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A potential Bio corridor for bears? New data on the occurrence of *Ursus arctos* (Linnaeus, 1758) in the Eastern Balkan Mountains

PAVLINA MARINOVA[1]*, NIKOLAY KOLEV[1], NIKOLAY NATCHEV[1, 2]

[1]*Shumen University "Konstantin Preslavski", Department of Biology 115 Universitetska Str., Shumen, Bulgaria, p.marinova@shu.bg*
[2]*Unit for Integrative Zoology, Department of Evolutionary Biology, University of Vienna, Djerassiplatz 1, 1030 Vienna, Austria*
**Corresponding author*

Abstract. In the present study we provide data on the presence of a Brown bear specimen in the Eastern Stara Planina (Eastern Balkan). We obtained camera-trap images and photographs of the footprints of bears from the region of Varbishki and Rishki passes (Varbishki Prohod and Rishki Prohod). The locations were positioned at over 100 km from the easternmost border of the core population of bears in the central Stara Planina. Our data indicate a potential bio corridor allowing at least for young bears to migrate east along the mountain.

Key words: Carnivora, geographic range, migration.

Introduction

In the past, the Brown bear was widely distributed in the territory of nowadays Bulgaria (Boev 2020). With the intensification of human activities including active hunting and deforestation, the bears disappeared from the flatland and currently inhabit the higher mountain ranges like Vitosha, Pirin, Rila, Rhodopes and the central part of the Balkan Mountains (Frosh *et al.* 2014). Despite the high level of protection of the species from local and international ecological legislation acts, the current tendency of the population of this large carnivore is a slow decrease in numbers (for an overview see Serbezov & Sapassov 2023). In the present study, we provide new data on the presence of the species in a region in the Eastern Balkans which was not reported in the range of the bears.

Material and methods

The observation of a bear specimen was made in the mountains in the region of Rishki Pass (Rishki Prohod) at a locality on the territory of a hunting concession. The concession was issued in 2021. The registration of *U. arctos* was made by direct imaging of the animal with a camera trap and by the documentation of its footprints. The pictures of the bear were taken by a camera-trap "BolyGuard BG636-48M" mounted on a tree in front of a feeding platform for wild animals and provided with a permanent electricity supply. The camera trap was in a regime of picture sharing. We recorded bear position (phototrap location) using a Garmin Oregon 600 hand-held GPS system (Garmin International Inc., Kansas, USA). The datum used to record geographic coordinates is WGS84.

The footprints were detected and documented by the guard of the hunting concession, who would like to remain anonymous. A cell phone made the photographs. The

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authors possess the exact coordinates and all of the images. In case of scientific interest, the data can be provided by the corresponding author.

Results

In the early morning of 25.05.2024 a young specimen of the Brown bear was detected and photographed three times by the camera trap. The first picture was taken at 05.25 h., the second at 05.30 h. (Figure 1) and the last was taken at 05.35 h. The air temperature was 13 C°.

Fig. 1. Image of a Brown bear specimen near a feeding platform in Eastern Balkan Mountains

On 27.05.2024 a linear distance of about 1100 meters east from the position of the camera-trap were photographed three bear footprints (left and right fore-limb and right hind-limb). The scientific team was informed about the presence of the bear on 18.06.2024 and the spot was visited immediately. The bear prints were no more recognizable and the mud was covered by numerous wild boar's footprints.

Discussion

The Brown bear specimen that was captured by the camera trap in the spring of 2024 in the vicinity of the Rishki Pass was not the only one reported for the East Balkan for that period. In addition to the materials published in the present study we received photo documentation for the presence of a bear from the region of Varbitsa Pass. Data on the presence of the bears in the vicinity of Varbitsa town were reported previously (Spassov *et al.* 2022; Serbezov & Sapassov 2023), however, these data were never published officially. Our data confirm the previous observations of bear's presence in the Eastern Balkan Mountains. We propose that the detected animal (animals) belong to the Balkan Mountain populations of Brown bears (see Gavrilov *et al.* 2015), as no other suitable bio corridors reach the region of Varbishki and Rishki passes (see Spassov et al. 1999). The core of the Balkan Mountain Brown bear population inhabits the high-altitude forests in the Central Balkan Mountains (Boev 2020; Spassov *et al.* 2022; Serbezov & Sapassov 2023). Apparently, a corridor exists that allows for bears to migrate for more than 100 km. in the Eastern direction.

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