

## THE BROWN BEAR IN BULGARIA

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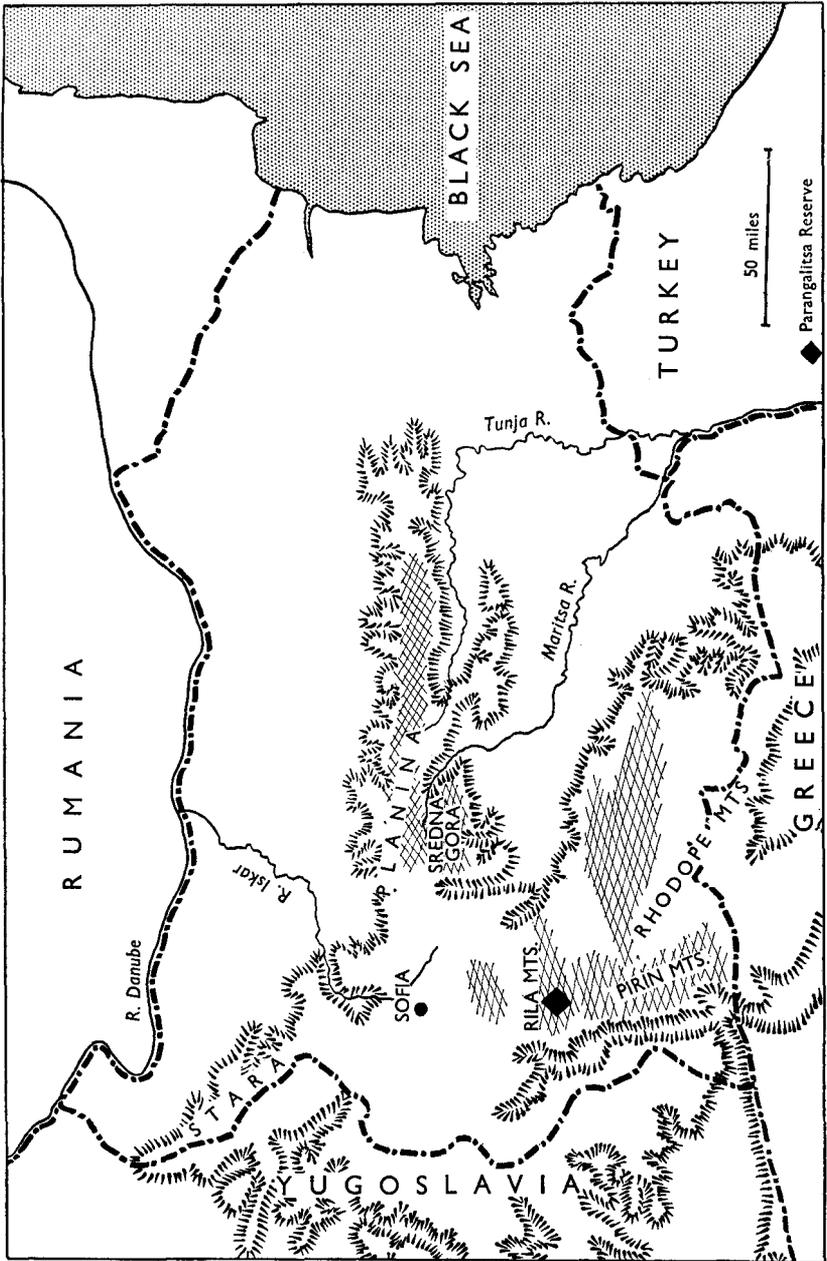
In the past, the brown bear was found in all the forested mountain regions of Bulgaria. This is known from written and oral evidence, and there are places with names including the word "bear" where no bears have been seen for a long time. The bear conflicted with the interests of man; it did enough damage to agriculture to be condemned as a pest, and its extermination was encouraged.

### *History of Conservation*

At the end of the nineteenth century, in accordance with Section 13 of the Hunting Law of 1897, a government bounty was introduced—20 lev for each female killed, 10 lev for a male, and 5 lev for a cub. (In 1897 a lev was worth 8s., or about £5 at today's value for money.) The bounty was stopped by the People's Assembly in 1903, but the killing went on. Though enlightened forest and game wardens defended the bear—hence the revocation of the law of 1897—the 4th Hunting Law of 1926 left the situation unchanged, indiscriminate killing continued, numbers fell steadily and the area where bears were found grew smaller.

In 1934, the "Sokol" hunting organization undertook an enquiry through the hunting clubs to discover the number of bears in Bulgaria, the number killed in 1934, what measures were needed to prevent the bear's extermination, and whether or not the bear was harmful. The replies (Katsarov, 1935) showed that bears existed in the territories of thirty-six hunting clubs, that there were 366 bears altogether, and thirty-two were killed in 1934. The general opinion was that killing should be limited to *stravnitsi*, the rogue bears that habitually destroy livestock, losing their fear of man even to the extent of raiding farms in daylight. As a result of this enquiry, it was forbidden to kill bears in the Stara Planina area, except for *stravnitsi*, and even these could only be killed with the permission of the local forester. In other areas, bears could still be killed if the forester's permission were obtained through a hunting club. Gradually, from 1941, killing became forbidden throughout the country, though *stravnitsi* could still be destroyed if permission were obtained. The 1948 Hunting Law maintained this state of affairs.

