

# An Overview to Population Status and Conservation of Black Grouse Worldwide<sup>(\*)</sup>

by  
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**Key words :** *Tetrao tetrix*, Black Grouse, Worldwide, population status, population conservation, Western Europe, Eastern Europe, Asia .

## SUMMARY

A worldwide overview to the status and population trend of the black grouse and to the threats to its survival is provided based on questionnaire data compiled in preparation of the IUCN Grouse Action Plan (Storch 2000). Information from most of the 29 countries within the range of the black grouse was analysed in relation to geographic distribution and frequency. Globally, the black grouse is not threatened (IUCN 1996). At the southern edge of the range and in densely populated regions, i.e., in Europe south of the boreal forest, however, black grouse are red-listed in most countries. Habitat degradation and fragmentation due to human land use activities, small population size, and increasing predator numbers are globally considered the major threats to population viability. Additional threats such as human disturbance (mostly western Europe) and exploitation (mostly eastern Europe and Asia) are regionally felt to be critical. In temperate Europe, small population sizes and isolation appear to significantly limit the chances for black grouse survival and recovery. Because the various regulating factors act in concert, influence each other, and are of locally different weight, comparative approaches from a global or at least regional perspective are recommended in black grouse conservation.

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## Introduction

From a western and central European perspective, the black grouse is a major conservation concern. Numbers are on the decline, and within the last few decades many local populations have disappeared, particularly in the lowlands. Many of the remaining populations are small and isolated, and major efforts are undertaken to prevent their extinction (see LONEUX and RUWET 1997). From a global perspective, however, black grouse occur in many different ecological settings, and most populations are relatively secure.

In this paper I provide a broad overview to the status and conservation of black grouse worldwide. My main objective is to strengthen the awareness that world-wide, there are many examples of black grouse populations and situations that conservationists could learn from. I argue that comparative approaches to black grouse ecology from a global or at least regional perspective may greatly improve the success of local conservation efforts.

## Information used

The information used for this paper came out of the IUCN Grouse Action Plan (Storch 2000), which summarizes the status, threats, and conservation needs of all grouse species worldwide. The Action Plan, and thus also this paper, are largely based on questionnaires by country, as well as published and unpublished sources. For the black grouse, questionnaires from 21 countries were obtained from researchers, conservationists, and state agencies; for these and further countries, global, European, and national red data lists were reviewed. With respect to a few countries (Czech Republic, Mongolia, Slovakia), the information given for the black grouse in Storch (2000) has been updated for this paper.

Geographically, I distinguished between northern (Denmark, Fennoscandia, the Baltic countries; N=7), western (Germany, Austria, Italy and countries further west; N=9), eastern (Poland, Czech Republic, Hungary, Slovenia, and countries east to the Urals; N=9) Europe, and Asia (Asian Russia and all countries east of the Urals; N=6).

The quality of the information obtained varied between rigorous monitoring results to personal beliefs of professionals. Also, no attempts were made to take into account the very different sizes of the countries or local differences within the countries. The resulting picture is therefore a fairly coarse one, and should be interpreted accordingly.

## Conservation status and population trends

The black grouse is a species with a huge distribution range. Black grouse occur in 29 countries of northern Eurasia. The contiguous range spans throughout the boreal forest from the Atlantic coast to approximately 140°E in south-eastern Siberia. The southernmost populations occur in Kyrgyzstan and North Korea at 42°N, the northernmost in northern Norway at 70°N. The western and southern parts of the range (western and eastern Europe, central Asia) are fragmented; here, major range contractions and declines have occurred during the 20<sup>th</sup> century (see KLAUS *et al.* 1990, Bergmann and Klaus 1994).

The total global population size can be estimated in an order of magnitude of 5-10 Million birds (see Storch 2000).

According to its extended distribution, the black grouse is not a globally threatened species. It is not listed in the IUCN 1996 Red List of Threatened Animals (IUCN 1996). Also, the black grouse is not listed in the Red Data Book of European Vertebrates (Council of Europe 1997). However, it is included in Annex I of the EU Birds Directive (79/409/EEC) as a species for which special habitat conservation measures are required. At a national level, the black grouse is listed as a threatened species in the red data books of the following countries: Austria, Belgium, China, Czech Republic, Denmark, Estonia, Germany, Italy, Kyrgyzstan, Lithuania, Netherlands, Slovakia, Slovenia, UK (listing in North Korea uncertain). Red lists on a district or county basis, which exist in many countries, were not considered here (see **Table I**). The black grouse is red-listed exclusively along the western and southern limits of its distribution range. This picture corresponds with the geographic distribution of the assumed population trends. Declining black grouse numbers were reported primarily from countries at the edge of the range (**Table I**).

