

Management Experiences in Restoration of Heather in Sallandse Heuvelrug (NL) (*)

by
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Key words : *Tetrao tetrix*, Black Grouse, the Netherlands, Sallandse Heuvelrug, habitat, heathland restoration, management policy, action plan.

SUMMARY

I am working for Staatsbosbeheer (National Forest Service) in the Netherlands and acting as districtmanager in the region Flevoland-Overijssel, one of the eight Regions in the organisation of Staatsbosbeheer. Staatsbosbeheer is a governmental organisation which has celebrated its centennial last year. Staatsbosbeheer has a strong relation to the Ministry for Agriculture, Naturemanagement and Fisheries, our main source of money to do our job. Our main task is to manage and preserve over 220.000 ha of forests and nature-reserves in our country. In our managementpolicy we tend to give equal rights and attention to both natureconservation and development and outdoor-recreation. The district includes « the Sallandse Heuvelrug » (Which can be translated as : Hills of Salland) (2400 ha property of Staatsbosbeheer). The Sallandse Heuvelrug has been formed in the second last Iceperiod. The landice has formed this hilly sandy spot of appr. 5000 ha, now covered with forest and heathland.

The area is yearly visited by over one million people. It is famous for the presence of the Black Grouse. The population of this bird is the last one in Holland with a chance for survival. In this respect the National Policy Plan for the protection of Nature is very specific about the efforts which have to be made to bring the population at a better level. To achieve an improvement of the habitat for the Black Grouse the plan recommends that the size of the heathland should increase from 700 ha to 1000 ha. In the last five years we have managed to do so.

I would like to tell you something about the heathland-management at this moment.

I will start with some history, followed by the possible management-tools, the communication with the public and some results of the monitoring.

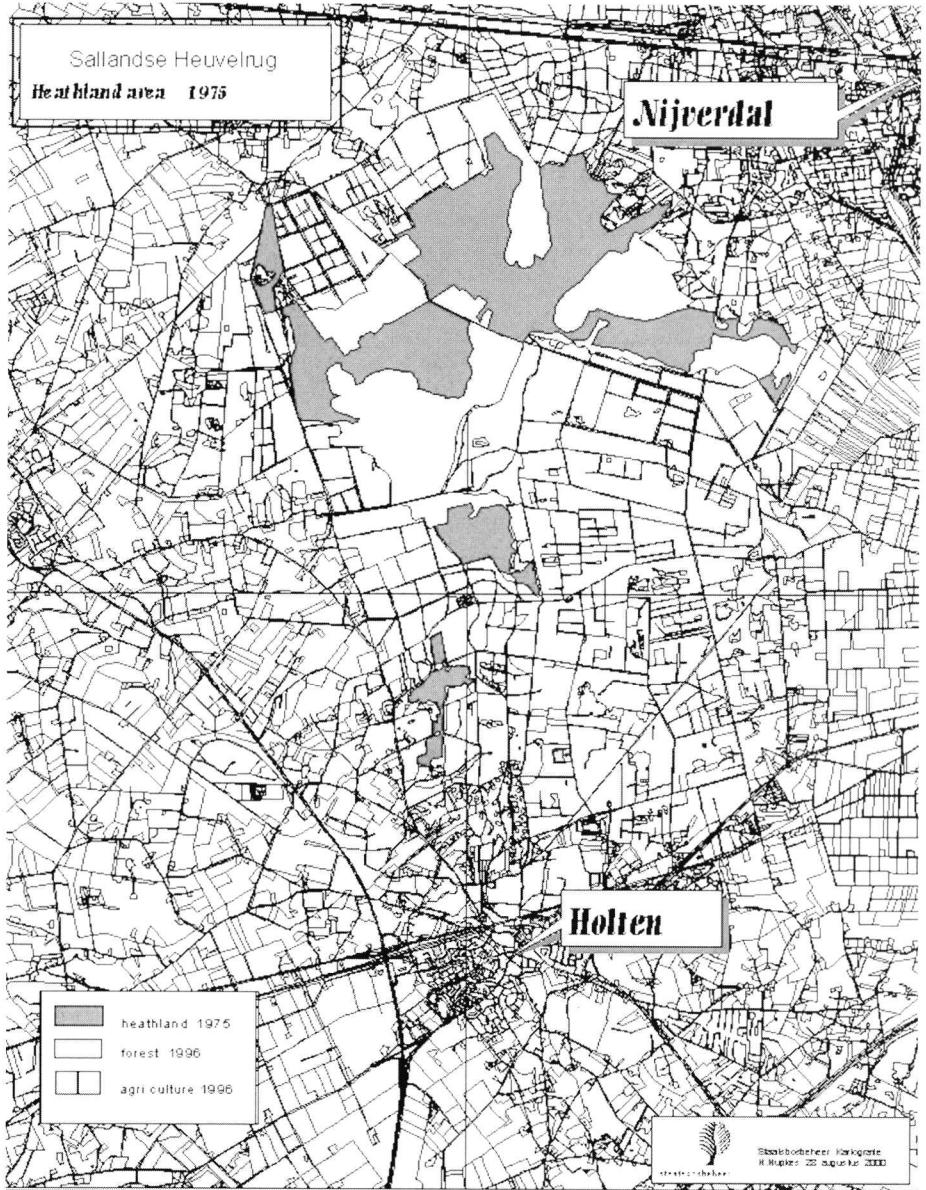
I would like to thank the organisation of this congress for their kindly invitation.

