

GROUSE NEWS



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WPA/BirdLife/Species Survival Commission
Grouse Specialist Group

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Editorial

Probably no family of birds has been so intensively studied for so long as the grouse. At the time of WPA's first International Grouse Symposium back in 1978, there was already a large corpus of knowledge published in the scientific literature. None the less, there were still large gaps in the evidence, and yet the grouse publications in many countries were rapidly declining. We recall the heartfelt cry of Dr Eberhard Wipperfurth "While you have been counting numbers by walking in line, our grouse have been eliminated from our forests".

Now after 24 years we surely have enough experience to move into active management of grouse populations wherever this is needed. The special case of managing red grouse *Lagopus scoticus* for commercial hunting is perhaps unique (though very important to the economy of upland Britain, for a single day's shooting on a top estate can bring £8-10,000 in a good year). Amazing autumn densities up to 2000 birds/km² can be achieved. But the principles, of predator control, optimal habitat management, reduction of disturbance and obstacles to flight paths apply everywhere.

It is encouraging to report in this issue the early successes of the N. Pennine Black Grouse Project, and on the political front the introduction of the EU Commission to compel a national government (of Scotland) to take action to preserve their remnant population of capercaillie. Can scientists in many other countries now move from the collection of basic data to scientifically designed, managed, evaluated and reported experiments in the management of grouse populations? The knowledge is there, the political will is now emerging, and perhaps at last even the money can be found.

Tim Lovel

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From the Chair

Welcome in the electronic age of the GSG. Not only have Diana and Tim Lovel hatched the first electronic issue of *Grouse News* (thanks to Jane Clacey for her computer skills!), but also, the new website of the GSG was launched (<http://www.gct.org.uk/gsg/>) by our Webmaster Michèle Loneux with technical support from Phil McGowan of WPA and The Game Conservancy Trust, which has kindly agreed to host the GSG website, and already hosts the Pheasant SG website and also the Partridge, Quail and Francolin SG website (for details see page 4). Both, the new *Grouse News* and the new Website, will greatly ease communication and exchange within our network. We also will get better linked to the other Galliformes Specialist Groups: the World Pheasant Association (with the technical support of SSC) has established a listserv linking the five Galliformes Specialist Groups (see report on page 20).

The past year has been a productive one for the GSG. As a group, the GSG has probably never been as active as in 2002. The 9th International Grouse Symposium (IGS) in Beijing, China, in August 2002, triggered a lot of motivation to develop new ideas and put old ones into practice. A major step was the GSG Audit, a review of our performance as a Specialist Group as compared to the tasks given to us by IUCN (see report on page 3). The result is a clearer view of what the GSG is supposed to do, how well we are doing it, and, most importantly, of the way forward towards making a difference for understanding and sustaining grouse and their habitats. In terms of grouse conservation, an important task is to clarify the conservation status of the Caucasian black grouse (CBG), a species endemic of the Caucasus region. It is the only grouse listed as "data deficient" by the IUCN. A workshop on the CBG during the IGS this summer will hopefully result in a first project to survey the species' range in Turkey. GSG member Sagdan Baskaya is presently working on a grant proposal that the GSG will support (a workshop report can be found on the GSG website and in this issue (page 4).

An encouraging point is that the GSG keeps growing. After the IGS, almost 20 new members joined the GSG. With that, the GSG now (December 2002) has 101 registered members from 27 countries in Eurasia and North America; also, the GSG is the largest of the five Galliformes Specialist Groups (Cracids; Grouse; Megapodes; Partridges, Quail, Francolins; Pheasants). Juri Kurhinen, who keeps migrating between Russia and Finland, became GSG member number 100 – congratulations, Juri. However, one should not forget that grouse are known to occur in 52 countries, and we are still lacking representation in large parts of eastern Europe and central Asia.

Last, but not least, I hope that you like our new "flagship" grouse. WPA asked us to find a colour picture of a grouse, best a capercaillie (I did not object), that would match the logos of the other Galliformes SGs. WPA Chairman Dick Potts and I opted for the one you find on the cover of this GN.

Ilse Storch, Chair Grouse Specialist Group

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NEWS FROM GSG

GSG Audit

The GSG Audit has been a major effort during this past half year. Following a brilliant idea and the good example of Peter Garson, Chairman of the Pheasant SG, the GSG has reviewed its tasks and performance. Based on the Terms of Reference given by IUCN/SSC to all Specialist Groups and their Chairs, an "Audit" of the Grouse Specialist Group (GSG) was drafted in summer 2002, was circulated for comment among all GSG members, was then presented and discussed during the 9th International Grouse Symposium in China in August, and finally revised according to the comments received from members and parent organisations. The final version was distributed by e-mail in December, 2002.

The GSG Audit has revealed a number of shortcomings in the GSG's performance. The GSG is lacking representation in parts of Eastern Europe and Asia; is rarely contributing actively to conservation debates and making advocacy interventions; is unsuccessful in Action Plan project implementation; and is not sufficiently providing the means for monitoring species status.

As major tasks to tackle in the near future, the GSG has agreed to establish and maintain a GSG web site; to publish and distribute *Grouse News* electronically; to identify potential new members in Eastern Europe and Asia; to encourage and assist Action Plan project proposers to implement their studies; to contribute to clarifying the conservation status of the Caucasian black grouse, which is IUCN-listed as "data deficient"; to develop and continuously update a database on distribution, localities, and status of all grouse species; to seek to become involved in wider conservation debates and advocacy for action; and to revise the Grouse Action Plan in 2004 for the period 2005-2009.

In order to operate most effectively, tasks and responsibilities will be divided among a greater number of GSG members. The key roles that became evident through the GSG Audit are a Webmaster to develop and maintain the GSG web site (*Michèle Loneux*), the Grouse News Editors (*Diana and Tim Lovel*), the next IGS organiser (*Emmanuel Ménoni*), Regional Representatives (*Alexander Andreev, David Baines, Jack Connelly, Pekka Helle, Siegfried Klaus, Kathy Martin, Emmanuel Ménoni, Ilse Storch, Sun Yue-Hua*), a Communication and Advocacy Officer (*volunteer wanted!*), and the Action Plan compiler and GSG Chair and with a leadership and oversight role (*Ilse Storch*). The GSG Committee will consist of all office-bearers, i.e., those GSG members who most actively contribute to GSG operation.

There is much to be gained from dividing the roles defined among Committee members, perhaps on a three year term (from Symposium to Symposium), but without a bar on re-appointments. This should broaden the operation of the GSG, whilst presenting volunteer workloads to the Chair and other Committee members that are of manageable proportions.

An electronic copy of the full text of the GSG Audit is available from Ilse Storch.

Ilse Storch

Chair Grouse Specialist Group, ilse.storch@t-online.de

New GSG website

The GSG has just set up its new website <http://www.gct.org.uk/gsg/>. Webmaster is GSG member Michèle Loneux – be prepared that she will contact you for material. Parts of the website are still under construction, and your suggestions for additions and improvement are very welcome. The new website will be much more expansive than the single page contained within the WPA website (<http://www.pheasant.org.uk/gsg.asp>). As the websites of the Pheasant (<http://www.gct.org.uk/psg/>), and Partridge/Quail/Francolin (PQF) (<http://www.gct.org.uk/pqf/>) SGs, the GSG's website is hosted at the Game Conservancy Trust (GCT) in the UK.

