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New Data on Chamois *Rupicapra rupicapra balcanica* Bolkay, 1925 (Mammalia: Bovidae) in the Western Stara Planina Mtn., Bulgaria

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Abstract: The Balkan chamois *Rupicapra rupicapra balcanica* Bolkay, 1925 has a highly fragmented distribution in the mountainous regions of the Balkan Range, including Bulgaria. In 2022, we recorded chamois using camera traps in two locations outside its known distribution range, i.e. in the municipality of Chuprene on the territory of State Forestry Enterprise Midzhur. This is the first well-documented evidence of the presence of the species in the Western Stara Planina Mtn., Bulgaria. The origin of the animals is, most probably, associated with a poorly documented attempt to reintroduce 12 individuals in the region in 2016, with no proper follow-up monitoring or official progress report.

Key words: reintroduction; survival; long-distance dispersal; outside reported distribution

Introduction

Although the Balkan chamois *Rupicapra rupicapra balcanica* Bolkay, 1925 is included in the Bulgarian Biodiversity Law as *Strictly Protected* (Appendices 2 and 3) (Bulgarian Biodiversity Law 2022) and Red Data Book of Bulgaria as *Endangered* (Spiridonov et al. 2015), this subspecies is subdued to a strong poaching pressure. Thus, it has disappeared from many historical areas of its distribution range and has significantly reduced its numbers in others (Genov et al. 2003). Five isolated populations have been identified on the territory of Bulgaria: (1) Central Balkans, (2) Rila, (3) Pirin, (4) Western Rhodopi and (5) Vitosha, the latter being a result of reintroduction in the last 20 years (Valchev et al. 2010). In 2012, a reintroduction attempt of the species was also carried out in the territory of the municipality of Chuprene (western Stara Planina Mtn.). According to unofficial information, six individuals (no data on sex and age available) were captured and translocated from State Hunting Enterprise Izvora (Devin) to an acclimatization enclosure (~30 ha) in the area of Chuprene before 2014. Furtherly, 12 individuals were released in 2014–2016, including the offspring born in the enclosure. The animals were released twice. Although, according to the same information, some individuals were observed several times a few

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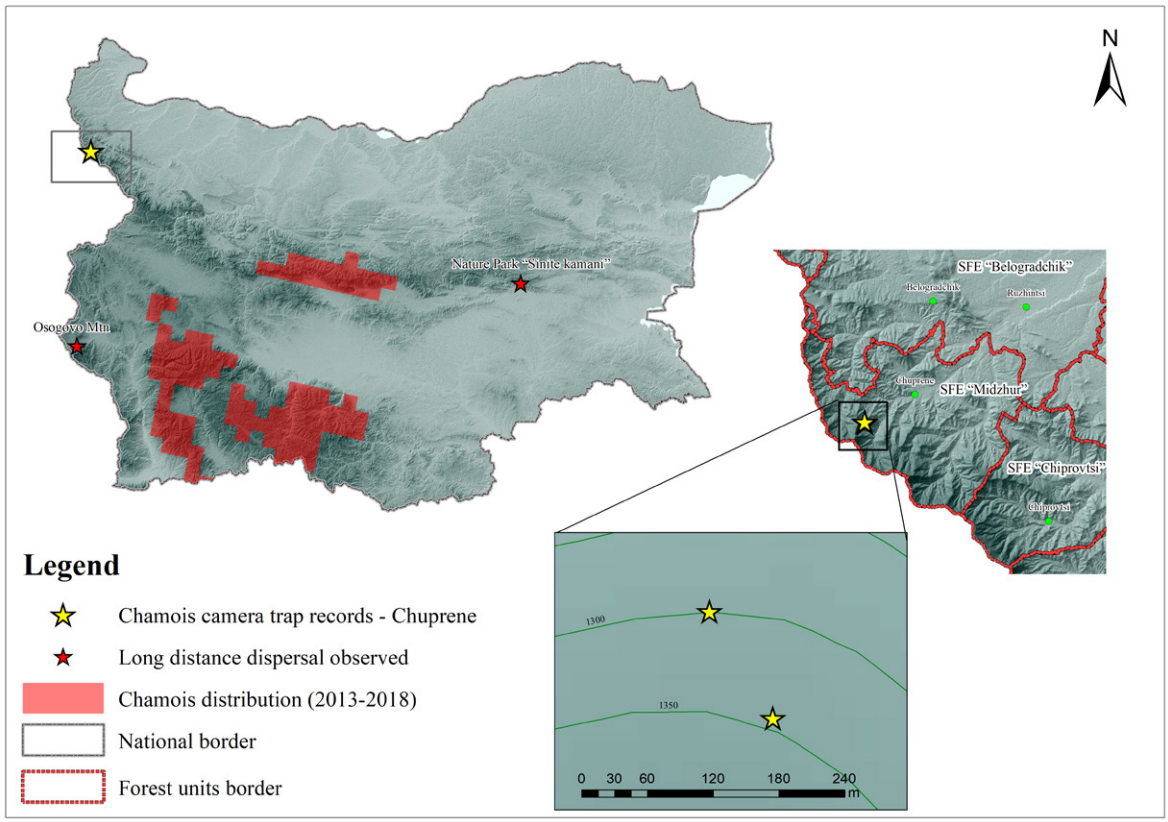


