

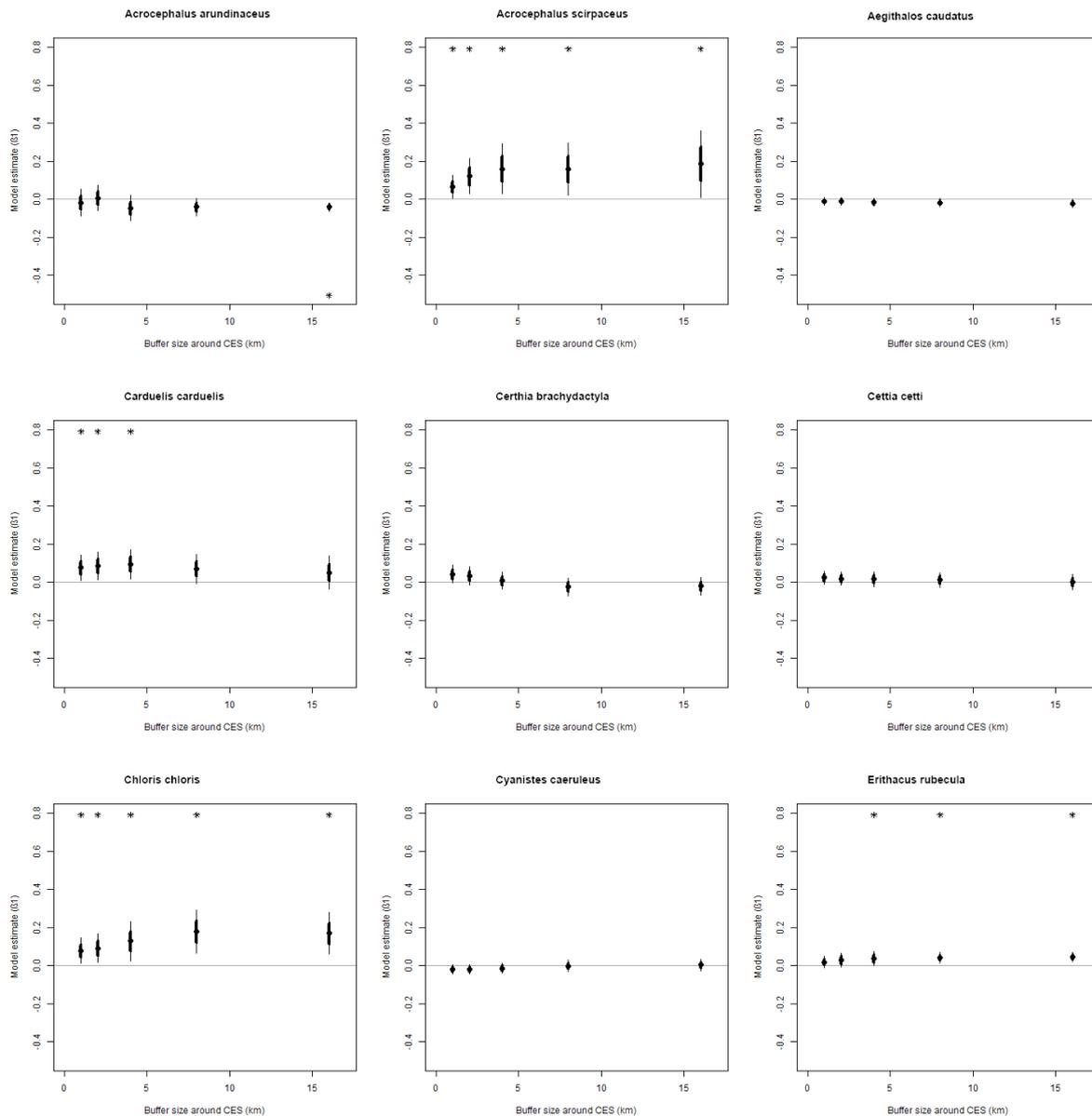
**Supplementary material**

## Evaluating the reliability of species distribution models with an indirect measure of bird reproductive performance

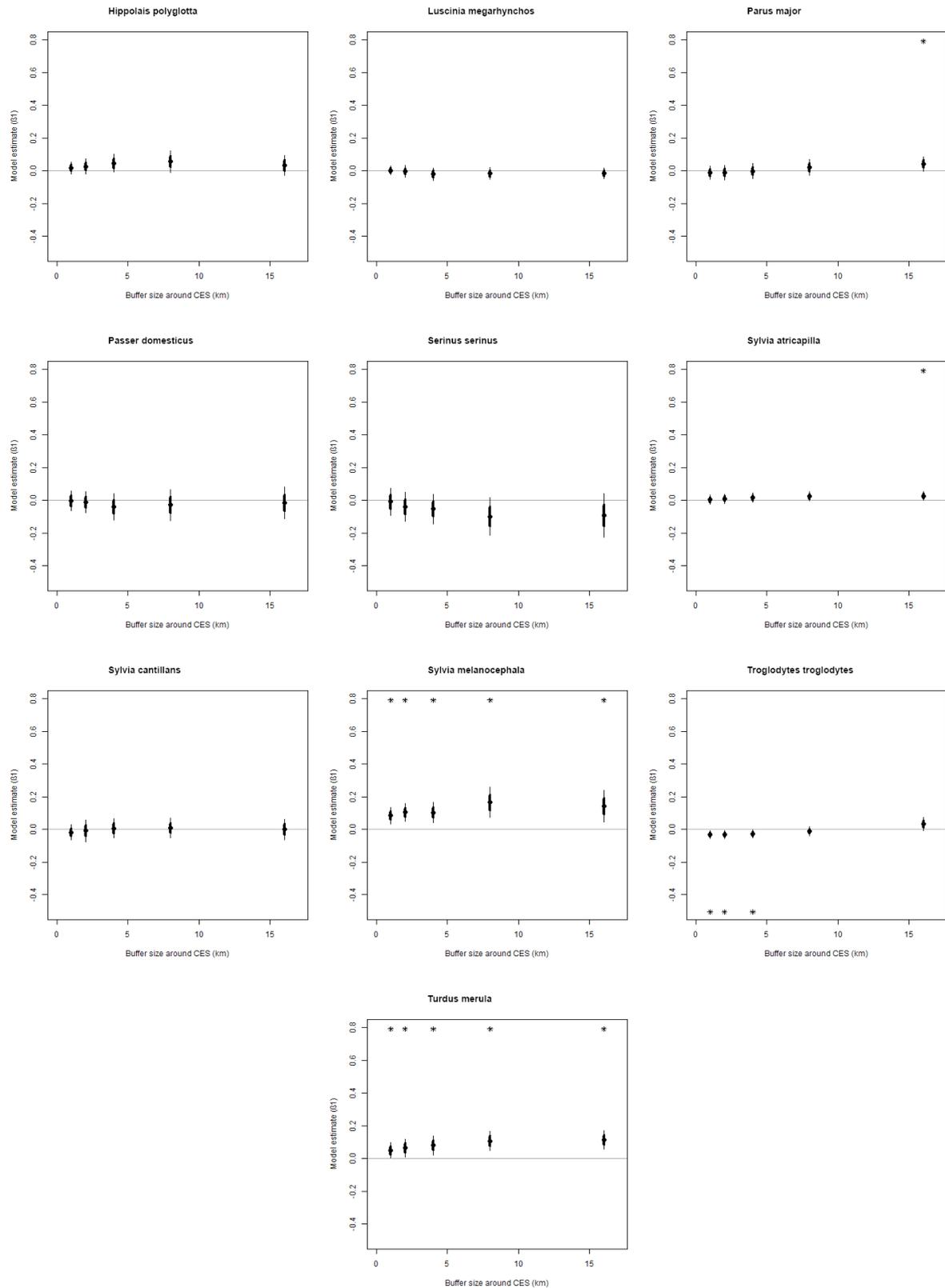
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### Appendix 1

In addition to Fig.2 in the main text, we present for each species separately across all spatial scales the relationship between the probability of capturing a juvenile and the habitat quality derived from the species distribution models (Fig.A1).



**Figure A1.** Slope estimate ( $\beta_1$ ) from the relationship between a reproductive performance parameter (the probability of capturing a juvenile) and the habitat quality estimated from the species distribution models around the Constant Effort Sites at multiple spatial scales (1, 2, 4, 8, and 16 km buffers) for each of the studied species separately. Points indicate the slope estimate, bold line indicates the standard error and thinner line indicates the 95% confidence intervals. Asterisks indicate a significant relationship ( $P \leq 0.05$ ).



