

APPROVED

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Natural Resources and Environmental
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Wolf Population in the Republic of Belarus MANAGEMENT PLAN

CHAPTER 1. GENERAL PROVISIONS

According to the Convention on Biological Diversity and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (further – CITES Convention) Republic of Belarus shall take measures to preserve biological diversity, ensure protection and rational use of its fauna.

Unlike the Republic of Belarus, in Western European countries, wolf is a rare wild animal species. Because of migration movements of wolves westwards, the wolf population in Belarus is regarded as one of the main donor populations supporting sustainability (genetic diversity) of such populations in Western European countries. In the Republic of Belarus, the wolf is not a rare wild animal species, and is an object of hunting. Meanwhile, in his lifetime activities wolf causes considerable damage to hunting and agriculture. Besides, wolf is a host for rabies.

Nevertheless, considering requirements of the international agreements and national legislation of the Republic of Belarus on animals protection and use, it is necessary to implement a package of measures concerning wolves' population, which shall ensure preservation of demographically viable wolves population, reduction of damage caused by them to hunting and agriculture, prevention of rabies spread by wolves.

CHAPTER 2. BIOLOGICAL CHARACTERISTICS OF WOLF

General information

Wolf (Class: Mammalia; Order: Carnivora; Family: Canidae) is a native species in the Republic of Belarus, and it is the biggest species in its family: its overall body length (incl. the tail) can measure up to 160 cm, height – up to 90 cm at the shoulder, body weight – up to 62 kg. In populations, males always are weighing approximately twenty per cent more than females. Wolf prefers forest habitats integrated in relatively unchanged natural complexes, though it can also live in agricultural landscape.

Wolves are monogamous, i.e. there is one female mating with every male; wolf is leading a family way of life, for a long time keeping its pair. The pack consists of a litter of this-year-born pups with their parents, and they can be joined by unrelated previous-year-born animals and single males. In a pack, it only occasionally happens to be more than 10-12 animals with domination of one pair.

Demographic characteristics of wolf population

Wolf reaches sexual maturity by the end of its first year of life. The reproduction period comes not earlier than the end of the second year of life in February — early March. If one animal in pair of the adults dies, the lost animal is replaced by another one. Pups (1 – 10 animals, more frequently 4 — 8 cubs) are born since middle April until early June, however mostly in late April – early May. The pups usually live together with the parental pair almost for two years, and then resettle. Wolves live ten and more years.

In case of intensive elimination of the wolf population and, as a result of it — decreasing its population density and increasing the share of young wolves — the average age of adult animals decreases, while the percentage of females in scent marking grows and the fertility of adult animals increases (Sidorovich et al., 2007).

In the Republic of Belarus death rate of pups in a litter by the beginning of winter (prior to the beginning of wolves hunting in current biological year) reaches 0 – 100%, with average level 42%. Thus, death rate of young females prior to the beginning of winter makes 36% - 40%, males – 45% - 48%. During the winter in case of intensive elimination are killed about 78% of young wolves, while moderate elimination results in killing about 42%. By the end of winter, as a result of natural deaths and conducted elimination only few wolf pups survive until the one year age: in case of intensive elimination — about 10%, at a moderate level of extraction — about 24.4%. Thus, on the average in the wild survive up to 6 of 10 pups, and in the case of elimination up to 1-4 of 10 wolf pups. Until the middle of the next winter survive:

in the case of intensive elimination — only 28% of young wolves present in the population at the middle of current winter;

in the case of weakened elimination their survival rate for this period is almost twice so high - 63 %, that makes 0.28-1.12 and 0.63-2.52 on 10 pups born last year, accordingly.

During the birth period, the breeding pair lives mostly separately, on a distance of 7-10 km from other members of the pack, occupying the area of 4-25 km². Places of stay of both groups are essentially localised.

Dietary habits of wolf

In most cases and everywhere the wolves consume wild boars, and in some regions of the Republic – also beavers, elks, roe deers, red deers and hares, as well

as foxes and raccoon dogs. Consumption of domestic and agricultural animals varies between 0.1 and 13%. Seasonal differences of dietary dynamics are insignificant and depend more on the availability of hunting objects.

Daily food consumption by wolves makes 3-5 kg at a rich and 1-3 kg at a poor food reserve. Under favorable food conditions an average pack of wolves extracts per annum about 5,430 kg of animals, or about 2.7 kg on one wolf a day. Under poor food conditions — 3,546 kg of animals or about 1.8 kg a day, accordingly.