The website will contain information on the GSG and its tasks and activities, and all grouse species. Grouse News will soon become available at the website for download, starting with this issue. Please send any suggestions regarding content and design to Michèle at Michele.Loneux@ulg.ac.be.

Ilse Storch

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Workshop report: Clarifying the Status of the Caucasian Black Grouse Ilse Storch

Background

The Caucasian black grouse *Tetrao mlokosiewiczi* occurs between the Black Sea and the Caspian Sea in the Great and Little Caucasus mountains in Russia, Georgia, Armenia, and Azerbaijan, east into north-eastern Turkey and south into north-western Iran; the major part of the range is in Russia and Georgia. The species has the smallest distribution of all Eurasian grouse species. Estimates of total population size are vague and vary between 10-100,000 birds. The species probably has been declining at least since the 1980s and has disappeared from parts of its range. Habitat degradation due to cattle grazing and shepherding, predation by feral and shepherd-dogs, and illegal hunting are assumed to be major threats to the species.

The conservation status of the Caucasian black grouse is insufficiently clarified. Up-to-date information on distribution, abundance, and population trends are lacking. This is reflected in the international red data books that list the species as data deficient (IUCN 2000) and insufficiently known (Red Data Book of European Vertebrates 1997). However, the species is listed as endangered in the national red data books throughout its range (Armenia, Azerbaijan, Iran, Georgia, Turkey, Russia). Some local naturalists believe that the species is rapidly declining and threatened by extinction.

In the IUCN/SSC Grouse Action Plan (Storch 2000), the IUCN/SSC/BirdLife/WPA Grouse Specialist Group (GSG) has reviewed information available on the Caucasian black grouse, and has sketched project proposals to clarify the status and reduce the threats to the species. To date, however, none of these projects has been implemented. The major difficulties appear to be the socio-economic situation in the range countries, and thus, a lack of funding, logistics, and other support for local researchers.

CBG Workshop in Beijing

The GSG held a workshop on the Caucasian black grouse (CBG) on 21 August 2002 during the 9th International Grouse Symposium (IGS) in Beijing, China. The workshop's objectives were:

- to bring together scientists from the CBG's range countries, to enable them to meet with international grouse experts, and to strengthen their contacts with the GSG;
- to increase awareness and interest regarding the CBG in the international scientific community and among GSG members;
- to initiate concrete steps towards field surveys and research studies on the CBG to clarify status and threats according to IUCN criteria.

The GSG invited scientists from 5 of the 6 range countries to participate in the IGS and the CBG workshop, and offered financial assistance with travel expenses. Unfortunately, WPA funding did not become available until about two months before the IGS, and thus, invitations came at too short notice. As a result, Sagdan Baskaya from Turkey participated in the IGS as the only representative of the CBG's range who is presently conducting field work on the species. Further workshop participants with their own experience of the species were Roald Potapov (Russia) and Siegfried Klaus (Germany). The workshop on 21 August 2002 was attended by 13 GSG members.

- GSG Chair Ilse Storch gave an introduction on the species, its range, unclarified conservation status, and the workshop goals.
- Siegfried Klaus showed slides reporting on the ecology of the species in Russia and Azerbaijan, and briefly introduced the new BirdLife/NABU project that has been started in Azerbaijan (see below).
- Sagdan Baskaya, who had given a lecture on his studies on the CBG in Turkey in the IGS Sessions on 20 August, sketched a project proposal in order to clarify the distribution and abundance of the species in Turkey, and to identify its major threats. The proposal was based on the Conservation recommendations outlined in the IUCN Grouse Action Plan.
- The proposal by Baskaya was discussed and approved by the workshop participants. The GSG will help to develop a project proposal and to find funding for project implementation.
- Suggestions were made to extend the scope of the project (collect feathers for genetic analyses of population differentiation and gene flow) and to extend activities into other range countries (GIS analysis of vegetation types and topography from satellite images to produce a map of potential habitats as a basis for field surveys).



- Workshop participants concluded that there is a need to systematically collect data for a range-wide analysis of factors affecting the distribution and abundance of the CBG in different parts of its past and present range.

CBG project underway in Azerbaijan

A first step to tackle the research needs outlined in the Grouse Action Plan is under way in Azerbaijan. The German BirdLife-Partner NABU and the Azerbaijan Ornithological Society (AOS) started work on the species in spring 2002, financed by NABU, RSPB and the Dutch Ministry of Environment through the BirdLife European Division.. The main objectives are:

- to re-initiate scientific work on the species in Azerbaijan. Over the last decades no surveys have been conducted, and knowledge and experience of the CBG are disappearing. In spring 2002 GSG member Siegfried Klaus *Siegfried.Klaus@gmx.de* was appointed to train locals on field methods. Efforts will continue.
- to start developing a method based on remote sensing and GIS-analysis to create a potential distribution map that covers all range countries. Work has been started but further funding is needed to continue.
- to develop conservation strategies for the high mountain areas of the Caucasus with a strong focus on the CBG but also for other components of this fragile ecosystem

First plans are being discussed by NABU to extend the activities into other range countries; in particular in cooperation with the BirdLife partners in Georgia and Turkey. The GSG is not directly involved in these activities. GSG and BirdLife/NABU however agreed that activities on the CBG should be coordinated whenever possible.

Acknowledgement

The GSG thanks the World Pheasant Association for making it possible to invite scientists from the CBG range to the IGS and the GSG's CBG workshop in China.

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Grouse people in Beijing: the 9th International Grouse Symposium

Harto Linden

The China Hall for Science & Technology offered a stylish milieu for grouse scientists to meet old friends, to acquaint oneself with interesting new faces, to present fresh ideas, and to learn more about grouse, and more about China. The Hall was situated in the main street, where you could daily see the old and the new world encounter. The modern world is entering China with giant steps, but the common people are still very poor, and the challenge caused by the rapid change in economy is enormous. Within these frameworks we had the 9th International Grouse Symposium in Beijing, 19-23 August, 2002.

Our hosts presented their vast conservation problems in the China Session. They have very prudently searched for international co-operation, which has also been most productive. In this connection, I have to thank also Siegfried Klaus and Jon Swenson, among others, for their altruistic research activities in China. The President of the Symposium Sun Yue-Hua with his colleagues showed us that they really are hard-working scientists with ethically appreciated goals. Sun and other Chinese friends showed their warm hospitality, and they guided us very personally to the marvellous treasures of their home country. We will always remember the Grouse Symposium in China. Thank you, our Chinese friends and colleagues.

The majority of us are field biologists, at least initially. This is surely a good thing and a good way of living. However, it is surely a good trend that generally speaking we are looking more like scientists than we used to do during the first symposiums. Grouse research has rapidly developed to be an important subject also in theoretical science. It is a pity that we have not totally succeeded to gather these top scientists to our meetings. There are magnificent progresses in the fields of population dynamics, behavioural ecology and landscape ecology, due to skilful scientists working somewhere in the grey area between field studies and theoretical ecology. We should try to attract them to participate in our meetings more numerously, and learn more and more effective ways to cooperate with them.



I would also like to see more Scandinavians, Finns, e.g. representatives of areas with more or less continuous grouse populations in the forests. They are working with fragmentation problems, and their studies give us some understanding how the process of becoming endangered actually begins. Most of the presentations in Beijing dealt with relatively small, often isolated populations. We seriously need knowledge of the bottlenecks of these threatened populations; we need management tricks. We might find these tricks from the studies of population dynamics or habitat requirements, but very often the basic problem can be found as the lack of connections between populations. Maybe the most effective way to save the decreasing populations is to improve the habitat mosaic. Somewhere it is probably already impossible, but somewhere else something could be done.

