

THE BROWN BEAR IN POLAND

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Abstract: In early times, the brown bear (*Ursus arctos* L.) was preserved by law for royal hunts and occurred in large numbers in the extensive forests of Poland. From the 16th century on, its destruction became increasingly intensive, and by the end of World War I, only a few bears were left. Full legal protection was given the bear in 1952. Attempts to reintroduce the bear into the Białowieża Primeval Forest were halted by World War II. At present, there is a western population (Tatra Mountains) and an eastern population (western Bieszczady Mountains) in Poland. Their combined numbers are estimated to be about 30, with a density of 0.02-0.33 animals per 1,000 ha. Because of increasing human activities and interference in the bear's range, preservation of the bear populations will soon require the establishment of extensive and less disturbed areas in which the brown bear can live in comparative security.

HISTORICAL REVIEW

The brown bear was considered as big game from early historical times in Poland and was preserved by law for royal hunts. There are records of such hunts in old chronicles: Anonim tzw. Gall, 1112 (third edition, 1968) and Wincenty Kadłubek, living at the end of the 12th and beginning of the 13th century, and Marcin Bielski's chronicle of 1551 (cited after Forelle and Szuszkiewiczowa 1976). Illegal killing of bears was treated as a serious offense as late as the 13th century.

Owners of forest lands, foresters, peasants, and gatherers of wild honey, suffering damage, killed bears despite the fact that legal hunting was reserved for kings and nobles. Some bears were killed by poachers. The bear must once have been a common animal in extensive forests, since early accounts tell us that knights "wore a bear on their armour, whole skins with stuffed heads and paws set as ornaments in silver or gold" (Łoziński 1879).

With the passage of time the bear, being intensively hunted and killed, became an increasingly rare species. It was first exterminated in the west and central parts of Poland. In the mid-1800s, it was fairly often encountered in Lithuania and in the south of Galicia but was heavily hunted. The bear was considered a harmful animal, and bear hunts took place without any restraint or limitation. Young bears were caught and handed over to the famed Smorgonska academy and other "bear schools," where inhumane methods (fire and iron) were used to teach them to perform.

Immediately after World War I, there were few brown bears in Poland, although their numbers increased slightly later on. The animals lived mainly in areas of the eastern Carpathians, where their numbers were calculated to be about 200 (Burzyński 1931).

In the 1930s, the number of brown bears in Poland was estimated (overestimated, in some opinions) at 275

animals. They occurred in 3 groups: (1) eastern Carpathians, 256; (2) Polesie region, 15; and (3) Tatra Mountains, 15-20 in the entire region and 4 transients (passing in and out of Poland) (Anonymous 1935a, b; Wodzicki 1935). This level was probably maintained up to the 1940s. Directly after World War II, the number of bears within the new boundaries of Poland was estimated at about 10-14. They persisted only in the Tatra and Bieszczady mountains. In the latter, their numbers during the 1960s were estimated as 25 (Kosiba 1964). Later data show that the number of bears in these regions decreased from 36 in 1970 to 28 in 1974 (Central Statistical Office 1975).

PROTECTION

In view of the diminishing number of bears, the need for their protection was first mentioned in the second half of the 19th century. In 1927, a decree was passed regulating bear hunts, establishing a long closed season, and forbidding the shooting of female bears (Couturier 1954).

In May 1934, the Małopolski Hunting Society formed a Bear Preservation Section that applied for changes in the permitted hunting seasons and methods: forbidding (1) shooting in midwinter, (2) using carrion to attract bears during hunts, and (3) attacking bears in their winter dens. The suggestion was made that shooting should be permitted only in very limited cases (Wodzicki 1935). During this period a plan was formed for reintroducing the bear into the Vilnius region, using animals caught in the Polesie region (Anonymous 1935c).

Not until after World War II was the brown bear in Poland given protection throughout the whole year, and shortly afterwards the bear was included in the list of animals protected by law (Orders of the Ministry of Forestry, dated 22 March 1949 and 3 November 1952, respectively).

REINTRODUCTION ATTEMPTS

The brown bear was exterminated in the second half of the 19th century in the Białowieża Primeval Forest (lat. 59°29' N to 52°57' N; long. 23°31' E to 24°21' E; about 1,250 km²). In 1937, authorities of the State Forests Administration decided to reintroduce the brown bear into this area.

