

Ecography

**E6930**

Rodríguez-Pérez, J., Wiegand, T. and Santamaria, L.  
2011. Frugivore behavior determines plant distribution:  
a spatially-explicit analysis of a plant-disperser  
interaction. – *Ecography* 34: xxx–xxx.

**Supplementary material**

**Appendix 1**

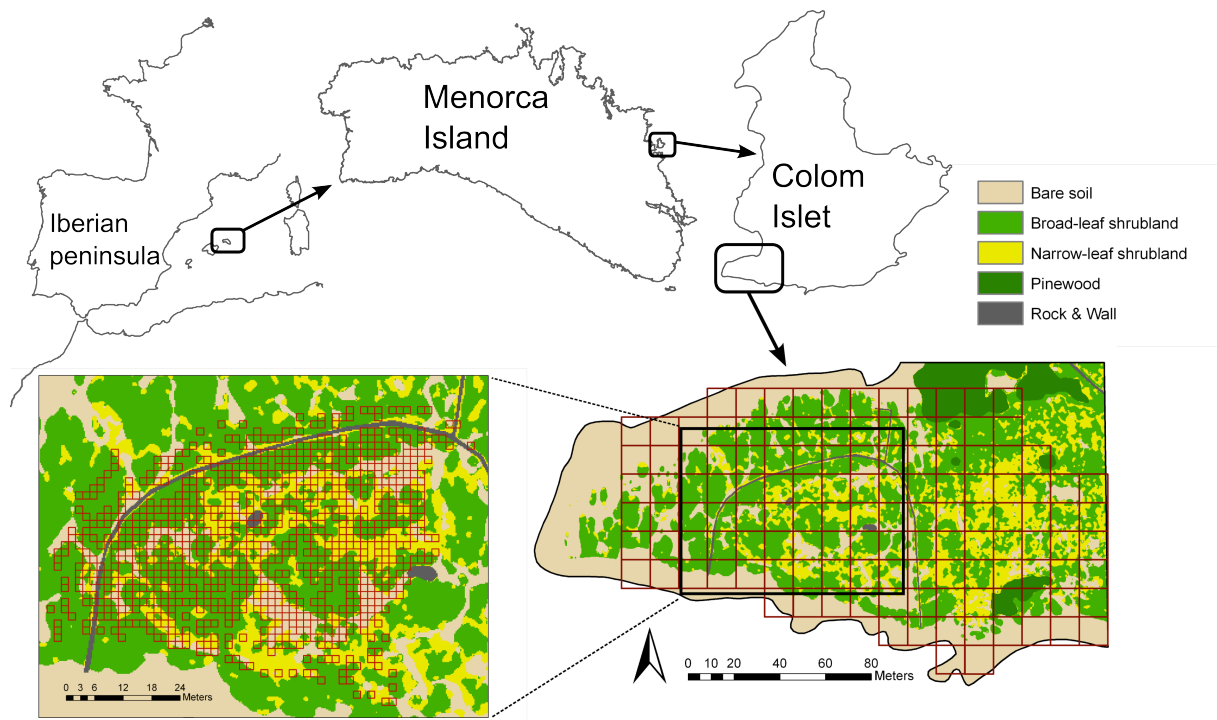


Fig. A1. Study site at Colom Islet (west coast of Menorca Island). On the lower part of the figure, we depicted the grids (red-dark squares) used to extract habitat variables, both for lizards and plants. In the case of lizards (low-right), grid-cell size (12.5 m square-side) coincided with the location error of radio-tracked lizards in the study site. For plants (low-left), grid-cell size (1.5 m square-side) corresponded with plant sampling sites. Different colours indicate the habitat types derived from a geo-referenced aerial photograph (1:1000 cartography).