Personally, I am expecting a lot from the studies of population genetics. They may offer effective tools for conservation purposes, they might give us some safety limits for habitat fragmentation. This is a real challenge also for the Grouse Specialist Group. Now we need qualified international cooperation, and now we need a large and well-planned project on a very large scale. The capercaillie might be – or already is – a good target species: we could analyse the whole genetic variation from Siberian to Pyrenees, from continuous, viable populations up to extremely isolated, threatened populations of capercaillie.

Most grouse populations as well as their distribution areas are decreasing. However, hunting and harvesting of grouse is common. Sometimes the harvesting pressure may be even relatively hard. In spite of these contradictory features, I believe that solutions may be found and sustainable hunting of grouse is possible. But it would be very important to give convincing evidence also to those who are doubtful. Studying the effects of hunting is very difficult and speculative, but it must be done. It is not allowed to be any kind of taboo.

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Post-Symposium excursion to Lianhuashan Reserve, China

Michèle Loneux

The first day was a travelling day : Beijing Airport Saturday early morning, flight to Lanzhou, coach driving from Lanzhou Airport to Forestry station, arrival in the evening. The road crossed various villages and landscapes of the Ganzhu Province, giving us a sight seeing of the life and cultural practices of the local people.

At the main forestry Station, a nice dinner and warm welcoming evening had been prepared by our hosts. One night at this place (2100m) prepared us for the higher altitude of the other station and its mountain hotel (2700m). On Sunday, an early morning and short birdwatching walk in the vicinity of the base station gave us the opportunity to see some common Asian birds before breakfast. Then we went to the mountain station.

As soon as we arrived the rooms attribution took some time and it was a while before we could explore the nature around. Then we could walk where ever we wanted inside the forest to look for the famous Chinese grouse, the pheasants and other animals until lunch. We were welcomed by the cries and songs of many birds we didn' t always see neither recognise. Personally, I did not see any pheasant, but I had the chance to meet a female Chinese grouse during this first lonely outing, and long enough to take many pictures. Others saw pheasants or had a quick dark seeing of a Chinese grouse.

After lunch, guided walks were organised by groups along some of the transect lines regularly used by the researchers to follow the Chinese grouse of this area.

Monday, second field day, began with a free early morning birdwatching walk, to see the Chinese grouse. After breakfast we were invited to climb the Lianhuashan Mountain to the Temple at 3578 m altitude: about a 900 m difference in level to climb. I was the last one to reach finally the top at the end of the afternoon ($\pm 16h30$), having crossed all the colleagues who were going down by the way I took to go up, but the landscapes at the top rewarded the effort to arrive there. The going down was much faster despite a very narrow and difficult part with chains and stairs. Whoever passed through that way will understand what I mean. But I discovered small flowering orchids on my way, so small that I am sure nobody had seen them.

Tuesday began also, for those who wanted it, with an early morning birdwatching walk along the transect line to see the grouse. After that we were driven to another reserve created for the Chinese grouse, and to other famous sites of the area, such as a nice valley. I have only Chinese names and don' t



know the Pin ying transcriptions. This outing gave us also the opportunity to see the famous Yaks, and other Asian birds like the Himalayan griffon and the Brown dipper.

Wednesday began with the last early morning opportunity to see the Chinese grouse along the transect lines. Eventually some of us could see a male, sleeping on a low branch near the path. And that was a problem : it did really sleep in the shadow, showing us its back without moving. Kenny and I were waiting patiently for some movement and it shortly stretched one wing and the tail and turned the head, before going to sleep again. I made some photos, which are not yet developed when I am writing this summary, but I am afraid they will be too dark. Despite various opportunities to search it, for which we were there, a few unlucky participants did not succeed in seeing it.

We left the mountain station at the end of Wednesday morning to go and visit the famous Tibetan Labrang Lamasery. The lunch taken in this small town, before the visit, was a real delight. We left the Lamasery at the end of the afternoon to go back to Lanzhou, where we arrived at night, after six to seven hours of coach driving. Despite the lateness of our arrival, the dinner was prepared for us at the hotel and we could eat for the last time in the company of Sun Hue-Yuan and Fang Yun. We had to wake up at five o' clock in the morning to have breakfast before going to the airport. The excursion continued with two days of a strictly touristic package tour at Xi-An. This had its interest also, of course, and I will not forget the terracotta soldiers of the first Emperor neither the HuaQingChi warm spring. At Xi-An, all time was taken and we had no free time to visit anything else in the city or to shop, except two hours before the last dinner. However a small market at Xi-An, close to the hotel, gave us the opportunity to see some pheasants, chukar and others animals, on sale for food.

From a climatic point of view : the weather during the week was always sunny and dry. We crossed a town during a sandstorm, and a rain shower the last part of our coach trip driving back.

I am grateful to the excursion organisers who have prepared a so rich and pleasant field trip and I congratulate our Chinese hosts to have assumed with great efficiency the logistic part of our venue. I am particularly sensitive to the preparation of warm dinners for more than 60 persons at the mountain station, in what seemed like camping conditions. From my point of view, the best part of the excursion was these first days in the reserve, with the company of our Chinese colleagues, when we could explore the nature reserve to look for animals. For field naturalists, the best feeling is on the field, and the stay in the reserve we felt was too short.

For pictures from the Symposium see <http://www.cnbird.com> and <http://www.ulg.ac.be/museezoo/>

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Publications from the International Grouse Symposium

The international scientific journal *Wildlife Biology* kindly offered us to publish a selection of high-quality contributions from the 9th International Grouse Symposium (IGS). Twenty-nine manuscripts from the IGS were submitted. Each paper will be peer-reviewed by two referees. In January 2003, revisions will be requested for those manuscripts that appear to be acceptable according to the standards of *Wildlife Biology*. Publication is scheduled for late 2003. Ilse Storch is acting as the Associate Editor for the journal.

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CONSERVATION NEWS

Capercaillie to be red-listed in Belarus?

A new edition of the Red Data Book of the Republic of Belarus is currently under way. GSG member Tatiana Pavlushchick from the Institute of Zoology at the National Academy of Sciences of Belarus and her colleagues have nominated *Tetrao urogallus major* Brehm, 1831 to be red-listed. This subspecies of the Capercaillie is distributed in the western part of Belarus (Grodno and Brest regions). It differs from *Tetrao urogallus pleskei* Stegmann 1926 (occurs in northern, central, and eastern regions of Belarus) in feather coloration, the type of song (the presence of "cork-pop" note in the song of T.u.major) and some morphological parameters. The population numbers of T.u.major were estimated at 1070-1160 individuals in Belarus in 1997-2001. It represents about 60% of the remaining lowland population inhabiting eastern Poland, southern Lithuania and western Belarus. The capercaillie has undergone a dramatic reduction both in numbers (to about 10%) and range over the past 50 years in this area largely due to clear cutting, forest fragmentation and poor habitat quality related to high ungulate densities. Thus, a long-term conservation programme for T.u.major is needed. Law enforcement, habitat management prescriptions, and enhancing awareness of local stakeholders are urgent measures.

