

Past and present Status of the Lesser Kestrel *Falco naumanni* in Bulgaria

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INTRODUCTION

The Lesser Kestrel's status in Bulgaria is not well known despite many fragmentary data in the specialised literature and even in spite of the species being included in the Red Book of Bulgaria (1985) and the newest monograph on the birds of Bulgaria (Simeonov *et al.* 1990). Our present knowledge of the species' distribution and numbers in the country, as well as its vertical distribution, habitat requirements, migration, adverse factors, etc. is rather general and inadequate. This work aims to shed some light on the Lesser Kestrel's status in the past and during recent years, in order to provide for better preservation of a species known to have declined significantly in numbers throughout its range.

MATERIAL AND METHODS

The present work is based on the authors' own research, done mainly from 1969 to 1991, as well as on all information they were able to gather from the literature, personal communications from other ornithologists, skin collections from the Natural History Museums in Sofia and Plovdiv, taxidermic collections, etc. thus covering a period from 1890 till 1991. Status analysis was based on 204 entries about the species, of which 50 refer to the period ending in 1950 (23 on nesting and 27 on migration) and 154 to the period since 1950 (138 on nesting and 16 on migration). A further eight observations were omitted as the data are insufficiently specific. The Lesser Kestrel's distribution, during both the breeding season and on migration, is shown on a standard UTM (10x10km) grid. Exact locations are stored with the BSPB National Bank for ornithological information. All entries dated before 31st March 1916 were set to the Gregorian calendar. Breeding evidence was determined according to criteria set by the European Ornithological Atlas Committee (EOAC) (Sharrock 1976).

RESULTS

Breeding distribution and numbers

Data on the breeding sites of the Lesser Kestrel for the period 1890 to 1950 are shown in Figure 1. This, no doubt, is far from a full and detailed picture because of the sporadic research done in Bulgaria during the above period of time and resulting fragmentary data.

It is hard to-day to make any assessment of the Bulgarian population of that time but we have every reason to believe it was quite numerous, particularly in certain localities and probably at certain periods. Reiser (1894) gives eloquent proof of this by his observation on 21 June, 1893 of a colony of nearly 100 pairs near the town of Karlovo. There were Lesser Kestrel colonies in many other places throughout the country, especially in Southern Bulgaria (Reiser 1894; Arabadzhiev 1962; Bozhkov 1972, etc.) but data on the number of breeding pairs are absent from most of these publications. It is reasonable to assume that the architecture of villages and towns in those days provided suitable nest sites and there are records of the species breeding in many human settlements at that time.

Figure 2 shows the breeding distribution of the Lesser Kestrel from 1951 to 1991. A total of 86 breeding sites were recorded, of which 42 were confirmed, 14 probable and 30 possible. They are distributed in 65 of the 10x10km UTM squares (by degrees of breeding evidence in 33, 12 and 20 squares respectively). Thus the species has been recorded in 5.2% of all 1,240 UTM squares of the territory of Bulgaria. For the decade 1980-1990 57 breeding pairs were recorded. This is the minimum of confirmed breeding pairs, and it is possible for their number in the wild to be slightly higher as there might be some unknown breeding localities.

Besides, at many localities the species breeds together with the Kestrel *Falco tinnunculus* on high rock faces and cliffs and it is hard to establish the exact number of pairs of each species.

The size of the colonies found during the last decade does not exceed four pairs. Two known colonies for this period were found in the southernmost border areas of the country, the Eastern Rhodope mountains and the heights of Sakar.

From the available data it is difficult to judge with certainty certain peculiarities of the population dynamics of the Lesser Kestrel in Bulgaria for the past 100 years. It is a well-known fact that the European population has shown significant fluctuations, with peak numbers in the periods 1830-1850, 1885-1915 and 1940-1955 and reduced numbers outside these periods (Gensbol 1987). However, the overall trend towards decrease, both in the numbers of birds and of breeding sites and in the range occupied by the species in the country is indisputable. Evidence of this are the abandoned nesting grounds at a number of places, the reduced number of colonies and of birds per colony, as well as the relatively small number of records of this species despite the increase in ornithological studies in Bulgaria.

Figure 1. Breeding distribution of the Lesser Kestrel during the period 1890-1950 (1 - possible breeding; 2 - probable breeding; 3 - confirmed breeding).

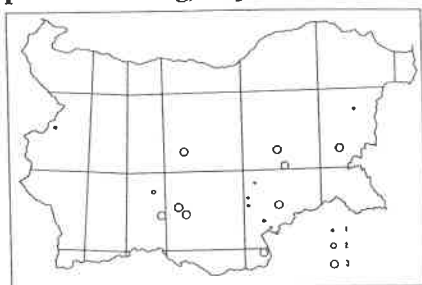
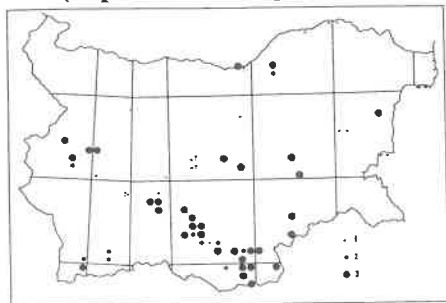


Figure 2. Breeding distribution of the Lesser Kestrel in Bulgaria during the period 1950-1988 (1 - possible breeding; 2 - probable breeding; 3 - confirmed breeding).