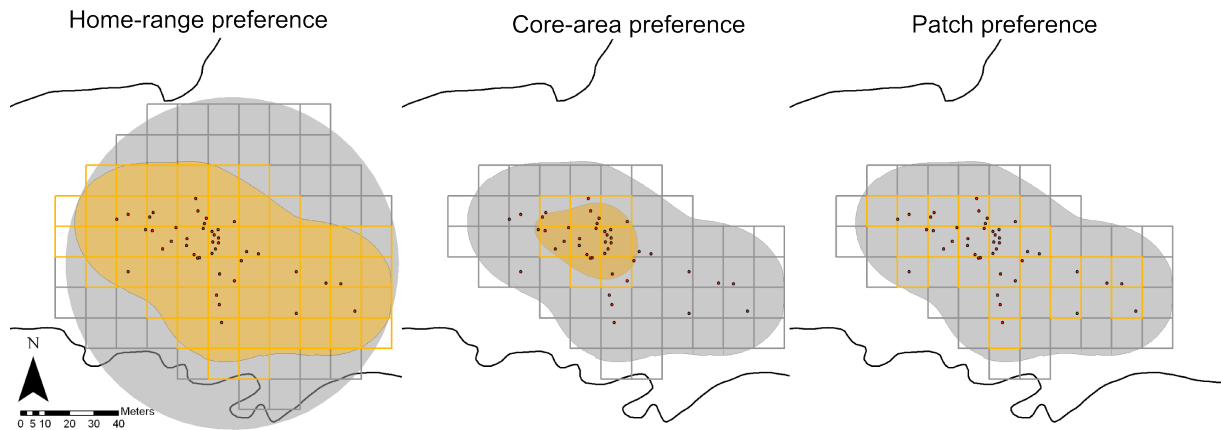


Fig. A2. Example, for one individual lizard, of the three scales at which lizard territory use was analysed. At each use, we generated presence/absence grid-cells by overlapping each polygon with the study-site lattice (see Fig. S1). Presences were scored at grid cells with >25% overlap with the corresponding polygon. Polygons and grid-cells in orange and grey respectively represent presences and absences, black dots represent actual lizard locations.

a) The *home-range* preference was defined as the area enclosing the predicted 0.95 cumulative probability of lizard locations (orange area, left panel) in respect to an area accessible but not predicted to be used by lizards (grey area, left panel). Grid-cells accessible to lizards were defined as cells that were located within distance  $R$  from the centre of the home-range, with  $R$  being the maximum observed radius of a home-range and not included within the *home-range* area (grey cells in Fig. S1 left).

b) *Core-area* preference was defined as the polygon enclosing the predicted 0.50 cumulative probability of lizard relocations (orange area, middle panel) in respect to the *home-range* polygon (grey area, middle panel). Grid-cells included in the *core-area* were analyzed against those grid-cells included within the *home-range* (orange grid-cells) and not included in the *core-area* area (grey grid-cells).

c) *Patch preference* compared visited and non-visited grid cells within each individual home-range (defined as above). We considered as presences those grid cells in which we detected, at

least, one telemetry location (orange grid-cells, right panel), whereas absences were all grid cells included in the home range with no location (grey grid-cells).