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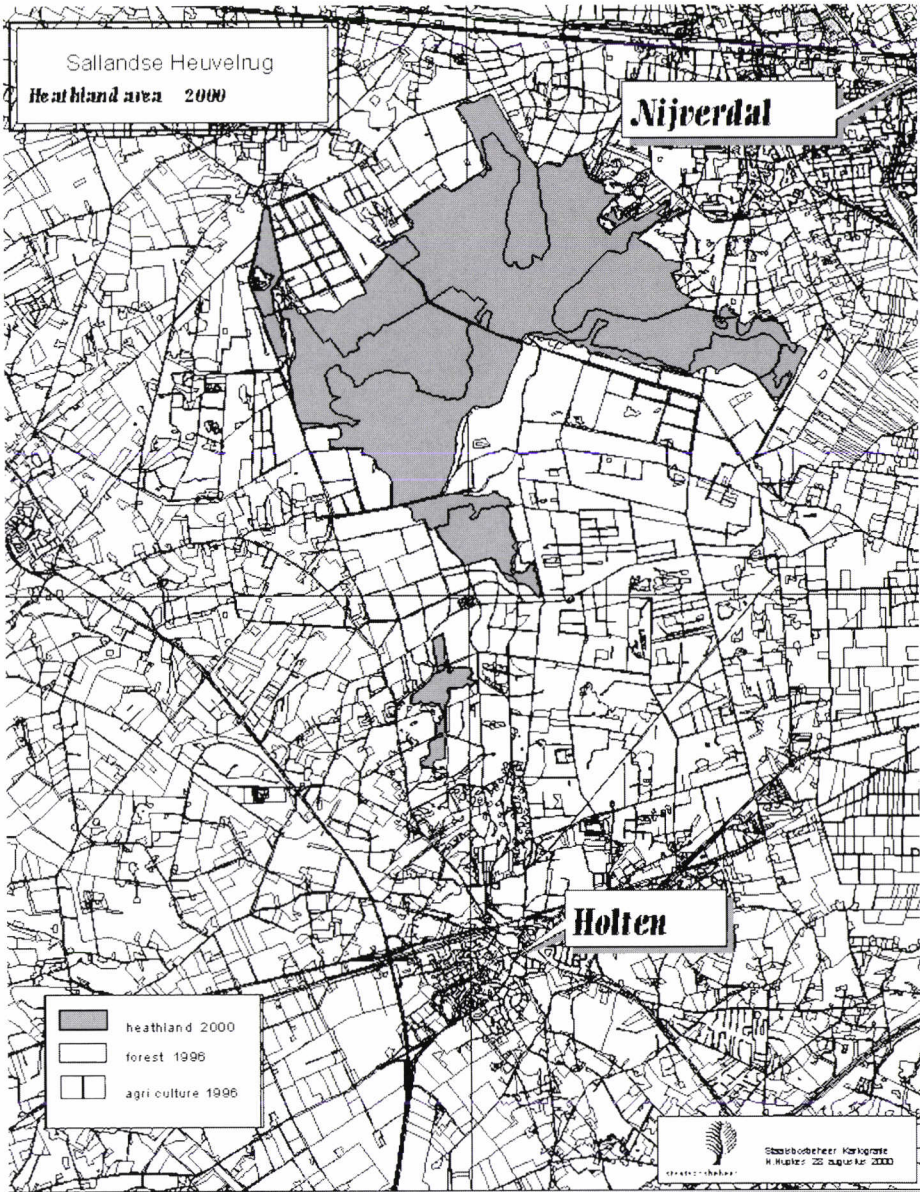
Past and present evolution of the landscape

