

Delattre, T., Baguette, M., Burel, F., Stevens, V. M., Quénol, H. and Vernon, P. 2013. Interactive effects of landscape and weather on dispersal. – Oikos 000: 000–000.

Appendix A1

ESM1. Landscape metrics in a 500m buffer around the study sites.

Site	CA	PLAND	PD	ED	LSI	AREA_MN	Connect	ENN_MN	PLADJ
A	18.855	9.968	8.459	37.398	5.543	1.178	449.015	25.687	98.723
B	61.607	31.221	3.041	51.581	5.048	10.268	13093.383	7.518	99.357
C	72.357	37.698	3.126	26.383	3.844	12.059	16373.462	21.087	99.548
D	45.536	25.797	7.365	57.706	6.013	3.503	956.330	20.178	99.109

CA : total habitat area; PLAND: percentage of land occupied by habitat; PD: patch density; ED: edge density; LSI: landscape shape index (McGarigal et al. 2002); AREA_MN: mean patch size; Connect: Fragstats connectance index; ENN_MN: mean distance to the nearest neighbour; PLADJ: percentage of like adjacencies

ESM 2. Multi-model inference table for the multivariate analysis of move length of *M. jurtina* flight paths.

Rank	Covariates	Dev	Par	AIC	Δ AIC	W_i
1	movement strategy + sex + Temperature + Connectance + Temperature/Connectance	8160.1	7	1943.3	0.0	0,972
2	movement strategy + sex + Temperature + Connectance +	8404.9	6	1950.6	7.3	0,025
3	movement strategy + sex + Temperature +	8606.5	5	1956.1	12.8	0,001
4	movement strategy + sex + +	8606.6	4	1957.2	13.9	9.319×10^{-4}
5	movement strategy + + +	8987.1	3	1965.1	21.8	1.794×10^{-5}
6	Null model	12651	2	2072.3	129	9.728×10^{-29}

Details for parameters of the optimal model are given in the Table 2. Move lengths have been log-transformed. Dev: deviance; Par: number of parameters; AIC: Aikaike criterion; Δ AIC: change in AIC relative to the optimal model; W_i : weights of evidence. Dotted lines show which parameter has been changed.

ESM 3. Multi-model inference table for the multivariate analysis of turning angle concentration of *M. jurtina* flight paths.

Rank	Covariates	Dev	Par	AIC	Δ AIC	W_i
1	sex + Temperature	300.10	4	791.03	0	0.973
2	sex +	310.69	3	798.19	7.16	0.027
3	Null Model	327.21	2	809.87	18.84	7.888E-5

Details for parameters of the optimal model are given in the table 3. Move lengths have been log-transformed. Dev: deviance; Par: number of parameters; AIC: Aikake criterion; Δ AIC: change in AIC relative to the optimal model; W_i : weights of evidence. Dotted lines show which parameter has been changed.

ESM 4. Multi-model inference table for the multivariate analysis of emigration rates of *M. jurtina*.

Rank	Covariates	Dev	Par	AIC	Δ AIC	W_i
1	Temperature + Connectance + Temperature: Connectance	1.251	5	-424.3	0	0.964
3	Temperature + Connectivity +	1.323	4	-415.38	8.92	0.011
2	Temperature +	1.326	3	-416.98	7.32	0.025
 + Connectance	1.539	3	-390.70	33.60	4.875×10^{-8}
4	Null Model	1.568	2	-389.11	35.19	2.201×10^{-8}

Details for parameters of the optimal model are given in the table 4. Dev: deviance; Par: number of parameters; AIC: Aikake criterion; Δ AIC: change in AIC relative to the optimal model; W_i : weights of evidence. Dotted lines show which parameter has been changed.