According to these results, black grouse are probably declining throughout temperate Europe, with exception perhaps of the Alps. However, also from Finland declining black grouse numbers were reported, and declines are also likely at least in parts of European Russia.

Increasing numbers, at a national scale, were reported from two countries only, Romania and Slovenia. In both countries, however, black grouse populations are small, and it is questionable if the reported positive trends are more than short-term fluctuations. Trends were unclear, or no information on trends could be obtained, for the Baltic countries, Greece, Kazakhstan, Mongolia and North Korea (see **Table I**).

**Table I.** Conservation status (red listed as threatened species) and assumed population trends for black grouse by country. Question marks (?) stand for no information or unknown trends. Information on trends are based on a questionnaire among grouse experts, they are thus not necessarily based on data but may reflect the perception of professionals (after Storch 2000, updated).

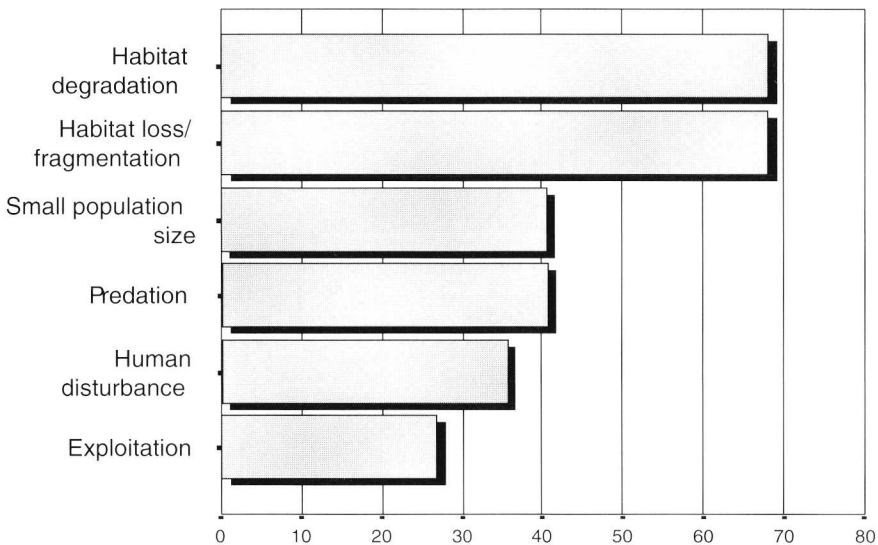
*Statut de conservation du Tétrás lyre (selon la liste rouge des espèces menacées) et estimation par pays des tendances démographiques. L'indication (?) correspond à l'absence d'information ou à l'ignorance des tendances. Les informations sur ces dernières sont basées sur les réponses à un questionnaire adressé aux experts ; elles ne se fondent pas nécessairement sur des données chiffrées et peuvent refléter la perception qu'en ont des professionnels (d'après Storch 2000, mis à jour).*

*Status (auf Roter Liste gefährdeter Arten) und angenommener Populationstrend für Birkhühner pro Land. Fragezeichen (?) stehen für fehlende Information oder unbekanntem Trend. Trendangaben basieren auf einer Umfrage unter Raufußhühner-Experten; sie basieren nicht unbedingt auf Daten sondern entsprechen der professionellen Meinung (nach Storch 2000, aktualisiert).*

REGION	COUNTRY	RED LIST	TREND
Northern Europe	Estonia	yes	?
	Finland	no	decline
	Latvia	no	?
	Lithuania	yes	?
	Norway	no	stable
	Sweden	no	?
Western Europe	Austria	yes	stable
	Belgium	yes	decline
	France	no	decline
	Germany	yes	decline
	Italy	yes	stable
	Liechtenstein	no	decline
	Netherlands	yes	decline
	Switzerland	no	stable
UK	yes	decline	
Eastern Europe	Belarus	no	stable
	Czech Republic	yes	decline
	Greece	no	?
	Poland	no	decline
	Romania	no	increase
	Russia	no	?
	Slovakia	yes	decline
	Slovenia	yes	increase
Ukraine	no	decline	
Asia	China	yes	decline
	Kazakhstan	no	?
	Kyrgystan	yes	decline
	Mongolia	no	?
	North Korea	?	?
	Russia	no	?