In the past we had this agricultural system in Holland in which 1 ha of arable land required 10 ha of heathland with sheep and 1 ha for sod-cutting. The sods were used in the stable and along with the manure spread on the arable fields. This system has been practised on most of the higher grounds in



Holland until the last century. Some 150 years ago the common grounds were divided and afforestation of the heathland began and it meant also a standstill-period in heathland-management. During the second worldwar heathlands have been mowed for camouflagepurposes and cattle-food.

In the fifties heathland-management has been undertaken in order to preserve the landscape. For the preservation of the heathervegetation it is necessary to reduce the nutrients.



In 1900 we had a deposition of Nitrogen of 5 – 10 kg /ha/year; this means sod-cutting after 90 years. Nowadays we have to deal with 40 kg N /ha /year or even more. This means a shorter period. Doing nothing means ; afforestation, grassgrowth, and brambling of the heathlands. Another effect of the undertaken measures should be to obtain different stages in the heathvegetation in order to accomodate the different suitable «niches» for the Black Grouse.

In many places an extensive form of grazing will do, but for the time being in this area we have chosen to continue the mechanical form of management. The reason is that we have to deal here with a relatively small population of Black Grouse, which is very vulnerable.

We have decided to postpone the discussion about grazing until we have enlarged the heathland from 700 ha up to 1000 ha in the central part of the area. We also want to wait what the effects this enlargement will have on the current Black Grouse population.

After that we may decide on extensive grazing (in parts) of the area. The choice which measure has to be undertaken has to be a motivated choice as it has substantial financial consequences. On the other hand we have to keep an open mind for the ecological consequences of the measures.

The possible management-tools

Burning

This has been done in the past; nowadays we think «burning» has too many negative side-effects on the life and habitat of e.g. lizards. It has often been carried out on a too large scale. There is the danger of intensive grass-growth afterwards. It is relatively cheap and maintains the micro-relief. Nowadays also regulations forbid to burn (air-pollution).

Mowing

Mowing the heather has a minor effect on the nutrient-situation, but it costs little and there are no problems in marketing the material. This measure is only undertaken to delay the sod-cutting measure which is very costly. It is also a good measure in keeping the arena-places for the Black Grouse.

Sod-cutting

One operation per 25-30 years. This is done mechanically, with special equipment. Yearly a 5-8 ha has been treated the last ten years. The measure is carried out in small strips in order to save the life and habitat for lizards and

other species. This measure is especially done in areas with a grass-vegetation. It is most effective to get rid of intensive grassgrowth. The costs are high and this is why we try to be economical about it.

Before we get to work in this way, we have to test the soil for the presence of metals. If the presence of these metals is too high according to the standard, we have to deal with polluted soil which has to be transported to a specialised burning-installation. In our situation we have been lucky so far that we had always unpolluted soils, so until now this has caused no problems.

