DBEM Lab Talk

Wednesday 24 June 2015
11:00-12:00 a.m
PRC Room 6203

Title
Where to go next?
Predicting habitat suitability of an expanding
mesocarnivore – the golden jackal (*Canis aureus*) in Europe

Speaker
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Abstract

The golden jackal's *Canis aureus* range in Europe is expanding rapidly. Historically restricted to the Mediterranean and Black sea coastal regions, golden jackals are now reproducing in most of Southeastern European and some Central European countries. In addition, vagrant animals have been detected further to the north and west (Estonia, Germany, Switzerland). The presence of this new carnivore could have impact on existing animal communities and is already receiving high interest among wildlife managers. There is thus an urgent need to forecast species colonization at the European scale. In this analysis, we used species distribution models (SDMs) to map the species habitat suitability across the continent. SDMs were calibrated within the core range of the species using data of territorial jackal groups (>1000 locations, mostly from howling surveys) as presence. By contrast, absences were drawn from hunting-statistics and refined with both expert-based distribution models and opportunistic jackal records. We used environmental variables relevant to the species ecology: altitude, snow cover, land-cover and grey wolf *Canis lupus* presence. We controlled for sampling selection bias by manipulating presence weights and absence spatial selection. We calibrated 10 different algorithms; all internally and externally validated. The final model projection was achieved through an ensemble procedure and we investigated the robustness of our predictions to extrapolation using a multivariate environmental surface analysis. Our analysis indicates that mountain areas characterized by unfragmented forest cover, high snow prevalence and wolf presence are particularly unsuitable. Besides these areas, large parts of Western and Central Europe appear suitable, so we can expect further expansion of this species in the future. These results provide managers with the opportunity to prepare for the future colonization by the jackals in areas, where expansion is most likely.

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