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G@llinformed: Newsletter of the IUCN-SSC/WPA Galliformes Specialist Group 1-7 (2009-2012)

IUCN Species Survival Commission

WPA Galliformes Specialist Group

G@llinformed

Newsletter of the
IUCN-SSC/WPA Galliformes Specialist Group

Issue 1 ***July 2009***

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FROM THE CO-CHAIRS

Welcome to the Galliformes Specialist Group

This new Galliformes Specialist Group (GSG) is dedicated to the conservation of all the world's Galliformes species, and acts under the joint auspices of the IUCN Species Survival Commission (SSC, see http://www.iucn.org/about/work/programmes/species/) and the World Pheasant Association (WPA, see http://www.pheasant.org.uk/). We join a family of over 120 other SSC SGs, most of which are focused on a particular taxon and are best described as 'voluntary self-help networks'. The GSG is itself an amalgamation of several SGs (Pheasant; Partridge, Quail and Francolin [PQF]; Grouse; and Megapode) which have acted for different groups of species within the order Galliformes since the early 1990s. Particularly in the 2005-08 period, these separate SGs were not working as well as we would have liked, and this merger is designed to pool knowledge, expertise and experience in order to improve performance.

Our avian Order contains a total of 288 species, of which 73 (25%) are currently threatened with extinction and therefore named in the IUCN Red List. For birds as a whole the percentage of threatened species is 'only' 11%, so our mission is undoubtedly onerous. We have also decided to represent the 47 species of tinamou, because these South American birds are ecologically convergent and geographically coincident with some new world quails and cracids, as well as sharing the attentions of several GSG field scientists! The tinamous are not currently represented within SSC and we hope that this 'adoption' process will help in the formation of an independent SG for them in due course.

We have been appointed by the SSC Chair, Simon Stuart, as the Co-Chairs of the GSG for 2009-12, and have invited 250 individuals to become the initial worldwide GSG membership. We have asked a few of these people to assist us on an email-based Co-chairs' Advisory Board. These members represent our collective expertise in groups of species, regions and important spheres of activity, as follows:

John Carroll	PQF; North America; *in situ* technical training
Rene Dekker	Megapodes
Richard Fuller	PQF; Red List assessments
Peter Garson	Co-chair; pheasants; project proposal processing
Alain Hennache	*Ex situ* conservation
Rahul Kaul	South Asia
Eric Sande	Africa
Ilse Storch	Co-chair; grouse
Jeff Thompson	Tinamous

We expect the GSG Board to evolve and fill some gaps in its representation, and provide for an effective succession beyond 2012. Philip McGowan, as Director of WPA, will have *ex officio* status on our Board, whilst we will report to and attend WPA Council meetings. Our work on Red List assessments will be undertaken jointly with BirdLife International as the IUCN Red List Authority for all birds. Trade issues, such as the review of CITES listings, will be handled for us by WPA, as they are already involved with this process. WPA is generously assisting us with our current re-launch by providing staff time for Natalie Clark (WPA's Conservation Officer) to assemble and maintain the membership list and produce *G@llinformed*. However, this is a temporary measure and if we are to fulfil our full potential we need to employ a part-time Support Officer. Suggestions for sources of funds towards this role are welcome!

Our collective expertise in grouse biology is extraordinary, and one of the main purposes of our merger is to make this bank of knowledge and experience much more easily available to members working on our other more threatened taxa. There is a plan to review approaches to grouse population management that might be applied to any threatened species within the GSG's remit, for use as a training aid for the whole GSG membership. By consensus, grousers will maintain a degree of autonomy in the GSG

within the Grouse Group, which will continue to have a discrete website, newsletter (*Grouse News*) and series of successful International Grouse Symposia.

As a taxon SG we must pledge ourselves to promoting the science-based activities required to cover the full spectrum inherent in the State-Pressure-Response (status-threats-action) concept which now lies at the core of SSC's Mandate (see Governance Documents at http://www.iucn.org/about/work/programmes/species/about_ssc/governance/). SSC has issued numerous cautions warning that SGs should not do anything that leads the wider world to perceive them as advocacy organisations, thereby possibly compromising their scientific objectivity (see Introduction to SSC at http://www.iucn.org/about/work/programmes/species/publications___technical_documents/tools_databases/). The intended division of labour between advocacy and action is a prompt to other organisations (including WPA) to undertake advocacy work on behalf of specific causes identified through the work of the GSG and its members.

In the absence of current Action Plans (except for Grouse [2007], see http://data.iucn.org/dbtw-wpd/edocs/2007-034.pdf), an urgent strategic task is to take stock of our knowledge-base and the position of all our threatened species on the State-Pressure-Response continuum. This should allow species, strategic, regional, and global priorities to be identified on the grounds of urgency and feasibility, as had been done in the previous SG Action Plans for different groups of Galliformes species. We hope to accomplish this work in the near future through the employment of an intern.

For the present, there is still much prioritised work remaining to be addressed from the earlier Action Plans, as well as many new insights, to guide us towards worthwhile project ideas. The SSC's normal expectation is that SG endorsed (i.e. approved) projects should be 'owned' and funded primarily by an SG member acting as the Principal Investigator (PI). The GSG has a proposal form with guidelines to enable members and others to seek project endorsement (these will shortly be available on the GSG page of the WPA website www.pheasant.org.uk and, upon its launch in upcoming months, on the GSG website). Past experience has shown that an SG endorsement letter, issued with the authority of both SSC and WPA, can provide a PI with a powerful lever through which to obtain project funds. Selected proposal reviewers may be requested by the GSG to act as mentors, working with PIs to improve the design of their projects, review progress, advise on data analysis, and help in the preparation of reports and journal publications. Such scientific 'capacity-building', embodying the notion of the voluntary self-help network, is surely one of the most important core functions of an effective SG.

We are also in the process of identifying candidates for SSC's new process of Strategic Planning for Species Conservation (see Handbook at http://www.iucn.org/about/work/programmes/species/publications___technical_documents/publications/). This poses a challenging agenda going well beyond science, and will require our engagement with new partners who can complement our own primarily scientific prospectus for needy cases. Candidates for this treatment, to be undertaken as a joint GSG/WPA activity, are currently being considered and one of these will be selected for a pilot trial. Again, a funded contract position will be required to enable the required work to be done.

Finally, we would like to encourage you to participate in the next WPA International Galliformes Symposium (to be held in Chiang Mai, Thailand, in October/November 2010; see http://www.pheasant.org.uk/ for more details and to complete an expression of interest form) and its satellite training workshops and field tours. In the past, these events have proved to be the principal meeting points for SG members, resulting in more networking, lasting international associations and, ultimately, increased activity relating to the conservation of our species.

Please help make the Galliformes Specialist Group as effective as we would all like it to be.
1. We have provisionally entitled the newsletter *G@llinformed*. Can you think of a better title? If so, please tell us!
2. We aim to produce and distribute the second issue of the GSG newsletter in November/December. Although we have help to produce the first two issues, we are looking for an editor (or two) to take over from issue three onwards. Please do consider offering!
3. Related to the newsletter is the GSG logo. For now we are just using the logos of IUCN-SSC and WPA but are looking for a single, but possibly composite, image to use on all official GSG outputs. So if you have an idea for this, and/or know a talented graphic artist to realise it, we would like to hear from you soon!
4. We will be looking to launch our own website before the end of the year. If you have experience of setting up and managing a website and you'd be prepared to do this, then again we would love to hear from you.
5. Finally, to regularly produce *G@llinformed* we need articles, reports, comments, announcements etc from you! Send us your news so that we can share it with the other members of the GSG.

Please send all comments, ideas, articles etc to gsg@pheasant.org.uk

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Welcome to the Species Survival Commission

I am delighted that the first issue of the new Galliformes Specialist Group newsletter is now available. This is a vital stage in establishing the group as the force for conservation that I am sure it will become.

There is no doubt that there is a crisis facing the world's species, not only as an increasing number move closer to the brink of extinction, but also because conservation attention often focuses on other pressing environmental issues, such as climate change. These issues are, of course, all linked, yet there is a great challenge for us to show how an emphasis on species can allow us to get a deeper understanding of the scale of some of these other issues and even how to start dealing with them. A striking example is that of long-term monitoring of grouse numbers at several sites in Europe and North America, all of which show the same worrying declines and disruption in population cycles in recent years. Do these changes have their root in much broader environmental change that affects these populations that are thousands of kilometres apart? At the local scale, many rural communities have long prized these big and tasty birds or their eggs as sources of food or for their roles in cultural events (feathers as adornment for example). This means that they also offer significant potential for developing community-based projects that will add greatly to the overall range of action that we must take to fight the biodiversity crisis. There is so much to be done and I look forward to this Specialist Group working with the rest of the SSC network to achieve some real conservation successes in the coming years. This newsletter will have a critical role to play in sharing information and spreading good practice quickly and informally: it has a vital role in keeping our SSC network informed and motivated.

Peter Garson and Ilse Storch have already invited members to join the Specialist Group and if all of you accept there will be an amazing 250 members in 55 countries. This shows the global spread of this group of amazing and important birds, and the appeal that they have for scientists and conservationists eager to grapple with big questions. This gives us huge potential for action on the ground across much of the world. I hope that all of those who have been invited will accept this invitation, and I look forward to working with you to make a great difference to the survival of our species.

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FORMER SPECIALIST GROUPS

From the Chair of the former Grouse Specialist Group

Grouse researchers have long been well connected. Close working relationships across countries and continents were intensified when Timothy Lovel, now Chairman of the World Pheasant Association (WPA), organised the first International Grouse Symposium (IGS) in Scotland in 1978. The second IGS followed three years later in 1982 and a triannual IGS series has continued ever since. Now we are looking forward to the 12th IGS in Japan in 2011. These symposia were the principle factor in making the international grouse network such an effective forum and led to the formation of the IUCN-SSC/WPA Grouse Specialist Group in 1993.

In the 15 years of its formal existence, the Grouse Specialist Group grew into a closely-knit network of more than 130 members from about 30 countries. The Group published two Grouse Conservation Action Plans, regularly produced a newsletter, *Grouse News*, maintained the Grouse website (http://www.gct.org.uk/gsg/), endorsed numerous grouse projects, and provided expert advice on issues of grouse conservation. Still, more could be done and indeed needs to be done as the global environmental crisis deepens, and with the emergence of a single Galliformes Specialist Group (GSG) we hope that this will now be possible.

The grouse network will persist as the Grouse Group (GG) within the GSG. GG will maintain its long-established identity by continuing to put out a newsletter, *Grouse News*, maintain the Grouse website and run the International Grouse Symposia. As a founding Co-chair of the GSG, I aim to ensure that the grouse network, which many "old grousers" feel so connected to, will not dissipate. My vision of the GG's role within the GSG is that of a "scientific advisor", as there is vast scientific knowledge and a huge published literature on grouse (even though we still claim to understand so little!) compared to the other Galliformes taxa. Grousers can provide reviews and meta-analyses on various topics of grouse ecology and management, such as habitat management and re-introduction. With more resources becoming available in the new GSG, we can give these issues fresh thought whilst helping to advise our colleagues working on the many threatened Galliformes species world wide.

Ilse Storch was Chair of the Grouse Specialist Group prior to its dissolution in October 2008

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From the Chair of the former Megapode Specialist Group

Bigger is better; that certainly counts for megapodes. No other bird lays an egg which is bigger in relation to its body size than the megapodes (eggs can weigh up to 24% of the adult's body weight!). And no other bird produces chicks which hatch at a more mature stage than the megapodes (chicks can fly on the same day that they are hatched!).

The Megapode Specialist Group (MSG) has been small, if slightly precarious, for over 20 years. Beginning as a group of young and intelligent conservationists and scientists, the members of the MSG successfully put megapodes on the avian map. They achieved amazing conservation successes, with possibly the biggest being the establishment of a second much larger population of Polynesian megapode *Megapodius pritchardii* on the uninhabited island of Fonualei in the Kingdom of Tonga.

However, after years of untamed stimulation, during which many of us were chasing megapodes in remote islands of the Indo-Pacific, the SG members matured and headed homeward bound. New jobs with greater responsibilities and more time spent in home countries away from the megapodes meant less time for MSG involvement, other than trying to stimulate a new generation of megapoders to take the reins. However, as with many of our species, which are partly threatened due to the threat from egg collection, the next cohort of active megapode scientists failed to hatch. In effect, megapoders became 'Critically Endangered' when more than 40% of their species were threatened with extinction – a fate that seemed inevitable for the existence of the megapode scientist.

Fortunately, megapodes are Galliformes and the support for galliform species as a whole is much greater. So the move to join efforts in one Galliformes Specialist Group (GSG) is an excellent one as far as the megapodes are concerned. It will unite the previous SGs and include the cracids, and help to bring us all back to life; from Critically Endangered to Least Concern. The GSG will give us energy, stimulate discussions, generate more income, strengthen our international links and make us aware of current aspects of galliform conservation and research. I hope that we can now all join efforts and give the GSG a super-precocial hatching, as the megapodes themselves do so well.

René Dekker was Chair of the Megapode Specialist Group prior to its dissolution in October 2008

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From the Co-chairs of the former Partridge, Quail and Francolin Specialist Group

In 1991, The Game Conservancy Trust, jointly with the World Pheasant Association (WPA), hosted a symposium on partridges, quails and francolins at their headquarters in Fordingbridge, England. The meeting culminated in a decision to form a Specialist Group, affiliated to the Species Survival Commission of the World Conservation Union (IUCN), the International Council for Bird Preservation (now BirdLife International), and WPA to deal with these much neglected species. The Partridge, Quail, and Francolin Specialist Group (PQFSG) initially comprised the symposium delegates, but over its 16 year history it grew into an international network of 200+ specialists from more than 40 countries. Thanks to the efforts of PQFSG members, we have come a long way during this period. A number of species, such as the bearded wood-partridge *Dendrortyx barbatus* of Mexico and the Nahan's francolin *Francolinus nahani* of Uganda, were virtually unknown at the time of our first Action Plan in 1995. The latter has now been the subject of an intensive PhD study and probably ranks as one of the better studied tropical species. The former was thought to be Critically Endangered in 1995, but has now been downgraded because a number of new populations have been found.

Despite this excellent track record, it has been difficult to keep up the momentum in recent years. Capacity has always been a limiting factor, largely due to the difficulty of finding time and resources in increasingly busy work schedules. Newsletter production has faltered, and the PQF SG has not been functioning as it should over the past few years.

The consolidation of the various Specialist Groups covering Galliformes under the single banner of the Galliformes Specialist Group (GSG) heralds the dawn of a new era in Galliformes conservation. The threats faced by many PQF species are common to Galliformes as a whole, as are many of the research priorities and conservation solutions, yet PQF species have perhaps not received as much exposure as those looked after by the other Galliformes SGs.

We are excited about the formation of the GSG for three reasons. First, uniting behind a single banner will undoubtedly mean increased exposure for PQF species and the conservation issues they raise. Second, economies of scale will mean we can operate much more effectively as a network, sharing information, contributing to the Red List production, and delivering advice and expertise where it is required. Third, we now have a chance to prioritize conservation activity across the full range of Galliformes species. Exciting possibilities include the recently developed Project Prioritization Protocol which can guide us in where to start in the seemingly endless universe of possible conservation actions for our species.

Richard Fuller and John Carroll were Co-chairs of the Partridge, Quail and Francolin Specialist Group prior to its dissolution in October 2008

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From the Co-chairs of the former Pheasant Specialist Group

It was in 1991 that Simon Stuart (then Head of the IUCN Species Programme in Gland) wrote to Keith Howman (then Director-General of WPA), suggesting the formation of five SGs to cover the conservation concerns of all the Galliformes species. The particular reason for making this suggestion at that time was to stimulate the networking required to produce SSC Action Plans for Galliformes species, in the then highly influential IUCN publication series started in 1986, which was achieving some visibility in the wider conservation community of NGOs and governments.

At this point the IUCN Red List criteria were also being crystallised by Georgina Mace and others. Also, led by the inimitable Ulie Seal, the Captive (now Conservation) Breeding SG (CBSG) was running Conservation Assessment and Management Plan (CAMP) workshops around the world, including Population Viability Analysis using the VORTEX software developed by Bob Lacy to simulate the effectiveness of different management options for individual threatened species.

It was against this background that a large gathering took place at Antwerp Zoo in February 1992 for a joint CBSG/WPA CAMP on all the Galliformes species. The spreadsheets that emerged were then used as a starting point for three Action Plans on Pheasants, PQFs and Megapodes, edited by Philip McGowan and published jointly by WPA and IUCN in 1995. The PSG was founded in July 1993 in the midst of this process. Following the successful implementation of many of the projects in these first Action Plans, they were revised and edited by Richard Fuller in 2000, and joined by the Grouse and Cracids to make the 'full set' of five in the much-consulted IUCN series.

The Pheasant SG continued to pursue its agreed international agenda based on the 2000 Action Plan, and again succeeded in implementing a large proportion of the projects highlighted there. However, we were unable to repeat this highly effective cycle in 2005: some key players were unable to do the necessary work in their own time, as expected under the SSC volunteerism model. Therefore, the PSG did not function to its full potential during 2005-08, although we did continue to oversee a healthy portfolio of endorsed projects. It was also becoming difficult to recruit new members, simply because there seemed to be a dip in the pheasant-obsessed scientific population! Young recruits seemed to be few and far between.

It was obvious that we needed to make a new start and delegate the core tasks of running the SG more effectively. Thus the suggestion that all the galliform SGs acting under SSC and WPA should merge was highly opportune, coming as it did at the end of the 2005-08 IUCN quadrennium. Fortunately, both SSC (now chaired by Simon Stuart!) and WPA could see advantages in this proposed set-up, and so it is that we now have a unified Galliformes SG for 2009-12 at least. If it works well, and the initial signs are good, the GSG will persist beyond this quadrennium, just as its forebears did previously!

Pheasant Specialist Group projects

The Pheasant Specialist Group provided expert advice on the planning and implementation of pheasant projects, and the GSG will continue to do this for all galliform projects. Proposals that are judged to have worthwhile and feasible objectives will be given official endorsement by the GSG. The GSG does not normally have any funds available to award as grants for these projects, but an endorsement letter from the GSG can have a positive effect in persuading donors to make awards to the projects.

Over the last year, the following projects were able to be part-supported by PSG thanks to the continuing generosity of James Goodhart.

1. Key Areas for Galliformes conservation in northwest India
K Ramesh (Wildlife Institute of India) completed his fieldwork for this project in the spring of 2008. Two particularly important areas have been found at Pilang in Uttarkashi District and Namik in Pithoragarh District of Uttarakhand State. The Pilang valley is sparsely populated and rich in Galliformes, including a good cheer pheasant *Catreus wallichii* population and the distinct possibility of western tragopan *Tragopan melanocephalus*. The Namik valley is flanked by other areas with good forest cover and together they may host one of the largest populations of satyr tragopan *Tragopan satyra* in India. These are being proposed to the State Forest Department for Conservation Reserve or Community Reserve status. Both of these relatively new legal designations for protected areas necessarily involve the sustainable integration of conservation and human livelihood considerations.

2. Manipur bush-quail in western Assam, India
Anwaruddin Choudhury (WPA-India) had a fleeting glimpse of a single Manipur bush-quail *Perdicula manipurensis* in June 2006. His repeated attempts since to verify the species' persistence at that site and others in and close to Manas National Park have been unsuccessful. In the spring of 2008, he carried out mist net drives for 55 hours in another bid to find and photograph this species, which otherwise has not been seen since the 1930s. As far as quails are concerned, only the blue-breasted *Coturnix chinensis* was recorded during these most recent surveys.

3. Satyr tragopan in Singhalila National Park, Darjeeling, India
Samya Basu (Kolkata, India) ran a year-long project from the spring of 2008 as a follow-up to earlier work by Sarala Khaling (2002-03). Both were aimed at establishing the distribution and abundance of the satyr tragopan *Tragopan satyra* in Singhalila National Park, along with assessments of human impacts on the forest, such as hunting, fuelwood and medicinal plant collection, and understorey browsing by livestock. Villages line the border area of Nepal on the park's western boundary, and impacts on the forest are correspondingly more severe on that side. Local villagers in both Nepal and India have little concept of the sustainable use of forest resources, and, as before, there is much need for awareness-raising and the introduction of alternative income generating schemes to reduce pressure on the forest.

4. Western tragopan surveys in Palas Valley, Pakistan
Francis Buner (Game & Wildlife Conservation Trust, UK) continued his training and survey project during May 2008 in this most iconic western tragopan *Tragopan melanocephalus* location, just east of the Indus river in Kohistan District of NW Frontier Province. His joint team of local villagers and Wildlife and Forestry Department staff succeeded in covering another six side-valleys, adding to the 18 other areas visited in

2006 and 2007. The 2008 survey work was part-funded by the British Ornithologists' Union and WWF-Pakistan.

5. Cambodian Galliformes Conservation Project

Chhum Samnang (Wildlife Protection Office, State Forestry Administration, Cambodia) led a team to survey the Phnom Tbeng mountains in northern Cambodia in April-May 2008, following on from a brief but promising visit in 2007. The results were not encouraging in that green peafowl *Pavo muticus imperator* were only recorded from feathers at hunting camps and there was no sign of siamese fireback *Lophura diardi* other than local reports. People harvesting for their subsistence needs in the forest use snares, but also take dogs with them, rendering Galliformes even more vulnerable. In an attempt to bring in sustainable harvesting practices, there is an ongoing plan to have this site declared as a Biodiversity Conservation and Ecotourism Area by the government.

6. Conservation awareness of school children near Pipar, Nepal

Suman Sharma (Bird Conservation Nepal) continued his project to raise the level of conservation awareness in village children who attend the schools close to the Pipar Pheasant Reserve in the Annapurna Conservation Area (WPA provides sponsorship to these schools). The objective in April-May 2008 was to assess whether attitudes had changed as a result of his efforts in 2007: running a training workshop for teachers and providing copies of a specially-written informative booklet in Nepali. The results were encouraging; a much greater proportion of the children now appreciate the need for conservation and understood the role of WPA in protecting the Pipar forests, as well as upgrading school buildings and providing extra teachers.

7. Cheer pheasant survey at Rara National Park, western Nepal

In May 2008, Paras Singh (Biodiversity Conservation Society Nepal) led a team to continue surveys of cheer pheasant *Catreus wallichii* in Rara National Park and its surroundings. This area was first visited by Bharat Buthapa in 2005, but the southern part of the site could not be visited because of insurgency. Much of the remaining open habitat, and most notably that at Botamalika, is at too high an altitude to harbour cheer pheasant, although both Himalayan monal *Lophophorus impejanus* and koklass pheasant *Pucrasia macrolopha* were encountered on its forested fringes. One additional area holding cheer pheasant was found in the buffer zone to the park; the likelihood is that the species was much more common here than they are now. Local people still keep cheer pheasant in captivity to use as hunting lures to attract wild birds into areas set with numerous snares. Wild Galliformes command around twice the price of domestic fowl as food in the local markets. This project was part-funded by the Oriental Bird Club.

8. Galliformes distribution beyond Pipar, Nepal

Laxman Poudyal (Institute of Forestry, Pokhara, Nepal) carried out surveys of forest cover and pheasant abundance for the first time at seven sites in and near the Seti valley in the Annapurna Conservation Area. He included the WPA Pipar Pheasant Reserve, along with two sites to the south, two to the north and three to the east on the other side of the valley in the Santel area. The spring call count surveys in 2008 showed no significant change in the satyr tragopan *Tragopan satyra* or koklass pheasant *Pucrasia macrolopha* populations at Pipar itself since the last such survey in 2005, or indeed since the first in 1979. However, there was a great deal of disturbance at Pipar by local villagers who were collecting an abundance of caterpillar fungus *Cordyceps sinensis*, a highly valued product for traditional medicine, especially in China. As this mainly occurs in the ground on open areas, these disturbances especially affected sightings of Himalayan monal *Lophophorus impejanus*; (the other Galliformes species are less inclined to venture out of the forest and scrub cover). These spring surveys generally revealed higher densities of satyr tragopan than either koklass pheasant or common hill-partridge *Arborophila torquela*, but all three occurred in appreciable numbers at all sites. This field project was part-funded by WPA.

In August 2008, Laxman visited the Wildlife Institute of India to work on the spatial analysis of his data with K Ramesh and Qamar Qureshi. Using Geographic Information Systems, Galliformes species distributions over the whole Seti valley were predicted,

based on remotely-sensed habitat distributions and the species' habitat preferences. The results suggest that satyr tragopan, common hill-partridge and koklass pheasant will have largely coincident distributions restricted to the two sides of the valley near Pipar and Santel, whilst Himalayan monal will have a much wider distribution including the Seti headwater forests and the sub-alpine areas adjacent to these forests.

In view of Laxman's observations of caterpillar fungus collection at Pipar in 2008, WPA and the GSG urgently wanted follow-up work to be conducted in the spring of 2009. Fortunately, Poorneshwor Subedi (Department of National Parks & Wildlife Conservation, Nepal) was available to do this work. Initial results have shown collectors from the local villages to be present again in concerning numbers, and much evidence of snaring and trapping pheasants and partridges. This survey was jointly funded by WPA and PSG.

Peter Garson and Rahul Kaul were Co-chairs of the Pheasant Specialist Group prior to its dissolution in October 2008

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TINAMOUS AND CRACIDS

The inclusion of the tinamous

The creation of the Galliformes Specialist Group (GSG) has resulted in some important changes in organization and perspective, none of which is greater than the inclusion of the Tinamiformes or tinamous as a group of interest for the GSG. As the Co-chairs' Advisory Board member whose role is to take the lead with the tinamou group, I think it is necessary to clarify and explain why the GSG would choose to include an additional taxonomic order and the benefits it will have for the conservation of Galliformes.

There are 47 species of tinamous of which five are classified as Vulnerable on the IUCN Red List and three as Near Threatened (see box below). They are all confined to the New World, from southernmost Texas in the United States, south to the southern extent of continental South America. From the northern portion of their distribution to approximately 30º S they inhabit many of the same habitats as the Galliformes and are their ecological equivalents. Furthermore, they are important components of gamebird communities in many of the most globally endangered biomes, such as tropical deciduous forest and temperate grasslands. Subsequently, the threats to the conservation of several endangered biomes and/or many of the New World Galliformes are synonymous to those of the tinamous. It is in this perspective that we can see the real conservation value of including the tinamous in the GSG, for both the Galliformes and for overall conservation in Central and South America.

Of the 47 species of tinamous, five are classified as Vulnerable on the IUCN Red List and three are classified as Near Threatened:

- Black tinamou *Tinamus osgoodi* **Vulnerable**
- Choco tinamou *Crypturellus kerriae* **Vulnerable**
- Taczanowski's tinamou *Nothoprocta taczanowskii* **Vulnerable**
- Lesser nothura *Nothura minor* **Vulnerable**
- Dwarf tinamou *Taoniscus nanus* **Vulnerable**
- Solitary tinamou *Tinamus solitarius* **Near Threatened**
- Pale-browed tinamou *Crypturellus transfasciatus* **Near Threatened**
- Yellow-legged tinamou *Crypturellus noctivagus* **Near Threatened**

The greatest threats to the conservation of the Galliformes in the New World, as well as to the tinamous, are overharvesting and habitat loss. Given this and the other similarities of the tinamous to the Galliformes, an understanding of the conservation threats posed to both groups by these factors will lead to a better understanding, and hopefully alleviation, of their negative impacts. Moreover, by expanding the vision of the GSG to include tinamous we also expand into a greater role in habitat conservation by concentrating upon biological communities and habitats, rather than just single species.

Although some of the North American Galliformes, such as the northern bobwhite *Colinus virginianus*, are the most intensively studied species globally, the ecology of the great majority of the Neotropical Galliformes is little known. Even the northern bobwhite is virtually unstudied throughout its large range in Mexico. Subsequently, research on the Neotropical Galliformes and the tinamous is greatly needed. Since many species of Galliformes and tinamous overlap in habitat use we can maximize research resources, as well as being more effective in obtaining those which are scarce, by being more holistic in our research and conservation activities and expanding our scope and conservation perspective to communities and ecosystems.

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Cracid conservation requires focused efforts

Habitat destruction is the number one cause of species extinction throughout the world. Conservation actions have responded to this paramount need by concentrating efforts theoretically in priority habitat assessments, and physically in habitat protection programs including corridor protection, parks and private reserve creation. Such conservation actions are high priority, but do not encompass all of the current conservation threats and the potential extinctions.

The cracids (chachalacas, curassows and guans) of South America fall into this gap, where the typical general conservation actions are not enough. Why? To simplify the problem down to the bare bones, cracids can be easily described as large forest chickens, and to their detriment, most local people report that they taste far better than their smaller relatives. Cracids seldom, and in most cases, can not, live near human settlements. In South America, hunting has been the number one threat to these species and some have been extirpated from a region (or country) even though the forest remains viable and intact. Presently, the Brazilian Alagoas curassow *Mitu mitu* is Extinct in the Wild, with individuals remaining only in captivity. The Peruvian white-winged guan *Penelope albipennis* and the Colombian blue-billed curassow *Crax alberti* are considered Critically Endangered, with their numbers on the brink of extinction. Another six species in Bolivia, Brazil, Colombia and Peru are considered Endangered, all for the same reason; human encroachment within forested areas. The Vulnerable wattled curassow *Crax globulosa* has lost over ninety percent of its population in the last 100 years, though most of its forest home remains standing, vacant of this species' dawn song and ecological contribution. Some of these healthy forests are considered protected areas, but the present hunting pressure is beyond sustainable levels to maintain the species for the future.

This is why cracids need special attention. Their protection will not be offered by the general conservation actions commonly observed. Cracid conservation requires specialists who are well studied in the threats, trends, monitoring and successful conservation measures used to combat the specific hunting and land encroachment problems. To be included in the Galliformes Specialist Group (GSG) is so very important to the cracids. In order to conduct effective conservation, a forum is required which focuses on galliform conservation problems and solutions. The GSG is an essential tool to assist in information exchange and conservation action improvement. Cracids are a case outside of the normal, and if we are to succeed in preventing species extinctions we must focus our conservation efforts on their specific needs.

