**Supporting information**

**Table S1**. **Results of abundance models.** Results of the generalised lineal models (negative binomial error distribution and logarithmic link function) used to predict red deer, fallow deer and cattle abundance on a spatial scale in Doñana National Park. Statistical parameters, coefficients (test-value), are shown for the best-fitting models (in bold). Variable codes are described in Table 1. Measures for model support (Akaike’s information criterion; AIC and ΔAIC) are included.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Response  | Model | Coefficients (t-value) | AIC | ΔAIC |
| Red deer abundance | Best-ﬁtting | **~ -0.001 · DE (-4.89\*\*\*) -2.96 · 1LT1 (-3.03\*\*) +0.78 · LT3 (1.71ns) +0.44 · 2MA2 (0.88ns) +2.15 · MA3 (4.8\*\*\*) +1.1 · MA4 (2.06\*) +0.4 · MA5 (0.7 ns)** | **1463** | **0** |
| Initial | ~ DW + DE + GA + **1**LT1 + LT2 + LT3 + **1**LT4 + LT5 + LT6 + MA (noted as Global) | 1538 | 75 |
| Fallow deer abundance | Best-ﬁtting | **~ -2.17 · DE (-3.85\*\*\*) -2.25 · 1LT1 (-3.04\*\*) + 2.9 · LT3 (3.55\*\*\*) + 7.22 · 1LT4 (2.25\*) -1.42 · 2MA2 (-1.31ns) +2.73 · MA3 (3.1\*\*) +3.68 · MA4 (3.82\*\*\*) –1.34 · MA5 (-1.26ns)** | **560** | **0** |
|  | Initial | Global | 653 | 93 |
|  |  |  |  |
| Cattle abundance | Best-ﬁtting | **~ -1.19 · 1LT1 (-2.67\*\*) +2.93 · LT3 (3.9\*\*\*) +3.36 · 2MA2 (4.14\*\*\*) +6.6 · MA3 (0.78ns) +9.17 · MA4 (1.1 ns) -3.41 · MA5 (0.1ns)** | **552** | **0** |
|  | Initial | Global | 609 | 57 |

1LT1 and LT4 were corrected by detection coefficients, 0.538 and 0.359, respectively. 2Reference value of the parameter estimator was 0 for “cattle management area 1 (MA1)”.

*P* values are shown: ns *p*> 0.05, \* *p*< 0.05, \*\* *p*< 0.01 and \*\*\* *p*< 0.001.