

Ecography

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Supplementary material

Appendix 1.

Table A1. Lowland species with divergence age (Ma) extracted from the literature.

Species	Endemic status	Age (Ma)	LDD syndrome	Islands	Palaeo-islands	Reference
<i>Anagyris latifolia</i>	Endemic	8.20 [3.70-12.70]	Unspecialized	4	4	Ortega-Olivencia and Catalán (2009)
<i>Androcymbium psammophilum</i>	Endemic	5.80 [5.60-6.00]	Unspecialized	2	1	Caujapé-Castells et al. (2001)
<i>Androcymbium hierrense</i>	Endemic	5.80 [5.60-6.00]	Unspecialized	3	3	
<i>Bryonia verrucosa</i>	Endemic	7.00 [4-10]	Endozoochorous	6	6	Schaefer et al. (2009)
<i>Campylanthus salsoloides</i>	Endemic	1.16 [0.16-2.61]	Anemochorous	6	5	Thiv et al. (2010)
<i>Cistus horrens</i>	Endemic	0.29 [0.05-0.65]	Unspecialized	1	1	Guzmán and Vargas (2010)
<i>Echium bethencourtii</i>	Endemic	0.5 [0-1.09]	Unspecialized	1	1	García-Maroto et al. (2009)
<i>Echium bonnetii</i>	Endemic	4.00 [1.51-6.49]	Unspecialized	4	3	
<i>Echium lacerottense</i>	Endemic	4.00 [1.51-6.49]	Unspecialized	3	1	
<i>Echium simplex</i>	Endemic	1.75 [0.37-3.13]	Unspecialized	1	1	
<i>Echium webbii</i>	Endemic	0.5 [0-1.09]	Unspecialized	1	1	
<i>Euphorbia aphylla</i>	Endemic	3.05 [1.34-4.76]	Unspecialized	4	4	Sun et al. (2016)
<i>Euphorbia atropurpurea</i>	Endemic	2.26 [0.76-3.76]	Unspecialized	1	1	
<i>Euphorbia berthelotii</i>	Endemic	6.62 [4.63-8.61]	Unspecialized	1	1	
<i>Euphorbia lamarckii</i>	Endemic	2.26 [0.76-3.76]	Unspecialized	4	4	
<i>Gymnocarpus decandrus</i>	Non-endemic	0.68 [0.32-1.15]	Thalassochorous	5	4	Jia et al. (2016)
<i>Lolium canariense</i>	Non-endemic	3.10 [1.90-4.90]	Epizoochorous	7	6	Inda et al. (2014)
<i>Lotus arinagensis</i>	Endemic	0.70 [0-0.99]	Unspecialized	1	1	Ojeda et al. (2014)
<i>Lotus callis-viridis</i>	Endemic	0.94 [0.03-2.2]	Unspecialized	1	1	
<i>Lotus eremiticus</i>	Endemic	0.10 [0-0.73]	Unspecialized	1	1	
<i>Lotus kunkelii</i>	Endemic	0.70 [0-0.99]	Unspecialized	1	1	
<i>Lotus lancerottensis</i>	Non-endemic	0.90 [0-1.18]	Unspecialized	3	1	
<i>Lotus sessilifolius</i>	Endemic	0.65 [0.08-2.31]	Unspecialized	3	3	
<i>Pericallis lanata</i>	Endemic	0.99 [0.11-1.23]	Anemochorous	1	1	Jones et al. (2014)
<i>Ruta oreojasme</i>	Endemic	8.14 [2.62-14.94]	Unspecialized	1	1	Salvo et al. (2010)
<i>Scrophularia arguta</i>	Non-endemic	0.90 [0.23-1.57]	Unspecialized	4	1	Valtueña et al. (2016)
<i>Scrophularia arguta</i>	Non-endemic	0.77 [0.16-1.38]	Unspecialized	4	4	Valtueña et al. (2016)

Table A1. Continued.

Species	Endemic status	Age (Ma)	LDD syndrome	Islands	Palaeo-islands	Reference
<i>Scrophularia arguta</i>	Non-endemic	-	Unspecialized	1	1	Valtueña et al. (2016)
<i>Scrophularia smithii</i>	Endemic	5.84 [1.30-3.37]	Unspecialized	5	5	Navarro-Pérez et al. (2015)

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Appendix 2.

Table A1. Summary information of the multiple-comparison Tukey's tests exploring the differences in plant distribution according to LDD syndromes obtained from different models and certain-native and likely-native datasets separately. *P* values were recalculated using a randomization method.