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Conserving the Trinidad piping-guan: defining a role for the Galliformes Specialist Group

With an estimated population of 77-231 birds and a distribution now limited to approximately 350 km^2 of forest in north-eastern Trinidad, the Critically Endangered Trinidad piping-guan *Pipile pipile* (locally known as the "Pawi") is arguably one of the most threatened Galliformes. Habitat loss has undoubtedly contributed to this species' decline, with deforestation on the island proceeding at an annual rate of 0.2% and forest cover currently at approximately 40% of its former state. Nonetheless, over-exploitation has been the primary driving force of the decline and large areas of unoccupied suitable habitats remain on the island where this guan was historically known to occur.

The prospect of the immanent loss of the species has led to its listing as Environmentally Sensitive under Trinidad and Tobago's Environmental Management Act. This designation is the highest level of species protection under national law. In parallel, there have been efforts led by local research institutions and NGOs including the University of the West Indies – St. Augustine, the Asa Wright Nature Centre, the Guardian Life Wildlife Trust and the Pawi Study Group to increase local education, awareness and research on the species.

In spite of these efforts, the recovery of the Trinidad piping-guan remains in doubt due to the lack of a comprehensive recovery plan, and a dearth of knowledge on the reproductive, genetic and demographic status of this species. This lack of basic ecological information reflects the lack of specialist skills and funding for research and management of the species.

Bridging this gap between research and the implementation of a recovery plan for the Pawi requires technical expertise and advocacy to catalyze management action. The Galliformes Specialist Group (GSG) represents the IUCN's expert body on the management and conservation of Galliformes, and can play a crucial role for the Trinidad piping-guan by providing technical guidance and helping to promote research and management priorities for funding. Without this type of leadership and support by the GSG there is a significant risk that the species will continue to decline in the wild.

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G@LLINFORMED REPORTS

Breeding ecology of grey junglefowl *Gallus sonneratii* at Gudular Range, Theni Forest Division, Western Ghats, Tamilnadu, south India

Thesis abstract:

Breeding ecology of grey junglefowl, G*allus sonneratii* was carried out at Gudular Range (23 km^2 - 9º 37'N, 77º 16' E) in Theni Forest Division, Western Ghats, Tamilnadu, south India. The encounter rate (1.00 ± 0.02 birds/km walk) and density (37.03 ± 2.81 birds/km^2) of grey junglefowl were recorded. 211 flocks with a mean of 6.60 ± 1.01birds/flock were observed. The sex ratio was 1:1.1 and 1.1:1 during breeding and non-breeding seasons. A total of 23 breeding pairs recorded. Eleven (92%) nests were located on ground and one (8%) nest was located on tree's cavity. The hatching success varied from 0% to 100%. The clutch size was 4 to 5 eggs. One clutch was observed continuously for intensive study. The adult female only incubate the eggs. It went outside only one time per day. Out of 278 hours the female spent 171.46 hours (62%) for incubation and 106.53 hours (38%) for other activities outside the nest. Canopy cover, ground cover, shrub cover, litter cover, litter depth and distance to human footpath were significant variables for nest selection.

Adult male grey junglefowl vocalized crowing, alarm and breeding calls. Only alarm call was identified in adult females. Out of 182 days of observation, the grey junglefowl calls were heard for 175 days during breeding season as against 131 days in non-breeding season. The Spectrograph analysis of crowing of adult male's first two component notes showed a successive rise in pitch while the third and fourth note drops a little below the pitch level. The grey junglefowl roost tree height ranged from 12.0 to 22.0m and the roost height varied between 8.0 and 18.0m. The frequency of different roost site varied significantly among breeding and non-breeding seasons.

Out of 157 feeding observations, a maximum percentage of feeding activity was observed during breeding season in all age and sex groups and during non-breeding season the feeding activity was moderate. 1,419 grey junglefowl droppings were analysed. The diet of the grey junglefowl constituted 55.0%, 31.1% and 13.9% of plant matter, animal matter and grit respectively. 894 cattle and 250 goats visited the study area. Forty-five firewood collectors visited the forest area to collect 1,125kg of fire wood. 12 Non Timber Forest Produces (NTFP) items were collected by the local people. Two hydroelectric projects are having a negative influence in the area. The main attributes of local people that influence conservation attitudes, habitat management and resource harvest should be identified and incorporated in the management strategies.

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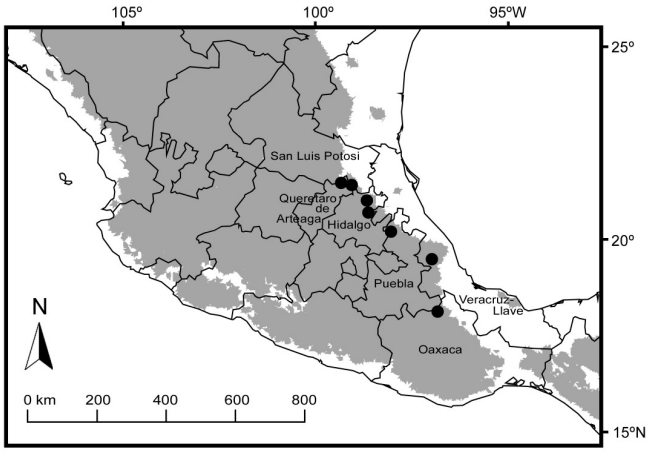
Studies continue with "at risk" quail of Mexico and Central America

Field studies on bearded wood-partridge *Dendrortyx barbatus* in the late 1990s resulted in a downlisting of this species' "at risk" IUCN status[1] from Critically Endangered to Vulnerable. Despite significant new sightings the northern portion of the species distribution (San Luis Potosi, Queretaro, Hidalgo) appeared discontinuous from its southern distribution in Veracruz and Oaxaca. Recent documentation, however, of the wood-partridge in Hidalgo and along the northern Veracruz/Puebla border region, in addition to over 50 new localities in Queretaro and San Luis Potosi, has "connected the dots" making the documented distribution now continuous.

Current efforts are focusing on determining common elements of all areas as well as documenting any limiting factors to population growth and expansion. Further, we are organizing an additional reconnaissance to delineate the southernmost point of its range in Oaxaca.

We wish to thank the following individuals for their contributions to our continued efforts with this species: Juan Cornejo, Knut Eisermann., Marco Antonio Hernandez Flores, Miguel Angel Martínez Morales, Roberto Pedraza, Sergio Humberto Aguilar Rodríguez, Robert Straub, and Jose Miguel Flores Torales.

[1] Threatened in 1988, Critically Endangered 1994-1996, Vulnerable 2000-present.



Recent observations have further delineated the range of D. barbatus. Map compliments Knut Eisermann

The ocellated quail *Cyrtonyx ocellatus* has steadily climbed "at risk" categories starting at Lower Risk/Least Concern in 1988, then Lower Risk/Near Threatened in 1994-2000, and finally uplisted to Near Threatened in 2004-2008. During 2009, further up listing was not possible due to the lack of data of the species status in the wild. In this regard the species was considered Data Deficient.

Current research has shed considerable light as to the species status and plight. Thanks to birding tour guides Mark Stackhouse and Rick Taylor, we have recent confirmed sightings of the species in southern Mexico, fortunately near two protected areas. In Guatemala due to the efforts of Knut Eisermann we have eight recent sightings further delineating the distribution of the species in that country. Despite being in favorable habitat in El Salvador (censusing migratory passerines), Oliver Komar of SalvaNatura was unable to confirm the presence of the species in that country. In Honduras, however, observations reported by Mark Bonta and David Anderson have recently been augmented with additional sightings, and a road killed specimen by Robert Gallardo. Robert continues to document field sightings of the species and hopes to make a recording of the species', yet undocumented, vocalizations. Finally, the only previous record of ocellated quail in Nicaragua was one in 1903 in a debatable locality (it is

suggested that it was actually collected in Honduras). In 2008 Francisco Muno observed 30 individuals in the Dipilto-Jalapa Mountain range along the Honduras-Nicaragua border. With this its presence in Nicaragua was reaffirmed!

This "road killed" ocellated quail flew into the auto of Robert Gallardo on 22 April 2009 in southern Honduras documenting the presence of the species in the area! Photo Robert Gallardo.

Despite the good news these observations mean that the future survival of the species remains of concern. Inhabiting pine-oak forest at 1500-3000m this species occurs in a highly populated area. In addition, this is an area rich in natural resources resulting in high levels of mining and timber extraction. While the quail appears remarkably adaptable to timber extraction the development of logging roads facilitate human expansion into the area often resulting in grazing of livestock. Livestock grazing frequently lowers floral diversity therefore degrading habitat suitable for ocellated quail.

Efforts will continue to collect information as to this species numerical status, distribution and ecological requirements. We do fully expect that during the next threat category evaluation this species will not only no longer be Data Deficient but unfortunately will likely continue its upward listing. This grim news is all the more justification to continue, and expand, efforts to gather field data and implement conservation action for these "at risk" species of quail.

This project is a collective activity of many people including: David Anderson, Mark Bonta, Stuart Butchart, Claudia Macias Caballero, René Corado, Juan Cornejo, Knut Eisermann, Robert Gallardo, Oliver Komar, Juan C-Martinez Sanchez, Mark Stackhouse, Rick Taylor and Pilar Thorn.

Additional details on our efforts with these two species will be published in a special issue of *Studies in Avian Biology* devoted to Mesoamerican Galliformes and in the first issue of the *International Journal of Galliformes Conservation*.

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Recent observations of Galliformes in degraded parts of Laos

A recent review of the conservation status of Galliformes in Indochina (Laos, Cambodia and Vietnam) concluded that, excepting green peafowl *Pavo muticus* and perhaps the quails *Coturnix*, most species were of no or low conservation concern (Brickle *et al*. 2008). In contrast to earlier assessments based on thin information, this rosy conclusion included at least most of the evergreen forest species although Edwards's pheasant *Lophura edwardsi* was kept, following the precautionary principle and its small range, flagged as globally threatened. This overall conclusion struck many as surprising, given the very high (possibly world-beating) levels of hunting in the region. Because of the tendency of conservation surveyors to survey the best-looking areas, information from the areas actually most informative in understanding species' resilience – those largely degraded, even deforested, landscapes outside the protected area system – was somewhat thin, so this note reports some further observations from such places in North and Central Laos.

In February–March 2009 I went back to Phou Gnouan (19°25´N, 103°18´E), a summit patch of a few square kilometers of degraded montane broad-leafed forest at 1700–1825m, profiled in Duckworth *et al*. (2002) on the basis of visits in 1999–2000. Ten years on it has been cut into by construction of a radar station and associated access road and a network of mineral exploration tracks, it has been even more heavily degraded with many of the remaining large trees felled, and it has doubtless sustained continued heavy hunting by the series of construction and prospecting crews. The local hunters said that grey peacock-pheasant *Polyplectron bicalcaratum* is now gone, and bar-backed partridge *Arborophila brunneopectus* probably so: both persisted in 1999–2000, being directly recorded by Duckworth *et al*. (2002) and remembered as such by these hunters, who reported that a pheasant *Lophura* is still there: this latter, on altitude, must be silver pheasant *L. nycthemera* rather than Siamese fireback *L. diardi*. That any of these species persist at all in such a hostile environment, and that the two locally-extinct species survived so long, is a testament to the resilience of these birds: even by 1999 not only the hornbills (Bucerotidae) and pigeons (Coumbidae) were effectively gone, but even resident forest bulbuls (Pycnonotidae) and drongos *Dicrurus* (birds of a size class shot by catapult for local consumption, throughout Laos) were unrecorded and could only have been, at best, very scarce. The 2009 visit gave evidence of further depletion of species of this size-class from the site.

I also returned to Latsen (19°20´N, 103°09´E; also profiled in Duckworth *et al*. 2002), a series of small wetlands amid the short-turf Xiangkhouang plateau (about 1120m), and site (in 1999–2000) of the only recent (post-1950) record of Chinese francolin *Francolinus pintadeanus* from anywhere in Laos's northern highlands. On 6 March 2009, unlike in 1999–2000, I was afield at dusk and there came a ten-minute chorus of francolins from all quarters at this time, although I had detected only one bird during epic amounts of trudging during the day. This area comprises many square miles of 2-inch high grass, all burnt annually, overrun with dogs and catapult-toting children, with little strips (no more than 30 feet wide) of bush along streams. Since 2000, it has been mostly ploughed. The francolins may only be able to persist because of these streamside strips, which are moist enough to survive burning. No other resident bird of comparable size is common there: a very few red-wattled lapwings *Vanellus indicus* (also largely extinct throughout the northern highlands), black-collared starlings *Sturnus nigricollis* (now highly localised in this region) and great coucals *Centropus sinensis* (which remain widespread and generally common, outpacing even the forest Galliformes in their ability to persist in areas where almost everything bigger than a sparrow is now rare) hang on, but the likes of large-billed crow *Corvus macrorhynchos*, spotted dove *Streptopelia chinensis*, and apparently savannah nightjar *Caprimulgus affinis* (all common there in the 1930s–1940s; David-Beaulieu 1944) seem to be long gone. In 1999 I had thought, based on daytime survey which gave only a single heard-only record, that the francolin might well be on its last legs there, but this is clearly not so: it probably has the biggest biomass among resident non-wetland birds (perhaps paddyfield pipit *Anthus rufulus*, smaller but superabundant, trumps it).

Despite the focused search effort through the Latsen grasslands (higher than in 1999–2000), I could not find any quails *Coturnix* (nor, for that matter, any Australasian bush larks *Mirafra javanica*) which were previously common there (David-Beaulieu 1994). This increases my concern that both the quail species recorded in Lao PDR are now rare (a good deal less common than in the pre-1950 era) and probably nationally threatened.

In November–December 2008, I spent a month surveying Muang Vilabouli in north-eastern Savannakhet province (survey area roughly centred on 16°58´N, 105°59´E), an area not previously surveyed. This is a heavily degraded lower-hills landscape of regrowth, low-grade secondary forest and agriculture. Although in these months calling by forest Galliformes in Laos is at very low levels, and thus establishing the status of at least some of the loud-calling genera (peacock-pheasants and hill-partridges; junglefowls seem more vocal year-round) is inefficient compared with survey in February–May, the number of direct sightings of bar-backed partridge and Siamese fireback (the latter even being recorded foraging by a roadside only a few hundred yards from a large bustling village at 16h00 one afternoon) proved a healthy local status for them both even though, except at the north-eastern margin (which abutted a large wilderness) the genuinely hunting-sensitive hornbills and forest pigeons were unrecorded and very rare respectively. Scaly-breasted partridges *Arborophila charltonii* were heard and although none was seen, this may reflect their lower tendency (than of Siamese fireback) to forage in the open along roads and a preponderance of searching within forest in the hill areas more the domain of bar-backed partridge. A single grey peacock-pheasant was heard loud-calling intermittently from one area both times it was visited: presumably its own internal clock was out of synchrony with the seasons, as this species does not usually make such calls at all in these months. It is highly secretive and the lack of any sightings on the survey is biologically uninformative. Red junglefowl was probably pretty common in this landscape, based on calls, but with so many settlers' huts and camps, permanent and transitory, determining that any individual call was from a truly wild bird rather than a domestic one, a domestic escape, or genetically polluted feral stock, was impossible. The eastern margin of the survey area just about merged into the 'eastern Annamite wet forest', a habitat-type predominantly in Vietnam supporting a distinct association of bird and mammal species absent from the seasonally dry forests which dominate Laos (see discussion in Timmins & Trinh Viet Cuong 2001) and, true to form, tail feathers of crested argus were on display in a house of the village of Ban Houayhong (at the mapped Ban Phakat, *c*.17°03´N, 106°07´E; 320m, with many higher hills around).

Apart from the quails, for which the national conservation status may genuinely be dire, this is all good news for galliform conservation outlook. Indeed, there remains, so far as I know, no evidence or credible suggestion that any of the (evergreen/semi-evergreen) forest Galliformes in Laos are under form of elevated threat relative to the other 'average' birds sharing their forests. Conservation analyses, such as species red-listing, need, if they are to serve conservation, to be accurate. If the Laos situation is representative of these species in their wider ranges, it is unjustifiable to list Siamese fireback on the international red list as Near Threatened, unless all other primarily lowland forest-dependent species of similar geographic range are so listed – because the threats to the fireback come from habitat conversion and degradation (only at extreme levels: the species persists in very heavily logged areas) which affect the whole community. This echoes the higher-altitude finding from Phou Gnouan: while it is losing galliform species, this tiny fragment is undergoing wholesale collapse of its forest bird community because it is so small. It is not in any way a barometer of national conservation status, given the large tracts of forest which persist elsewhere. It is fortunate that both the quails have large global ranges, but I often wonder about their status elsewhere, and how well known it really is. The experience with the Indian vultures *Gyps*, where the transition from abundance to great rarity occurred within a few years yet was not even noticed by most people (e.g. Prakash *et al*. 2003, Shultz *et al*. 2004), shows that even major changes in status may be hard to detect and that, when detected, prove even harder to communicate to the wider community. Given the overlap of quail occurrence with farmland, the pace of agricultural change in tropical Asia, and the grim situation of farmland birds in Europe, an Asia-wide status review of the quails could be timely.

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G@LLINFORMED COMMENTS

Black francolin and kalij pheasant in Dhading, Nepal

Wildlife traders are commonly found in the Dhading district of Nepal and some people are known to be specifically involved in the hunting and trading of black francolin *Francolinus francolinus*. The birds are sold to local traders who use caged calling males to attract other wild males in the forest. The cost of a male francolin ranges from US$40-60 in local markets. The hunting of black francolin and kalij pheasant *Lophura leucomelana* is common in the area, and kalij meat is consumed locally. The cost of a kalij ranges from US$3-5 in local markets.

Caged male black francolins are used as lures to attract wild males.
Photo courtesy of Raju Acharva Sharma

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Rare birds get private beach

A private beach is a luxury for most, but for the maleo - an endangered bird found only on the Indonesian island of Sulawesi - it's a lifesaver. In order to help the population recover, the Wildlife Conservation Society (WCS) has helped buy an exclusive stretch of sand that maleos use for nesting.

Located on the Binerean Cape in northern Sulawesi, the 36-acre beach is now owned by PALS (Pelestari Alam Liar dan Satwa), a local NGO that works with WCS to conserve wildlife in Sulawesi. The beach was purchased for approximately $12,500 with funds donated by the Lis Hudson Memorial Fund and the Singapore-based company Quvat Management. The Dutch-based Van Tienhoven Foundation also provided support.

"Protecting this beach is just the first step in what will soon be a comprehensive conservation project for the benefit of the maleo," said Noviar Andayani, Country Director of WCS-Indonesia. "Fewer than 100 nesting sites still exist throughout the bird's entire home range, so every one counts."

The maleo is a chicken-sized bird with a blackish back, a pink stomach, yellow facial skin, a red-orange beak, and a black helmet or "casque." The bird relies on the sun-baked sands of beaches or volcanically heated soils to incubate its oversize egg, which is five times larger than a chicken's. After burying the egg in the sand or soil, it moves on. When the chick hatches and emerges from the ground, it can fly and fend for itself.

Four maleo chicks were released in a ceremony held by WCS staff members and some 60 participants from local communities to commemorate the beach's new protected status. The ceremonial party also released 98 green, leatherback, and olive ridley turtle hatchlings into the surf. The beaches of Binerean Cape are an important nesting ground for all three turtle species as well as for the maleos, and WCS staff members are working to safeguard the turtle nests, which have produced some 500 hatchlings this season.

In addition to maleos and sea turtles, the beach supports a coconut farm that produces more than 10,000 coconuts per year. Funds from the harvest will be used to pay local guards to protect the beach's wildlife.

WCS has been actively protecting maleo nests since 2004, specifically by preventing poachers from illegally harvesting the eggs. This year, WCS staff in Indonesia will celebrate the release of the five-thousandth chick as part of a recovery plan for the species.

Maleo. Photo courtesy of Julie Larsen Maher/WCS

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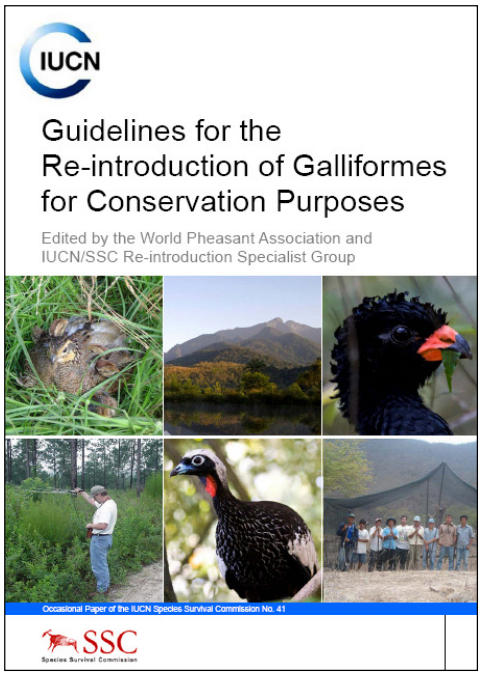
G@LLINFORMED NEWS

Guidelines for the re-introduction of Galliformes for conservation purposes



Re-introductions are increasingly being used as a wildlife management tool to restore extinct or depleted wild populations into suitable habitats. These guidelines have been developed to provide guiding principles for the restoration of viable Galliformes populations in the wild for conservation purposes. It should be noted at the outset that re-introduction is difficult, expensive and requires a long-term commitment if it is to be successful. To date few re-introductions have led to self-sustaining Galliformes populations.

The guidelines were developed by the World Pheasant Association, IUCN SSC Reintroduction Specialist Group and the WPA-IUCN SSC Galliformes Specialist Groups. They will shortly be available to download at www.pheasant.org.uk, www.iucnsscrsg.org and www.iucn.org/publications.

Executive summary from the guidelines:

Re-introductions are increasingly being used as a wildlife management tool to restore extinct or depleted wild populations into suitable habitats. The *Guidelines for the re-introduction of Galliformes for conservation purposes* have been developed to provide guiding principles for the restoration of viable Galliformes populations in the wild for conservation purposes. It should be noted at the outset thatre-introduction is difficult, expensive and requires a long-term commitment if it is to be successful. To date few re-introductions have led to self-sustaining Galliformes populations.

These guidelines provide background information on the aims and objectives of a re-introduction and the issues to consider during the planning phase. The taxonomy, ecology and conservation status of Galliformes is introduced and covers all of the sub-groups: megapodes, cracids, grouse, partridges, quails, francolins, snowcocks, guineafowl and turkeys, and pheasants.

When considering a galliforme re-introduction project for conservation purposes it is essential to look at certain key factors to ensure that the project is appropriate. These include factors such as:
- the availability of suitable habitat (including nesting grounds for megapodes);
- the identification and elimination of previous causes of decline;
- the genetic composition of individuals destined for release in relation to the wild population at release site; and
- how the project would contribute to local and national legislative objectives for biodiversity conservation.

In most cases a feasibility study would be advisable based on clearly defined aim and objectives. In addition, suitable research should be conducted into the biology of the species involved as well as the socio-economic and political issues of such a project. The pre-release and release stages should:
- develop a well-coordinated multidisciplinary team to oversee the entire project;
- fully assess all biological issues such as trapping, transport, rearing techniques (if necessary), behaviour, health and genetic screening;
- ensure adequate political support and obtain necessary licenses; and
- prepare budgets and an effective public-awareness programme.

The post-release stage should ensure that there is scientific monitoring, the evaluation of success indicators, the development of potential intervention strategies and the integration of any lessons learned into future planning for similar and/or related species.

These guidelines include a bibliography section that includes key references on the conservation status and natural history of the Galliformes in general and on re-introductions in particular. There are nine appendices: a list of all known Galliformes species and their IUCN Red List categories, an example of a budget for a re-introduction project, guidance on live trapping, transport, rearing techniques, marking techniques, contact information for Galliformes studbooks, glossary of terms, and a list of Galliformes symposia held to date.

Guidelines citation:
World Pheasant Association and IUCN/SSC Re-introduction Specialist Group (eds.) (2009). *Guidelines for the Re-introduction of Galliformes for Conservation Purposes*. Gland, Switzerland: IUCN and Newcastle-upon-Tyne, UK: World Pheasant Association. 86pp.

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Proceedings of Gamebird 2006 - A Joint Conference Quail VI and Perdix XII

Proceedings from the Gamebird 2006 conference will shortly be available online. A list of papers included in the document can already be viewed at http://gamebird.forestry.uga.edu/quailvi. The full Proceedings will soon be downloadable from the website as will the enclosed individual papers.

Proceedings Foreword:

In his concluding remarks in Quail IV, John Roseberry stated, "the ultimate challenge for quail conservation was to change how society managed its forests and fields if bobwhites are to remain a widely hunted game species". He predicted that with on-going research we will have the knowledge to produce locally abundant quail populations, even record numbers, but recovering quail at a landscape scale is a daunting, perhaps impossible, dilemma for researchers, managers, and policy makers. At this meeting, Dick Potts lamented on the decline of Grey Partridge in Europe, from millions to tens of thousands, even though intensive management can demonstrate restoration to "Edwardian" numbers. The continents and species may differ, but the tune is the same. The challenge for the recovery of these flagship species, not to mention the hundreds of less prestigious Galliformes, is what biologists around the world face and rendered an excellent rationale for hosting a National Quail Symposium and Perdix Conference simultaneously, now 3 years ago.

I met John Carroll and his family on my first visit to the Game Conservancy Trust in 1997 just as he was leaving to head to the University of Georgia to start a game bird program. It was a trip that my boss, at the time Lenny Brennan, supported and encouraged. Since then we have collaborated on dozens of research projects. This is to say, that while game bird management is a small world, one purpose for combining these symposia was to make it a tad larger for all attending. In this volume there are presentations from 8 countries and 3 continents. From the EU, information on conservation headlands to biodiversity plans and from the US farm and forest

management to NBCI are presented as shared visions for conservation. There is important information on the efficacy of management techniques, and interestingly re-introduction and translocation practices are tested, which is likely to become an important conservation practice for some species. As a game bird biologist, it is more than just a novelty to learn about how others approach management of their wildlife resources, it is another window into what drives game bird populations which makes us all better biologists. One of the highlights of the meeting itself was the panel presentations and discussion on the effects of radio-transmitters on quail as it is vital that our methodology remains as unbiased as possible.

The editors of this symposium deserve credit for their breadth of knowledge to review and edit manuscripts from species around the world. They have done an outstanding job elevating the quality of the science for a span of disciplines. Probably one of the greatest testaments to the resurgence in research on game birds is the number of bright and ambitious graduate students attending, and in this case, running the meeting as well. Certainly, they do the lion's share of the work in developing game bird knowledge and in this case pulling together the symposium for publication. I toast their dedication and thank all the presenters that took the time to make GameBird 2006 a success. With our collective efforts perhaps the challenges outlined by Roseberry and others before him can be met.

Bill Palmer, Ph.D.
Game Bird Program Director
Tall Timbers Research Station
Tallahassee Florida

Proceedings citation:
Cederbaum S.B., Faircloth B.C., Terhune, T.M., Thompson J.J., Carroll J.P., eds. Gamebird 2006: Quail VI and Perdix XII. 31 May - 4 June 2006. Warnell School of Forestry and Natural Resources, Athens, GA, USA. 505p. ISBN: 978-0-9703886-2-9 (cd) and 978-0-9703886-1-2 (printed)

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FUTURE EVENTS

5th International Black Grouse Conference in Europe
Bialowieza, Poland 5-9 October 2009

The first International Black Grouse Conference was organized in Belgium, in 2000. Since then the conferences have been organized in different countries to gather black grouse specialists from across Europe. The 5th meeting will be held in Poland. The Polish Society for Birds Protection (PTOP) is pleased to invite you to the 5th European Conference Black Grouse Endangered Species. The conference will be held in Białowieza, Poland, between 5th and 9th October 2009. We hope that the conference will be a great opportunity to discuss the present situation of the black grouse in Europe and further initiatives concerning the protection of this species and its habitats.

For more information please visit http://www.gct.org.uk/gsg/pdf/2announcement.pdf or contact Anna Suchowolec, email: blackgrouse@ptop.org.pl, tel: 0048 856642255

5th International Galliformes Symposium
Chiang Mai, Thailand October/November 2010

Plans for the next WPA International Galliformes Symposium (October/November 2010) in Thailand are well underway. Thailand has a rich diversity of galliform species, ranging from the threatened green peafowl, Mrs Hume's pheasant and chestnut-headed hill-partridge, to the relatively common Siamese fireback, scaly-breasted partridge and silver pheasant. We hope that there will be opportunities to see some of these, or at the very least experience the habitats in which they occur, during the latter part of the symposium or on the post-symposium trips.

Details can be found in *WPA News 83* (Summer 2009), but briefly, the symposium itself will be held in Chiang Mai, the country's northern capital and will be followed by a few days in the mountains to the north which will be our base for various short excursions. These parts of the symposium will allow us to spend time hearing about and discussing the most up-to-date news and views on conservation work underway. There will be pre- and post-symposium tours and we are currently in the process of arranging them.

For more information and to complete an expression of interest form please visit the WPA website www.pheasant.org.uk or contact the WPA office office@pheasant.org.uk

G@llinformed

Newsletter of the
IUCN-SSC/WPA Galliformes Specialist Group

Issue 2 ***December 2009***

Contents

FROM THE CO-CHAIRS

We are continuing to increase our start-up membership of c.250. Many thanks to those of you who have nominated the newcomers – this can only strengthen the GSG's capability as a whole. We have added Luis Fabio Silviera (University of Sao Paulo, Brazil) to our Co-chairs' Advisory Board (CAB) to represent the cracids, and to share responsibility for South America with Jeff Thompson and his tinamous. For China we are glad to welcome Zhang Yanyun (Beijing Normal University) to the CAB, and New Palaearctic and Nearctic grouse representation comes from Gilbert Ludwig (University of Jyväskylä, Finland) and Brett Sandercock (Kansas State University, USA), respectively. The CAB now comprises of the following:

Co-chairs Advisory Board member	Role/area of expertise
Peter Garson peter.garson@newcastle.ac.uk Newcastle University, UK	Co-chair Pheasants Project proposal processing
Ilse Storch ilse.storch@wildlife.uni-freiburg.de University of Freiburg, Germany	Co-chair Grouse
Gillian Baker baker_gillian@yahoo.co.uk UK	*G@llinformed* co-editor Megapodes
John Carroll jcarroll@warnell.uga.edu University of Georgia, USA	PQF North America In situ technical training
Rene Dekker dekker@naturalis.nnm.nl Naturalis Museum, Netherlands	Megapodes
Richard Fuller r.fuller@uq.edu.au University of Queensland, Australia	PQF Red List assessments
Alain Hennache alain.hennache@wanadoo.fr France	Ex situ conservation
Rahul Kaul rahul@wti.org.in Wildlife Trust of India	South Asia
Gilbert Ludwig gilbert.x.ludwig@jyu.fi University of Jyväskylä, Finland	*G@llinformed* co-editor Palaearctic grouse Population dynamics and monitoring
Eric Sande Awaiting confirmation Makerere University, Uganda	Africa
Brett Sandercock bsanderc@k-state.edu Kansas University, USA	Nearctic grouse Behavioural ecology
Luís Fábio Silveira lfsilveira@uol.com.br University of São Paulo, Brazil	Cracids South America
Jeff Thompson jthompson.inta@gmail.com National Institute of Technology and Agribusiness, Argentina	Tinamous South America
Zhang Yanyun zhangyy@bnu.edu.cn Beijing Normal University, China	China

Please contact members of the CAB directly with questions, comments etc relating to their areas of expertise.