Two methods of reintroduction were used: (1) releasing young brown bears brought from Byelorussia, and (2) placing in the forest a pregnant female in a cage equipped with a sleeping compartment and bars sufficiently far apart to allow the young bears to leave the cage and grow up under natural conditions. The results

a distance of about 200 m from the hut. Except for the 2 keepers that supervised and fed the animals and made observations, the bears were allowed no contact with humans.

Two young were born in January 1938 (Table 1), which were wild and avoided humans. At the end of April they began to leave the cage — at first slipping easily between the bars. As the young bears grew larger, the bars were purposely bent apart to permit easy movement between them. At first, the 2 young bears returned to the cage for the night but by autumn they were completely independent. The bent bars of the cage were straightened and the young bears remained free. They appeared only sporadically near the cage in the spring of

Table 1. Summary of data on reintroductions and numbers of brown bears in the Białowieża Primeval Forest during 1937-47.

Period	Origin of animals	Number and sex of animals	Fate of animals
30 April 1938	Release of young bears (method 1)	4 (2 M+2 F)	1 F killed; 1 F+1 M recaptured, sent to zoo; 1 M remained free.
3 August 1938	Release of young bears (method 1)	3 (1 M+2 F)	1 F recaptured, sent to zoo; remaining 2 disappeared without trace, probably killed.
Summer 1938	Young born in forest, left in freedom (method 2)	2 (1 M+1 F)	Wintered in forest; in spring 1939 occasionally visited place of birth.
1939-44	Adults introduced or released from cages	2	Bears aggressive, caused 2 or 3 human fatalities; shot.
—	Others, probably originating from earlier reintroductions	3	Remained free; probably reproduced.
1945	Free-living	4 (1 M+1 F, ad; 2 juv)	1 juv illegally killed.
1946	Next offspring of adult pair	5	1 small bear illegally killed.
1947	—	1	Tracks only.
1963	Migration from Byelorussia?	1	Tracks only.

of these experiments are summarized in Table 1.

The first method proved unsuccessful. Of the 7 young animals released (none was more than 1.5 years old), only 1 male survived. The remainder were soon either killed by poachers or had to be recaptured when they began leaving the forest and came into conflict with the local population — either begging for food or stealing it, and entering buildings. The people themselves behaved thoughtlessly, as they tried to attract the young bears and fed them.

The second method proved more effective. In the summer of 1937, a warden's hut was set up in the Białowieża National Park, and a cage containing a pregnant female bear taken from Poznań Zoo was

placed at 1939 (Karpínski 1947, 1949).

During the German occupation, 2 other adult bears were released from cages into the Białowieża Primeval Forest, but they attacked humans, killing 2 or 3 persons and seriously injuring another. These bears were then shot. Directly after World War II, there were probably 4 bears in the Białowieża Forest: an adult male and female with 2 young. Soon after this observation, 1 of the young bears was killed by poachers. The 3 animals were occasionally seen, and offspring were again recorded in 1946; the next illegal shooting of a young bear also occurred that year. In March 1947, the tracks of only a single large bear were found on the remains of snow. The bears had either been killed or had wandered into

Byelorussian territory. The last tracks of a bear in the Białowieża Forest were seen in May 1963 (Table 1).

Although the experiments made by Karpiński (1949) did not result in a permanent population of the brown bear in the Białowieża Primeval Forest, they represented a successful attempt to introduce a large predator into the forests of Central Europe.

CURRENT STATUS OF THE BROWN BEAR IN POLAND

A total of 29 detailed questionnaires were sent out in the autumn of 1976 to all administrative units of the state forests in the Carpathians and their foothills, and 28 replies were received. Twenty units reported the presence of bears, either permanent residents or transients. For the period 1973-76, 17 of these reports were confirmed by visual observations of the animals or their tracks. Brown bears live permanently and reproduce in the area of the western Bieszczady Mountains, the most southeasterly area of the Polish Carpathians (Buchalczyk and Markowski 1979); and in the Tatra Mountains. They also have permanent retreats in the Babia Góra Mountains. The western population (Tatra Mountains and the western part of the Carpathians) connects with the compact range of this species in Czechoslovakia, and the eastern population (Western Bieszczady Mountains) possibly comes into contact with the population living in the Ukraine. The brown bear also occurs, probably only as a migrant, in the Beskid Sądecki Mountains and the Beskid Niski Mountains (Fig. 1).

