



Further Range Expansion of the Masked Shrike *Lanius nubicus* (Lichtenstein, 1823) (Aves: Laniidae) in the Balkan Peninsula: the First Record of the Species from Serbia

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Abstract: The masked shrike *Lanius nubicus* (Lichtenstein, 1823) (Aves: Laniidae) is recorded in Serbia for the first time. On the 7th and 24th May and 26th June 2021, one pair and three individuals of the species were observed near village Slavujevac, Preševo Municipality, south Serbia. The occurrence of several birds of both sexes in the two consecutive months during the reproduction period led us to propose that the species is a new breeding species for Serbia. These records confirm the claims about the expansion of the range of the masked shrike to the north and west, respectively, concerning the current distribution in neighbouring Bulgaria and the Republic of North Macedonia.

Key words: Masked Shrike, *Lanius nubicus*, new species, first observation, Rujan Mt., Serbia

Introduction

Shrikes are carnivorous medium-sized passerines belonging to the family Laniidae. Worldwide, there are three genera with 33 species. The distribution range includes all continents except Australia and South America (WINKLER et al. 2020). Altogether, six species breed in Europe (KELLER et al. 2020). Shrikes inhabit a variety of edge and open habitats such as grasslands, sand-sage, pastures, agricultural areas and open woodlands, with shrubs and scattered trees providing nesting and foraging grounds (LEFRANC & WORFOLK 1997, WINKLER et al. 2020).

One of the least known and poorly studied species in Europe is the masked shrike *Lanius nubicus*

(Lichtenstein, 1823). The breeding distribution of monotypic masked shrike is confined to South-eastern Europe, Asia Minor, the Levant countries as well as disjunct populations eastwards in parts of Iran, Iraq and probably Afghanistan (LEFRANC & WORFOLK 1997, YOSEF & ISWG 2020). It is a summer visitor, arriving from late April to mid-May to breed and leaving during August to return to its wintering grounds in eastern and northeastern Africa (YOSEF & ISWG 2020). The masked shrike is commonly found in natural open woodlands with shrubs and glades or large solitary trees during the breeding season. It is monogamous and both sexes build the nest, which is usually placed in a dense shrub and small trees surrounding open habitats (LEFRANC &

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WORFOLK 1997). Most of its diet consists of grasshoppers and beetles, although it occasionally consumes other insects and small vertebrates (LEFRANC & WORFOLK 1997). The European population is roughly estimated at 36,300-105,000 pairs (BirdLife International 2021).

This short article reports the first sighting of a masked shrike in Serbia. In addition, we provide a brief description of its identification, behaviour and habitat.

Materials and Methods

The fieldwork was carried out on the 6th, 7th, 24th May, and 26th June of 2021, on the slopes of mountains Starac (840 m a. s. l.) and Rujan (968 m a. s. l.) in southern Serbia. The study area was characterised by an arid mosaic landscape dominated by shrubby and grassy habitats, with small arable plots in the vicinity of the villages. The climate of this region is temperate continental with an influence from the Mediterranean climate. Therefore, summers are significantly warmer and drier, and precipitation is lower than those in the other parts of Serbia (RAKIĆEVIĆ 1980, AVRAMOVIĆ et al. 2005). A combination of line transects and point counts have been used to estimate the abundance and diversity of bird species and their populations relevant for establishing the national ecological network and the EU Natura 2000 network of protected areas. We focused on collecting data on species listed in Annex 1 of the Birds Directive (Council Directive 2009/147/EC on the conservation of wild birds) and the species listed as strictly protected in the national legislation. We used binoculars (10×42) for observation. All collected data on observed species were stored in the Android application maintained by the Institute for Nature Conservation of Serbia. Rarer bird species were identified by using SVENSSON et al. (2009).