The draft of the new Red List will be discussed at a conference "RED DATA BOOK OF THE REPUBLIC OF BELARUS: STATE, PROBLEMS AND PROSPECTS" in Vitebsk on the 12-13th of December.

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Scottish Capercaillie Petition PE16

Capercaillie were thought to have become extinct in Scotland around 1780 when two were shot for a Royal feast. Various valid explanations have been put forward for their disappearance, the most likely to be deforestation. A recorded reintroduction to central Scotland from Sweden in 1837 was a great success and soon there was an abundance. This was done in two stages of sailing ships first to the North of England where they transferred on to another ship and landed at Dundee on the East coast of Scotland. On the way to the release area it is recorded that people in the towns en-route turned out to see this convoy of horse drawn carts go past and were so glad to hear of the cargo.

Only one died on the sea crossing and this success was recorded as being due to the diligence of the gamekeeper who accompanied them in keeping their cages clean by having a change of cage each day. New forests of native pine were being planted on a large scale and the birds spread over a wide area. Many of these forest were then felled to meet the demands of two world wars and by the end of the 1940' s the Forestry Commission were planting many exotic trees and changing the forest floor to a barren desert for the birds. Also a standing Order to Forestry Commission Rangers to trample nests did not help. By the end of the 1960' s two metre deer fences had to surround these plantations with government grant aid. It was soon found that these wire fences were causing many deaths due to collisions.

Scientists took a lively interest and by monitoring fence lines and radio tracking produced a number of papers and showed the population had plunged from 20,000 to less than 1,000 in the matter of twenty years. There was a lack of interest by the politicians and a new Scottish Parliament was being set up in Scotland with a provision for public complaint. I consulted with some of the scientists who were very helpful and set up Petition PE 16 and presented it to the Scottish Parliament on 30th September 1999. This can be found on the Internet under Petitions -<http://www.scottish.parliament.uk/> I had also brought it in April 1999 to the attention of the London UK Government in a 1.5 hour debate in the House of Lords which I attended.

The Petition called for a change in the law and the removal or marking of deer fences and a stop put to felling old granny Scots pine. Also to stop snaring in capercaillie habitats. The Scottish Parliament accepted all the requirements and the UK Government changed the law to give capercaillie full protection. Other groups gave good support to the birds, we had no communication but the combined effort made impressed the politicians who in the end count.



A short quote from George Kremlis, Head of Environmental Unit in Brussels dated 16.09.02 "As a result of this concern, we have issued a Letter of Formal Notice under Article 226 of EC Treaty against the United Kingdom Government. We are now assessing their response and are in the process of deciding what further action needs to be taken. Part of the concern raised with the United Kingdom authorities related to the failure to take protection measures in particular with regard to forest fencing but also with regard to reducing capercaillie deaths in snares."

Jimmy Oswald
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The Black Grouse Recovery Project, North Pennines, UK

The latest report on this project is encouraging. The number of displaying males has increased where grazing has been reduced, and decreased in paired control areas. Breeding success has risen from a low of 0.5 chicks per hen in 1997 to 2.1 last year. Management tools have included reduction in sheep grazing, planting small native woodlands, blocking drains to encourage cottongrass, and controlling predators, particularly stoats and weasels.

For further information contact the Project Officer, Phil Warren on pwarren@gct.org.uk

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RESEARCH REPORTS

Forest land biodiversity use, degradation and development, co-natural silviculture and capercaillie (*Tetrao urogallus* L.) as indicator in Slovenian Alps

Miran Cas

The main part of this summary presents preliminary results of research of my upcoming doctoral thesis which will be submitted on the University of Ljubljana, Biotechnical faculty, Department of Forestry and Renewable Forest Resources in 2003.

1. Forest biodiversity use and suitability of capercaillie habitat from virgin forests to the past devastation

Past rural land use caused degradation of primary biodiversity and structures of fir-beech and beech virgin forests from 11th to 18th centuries in prevailing limestone Alps. In the first colonization of forest mountain landscapes in Slovenian Alps performed from 11th to 15th century. 50% of forest surfaces were cut down. From the 14th to 18th century the others virgin forests were heavily felled for firewood and charcoal for ironworks and mining industry. Glass making needed a great deal of wood potash. In 18th and in 19th century forests areas were covered with pastures and degraded into torrential areas with soil and land biodiversity and fertility erosion (Cas 1988). In every case the great need for wood gave rise to the myth of boundlessness of forest riches. Natural structures of old mixed forests and suitability for capercaillie were conserved only in inaccessible and faraway altitude areas in the middle of devastated forests and pastures (Erjavec 1970, Cas 1996, Cas / Adamic 1998).

In mountain study area in Slovenia on the east of south-east Alps (Peca, 2126 m over sea level /o.s.l./, Smrekovec with Mozirje mountains, 1684 m o.s.l.) were in the second part of 18th century only 25% of forests surface. The size of suitable capercaillie's habitat was very low.

2. Beginings and development of planning management in forests

The need for wood in 18th and 19th century dictate systematical development of planning forests management. At the first crises the greater forest's owners accelerated growth of profitable coniferous trees, especially Norway spruce *Picea abies* and began with shortsighted space planning of the forest's management in 100 y. cycles with clear felling system with re-afforestation. Many places of coniferous forests today are in the 3rd cycle of such old spruce monocultures with labile stands and degradation of the ecosystem's biodiversity and fertility. In Slovenia there is a typical area of Pohorje mountain (1564 m o. s. l.) above Maribor city in the north-east of the State. Also in middle of 19th century these began overgrowing of wide faraway abandoned mountainous pastures with alpine larch *Larix decidua* and then with Norway spruce. The result was secondary coniferous landscapes of labile boreal types, and catastrophic multiple damages with snow- or windbreaks, insects - attacks and sickness *Heterobasidion annosum*. After the 2nd World War with intensive development of industry these began overgrowing rural landscapes in middle altitudes in poor areas of Slovenia too.

In the study area in Slovenian Alps today are about 80% of forests surface. More than 60% of forests are in mature stands (Cas 1996, 2001, Cas/Adamic 1998), suitable for capercaillie habitat (Adamic 1987, Storch 1999, Cas 2001). A similar situation exists in all mountainous Slovenia (Boncina/Mikulic 1998).

3. Development of natural management for revitalization of biodiversity and improvement of multipurpose role in forests after 1948

After heavy years in destroyed lands after 2nd World War foresters in Slovenia in 1948 began with planning natural thinning silviculture, as was practiced in Switzerland (Mlinšek 1968, Ott 1998). The bases were lawful prohibition of clearing systems and known "goat" law, the main reasons of past destructive use causing degradation and deserts. Prohibition of goats in all Yugoslavia eliminated about 6 millions goats, especially in mountain deserts in Slovenia and Croatia and in southern republic on the Balkan (Bosnia and Herzegovina, Serbia, Montenegro, Macedonia). Extensive devastated erosion and torrential areas began overgrowing with natural forests. In strongly degraded, acid and labile spruce stands with poor habitat suitability, with rare biodiversity of forest fauna, began the revitalization of forest ecosystems. In both cases the natural forestry were introducing autochthonic deciduous trees with silviculture and afforestation into the forest mixture (Mlinšek 1968). Renovation of forests began with natural study of rejuvenation.



