

Climate and landscape changes as driving forces for future range shift in southern  
populations of the European badger

Luís M. Rosalino<sup>1,2</sup>, Diana Guedes<sup>1</sup>, Diogo Cabecinha<sup>2</sup>, Ana Serronha<sup>3</sup>, Clara Grilo<sup>1</sup>,  
Margarida Santos-Reis<sup>2</sup>, Pedro Monterroso<sup>3</sup>, João Carvalho<sup>1,4</sup>, Carlos Fonseca<sup>1</sup>, Xosé  
Pardavila<sup>5</sup>, Emílio Virgós<sup>6</sup>, Dário Hipólito<sup>1</sup>

<sup>1</sup> Departamento de Biologia & CESAM, Universidade de Aveiro, 3810-193 Aveiro, Portugal;

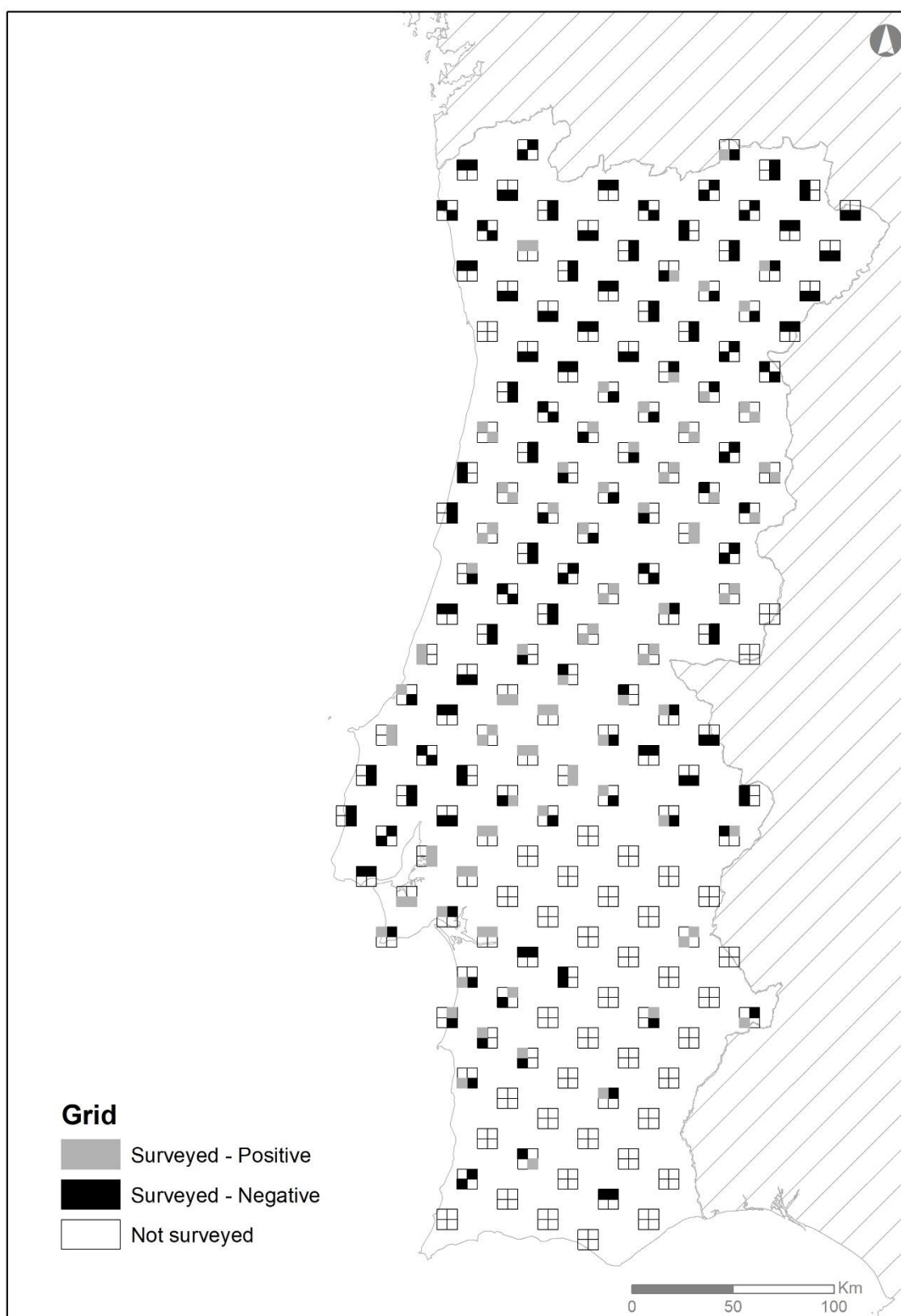
<sup>2</sup> cE3c- Centre for Ecology, Evolution and Environmental Changes, Faculdade de Ciências da  
Universidade de Lisboa, 1749-016 Lisbon, Portugal;