## Major threats

*Habitat change.* Numerous factors are believed to influence the dynamics of black grouse populations and to threaten their survival. According to the questionnaire, habitat degradation and habitat loss and fragmentation due to changes in human land-use, and particularly the intensification of agriculture, were perceived as the major causes of black grouse declines worldwide (see also e.g., BERGMANN and KLAUS 1994, NIEWOLD 1990, LONEUX and RUWET 1997). Habitat degradation is the decline in species-specific habitat quality that leads to reduced survival and/or reproductive success, habitat loss means that an area completely loses its suitability for black grouse, and fragmentation, the cutting of contiguous habitat into separate patches, is a likely consequence of habitat loss. Both threat categories, habitat degradation as well as habitat loss and fragmentation, were reported in two thirds of the questionnaires (i.e. from 14 of 21 countries which reported on threats); they were the two most important threats in all regions (**Fig. 1**).



**Figure 1.** Relative importance of various categories of threats to black grouse populations, as based on the results of a questionnaire among experts in 21 of the 29 countries within the black grouse range. The bars give the proportion of countries for which a particular category was reported as an important threat to black grouse at the national scale.

*Importance relative des diverses catégories de menaces pesant sur les populations de Tétrasyres, basées sur le résultat d'un questionnaire adressé à des experts des 21 des 29 pays situés dans l'aire de répartition de l'espèce. Les barres indiquent la proportion de pays pour lesquels une catégorie particulière de facteur a été signalée comme constituant une importante menace pour le Tétrasyre à l'échelle nationale.*

*Relative Bedeutung verschiedener Gefährdungskategorien für Birkhuhn-Populationen, basierend auf einer Umfrage unter Experten in 21 der 29 Länder innerhalb des Verbreitungsgebiets der Art. Balken zeigen den Anteil Länder, für die eine bestimmte Kategorie als bedeutsame Bedrohung für Birkhühner des jeweiligen Landes angegeben wurde*

Typical examples of causes of black grouse habitat deterioration are drainage and destruction of moorland, fertilization or afforestation of heathland and sheep pastures (BERGMANN and KLAUS 1994), destruction of ground vegetation and associate invertebrate communities due to heavy grazing by livestock or wild ungulates (BAINES *et al.* 1994, BAINES 1996), declining use and maintenance of alpine summer pastures by grazing and mowing (GLÄNZER 1985, MAGNANI 1988), and development of ski stations. Locally, collisions with fences, ski-lift cables, and power lines can cause significant mortality among black grouse (e.g. MIQUET 1986, BEVERANGER 1995, BAINES and SUMMERS 1997). It should be noted that not only primary habitats of the black grouse, but also many secondary, i.e. man-made, habitats were reported to deteriorate in quality. The causes are almost always related to changing land use practices and infrastructure development.

*Small population size.* Particularly in temperate Europe, deterioration and fragmentation of black grouse habitats have led to major range contractions and resulted in small, remnant populations (LONEUX and RUWET 1997). Small populations (e.g. =100 birds) are generally vulnerable and show a high risk of extinction due to chance demographic or environmental events, and possibly also reduced genetic variability (WESTEMEIER *et al.* 1998). A series of years with unsuitable weather or the loss of a number of females to a predator can be enough to extirpate a remnant population. There are several well documented examples of small black grouse populations that went extinct, or are close to extinction despite major conservation efforts, e.g. in Denmark (HOLST-JÖRGENSEN 1995), Belgium, Germany (LONEUX and RUWET 1997), and the Netherlands (NIEWOLD 1990). It seems that conservation efforts came too late. Small size is a particularly serious threat if a population is isolated, and rescue effects through immigrants from neighbouring ranges cannot be expected. Small population size was considered an important threat to black grouse populations in 38% (8 of 21) of the countries and was most frequently reported from western and eastern Europe (**Fig. 1**).

