

Habitat suitability for the giant anteater in the Gran Chaco

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Abstract

Land use change is expected to have the largest global impact on biodiversity loss according to worrying rates of deforestation. Due to their body size, large mammals are already subject to higher extinction risk and suffer even more from environmental changes. The giant anteater, as a member of the Xenarthrans, which is most probably the only group of mammals originated from South America, represents an essential part of the ecosystem in this part of the world. The species is classified as vulnerable by the IUCN since decades as a result of its seriously threatened range, currently extending from Honduras to North Argentina. The Gran Chaco, representing the southern end of its distribution, is regarded to be highly dynamic, concerning altering land cover. Thus, there is a strong risk of decimating the species' range further on. To determine meaningful conservation actions, a fundamental understanding about the requirements of a species' habitat and their distribution is indispensable. On this matter, habitat suitability models are a widely used instrument to predict and investigate species distribution within a certain region. In regard to the existing data, the maximum entropy species distribution modelling (MaxEnt) is considered to be appropriate. This method, which finds statistical relationships between environmental variables and the points of species occurrence, was used to (1) create a habitat suitability model for the giant anteater over the Gran Chaco region, including the evaluation of the predictor variables and to (2) map the habitat suitability of the species to the study area to analyze the spatial pattern. The resulting map identifies broad areas of habitat suitability (HS), predominantly in North Argentina and in forest covered landscape. The strongest dependence is shown by climate and forest related predictor variables. Moreover, the wide absence of protected areas where HS is abundant and the partly overlap of suitable habitat and cropland in the South, are particularly noticeable. These main results demonstrate that conservation are overdue and allow a focus on certain areas, which needs to be addressed with special priority.