Fig. 1. Location of the chamois registration related to the current distribution of the species and the long distance dispersal observation in Osogovo Mountain

years after the release, these observations were not documented in any official reports, neither follow-up monitoring was conducted. No reports on the settlement success of the released animals were prepared.

The present article reports the first hard evidence of chamois presence due to the potential survival of the released individuals. According to the action plan for the conservation of the Balkan chamois in Bulgaria for the period 2023-2032 (Zlatanova & Popova 2022), no chamois presence has been documented for Western Stara Planina Mtn. Therefore, the present observation is the first report of the species outside its officially recognised distribution range in Bulgaria (Fig. 1).

Materials and Methods

The State Forestry Enterprise (SFE) Midzhur is located along the national border with the Republic of Serbia, covering 197.76 km² of the territory of Western Stara Planina Mtn., as a strip of 3–6 km wide and 50 km long (Fig. 1). The entire territory of SFE Midzhur is part of Natura 2000 site. The highest peak in the region is Midzhur (2168 m a.s.l.). The SFE Midzhur was established to manage vast forests, predominantly deciduous: oak (*Quercus robur*), beech (*Fagus sylvatica*), cerris (*Quercus cerris*), as well as coniferous – black pine (*Pinus nigra*), scots pine *(Pinus sylvestris*), spruce (*Picea abies*) and fir (*Abies alba*). These forests present rich habitats for large mammal species such as brown bear (*Ursus arctos*), red deer (*Cervus elaphus*), wild boar (*Sus scrofa*), roe deer (*Capreolus capreolus*), wolf (*Canis lupus*), as well as mesocarnivores such as the red fox (*Vulpes vulpes*), stone (*Martes foina*) and pine (*Martes martes*) martens, badger (*Meles meles*) and others.

Four camera traps (Moultrie MCG 13331) were deployed opportunistically on animal trails in forested areas on the grounds of Chuprene, part of SFE Midzhur in an attempt to collect data on another large carnivore – the lynx (*Lynx lynx*), which presence was poorly documented in the area. The devices have been active since 11.02.2021 until the present. The average altitude of the group of four camera traps was 1169.67 m. The camera traps were set up to take three consecutive pictures, five seconds apart. Photos showing the prolonged stay of the same individual(s) in front of the camera trap were considered as one *independent registration* to avoid overrepresentation of the species.

Apart from the unofficial information mentioned above, no data on the presence or number of chamois was officially reported after 2014 for the area of Chuprene, SFE Midzhur or the entire Regional Forest Directorate Belogradchik (in which SFE Midzhur is a part) (Rusev 2015, Yankulov 2017, Juparov 2018, 2019, Petrov 2021). No published data (even in grey literature) is present for chamois occurrence in the area before 2014 either.

