

Recordings of Lesser Kestrel in Bosnia and Herzegovina in the 2012- 2022 period

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Introduction

The breeding status of Lesser Kestrel in Bosnia and Herzegovina (B&H) is still unclear. Obratil (1984) listed it as a breeding species in his work on the bird fauna of the karst poljes until 1920, but without data on population size and the locations of breeding colonies. Matvejev & Vasić (1973) described the species as a passage migrant during spring and autumn migration.

Dr Saša Marinković (viva voce) claims that the Lesser Kestrel used to breed at 4 locations in Bosnia and Herzegovina in 1980s. The Lesser Kestrel is currently listed as a breeding species (Kotrošan 2008/09) in Bosnia and Herzegovina, and in an internal publication for the project "Evaluation of IBA in FB&H." (Kotrošan et al. 2012) it is stated that the Lesser Kestrel is the regular breeder with less than 10 breeding pairs in B&H. Neither of these 3 sources listed locations of the colonies or documenting photos.

Data on appearance of Lesser Kestrel in the karst poljes of Bosnia and Herzegovina during 2012- 2017 are published in Topić et al., 2019.

Methods

No systematic research of the Lesser Kestrel has ever been conducted in the B&H. The presented data on the occurrence of this species in B&H during the 2012- 2022 period are opportunistic results of various ornithological research conducted on karst poljes of Bosnia and Herzegovina e.g., monitoring of birds for designation of new IBA sites during which 22 largest karst poljes are visited at least once a month during 2016-2017.

At roosting sites birds were counted while returning from their foraging grounds to the roost in the evening hours, from 6 pm to 7.30 pm. The birds at the roosting sites were not systematically nor simultaneously counted so it was not possible to determine the total number of ind. who used them.

Results

During the ten-year period, the species has been registered only during the spring and autumn migration. In total, Lesser Kestrel was recorded on 11 karst poljes (Topić et al., 2019, Topić, B. & Topić G., unpubl. data), and on the Mount Šator (Kata Dejanović, viva voce) (Fig. 1; Table 1).

There are only four observations of Lesser Kestrel during spring migration, namely in April and May, and all of them in the eastern part of the country, in Mostarsko Blato and Zijemlje Polje (Fig.1 within green shapes). The earliest observation was on April 25 and the latest on May 26, when 6 individuals were observed in the Mostarsko Blato. Birds are always observed in small numbers from 1 to 8.

From the beginning of August to the beginning of October, Lesser Kestrel was registered in 9 karst poljes (Glamočko, Kupreško, Kruško, Marinkovci, Pašića, Popovo, Ravanjsko, Vukovsko and Livanjsko; Fig. 4) and on the Mount Šator (within the yellow shapes in Fig 1). The earliest observation during autumn migration was on August 11 in Kupreško Polje, and the latest autumn observation was on October 5 in Popovo Polje. The largest number of individuals, about 200, was counted on August 14, 2017 at the roosting site in Zlosela. On that day, birds were not counted at the other roosting site in Kupreško Polje so the total number of individuals on that day remains unknown. In Bosnia and Herzegovina in autumn most

Lesser Kestrels were noted in karst poljes which are located in higher altitudes, such as Kupreško polje (1150 m), Vukovsko polje (1170 m), Ravanjsko polje (1140 m), Glamočko polje (900 m), Pašića polje (800 m) and Polje Marinkovci (800 m). This species was not observed during autumn migration in karst poljes located in the lower altitudes, except one late observation in Popovo polje (250 m).

Taking into consideration the turn-over of individuals resting in karst poljes, the numbers of Lesser Kestrels are considerably larger than the numbers we have recorded over the last years.)

