

PROBLEMS OF THE RESTITUTION OF EUROPEAN BISON *BISON BONASUS L.* IN RUSSIA.

Prioksko-Terrasny State Nature Biosphere Reserve named after M.A.Zablotsky, Russia

The shrinking of the Bison *bonasus L.* range began in the early Holocene. Three geographical isolates of subspecies rank: Belovezhian or Lithuanian (Bison *bonasus bonasus L.*, Carpathian (Bison *bonasus hungaricus Kretzoi*) and Caucasian (Bison *bonasus caucasicus Sat.*) were formed in Europe. By the end of first third of XX century all three subspecies vanished from the former habitats; wild European bison ceased to exist, and Carpathian and Caucasian subspecies were not preserved even in captivity.

The number of Bison *bonasus L.* living in captivity by January 1, 1927 was only 48 specimens all over the world. This was the lower level of the number in the history of this species. At present zoological species Bison *bonasus L.* is presented by two forms: European bison of Belovezhian subspecies Bison *bonasus bonasus L.* and European bison of Caucasian - Belovezhian line Bison *bonasus caucasicus Sat.* x Bison *bonasus bonasus L.* who have in their genofund genes of Caucasian subspecies. European bison of new form - Caucasian - Belovezhian line - are descendants of a single male of Caucasian subspecies Kaukasus, 100 (20) mated in captivity with females of Belovezhian subspecies.

Now the situation with Bison *bonasus L.* had been changed to the better as a result of hard international work conducted over many years. By January 1, 2015 total number of European bison reached 5,555, 3,543 of them were living in wild state on the territories of Russia, Ukraine, Byelorussia, Poland, Lithuania, Slovakia, Germany (European bison Pedigree Book, 2014). Among the species, which were on the brink of extinction and preserved only in captivity, Bison *bonasus L.* is a unique one which was successfully returned into natural condition.

But European bison is rare endangered species till now and can be considered only as a species escaped the threat of instant extermination. The question of necessity to ensure the existence of Bison *bonasus L.* is still urgent.

The work of the restitution of Bison *bonasus L.* was started in the USSR in 1946. The initial stock (5 specimens) was brought from Poland to the Byelorussian part of Belovezhskaya Pushcha.

The Main Breeding Centre of European bison in the Prioksko-Terrasny State Nature Reserve was established by outstanding Russian scientist Michael Zablotsky in 1948.

Maria M. Zablotskaya
Leading scientific officer, Ph.D.,
Member of European Bison Group of the
International Union of Nature Conservation
since 1983



Michael Zablotsky and young European bison (Mishkin)



First 4 European bison (one pair of Belovezhian subspecies and another - of Caucasian - Belovezhian line) were brought from Poland too. Main goals of the Breeding Centre work are: 1) accelerated reproduction of European bison in conditions close to natural to restore wild living populations within former range of the species, 2) the preservation of European bison pedigree stock (with pedigree retrieved till 1881), 3) the preservation of insurance genofund of the species Bison *bonasus L.*, 4) investigations of biology, ecology, ethology of European bison, 5) the elaboration of methods of keeping, breeding, feeding, transportation of European bison, 6) the education of specialists on the problem of the restitution of European bison.

The area of the Main Breeding Centre of European bison is of 200 ha. About 25-30 adult pedigree European bison are living here during all their lives. About 20-30 calves are reared up here till the age of 1.5-2 years. Total European bison number in the Main Breeding Centre is 45-60 per annum.

By August 10, 2016 643 European bison were born in the Main Breeding Centre of European bison, 382 of them were sent to other places to establish new Breeding Centres of European bison and wild living groups on the territory of the former USSR and Russian Federation. These "daughter" Breeding Centres were established in the Oka State Nature Reserve, Russia (1959), in the Game Management "Masarykivka", Lithuania (1969), in the Experimental Management "Cherga", Russia (1982). The set-up of wild living groups and later wild living populations of Bison *bonasus L.* had been started since 1965. European bison born and reared up in the Main Breeding Centre of European bison were brought to 27 places in forests of Russia, Ukraine, Lithuania, Byelorussia, Kirghizia (the last - experimental work) as initial stock for future wild living populations.

