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Comparison of Saker Falcon *Falco cherrug* Predation during and after the Breeding Period

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ABSTRACT

Sakers are monogamous birds often hunting together in pairs. Sakers change hunting strategy seasonally according to the available prey. Therefore the composition of their food changes too. Observations carried out on one pair of Saker Falcon in the breeding periods of 2001 and 2002 and in winter 2002 aimed at the determination of their food composition and their hunting behaviour. Starling *Sturnus vulgaris*, Suslik *Spermophilus citellus* and pigeons (*Columba* spp.) were found to be the most common prey during the breeding period, and about 90% of the hunts was carried out by the male. In winter the falcons often seized prey from Common Buzzards *Buteo buteo*, Rough-legged Buzzards *Buteo lagopus*, Hen Harriers *Circus cyaneus* and Kestrels *Falco tinnunculus*, hunting in 84% of the observed cases co-operatively. Results are preliminary and represent only information about a single pair. Other pairs can have a completely different prey composition, especially in lowland areas. However, the results indicate great pressure on the male during the breeding season.

INTRODUCTION

The Saker Falcon *Falco cherrug* breeds both in the lowlands and mountainous areas in Hungary, on trees and cliffs. Breeding pairs often specialise on certain prey common around the nest, such as suslik *Spermophilus citellus*. The diet changes completely in the winter because doves and starlings are migrating and the suslik is hibernating, therefore domestic pigeons and migrant bird species become the main prey. The formerly fairly abundant suslik used to be the main prey species of Saker Falcons in Hungary. However, it has suffered a dramatic decline in most of the breeding areas of the

Saker, due to which birds nowadays constitute the majority of prey, above all *Columba* spp., *Sturnus vulgaris*, *Pica pica*, *Corvus* spp., etc. In locations where viable suslik populations still exist Sakers prefer suslik to other prey species (Bagyura *et al.* 1994).

This paper presents the results of observations carried out on a single pair of Sakers in two breeding seasons and one winter. The purpose of the observations was to identify prey species taken and their relative abundance, as well as the hunting behaviour of the Saker pair in the breeding season and during the winter. In the breeding period of 2001 two male chicks were raised by the pair and the chicks spent 42 days in the nest; in 2002 two females fledged 46 days after hatching.

METHODS

The observations were carried out in the Börzsöny mountains (Danube-Ipoly National Park) in northern Hungary. The nest site of the Saker Falcon pair was a niche in an old quarry surrounded by *Quercus* and *Fagus* forest with elevations between 500 and 800m. Two pastures on which suslik populations still exist are 7 and 15 km distant, respectively. In winter the pair stayed in the open foraging areas during the day, i.e. in agricultural areas surrounding the mountains. Observations were carried out in the following periods:

- Breeding period in 2001 (27 April – 07 June)
- Breeding period in 2002 (30 April – 14 June)
- Non-breeding period – November-December 2002

Observers used binoculars and telescopes. Observation distance varied during the winter season, and was about 200m from the nest site in the breeding periods. In the breeding season, the time spent by either adult away from the nesting area was considered to be time spent hunting.

RESULTS

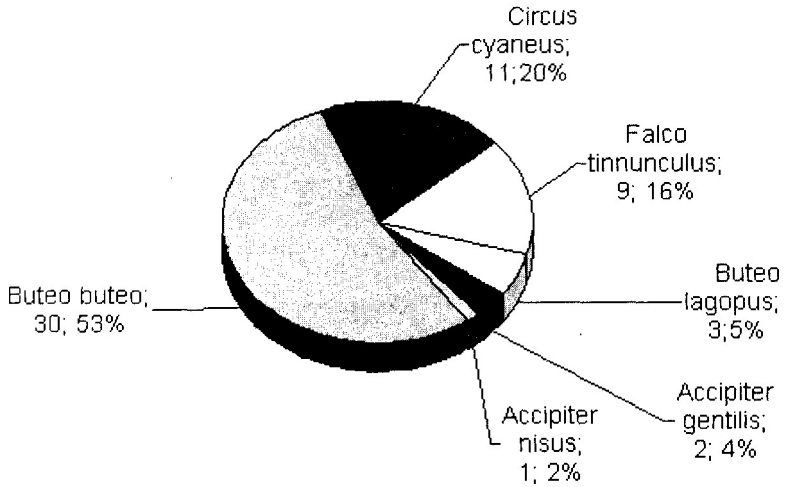
Observations in the non breeding period

In total, 64 hunting attempts were observed, with the following pattern:

- 54 cases (84%): pair hunting co-operatively
- 7 cases (11%): male hunting alone
- 3 cases (5%): female hunting alone

Out of the hunting attempts the falcons were actively hunting in only eight cases (13%), the targeted prey were always pigeons. In 56 cases (87%) the falcons seized prey from other raptors. The two raptor species most often seized from were Common Buzzards *Buteo buteo* and wintering Hen Harriers *Circus cyaneus* (see Figure 1.).

