

SUPPLEMENTARY ELECTRONIC MATERIAL (APPENDIX 2)

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**NEGATIVE EFFECTS OF SNOW COVER ON FORAGING
HABITAT SELECTION AND BREEDING SUCCESS IN THE RED-
BILLED CHOUGH *PYRRHOCORAX PYRRHOCORAX***

**EFFECTOS NEGATIVOS DE LA CUBIERTA DE NIEVE EN LA SELECCIÓN DE
HÁBITAT DE FORRAJE Y EL ÉXITO REPRODUCTOR EN LA CHOVA
PIQUIRROJA *PYRRHOCORAX PYRRHOCORAX***

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Appendix 2: Habitat selection, Jacobs' index

[Selección de hábitat. Índice de Jacobs.]

METHOD

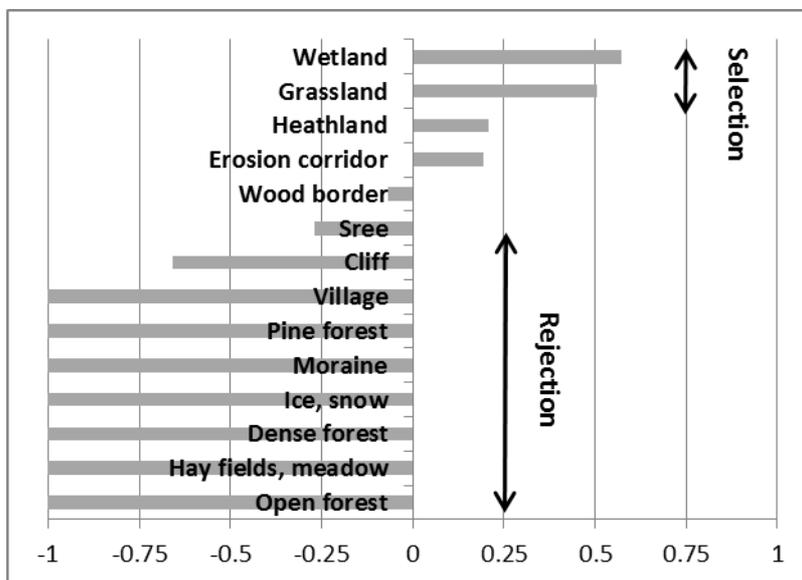
The foraging areas were not randomly distributed in the study area because they were selected by birds. This selection depends on the available habitats, so we compared the proportions of those foraged to their availability in the study area by a Chi-squared test. For assessing habitat selection, we calculated the Jacobs' (1974) electivity index for each habitat: $I_h = U - D / (U + D - 2U*D)$ where U is the proportion of pixels in habitat h and D the proportion of this habitat in the study area. The index ranges between -1 (strong rejection of a particular habitat) and 1 (strong selection).

RESULTS

Red-billed Choughs during the young rearing period mainly exploited grassland (59.4%), secondary moors (11.7%), cliffs (10.8%), wetlands (3.4%) and other ecological units (each less than 3%). Choughs habitat selection differed significantly from habitat availability ($X^2(6) = 554.317$, $p < 0.0001$). According to the Jacobs' index, birds selected alpine grassland and the scarce wet ground areas. They avoided perennial ice and snow patches, rock areas (cliff, moraine and scree), forests, meadows or hayfields and villages (Figure S4). Foraging areas were largely grazed: 70.5% of their surface was pastures. They were also less snowy; 51% were snow-free when young rearing began and all were snow-free eight days later.

Figure S4: Red-billed Cough selected or rejected habitats according to Jacobs' index in Gavarnie SPA.

[Habitats seleccionados o rechazados por la chova piquirroja de acuerdo al índice de Jacobs en la ZEPA de Gavarnie.]



REFERENCES

Jacobs, J. (1974). Quantitative measurement of food selection: a modification of the forage ratio and Ivlevs' selectivity index. *Oecologia*, 14: 413-417.