

The Importance of Hunting and Hunting Areas for Big and Small Game (Food) for the Tourism Development in the Crna River Basin in the Republic of Macedonia

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Received: December 20, 2013 / Accepted: January 20, 2014 / Published: February 25, 2014.

Abstract: The Crna River is a river in the Republic of Macedonia, right tributary to Vardar. Its source is in the mountains of Western Macedonia, west of Krusevo. It flows through the village of Sopotnica, and southwards through the plains east of Bitola. The name means “black river” in Macedonian, which is translation for its former Thracian name. The purpose of this paper is to show the hunting and hunting areas for big and small Game (food), the structure of the areas of certain hunting, fishing, fishing water objects, fish species, fishponds up to 20 years shown by municipalities and individual farms with ponds in the basin of Black River. It had used statistical data for the hunting grounds by areas, fishing ponds. Fish is very diverse in this river. Hunting in the Black River basin is of great importance for the economy of Republic of Macedonia. It is also a necessary factor for development of other economic activities.

Key words: Structure of the hunting grounds, fishing water objects, types of fish, fishponds, agricultural holdings.

1. Introduction

Hunting in the Crna River basin is presented as a branch in the economy, having in mind that special economic fundamentals are being made of each hunting area for the researched region, so one could feel free to point out that hunting includes: breeding, protection and exploitation of the Game (food) [1]. The useful part of hunting is that besides the production of meat and skins, it also creates conditions for development of other economic activities. It should be primarily mentioned the role of recreational sport hunting and its significance for the development of hunting tourism [2].

An important element in the analysis of hunting represents the total areas of the hunting grounds, so the data from Table 1 will be used.

2. Materials

Fishing in the Black River basin has more sports-recreational character in the rivers and more economic-economic character in fishponds. Take care of stocking the river water objects that belongs to the sports fishing associations, such as Mamec from Prilep, Kajmakcalan from Bitola and all other fishing associations from other community centers, from Hisar, Krushevo, Dolneni, Novaci, Mogila and Tikvesh [3].

There are no written records about how much water fish stocks and micro accumulations in the rivers because fishing has no commercial and economic character except for the ponds, but the fact is that certain water objects have large quantities of fish such as rivers: Crna, Buturica, Lisicka, Gradeska, Belica, Konjarka, Satoka, Blato, Stroska and Golema [4]. Also all the micro accumulations on the territory from Black River basin are more or less fish stocked. The

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Table 1 Structure of the areas of certain hunting grounds in the Basin of Crna River for the period 1998-2007.

Area in ha	Hunting areas in the basin of Crna Reka									Total area in ha
	Hunting ground Veprcani 2001-2010	Hunting ground Vitolishte 2001-2010	Hunting ground Dunje 2001-2010	Hunting ground Krusheva 2001-2010	Hunting ground Melnica 2001-2010	Hunting ground Trojaci 2001-2010	Hunting ground Nidje 1998-2007	Hunting Ground Staravina 1998-2007	Hunting ground Strovija (Kadica)	
Total area Hunting ground	6,200	15,028	8,730	6,300	8,780	7,670	22,003	10,960	11,034	85,671
Hunting ground	6,050	14,418	8,460	6,170	8,560	7,500	22,003	10,630	10,634	83,791
Hunting productive area	4,650	11,413	6,980	5,670	7,920	7,290	16,564	9,860	7,556	70,347
Plough area	683	1,495	1,761	2,659	1,526	1,650	802	1,881	1,972	12,457
Meadows and pastures	3,747	5,000	5,027	2,981	4,222	3,460	5,440	3,723	1,964	33,600
Wood	220	4,918	192	30	2,172	2,180	10,322	4,256	3,620	24,290
Hunting unproductive area	1,400	3,005	1,480	500	640	210	5,439	770	3,078	13,444
Rivers, canals	110	84	160	64	58	100	50	30	26	656
Other areas	1,290	2,921	1,320	436	582	110	5,389	740	3,052	12,788
Unhunting area	150	610	270	130	220	170	0	330	400	1,880

Hunting Commercial Basics of hunting association Deer from Hisar for the hunting grounds: Leskovo, Zurce and Pribilci [3];
Hunting Commercial Basics of hunting association Deer from Krushevo for the hunting grounds, Aldanci, Ostrilci and Divjaci [4];
Hunting Commercial Basics of hunting association Kavadarci from Kavadarci for the hunting grounds Seskovo, Kumanicevo; LUKAR, Mrezicko, Drenovo, Rosoman, and et al. in state property [5];
Hunting Commercial Basics of hunting association Mukos from Prilep for the hunting grounds: Strovija-Kadica, Krstec-Nikodin, Belovodica, Vitoliste, Melnica, Krusevica, and et al. [6];
Hunting Commercial Basics of hunting associations from Bitola and hunting association Kajmakalan from Staravina, Zlokukani, Sekirani, Sv Todori, Nidje and Staravina [7].

types of fish commonly fished in Black River basin are: catfish, carp, barbel or *Gobio gobio*, Carras, common bleak, common roach, Macedonian vimba, skobalt, perch, tench and trout [9].

