

**SUPPLEMENTARY ELECTRONIC MATERIAL (APPENDIX 1)**

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**VARIATIONS IN NICHE BREADTH AND POSITION OF  
ALPINE BIRDS ALONG ELEVATION GRADIENTS IN THE  
EUROPEAN ALPS**

**VARIACIONES EN LA AMPLITUD Y POSICIÓN DEL NICHOS DE LAS  
AVES ALPINAS A LO LARGO DE LOS GRADIENTES DE ALTITUD EN  
LOS ALPES EUROPEOS**

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## APPENDIX 1.

Study area and variables considered.

*[Área de estudio y variables empleadas.]*

**Figure A1.** Map of study area and list of the variables used in the dataset

*[Mapa de la zona de estudio y lista de las variables utilizadas en la base de datos.]*

A map of the study region and location of sites is given in **Figure A1**. A list of all the environmental variables used in the analysis is given in **Table A1**.



Figure A1 Location of the study sites in the province of Turin (Piedmont, Italy). Each point represents the mean coordinates of a transect.

*Ubicación de los puntos de estudio en la provincial de Turín (Piamonte, Italia). Cada punto representa la media de las coordenadas de un transecto.*

TABLE A1

List of the environmental variables.

*[Lista de las variables ambientales.]*

Variable	Description	Unit	Type
Alt	Elevation	m	Numeric
SLOPE	Slope	°	Numeric
S	Orientation (South)	°	Numeric
E	Orientation (East)	°	Numeric
Canopy	Canopy cover (vegetation above head height)	%	Numeric
Shrub	Shrub cover (woody vegetation under head height)	%	Numeric
Grass	Grass cover (no canopy)	%	Numeric
Rock	Rock cover (scree and unvegetated areas)	%	Numeric
Snow	Snow cover	%	Numeric
Trees	Number of mature trees	-	Numeric
Water	Presence / absence of water	-	Binomial
Path	Presence / absence of path	-	Binomial
Dung	Presence / absence of dung	-	Binomial
Precip	Precipitation	mm	Numeric
Temp	Mean temperature	°C	Numeric
T_MAX_NOW	Maximum temperature	°C	Numeric
T_MIN_NOW	Minimum temperature	°C	Numeric
X_COORD	Longitude (WGS84)	m	Numeric
Y_COORD	Latitude (WGS84)	m	Numeric

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