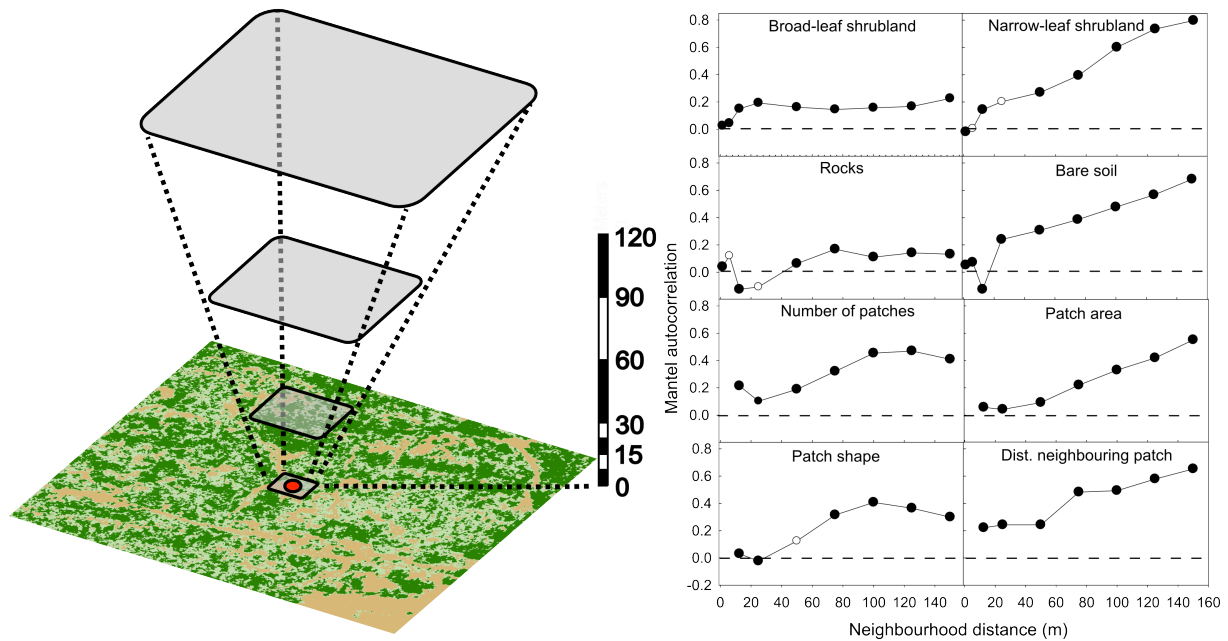


Fig. A3. Extraction and summary of the neighborhood distance of habitat aggregation. On the left, we represented the extraction procedure at increasing spatial scales. Use of such neighborhood-distance variables allows us to determine critical spatial scales of lizard territory use and plant presence. For simplicity, we only represented three spatial scales. Habitat variables used to analyze the determinants of lizard territory use and movement distance, and plant presence included cover of broad-leaf shrubs, narrow-leaf shrubs, rocks and bare soil and four fragmentation indexes referring to the characteristics of the shrub patches (number, size and shape of patches, and mean distance to the closest-neighbouring patch). Variables were extracted at different neighborhood distances for the analysis of lizard territory use and movement distance (12.5, 25, 50, 75, 100, 125 and 150 m), and plant presence (.5, 3, 6, 12, 25, 50, 75 and 150 m). Since we were interested in the scale of response of organisms to the habitat characteristics, we did not modify the neighborhood distance of the dependent variables. On the right, we depicted Mantel autocorrelation scores (*vegan* library; R Development Core Team 2010) for each habitat variable and neighborhood distances. Filled symbols indicate autocorrelation scores statistically significantly different from zero ( $p < 0.05$ ), whereas empty ones indicate non-significant scores.

Table A1. Multiple correlations among habitat variables extracted at 12.5 and 1.5 m square-size (upper and lower tables, respectively). Tables show two-way Spearman rank correlations (lower left) and associated probabilities (upper right). High association ( $|r|>0.70$ ) between pairs of predictor variables, used to identify correlated groups of variables that had to be reduced to a single one, are highlighted in bold. *Soil* = % cover of bare soil. *BLS* = % cover of broad-leaf shrub. *NLS* = % cover of broad-leaf shrub. *Rocks* = % cover of rocks. *Shrubs* = % cover of shrubs (BLS+NLS). *#Patches BLS* = number of patches of broad-leaf shrubs. *Area BLS* = mean area of broad-leaf shrub patches. *Shape BLS* = mean shape of broad-leaf shrub patches. *DNP BLS* = Distance to the closest-neighbouring patch of broad-leaf shrubs. *#Patches* = number of shrub patches. *Area* = mean area of shrub patches. *Shape BLS* = mean shape of shrub patches. *DNP BLS* = Distance to the closest-neighbouring shrub patch.

<b>12.5 m</b>	Soil	BLS	NLS	Rocks	Shrubs	#Patches BLS	Area BLS	Shape BLS	DNP BLS	#Patches	Area	Shape	DNP
Soil		<0.001	<0.001	n.s.	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
BLS	-0.6407		<0.001	<0.01	<0.001	n.s.	<0.001	<0.001	<0.001	n.s.	<0.001	<0.05	<0.001
NLS	-0.5973	0.2913		n.s.	<0.001	<0.001	<0.05	n.s.	<0.001	n.s.	<0.001	<0.001	<0.001
Rocks	-0.0994	0.2487	0.0106		n.s.	n.s.	<0.01	<0.001	n.s.	n.s.	n.s.	n.s.	n.s.
Shrubs	<b>0.9905</b>	0.6254	0.6138	-0.0125		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
#PatchesBLS	-0.3916	0.1484	<b>0.7937</b>	0.0203	0.4051		n.s.	n.s.	<0.001	<0.05	<0.001	<0.001	<0.001
Area BLS	-0.3771	0.5894	-0.2009	0.2816	0.3534	-0.1660		<0.001	<0.001	n.s.	<0.001	n.s.	<0.001
Shape BLS	-0.3450	0.6089	0.0886	0.3727	0.3122	0.0662	<b>0.7330</b>		<0.001	n.s.	<0.001	<0.01	<0.001
DNPBLS	0.6209	-0.3037	-0.4129	-0.0377	-0.6203	-0.3803	-0.3340	-0.3218		<0.01	<0.001	<0.001	<0.001
#Patches	0.3243	-0.0128	0.0022	0.0623	-0.3138	0.2070	0.0838	0.0929	0.2601		<0.001	n.s.	<0.01
Area	<b>0.8545</b>	0.5489	0.4642	0.1173	<b>0.8400</b>	0.3945	0.4450	0.4210	<b>-0.7963</b>	-0.4104		<0.001	<0.001
Shape	-0.3160	0.1928	0.5360	0.1645	0.3093	0.5988	0.0350	0.2356	-0.5314	-0.0976	0.5316		<0.001
DNP	0.6209	-0.3037	-0.4129	-0.0377	-0.6203	-0.3803	-0.3340	-0.3218	1.0000	0.2601	<b>0.7963</b>	-0.5314	

