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Erratum

A sampling formula for ecological communities with multiple dispersal syndromes

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The dataset on which we applied our new sampling formula (Janzen et al., 2015) has two species that were erroneously assigned to both guilds, which could affect our estimates and subsequent conclusions.

We corrected this error in the dataset, and again applied our sampling formula on the corrected dataset. The new parameter estimates and associated likelihoods (revised Tables 2 and A1) are close to the values in the original paper. The same optima are selected as in the original paper.

Furthermore we updated Fig. 2, as Fig. 2 uses parameter estimates obtained in Table 2. Again patterns in the updated figure are very similar to the original patterns.

We also updated Fig. 1, which uses the randomized dataset to test whether after randomization we can still pick up a signal of guild structure. As in the original manuscript, we find no signal of guild structure in the majority of replicates. However, contrary to the original manuscript, we sometimes recover the model with guild structure (in 29, 26, 20, 11, 17, 11 out of 100 replicates for the census 1982, 1985, 1990, 1995, 2000, and 2005).

Lastly we improved notation in Tables 1, 2, and A1 for clarity and substituted θ with $\theta_X = \theta_Y$.

Table 1

Bias and precision of the maximum-likelihood estimates as shown by the median and the 25th and 75th percentiles of the estimated parameter values of 100 simulated data sets per parameter combination.

Parameters used to generate data			Estimated parameter values (25th, 50 and 75th percentiles)								
Model	$\theta_X = \theta_Y$	α_X	α_Y	$\theta_X = \theta_Y$	α_X	α_Y					
D0	30	0.100		28.49	30.07	35.24	0.06219	0.09033	0.13310		
	30	0.010		24.66	29.94	36.17	0.00679	0.00960	0.01674		
	30	0.001		10.81	21.70	31.83	0.00097	0.00148	0.00691		
	100	0.100		93.89	101.93	111.64	0.06711	0.09420	0.12661		
	100	0.010		80.80	104.43	126.31	0.00784	0.00955	0.01369		
	100	0.001		40.39	61.69	106.27	0.00102	0.00127	0.00163		
	300	0.100		277.82	313.17	351.06	0.07192	0.09331	0.12084		
	300	0.010		230.08	283.26	355.46	0.00909	0.01029	0.01224		
	300	0.001		90.20	173.06	255.91	0.25069	0.50046	0.75023		
D1	30	0.100	0.010	28.64	33.29	39.75	0.02107	0.07899	1.00000	0.0046	0.0079
	30	0.100	0.001	27.57	31.15	36.15	0.04524	0.08278	0.15556	0.0007	0.0009
	30	0.010	0.001	23.86	29.23	39.47	0.00565	0.01010	0.03525	0.0007	0.0009
	100	0.100	0.010	87.01	98.99	113.95	0.05214	0.11171	0.25117	0.0066	0.0076
	100	0.100	0.001	95.00	104.36	128.20	0.04673	0.08621	0.11942	0.0008	0.0010
	100	0.010	0.001	73.29	90.36	121.90	0.00760	0.01087	0.01855	0.0008	0.0010
	300	0.100	0.010	270.00	308.83	365.12	0.06318	0.09173	0.14091	0.0084	0.0093
	300	0.100	0.001	273.45	304.43	370.33	0.07156	0.09956	0.13416	0.0008	0.0010
	300	0.010	0.001	242.87	287.32	340.56	0.00890	0.01012	0.01261	0.0009	0.0010

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Table 2

Parameter estimates for six different censuses of Barro Colorado Island. The D0 model does not take into account differences in dispersal between the guilds, the D1 model does take these differences into account. Guild X represents tree species with biotic dispersal, and guild Y represents tree species with abiotic dispersal. The *p*-Value of the 'exact' test of neutrality is reported in the last column.