Results

Shortly after 1 pm, on 7th May 2021, close to the village Slavujevac (Preševo Municipality, S Serbia) near Aljunjštica creek and the state border between Serbia and the Republic of North Macedonia (UTM 34T EM 68; N 42.284150° E 21.778102°; 545 m a. s. l.), we observed an adult individual of the masked shrike. The bird was initially observed from about 70–80 m during a short flight from one bush to another. At first glance, the observers' attention was drawn to the conspicuously black-and-white colour of the upper parts (especially wings) without the chestnut tones on the head characteristic of the

woodchat shrike *Lanius senator* Linnaeus, 1758 – a relatively abundant and common bird species in this area. After we approached the bush at approximately 30–40 m and took a closer look, we confidently confirmed the identification of the masked shrike. Besides generally black-and-white plumage, we noticed the following good visible characteristics of the observed individual: bright orange flanks and underparts, extensive white scapular patches, broad white forehead and relatively plain black bill. Also, the bird was significantly smaller, slimmer, and more delicate than woodchat shrike. Based on the colour pattern, we concluded that it was a male (Fig. 1). During the 20 minutes of observation, the bird characteristically wagged its tail while the wings were slightly drooped. Furthermore, the observed specimen was vigilant in our presence, staying mainly at the pasture's edges, always keeping to the sides of bushes and low trees, and in shadow, unlike other shrike species found in Serbia. During the observation, we took a series of documentary photographs.

Around 30 min. after the first record, a female appeared in the same bush next to the male. This bird had a noticeably smaller and less intense orange patch on the flanks. Additionally, the plumage on the upper parts was dull, not bright black. On 18th May 2021, during additional fieldwork in the above-described location, three specimens of the masked shrike were recorded. The fourth author watched the probably previously registered pair chasing the third bird from the territory on that occasion. On 26th June 2021, we attempted to find more definite evidence of breeding (such as finding occupied nest or recently fledged nestlings) but without success. Again, three adult birds were observed in the same area near the creek. However, the individuals were much less territorial than during the first two visits. They did not chase each other and did not react to other bird species in the vicinity.

The landscape where the masked shrikes have been observed consisted of three smaller habitat units: dense shrubs along the Aljunjštica Creek, scattered forest vegetation on the southeast and southwest oriented slopes and open terrain in the form of pastures, meadows and a few tiny arable patches (Fig. 2).

The complete area has an influence by the warm Mediterranean climate with a significant number of thermophilic species and plant associations (RANDELOVIĆ & RUŽIĆ 1983). Grassy habitats are dominated by dry sub-Mediterranean and sub-continental steppe formations from low to medium-tall herbaceous plants, mainly of the family Poaceae, Cyperaceae and Juncaceae found on silicate substrate



Fig. 1. Masked shrike *Lanius nubicus* (male) observed in May – June 2021 near the village Slavujevac, Preševo Municipality, south Serbia.



Fig. 2. Biotope where the masked shrike *Lanius nubicus* has been observed in Serbia, June 2021.

(STANKOVIĆ 2015). Thermophilic deciduous, acidophilic and partly mesotrophic forest communities dominate among the bush and forest cover (STANKOVIĆ 2015). The most common species in this habitat belong to the genera *Quercus*, *Fraxinus*, *Carpinus*, *Crataegus*, *Paliurus*, *Acer*, *Rosa* and *Prunus*.

Despite our several visits to the locality and habitat sharing with sympatric red-backed shrike *Lanius collurio* Linnaeus, 1758 and woodchat shrike,

we recorded only once an interaction with another species when the male red-backed shrike chased the female of masked shrike out of its territory.

Discussion

To our knowledge, described observation represents the first finding of this species in Serbia and the fifth shrike species altogether in the country.