Michele Loneux (Belgium) has already reworked the Grouse Group website and has kindly volunteered to set up a new site for the GSG, on top of this. Through GSG

members some artists are currently working on a new logo design for us which should soon see the light of day.

Several of you kindly offered to assist with the production of future issues of *G@llinformed*. For the immediate future we have asked Gilbert Ludwig to take on this task together with Gillian Baker (UK). We should all be grateful to them for offering their time in order to carry out this most vital of functions for the GSG.

At present we have no action plan, except for grouse. Without one we have no objective means of deciding what our most urgent causes should be. With 72 of our 286 species threatened, we do need some means of prioritising our collective effort. At Newcastle University (UK), Lowell Mills has been working as a volunteer intern since October with Peter Garson. We are developing a logical framework through which we can establish our priorities for new work at the global, regional, strategic and species level. This system will start by ranking the extent and reliability of our data on the status of and threats to all our species. We are also assessing how much conservation action has been undertaken, how well this is linked to our knowledge of status and threats, and what has happened as a result. Our aim is to audit what we know and how we are applying that knowledge to conservation action at the species level, against the background of SSC's preferred analysis tool: the 'State (status)-Pressure (threats)-Response (action)' model. The raw data for our species comes from the current accounts on the IUCN Red List website (http://www.iucn.org/about/work/programmes/species/red_list/) and BirdLife International's World Bird Database (http://www.birdlife.org/datazone/species/index.html). Collectively we have contributed substantially to the compilation of the accounts on all our threatened and many Near Threatened species, through our earlier Action Plans (http://www.iucn.org/about/work/programmes/species/publications___technical_documents/publications/species_actions_plans/) and via the Threatened Galliformes Forum (http://www.birdlife.org/action/science/species/global_species_programme/gtb_forums.html), jointly moderated by WPA and BirdLife. Thus our own and other information has already been neatly packaged, making Lowell's job of extracting what we want for this exercise a great deal easier. We will make our analyses and conclusions available to you as they emerge, in the hope that with your feedback we can produce a list of activities with international priority as soon as possible. This will be our new Action Plan, which we should all strive to implement through writing proposals for donors and then carrying out this most urgent work. We are responsible for one of the most threatened families of birds: they desperately need our help, so we should try to deal with the most urgent cases as soon as possible.

Meanwhile three of our most threatened species are already heading for more attention thanks to funds raised by WPA. Key GSG members are being invited to participate in 'Strategic Planning for Species Conservation' workshops on Djibouti francolin (CR), Trinidad piping-guan (CR) and maleo (EN) in the first half of 2010. These workshops are designed to produce SSC's new species action plans, concentrating on reviewing the state of play with all stakeholders in order to plan realistically for the future (see http://cmsdata.iucn.org/downloads/scsoverview_1_12_2008.pdf).

As ever, out there in the network, you have been busy planning more new work. Since July we have received the following proposals for review:

- Robert Kizungu (Uganda): *Ecology of handsome francolin in Kahuzi Beiga NP, eastern DR Congo*.
- Francis Buner (UK): *Pilot study on radio satellite tagging western tragopan in Palas Valley, Pakistan*.
- Naeem Awan (Pakistan): *Status survey and identification of key areas for the conservation of western tragopan in Jhelum Valley, Azad Kashmir, Pakistan*.
- John Corder (UK): *Importation of eggs of endangered species from China to support existing populations of endangered pheasant species in captivity in Europe*.
- Rijan Tamrakar (Nepal): *Monitoring cheer pheasants and assessing human impacts in Dhorpatan Hunting Reserve, Nepal*.
- Paras Singh (Nepal): *Baseline study of Income Generating Activities (IGAs) in upper Seti Khola, Annapurna Conservation Area, Nepal*.

- Justus Joshua (India): *Assessment of distribution and population status of Galliformes in the Southern Arivalli Hills, Rajasthan and Gujarat, India*.

As yet, none of these has been endorsed by the GSG and most are now being revised and checked following feedback from reviewers: thanks to all those of you who have contributed to this important process. Past experience has shown how much this improves the quality of the work that is eventually done. We also know that SG endorsements greatly increase the likelihood of external funding for your projects, so this is a process well worth going through, even if it takes more time and may be a bit painful!

Moving to the endpoint, meaning publication, we were happy to receive the following two final reports since July, on previously endorsed projects:

- ✓ Poorneshwor Subedi (Nepal; poorneshwor@yahoo.com): *Monitoring of yarsagumba Cordyceps sinensis harvesting and assessing its effects on pheasants and the livelihoods of local people at Pipar, Nepal*.
- ✓ Samya Basu (India; samyabasu@hotmail.com): *Participatory conservation of pheasants and their habitats in Singhalila National Park, Darjeeling, India*.

Finally we thank Natalie Clark and WPA once again for helping us through our first year. Now we must fledge with the help of our CAB members and our new editorial team for *G@llinformed*.

Many thanks to all of you who contributed to this second issue of *G@llinformed*. We are immensely pleased to have had such a good response to our calls for reports, comments, announcements etc. Please do keep them coming in for issue three, due out in May/June 2010.

Please send all comments, ideas, articles etc to gsg@pheasant.org.uk

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THE IUCN RED LIST: PLANS AND ACTION

RED LISTING BIRDS: HOW BIRDLIFE AND THE GALLIFORMES SPECIALIST GROUP WORK TOGETHER

The IUCN Red List is generally regarded as the most objective and authoritative system available for classifying species in terms of their risk of extinction, and it is used widely as an effective tool for guiding nature conservation. Species are assigned to Red List categories (ranging from Least Concern to Extinct) through detailed review of information against a set of objective, standard, quantitative criteria. Over the last few years, the IUCN Red List has been developed into a global programme to monitor the extent and rate of biodiversity degradation. The programme is currently overseen by a number of partner organisations including the IUCN Species Survival Commission, BirdLife International, NatureServe, the Center for Applied Biodiversity Science at Conservation International and the Zoological Society of London, with additional partners being recruited. Red List Authorities (RLAs) are appointed to ensure consistent categorisation between species and groups. A Red List 'Standards and Petitions' subcommittee monitors the process, resolves challenges and disputes to listings, and produces guidelines on the application of the Red List categories and criteria.

BirdLife International is the RLA for the world's birds. In this capacity BirdLife has worked with others to assess all 10,000 bird species against the IUCN Red List categories and criteria five times since 1988, most recently published in *Threatened birds of the world 2008* (CD-ROM) and released over BirdLife's website on its datazone at www.birdlife.org and on the 2008 IUCN Red List at www.iucnredlist.org.

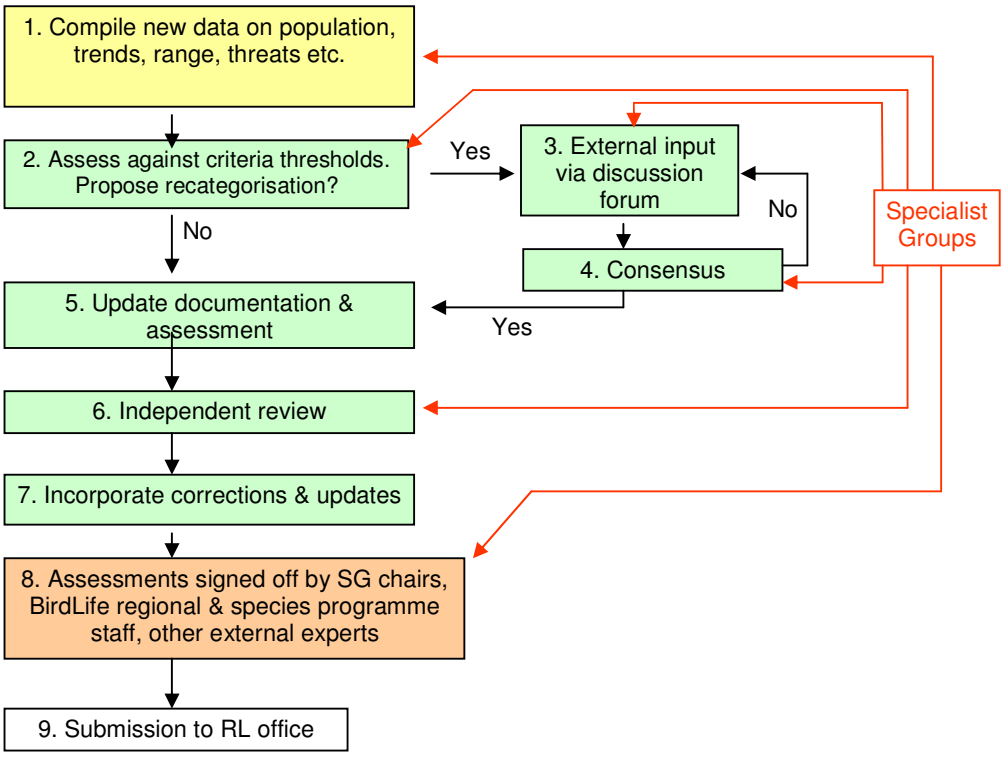
As the RLA for birds, BirdLife has a long history of working closely with the various bird specialist groups (SGs), including the IUCN-SSC/WPA Galliformes Specialist Group (and the individual groups that were its forebears). In this article we review the Red List process for birds, how the specialist group and its members can get involved and contribute to this process, and how contributions are credited and acknowledged. This is timely given a number of recent developments including the reconstitution of the group, revisions made by IUCN to aspects of the Red Listing process and associated terminology, changes to the IUCN Red List website and planned upgrades to the BirdLife datazone 'species factsheets', as well as the underlying databases that feed these.

The Red Listing process for birds

IUCN requires Red List assessments to be supported by extensive documentation including population and range sizes, trends, distributions, life history, ecology, habitats, utilisation, threats, actions underway and actions needed. Data have to be supplied in database format, including textual accounts, numerical data (with data quality, data derivation, justifications and sources), coded data, completed threats, actions, habitats and utilisation classification schemes, plus GIS shapefiles of distributional ranges. It is the role of BirdLife as the RLA to supply the assessments for birds (categories and criteria) with the required documentation and to ensure that, as far as possible, data are accurate, up to date and consistent between species in different taxonomic groups and regions.

BirdLife also has a responsibility to determine the taxonomic list of species assessed, and to ensure this matches the IUCN taxonomic standards. In 2000, BirdLife used Sibley and Monroe (1990, 1994) as its baseline taxonomy, but this is now considerably out of date. When the Red List for birds was updated for the comprehensive reassessment of all species in 2004, no adequate globally consistent taxonomic checklist was available. Consequently BirdLife developed its own taxonomic checklist based on a compilation of regional taxonomies (such as the AOU's South American Classification Committee's list). In general, any taxonomic revisions proposed since the publication of the adopted regional sources are only followed if they have been published in peer-reviewed papers and if they meet BirdLife's guidelines for recognising species limits (details of which are in a paper in preparation). To download the BirdLife world checklist and for a full explanation of its basis see http://www.birdlife.org/datazone/species/taxonomy.html.

BirdLife proactively coordinates a reassessment of all species every four years (most recently in 2008 and next scheduled for 2012), and reactively responds to new information in ad-hoc reassessments on an annual basis (typically c.100-200 species per year). The process involves inputs at different stages from thousands of individuals and hundreds of organisations, ranging from professional to amateur, and covering all parts of the world. Bird SGs, including the Galliformes SG, play a key role in the process, as outlined in the diagram below.



The steps taken by BirdLife and the SGs when reassessing species on the Red List

These steps are amplified below.

1. New data on parameters relevant to Red Listing (eg population size, trends, distribution, threats etc) are extracted from the scientific literature and a variety of other sources. BirdLife continually reviews new issues of c.200 relevant periodicals, and any new ornithological or conservation books and reports, grey or unpublished literature and email correspondence. Over 2,800 new published sources and 3,000 unpublished reports were reviewed for the 2008 update, and the 2008 Red List assessments for birds cite a total of 12,500 references.
2. These new data are reviewed against the IUCN Red List categories and criteria for each species to see if they suggest new parameter estimates that cross Red List criteria thresholds, and hence imply that a recategorisation may be appropriate.
3. Any such potential recategorisations are posted, species by species, on BirdLife's web based discussion forums (at www.birdlifeforums.org). These are organised taxonomically and regionally (with species duplicated between the two), including a forum for Galliformes. On each forum, topics are posted for each species outlining the current Red List category, criteria and underlying parameter estimates, the relevant new information or opinion, the potential implications in terms of criteria and categories, and a final request for further/additional relevant data, information and comment. Input and contributions to the topics are proactively solicited by forum moderators (from individual experts, networks and through e-lists etc), but anyone can post a contribution; this makes for an open and transparent system.

4. Topics are posted up throughout the year, but there is an annual cycle so that preliminary decisions are made (currently in November), posted up for a final opportunity for comments, and finalised (currently in December). Decisions are made by assessing contributions posted against the original proposal, and are agreed between BirdLife staff, SG chairs and discussion forum moderators.
5. For each species, textual accounts, documentation, coded fields and GIS shapefiles are edited and updated in a database and output as species factsheets with the proposed new assessment.
6. Completed species factsheets are sent out for external review by 1-5 reviewers, for checking of accuracy and the latest information (the extent of this stage is funding-dependent: in 2004, funds only permitted this step to a limited degree; in 2008, all threatened species were sent out for external review).
7. Corrections and updates are incorporated, and final edits made to each account.
8. Final checking and consistency checks are carried out, and assessments are signed off by *Assessment reviewers* (formerly known as *Evaluators*), comprising BirdLife staff, SG chairs and occasionally selected external experts.
9. BirdLife sends the assessments and supporting documentation to the IUCN Red List Unit in the required format, and responds and deals with any queries and feedback from the Red List Unit.

BirdLife also interacts with staff carrying out or coordinating Red List assessments in other taxonomic groups (eg through the Biodiversity Assessments Sub-committee and its associated Red List Technical Working Group) and with the Standards and Petitions Working Group. This is to ensure inter-taxonomic group consistency in criteria interpretation and application, underlying data used, and evidentiary vs precautionary attitude in Red Listing.

How the Galliformes Specialist Group contributes

Taking into account the structure of the newly merged Galliformes SG, and revisions made by IUCN to aspects of the Red Listing process and associated terminology, the following section describes how the SG contributes to the Red Listing process at a number of stages (numbered following the diagram above), either through its members or through its Red List focal point (Richard Fuller, see box 1).

1. SG members may send directly to BirdLife any publications, reports or personal communications with new information on species' populations, distributions, threats etc, or recommendations for revision and updates to the priority actions needed. Such new information is then reviewed by BirdLife (often in correspondence with the contributor) for any implications in terms of Red List categorisation.
2. SG members may also propose recategorisations to BirdLife directly, or via the Threatened Galliformes discussion forum (www.birdlifeforums.org) based on such new information.
3. SG members are invited by the Red List focal point to comment on all relevant proposed recategorisations on the taxon-specific discussion forum, including commenting on the interpretation of information and its application to the Red List criteria thresholds.
4. The SG Red List focal point works with BirdLife staff to review input on the Threatened Galliformes discussion forum and to propose decisions on potential recategorisations. SG members have a final chance to comment on the proposed decisions, and these are finalised through discussion between the SG Red List focal point and BirdLife staff.
6. The SG Red List focal point works with BirdLife staff to identify suitable reviewers from among SG members, who review and check revised species factsheets.
8. The SG Red List focal point signs off on the final accounts and is listed as an Assessment Reviewer.

Box 1: Who does what?

Richard Fuller, Galliformes SG Red List focal point: coordinates inputs to the Red List process from and on behalf of the SG and its members, including alerting and reminding SG members of opportunities and timelines for contributing, identifying reviewers among SG members and coordinating such review.

Peter Garson and Ilse Storch, Galliformes SG Co-chairs: oversee and steer the SG activities, including Red List work, and liaise more generally between the SG and BirdLife, and between the SG and IUCN.

Jez Bird, Global Species Programme Officer, BirdLife International: manages the Red List process, including coordinating BirdLife's threatened bird discussion forums, updating assessments with new information, ensuring global consistency in assessments in terms of interpretation of data, application of the Red List criteria etc.

Stuart Butchart, Global Research and Indicators Coordinator, BirdLife International: manages BirdLife's Global Species Programme, oversees the Red List process for birds, ensures global consistency in assessments, chairs IUCN's Red List Technical Working Group to oversee technical developments in Red Listing for all taxonomic groups and ensure consistency in assessments between them.

Philip McGowan, Director, World Pheasant Association: provides support to the Galliformes SG and input and guidance on the Red List issues, and co-moderates the threatened Galliformes forum on the BirdLife website.

Improving the process

The Red List process is continually being reviewed and improved. In order to make the most of available expertise and capacity, BirdLife and the Galliformes SG Co-chairs, with input from others, have agreed to pay particular attention to the following:

a. BirdLife will inform and remind SG members (including through the Galliformes SG Red List focal point and via the World Pheasant Association [WPA]) of annual and quadrennial plans, timetables and deadlines, and opportunities and processes to which SG members can contribute. The SG Red List focal point will target particular SG members to encourage them to contribute.
b. BirdLife will consult with the SG Red List focal point to agree on proposed and final decisions regarding potential recategorisations posted on the threatened bird discussion forums.
c. BirdLife will work with the SG Red List focal point to finalise the expert reviewers identified for each species and the SG chair Red List focal point will proactively encourage relevant SG members to participate in the review phase.
d. BirdLife will identify the Red List focal point as an *Assessment Reviewer* and will provide the opportunity to 'sign-off' on all Galliformes accounts.

Acknowledging contributions to the Red Listing process

For several years, BirdLife has acknowledged the contributions of individuals on the species factsheets on www.birdlife.org, and in *Threatened birds of the world*, in three different ways:

a. Anyone who has contributed data, information, relevant comments etc, either directly to BirdLife or via the discussion forums, or who has provided reviews, corrections or updates are listed as *Contributors*.
b. Individuals who compile and edit the textual accounts (which may include SG representatives or nominated individuals) are listed as *Assessors* (previously termed *Compilers*).
c. SG Chairs, Red List focal points or selected external experts in the Red List assessment process who sign off on the validity or rigour of the process, adequacy of the documentation, correctness of the criteria/category and consistency of categorisations across species and within/across regions/taxonomic groups are listed as *Assessment Reviewers* (previously termed *Evaluators*).

All *Contributors*, *Assessors* and *Assessment Reviewers* are listed with their institutional affiliation on the BirdLife factsheets (formerly one institution per individual, but both institution and SG membership will become possible later in 2009). These same acknowledgements will also be reflected on the IUCN Red List website. This will require some modifications to the current IUCN system (for example, adding *Contributors* to the accounts), and it is hoped that these will be implemented throughout the course of 2009. In future, BirdLife (and IUCN) will list separately the current and former *Assessors* for an account.

The Galliformes SG and its supporting organisation, WPA, play a key role in stimulating and coordinating input through the Threatened Galliformes discussion forum; this is gratefully acknowledged on the forum homepage, which also shows the relevant institutional logos.

Final remarks

The system and process for running Red List assessments for birds is more highly developed, regularly updated, transparent and open than for any other taxonomic group, and is often held up as a model for other groups to follow. However, to work effectively, it relies on inputs from thousands of individuals and hundreds of organisations. The Galliformes SG is one of BirdLife's closest collaborators in this respect, ably supported by WPA, and we are grateful for the continued support, expertise and inputs of the SG members. It is hoped that this article provides a clear explanation of the process and opportunities to engage, and will stimulate even better collaboration in future. It is vital that we work together to reach consensus over the most appropriate Red List category with the best possible documentation for all Galliformes, in order to prioritise the actions needed to ensure their survival.

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YOUR RED LIST NEEDS YOU!

The IUCN Red List of Threatened Species determines the relative risk of extinction of the world's species. Its main purpose is to catalogue and highlight those plants and animals that are facing a high risk of global extinction, and it has been widely used to prioritize conservation research and action. Currently, about 25% of Galliformes are listed as globally threatened.

The responsibility for updating the Red List for birds falls to BirdLife International, the Red List Authority. BirdLife relies on good quality information from the field to make its assessments, so if you have any information that could be useful in assessing the conservation status of any threatened or Near Threatened species, email them at science@birdlife.org

Each year, BirdLife provides a formal mechanism for reassessing species that could potentially have changed status in the past 12 months. Suggestions of species that might require reassessment can be made to BirdLife at any time throughout the year, and if there appears to be a good case for considering a reassessment, a topic is posted in one of the Globally Threatened Bird Forums at http://www.birdlifeforums.org around September or October each year.

If you visit the forums you will notice a directory entitled Threatened Galliformes, which contains all galliform species currently being considered for reassessment. The following proposals are up for discussion this year:

1. Downlist Elliot's pheasant from Vulnerable to Near Threatened
Elliot's pheasant *Syrmaticus ellioti* is endemic to south-east China, where it has been recorded from Guizhou, Hubei, Anhui, Zhejiang, Fujian, Jiangxi, Hunan, Guangxi and Guangdong. It is currently listed as Vulnerable under criterion A of the IUCN Red List categories and criteria (v3.1 can be downloaded from www.iucnredlist.org) because it was believed to be declining rapidly within its highly fragmented habitat and may no longer occur at many former localities. However, considerable survey effort over 20 years in China suggests that the species is relatively widespread: in recent years, its known range has been greatly extended to the west and there have been reports that it is locally common. Based upon estimated population densities the global population size may exceed 100,000 (even approaching 200,000) individuals (J. Fellowes in litt. 2007; He Fen-qi in litt. 2007). Habitat loss was believed to have resulted in a rapid population decline. Clearance of natural forest has been illegal since 1998 and, although hunting is also a factor at a local level, it seems that what were previously assumed to be rapid population declines are now slower. Consequently the species may warrant downlisting to Near Threatened if its population has declined by less than 30% (but greater than 20%) over the past 15 years (three generations based on a generation time of 5 years, BirdLife International unpublished data). Comments on population trends and this proposed reassessment are welcomed.

2. Downlist ocellated quail from Near Threatened to Least Concern
Ocellated quail *Cyrtonyx ocellatus* has a moderately small range and a small population; it occurs from south Mexico through Guatemala, El Salvador and Honduras to north Nicaragua. It has an estimated Extent of Occurrence (EOO) of 131,000 km^2. For a discussion of measuring geographic range size, including the distinction between EOO and Area of Occupancy (AOO) see Gaston, K.J. & Fuller, R.A. (2009) The sizes of species' geographic ranges. *Journal of Applied Ecology*, 46, 1–9.

Note: This species is part of a large number of species listed as Near Threatened on the IUCN Red List because they were thought to have a restricted range that approaches the threshold for listing as Vulnerable (<20,000 km^2), combined with severely fragmented habitat or occurrence at approximately ten or fewer locations and a continuing decline in their habitat, population size or number of locations/sub-populations. However, all have been mapped by Natureserve/BirdLife International as having range sizes of >50,000 km^2; hence they do not appear to approach the IUCN thresholds and seem to warrant downlisting to Least Concern. However, if the species have experienced declines over the

past three generations approaching 30% they may warrant listing as Near Threatened under the A criterion (population declines). Given their relatively large range sizes it seems unlikely that any of these species will have populations approaching 10,000 mature individuals so they would not qualify as threatened or Near Threatened on population size under the C criterion.

The geographic range maps for all western hemisphere birds generated by NatureServe are available at http://www.natureserve.org/getData/birdMaps.jsp

3. Information needed to potentially uplist Swierstra's francolin from Vulnerable to Endangered

Swierstra's francolin *Francolinus swierstrai* is currently listed as Vulnerable on the IUCN Red List under criteria B1a+b(i,ii,iii,v) and C2a(i) owing to its presumed small and highly fragmented population. While there is an extreme lack of information there is the distinct possibility that the species is more threatened than currently reflected by this listing. The species is historically known from a fragmented range of 18,500 km^2 from Tundavala in Huila District north to Cariango in Cuanza Sul District, on inselbergs in Huambo District and in the Bailundu Highlands, western Angola (Mills 2007; Bull ABC 14(2): 175-180). There were no records of this species between 1971 and 2005, when c.10 individuals were recorded (seven birds were seen and another pair or group were heard) at Mts Moco and Soque. Mt Moco in the Bailundu Highlands is thought to be the most important remaining site of its conservation and is the area with the most forest remaining, but only c.15 patches of true Afromontane forest survive (1-15 ha), all in deep ravines, although there are other more extensive patches of sub-montane forest in western Angola. Consequently it seems likely that the extent of suitable habitat is very small and we can infer from this that it must have a very small AOO. If the AOO is believed to be <500 km^2 the species would qualify for uplisting to Endangered under B2a+b(ii,iii,v) owing to the suspected population decline as a result of ongoing habitat loss within its range. If the occupied area is indeed this small the population estimate of 2,500-9,999 mature individuals may also need revising and potentially the species meets the threshold for listing as Endangered under criterion C2a(i) with a population of <2,500 mature individuals and all sub-populations supporting <250 individuals. Comments on the extent of suitable habitat (and any assessments of this) as well as the likely population size are welcomed to improve this assessment.

4. Uplist wattled curassow from Vulnerable to Endangered

Wattled curassow *Crax globulosa* is currently classified as Vulnerable on the IUCN Red List under A2b,c,d; A3b,c,d; A4b,c,d; C2a(i) because a rapid and ongoing population decline (equating to >30% over 10 years) has been suspected based upon rates of habitat loss and hunting pressure, and because the population size is estimated at 2,500-9,999 individuals (based upon an inferred population density of 1-5 individuals/km^2 x 2,800 km^2 [10% EOO] = 2,800-14,000 individuals; the population density range is from the lowest up to the lower quartile estimates for three curassow species in the BirdLife Population Density Spreadsheet). The species' known and projected range is currently estimated at 28,000 km^2 (see figure 1). Comments on the map and whether the true range may lie below 5,000 km2 are needed as this would qualify the species as Endangered under B1a+b with a severely fragmented population experiencing continuing declines. H. Aranibar-Rojas in litt. (2008) calculated a total area of optimal habitat within the species' global range of just 366 km^2; this constitutes an AOO of <500 km^2 which suggests the species may qualify as Endangered under criterion B2a+b. H. Aranibar-Rojas in litt. (2008) compiled density estimates between 0.64 and 4.6 ind/km^2 (Chand et al. 2007; Hill et al. 2007). Extrapolating these for an AOO of 366 km^2 he estimated global population would be in the range of 238 to 1683 individuals, while R. McLeod in litt. (2008) estimated a global population of 500 to 2500 mature individuals based on occupancy of 1-2% of the EOO and a population density of 4.6 and 3.5 adult per km^2. This is consistent with the known population sizes of 0 in Ecuador, 50 to 100 in Columbia, 100 to 150 in Bolivia, <300 in Peru, and c. 1000 from Brazil. These population estimates suggest the species could qualify as Endangered under criterion C2a(i) if all sub-population support <250 mature individuals. The species also appears to be declining rapidly owing to hunting pressure, invasive mongoose and degradation of marshland habitats by fire. Brooks (2006) proposes uplisting wattled curassow to Endangered under A2b,c,d implying an estimated decline of >50% over the last decade.

Trends should be calculated over the past three generations (34.5 years based on a generation length of 11.5 years; BirdLife International unpublished data). If declines over this period have exceeded 50% the species also qualifies as Endangered under A2, or if its population has declined by more than 80% over the same period it would warrant uplisting to Critically Endangered. Comments on the rate of population declines, the global population size and its current distribution are welcomed in order to reassess this species.

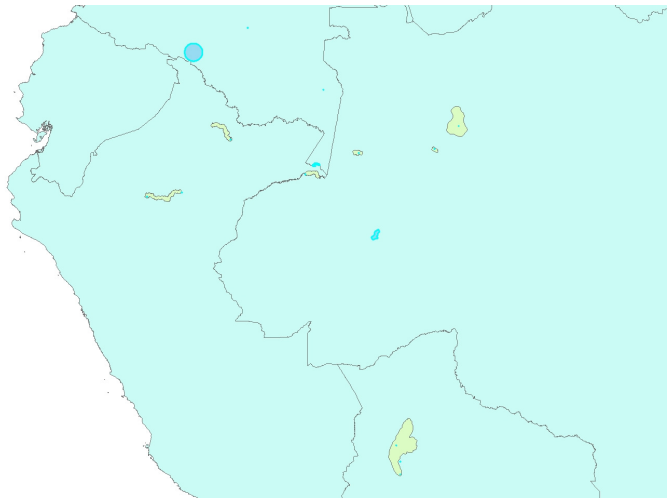

Figure 1 Current known distribution of wattled curassow. Highlighted polygons are known range, the others represent probable range.

5. Information required on Japanese quail and blue quail

Japanese quail *Coturnix japonica* and blue quail *Coturnix chinensis* are both currently treated as Least Concern on the IUCN Red List because they have large global ranges centred on East Asia and South Asia/South-East Asia/Australia respectively. They are consequently assumed to have large global populations. No threats have been previously identified for these species so while the relative reduction in the number of records of Japanese quail has led to a suspected population decline, blue quail is assumed to be stable. Duckworth (2009) reports a failure to find *Coturnix* quails in the Latsen grasslands, Lao PDR, where both species were previously common. Brickle et al. (2008) highlighted the paucity of recent records in Indochina of both species with only blue quail still seasonally abundant in the Tonle Sap inundation zone, Cambodia. There appears to have been a genuine decline in abundance (Duckworth, 2009) but whether this is over a time frame that means declines approach the thresholds for listing as threatened under criterion A of the IUCN Red List is less clear (>30% over ten years). Duckworth (2009) points out that given the overlap between quail occurrence and farmland, the pace of agricultural change in tropical Asia and the declines witnessed in European farmland birds a status review of these quails is timely. In response, this topic seeks to gather new information on the rate of agricultural intensification within these species's range. Comments on likely population declines owing to agricultural changes over the past ten years are welcomed.