**1.5 m**

	Soil	BLS	NLS	Rocks	Shrubs	Core <sub>75</sub>	DistCore <sub>75</sub>
Soil		<0.001	<0.001	n.s.	<0.001	n.s.	<0.001
BLS	-0.5967		<0.001	<0.01	<0.001	<0.001	n.s.
NLS	0.0220	-0.6913		n.s.	n.s.	<0.001	<0.001
Rocks	-0.0589	-0.0871	0.0125		<0.001	n.s.	n.s.
Shrub	-	<b>0.9421</b>	-0.0147	-0.2484		<0.05	<0.001
Core <sub>75</sub>	-0.0592	-0.1672	0.2162	-0.0553	0.0722		<0.001
DistCore <sub>75</sub>	0.1538	0.0183	-0.1184	0.0065	-0.1386	-0.5547	

Table A2. Results of the univariate models relating single habitat variables to lizard territory preference (upper table) and plant occurrence (lower table). Univariate models were used to select among groups of correlated independent variables which have high capacity of prediction of lizard activity. We performed this step before conducting multivariate GLM analyses on the dependent variables, on the basis of their respective AIC scores (see *Methods* and *Results* for details). Variables selected for GLMs on lizard habitat use were also used for GLMs on lizard movement distance. *Soil* = % cover of bare soil. *BLS* = % cover of broad-leaf shrub. *NLS* = % cover of broad-leaf shrub. *Rocks* = % cover of rocks. “*Shrubs*” = % cover of shrubs (BLS+NLS). *#Patches BLS* = number of patches of broad-leaf shrubs. *Area BLS* = mean area of broad-leaf shrub patches. *Shape BLS* = mean shape of broad-leaf shrub patches. *DNP BLS* = Distance to the closest-neighbouring patch of broad-leaf shrubs. *#Patches* = number of shrub patches. *Area* = mean area of shrub patches. *Shape BLS* = mean shape of shrub patches. *DNP BLS* = Distance to the closest-neighbouring shrub patch. *Adults* = number of adult plants. *Core<sub>75</sub>* = predicted presence of lizard core areas. *DistCore<sub>75</sub>* = predicted movement distance from lizard core areas.

<b>Lizard habitat preference</b>	<b>Home-range</b>	<b>Core-area</b>	<b>Patch</b>
Soil	463.4	758.9	524.3
BLS	463.3	758.9	524.2
NLS	464.3	749.5	524.2
Rocks	456.9	757.4	525.0
Shrubs	464.3	759.1	524.2
#Patches BLS	465.1	748.3	524.1
Area BLS	462.6	738.4	516.4
Shape BLS	464.8	759.3	521.7
DNP BLS	464.7	756.4	524.3
#Patches	464.7	752.2	524.7
Area	465.0	758.7	525.0
Shape	463.4	758.5	524.7
DNP	463.3	756.9	525.0



<b>Plant presence</b>	Juvenile	Reprod.
Soil	625.9	625.9
BLS	637.2	637.2
NLS	627.8	627.8
Rocks	637.3	637.3
Shrubs	626.6	626.6
Adults	571.8	NA
Core <sub>75</sub>	551.0	551.0
DistCore <sub>75</sub>	612.0	612.0

Table A3. Results of Generalized Linear Models predicting lizard habitat preference at the scale of (a) home range, (b) core area and (c) patch, on the basis of habitat characteristics. Results shown correspond to the best model (i.e., with the lowest AIC and highest AIC weight), selected from a full-model that included all variables presented in the table's heading line, for the different neighbourhood distances. Values shown include parameter estimates for the different variables, information-criterion scores (AIC, AIC weight) of fitted models, AUC scores evaluating the predictability of the fitted model, and AUC scores of two types of *k*-fold cross-validations (random and individual cross-validations, see *Methods* for details). AICw = AIC weight. AUCsd = standard deviation of AUC scores. *BLS* = % cover of broad-leaf shrub. *NLS* = % cover of broad-leaf shrub. *Rocks* = % cover of rocks. *Area* = mean area of shrub patches (BLS+NLS). *Shape* = mean shape of shrub patches. *DNP* = Distance to the closest-neighbouring shrub patch.

