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CONTEMPORARY STATE OF HUNTING INDUSTRY IN THE REPUBLIC OF BELARUS

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Abstract. The main issues in hunting management in Belarus are environmental protection, social-cultural, and economic problems. The total area of hunting grounds in the area is approx. 16.6 million hectares, including approx. 7.4 million hectares of forestlands, 8.2 million hectares of farmlands, and approx. 1 million hectares of wetlands. The territory of Belarus is characterized by lowland terrain features and a large number and area of stagnant and flowing waters. Protected areas (parks, reserves) account for 8.7% of the total area of the country. The hunting management is implemented in 250 legal entities. The main user of hunting grounds is the Belarusian Association of Hunters and Fishermen managing an area of ca. 10 million hectares. Hunting management is implemented based on national legislation of 2005. In 2015, the population of the moose was 32 thousand, deer – 15.2 thousand, roe deer – 74.6 thousand, beaver – 58.3 thousand, capercaillie – 8.5 thousand, black grouse – 37.3 thousand. Over the last 10 years, the population of moose has doubled and the population of deer and roe deer has increased 2.5-fold and 1.5-fold, respectively. In relation to the habitat potential and breeding recommendations, the current populations of game species (moose, deer, and roe deer) do not exceed 70% of the expected number. There are wild boars, but their numbers have been substantially reduced from 80 thousand to 2–3 thousand due to the epizootic threat (ASF). The hunting size is limited with reference to the number of individual species and the abundance dynamics. The level of exploitation of Cervidae is 10–13% of the total abundance, beavers – ca. 15%, and capercaillie and black grouse – 8–10%. Wolves are a hunting species and their population size over the last 10 years increased from 1000 to 1600 individuals, and the culling size increased from 700 to 1400.

Key words: game management, bag, hunting

INTRODUCTION

The territory of Belarus provides all conditions for good hunt and fishing. Hunting in the Republic of Belarus is a progressively developing area of activity that has social, cultural, and economic components.

The Belarusian Society of Hunters and Fishermen is a major tenant of hunting lands in the Republic of Belarus.

It rents 10 million hectares of hunting lands or 60% of their total area (Fig. 1).

Hunting is regulated by the Maintenance rules of hunting industry and hunting that were approved by the Decree of the President of the Republic of Belarus from 08.12.2005 № 580 [Decree... 2005]. They comprise a list of game animals, which consists of 50 species, including 12 rated (8 hoofed animals species, 2 fur-bearing species, and 2 bird species) and 38 off ration species (11 fur-bearing species and 27 bird species).

Hunting in the Republic of Belarus is allowed only with a state hunting certificate. 121 thousand of citizens have such a certificate. The Belarusian Society of Hunters and Fishermen was founded in May 1921. In May 2016, the Belarusian Society of Hunters and Fishermen celebrates its 95th anniversary. There are more than 90 thousand members in the Society. The Belarusian Society of Hunters and Fishermen includes 6 regional and over 100 district organizational structures. 650 regular employees work on the security, rational use, and reproduction of game animals.

The Belarusian Society of Hunters and Fishermen is a member of the International Council for Game and Wildlife Conservation (CIC), World Canine Organization (FCI), and World Sport Fishing in Fresh Water Federation (FIPSeD). Hunting entities of the Belarusian Society of Hunters and Fishermen are registered in the "Traces" system.

In order to guarantee firm development of the hunting industry in the country by forming and realizing the main directions of the state politics in this sphere, the Government of the Republic of Belarus approved the Conception of hunting industry development in October, 2014 [Enactment ... 2014] and the State Program "Belarusian Forests" for 2016–2020 with a subprogram "Development of Hunting industry" in March, 2016 [Enactment... 2016].

The aim of the study is to present the problem of game species management in Belarus in 2015. The population size and level of exploitation of 15 game species is shown and the territorial distribution of the basic species is demonstrated.

