ***	0.52 ***	0.54 ***
$\log(I)$	0.02	-0.17	-0.25	0.25	0.25	0.28	0.87 ***	0.79 ***

Appendix 5. Predicted vs observed values of summary statistics representing functional and taxonomic diversity for the 100 tree communities (posterior predictive checks). Predicted values were obtained using the assembly model with parameter values sampled from their posterior distributions obtained with Approximate Bayesian Computation. Points represent medians values and error bars show 90% credible intervals based on 100 simulations. The dashed line represents $y=x$. Functional statistics (a, b, c, d, e, f) include community weighted means (cwm) and square root-transformed community weighted variances (\sqrt{cwv}) for each of the three functional dimension defined as the three axes of the rotated principal component analysis (respectively, cwm1, cwm2, cwm3, and $\sqrt{cwv1}$, $\sqrt{cwv2}$, $\sqrt{cwv3}$). Because they were left-skewed, cwv values were square root-transformed to facilitate plot interpretation. Taxonomic statistics (g, h) include species richness (SR) and Shannon diversity (ES).



Appendix 6. Twenty best linear models (i.e. models with lower AICc, Akaike information criterion corrected for sample size) for the effect of topographic and soil variables on parameter estimates of environmental filtering and immigration (see Table 1) for all communities (n = 100). Coefficients are given for selected predictors. Log-likelihoods, AICc, and delta AICc are given.

$\log(L)$											
rank	intercept	curvature	elevation	lithology	river	aspect	TWI	df	logLik	AICc	delta AICc
1	3.256							2	-137.957	280.038	0.0000
2	3.178			0.2440				3	-137.252	280.753	0.7147
3	3.256		0.11371					3	-137.260	280.770	0.7317
4	3.162		0.13781	0.2952				4	-136.241	280.903	0.8650
5	3.256	-0.09937						3	-137.426	281.101	1.0631
6	3.167	-0.11667		0.2771				4	-136.520	281.461	1.4226
7	3.256				-0.07696			3	-137.639	281.528	1.4900
8	3.256		0.14238		-0.11307			4	-136.606	281.633	1.5951
9	3.151	-0.11585	0.13711	0.3278				5	-135.505	281.649	1.6101
10	3.256					-0.06805		3	-137.709	281.667	1.6290
11	3.256		0.15990				0.110771	4	-136.707	281.834	1.7957
12	3.163			0.2914		-0.09878		4	-136.746	281.913	1.8742
13	3.256	-0.09614	0.11091					4	-136.756	281.933	1.8946
14	3.256						0.044095	3	-137.853	281.956	1.9178
15	3.150	-0.12506		0.3317		-0.10876		5	-135.901	282.440	2.4019
16	3.179		0.15113	0.2402	-0.07024			5	-136.021	282.679	2.6409
17	3.256	-0.10270				-0.07276		4	-137.139	282.699	2.6606
18	3.256				-0.10474	-0.09780		4	-137.163	282.747	2.7086
19	3.256	-0.09195			-0.06673			4	-137.187	282.795	2.7569
20	3.188			0.2123	-0.03714			4	-137.189	282.798	2.7598

