

Table S2. Results of the GLMMs analysing the relationship between the prevalence of the two studied mosquito-borne pathogens: avian malaria *Plasmodium* (N=2,588) and seroprevalence of WNV (N=2,544), and the individual characteristics of the house sparrows (age, sex, and month of capture), avian and mammal species density, richness (measured from the raw number of different avian or mammal species registered at each sampling site) and diversity (calculated as evenness index), and vector species richness (measured as the raw number of different mosquito species captured at each sampling) and diversity (calculated as evenness index). Significant relationships ($p \leq 0.05$) are highlighted in bold; conditional and marginal (in brackets) R^2 variance are shown.

Independent variable	<i>Plasmodium</i>					West Nile virus			
	Estimate (\pm S.E.)	χ^2	d.f.	<i>p</i>		Estimate (\pm S.E.)	χ^2	d.f.	<i>p</i>
Intercept	0.46 (1.05)	0.19	1	0.66		-2.27 (5.04)	0.20	1	0.65
Month	-0.13 (0.06)	3.87	1	0.05		-0.76 (0.31)	6.18	1	0.01
Sex: male	0.00 ^a	0.21	1	0.65		0.00 ^a	0.35	1	0.55
Sex: female	0.04 (0.09)					-0.25 (0.42)			
Age: unknown	0.00 ^a	5.70	2	0.06		0.00 ^a	1.54	2	0.46
Age: juvenile	-0.17 (0.15)					-0.52 (1.14)			
Age: adult	-0.44 (0.20)					0.02 (1.20)			
Avian density	-0.01 (0.01)	1.21	1	0.27		-0.01 (0.01)	0.57	1	0.45
Avian richness	-0.01 (0.02)	0.13	1	0.72		0.12 (0.06)	4.66	1	0.03
Avian diversity	0.49 (0.96)	0.26	1	0.61		-4.57 (4.77)	0.92	1	0.34
Mammal density	-0.01 (0.02)	0.33	1	0.56		-0.05 (0.06)	0.87	1	0.35
Mammal richness	0.06 (0.12)	0.24	1	0.63		-0.57 (0.47)	1.51	1	0.22
Mammal diversity	-0.54 (0.56)	0.95	1	0.33		2.93 (1.78)	2.69	1	0.10
Mosquito richness	0.05 (0.07)	0.66	1	0.41		0.44 (0.27)	2.71	1	0.10
Mosquito diversity	-1.03 (0.83)	1.55	1	0.21		3.77 (2.58)	2.14	1	0.14
R^2 (%)	13.56 (3.32)					58.42 (42.02)			

^a Reference category.