STUDY AREA

The Republic of Belarus is located in the central part of Europe. It borders Latvia, Lithuania, Poland, Russia, and Ukraine. The territory of Belarus is 208 000 km². The country extends from 560 km from North to South to 650 km from East to West. The population of Belarus is 9.5 million people. Belarus is divided administratively into 6 regions. The capital of the state and the biggest city is Minsk with a population of 2 million people. The nature of Belarus is unique. The north of Belarus is the land of lakes. In the south of the country, there is a swampy land

downstream the Pripjat river – a famous Belarusian Polesye. There are about 21 thousand rivers running across the country with a total length of over 90 thousand kilometres. There are also more than 10 thousand natural lakes and 1.5 thousand water reservoirs with a total surface area of 2 thousand square kilometres. Forests grow over the area of 9.5 million hectares and their coverage is 40% of the country's territory. Swamps cover 2.5 million hectares or 14% of the territory.

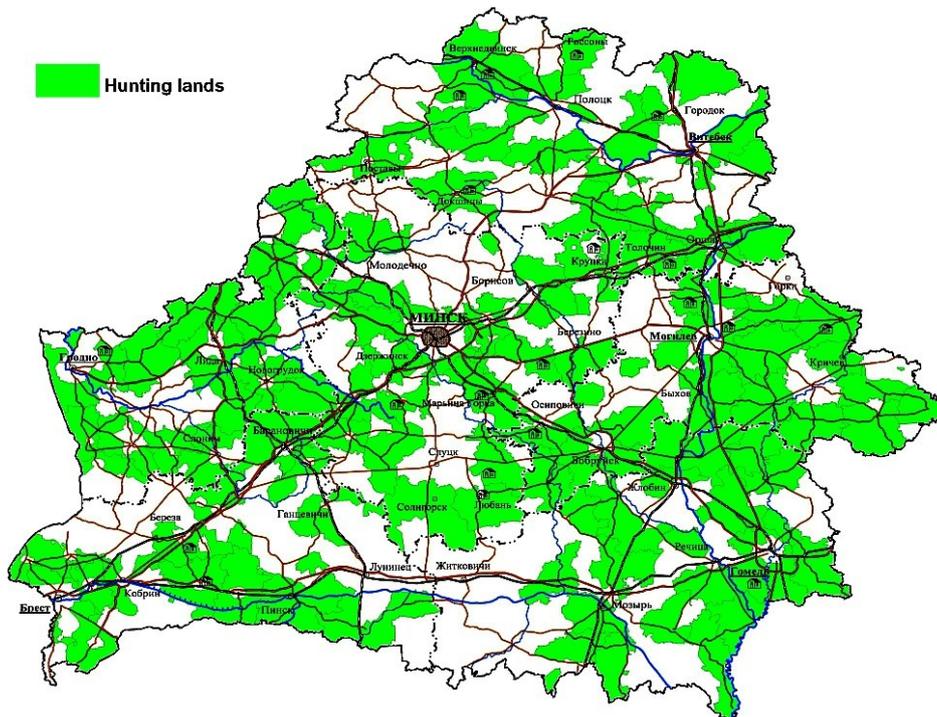


Fig. 1. Hunting lands rented by the Belarusian Society of Hunters and Fishermen

Some territories of the Republic of Belarus with unique, model, or other valuable ecosystems and nature objects that are of special ecological, scientific, and/or aesthetic value are among specially protected natural sites. Preservation of ecosystems is realized through creation of natural reserves (2), national parks (4), wildlife sanctuaries of national (96) and local (267) significance, as well as natural monuments at the state (319) and regional (568) level. Their total area is 1809 thousand hectares, which constitutes 8.7% of the country's territory. They are aimed at saving the biological and terrain variety; they also ensure efficient use of the ecosystems and prevention of degradation, pollution, damage, depletion, and other harmful impacts.

The area of hunting lands of the Republic of Belarus is 16.6 million hectares, including 7.4 million hectares of forestlands, 8.2 million hectares of farm-

lands, and 1 million hectares of wetlands. Approximately 250 legal entities are in charge of hunting management (Fig. 1).

MATERIALS AND METHODS

The paper presents information on the number, density, size, and distribution of basic game species in Belarus. Data on the population size and the size of hunts were obtained from the Ministry of Forestry; they include information on animals present in hunting areas managed by the Belarusian Society of Hunters and Fishermen and managed by the State Forests. Photos documenting the results of the work were obtained from the resources of the Belarusian Association of Hunters and Fishermen.