Brickle, N. W., Duckworth, J. W., Tordoff, A. W., Poole, C. M., Timmins, R. J. & McGowan, P. J. K. (2008) The status and conservation of Galliformes in Cambodia, Laos and Vietnam. *Biodiversity and Conservation* 17: 1393-1427.

Duckworth, J. W. (2009) Recent observations of Galliformes in degraded parts of Laos. *G@llinformed* 1: 18-20.

If you have any comments, informed opinions, or information relevant to these discussions, please consider posting to the forums – if your views are not shared in this forum, they could be overlooked in the reassessment process. While BirdLife do attempt to scan all relevant journal sources for information, they might have missed your recent paper or report that contains valuable information.

Preliminary decisions relating to these proposals will be posted by BirdLife in February 2010, at which point there will be an opportunity for final input from anyone with further comments or information. Forums will be closed toward the end of February 2010, and the decisions will pass into the Red List. So visit http://www.birdlifeforums.org right now and begin making your contribution!

If you have any queries on the Red Listing process, or would like to discuss any aspect of how your information might help inform a species' conservation assessment, please feel free to email either of us.

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HAINAN PEACOCK-PHEASANT: ANOTHER CR SPECIES FOR THE IUCN RED LIST?

Taxonomy and conservation

During the long years of James L. Peters's monumental work of documentation, his *Check-list of birds of the world*, begun in 1931 and completed, 34 years after his death, in 1986, avian taxonomy was relatively stable and uneventful. The great period of exploration and discovery drew to an end after the Second World War, bird scientists found other preoccupations and taxonomy became something of an ornithological backwater. Peters's work was a massive labour of amalgamation, recategorising avian forms that had originally all been given species status into species and subspecies. In parallel with it, over much the same period of time, Ernst Mayr's Biological Species Concept (BSC) grew and developed to become the dominant idea in avian taxonomy. Indeed, after Peters's death, it was Mayr himself who oversaw the completion of the project.

Two things have dramatically revitalised avian taxonomy in the past 10–20 years. First, the seriousness of the extinction crisis has led to a growth in conservation-minded institutions and scientists anxious to ensure that as many elements of biological diversity as possible are preserved, and this has inevitably driven a greater focus on what those elements, and particularly the "important" ones, are. Second, the realisation that DNA provides the most conclusive evidence yet of the evolutionary pathways of organisms has given rise to a great industry of laboratory studies, with researchers vying with each other to produce novel insights into the origins and relationships of species, genera and families.

For conservationists, however, the most pressing concern in taxonomy remains the issue of species limits, since over the past 25 years the view has increasingly strengthened that in national and international laws the currency of biodiversity conservation is the species. The IUCN Red List overwhelmingly consists of species, not subspecies or varieties. Conventions like CITES, CMS and Ramsar all largely concern themselves with species. Domestic legislation in most countries does the same. Moreover, funding agencies take a similar view. Inevitably, therefore, the once rather sleepy issue of what constitutes a species has taken on a new, urgent importance. The situation is particularly acute in Asia, ancestral home of the pheasants, where, as I suggested earlier this century, avian taxonomy appears to lag behind the rest of the world (Collar, 2003). Asia's huge human populations and emergent economies are causing more species to be red-listed than elsewhere on the planet, at least for birds (BirdLife International, 2008), so the worry is that many taxa which, if they were in the Americas, Africa or Australia, would be treated as species are being ignored because of their continuing subspecies status, and might become extinct without any real effort being made to save them.

Peters's synthesis (to be fair, he took his cues from many others who were championing the "new" idea of subspecies at the start of the last century; and since he died in 1952 he cannot be blamed for what followed in his name) resulted in too many "lumps", ie taxa merged together as one species. Unlumping ("splitting") them has been proceeding steadily in other parts of the planet, but only slowly in Asia. The problem everywhere, however, remains how to do this. Differences of opinion have arisen between the traditional taxonomist camp, home to the BSC, and the modern camp, championing the Phylogenetic Species Concept (PSC). The BSC takes reproductive isolation as its principle (ie if two taxa fail to interbreed successfully in the wild, they are species); the PSC replaces this with diagnosability and monophyly (ie if two taxa show characters that demonstrate they have separate unmixed lineages, they are species; thus the PSC tends to raise all subspecies—certainly isolated ones—to species status). The problem with the BSC is that taxa which never naturally come into contact because of geographical isolation cannot be tested against its principle. The problem with the PSC is where to draw the line in the search for characters demonstrating monophyly (every isolated population is likely to have *one* genetic character that lets it be identified with high confidence, even if in every other respect it is identical to its neighbour).

The way forward finding widest favour is a compromise, seeking to combine evidence from as many lines of investigation as possible, thus generating a suite of characters to

demonstrate considerable evolutionary independence, so that the notion of interbreeding becomes improbable. If the evidence stacks up - for birds it could be morphological, behavioural, acoustic, ecological and/or genetic - then opinions might converge that taxon *a* should be treated as a species separate from taxon *b*. It therefore does not matter that these taxa *might* interbreed and produce fertile offspring (waterfowl and galliforms have always been a thorn in the side of the BSC on this point): it is more that they should show points of divergence that are both multiple and significant. Even so, *how much* difference makes a subspecies into a species and how do you measure it? Is one big difference more important than five small ones? How do you measure bigness or smallness anyway? How do you measure difference in behaviour or ecology, and how sure can you ever be that such differences are absolute? How do you judge degree of difference in voice? What rules are there to establish taxonomic thresholds based on genetic difference?

The case of the Hainan peacock-pheasant

This last question looms large over a paper published last year by Chang et al. (2008), who sought to use molecular markers to demonstrate that the peacock-pheasant on the island of Hainan, off the coast of China, is a full species, *Polyplectron katsumatae*, rather than a subspecies of grey peacock-pheasant *P. bicalcaratum*. The issue is far from academic: the form *katsumatae* is very rare indeed, declining from 2,700 individuals in 1990 to just 300 in 2000 (Chang et al., 2008) and therefore, depending on more recent evidence, highly likely to qualify as Critically Endangered under the IUCN criteria.

What Chang et al. (2008) concluded, albeit with caveats that more sampling is desirable, was that *katsumatae* is a species because it is monophyletic ("a distinct taxon clearly phylogenetically discontinuous from *P. bicalcaratum*") - this is the classic PSC argument - and, more significantly, because it is not as closely related to *bicalcaratum* as the latter is to mountain peacock-pheasant *P. inopinatum* (which they also sampled along with Palawan Peacock-pheasant *P. emphanum* [now *P. napoleonis*]). This second finding is, however, very difficult to explain and indeed to accept, since *bicalcaratum* and *katsumatae* are very close to each other in appearance and *inopinatum* is strongly different from both; on biogeographical grounds too it seems an entirely implausible circumstance, with *bicalcaratum* stretching across much of southern China and *inopinatum* way to the south in Peninsular Malaysia. The result is so counter-intuitive that one is forced to speculate, without any disrespect, whether conceivably an error might somewhere have been made.

However, one of the concluding caveats in Chang et al. (2008) is to call for more morphological evaluation, and here there is a real opportunity to reinforce their molecular endeavours. They make little of their own table and paragraph on the morphological differences between *bicalcaratum* and *katsumatae*, but much can in fact be inferred from them. In March 2008, in the American Museum of Natural History (AMNH) in New York, I examined the only skins of *katsumatae* that I know of outside China. The form was originally described by Rothschild (1906) as a full species. Interestingly, in his account his first comparison was not with *bicalcaratum*, and he left *opinatum* out of consideration altogether:

> *"This beautiful new species is smaller than any of its allies. It is nearest to P. germaini, from Cochin China, but that form is larger, has the eye-spots violet when held against the light, dark purplish-green when held from the light; the spotting and mottling on the back, rump, tail-coverts and underside are finer and of a different colour, and the upper throat is not pure white. P. malaccensis [sic] differs in various characters, and especially in the colour of the back, rump and upper tail-coverts being brownish-buff, with black spots, while P. bicalcaratus [sic] is larger, has purplish-violet eye-spots, a more crested and ashy-grey crown and hind-neck, and a more greyish upper surface."*

The birds in New York are the ones he had before him when he wrote his description, but it was Peters (1934) who decided that *katsumatae* was not only most closely related to *bicalcaratum* but also merely a subspecies of it. This is what (with a few exceptions) subsequent world lists, Chinese textbooks and pheasant authorities have accepted - eg

Delacour (1964), Meyer de Schauensee (1984), Cheng (1987), Sibley & Monroe (1990), McGowan (1994), Stattersfield et al. (1998), Johnsgard (1999), BirdLife International (2000), MacKinnon & Phillipps (2000), Dickinson (2003), Clements (2007) - so when I looked at the specimens in AMNH it was with material of *bicalcaratum* that I compared them. I found five clear points of difference.

1. The smaller size of *katsumatae* is remarkable (Table 1).
2. The colour of the ocelli on the wings and mantle is steel-green in male *katsumatae*, steel-purplish in *bicalcaratum* (Madge & McGowan [2002] state that the ocelli are larger with a bolder white surround in *katsumatae*, but the AMNH material did not uphold this).
3. Male *katsumatae* lack the elongate feathers of the crown in male *bicalcaratum*.
4. The crown is darker in both sexes of *katsumatae* than the neck and mantle, whereas it is paler or the same colour in *bicalcaratum*.
5. In body plumage *katsumatae* is somewhat darker, as a result of much denser vermiculations than *bicalcaratum*.

These differences all conform with the concluding comparison made by Rothschild. What, then, can we make of this evidence? How can one find a way of assessing the significance of this divergence between the two taxa?

		bill	tarsus	wing	tail
bicalcaratum (n = 9)	mean	30.2	77.0	218	397.9
	s.e.	0.40	0.97	1.59	5.17
	range	28–33	72–82	210–225	370–420
katsumatae (n = 5)	mean	25.6	64.2	182.4	279.4
	s.e.	0.66	0.86	1.54	10.74
	range	25–27	62–67	179–187	249–302
	z	45	45	45	45
	P	0.0031	0.0033	0.0033	0.001
	Cohen's *d*	3.00	5.18	8.57	5.85

***Table 1**. Mean biometrics of male specimens of Polyplectron bicalcaratum and P. katsumatae held in AMNH; z and P values are derived from Mann-Whitney U-tests.*

Working with BirdLife International, Tobias et al. (submitted) propose a system whereby differences between taxa can be scored in a transparent and repeatable manner in order to make consistent species-level judgements between all types of birds. Criteria relevant to the *katsumatae* case relate to morphometric and plumage differences. These may be classified as *minor* (score 1), *medium* (score 2) and *major* (score 3), with species status reached when character scores reach 7. Morphometric differences can be expressed as effect sizes (calculated using Cohen's *d*), with 0.2–2 for *minor*, 2–5 for *medium*, and 5–10 for *major*. A colour or pattern difference is *minor* when it is a weak divergence in a plumage or bare part feature; *medium* when a distinctly different tone to all or part of a significant area of feathering or a strongly demarcated part of these areas or bare part; and *major* when a strong plumage or bare-part character, or involving an entirely different pattern. Only the three highest-scoring plumage differences can be counted, since there is a risk that more minor characters are correlated. These values have proved robust in tests involving a set of well-accepted species and subspecies. In other words, scores of 7 and over are consistent with differences shown by accepted species, and scores of 1–6 are consistent with differences shown by accepted subspecies.

Polyplectron katsumatae scores 3 on size difference (any one of the three out of four mensural values is enough to trigger classification as a *major* morphometric difference), and, in my estimation, 2 for the male's green not purplish ocelli, 1 for lack of elongate crown feathers and 1 for either the darker crown or the more densely vermiculated body plumage. The total score comes out at 7, and the Hainan peacock-pheasant accordingly

assumes species status. This, at any rate, is how BirdLife International would now be inclined to treat it (so long as Tobias et al. is published without radical alteration), thereby supporting the position taken by Chang et al. (2008). The result would be a new species for the conservation community to have to deal with, almost certainly Critically Endangered; but WPA's track record in China is particularly reassuring in this regard, and Hainan is, of course, home to the threatened (Vulnerable) Hainan partridge *Arborophila ardens*, making it all the more important to continue to engage with conservationists working on galliforms on the island. It would be good, therefore, to reach a consensus on the taxonomic status of *P.* (*b.*) *katsumatae* as soon as possible. The few post-Peters (1934) authorities who continued to accept Rothschild's original view that *katsumatae* is a species were Beebe (1936), the Oriental Bird Club (Inskipp et al., 1996), and Madge & McGowan (2002), and it is notable that these last authors call it "severely threatened by habitat loss" and as having "suffered from neglect" as a consequence of its taxonomic status. Now is clearly the time to rectify the situation.

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Plates 1 and 2. Grey and Hainan peacock-pheasants laid out for examination in AMNH, March 2008. Photo: NJC.

Plate 3. Male Hainan (above) and grey (below) peacock-pheasants in AMNH. Note green ocelli of former. Photo: NJC

Plate 4. Male grey (left) and female Hainan (right) peacock-pheasants in AMNH. Note huge size difference between them. Photo: NJC

Plate 5. Upperparts of male Hainan (above) and grey (below) peacock-pheasants in AMNH. Note dark crown of former. Photo: NJC

Plate 6. Underparts of male Hainan (above) and grey (below) peacock-pheasants in AMNH. Note proportionately much denser vermiculations on former. Photo: NJC

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G@LLINFORMED RESEARCH REPORTS

NEW INFORMATION ON HABITAT USE BY THE CONGO PEAFOWL

New work recently published by Emile Mulotwa and colleagues (in press) has shown that Congo peafowl use both primary and secondary forest in the Salonga National Park, Democratic Republic of Congo (DRC). This new finding is important because patches of secondary or regenerating forest connecting fragments of primary forest might increase connectivity at a landscape scale by allowing movement of Congo peafowl between forest blocks, and might even support breeding populations in their own right. Such areas of secondary forest could be an important component of a conservation strategy for a rare terrestrial species that is sparsely distributed across a large geographic range.

Currently listed as globally Vulnerable in the IUCN Red List (BirdLife International, 2009), the Congo peafowl is endemic to the DRC. Although data are sparse, it is assumed to have a small population within an estimated extent of occurrence of c. 700,000 km^2. Recent surveys have revealed that large areas within the limits to its occurrence are apparently unoccupied, implying that the population is severely fragmented and exists as a series of small subpopulations (BirdLife International, 2009; Hart & Upoki, 1997).

Fieldwork took place in Salonga National Park, Africa's largest tropical rainforest reserve located in the central Congo River basin. It is remote, accessible only by air or water. Between June 2004 and November 2005, we measured relative use of two contiguous forest blocks, one patch of primary forest and another of secondary forest that has been regenerating for over 30 years. Emile spent many months in the field surveying for Congo peafowl using systematic transects along a grid, and exhaustively searching smaller areas for secondary signs of peafowl presence (feathers and droppings). Detections of secondary signs of peafowl presence were significantly more frequent in secondary than in primary forest, and 19 of the 31 sightings of birds were in secondary forest. Microhabitats used by the birds differed between forest types, with those in secondary forest being closer to the nearest watercourse, having fewer large trees, and lower plant species richness. Also, fewer taxonomic groups were found in peafowl droppings collected in secondary forest.

Congo peafowl has been reported to occur only in primary forest by several authors (Verheyen, 1963; Collar & Stuart, 1985; Urban et al., 1986; Dupain et al., 1996) though some accounts of secondary forest use do exist (Hart & Upoki, 1997). Our data show that, at least in our study area, use of regenerating forest was relatively intense, although it must be noted that the secondary forest has been undisturbed for more than 30 years, and is in close proximity to primary forest. Human access is not permitted in the national park, and personal observations suggest that levels of hunting and human disturbance are presently very low in the study area, although because of illegal poaching and encroachment, Salonga National Park still remains on the UNESCO List of World Heritage in Danger to which it was added in 1999 (UNESCO, 1999). The very low rate of visually detecting birds (one sighting per 9.03 km walked) attests to the value of searching for secondary signs of

peafowl presence to maximise the amount of data that can be generated from fieldwork time on this species.

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OBSERVATIONS OF WHITE-BREASTED GUINEAFOWL ON TIWAI ISLAND, SIERRA LEONE

As part of a study on pygmy hippopotamus *Choeropsis liberiensis*, near-infrared digital camera traps were placed in random locations on and around Tiwai Island in Sierra Leone (07°33'N 11°19'W), between November 2008 and June 2009. Cameras were set to take two photographs 10 seconds apart and could not be triggered again for an additional 60 seconds. Cameras were moved to a different location after each two-week sampling period for a total of 5 sampling periods. During the field season, we obtained photographs of a wide range of mammalian and avian species, including several threatened species. We report on new observations of the rare white-breasted guineafowl *Agelastes maleagrides*, with a total of 6 photographs taken by camera traps on 3 occasions in addition to 1 visual observation.

Tiwai Island is a unique riverine island on the Moa River (Fig. 1). It is currently one of the premier tourism, but underutilized, destinations in Sierra Leone, with a basic but comfortable visitors' centre and research station, over 50km of hiking trails, and one of the highest primate densities in the world. Eight villages protect the island from hunting, farming and logging in return for a portion of the annual visitors' fees for use in community development projects. After a decade-long civil war ended in 2002, Sierra Leone became a popular destination for bird watchers, and Tiwai Island, part of the Gola Forest Important Bird Area (IBA), is one of the top birding sites in the country.

Fig. 1. Map of Sierra Leone showing the approximate location of Tiwai Island on the Moa River.

White-breasted guineafowl are listed as Vulnerable on the IUCN Red List with a population optimistically estimated at 85,000-115,000 individuals (Birdlife, 2009). One of the two most primitive species in the *Numididae* family, this species is seldom confused with others due to its white breast and collar, naked red head, and full tail which resembles a domestic chicken (Borrow and Demey, 2001). Although the reported range of white-breasted guineafowl extends throughout the Upper Guinea forests in West Africa, their habitat seems to be restricted to remnant primary or mature secondary forests (Martinez, 1994). The population has declined drastically over the past decade most likely due to deforestation and hunting. Cote d'Ivoire is thought to contain the bulk of the population and intensive studies have been conducted in Tai National Park (Francis et al., 1994; Waltert et al., 2009). However, little is known about the species in Sierra Leone, although they have been documented in Gola Forest (Allport et al., 1989).

Although white-breasted guineafowl are believed to move in bands of 15-20 individuals, we did not capture or observe > 5 individuals in our photographs. Our first photograph was recorded on 1 November 2008 at 12:14 during the 1st trapping period (Fig. 2). This photo contains 5 adult guineafowl and was taken on a infrequently used human-made trail. The camera was located near the site of the visual observation made of 1

individual at 08:40 on 4 December 2008. On 25 November 2008, during our 2nd camera survey period, a camera captured a single photograph of 1 juvenile guineafowl at 16:12 on the east side of the island. The final photographs were taken on 6 March 2009 at 10:59 of 5 adult birds in Kanfo swamp, a cane swamp that drains during the dry season. As they are very similar, we include only 2 photographs from this event. The birds remained in view of the camera for 3 minutes and appeared to be foraging.

(a) *(b)*

(c) *(d)*

Fig. 2. Digital camera trap photos of white-breasted guineafowl (a) Five adults on human-made trails (b) Photograph enlarged to show one juvenile on the ground (c,d) Five adults feeding on the ground in Kanfo Swamp, Tiwai Island, Sierra Leone.

Our photographs, some of the few ever captured of this species in the wild, give promising evidence to the continued survival of white-breasted guineafowl in the area. Our second field season in 2010 will expand on the previous camera study by including areas surrounding Tiwai Island, including the unprotected agricultural lands situated near villages. The results of this study will give us a clearer picture of the status of wildlife in areas without official protection. Although our main project focus is the pygmy hippopotamus, we are interested in all species captured on camera and will analyze the ecology of the community in addition to that of our target species. Pygmy hippos are an umbrella species whose habitat is utilized by a variety of animals, including several Vulnerable and Endangered species. Tiwai Island, categorized as a Wildlife Sanctuary, is a convenient base to study this species' habitat use, distribution and response to human disturbance. New data could be used to support sustainable land management and conservation plans for the area and could further promote the island as a premium site for bird watchers and researchers.

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RETICULATED PYTHON PREDATION ON SILVER PHEASANT IN KHAO YAI NATIONAL PARK, THAILAND

Silver pheasant *Lophura nycthemera* have a large distribution ranging from mountains in southern China, southward through eastern Burma and most of Indochina (Johnsgard, 1999). In Thailand it is uncommon to locally common in evergreen forests of the north, north west through to the south east from 700-2000m elevation (Lekagul and Round, 1991). Although globally considered to be of Least Concern (BirdLife International, 2009) it was recently reported to be affected by climate change (Round and Gale, 2008).

Reports of predation by reptiles on pheasants are rare (Lind and Welsh, 1990; Bezy and Enderson, 2003) and generally they are considered at risk mainly to mammalian and avian predators (Gates, 1972). In this note we report on the predation of a silver pheasant by a reticulated python *Python reticulates* at Khao Yai National Park (14°26′ N 101°22′ E), Thailand, at about 850m above sea level in an area of seasonally wet, evergreen forest.

Observations

A female silver pheasant (weighing 950g) was radio-tagged on 16 April 2007 (it was flushed into a large mesh mist-net set on the ground during the last week of incubation [Dzus and Clark, 1996]). After its chicks hatched, the bird was relocated, on average, every day to collect data on ranging, habitat use, behavior and development of the chicks. The female was last located on 12 August 2007 when she was observed together with a group of siamese fireback *Lophura diardi* sympatric in the area (Round and Gale, 2008). The pheasant was relocated again on the morning of 24 August 2007, when the radio signal was detected in an area with a highly density of lianas (Fig. 1) at an elevation of 736m and at a distance of 496m from the area of the last observation. The signal was detected near a fallen tree under which we observed a reticulated python about 2m in length (Fig. 2). The python was coiled on the ground without alarm and we did not observe a pheasant shape in the python's body. We marked the location, but left the snake undisturbed.

Fig. 1. The habitat where the predation was observed

Fig. 2. Reticulated Python (~2.0m) coiled under a fallen tree.

Fig. 3. The python dung with the colour band, metal ring and radio collar inside

During the afternoon of 26 August 2007 the python was relocated, using the radio signal of the ingested pheasant's radio collar, about 10m from the point of the first observation

under a pile of dead vine. The python was still coiled in the same place when relocated on 28 August 2007. During the morning of 31 August 2007, while relocating the python, we found only its dung with the color band, metal ring and radio collar inside (Fig. 3). The python dung was collected and the still functioning radiotag retrieved.

Discussion

Predation on radio-collared animals has been sporadically reported, e.g. Malayan sun bear *Helarctos malayanus* predated by reticulated python (Fredriksson, 2005), and agouti *Dasyprocta punctata* predated by ocelot *Leopardus pardalis* (Aliaga-Rossel et al., 2006). In at least one of these cases the predation event on a radio-collared animal highlights the potential predation pressure by an unexpected predator.

This observation gives us clearer information on the nature of pheasant predators in a tropical habitat. Most pheasant predation events have been reported for ring-necked pheasant *Phasianus colchicus*, for which the majority of predators were mammalian and avian (raptors) (Gates, 1972). For those predator groups the escape strategy by pheasants and other Galliformes is usually to take sudden flight to woody vegetation or downslope in steep terrain (Lima, 1993). Although the scene of the predation event reported here was unclear, the silver pheasant might have been foraging close to the burmese python without detecting its presence and been caught after a sudden strike by the snake. A sudden strike is the classic predation strategy by cryptic large snakes, such as this python, which tend to ambush prey by relying on their camouflage (Fredriksson, 2005).

On average, digestion, nutrient absorption, excretion and defecation by a python occurs 8-14 days after feeding (Starck and Beese, 2001). As this predation event was observed for 8 days, from 24 to 31 August 2007, we can assume the predation event to have happened around the 18-23 August 2007. After predating the pheasant, the python coiled in a burrow under a fallen tree and started to digest its prey. The python had changed position when observed for the second time, most likely as the consequence of our disturbance during the first observation.

We still do not know the frequency of pheasant predation by large snakes. We also do not know what the anti-predator strategy might be. However, in any investigation of the ecological factors affecting Galliformes, the density of large snakes in the area should be considered.

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DIET AND HABITAT SELECTION IN CANTABRIAN CAPERCAILLIE: ECOLOGICAL DIFFERENTIAION OF A SOUTHERN EDGE POPULATION

Cantabrian capercaillie *Tetrao urogallus cantabricus* lives in the southwestern edge of the species range, in purely deciduous forests. In contrast, the vast majority of capercaillie populations inhabit boreal coniferous forests (Storch, 2007). The Cantabrian population shows distinctive biogeographic, phenotypic and genetic characteristics (Castroviejo, 1975; Rodriguez-Munoz et al., 2007), hence it may be expected to show substantial ecological differentiation associated with its distinctive habitat. Additionally, the species is globally classified as Endangered and the paucity of local data on its ecology hinders recommendations for a sound conservation strategy.

Resource selection is a key aspect of the ability of animals to cope with their environment, and may be used to evaluate the divergence from range-central ecological and behavioral characteristics. This is especially true in herbivorous birds like capercaillie, which need to devote much time to foraging. This is especially so in deciduous forests, where the lack of permanent food and shelter provided by conifers may determine an ecological differentiation and drive daily habitat selection.

We evaluated year-round diet selection, small-scale (daily-range) habitat selection, and trophic niche width in an area presumed to be of good habitat quality for Cantabrian capercaillie (Quevedo et al., 2006a). Our objectives were to assess the potential relationship between diet and small-scale habitat selection, and to see how this related to previous stand-scale studies (Quevedo et al., 2006b). We also evaluated the extent of diet-related ecological differentiation in this peripheral population compared with other range-central capercaillie populations.

Ecological singularities and convergences of living on the edge

Living in purely deciduous forests appears to have trophic and behavioural consequences for capercaillie. We found ecological distinctiveness based on (1) a higher reliance on ground resources (Fig. 1), (2) a broader niche width than any other European population, and (3) a higher specialisation of feeding events. This contrast appeared especially marked in winter, arguably the season with more pronounced structural differences between deciduous and conifer forests. Cantabrian birds seemingly need to move more often and farther, as opposed to behavior observed in northern populations where an animal can spend days or even weeks feeding on an individual tree (Sedinger, 1997).

Bilberry, a major source of food and shelter for adults and chicks (Storch, 1994; Wegge et al., 2005), is the only major diet resource shared with birds from the conifer domain. Hence, bilberry reliance seems to be a general characteristic of both central and peripheral capercaillie populations. Moreover, Cantabrian capercaillie positively selected this plant species in their summer diet (54% of the diet) and preferred areas richer in bilberry in winter, when it is also a major diet resource (16%).

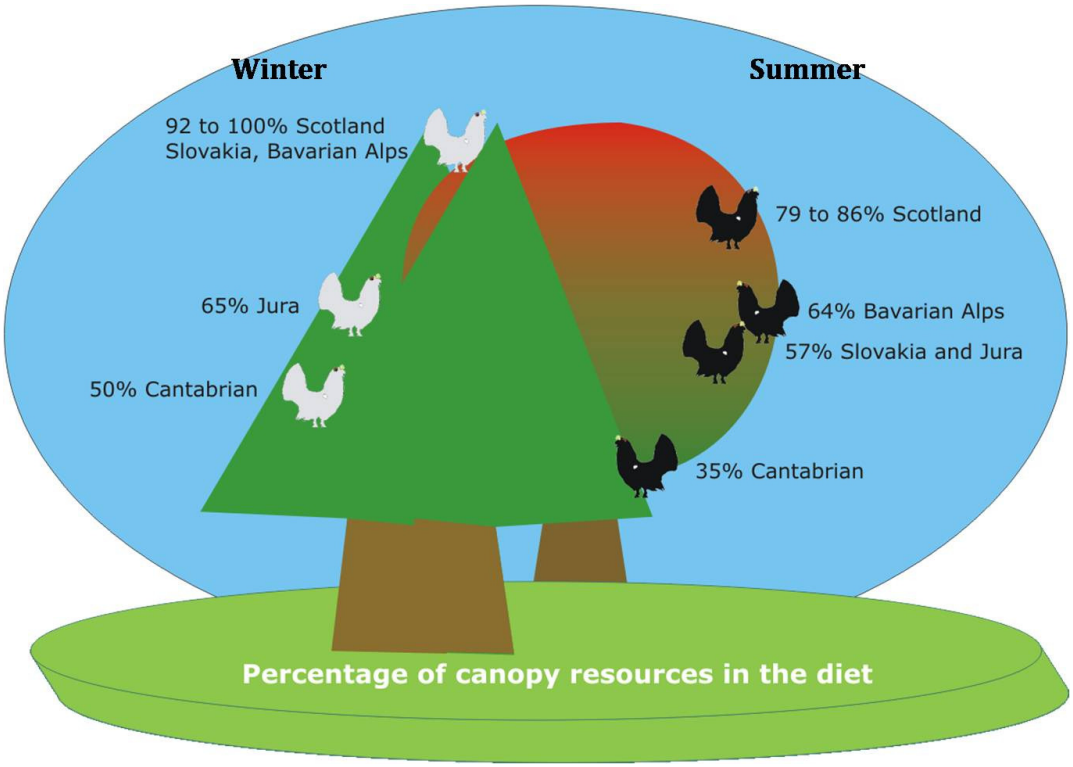

Fig. 1 Proportion of canopy resources in the diet for several European capercaillie populations. Data obtained from the following studies: Scotland (Picozzi et al., 1996; Summers et al., 2004), Slovakia (Saniga, 1998), Bavarian Alps (Storch et al., 1991), Jura Mountains (Jacob, 1988).

Diet selection as a driver of stand-scale habitat selection

Overall diet and habitat selection showed preference for beech *Fagus sylvatica*, holly *Ilex aquifolium*, bilberry *Vaccinium myrtillus* and ferns, but not for the abundant oaks *Quercus petraea*, birches *Betula pubescens* and heaths *Erica sp* (Fig. 2). We found that the strong seasonality of montane deciduous forests drives diet selection, which in turn, was found to drive small scale habitat selection. For instance, holly and beech buds were selected in winter as the only evergreen tree in the area and the first appearing buds, respectively. In late spring when bilberry unfolds its leaves, diet preferences shift towards this species, possibly preventing the use of oaks and birches.