Census	General statistics					Model	Parameter estimates			Model fit				<i>p</i> Value
	<i>J</i>	<i>J_X</i>	<i>J_Y</i>	<i>S_X</i>	<i>S_Y</i>		$\theta_X = \theta_Y$	α_X	α_Y	LL	AIC	Δ AIC	AIC W	
1982	20,878	18,321	2557	196	42	D0	33.65	0.0475	0.0475	−399.18	802.35	60.24	0.00	0
						D1	251.50	0.0048	0.0008	−368.06	742.12	0.00	1.00	0.43
1985	20,712	18,203	2509	197	40	D0	32.78	0.0525	0.0525	−400.82	805.64	64.60	0.00	0
						D1	280.48	0.0046	0.0007	−367.52	741.03	0.00	1.00	0.31
1990	21,226	18,641	2585	189	40	D0	31.06	0.0521	0.0521	−393.86	791.71	54.87	0.00	0.01
						D1	53.49	1.0000	0.0005	−365.42	736.84	0.00	1.00	0.93
1995	21,442	18,812	2630	188	39	D0	31.00	0.0491	0.0491	−404.08	812.17	56.21	0.00	0
						D1	53.25	1.0000	0.0005	−374.98	755.95	0.00	1.00	0.69
2000	21,193	18,607	2586	187	40	D0	30.56	0.0532	0.0532	−392.54	789.08	53.11	0.00	0.02
						D1	52.91	1.0000	0.0005	−364.99	735.97	0.00	1.00	0.91
2005	20,838	18,307	2531	188	41	D0	30.20	0.0604	0.0604	−390.99	785.99	56.04	0.00	0
						D1	235.65	0.0046	0.0007	−361.98	729.95	0.00	1.00	0.51

Fig. 1. Fraction of replicates assigned to each model (D0 or D1) after randomizing the BCI datasets by randomly assigning species to a guild. The number of replicates is 100 for every census.

Fig. 2. Empirical (gray bars) and expected (solid curve: D1 model, dashed curve: D0 model) species abundance plots for all BCI censuses. Histograms on the left hand side represent the biotically dispersing guild, histograms on the right hand side the abiotically dispersing guild. Abundances are binned in ²log bins.

Table A1
Parameter estimates for the six different censuses of BCI, including both found optima for the D0 model. Guild X represents tree species with biotic dispersal, and guild Y represents tree species with abiotic dispersal. The *p*-Value of the Neutrality test is reported in the last column.

Census	General statistics					Model	Parameter estimates			Model fit				<i>p</i> Value
	<i>J</i>	<i>J_X</i>	<i>J_Y</i>	<i>S_X</i>	<i>S_Y</i>		$\theta_X=\theta_Y$	α_X	α_Y	<i>LL</i>	<i>AIC</i>	ΔAIC	<i>AIC W</i>	
1982	20,878	18,321	2557	196	42	D0	33.65	0.0475	0.0475	−399.18	802.35	60.24	0.00	0
1982						D0	102.04	0.0043	0.0043	−400.05	804.10	61.98	0.00	0
1982						D1	55.74	1.0000	0.0006	−369.56	745.11	3.00	0.18	0.89
1982						D1	251.50	0.0048	0.0008	−368.06	742.12	0.00	0.82	0.43
1985	20,712	18,203	2509	197	40	D0	32.78	0.0525	0.0525	−400.82	805.64	64.60	0.00	0
1985						D0	105.94	0.0042	0.0042	−401.82	807.64	66.61	0.00	0
1985						D1	56.01	1.0000	0.0005	−369.77	745.54	4.50	0.10	0.76
1985						D1	280.48	0.0046	0.0007	−367.52	741.03	0.00	0.90	0.31
1990	21,226	18,641	2585	189	40	D0	31.06	0.0521	0.0521	−393.86	791.71	54.87	0.00	0.01
1990						D0	79.11	0.0051	0.0051	−396.93	797.87	61.03	0.00	0.02
1990						D1	53.49	1.0000	0.0005	−365.42	736.84	0.00	0.72	0.93
1990						D1	198.77	0.0050	0.0007	−366.35	738.69	1.85	0.28	0.43
1995	21,442	18,812	2630	188	39	D0	31.00	0.0491	0.0491	−404.08	812.17	56.21	0.00	0
1995						D0	77.68	0.0050	0.0050	−406.82	817.63	61.68	0.00	0
1995						D1	53.25	1.0000	0.0005	−374.98	755.95	0.00	0.64	0.69
1995						D1	197.48	0.0050	0.0007	−375.56	757.12	1.16	0.36	0.16
2000	21,193	18,607	2586	187	40	D0	30.56	0.0532	0.0532	−392.54	789.08	53.11	0.00	0.02
2000						D1	52.91	1.0000	0.0005	−364.99	735.97	0.00	0.74	0.91
2000						D1	189.27	0.0051	0.0007	−366.02	738.05	2.07	0.26	0.49
2005	20,838	18,307	2531	188	41	D0	30.20	0.0604	0.0604	−390.99	785.99	56.04	0.00	0
2005						D0	102.22	0.0040	0.0040	−392.47	788.94	58.99	0.00	0
2005						D1	53.36	1.0000	0.0005	−363.71	733.42	3.47	0.15	0.97
2005						D1	235.65	0.0046	0.0007	−361.98	729.95	0.00	0.85	0.51

Reference

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