RESULTS

Nowadays, the current population of moose in the hunting lands is 32.0 thousand individuals, the population of red deer – 15.2 thousand individuals, and the population of roe deer – 74.6 thousand individuals (Fig. 2). In the last 10 years, the population of moose has doubled, red deer – by 2.5 times, and roe deer – by 1.5 times. At the same time, the population optimum of these species has not been reached. The current population of moose is 74% of the population optimum, red deer – 17%, and roe deer – 46%.

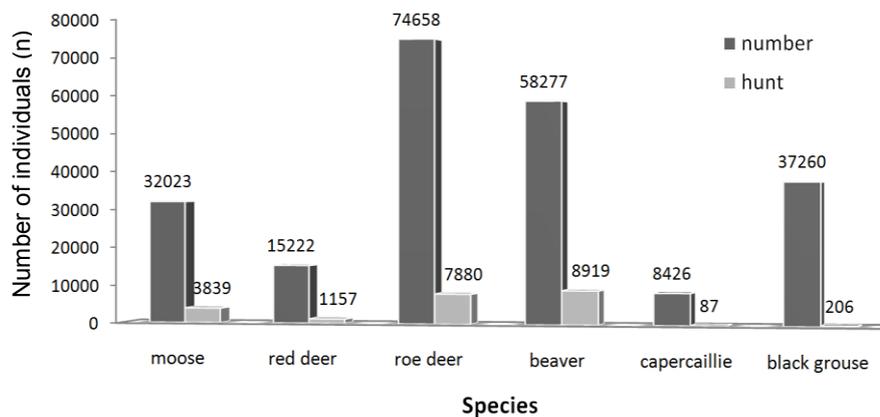


Fig. 2. Number of individuals and hunt of rated species of game animals in the Republic of Belarus in 2015

Moose inhabit the territory of the country unevenly (Fig. 3). Its highest density is noted in the northern and eastern parts of the country. To the south-west

of the country, the population of moose decreases significantly. This is connected with the worsening of the habitat conditions for moose. The economic advance of the species is sufficiently low and averages 12% [Danilkin 1999, Kozorez 2014].

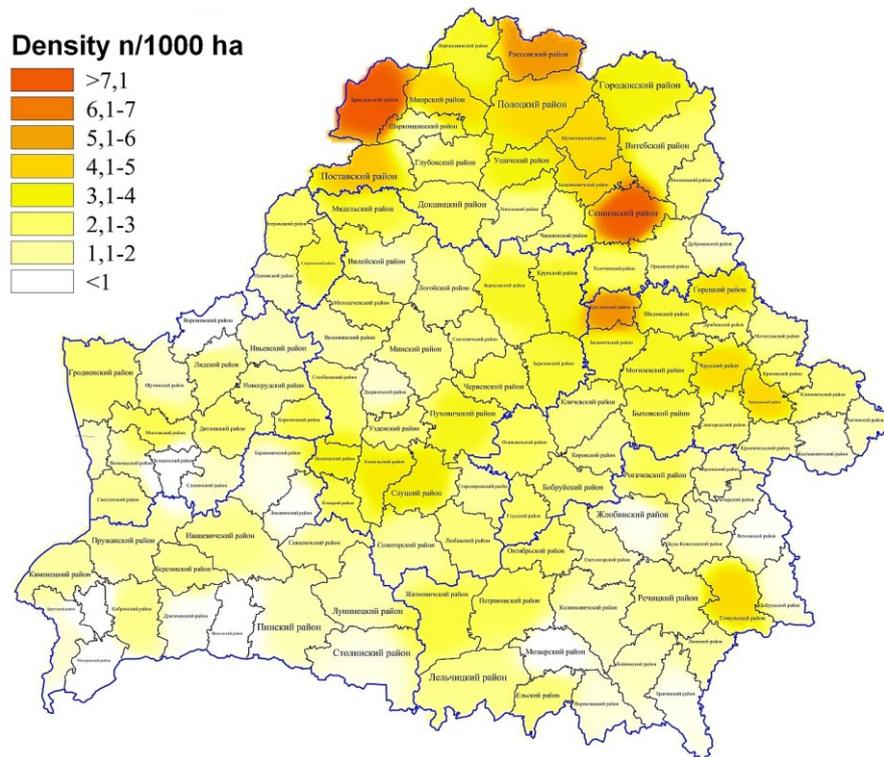


Fig. 3. Density of the moose population (individuals/1000 ha) in terms of administrative districts in the Republic of Belarus