4. Capercaillie as indicator of devastation, use and development of forests

In last 210 y. forest landscape in the research area in Slovenian Alps increased for about 55% of surface, from 25% to 80% (Cas 1996). Fluctuations and trends in the population density of capercaillie as a hypothetical reflection of changes in the woods and habitat's size showed a maximum in the beginning of 20th century (Cas 1996, 1999a). This confirm overgrowing of pastures and intensive afforestation in 19th century. With development of suitable habitat of mature forests in that time, population density reached a maximum, before new cutting down of intensive forestry with mountain roads and tourism in habitat at the end of 20th century. Only 48% of leks were active in 2000. We investigated that portion of active leks increase linearly from 600 to 1600 m o. s. l. (Cas 1999b).

Distribution of capercaillie leks in relation to hypothetically better conservation of natural structures of forest ecosystems in suitable forest stands on the remaining forest patches showed significantly shortly distances ($p < 0,001$) with mutual distances about 700 to 1700 m (Cas 1996, Cas/Adamic 1998). The capercaillie probably show the state of suitability of forest stands and landscapes structures (Wegge 1985, Rolstad / Wegge 1989, Helle et al. 1994, Beškarev et al. 1985, Storch 1999, Cas 1996, Angelstam 1999, Angelstam / Cas 2002).

We studied in 2000 the hypothetically higher biodiversity on the remaining forests. In forests on significant leks we analysed biodiversity of some important groups of forest fauna, both invertebrates (earthworm, earwig, beetles) and vertebrates (birds, small mammals and bats, traces of big mammals). Preliminary results of this research confirmed our hypothesis about higher primary biodiversity of invertebrates on the leks in these forests and different biodiversity of vertebrates on the different conserved forests landscapes, eg small mammals (Janžekovic / Cas 2001) with bats.

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Captive grey partridges and capercaillies differ vitally from their wild conspecifics

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Several studies on galliform birds have clearly shown that survival of hand-reared individuals is poor after release into the wild. The main reason for this is predation. In addition, starvation may cause death directly because of birds' inability to find, recognize and/or process proper food items. Indirectly, foraging of hand-reared birds may take longer and birds may be visible for longer periods, which predisposes them for predation.

There are some general characteristics in the hand-rearing methods, which contribute to the "quality" of birds. Firstly, captive birds are usually fed with high-digestible commercial poultry foods, with high energy and low fibre content. After being released birds have to cope with a totally different kind of diet; natural food is coarse, low in nutrients, and rich in fibre. In addition, plant food contains complex toxic mixtures of so-called defence chemicals.

Secondly, flight ability - both take-off and sustained flight - of hand-reared birds may be poor. Rearing aviaries are usually relatively small, which is not encouraging to flight exercise. In fact, flight may not be desirable, since it increases the risk of injuries to the birds if they fly into the cage wires.

Finally, captive-reared birds are tame and easier to breed than wild birds. What if the captive stock is not derived from the wild stock, but from an imported stock? Is it possible that we release birds that are not adapted to those climatic conditions they will meet at the releasing site?

My PhD study consisted of six separate papers. In two ecophysiological papers I studied grey partridges and capercaillie to find possible morphological and physiological disparities between wild and hand-reared birds. Further, I conducted three feeding trials on grey partridges to examine a) the effects of invertebrate food on chick development, b) the effects of an abrupt change in diet on adult birds, and c) the effects of tannin, a plant secondary compound, on their nutritional status. Finally, I examined wild and hand-reared grey partridges in Finland, as well as several populations in Europe, using mitochondrial DNA as a tool, to find one more possible explanation for the poor success of introductions.

First, I studied those morphological and physiological differences between captive and wild capercaillie, which may explain poor post-release survival of captive birds. Wild birds had heavier livers and gizzards, and also longer small intestines and caeca than captive birds. These differences in digestive system and liver result from the differences in the diets, and negatively affect the ability of captive birds to utilise coarse fibre-rich natural food after the release.

Cytochrome c-oxidase activity, which reveals the oxidative capacity of muscles, was low in the pectoral muscle and heart of captive birds. This together with the small heart size can decrease the takeoff and flying ability of captive birds. Both pectoral muscle and heart need exercise to achieve a maximal performance, such as escape. Limited exercise is known to cause atrophy.

Most galliform chicks feed on invertebrates during their first weeks of life, and gradually change to plant food. Hand-reared galliform chicks are usually fed with commercial chicken foods. Importance of invertebrates on the growth and development of temperature regulation in grey partridge chicks was demonstrated. Chicks were weighed regularly, their primaries were measured, and their cooling rate at 0 °C was recorded. Chicks fed lots of invertebrates were heavier and cooled slower than other chicks, and their primaries developed earlier than in other chicks.

Captive birds face a dramatic abrupt change in their diets when they are released into the wild. I examined the nutritional status of captive birds after a change from a commercial to a natural diet. Body mass and metabolised energy coefficient decreased significantly after the change in diet, and stabilised on a lower level. Obviously, birds could not assimilate enough energy from natural food, and this may lead to starvation. After the six weeks feeding trial gizzards were heavier in birds fed natural diet, indicating the need for more effective grinding of fibrous food.



Wild birds receive plant chemicals in their diet, and they must have a well-developed detoxication system to eliminate toxic compounds from foods. The liver is an important place for such processes. I analysed hepatic cytochrome P450 enzyme activities in grey partridges and capercaillie, both captive and wild. In contrary to my expectations, wild capercaillie had significantly lower enzyme activities than hand-reared ones. This may result from the phenolics in their needle diet, which may have a decreasing effect on some enzymes. Grey partridges had higher coumarin-linked detoxication activity. Observed differences were connected to feeding habits on both species (grey partridge vs. capercaillie) and origin (captive vs. wild) level. The hepatic route may be secondary in galliform birds, and they probably mainly detoxify xenobiotics in their gastrointestinal tract.

The most common plant secondary compounds are the phenolics, such as tannins. 6 % dietary tannin (commercial quebracho) added to commercial poultry food with high protein content affected the grey partridge only slightly. Food consumption and body mass remained stable. However, birds fed tannin had longer small intestines, which most probably indicate elevated gastrointestinal detoxication. They also excreted a high amount of tannin in their faeces. In addition, hepatic cytochrome P450 enzyme activity was not elevated. Potential short-term effects of the change in diet were seen in plasma. These findings coincide with the high mortality period of birds released into the wild.

To compare wild and captive stocks of Finnish grey partridge with one another, and to compare these with European birds I sequenced 390 nucleotides of the mitochondrial DNA control region of altogether 227 birds (68 farm and 159 wild birds). Birds were divided into two major clades (western and eastern) which differed in CR1 by 14 nucleotide substitutions. The major clades' differentiation in the whole control region corresponded to an estimated coalescence time of ca 1.1 million years. Western clade haplotypes were found in France, England, Germany, Poland, Italy and Austria. Finnish farm stock represented this clade as well. Eastern clade haplotypes were found in the wild in Finland, Bulgaria, Greece, and Ireland. One Finnish population and Bulgarian and Irish populations were mixed, but only in Bulgaria was the mixing assumed to be natural. The western clade presumably originates on the Iberian Peninsula (with related subtypes in Italy), and the eastern clade either on the Balkan or Caucasian refugia.

The aim of my work was to clarify those differences between wild and hand-reared birds, which may explain the high mortality of released birds. It is obvious, that the subspecies of the birds raised for releasing purposes must be of the same genetic stock as the birds at the releasing site. The rearing methods should be conducted in a way that enables the birds' morphology and physiology to develop in natural ways. This includes feeding practices as well as rearing aviaries, which should, at least to some extent mimic life in the wild.