topt1

rank	intercept	curvature	elevation	lithology	river	aspect	TWI	df	logLik	AICc	delta AICc
1	0.4575			0.06126		-0.02237		465.283	-122.146	0.0000	
2	0.4585		0.02094	0.05830				465.129	-121.837	0.3094	
3	0.4610			0.05052				363.823	-121.396	0.7495	
4	0.4566		0.01479	0.06410		-0.01685		565.858	-121.078	1.0675	
5	0.4598			0.05404	-0.009552	-0.02432		565.512	-120.385	1.7605	
6	0.4567	-8.27e-03		0.06392		-0.02303		565.492	-120.346	1.7997	
7	0.4771							262.151	-120.179	1.9668	
8	0.4562			0.06531		-0.02111	-0.005093	565.345	-120.051	2.0944	
9	0.4607		0.02263	0.05135	-0.008890			565.327	-120.016	2.1300	
10	0.4579	-6.37e-03	0.02090	0.06010				565.253	-119.868	2.2784	
11	0.4577			0.06074			-0.011172	464.133	-119.845	2.3011	
12	0.4578		0.01995	0.06050			-0.002804	565.146	-119.653	2.4926	
13	0.4771		0.01618					362.925	-119.600	2.5463	
14	0.4771					-0.01591		362.898	-119.547	2.5990	
15	0.4594		0.01637	0.05547	-0.011834	-0.01868		666.207	-119.510	2.6357	
16	0.4604	-6.49e-03		0.05237				463.949	-119.477	2.6692	
17	0.4771				-0.018815	-0.02125		463.876	-119.331	2.8151	
18	0.4620			0.04717	-0.003934			463.863	-119.304	2.8418	
19	0.4771		0.02076		-0.018043			463.840	-119.258	2.8876	
20	0.4558	-7.76e-03	0.01447	0.06654		-0.01759		666.044	-119.185	2.9608	

σI

rank	intercept	curvature	elevation	lithology	river	aspect	TWI	df	logLik	AICc	delta AICc
1	0.1843					-0.00474		3	239.336	-472.422	0.000
2	0.1848			-0.001381		-0.00459		4	239.377	-470.332	2.090
3	0.1843		0.000583			-0.00451		4	239.365	-470.310	2.113
4	0.1843				-2.48e-04	-0.00481		4	239.342	-470.263	2.160
5	0.1843					-0.00472	-7.07e-05	4	239.337	-470.252	2.170
6	0.1843	3.10e-05				-0.00474		4	239.336	-470.251	2.171
7	0.1843							2	237.106	-470.088	2.334
8	0.1843		0.002358					3	237.648	-469.047	3.376
9	0.1855			-0.003587				3	237.381	-468.512	3.910
10	0.1843						-1.63e-03	3	237.366	-468.482	3.940
11	0.1843							3	237.228	-468.205	4.217
12	0.1849			-0.001802	-5.56e-04	-0.00471		5	239.402	-468.165	4.257
13	0.1847		0.000522	-0.001281		-0.00440		5	239.400	-468.161	4.261
14	0.1848			-0.001556		-0.00465		5	239.380	-468.122	4.300
15	0.1848	1.26e-04		-0.001422		-0.00458		5	239.378	-468.118	4.304
16	0.1843		0.000642		-3.47e-04	-0.00458		5	239.376	-468.114	4.308
17	0.1843		0.000628			-0.00454		5	239.367	-468.095	4.327
18	0.1843	5.87e-05	0.000587			-0.00451		5	239.366	-468.093	4.329
19	0.1843				-3.87e-04	-0.00476	-2.73e-04	5	239.347	-468.055	4.367
20	0.1843	5.60e-05			-2.54e-04	-0.00481		5	239.342	-468.046	4.376