Red deer can be found on the territory of 104 tenants of hunting grounds and inhabits about 3 million hectares from 7695 thousand hectares of suitable hunting lands [3]. This species is spread around the territory of the country extremely unevenly (Fig. 4). The major strength of the red deer population is concentrated in the West of the country in some local populations (Belovezhsko-Pruzhanskaya, Nalibokskaya etc.). Large territories are devoid of red deer. Besides, many local populations are characterized by low density (less than 10 individuals on 1 thousand hectares), which is not enough for normal population-based species existence [Danilkin 1999, Kozorez 2014].

Currently, red deer dispersal over the hunting lands territories is being performed. In 2014–2015, the Belarusian Society of Hunters and Fishermen created 12 populations of this species in its system. This year creation of new populations is also in progress.

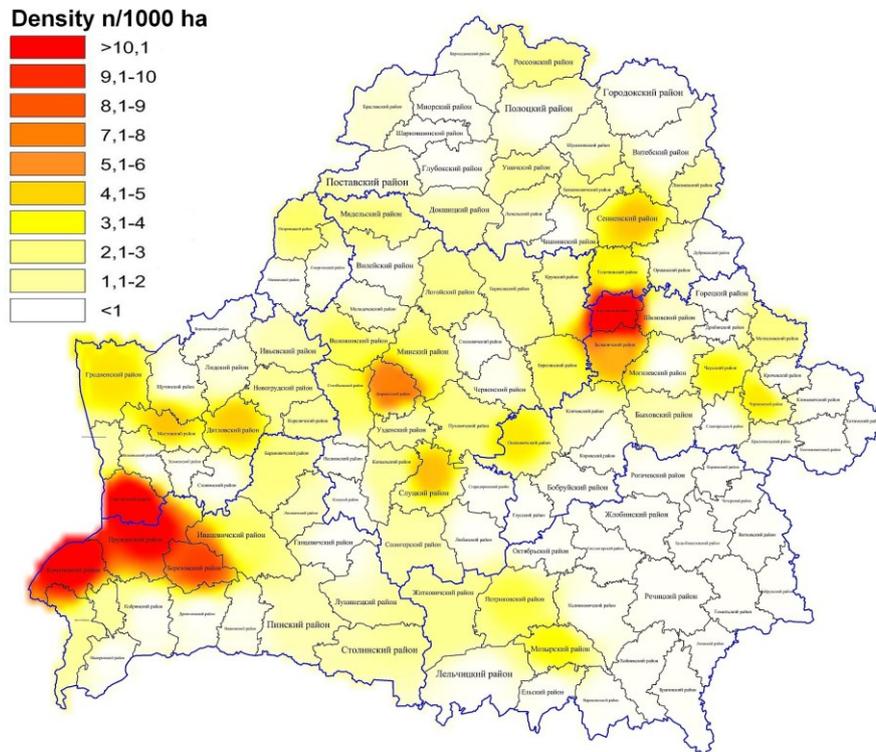


Fig. 4. Density of the red deer population (individuals/1000 ha) in terms of administrative districts in the Republic of Belarus

The increase in the roe deer population, likewise for moose, is sufficiently low: it is only 11%, while 30–40% is possible [Danilkin 1999, Kozorez 2014]. The geographical spread of roe deer over the territory of the country is azonal without well-defined zonal distribution (Fig. 5). With the specified degree of accuracy, it is possible to claim that the density of the roe deer population is slightly higher in the western part of the country. This is due to the more favourable climatic factors for the roe deer population in this part of Belarus (snow-cover height) [Kozorez 2014].

Only two years ago, the wild boar headcount in the hunting lands was about 80000 individuals. However, because of the African swine fever viral shedding risk, the wild boar headcount got down to several (2–3) thousand specimens thanks to hunters. It should be mentioned that there were no recorded cases of African swine fever in the Belarusian wildlife in 2015.

The numbers of beavers is 58000, western capercaillie – 8500, and black grouse – 37000 (Fig. 2).

