

# The Black Grouse in Denmark 1978-2000 (\*)

by

Bo HOLST-JØRGENSEN<sup>1</sup>

**Key words :** *Tetrao tetrix*, Black Grouse, Denmark, habitat management, extinction.

## SUMMARY

In this period we have tried to keep alive the last stand of Danish Black Grouse in an area of 1000 hectares. We have done : Main heathers closed for the public. Elimination of goshawk, fox and crows. Heather care by burning, moving and sheep grazing. Ecological farming on all surrounding areas. Large areas with «weed and crop» and special crops, suitable for birds. Creation of better wet areas. Elimination of trees and shelterbelts. In spite of everything the last cock disappeared in 1998. And the ministry have decided, that we shall not try again with another provenience of Black Grouse.

In 1978, at the First International Grouse Symposium in Scotland, H.J. DEGN, predicted that the black grouse population in Denmark would disappear before 1980. However, in 1980, there were still black grouse left at three sites : Randbøl Heath (760 hectares), Kongenshus Heath (1360 hectares, neighbouring Hessellund Heath approx. 1300 hectares) and the Vind Heaths (approx. 700 hectares). The last blackcock at Randbøl Heath was found dead in 1992. At a guess, there were 5-10 birds left at each of Kongenshus Heath and Vind Heath in 1993. For some years we have not heard about any birds left on Kongenshus Heath, and the following is only handling about the Vind Heaths.

Ulborg State Forest District has administered the practical work in connection with Vind Black Grouse Wildlife Reserve since 1942. In 1980, when I took over as the chief forester of this district only 5 black cocks could be counted on the lekking spots in the wildlife Reserve. Twenty years earlier, 50 black cocks could be seen on the same area.

Since the population seemed close to extinction, we agreed not to carry out any experiments with the birds. Instead, all possible ways within reason to improve the situation were to be attempted immediately.

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<sup>1</sup> Chief forester, Skov-og Naturstyrelsen, Ulborg Statsskovdistrikt, Paradisvej 4, 6990 Ulfborg, Danmark

The district has a long-standing tradition for heather care by means of burning, mowing and sheep grazing. This care was intensified and systematized in five-year plans. We tried to solve the biggest problems, namely removing the *Populus tremuloides*, in many ways : by cows, sheep, goats and by herbicides. It turned out that sheep provided the most suitable solution, so now we have about 450 ewes and their progeny on the payroll. All the sheep are fenced in.

At the same time we established feeding areas with no herbicide spraying. Among others, the crops were buckwheat, flax and sunflower, all of which are rich in linoleic acid. To avoid problems with the goshawk, we removed the hedges of spruce in the Wildlife Reserve as well as a small forest close to the feeding areas. Finally we requested permission to catch the goshawks, gas the foxes and kill the crows in the closed season. Permission was granted and we have been doing this from 1982 till 1998.

In 1983, we bought 70 hectares of heathland next to the Wildlife Reserve and also 150 hectares estate, which increased the Wildlife Reserve by 100 hectares of agricultural land and some small forests. The agricultural land was used partly to dam a brook for 4 wet areas and partly to establish some large new feeding areas. Some of these areas were used for grazing, others for «weeds with crop». Still others were used for crops that are green in winter, e.g. rye and trefoil, where snow could be cleared for the birds in winter.

In the beginning we were able to raise funds for only one salary per year and this even in connection with the state forest job creation programme. This programme stopped in 1984 and, subsequently, we depended on applications to the Hunting Foundation, which receive an annual income from game licenses. The Hunting Foundation is administered by the hunting associations in Denmark. The foundation has owned the Wildlife Reserve since 1942. In the course of time its interest in the project has increased, and at last was paid Dkr. 300,000 a year. From 1990 the areas have been owned by the Ministry of Environment. And that meant better possibilities for getting money.

To minimize the influence of the goshawk, we have removed the tallest stands on the estate that was bought in 1983. Furthermore we have entered into care agreements with farmers that have lands adjoining the sanctuary. These agreements are made possible due to funding from a new law under the Ministry of Environment. Over a 5-year period Dkr. 720.000 is being used to compensate the farmers. The background for the agreements is as follows :

The number of black grouse in the Vind Black Grouse Wildlife Reserve has been calculated yearly. From 1980 to 1983 there was a rise from 5 to 15 cocks. Since then the number has declined steadily by approximately 1 per year. The alarming thing is that there are no «peaks» which might indicate one or more successful broods. Young birds are a very rare sight in the terrain and chicks never appear. Our conclusions are that due to the elimination of predators the old grouses either die from illness or old age, and that there is something quite wrong with the production of chicks. The problem may be caused

by predation on nests, eggs and chicks, wind eggs, thin-shelled eggs, poor fertilization, sick chicks and lack of food for these. Except for predation, the other factors may be a consequence of changed agricultural practices and lack of wet areas. It is not immediately possible for us to find additional wet areas and we are not sure that the time is ripe for further action against predators such as other birds of prey, badgers, martens mink, ermine as well as a more effective method for dealing with crows.