		Model: number of current islands~syndrome			
		Estimate	SE	Z value	P value
Certain-native species N=372	END - ANE	0.536	0.147	3.644	<0.001
	EPI - ANE	0.859	0.201	4.280	<0.001
	THA - ANE	0.647	0.141	4.582	<0.001
	UNS - ANE	-0.001	0.091	-0.006	0.464
	EPI - END	0.324	0.225	1.438	0.081
	THA - END	0.111	0.174	0.639	0.265
	UNS - END	-0.536	0.137	-3.933	<0.001
	THA - EPI	-0.213	0.221	-0.960	0.173
	UNS - EPI	-0.860	0.193	-4.453	<0.001
	UNS - THA	-0.647	0.130	-4.980	<0.001
Certain- and likely-native species N=506	END - ANE	0.386	0.140	2.756	0.004
	EPI - ANE	0.532	0.143	3.726	<0.001
	THA - ANE	0.413	0.123	3.368	<0.001
	UNS - ANE	0.052	0.077	0.679	0.252
	EPI - END	0.145	0.178	0.819	0.204
	THA - END	0.026	0.162	0.163	0.436
	UNS - END	-0.334	0.130	-2.564	0.006
	THA - EPI	-0.119	0.164	-0.725	0.233
	UNS - EPI	-0.480	0.133	-3.602	<0.001
	UNS - THA	-0.361	0.111	-3.241	0.001
		Model: number of palaeo-islands~syndrome			
		Estimate	SE	Z value	P value
Certain-native species N=372	END - ANE	0.582	0.136	4.266	<0.001
	EPI - ANE	0.781	0.196	3.981	<0.001
	THA - ANE	0.490	0.141	3.472	<0.001
	UNS - ANE	-0.004	0.086	-0.047	0.4785
	EPI - END	0.199	0.217	0.916	0.182
	THA - END	-0.092	0.169	-0.545	0.294
	UNS - END	-0.586	0.126	-4.645	<0.001
	THA - EPI	-0.291	0.220	-1.322	0.098
	UNS - EPI	-0.785	0.189	-4.150	<0.001
	UNS - THA	-0.494	0.131	-3.764	<0.001
Certain- and likely- native species N=506	END - ANE	0.468	0.128	3.656	<0.001
	EPI - ANE	0.520	0.135	3.845	<0.001
	THA - ANE	0.294	0.121	2.443	0.007
	UNS - ANE	0.045	0.072	0.630	0.266
	EPI - END	0.052	0.165	0.315	0.376
	THA - END	-0.173	0.153	-1.133	0.130
	UNS - END	-0.422	0.119	-3.563	<0.001
	THA - EPI	-0.225	0.159	-1.416	0.079
	UNS - EPI	-0.474	0.126	-3.756	<0.001
	UNS - THA	-0.249	0.111	-2.254	0.012

Table A2. Summary information of the multiple comparison Tukey post-hoc tests exploring the differences in plant distribution considering the presence/absence of particular LDD syndromes and the endemism status of the species. The results shown were obtained from models differing in the response variable (number of current islands or number of palaeo-islands) and with certain-native and likely-native datasets separately. *P* values were recalculated using a randomization method. END = endozoochorous, EPI = epizoochorous, ANE = anemochorous, THA = thalassochorous syndrome, UNS = unspecialized.

Model: number of current islands~syndrome + endemic status					
		Estimate	SE	Z value	P value
Certain-native species N=372	END - ANE	0.326	0.138	2.361	0.011
	EPI - ANE	0.492	0.190	2.593	0.007
	THA - ANE	0.304	0.136	2.240	0.014
	UNS - ANE	0.031	0.084	0.371	0.355
	EPI - END	0.166	0.209	0.796	0.212
	THA - END	-0.022	0.161	-0.135	0.445
	UNS - END	-0.295	0.129	-2.282	0.014
	THA - EPI	-0.188	0.205	-0.919	0.180
	UNS - EPI	-0.461	0.184	-2.508	0.008
	UNS - THA	-0.273	0.127	-2.147	0.018
	Non-endemic-endemic	0.646	0.075	8.574	<0.001
Certain- and likely-native species N=506	END - ANE	0.231	0.125	1.848	0.033
	EPI - ANE	0.181	0.129	1.405	0.083
	THA - ANE	0.101	0.111	0.909	0.183
	UNS - ANE	0.006	0.068	0.082	0.467
	EPI - END	-0.050	0.158	-0.314	0.376
	THA - END	-0.130	0.144	-0.902	0.182
	UNS - END	-0.225	0.116	-1.941	0.028
	THA - EPI	-0.080	0.146	-0.552	0.291
	UNS - EPI	-0.176	0.120	-1.463	0.075
	UNS - THA	-0.095	0.101	-0.948	0.172
	Non-endemic-endemic	0.711	0.059	12.012	<0.001
Model: number of palaeo-islands~syndrome + endemic status					
		Estimate	SE	Z value	P value
Certain-native species N=372	END - ANE	0.433	0.125	3.468	0.002
	EPI - ANE	0.514	0.181	2.844	0.009
	THA - ANE	0.242	0.132	1.829	0.059
	UNS - ANE	0.018	0.077	0.229	0.422
	EPI - END	0.081	0.195	0.413	0.355
	THA - END	-0.191	0.152	-1.255	0.139
	UNS - END	-0.415	0.117	-3.562	0.001
	THA - EPI	-0.272	0.198	-1.376	0.122
	UNS - EPI	-0.496	0.175	-2.829	0.009
	UNS - THA	-0.224	0.125	-1.796	0.063
	Non-endemic-endemic	0.460	0.071	6.512	<0.001

Table A2. Continued.

