Ecography

ECOG-00077
Suárez-Seoane, S., Virgós, E., Terroba, O., Pardavila, X. and Barea-Azcón, J. M. 2013. Scaling of species distribution models across spatial resolutions and extents along a biogeographic gradient. The case of the Iberian mole *Talpa occidentalis*. – Ecography 36: xxx–xxx.

Supplementary material

Appendix 1. Calculation of environmental predictors used to train Maxent models.

TOPOV5	Description: Variation in altitude in a 5×5 pixel array, where altitude is measured to 5m vertical resolution. It varies from "0" (flat areas) to "1" (maximal topographical variability)
	Estimation at 50m: The value of each pixel is calculated as (n − 1)/(p − 1) where n=number of different altitude classes in the array, p=number of pixels in the array (i.e. 25). Measured directly from a 50m resolution using a Digital Elevation Model (DEM) at that resolution.
	Estimation at 10km: Idem, but calculated independently using a Digital Elevation Model (DEM) at 200m resolution and averaged to 10 km^2 by pixel aggregation.
RIVERDIST	Description: Distance in km to the nearest pixel containing rivers
	Estimation at 50m: The calculation of this variable first requires an image containing integer values with non-zero pixels indicating the feature targets (i.e. rivers). We converted a vector layer accounting for rivers at 1:50,000 scale to a raster file at 50m resolution. Then, we applied a GIS distance operator that returns the value of the Euclidean distance from each pixel to the nearest non-zero pixels.
	Estimation at 10km: Idem, but derived independently from a vector file at 1:200,000 scale. Variable calculated at 200-m resolution and averaged to 10 km^2 by pixel aggregation.
PASTDENS	Description: Percentage of meadows and pastures in a 5×5 pixel array
	Estimation at 50m: The value of each pixel is calculated as the number of pixels containing meadows and pasturelands divided by the total number of pixels in the array (i.e. 25). Values range from 0 (no meadows and pastures in the array) to 1 (all pixels correspond to meadows and pastures). The variable was derived from a habitat cartography specifically developed at 1:50,000 for each region by the corresponding Regional Government: Madrid (CAM 1998), Galicia (SITGA 1998) and Andalucía (SINAMBA 1999).
	Estimation at 10km: Derived from the CORINE Land Cover Map (Heymann et al. 1994) at 1:100,000 (classes: "pastures", grid code 18; "natural grasslands, grid code 26). Calculated at 100-m resolution and averaged to 10 km^2 by pixel aggregation.
WOODENS	Description: Percentage of broad-leafed and mixed woodlands in a 5×5 pixel array
	Estimation at 50m: The value of each pixel is calculated as the number of pixels containing broad-leafed and mixed woodlands divided by the total number of pixels in the array (i.e. 25). Values range from 0 (no broad-leafed and mixed woodlands in the array) to 1 (all pixels correspond to broad-leafed and mixed woodlands). The variable was derived from a habitat cartography specifically developed at 1:50,000 for each region by the corresponding Regional Government: Madrid (CAM 1998), Galicia (SITGA 1998) and Andalucía (SINAMBA 1999).
	Estimation at 10km: Derived from the CORINE Land Cover Map (Heymann et al. 1994) at 1:100,000 (classes: "Broad-leaved forest", grid code 23; "mixed forest, grid code 25). Calculated at 100m resolution and averaged to 10 km^2 by pixel aggregation.
PATCHSIZE	Description: Size of patches made of pasturelands and woodlands
	Estimation at 50m: The variable returns the size (in km^2) of the patch were a pixel of broad-leafed and mixed woodlands is contained. The variable was derived from a habitat cartography specifically developed at 1:50,000 for each region by the corresponding Regional Government: Madrid (CAM 1998), Galicia (SITGA 1998) and Andalucía (SINAMBA 1999).
	Estimation at 10km: Derived from the CORINE Land Cover Map (Heymann et al. 1994) at 1:100,000 (grid code classes: 18, 23, 25 and 26). Calculated at 100m resolution and averaged to 10 km^2 by pixel aggregation.
NDVIMAX	Description: Annual maximum value of above ground net primary production estimated from NDVI (Normalized Difference Vegetation Index)
	Estimation at 50m: The variable was calculated from NOAA-AVHRR imagery at 1 km using a 12-months series of maximum value composite for the period 1983-1999. The value of each pixel in the variable is the maximum value of NDVI for the whole temporal series. Calculated at 1km resolution and expanded to 50m.
	Estimation at 10km: Idem, calculated at 1km resolution but averaged to 10 km^2 by pixel aggregation.
NDVIMIN	Description: Annual minimum value of above ground net primary production estimated from NDVI (Normalized Difference Vegetation Index)
	Estimation at 50m: The variable was calculated from NOAA-AVHRR imagery at 1 km using a 12-months series of maximum value composite for the period 1983-1999. The value of each pixel in the variable is the minimum value of NDVI for the whole temporal series. Calculated at 1km resolution and expanded to 50m.
	Estimation at 10km: Idem. Calculated at 1km resolution, but averaged to 10 km^2 by pixel aggregation.
TOWNDIST	Description: Distance in km to the nearest pixel containing towns
	Estimation at 50m: The calculation of this variable first requires an image containing integer values with non-zero pixels indicating the feature targets (i.e. towns). We converted a vector layer accounting for towns at 1:50,000 scale to a raster file at 50m resolution. Then, we return the value of the Euclidean distance from each pixel to the nearest non-zero pixel.
	Estimation at 10km: Idem, but derived independently from a vector file at 1:200,000 scale. Variable calculated at 200-m resolution and averaged to 10 km^2 by pixel aggregation.
ROADDIST	Description: Distance in km to the nearest pixel containing roads
	Estimation at 50m: The calculation of this variable first requires an image containing integer values with non-zero pixels indicating the feature targets (i.e. roads). We converted a vector layer accounting for roads at 1:50,000 scale to a raster file at 50m resolution. Then, we applied a GIS distance operator that returns the value of the Euclidean distance from each pixel to the nearest non-zero pixel.
	Estimation at 10km: Idem, but derived independently from a vector file at 1:200,000 scale. Variable calculated at 200-m resolution and averaged to 10 km^2 by pixel aggregation.
TAXSUM	Description: Maximal temperatures (ºC) in summer
	Estimation at 50m: The variable was calculated from WorldClim data (Hijmans et al. 2005) (1965-2005) at 1km. It was measured as the maximum value of the maximal monthly temperatures provided for each pixel for june, luly and august. Calculated at 1km resolution and expanded to 50m.
	Estimation at 10km: Idem. Calculated at 1km resolution, but averaged to 10 km^2 by pixel aggregation.
PRECSUM	Description: Mean precipitation (mm) in summer
	Estimation at 50m: The variable was calculated from WorldClim data (Hijmans et al. 2005) (1965-2005) at 1km. It was measured as the mean value of monthly precipitation provided for each pixel for june, luly and august. Calculated at 1km resolution and expanded to 50m.
	Estimation at 10km: Idem. Calculated at 1km resolution, but averaged to 10 km^2 by pixel aggregation.