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CHANGES IN THE HARVEST OF THE PHEASANT (*PHASIANUS COLCHICUS* L.) IN POLAND IN THE YEARS 1999-2009

Abstract

The analysis aimed at determining of changes of the population of pheasant (Phasianus colchicus L.) in years 1999-2009. Statistical data demonstrate increase in the annual hunting bag of pheasant from 64,100 to 93,600. The greatest concentration of the population and the positive outcome of pheasant management was in hunting districts with favorable habitat conditions, where fox (Vulpes vulpes L.) was intensively reduced. The lowest number of pheasant was assessed in hunting districts of north-eastern Poland. In the majority of districts the reintroduction is the key factor for sustained hunting.

Key words: *hunting management, pheasant, hunting statistics*

Introduction

Pheasant (*Phasianus colchicus* L.) is one of the most abundant game animals present in farmland landscape. It should be emphasized that it is not native species in Poland, and its successful introduction in 1975/1976 allowed for the harvest of over 200,000 birds (Kamieniarz & Panek, 2008).

The feasible adaptation for environment gives possibilities for the reconstruction of the population of pheasant on the basis of appropriate reintroduction programme. Moreover, this is the reason that pheasant may soon become the most often hunted species of all game animals in Poland (Manelski, 1999).

The second world war warfare led to total decline of the population of pheasant. Reintroductions, led in 1950s by the Ministry of Forestry and Polish Hunting Association restored the density of the species (Czyżowski, 1999).

Wild population of pheasants is substantially supplied by introducing the birds reared on specialized farms. Complete adaptation in natural environment conditions is not an easy process, so the mortality of the introduced animals is an important issue. Pheasant is an environment-sensitive species. The effectiveness of the introduction depends on the quality of the habitat, suitable also for the breeding purposes. It is an indicative species for negative changes in the farmland production space, which remain the essential threat for the pheasant population density. Agricultural density, habitat degradation, growing consumption of chemical fertilizers and pesticides significantly decrease the number of birds (Bresiński et al., 2003).

At present, the total harvest of pheasant in Poland is 94,000 (hunting year 2008/2009). However it should be noted that in some hunting districts there is no living population of pheasant (Budny et al., 2010). The decline in population is often

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related to uncontrolled harvest, resulting in sex proportions and the predation pressure (mostly of significantly increased population of fox).

Task

The aim of the study was to show the changes of the relation between hunting harvest and reintroduction of pheasant in Poland in years 1999-2009. Results present the regional diversification of pheasant population management on the basis of hunting districts statistics (49 districts).

Materials and methods

The data for the analysis were taken from the hunting statistics of the Polish Hunting Association database in years 1999-2009. The harvest is being calculated according to the hunting year, from April 1st to March 31st next year. The hunting statistics were calculated on the basis of annual hunting bags. The quantitative data were excluded from the analysis due to the fact, that the population density was estimated only approximately. The analysis based on actual harvest data, allowed the assignment of the regional structure of the pheasant population in Poland, in the studied period. The harvest/introduction ratio (H/I) was also evaluated.

Results of researches

Table 1

Harvest and introduction of pheasant in Poland, in years 1999-2008.

Hunting year	Harvest	Introduction	H/I
1999/2000	64,100	60,400	1,06
2000/2001	62,000	62,000	1,00
2001/2002	63,300	67,000	0,94
2002/2003	79,300	83,400	0,95
2003/2004	67,600	86,400	0,78
2004/2005	71,700	99,400	0,72
2005/2006	67,900	98,800	0,69
2006/2007	63,000	92,400	0,68
2007/2008	80,700	101,100	0,80
2008/2009	93,600	96,500	0,97

Source: Polish Hunting Association

As one of the most popular game species, pheasant with the size of the harvest 93,600 is almost as commonly hunted in Poland as duck (*Anas platynrhynchos* L.) with the harvest size 108,000 in hunting year 2008/2009.

The hunting bag of pheasant since the end of 1990s was variable with the growing number of reintroduced birds. Since 1999 the introduction of the pheasant increased from 60,400 to over 100,000 in hunting year 2007/2008 (Table 1). It should be noted that in some regions introductions were the only option for continuous hunt of pheasants. Since the year 2000, the number of introduced birds exceeds the hunting

bag. There is a negative outcome of the hunting management, that forces the introduction of the farmed pheasants.

Additionally, the negative trend is strengthened by the predator pressure of fox population, the species excellently adapting to farmland modifications in Poland. The exceptional, whole year pressure of growing fox population was supported by the national anti-rabies campaign, successfully commenced in 2002. The number of rabies in Poland decreased from 3,084 in 1992 to 138 in 2005 (Smerczak, 2007). But the natural regulatory mechanism of fox population was eliminated.

Table 2

Harvest and introduction of pheasant in the hunting year 2008/2009.