Chopping

This measure is in between of mowing and sod-cutting and is carried out by a type of cleppermower and effects only the upperlayer just beneath the roots of the heather. The advantage of this measure is a quicker re-growth of the heathervegetation as by sod-cutting. It is also cheaper than sod-cutting. However, we cannot use chopping when we have to remove a massive growth of grasses. These measures are also undertaken in order to create and maintain variety in age and height of the vegetation.



Grazing sheep

has been carried out for a period of time until 1989. Grassgrowth was not reduced; there was disturbance of groundbreeders; the control of bushgrowing is insufficient; there was an accumulation of humus and costs were very high. This is why we have chosen for a mechanical type of management during the coming years.

Clearing

For the clearing of the heathland we sometimes do it with our own labourforce. But mostly we work with volunteers (pupils from schools but also employees who have a day-outing with their firm as an alternative team building activity). To have the local community council at work is also very attractive to get new contacts. We are also dealing with the management of the fringes of the heathlands, in order to create or to maintain a gradual transition between heathland and forest. We do so by taking the elder trees out and leave some young material behind. At the Sallandse Heuvelrug the *Vaccinium vitis-idaea* is the main course on the menu of the Black Grouse, but the right habitat is also very important, especially for the chickens. So we have to take care that we have older as well as younger heather together.

Another important issue for the management has been the report from the Research Institute for Nature Conservancy in Holland (1993) with recommendations to expand the area of heathland from 700 ha up to 1000 ha. This is considered to be the minimum area for a self-supporting population of Black Grouse.

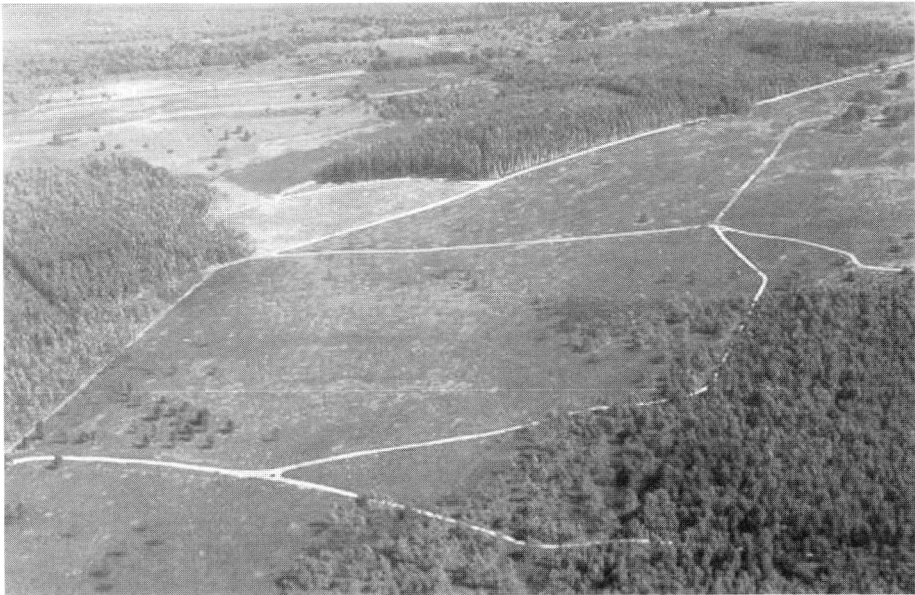
We have already stated that other heathland-species such as Nightjar, Stone-chat, Woodlark and Yellow Hammer have also benefited from the extension of the heathland area. The maps show which forests have been cut down in the last years. In total an area of 150 ha of the Staatsbosbeheer-property and 150 ha of the property of Natuurmonumenten have been felled.

To undertake these measures we had to get a clearance from the Ministry of Agriculture, Nature management and Fisheries, according to the Forestlaw. Normally one has to replant the same area as one has felled. In this case the replant has been suspended, provided that the population of the Black Grouse will benefit from these habitat-improvements.

