

# European bison in Ukraine threatened by Russian invasion

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**Abstract:** Presented is the history of disappearance of European bison from Ukrainian wildlife and recent attempts towards its restitution. By 2020, Ukraine owned the fourth largest population of the species in the world, and many further initiatives towards its enlargement were already in progress, in cooperation with several European countries. However, as the history of the species extinction in the wild has shown, the European bison due to its body size and gregarious behaviour is especially sensitive to poaching and other forms of illegal killing. Advances of present Russian invasion in Ukraine threaten home ranges of this species. We have analysed situation of free ranging herds in Ukraine after the first month of invasion and indicated potential threats for this population as a consequence of warfare.

**Keywords:** European bison, Ukraine, threat, invasion

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## Introduction

European bison (*Bison bonasus*) which used to be quite common in contemporary Ukraine until late Middle Ages, inhabiting the most of its territory to the coasts of Black and Azov seas, according to some sources even including the Crimean Peninsula. Especially large herds were observed than within the region of Podolia as well as within the Province of Kijev. However, they were gradually disappearing due to overexploitation, and in a consequence they became so rare that the right to hunt them was reserved only for a country elite. Finally, European bison became extirpated from the wild in Ukraine some 150–200 years ago, definitely not later than by the end of XVII century. First, unfortunately unsuccessful attempts to bring the species back to the region took place before the World War I in the estate of the Count Józef Potocki in Volyn region. Those animals did not survive the turmoil of 1917. Their successful reintroduction has been initiated with use of animals from Białowieża Forest in Poland and from Prioksko-Terasny and Oksky reserves in Soviet Union in 1965. First animals were released in the Carpathians at

Majdan Forestry of Skole District, close to the Polish border. Gradually there were established four new herds in the Carpathians and seven in the north-eastern lowland part of the country. An attempt to introduce European bison to Crimean Peninsula in 1890 was unsuccessful. By the 90-ties of XX<sup>th</sup> century the numbers of this species in Ukraine were estimated for 685 individuals. All free ranging populations of the species in Ukraine belong to Lowland-Caucasian line, except of Lopatinskie herd dwelling in Lviv region, consisting of pure Lowland animals (Akimov *et al.* 2002; Kryzhanivskyi 2004; 2006; Perzanowski *et al.* 2004; Gerus & Kryzhanivskyi 2005; Parnikoza *et al.* 2009) (Figure 1).



**Figure 1.** Distribution of European bison herds in Ukraine and in neighbouring countries by the break of XX and XXI centuries. Herds: 1 – Rozlucz, 2 – Skole, 3 – Nadvirnianskie, 4 – Bukovinskie, 5 – Lopatinskie, 6 – Cumanskie, 7 – Podilskie, 8 – Uladivskie, 9 – Zaliskie, 10 – Danivskie, 11 – Konotopskie. Red circles indicate areas directly threatened by warfare (redrawn, based on: Perzanowski *et al.* 2004).

However, during several years after the establishment of independent Ukraine, due to mismanagement, over hunting, poaching etc. the numbers of free ranging European bison dwindled there by 2009 to little over 200, and four of formerly created free ranging herds were lost. Totally disappeared herds in regions of Ivano-Frankivsk, Rivne and Khmelnytsk. This was mostly

connected, with introduction of so called "selective shooting" in fact – trophy hunting which was allowed despite the registration of the species in the Red Book of Ukraine. Until now several herds lives within the territories of so called State Hunting Enterprises. Only the herd from Skole dwells within a national park (Parnikoza *et al.* 2009; Smagol & Gavris 2013).

Nevertheless, efforts towards an improvement of the genetic pool of this population through an import of selected animals from abroad, undertaken in last 10 years by the Ministry of Ecology and Natural Resources of Ukraine and the Ukrainian Academy of Sciences, in cooperation with a number of European partners, lead to a general increase of its numbers as well as the establishment of new herds, so by the end of 2021 the number of this species in Ukraine reached almost 370 individuals in two semi free and six free ranging herds occupying a vast range of habitats (Olech & Perzanowski 2022; Smagol *et al.* 2022). Such recovery created new potential perspectives for the restitution of such important species in this part of Europe. Especially close distances between home ranges of Ukrainian free ranging herds in the north of the country and home ranges of three Byelorussian herds close to the countries' border, as well as vicinity of the herd in Romanian Carpathians in the south to Chernivtsi herd in Ukraine, were very promising for the establishment of transboundary populations in the future (Figure 1).