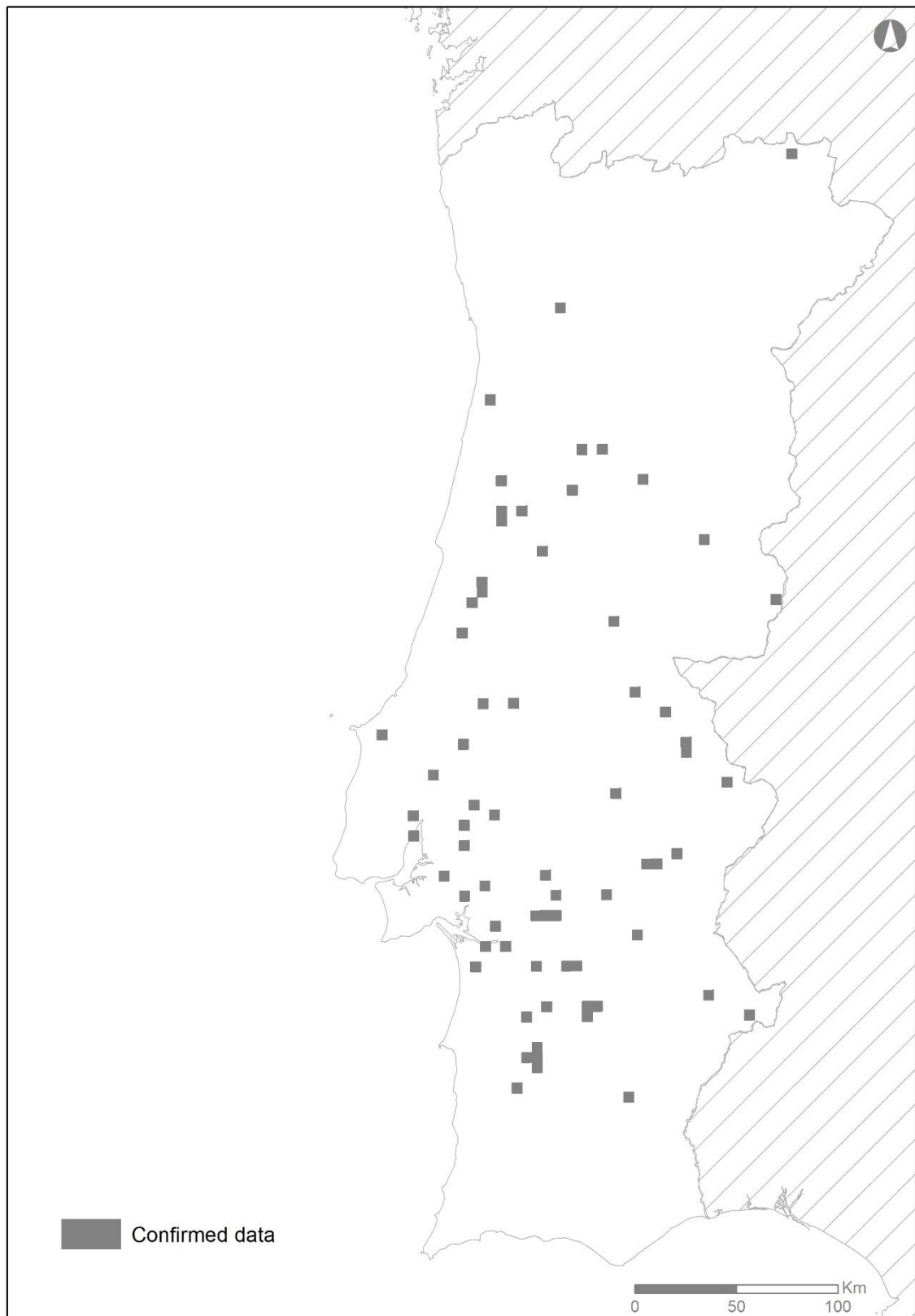
<sup>3</sup> CIBIO/InBIO, Centro de Investigação em Biodiversidade e Recursos Genéticos,  
Universidade do Porto, Campus Agrário de Vairão, 4485-661 Vairão, Portugal;