My PhD thesis "Nutritional and genetic adaptation of galliform birds: implications for hand-rearing and restocking" is available in electronic format (<http://herkules oulu.fi/isbn9514259904/>). The thesis was supervised by Prof. Markku Orell and Prof. Raimo Hissa at the University of Oulu. The ecophysiological part of this work belonged to a wider project, which was financed by the Finnish Ministry of Agriculture and Forestry, the Academy of Finland, and the Thule Institute. The mtDNA work was financed by Alfred Kordelin Foundation, Emil Aaltonen Foundation, University of Oulu, Thule Institute, Finnish Cultural Foundation, South Ostrobothnian Fund of the Finnish Cultural Foundation, the Finnish Ministry of Agriculture and Forestry, and the University Pharmacy Fund.

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The black grouse project in the Veglia-Devero Natural Park: research and implications for management in the Western Italian Alps

Luca Rotelli

Introduction

In the Italian Alps black grouse *Tetrao tetrix* have been declining for several decades. The common causes of regression and range contraction can essentially be considered habitat loss, degradation and fragmentation, locally associated with other factors, like tourist activities and overshooting.

The ecological niche of black grouse, in the alpine area, is made up by open landscapes. Under the timberline, they have been created to a great extent, by old traditional forms of agriculture that changed closed forests into a mosaic of shrubby patches interspersed with meadows and pastures (Bergmann and Klaus 1994). Thus the species took advantage from this situation spreading out in many areas where the habitat was originally not suitable for black grouse.

In the alpine chain these habitats have now undergone great changes in the last fifty years. This is in part a natural process, as a consequence of the abandonment of the alpine landscape by people, and in part the result of the exploitation of mountain areas by tourist activities for the development of infrastructures and for the practice of different sports, in particular skiing.

In fact, the decline and in many cases the complete abandonment of the traditional human practices, like cattle breeding and mowing, has led to a deterioration of black grouse habitats. Bushes have invaded the original man-made mosaic of shrubby patches and pastures, making ground vegetation more and more dense, thus reducing the quantity and quality of important brood habitats.

On the other hand the Alps are today the biggest tourist area in the world, with about 150 million visitors every year. The people's interest to the alpine area is due to the fact that many different leisure activities (hiking, climbing, alpine skiing, cross country skiing, mountaineering skiing, snow-shoeing, mountain-biking, paragliding, orienteering, etc.) find here the ideal place to be carried out. This new exploitation of mountain areas has had, in a few decades, a strong negative effect on the alpine environment, jeopardizing the elective black grouse habitats in two ways:

- through habitat loss and fragmentation;
- through human disturbance on winter habitats, at the leks, and during brood rearing.

To be able to better understand and quantify the most important causes of regression of black grouse in this part of the Italian Alps, in 1998 a radiotelemetry project has been launched in the Veglia-Devero Natural Park, with the aim to investigate the most important aspects of the life cycle of this species as breeding ecology, dispersal, mortality causes and impact of the different human activities on dynamic population.

The ultimate goal of the present research is to identify the precise black grouse habitat requirements to incorporate them into management prescriptions, with the aim to assure the conservation of the existing populations on the basis of sound scientific knowledge more than on naturalistic intuition.

Study area and methods

The Veglia-Devero Natural Park lies in the north westernmost part of the region Piedmont, close to the border with the Canton of Valais (CH), in the Western Italian Alps. The black grouse habitat is characterized by gentle slopes with a prevalent exposure to north-west dominated by scattered subalpine larch (*Larix decidua*) forests with abundant shrubby vegetation made up by blueberry (*Vaccinium myrtillus*) and rhododendron (*Rhododendron ferrugineum*) and interspersed with pastures. In the past these grassy patches were an important part of the landscape, while in the past 50 years their size has markedly declined as a consequence of the abandonment of the old traditional human activities, like cattle grazing.

The Park is made up by two areas divided by high mountains that isolate the two black grouse populations. At the Alpe Devero, because of the easy accessibility, tourist frequentation is pretty high compared to other areas of this part of the Italian Alps, both in summer and in winter. During the winter season, besides the opportunity to practice mountaineering skiing, a small ski-resort is present on the north-east slope of the Mount Cazzola, where there is still an important lek, being an important cause of disturbance for black grouse during both the roosting time and the displaying activity. Furthermore on one third of the area suitable to black grouse (about 7 km²) hunting is allowed in October. At the Alpe Veglia, on the contrary, the only human disturbance is due to some summer tourism, as the area is inaccessible for the rest of the year because of danger of avalanches.



The black grouse population has been monitored both in May, to determine the density of the displaying cocks on the leks, and in the second half of August, to determine the breeding success of hens with the help of local hunters and by means of pointing dogs. Furthermore since 1998 some individuals have been captured both in spring on the leks with 3 pockets mist-nets and in summer by means of pointing dogs and hand-nets and radiocollared.

Results of the censuses

Spring density

At the Alpe Devero, on an area of about 21 km² of suitable habitat, in the period 1994-2001, the number of displaying cocks in May has varied between 35 and 64, with densities fluctuating between 1.67 and 3.05 cocks per km². Although an important part of the cocks displays as soloists, and in small groups of 2-3 individuals, there are however 2-3 leks with up to 9-10 individuals, depending on the years (tab. 1).

At the Alpe Veglia, on an area of about 10 km² of suitable habitat, in the period 1996-2001, the number of displaying cocks in May has varied between 36 and 72, with densities hence fluctuating between 3.6 and 7.2 cocks per km². The high density is positively reflected in the lek group size, with about 60% of the cocks displaying yearly in large leks with 4 and more individuals, and up to 16.

Tab. 1 Percentage of black grouse cocks displaying solitarily and in groups of various size in the Veglia-Devero Natural Park in the period 1996-2001.

A. Devero	1996	1997	1998	1999	2000	2001
Soloists	17	27	48	37	42	54
2-3	18	30	7	20	24	20
>3	65	43	45	43	34	26
A. Veglia						
Soloists	17	16	25	33	22	23
2-3	22	24	16	8	15	14
>3	61	60	59	59	63	63

Breeding success

Since 1997 a yearly sample between 32 and 59 hens has been collected. At the Alpe Devero breeding success has varied between 1 and 2.87, the mean brood size between 2.57 and 4.1, while the percentage of hens with brood has fluctuated between 42.11 and 72.41. At the Alpe Veglia breeding success has varied between 1.77 and 2.93, the mean brood size between 2.88 and 4.16, while the percentage of hens with brood between 61.54 and 70.37 (tab. 2).

Tab. 2 Black grouse breeding success in the VDNP during the period 1997-2001 (data pooled together for the two areas). Data collected by means of pointing dogs during the second half of August.

Year	Checked hens	No. of hens with brood	% of hens with brood	Brood size	Breeding success
1997	48	29	60.42	3.44	2.02
1998	59	42	71.19	4.13	2.89
1999	36	26	72.22	3.5	2.53
2000	37	24	64.86	2.65	1.69
2001	32	16	50	2.73	1.32
Total	212	137	64.62	3.44	2.19

Results of the radiotelemetry project

In 4 years 51 cocks and 20 hens have been captured and radiocollared: 43 cocks (20 adults and 23 subadults) and 15 hens (6 adults and 9 subadults) in spring, and 8 juvenile cocks and 5 juvenile hens in summer.

