

Small mammals of the Mongolian mountain steppe region near Erdensant: insights from live-trapping and bird pellet remains.

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Abstract

Relatively little is known of the distribution, abundance and ecology of small mammals in Mongolia and as a result there is scant knowledge of the effects of environmental and anthropogenic factors on small mammal populations. The aim of this study was to assess the occurrence of small mammals in mountain steppe habitat from live-trapping and analysis of mammal remains from raptor pellets and below nests. During live-trapping, root voles (*Microtus oeconomus*) were the most commonly caught species accounting for 47.5 % of captures, striped hamsters (*Cricetulus barabensis*) and pika (*Ochotona hyperborea*) accounted for 30 % and 22.5 % of captures respectively. Temperature influenced trapping success, with small mammals appearing to avoid being active at temperatures over 20°C. The three species caught on the trapping grid appeared to avoid competition for resources through both temporal and spatial differences in the use of available habitat. Mammals identified from raptor pellets and other remains included the grey hamster (*Cricetulus migratorius*), Siberian marmot (*Marmota sibirica*), red fox (*Vulpes vulpes*), long-tailed souslik (*Citellus undulatus*) and the Daurian mole (*Myospalax aspalax*). Results are discussed in terms of their relevance to the conservation of mammals in Mongolia and their co-existence with livestock and humans.

Key words: grazing, livestock, live-trapping, mammal, Mongolia, niche overlap.

Introduction

Relatively little is known of the distribution, abundance and ecology of small mammals in Mongolia (Clarke *et al.* 2006) and as a result there is scant knowledge of the effects of environmental and anthropogenic factors on small mammal populations. More than 25 % of Mongolia is classified as mountain-steppe (Mallon, 1985) and a variety of small mammals occur in this habitat type. However mountain steppe regions are also increasingly occupied by humans, resulting in wildlife being threatened by competition with livestock for pasture and water and illegal hunting.

Globally, many studies have found a decrease in the abundance and diversity of small mammals with an increase in grazing intensity (e.g. Schmidt *et al.*, 2005). In Mongolia, livestock stocking rates are increasing at a rapid level in the mountain steppe regions and this can result in grass on the steppes

being shorter and sparser, with reduced soil moisture content, which is predicted to alter small mammal diversity and species composition (Wang *et al.*, 2003). Outbreaks of Brandt's vole (*Microtus brandti*), in conjunction with grazing pressure, can drastically defoliate grasslands. However, poisoning to control Brandt's vole can also negatively impact on other native mammals and birds (Natsagdorj & Batbayar, 2002). A number of small mammals in the steppe regions are hunted for food and fur, such as the Siberian marmot (*Marmota sibirica*) and some species of ground squirrel (*Citellus* spp.).

The aim of this study was to assess the occurrence of small mammals in the mountain steppe region near Erdensant, Töv aimag, from live-trapping and analysis of mammal remains from raptor pellets and below nests. We also collected some preliminary ecological data on species overlap and discuss possible mechanisms which allow species