ASPECTS CONCERNING THE OPTIMIZATION OF THE HUNTING AREA NR. 40 AGNITA EXPLOITATION, SIBIU COUNTY

ASPECTE PRIVIND OPTIMIZAREA EXPLOATĂRII FONDULUI DE VÂNĂTOARE NR. 40 AGNITA, JUDEȚUL SIBIU

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Abstract: *The aim of the research: to determine the life and feeding conditions for the here existing wild, on a surface of 7699 ha. The research level: the researches does not include the determination of vegetable mass production, based on the here existing forest type. Methods and materials: the analysis of the forest regeneration and the wood exploitation type because both have a great influence on the wild inside the hunting area. The food needs were determined (type of food/year) and compared with the situation of the natural availabilities existing in the hunting ground. For each forest category, a surface of 1000 m2 was selected, in order to locate minimum 5 surfaces of 1/1 m, where from vegetation was collected and weighted. We consider that 20% of it can be used. The entire quantity was multiplied with the surface of each type of forest. The food need, the necessary hunting plants and fixtures inside the hunting area, were determined. The newness of the research: it is the first time such a complex analysis of a hunting area is deployed. The research level in the domain: there exist general rules, established by ICAS Bucharest, concerning the calculation of the necessary hunting plants and fixtures. Limits of the researches: the wild species migration from one hunting area to another. The practical implication of the research: the results can be used in the current exploitation of the hunting ground. The originality of the study: the complexity of the analyzed parameters. The importance of the study: the high level of practicability and the big dimensions of the analyzed ground surface.*

Rezumat: *Scopul cercetărilor: determinarea condițiilor de viață și de nutriție pentru vânatul existent în fondul de vânătoare analiza. Stadiul cercetărilor: nu se fac determinări legate de producția de masă vegetală în funcție de tipul de pădure. Metode cercetare și materiale utilizate: s-au analizat regenerarea arboretului și modul de exploatare a materialului lemnos știindu-se că acestea au o influență deosebită asupra activității vânatului din cadrul fondului de vânătoare. s-a determinat necesarul de hrană pe specii si categorii de furaje/an și s-a comparat acest necesar cu situația disponibilităților trofice naturale existente. S-a ales o suprafață de 1000 m^2 pentru fiecare tip de pădure pe care s-au amplasat minim 5 suprafețe de 1/1 m de pe care s-a recoltat vegetația, s-a cântărit, considerându-se că aceasta poate fi utilizată în proporție de 20 %. Cantitatea rezultată (kg) a fost înmulțită apoi cu suprafața (ha) deținută de fiecare tip de pădure. S-a determinat necesarul de hrană și de amenajări, construcții și instalații vânătorești. Gradul de noutate: pentru fondul de vânătoare analizat se face pentru prima dată o analiză atât de complexă. Stadiul cercetărilor în domeniu: există norme generale stabilite de ICAS Bucureşti pentru calculul necesarului de amenajări, construcții și instalații vânătorești. Limitele cercetării: sunt date de migrația efectivelor de vânat între fondurile de vânătoare. Implicațiile practice ale cercetării: pot fi utilizate în practica curentă de exploatare. Originalitatea lucrării: este dată de complexitatea parametrilor analizați. Importanța lucrării: aplicabilitatea ei practică și din suprafața mare de teren analizată.*

Key words: *hunting, forest stand, vegetal resources*
Cuvinte cheie: *vânătoare, fond forestier, resurse vegetale*

INTRODUCTION

The geographic location

The hunting ground nr. 40 Agnita is situated in the southern part of Sibiu County, in the water catchment area of the Hartibaciu River, in the territory of Altana and Chirpar villages.

The forest administration is done by the Agnita Forest Range – Sibiu Forestry Department, the villages Altana and Chirpar and has the following utility categories of land surface:

Table 1

UM	Water surface	Wood	Plough land	Hay field	Grazing	Other agricultural land	Mountain	Hunting productive land	Unpro-ductive	Total
Ha	25	2770,5	2047	953	2174,7	0	0	7670,2	28,8	7699
%	0,32	32,09	26,59	12,38	28,24	0	0	99,62	0,38	100

METHODS AND MATERIALS

The analysis of the forest regeneration and the wood exploitation type because both have a great influence on the game inside the hunting area. For the existing wild species the food needs were determined (type of food/year) and compared with the situation of the natural availabilities existing in the hunting ground.

For each forest category, a surface of 1000 m^2 was selected, in order to locate minimum 5 surfaces of 1/1 m, where from vegetation was collected and weighted. We consider that 20% of it can be used. The entire quantity was multiplied with the surface of each type of forest.

So, based on the administration contract conditions and on the dynamic of wild species, the food need, the necessary hunting plants and fixtures inside the hunting area, were determined.

