

Altitudinal stratification and habitat selection of rodents in Dana Nature Reserve, Jordan

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Abstract. An analysis of the spatial distribution of 12 rodent species in Dana Nature Reserve, Jordan, showed that the Mediterranean zone has the highest number of species whereas the Irano-Turanian mid-altitude steppe zone has the lowest number. *Apodemus mystacinus* was confined to higher altitudes with a dense vegetation of oak trees, whereas *Gerbillus gerbillus* was found to be restricted to sand dune habitats with xerophilic vegetation. The distribution of the other species was analysed based on vegetation cover and substratum texture.

Kurzfassung. Eine Analyse der räumlichen Verteilung von 12 Nagern im Dana-Naturschutzgebiet in Jordanien zeigte, dass in der Mittelmeerzone die höchste Artenzahl vorkommt, in der irano-turanischen Steppenzone in mittleren Höhen die niederste. Das Vorkommen von *Apodemus mystacinus* ist auf höhere Lagen mit dichten Eichen-Beständen beschränkt, während der Lebensraum von *Gerbillus gerbillus* von Sanddünen mit xerophiler Vegetation gebildet wird. Die Verbreitung der anderen Arten wurde auf Grundlage der Vegetationsdecke und der Textur des Substratums analysiert.

Key words. Rodents, spatial distribution, habitat selection, Dana, Jordan, ecology, Middle East.

Introduction

Several studies have addressed the spatial distribution of rodent communities in the Middle East. For example, ABRMSKY et al. (1985) studied the community structure and geographical ecology of gerbils in sand dune habitats in Palestine; KRASNOV et al. (1996) studied the habitat distribution of 12 rodent species in the Negev Highland, Palestine; and YİĞİT & ÇOLAK (1998) made an analysis of the rodent communities in 17 habitats across Turkey. In Jordan, 28 species of rodents have been recorded (AMR 2000). Only one study, which was carried out in the Eastern Desert, deals with the ecological requirements of rodents (SCOTT & DUNSTONE 2000). The present study describes the spatial distribution of rodent communities in four different habitats in Dana Nature Reserve.

Study area

Dana Nature Reserve is located in south-western Jordan. It extends over 229 km²; its elevation rises to 1500 m a.s.l. (in the north-east of the reserve) and decreases to -100 m below sea level (in the south-west of the reserve). Details of the study area have been described previously (AMR et al. 1996). Four different types of vegetation zones are present in the reserve (Fig. 1):

1. Mediterranean semi-arid forest vegetation (I) with abundance of *Juniperus phoenicea*,