topt2

rank	intercept	curvature	elevation	lithology	river	aspect	TWI	df	logLik	AICc	delta AICc
1	0.6008	0.05359	-0.04999	-0.10585	0.04252			6	52.812	-92.720	0.000
2	0.6037	0.05799	-0.04562	-0.11484	0.04769		0.015084	7	53.080	-90.943	1.777
3	0.6004	0.05330	-0.05177	-0.10456	0.04174	-0.005277		7	52.866	-90.514	2.206
4	0.6033	0.05781	-0.04753	-0.11367	0.04699	-0.006137	0.015640	8	53.153	-88.724	3.996
5	0.6121	0.06076	-0.04188	-0.14115				5	49.508	-88.378	4.343
6	0.6108	0.05988	-0.04595	-0.13707		-0.011112		6	49.737	-86.571	6.149
7	0.6101	0.05830	-0.04438	-0.13496			-0.007024	6	49.573	-86.242	6.478
8	0.5669	0.04486	-0.04667		0.06249			5	48.217	-85.795	6.926
9	0.6058	0.06608		-0.12138	0.04624		0.036902	6	49.172	-85.442	7.279
10	0.6093	0.05800	-0.04770	-0.13243		-0.010551	-0.005504	7	49.777	-84.336	8.385
11	0.5982	0.05579		-0.09762	0.03114			5	47.472	-84.306	8.415
12	0.5669	0.04448	-0.05043		0.06040	-0.010879		6	48.429	-83.955	8.765
13	0.5669	0.04315	-0.04884		0.05928		-0.007041	6	48.277	-83.650	9.070
14	0.6061	0.06588		-0.12247	0.04717		0.035117	7	49.282	-83.346	9.374
15	0.6071	0.06101		-0.12566				4	45.780	-83.139	9.581
16	0.5994	0.05630		-0.10143	0.03397			6	47.790	-82.678	10.043
17	0.5932		-0.05241	-0.08212	0.05354			5	46.595	-82.552	10.169
18	0.5669	0.04311	-0.05202		0.05789	-0.010386	-0.005718	7	48.469	-81.720	11.001
19	0.6119	0.06617		-0.14072			0.014873	5	46.107	-81.576	11.144
20	0.6081	0.06148		-0.12875				5	45.856	-81.073	11.647

σ^2

rank	intercept	curvature	elevation	lithology	river	aspect	TWI	df	logLik	AICc	delta AICc
1	0.1642							2	200.116	-396.109	0.0000
2	0.1642					-0.003509		3	200.689	-395.129	0.9801
3	0.1642							3	200.319	-394.388	1.7208
4	0.1642	-0.002083						3	200.317	-394.385	1.7240
5	0.1642		1.19e-04					3	200.117	-393.984	2.1250
6	0.1642							3	200.117	-393.983	2.1255
7	0.1642						-1.15e-05	3	200.116	-393.983	2.1263
8	0.1642	-0.001714				-0.003319		4	200.825	-393.230	2.8793
9	0.1653				-0.003322	-0.004132		4	200.785	-393.149	2.9602
10	0.1642					-0.003821	-1.09e-03	4	200.741	-393.061	3.0476
11	0.1642		1.07e-03			-0.003783		4	200.740	-393.060	3.0492
12	0.1642					-0.003409		4	200.690	-392.960	3.1491
13	0.1642	-0.001620						4	200.431	-392.441	3.6675
14	0.1642		1.20e-03					4	200.374	-392.328	3.7812
15	0.1649				-0.002093			4	200.356	-392.290	3.8188
16	0.1642						-7.91e-04	4	200.345	-392.269	3.8399
17	0.1640	-0.002133						4	200.324	-392.227	3.8820
18	0.1642	-0.002088					-1.07e-04	4	200.318	-392.215	3.8940
19	0.1642	-0.002081	5.88e-05					4	200.318	-392.214	3.8947
20	0.1642		1.40e-04					4	200.118	-391.814	4.2947

topt3

rank	intercept	curvature	elevation	lithology	river	aspect	TWI	df	logLik	AICc	delta AICc
1	0.5403		-0.02471					3	63.853	-121.456	0.0000
2	0.5403					0.02351		3	63.678	-121.106	0.3501
3	0.5403		-0.02905		0.017144			4	64.694	-120.967	0.4893
4	0.5403		-0.02186		0.021271	0.02095		5	65.801	-120.964	0.4926
5	0.5403				0.017896	0.02859		4	64.576	-120.730	0.7260
6	0.5403		-0.01829			0.01631		4	64.540	-120.658	0.7977
7	0.5403							2	62.036	-119.948	1.5078
8	0.5403	0.008450	-0.02446					4	64.070	-119.719	1.7375
9	0.5403	0.010259				0.02398		4	63.996	-119.572	1.8845
10	0.5403		-0.02736				-6.37e-03	4	63.955	-119.489	1.9671
11	0.5415		-0.02501	-0.003760				4	63.862	-119.303	2.1528
12	0.5403	0.007245	-0.02131		0.020412	0.02125		6	65.964	-119.024	2.4318
13	0.5403	0.006514	-0.02865		0.016319			5	64.823	-119.007	2.4488
14	0.5403					0.02453	-3.09e-03	4	63.704	-118.987	2.4694
15	0.5403	0.009421	-0.01777			0.01695		5	64.812	-118.986	2.4704
16	0.5423			-0.006053		0.02414		4	63.701	-118.981	2.4749
17	0.5403	0.008588			0.016979	0.02872		5	64.800	-118.962	2.4942
18	0.5403		-0.02171			0.01831	-1.00e-02	5	64.789	-118.939	2.5174
19	0.5367		-0.02864		0.019145			5	64.765	-118.892	2.5640
20	0.5403		-0.02782		0.019186			5	64.727	-118.815	2.6409