Figure 1. Species from which Sakers seized prey (occasions; percent)



Observations in the breeding period

In the breeding period of 2001, between 27 April and 07 June in total 207 prey items were counted. Eight items could not be identified. The overwhelming majority of the prey was made up by Starlings *Sturnus vulgaris*, followed by pigeons (*Columba* spp.), susliks and doves, as shown in Figure 2.. In the breeding period of 2002 in total 175 prey items were counted. The prey composition in that year was similar to the composition in 2001 (see Figure 3.), the Starling still being the most frequently taken prey, followed this year by the suslik. The chicks were fed almost exclusively by the female; only in exceptional cases did the male feed the nestlings (usually when the female was not present).

Figure 2. Prey species identified in the breeding period of 2001 (number; percentage)

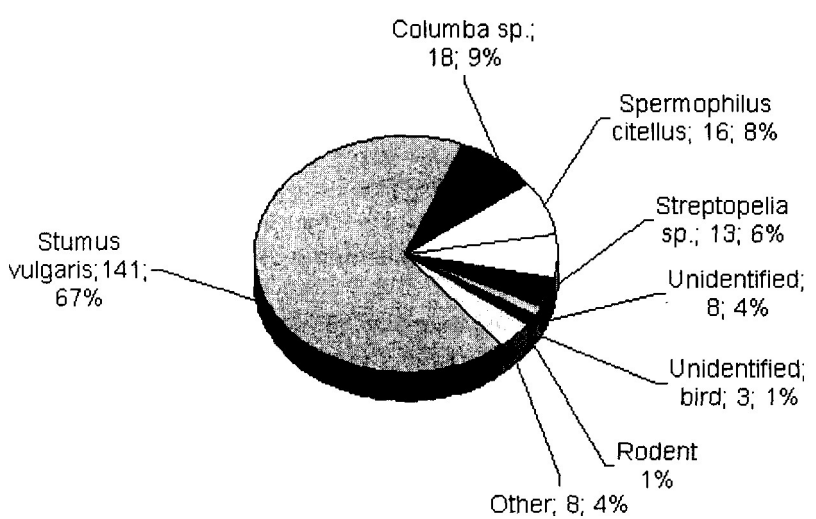
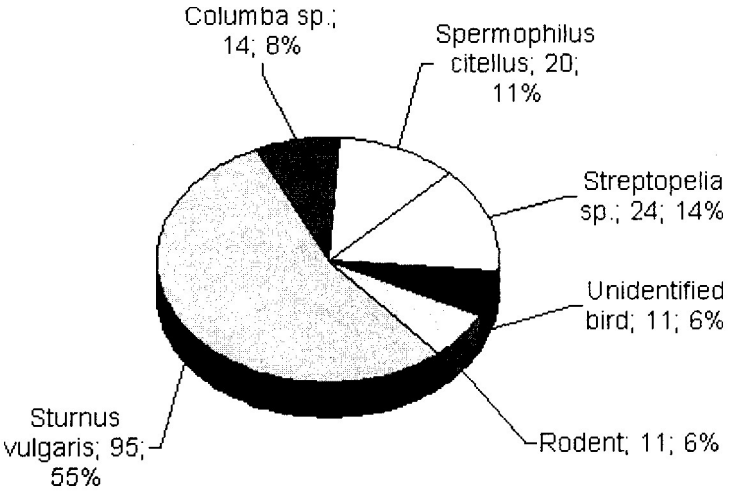


Figure 3. Prey species identified in the breeding period of 2002 (number; percentage)



In the breeding period of 2001 207 hunting excursions of the parents could be observed, out of which the male went hunting on 195 occasions and the female on only 12 occasions. The time spent hunting by the male was 401.22 hours (95% of the total time spent hunting by the adults), while the female spent 19.44 hours on hunting excursions (5% of the total time).

In the breeding period of 2002 a total of 191 hunting excursions were recorded, out of which 157 excursions were made by the male, on 21 occasions the female went hunting and on 13 occasions the pair left for a hunting excursion together. In this year the male spent 373.32 hours (90% of the time spent hunting by the adults) on hunting excursions, while the female spent 36.07 hours (9% of the total time) on that activity, and the pair spent 6.17 hours (1% of the total time) away from the nest site together.

CONCLUSIONS

The results presented above do not allow conclusions to be drawn for even just a part of the Hungarian Saker Falcon population, since they refer to a single pair breeding in mountainous habitat. The food composition of other breeding pairs can be very different, depending on local prey availability. However, the results indicate that there is a strong pressure on the male during the breeding season, which could explain the fact that male Saker Falcons start their moult only toward the end of the breeding period, unlike females that start their moult in spring.

These observations should be extended to other pairs nesting in mountain areas and, most importantly, in lowland habitats. The comparison of results between mountain and lowland pairs could reveal useful information regarding differences in hunting strategies in these habitats, and could help us to explain the population shift in favour of lowland habitats during the last ten years.

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