

The brown bear in Sweden

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The brown bear (*Ursus arctos* L.) was once distributed throughout the Swedish mainland. But provincial laws requiring hunting of bears and high bounties reduced the species distribution and numbers last century. Steps were already taken in the 1890's to protect bears, and the species have slowly recovered the last 40 years due to this protection. The bear population was in mid 1970's estimated to 400-600 bears, and the population still shows increasing tendency. Hunting season is between the first of September throughout October. The EPB sets yearly a maximum harvest number for each region, and approximately 30 bears have yearly been shot the last three years.

I. Introduction

Historically the brown bear occurred throughout the Swedish mainland (Lönnerberg 1929). Many old provincial laws required hunting of the species, and bounties were high even as early as the 17th century (Zetterberg 1951).

Consequently the bear gradually decreased especially in southern and central Sweden. By the end of the 19th century the species had disappeared from areas south of 60°N. North of that, populations were drastically reduced and bears were mainly confined to remote areas.

Beginning around 1890, steps were taken to protect the brown bear. Particularly important was that all hunting on state land was prohibited from 1912. Under this protection the population recovered and since 1943 bear-hunting has again been allowed in Sweden.

II. Present distribution

The Swedish bear population was surveyed in the mid 1970's. Results showed a large but discontinuous area of distribution in northern and central Sweden (Björvall 1980).

There has been no follow-up of this survey, but information from hunters and others indicate that slight changes have occurred during the last decade. The area of distribution has expanded a few thousand km² to the south and southeast. Furthermore, a slight eastward expansion towards the Gulf of Bothnia has been reported from Norrbotten and Västerbotten.

III. Population estimate

In the 1975/76 survey, the total Swedish population

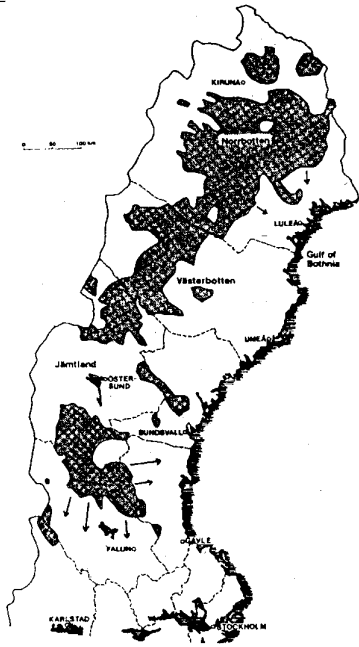


Fig. 1. Distribution of the brown bear in Sweden, 1975-76. Arrows indicate increased range during the last decade.

was estimated to be between 400 and 600 bears (Björvall 1980). A comparison with some earlier surveys, published and discussed by Haglund (1968), suggested that the population has been slowly increasing for at least 40 years.

Relations between population estimates and yearly harvest during these 40 years are difficult to study because hunting regulations have been changed several times. Since the present license system was introduced in 1981 (see below), the official shooting statistics have predicted a slowly growing population; 71 bears (range 16-34) were shot during the first 3 years, 89 (range 27-35) during the following 3 years.

IV. Present management practice

The result of the 1975/76-survey showed an obvious discrepancy between the distribution of bears in the two areas where open seasons were held. As a result of the survey it was suggested that the open season should be abolished and replaced with a license system where the harvest was better adjusted to the actual distribution of the bear.

This system has been in force since 1981. The Environment Protection Board determines the maximum harvest for each region. When a bear is shot, hunters must inform the local police before noon the next day. When the maximum number is reached within a region, hunting is stopped by announcements in local papers and on the radio.

There has been some controversy about how to determine a suitable harvest level. Since data from Swedish bear populations are lacking, it has been necessary to depend on facts from abroad.

From the Yukon territory, situated approximately at the same latitude as north/central Sweden, Sidorowicz and Gilbert (1981) reported that the population would decline if total adult mortality (natural and hunted) exceeded 5%. Similarly, by analysing hunting statistics, Elgmork (1979) found that Norwegian bear-populations declined 4.5% annually, when the harvest level was probably around 10%.

Based on these studies the Environment Protection Board has tried to keep the harvest level below 5%. With an estimated population of 600 bears, this means that a maximum of 30 could be killed annually. The average for the six years with licensed hunting is 27 bears.

V. Damage and bear/human interactions

Bears cause damage when preying upon sheep or semidomestic reindeer (there are no wild reindeer in Sweden). In both cases the owners are compensated according to detailed rules, which take into consideration among other criteria, the age and sex of the prey. During the budget year 83/84 a total loss of 160 reindeer and 143 sheep killed by bears were compensated. The following year the values were 239 and 0, respectively.

There are almost annual cases where bears are shot in selfdefence in supposed attacks on people.

Personal injuries are rare in those cases. Almost all cases of personal injuries during the 20th century have involved an armed hunter and/or a wounded bear. Last spring however, an unarmed forester in northern Jämtland was attacked and badly injured by a female with cubs, when he happened to approach within a distance of 10 m.

(Björvall & Sandgren 1987). In the course of 1986, 14 bears have been marked. Several of them have lost their radioequipment for different reasons, but the first marked individual has been monitored through three complete seasons. The project will proceed and the number of marked bears will hopefully increase.

VI. Present research

In March 1984, research on brown bear was started in order to obtain information on movements, activity patterns and population dynamics. This research is a joint project between the Environment Protection Board and The Swedish Sportmen's Association. Fieldwork was initiated within two separate areas

VII. Management needs

It is possible that the base for the present management of the Swedish bear population is conservative. The Environment Protection Board is prepared to use information from the bear project to refine the assumptions on which the future management of the species will be based.

References

- Björvall, A. 1980: The brown bear in Sweden - distribution, abundance and management. - In: Martinka, C.J. & McArthur, K.L. (eds.), *Bear Biol. Ass. Conf. Ser.* 3: 255-257.
- Björvall, A. & Sandgren, F. 1987: Early experiences with the first radio-marked bears in Sweden. - *Int. Conf. Bear Res. and Managem.* 7: 9-12.
- Elgmork, K. 1979: *Bjørn i naturen.* - Oslo. 179 pp.
- Haglund, B. 1968: Winter habits of the bear and the wolf as revealed by tracking in the snow. - *Swedish Wildlife* 5(6): 213-361.
- Lönnerberg, E. 1929: *Björnen i Sverige 1856-1928.* - Uppsala och Stockholm.
- Sidorowicz, G.A. & Gilbert, F.F. 1981: The management of grizzly bears in the Yukon, Canada. - *Wildl. Soc. Bull.* 9(2): 125-135.
- Zetterberg, H. 1951: *Björnen i sägen och verklighet.* - Uppsala.