

# Estimation of Correlation between the Number of Individuals and Biogenic Capacity of the Hunting Terrain 56, Forest District Lunca Timișului, for 13 Hunting Species in 2006-2010 Period

Dorel Dronca<sup>1</sup>, Nicolae Păcală<sup>1</sup>, Ioan Bencsik<sup>1</sup>, Razvan Popa<sup>2</sup>, Mihaela Ivancea<sup>3</sup>, Gabi Dumitrescu<sup>1</sup>, Marcel Matiuti<sup>4</sup>, Adela Marcu<sup>1</sup>, Ada Cean<sup>1</sup>, Liliana Boca<sup>1</sup>

<sup>1</sup>Faculty of Animal Sciences and Biotechnologies, Timisoara, Romania

<sup>2</sup>Faculty of Animal Sciences Bucharest, Romania

<sup>3</sup>Faculty of Animal Sciences Iasi, Romania

<sup>4</sup>Faculty of Veterinary Medicine Timisoara, Romania

---

## Abstract

Integration of the Romania in the UE, is imposing a special attention to hunting animals populations. The aim of the present paper was to study the quantitative evolution of the hunting population for the 13th species, in the period 2006-2010, in the hunting terrain 56 Chevereș, from Forest Domain – Lunca Timișului, with a total surface of 9109ha. After the observations were performed, the present paper is stating that on this hunting ground had no good correlation between the number of individuals and the biogenic capacity of the hunting fond at the following species: Red Deer (*Cervus elaphus* L.), Fallow Deer (*Dama dama* L), Roe Deer (*Caproleus Caproleus* L.), Wild hog (*Sus scrofa* L.), European hare (*Lepus europaeus* P.), in turn at the rest of the studied species the correlation is good. For the species in regress the observations are recommending the following with attention of the natural selection and the improvement of the artificial selection..

**Key words:** hunting animals, hunt population, cynegetic.

---

## 1. Introduction

The UE integration of the Romania is imposing a special attention to the populations of wild animals for hunting. The hunt was always a spring of rich in our country, not only by the large number of animals but also by the variety of species. The hunt represents the oldest human occupation, before all others jobs human was hunter and gatherer. As old as man, the hunt was evolved with the human and with the development of the society. In this domain, man made the first observations, research and discoveries, also the

first inventions. After extended study of the paleolithic hunters, it was proven that there were domesticated animals [1]. The discovery of the spear, bow with arrows, perfecting the tools and hunting methods were the first and most important inventions of the primitive era, which lead to an increase of the success of the hunt [2].

Romania is one of the few countries in UE, that still have pools for aquatic hunting, large forest for roe deer, bears and other big hunt. The duty of hunters is to know the environmental requirement of the hunted animals and to contribute to its preservation. The hunting terrain with the constructions makes up the hunting patrimony.

Starting from the year 1948, all over our country, the hunting terrain becomes state propriety. From

---

\* Corresponding author: Dronca Dorel, 0256 277 144, [ddronca@animalsci-tm.ro](mailto:ddronca@animalsci-tm.ro)

that date, since there was no private propriety, large hunting terrain could be established. The management measures applied to a hunting terrain depends of the species that populate it. Presently, in Romania, after the institute of the Law 103/1996, the number of the hunting domains is 2.227 [2]. Main developmental conditions for a hunting domain and existence are: food, shelter and quiet.

There is considered that the hunt density is optimal when a sufficient number of individuals exist according to biogenic capacity. Exceeding the optimal density can cause damage to other economical arias and also can affect the specie in cause, through lack of food, shelter and rapid expansion of diseases and other detrimental factors [3].

The aim of the present study was to study the quantitative evolution of the hunting populations for 13 animal species, from 56 Cheveres̃ aria in the period of 2006-2010.

## 2. Materials and methods

The hunting terrain taken into study, has a total surface of 9109 ha, and is bordered at North by Timis river, at East by Buzias county river - Hitias Timis river, at South by Buzias county river - Bacova – Cheveresul mare until Albina bridge – Timis river and at the west by Timis river. In table 1 we present the total surface of the hunting ground of the hunting ground studied divided in categories.

**Table 1.**The surface of the hunting terrain 56 Cheveres̃ divided into categories

UM	The cynegetic productive surface for:					Unproductive land	Total
	Aquatic animals land	Other hunt species					
	Water length	Forest	Agricultural land	Grazing field	Total		
ha	183	2345	5494	695	8534	392	9109
%	2	25.7	60.3	7.6	93.6	4.4	100

From table 1 it can be seen that, from the total surface of the land studied (9109 ha) the terrain occupied by the Aquatic animals represents 183 ha (2%) while other species have 8534 ha (93,6%) from which agricultural land 5494 ha (60,3%), grazing field 695 (7,6%) and forest land 2345 ha (25,7%). The cynegetic non-productive surface is 4.4% respective 392 ha.

The study presented in this paper is aiming to evaluate the number of animals from this hunting ground in the period 2006-2010, because without this information a rational hunt of the animals would not be possible. Knowing the effective of animals serves for evaluate the annual number of animals that can be hunted and for calculate the

complementary food requirements for the winter, and it also helps maintaining the sex ration. The number of animals is crucial for achieving an optimal density and prevent de degradation of the trophies and the damages in forest an agricultural cultures. This is why this action to be made with responsibility by the persons that know well the terrain and the biology of the hunted animals.

## 3. Results and discussion

In table 2, we presented the evolution of the spring effectives by species and number of individuals during the hole studied period.