Results

In 2022, chamois individuals were registered by two different independent registrations in two locations in SFE Midzhur (Fig. 1). The first independent registration was on 10.02.2022 at 14:40 h; it showed two individuals – a female with a yearling (Fig. 2) on a steep forested slope (mixed coniferous and deciduous forest) at an altitude of 1283 m a. s. l. The other registration was of a single young, possible male, individual in his second year. It was recorded on 16.03.2022 at 08:50 h also in a forested area (coniferous forest) at altitude 1344 m a. s. l. (Fig. 3).

On 11.02.2021, another proof for chamois persistence in the area was found at a distance of 4 km straight line from the camera traps that registered the species – excrement of a chamois. Yet, the camera traps set in this area did not produce any chamois registration. Another collateral data was collected for chamois observation at the end of 2022 during hunting when a local hunter photographed a chamois with his mobile phone. This observation was not confirmed with a hard proof; however, it supported our findings.

Discussion

The camera trap data we collected are the first hard proof of chamois presence in the Western Stara Planina Mtn., outside the currently known distribution range of the species in Bulgaria (Genov et al. 2003, Zlatanova & Popova 2022). The area of Chuprene and SFE Midzhur is characterised by steep slopes covered with forests or herbaceous, shrubby and woody vegetation, which concurred with the preferred habitats of the chamois as described in the literature (Hutchins & Geist 1987). During the operation of the camera traps, no human presence was recorded; therefore, it could be assumed that the human disturbance was low. Nearby the camera traps, there are two protected areas – the Chuprene Biosphere Reserve and the Chuprenski Buki Protected Locality. The presence of the protected areas could additionally contribute to the low disturbance for the species, which is amplified by the effect of the protected border area (strict border police control), in which the SFE Midzhur was located.

The origin of the registered chamois in this region is not yet fully understood. Perhaps the most likely origin is the poorly documented reintroduction attempt in the region (mentioned above). According to the IUCN Guidelines for Reintroductions



Fig. 2. Two chamois recorded by a camera trap in SHE Midzhur on 10 February 2022



Fig. 3. Chamois captured by a camera trap in SHE Midzhur on 16 Mart 2022

and Other Conservation Translocations (IUCN/SSC 2013, Zlatanova 2016), the monitoring is the fourth required and very much needed step to be undertaken, when reintroduction planned and implemented. Yet, a lot of reintroductions or other translocations on ungulates in Bulgaria are not including monitoring of the released species as follow-up. Thus, the lack of monitoring of the released individuals gives room for many questions and uncertainties, regarding the development of the population over the years, adding to the waste of resources and funding. The second, less likely but still viable option, is that these individuals might originate from the Serbian Zlot Mountain. The reason for this hypothesis is that all recorded by us animals are young, at an age suitable for dispersal. Zlot Mtn., it is inhabited by chamois (Anderwald et al. 2020), is located about 70 km straight line from Chuprene, with some habitats providing corridors and stepping stones for dispersal. Despite the literature reports that the furthest chamois dispersal observed was 17 km (Loison et al. 1999), there were other documented records revealing chamois presence (young animal in dispersal age) more than 50 km away from the nearest officially reported population distribution. Zlatanova & Popova (2022) provided camera trap data on the presence of a chamois individual in Osogovo Mtn, where the nearest possible population source was a 50 km straight line from the nearest area where it has been registered (in view that there has not been a historical evidence of a previous presence of chamois in the region). A young male individual (in its second year) was also registered on the territory of the Nature Park "Sinite Kamani", which was at a distance of c. 100 km straight-line distance from the nearest population segment in Central Balkan National Park (Zlatanova & Popova 2022). In both cases, there were corridors of suitable habitats for dispersal, with topography difficult to be accessed by humans. However, the number of chamois registered by us puts the first hypothesis (origin from the reintroduction attempt and survival long enough) in favour.

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