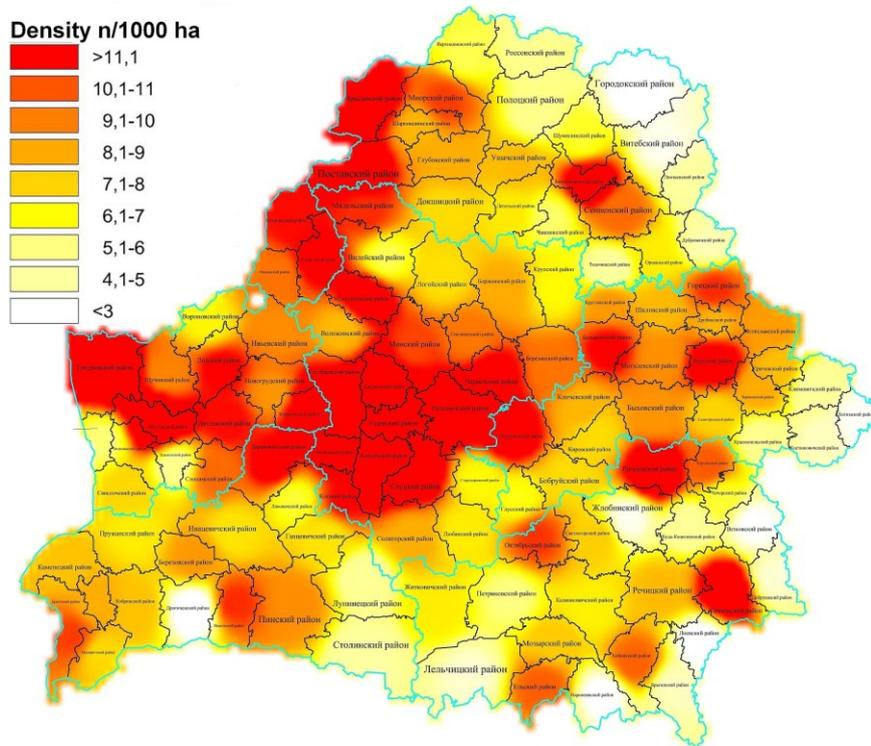


Fig. 5. Density of the roe deer population (individuals/1000 ha) in terms of administrative districts in the Republic of Belarus

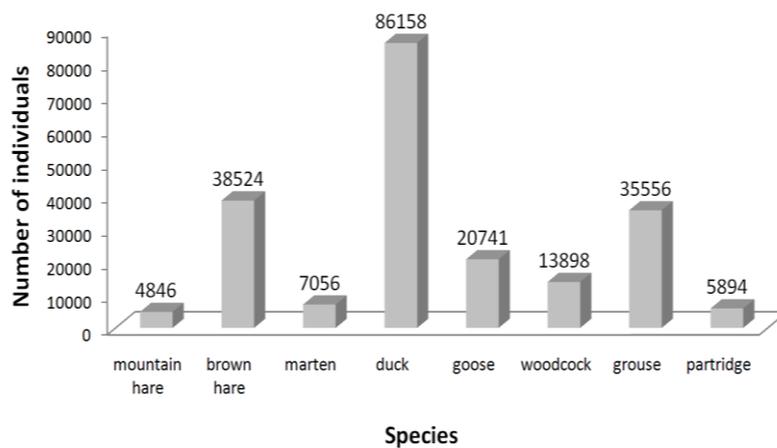


Fig. 6. Number of game animals hunted in Belarus in 2015

In 2015, the moose culling rate was 3839 individuals, red deer – 1157 individuals, roe deer – 7880 individuals, beaver – 8919 individuals, capercaillie – 87 individuals, and black grouse – 206 individuals.

The summer and autumn hunting season for feathery game (ducks, geese, woodcock, grouse, and partridge) and the autumn and winter hunting season for fur-bearing animals (mountain hare, brown hare, marten) are very popular among hunters.

In 2015, hunters culled 5000 individuals of mountain hare, 38.5 thousand individuals of brown hare, 7000 individuals of marten, 86000 individuals of ducks, 21000 individuals of geese, 14000 individuals of woodcock, 3500 individuals of grouse, and 6000 individuals of partridge (Fig. 6).