**Table 2.** The evolution of the spring effectives from the 56 Chevereș hutting terrain, in the period 2006-2010

Specie	2006	2007	2008	2009	2010
Red Deer ( <i>Cervus elaphus L</i> )	40	25	25	22	19
Fallow Deer ( <i>Dama dama L</i> )	180	140	150	130	116
Roe Deer ( <i>Capreolus capreolus L</i> )	125	135	120	105	92
Wild hog ( <i>Sus scrofa L</i> )	150	130	105	102	100
European hare ( <i>Lepus europaeus P.</i> )	350	300	300	297	295
Wildcat ( <i>Felis silvestres L</i> )	-	-	-	-	-
Common Pheasant ( <i>Phasianus colchicus L</i> )	300	300	300	310	326
Grey Partridge ( <i>Pedrix pedrix L</i> )	20	30	30	30	30
Red Fox ( <i>Vulpes vulpes L</i> )	25	25	25	25	25
European Pine marten ( <i>Martes martes L</i> )	-	8	8	8	8
Mustela ( <i>Putorius putorius L</i> )	-	5	5	5	5
Least Weasel ( <i>Mustela nivalis L</i> )	-	5	5	5	5
Muskrat ( <i>Ondatra zibethica L.</i> )	-	10	10	10	10

From the analysis of the table 2 it can be noticed that at 4 species from the 13 studied, did not existed at the beginning of the studied period, respectively the year 2006, but starting with the year 2007, they were documented and what is interesting is that their number remained constant during the rest of the period registering the following: European Pine Marten (*Martes martes L.*) 8 individuals, Mustela (*Putorius putorius L.*) 5 individuals, Least Weasel (*Mustela nivalis L.*) 5 individuals, Muskrat (*Ondatra zibethica L.*) 10 individuals. The noticeable thing on this hunting terrain compared with other hunting terrain is the lack of Wildcat (*Felis silvestres L*) specie. Also very important is the information that on this hunting terrain from the Wolf specie (*Canis LupusL*) the last two individuals were documented in 2003, but the Red Fox (*Vulpes vulpes L*) specie, keeps it's number, 25 individuals, constant on all studied period 2006-2010.

The last five species have registered a drop in number thru all studied period so: Red Deer (*Cervus elaphus L.*) specie, had 40 individuals, and at the end of the studied period it reached 19 individuals, a drop of 52.5%, Fallow Deer (*Dama dama L*) specie registered at the beginning of the studied period an effective of 180 individuals, which drops in 2007 at 140 (22.22%) individuals in 2008 it is 150 individuals, but in the following two years it drops again so at the end of the studied period, the 2010 year, the effective registered was 116 individuals, with a drop in 35.55% an all studied period. The same descendent evolution is noted for Roe Deer (*Caproleus Caproleus L.*) specie, wich in 2006 had an efective of 125 individuals, and in

2010 the efective was 92 (26.4%) individuals. For Wild hog (*Sus scrofa L.*) specie, at wich the efectives dopes from 150 individuals in 2006 at 100 individuals at the end of the studied period (33.33%). The European hare (*Lepus europaeus P.*) specie, registered the folowing evolution: 350 individuals in 2006, 300 individuals in 2007, 300 in 2008, 297 in 2009 and in te laste year of study the efective reached the value of 295 individuals, so a drop of 15.7% for the entire period.

Very interesting is the evolution of the following two species of feathered hunting animals, which do not register decrease in number but on a contrary: Common Pheasant (*Phasianus colchicus L.*) specie had at the begining of the period in 2003, had 300 individuals efective that reached at 326 individuals in 2010, so an increase of 8.6%. for the Grey Partridge (*Perdix perdix L.*) specie registered an increase of 50%, from 20 individuals in 2006 at 30 individuals at 2010.

#### 4. Conclusions

At the end of the studied period 2006-2010 the quantitative evolution of the hunting animals for 56 Chevereș, hunting domain Lunca Timișului, the following can be concluded, from the 12 hunting species 5 register a decrease in number: Red Deer (*Cervus elaphus L.*) specie, Fallow Deer (*Dama dama L*) specie, Roe Deer (*Caproleus Caproleus L.*) specie, Wild hog (*Sus scrofa L.*) specie, European hare (*Lepus europaeus P.*) specie, 4 species appeared in 2007, after which the effectives remained constant: European Pine Marten (*Martes martes L.*) specie, Mustela

(*Putorius putorius L.*) specie, Least Weasel (*Mustela nivalis L.*) specie, Muskrat (*Ondatra zibethica L.*) specie, and two species registered an increase of the effectives Common Pheasant (*Phasianus colchicus L.*) specie and Grey Partridge (*Perdix perdix L.*) specie.

Based on this observations we concluded that on this hunting terrain there was not a good correlation between the number of individuals and the biogenic capacity of the hunting terrain for the following species: Red Deer (*Cervus elaphus L.*) specie, Fallow Deer (*Dama dama L.*), Roe Deer (*Caproleus Caproleus L.*), Wild hog (*Sus scrofa L.*), European hare (*Lepus europaeus P.*) in exchange at the rest of the studied species, the correlation is good. For the species in regress we recommend a close monitor of natural selection and the efficient use of artificial selection.

### Acknowledgements

This work was supported by the grant POSDRU /21/1.5/G/38347

### References

1. Dronca, D., Ameliorarea genetică a populațiilor de animale. Editura Mirton, 2007
2. Cotta, V., Badea, M., Micu, I., Vânatul și vânătoria în România, Ed. Ceres, 2008
3. Bud, I., Economia vânatului, Editura Tipo Agronomia Cluj-Napoca, 1998