ACTA ZOOLOGICA BULGARICA

Acta Zool. Bulg., in press

Short Communication

Published online 26 July 2021
http://www.acta-zoologica-bulgarica.eu/2021/002537

Evidence for the Occurrence of the Eurasian Pygmy Owl *Glaucidium passerinum* (Linnaeus, 1758) (Strigidae) in the Vitosha Nature Park, Bulgaria

Neli Doncheva*, Radoslava Kuneva, Borislav Vuchkov, Leonora Shtarkova, Bozhidar Simeonov, Svetoslav Mitkov & Iordan Hristov

*Corresponding author: 74 Cherni Vrah Blvd., 1407 Sofia, Bulgaria; E-mail: neli_doncheva@yahoo.com

Abstract: On December 30, 2020 and January 2, 2021, acoustic observations on Eurasian pygmy owl *Glaucidium passerinum* were made in coniferous forests near Brezovitsa Chalet, Vitosha Nature Park, Bulgaria. The analysis of the sonogram confirmed the species identification. This is the first documented observation of *G. passerinum* in the Vitosha Mountains, thus expanding data on the distribution of this species in Bulgaria.

Key words: nocturnal bird of prey, coniferous forest, Nature park

Introduction

Eurasian pygmy owl *Glaucidium passerinum* (Linnaeus, 1758) is one of the rarest owls in Bulgaria. Its population is assessed at 30-120 pairs (Spiridonov et al. 2007) or c. 100 pairs (Spiridonov et al. 2015). The main areas for occurrence of the species are in the Central Balkan National Park, Rila Mts., Western Rhodope Mts., southern parts of Pirin Mts. and Slavyanka Mts, (Spiridonov et al. 2007, 2015). Shurulinkov & Daskalova (2014) have speculated that the species occurs in the Vitosha Mts. due to the habitat suitability and the proximity of the mountains to neighbouring populations. There is only one observation of the pygmy owl at the lower parts of the Vitosha Mts. (Todorov 1983) but it has been characterised as "undocumented" (Spiridonov et al. 2007), being outside the typical habitats for this species.

The possible occurrence of *G. passerinum* in the Vitosha Mts. is of significant importance for the species conservation at the national level. Vitosha is situated in between Rila and Central Balkan Mts. where the species occurs and may act as a stepping stone providing connectivity between the two main populations, thus contributing for the stabilisation of the national population.

In this note, we provide data on the first documented records of *G. passerinum* in the Vitosha Mts.

Materials and Methods

On December 30, 2020, a team of amateur ornithologists (B. Vuchkov, B. Simeonov, L. Shtarkova, R. Kuneva and N. Doncheva) conducted casual ornithological observations in the coniferous belt of the Vitosha Mts. Meteorological conditions during the day were characterised by unusually warm weather for the season, broken cloud cover (7-8/10th), no precipitation, southern winds and lack of snow cover. The route was selected randomly in the area of the Brezovitsa Chalet, following a practice of a bird identification training course organised by the Bulgarian Society for the Protection of Birds / BirdLife Bulgaria (BSPB). Observations were conducted with binoculars 8x42 and georeferenced recorded using GPS coordinates in a specialised application for mobile devices called SmartBirds Pro managed by BSPB. No playback was used to provoke species calls. Existing bird calls were recorded with a photocamera. The sonogram was produced using Audacity 2.4.2 (Audacity 2021) and compared to the freely available collection in the specialised website xeno-canto.org , where the recording was subsequently uploaded under the following link: https://www.xeno-canto.org/621527.

The second visit was conducted to the same area on January 2, 2021. Playback for pygmy owl

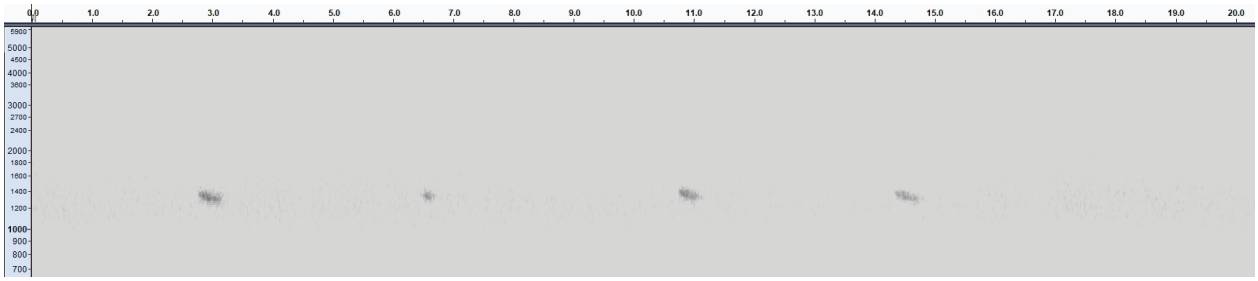


Fig. 1. Sonogram of a pygmy owl territorial call recorded in December 2020, Vitosha Mountains. y-axis – frequency (Hz), x-axis – time (s).

was used for 5-7 times for 2-3 seconds. The observations were conducted at clear sky, no wind, unusually warm weather for the season and lack of snow cover.

