Study on Wild Animals' Dynamics on 20 Bara Hunting Area from Timis County during 2014-2018

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Abstract

Integration of the Romania in the European Union is imposing a special attention to hunting populations. The aim of the present paper was to study the quantitative evolution of the hunting population for 13 animal species during 2014-2018, on 20 Bara hunting area, from Timis County, heaving a total area of 10.889 ha. The study shows that form the 13 monitored animal species, 3 were not identified on this hunting area: Fallow Deer (*Dama dama L*), Wildcat (*Felis silvestris L*), and Muskrat (*Ondatra zibethica L.*). The study has highlighted the emergence of an immigrant species, Jackal (*Caniş aureus L.)*, with a constant population of 5 individuals at the beginning of the study period - 2014, which caused a decrease in the number of the Red Fox *(Vulpes vulpes L)* herds, with a relative value of 57.7%, the two species being competing. For the other species identified, the population of evolution number demonstrated that there is a good correlation between the number of individuals and its biogenic capacity.

Key words: game animals, game population, cynegetic

1. Introduction

The EU 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 occupation, before all others humans were hunter and gatherer. As old as man, the hunt evolved with the humans 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 game. The duty of hunters is to know the environmental requirement of the game and to contribute to its preservation.

The hunting terrain with the constructions makes up the hunting patrimony [3].

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 [4]. 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

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exist according to biogenic capacity [5]. 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 [6].

The aim of the present study was to study the quantitative evolution of the hunting populations for 13 animal species, from 20 Bara aria in the period of 2014-2018.

2. Materials and methods

The hunting terrain taken into study, has a total surface of 10,889 ha, and is bordered at North by Paniova- Secas-Radmanesti, at East by Budurani – Cutina local road, at South by Cutina local road– Bodo – Balint, and at the West by Balint local road Targoviste-Paniova. In table 1 is presented the total surface of the hunting ground of the hunting ground studied divided in categories.

Table 1. The surface of the hunting terrain 20 Bara divided into categories

	The cynegetic productive surface for:						
	Aquatic animals land	Other hunt species					
UM	Water length	Forest	Agricultural land	Grazing field	Total	Unproductive land	Total
Ha	370	370	7,502	2,173	10,045	474	10,889
%	3.4	3.4	68.9	20	92.3	4,3	100

From table 1 it can be seen that, from the total surface of the land studied (10,889 ha) the terrain occupied by the Aquatic animals represents 370 ha (3.4%) while other species have 10,045 ha (92.3%) from which agricultural land 7,502 ha (68.9%), grazing field 2,173 (20%) and forest land 370 ha (3.4%). The cynegetic non-productive surface is 4.3% respective 474 ha.

The study presented in this paper is aiming to evaluate the number of animals from this hunting ground in the period 2014-2018, 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 [7].

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.

From the analysis of the table 2, it can be noticed that from the 13 species studied, 3 were not identified on this hunting ground: Fallow Deer (*Dama dama L*), Wildcat *(Felis silvestres L*) and Muskrat (*Ondatra zibethica L.*).

Red Deer (*Cervus elaphus L*) species, was identified on this hunting fund starting from 2016 with a number of 6 individuals. In 2017, the number grew to 10 individuals (66.66%), and at the end of the study, the species had a number of 14 individuals. We can conclude that Red Deer (*Cervus elaphus L*) species, during the period 2017-2018, recorded an increase of 133.33%.

Roe Deer (*Capreolus capreolus L.)* species registered in 2014 a number of 142 individuals, which actually declined in 2015 to 134 individuals, which represents a 5.6% decrease in relative values. In the following period, the species recorded an increase in the number of individuals at 137 individuals in 2016, an increase of 2.2% and 139 individuals in 2017. It is noted a reduction of the number in 2018 to 124

individuals, respectively a decrease by 15 individuals, which represents 10.7%.

Wild hog (*Sus scrofa L.*) species grew throughout the studied period, so if in 2014 the species had 29 individuals, in 2015 it reached to 41 individuals, so there was an increase of 41.3 %. The increase continued and in the following periods, the number reached to 44 individuals in 2016 (7.3%), 54 individuals in 2017 (22.7%) and 60 individuals at the end of the study period, respectively in 2018 (11.1%). Throughout the studied period (2014-2018), the increase was by 31 individuals, respectively 106. 9%.