We found stronger patterns of diet and habitat selection in spring, perhaps reflecting higher energy demands associated with the onset of the mating season while resources are still scarce in deciduous forests. Additionally, the high proportion of understory resources in the diet of capercaillie may partially explain the results of previous, larger-scale studies, which showed that stand-scale forest composition was not a key factor for habitat selection in Cantabrian capercaillie (Quevedo et al., 2006b).

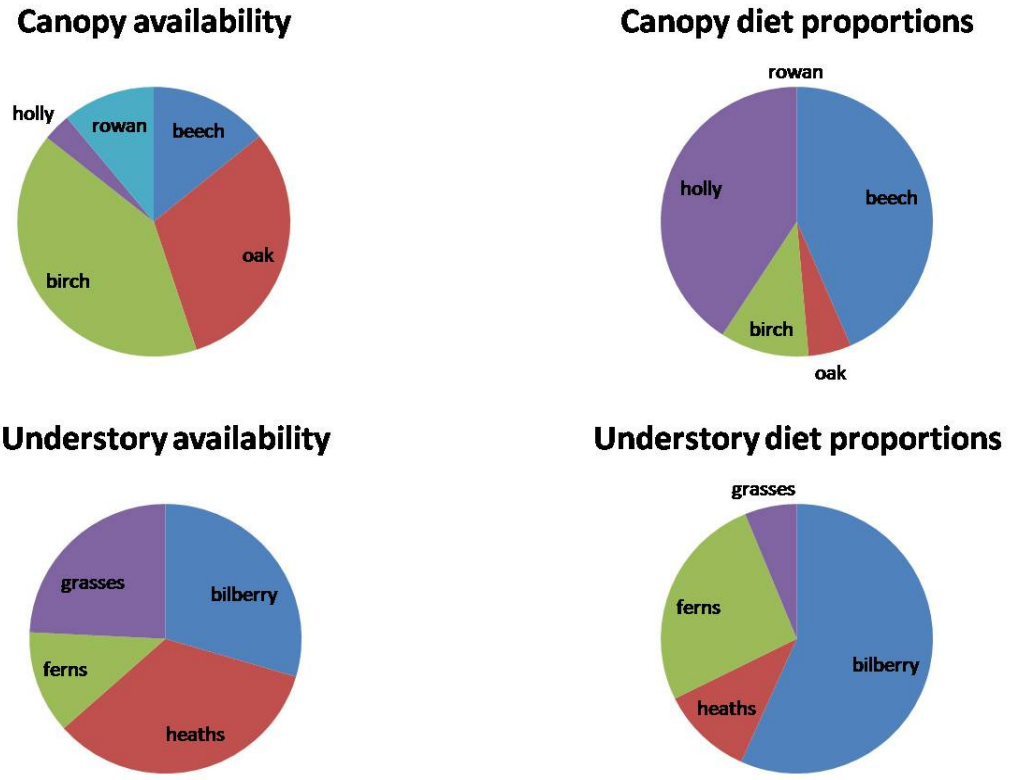

Fig. 2. Availability and year-round diet proportions of the main canopy and understory species in the study area

Conservation tips

The ecological differentiation between range-central and the Cantabrian population further stresses the singularity of the latter's population, and the need for local data and specific conservation strategies. In particular, the importance of bilberry as a key resource for capercaillie should be translated into effective measures that protect it from overbrowsing. This is a likely threat in parts of the range, where wild ungulates and especially free-ranging cattle attain high densities. We suggest that reducing the range and season over which cattle graze and trample freely within sensitive areas may help capercaillie directly by reducing competition, and indirectly by improving bilberry productivity (Tolvanen, 1994).

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STUDY COMPELTED ON THE PREFERRED HABITAT OF THE BLACK-THROATED BOBWHITE QUAIL IN THE MANATEE FOREST RESERVE, BELIZE

Although few of the species of quail inhabiting Mexico and adjacent Central America are "at risk", field studies as to their ecological requirements are scarce (Johnsgard, 1988). Most of the New World quail are assumed to be at safe population levels due to the amount of habitat remaining and the limited extent to which these species are hunted. That said, the apparent "Data Deficient" situation in which we find many of these species is unsettling. One such species within this label is *Colinus nigrogularis*. Also called the black-throated bobwhite quail, it is a fairly common resident on the mainland of Belize, inhabiting savannas and meadows. The bird is less common in secondary scrubs which border agricultural areas (Jones, 2003). This is the only quail found in the open country of Belize (Jones 2003).
Under the Wildlife Protection Act of 1981, the black-throated bobwhite quail is among six bird species that can be legally hunted in Belize. Adequate studies, however, have not been done to determine the status of this species or the habitats where it lives. The current study determined its preferred habitat in order to assist in its proper management. It followed a study on the species population status in the reserve (Eitniear et al., 2009). In this paper we share our methodology in hopes that it will stimulate conversation as to how such can be improved and adapted for use with other more forest dwelling species of quail. Since data collected is currently being analyzed future papers will be devoted to the discussion of our findings.

The overall goal of this present study is to determine the preferred habitat of the black-throated bobwhite quail in the Manatee Forest Reserve by:

1. Locating black-throated bobwhite quail and using flush points, as center points for vegetation analysis.
2. Characterizing general types of vegetation; whether it be grass, shrubs, forbs or trees, at each flush point.
3. Measuring vegetation density and canopy cover of each flush point.
4. Creating a species list of the vegetation present near each flush point through identification and collection of specimens to determine the specific composition of the vegetation type in which black-throated bobwhite quails are found.
5. Statistically analyzing the data using ANOVA

Sampling Protocol
In order to determine the habitat preference of the black-throated bobwhite quail, University of Belize student Celeshia Guy worked with local ornithologist Mr Ray Cal, in establishing flush points, by correctly identifying the black-throated bobwhite quail by both sighting and vocalization while randomly walking through the northeast sector of the reserve. Each observation/flush point of quail was marked with a red flag. Variables assessed at each flush point will allow us to determine the preferred habitat type. The general methodology being executed is similar to that of Bristow and Ockenfels (2002). At each flush point a plot ($100m^2$) with a 5.6m radius was established, which produced comprehensive information about the vegetation of the habitat. Strips lead out from the center of the flush point in each cardinal direction. This $100m^2$ plot is appropriate as the plot survey is effective for mobile species, and the $100m^2$ area is adequate for utilization by quails.

The distance from the flush point to the nearest tree was determined by using a range finder. The height and circumference of the nearest tree was also measured using a clinometer and tape respectively. This was useful in analysis as conclusions can be made between the relationship of quails and height basal area of trees.

Within the plots the number of each vegetation type was characterized at 1m intervals; for example, there are X number of grasses, forbs, trees, shrubs present. The diversity of the vegetation will also be classified, giving the number and amount of species present for each vegetation type. Voucher specimens were collected for all plant species at each flush point for ex situ identification. Data on the specific species of plant is useful in determining the specific plants the quails prefer. Other information such as date, time, weather condition, and GPS waypoint of each flush site will also be recorded

as these are physical and climatic environmental factors that affect the ecology of various ecosystems.

The vertical structure of the habitat at the flush point was measured by using a density board. This method is standard, and uses a 50cm^2 board with a 5cm grid, with increments painted alternately in black and white. The board is placed vertically at each flush point, and the observer stands 4m away from the board and estimates the amount of obstruction of the vegetation against the measurements on the board. Density of the obstruction is a good measurement, as it estimates the amount of individual/vegetation type in a unit area.

The canopy cover of quails within each plot is then assessed by walking along 25m perpendicular transects in each cardinal direction. Each 1m mark is a spot point of which the canopy cover (>10cm) will be estimated using a 0-10 scale with zero being no canopy and 10 being solid canopy.

The data collected in the field will be statistically analyzed using ANOVA. The dependent variable is continuous and the independent variable is categorical. The equality of means will be tested by vegetation characteristics at 10 flush sites randomly selected in the reserve.

While a robust literature base exists detailing methods for the study of northern bobwhite *Colinus virginianus* (and to a lesser extent the other North Temperate Zone (NTZ) species), utilizing this knowledge base to develop study plans for tropical quail is problematic. NTZ species generally inhabit grasslands or arid landscapes with four pronounced seasons. Tropical species live in dense tropical forest (often mountainous) with a dry and wet season. In addition tropical species often feed on a variety of food items including fruits, seeds and insects. Baiting and trapping with grain is often not as successful as with NTZ species. Despite the unique challenges of studying tropical species the need has never been greater as human populations expand and natural resource extraction increases. Without field data, sound management decisions cannot be made, resulting in local extirpation of species and threat level models of questionable accuracy.

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THE MASKED BOBWHITE QUAIL: A BIRD ON THE EDGE

Early settlers to the southwest USA fueled the rumors of the existence of a strikingly handsome quail with a black throat and bright cinnamon breast. This secretive and little known bird, the masked bobwhite quail *Colinus virginianus ridwayi,* was not identified and named until the late 1880s. Sadly, shortly after its discovery, the loss of its grassland habitat due to cattle grazing and prolonged drought eliminated the masked bobwhite from southern Arizona by the early 1900s. Fortunately, masked bobwhites continued to be fairly numerous in the Mexican state of Sonora as late as 1937. The effects of cattle grazing eventually caught up with the species in Mexico, and by the 1950s it was eliminated from Sonora.

The speed at which the masked bobwhite was driven to near extinction left us with little knowledge of its basic ecological requirements, which became a problem when it was rediscovered in Sonora in 1964, and the challenge of recovering this bird was initiated. To date, efforts in Arizona to re-establish a population in the wild using captive bred birds have met with no success and protecting its remaining habitat in Sonora has proven almost impossible. Adding to this dire situation was the introduction and planting of buffelgrass *Pennisitum ciliare* to increase cattle production in Sonora. Buffelgrass, an African exotic, thrives in the dry Sonoran landscape allowing cattle ranchers to maintain cattle operations in areas where native grasses have already been overgrazed or eliminated. Unfortunately, for the masked bobwhite, buffelgrass crowds out native vegetation, eliminating the diversity of native vegetation that this quail depends on for food, cover, and nesting substrate.

The combination of overgrazing, spreading buffelgrass, and drought conditions has triggered a precipitous decline in masked bobwhite numbers and distribution. Since 2006, a team of biologists has conducted masked bobwhite surveys in Sonora and southern Arizona. In 2006 only 9 masked bobwhites were detected, whereas in 2007 and 2008 only 6 were detected. The most recent surveys in 2009 resulted in no detections! For all practical purposes the masked bobwhite appears to be extinct in the wild, leaving only the captive population, making the masked bobwhite arguably one of the most endangered birds in North America.

At this point in the history of the masked bobwhite, it is perilously close to extinction. Our hopes of recovery depend on the successful reintroduction of captive bred masked bobwhite into the wild. To meet the challenge, the US Fish and Wildlife Service has assembled a recovery team made up of biologists from the US and Mexico to develop and help implement a recovery strategy for the masked bobwhite.

Masked bobwhite quail. A male and two females (left) and a female (right). Photos courtesy of Bonnie Swarbrick.

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RECOGNIZING CURASSOW DIVERSITY: *Crax fasciolata pinima* AS A CASE STUDY

The family Cracidae comprises eight genera and around 50 species that are found from southwestern United States (plain chachalaca *Ortalis vetula*) to southern Uruguay (dusky-legged guan *Penelope obscura*) where they occur in all the important biomes (del Hoyo, 1994; del Hoyo & Motis, 2004; Silveira et al., 2004; Frank-Hoeflich et al., 2007). Colombia has the greatest number of species (24), followed by Brazil with 23 species, seven of which are endemic (del Hoyo & Motis, 2004; CBRO, 2009).

Alpha taxonomy of the Cracidae is known to be confusing, with several problems (Teixeira & Nacinovic, 1997). Despite the many reviews and species lists by diverse sources (Sclater & Salvin, 1870, 1873; Vaurie, 1968; Delacour & Amadon, 1973; del Hoyo & Motis, 2004), differences in the way variation among species was interpreted has resulted in debate, which is far from settled. The genera *Penelope*, *Ortalis*, *Aburria* and *Crax* are especially confusing and the number of species varies widely among authors.

In the last 30 years, following the publication of Delacour & Amadon (1973), whose taxonomic decisions largely followed Vaurie (1968), very few species have been subject to taxonomic review, despite the clear need and many calls for such reviews (del Hoyo, 1994; Teixeira & Nacinovic, 1997, Brooks & Strahl, 2000; del Hoyo & Motis, 2004). Perhaps as a reaction to the many uncertainties with respect to the true diversity of the family, a "taxonomic consensus" was proposed (Strahl & Schmitz, 1997; Brooks & Pereira, 2006). In this consensus, researchers and those involved in captive rearing of cracids were asked to make a list of species and subspecies of the Cracidae, without a critical examination of any material in collections or justifications for the individual conclusions.

The Cracidae are an ideal model, and challenge, for a variety of taxonomic and systematic studies because they have all the problems that usually afflict taxonomists (great individual variation, plumage phases, clinal variation, small sample sizes, little known with few or imprecise descriptions, lack of type material, types for one species being attributed to another, types that do no permit a precise taxonomic identification, a large community of amateurs looking for novelties). For example, the recent descriptions of four taxa: Crax *estudilloi* Allen, 1977; *Crax fasciolata xavieri* Nardelli, 1993; *Penelope superciliares* [sic] *alagoensis* Nardelli, 1993 and *Penelope superciliares* [sic] *cyanosparius* Nardelli, 1993. We must point out, to illustrate our lack of knowledge of geographic variation and diversity, that the first two taxa are large birds (> 2 kg), and that *P. s. alagoensis* is known only from coastal forest fragments in the state of Alagoas, in Brazil (Silveira et al., 2003; Silveira & Olmos, 2003; Silveira & Straube, 2008; Silveira, 2008). Only *Crax estudilloi* was subject of additional study (Joseph et al., 1999), while the remainder await the collection of additional material to confirm (or not) the validity of the descriptions. Each of these taxa were described by amateurs and no type-material yet exists to support these descriptions.

The lack of precision in defining terminal taxa and the poor understanding of geographic distributions of the Cracidae carries with them problems for other areas of study, such as biogeography. The lack of information makes analysis difficult for modeling to understand the diversity of South American birds. Endemic cracids are found in 19 of 25 (forest) centres of endemism in South America (Cracraft, 1985).

Cracidae is considered one of the most important families in the Neotropics, and also has the greatest proportion of endangered species (BirdLife International, 2000). Around 34 species are considered to be conservation priorities (Brooks & Strahl, 2000; Silveira et al., 2005; Silveira & Straube, 2008). The correct definition of the taxa is crucial for the conservation of these species ("Taxonomy precedes conservation"; Collar, 1997: 122), and the success of conservation efforts is closely connected with the quality of the taxonomy that precisely reflects true diversity (Prum, 1994).

Today, four taxa are recognized in *Crax fasciolata spix*, 1825 (the bare-faced curassow). The formal nominate occurs, and is still common, in much of Brazil, from the state of Pará to Mato Grosso do Sul. The poorly known *Crax fasciolata grayi* Ogilvie-Grant, 1893,

is found from the Chaco in Argentina, Bolivia and Paraguay. *Crax fasciolata xavieri* Nardelli, 1993, has an uncertain distribution and its validity as a taxon is in question. *Crax fasciolata pinima* Pelzeln, 1869, is only found in forested areas in the states of Pará and Maranhão. The distinguishing characters that separate these taxa are mostly the amount of yellowish-white in the female plumage, that is apparently a clinal latitudinal variation in which southern birds are much lighter colored than northern birds. Males are essentially identical.

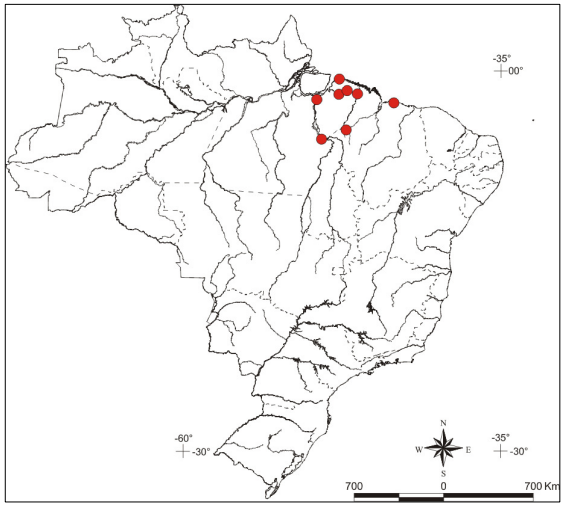

Fig. 1. Distribution of Crax fasciolata pinima (from Silveira & Straube, 2008)

In northern Brazil *C. f. pinima* is one of the least known and most threatened species in the entire Neotropical region. The species occurs in a region known as the Belém center of endemism, on the south side of the Amazon Rivers, between the Tocantins River and the western Amazonian border of the state of Maranhão (Fig. 1). This region is one of the most important in the entire Amazon basin because of the great species richness found there, including the dark-winged trumpeter *Psophia obscura*. The region is also one of the most threatened by forest loss in the entire Amazon, where ~80% has already been destroyed. The combination of great biodiversity with many unique species and the critical state of preservation make this area one of the most important in need of study in the entire Amazon.

This taxon was first described near the end of the 19th century based on a female collected not far from the city of Belém, in Pará. Since then, only 10 specimens have been collected, in only eight locations, with the last taken in the late 1970s. For many years, ornithologists and other researchers have searched for, without success, a population of this bird, which is considered one of the rarest, least known and most threatened in the Neotropics. Today it may be considered probably extinct in Pará, with some slim hope that it may still survive in some remote corner in the state of Maranhão, such as the Gurupi Biological Reserve.

How do we recognize this taxon? Clearly, its stripes and the general plumage color in the female remind anyone (even the novice) of its relationship with the nominate bare-faced curassow (*C. f. fasciolata*). However, upon closer inspection, females of this species are much darker, with very narrow stripes, practically absent in the tail (Figs. 2 and 3). In females, the crest is very different as well. Nonetheless, this information comes from the museum specimens. The photographs here are the first of live *Crax fasciolata pinima*. Observing live animals is important because many characteristics can be lost during the preparation of museum specimens. Note that the bill color is also different in the two species. Bill color was completely ignored in systematics of the Cracidae because it can only be seen in live birds (Fig. 4).

Fig. 2. Adult female of Crax fasciolata pinima

Fig. 3. (left) Dorsal view of tail feathers of Crax fasciolata pinima (right) Dorsal view of tail feathers of Crax fasciolata fasciolata

Fig. 4. (left) Head of Crax fasciolata pinima (right) Head of Crax fasciolata fasciolata

In a study of more than 150 specimens in museums, including the entire geographic distribution of the species, with analysis of dozens of individuals in captivity and in nature, we can affirm that the characters that define *C. f. pinima* do not overlap those for other *Crax fasciolata* subspecies. Bill color is also distinct and unique in *C. f. pinima*, permitting its recognition as a valid taxon. The others in the species complex (*C. f. grayi* and *C. f. xavieri*) are also being studied to attempt to better define their status. Molecular studies of all these taxa are also underway.

Taxonomic studies are important when we wish to identify evolutionary units, which then guides conservation efforts in an intelligent way. Subspecies are widely ignored in lists of endangered species and it is likely that many of them may indeed be valid taxa and endangered. The example of *C. f. pinima* illustrates well the importance of better understanding diversity, and only now will this taxon gain attention from the scientific community. This species is extremely endangered with no recent records in nature and only three known individuals in captivity in the world. Clear recognition of biodiversity is absolutely fundamental for the identification, study and conservation of evolutionary units.

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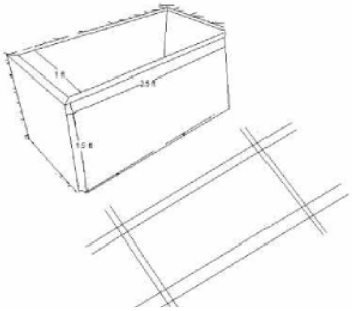
G@LLINFORMED COMMENTS/LETTERS

TRADITIONAL TRAP USED FOR CAPTURING PHEASANTS IN PAKISTAN

During a survey of western tragopan *Tragopan melanocepahlus* in Salkhala Game Reserve, a new traditional trap was discovered in June 2009. Such traps are used by hunters to capture live pheasants in Azad Kashmir. A dry pitfall trap is used by the poachers to capture pheasants which are feeding on ground.

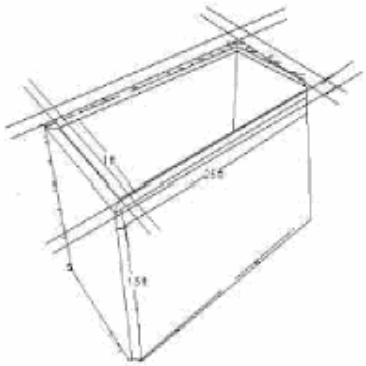
An example of a dry pitfall trap



(l-r) A sketch of the pit, dug into the ground, and lid; Wood used to make the trap

Hunters dig a deep pit (1ft x 2.5ft x 1.5ft) in the ground and put a lid (1ft x 2.5ft) on top. The lid of the trap is covered with humus to provide camouflage. The bird innocently walks across the trap and falls down into the pit where it is collected by the poachers. These traps are mostly used along ridges under the trees. When there is snow on the ground the traps are fixed under tree branches in areas free of snow fall, which are often used by the pheasants as a feeding ground.

A pit is dug into the ground (1ft wide x 2.5ft long x 1.5ft deep)



A wooden lid is fixed onto the top of the pit

The top of the trap is covered with soil, leaves etc to provide camouflage

The pheasant falls through the humus camouflage and into the pit trap below

All pictures courtesy of Muhammad Naeem Awan.

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MEGAPODES ARE GIVEN A HELPING HAND THROUGH COMMUNITY CONSERVATION AGREEMENTS

This year, two of the most endangered species of megapode, the maleo *Macrocephalon maleo* and Bruijn's megapode *Aepypodius bruijnii* , have been offered a lifeline by local communities who are engaging in innovative new ways of protecting their habitat.

The maleo nesting ground in Libuun in the eastern peninsula of Central Sulawesi has long been regarded as a prime conservation site due to the enthusiastic engagement of the local community in managing the maleo population. Over the past two years the Alliance for Tompotika Conservation (AlTo) has been working with these communities to facilitate improvements in nesting ground management. One of the main causes of maleo population decline is the degradation of forested habitat and safe forested corridors between foraging habitat and nesting grounds. AlTo are in the process of buying 1000 hectares of this forest to establish the region's first permanent locally-managed preserve which local villages will help to manage. In addition, AlTo are leasing a further 9000 hectares of adjacent forest for the next 95 years. In effect AlTo will manage this critical forest land in a sort of "conservation concession" thus protecting the vital habitat from mining and deforestation. For more information see the latest AlTo newsletter at http://www.tompotika.org/.

Meanwhile, on the island of Waigeo, a Community Conservation and Ecotourism Agreement (CCEA) has been developed between Papua Expeditions/cv.Ekonexion and customary landholding groups. Quid pro quo payments are being made in return for both carefully defined conservation outcomes as well as exclusive access by the private eco-tour company, who run small-scale, essentially non-invasive eco-tours to birdwatchers and other tourists. For further information about this project see: www.PapuaExpeditions.com.

Both of these projects are likely to have a very beneficial effect on megapode populations and highlight how local people can also benefit from conserving their forest habitats.

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EXCITING NEWS FOR THE BLUE-BILLED CURASSOW

With an estimated population of nearly 250 individuals and a large decline in habitat loss and hunting, the blue-billed curassow *Crax alberti* is considered one of the most endangered species of the Americas. Definitely the El Paujil Bird Reserve in Serranía de las Quinchas now represents the most important sites for their protection and conservation as almost their entire original rainforest habitat has been destroyed.

Since the beginning of the El Paujil Bird Reserve in 2003, blue-billed curassow observations were sporadic and rare and almost always of single individuals. Luis Gabriel Mosquera, who has studied and protected the blue-billed curassow since 2003 and is now the Director of the El Paujil Bird Reserve, noted a significant increase in sightings and of group sizes in just the past year. Recent observations by birders included groups of up to three males at the same time and recently photos confirmed, up to four females together!

Luis Gabriel also noted that the earliest colonists to the region commented that when they first settled the area of the reserve, they found large groups of blue-billed curassows, up to 30 individuals together!! Sadly, the same colonists hunted the species, almost exterminating it from the region. It may take many years for the curassow to recover to its original population, but protection of El Paujil Bird Reserve in just the last five years has shown the importance of establishing and enforcing protected areas as well as working with local communities as the most important steps to saving the species.

One male and two female blue-billed curassows. Photo courtesy of ProAves Colombia www.proaves.org

ProAves remains committed to the protection of the Blue-billed Curassows across Colombia and likewise hope to achieve more significant progress in the conservation of this unique species and unique to Colombia.

Thanks to support from American Bird Conservancy and BirdLife International, especially Species Champion Ted Reissing.

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Taken from Aleteo #56: Colombian Conservation news
Full article available online: http://www.proaves.org/article.php?id_article=696

GENETIC STRUCTURE OF MEDITERRANEAN CHUKAR (*Alectoris chukar*, GALLIFORMES) POPULATIONS: CONSERVATION AND MANAGEMENT IMPLICATIONS

Abstract
The chukar (*Alectoris chukar*, Galliformes) is a species hunted throughout its native range from the East Mediterranean to Manchuria and in the USA, which hosts the world's largest introduced population. This study aims to investigate the genetic structure of Mediterranean chukar populations to aid management decisions. We genotyped 143 specimens at two regions of the mitochondrial DNA (mtDNA: cytochrome *b*, control region) and eight loci of the microsatellite DNA. Samples were collected in northern (Limnos, Lesvos, Chios) and southern (Crete) Aegean islands (Greece) and Cyprus. We also carried out mtDNA-based comparison with chukars (*n*=124) from Asia (16 countries) and the USA (five states). We propose six management units for Mediterranean populations. Given their genetic integrity, Limnos and Cyprus, which host different subspecies, proved to be of primary conservation interest. We found exotic *A. Chukar* mtDNA lineages in Lesvos, Chios and Crete and produced definitive genetic evidence for the Asian origin of the US chukars.

Citation:
Barbanera, F., Marchi, C., Guerrini, M., Panayides, P., Sokos, C. and Hadjigerou, P. (2009) Genetic structure of Mediterranean chukar (Alectoris chukar, Galliformes) populations: conservation and management implications. Naturwissenschafen 96: 1203-1212. DOI:10.1007/s00114-009-0586-x; published by Springer.

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RANGE EXTENSION OF *Tragopan blythii blythii* INTO THE NORTH BANK OF RIVER BRAHAMPUTRA

Blyth's tragopan *Tragopan blythii* was described from a specimen discovered from the Naga Hills by Jerdon in 1870 (Ali & Ripley, 1983). Thereafter, in 1914, a different form of Blyth's tragopan was discovered from Bhutan and was recognized as a distinct sub-species. Thus, two sub-species of the Blyth's tragopan are now recognized, *Tragopan blythii blythii* and *Tragopan blythii molesworthii.* Both forms show morphological differences (see Ali & Ripley, 1983; Johnsgard, 1986).

According to Ali and Ripley (1983), the nominate race (*T.b.blythii*) is distributed in the Barail, Pataki and Naga Hill ranges into Manipur and Mizoram, areas south of the river Brahamputra. The *molesworthii* race, however, is distributed in parts of Bhutan and across Arunachal Pradesh to the Mishmi Hills, north of the Brahamputra river.

Blyth's tragopan was found in Mehao Wildlife Sanctuary in 1992 (Kaul et al., 1995) from calls and remains of a bird hunted by a local. However, from the remains of the bird, the sub-species could not be ascertained. Recently, a team comprising personnel from the Arunachal Pradesh Forest Department and the Wildlife Trust of India rescued a male Blyth's tragopan from Myodia area of the Mehao Wildlife Sanctuary. Upon inspection, the bird was found to be *Tragopan blythii blythii* (see photo), thereby extending the known distribution range of this sub-species into areas north of Brahamputra river.

Male Blyth's tragopan *Tragopan blythii blythii* found north of the Brahamputra river. Photo courtesy of Rahul Kaul.

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GUNNISON SAGE-GROUSE RECONSIDERED

The rare Gunnison sage-grouse *Centrocercus minimus* is being reconsidered for protection under the Endangered Species Act after being denied federal protection in 2006. The US Fish and Wildlife Service (FWS) has until 30 June 2010 to decide whether to protect the bird, according to the terms of a settlement agreement with environmental groups and a county in Colorado. The 19 August settlement comes three years after the groups filed a lawsuit protesting the decision not to list the grouse.

The FWS 2010 decision will be an important one in species conservation, as there are only 3500 breeding adults in the bird's remaining Colorado and Utah ranges, with some populations consisting of as few as 10 individuals.

The Gunnison sage-grouse is considered to be one of the most endangered birds in the country by the Audubon Society. A recent report, "The State of the Birds", identified sage-grouse habitat (high desert grass and sagebrush) as among the most degraded in the country. As this habitat declines, population size and dispersal ability suffer. While experts believe that at one point the bird inhabited much of the interior west, today the species is confined to southwestern Colorado and southeastern Utah. Habitat decline is largely due to human land use practices such as housing and highway development, oil and gas drilling, livestock grazing and motorized recreation.

Sources: Center for Biological Diversity, Colorado Department of Natural Resources, E&E Publishing, LLC (Land Letter), State of the Birds Report.

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Editor: Laura M. Bies
Full issue available online: http://joomla.wildlife.org/documents/policy/WPNv19i5.pdf

G@LLINFORMED NEWS

ARKIVE SPREADS ITS WINGS IN THE PURSUIT OF IMAGERY

ARKive, the world's central digital library of films and photographs of threatened animals, plants and fungi, is calling on all *G@llinformed* readers to help in the search for imagery of endangered Galliformes.