Scale	Parameter estimates							Goodness-of-fit		Predictability		Random cross-validation		Individual cross-validation		
	Intercept	BLS	NLS	Rocks	Area	Shape	DNP	AIC	AICw	AUC	AUCsd	AUC	AUCsd	AUC	AUCsd	
Home-range preference	12	0.620	NA	0.375	0.157	-0.277	NA	-0.173	743.7	0.173	0.616	0.025	0.598	0.035	0.573	0.026
	25	0.977	0.135	0.479	NA	-0.633	0.354	NA	726.2	0.145	0.628	0.026	0.612	0.038	0.586	0.026
	50	0.882	NA	0.583	0.289	-0.602	NA	NA	702.7	0.196	0.680	0.024	0.674	0.033	0.615	0.025
	75	0.830	NA	0.601	0.373	-0.809	NA	NA	685.5	0.258	0.706	0.023	0.701	0.036	0.637	0.025
	100	0.873	NA	0.625	0.447	-0.871	NA	NA	671.8	0.293	0.711	0.023	0.706	0.032	0.660	0.025
	125	0.926	NA	1.072	0.409	-0.614	-0.519	0.363	659.0	0.325	0.725	0.023	0.715	0.0298	0.660	0.025
	150	1.120	0.261	1.289	NA	-0.589	-0.589	0.585	671.1	0.375	0.712	0.023	0.698	0.036	0.652	0.025
Core-area preference	12	-1.075	0.309	0.239	0.308	-0.385	0.245	NA	456.6	0.068	0.688	0.028	0.604	0.045	0.562	0.032
	25	-1.332	NA	NA	0.467	NA	0.367	0.301	440.3	0.093	0.737	0.026	0.657	0.046	0.605	0.035
	50	-1.009	NA	NA	0.726	NA	NA	-0.302	430.1	0.131	0.732	0.026	0.681	0.048	0.648	0.034
	75	-1.085	0.352	NA	0.5370	NA	NA	-0.454	422.1	0.235	0.761	0.025	0.713	0.038	0.639	0.032
	100	-1.180	0.550	NA	NA	NA	-0.566	-0.637	415.1	0.169	0.751	0.025	0.710	0.038	0.661	0.028
	125	-1.207	-0.500	0.506	0.805	NA	-1.048	NA	424.5	0.212	0.726	0.026	0.684	0.045	0.613	0.029
	150	-1.515	-0.270	-1.342	NA	NA	-0.947	-1.706	429.2	0.231	0.721	0.026	0.677	0.038	0.641	0.028
Patch preference	12	-0.448	NA	NA	NA	NA	NA	NA	523.0	0.096	0.598	0.029	0.500	<0.001	0.598	0.029
	25	-0.448	NA	NA	NA	NA	NA	NA	523.0	0.0545	0.605	0.029	0.552	0.034	0.598	0.029
	50	-0.464	NA	0.218	0.254	NA	NA	NA	518.4	0.118	0.627	0.029	0.589	0.037	0.559	0.030
	75	-0.423	0.480	NA	NA	-0.3599	NA	-0.422	504.0	0.114	0.666	0.028	0.640	0.044	0.620	0.030
	100	-0.591	NA	0.348	0.326	NA	-0.393	NA	505.6	0.107	0.666	0.028	0.638	0.042	0.617	0.029
	125	-0.345	0.382	0.456	NA	-0.3698	-0.312	NA	510.6	0.088	0.624	0.028	0.597	0.041	0.545	0.029
	150	-0.473	NA	NA	NA	NA	-0.290	NA	518.4	0.113	0.595	0.029	0.573	0.038	0.552	0.029

Table A4. Results of Generalized Linear Models on the relationship between the habitat characteristics of the *start patch* and lizard movement distance (a) at each *step* (between successive locations), (b) between each location and the centroid of the *home-range*, and (c) between each location and the centroid of the core area. Table reports parameter estimates from the best model (i.e., with the lowest AIC and highest AIC weight) at each given neighbourhood distance. Model predictability was assessed using the Pearson regression coefficient (PC=mean, PCsd=standard deviation) between fitted and observed values. Cross-validations as in Table S3. *BLS*= % cover of broad-leaf shrub. *NLS* = % cover of broad-leaf shrub. *Rocks* = % cover of rocks. *Area* = mean area of shrub patches (BLS+NLS). *Shape* = mean shape of shrub patches. *DNP* = Distance to the closest-neighbouring shrub patch.