Model: number of palaeo-islands~syndrome + endemic status					
		Estimate	SE	Z value	P value
Certain- and likely-native species N=506	END - ANE	0.348	0.115	3.037	0.004
	EPI - ANE	0.244	0.123	1.984	0.044
	THA - ANE	0.050	0.110	0.457	0.344
	UNS - ANE	0.009	0.064	0.134	0.452
	EPI - END	-0.104	0.147	-0.707	0.266
	THA - END	-0.298	0.137	-2.180	0.027
	UNS - END	-0.339	0.106	-3.204	0.003
	THA - EPI	-0.194	0.142	-1.368	0.117
	UNS - EPI	-0.235	0.115	-2.053	0.038
	UNS - THA	-0.041	0.100	-0.414	0.357
	Non-endemic-endemic	0.539	0.055	9.781	<0.001

Table A3. Summary information of the multiple comparison Tukey post-hoc tests using a subset of single-species lineages. The two models (with number of current islands and palaeo-islands as the response variable in each of the models) were run with a subset of lineages from the certain-native and likely-native datasets. *P* values were recalculated using a randomization method. END = endozoochorous, EPI = epizoochorous, ANE = anemochorous, THA = thalassochorous syndrome, UNS = unspecialized.

Model: number of current islands~syndrome					
		Estimate	SE	Z value	P value
Certain-native species N=132	END - ANE	0.248	0.173	1.437	0.076
	EPI - ANE	0.510	0.190	2.680	0.004
	THA - ANE	0.322	0.154	2.092	0.019
	UNS - ANE	-0.020	0.121	-0.163	0.436
	EPI - END	0.262	0.216	1.213	0.115
	THA - END	0.074	0.185	0.399	0.347
	UNS - END	-0.268	0.159	-1.690	0.046
	THA - EPI	-0.188	0.201	-0.934	0.176
	UNS - EPI	-0.530	0.178	-2.983	0.001
	UNS - THA	-0.342	0.138	-2.477	0.008
Certain- and likely-native species N=249	END - ANE	0.144	0.152	0.953	0.171
	EPI - ANE	0.256	0.128	1.997	0.023
	THA - ANE	0.149	0.125	1.192	0.117
	UNS - ANE	0.029	0.087	0.329	0.374
	EPI - END	0.112	0.168	0.663	0.257
	THA - END	0.005	0.166	0.028	0.489
	UNS - END	-0.116	0.139	-0.832	0.204
	THA - EPI	-0.107	0.145	-0.737	0.234
	UNS - EPI	-0.228	0.114	-2.003	0.023
	UNS - THA	-0.121	0.110	-1.096	0.134

Table A3. Continued.

Model: number of palaeo-islands-syndrome					
		Estimate	SE	Z value	P value
Certain-native species N=132	END - ANE	0.453	0.164	2.761	0.002
	EPI - ANE	0.526	0.192	2.731	0.002
	THA - ANE	0.247	0.160	1.542	0.061
	UNS - ANE	0.031	0.122	0.251	0.410
	EPI - END	0.072	0.210	0.345	0.365
	THA - END	-0.206	0.180	-1.143	0.128
	UNS - END	-0.423	0.148	-2.857	0.002
	THA - EPI	-0.279	0.207	-1.350	0.093
	UNS - EPI	-0.495	0.179	-2.769	0.001
	UNS - THA	-0.216	0.143	-1.508	0.065
Certain- and likely-native species N=249	END - ANE	0.359	0.143	2.508	0.004
	EPI - ANE	0.315	0.129	2.453	0.005
	THA - ANE	0.100	0.130	0.772	0.220
	UNS - ANE	0.062	0.088	0.701	0.236
	EPI - END	-0.044	0.159	-0.273	0.392
	THA - END	-0.259	0.161	-1.610	0.050
	UNS - END	-0.297	0.129	-2.298	0.007
	THA - EPI	-0.215	0.148	-1.455	0.068
	UNS - EPI	-0.254	0.113	-2.244	0.009
	UNS - THA	-0.038	0.115	-0.335	0.370