So far, the masked shrike has not been either in the checklist of the bird species recorded in Serbia (VASIĆ 1995, Šćiban et al. 2015) or in the National Rulebook on the Designation and Protection of Strictly Protected and Protected Wild Flora, Fauna and Fungi (Official Gazette of Republic of Serbia No. 5/2010, 47/2011, 32/2016, 98/2016). However, our finding of the masked shrike in Serbia is certainly not unexpected, given the decades-long expansion of the range, significant population growth in the neighbouring Republic of North Macedonia and Bulgaria (VELEVSKI 2001, DEMERDZHIEV & STOYCHEV 2008, BIRDLIFE INTERNATIONAL 2015) and the estimated shift in the species' distribution in future years (NIJSSEN 2020). The masked shrike range extension was quite well documented in Bulgaria and North Macedonia in the past decades (VELEVSKI 2001, DEMERDZHIEV & STOYCHEV 2008). The first accepted record for Bulgaria dated from 1963 in the Eastern Rhodope Mountains (MAUERSBERGER & STUBBS 1963), while the first breeding was proven in 1976 in the Maleshevska Mt. in southwestern Bulgaria (VATEV et al. 1980). In the Republic of North Macedonia, the first record of the species dated from 1917 from the southern part of the country (VELEVSKI 2001). Recent studies have shown that 300–500 pairs nest in North Macedonia and that the distribution range is slightly expanding towards the north of the country, especially along the Pčinja River (VELEVSKI 2001). According to VELEVSKI (2001), the northernmost finding of the Masked Shrike in North Macedonia is located about 7 km south of the observation site in Serbia. Therefore, it was a matter of time for the masked shrike to be recorded in Serbia. From a broader perspective, this range extension could be associated with a level of climate warming as the distribution of a significant number of bird species is expected to move towards the North or South Pole due to rising temperatures and less precipitation (THOMAS & LENNON 1999, SHI et al. 2006).

Apart from core distribution areas in the North Macedonia, Bulgaria, Greece and Turkish Thrace (VELEVSKI 2001, NIJSSEN 2020), this species is an extraordinary rare vagrant in other neighbouring countries, with only one observation from east Romania in May of 2019 (<https://rombird.ro/>). We could not find any published data or official records from other countries. In terms of habitat preferences, our finding is consistent with previously described preferences for mountain foothills from south-eastern Bulgaria (DEMERDZHIEV & STOYCHEV 2008) and southern parts of the Balkan Peninsula (CHIATANTE 2021).

Future ornithological research in southern Serbia should cover this area in more detail in order to determine whether the finding of masked shrikes is a consequence of population pulsation on the northern edge of its distribution or there is a permanent colonisation northwards in progress, establishing a new distribution limit of this Mediterranean species.