An increase in the number of some predator animal species is noted. It exerts a negative impact on the most valuable game animal species. High density of carnivores is troublesome for game management due to the epizootic situation in respect of e.g. the rabies virus.

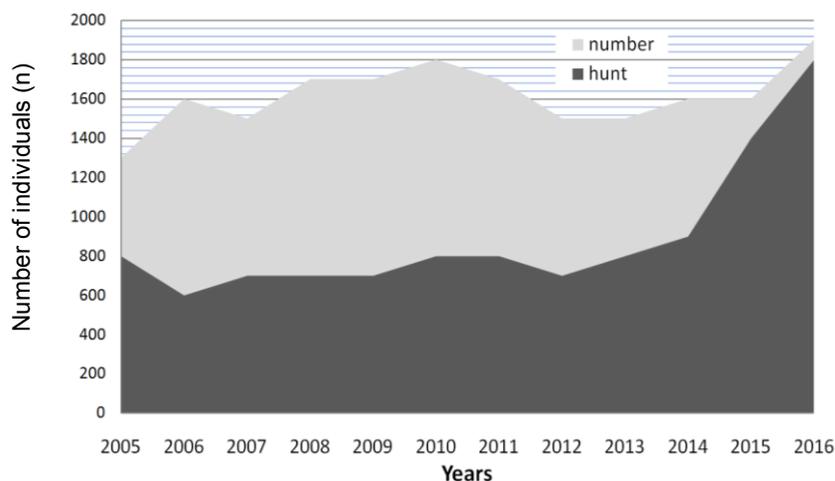


Fig. 7. Numbers of living and culled wolves in Belarus in 2004–2015

The number of wolves has increased by 45% in the last 10 years, raccoon dog (which is an invasive alien species) – by 68%, marten (both common and stone) – by 43%, and lynx – by 113%. At the same time, there is a positive tendency towards a decrease in the fox headcount by 37%.

Last year, wolf culling amounted to 1481 individuals, which is twice as much as it was 10 years ago.

The highest wolf-culling rate was noted in 2015 (Fig. 7). In comparison with 2014, it increased by 57%. At the same time, measurements held in 2016 show that the size of all wolf populations is almost the same: the numbers of wolves has decreased only by 5%.



Fig. 8. Fragment of a wolf pack hunt

According to the research held in Belovezhskaya Pushcha, one wolf hunts about 42 hoofed animals annually, including 27 red deer, 12 wild boars, and 2 roe deer [Schmidt 2014]. This indicates that one wolf eats about 2 tonnes of meat annually (Fig. 8).

DISCUSSION

Belarus offers beneficial conditions for the existence of game animals and hunting management. This is confirmed by the size of forestland, i.e. 38%, and considerable water resources. The mean human population density is ca. 45 individuals per km² with 47% of the population living in the 10 largest cities of Belarus, which indicates a low level of anthropopressure on natural habitats. Moderate- and low-quality soils dominate; due to the continental climate with a vegetation period below 200 days, the natural vegetation cover is not abundant, and forests are dominated by coniferous species. The number of animal species is high and some of them are, e.g. capercaillie, black grouse, characterized by several-fold greater population size than in Poland. The density of ungulates in Belarus is varies. The most even spatial structure is noted in the case of roe deer with the mean density of ca. 1 individual per 100 hectares of forest area. Moose occur

almost all over the country with a mean density of 4 individuals per 1000 hectares. In turn, the spatial distribution of the deer occurrence has an island structure and the mean density in the country is ca. 2 individuals per 1000 hectares of forest area. The economic goals in hunting aim at increasing the size of deer population and their more even distribution. Wild boars are a game species in Belarus, but their population size is substantially reduced due to the ASF virus risk. In comparison with Poland [Dziedzic and Błaszczuk 2015], the densities of the basic species is several times lower. The level of hunting exploitation is the highest in the beaver population – approx. 15% of the number of living animals, moose – approx. 12%, and in roe deer – approx. 10%. The culling rate is 0.5% of the black grouse population and 1.0% of the capercaillie population. This level of exploitation has no effect on the abundance dynamics in these species. In comparison with Poland, the Czech Republic, and Germany, the exploitation of ungulates is low [Dzięciółowski and Dziedzic 2010].