Spacing pattern

In spring and summer black grouse cocks had home ranges between 49.83 and 368.08 ha (n=14, mean=189 ha), while in the fall-winter season their home range varied between 123.92 and 1206.88 ha (n=11, mean=562.29) (data pooled together for the two age classes). Adult hens had home ranges between 58.02 and 126.4 ha during the rearing brood period (n=4, mean=94.76), while subadult hens, during the same period, had home ranges between 5.22 and 47.65 (n=5, mean=30.78). A subadult hen, that lost the nest just before hatching, had a home range of 52.38 ha. During fall and winter hen home range varied between 24.24 and 157.34 (data pooled together for the two age classes).



Dispersal

The longest distances are covered by birds of both sexes in late fall or at the beginning of the winter when they leave the summer areas for the wintering ones. While cocks usually settle down a few km apart from their summer ranges, hens can move up to 17 km from their nesting and rearing brood area (Tab. 3 and 4).

Tab. 3 Distances covered by cocks during the year from the lek they visited during the mating season.

Seasons/distances in km	3-4	4-5	6-7	9-10
Spring	1			
Summer				1
Fall	1			
Winter	5	1	1	

Tab. 4 Distances covered by hens during the year from the nesting and brood rearing area they used during summer.

Seasons/distances in km	2-3	3-4	4-5	5-6	6-7	7-8	16-17
Spring	1						
Summer							
Fall		2	2		1		
Winter		1	1	1		1	1

Nesting

Nest predation seems to be very low compared to other areas in and outside the Alps, being the percentage of nests hatched 80% out of 15 nests. The mean clutch size has averaged 6.33 for adult hens and 6 for subadult ones, while the number of eggs hatched has been of 6 for the former and of 5.33 for the latter (tab.5). The hatching date of subadult hens is postponed of about 10 days compared to that of adult ones.

Tab. 5 Characteristics of 12 nests of black grouse hens in the VDNP during the period 1998-2001 (mean values).

No.	Age	Altitude	Start of incubation	Hatching date	Mean clutch size	Hatched eggs	Hatchability of eggs	% of nests hatching
6	Ad.	1955	9.6	5.7	6.33	6.00	94.74% of 38	75% of 8
6	Subad.	2001	18.6	14.7	6.00	5.33	88.89% of 36	85.71% of 7
12		1978	13.6	10.7	6.17	5.67	91.89% of 74	80% of 15

Mortality

Causes of mortality were as follows: predation 67.6% (n=25), hunting 13.5% (n=5), collision with wires 10.8% (n=4), and unknown 8.1% (n=3). Predation is due in particular to raptors (golden eagle, eagle owl, and goshawk), while just in few cases mammalian predators were responsible. Although aerial wires are scarce on the study area (3 ski lifts, 1 power line and 1 telephone line) they are an important cause of mortality, almost equaling that due to hunting.

Discussion

The black grouse population of the Veglia-Devero Natural Park is characterized in spring by high densities and by leks of large size, compared to other alpine populations. However, although the two areas in which the Park is divided are very similar regarding habitat suitability and weather conditions, at the Alpe Veglia, where human activities are almost absent, population density is twice as high as at the Alpe Devero, where human disturbance is high.

Breeding success, although values vary greatly from year to year depending on the weather conditions during summer, is of the same size of that recorded in the best black grouse areas in the Alps. Nesting hatchability is also high (80%), especially if compared with the values found by Ellison (1979) in the French Alps (31%).

After the mating season the most part of the cocks spends the rest of the year in the radius of 1 km or less around the lek. Subadult cocks can leave the area to spend the rest other seasons some kilometers away from the lek, in other valleys (up to 10 km). In some cases, cocks spend summer 1-3 km far away, to go back to the lek in September. Some cocks can also leave the surroundings of the lek late in fall (3-4 km), but usually just for short periods, and in winter (6-7 km), this time for settling down. In this case they return to the leks just in spring.



Outside the breeding season either hens stay in the same area where they grew up the brood, shifting of some hundreds meters, during particular weather conditions, or during particular periods of the year, especially in spring, or they leave the summer range to winter some kilometers away. In this case, they came back to the nest and breeding area late in April or at the beginning of May. In the most cases, the hens that migrate, are very sedentary and spend the wintertime in small areas. In some cases, however, they can switch area, from time to time. The different winter areas can be far away several kilometers from each other. It is not unusual to find hens 7-8 km far away from their summer ranges, and up to 16-17 km. Predators avoidance and food availability seem to be, so far, the most likely reasons for explaining this behavior.

Predation is the most important cause of mortality, but human causes also play an important role, making up about 24% of the whole mortality of adults.

Besides counts and radio-tracking, other important aspects of the research consist in promoting habitat restoration plans, aimed to improve the quality of brood rearing areas and in working out guide lines for a sustainable hunting and tourism management.

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Nest predation risk in Bavaria in relation to the distance to farmland and habitat structure

Evi Voitke

Predation pressure on ground nesting birds may be significantly influenced by landscape patterns such as habitat fragmentation. In the Bavarian Alps, forested mountain ranges are separated by dairy farming valleys. These valleys are likely to offer excellent conditions for generalist predators such as corvids, foxes, and some mustelids. High numbers of predators in the valleys, however, may also effect predation pressure in the surrounding mountain forest. Capercaillie almost exclusively use the upper mountain forests even where the lower-elevation forests offer optimal habitat structures. Increased predation in vicinity of farmland, i.e. at lower altitudes, may offer one possible explanation for this observation (I. Storch unpubl.). A first test of this hypothesis was the topic of the Diploma-thesis (German equivalent to a master's thesis) of Evi Tschunko, who worked in Bavaria with Ilse Storch.

Evi's approach was to expose dummy nests to predators along altitudinal gradients in five different study areas in the Bavarian Alps and the Fichtelgebirge, southern Germany, in June 1999. Nests contained three brown eggs of domestic chickens, were checked in 10 day intervals, and their fate was analysed using logistic regression in relation to a number of habitat variables (e.g., age and type of stand, ground vegetation, nest cover, altitude, distance to next edge, distance to farmland valley).

The overall predation rates after 30 days differed among the five study areas and ranged between 14 and 81%. In part, these differences paralleled structural differences between the areas. First, there was a significant negative relationship between vegetation cover around a nest and the probability that this nest was robbed. Second, the study areas with high percentage of bilberry (*Vaccinium myrtillus*) in the ground vegetation were characterized by low predation rates on dummy nests. Other differences were the sizes of the study areas and their relative position in the surrounding landscape. There was an indication of different species of predators: in the Bavarian Alps, a higher percentage of nest losses could be attributed to corvids, in the Fichtelgebirge to mammals.

Some evidence was found in support of the hypothesized relationship between predation rate and elevation and/or distance to the farmland edge. For the two Fichtelgebirge study areas, the rate of predation decreased in higher altitudes. In the Alpine areas, however, other factors apparently complicated the picture. Losses of dummy nests were high in vicinity to summer pastures at the top of the mountain ranges. Other factors that significantly affected nest predation were the density of the vegetation surrounding a nest, its distance to the nearest open area >5 ha, the distance to the nearest path or forest road, and the density of paths or forest roads around the nest.

The fundamental differences in the predation rates between the study sites indicate that nest survival can be highly variable even among areas with similar habitat features, and probably also between years. Thus, extrapolations of results from one area to another or from one year to the next are not justified. Also, as has been pointed out by earlier studies, predation rates obtained from artificial nests cannot be assumed to equal predation among real nests of ground breeding birds, but should rather be seen as an index to relative differences in predation pressure in relation to habitat characteristics.