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References

- AVRAMOVIĆ D., ZLATKOVIĆ B., RANDELOVIĆ N. 2005. Protected areas of nature in southeastern Serbia. Proceeding of the 8th Symposium on the flora of Southeastern Serbia and neighbouring regions, 20-24 June, Niš, Serbia.
- BIRDLIFE INTERNATIONAL 2015. European Red List of Birds: Masked Shrike *Lanius nubicus*. Luxembourg: Office for Official Publications of the European Communities.
- BIRDLIFE INTERNATIONAL 2021. Species factsheet: Masked Shrike *Lanius nubicus*. Downloaded from <http://www.birdlife.org> on 08/06/2021.
- CHIATANTE G. 2021. Habitat requirements of the Masked Shrike *Lanius nubicus* in the southern Balkans. *Bird Study* 68 (2): 198–210.
- DEMERDZHIEV D. & STOYCHEV S. 2008. Status of the Masked Shrike *Lanius nubicus* in Bulgaria. *Acrocephalus* 29 (137): 99–104.
- KELLER V., HERRANDO S., VOŘÍŠEK P., FRANCH M., KIPSON M., MILANESI P., MARTÍ D., ANTON M., KLVAŇOVÁ A., KALYAKIN V.M., BAUER H.-G. & FOPPEN B. P. F. 2020. European Breeding Bird Atlas 2: Distribution, Abundance and Change. European Bird Census Council & Lynx Edicions, Barcelona, ES.
- LEFRANC N. & WORFOLK T. 1997. Shrikes: A guide to the shrikes of the World. UK, Mountfield, Pica Press. 192 p.
- MAUERSBERGER G. & STUBBS J. 1963. Drei für Bulgarien neue Vogelarten. *Journal für Ornithologie* 104: 440–441.
- NIJSSEN M. 2020. Masked shrike *Lanius nubicus*. In: KELLER V., HERRANDO S., VOŘÍŠEK P., FRANCH M., KIPSON M., MILANESI P., MARTÍ D., ANTON M., KLVAŇOVÁ A., KALYAKIN V.M., BAUER H.-G. & FOPPEN B. P. F. (Eds.): European Breeding Bird Atlas 2: Distribution, Abundance and Change. ES, Barcelona, European Bird Census Council & Lynx Edicions. 542 pp.
- RAKIĆEVIĆ T.L. 1980. Klimatsko rejoniranje SR Srbije. *Zbornik radova Geografskog instituta* 27: 29–42.
- RANDELOVIĆ N. & RUŽIĆ M. 1983. Pastoral vegetation on serpentine in south-eastern Serbia (*Festuco-Plantaginietum* association on serpentine). *Bulletin du Muséum d'Historie Naturelle series B* 38: 55–61.
- SHI J.-B., LI D.-Q. & XIAO W.-F. 2006. A review of impacts of climate change on birds: implications of long-term studies. *Zoological Research* 27 (6): 637–646.

- STANKOVIĆ M. 2015. Floristic characteristics of the habitats in the surroundings of Slavujevac (SE Serbia). Master thesis. The University of Niš, Faculty of Sciences and Mathematics, Department of Biology and Ecology. 135 p. (in Serbian).
- SVENSSON L., MULLARNEY K. & ZETTERSTRÖM D. 2009. Collins Bird Guide. Second edition. UK, London: Harper Collins.
- Šćiban M., RAJKOVIĆ D., RADIŠIĆ D., VASIĆ V. & PANTOVIĆ U. 2015. Birds of Serbia: critical list of species. RS, Novi Sad: Institute for Nature Conservation of Vojvodina Province & Bird Protection and Study Society of Serbia.
- THOMAS C. & LENNON J. 1999. Birds extend their ranges northwards. *Nature* 399: 213.
- VASIĆ V. 1995. Diverzitet ptica Jugoslavije sa pregledom vrsta od međunarodnog značaja. In: STEVANOVIĆ V. & VASIĆ V. (Eds.): Biodiverzitet Jugoslavije sa pregledom vrsta od međunarodnog značaja. RS, Beograd, Biološki fakultet i Ecolibri.
- VATEV I., SIMEONOV P., MICHEV T. & IVANOV B. 1980. Masked Shrike (*Lanius nubicus* Lichtenstein) – a breeding species in Bulgaria. *Acta Zoologica Bulgarica* 15: 115–118. (In Bulgarian).
- VELEVSKI M. 2001. New data on the distribution of the masked shrike *Lanius nubicus* in Macedonia: further evidence for the expansion of its range on the Balkan Peninsula. *Acrocephalus* 22 (108): 159–162.
- WINKLER D. W., BILLERMAN S. M. & LOVETTE I. J. 2020. Shrikes (Laniidae), version 1.0. In: BILLERMAN S. M., KEENEY B. K., RODEWALD P. G. & SCHULENBERG T. S. (Ed.): *Birds of the World*. USA, Ithaca: Cornell Lab of Ornithology.
- YOSEF R. & ISWG-International Shrike Working Group. 2020. Masked Shrike (*Lanius nubicus*), version 1.0. In: DEL HOYO J., ELLIOTT A., SARGATAL J., CHRISTIE D. A. & DE JUANA E. (Eds.): *Birds of the World*. Cornell Lab of Ornithology, Ithaca, NY, USA

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