*Predation.* Because the numbers of some generalist predator species such as foxes, mustelids, and corvids have significantly increased since the 1960s, many conservationists are concerned that predation has become a serious threat to local black grouse populations. Increasing predator densities are generally associated with large-scale land-use changes. In the boreal zone, forest fragmentation due to industrial clearcutting has resulted in increasing densities of small and medium-sized mammalian and avian predators; in temperate Europe, farmland fertilization and particularly the «suburbanization» (REYNOLDS 1990) of the landscape have had similar effects: garbage and other human food source are readily available, compared to earlier farming societies, the persecution of predators has relaxed considerably, and in many regions foxes are vaccinated against rabies. All this has contributed to conditions favourable for some generalist predator species (e.g., REYNOLDS 1990, KLAUS *et al.* 1990, BERGMANN and KLAUS 1994, VOS 1995, KURKI *et al.* 1997), and increased predation pressure on black grouse is a likely consequence. In addition, increasing populations of wild boar are suspected to cause major losses among grouse nests (see BERGMANN and KLAUS 1994).

Predation was reported as a threat to black grouse populations from 9 of 21 countries (43%) (**Fig. 1**). It should be noted, however, that predation was perceived as a problem particularly where black grouse populations already were small and isolated. Thus predation appears to be a proximate but not the ultimate cause of black grouse declines.

*Human disturbance.* Tourism and outdoor activities such as hiking, skiing, mountain-biking, etc. are increasingly seen as serious threats to local black grouse populations. The effects range from short-term behavioural responses to encounters with humans, such as escape flights, to longer-term effects at the population level. Areas frequented by humans may be lost as grouse habitats even if the habitat structure remains unchanged (e.g. MÉNONI and MAGNANI 1998, ZEITLER and GLÄNZER 1998). Particularly in the mountainous regions of western Europe, black grouse wintering habitats often overlap with popular skiing areas (e.g., MEILE 1982, MÉNONI and MAGNANI 1998, ZEITLER and GLÄNZER 1998).

Disturbance as a threat to black grouse populations was reported from 33% (7 of 21) of the countries. However, concerns came almost exclusively from western Europe; here correspondents from the great majority of the countries (7 out of 9) worried about the effects of outdoor activities on black grouse (**Fig. 1**). This region combines high human population densities, urban lifestyles, and great popularity of outdoor activities with often small and highly endangered black grouse populations.

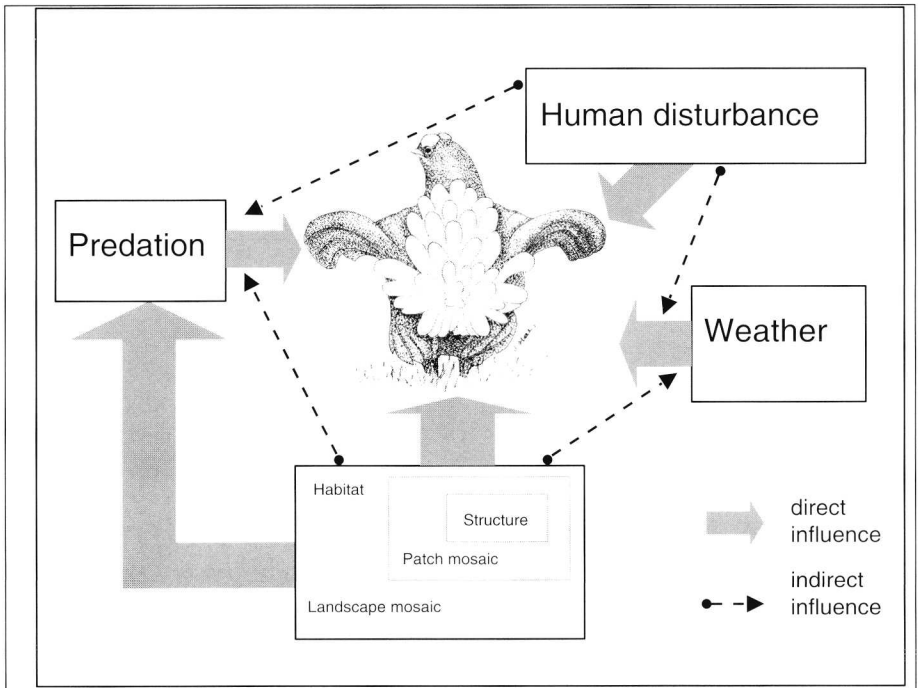
*Exploitation.* Poaching and excessive legal hunting as a potential threat to black grouse populations seem to be related to insufficient law enforcement and/or poor harvest planning rather than insufficient legislation. Exploitation as a serious threat was reported from 29% (6 of 21; Austria, China, Greece, Romania, Switzerland, Ukraine) of the countries (**Fig. 1**), and appear to be more common in eastern Europe and Asia (reported from 4 of 9 countries) than in northern and western Europe (2 of 12 countries).