Reference

Tschunko, E. 2000. Die Höhenverteilung des Prädationsrisikos von Bodenbrütern im Bergwald der Bayerischen Alpen und des Fichtelgebirges. Diplomarbeit, Lehrstuhl für Zoologie III, Tierökologie und Tropenbiologie der Julius-Maximilians-Universität Würzburg and Forstwissenschaftliche Fakultät, Fachbereich Wildtierbiologie und Wildtiermanagement, Technische Universität München, Freising, Germany. 97 pp.

Evi Woitke

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New PhD Project on Translocation of Russian Capercaillie (*Tetrao urogallus*) to Thuringia

Christoph Unger

Introduction

*Previously, reintroductions of captive raised tetraonids into the wild resulted in low establishment success or failed completely. This Ph.D study investigates the habitat use, spacing behaviour and population biology of 101 wild Capercaillie *Tetrao urogallus* from central Russia released in Thuringia between December 1999 and autumn 2001. The study comprises the following points:*

- Habitat use and spacing over the course of the year

The original Russian habitat of the capercaillie is very different from that of the release area in the Thuringian mountains in terms of relief, forest structure and ground vegetation. Radio telemetry is considered the most suitable method to study habitat use and spacing behaviour. From 38 individuals received from central Russia in November 2001, six male and six female capercaillie were equipped with radio transmitters to answer the following questions:

- Determination of the home range sizes and their fluctuations over the year in the new environment, in particular differences between summer and winter ranges
- Recording and description of trees used for roosting and for sleeping
- Monitoring and description of leks
- Survey of breeding habitats and their description

In addition to telemetry several standard indirect survey techniques will be used such as monitoring of excrements, feathers and tracks.

- Comparison of habitats in descent area and release area

In a representative part in the release area habitat analyses by the method of Sewitz & Klaus (1997) are carried out. In both the original and the release area various habitat parameters are measured such as the relief, the altitude, height, inclination and vegetation parameters. The latter include tree species, abundance, age, height and the stratum of stems and components of the ground vegetation. The habitat qualities of the descent and the release area will be compared. The food composition in both areas will be compared through the analysis of excrements.

- Recommendation for protection

The deterioration of habitats is the primary cause for the decline of capercaillie in central Europe. The creation of new habitats should therefore have the highest priority in conservation projects of capercaillie. In cooperation with the Thuringian forest administration the results of this study will enable scientifically based suggestions for the protection and conservation of the Capercaillie in Thuringia.

Reference

Sewitz & S. Klaus (1997): Besiedlung isolierter Waldinseln im Vorland des Böhmerwaldes durch das Haselhuhn (*Bonasia bonasia*). Beitr. Jagd - und Wildforschung 22, 263 – 276.

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SNIPPETS

WPA moved

The World Pheasant Association (WPA) has moved its office to Fordingbridge in the south of England. Both WPA Chairman Dick Potts office@pheasant.org.uk and WPA Conservation Director Phil McGowan conservation@pheasant.org.uk are now located there. There is also a new Administrator, Mrs Pat Savage, who can also be contacted on office@pheasant.org.uk. The new contact details are:

WPA
7-9 Shaftesbury Street
Fordingbridge
Hampshire SP6 1JF
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Tel: ++44 (0)1425 657 129
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Fordingbridge is also home to The Game Conservancy Trust, which has kindly agreed to host the GSG website, and already hosts the Pheasant SG website and also the Partridge, Quail and Francolin SG website.

European Conference: Black Grouse - Endangered Species of Europe 8-12th September 2003, Prague

Organisers

Department of Ecology, Forestry Faculty, Czech University of Agriculture in Prague
Czech Society for Ornithology/ BirdLife International

Contact person

Petra Málková, Department of Ecology, Forestry Faculty, Czech University of Agriculture in Prague,
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Basic Information

Invitation - Department of Ecology, Forestry Faculty, Czech University of Agriculture and Czech Society for Ornithology/BirdLife International are pleased to invite you to the European Conference 'Black Grouse – Endangered Species of Europe'. We hope that the conference will be a good opportunity for the meeting of Black Grouse specialists from a wide range of European countries. The conference will be held in Prague, Czech Republic, on 8-12th September 2003.

Grouse Specialist Group study trip to Scotland

A study trip of GSG members with expertise in capercaillie conservation is organized by the Scottish Capercaillie Life Project. The purposes of trip are:

- To attend Scottish Capercaillie Life Project seminar
- To learn about *Tetrao urogallus* and *Tetrao tetrix* conservation work in Scotland
- To share GSG knowledge and experience with Scottish grouse workers
- To develop links between GSG members and Scottish grouse workers

Kenny Kortland

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Galliformes listserver launched

Philip McGowan

The amount of conservation and management work on Galliformes continues to expand considerably, and requests for our input into wider conservation activities and debates are also increasing dramatically. This makes it more and more difficult for us to ensure that the right people with the most relevant expertise are always consulted on issues such as Red Listing, project development and producing policy guidelines that have global relevance.

In order to try and address this communication gap, the World Pheasant Association (with the technical support of SSC) has established a listserv linking the five Galliformes Specialist Groups. Altogether, these groups contain 350 members in 58 countries and an array of conservation expertise that is quite exceptional. The aim of the listserv is to enhance the conservation impact of the SG members.

We are aware that there are many listservs in existence now and that many people have had bad experiences of these. Therefore, we are keen to ensure that this one is as useful as possible. We hope, therefore, that the listserv would be used for e-mails on the following kinds of subjects:

1. Requests for advice on project development
2. Requests for collaboration on projects
3. Requests for advice on management of species and habitats.
4. Notices of meetings.
5. Information on funding sources.
6. Notices of relevant new papers/developments.
7. To send the web addresses of galliformes and other SSC e-newsletters to members of other SGs.

We (Galliformes conservationists) have two subjects that we will have to address in the very near future that seem ideally suited to this forum. The first is the revision of the IUCN Red List for publication in 2004 (a version with analyses as in the 2000 publication) and a second publication on ' Globally Threatened Birds' , which BirdLife International will produce. There are a wide variety of potentially important issues here, such as taxonomy (e.g. Vietnamese lowland pheasants and at least one hill-partridge) and status changes (e.g. Caucasian black grouse). Work on this will be more or less completed by April 2003.

The second issue that may arise in the next few weeks is the development of IUCN Guidelines on the Re-introduction of Galliformes. Discussions have started between the Pheasant SG and the Reintroduction SG and there now seems enthusiasm to broaden the taxonomic limit to all Galliformes.

We sincerely hope that you will join this listserv for a trial period of 6 months. To subscribe, please send an e-mail to Philip McGowan at conservation@pheasant.org.uk.

Phil McGowan

Conservation Director, World Pheasant Association, conservation@pheasant.org.uk

Addendum

In the article in Grouse News 2002: 16-21 entitled 'Capercaillie Research Programme at the Vogelwarte Radolfzell – a brief report on project now underway', by P. Berthold et al ., one sentence was accidentally deleted during the editorial process. The lost text is as follows: 'The research program is being carried out in close collaboration with the Forstliche Versuchs- und Forschungsanstalt Baden-Württemberg (FVA), in particular with Dr R. Suchant.'