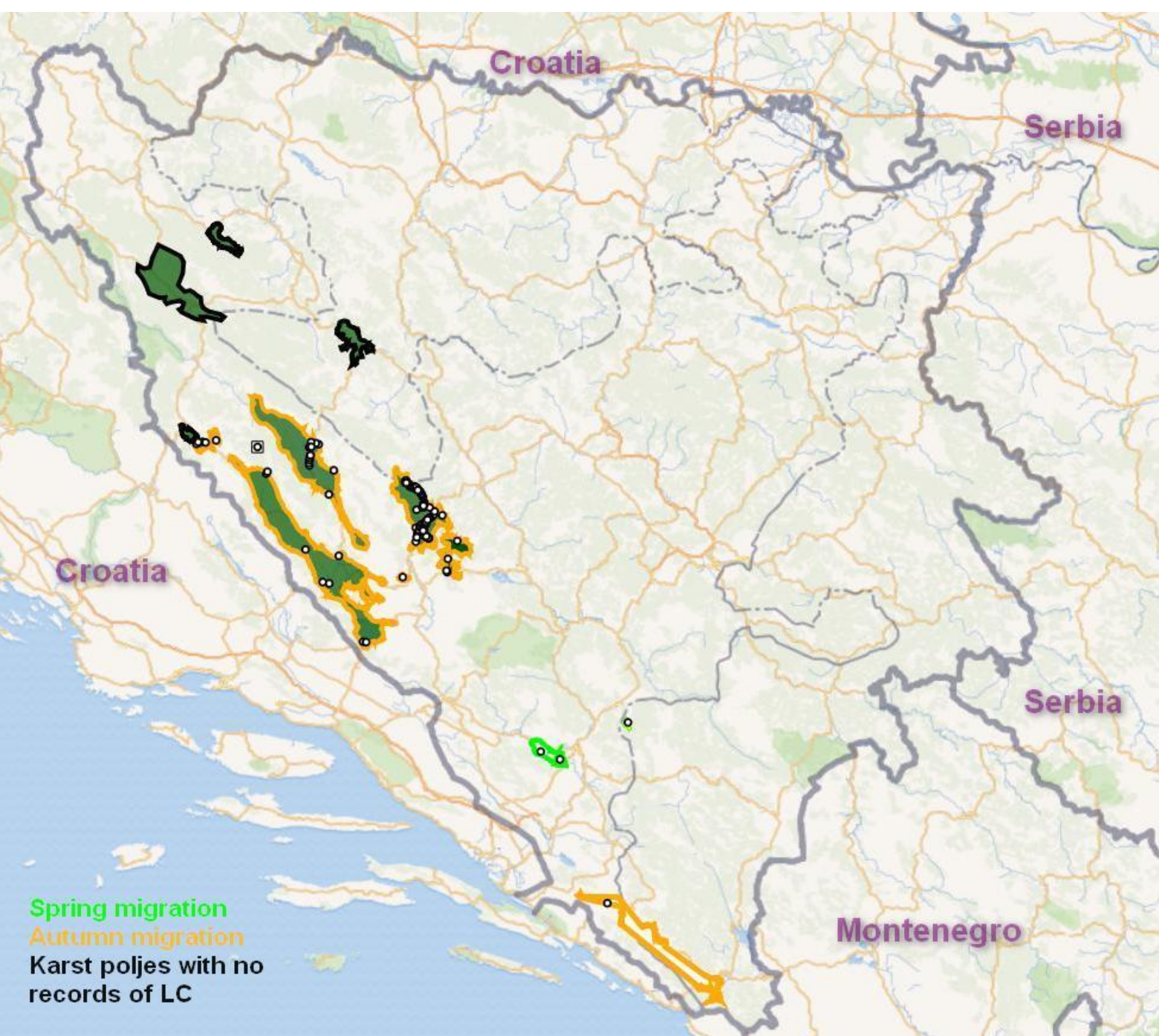


Fig. 1 Karst poljes well researched during the 2012-2022 with locations where Lesser Kestrel was observed (left)

Fig. 2 Lesser Kestrel in roosting site in Zlosela (above). (Photo G. Topić)

Post-breeding communal roosts in Bosnia and Herzegovina

So far only two known roosting sites were found in Kupreško Polje, in the villages of Zlosela and Rilić, in 2016 (Topić et al. 2014/16, Topić et al., 2019).