Hunting land capacity in the Republic of Belarus gives the possibility of population growth of such native species as moose, red deer, roe deer, brown hare, mountain hare, capercaillie, black grouse, and partridge, which will contribute to higher culling rates in future. Moufflon and fallow deer immigration to hunting lands is also going to be tested. It will diversify hunting fauna, increase hunting lands' richness, and satisfy hunters' demand.



Fig. 9. Pattern of nesting site equipment for waterfowl

The Belarusian Society of Hunters and Fishermen pays great attention to game breeding. Apart from red deer dispersal, Belarusian Society of Hunters and Fishermen employees made and installed about 8 thousand nesting sites for waterfowl over the last 2 years (Fig. 9). Currently, pheasant yards are being created in 9 hunting entities; brown hare and partridge breeding farms are also planned to be set up.

CONCLUSIONS

The above-mentioned statutory and regulatory enactments aim at solving the following current problems in hunting industry:

- the complicated statutory regulation and the absence of an objective evaluation system of hunting industry efficiency;
- the insufficient (lower than optimum) density of moose, red deer, roe deer, capercaillie, blackcock, and some other game animal species;
- the absence of a high-performance system of game animal protection, which is primarily connected with the lack of hunters' interest in maintenance of game animals at an optimum level and low effectiveness of protective actions held by some tenants of hunting grounds;
- the considerable reduction in the wild boar population in order to prevent epizooty and other extreme situations and elimination of their consequences;
- the insufficient number of specialists having core education among game managers and game keepers.

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WSPÓLCZESNA SYTUACJA GOSPODARKI ŁOWIECKIEJ NA BIAŁORUSI

Streszczenie. Głównymi kierunkami funkcjonowania łowiectwa w Białorusi są problemy dotyczące ochrony przyrody, społeczno-kulturalne i ekonomiczne. Ogólna powierzchnia użytków łowieckich w kraju wynosi ok. 16,6 mln ha, w tym powierzchnie lasów zajmują ok. 7,4 mln ha, powierzchnie użytków rolnych ok. 8,2 mln i powierzchnie bagienno-torfowiskowe ok. 1 mln ha. Terytorium Białorusi charakteryzuje się nizinym ukształtowaniem terenu i dużą ilością oraz powierzchnią wód stojących i płynących. Tereny obszarów chronionych (parki, rezerwaty) stanowią 8,7 % ogólnej powierzchni kraju. Gospodarka łowiecka realizowana jest w 250 jednostkach gospodarczych. Głównym użytkownikiem powierzchni łowieckich jest Białoruski Związek Myśliwych i Wędkarzy, ponieważ gospodaruje na obszarze ok. 10 mln ha. Funkcjonowanie łowiectwa prowadzone jest w oparciu o ogólnokrajowy akt prawny z 2005 roku. W 2015 roku liczebność łośi wynosiła 32 tys. osobników, jeleni – 15,2 tys., saren – 74,6 tys., bobrów – 58,3 tys., głuszców – 8,5 tys., cietrzewi – 37,3 tys. W ostatnich 10 latach liczebność łośi wzrosła dwukrotnie, jeleni – 2,5 krotnie i saren – 1,5 krotnie. W stosunku do możliwości siedliskowych i zaleceń hodowlanych obecne liczebności podstawowych gatunków łownych (łoś, jeleni, sarna) nie przekraczają 70% oczekiwanych stanów zwierzyny. Dziki występują, ale ze względu na zagrożenia epizootyczne (ASF) liczebność ich znacznie zredukowano z 80 tys. do 2 – 3 tys. Pozyskanie łowieckie jest limitowane, odniesieniem są liczebności poszczególnych gatunków i dynamika liczebności. Poziom eksploatacji jeleniowatych wynosi 10 – 13% liczebności, bobrów ok. 15%, a głuszców i cietrzewi – 8 – 10%. Wilki są gatunkiem łownym, liczebność w ostatnich 10 latach wzrosła z 1000 do 1600 osobników, a pozyskanie łowieckie z 700 do 1400.

Słowa kluczowe: gospodarka gatunkami łownymi, pozyskanie, łowiectwo