	Scale	Parameter estimates							Goodness-of-fit		Predictability		Random cross-validation		Individual cross-validation	
		Intercept	BLS	NLS	Rocks	Area	Shape	DNP	AIC	AICw	PC	PCsd	AUC	AUCsd	AUC	AUCsd
Step distance	12	0.0006	NA	NA	NA	NA	NA	NA	430.7	0.0942	0.0001	0.000	0.0001	0.0000	-0.2427	0.050
	25	0.0960	NA	0.1582	NA	0.1699	NA	NA	430.6	0.0576	0.1668	0.076	0.0487	0.1374	0.0138	0.953
	50	0.0000	NA	NA	NA	NA	NA	-0.1653	428.6	0.1040	0.1653	0.077	0.0922	0.1976	0.0934	0.139
	75	0.0106	-0.2478	NA	0.2396	NA	NA	NA	429.6	0.0904	0.1856	0.067	0.1573	0.1036	0.0790	0.165
	100	0.0000	NA	NA	NA	NA	NA	-0.1668	428.5	0.1086	0.1668	0.076	0.1230	0.1596	0.1029	0.126
	125	0.0000	NA	NA	NA	NA	-0.1303	-0.2573	426.5	0.0718	0.2326	0.052	0.1850	0.1397	0.1456	0.088
	150	0.0000	NA	NA	NA	NA	NA	-0.1784	427.9	0.0903	0.1784	0.070	0.1711	0.1326	0.1242	0.104
Home-range distance	12	0.0128	NA	NA	-0.1065	NA	NA	NA	607.9	0.1338	0.1462	0.057	0.1442	0.0946	-0.1908	0.042
	25	-0.0522	NA	NA	-0.1345	NA	NA	NA	606.1	0.0918	0.0731	0.116	0.0822	0.0759	-0.1667	0.049
	50	-0.0684	NA	NA	NA	NA	-0.2226	NA	599.4	0.1074	0.1021	0.082	0.1106	0.0997	-0.0756	0.112
	75	-0.0846	-0.2290	NA	NA	0.2271	-0.3606	NA	602.7	0.0914	0.0507	0.168	0.0310	0.0957	-0.1097	0.076
	100	-0.0588	NA	NA	0.1585	0.2328	0.2263	NA	604.2	0.1267	0.1541	0.053	0.1171	0.0884	-0.0305	0.279
	125	-0.0757	NA	NA	NA	0.2389	NA	-0.1404	607.0	0.0755	0.1001	0.084	0.0925	0.0934	-0.1451	0.057
	150	-0.0593	NA	NA	NA	0.3309	NA	-0.2876	604.2	0.1302	0.0712	0.119	0.0416	0.0920	-0.1241	0.067
area distance	12	0.1110	NA	NA	NA	0.2568	NA	NA	646.8	0.1453	0.2568	0.030	0.2480	0.0941	0.1929	0.042
	25	0.0085	-0.1953	NA	-0.0952	NA	NA	NA	651.3	0.1087	0.2373	0.033	0.2208	0.0989	0.0859	0.098
	50	0.0168	-0.3193	0.0955	NA	NA	NA	NA	639.9	0.1150	0.3189	0.023	0.3028	0.0961	0.2453	0.032

75	0.0000	-0.2859	NA	NA	NA	NA	-0.1105	640.2	0.0872	0.3171	0.023	0.2910	0.0796	0.2515	0.031
100	0.0071	NA	NA	NA	0.1684	0.2280	-0.2366	641.8	0.1191	0.3199	0.023	0.2820	0.0832	0.2578	0.030
125	0.0000	NA	NA	NA	NA	0.1417	-0.2182	641.3	0.1043	0.3102	0.024	0.2893	0.0745	0.2004	0.040
150	0.0052	NA	0.4739	NA	0.2132	NA	NA	637.2	0.1256	0.3350	0.021	0.3093	0.0735	0.2970	0.025

Table A5. Results of Generalized Linear Model on the relationship between habitat characteristics of the *destination patch* and lizard movement distance (a) at each *step* (i.e., between successive locations), (b) between each location and the centroid of the *home range*, and (c) between each location and the centroid of the *core area*. Table reports parameter estimates from the best model (i.e., with the lowest AIC and highest AIC weight) at each given neighbourhood distance. Model predictability was assessed using the Pearson regression coefficient (PC=mean, PCsd=standard deviation) between fitted and observed values. Cross-validations as in Table S3. *BLS* = % cover of broad-leaf shrub. *NLS* = % cover of broad-leaf shrub. *Rocks* = % cover of rocks. *Area* = mean area of shrub patches (BLS+NLS). *Shape* = mean shape of shrub patches. *DNP* = Distance to the closest-neighbouring shrub patch.

