

Population monitoring and management

Monitoring of the Balkan chamois (*Rupicapra rupicapra balcanica*) populations in the territory of the Republic of Srpska

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Balkan chamois (*Rupicapra rupicapra balcanica*) is an important indigenous large game species in the Republic of Srpska. This constitutional-legal unit covers around 2.46 million hectares, which corresponds to around 49% of the area of Bosnia and Herzegovina. There are three types of hunting grounds in the Republic of Srpska: (i) special hunting grounds; (ii) sports and recreational hunting grounds; and (iii) commercial hunting grounds. In terms of number and total area, sports and recreational hunting grounds, which were given to hunting associations for management, dominate (N=78) and cover approximately 2.17 million hectares, which corresponds to 88% of the total area of hunting grounds in the Republic of Srpska. The aim of this study is to analyse the dynamics of the number and spatial distribution of Balkan chamois populations in the hunting grounds of the Republic of Srpska in the period 2007-2023. We used data collected by the Ministry of Agriculture, Forestry and Water Management for each hunting year, namely the estimated spring count, the culling plan, and the realized culling. The spatial distribution was determined on the basis of field research conducted as a part of the international project Biopolis/2023/009_CPRV_AO2 (i.e., a case study of the Horizon project Biodiversity Genomics Europe, BGE). We included 12 hunting grounds: Bakić, Panos, Čemernica, Vrbnica, Treskavica, Velež, Sjemeć, Šipovo, Zelengora, Sušica, Kamenica, and Gacko. The map of the spatial distribution of chamois was created using a 1×1 km grid in the ArcGIS 10.3 software package.

The main factors threatening populations of Balkan chamois in the Republic of Srpska are illegal hunting (poaching), habitat loss, and fragmentation. During the period 2007-2023, the total area suitable for the Balkan chamois decreased (668 vs. 604 km²). It was noted that there is no aggregated and detailed data for a longer period at the level of geographic regions and the constitutional-legal entity (e.g. trophies, sex and age structure of hunted individuals, recorded losses). The estimated spring abundance had an increasing trend in the period 2007-2023 (approx. 1,100 vs. 1,500 individuals), but is still below the habitat potential, as the estimated optimal number would be >2,600 individuals. The most numerous and biologically and economically valuable population is located in the special hunting ground Zelengora, managed by the National Park Sutjeska, where 1,079 individuals were estimated in spring 2023, which is about 70% of the total number in the Republic of Srpska. It has been noted that in recent years the Balkan chamois has spontaneously spread from existing hunting grounds to new suitable habitats in the vicinity (e.g. Mount Romania and Drina Canyon). It can be concluded that the current monitoring system and protection against poaching should be significantly improved, in particular through cooperation between the competent institutions and the users of hunting grounds (both hunting associations and public enterprises).