rank	intercept	curvature	elevation	lithology	river	aspect	TWI	df	logLik	AICc	delta AICc
1	0.1797		0.007799		-0.006707			4	225.614	-442.807	0.000
2	0.1779		0.008015	0.005916	-0.005652			5	226.111	-441.584	1.223
3	0.1797		0.008731		-0.005162		0.003174	5	226.086	-441.534	1.274
4	0.1797		0.007025		-0.007151	-0.002253		5	225.932	-441.225	1.582
5	0.1797	-0.001766	0.007691		-0.006483			5	225.851	-441.064	1.743
6	0.1797		0.008608				0.006019	4	224.686	-440.952	1.856
7	0.1777		0.007150	0.006485	-0.006059	-0.002578		6	226.527	-440.150	2.657
8	0.1775	-0.002339	0.007909	0.006952	-0.005171			6	226.517	-440.130	2.677
9	0.1797		0.007939		-0.005510	-0.002591	0.003508	6	226.505	-440.107	2.701
10	0.1776		0.008591	0.006684			0.004669	5	225.296	-439.954	2.853
11	0.1764		0.006942	0.010340				4	224.149	-439.876	2.931
12	0.1782		0.008707	0.004747	-0.004643		0.002502	6	226.387	-439.871	2.937
13	0.1797	-0.001846	0.006886		-0.006932	-0.002330		6	226.192	-439.481	3.326
14	0.1797	-0.001102	0.008536		-0.005234		0.002740	6	226.170	-439.437	3.370
15	0.1797		0.008001			-0.001966	0.006418	5	224.924	-439.210	3.597
16	0.1761	-0.003211	0.006923	0.011245				5	224.912	-439.186	3.621
17	0.1797	-0.000840	0.008458				0.005718	5	224.734	-438.830	3.978
18	0.1773	-0.002489	0.006984	0.007623	-0.005572	-0.002739		7	226.988	-438.759	4.048
19	0.1797		0.006098					3	222.472	-438.694	4.113
20	0.1781		0.007854	0.005226	-0.004965	-0.002783	0.002792	7	226.871	-438.524	4.283

Appendix 7. Partition of the effects of landscape metrics, and topographic and soil variables on parameter estimates of environmental filtering and immigration (see Table 1 for details) for forest core communities (n=32).