	Scale	Parameter estimates							Goodness-of-fit		Predictability		Random cross-validation		Individual cross-validation	
		Intercept	BLS	NLS	Rocks	Area	Shape	DNP	AIC	AICw	PC	PCsd	AUC	AUCsd	AUC	AUCsd
Step distance	12	0.1236	-0.101	-0.125	-0.185	NA	NA	NA	649.7	0.081	0.230	0.034	0.181	0.0816	0.110	0.076
	25	0.019	-0.143	NA	-0.316	NA	NA	NA	628.7	0.173	0.364	0.019	0.350	0.0839	0.314	0.023
	50	-0.085	-0.247	NA	-0.186	NA	NA	NA	630.7	0.132	0.339	0.021	0.332	0.0799	0.285	0.026
	75	-0.003	-0.350	NA	NA	NA	NA	NA	632.3	0.149	0.344	0.021	0.353	0.0726	0.311	0.024
	100	<-0.002	NA	NA	-0.123	NA	0.189	NA	643.6	0.094	0.282	0.027	0.260	0.0833	0.225	0.035
	125	-0.098	0.279	NA	-0.305	NA	0.290	NA	640.5	0.223	0.325	0.022	0.301	0.0800	0.267	0.029
	150	-0.089	0.253	NA	-0.203	NA	0.299	NA	640.7	0.088	0.322	0.023	0.297	0.0860	0.265	0.029
Home-range distance	12	-0.196	-0.200	NA	NA	0.356	-0.153	0.081	670.6	0.214	0.258	0.026	0.233	0.1007	0.055	0.133
	25	-0.189	NA	-0.092	-0.206	0.364	NA	0.196	673.1	0.133	0.266	0.025	0.229	0.0849	0.017	0.440
	50	-0.116	NA	NA	-0.177	NA	0.246	0.170	672.2	0.085	0.264	0.025	0.243	0.0707	0.028	0.259
	75	-0.046	0.167	-0.287	NA	-0.333	0.509	NA	652.1	0.257	0.320	0.019	0.287	0.0835	0.135	0.053
	100	0.107	NA	-0.626	-0.284	0.215	NA	NA	635.6	0.191	0.271	0.024	0.257	0.0813	0.153	0.046
	125	0.064	NA	-0.920	-0.487	0.154	0.102	-0.249	637.4	0.189	0.323	0.019	0.299	0.0770	0.100	0.072
	150	-0.051	NA	0.502	NA	NA	0.133	0.848	658.0	0.134	0.270	0.024	0.271	0.0558	0.102	0.071
area distance	12	0.157	NA	-0.160	-0.141	-0.157	NA	NA	739.6	0.100	0.330	0.019	0.314	0.0801	0.170	0.041
	25	-0.119	-0.148	-0.147	-0.466	0.253	-0.455	-0.119	654.4	0.138	0.556	0.008	0.528	0.0676	0.427	0.013
	50	-0.110	-0.485	NA	-0.237	NA	0.170	NA	683.8	0.233	0.515	0.009	0.506	0.0663	0.427	0.013

75	0.022	-0.755	NA	0.203	NA	0.189	0.185	635.3	0.381	0.639	0.005	0.631	0.0563	0.575	0.007
100	0.094	-0.416	-0.413	-0.300	0.278	NA	-0.210	675.2	0.206	0.555	0.008	0.537	0.0669	0.442	0.012
125	-0.148	0.261	NA	-0.480	NA	0.428	NA	673.1	0.336	0.553	0.008	0.551	0.0627	0.461	0.011
150	-0.015	0.099	1.306	NA	NA	0.289	1.116	669.0	0.284	0.574	0.007	0.562	0.0651	0.504	0.009

Table A6. Results of Generalized Linear Model on the relationship between habitat characteristics and the occurrence of (a) juvenile and (b) adults of *Daphne rodriguezii*. Table reports parameter estimates from the best model (i.e., with the lowest AIC and highest AIC weight) at each given neighbourhood distance. Model predictability was assessed using the AUC (AUC=mean, AUCsd=standard deviation). Cross-validations as in Table S3. *BLS* = % cover of broad-leaf shrub. *NLS* = % cover of broad-leaf shrub. *Rocks* = % cover of rocks. *Area* = mean area of shrub patches (BLS+NLS). *Shape* = mean shape of shrub patches. *DNP* = Distance to the closest-neighbouring shrub patch. *Adults* = number of adult plants. *Core<sub>75</sub>* = predicted presence of lizard core areas. *DistCore<sub>75</sub>* = predicted movement distance from lizard core areas.