One can conclude that the river water objects in the Black River basin are quite rich in diverse fish stocks, but one must point out for the selfless care of members of sport fishing association Mamec (Bait) from Prilep and Kajmakalan from Bitola who regularly carried out fish stocking every year in the most of the water objects in the region investigated. The number of ponds in Black River basin is shown in Table 2.

3. Results and Discussion

According to data from the Table 2, it can be seen that in the Black River basin there are 22 individual farms with fishponds, they have a total of 23 fish ponds of which 19 are older than 20 years. Ponds cover a total area of 53,883 m², with a total volume of 391,743 m³. Seen by municipalities, there are most

ponds in the municipalities of Bitola and Kavadarci [10]. The number of households that own fish pond is 25 ha with a total area of 236 ha, of which for trout there are 65 ha, 147 ha for carp and other fish 123 ha. As to the capacity of the fishponds for trout, it is about 3,382 m³; the carp is 115,462 m³ and 268,478 m³ for other fish [11].

It can be concluded that in future much more individual farmers should pay attention to the opening of new fishponds and fish stocking of rivers that has great importance for tourism development in the basin of Black River [12]. Also, in Table 3 are presented data about the area and the capacity of the fishponds.

In the Fig. 1, it is presented fishpond in the near village Babino.

4. Conclusions

Hunting in the Black River basin is presented as a branch, hunting includes: breeding, protection and exploitation of the game [13]. The hunt is not only for

Table 2 Displaying fishponds in municipalities with up to 20 years and individual farms with ponds in Black River basin in 2007.

Municipality	Individual farmholds with objects (fishponds)	Total number	Fishponds From which up to 20 years	Fishponds	
				Area (m ²)	Volume (m ³)
Bitola	3	4	3	40,990	361,980
Gradsko part of the basin	0	0	0	0	0
D.Hisar	1	1	1	300	600
Dolneni	2	2	2	205	525
Drugovo part of the basin	3	3	2	1,500	1,800
Kavadarci part of the basin	4	4	4	3,280	5,690
Krivogastani	1	1	1	600	7,200
Krusevo	0	0	0	0	0
Mogila	0	0	0	0	0
Novaci	0	0	0	0	0
Prilep	7	7	6	6,980	13,892
Rosoman	1	1	0	28	56
Caska part of the basin	0	0	0	0	0
Total	22	23	19	53,883	391,743

Table 3 Area and capacity of the fishponds in 2007

Municipalpty	Nr of households that have fishponds	Surface of the fishponds (ha)				Capacity of fishponds (m ³)		
		Total	For trout	For carp	For other fish	For trout	For carp	For other fish
Bitola	6	4.13	0.03	1.15	2.95	630	96,480	265,500
Gradsko part of the basin	0	0	0	0	0	0	0	0
Hisar	1	0.30	0.30	0	0	0	0	0
Dolneni	1	0.01	0	0.01	0	0	150	0
Drugovo part of the basin	2	0.20	0.20	0	0	1,540	0	0
Kavadarci part of the basin	5	0.38	0.12	0.23	0.03	1,200	6,340	650
Krivogas	1	0.60	0	0.60	0	0	7,200	0
Krushevo	0	0	0	0	0	0	0	0
Mogila	0	0	0	0	0	0	0	0
Novaci	1	0.00	0.00	0	0	12	0	0
Prilep	7	0.70	0	0.47	0.23	0	5292	2300
Rosoman	1	0.00	0	0	0.00	0	0	28
Caska part of the basin	0	0	0	0	0	0	0	0
Total	25	236	65	147	123	3,382	115,462	268,478

Inventory of R. Makedonija 2007; Skopje 2008; Calculations from the author.

production of meat and skins, it creates conditions for development and other economic activities. This primarily have to be mentioned the role of recreational sport hunting and its significance for the development of hunting tourism [14]. An important element in the analysis of hunting is the total areas of the hunting grounds. Major commercial hunting areas that exist in Crna reka basin are:

(1) Hunting Commercial Basics of hunting association Deer from D. Hisar for the hunting

grounds: Bazernik, Leskovo, Zurce and Pribilci;

(2) Hunting Commercial Basics of hunting association Deer from Krushevo for the hunting grounds Aldanci, Ostrilci and Divjaci;

(3) Hunting Commercial Basics of hunting association Kavadarci from Kavadarci for the hunting grounds Seskovo, Kumanicevo, Lukar, Mrezicko, Drenovo, Rosoman, Marena Vatasha, Koshani, Cemersko and Klinovo-Rozden in state property;



Fig. 1 Fishpond in the near of v. Babino (Aug. 24, 2008).