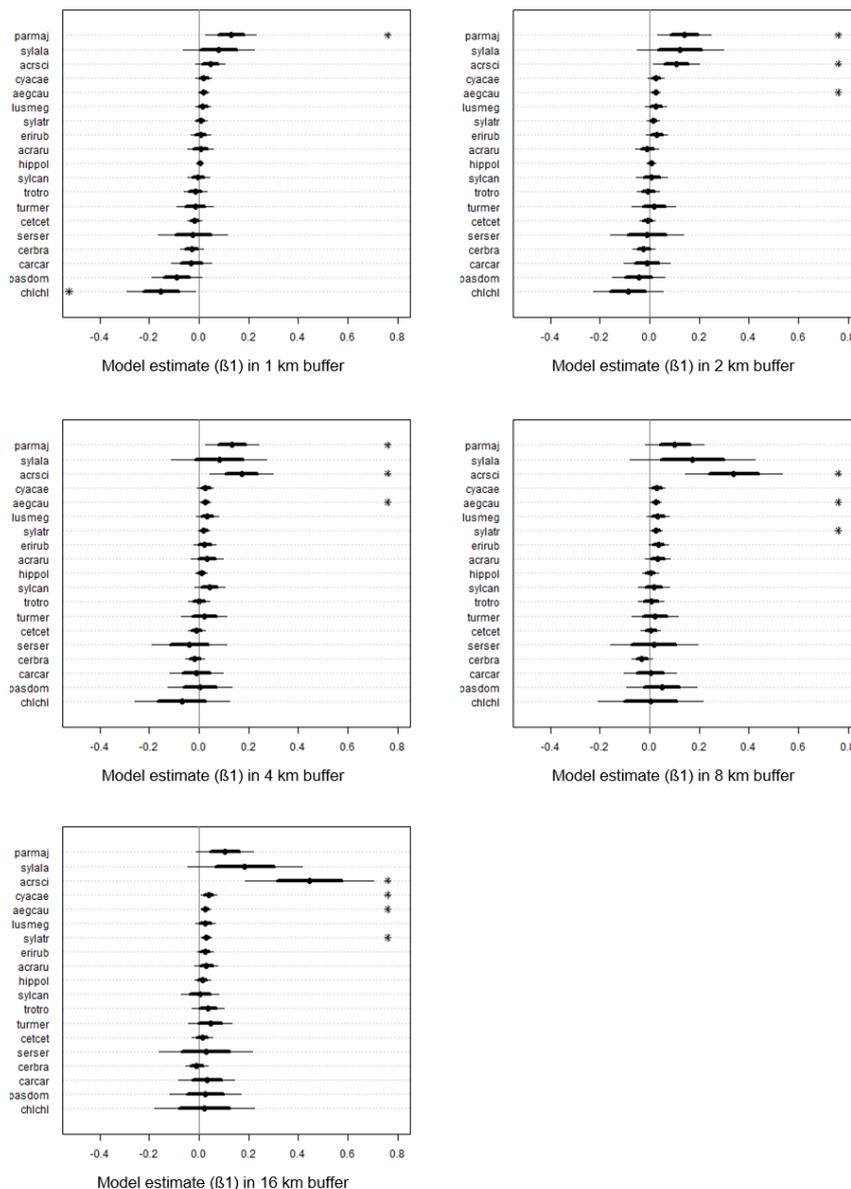
**Figure A1 (continued).** Slope estimate ( $\beta_1$ ) from the relationship between a reproductive performance parameter (the probability of capturing a juvenile) and the habitat quality estimated from the species distribution models around the Constant Effort Sites at multiple spatial scales (1, 2, 4, 8, and 16 km buffers) for each of the studied species separately. Points indicate the slope estimate, bold line indicates the standard error and thinner line indicates the 95% confidence intervals. Asterisks indicate a significant relationship ( $P \leq 0.05$ ).

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### Appendix 2

As mentioned in the main text, we also tested the relationship between the probability of capturing a female with brood patch in the CES and the habitat quality values obtained from the species distribution models. We assumed that a high proportion of females with brood patch indicates high breeding habitat quality for the species around the CES. We applied the same statistical analysis as for the probability of capturing juveniles and the results are presented in Fig.A2.



**Figure A2.** Slope estimate ( $\beta_1$ ) for the relationship between reproductive performance (i.e. probability of capturing a female with brood patch) and habitat quality estimated from the species distribution models around the Constant Effort Sites at multiple spatial scales: (a) 1 km, (b) 2 km, (c) 4 km, (d) 8 km and (e) 16 km buffers. The different bird species are ordered in the same way in the different panels (see Table 1 in the main text for acronyms). Points indicate the slope estimate, bold line indicates the standard error and thinner line indicates the 95% confidence intervals. Asterisks indicate a significantly positive or negative relationship ( $P \leq 0.05$ ).