The great part of the work on the problem of the restitution of Bison *bonasus L.* in the USSR and in Russia had been made by Michael Zablotsky (since 1946 till 1996). The Prioksko-Terrasny State Nature Biosphere Reserve was named after M.A.Zablotsky in honour of his work by March 19, 2015.

By January 1, 2016 there were 664 wild living Bison *bonasus L.* in 13 points of Russian Federation.

About 129 Bison *bonasus L.* were living in 3 European bison Breeding Centres by this date: 53 in the Main Breeding Centre of European bison, 23 in the Oka reserve Breeding Centre, 53 in the "Cherga" Breeding Centre (the last number is given by January 1, 2014). Almost all Bison *bonasus L.* in Russia belong to Caucasian-Belovezhian line. European bison of Belovezhian subspecies Bison *bonasus bonasus L.* remain only in the Breeding Centre "Cherga" (less than 60 specimens). Some urgent problems should be solved to ensure the survival of Bison *bonasus L.*

M.A.Zablotsky - the laureate of The Global 500



The distribution of wild living groups of Bison *bonasus L.* in Russian Federation



1. At least 1500-2000 specimens of Bison *bonasus L.* should live in wild state in forests of Russia, Byelorussia, Ukraine.
2. At least two large self-regulating populations with effective number *N_e* (the breeding part of the population) of 500 European bison should be established according criteria of International Union of Nature Conservation based on the population genetics only fulfillment of requirements 1 and 2 preserves the species Bison *bonasus L.* from extinction.
3. The separate breeding of European bison of Belovezhian subspecies Bison *bonasus bonasus L.* and of Caucasian - Belovezhian line Bison *bonasus caucasicus Sat.* x Bison *bonasus bonasus L.* should be continued.

Separate breeding of these two forms belonged to the species Bison *bonasus L.* had been provided since first steps of work by the International Society for Protection of European bison (1923). All countries have been adhered to this principle till now, but since 1996 it have been violated in Russia.

4. Bison *bonasus bonasus L.*, a single preserved natural subspecies, should preserve the genetic purity. The number of Belovezhian European bison must be increased in Russia.

It should be in mind that Belovezhian subspecies of European bison is the nominal subspecies and its loss is inadmissible.

5. The Main Breeding Centre of European bison must restore separate breeding of both existing forms of Bison *bonasus L.*
6. Herds of interspecific hybrids Bison *bonasus L.* x Bison *bonasus L.* should be eliminated on the territory of the North West Caucasus (from the Kavkazkiy State Nature Biosphere Reserve). Bison *bonasus L.* of Caucasian-Belovezhian line must be settled on these territories, most suitable for this form (L.Y.Zablotskaya, M.A.Zablotsky, M.M.Zablotskaya, 2004).

7. It is necessary to provide the artificial gene flow (separately for European bison of the Belovezhian subspecies and for European bison of Caucasian - Belovezhian line) between local populations by means of repeated bringing of European bison from

Breeding Centres and by exchange of sires between wild living herds.

8. Breeding of Bison *bonasus L.* in Breeding Centres should be continued to preserve insured pedigree stock (at least 15% from total number of European bison in the country) and gene pool of the species.

9. The administrative and disciplinary measures to improve the protection and conditions in

European bison habitats should be taken.

10. The economic losses caused by wild living European bison to private agricultural property should be compensated by the State.

11. The restitution of European bison in Russian Federation must be among priorities of

governmental policy of natural conservation. Broad circle of scientists from State Nature

Reserves, Academy of Sciences, Universities and others scientific institution should be

involved in the decision of this problem.

References:

1. European bison Pedigree Book, 2014. Bilowicza, 2015. 162 p.
2. Lidia V. Zablotskaya, Mikhail A. Zablotsky, Marina M. Zablotskaya. Origin of the Hybrids of North American and European Bison in the Caucasus Mountains. - In: European Bison. Status Survey and Conservation Plan. IUCN, 2004, p. 49-52.