Wolf predatoriness

Predatoriness of the wolf is to a large extent selective while aimed at sick animals, and it essentially improves populations of all wild ungulates, improving their trophy qualities and average weight of the game animals extracted by hunters (Jedrzejewski et al., 2002; Husseman et al., 2003; Mech, Boitani, 2003; Wright et al., 2006).

The estimated figures concerning the consumption of resource species of game animals by wolves are presented in the Annex 1.

On the average one wolf kills per annum 13 foxes and 19 raccoon dogs*. Killing foxes and raccoon dogs, the wolf thereby prevents rabies spread by these species, as well as possible predatory influence of these species on the population of the game animals resource species, first of all their predatory influence on the grouse and duck birds, roe deer and hares.

The wolf population can maintain numbers of beaver at the level which ensures demographic viability of their population, that results in reduction of the damage caused by beavers to forestry and agriculture. In the case of high density of the beaver population its share in the diet of wolf grows and, accordingly, extraction of ungulates by wolves decreases.

*13 foxes and 19 raccoon dogs would consume at least 18 wood grouses, 51 black grouses, 140 ducks and other waterfowl birds, 162 young hares and 24 young roe deers (Sidorovich et al. 2007 a, b; Sidorovich et al., 2006, 2008).

Wolf aggression against people, rabies spread by wolf

According to the Health Ministry of Belarus, during the last seven years 98 cases of aggressive behaviour by wolf (bites and/or scratches and/or saliva impacts) are registered in the country, i.e. on the average about 14 cases a year. Fatal cases are not registered. To compare, foxes and a raccoon dogs displayed aggression 38 times more frequently, and they account on the average for 528 annual cases of aggression.

According to the Agriculture and Food Ministry of Belarus, during the last eight years 52 wolves ill with rabies have been identified in the country, on the

average 7 wolves a year. In the same time, cases of rabies among foxes and raccoon dogs are registered 86 times more frequently than among wolves — on the average 561 cases annually.

CHAPTER 3. NUMBERS AND DENSITY OF WOLF POPULATION. APPROACHES TO OPTIMIZATION OF WOLF NUMBERS AND ITS SPATIAL DISTRIBUTION IN BELARUS

Current numbers and density of wolf population, details of wolves spatial distribution

In 2006-2008, 195 wolf packs containing 834 wolves, were registered. Wolf population density in the Republic of Belarus varied from 0 in agricultural and urbanized regions up to 1.9 animals on 100 km² in administrative districts with territories covered mostly by natural ecological complexes. Average density of wolf population reached 0.47 animal on 100 km². The map of wolves distribution in Belarus at the beginning of winter in 2006-2008 is enclosed in the Annex 2.

Optimum numbers and spatial distribution of wolves on the territory of Belarus

The optimum numbers and spatial distribution of wolves should be 72 packs with postreproductive numbers reaching approximately 504 animals (Annex 3). Thus, wolf population density calculated for the entire territory of the Republic of Belarus will be:

- in Minsk Region – 0,2 animal on 100 km²;
- in Vitebsk Region – 0,3 animal on 100 km²;
- in Mogilev Region – 0,2 animal on 100 km²;
- in Grodno Region – 0,2 animal on 100 km²;
- in Gomel Region – 0,4 animal on 100 km²;
- in Brest Region – 0,2 animal on 100 km².

To achieve the optimum numbers and spatial distribution of wolves on the territory of Belarus, their extraction should be regulated according to specific habitats of the wolf.

There are 4 categories of the wolf habitats:

first category of habitats — agricultural landscape (more than 50% of territory), preserved natural areas are considerably fractured or have a high density of human population. The wolf on this territory causes considerable damage to agriculture and is the host of rabies;

second category of habitats – specially protected natural areas and other territories (with area more than 400 km²), for which special or specific mode of protection and use is established;

third category of habitats — territories covered mostly with forest, wetland and valley ecosystems, on which agricultural lands share does not exceed 20%. The wolf on this territory causes considerable damage to hunting;

fourth category of habitats — territories that have no continuous natural complexes, but there is also no obvious prevalence of anthropogenous (agricultural or urbanised) landscape. The wolf on this territory causes considerable damage to agriculture (animal husbandry) and is the host of rabies.