<sup>4</sup> Wildlife Ecology & Health group (WE&H) and Servei d'Ecopatologia de Fauna Salvatge  
(SEFaS), Departament de Medicina i Cirurgia Animals, Universitat Autònoma de Barcelona,  
08193-Bellaterra, Barcelona, Spain;

<sup>5</sup> Área de Ecoloxía, Departamento de Bioloxía Funcional, Universidade de Santiago de  
Compostela, Facultade de Bioloxía - Rúa Lope Gómez de Marzoa, s/n. Campus sur. 15782  
Santiago de Compostela, Spain;

<sup>6</sup> ESCET, Departamento de Biología, Geología, Física y Química Inorgánica, Universidad  
Rey Juan Carlos, C/Tulipán s/n., 28933 Móstoles, Spain.





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30 Fig S2. Distribution of the independent badger presence data used to test accuracy of the best

31 RAC-BRT model.

Table S1 - Variance Inflation Factor (VIF) for each continuous covariates included in hypothesis H1. Variables with VIF values higher than 5 were excluded from further analysis. The VIF was recalculated for the remaining variables. The process was repeated until none of the retained variables reached  $VIF > 5$ .

| Variable     | VIF      |
|--------------|----------|
| Coniferous   | 2.566203 |
| Shrublands   | 2.504710 |
| Food         | 1.965273 |
| Herbaceous   | 1.947030 |
| Eucalyptus   | 1.888728 |
| Deciduous    | 1.842170 |
| Agroforestry | 1.821995 |
| Artificial   | 1.420192 |
| H            | 1.120240 |
| Wetlands     | 1.106249 |
| Exotic       | 1.071054 |

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39 Table S2 - Variance Inflation Factor (VIF) for each continuous covariates included in  
40 hypothesis H2. Variables with VIF values higher than 5 were excluded from further  
41 analysis. The VIF was recalculated for the remaining variables. The process was  
42 repeated until none of the retained variables reached  $VIF > 5$ .

| Variable      | VIF      |
|---------------|----------|
| Paved_roads   | 3.027804 |
| Human_pop     | 2.471251 |
| Highways      | 1.438579 |
| Goat&sheep    | 1.093621 |
| PA            | 1.093585 |
| Cattle        | 1.074238 |
| Unpaved_roads | 1.062543 |
| Hunting       | 1.049642 |
| Pigs          | 1.011846 |

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Table S3 - Variance Inflation Factor (VIF) for each continuous covariates included in hypothesis H3. Variables with VIF values higher than 5 were excluded from further analysis. The VIF was recalculated for the remaining variables. The process was repeated until none of the retained variables reached VIF>5.

| <b>Variable</b>    | <b>VIF (Initial)</b> | <b>VIF (Final)</b> |
|--------------------|----------------------|--------------------|
| Sediment           | 47.019247            | *removed           |
| Sediment/Metamorph | 44.746818            | 3.234831           |
| Eruptive           | 39.538041            | 2.911627           |
| Cambisols          | 4.934294             | 4.488028           |
| Lithosols          | 3.568110             | 3.378787           |
| Luvisols           | 2.939209             | 2.705969           |
| Podzols            | 2.773519             | 2.574867           |
| Alt_mean           | 2.508845             | 2.492825           |
| Alt_range          | 2.036755             | 2.035352           |

Table S4 - Variance Inflation Factor (VIF) for each continuous covariates included in hypothesis H4. Variables with VIF values higher than 5 were excluded from further analysis. The VIF was recalculated for the remaining variables. The process was repeated until none of the retained variables reached  $VIF > 5$ .

| Variable    | VIF      |
|-------------|----------|
| Ann_Temp    | 3.066682 |
| Ann_Prec    | 2.190609 |
| Prec_season | 2.051523 |
| Temp_season | 1.428217 |

58 Table S5 - Variance Inflation Factor (VIF) for each continuous covariates included in  
 59 hypothesis H5. Variables with VIF values higher than 5 were excluded from further  
 60 analysis. The VIF was recalculated for the remaining variables. The process was  
 61 repeated until none of the retained variables reached  $VIF > 5$ .

| <b>Variable</b> | <b>VIF</b> |
|-----------------|------------|
| Ann_Prec        | 3.540072   |
| Ann_Temp        | 3.188764   |
| Shrublands      | 1.752918   |
| Eruptive        | 1.721719   |
| Herbaceous      | 1.538916   |
| Podzols         | 1.324292   |
| Eucalyptus      | 1.270405   |
| Cattle          | 1.207367   |
| Pigs            | 1.116017   |

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