

## HUNTING OF RED DEER AND FALLOW DEER IN ROMANIA

Adrian ILIE<sup>1</sup>, Cristian Mihai ENESCU<sup>2,3</sup>

<sup>1</sup> *Forestry Specialization, Faculty of Agriculture, University of Agronomic Sciences and Veterinary Medicine of Bucharest, Romania*

<sup>2</sup> *Department of Soil Sciences, Faculty of Agriculture, University of Agronomic Sciences and Veterinary Medicine of Bucharest, Romania*

<sup>3</sup> *Faculty of Silviculture and Forest Engineering, Transilvania University of Brașov, Romania*

Corresponding author: [mihaienescu@agro-bucuresti.ro](mailto:mihaienescu@agro-bucuresti.ro)

**Abstract:** In Romania, the hunting is permitted for 18 mammal species (Law no. 407/2006), fallow deer (*Dama dama L.*) and red deer (*Cervus elaphus L.*) being among the most common species of hunting interest. The aim of this study was to analyze the data provided by the central public authority responsible for hunting activity for the hunting seasons starting from 2014-2015 until present regarding the approved annual quotas for fallow deer and red deer. In the case of the red deer, Harghita, Mureş and Suceava were among the counties with the highest approved quotas and with the highest numbers of realized quotas by the foreign hunters. The highest approved quotas for fallow deer were recorded in Arad and Timiş counties, respectively. We believe that these results would be useful for those managers of the hunting associations who would like to develop additional programs and services targeting the foreign hunters.

**Keywords:** fallow deer, hunting, quota, red deer

### INTRODUCTION

In Romania, the hunting fund is divided into 2,151 game management units, out of which the vast majority (85.9%) is managed by various hunting associations, while the rest is under the direct management of the National Forest Administration – ROMSILVA (12.4%) and forestry research and education entities – 1.7% (MAP, 2018). The surfaces of the game management units range between 5,000 and 35,000 hectares (CAZACU ET AL., 2014).

At national level, the distribution of the managers of the game management units (n=592) is uneven (Figure 1), most of them, with the exception of the ones from Bucharest, being located in Transilvania region (central-western part of Romania).

Shortly after the fall of the communist era, wildlife conservation and education became very important issues in Romania (LESLIE ET AL., 1995), and hunting started to be regarded from a new perspective, with a special focus on the biology, growth, harvesting of the game species and marketing of the game products (PETROMAN ET AL., 2009). For example, nowadays, several study programs related to Wildlife Management exist within some universities with tradition in this field, such as *Transilvania* University of Brașov or University of Agronomic Sciences and Veterinary Medicine of Bucharest.

From a normative point of view, the hunting in Romania is regulated by Law no. 407/2006 on Hunting and Protection of Hunting Stock, according to which hunting is permitted for 18 species of mammals and 39 species of birds (ENESCU AND HÄLÄLİŞAN, 2017), red deer (*Cervus elaphus L.*) and fallow deer (*Dama dama L.*) being among the most appreciated species by hunters.

Currently, the Ministry of Waters and Forests, thorough its specialized directorate, is the public authority responsible for game management in Romania. Another important stakeholder is the General Association of Hunters and Sports Fishermen from Romania (ro.

Asociația Generală a Vânătorilor și Pescarilor Sportivi din România) which includes more than 40.000 hunters (AGVPS, 2018).

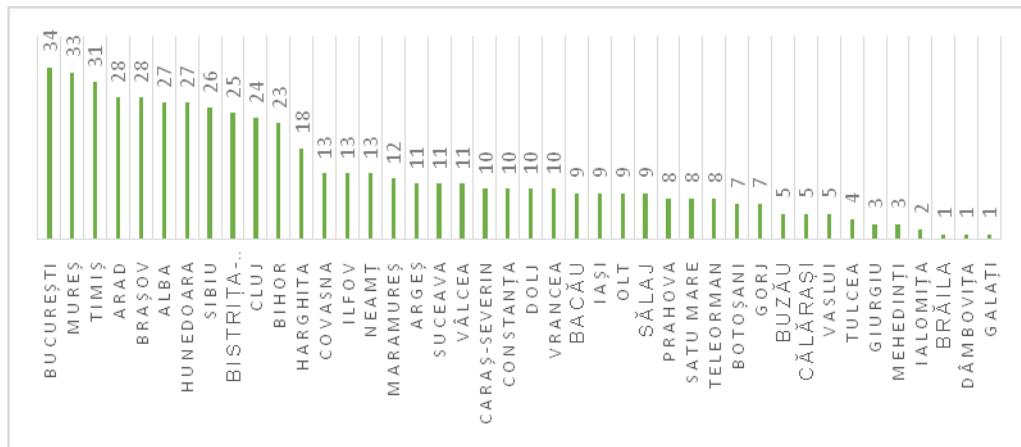


Figure 1. Distribution of the managers of the game management units at county level (MAP, 2018)

