

# Diet of the Lesser Kestrel, *Falco naumanni*, in Israel

(Aves: Falconiformes)

Grzegorz Kopij, Ifat Liven-Schulman

**Abstract.** The food of the Lesser Kestrel (*Falco naumanni*) was studied by means of pellet contents analysis. A total of 645 entire pellets was collected, 550 pellets from the urban area of Jerusalem, 71 pellets from a rural area (a farmland) in Alona Region, 12 pellets from a natural area in the Judean Desert and 12 pellets from a quarry near Rosh Hain. Grasshoppers (Orthoptera), beetles (Coleoptera) and sun spiders (Solifugae) constituted the bulk of the diet. Numerically, grasshoppers and beetles were almost equally important (38.5% and 42.2% respectively), while sun spiders were much less numerous (11.7%). However, in terms of biomass, grasshoppers (54.7%) were far more important than beetles (18.8%) and sun spiders (20.6%). Four beetle families, viz. Carabidae, Scarabaeidae, Curculionidae and Tenebrionidae, comprised together 76.8% of all beetle prey items and 81.6% of beetle biomass. Among grasshoppers, the most important family (64.6% by numbers of prey items, 70.4% by grasshopper biomass) was the locusts (Acrididae). Significant month-to-month variations in the proportion of the main prey groups have been recorded. From February to April the Lesser Kestrel fed mainly on beetles, while from May to July it fed mainly on grasshoppers and sun spiders. Beetles and sun spiders comprised a much lower proportion of prey in 1998 (low rainfall) than in 1999 (high rainfall), while the proportion of grasshoppers and other invertebrates (altogether) was higher in 1998 than in 1999.

**Key words.** Diet, Solifugae, Cetoniinae, variation in diet, Jerusalem.

## Introduction

The Lesser Kestrel, *Falco naumanni* Fleischer, 1818, is an endangered species. Its numbers have declined drastically over the last few decades. Depleting food resources is regarded as one of the main reasons for this decline, at least in Europe (BIRDLIFE INTERNATIONAL 2004). Its diet has recently been intensively studied both in its breeding range in southern Europe (LEPLEY et al. 2000, RODRÍGUEZ & BUSTAMANTE 2008, PEREZ-GRANADOS 2010; RODRÍGUEZ et al. 2010) and in its winter quarters in southern Africa (ANDERSON et al. 1998, KOPIJ 1998, 2002, 2004, 2007, KOK et al. 2000, PIETERSEN & SYMES 2010). Both in the breeding and in the wintering areas its main diet comprised orthopterans, termites, beetles and other larger terrestrial arthropods. It has been shown that while in the wintering areas prey availability is not a limiting factor, it probably limits abundance of this species in the breeding range. However, in south-west Asia, which can be viewed today as a stronghold of the Lesser Kestrel breeding population, its diet has only been quantified in northern Iran (KHALEGHIZADEH & JAVIDKAR 2007, 2010).

In this paper, the diet composition of Lesser Kestrels breeding in Israel has been quantified by means of the pellet content analysis. Variations in the diet in relation to the habitat, month and year have also been analysed.