Population monitoring and management

Analysis of the real growth rate of brown hare (*Lepus europaeus*) in different hunting grounds of the Republic of Serbia in 2024

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DOI: 10.20315/evmc.2025.121

Brown/European hare (*Lepus europaeus*) is one of the most important species of small game, both in Europe and in the Republic of Serbia. However, it faces a continuous decline in population numbers due to the complex influence of natural and anthropogenic factors. Effective management of this species requires not only monitoring population numbers but also conducting a detailed analysis of age structure, which enables the assessment of the real growth (increment) rate. Based on the real growth rate as well as data on population size and previous management practices recorded by hunting associations, recommendations for the next hunting season can be formulated.

The aim of this study was to determine the real growth rate of brown hares in 2024 at various localities across the Republic of Serbia, with hares sampled from a total of 15 hunting grounds. The analysis included a total of 969 individuals. The age of each individual was determined based on the lens weight, allowing for a precise assessment of the population's age structure. Based on the determined age, the real growth rate, reflecting the proportion of young individuals (up to one year old) in the total population, was calculated. The real growth rates varied significantly across hunting grounds, ranging from 23.5% to 65.2%. The observed real growth rates for the hunting grounds were as follows: 59.9%, 55.0%, 53.2%, 60.0%, 34.8%, 54.5%, 23.5%, 41.9%, 29.7%, 59.4%, 62.7%, 53.1%, 41.7%, 62.7% and 65.2%, respectively. Based on these values and data provided by hunting associations, recommendations were made for the subsequent hunting season. In five hunting grounds (33.3%), hunting was recommended according to the management plan; in another five hunting grounds, a reduction of hunting was suggested, while in the remaining five hunting grounds, a complete suspension of hunting was requested.

Differences in real growth rates among hunting grounds can be explained by geographical and climatic factors, as the hunting grounds are located in different regions of the Republic of Serbia. Additionally, the level of agricultural development varies across the observed hunting grounds, influencing food availability and, consequently, reproduction and the real growth rate of brown hare. Furthermore, in some of the observed hunting grounds, the real growth rate had been monitored in previous years, while in others this was not the case. It is possible that consistent monitoring of the real growth rate over an extended period and the application of hunting recommendations contributed to better results in certain hunting grounds.

This research was supported by the Ministry of Science, Technological Development and Innovation of the Republic of Serbia, grant 451-03-137/2025-03/200116.