Results

During the first visit on December 30th, 2020, a single pygmy owl was registered by its territorial song without the use of playback for provocation. One individual sang for c. two hours (12:30 – 2:30 p.m.), without the use of provocation and we managed to get a recording.

On January 2nd, 2021, a second attempt was made to register the bird around 12:30 p.m. Immediately upon arrival, a single call of a Eurasian pygmy owl was detected, after which the bird stopped calling. No visual observation was performed. Playback was used for 1-2 times for 2-3 seconds to provoke the bird for singing but without a result. The appearance of a Eurasian sparrowhawk (*Accipiter nisus*) caused immense alarm calls of passerine birds in the area. Immediately afterwards, three clear single calls of a Eurasian pygmy owl were heard, followed by three clear and powerful calls of a tawny owl (*Strix aluco*). After the call of the tawny owl, no further calls of a pygmy owl were registered until the end of the day, regardless the use of playback for 3-4 more times for 2-3 seconds.

The sonogram (Fig. 1) showed that the song structure, i.e. frequency range (c. 1400 Hz), syllable length and intervals between them, are comparable to those in pygmy owl recordings from other countries (xeno-canto.org collection).

The habitat where the pygmy owl was found, consisted of Scots pine (*Pinus sylvestris*) and Norway spruce (*Picea abies*), with a sporadic distribution of rowan (*Sorbus aucuparia*) and common beech (*Fagus sylvatica*). The altitude was c. 1500 m. The average age of the stand was about 60-70 years. The terrain had a slight slope to the north and was diversified by meadows and clearings, with groups of withered standing and lying dead trees.

Discussion

The habitat description overlaps with the species requirements (Mikkola 1992). Moreover, during the casual observations, we registered other species such as black woodpecker (*Dryocopus martius*) and a variety of passerines. Greater spotted woodpecker (*Dendrocopos major*) is also a common species in the Vitosha Mts. The occurrence of these birds possibly provides adequate availability of nesting cavities and food resources. The territorial behaviour of the pygmy owl observed during the second visit confirmed the fidelity of the individual to the area.

The Eurasian pygmy owl is among the rarest nesting owls in Bulgaria and is included in the Red-Data Book of the Republic of Bulgaria in the category "endangered" (Spiridonov et al. 2015). The only data on the presence of the species in the region of Vitosha is from 1977 in the region of Dragichevo (800 m a. s. l.) but since then they have remained unconfirmed (Spiridonov et al. 2007). The present study is the first documented observation on the Eurasian pygmy owl in the Vitosha Mts.

Acknowledgments: We thank Dr Boris Nikolov (Institute of Biodiversity and Ecosystem Research, Bulgarian Academy of Sciences) for the preparation of the sonogram and its analysis. He and Dr Petar Shurulinkov (National Museum of Natural History, Bulgarian Academy of Sciences) provided useful comments on various aspects of the study. Special thanks are expressed to the Bulgarian Society for the Protection of Birds (BSPB) for the opportunity to attend the course for field identification and bird watching held within the project ACF281 "Citizens for Nature".

References

Audacity 2021. Audacity for Windows, version 2.4.2. Free Digital Audio Editor. Available at: https://www.audacityteam.org/download/ (accessed on 10 February 2021).

Mikkola H. 1992. Owls of Europe. London: T & A. D. Poyser.

Shurulinkov P. & Daskalova G. 2014. Feathery world (birds). In: Popov A. (Ed.) Natural bounty of Vitosha Nature Park. Vitosha, NMNH – BAS, pp. 122–140.

Spiridonov G., Hristov I. & Velev K. 2007. Eurasian Pygmy Owl *Glaucidium passerinum*. In: Iankov P. (Ed.) 2007. Atlas of breeding birds in Bulgaria. Sofia: Bulgarian Society for the Protection of Birds. Conservation series, Book 10. Sofia, BSPB, pp. 326–327.

Spiridonov G., Nikolov B. & Shurulinkov P. 2015. Pygmy Owl *Glaucidium passerinum*. In: Golemansky V. (Ed.): Red Data Book of Bulgaria. Vol. 2, Animals. BAS & MoEW, Sofia, p. 191.

Todorov N. 1983. The bird species in the area of Dragichevo Ornithological Station. Ornithology Information Bulletin 13/14: 37–58. (In Bulgarian).

Received: 07.03.2021
Accepted: 12.07.2021