To discover the effects of these measures on bear populations, and to find the numbers and proportion of *stravnitsi*, a further census was made in 1959 (Ruskov, 1961) on a forest-district basis, with the co-operation of the Forestry Department of the Ministry of Agriculture and the Faculty of Game Management at the University Forestry Institute, Sofia. The following questions were asked on the census form: (1) Are there bears in your forest district; if so, how many are there and where do they live? (2) How many of them are *stravnitsi*, and what kind and amount of damage did they do in 1959? (3) Were any bears killed during the year; if so, how many and what kind? The replies provided a considerable body of useful information on the bear population. Though it was realized that the census method could not give absolutely accurate information, it was



the best that could be devised in view of the nature of the country and the bear's habits.

### *Distribution and Numbers*

The main stronghold of the bear in southern Europe is in the Balkans. The Bulgarian bear population is connected with that of Yugoslavia and Greece, with also a possible link to the north into the Southern Carpathians of Rumania (Van den Brink, 1955). In Bulgaria the bears, as the table shows, now survive only in the remote forested massifs of the Stara Planina and Sredna Gora, the Rhodope Mountains, the Pirin, Rila, and other neighbouring smaller ranges. Bears were present in forty-three forest districts, the favoured habitats being natural coniferous forests or natural mixtures of conifers and beech, high in the mountains.

NUMBERS AND DISTRIBUTION OF BEARS IN 1959

<i>Location.</i>	<i>No. of Forest Districts.</i>	<i>Total No. of Bears.</i>	<i>No. of stravnitsi</i>
Rila range . . . . .	12	125	48
Pirin range . . . . .	6	117	22
Stara Planina and Sredna Gora	11	104	24
Rhodope Mts. . . . .	13	90	27
Other ranges . . . . .	1	8	2
	—	—	—
	43	444	123
	—	—	—

The total number of bears present in 1959 was reported as 444. According to the 1934 census there were then 366, but Katsarov in his report considered that many bears had probably been counted twice in adjoining regions, and that the true figure was about 300. In the later census, the basis of which was not of course strictly comparable, this duplication was avoided by asking not only for the district but also for the actual locality where the bears lived.

Over the twenty-five years between the two censuses, the bear population has increased by some 50 per cent, despite the annual killing of a number of real or imagined *stravnitsi*. Thus the prime object of protection has been achieved. The bear has been saved from extermination, and its numbers are now slowly but steadily increasing.

### *Bear Damage*

For the planning of any bear conservation programme, it is essential to have accurate information on the probable repercussions of conservation. It was because of this that the 1959 census was designed to provide data on the numbers of rogue bears in the total population, and on the damage done by them and by normal bears during 1959.

The forest officers, rangers and wardens responsible for compiling the data reported 123 rogues, almost a third of the total population. However, this figure included animals which may have taken a farm animal only on one isolated occasion. As bears hibernate regularly in Bulgaria, harm to livestock is restricted almost exclusively to the summer months, when the

bears, in their wanderings above the tree-line, are likely to encounter flocks of sheep on the high mountain pastures. The number of bears that kill livestock blatantly and repeatedly, and live mainly on flesh is much smaller, as is shown by the fact that only 24 really dangerous rogues were shot during 1959. Even so, the list of livestock killed by bears during the year seems quite formidable at first glance : horses 59, asses and mules 29, oxen and cattle 87, sheep 394, pigs 1.

However, some of these animals may have died from other causes, been eaten by bears as carrion, and yet been counted as live kills. In any case, large parts of Bulgaria are still primarily agricultural, and the country has a very large total head of livestock, including big and free-ranging flocks of sheep. In this perspective, the animals killed form an insignificant fraction. Even with sheep, the animal taken most frequently, the rate is less than one per bear per annum.

Other forms of damage by bears have not been reported so fully, or are more difficult to assess. In one region some seven acres of oats were destroyed, and, in another, 188 beehives were broken and robbed of their honey.

Bulgarian foresters also complain of damage to pine trees, especially *Pinus peuce*, in the Rila and Pirin mountain ranges. In the spring, the bears strip the bark from the base of the stems, sometimes nearly girdling the trees to a considerable height. The chief theories to explain this are : A method of wearing down or blunting the claws after hibernation. To get at the spring sap, which the local peasants claim has a strong tonic effect. A means of demarcating territory.

This catalogue of damage is varied but not excessive, and is far outweighed by the scientific interest and tourist attraction that the bears provide.

### *Prospects*

It is thought that Bulgaria can support a population of about 500 bears, and that some twenty-five to thirty rogues can be shot annually without endangering the stability of the population. To maintain this population it will be necessary to continue the total prohibition of bear hunting, except in the case of proven rogues. The assumption is that, in Bulgaria, poaching and illicit shooting will be negligible or non-existent—the bear, though a retiring animal, is still an easy target for the modern rifle—and that collecting for zoological gardens will also be forbidden.

The population balance is a fine one, despite the bear's longevity, because the reproduction rate is low. The bear takes two years to reach full sexual maturity ; the gestation period is relatively long, seven months, and with a small and frequently scattered population, many individuals may never breed because they fail to find mates.

Moreover, the development of the Bulgarian economy, particularly in the agricultural and forestry sector, adversely affects the chances of the bear's survival by steadily depriving the animal of its normal habitat—remote, natural, uneven-aged conifer forests or conifer-hardwoods mixtures in the mountains. Forestry in Bulgaria is being rapidly intensified, with

increasing mechanization, a tendency towards growing even-aged soft-woods on short rotations, and the opening up of hitherto untouched mountain forests. Nevertheless, Bulgarian foresters are sympathetic towards the bear's requirements and proposals have been made for leaving certain areas of forest in the mountains as natural cover for him, such as the Parangalitsa reserve in the Rila mountains. The creation of these bear reserves, coupled with the prohibition of shooting, offers strong grounds for optimism regarding the conservation of the bear in Bulgaria.

#### LITERATURE

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