Considering the listed habitats of wolf, for regulation of its numbers and spatial distribution it is necessary to ensure:

full extraction of the wolf in the habitats of the first category;

while extracting the wolves, it is necessary to preserve limited number of their packs with minimal numbers of animals in every pack in the habitats of the third and fourth category. In this case, it is necessary to ensure preservation of parental pair (breeding pair of the dominant wolves which mostly keep territory occupied by a pack) and one or two pups of current or last years;

preservation of full structure of the packs in the habitats of the second category. Extraction of wolves in these territories is possible, if their numbers exceed the optimum level (2-2.5 animals for 100 km²).

Such approach to restriction of the wolves numbers will lead to increase in wolves' average age comparing with natural functioning of the population. The reproductive potential of such population will be considerably bigger, yet intensity of young wolves' resettling will be lower due to the natural death rates and elimination in the habitats of the first, third and fourth category.

As the main method of wolves extraction it is reasonable to apply the elimination of pups in litters on primary den sites in May-June.

CHAPTER 4.

PURPOSE OF THE MANAGEMENT PLAN FOR WOLF POPULATION ON THE TERRITORY OF BELARUS AND MEASURES FOR ITS ACHIEVING

The purpose of the Management Plan for the wolf population on the territory of Belarus is achieving optimum numbers and spatial distribution of the wolf population on the territory of Belarus that would combine minimisation of wolf harmfulness and preservation of its demographically viable population.

Among measures to be taken to achieve this purpose, are:

improvement of the legislation on protection and use of fauna regarding regulation of the wolf extraction according to the approaches presented in this plan;

Implementation period: 2010-2012.

Implementing agencies: Ministry of Natural Resources and Environmental Protection of the Republic of Belarus, Forestry Ministry of the Republic of Belarus, National Academy of Sciences;

carrying out further scientific research to study spatial structure of the wolf population, its genetic variety, dietary characteristics and food capacity of the wolf habitats;

Implementation period: 2010-2015.

Implementing agencies: National Academy of Sciences

determining the optimum numbers of wolves in the hunting grounds leased or given for gratuitous using, as well as planning of other hunting enhancement actions according to the approaches presented in this plan, as part of the hunting enhancement activities;

Implementation period: permanently as part of the hunting enhancement projects development.

Implementing agencies: Forestry Ministry of the Republic of Belarus, National Academy of Sciences and other organizations developing hunting enhancement projects, Ministry of Natural Resources and Environmental Protection of the Republic of Belarus;

improvement of the wolf den search and wolf pups elimination methodology;

Implementation period: 2010.

Implementing agencies: Forestry Ministry of the Republic of Belarus, National Academy of Sciences;

creation of wolf-hunters and den-searchers teams, their training and organisation of their work;

Implementation period: since 2011.

Implementing agencies: Forestry Ministry of the Republic of Belarus, National Academy of Sciences, hunting grounds users;

maintaining the fauna cadastre regarding the hunting wild animal species, including the wolf;

Implementation period: yearly.

Implementing agencies: Ministry of Natural Resources and Environmental Protection of the Republic of Belarus, Forestry Ministry of the Republic of Belarus, National Academy of Sciences;

Carrying out the monitoring of fauna regarding the hunting wild animal species and wild animal species covered by the Convention CITES, including the wolf;

Implementation period: yearly

Implementing agencies: Ministry of Natural Resources and Environmental Protection of the Republic of Belarus, Forestry Ministry of the Republic of Belarus, National Academy of Sciences;

organisation and carrying out educational measures concerning rational use and protection of wolf in Belarus and the world;

Implementation period: permanently.

Implementing agencies: Forestry Ministry of the Republic of Belarus, Ministry of Natural Resources and Environmental Protection of the Republic of Belarus,

National Academy of Sciences, hunting grounds users, RGOO «BOOP», public organizations;

ecological tourism development, using the wolf as the demonstration object;

Implementation period: permanently.

Implementing agencies: Forestry Ministry of the Republic of Belarus, hunting grounds users, RGOO «BOOP», tourist and other organizations.

Implementation of the listed measures will allow to ensure the preservation of the demographically viable wolf population, reduction of damage caused by it to hunting and agriculture, prevention of rabies spread by the wolf.