parameter	groups	pred.	coef.	Adj. R ²	Adj. R ² c	Adj. R ²	Adj. R ² c
log(I)	Recent landscape	E.D.	.	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>
		P.A.	.	<i>ns</i>	<i>ns</i>		
		H.A.	.	<i>ns</i>	<i>ns</i>		
	Past landscape	E.D.	.	<i>ns</i>	<i>ns</i>	0.21*	0.23*
		P.A.	.	<i>ns</i>	<i>ns</i>		
		H.A.	(+)	0.24**	0.29**		
	Topography & soil	<i>ns</i>	<i>ns</i>
	Unexplained		0.76
	topt1	Recent landscape	E.D.	.	<i>ns</i>	<i>ns</i>	<i>ns</i>
P.A.			.	<i>ns</i>	<i>ns</i>		
H.A.			.	<i>ns</i>	<i>ns</i>		
Past landscape		E.D.	.	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>
		P.A.	.	<i>ns</i>	<i>ns</i>		
		H.A.	.	<i>ns</i>	<i>ns</i>		
Topography & soil		0.11*	0.13*
Unexplained			0.95
σ1		Recent landscape	E.D.	.	<i>ns</i>	<i>ns</i>	<i>ns</i>
	P.A.		.	<i>ns</i>	<i>ns</i>		
	H.A.		.	<i>ns</i>	<i>ns</i>		
	Past landscape	E.D.	.	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>
		P.A.	.	<i>ns</i>	<i>ns</i>		
		H.A.	.	<i>ns</i>	<i>ns</i>		
	Topography & soil	<i>ns</i>	<i>ns</i>
	Unexplained		0.98
	topt2	Recent landscape	E.D.	.	<i>ns</i>	<i>ns</i>	<i>ns</i>
P.A.			.	<i>ns</i>	<i>ns</i>		
H.A.			(-)	0.09*	0.12*		
Past landscape		E.D.	.	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>
		P.A.	.	<i>ns</i>	<i>ns</i>		
		H.A.	.	<i>ns</i>	<i>ns</i>		
Topography & soil		0.22*	0.25*
Unexplained			0.66
σ2		Recent landscape	E.D.	.	<i>ns</i>	<i>ns</i>	<i>ns</i>
	P.A.		.	<i>ns</i>	<i>ns</i>		
	H.A.		.	<i>ns</i>	<i>ns</i>		
	Past landscape	E.D.	.	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>
		P.A.	.	<i>ns</i>	<i>ns</i>		
		H.A.	.	<i>ns</i>	<i>ns</i>		
	Topography & soil	<i>ns</i>	<i>ns</i>
	Unexplained		0.94
	topt3	Recent landscape	E.D.	.	<i>ns</i>	<i>ns</i>	<i>ns</i>
P.A.			.	<i>ns</i>	<i>ns</i>		
H.A.			.	<i>ns</i>	<i>ns</i>		
Past landscape		E.D.	(-)	0.12*	<i>ns</i>	<i>ns</i>	<i>ns</i>
		P.A.	(-)	0.09*	<i>ns</i>		
		H.A.	(-)	0.11*	<i>ns</i>		
Topography & soil		0.11*	0.17*
Unexplained			0.72
σ3		Recent landscape	E.D.	.	<i>ns</i>	<i>ns</i>	<i>ns</i>
	P.A.		.	<i>ns</i>	<i>ns</i>		
	H.A.		(-)	0.12*	<i>ns</i>		
	Past landscape	E.D.	.	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>
		P.A.	.	<i>ns</i>	<i>ns</i>		
		H.A.	.	<i>ns</i>	<i>ns</i>		
	Topography & soil	<i>ns</i>	<i>ns</i>
	Unexplained		0.77

Appendix 8. Twenty best linear models (i.e. models with lower AICc, Akaike information criterion corrected for sample size) for the effect of topographic and soil variables on parameter estimates of environmental filtering and immigration (see Table 1 for legend) for forest interior communities (n = 32). Coefficients are given for selected predictors. Log-likelihoods, AICc, and delta AICc are given.