Across Europe, in the last centuries, red deer and fallow deer, which are the most widespread deer species (LUDT ET AL., 2004; WEBLEY ET AL., 2007) were the subject to a continuous human influence which consisted in habitat fragmentation, translocations, and selective hunting (FEULNER ET AL., 2004; BURBAITE AND CSANYI, 2010; SYKES ET AL., 2011). Due to these aspects and by taking also into consideration that the individuals, especially the young ones, recorded horizontal movements up to 65 km (KROPLI ET AL., 2015), in the last decades, red deer gain the attention of the evolutionary and conservation biologists (NIEDZIAŁKOWSKA ET AL., 2011), several genetic studies being recently conducted across its European distribution range (MCDEVITT ET AL., 2009; ZACHOS AND HARTL, 2011; ZACHOS ET AL., 2016). In Romania, red deer has an uneven distribution, with low densities recorded, for example, in south-western part of the country (MURARIU, 2002) or in north-western part of Tulcea County (GEACU, 2010). Similar distribution pattern exists also in the case of the fallow deer.

The aim of this study was to analyze the data provided by the central public authority responsible for hunting activity for the hunting seasons starting from 2014-2015 until present regarding the approved annual quotas for fallow deer and red deer.

## MATERIAL AND METHODS

Data available on the websites of the Ministry of Environment (MM, 2016) and the Ministry of Waters and Forests (MAP, 2018) regarding the approved quotas, realized quotas and realized quotas by foreigners recorded for the red deer and fallow deer in the hunting seasons 2014/2015, 2015/2016, 2016/2017 and 2017/2018, respectively, (*i.e.* Ministerial Orders no. 359/2014, no. 818/2015, no. 951/2016 and no. 428/2017 on the approval of harvesting quotas for certain species of hunters of hunting interest, for which hunting is permitted) were taken into consideration.

## RESULTS AND DISCUSSIONS

In the hunting season 2014/2015, the approved quota in the case of red deer accounted for 2,961 individuals, out of which 418 were hunted by the foreign hunters (Figure 2). Most of the approved quotas were recorded in Harghita, Suceava and Mureş counties. The highest realized quotas by foreigners were achieved in the above-mentioned counties plus Bihor, Braşov and Covasna counties.

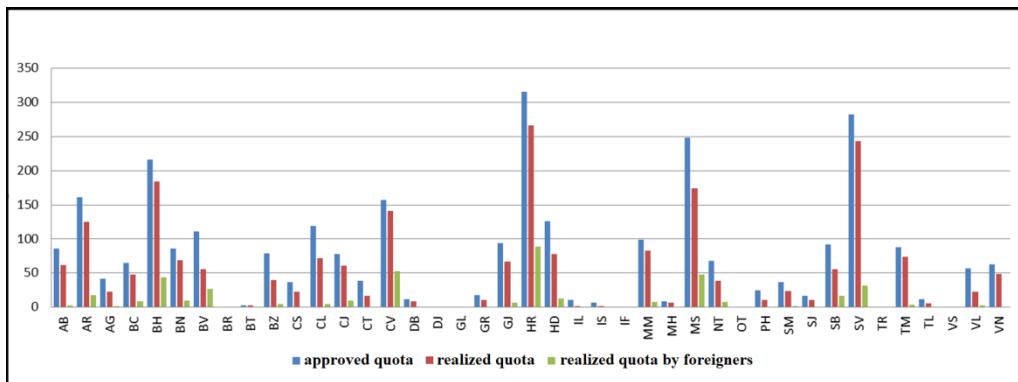


Figure 2. Quotas for red deer in the hunting season 2014/2015

The same pattern was also recorded in the hunting season 2017/2018 (Figure 3), Harghita, Covasna and Mureş counties (central part of Romania) being the most preferred by the foreign hunters. No quotas were realized by foreigners in several counties situated in the eastern and southern parts of the country.

