A comparison of GLM and Maxent for modelling Iberian ibex distribution in central Spain

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Abstract

This study was to determine if MaxEnt is useful for establishing the most suitable areas for the reintroduction of a wildlife species, the Iberian ibex (*Capra pyrenaica*). This method uses partial data (presence-only); thus, its reliability can be doubtful compared to models that use presence-absence data (general linearized model). This paper seeks to compare these models from their graphical representations (spatial correlation) instead of using the traditional comparisons of the statistics that they generate. We determined the potentiality of the territory via binomial logistic regression (GLM) and the graphical representation of the territory suitability with presence data only (MaxEnt). To compare both results, correlation analyses were performed. The most suitable areas for the species are similar although they were extended in GLM Model. In both cases, the variables of altitude, anthropogenic influence, and vegetation/stoniness are relevant for the presence of the species. The correlation analyses performed showed a strong relationship between both models. These results suggest that the use of the species' presence-only distribution modelling employing MaxEnt is useful for defining the preferred locations of the species and can replace the absence-presence methods when information on the absence of the species is lacking.

Biography

Cristina Olmedo Salinas is a PhD student in the Zoology and Physical Anthropology Department of the Complutense University of Madrid (UCM). She received her Master's in Conservation Biology (2012) from UCM and degree in Biology from the Autonomous University of Madrid (UAM) in 2002. She has 5 published articles and 14 international conferences' communications in Biodiversity and Species Distribution. Her current research areas are focused on the diversity of parasites in wildlife ungulates and its influence on the populations.

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