XXXIV. INFLUENCE OF HUNTING ON THE *ANSER ANSER* POPULATION IN FINLAND

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Introduction

Opinions concerning the effect of hunting on game populations are markedly divided. Recent American studies have emphasized the compensatory character of hunting mortality and explained that natural mortality is, at least to a certain degree, inversely proportional to the intensity of hunting mortality (see *Anderson* and *Burnham* 1976 and *Rogers et al.*, 1979). This viewpoint has been shared also by some European experts, and partly also the author. There are many others, however, who believe that shooting has a stronger or slighter effect on the populations, dependig on the intensity of hunting. Numerous examples of the effect of heavy shooting on non-migratory game populations in particular indicate a clear influence of hunting on the abundance of the populations. Hence, we hardly can consider this problem completely settled, but additional information is highly desirable in this matter.

Examination of the effects of hunting on migratory waterfowl is usually rather difficult, as differences in the intensity of shooting and varying hunting regulations in different countries easily obscure the picture. Yet the *A. anser* situation in Finland may throw some additional light on this problem, as different shooting policies have been applied in different parts of the Finnish range of *A. anser*. As there are no evident differences in other factors capable of producing the differences found in the Finnish *A. anser* population, there is good reason to examine the situation in more detail.

Abundance fo the A. anser in the 1950s.

The Finnish distribution of *A. anser* is characterized by the domestic name of the species, the "Sea Goose". The species occurs in Finland in the southern and western archipelagos and in one small area on the coast only. This has been the distribution of *A. anser* in Finland at least since the end of the last century. In the first half of the present century the population experienced a drastic crash, which took place in all parts of its range.

It is important from the point of view of this study to examine the goose situation in the 1960s, i.e. prior to establishing the differences in shooting policy in 1960. According to Merikallio (1955), the whole Finnish population of *A. anser* then consisted of 130 breeding pairs distributed as follows: 3 pairs in the Gulf of Finland, 20 pairs in the southwestern archipelago, 5 pairs in Merenkurkku and 100 pairs in the northernmost part of the Gulf of Bothnia.

Grenquist's (1956) estimate of the Finnish breeding population of *A. anser* was based on somewhat more recent material and was a good 200 pairs. According to him, more than 50 pairs were found in the southwestern archipelago and adjacent areas, whereas the population in the northernmost Gulf of Bothnia consisted of 150 pairs.

There is no doubt, thus, that the principal Finnish *A. anser* population was found in the 1950s in the northernmost part of the Gulf of Bothnia, where three quarters of the total population was breeding. One quarter only was met with in the southwestern archipelago and adjacent areas.

Hunting regulations

The shooting season for *A. anser* has varied in Finland at different times. The end of the open season has no practical significance, as the species leaves the country in August and early September. The opening dates at different periods were as follows: 15 July (from 1868), 1 August (from 1895), 15 August (from 1923) and 20 August (from 1934).

Due to a strong decrease in the population the species was protected in 1947 throughout the year in the whole of Finland. The Ministry of Agriculture was authorized to grant licences for *A. anser* hunting, which however took place in rare cases only.

In 1960 the policy was changed again, as the goose population had started to increase. Shooting was started now on 20 August at 1200 hours, but the species remained fully protected in the southern and southwestern provinces (Turku and Pori, Uusimaa and Kymi). In 1963 goose hunting was started, also in these provinces but only on 15 September when the *A. anser*, practically speaking, has already left Finland. The idea of the new regulation was to allow *Anser fabalis* hunting also in the southern and southwestern areas but keep *A. anser* protected in this region.

In 1969 the opening date was changed to 10 September in the southern and southwestern provinces, the province of Vaasa included. In 1976 the opening date was changed to 1 September, which date is still valid.

In the province of Oulu, where the main proportion of the Finnish *A. anser* population was breeding, goose shooting has begun on 20 August every year since 1960. According to the information collected in 1981, the number of *A. anser* bagged annually in recent years in this province is 60 to 70, which is a good 10% of the local autumn population. The number of *A. anser* bagged in the whole of Finland is unknown, as *A. fabalis* is also open to shooting in Finland and the species are not reported separately in the kill statistics.

Effects of the different hunting policies

It is of interest to examine what effects, if any, are to be found after 20 years of differing hunting policies, which have meant more or less normal harvesting in the northernmost breeding area but nearly complete protection in the southern and southwestern areas.

According to *Blomqvist and Tenovuo* (1980) and *Tenovuo* (pers. com. 1981), the population of *A. anser* in the southwestern archipelago consisted in the early 1980s of 150–220 breeding pairs. In other southern and southwestern areas, Åland included, there were 30–60 pairs (*Lampio*, in press). Thus the southwestern population had increased roughly six-fold since the 1950s.

According to censuses carried out by the author and his coworkers in the northernmost breeding area in the Gulf of Bothnia, the breeding population in