RESULTS AND DISCUSSIONS

The forest management type may have great influences on food, silence and covert needs of the game.

The forest is managed by the foresters; they have the obligation to create and maintain the natural feeding conditions, silence and covert needs, able to assure the optimal development conditions for the game.

The vegetal component of the forest inside the hunting area 40 Agnita , is able to deliver sufficient food for the game, the whole year, without interrupting the feed chain. Inside the area, the game can find enough food, silence and covert conditions.

The clear cuttings on small surfaces favour the grass, brushwood and bush growing, offering very good food conditions for the game. As a result of the vegetal succession, these plants and herbs are replaced by forest species, starting with thicket, very good for covert and feeding needs. The growing process continues, the trees are losing the branches in the lower part, so that the feeding and covert functions recede. In the meantime the seeds potential is growing. All these determine a high mobility of the wild animals. The game population is larger in young forests or in forests with different tree ages.

Sanitary cuttings are necessary in old forests, in order to eliminate sick, dried trees, attacked by different insects. At least one of such tree on 1 ha mustn't be cut because it offers very good life conditions for woodpeckers, owls and other birds important for the forest hygiene.

The group and uniform shelter wood systems are treatments offering better feeding and covert conditions, than the clear cuttings. In the meantime they create a large diversity of species, so that the wild animals may chose the best food.

The release cuttings are done in seedling stage, when stalks and branches are accessible for the game, in order to promote valuable tree species.

The cleanings must be done in the thicket stage, extracting defective trees, the ligneous food become less than in the thicket stage. It is recommended to do this in autumn or at the beginning of winter and the wooden material shall be left on the ground, valid for all the treatments.

The thinning is done in pole stage and high forest, only healthy trees are left behind.

We can say that the forest management plan is satisfactory and concerns all the important functions of the forest: wood production, soil protection, climatic equilibrium, wild animal protection and, not at least, recreation.

The game is able to offer "harvest" in every year, the principle yield exploitation can be done at long periods of time.

You can observe the necessary hunting plants, fixtures and buildings in table nr.2.

Table 2

The necessary hunting plants, fixtures and buildings inside the hunting area nr. 40 Agnita (hill region)

Plants Buildings Fixtures	Stag			Roe deer			Wild boar			Brown bear			Necessary For 100 ha forest	Total
	Existing	Necessary		Existing	Necessary		Existing	Necessary		Existing	Necessary			
		Real	Optimal		Real	Optimal		Real	Optimal		Real	Optimal		
Feeding land													0,2 ha	5
Pathways													0,2 km	5
Watering	5	2	5	25	18	25	3	4	3					
Dips	3	1	3	13	9	13	4	4	3					
Salt licks	6	2	5	25	18	25	8	8	5					
Feeding places		2	5	13	18	25	5	8	5					
Store houses														2
Hunting lines													0,2 km	5
Hunting stands								0	40		0	10		
Observatories		0	5	1	0	12		0	2		0	1		
Cottages														2
Huts														2
Houses														1

Based on the administration contract conditions and on the game dynamic, the necessary additional food during the wintertime was determined.

Tabel 3

The necessary additional food/year/game

Nr.	Species	Concentrate	Hay – green mass -	Succulent and Root food
1	Stag	25	75	25
2	Roe deer	8	25	8
3	Wild boar	60	0	60
4	Hare	0	1,5	0
5	Pheasant	6	0	0
6	Partridge	6	0	0
7	Brown bear	60	0	60

After these studies we can observe that during the vegetation period, the stand assure the food needs for the game. In the repose period it is very important to bring additional food, especially when the snow and frost outlast.

Hereby we can observe the necessary additional food quantities for each game.

The study of the nutritional potential of the stands, at a level accessible for the game, is very important for the trophic game conditions inside the hunting territory. The investigations concerning the vegetal resources are important for the determination of the disposal natural food and for the evaluation of the trophic value of the natural food.

Table 4

The necessary additional food quantities/game/year

			Necessary kg/yaer/game.			Total necessary 2007			Total necessary 2008		
Specie	Concentrate	Hay -green mass-	Succulent and root food	Number of animals	Concentrate	Hay -green mass-	Succulent and root food	Number of animals	Concentrate	Hay -green mass-	Succulent and root food
Stag	25	75	25	14	350	1050	350	16	400	1200	400
Roe deer	8	25	8	104	832	2600	832	116	928	2900	928
Wild boar	60	0	60	37	2220	0	2220	34	2040	0	2040
Brown bear	60	0	60	5	300	0	300	5	300	0	300
Hare	0	1,5	0	120	0	180	0	144	0	216	0
Pheasant	6	0	0	84	504	0	0	141	846	0	0
Partridge	6	0	0	86	516	0	0	103	618	0	0
TOTAL					4722	3830	3702		5132	4316	3668

