

Indicator species analysis of some wild mammals; A case study of Ağlasun

Halil Süel^{1,*}, Berna Yalçınkaya², Ahmet Mert²

¹ Süleyman Demirel University, Sütçüler Vocational School, Forestry Department, Isparta

² Süleyman Demirel University, Faculty of Forestry, Department of Wildlife Ecology and Management, Isparta

* Corresponding author: halilsuel@sdu.edu.tr

Abstract: The purpose of natural resource management is to protect components and habitats of wildlife. In Turkey, mammals with 170 species are important part of the wildlife. The coexistence of mammalian species in the ecosystem is an important indicator that the ecosystem is in balance. Therefore, this study was carried out to determine the conditions related to each other of some wild mammals distributed in Burdur-Ağlasun district. In this study, absence-presence data based on sign and tracks of wild mammals were collected from 70 sample plots. Statistically, five species were sampled at adequate levels. Sample areas were divided to groups with Cluster analysis (Ward's method of Jaccard indices) using PC-ORD. To see the relationships between groups and mammals, Chi-square test was performed with SPSS. Indicator species and relationship orientation of these species were determined by using interspecific correlation analysis for important ones. A correspondence analysis was carried out with the Past program to see the situation of groups and wild animals with sample areas. Cluster analysis separated sample areas into three groups. As a result of the Chi-square, the group A with Badger, Red fox and Beech marten, the group B with Badger and Red fox, the group C with Badger, Red fox and Beech marten were related ($p < 0.05$). Indicator species of groups A, B and C were determined by interspecific correlation analysis. While the group A showed negative relationship with the Badger ($p: 0,000$), it showed positive association with Red fox ($p: 0,000$) and Beech marten ($p: 0,000$). In addition, direction of relationships of B group's indicators were to negative Red fox ($p: 0,005$), positive Badger ($p: 0,000$). Red fox ($p: 0,000$), Badger ($p: 0,000$) and Beech marten ($p: 0,000$) were found as negative indicators of the group C. When the result of the Correspondence analysis was examined, it was seen that the European hare and Wild boar were almost equally distant from the three groups. As a result of this study, it seems that own habitats of species (except for European hare and Wild boar) sharply separated. Since Wild boar and European hare are found in almost all areas, it is possible to say that these species are on a wide scale in terms of their territory and ecological desires. Finally, this study is also important in that it shows the mentioned analysis methods can be used to reveal the relationships of the species with each other.

Keywords: Ağlasun district, Correlation analysis, Correspondence analysis, Indicator species, Interspecific correlation analysis, Mammals, Wildlife

Acknowledgement

We thank to project 4123- YL1-14 supported by the Coordination Unit for Scientific Research Projects, Süleyman Demirel University.