## Results and Discussion

Data for this communication were collected through personal interviews with people involved in nature conservation within Ukraine, still accessible despite the war conditions. On 24<sup>th</sup> February of 2022, Russian Army invaded Ukraine, and many formerly protected areas became either directly occupied or are threatened by a long range artillery or rocket fire. At the moment it is impossible to closely monitor situation of protected areas and species, nevertheless a number of such sites is exposed to various impacts of warfare (Figure 2).

Home ranges of two herds – Zalisska and Konotopska (north-east of the country) were within area under Russian occupation during the first month of invasion. There is a good chance that most of the animals survived and some have even been seen. Very recent information was about the presence of a group counting about 50 individuals from Konotopskie herd and 15 animals from Zalisskie herd. So far there is no information on any cases of purposeful extermination of European bison by invading army. However, there is no way to assess random effects of shelling or incidental forest fires on local wildlife. Moreover, forests within home ranges of the Konotopska and Zalisska sub-



**Figure 2.** Advances of Russian invasion in Ukraine and location of semi free (in large enclosures) and free ranging herds of European bison (redrawn, based on: European Wilderness Society 2022)

populations are heavily mined and few people risk entering this area now. It will be possible to estimate the losses in European bison numbers not earlier than in autumn after leaves will fall from the trees. Similarly, the already advanced project of the reintroduction of European bison into Chernobyl Zone, where the acclimatization enclosure for reintroduced animals has been already build, had to be terminated, since the area has been even more heavily mined and entry there is absolutely impossible now (Smagol, pers. comm).

Since it is impossible to predict the development of present situation, potential high mortality in European bison herds may lead to the total dissipation of so far reached success in the reinstatement of that critically endangered species in Ukraine. Because of their body size and gregarious behaviour European bison are very vulnerable to poaching and they are an attractive source of meat which is particularly important during periods of social unrest or war. It is necessary to remember that the last native free ranging population of European bison in Białowieśka Forest of Poland was exterminated in a short time by the end of the World War I<sup>st</sup>, by marauders of German and Russian armies and/or local poachers. Similar was the fate of European bison



in Caucasus Mountains short after Bolshevik revolution in Russia (Kraśńska *et al.* 2014). Another long lasting threat for such large mammals may pose land mines placed in forests and agriculture, similarly like it was with brown bears after the war in Yugoslavia (Jakšić 2008). It would be a great tragedy if such situation would repeat again in XXI century in Ukraine. Loss of so important "umbrella" wildlife species would exert a considerable negative impact upon biodiversity in this region of Europe.

Moreover, free ranging part of European bison population in Ukraine, counting 367 animals by the end of 2021, constituted 5% of all free ranging individuals of that species in the world (Raczyński & Bołbot 2022). Taking into account numerous recent efforts to improve and enrich the gene pool of this population, through a prescribed import of relatively lowly related animals from abroad (Olech & Perzanowski 2022), the decline of European bison in Ukraine would be a considerable failure to mitigate effects of extreme inbreeding level of this species and make progress in its effective restitution to the wild.

By the end of 2021, Konotopskie and Zalisckie herds were estimated for some 85 animals which was almost 25% of the whole Ukrainian population. Additionally, the region of Vinnitsia where the Uladivskie herd (another 110 animals) is situated, was attacked by a rocket fire (Raczyński & Bołbot 2022) (Figure 2). Hence, over 50% of Ukrainian population of European bison is directly threatened by acts of warfare. This shows how critical is situation of the species in this country, and how difficult can be the task of its restoration to the pre-war status.

Such mission would undoubtedly require an involvement of international organisations like the Bison Specialist Group of Species Survival Commission IUCN, European Bison Conservation Center or WWF.

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### Żubry w Ukrainie zagrożone inwazją Rosji

**Streszczenie:** W pracy przedstawiono historię zniknięcia żubra z ukraińskiej fauny oraz niedawne próby jego restytucji. Do 2020 roku Ukraina posiadała czwartą, co do wielkości, populację tego gatunku na świecie, a wiele dalszych inicjatyw na rzecz jej rozszerzenia było już realizowanych we współpracy z kilkoma krajami europejskimi. Jednak, jak pokazała historia wymierania gatunku na wolności, żubry ze względu na swój rozmiar ciała i zachowania stadne są szczególnie wrażliwe na kłusownictwo i inne formy nielegalnego zabijania. Postępująca obecna inwazja rosyjska na Ukrainie poważnie zagraża temu gatunkowi. Przeanalizowaliśmy sytuację wolnych stad na Ukrainie po pierwszym miesiącu inwazji i wskazaliśmy potencjalne zagrożenia dla Żubra w wyniku działań wojennych.

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