The agreement with the farmers aims to solve the problem of the changed agricultural practice. On the areas in question it is prohibited to use insecticides and only in very few cases herbicides are allowed. On the farmlands along the heath area we are sowing 20 meters broad stripes with species intended only for the welfare of the black grouse. These areas are not harvested. Fields of stubble are left throughout the winter and the seed corn must not be chemically treated. The background for this last ban is a publication that the Ministry of Environment has published about the influence of pesticides on birds, on arable land. This survey showed that ordinary fungicides, such as Maneb, Thiram, Zineb and Captan induce eggs without shells and increase chicken mortality in gallinaceous birds. The fungicide used for treating seed corn today have not been tested. Since their effects is to kill fungi, as with the remedies that have already been examined, it seems reasonable to assume that birds which live on seed corns for long periods, like the black grouse, could have their ability to reproduce damaged.

The Vind wildlife Reserve and adjoining areas that are suitable for black grouse consist of 700 hectares of heathland, about 200 hectares of «black grouse friendly» agricultural land and about 100 hectares of grazed meadows and willow scrub, in total 1000 hectares. In addition to this 5-600 hectares of heathland, willow scrub and meadow areas are situated within a close distance. In 1990 at the grouse symposium in Holland, Dr Angelstam said that in Sweden there was a capacity of 5 black cocks per 100 hectares. (De toekomst van de wilde hoenderactigen in Nederland, Organisatiecommissie Nederlandse Wilde Hoenders Amersfoort, 1990, p. 249). From Finnish countings from August 1989, it appears that there is an average density of 12,7 black grouse per 100 hectares. Theoretically there could therefore be 50 to 100 black grouse on our areas. This indicates that it is probably not the size of the area that is the limiting factor for the black grouse population today.

Another indication that the size of the heath is not the only decisive factor is that for example black grouse are no longer found at Borris Heath (4800 hectares, divided between heath, marsh and declared arable land) and Kallesmørs Heath (2-3000 hectares divided between heath and declared arable land).

In 1997 there were still 3 cocks and 2 hens on the best lekking spot in Vind. But in 1998 they disappeared, and we stopped both the control of predators and the arrangements with neighbour farmers about ecological farming.

For 18 years we have tried almost everything within reason to help the black grouse. We hoped that the control of goshawk and foxes could be a temporary help for some time, while we tried to find out if the decline in the population could be changed. This could also give the grouse a period to adapt to the present landscape, where the previous extensive heath areas have been replaced by a mosaic of forests, heath, arable land, moor, willow scrub and meadows. But either the Danish provenience of black grouse have not been able to get used to the new landscape or there is one or more reasons which we have not found.

Two factors have not yet been tried for, if the reason could be inbreeding or if another provenance of black grouse could do it better. Through two years we have discussed these items to find out if there was an opinion for to try again with Swedish or Scottish birds. But now our Minister has decided that we shall not try any more.

Still the work with the black grouse has not been in vain. We have got money for experiments and works about making the best heather management in Denmark. And by that we have secured other species, which are very rare in our country. For example : the last stands of *Pulsatilla vernalis* and one out of 10 pairs of *Lanius excubitor*. And - not to forget - it has been a great pleasure to deal with !

#### **ZUSAMMENFASSUNG : Das Birkhuhn in Dänemark 1978-2000**

Während dieser Periode versuchten wir, den letzten Bestand des Dänischen Birkhuhnes in einem Gebiet von etwa 1000 Hektar zu erhalten. Wir haben zu diesem Zweck westentliche Teile des Heidelandes für die Öffentlichkeit geschlossen, Habicht, Fuchs und Krähen bekämpft, Heidemanagement durch Feuer und Beweidung mit Schafen betrieben, ökologischen Landbau auf den umliegenden landwirtschaftlichen Flächen betrieben, grosse Gebeiet mit Wildpflanzen und Kulturpflanzen, welche für die Vögel geeignet sind, angelegt, bessere Feuchtgebiete geschaffen sowie Bäume und Hecken entfernt. Dennoch verschwand der letzte Birkhahn im Jahre 1998 und von Seiten des zuständigen Ministeriums wurde beschlossen, dass kein vergleichbarer Versuch der Erhaltung des Birkhuhnbestandes in einer anderen Provinz erfolgen soll.

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**Schlüsselwörter :** *Tetrao tetrix*, Black Grouse, Dänemark, Habitat Management, Aussterbung.

#### **RESUME : Le Tétras lyre au Danemark : 1978-2000**

De 1978 à 2000, nous nous sommes efforcés de garder en vie la dernière population danoise du Tétras lyres dans une zone de 1000 ha. Parmi nos actions, nous avons : interdit au public l'accès aux principales bruyères ; éliminé les autours, renards et corvidés ; entretenu la bruyère, qui a été brûlée, emportée, pâturée par des ovins ; appliqué dans les aires environnantes les principes de la culture biologique ; aménagé de vastes espaces avec des semences, cultures et productions favorables aux oiseaux ; créé des aires plus humides ; éliminé les arbres et les fourrés. En dépit de toutes ces interventions, le dernier coq a disparu en 1998. Et le Ministère a décidé d'en rester là et de ne pas réessayer avec des tétras lyres d'une autre provenance.

**Mots-clés :** *Tetrao tetrix*, Tétras lyre, Danemark, gestion de l'habitat, extinction.