Table 2. The evolution of the spring effectives from the 20 Bara hunting terrain, in the period 2014-2018

Specie	2014	2015	2016	2017	2018
Red Deer (*Cervus elaphus L*)	-	-	6	10	14
Fallow Deer (*Dama dama L*)	-	-	-	-	-
Roe Deer (*Capreolus capreolus L*)	142	134	137	139	124
Wild hog (*Sus scrofa L)*	29	41	44	54	60
European hare (*Lepus europaeus P.*)	788	630	615	616	656
Wildcat *(Felis silvestres L*)	-	-	-	-	-
Common Pheasant (*Phasianus colchicus L*)	696	777	840	870	713
Grey Partridge (*Pedrix pedrix L*)	240	225	161	154	161
Quail (*Coturnix coturnixL*)	1000	700	700	600	695
Red Fox (*Vulpes vulpes L*)	71	55	64	45	30
Jackal (*Caniș aureus L*)	5	5	4	5	5
Sitar of the forest (*Scolopax rusticola L*)	50	50	50	50	50
Muskrat (*Ondatra zibethica L.*)	-	-	-	-	-

The European hare (*Lepus europaeus P.)* species recorded the following evolution: 788 individuals in 2014, which actually fell in the next two years, respectively to 630 individuals in 2015 (-20.0%), 615 in 2016 (-2.4%) and 616 in 2017, respectively. In 2018, the species registered a significant increase again, reaching to 656 individuals, which represents a 6.4% increase in relative value.

The Common Pheasant (*Phasianus colchicus L.*) species starts in 2014 with a number of 696 individuals and are on an upward trend until 2017 (2015-777 individuals, 2016-840 individuals) when it reached 870, so there is an increase with 174 individuals, which represents 25%. At the end of the studied period, respectively in 2018, the species recorded a decrease in the number of individuals compared to the previous year, with 157 individuals and 18%, respectively.

Gray Partridge (*Pedrix pedrix L.*) species recorded a decrease in the period 2014-2017, so if at the beginning of the study, i.e. 2014, the inventory was of 240 individuals, in 2015 it dropped to 225, so a reduction of 6.25%, in 2016 there were 161 individuals (-28.4%), and in 2017 the total number was 154 (- 4.3%). At the end of the study period, in 2018, there was an increase of 4.3% again, the number reaching again to 161 individuals.

Quail (*Coturnix coturnix L.)* species has also registered a decrease of the number in the period from 2014 to 2017, so if at the beginning of the study, namely 2014, the number was of 1000 individuals, in 2015 it drops to 700, so there is a reduction of 30.0%, in 2016 the herd remained at the same value of 700 individuals, and in 2017 the herd fell again to a value of 600 individuals (-14.2%). At the end of the study period, 2018, there was an increase of 15.8%, thus the number reaching to 695 individuals.

Canidae Family, which includes elongated buttocks and slender limb carnivores, is represented on this hunting fund by two species, namely Red Fox (*Vulpes vulpes L*), and from 2013 to 2014, there appears a new species, namely Jackal (*Canis aureus L*).

Red Fox (*Vulpes vulpes L*) species declined throughout the study period, so if at the beginning of the study the number was of 71 individuals, at the end of the study, the number of individuals was 30, so the registered decrease had a relative value of 57.7%.

Jackal (*Caniş aureus L*) species, has been inventoried on this hunting fund from 2013 to 2014, the number of individuals, 5, remaining constant throughout the studied period.

We also notice on this hunting fund, the presence of a bird species, considered especially by the

Italian hunters a special trophy, namely Sitar of the Forest (*Scolopax rusticola L.*) species, with a population of 50 individuals per year.

4. Conclusions

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 10 species identified.

The species that recorded a continuous increase of the herd over the entire studied period of 5 years was the wild hog (*Sus scrofa L.)* species, an increase by a relative value of 106.9%.

The study highlighted the emergence of an immigrant species, Jackal (*Caniş aureus L*) at this beginning of the study period, ie 2013- 2014, with a relatively constant population of 5 individuals.

Red Fox (*Vulpes vulpes L.)* species declined during the study period, so if at the beginning of the period the number was of 71 individuals at the end of the study, the number of individuals was 30, so the registered decrease had a relative value of 57.7%. We believe that this decrease is mainly due to the appearance of Jackal (*Caniş aureus L.*), a concurrent species.

We recommend the implementation of real and consistent management measures that will increase the productive hunting potential on this hunting fund. The most relevant problems are related to the intensification of agricultural activities, the use of pesticides on a large scale, etc.

We also recommend actions to restoring the biogenic potential of the hunting fund by reintroducing some vanishing wildlife species of hunting interest or by introducing new game species that can harness the free ecological niches.

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