In Zlosela the birds gathered on Norway spruce (*Picea abies*), Scots pine (*Pinus sylvestris*) but also on electric and telephone lines and rooftops in the centre of the village (Fig. 2). In 2017 with 200 ind. the maximum number of birds were counted at this roosting site on 14 August. The second roosting site was located on than abandoned barns in the village of Rilić with the maximum of 154 ind. of Lesser Kestrel counted on August 15, 2021) (Fig. 3).

As birds were regularly recorded in Glamočko polje and poljes around city of Bosansko Grahovo (Pašića polje and Polje Marinkovci) which are approximately 30 km and 60 km apart from Kupreško polje respectively it is expected that several other roosting sites exist in this part of Bosnia and Herzegovina, probably in the vicinity of Bosansko Grahovo and in Glamočko polje, but this still need to be confirmed.

Fig. 3 Lesser Kestrels in roosting site in Rilić (right). (Photo B. Topić)



Both of the roosting sites are disturbed in the past 5 years. On August 21, 2017, at a time when about 150 individuals were approaching the roosting site in Zlosela, several shots were heard after which the birds flew away. During the following surveys in the same year no birds were observed at this roosting site. Birds used the same roost in the following years but moved about 500 m to the north. The roosting site wasn't active in the August 2022.

Once abandoned stables in the village of Rilić were bought and changed ownership, and 5 out of 9 had a roof replacement in past two years. There were 20-25 ind. recorded on August 16, 2022 in this communal roost.

Numerous wind farms are planned at the perimeter of karst poljes, and one only 1.200 m away from the roost in Rilić, in the foraging zone of Lesser Kestrel.

Postreproductive activities of Lesser Kestrel in Kupreško polje

Lesser Kestrel was registered in Blagaj, Zlosela, Rilić, Rastićevo, Suhova, Otinovci, Milač and Kupres, i.e. in about 60% of the total area of Kupreško polje. The analysis of the spatial distribution of the foraging sites of Lesser Kestrel in Kupreško polje indicates that managed grasslands, i.e. regularly mowed and late grazed meadows are the optimal feeding habitats (Fig. 5). Lesser Kestrels were not registered in the area around Bili Potok, Stražbenica and Mrde Bare which is overgrown with Common Juniper (*Juniperus communis*), Scots pine and wild roses (*Rosa* spp.). The area along the Mrtvica river was not surveyed due to the presence of land mines with the exception of the heavily grazed area around the river Mrtvica's sinking holes where only several Lesser Kestrels were observed.

Fig. 4 Karst poljes with the biggest numbers of Lesser Kestrel individuals recorded during the mid August- mid September, 2012-2022 (right).