After felling we leave the branches etc. in most cases in order to create more diversity in the regrowth of the heather as well as to give more shelter opportunities for groundbreeders e.g. Black Grouse and Nightjar. In Larch-forests we have a massive undergrowth of the Wavy hair grass (*Deschampsia flexuosa*). In these cases we remove the total upper layer of the humus package. This has resulted in a spectacular regrowth of the heather. In other cases we were anxious not to damage the vegetation of heather and the *Vaccinium*-vegetation. In the coming period we will give special attention to create smooth

fringes between heathland and woodland.

I now would like to emphasise the fact of a good communication with the public as well as with the authorities. In our new visitorscenter (built in 1996) is also a presentation of the Black Grouse and its habitat and here we communicate the measures which have been undertaken. We also give our information with temporarily signposts on the spot and occasionally we have articles in the local newspapers and other media. Our so-called «boswachters» (= wardens) give information to an interested audience. As a result of the measures in the field we have a lot of questions from our visitors for the local wardens.



Outdoor-Recreation

As I have mentioned before; a number of over 1 million people are visiting the Sallandse Heuvelrug every year. As a result of negotiations over the last decades the Minister has finally declared that the area will be a National Park. The Parkboard has been installed in August 2000. This will mean a further intensification of the recreation in the area. Until now we receive over 1 million visitors each year. This number will increase. The parties united in the National Parkboard have agreed upon several starting-points. For example there is an agreement over the roadstructure in the future. We want to create a new infrastructure in which the pressure will be concentrated at the borders of the area. Therefore we are creating concentrationpoints (honey-pots) round the area. The main road is already closed between 09 *p.m.* and 9.00 *a.m.*, but this process of closing this road for the motorists will be continued. At this stage the political situation is still against a total banning of motorists on this road. We also have made provisions for alternative transport e.g. electric cars.

Wildlife management

The Black Grouse is not only threatened by a change of climate, weatherconditions, decrease of biotope. Oh no ! In Holland also there are still people who consider the predators of the Black Grouse to be one of the main reasons of a foreseen extinction of the species in the Netherlands. And they will tell you immediately that the Hawk, the Fox and Black crows lay an unacceptable burden on the population as a whole.

Well we do have Crows of course. For a number of years we have tried to catch them in a cage, but with no significant result of course. The population of the hawk in this field is at an absolute minimum (only one breeding-pair; probably due to poaching). The number of foxes is definitely increasing. Hunting of foxes has never been prohibited within the area, but only in 1998 7 foxes were shot and in 1999 12 foxes were shot.

Monitoring

Because of the presence of the Black Grouse, the data of the mapping of the vegetation in the heathland-area in management by Staatsbosbeheer insists on the vegetation structure.

There have been chosen for a different method as usual. Instead of integral mapping on specific vegetation-types, the vegetation and the structure have been recorded in about 2300 plots like grids. Each plot covers an area of 28m² (circle with $r = 3m$). The distance between the plots is 50m. The number of plots are so many, that after the input in Arc View, we can give a overview of the different parametres. We use a back-pack- GPS-system to determine our position in the field. We also have made a special inquiry into the situation and the management of heather/forest-borders.

We are monitoring some critical or significant species; plants, birds, insects in order to tell something about the effects of our management. And of course we can follow the situation by arial photographs.

Monitoring the population of the Black Grouse

The yearly population of the Black Grouse is counted on three fixed data in april/may each year with a number of volunteers, birdwatchers, hunters and employees of Staatsbosbeheer and the Society for Naturemonuments. The counting is between 6 and 8 o'clock in the morning and the whole area is divided in 15 subarea's. Therefore special countingforms are being used.

Although there has been invested a lot of money and energy to create a self-supporting population of the Black Grouse in the Sallandse Heuvelrug, there has been a lot of fluctuation in the number of birds present in the area. During the first years of the restoration plan the number of Black Grouse increased. During the last three years the number decreased down to the level of 1989. Probably due to bad weatherconditions during the spring, the last to years many chicks have not survived.

Other critical species of heathlands such as Treelark, Nightjar and Stonechat have benefitted from the outcome of the restoration plan. We hope the Black Grouse will do so in the near future.

