

Estimation of Correlation between the Number of Individuals and Biogenic Capacity of the Hunting Terrain 54 Padureni, Forest District Lunca Timișului, for 13 Hunting Species in 2007-2011 Period

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Abstract

Integration of the Romania in the EU 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 2007-2011, in the hunting terrain 54 Padureni, from Forest Domain – Lunca Timișului, with a total surface of 11,963ha. The paper shows that from the 13th species studied 5 were not identified on this hunting terrain Red Deer (*Cervus elaphus* L.), Wildcat (*Felis silvestres* L.), European Pine Marten (*Martes martes* L.), Least Weasel (*Mustela nivalis* L.) Muskrat (*Ondatra zibethica* L.). For the other species identified the individuals number evolution demonstrated that there is a good correlation between the number of individuals and its biogenic capacity. Also the paper recommends a special attention to natural selection and the efficient use of artificial selection, especially for the following 3 species: Roe Deer (*Capreolus Capreolus* L.), Wild hog (*Sus scrofa* L.) and Common Pheasant (*Phasianus colchicus* L.).

Key words: cynegetic, hunting animals, hunt population

1. Introduction

The EU integration of 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 EU, 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.

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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 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 54 Padureni arias in the period of 2007-2011.

2. Materials and methods

The hunting terrain taken into study, has a total surface of 11,963 ha, and is bordered at North by Timiș river, at East by local road Uliuc-Unip-Liebling, at South by county road Jebel-Liebling and at the west by county road Jebel-Şag. In table 1 is present the total surface of the hunting ground studied divided in categories.

Table 1. The surface of the hunting terrain 54 Padureni 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	304	1,341	8,437	1,364	11,142	517	11,963
%	2.5	11.2	70.5	11.5	93.2	4.3	100

From Table 1 it can be seen that, from the total surface of the land studied (11,963 ha) the terrain occupied by the Aquatic animals represents 304 ha (2.5%) while other species have 11,142 ha (93.2%) from which agricultural land 8,437 ha (70.5%), grazing field 1,364 (11.5%) and forest land 1,341 ha (11.2%). The cynegetic non-productive surface is 4.3% respective 517 ha.

The study presented in this paper is aiming to evaluate the number of animals from this hunting ground in the period 2007-2011, 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 prevents 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 54 Padureni hutting terrain, in the period 2007-2011

Specie	2007	2008	2009	2010	2011
Red Deer (<i>Cervus elaphus L</i>)	-	-	-	-	-
Fallow Deer (<i>Dama dama L</i>)	40	47	55	65	65
Roe Deer (<i>Capreolus capreolus L</i>)	70	70	70	75	75
Wild hog (<i>Sus scrofa L</i>)	60	70	70	64	65
European hare (<i>Lepus europaeus P.</i>)	500	510	550	570	575
Wildcat (<i>Felis silvestres L</i>)	-	-	-	-	-
Common Pheasant (<i>Phasianus colchicus L</i>)	300	300	300	310	305
Grey Partridge (<i>Pedrix pedrix L</i>)	30	30	30	30	30
Red Fox (<i>Vulpes vulpes L</i>)	15	15	15	15	15
European Pine marten (<i>Martes martes L</i>)	-	-	-	-	-
Mustela (<i>Putorius putorius L</i>)	-	-	-	-	-
Least Weasel (<i>Mustela nivalis L</i>)	-	-	-	-	-
Muskrat (<i>Ondatra zibethica L.</i>)	10	10	10	10	10

From the analysis of the table 2, it can be noticed that from the 13 species studied, 5 were not identified on this hunting ground: Red Deer (*Cervus elaphus L.*), Wildcat (*Felis silvestres L.*), European Pine Marten (*Martes martes L.*), Least Weasel (*Mustela nivalis L.*) respectiv Muskrat (*Ondatra zibethica L.*).

Fallow Deer (*Dama dama L*) specie, registered a significant increase in number, so in 2007- 40 individuals, in anul 2008-47 individuals (17.5%), in year 2009-55 individuals (17%), in year 2010-65 individuals (18.1%) and in year 2011 65 individuals maintained constant. On the entire studied period for this specie the increase was 25 individuals (62.5%).

Roe Deer (*Capreolus Capreolus L.*) specie, maintained constant the effective during the entire period 2007-2009, and in 2010-2011 it increased with 5 individuals (7.1%).

Wild hog (*Sus scrofa L.*) specie starts the study period with 60 individuals, effective that grows at 70 individuals (16.6%), after which it decreases at 64 individuals (8.5%) in 2010 and 65 individuals in 2011.

The European hare (*Lepus europaeus P.*) specie registered a permanent increase during the studied period, 500 individuals in 2007, 510 individuals in 2008 (2%), 550 individuals in 2009 (7.8%), 570 individuals 2010(3.6%), and at the end of the period in 2011, 575 individuals (0.87%). During the entire studied period the quantitative increase of the number of this specie was 15%.

Common Pheasant (*Phasianus colchicus L.*) specie, maintained the effective of 300 individuals in 2007-2009, it increases at 310 individuals

(3.3%) in 2010, and in 2011the effective was estimated at 305 individuals.

In our study at 54 Padureni hutting terrain, in the period 2007-2011, we identified 3 species in which during the period maintained constant in number, Grey Partridge (*Perdix perdix L.*) specie 30 individuals, Red Fox (*Vulpes vulpes L*) specie 15 individuals and Muskrat (*Ondatra zibethica L.*) specie 10 individuals.

4. Conclusions

At the end of the studied period 2007-2011 the quantitative evolution of the hunting animals for 54 Padureni, hunting domain Lunca Timișului, it can be noticed that from the 13 species taken into study, 5 were not identified on this hunting terrain: Red Deer (*Cervus elaphus L.*), Wildcat (*Felis silvestres L.*), European Pine Marten (*Martes martes L.*), Least Weasel (*Mustela nivalis L.*) and Muskrat (*Ondatra zibethica L.*) respective.

Also this study shows the fact that none of the 8 species identified: Fallow Deer (*Dama dama L*) specie, Roe Deer (*Capreolus Capreolus L.*) specie, Wild hog (*Sus scrofa L.*) specie, European hare (*Lepus europaeus P.*) specie, Common Pheasant (*Phasianus colchicus L.*) specie, Grey Partridge (*Perdix perdix L.*) specie, Red Fox (*Vulpes vulpes L*) specie and Muskrat (*Ondatra zibethica L.*) specie, have registered decreases in number, on a contrary some had increases, Fallow Deer (*Dama dama L*) specie (62.5%), European hare (*Lepus europaeus P.*) specie (15%).

All of these findings led us to the conclusion that on a hunting ground there is a good relation between the number of individuals and the

biogenic of the hunting terrain at all 8 species identified.

We recommend careful monitoring of the natural selection and the efficient use of artificial breeding especially for: Roe Deer (*Capreolus Capreolus L.*), Wild hog (*Sus scrofa L.*) and Common Pheasant (*Phasianus colchicus L.*) species.

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