log(<i>I</i>) (forest interior)											
rank	intercept	curvature	elevation	lithology	river	aspect	TWI	df	logLik	AICc	delta AICc
1	3.706							2	-44.804	94.022	0.000
2	3.603			0.3655				3	-44.349	95.556	1.533
3	3.675		0.07228					3	-44.684	96.225	2.203
4	3.701						-0.04569	3	-44.772	96.401	2.379
5	3.712				-0.03183			3	-44.792	96.442	2.420
6	3.709					0.02758		3	-44.793	96.443	2.420
7	3.709	-0.02343						3	-44.795	96.447	2.425
8	3.539			0.5309			-0.16283	4	-44.019	97.519	3.496
9	3.556		0.09170	0.3962				4	-44.153	97.787	3.765
10	3.585			0.4012	0.05009			4	-44.323	98.128	4.106
11	3.606	-0.03339		0.3700				4	-44.330	98.141	4.119
12	3.595			0.3830		-0.02707		4	-44.339	98.159	4.137
13	3.681		0.08871		-0.07167			4	-44.630	98.741	4.718
14	3.677		0.08542			0.05719		4	-44.638	98.757	4.735
15	3.676		0.06745				-0.01663	4	-44.680	98.842	4.819
16	3.677	-0.00690	0.07110					4	-44.683	98.848	4.825
17	3.713				-0.10177		-0.09974	4	-44.696	98.873	4.850
18	3.705	-0.03320					-0.05243	4	-44.754	98.990	4.967
19	3.705					0.03203	-0.04862	4	-44.757	98.995	4.972
20	3.715	-0.02558			-0.03414			4	-44.782	99.045	5.022

topt1 (forest interior)

rank	intercept	curvature	elevation	lithology	river	aspect	TWI	df	logLik	AICc	delta AICc
1	0.4839			0.09401				3	26.368	-45.878	0.0000
2	0.4813	0.02659		0.09042				4	27.415	-45.349	0.5285
3	0.4936			0.07549	-0.02601			4	26.957	-44.433	1.4452
4	0.5175				-0.04142			3	25.569	-44.280	1.5976
5	0.5135	0.02657			-0.03902			4	26.560	-43.639	2.2387
6	0.5103							2	24.013	-43.612	2.2662
7	0.4905	0.02553		0.07338	-0.02413			5	27.955	-43.602	2.2761
8	0.4804			0.10137		-0.011431		4	26.522	-43.563	2.3149
9	0.5093	0.03523					0.033321	4	26.456	-43.430	2.4474
10	0.4866			0.08690			0.007000	4	26.418	-43.354	2.5237
11	0.5064	0.02902						3	25.095	-43.334	2.5441
12	0.4837		0.000350	0.09412				4	26.368	-43.254	2.6239
13	0.4873	0.03002		0.07370			0.016005	5	27.680	-43.053	2.8254
14	0.4776	0.02682		0.09816		-0.012060		5	27.599	-42.891	2.9868
15	0.5132						0.026171	3	24.814	-42.771	3.1070
16	0.4786	0.02771	0.004970	0.09193				5	27.465	-42.621	3.2565
17	0.4900			0.08336	-0.02932	-0.015870		5	27.258	-42.208	3.6694
18	0.5170				-0.04373	-0.007428		4	25.632	-41.782	4.0956
19	0.5155		0.005831		-0.04404			4	25.626	-41.770	4.1079
20	0.4915		0.006018	0.07559	-0.02869			5	27.023	-41.739	4.1389

σI (forest interior)

rank	intercept	curvature	elevation	lithology	river	aspect	TWI	df	logLik	AICc	delta AICc
1	0.1866							2	74.806	-145.198	0.000
2	0.1859	0.004859						3	75.523	-144.189	1.008
3	0.1872				-0.003572			3	75.072	-143.286	1.912
4	0.1854			0.004308				3	74.916	-142.975	2.223
5	0.1867		-3.39e-04					3	74.810	-142.764	2.434
6	0.1865						-3.43e-04	3	74.809	-142.761	2.437
7	0.1866							3	74.806	-142.755	2.443
8	0.1865	0.004661			-0.003151			4	75.738	-141.994	3.203
9	0.1849	0.004760		0.003665				4	75.606	-141.731	3.466
10	0.1860	0.004983						4	75.535	-141.589	3.608
11	0.1857	0.004977						4	75.534	-141.586	3.612
12	0.1859	0.004862				-9.801e-0		4	75.523	-141.565	3.632
13	0.1872				-0.006076		-3.570e-0	4	75.295	-141.109	4.089
14	0.1865			0.002064	-0.003151			4	75.094	-140.706	4.492
15	0.1871				-0.003825	-8.15e-04		4	75.088	-140.695	4.502
16	0.1870				-0.003813			4	75.082	-140.683	4.515
17	0.1847			0.006001			-1.66e-03	4	74.975	-140.469	4.728
18	0.1852			0.004673		-5.67e-04		4	74.924	-140.366	4.831
19	0.1854		-1.29e-04	0.004264				4	74.917	-140.352	4.846
20	0.1867		-5.01e-04				-5.59e-04	4	74.818	-140.154	5.043