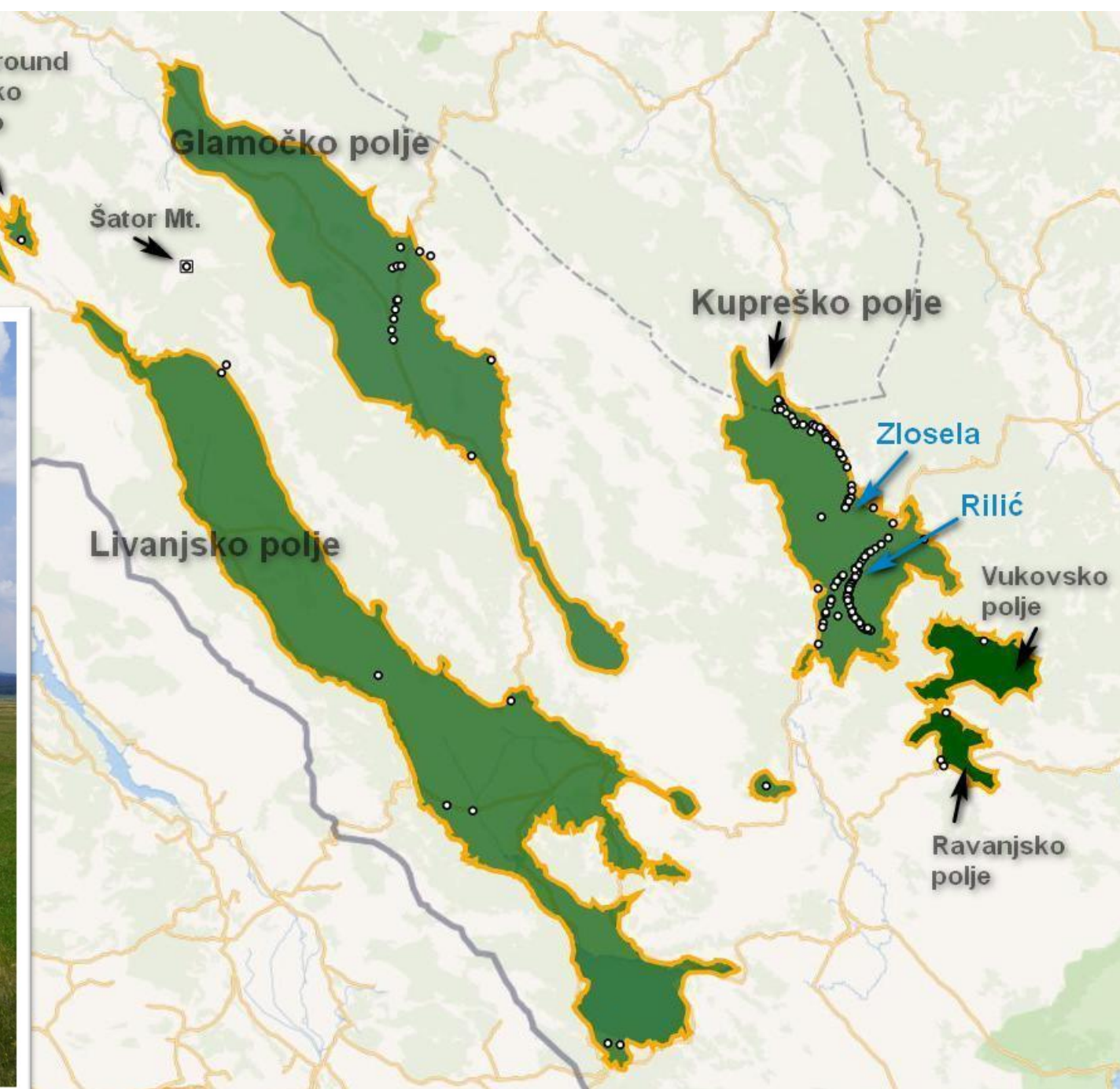


Fig 5 Typical foraging habitats of Lesser Kestrel in Kupreško polje. (Photo B. Topić)

It is still not known where the Lesser Kestrels which were observed in Bosnia and Herzegovina are coming from. One bird fitted with satellite telemetry (very likely) was observed in the roosting site in Rilić on August 12, 2019 (Fig. 6), but it is still not clear where and when it is tagged.

Three (3) individuals, two juvenile and one adult female, of Lesser Kestrel were marked with NAŠE PTICE SARAJEVO metal rings in Kupreško Polje on August 15, 2022 (Fig. 7).



Fig. 6 Lesser Kestrel with possible satellite telemetry. (Photo B. Topić)



Fig. 7 The first Lesser Kestrel marked with metal ring in B&H (Photo G. Topić)

Conclusions

Despite the fact that the data on Lesser Kestrel were not collected systematically, the present results indicate that the karst poljes of Bosnia and Herzegovina are important stop-over and resting sites during spring migration and, especially, the post-breeding movements of this species.

The analysis of the spatial distribution of the foraging sites of Lesser Kestrel in Kupreško Polje indicates that managed grasslands are the optimal feeding habitats.

It is still not known where the Lesser Kestrels observed in B&H are coming from, so future projects related to this species should include detailed surveys on the occurrence of Lesser Kestrel, ideally using methods such as colour marking and telemetry, for investigating the origin and stop-over duration during migration and premigratory dispersion. It will be further necessary to carry out a synchronized count of individuals of this species in karst poljes, and to locate and map the most important feeding sites, as well as roosting sites with the aim of protecting them and reducing the negative impact on this species during migration.

Acknowledgements

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