## Population persistence and influencing factors

The list of factors influencing the dynamics of black grouse populations is longer than the list of threat categories sketched above. Weather fluctuations and climate change, parasite loads and competitors, pesticides and pollution are examples of further factors potentially limiting black grouse populations (see KLAUS and BERGMANN 1994, LONEUX and RUWET 1997).

To maximise the survival chances of black grouse populations, it is vital to identify the most important regulating factors and thus, the limitations to population size. Quite evidently, there is not a simple answer to this question: factors are acting in concert, are interrelated, and their relative importance may vary between areas and years (**Fig. 2**). Nevertheless, among grouse researchers

and even more so among conservationists, particularly in central Europe, there seems to be a tendency for monocausal explanations and strong beliefs, which may or may not be supported by data. A working group in the one area may be convinced that predation levels are critical, their colleagues elsewhere may disagree and point to disturbance as the key limitation, and workers in a third area may present data suggesting that black grouse declines are explained by climatic factors. Perhaps due to the urgency of their task and their often strong emotional involvement, conservationists in charge of saving local grouse populations tend to rely too exclusively on local experience and preconceptions. As a consequence, cooperation between conservationists in different parts of the black grouse range appears to be limited.



**Figure 2.** A simple, conceptual sketch of black grouse population regulation. Only a small set of factors is considered. Each factor may influence the black grouse population directly, however, there are also indirect effects, e.g. habitat quality can affect the chances of predators and the responses to human disturbance. Factors are likely to act in concert, are interrelated, and may have different weight in different areas.

*Schéma conceptuel simple de la régulation d'une population de Tétrás lyre. Un petit jeu seulement de facteurs est pris en considération. Chacun de ces facteurs est susceptible d'influencer, mais il faut envisager aussi les effets indirects. Ainsi, la qualité de l'habitat peut agir sur la chance de succès des prédateurs comme sur les réactions des Tétrás aux perturbations d'origine humaine. Certains facteurs sont susceptibles d'agir de concert, sont interconnectés, et peuvent avoir un poids différent dans différentes régions.*

*Einfache konzeptionelle Skizze zur Populationsregulation bei Birkhühnern. Lediglich einige wenige Faktoren sind berücksichtigt. Jeder Faktor kann auf die Birkhuhn-Population direkt wirken. Dazu kommen indirekte Effekte; so kann etwa die Habitatqualität die Chancen der Prädatoren oder die Reaktionen auf menschliche Störungen beeinflussen. Die Faktoren wirken gleichzeitig, beeinflussen sich gegenseitig, und können in verschiedenen Gebieten unterschiedliches Gewicht haben.*



## Conclusion

The black grouse is a major conservation concern in the European lowlands. Yet, from a global perspective, probably more than 99% of all black grouse live in populations that are relatively secure. From these, much could be learned. The black grouse is one of the grouse species with the broadest, or least specialized, habitat requirements (BAINES 1995, LINDSTRÖM *et al.* 1998). Populations in different ecological settings can provide excellent references, or case studies. Thus, exchange and cooperation between researchers from various parts of the black grouse range, as the organizers of this conference have had in mind, may help to improve our understanding of black grouse ecology and the prerequisites of population persistence.