ZUSAMENFASSUNG : Erfahrungen in die Betreuung von ein Heidebiotop für Birkhühner in Sallandse Heuvelrug (NL)

In diesem Vortrag wird ein Bild gegeben von die Betreuungsmaßnahmen für ein gutes Biotop für die letzte Population der Birkhühner in Holland.

In dem Gebiet der «Sallandse Heuvelrug» in das östliche Teil von Holland, ist Staatsbosbeheer zuständig für die Betreuung. Das Artenschutzprogramm für das Birkhuhn in Holland (1990) gibt Richtlinien für die Massnahmen um eine dauerhafte Population zu befördern.

In diesem Programm wird eine weitere Ausbreitung von die Heidegelände von 700 Ha nach 1000 Ha empfohlen. In die letzte fünf Jahren haben wir diese Ausbreitung ausgeführt.

Auch andere Betreuungsmassnahmen werden vorgetragen und daneben die Öffentlichkeitsarbeit und die Monitoring von die Birkhuhnpopulation so wie auch das Biotop..

Monitorig umfasst auch die Kartierung der Vegetation für verschiedene Parameter.

Obwohl schon viel Geld und Energie in ein gutes Biotop investiert worden ist um eine «self-supporting» Population von das Birkhuhn in der Sallandse Heuvelrug heran zu bringen, sehen wir viele Schwankungen in der Grösse der Population. In die erste Jahren in das letzte Jahrzehnte stieg der Anzahl aber in die letzte Jahren ist das Anzahl wieder heruntergegangen. Wahrscheinlich waren die schwere Klimabedingungen der vergangene Jahren die Ursache.

Andere kritische Arten von das Heidelandschaft haben wohl profitiert von diese Massnahmen (Zb. Heidelerche, Schwarzkehlchen und Ziegenmelker)

Wir hoffen dass die Birkhuhnpopulation in die nächste Zukunft ebenso heranwachsen will!

RESUME : Expériences de restauration des landes à bruyère comme habitat du Tétrás lyre au Sallandse Heuvelrug (Pays-Bas)

Nous narrons ci-après l'histoire des mesures de gestion appliquées aux Pays-Bas pour y préserver la dernière population du Tétrás lyre et son habitat.

C'est le Service Forestier National qui, au Sallandse Heuvelrug, est responsable de la gestion de cette population. Le Plan d'Action National pour la Protection de la Nature est très strict quant aux efforts qui doivent être consentis pour amener et garder la population à un meilleur niveau. Pour assurer une amélioration de l'habitat du tétras lyre, le plan recommande que la superficie des bruyères passe de 700 ha à 1000 ha. Au cours des cinq dernières années, nous avons fait en sorte qu'il en soit ainsi.

On évoquera ensuite d'autres outils de gestion, puis les mesures prises pour la communication avec le public, et enfin la surveillance et la gestion du Tétrás lyre et de son habitat, ce qui inclut aussi la cartographie de certains paramètres de la végétation.

Bien que l'on ait investi quantité d'argent et d'énergie pour créer un habitat valable pour abriter une population autosuffisante de Tétrás lyres au Sallandse Heuvelrug, on a enregistré une série de variations des effectifs de tétras présents dans cette région. Pendant les 7 premières années du plan de restauration, le nombre de ces oiseaux a augmenté. Au cours des trois dernières années, l'effectif est retombé au même niveau qu'en 1989. Au cours des deux dernières années, et sans doute en raison des mauvaises conditions climatiques, de nombreux poussins n'ont pu survivre. D'autres espèces sensibles liées et en situation critique comme l'Alouette lulu, l'Engoulevent et le Traquet pâtre ont bénéficié du plan de restauration de la bruyère. Nous espérons qu'il en sera de même pour le Tétrás lyre dans un futur proche.

Mots-clés : *Tetrao tetrix*, Tétrás lyre, Pays-Bas, Sallandse Heuvelrug, habitats, restauration de la bruyère, politique de gestion, plan d'action.