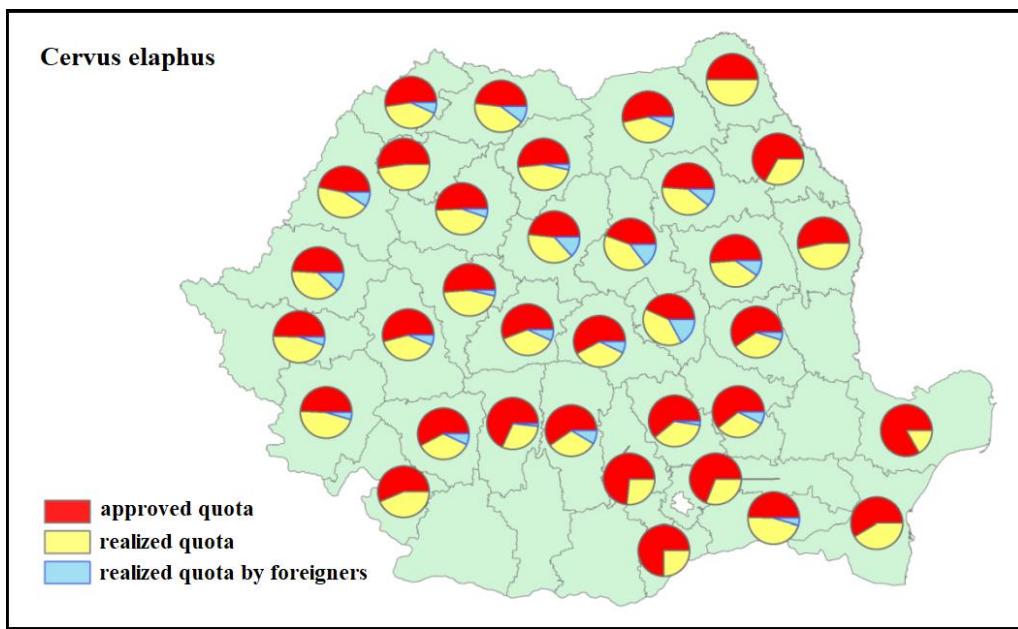


Figure 3. Quotas for red deer in the hunting season 2017/2018

As regards the realized quotas by foreigners in the case of fallow deer, Arad County was in the top in the hunting season 2014/2015, 151 individuals being hunted across this county. Similar results were also recorded in the hunting season 2017/2018, Arad and Timiș counties being in the top, followed by Argeș and Bihor counties (Figure 4).

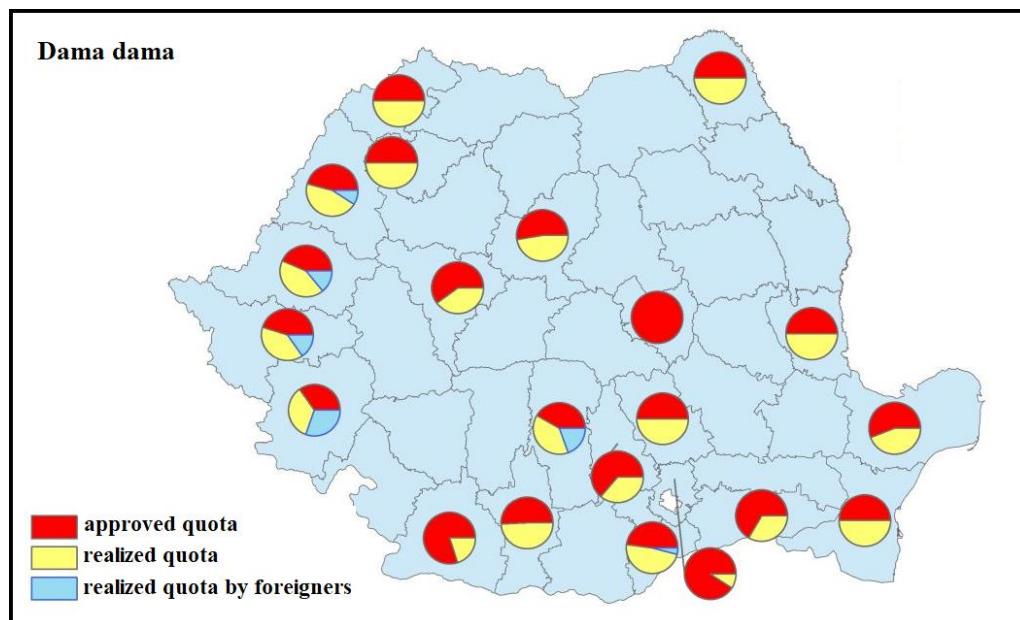


Figure 4. Quotas for fallow deer in the hunting season 2017/2018

### CONCLUSIONS

Based on the results of this study, we conclude that the two deer species are of great interest for the foreign hunters, who prefer to hunt in specific regions across Romania. In the case of red deer, the central part of the country is preferred (Harghita, Covasna and Mureş counties), while the hunting of fallow deer is more concentrated in the western part of Romania (Arad and Timiș counties).

By taking into account that the hunting is also regarded as a vector of rural tourism, we believe that these results would be useful for those managers of the hunting associations who would like to develop additional programs and services targeting the foreign hunters.