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### REFERENCES

- BAINES, D. (1995). Habitat requirements of black grouse. *Proc. Int. Symp. Grouse* **6** : 147-150.
- BAINES, D. (1996). The implications of grazing and predator management on the habitats and breeding success of black grouse *Tetrao tetrix*. *J. Applied Ecology* **33** : 45-53.
- BAINES, D. and R.W. SUMMERS (1997). Assessment of bird collisions with deer fences in Scottish forests. *J. Applied Ecology* **34** : 941-948.
- BAINES, D., R. B. SAGE and M. M. BAINES (1994). The implications of red deer grazing to ground vegetation and invertebrate communities of Scottish native pinewoods. *J. Applied Ecology* **31** : 776-783.
- BERGMANN H. H. and S. KLAUS (1994). Distribution, status and limiting factors of black grouse in central Europe, particularly in Germany, including an evaluation of reintroductions. *Gibier Faune Sauvage* **11** : 99-124.
- BEVERANGER, K. (1995). Estimates and population consequences of tetraonid mortality caused by collisions with high tension power lines in Norway. *J. Applied Ecology* **32** : 745-753.
- COUNCIL OF EUROPE (1997). *Red data book of European Vertebrates*. Final draft for review. Convention on the conservation of European wildlife and natural habitats Standing Committee. Strasbourg, France.
- GLÄNZER, U. (1985). Effects of land use changes on bird life, example: *Tetrao tetrix* and *Lagopus lagopus*. *Trans. Congr. Int. Union Game Biol.*; **17** : 501-507
- HOLST-JÖRGENSEN, B. (1995). The black grouse in Denmark, (1978-1993). Pp. 163-164 in Jenkins, D. (ed.): *Proceedings International Symposium on Grouse 6*. World Pheasant Association, Reading, UK.
- IUCN (1996). *1996 Red list of threatened animals*. IUCN, Gland, Switzerland.
- KLAUS, S., H.-H. BERGMANN, C. MARTI, F. MÜLLER, O. A. VITOVIC and J. WIESNER (1990). *Die Birkhühner*. Die Neue Brehm-Bücherei. Westarp Wissenschaften, Magdeburg, Germany.
- KURKI, S., P. HELLE, H. LINDÉN and A. NIKULA (1997). Breeding success of black grouse and capercaillie in relation to mammalian predator densities on two spatial scales. *Oikos* **79** : 301-310.

- LINDSTRÖM, J., P. T. RINTAMÄKI and I. STORCH (1998). Black grouse. - *BWP Update. The journal of birds of the Western Palearctic*. Oxford University Press, Oxford, UK 2 : 173-191.
- LONEUX, M. and J.C. RUWET (1997). Evolution des population du Tétraz lyre en Europe. *Cahiers d'Ethologie* 17 : 287-343.
- MANGANI, Y. (1988). Sélection de l'habitat de reproduction et influence de l' évolution des pratiques sylvo-pastorales sur la population de tetras lyre (*Tetrao tetrix* L.) de la réserve des Fretes (Haute-Savoie). *Gibier Faune Sauvage* 5 : 289-307.
- MÉNONI, E. and Y. MAGNANI (1998). Human disturbance of grouse in France. *Grouse News* 15 : 4-8.
- MEILE, P. (1982). Skiing facilities in alpine habitat of black grouse and capercaillie. *Proc. Int. Grouse Symp.* 2 : 87-92.
- MIQUET, A. (1986). Tétraz-Lyre et stations du ski IV. Premiers résultats d'une enquête sur la mortalité du Tétraz-Lyre par percussio dans les câbles. *Office National de la Chasse - Bulletin Mensuel* 99 : 33-36.
- NIEWOLD, F.J.J. (1990). The decline of black grouse in the Netherlands. Pp 71-81 in: Lumeij J.T. and Hoogeveen Y.R. eds. *The Future of Wild Galliformes in the Netherlands*. Organisatiecommissie Nederlandse Wilde Hoenders, Amersfoort, Netherlands.
- REYNOLDS J.C. (1990). The impact of generalist predators on gamebird populations. Pp 172-184 in: Lumeij J.T. and Hoogeveen Y.R. eds. *The Future of Wild Galliformes in the Netherlands*. Organisatiecommissie Nederlandse Wilde Hoenders, Amersfoort, Netherlands.
- STORCH, I. (2000). *Status Survey and Conservation Action Plan 2000-2004 Grouse*. - WPA/BirdLife/SSC Grouse Specialist Group. IUCN, Gland, Schweiz und Cambridge, UK und World Pheasant Association, Reading, UK.
- VOS, A. (1995). Population dynamics of the red fox (*Vulpes vulpes*) after the disappearance of rabies in county Garmisch-Partenkirchen, Germany, 1987-1992. In: Helle E et al, eds. *II. North Europ. Symp. on the Ecology of Small and Medium-sized Carnivores*, Lammi, Finland, April 1994; *Ann. Zool. Fenn.* 32(1) : 93-97.
- WESTEMEIER, R.L., J.D. BRAWN, S.A. SIMPSON, T.L. ESKER, R.W. JANSEN, J.W. WALK, E.L. KERSHNER, J.L. BOUZAT and K.N. PAIGE (1998). Tracking the long-term decline and recovery of an isolated population. *Science* 282 : 1695-1698.
- ZEITLER, A. and U. GLÄNZER (1998). Skiing and grouse in the Bavarian Alps. *Grouse News* 15 : 8-12.