A project of UK-based NGO, Wildscreen, ARKive's objective is to raise public awareness of the world's threatened species and the need for their conservation through the power of wildlife imagery. To date, ARKive has created digital multi-media profiles for over 5,000 species, digitising and storing more than 38,000 still images and over 100 hours of moving footage, from over 3,000 contributors, including the BBC, National Geographic, and a wide variety of photographers, scientists and conservationists. These important audio-visual records are being preserved and maintained for the benefit of future generations, and are made freely available for non-commercial awareness-raising and educational purposes via the ARKive website www.arkive.org. The ARKive website regularly receives over 30,000 visits a day from around the world, with visitor demography including research scientists, conservationists, educators and the general public.

Having recently become a formal partner of the IUCN Red List, ARKive's immediate aim is to compile audio-visual profiles for the c. 18,000 species at most risk of extinction (Critically Endangered, Endangered and Vulnerable), including all 71 threatened galliformes. ARKive is collaborating with the IUCN Species Programme and the Species Survival Commission to find photos and films for as many of these threatened species as possible, with all images sourced under the partnership being made available for use in IUCN Red List activities.

With a quarter of the world's galliform species currently threatened with extinction, the aim is to find imagery for all 71 threatened species, making ARKive the most comprehensive online collection of still and moving Galliformes images. Although there are already almost 50 threatened galliformes profiled on the ARKive website, there are another c. 20 species for which media is still needed. If you have films or photographs of any Red List Galliformes, or indeed of any of the world's threatened species, then ARKive would be delighted to hear from you.

The ARKive team are particularly looking for images of the following species:

Arborophila gingica	White-necklaced partridge
Arborophila mandellii	Chestnut-breasted partridge
Arborophila orientalis	White-faced partridge
Dendrortyx barbatus	Bearded wood-partridge
Francolinus camerunensis	Mount Cameroon francolin
Francolinus gularis	Swamp francolin
Francolinus swierstrai	Swierstra's francolin
Lophura hatinhensis	Vietnamese pheasant
Lophura hoogerwerfi	Aceh pheasant
Megapodius geelvinkianus	Biak Megapode
Megapodius layardi	Vanuatu megapode
Megapodius nicobariensis	Nicobar megapode
Odontophorus atrifrons	Black-fronted wood-quail
Odontophorus dialeucos	Tacarcuna wood-quail
Ortalis erythroptera	Rufous-headed chachalaca
Penelope jacucaca	White-browed guan
Perdicula manipurensis	Manipur bush-quail
Polyplectron schleiermacheri	Bornean peacock-pheasant
Xenoperdix udzungwensis	Udzungwa forest-partridge
Francolinus ochropectus	Djibouti francolin
Ophrysia superciliosa	Himalayan quail

Please contact the ARKive team at: arkive@wildscreen.org.uk

Please note that ARKive does not sell photographs, but rather the ARKive website acts as a showcase for image providers, displaying copyright and contact details with every image, as well as links to each media donor's own web activities.

View the ARKive species profile for the Vulnerable Malaysian peacock-pheasant Polyplectron malacense at: http://www.arkive.org/malaysian-peacock-pheasant/polyplectron-malacense/
Photo courtesy of John Corder/WPA

THE PER WEGGE JUBILEE SYMPOSIUM

Introduction

On 6-7 August 2009, a group of more than 50 people met at Hedmark University College in southeastern Norway. The purpose was the celebration of the forest grouse, and one of the most dedicated grouse researchers - Per Wegge. Wegge is now 70 years old, and he has spent the last 30 years conducting ecological research on capercaillie and black grouse in Varaldskogen, southeastern Norway. In "the Per Wegge Jubilee Symposium", he summarized information obtained during his studies on grouse ecology at Varaldskogen. In addition, invited lecturers shared their knowledge of several key topics in forest grouse research, including the effects of forestry and other human activities, the role of predation, grouse population dynamics, and the effect of climate change. The symposium idea was initiated by one of Wegge's former PhD-students, Torstein Storaas, who also acted as the main organizer of the symposium.

Per Wegge at the symposium. Photo courtesy of Karen Marie Mathisen

Thirty years of capercaillie and black grouse research at Varaldskogen

Per Wegge's research project at Varaldskogen was started in 1979 as a response to a growing concern about negative trends in capercaillie populations in Norway during the preceding 20-30 years. The population decrease coincided with a change in forestry practice from selective cutting to clear-cutting and replanting. Evaluating the effects on forest grouse of the ongoing changes in forest composition and fragmentation was a main focus of the project from its initiation. Per Wegge and his team were the first group to use radio telemetry in capercaillie research. At the time, this "state of the art" method produced novel data in a rapid pace, and several aspects of forest grouse ecology were revealed in a short time-span, including habitat selection, spacing behaviour, reproduction and patterns of dispersal and mortality. At the onset of the study, high levels of predation on both black grouse and capercaillie were observed. In particular, it was concluded that mammalian predators on eggs and chicks had a strong impact on annual chick production, and thus the population trajectories. Furthermore, a strong association with old forest was observed among adult capercaillie males during autumn, winter and spring and among broods during summer. As the fragmentation increased and the size of the remaining patches of old forest were depleted, larger capercaillie leks broke up into several smaller units, and availability of prime habitat for broods was markedly reduced. Accordingly, the capercaillie was initially expected to decrease in abundance, whereas an opposite pattern was expected for black grouse due to its preference for younger successional forest stages.

Thirty years later, the Varaldskogen project has accumulated time-series data, which show counter-intuitive results regarding the population developments of the two grouse species. In short, the black grouse has decreased in abundance, whereas the capercaillie density has remained fairly constant. Equally surprising, the trend in annual breeding success has been increasing slightly but significantly in both species. Based on empirical data and indirect evidence, Wegge pointed out several factors that may have created this pattern. Firstly, the composition of the forest gradually changed from being dominated by a sharply contrasting mosaic of clearcuts and old forest to include larger proportions of middle-aged plantations. The capercaillie turned out to be more flexible regarding its use of forests than initially assumed (leks in young forest and broods in bilberry-rich plantations). Regarding the decline in black grouse numbers, Wegge underlined the importance of a change in their pattern of predation. An increase in adult mortality due to a higher predation pressure from goshawk was observed during the

latter part of the study, a change that may have been facilitated by a changing forest structure.

Human land-use and predation
Per Wegge's presentation was followed up by several lectures and panel discussions that shed further light on the influence of predation and human land-use on forest grouse. Per Angelstam described the contrasts between natural and man-made forest dynamics, the differences in disturbance regimes and their consequences for the current and future populations of grouse. Janne Miettinen presented an extensive set of data from his PhD thesis on the role of forestry for capercaillie distribution and densities in Finland. Interestingly, some main results concurred with findings from Varaldskogen; the capercaillie has gradually become less associated with mature forests, and it seems to manage well in middle-aged forests. The effects of human hunting on forest grouse was the topic of a presentation by Tomas Willebrand. He showed data suggesting that forest grouse dynamics is not associated with any strong relationship between last year's breeding success and this year's density of breeding birds. His main point was that we need to take into account the spatial configuration of the populations to understand the dynamics of forest grouse. Olav Hjeljord presented data from an ongoing project in Pinega forest reserve in north-west Russia that illustrated the effect of human land use on the composition of the predator fauna. In contrast to the more intensively managed forests in Fennoscandia where mammalian predators dominate, raptors were the most important predators in the pristine forests of Pinega. A closer look at the importance of raptors was presented by Risto Tornberg. He described how the breeding density of his focal species, the goshawk, tracked the numbers of main prey (grouse) with a lag of two years. The delayed numerical response of the hawks produced inverse density dependence in their predation on grouse, a pattern suggesting that the goshawk may play a significant role in the generation of multi-annual grouse population cycles.

In the following panel discussion, there was a general agreement that focus should be aimed on the indirect effects of human alterations of forest grouse habitat through their impacts on ecological processes. The immediate impact on grouse from loss of key resources such as food and cover may be less important than human-induced alterations of the predator regime. Predation on grouse may have increased partially due to elevated predator densities or a changed composition of the predator guild, but also as a result of altered hunting success among predators due to a change in forest structure.

Population dynamics and the role of climate change
Few, if any, match the Finnish researchers' contribution to our current understanding of the spatio-temporal dynamics of grouse populations. Pekka Helle presented a summary of a long-term grouse monitoring scheme where ca. 1500 "wildlife triangles" of 12 km each have been monitored twice per year. Currently, more than one million kilometers of transects have been sampled by Finnish volunteer hunters, an effort that has rendered valuable insight into the short-term dynamics of grouse populations, their long-term trends and the underlying ecological processes. Helle talked about the elements needed for producing population cyclicity in grouse, and described how the predictable 6-7 year long cycles that previously characterized the Finnish grouse populations have changed during the last two decades. Short-term population changes have become irregular and the spatial synchrony in grouse population dynamics has been reduced. Similar trends have been documented for small rodent cycles throughout much of the previously cyclic range.

The potential role of climate change on grouse population dynamics and distribution was also given attention. Robert Moss pointed out that grouse are adapted to cold climate. In general, there has been a warming over the last seven decades, and this warming appears to have had negative effects on grouse in the UK, with capercaillie and black grouse suffering before red grouse and rock ptarmigan. It was argued that although climate change undoubtedly will affect grouse populations, effects are expected to vary among species and with geographical locations.

In summarizing the symposium, Torstein Storaas emphasized the value of long-term population studies - like the Varaldskogen project - where changes in ecological processes and their effects are monitored, combined with shorter-term studies with

specific objectives. He thanked all participants for their contributions and hoped they would enjoy the upcoming barbeque banquet dinner – whole-roasted reindeer at the bank of the Glomma River. Which they certainly did!

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CHINESE BIRDS

I am very pleased to inform you that *Chinese Birds*, an English-language scholarly journal, will join in the list of international ornithological periodicals. The Journal will publish quarterly from the year 2010, and include peer-reviewed research articles, reviews and short communications concerning bird researches among globally ornithological communities. The Journal will be jointly published by the China Ornithological Society and Beijing Forestry University.

I sincerely invite your quality submissions to the inaugural or the following issues of the Journal. It will be our great honor if you can do so.

For submission please contact:
Mr. Pengjun Cheng
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Information required on Sicilian rock partridge

Gordon Campbell, currently studying at Aberdeen University (UK), is researching *Alectoris graeca ahitakeri* and would appreciate any information you have on the species. Gordon would be interested in any details, but particularly those relating to specific coveys, range, dispersal, diet and watering hole preferences, which he has found there to be a lack of information on.

If you have or know of good data sources for the Sicilian rock partridge, please contact Gordon at gozzhawk@hotmail.com

Scientific meetings are a very important part of endangered species conservation programmes. Exchanging information, including the results of new research and the experiences gained from conducting conservation projects, informs others of successful methods and where the gaps in our knowledge remain. The first meeting of the International Black Grouse Conference series was held in Belgium in 2000. Since then, black grouse specialists have met in many different European counties, including the Czech Republic, Great Britain and Austria. Most recently, between 5-9 October 2009, the series reached Bialowieza in Poland. The first black grouse conservation project in northeast Poland started just 10 years ago with great support from the then IUCN-SSC/WPA Grouse Specialist Group, and now The Polish Society for Birds Protection (PTOP) were able to organize the 5th European Conference for Black Grouse Endangered Species and learn much more about this galliform species.

The meeting started with a photograph display prepared by the great Polish nature photographer Grzegorz Leśniewski. The presentation focused on the black grouse's spectacular lekking behaviour, which is compared in Polish tradition to medieval tournaments and black grouse are known as the "knights of spring". Then followed an introduction given by the President of PTOP and by representatives from the Regional Management of State Forestry in Bialystok and the Regional Directorate of Environmental Protection in Bialystok - institutions that are involved in black grouse conservation in northeast Poland.

The conference brought together 59 black grouse specialists from 12 countries, including representatives from almost 30 different institutions. During the meeting, participants presented 19 oral presentations, which were divided into 5 sessions, and 10 posters. Michał Kaszuba, as a host of the conference, gave the first talk; a summary of conservation projects in northeast Poland.

The first session was entitled *Black grouse versus habitat changes*. The main issues discussed concerned the sufficiency of black grouse habitat management and the complexity of factors that determine population response, including time scale modeling of habitat suitability for black grouse and how it can be used in current conservation activities.

The next session *Why birds don't ski (tourism impact)* aroused a great deal of interest and one of the subsequent workshop meetings was dedicated to the topic. Presentations chiefly concerned human disturbance caused by winter recreation on the winter refuges of alpine black grouse (Swiss and Bavarian Alps). Behavioural and physiological responses of black grouse to winter recreation were investigated, as well as the strategies used by grouse to cope with energy losses caused by human disturbance. Another issue discussed was the planning of wildlife winter refuges on the basis of spatially-explicit maps showing conflict zones between wintering black grouse and free-ranging winter sport activities.

A wide range of interesting problems were brought up during the third session, *Management*. Talks discussed the difficulties involved with saving the last black grouse population in the Netherlands, the genetic aspects of black grouse reintroduction projects, management using trial methods in forestry in Scotland, novel ways of bird protection by discouraging predators, and the use of new techniques (such as GPS transmitters) for future research. Much interest was shown in the use of reintroduction as a conservation tool and so another workshop meeting was arranged to enable further discussion on the topic.

The fourth session investigated the *Dynamics of black grouse populations*, looking at projects in the Netherlands, the north-European taiga (Finland, Russian Karelia, Murmansk, Arkhangelsk and Komi regions), and Poland.

The final session, *Mechanism of evolution* concentrated on the predation impact on black grouse. Talks covered how predation may affect the display behaviour of lekking males, and the maternal and environmental covariates of nesting success under variable predator densities. Also, the session looked at the use of appropriate genetic analyses in practical conservation for the species.

The poster session gave a great diversity of interesting issues, from reintroduction, conservation and management, including studies to monitor the impact of new ski-lifts, hiking trails, power lines and overhead cables on black grouse populations.

One day of the conference was set aside for a field excursion. Delegates visited two black grouse refuges - Rabinówka and Krynki – and learnt of the current conservation activities in place. Efforts underway include the restoration of peat bogs and the reestablishment of an ecotone zone. Open areas have been established in black grouse refuges by clearing vegetation and introducing cattle grazing, and predars (such as fox, pine marten, American mink and raccoon) have been reduced. The highlight of the field excursion was observing a group of male black grouse in their natural habitat.

Bialowieza is a unique area with a wonderful primeval forest and delegates were able to visit the Białowieża National Park. This site protects the best preserved fragment of Białowieża Forest – the last natural forest in the European Lowland Area with a primeval character, identical to that which covered vast areas of deciduous and coniferous forest many years ago. The European bison – Europe's largest land mammal - is the flagship species of the Park and a visit was made to the European bison show reserve to meet them eye to eye.

The conference was a great opportunity to discuss the present situation of the black grouse in Europe and further initiatives concerning the protection of the species and its habitats. Abstracts of oral and poster presentations were published and distributed to the authors in Białowieża, and there are plans to produce a further publication exploring the many important issues raised during the meeting (conference attendants will be informed about such plans). Thanks go to the meeting's Scientific Committee (see below) for great support, to the meeting's sponsors, and to the conference attendants for making the meeting very interesting, friendly and highly valuable.

Scientific committee:
Ilse Storch, Co-chair of IUCN-SSC/WPA Grouse Specialist Group
Jacob Höglund, Uppsala University, Sweden
David Baines, The Game Conservancy Trust, UK
Michał Kaszuba, Polish Academy of Science, Poland
Adam Dmoch, Poland

Anna Suchowolec
Chairwoman of the Organizing Committee
The Polish Society for Birds Protection, 17 Ciepla Street, Bialystok 15-475, Poland
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RECENT PAPERS BY GSG MEMBERS

Please keep us informed of your recent publications and they will appear in the next issue!

An, B., Zhang, L. X., Browne, S. J., Liu, N. F., Ruan, L. Z. & Song, S. (2009) Phylogeography of Tibetan snowcock (*Tetraogallus tibetanus*) in Qinghai–Tibetan Plateau *Molecular Phylogenetics and Evolution* 50: 526-533.

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FUTURE EVENTS

25th INTERNATIONAL ORNITHOLOGICAL CONGRESS IN BRAZIL

The 25th International Ornithological Congress will be held in Campos do Jordão, São Paulo, Brazil from **22-28 August 2010**. This will be the first International Ornithological Congress to be held in Latin America organized under the auspices of the Brazilian Society of Ornithology. The congress covers topics from ecology, behaviour and evolutionary biology to molecular biology and physiology, not only as individual disciplines but also in highly integrative ways. An important event of the congress will be the invitation of an International Ornithologist's Union. The congress programme will have 48 symposia, one of which is *Reintroduction and the restoration of avian populations*, being co-convened by Philip McGowan and Christine Steiner São Bernardo.

Early registration closed on 15 October 2009, but the fee for registering before 8 August will be R$1320 (498 EUR, 721 USD) and on the day R$1600 (616 EUR, 930 USD). Lower income country residents have reduced registration fees. For further information see the IOC website at http://www.acquaviva.com.br/sisconev/index.asp?Codigo=26

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5th INTERNATIONAL GALLIFORMES SYMPOSIUM IN CHIANG MAI, THAILAND

The World Pheasant Association (WPA), with assistance from King Mongkut's University of Technology, Thornburi (KMUTT), is delighted to announce plans for a symposium on the conservation and sustainable management of all species of pheasant, partridge, quail, francolin and guineafowl, with special emphasis on Asia, threatened species and their habitats. This meeting is the successor to the International Symposium of Galliformes held in China in October 2007 and is being jointly organised by WPA, KMUTT and the Galliformes Specialist Group. The objective is to hold a major gathering of all those with an interest in the conservation of the birds and their habitats.

The formal Symposium will be held from **7-14 November 2010** in Chiang Mai, the country's northern capital, and will be followed by a few days in the mountains to the north which will be our base for various short excursions. These parts of the symposium will allow us to spend time hearing about and discussing the most up-to-date news and views on conservation work underway. A pre-symposium tour of Bangkok and five different post-symposium tours will be available. Thailand has a rich diversity of galliform species, ranging from the threatened green peafowl, Mrs Hume's pheasant and chestnut-headed hill-partridge, to the relatively common Siamese fireback, scaly-breasted partridge and silver pheasant. We hope that there will be opportunities to see some of these, or at the very least experience the habitats in which they occur, during the latter part of the symposium or on some of the post-symposium trips.

Preliminary information can be obtained from the WPA office (office@pheasant.org.uk) and more detailed information will be available on the WPA website (www.pheasant.org.uk) from 10 January 2010.

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G@llinformed

Newsletter of the
IUCN-SSC/WPA Galliformes Specialist Group

Issue 3 ***October 2010***

Contents

From the Co-chairs

Our membership has now stabilised at 258 (almost one each for our 287 species!), and includes scientists, educators, and conservation managers with expertise in all the Galliformes families, as well as the Tinamous with which some of them share many characteristics. Our thanks to Natalie Clark at WPA for overseeing our membership records for us over the last year or so: thy have ben passed to IUCN. As a result you are also registered as members of the IUCN Species Survival Commission and should be receiving their monthly e-bulletin and biennial *Species* newsletter. Please get in touch with us if you are not getting these.

Thanks also go to Gilbert Ludwig in Finland and Gillian Baker in UK for volunteering as Co-Editors of *G@llinformed*, whilst Tor Spidso in Norway continues to edit Grouse News, the sister newsletter for our Grouse Group (115 of our members). The schedule we originally set out was to produce *G@llinformed* in June and December each year. We are dependent on receiving material from you, preferably without too much persuasion, bt we also got late with this issue, for which we apologise.

Michèle Loneux in Belgium has just launched our our website a www.galliformes-sg.org). This announces who we are and what we do to the rest of the world, holds back-numbers of newsletters (ours the five previously separate SGs for the Galliformes), other useful sources of reference for information on our species, and many helpful links. We thank Ram Papish (USA) for designing our logo (see p.14) and giving us such a striking and unique identifier for *G@llinformed*, the website and our letterhead. Thanks to Michele, we are now fully visible and identifiable to the outside world. If you have comments on the website as it is, or suggestions for improving or expanding it, please contact Michèle.

Promoting the GSG to others is important because it attracts the world's attention to the exceptional level of threat to our many species (26% on the *Red List* as CR, EN or VU), and invites others to join us. But perhaps even more important is helping you to realise your plans for more conservation research and action on species you are already near to or concerned with. The starting point for this process within the SG is the submission of a project proposal relating to the conservation (and sustainable use) of any Galliformes (or Tinamidae) species. After peer review, we may issue a letter of endorsement (i.e. approval) to the proposer/principal investigator. Long experience has shown us that these letters, written on a letterhead bearing both the WPA and IUCN-SSC logos, often have a positive effect in attracting new funds for projects. The idea is to catch the attention of the donor agencies, be they national or international, government or NGO, by giving your project an international badge of quality and relevance.

The Co-Chairs' Advisory Board and a good many other GSG members have long experience of reviewing proposals for donor agencies. For the review process we always try to use this bank of experience and technical expertise, as a means of advising proposers on their draft project plans, in an effort to improve their impact before submission. This can involve an experienced advisor becoming a mentor and this may continue right through a project's delivery, including data analysis, report writing and journal manuscript preparation.

So, to encourage you to make proposals to feed into this process, we are attaching our Project Proposal Form and some Guidelines to the email carrying this issue of *G@llinformed*. We look forward to receiving your proposals any time: there are no closing dates and proposals are endorsed as soon as they are judged to be ready. The ultimate objective is simple: to get more projects with realistic conservation aims funded and operational.

Unfortunately, as a voluntary self-help network of species experts, the GSG does not have funds through which to support its endorsed projects. But we are sometimes able to forward proposals to specific private donors, or work with WPA in a targeted search for funds. But only proposals that are sharply focused on how to conserve our most threatened species are likely to receive such special treatment. Just to be clear, GSG-endorsed projects always remain the property and responsibility of the proposer/principal investigator.

For any Specialist Group, assessing the conservation needs of all its species and then prioritising all the necessary work, should be a key strategic activity. Some of our species, and especially the Grouse, have been heavily researched and can now be managed scientifically as a result. There is also a recent *IUCN Action Plan* for Grouse (2006-10), but not for the rest of our species, many of which remain very poorly known beyond their taxonomy, geographic range and basic natural history. This includes a good proportion of the 73 species on the IUCN *Red List*: finding out more about their status, ecology and the factors threatening them is a must. Only if we have some knowledge of species biology and the nature and impact of threats, can we propose conservation action that is likely to improve the situation.

A review of what we currently know and how well we are translating this into effective conservation action where required, has been the subject of recent work by Lowell Mills, working as a voluntary intern with Peter Garson in UK (see p. 6). After presenting this work at WPA's International Symposium on Galliformes in Thailand in November, we want to use this gathering of Galliformers to take the next step: attempting to prioritise all action globally. Developing a system for doing this would then provide us with an Action Plan for work on all our threatened species in the immediate future. This will go on our website as a menu of projects for anyone to pick up and make a selection from.

The *Red List* is of course an existing product of our species knowledge. Partly as a result of Nigel Collar's article in G@llinformed #2, the Hainan Peacock-pheasant *Polyplectron katsumatae* has been declared as the seventh species in its genus, distinct from the Grey Peacock-pheasant *P.bicalcuratum*. It was therefore assessed against the *Red List* criteria, and categorised as Endangered. Seven other Galliformes species were re-assessed in view of new information coming to light during 2009 (see p. 7). Thanks are due to Richard Fuller (GSG Red List Focal Point) in Australia for prompting inputs from members on these cases.

And now two pleas for help! One of the main reasons for bringing the previous SGs for Galliformes species into one organisation in 2009 was to improve communication between long-established experts and enthusiastic newcomers right across our field of endeavour. Apart from encouraging mentoring partnerships focused on particular projects, as mentioned above, we want to catalyse a wholesale transfer of technical expertise and practical knowledge from members currently involved in grouse research in the Holarctic to those working on our other species elsewhere, and especially in the tropics. In collaboration with WPA we are wanting to commission a major review of 'lessons learnt' from grouse research for journal publication and application throughout our network. If this is a challenge you would relish, please get in touch with us!

The second plea is a request to you for short reports of your experiences with any of the new technologies now being applied to the science underpinning conservation. Two decades ago many vertebrate ecologists thought of the radio-tag as the answer to most of their prayers: but whilst they have their uses, there are also significant limitations. This technology has not stood still, and we now have satellite and GPS tags in the toolkit. Does anyone out there have experience of trying these with a Galliformes species? When it comes to diet, has anyone tried stable isotope analysis or fat profiling instead of laborious faecal content identification? And for population density and structure, can we use faeces as a source of DNA to get at these details satisfactorily (e.g. see Jacob, G. et al. 2010. *Conservation Genetics*, 11, 33–44 on capercaillie)? See also the piece on p.16 about LiDAR as a remote technique for measuring the structure of forest understorey: has anyone tried to use this approach yet on a problem related to Galliformes? Can those of you with useful experience or knowledge with any of these (or indeed other) novel approaches please write a short piece and supply helpful journal references for the next *G@lliformed* issue?

Despite the late arrival of this issue, we would like to catch up by getting issue #4 out in December as scheduled. We will be happy to feature any reports and reflections arising from the WPA Symposium in Thailand in November. Please send your material to the Editors at gallinformed@yahoo.co.uk as soon as you can and by 30 November at the latest.

Thanks and keep up the good work!

Peter Garson & Ilse Storch

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Strategic review of conservation research and action for all Galliformes species

Given the global paucity of expertise and funds for conservation world wide, there is, as ever, a need to do as good a job as possible with limited resources. Over the last two decades or so, IUCN-SSC has championed the production of Species Action Plans. All our species have one of these for the years 2000-04, but only the Grouse Action Plan was updated for 2006-10 (you can download any of the published Action Plans from http://www.iucn.org/about/work/programmes/species/about_ssc/specialist_groups/directory_specialist_groups/directory_sg_birds/). With the exception of the Grouse therefore, we are now relying on increasing out-of-date documents to give us strategic direction, and have not systematically audited progress against targets. So there is an urgent need to review the position of all our species in order to come up with a revised list of global priorities. With 73 of our 286 species threatened and on the IUCN Red List (http://www.iucnredlist.org/), we need not expect this to produce a small menu!

In an effort to prompt a logical approach to species conservation, the current Strategic Plan for IUCN-SSC (2009-12; http://www.iucn.org/about/work/programmes/species/our_work/species_strategic_plan/) is framed in terms of activities aimed at obtaining reliable data on the current status (State; S) of and threats (Pressure; P) to a taxon, and then to specify, implement and monitor conservation action (Response; R). This 'SPR' framework originated in the related field of sustainable development as the 'Pressure-State-Response' model developed by the Organisation for Economic Co-operation and Development (OECD) (see http://www.smallstock.info/issues/psr.htm). It is rather obvious that without good information on S and P, it is hard to design and implement R that has much chance of improving the situation. The SPR approach is therefore entirely consistent with the idea that conservation action should be evidence-based (http://www.cebc.bangor.ac.uk/index.php).

We have started to use this framework to review the state of play for all the extant Galliformes, concentrating particularly on the 111 threatened and near-threatened species. Our initial aims were to see how much is known about our species in terms of S and P, and then to check the extent to which that information was being used to promote robust R.

For consistency, we obtained all our data from the summary texts on the IUCN Red List website and Birdlife International's Datazone (http://www.birdlife.org/datazone/index.html). Our S scores incorporated elements for taxonomic uniqueness, distributional range and population status. P scores were based on the number of threat types (as per the Red List Classification Scheme) affecting each species. We also assigned quality scores to S and P, according to the reliability and completeness of the information available. The extent of the conservation response (R) was scored according to the number of actions (again as per the Red List Classification Scheme) that have been undertaken for a species. We also derived an appropriateness score for R based on the extent to which the described R logically follows from what we know about S and P.

These scores indicate that there are six threatened species for which S, P and R (appropriateness) are all low: i.e. not much is known about them and (thus) not much is being done that is likely to help them. These are: Bearded Wood-partridge *Dendrortyx barbatus* (VU), Horned Currasow *Pauxi unicornis* (EN), Udzungwa Forest-partridge *Xenoperdix udzungwensis* (EN), Snow Mountain Quail *Anurophasis monorthonyx* (NT), Ferruginous Partridge *Caloperdix oculeus* (NT), Chestnut Wood-quail *Odontophorus hyperythrus* (NT). As an example of how this analysis can be used to prioritise action, we might decide on this basis that the two EN species in this list (and perhaps not the other four) should be given top priority for work on S and P, so that appropriate R can be specified as soon as possible. But how do we rank these actions with respect to those designed to hep us to help the other 109 threatened species!?

In general we find that there is a strong relationship between the extent of knowledge on S and P combined, and the appropriateness of R, and that this is relatively unaffected by the quality of the S and P data. We can take some comfort from this: good use seems to have been made of whatever is known to specify logical conservation action in favour of our threatened species. But we have identified nine species that depart quite markedly from this pattern, on which we are now seeking advice from species experts in our network.

We thank Phil McGowan and Mark Whittingham for insightful discussions about this ongoing work.

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2010 IUCN Red List Revisions

Richard Fuller (University of Queensland, Australia) coordinates our discussions with BirdLife International as the Red List Authority for birds. This process is conducted via the Threatened Galliformes Forum, co-moderated by WPA and BirdLife International. The annual update in 2009/10 included detailed consideration of the following eight species (see BirdLife International's Datazone at http://www.birdlife.org/datazone/species/index.html for the full texts, of which the following are [slightly edited] extracts):

Elliot's Pheasant *Syrmaticus ellioti*
This species has been downlisted [from Vulnerable] as, despite the presence of habitat loss and hunting as ongoing threats, there is no clear evidence that the species is undergoing a dramatic decline. However, it precautionarily retained as **Near Threatened**, though further evidence that the species is not declining may lead to further downlisting in the future.

Ocellated Quail *Cyrtonyx ocellatus*
This species has been uplisted to **Vulnerable** [from Near Threatened] as it is projected to undergo a rapid population decline over the next 10 years (three generations) as a result of increased demand for agricultural land due to human population increases, because of mining concessions in its stronghold of Guatemala, and due to increased hunting pressure.

Swiestra's Francolin *Francolinus swiestrai*
This species has been uplisted to **Endangered** [from Vulnerable] as recent analysis has shown that it has a very small range which is declining in quality and size, and a very small population which is suspected to be decreasing owing to habitat loss and hunting pressure. Urgent conservation action is required to preserve tracts of forest in Angola large enough to support a viable population.