Annex 1
to the Wolf Population Management Plan
in the Republic of Belarus

Estimated consumption of the resource species of game animals by the wolves

Name and characteristic of the region	Wolf population density, animals on 100 km ²	Numbers of game animals consumed by wolves during one year on 100 km ² * according to species					
		Beaver	Hares	Wild boar	Elk	Red deer	Roe deer
Central South (relatively natural forest and marsh complex between the rivers of Lva and Stviga on the territories of Lechitsy and Stolin Districts)	0,5	1,0	3,2	3,1	0,2	-	5,4
	1	1,9	6,4	6,3	0,3	-	10,9
	1,5	2,9	9,6	9,4	0,5	-	16,3
	2	3,8	12,8	12,6	0,6	-	21,8
	2,5	4,8	16,0	15,7	0,8	-	27,2
	3	5,7	19,1	18,9	0,9	-	32,7
South-East (territory of the Petrikov and Oktyabr Districts having extensive forest complexes and intensive agricultural landscape mostly on reclaimed lands)	0,5	15,1	0,1	3,0	0,003	0,3	0,2
	1	30,2	0,2	6,1	0,006	0,6	0,5
	1,5	45,3	0,3	9,1	0,009	0,9	0,7
	2	60,4	0,4	12,2	0,012	1,2	0,9
	2,5	75,6	0,5	15,2	0,015	1,5	1,2
South-West (Belavezhskaya pushcha natural complex with prevalence of forest ecosystems on the territory of Bielastok Province of Poland (Jedrzejewska, Jedrzejewski, 1998))	0,5	0,5	0,7	2,0	-	4,5	10,6
	1	1,0	1,4	4,0	-	9,0	21,2
	1,5	1,5	2,1	6,0	-	13,5	31,9
	2	2,0	2,8	7,9	-	18,1	42,5
	2,5	2,5	3,5	9,9	-	22,6	53,1
Central West (relatively unchanged natural complex of the Nalibokskaya Pushcha, partly fractured by draining land reclamation with prevailing forest ecosystems on the territory of Stolbtsy, Novogrudok, Iveye and Volozhin Districts)	0,5	6,0	2,3	3,4	0,6	1,0	10,0
	1	12,1	4,5	6,8	1,2	1,9	20,1
	1,5	18,1	6,8	10,2	1,7	2,9	30,1
	2	24,1	9,0	13,6	2,3	3,8	40,2
	2,5	30,2	11,3	17,0	2,9	4,8	50,2
Central North (relatively natural forest and marsh complex between the rivers of Svolna and Nishcha on the territory of Rossony and Verkhnedvinsk Districts)	0,5	0,7	2,1	8,0	1,2	-	1,5
	1	1,3	4,2	16,1	2,4	-	2,9
	1,5	2,0	6,3	24,1	3,6	-	4,4
	2	2,6	8,4	32,1	4,8	-	5,8
	2,5	3,3	10,6	40,1	6,0	-	7,3
	3	3,9	12,7	48,2	7,2	-	8,8

North-East (territory of Gorodok District with the combination of extensive and relatively unchanged natural areas and large fragments of agricultural landscape both given up and intensively used by people)	0,5	1,2	7,5	3,8	0,5	-	1,3
	1	2,4	15,0	7,6	1,0	-	2,5
	1,5	3,6	22,5	11,4	1,6	-	3,8
	2	4,8	30,0	15,1	2,1	-	5,0
	2,5	6,0	37,5	18,9	2,6	-	6,3
	3	7,2	45,1	22,7	3,1	-	7,5

*Calculations have been made considering the ration and daily food consumption by the wolves

Annex 3
to the Wolf Population Management
Plan in the Republic of Belarus

Optimum numbers and spatial distribution of wolves on the territory of Belarus

Region	Habitats of the second category		Habitats of the third category		Habitats of the fourth category		Habitats of the second, third and fourth categories in aggregate	
	Packs	Animals	Packs	Animals	Packs	Animals	Packs	Animals
Minsk	4	28	7	49	3	21	14	98
Vitebsk	4	28	9	63	2	14	15	105
Mogilev	-	-	4	28	3	21	7	49
Grodno	2	14	2	14	2	14	6	42
Gomel	7	49	10	70	4	28	21	147
Brest	2	14	4	28	3	21	9	63
In the Republic of Belarus, total:	19	133	36	252	17	119	72	504