District	Harvest	Introduction	H/I	District	Harvest	Introduction	H/I
Krośnieński	529	50	10,58	Elbląski	309	514	0,60
Krakowski	7981	1499	5,32	Zielonogórski	2312	3936	0,59
Bielski	7464	1917	3,89	Ciechanowski	1097	1975	0,56
Tarnowski	6804	2065	3,29	Koszaliński	557	1015	0,55
Sieradzki	2873	1115	2,58	Koniński	1592	2906	0,55
Gdański	141	55	2,56	Opolski	1648	3305	0,50
Kielecki	5806	2492	2,33	Warszawski	2016	4067	0,50
Katowicki	7671	3810	2,01	Zamojski	804	1707	0,47
Skierniewicki	1881	1083	1,74	Włocławski	2082	4429	0,47
Częstochowski	2212	1295	1,71	Łomżyński	327	780	0,42
Tarnobrzeski	3706	2179	1,70	Legnicki	347	830	0,42
Rzeszowski	3242	2140	1,51	Toruński	2000	4795	0,42
Łódzki	1650	1214	1,36	Bydgoski	1323	3656	0,36
Płocki	2822	2206	1,28	Przemyski	411	1149	0,36
Radomski	2037	1695	1,20	Olsztyński	168	564	0,30
Lubelski	3565	3489	1,02	Ostrołęcki	398	1364	0,29
Piotrkowski	1197	1242	0,96	Wałbrzyski	365	1268	0,29
Gorzowski	2086	2603	0,80	Bielskopodlaski	432	1525	0,28
Chełmski	1168	1460	0,80	Poznański	1166	4366	0,27
Kaliski	2665	3469	0,77	Leszczyński	477	1898	0,25
Wrocławski	1988	2663	0,75	Szczeciński	1031	4270	0,24
Nowosądecki	549	764	0,72	Jeleniogórski	90	435	0,21
Siedlecki	930	1374	0,68	Białostocki	89	595	0,15
Pilski	1158	1747	0,66	Suwalski	36	853	0,04
Słupski	448	690	0,65	Total	93650	96518	0,97

* stan ilościowy na dzień 31 marca, początek hodowlanego roku łowieckiego

Source: Polish Hunting Association

Fox, with its annual hunting bag approximately 139,000 became common, dangerous predator. The hunting intensity of fox remains constantly low (approx. 71%).

The positive outcome of the hunting management in pheasant was noted in districts: krośnieński, krakowski and bielski (Table 2). The average national H/I ratio in the hunting year 2008/2009 was only 0,97. The positive balance of pheasant management was noted merely in 33% of districts. The poorest H/I results were calculated for districts białostocki and suwalski (0,15 and 0,04 respectively).

The structure presented in Table 2, is an outcome of differentiation of environment conditions. Pielowski et al. (1993) showed the regional pattern of favored habitats for pheasant, based on the population density in 1970s and 1980s. The present structure of harvest is in accordance with that from the beginning of 1990s (Table 2). The highest harvest of pheasant is typical for the southern regions of Poland. In districts: krakowski, katowicki, bielski, tarnowski and kielecki the annual harvest was from 5,806 to 7,981 with the positive management of the species maintained.

The lack of particular environmental conditions (rushes at water pond banks, poor condition of drainage ditches, uncultivated lands) decrease the local population size of pheasants, so the only available for harvest birds have to be released/introduced.

The least favored region for pheasant management in north-eastern Poland. Budny et al. (2010) point at the lowest harvest of fox in suwalski and białostocki districts.

Conclusions

1. Since 1999 the harvest of pheasant increased from 64,100 to 93,600. This high increase was due to high annual release/introduction (over 100,000).
2. The density of pheasant population is endangered by environmental factors and the pressure of predators, especially growing population of fox.
3. The highest density of pheasant and the positive balance of the hunting management occurs in districts with significant harvest of fox and favored environmental conditions: krakowski, katowicki, bielski, tarnowski and kielecki. In the majority of districts the release/introduction of farmed pheasants is absolutely essential for continuous hunting.
4. The positive balance of hunting management of pheasant have merely 33% of districts in Poland. In the krośnieński district for 1 released bird, 10,58 were shot. The most abundant hunting regions are in krakowski district (H/I above 5), due to low annual harvest (approx. 500). The poorest results were assessed for north-eastern Poland (H/I ratio for suwalski district was 0,04).

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Summary

The paper presents changes in the harvest of pheasant in Poland between 1999 and 2009. The analysis of hunting statistics showed the increase in annual number of hunted birds from 64,100 do 93,600. The density of pheasant population is affected by the environment conditions, predation and release/introduction programme. The greatest concentration of pheasants with the positive balance in species management was in regions with the highest harvest of fox in the favorable environment conditions. The best districts are: krakowski, katowicki, bielski, tarnowski and kielecki. The worst situation appears to be in hunting districts of north-eastern Poland.

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