Risk Mapping of Wolf (*Canis lupus*) Attacks on Human and Livestock in Ardabil Province by Spatial Modeling Using Maximum Entropy (MaxEnt) Method

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Abstract

Based on historical data, wolf is one of the large carnivores which suffers from human-wildlife conflicts especially in the animal husbandry field. In this research we tried to model wolf attacks to the humans and livestocks in Ardabil Province, and give some relevant recommendations. Focusing on the wolf attacks data (both human and livestocks), recorded during 10 years (2004–2014), we carried out risk zoning by MaxEnt modelling approach. The results indicated that both models had an excellent performance for predicting the pattern of wolf attacks on human (AUC = 0.91) and livestocks (AUC = 0.89). Also, I found that 28 and 12 percent of the province face with the highest probability of wolf attacks on human and livestocks, respectively. MaxEnt model showed that variables including distance to irrigated farms, distance to human settlements and human density are the most important factors affecting the incidence of human-wolf conflicts in the study area. The results indicated that the areas of attack to the human are completely overlapped by areas where attacks to the livestock were recorded. The risk maps obtained in this study can be considered as a useful tool in the management of the human-wolf conflicts in the study area.

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