Wattled Curassow *Crax globulosa*
This species has been uplisted to **Endangered** [from Vulnerable] as it has a very small population which is estimated to have undergone a very rapid population decline. Hunting is suspected to be causing these ongoing declines, and effective control is urgently required. This species may be uplisted to Critically Endangered in the future should information suggest population declines are greater than currently estimated.

White-winged Guan *Penelope albipennis*
This species qualifies [and remains] as **Critically Endangered** because it has an extremely small population with a severely fragmented distribution. Awareness campaigns directed at local people, further surveys and concerted conservation action (the beginnings of which are apparent) appear to be improving its status such that the population may have ceased to decline. If this is confirmed, the species may warrant downlisting in the future.

Japanese Quail *Coturnix japonica*
This species has been uplisted to **Near Threatened** [from Least Concern] as it is suspected to have undergone a moderately rapid population decline, potentially due to hunting and shifts in agriculture. Research is urgently required to establish population numbers, trends, and to assess and mitigate the threats to the species.

Blue Quail *Coturnix chinensis*
This species has an extremely large range, and hence does not approach the thresholds for Vulnerable under the range size criterion (Extent of Occurrence <20,000 km2 combined with a declining or fluctuating range size, habitat extent/quality, or population size and a small number of locations or severe fragmentation). The population trend appears to be stable, and hence the species does not approach the thresholds for Vulnerable under the population trend criterion (>30% decline over ten years or three generations). The population size has not been quantified, but it is not believed to approach the thresholds for Vulnerable under the population size criterion (<10,000 mature individuals with a continuing decline estimated to be >10% in ten years or three generations, or with a specified population structure). For these reasons the species is evaluated [again] as **Least Concern**.

Hainan Peacock-pheasant *Polyplectron katsumatae*
This newly-split species is listed as **Endangered** as it has very small population which is estimated to have undergone a very rapid decline owing to habitat loss and hunting. Surveys are urgently required to obtain an up-to-date population estimate, and should the population be smaller than currently thought the species may warrant uplisting to Critically Endangered in the near future. [Apart from being genetically distinct*, it is recognisably different** from the Grey Peacock-pheasant *P. bicalcaratum* in having a smaller, forward-pointing and bushy crest, extensive

vermiculated grey-brown plumage, with large ocelli on the upperparts, each spot being green or blue with a buffish or bold white surround. The
upper throat is whitish whilst the bare facial skin is pinkish or yellowish.]

* Chang, J., Wang, B., Zhang, Y.-Y., Liu, Y., Liang, W., Wang, J.-C., Shi, H.-T., Su, W.-B. & Zhang, Z.-W. (2008) Molecular evidence for species status of the endangered Hainan peacock pheasant. *Zool. Sci*. 25: 30-35.

** Collar, N. (2009) Hainan Peacock-pheasant: another CR species for the IUCN Red List? *G@llinformed* 2: 14-19.

Which are the priority species for conservation breeding?

Alain Hennache (alain.hennache@wanadoo.fr)

Ex situ conservation of a threatened galliform species should be considered a necessity when the imperative of *in situ* conservation cannot by itself ensure the survival of a species and its ecosystem. Although there will be taxon-specific exceptions due to unique life histories, the decision to initiate *ex situ* programmes should be based on one or more of the appropriate IUCN Criteria included in a document approved in December 2002: *IUCN Technical Guidelines on the Management of Ex-situ populations for Conservation*.

How we might decide which are the priority species for conservation breeding under the IUCN Guidelines, especially when the financial, logistic and human resources available for consevation are so limited?

The main criteria may be:

1. IUCN Red List status and the species' Evolutionary Distinctiveness (ED) score, as generated by the ZSL EDGE programme. EDGE species have few close relatives on the tree of life and are often extremely unusual in the way they look, live and behave, as well as in their genetic make-up (http://www.edgeofexistence.org/about/edge_methods.php).

2. The nature of threats which the species is facing. Are these threats reversible or not?

3. Overall *in situ* population size, and the proportion living within effectively protected areas.

4. The human, cultural and economic value of the species within its natural range or in a wider context. A species can be a national symbol, have cultural (and therefore touristic) significance or be used for food.

5. A common and widespread species that is closely related to a threatened species can be used to develop appropriate husbandry protocols. I*n situ* conservation can depend of research best done in captivity. The species can be used for staff training, public education or fundraising.

Ex situ programmes must also take into consideration:

6. The preference to establish the initiative within a range state. Emphasis should therefore be placed on developing appropriate capacity within range states when this is lacking.
7. The exchange of data between the workers involved in *in situ* and *ex situ* management of species. Information should be openly available to all participants. Strong links between *ex situ* and *in situ* components are fundamental to the long-term success of species conservation initiatives involving both. This is best done through the establishment of a formal Taxon Management Plan that defines the goals and timelines for each component.

Consideration of each of these seven points is fundamental before a decision is made to plan any *ex situ* conservation project. Subsequent planning of an *ex situ* conservation programme should address the following questions:

- Are there sufficient animals of the species potentially available (from wild or captive sources) to initiate the specified *ex situ* programme?
- Are there potential wild sources available (preferably eggs but birds could be also considered)?
- Has the species or a close relative already been maintained and bred successfully in captivity?

- Is there a history of keeping and breeding this taxon successfully in captivity? Is there a studbook or sufficient data to build a register and trace back to the true founders of the captive stock?
- Is there sufficient understanding of reproductive ecology and behaviour of the species to infer its likely *ex situ* requirements?
- Is the appropriate quality and quantity of facilities currently available in or outside a range state, not just for founder animals, but also for the captive bred offspring?
- Is there sufficient financial support for the anticipated life of the *ex situ* initiative? Or is there good reason to believe that further financial support is realistically achievable?
- Are there adequate numbers of skilled staff available with the appropriate *ex situ* experience? Or can adequate numbers of skilled staff be made available for training?
- Is the appropriate standard of routine health monitoring, record-keeping and knowledge of small population management available to help minimise the risk of potential deleterious effects such as loss of genetic diversity, artificial selection, pathogen transfer, hybridisation. Etc?

It's vital that we consider all these things before considering the practical feasibility of initiating and maintaining an *ex situ* conservation programme. If necessary, a prioritisation tool, involving a scoring system and/or a decision tree, could be used to determine priorities amongst several candidate species.

Conservation Priorities for Mesoamerican Quail : revisiting the 2000-2004 Action Plan

Jack Clinton Eitniear, Director, Center for the Study of Tropical Birds, Inc.

Effective use of conservation resources often requires a periodic assessment of priorities. Such reassessments should consider recent information from field studies (including information collected by researchers studying other faunal species), landscape changes, and the status of protected areas in the region (Carroll and Eitniear 2000, 2004, Gordillo-Martinez 2000). Conservation priorities of Mesoamerican species of quail were elaborated on in "Partridges, Quails, Francolins, Snowcocks, Guineafowl, and Turkeys (Fuller et al. 2000). This document reflected on conclusions previously included in Carroll et al. (1995). Priorities are summarized below.

Global

Project 1. Increasing the Effectiveness of the PQF Specialist Group.
- a. Increasing the effectiveness of the communication network.
- b. Increasing the effectiveness of project monitoring and evaluation.

Project 2. Improving communication of research findings.
- a. Converting project outputs into conservation action.
- b. Improving international exposure of research findings.

Regional

Project 5. Assessing the conservation status of Neotropical Quails in northern Central America. Objective of creating large-scale conservation assessments of these species.

Projects grouped by Threat level

Endangered
- a. Gorgeted wood-quail (*Odontophorus strophium)*

Vulnerable
- a. Bearded Wood-partridge (*Dendrortyx barbatus*)
- b. Tacarcuna wood-quail (*Odontophorus dialeucos*)

Table 1. Summary of 2000-2004 Action plan as it pertains to Mesoamerican quail.

Discussion

Communication among quail researchers in Mesoamerica was enhanced with two meetings (Monterrey, Mexico 1999, Veracruz, 2006) the first resulting with the publication of "Conservation of Quail in the Neotropics"(Eitniear et al. 2004). Such gatherings serve to enhance communication and allow for the exchange of contact information and ideas. Despite what appears to be a diminishing number of quail researchers in the region a third gathering appears warranted as it has been 5 years since such a meeting was organized. Linking such meetings with regional

ornithological meetings, such as the Neotropical Ornithological Congress (NOC) or the Mesoamerican Society for Biology and Conservation (MSBC), seems cost effective. Encouraging publication of research results in peer-reviewed journals, including the new IJGC, has also increased. There is a need for a single bibliographical listing where such papers can be located. This is especially important given that such articles may be published in a variety of publications not always included in search engines. Perhaps this can be included as part of the new Galliformes SG webpage.

Species priorities are changed as a result of periodic reviews by Birdlife International (on behalf of IUCN) staff with input from quail researchers in the field. An example of the process was the down listing of *Dendrortyx barbatus* in 2000 to "Vulnerable" from its listing as "Endangered" in 1996. With the establishment of internet based forums such changes will likely take less time. Current forum debates supplemented with an article in the new International Journal of Galliformes Conservation (Eitniear and Eisermann 2010) may well result in the uplisting of *Cyrtonyx ocellatus* review in 2008 and determined to justifiably remain "Near Threatened". These forums are invaluable in maintaining species within the appropriate threat category. The ability of this mechanism to accomplish this task is dependent on researchers providing Birdlife with results of field studies.

Species	**Current Status**	**Proposed Activity**	**Country**
Cyrtonyx ocellatus	Near Threatened	Possible uplisting to vulnerable	Mexico, Guatemala, Honduras
Dendrortyx barbatus	Vulnerable	Molecular studies	Mexico
Odontophorus dialeucos	Vulnerable	Habitat monitoring	Panama
Philortyx fasciatus	Lower risk	Population monitoring	Mexico

Table 2. Proposed action for quail in Mesoamerica (See text for details).

Proposed species action

Dendrortyx barbatus
The Bearded Wood-partridge was considered "Critically Endangered" in 1996 but due to field studies was downlisted to "Vulnerable" in 2000 (Birdlife 2009c). Additional information has been collected since 2000 further delineating its distribution and status. With additional sightings in Queretaro the gene flow between the southern range in Veracruz/Oaxaca and the northern population in Queretaro/San Luis Potosi is of concern. Genetic studies will determine if this is a concern so should be a priority (Eitniear at al.2000)

Cyrtonyx ocellatus
This species was reviewed in 2008 and determined to best remain as "Near Threatened" (Birdlife 2009a). Recently Eitniear and Eisermann (2010) reviewed the species status and recommended that the species be uplisted. Projections of human growth, mining and logging activity with the species preferred habitat at a minimum suggest that continued monitoring be undertaken.

Odontophorus dialeucos
Little new has been documented as to this species distribution and status since its discovery in 1963. Ridgely and Gwynne (1989) add little to the account of Wetmore (1981). The species was considered "Lower Risk/Near Threatened" in 1994 but uplisted to "Vulnerable" in 2000 (Birdlife 2009b). A highland species it is believed to occur at elevations above 1050 meters. This restricted range species unless it can adapt to disturbed habitats (as was found to be the case with *Dendrortyx*). The actual amount of suitable habitat will greatly depend on how dependent it is on remaining within this elevational gradient (Fig. 1). Efforts to determine status and distribution should be made by contacting the few birding and nature tours that venture into Darien National Park as well as through monitoring changes in land use as determine through the use of satellite images (eg. Google earth, NASA images etc

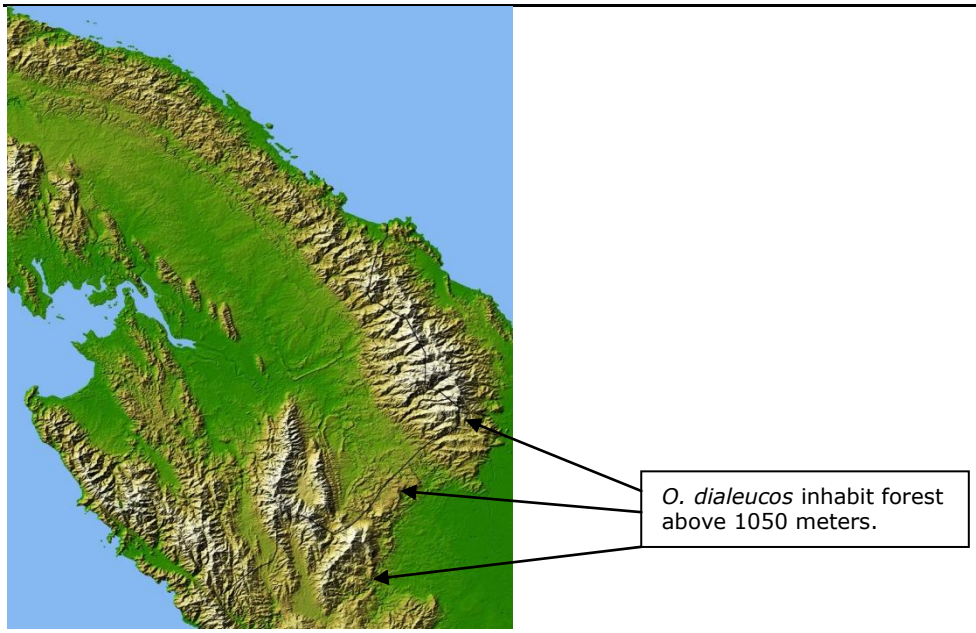

Fig. 1 Mountains at Panama/Colombia border where Tacarcuna wood-quail occur.
Image www.earthobservatory.nasa.gov

Philortyx fasciatus
This species is endemic to southwestern Mexico (southern Jalisco.,and Colima though southwestern Puebla and central Guerrero) occurring in thorn forest and overgrown fields (Urbina and Zainhana-Ortiz 2004, MacGregor-Fors 2006). It has historically been considered at "Lower risk" but data quality is considered poor (Birdlife 2009d). While thrives in overgrown agricultural fields a recent visit to Oaxaca found the species abundant but restricted to hedgerows located around the perimeter of pastures. The species large range precludes its threat level but as recently has been discovered with the Northern Bobwhite *Colinus virginianus* (Birdlife 2009e*)* even abundant and wide ranging species can become at risk if they share man altered landscapes. This appears to be the case with Philortyx. While certainly not at risk
Its population numbers have likely been significantly reduced in recent times given large human densities and competition for suitable habitat as grazing alters floral communities.,
Population monitoring is certainly warrented especially considering the species endemic status.

Fig. 2 Banded (Barred) Quail (*Philortyx fasciatus*) covey travelling along a pasture hedgerow in Oaxaca. Photo Raul Valdez

Summary
With 18 species of quail Mesoamerica is important in terms of maintaining biodiversity with this avian group. While only three appear currently to be at risk other species, such as the Banded quail, have restricted ranges so are vulnerable if landscape alteration accelerates. This species warrant montoring while they are abundant so that threats can be addressed before the species become threatened and require more resources. Organizing a regional meeting on quail, ever 5 years or so, as well as promoting publishing of research results in peer-reviewed journals of quail

studies will enhance communication among all gamebird researchers thus maximizing the return of our limited resources.

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Event Report - Megapode Conference

Marc Argeloo & Didi Indrawan

The conservation of the Maleo *Macrocephalon maleo* has a long history. This member of the megapode family is endemic to the Indonesian island of Sulawesi. As with most wildlife it is threatened by the disappearance of its habitat, tropical forest. A complicating factor is the collecting of its huge eggs for human consumption. Eggs weigh as much as five times more than a chicken egg and can be found on communal nesting grounds of the species. These nesting grounds are found on sandy beaches, where the sun incubates the eggs, or in the forest, where volcanic heat is responsible for incubation.

The first conservation initiatives date back to the late 1940's. A key publication in these days comes from the head of the forestry department of Gorontalo, North-Sulawesi, A. Uno. He gave a detailed description of the collection of and trade in Maleo eggs, and called for immediate action for its conservation. It lasted another 30 years when the first Maleo conservation initiatives were undertaken. Based on the work of John Hatibe (a forester in the Gorontalo area), it was John MacKinnon who started semi-artificial breeding of the eggs on their natural nesting grounds in 1977. Other westerners became responsible for new conservation projects, such as Dekker in 1985 and 1986, and Argeloo in 1990 and 1991.

At a conference commemorating the famous letter of Alfred Russel Wallace of Febraury 1859 to Charles Darwin in Makassar, South-Sulawesi, it turned out that many new Maleo conservation initiatives had started. This time most of these new projects were initiated by local conservationists. Having witnessed this emerging conservation spirit amongst Indonesian

conservationists, the idea was born in Makassar at this conference in December 2008 to bring 'old and new' Maleo conservationists together to share experiences and learn from the various initiatives.

It took another 15 months of fundraising and practical preparations before the first international Maleo conference took place. The conference was organised by the Pokja Maleo Indonesia, an informal group of maleo conservationists from Indonesia and some other countries. Practical support 'on the ground' was given by the Wildlife Conservation Society office in Manado, North-Sulawesi. The conference was held from 24-27 March 2010 in Tomohon, North-Sulawesi and included an excursion tom the famous nesting ground of Tambun.

A key component of the conference was to allow conservationists of sometimes remote regions of Sulawesi to learn lessons from the various conservation initiatives. The conference anticipated on 60 participants, finally ending up with nearly 80 interested. The majority, 75%, came from Sulawesi, some from Java and five participants came from abroad (US, Australia, Netherlands, Germany, Great-Britain). The interest by the participants to deliver a talk on experiences with Maleo conservation was equally overwhelming. Fourteen talks were held on a wide range of subjects, from artificial breeding to concrete conservation of specific nesting grounds. National and local media paid attention to the conference.

The first Maleo Award for outstanding Maleo conservation was given to guard Ramoy Maramis of the Tambun nesting ground in North Sulawesi. Ramoy used to be an Maleo egg collector and is now one of the most dedicated promotors of Maleo Conservation. A second Maleo Award was given to Taima village (Central-Sulawesi). This village has completely 'converted to' the conservation of the Maleo, resulting in a significant rise of Maleo numbers visiting the Taima nesting ground. (for more information about this project see www.tompotika.org)

Some key findings of the conference.

- According to the National Species Conservation Strategy, as organised by the Indonesian Ministry of Forestry, 3-4 january 2008, the Maleo was recognized 'first priority', together with ten other endemic forest species of Indonesia. This is a perfect platform to work on the implementation of the outcome of the conference.

- In terms of research and conservation, a proper balance is needed between ex-situ and in-situ measures. The present situation seems to be somewhat biased towards ex-situ activities. In-situ priorities call for immediate population surveys throughout the range of the Maleos, in particular for Central-Sulawesi. Since local expertise and coordination structure (i.e. *Pokja Maleo Indonesia*) are available, complete surveying is feasible.

- The conservation of the Maleo should not only been approached from an ecological and environmental point of view. It needs to be acknowledged that the Maleo has strong roots in traditional culture as its eggs used to be an important source of income for former kingdoms and local communities. This creates opportunities to involve local communities in the conservation of the Maleo through education and awareness.

- The number of local Maleo conservationists has increased substantially. These local and relatively newly established conservation groups will have to play a prominent role when advocating for the conservation of the Maleo.

- A Maleo Handbook for Conservation, summarizing do and don'ts of Maleo conservation is in preparation and is meant to be distributed amongst policy makers and authorities to promote Maleo conservation. The distribution of this Handbook can be organised through the Pokja Maleo Indonesia, and can be combined with population surveys.

- Certain localities in Central, and particularly North-Sulawesi receive most conservation attention. Additional conservation activities are needed in other part of Central-Sulawesi and in South-East Sulawesi.

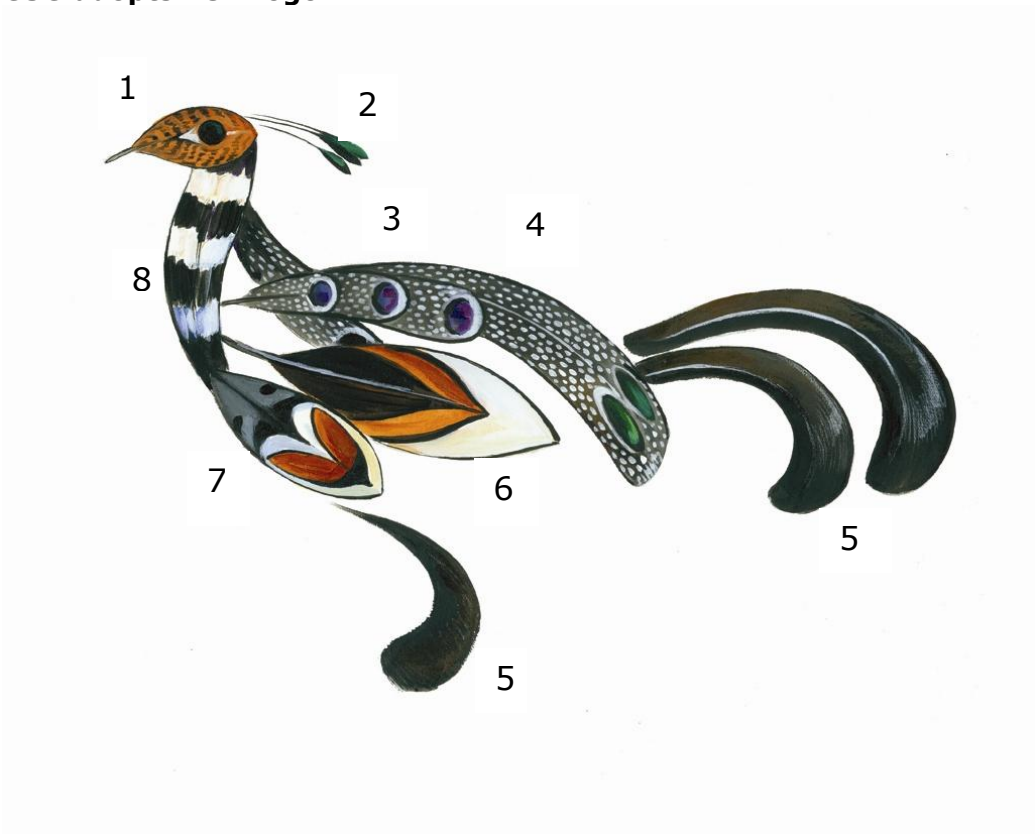
- Spatial planning is key to conservation of Maleo habitat. Therefore, the regional governments need to establish Maleo-friendly landscapes. In relation to the Maleo-friendly landscape, the Regional Planning Board (*Bappeda*s) at district and provincial level need to proactively involve themselves with Maleo as Sulawesi's icon for endemic biodiversity, tradition and local economy.

- *Bappeda*s should also ensure that the conservation measures for the Maleo should be embedded in legal planning mechanisms especially *Musrenbang* (development planning forum), and *RPJMN* (national five yearly development plans).

- Umbrella policy for the conservation of the Maleo is available (*Permenhut* 57/ 2008) as supporting legal reference ('konsideran'). Therefore, local regulations must be issued throughout the districts and provinces where the Maleo occurs.

NEWS IN BRIEF

GSG adopts new logo



The GSG has adopted a new logo. The design, painted by Ram Papish (see www.rampapish.com) includes feathers from a good range of our species. Can you guess which feather belongs to which species? This is tough quiz, but the solutions are on the last page of the issue. Many thanks to Ram for the fine artwork, as well as Jack Eitniear and the Center for the Study of Tropical Birds (see http://www.cstbinc.org/) for sponsorship.

GSG launch its website

The GSG now has its website at www.galliformes-sg.org. The site, which is managed by Michele Loneux (Michele.Loneux@naturalsciences.be) houses copies of archived newsletters, the roles and contact details for all GSG Co-Chairs' Advisory Board members, our project proposal form (in English) and the guidelines for completing it (in several languages). There are also links to important websites (e.g. IUCN Red List) and key documents (e.g. RSG/WPA Guidelines for the Re-introduction of Galliformes for Conservation Purposes). Please visit the site and tell us what else you would like to see there.

New Email Address for Grouse News

The Grouse Newsletter editor can now be reached at: tks.grouse@gmail.com. Please send any submissions via this address.

Belize Quail Studies – Radio transmitters needed!

The Center for the Study of Tropical Birds has partnered with the University of Belize Natural Resource Management program to investigate the ecological and management needs of game birds in Belize. Focusing initially on quail, students have conducted research on census techniques and habitat preference but are eager to utilize radio transmitters to determine movements and to locate nests. Due to funding constraints, they are appealing to game bird researchers who are conducting quail research, to consider donating surplus radios, or units already used in field studies that can be re-conditioned, to this project. For additional information on this exciting program e-mail: admin@cstbinc.org

New Ornithological Union in Nepal

Nepalese Ornithological Union was formed late last year with the aims of providing correct scientific information on Nepal's birds and promoting ornithological research in the country. A

website is being developed at www.birdsofnepal.org. The logo of this new not-for-profit is kept as an image of the Danphe (Himalayan Monal) drawn by Martin Woodcock in 2000 for the International Galliformes Symposium in Kathmandu.

US Department of Interior expands common-sense efforts to conserve Sage Grouse habitat in the west

WASHINGTON, D.C. - The Department of the Interior will expand efforts with state, local and tribal partners to map lands that are vital to the survival of the greater sage-grouse. For information about the Service's finding on the greater sage-grouse, visit http://www.fws.gov/mountain-prairie/species/birds/sagegrouse/ .[or http://tinyurl.com/yjnsq7l For more information about the BLM's efforts to conserve sage-grouse habitat, visit http://www.blm.gov/wo/st/en/info/regulations/Instruction_Memos_and_Bulle

Changes in "Guidelines for Using the IUCN Red List Categories and Criteria" Version 8.0

There has been an update to the IUCN Red Data List Categories. Version 8 (March 2010) replaces version 7. The major changes are listed below:
Section 2.3: Minor change to refer to the new section 12 (instead of "future versions")
Section 4.10.5: Several minor changes, mostly to equations to make them more clear.
Figure 4.4: New figure
Section 5: New paragraphs (third and fourth) to clarify subcriteria a and b.
Section 5: New sentence (last): "If any of the three conditions (reversible and understood and ceased) are not met in a substantial portion of the taxon's population (10% or more), then A2 should be used instead of A1."
Section 8: Changes in the first and third paragraph to clarify, and to give an example for "a very short time" (within 1 or 2 generations).
Section 12: New section on Threatening Processes.

Skeletons in the cupboard!

Jim Bendell has a collection of Spruce Grouse skeletons. If anyone can make use of them please contact Jim at: jfsbendell@sympatico.ca

NEW PUBLICATIONS AND ARTICLES

International Journal of Galliformes Conservation

WPA is delighted to announce the publication of Volume 1 of the International Journal of Galliformes Conservation. The Journal is free to all and open access at http://www.pheasant.org.uk/page/IJGC. Volume 2 is imminent.

New book on Grouse

Sharp-tailed grouse, greater prairie-chickens, greater sage-grouse, and ruffed grouse are beautiful and interesting birds that often face challenges due to disturbance or loss of their habitats. A book devoted specifically to these grouse species (Grouse of Plains and Mountain—The South Dakota Story) has been completed and will soon be available through the South Dakota Department of Game, Fish and Parks (SDGFP). The book was written to increase interest and appreciation for grouse and is meant for a general audience. The authors are hopeful the book will help in conserving grouse and their habitats The book is coauthored by Les Flake (retired from South Dakota State University in 2003), Jack Connelly (Principal Wildlife Research Biologist, Idaho Department of Fish and Game), Tom Kirschenmann (Chief of Terrestrial Resources, SDGFP), and Andy Lindbloom (Regional Wildlife Manager in charge of grouse surveys, SDGFP, Pierre). These authors have been involved with grouse through research, surveys, teaching, observing, and hunting and have a deep interest and appreciation for these remarkable birds.
The book covers an array of topics in including historical and current distribution, physical characteristics, behavior, mobility and habitat, nesting, brood rearing, survival, population monitoring, harvest statistics, hunting, habitat loss, and conservation. The book is loaded with striking photos of grouse and grouse habitats, to encourage interest by a broad readership. Even though the book is meant for a general audience, grouse specialists, wildlife administrators, conservation officers, ornithologists, and other wildlife professionals will find much of interest in this book.

As soon as published, the book can be ordered over the Internet at the South Dakota Department of Game, Fish and Parks website (http://www.sdgfp.info/ under Online Shopping/Books, or under Publications). The cost of the book including shipping will be about U.S. $15.00. Les Flake lives in Springville Utah and can be contacted at 801-491-0854 or e-mailed at LDFlake@Yahoo.Com.

Jack Connelly, Idaho Department of Fish and Game, 83 West 215 North, Blackfoot, ID 83221, USA. jcsagegrouse@aol.com.

Books and Book Chapters

Davison, G.W.H. and Yeap Chin Aik (2010): A Naturalist's Guide to the Birds of Malaysia and Singapore, including Sabah and Sarawak. Beaufoy Books, Oxford. Includes colour photos of 280 species by Malaysia-based photographers, with several wild galliforms including Great Argus and Red-breasted Partridge, and of captive Malaysian Peacock-pheasant by WPA stalwart John Corder.

Sinclair, J.R., Lorima, T. & Opiang, M. (2010): What the Locals Know: Comparing Traditional and Scientific Knowledge of Megapodes in Melanesia. In: Tidemann, S. & Gosler, A. (Eds) (2010): Ethno-ornithology: Birds, Indigenous Peoples, Culture and Society (chapter 10). http://www.earthscan.co.uk/Portals/0/pdfs/Ethnoornithology.pdf

Status, distribution and conservation of the Western Tragopan (Tragopan melanocephalus) in Azad Jammu & Kashmir, Pakistan.

Muhammad Naeem Awan - Program for Mountain Areas Conservation (PMAC), Ministry of Environment, Government of Pakistan, Regional Office Muzaffarabad, Azad Jammu & Kashmir. Pakistan. ajkwildlife@gmail.com

Azad Jammu & Kashmir (AJK) is an area supporting a significant but unexplored population of Western Tragopan (*Tragopan melanocephalus*). A full review has been undertaken of its status, distribution and conservation, using all published and unpublished papers, technical reports, field progress reports and prosecution reports. To collect information on the species in areas where surveys have not conducted recently, local villagers and hunters were interviewed. Time has been divided into three phases i.e. P-1 (Prior to 1990), P-2 (1990 to 2000) & P-3 (2000 to date). All the areas which were either surveyed or need to be surveyed have also been covered in this review. Based on all the available information, conservation recommendations have also been made for the better management of this threatened species in this area of Pakistan. It is hoped that a final version of the review will be submitted for publication in due course.