topt2 (forest interior)

rank	intercept	curvature	elevation	lithology	river	aspect	TWI	df	logLik	AICc	delta AICc
1	0.5584	0.06341	-0.05605		0.09089			5	11.859	-11.411	0.000
2	0.5372	0.07492			0.06676			4	9.837	-10.193	1.218
3	0.5716		-0.06664		0.08992			4	9.759	-10.037	1.374
4	0.5494	0.07072						3	8.332	-9.806	1.605
5	0.5814	0.07382		-0.11513				4	9.609	-9.737	1.674
6	0.5834	0.06453	-0.05606	-0.07940	0.07479			6	12.496	-9.632	1.780
7	0.6037	0.06456	-0.04127	-0.12770				5	10.760	-9.212	2.199
8	0.5347	0.08782			0.10697		0.055685	5	10.690	-9.073	2.338
9	0.5544	0.07274	-0.04950		0.11298		0.034478	6	12.195	-9.030	2.381
10	0.5746	0.09583		-0.13071	0.09964		0.082253	6	12.125	-8.890	2.522
11	0.5656	0.06250	-0.03537					4	9.114	-8.746	2.665
12	0.5622	0.07604		-0.07936	0.05066			5	10.396	-8.485	2.927
13	0.5584	0.06332	-0.05681		0.08991	-0.004258		6	11.868	-8.376	3.036
14	0.5882	0.08140	-0.04460	-0.11709	0.10581		0.060377	7	13.436	-8.205	3.206
15	0.5951		-0.06683	-0.07426	0.07484			5	10.246	-8.184	3.228
16	0.6155		-0.05204	-0.12260				4	8.725	-7.968	3.443
17	0.5589							2	6.154	-7.895	3.517
18	0.5784		-0.04603					3	7.375	-7.892	3.519
19	0.5484				0.05999			3	7.206	-7.556	3.856
20	0.5925	0.08015		-0.14597			0.029522	5	9.906	-7.503	3.908

σ^2 (forest interior)

rank	intercept	curvature	elevation	lithology	river	aspect	TWI	df	logLik	AICc	delta AICc
1	0.1680							2	69.862	-135.310	0.000
2	0.1685						0.005281	3	70.431	-134.005	1.306
3	0.1684	-0.003119						3	70.076	-133.295	2.016
4	0.1678					-1.27e-03		3	69.894	-132.931	2.380
5	0.1682				-0.001375			3	69.891	-132.925	2.386
6	0.1678							3	69.866	-132.876	2.435
7	0.1677							3	69.865	-132.872	2.438
8	0.1681				0.003710		0.007252	4	70.567	-131.653	3.657
9	0.1677						0.006224	4	70.560	-131.639	3.671
10	0.1704			-5.953e-0			0.006595	4	70.555	-131.629	3.681
11	0.1688	-0.002219					0.004831	4	70.539	-131.596	3.715
12	0.1683					-1.77e-03	0.005444	4	70.495	-131.508	3.802
13	0.1687	-0.003224			-0.001667			4	70.118	-130.756	4.555
14	0.1682	-0.003078				-1.14e-03		4	70.102	-130.723	4.588
15	0.1680	-0.003151						4	70.082	-130.683	4.628
16	0.1684	-0.003156	-1.59e-04					4	70.077	-130.672	4.639
17	0.1681				-0.001910	-1.72e-03		4	69.945	-130.409	4.901
18	0.1679				-0.001723			4	69.907	-130.332	4.978
19	0.1673					-1.51e-03		4	69.906	-130.330	4.981
20	0.1678					-1.23e-03		4	69.894	-130.307	5.004