(4) Hunting Commercial Basics of hunting association Mukos from Prilep for the hunting grounds: Strovija-Kadica, Krstec-Nikodin, Vitoliste, Melnica, Krusevica, Dunje, Prilepec, Podmol, Erekovci, Topolcani, Zagoreska korija, Sredorek, Krivogastani, Dolneni, Slavej, Oreovec, and Trojaci;

(5) LSO, Hunting Commercial Basics of hunting associations from Bitola and hunting association Kajmakalan from S. Staravina: Zlokukani, Sekirani, SV Todor, Nidje and Staravina.

One can conclude that in the Black River basin there are excellent conditions for development of hunting tourism [15].

Fishing in Black River basin has sports recreational character in rivers and economic character in fishponds [16].

The fish stocking of river water objects is made by sports fishing associations, such as Mamec from Prilep, Kajmakalan from Bitola and all other fishing associations from other community centers including Krusevo Dolneni Novaci, Mogila and Tikvesh [17].

Major water objects that possess large quantities of fish are the rivers: Crna, Buturica, Lisicka, Gradeska, Belica, Konjarka, Satoka, Blato, Stroska and Golema River [18].

All micro accumulations on the territory of the Black River basin are more or less fish stocked [19].

From the fish that is usually fished in the Basin of Crna River, they are: catfish, carp, barbel or gobio gobio, Carras, common bleak, common roach, Macedonian vimba, skobalt, Tench and trout [20]. River water objects in the Crna River basin are quite rich in diverse fish stocks, and they contribute much to the development of the weekend sport fishing tourism [21, 22].

Reference

- [1] I. Basevski, Prilep Lake, Geografski razgledi Scientific society Prilep 7, Skopje, 1969, pp. 78-89.
- [2] M. Gasevski, Hydrographic features of Mariovo, Scientific Society, Prilep, 1984, pp. 22-28.
- [3] G. Basevski, Trojachka valley, the natural conditions for development of hunting in Trojachka Valley, 1989, pp. 84-99, 127-135.
- [4] D. Kolcakovski, Basic Biogeographic Features of Macedonia Geografski Razgledi Book, Skopje, 2000, p. 35.
- [5] D. Kolcakovski, Nidje mountain (Kajmakalan 2.520 m)—Basic geomorphologic features, 2004, pp. 110-115.
- [6] C. Koteski, Hydrological features of the basin of Crna River, 1971, pp. 123-128.
- [7] C. Koteski, Thematic atlas of Mariovo and Raecka valley, Master work, Faculty of Geography, University of Skopje, 2004, pp. 201-205.

- [8] B. Markoski, Cartographic definition and differentiation of mountain, 2005, pp. 101-105.
- [9] Spatial entities in the Republic of Macedonia, Skopje, Bulletin for physical geography, 2nd, 2009, pp. 25-34, 201-207.
- [10] I. Matanickin, Z. Pavletis, Life of Our Rivers, Zagreb, Geographical Studies, Skopje, 1972, pp. 151-155.
- [11] M. Milosevski, M. Zlateski, Waterpower engineering in Pelagonia, Bitola field Status, Development and Perspective, Bitola, 1998, pp. 141-150.
- [12] K. Micevski, Flora in R. Macedonia, MANU, Vol. 1, Skopje, 1993, pp. 70-74.
- [13] N. Panov, Tourist valorization of the artificial lakes in R. Macedonia, Master work, Faculty of Geography, University of Skopje, Belgrad, 1998, pp. 22-23.
- [14] N. Panov, Development of tourism in R. Makedonija, Zbornik, and First congress of geographers of R. Makedonija held in Ohrid od 26-28.10. 1995, Skopje, Makedonije, Forest encyclopedia, Vol. 3, Zagreb, 1996, pp. 24-25.
- [15] V. Sokoloski, Microacumulations, Macedonian waterpower engineering, No. 10, Skopje, 1997, pp. 25-26.
- [16] A. Stojmilov, Tourist value of the mountains in SR Makedonija, Annual Review of the Institute for Geography, No. 21, Skopje, 1975, pp. 45-47.
- [17] A. Stojmilov, Spatial factors in development of tourism in Kozuf-Nidje region, Annual Review of Faculty for Geography, University of Skopje, 1980, pp. 56-57.
- [18] A. Stojmilov Forestry in Mariovo, Complex Geographical Studies, Faculty of geography, University of Skopje, 1984, pp. 201-202.
- [19] Book of Ministry of Agriculture, Forestry and Water Economy R. Macedonia Hunting Ground Nr.1, Strovija-Prilep, Skopje, 2001, pp. 190-191.
- [20] Book of Ministry of Agriculture, Forestry and Water Economy R. Macedonia, Hunting Ground Nr. 4, Nixe-Bitola, 1998-2007, Skopje, 1998, pp. 80-81.
- [21] Ministry of Agriculture, Forestry and Water Economy R. Macedonia. Hunting Ground Nr. 5, Staravina-Bitola, Skopje, 1998, pp. 90-91.
- [22] Book of Ministry of Agriculture, Forestry and Water Economy R. Macedonia Hunting Ground Nr. 4, Vitolishte-Prilep, Skopje, 2001, pp. 70-72.