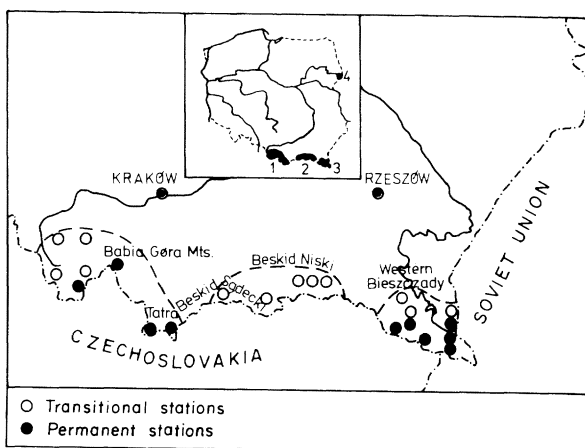


Fig. 1. Distribution of the brown bear in Poland (1976). 1. Western population, including Babia Góra Mountains and Tatra Mountains. 2. Transitional stations of the brown bear, including Beskid Sądecki Mountains and Beskid Niski Mountains. 3. Eastern population, western Bieszczady Mountains. 4. Białowieża Primeval Forest (historical data only).

It has been estimated that about 30 brown bears live within Polish territory (Table 2). This estimate is based

Table 2. Current status of the brown bear in Poland, according to data from questionnaires, November 1976. Density is calculated from probable number of animals.

Region	Numerical estimates		Density per 1,000 ha
	Probable	Maximum	
Most westerly part of Polish Carpathians and Babia Góra Mts.	3	5	0.06
Tatra National Park	7	10	0.33
Beskid Sądecki Mts. and Beskid Niski Mts.	2	4	0.02
West Bieszczady Mts.	18	27	0.05-0.17
Total	30	46	0.12 0.09

on the minimum numbers of bears (not possible maximums) reported in the questionnaires for adjacent areas and takes into account the brown bear's tendency towards lengthy movements and the more extensive and widely separated regions involved. This number is smaller than that recorded for 1970 and indicates a decrease in the numbers of these predators. In the Bieszczady Mountains, the largest retreat, only 5-6 young bears were reported, according to the questionnaire data. Sumiński (1976) states that at present there are 10 brown bears living in the Tatra Mountains and 25 in the Bieszczady Mountains.

The density of the brown bear in Poland varies from 0.02 to 0.33 per 1,000 ha. It is highest in the area of Tatra National Park, where the bear occurs over a relatively small area. In general, however, numbers are smaller than in Czechoslovakia.

DISCUSSION

In Central Europe the brown bear occurs in the greatest numbers in Rumania. Owing to state protection and limited shooting, its numbers rose from about 1,000 animals in 1940 to about 3,500 in 1964. Density varies from 0.6 to 1.8 per 1,000 ha (Almašan and Vasiliu 1967).

In Czechoslovakia the bear occurs only in Slovakia, with a density of 0.1-0.9 animals per 1,000 ha, and occupies the 42 larger forested areas with the greatest variety of vegetation of the 64 areas examined. The animals thus already occupy most of the areas currently available for them. At present, their spontaneous decrease in numbers in certain ecosystems clearly points to their ecological requirements, and this guideline may serve as a starting point when defining habitats suitable

for their successful reintroduction (Nováková et al. 1969).

In Byelorussia the brown bear occupied extensive areas in the central and northeast parts of the country at the beginning of the present century. During the period 1915-25, there was a considerable decrease in the numbers of this species, representing a decrease in the index of the bear's occurrence in 7 districts of the Byelorussian Republic and its complete disappearance in 3 other districts. According to data from the Nature Conservation Committee on the Byelorussian SSR in 1960, there were 81 bears in Byelorussia, where bears are now a protected species (serzhanin 1961).

The brown bear, if not persecuted, may accustom itself to coexistence with humans and continue to live in large forested areas where some cultivation takes place. Nevertheless, increased tourist traffic and intensified human interference have a deleterious effect upon these

animals. A bear driven from its den during winter does not resume its sleep for a long time, and when a mother bear is driven from her den, the young freeze to death (Slobodyan and Gutzulyak 1976).

Apart from known single cases of exceptional tameness and lack of aggressiveness (Onegov 1976, Slobodyan and Gutzulyak 1976), the brown bear is disturbed by heavy tourist traffic (in Poland in the Tatra and Bieszczady Mountains) and by excessive and increasing interference in forests. Therefore, the relatively limited areas of the Polish national parks will not long suffice to sustain brown bears, and, consequently, additional suitable retreats will have to be created for them. Extensive areas with only limited forestry activities would be favorable to continuing settlement by brown bears, as these animals could then establish permanent winter dens there, obtain food, and bring up their young in peace.

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