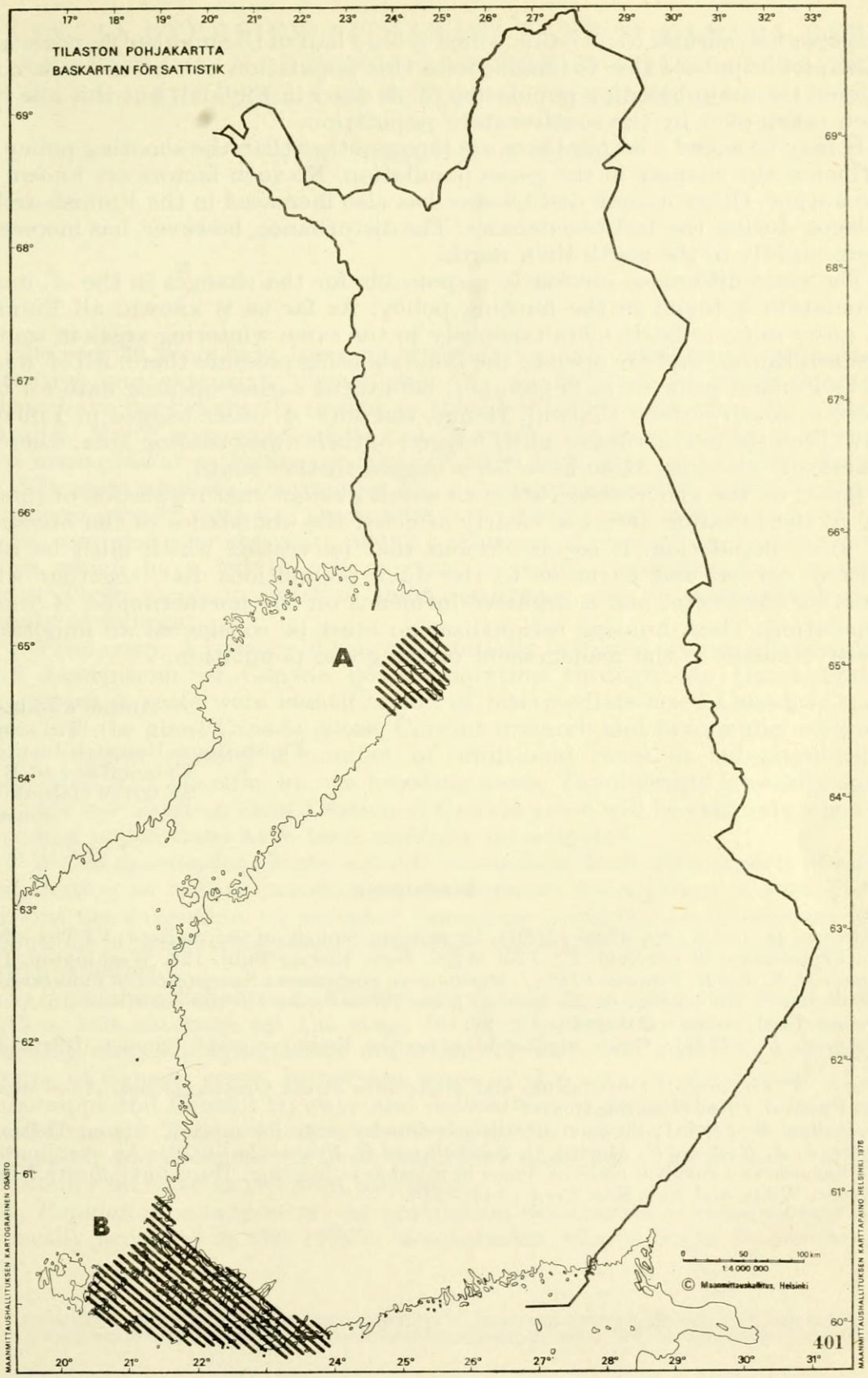

Figure XXXIV/1: The main breeding areas of the Greylag Goose in Finland. A = the northernmost population. B = the southwestern population

this area had shrunk to 60 pairs, which is only half of the number 20 years ago (*Lampio*, in press). Due to the decrease this population can no more be considered the main breeding population of *A. anser* in Finland, but this role has been taken over by the southwestern population.

It may be asked whether there are factors other than the shooting policy to influence the changes in the goose population. No such factors are known to the author. Other human disturbance has also increased in the Finnish archipelagos during the last two decades. The disturbance, however, has increased more rapidly in the south than north.

The main difference obviously responsible for the changes in the *A. anser* population is found in the hunting policy. As far as is known, all Finnish *A. anser* migrate fairly simultaneously to the same wintering areas in southwestern Europe and are open to the same shooting pressure there. All *A. anser* leave Finland prior to 15 September, before the earlier opening date for the geese in southwestern Finland. Hence, the only *A. anser* bagged in Finland have been the northernmost birds bagged in their own breeding area, whereas practically speaking none have been bagged further south.

Based on the above observation sit seems evident that regulation of shooting in the breeding area has clearly affected the abundance of the breeding *A. anser* population. It seems obvious that harvesting which must be considered normal and harmless to the duck populations has, together with shooting elsewhere, had a negative influence on the northernmost *A. anser* population. Thus, hunting rationalization must be considered an important positive means in the management of the goose population.

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References

Anderson, D. and K. Burnham (1976): Population ecology of the mallard: VI The effect of exploitation of survival. US Fish Wildl. Serv. Resour Publ. 128. Washington, DC.

Blomqvist, R. and R. Tenovuo (1980): Merihanhen pesimisesta Saaristomeren luoteisosassa (Summary: The nesting of the greylag goose *(Anser anser)* in the northwestern Archipelago Sea). Suomen Riista 28: 25 – 29.

Grenquist, P. (1956): Onko merihanhikantamme lisaantymassa? Suomen Riista 10: 87 – 94.

Lampio, T. (in press): Distribution and abundance of the Greylag Goose, *Anser anser*, in Finland. Ornis Scandinavica.

Merikallio, E. (1955): Suomen lintujen levinneisyys ja lukumaara. Otava, Helsinki.

Rogers, J. J. Nichols, F. Martin, C. Kimball and R. Pospahala (1979): An examination of harvest and survival rates of ducks in relation to hunting. Trans forty-fourth North Amer. Wildl. and Nat. Res. Conf.: 114 – 126.