## ZUSAMENFASSUNG : Überblick zum Populationsstatus und Schutz von Birkhühnern weltweit .

Auf Grundlage von Umfragen in Vorbereitung des IUCN Grouse Action Plan (Storch 2000) wird ein weltweiter Überblick zu Status, Populationstrends, und Gefährdungsursachen von Birkhühnern gegeben. Informationen aus den meisten der 29 Länder im Verbreitungsgebiet der Art wurden analysiert. Weltweit ist das Birkhuhn nicht vom Aussterben bedroht (IUCN 1996). Am südlichen Rand der Verbreitung und in dicht-besiedelten Regionen, z.B. im Europa südlich der borealen Zone, findet sich die Art jedoch in den Roten Listen der meisten Länder. Verschlechterung und Fragmentierung des Lebensraums als Folge menschliche Landnutzung, geringe Populationsgröße und steigende Prädatorendichten werden weltweit als die wichtigsten Ursachen der Gefährdung gesehen. Regional werden außerdem Störungen durch menschliche Freizeitaktivitäten (vor allem Westeuropa) und Bejagung (vor allem Osteuropa und Asien) als kritisch erachtet. In Europa scheinen vor allem die Isolation und geringe Größe vieler (Flachland)-

Populationen die Überlebenschancen des Birkhuhns zu begrenzen. Da die verschiedenen Regulationsfaktoren zusammenwirken, sich gegenseitig beeinflussen und in lokal von wechselnder Bedeutung sein dürften, werden großräumig vergleichende Ansätze im Birkhuhn-Schutz empfohlen.

**Schlüsselwörter:** Birkhuhn, *Tetrao tetrix*, Status, Artenschutz, Westeuropa, Osteuropa, Asien.

### **RESUME : Statut des populations et conservation du Tétrás lyre : un aperçu mondial**

Un aperçu mondial du statut, des tendances des populations, menaces et besoins de conservation du Tétrás lyre a été dressé sur base des données rassemblées en réponse à un questionnaire, en vue de la préparation du plan d'action du groupe Tétráonidés de l'UICN (Storch 2000). Des informations en provenance des 29 pays situés dans l'aire de répartition du Tétrás lyre ont été analysées en fonction de la répartition géographique et de l'abondance. Globalement, le tétras lyre n'est pas menacé (UICN, 1996). Toutefois, en bordure méridionale de son aire de répartition et dans les régions densément peuplées, soit en Europe centrale et occidentale, le Tétrás lyre est inscrit sur la liste rouge de la plupart des pays concernés. La dégradation et la fragmentation des habitats du fait de l'emprise humaine et une augmentation des prédateurs sont les facteurs généralement invoqués comme constituant une menace pour la viabilité de ces populations. Des menaces supplémentaires, telles que l'exploitation et les dérangements par l'homme, sont ressentis régionalement comme critiques. En Europe centrale, la petite taille des populations et l'isolement de celles-ci apparaissent comme limitant significativement les chances de reconstitution de ces populations et de survie du Tétrás lyre.

**Mots-clés :** *Tetrao tetrix*, Tétrás lyre, statut des populations, tendances, déclin, aperçu mondial.



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SCHMALZER à l'avant plan. Photo M. LONEUX