### BIBLIOGRAPHY

- ASOCIAȚIA GENERALĂ A VÂNĂTORILOR ȘI PESCARILOR SPORTIVI DIN ROMÂNIA (AGVPS), 2018. Bun venit. Available at: <http://agvps.ro/>.
- BURBAITE, L., CSANYI, S., 2010. Red deer population and harvest changes in Europe. Acta Zoologica Lituanica 20(4): 179-188.
- CAZACU, C., ADAMESCU, M.C., IONESCU, O., IONESCU, G., JURJ, R., POPA, M., CAZACU, R., COȚOVELEA, A., 2014. Mapping trends of large and medium size carnivores of conservation interest in Romania. Annals of Forest Research 57(1): 97-107.
- ENESCU, C.M., HÂLĂLIȘAN, A.F., 2017. The economic contribution of hunting products to the turnover of the forestry units in Romania. Agriculture & Forestry 63(3): 147-153.

- FEULNER, P.G.D., BIELFELDT, W., ZACHOS, F.E., BRADVAROVIC, J., ECKERT, I., HARTL, G.B., 2004. Mitochondrial DNA and microsatellite analyses of the genetic status of the presumed subspecies *Cervus elaphus montanus* (Carpathian red deer). *Heredity* 93: 299-306.
- GEACU, S., 2010. The population of red deer (*Cervus elaphus* L., 1758) in Tulcea County (Romania). *Travaux du Museum National d'Histoire Naturelle <<Grigore Antipa>>* LIII: 351-356.
- KROPIL, R., SMOLKO, P., GARAJ, P., 2015. Home range and migration patterns of male red deer *Cervus elaphus* in Western Carpathians. *European Journal of Wildlife Research* 61: 63-72.
- LESLIE, D.M., IONESCU, O., TISSESCU, A., NICOLESCU, N.V., 1995. Wildlife conservation and education in Romania. *Wildlife Society Bulletin* 23(1): 12-17.
- LUDT, C.J., SCHROEDER, W., ROTTMANN, O., KUEHN, R., 2004. Mitochondrial DNA phylogeography of red deer (*Cervus elaphus*). *Molecular Phylogenetics and Evolution* 31: 1064-1083.
- MCDEVITT, A.D., EDWARDS, C.J., O'TOOLE, P., O'SULLIVAN, P., O'REILLY, C., CARDEN, R.F., 2009. Genetic structure of, and hybridisation between red (*Cervus elaphus*) and sika (*Cervus nippon*) deer in Ireland. *Mammalian Biology* 74(4): 263-273.
- MURARIU, D., 2002. Contributions to the knowledge of mammal fauna (Mammalia) from South West Romania. *Travaux du Museum National d'Histoire Naturelle <<Grigore Antipa>>* XLIV: 431-441.
- MINISTERUL APELOR ȘI PADURILOR (MAP), 2018. Centralizator studii evaluare fauna cinegetică 2017. Available at: <http://apepaduri.gov.ro/efective/>.
- MINISTERUL MEDIULUI (MM), 2016. Cote de recoltă. Available at: <http://www.mmediu.ro/articol/cote-de-recolta/43>.
- NIEDZIAŁKOWSKA, M., JEDRZEJEWSKA, B., HONNEN, A.C., OTTO, T., SIDOROVICH, V.E., PERZANOWSKI, K., SKOG, A., HARTL, G.B., BOROWIK, T., BUNEVICH, A.N., LANG, J., ZACHOS, F.E., 2011. Molecular biogeography of red deer *Cervus elaphus* from eastern Europe: insights from mitochondrial DNA sequences. *Acta Theriol* 56: 1-12.
- PETROMAN, C., MATIUȚI, A., BĂLAN, I., PALADE, S., LALA, V., 2009. Territory arrangement methods for the practicing of hunting tourism. *Lucrări Științifice, Seria I*, 11(4): 1-8.
- SYKES, N.J., BAKER, K.H., CARDEN, R.F., HIGHAM, T.F.G., HOELZEL, A.R., STEVENS, R.E., 2011. New evidence for the establishment and management of the European fallow deer (*Dama dama*) in Roman Britain. *Journal of Archaeological Science* 38(1): 156-165.
- WEBLEY, L.S., ZENGER, K.R., HALL, G.P., COOPER, D.W., 2007. Genetic structure of introduced European fallow deer (*Dama dama dama*) in Tasmania, Australia. *European Journal of Wildlife Research* 53: 40-46.
- ZACHOS, F.E., HARTL, G.B., 2011. Phylogeography, population genetics and conservation of the European red deer *Cervus elaphus*. *Mammal Review* 41(2): 138-150.
- ZACHOS, F.E., FRANTZ, A.C., KUEHN, R., BERTOUILLE, S., COLYN, M., NIEDZIAŁKOWSKA, M., PEREZ-GONZALEZ, J., 2016. Genetic Structure and Effective Population Sizes in European Red Deer (*Cervus elaphus*) at a Continental Scale: Insights from Microsatellite DNA. *Journal of Heredity* 107(4): 318-326.