Table 5

The situation of natural trophic disponibilities in forest stands during the wintertime (16 October – 31 March)

Nr.	Forest type Quantities resulted from the sample surface - g/ m2 -	Percent of the forest type from the entire surface	Forest type surface	Vegetation quantity kg/ha	Accessible vegetation - kg -	Consumed vegetation (20% of the accessible) -kg-
1.	5212 – Oak and beach mixed stand with mul- middle productivity: 127,9 g/m2	51 %	1260	1279	1 611 540	323 000
2.	5324 – Hill mixed hardwood stand with oak- middle productivity : 264 g/m2	13 %	321	2640	847 440	169 480
3.	5131 – Hillside oak mixed stand with graminaceae and Luzula luzuloides : 166,1 g/m2	12 %	296	1161	234 656	68 797
4.	5113 – Oak mixed stand with mull – middle productivity : 161,1 g/m2	10 %	247	1161	286 767	57 656
5.	5314 – Hill mixed hardwood stand with ok and beach – middle productivity : 225 g/m2	7 %	173	2250	389 250	77 901
6.	5211 – Oak and beach mixed stand with mull- superior productivity : 184 g/m2	7 %	173	1840	318 320	63 664
				TOTAL	3 800 973	760 195

The layout of hunting buildings, fixtures and plants

The endowment of the hunting area must be done based on the natural conditions. These endowments include buildings, fixtures and plants and are bringing some modifications to the existing natural conditions, in order to create better life conditions for the game or to facilitate their observation. They are used in both situations: game caring and game harvest.

Table 6

Specification	Feeding land - ha -	Endowments					Fixtures			
		Hunting lines - km -	Hunting pathways - km -	Watering - pieces -	Dips -pieces -	Salt licks - pieces -	Observatories - pieces -	Feeding places –pieces-		
								Roebuck	Fallow deer	Wild hog
Existing	5,0	5,0	5,0	38	20	57	5	1	17	2
Proposed	0	0	0	0	0	0	15	2	8	16
TOTAL	5,0	50,	5,0	32	19	36	20	3	25	8

The minimal necessary number of endowments and fixtures was established based on the ICAS instructions, as in table nr.7.

Table 7

Type	Necessary for the species			Necessary for 100 ha wood
	Stag	Roe deer	Wild boar	
Feeding land				0,2 ha
Hunting pathways				0,1-0,5 km
Watering	1 to 5 pieces	1 to 5 pieces	1 to 10 pieces	
Dips	1 to 10 pieces	1 to 10 pieces	1 to 10 pieces	
Salt licks	1 to 5 pieces	1 to 5 pieces	1 to 5 pieces	
Hunting lines				0,1-0,3 km
Feeding places	1 to 5 pieces	1 to 5 pieces	1 to 5 pieces	

The stag feeding places must be supplemented with 2 pieces, for the roe deer with 8 pieces, so that the game doesn't have to walk far for its feeding, especially in wintertime.

The salt licks shall be located at 15-20 m far from the feeding places, using the following types: in the log or in the stump.

The observatories shall be located near the stag call places, in glades where animals graze and near the pathways.

CONCLUSIONS

The forest inside the hunting territory is managed according to the approved management plan:

System: high forest system

Treatment method: uniform shelter wood and group shelter wood system, clear cuttings on small surfaces, sanitary cuttings

Generally the main conditions – refuge, silence, food – are satisfied, but in the future the evolution of anthropic factors must be restrained.

The negative influences on the wild animal evolution in the future are:

- grazing in the forests
- the berries and mushrooms harvest
- the car access on forest roads
- the abusive wood cuttings
- the capture of young animals

The grazing has a very bad influence, first of all because of the produced noise by animals and people, but also because of wild hounding by the sheep dogs. Where grazing is allowed in the forest, the natural offer for wild animal is reduced and one of the most important existence conditions is eliminated.

The sheep dogs must be controlled periodically, the pariah dogs must be gunned, they are the greatest danger for young animals. Wild fruit and mushrooms harvest can bring a lot of noise but can also reduce the food for the animals. In the mean time the car access shouldn't be allowed, by layout of barriers. The refuges were destroyed, in many cases by abusive cuttings, most of them in woods taking in possession by former owners. Very important in this case are the foresters, responsible for this activity that must be done rational, respecting the forest management plan. For decreasing the bad effects of young animal capture, the employees have to talk these things up, so that the people should know the legal stipulations and the penalties in these cases.

The additional feeding must be done because of two reasons:

- to protect the forest vegetation against possible harm, caused by the game
- to elude the decreasing of the game

The additional feeding must take place between 01 November and 31 March (150 days).

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