	Scale	Parameter estimates							Goodness-of-fit		Predictability		Cross-validation	
		Intercept	BLS	NLS	Rocks	Adults	DistCore <sub>75</sub>	Core <sub>75</sub>	AIC	AICw	AUC	AUCsd	AUC	AUCsd
Juvenile plants	1.5	-1.727	0.754	0.685	0.372	0.407	0.322	0.769	860.9	0.979	0.761	0.019	0.749	0.027
	3	-1.738	0.716	0.653	0.359	0.410	0.326	0.748	862.7	0.983	0.762	0.018	0.753	0.028
	6	-1.680	0.614	0.545	0.240	0.425	0.339	0.745	872.6	0.929	0.753	0.019	0.742	0.028
	12	-1.576	0.633	0.457	0.132	0.436	0.393	0.824	876.1	0.509	0.749	0.019	0.744	0.029
	25	-1.485	0.659	0.443	-	0.443	0.428	0.846	874.6	0.620	0.750	0.019	0.741	0.025
	50	-1.456	0.626	0.403	-	0.441	0.450	0.871	880.9	0.640	0.743	0.020	0.735	0.029
	75	-1.450	-0.292	0.330	0.178	0.444	-0.645	-0.315	905.7	0.216	0.723	0.022	0.715	0.031
	150	-1.247	0.418	-0.226	0.894	0.467	0.642	-	885.5	0.354	0.750	0.020	0.736	0.030
Adult plants	1.5	-2.698	0.577	0.477	-	-	-	1.163	543.6	0.356	0.783	0.019	0.776	0.028
	3	-2.742	0.523	0.412	0.206	-	-	1.187	545.9	0.365	0.783	0.020	0.773	0.029
	6	-2.548	0.220	-	-	-	-	1.263	546.6	0.163	0.777	0.021	0.775	0.027
	12	-2.566	0.339	-	-	-	-	1.376	543.0	0.228	0.781	0.021	0.777	0.030
	25	-2.671	0.420	-	0.269	-	-	1.538	540.7	0.284	0.787	0.021	0.781	0.033
	50	-2.710	0.721	-	-	-	-	1.485	546.5	0.374	0.776	0.021	0.774	0.031
	75	-2.907	-	-	0.941	-	-1.025	-0.315	534.4	0.182	0.793	0.021	0.784	0.028
	150	-2.229	-	0.455	-	-	-	-	617.9	0.141	0.652	0.024	0.655	0.034



Table A7. Results of Generalized Linear Models predicting the probability of presence of juvenile plants based respectively on (a) local habitat features, and (b) lizard activity. For both models, we report the results of the best-fitting habitat neighbourhood distance (1.5 m). In both cases, model goodness-of-fit (AIC: 929.6 and 961.6, respectively) and predictability (AUC:  $0.687 \pm 0.021$  and  $0.645 \pm 0.020$ , respectively) were lower (“worse”) than those of the mixed-model, which included both groups of variables (AIC: 860.9; AUC:  $0.761 \pm 0.019$ ; see Table 2a). Parameter estimates refer to standardized variables. *BLS* = % cover of broad-leaf shrub. *NLS* = % cover of broad-leaf shrub. *Rocks* = % cover of rocks. *Core<sub>75</sub>* = predicted presence of lizard core areas. *DistCore<sub>75</sub>* = predicted movement distance from lizard core areas.

a) Local habitat features

Variables	Estimate	z- value
(Intercept)	$-1.501 \pm 0.114$	-13.2 ***
BLS	$0.693 \pm 0.157$	4.41 ***
NLS	$0.788 \pm 0.141$	5.60 ***
Rocks	$0.298 \pm 0.745$	4.01 ***

b) Lizard activity

Variables	Estimate	z- value
(Intercept)	$-1.213 \pm 0.086$	-14.2 ***
<i>Core<sub>75</sub></i>	$0.804 \pm 0.100$	8.02 ***
<i>DistCore<sub>75</sub></i>	$0.216 \pm 0.099$	2.18 *