topt3 (forest interior)

rank	intercept	curvature	elevation	lithology	river	aspect	TWI	df	logLik	AICc	delta AICc
1	0.4910					0.04783		3	24.113	-41.369	0.000
2	0.4875	0.02560				0.04679		4	24.953	-40.424	0.945
3	0.4952				-0.02906	0.04088		4	24.808	-40.134	1.235
4	0.4981		-0.01844			0.04142		4	24.656	-39.830	1.539
5	0.4924				-0.04172			3	23.083	-39.308	2.061
6	0.4852							2	21.723	-39.032	2.337
7	0.4971		-0.02796					3	22.914	-38.970	2.399
8	0.4916	0.02413			-0.02703	0.04039		5	25.582	-38.857	2.512
9	0.4927			-0.005411		0.04860		4	24.120	-38.758	2.611
10	0.4909					0.04791	-8.60e-04	4	24.114	-38.746	2.623
11	0.4935	0.02240	-0.01452			0.04187		5	25.291	-38.274	3.095
12	0.4954				-0.04734	0.03885	-2.51e-02	5	25.288	-38.267	3.102
13	0.4815	0.02730						3	22.547	-38.236	3.133
14	0.4887	0.02482			-0.03948			4	23.818	-38.154	3.215
15	0.4995		-0.02051		-0.03251			4	23.697	-37.913	3.456
16	0.4998		-0.01391		-0.02393	0.03727		5	25.105	-37.903	3.466
17	0.4927				-0.06256		-2.97e-02	4	23.691	-37.900	3.469
18	0.4878	0.02648				0.04632		5	24.978	-37.648	3.721
19	0.4900	0.02578		-0.008501		0.04799		5	24.970	-37.632	3.737
20	0.5037			-0.026032	-0.03356	0.04352		5	24.952	-37.596	3.773

σ^2 (forest interior)

rank	intercept	curvature	elevation	lithology	river	aspect	TWI	df	logLik	AICc	delta AICc
1	0.1897						0.006417	3	78.062	-149.267	0.0000
2	0.1890							2	76.741	-149.068	0.1987
3	0.1927			-0.010024			0.008628	4	78.639	-147.796	1.4713
4	0.1884		0.003291				0.007835	4	78.539	-147.598	1.6695
5	0.1893				0.003285		0.008161	4	78.235	-146.988	2.2793
6	0.1894				-0.002438			3	76.880	-146.903	2.3636
7	0.1885		0.001016					3	76.788	-146.720	2.5475
8	0.1891	-0.001065						3	76.779	-146.701	2.5657
9	0.1896					-2.95e-04	0.006444	4	78.065	-146.648	2.6186
10	0.1893			-0.001258				3	76.752	-146.646	2.6208
11	0.1897						0.006444	4	78.063	-146.644	2.6231
12	0.1890							3	76.744	-146.631	2.6364
13	0.1916		0.003471	-0.010484			0.010226	5	79.189	-146.071	3.1963
14	0.1923			-0.009459	0.002540		0.009852	5	78.743	-145.179	4.0879
15	0.1931			-0.010755			0.008696	5	78.671	-145.035	4.2323
16	0.1928			-0.010407			0.008889	5	78.665	-145.023	4.2441
17	0.1882		0.003071		0.002566		0.009103	5	78.646	-144.983	4.2837
18	0.1882		0.003636				0.008251	5	78.597	-144.886	4.3809
19	0.1885		0.003472				0.007842	5	78.558	-144.809	4.4578
20	0.1888		0.001755		-0.003226			4	77.008	-144.535	4.7320