Update of the situation of the Cantabrian capercaillie *Tetrao urogallus cantabricus*: an ongoing decline

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In a previous number of Grouse News (Bañuelos et al. 2004) we reported the drastic decline that Cantabrian capercaillie *Tetrao urogallus cantabricus* had apparently suffered in two decades, from the early 1980’s to 2000 - 2001. Based on extensive evaluation of lek occupancy, about 50% of the display areas had been deserted, and the number of remaining cocks was roughly estimated at 300. Accordingly, Cantabrian capercaillie was listed as endangered in Spain, and became the only subspecies of capercaillie qualifying as endangered according to IUCN criteria (Storch et al. 2006). This capercaillie population occupies a very southerly range for a tetraonid (Quevedo et al. 2006a), and has recently been identified as an evolutionary significant unit because of its unique ecological and genetic characteristics (Rodríguez-Muñoz et al. 2007).

Between 2005 and 2007 a new extensive lek survey was performed in the northern watershed of the range (Asturias), over a territory that comprises more than 50% of the population. Almost all known display areas (N=364) were repeatedly surveyed during the lekking season (April-May). Surveys were performed during the day, looking for signs such as feathers, fresh droppings or footprints, so that results were mainly presence-absence data. Occupancy surveys during the day were mostly chosen over more traditional lek counts at dawn to minimize disturbances, but also because the previous survey (2000/2001) showed that less than 10% of the occupied sites had more than one cock. The previous comparison between early 1980’s and 2000/2001 was susceptible to differential survey methods or efforts. Such potential differences were minimal between 2000/2001 and the new survey.

The outcome of that new survey is alarming. The acute decline was confirmed, and seems to be even more pronounced. In the Asturias province 27% of the lekking areas holding capercaillies in 2000/2001 showed no sign of the species in 2005/2007. Only 108 leks remained occupied (30% of all known leks), and most of them showed low capercaillie activity, according to the signs. This result indicates an annual rate of occupancy decline of 5.4%. In the southern watershed the situation is not more promising, with just 85 occupied leks corresponding to 34.5% of all known leks in that area (N = 247, Robles et al. 2006). Although we do not have precise data on the southern watershed to elaborate, it does not seem too speculative to say that the population will go extinct in a few years, unless the trend is reversed.

A closer look at the recent Asturian data shows that the central part of the range is almost gone, with just a few isolated spots were capercaillie may still be seen (Figure 1). That poses additional problems to the already serious scenario of decline, because the central part of the southern watershed is basically deforested (Quevedo et al. 2006b). Still lingering and showing a somewhat less dramatic trend of decline are the southwestern areas of Asturias, including the integral biological reserve of Muniellos Forest (55 km²). Forest cover is very high in this area (according to Cantabrian standards of highly fragmented masses), and is also connected to the best areas in the southern watershed, in the León province.

It seems straightforward that urgent measures should be taken. Less clear is which ones. However, the first thing that strikes us is that almost nothing is known about the demography of the population, except for some estimates of very low reproductive output at the end of the summer (Bañuelos et al. 2008). At this point, we believe that an ambitious telemetry project, strictly coordinated among the different regional administrations involved, is the only way of shedding some light on the ultimate causes of the decline. That could be also the only way to identify effective management targets, i.e. to develop strategies to reverse the trend of certain demographic parameters that might have the greatest impact on the viability of the population. However, to the best of our knowledge such a project has never been discussed. One could hesitate to start catching birds because it implies some risks. However, some birds are being caught and tagged within a captive breeding program; apparently, tagged hens will provide the source eggs for such captive breeding program. It may be argued that captive breeding programs are not effective conservation measures for capercaillie (Seiler et al. 2000, Storch 2007), but we have argued that elsewhere (Quevedo et al. 2005, Rodríguez Muñoz et al. 2008) and it is not our point here. Instead, we would like to stress that without knowing which are the key demographic parameters for the wild population there is 1) very little chance of having an effective management, 2) very little chance of population survival beyond a couple of decades and 3) very little chance of success of any captive breeding program. Particularly the latter has been stressed by the IUCN, GSG’s parent organization (IUCN 1998).
Figure 1. Trends of Cantabrian capercaillie occupancy in 1km² cells. Green cells indicate capercaillie presence in the early 1980’s, blue cells indicate occupancy in 2000-2001, and red cells indicate present occupancy (2005 - 2007 survey).

Maybe this critical situation would benefit from direct advice from experienced members of the GSG, as IUCN partners, to the highest instances, at the Spanish Ministry for the Environment. There are few capers in the Cantabrian Mountains, and it is not very likely that they have much influence on the overall ecology of these Atlantic forests. But as Aldo Leopold aptly put it: "In terms of conventional physics, the grouse represents only a millionth of either the mass or the energy of an acre. Yet subtract the grouse and the whole thing is dead" (Leopold 1948).

References
Capercaillie conservation in the state forests of Scotland

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The Scottish Forestry Strategy (SFS) was launched by the Scottish Government in October 2006 and determines the future direction of forestry in Scotland (see www.forestry.gov.uk). The seven themes of the SFS include not only timber production, but also themes such as access and health, and climate change. Biodiversity is a theme and the explicit aim is to manage landscape-scale areas for threatened species and habitats. For a range of species, ranging from butterflies to mammals and birds, the state forestry agency, Forestry Commission Scotland (FCS), is producing funded programmes of action, which will complement broader habitat work, such as significant native woodland expansion. One of the first programmes to have been produced is the Capercaillie Species Programme, which covers management in both private and state forests. Management in private forests will be funded through a new government grant scheme and is being developed. However, of particular interest to GSG members may be the agreed programme for capercaillie within the state-owned forests in Scotland, which are managed by FCS. The GSG and its members have previously supported efforts to protect capercaillie in Scotland, so they will be happy to see that capercaillie conservation is now a mainstream management objective within state forests in this country.

The aims of the Capercaillie Species Programme for state-owned forests in Scotland are:
1. To contribute to the national capercaillie action plan target of 5000 birds by 2010.
2. To contribute to the national capercaillie action plan target of a range expansion from 40 to 45 occupied 10km² squares by 2010.
3. To ensure management of capercaillie in state forests contributes to wider capercaillie management strategies.
4. To incorporate capercaillie as a management objective in all relevant state forest plans.
5. To maintain all occupied leks in state forests by enhancing existing habitat or by creating new habitat.
6. To enhance habitat around unoccupied lek ranges and in strategically important forests to facilitate range expansion. (Unoccupied leks are those with no cocks recorded in the area in the last three springs.)

The Capercaillie Species Programme is being delivered via action carried out on two levels within a suite of state-owned forests in Scotland. At level one, capercaillie is identified as a formal management objective and included within forest plans. This means that all forest management activities in the selected forests must be planned to avoid any disturbance to breeding capercaillie. In addition, forest management on these sites must aim to increase, or at least maintain, the amount of high quality habitat available to capercaillie — particularly brood habitat. This is usually achieved by adapting forest management practices to suit capercaillie. For example, large scale clear felling is avoided and silvicultural systems that produce more suitable habitat are used wherever possible. These systems include group selection and other forms of continuous cover forestry. Level two action constitutes additional targeted action for capercaillie and is carried out in state forests with active leks. This level of action comprises additional work that would not be carried out as part of normal forest plans. The aim of this work is to increase existing populations by increasing survival and breeding success of capercaillie.

1) Level one action
Level one action applies to all twenty-seven state forests that are important for capercaillie and these are spread across seven forest districts. Eleven of these state forests currently have either very low numbers of capercaillie or have none at all. However, these forests are important in terms of facilitating future