Breeding habitats and periods of breeding

The distribution of the Lesser Kestrel by breeding habitat is shown in Table 1. We should stress that rocky terrain is the major breeding habitat for this species in Bulgaria (52.9% of all known sites), namely mountain slopes, gorges, deep ravines etc. with open areas around them where the birds usually hunt. In human settlements 34 nests (32.1%) were recorded but this figure refers to a large extent to the period before 1960-1965, since when the species has virtually ceased to use buildings, rocks and to a large extent trees within the limits of larger human settlements. At present single pairs still breed in some villages. One cannot overlook the relatively higher percentage of nests in trees (20.7%) a fact considered to be exceptional for the European population of the species as a whole (Cramp & Simmons 1979).

Table 1. Habitat distribution of 106 nests of the Lesser Kestrel for the period 1890-1991.

Type of substrate where the nest is built	Habitat	Number	% of all of pairs	Total nests	%
Rocks (on ledges, in niches, hollows, old nests of other species)	open rocky ground, deep ravines in the wild	49	46.3		
	in human settlements	7	6.6	56	52.9
Buildings (mainly under roofs and in hollows)	in human settlements	24	22.7		
	solitary buildings outside settlements	1	0.9	25	23.6
Trees (in hollows, in old nests of other species etc.)	on banks near water	11	10.4		
	in other places	8	7.5		
	in human settlements	3	2.8	22	20.7
Rock quarries, walls of lime-kilns		3	2.8	3	2.8
	Total:	106	100	106	100

The vertical distribution of the Lesser Kestrel during the breeding season in Europe is known to encompass altitudes of up to 500m a.s.l. (Cramp & Simmons 1979). In Bulgaria there are certain variations. Although it may be assumed that there is a certain preference for breeding at altitudes of between 100 and 200m a.s.l., 11 nests have been recorded at not less than 600m and another three were found at not less than 800m.

In the vicinity of nests the earliest records of Lesser Kestrels were made in mid-March (14 March 1988, pers. comm. of E. and I. Krasteniakovi) and breeding pairs were recorded at the beginning of April (5 April 1986). The latest were observed at the beginning of October (2 October 1960, Boev *et al.* 1964). There was a rather late observation of young kestrels just fledged on 7 September 1959 (Arabadzhiyev 1962). Such a late breeding is obviously no exception as there are similar observations of young in down on 9 July 1984 in the Eastern Rhodope mountains (Iankov & Niagolov 1987).

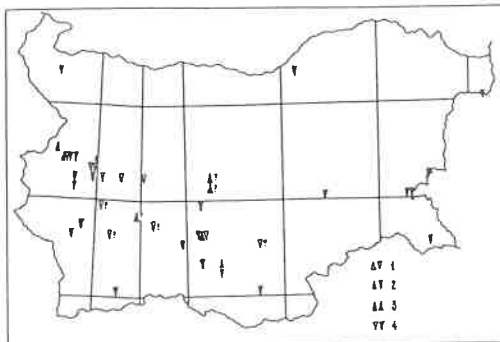
Migration

Figure 3 analyses the available information on seasonal migrations of the Lesser Kestrel. Data shown testify to a comparatively broad front of migration although the birds generally keep to the main flyways. These follow in general 1) Sofia Plain - the river Maritza valley - Sea of Marmara;

2) Sofia Plain - the river Struma valley - the Aegean Sea (the so-called Via Aristotelis flyway); and 3) the Via Pontica flyway along the Black Sea coastline. From our observations it is inferred that Lesser Kestrels do not apparently prefer the latter flyway so much as other soaring migrants. The species migrates over Bulgaria singly or in small flocks consisting of 40 to 50 individuals, as observed by Liedel and Luther (1969) at about 2,000m a.s.l. on Rila mountain on 23 August 1961. The first spring migrants were observed on 14 March 1988 near a nest in north-east Bulgaria (pers. comm. by E. & I. Krasteniakovi). The spring migration lasts until the first ten days of May.

Autumn migration begins at the beginning of August (1 August 1963 - Kalchev 1965), and the last autumn migrant was recorded in Bulgaria on 16 October 1898 (Anon. 1907). The peak was recorded in August: 51 birds for eight observations. In September 14 birds were counted in two observations and only nine Lesser Kestrels were recorded in October during six days in the field.

Figure 3. Distribution of the Lesser Kestrel in Bulgaria during the seasonal migrations (1 - before 1950; 2 - after 1950; 3 - spring migration; 4 - autumn migration).



Mortality and threats

For the 100-year period under discussion we have records of 57 deaths of Lesser Kestrels, of which 29 occurred after 1950. Causes of death are as follows: 50 birds shot by hunters (87.7% of all cases), four young taken from the nest (7.0%) and three (5.3%) dead from unknown causes. It seems most likely that the above figure represents a negligible part of all deaths of Lesser Kestrels during the period and, besides, the causes of death mentioned here far from exhaust the whole range of negative factors affecting the species; for instance, among others, the growing use of agricultural chemicals since the end of World War II, the overall increase in environmental pollution, changes in village buildings, etc.

Protection status

The Lesser Kestrel is protected by law. However, analysis of its breeding sites shows that only nine of them (or 10.5% of all known breeding sites for the period 1951-1991) are situated in protected areas. It seems logical to assume that to place as many as possible of the existing breeding sites under legal protection is an indispensable measure to ensure efficient protection more especially in view of the fact that most of the known causes of death are shooting or taking young from nests. Of course, it is necessary to carry out further research into other factors crucial for the species' survival, along with implementation of specific measures for its preservation.

ACKNOWLEDGEMENTS

The authors wish to thank E. & I. Krasteniakovi, Bob Scott from RSPB, J. Bekhuis, I. Vatev, J.L. Roberts, G. Kuzmanov and M. Mikhov for all information they supplied. Special thanks are due to K. Niagolov for his help in our joint field trips.

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Lesser Sooty Owl *Tyto multipunctata*