

基于 MaxEnt 模型和 ArcGIS 预测南京市人与野猪冲突的空间分布

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摘要:【目的】预测南京市人与野猪冲突的空间分布,划分不同风险等级,建立野猪应急防范机制,同时,为野生动物致害补偿、致害险及差额保费政策提供数据支撑。【方法】通过布设红外相机、问卷调查和资料收集等方法获取了 86 个野猪冲突有效分布位点,综合运用 MaxEnt 模型和 ArcGIS 分析和预测南京市人与野猪冲突的潜在分布区。【结果】南京市人与野猪冲突的高风险地区集中在溧水无想山、江宁汤山和浦口老山等周边区域,高风险区面积 266.69km²,占全市总面积的 4.05%,林地及周边居民所面临的野猪致害风险较大;中风险区面积为 982.78 km²,主要分布在林地外围,占市域面积的 14.92%;低风险区面积为 5337.50km²,主要为远离山区及林地的区域,占市域面积的 81.03%。【结论】距林地距离、海拔和最干季度降水等环境因子对预测模型的贡献率较高,表明人与野猪冲突风险区的分布与林地、海拔和降水等环境因子有关。南京市人与野猪冲突分布区的区域性特点明显。

关键词: MaxEnt 模型; 人与野猪冲突; 空间分布; 南京市

Spatial distribution of human-wild boar conflicts in Nanjing City based on MaxEnt model and ArcGIS

Abstract: 【Objective】 To predict the spatial distribution of conflicts between humans and wild boars in Nanjing, classify different risk levels, establish an emergency prevention mechanism for wild boars, and provide data support for wildlife damage compensation, damage insurance and differential premium policies. 【Method】 86 effective distribution sites of wild boar conflict were obtained by setting up infrared cameras, questionnaire survey and data collection. MaxEnt model and ArcGIS were used to analyze and predict the potential distribution area of human-wild boar conflict in Nanjing. 【Result】 The high-risk areas of human-wild boar conflict in Nanjing were concentrated in the surrounding areas such as Lishui Wuxiang Mountain, Jiangning Tangshan Mountain and Pukou Laoshan Mountain. The high-risk area was 266.69 km², accounting for 4.05 % of the total area of the city. The risk of wild boar damage faced by forest land and surrounding residents was relatively high. The medium risk area was 982.78 km², mainly distributed in the periphery of forest land, accounting for 14.92 % of the city area. The area of low risk area is 5337.50 km², which is mainly away from the mountainous area and forest land, accounting for 81.03 % of the city area. 【Conclusion】 The contribution rate of environmental factors such as

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distance from forest land, altitude and precipitation in the driest quarter to the prediction model was higher, indicating that the distribution of human-wild boar conflict risk areas was related to environmental factors such as forest land, altitude and precipitation. The regional characteristics of the conflict distribution area between human and wild boar in Nanjing are obvious.

Key Words: MaxEnt model; Human-wild boar conflicts; Spatial distribution; Nanjing.