Remote sensing of forest understorey: save your legs and lungs!

LiDAR (Light Detection and Ranging) produces high accuracy, high resolution elevation data derived from airborne sources. A laser is used to measure the distance between the aircraft and ground and between the aircraft and the vegetation canopy or building tops (http://www.stanfords.co.uk/business-mapping/lidar/). The resulting data can be used to construct highly detailed models of sub-canopy vegetation structure in forests at very high resolution.

Subject to the availability of data (or an appropriately equipped aeroplane!), arduous or even dangerous treks to determine the extent and quality of understorey cover in forests may now be unnecessary! For those of us addicted to fieldwork, surely a bit of ground-truthing will be necessary? But with so many Galliformes species living in remote and topographically challenging places, this might prove to be a very valuable new technology. The following paper gives some insight into its power: the abstract is reproduced here with the publisher's permission from Elsevier.

Sebastián Martinuzz et al. 2009. Mapping snags and understory shrubs for a LiDAR-based assessment of wildlife habitat suitability. *Remote Sensing of Environment*, 113(12), 2533-2546.
The lack of maps depicting forest three-dimensional structure, particularly as pertaining to snags and understory shrub species distribution, is a major limitation for managing wildlife habitat in forests. Developing new techniques to remotely map snags and understory shrubs is therefore an important need. To address this, we first evaluated the use of LiDAR data for mapping the presence/absence of understory shrub species and different snag diameter classes important for birds (i.e. ≥ 15 cm, ≥ 25 cm and ≥ 30 cm) in a 30,000 ha mixed-conifer forest in Northern Idaho (USA). We used forest inventory plots, LiDAR-derived metrics, and the Random Forest algorithm to achieve classification accuracies of 83% for the understory shrubs and 86% to 88% for the different snag diameter classes. Second, we evaluated the use of LiDAR data for mapping wildlife habitat suitability using four avian species (one flycatcher and three woodpeckers) as case studies. For this, we integrated LiDAR-derived products of forest structure with available models of habitat suitability to derive a variety of species-habitat associations (and therefore habitat suitability patterns) across the study area. We found that the value of LiDAR resided in the ability to quantify 1) ecological variables that are known to influence the distribution of understory vegetation and snags, such as canopy cover, topography, and forest succession, and 2) direct structural metrics

that indicate or suggest the presence of shrubs and snags, such as the percent of vegetation returns in the lower strata of the canopy (for the shrubs) and the vertical heterogeneity of the forest canopy (for the snags). When applied to wildlife habitat assessment, these new LiDAR-based maps refined habitat predictions in ways not previously attainable using other remote sensing technologies. This study highlights new value of LiDAR in characterizing key forest structure components important for wildlife, and warrants further applications to other forested environments and wildlife species.

Some recent journal articles

Barbanera, F., Oliver R.W., Pergams, O.R.W., Guerrini, M., Forcina, G., Panicos Panayides, P. & Dini, F. (2010): Genetic consequences of intensive management in game birds. *Biological Conservation* 143: 1259–1268

Barbanera, F., Guerrini, M., Bertoncini, F., Cappelli, F., Muzzeddu, M., & Dini, F. (2010, in press): Sequenced RAPD markers to detect hybridization in the barbary partridge (Alectoris barbara, Phasianidae). *Molecular Ecology Resources* (in press)

Ludwig, G.X., Alatalo, R.V., Helle, P. & Siitari, H. (2010): Individual and environmental determinants of daily black grouse nest survival rates at variable predator densities. *Annales Zoologici Fennici* 47 (in press)

Ludwig, G.X., Alatalo, R.V., Helle, P. & Siitari, H. (2010): Individual and environmental determinants of early brood survival in Black Grouse. *Wildlife Biology* (in press)

Moss, R., Storch, I. & Müller, M. (2010). Trends in grouse research. *Wildlife Biology 16: 1-11.*

Mulotwa, M., Louette, M., Dudu, A., Upoki, A. & Fuller, R.A. (2010): Congo Peafowl use both primary and regenerating forest in Salonga National Park, Democratic Republic of Congo *OSTRICH, 81(1): 1–6*

Sahlsten, J., Wickström, F. & Höglund, J. (2010): Hazel grouse Bonasa bonasia population dynamics in a fragmented landscape: a metapopulation approach. *Wildlife Biology 16: 85-92*

Sirkiä, S., Lindén, A., Helle, P., Nikula, A., Knape, J. & Lindén H. (2010): Are the declining trends in forest grouse populations due to changes in the forest age structure? A case study of Capercaillie in Finland. *Biological Conservation 143: 1540-1548*

Upcoming Events

5th International Galliformes Symposium, Chiang Mai, Thailand (7-14 November 2010)

This meeting is being organised by Stephen Browne (Flora & Fauna International, Cambridge, UK) for WPA (and GSG). The main 3-day programme of talks and posters on has been put together by the local host, Dr Tommaso Savini (Conservation Ecology Program, King Mongkut's University of Technology Thonburi, Thailand) and Dr Simon Dowell (Liverpool John Moores University, UK).

Program:

Sunday 7 November 2010

16:00 Registration open
19:00 Dinner

Monday 8 November 2010

8:30 Registration

Opening Session Chair: Stephen Browne

9:00	Sakarindr Bhumiratana *Symposium opening speech*
9:15	Simon Dowell and Tommaso Savini *Scientific Program Committee Chairman's Introduction*
9:25	Philip J. K. McGowan *Conserving Galliformes*
9:45	Peter J. Garson *The Galliforme Specialist Group*
10:00	Symposium Photograph
10:15	Coffee break

Session 1: Conservation in Thailand Chair: Tommaso Savini

10:45	Mattana Srikrajang *Wildlife Conservation status in Thailand*
11:30	Wina Meckvichai *Galliformes study and research problems in Thailand*
12:15	Lunch

Session 2: Galliformes research and conservation in Thailand Chair: Wina Meckvichai

13:40	Niti Sukumal, George A. Gale, Tommaso Savini *Ranging ecology of Siamese Fireback (Lophura diardi) in sub-montane forest*
14:00	Tiwa Ong-in, George A. Gale, Andrew J. Pierce, Philip D. Round, Stephen Browne, Tommaso Savini *Roost site selection of Scaly-breasted Partridge in seasonally wet evergreen forest*
14:20	Jirapa Suwanrat, Taksin Artchawakom, Niti Sukumal, Dusit Ngoprasert, Tommaso Savini and Pongthep Suwanwaree *Study of Siamese Fireback (Lophura diardi) by using camera traps*
14:40	Tanwarat Pinthong and Wina Meckvichai *Habitat Utilization of Green peafowl at Huai Tab Salou, Uthai Tani Province*
15:00	Wina Meckvichai *Genetic variation of captive Green peafowl in Thailand base on Dloop sequence*
15:20	Tommaso Savini and Niti Sukumal *Current and Future of Galliformes research in Thailand*
15:40	Coffee break

Session 3: Effectiveness of protected area Chair: Sun Yue-hua

16:10 Simon Dowell, Dai Bo, Roger Wilkinson, Chen Benping and Zhu Min
Achieving long-term protection for Galliformes habitat: A case study from China

16:30 Natalie Clark, Elizabeth Boakes, Richard Fuller, Georgina Mace and Philip J. K. McGowan
Coverage of the Galliformes within South Asia's protected area

16:50 Hem Sagar Baral
Galliformes conservation in Nepal through the priority sites for conservation

17:10 Edmund Leo B. Rico, Ronald Allan Altamirano, Neil Aldrin D. Mallari and Rachel Austin
Enhancing the conservation and scope of Puerto Princesa subterranean River National Park (PPSRNP) Palawan, Phillipines

17:30 N.A.D. Mallari, S.M. Marsden, J.Mendoza, J. Wenceslao, N.Puna, J.Bactol and P.J.K. McGowan
Bringing Protected Areas Beyond Conservation Rhetoric: A case study in Palawan, Philippines

17:50 Close

Tuesday 9 November 2010

Session 4: Field research techniques Chair: Niti Sukumal

8:30 John P. Carroll
Science, conservation and abundance estimation in Galliformes

9:10 George A. Gale, Tiwa Ong-in and Tommaso Savini
A test of distance sampling to estimate the abundance of Scaly-breasted Partridge in a tropical evergreen forest

9:30 Poudyal K., Bhattacharya T., Bashir T., Sathyakumar S. and Saha G.K.
Abundance, population structure and occupancy based modeling of three pheasants in western part of Khangchendzonga Biosphere Reserve, Sikkim, India

9:50 David Lee and Jeremy Lindsell
Using camera traps to assess abundances and habitat associations of Galliformes in an Indonesian lowland forest

10:10 Ding Ping
Monitoring population dynamic of threatened pheasants using camera trap: a case study in Gutianshan 24-ha plot

10:30 Laxman Prasad Poudyal, Baburam Lamichhane, Heera B. Chhetri, Ramesh K., Philip J. K. McGowan
Distribution of pheasants and partridges in the upper Setikhola forests of Annapurna Conservation Area, Nepal

10:50 Coffee break

Session 5: Conservation status of Galliformes Chair: Simon Dowell

11:20 Le Trang Trai
Emerging concerns about the status of Vietnam's Galliformes

11:40 Kidwai and Qureshi
Galliformes in Sariska Tiger Reserve, India

12:00 Clive Bealey, Houssein Rayaleh, Zomo Fisher, Sam Cartwright, Geoff Welch and Philip J.K. McGowan
Saving the critically endangered Djibouti Francolin and its forest ecosystem: cause for optimism?

12:20 Paras Bikram Singh and Laxman Poudyal
Status, habitat and conservation of Swamp Francolin (Francolinus gularis) in Suklaphanta Wildlife Reserve

12:40 Dahal Baghwan R.
Re-assessment of population status, habitat use and threats to Swamp Francolin (Francolinus gularis) between 2004 and 2009 in Koshi Tappu Wildlife Reserve, Nepal

13:00 Lunch

Session 6: Behavioural and Population Ecology Chair: Rahul Kaul (Clive Bealey)

14:00 Wu Yi-qun
Diurnal behaviour of Crossoptilon auritus in winter in NW China

14:20 Que Pinjia
Habitat selection and group size change of Tibetan Partridge in Daocheng, Sichuan, China.

14:40 David Baines, Nicholas Aebischer and Allan MacLeod
The roles of weather and predator abundance in determining breeding success of Capercaillie in Scotland

15:00 Susan N. Ellis-Felege, Jonathan S. Burnam, William E. Palmer, D. Clay Sisson, and John P. Carroll
Parental decisions and predators: investment and risks to incubating Northern Bobwhites

15:20 Ramesh N. and Sathyanarayana M.C.
Breeding biology of Gray Junglefowl (Gallus sonneratii) in Theni Forest Division, Gudalur Range, Western Ghats, Tamilnadu, Southern India

15:40 Kerrie T. Naranjit
Reproductive ecology of the Trinidad Piping-guan

16:00 Coffee break

16:30 Poster session (see under poster tab for list of contributors)
Coordinator: John P. Carroll

18:00 Close

Wednesday 10 November 2010

Session 7a: Spatial ecology Chair: Zhang Zheng-wang

8:30 Ji-Liang Xu, Xiao-Hui Zhang, Zheng-Wang Zhang, Guang-Mei Zheng and Yong Wang
Spatial and Temporal Associations of Male Reeves's Pheasants to Different Forest Edges in the Dabie Mountains of Central China

8:50 Merwyn Fernandes, Mukesh, S. Sathyakumar and K. Ramesh
Ecogeographical determinants of range limit and distribution pattern of Red Junglefowl and Grey Junglefowl in India

9:10 Poudyal K., Bashir T., Bhattacharya T., Sathyakumar S. and Saha G.K.
Habitat use and activity pattern of Galliformes in western part of Khangchendzonga Biosphere Reserve, Sikkim, India

9:30 N*an Yang, Kai Zhang, Jianghong Ran, Huw Lloyd, Yu Xu, Bisong Yue and Ying Wang*
Territory size and overlap of Buff-throated Partridge in tree-line habitats, Pamuling Mountains, Chin

9:50 Yao Xiao-gang, Zhou Wei, Xu Wan-ji, Deng Zhong-jian and Zhang Ren-gong
Habitat suitability assessment for Hume's Pheasant (Syrmaticus humiae) in Nanhua part of Ailaoshan Nature Reserve

Session 7b: Conservation Breeding Chair: Keith Howman

8:30 John Corder
Conservation Breeding in WPA

8:50 Alam Singh Chauhan and Sat Pal Dhiman
Conservation breeding programme of Western Tragopan at Sarahan Pheasantry in Himachal Pradesh, India

9:10 Zhang Jing, Zhang Jinguo and Liu Bin
Introduction and breeding of Blood Pheasants in Beijing zoo

9:30 Naim Akhtar and Shri B.S. Bonal
Conservation Breeding of Pheasants in India: the Central Zoo Authority Perspectiv

9:50 Sat Pal Dhiman
Conservation breeding of Cheer Pheasants giving emphasis to enclosure designs in Himachal Pradesh, India

10:10 Ashwanii Gulaati
Taking next step forward in conservation breeding of pheasants in Himachal Pradesh,India

10:30 Coffee break

Session 8: Galliformes-human interaction Chair: Brig Mukhtar Ahmed

11:00 Lowell J. Mills and Peter J. Garson
Logical conservation: applying the state-pressure-response model to priorities work on the threatened Galliformes species

11:20 Suman Sharma
Present opportunities of ecotourism and its impact on Himalayan Pheasants in Pipar Area, Nepal

11:40 Jiang Chang, Ning Wang, De Chen and Zhengwang Zhang
Genetic signature of anthropogenic population collapse in Reeves's pheasant (Syrmaticus reevesii)

12:00 Wangnan
Grouping behavior of white eared-pheasant

12:20 David Baines, Philip Warren and Kathy Fletcher
Factors limiting population size of Gray Partridge in upland agricultural landscapes in Northern England
12:40 Lunch

Session 9: Taxonomy and ecology Chair: Natalie Clark

14:00 Mukesh, M. Fernandes, S. Sathyakumar, R.S. Kalsi, Rahul Kaul and R.P. Mandhan
Evaluation of genetic diversity and admixture analysis of Red Junglefowl with domestic chicken in India: preliminary finds
14:20 Lu Dong, Yanyun Zhang, Gerald Heckel and Guangmei Zheng
Taxonomic clarification in a plumage polymorphic species, Silver Pheasant
14:40 Chang Lina and Zhou Wei
The spatial variation of plant food for Syrmaticus humiae in spring at Dazhongshan, Yunnan
15:00 Sathyanarayana M.C. and Ramesh N.
Seasonal variation in the diet of Gray Junglefowl (Gallus sonneratii) in Theni Forest Division, Gudalur range, Western Ghats, Tamilnadu, Southern India
15:20 Charles Santiapillai and Shanmugasundaram Wijeyamohan
Observations on the Indian Peafowl (Pavo cristatus) in the Mannar District, Sri Lanka
15:40 Coffee break
16:10 Peter J. Garson
Workshop: Future shape and role of the Galliformes Specialist Group
17:40 John P. Carroll Chair: Philip McGowan
Closing up
19:30 Banquet hosted by the World Pheasant Association

Posters

Arsirapoj and Meckvichai	Vocalization of Red Junglefowl (Gallus gallus spadiceus) in Huai Kha Khaeng Wildlife Breeding Station, Uthai Thani Province
Arsirapoj and Meckvichai	Distribution and human disturbance after Green peafowl (Pavo imperater) after reintroduced at Mae Wong National Park, Kamphang Petch Province
Bhadouria et al	Assesment of pesticide load on Indian Peafowl Pavo cristatus in Keoladeo National Park, Bharatpur Rajastan, India
Corder	Conservation Breeding in WPA
Ding et al	Briet introduction of Galliformes and the distribution of Alactoris chukar *in Xinjiand province, the west of China*
Dunn	Declines and conservation of threatened galliformes in the Himalayas
Fang et al	Niche separation between the seven pheasant species in Karst mountains in Southwest of Guangxi provine, China
Kai et al	Opportunistic shift in nesting strategy by Buff-throated Partridges in tree-line habitat, China
Kandpal and Sathyakumar	Distribution and relative abundance of Pheasant in Pindari Valley, Nanda Devi Biosphere Reserve, India
Kumar Sharma et al	Koklass (Pucrasia macrolopha biddulphi) relative abundance and habitat use at lower Dachugam National Park, Kashmir
Li et al	A novel PCR method for gender identification of Tetraophasis szechenyii
Lin et al	Genetic evidence for male-biased dispersal in the Elliot's Pheasant（*Syrmaticus ellioti*）in China
Mukesh et al	Assessment of genetic diversity of Red Junglefowl (Gallus gallus) population in Himachal Pradesh, India
Naeem Awan and Bower	Conservation Status of Western Tragopan Pheasant (Tragopan melanocephalus) in Machiara National park, Muzaffarabad, Azad Kashmir, Pakistan
Ong-in et al	Nesting behaviour and nest site selection of Scaly-breasted Partridge in Mo Singto Research Plot, Thailand
Paudyal et al	Distribution and relative abundances of Galliformes in Khangchendzonga Biosphere Reserve, Sikkim, India
Poudyal and Joshi	Participatory survey of Cheer Pheasant through broadcasting a radio program in far western Nepal
Robinson et al	Reassessing the phylogenetics of Piping Guan using a native sample of the Trinidad Piping Guan (Pipile pipile)
Singh and Garson	Status of Cheer Pheasant in Nepal

Singh Bhadouria et al	Assessment of pesticide load on Indian Peafowl (Pavo cristatus) in Keoladeo National Park, Bharatpur Rajasthan, India
Wu and Liu	Diurnal behavious of Crossoptilon auritum in Northwestern China
Yang et al	Complete mitochondrial genome of Tetraophasis szechenyii Madarász,1885 (aves: Galliformes: Phasianidae), and its genetic variation as inferred from the mitochondrial DNA CR
Zhang et al	Comparison of artificial breeding methods of Crossoptilon harmani
Zhaofeng et al	Phylogenetic study on Phasianidae species based on CR1 Retrotransposable Elements
Zhou and Zhang	Habitat evaluation for reeves's pheasant

Gyrfalcons and Ptarmigan in a Changing World - International conference 1-3 February 2011 in Boise, Idaho, USA

This international conference will explore evidence for a range of environmental changes in arctic ecosystems affecting the Gyrfalcon, its competitors, and its prey, ptarmigan, waterfowl, seabirds and others, to predict effects and outcomes of global climate change, identify areas of uncertainty, and develop global strategies for measuring and mitigating them. We will publish a conference proceedings in what we expect will be a landmark publication of information, ideas, and strategies. The conference will take place in the Simplot Ballroom at Boise State University in Boise, Idaho, USA, beginning on Tuesday 1 February and running through Thursday 3 February 2011. It will feature three days of invited and contributed scientific papers and posters, as well as strategy workshops and tours of The Peregrine Fund's World Center for Birds of Prey.
Convened by: The Peregrine Fund, Boise State University (the Raptor Research Center and the Biological Sciences Department), and the US Geological Survey (Snake River Field Station).
Important dates: Early Registration Ends 1 November 2010. Abstract Submission Deadline 1 November 2010. Draft Paper Submission Deadline 1 January 2011. Final Paper Submission Deadline 1 March 2011.

Registration fees: Early registration $200 per person (on or before 1 November 2011). Regular registration $300 per person (after 1 November 2011 and throughout the conference, as long as space is available). Closing Banquet on 3 February 2011 (optional) $25 per person. For more information see the conference website at http://www.peregrinefund.org/gyr_conference/, or contact at the following e-mail tpf@peregrinefund.org.

12th International Grouse Symposium, Matsumoto, Nagano Prefecture, Japan, 19-23 July 2011

The Japan Rock Ptarmigan Meeting, the Institute of Mountain Science, Shinshu University, and Mountain city of Matsumoto are pleased to invite you to the 12th International Grouse Symposium to be held in Matsumoto, Nagano prefecture, Japan, 19th to 23rd July 2011.This symposium, which is held every three years, brings together grouse specialists and biologists from many countries from Europe, North America and Asia. The conference will be held in M-Wing Matsumoto city central public hall. The official language will be English.

Scientific program

The congress will focus on all aspects of grouse biology, research and management. The Special themes will be:

Behavioral Ecology,
Grouse Genetics,
Population Dynamics and Monitoring,
Habitat and Landscape Ecology,
Conservation Biology and Wildlife Management,
Global Warming,
Grouse and their Habitats.

On Saturday afternoon 23rd July a bus tour in Matsumoto City for sightseeing and shopping. The city is a small historic castle town located at the foot of the Japan Alps.

Post Conference Tour

The post conference field trip will start on Sunday morning 24th July and return on the evening of 26th July. One field trip is to the North Japan Alps to observe the Rock Ptarmigan Lagopus mutus japonicus. You can see the tame Rock Ptarmigan and their cute chicks at close range. Another field trip is to Hokkaido to observe Hazel Grouse Tetrastes bonasia vicinitas. For more information see the website and also second announcement.

Important dates

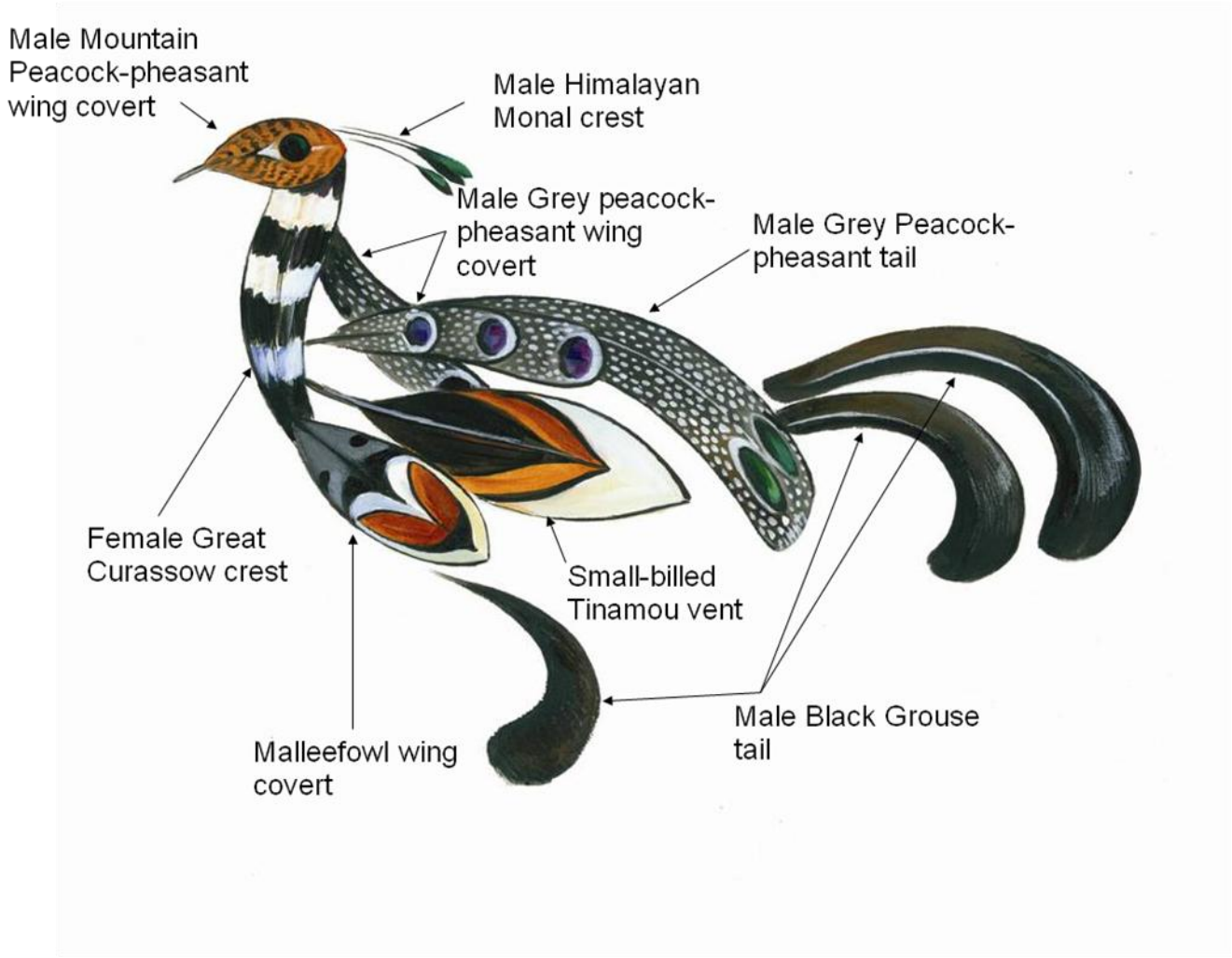
Second announcement: 30 April, 2010.
Deadline for intent to register: 30 Dec., 2010.
Deadline for abstract submission and Registration: 30 March, 2011.

Contact Persons

For general conference details contact: Hiroshi Nakamura, Faculty of Education Shinshu University, Nagano380-8544, Japan, hnakamu@shinshu-u.ac.jp and see the website http://cert.shinshu-u.ac.jp/eco_lab/modules/tinyD4/.

Hiroshi Nakamura, Faculty of Education Shinshu University, Nagano380-8544, Japan, hnakamu@shinshu-u.ac.jp

Solution to Logo puzzle!



G@llinformed

Newsletter of the
IUCN-SSC/WPA Galliformes Specialist Group

Issue 4 ***January 2011***

Contents

From the Co-chairs

Less than a month after the issue of *G@llinformed* No. 3 in October 2010, the earth hopefully moved quite significantly, in terms of global policies and action on conservation, sustainable use and human livelihoods. Participants in the latest meeting (COP10) of the Convention on Biological Diversity (CBD) in Nagoya (Japan) hailed the final document (http://www.cbd.int/cop10/doc/ and click on Official Document 42) as a major step forward. Several of the 20 agreed Targets for 2011-20 relate very closely to what we stand for, and virtually all the others will affect our efforts at least indirectly. For example:

Target 4: sustainable production and consumption of biological resources.
Target 5: halve the rate of loss of all natural habitats.
Target 7: sustainability of agriculture and forestry.
Target 12: prevent extinctions and improve the status of threatened species.
Target 13: conservation of wild relatives of domesticated animals, and species with particular socio-economic and cultural values.
Target 18: traditional knowledge and practices of indigenous communities are respected and integrated into schemes for biodiversity conservation.
Target 19: improvement, sharing and application of the science used as the basis for conservation action.

Small and specialised the GSG may be, but we are responsible for a group of highly threatened bird species, many of which are valued culturally or as a source of food. Therefore we can and should relate what we do to this new high profile global agenda. So please think about it!

Thanks to several contributors in this issue for honouring two requests from us in the last issue of *G@llinformed*: below you can read pieces about the lessons learnt from re-introductions in grouse, and emerging research technologies: sampling DNA to answer ecological questions, and using GPS tags on birds. We are sure there are others of you with useful tales to tell about different research and conservation techniques, so please think about contributing something else to this catalogue for the benefit of others and the species that they work on.

Over twenty members of the GSG attended the International Galliformes Symposium in Thailand in November (see pp.6-13). Peter Garson took the opportunity to ask them (via a short questionnaire) how well (or otherwise) the GSG was functioning for them. As far as *G@llinformed* is concerned, these members wanted more technical advice (see above), and alerts to useful literature (see p.26). Unfortunately copyright law normally prevents us from reproducing abstracts unless we get the publisher's permission, so usually we will be restricted to the citation only. We will not be placing the membership database on the website, as this is an open invitation to those who want to flood us with 'spam' or 'phishing' messages from which we all need to be protected. So if you want to know if there are members who might be able to help you with a problem in your work, please contact the most relevant Board member, or one of us. Another request relating to the website was to provide a page on project funding sources: we will make a start on this with Michèle Loneux (our webmaster in Belgium) and see how it builds. We think a searchable literature database and a moderated blog or bulletin board are both beyond our capacity at present, but if there is anyone out there with some time to spare and the right expertise, please get in touch with us.

Respondents to the questionnaire in Thailand asked for a list of international priorities for research and conservation action on our species. Lowell Mills and Peter Garson ran a workshop at the Symposium in Thailand, in an effort to derive rules for prioritisation. *Red List* category, not surprisingly, came out as the most important measure for doing this at the species level, followed by species where little is known about their status and threat level, the extent and appropriateness of conservation action, and the need to monitor both action and its effects. So a list should indeed appear on the website as soon as possible.

Our small survey also showed there was strong support for our system of project endorsement, whereby the expertise of our more experienced members can be communicated via the reviewing process to those just starting out. It is therefore rather perplexing that, despite our appeal in the last issue of *G@llinformed*, we have only received one new proposal in the last four months! As the proposal form and guidelines are available on our website, it is easy for members and indeed anyone else who finds them, to apply. Please do submit a proposal if you think it will help you to develop your plans and increase the likelihood of funding, so that the work can actually be done, ultimately for the benefit of our species. If you want advice on your project as it develops, and assistance with reporting and publishing your work, we will do our best to find you a mentor

whenever possible in your own or a nearby country, so that there is potential for you to visit each other and work together.

We cannot possibly better the insightful commentary given at the end of the Thailand Symposium by John Carroll (see pp. 11). It shows how much progress there has been in our work over the last two decades and gives us key pointers for the future: and not just for Asia, but throughout the world.

Please send in your pieces for the next issue of *G@llinformed* to gallinformed@yahoo.co.uk by 15 May 2011, so that we can distribute Issue No.5 in June as scheduled.

Wishing you and all Galliformes everywhere a happy, healthy and fulfilling 2011!

Peter Garson & Ilse Storch

Co-chairs Advisory Board Members

Peter Garson (UK)
Role: Co-Chair, Pheasants, project endorsement
Peter Garson is Director of Teaching in the School of Biology at Newcastle University in UK. He has been concerned with research relating to the conservation of pheasants in Asia since 1980. He has supervised PhD students and advised on numerous projects in India, Pakistan, Nepal, China and Indonesia. He was founding Chair of the Pheasant SG in 1993. He co-authored the 1995 and 2000 IUCN Action Plans for Pheasants and has helped to organise several of WPA's symposia on Galliformes in Asia.
Peter.Garson@ncl.ac.uk

Ilse Storch (Germany)
Role: Co-Chair; European Grouse; Grouse Group
Ilse Storch is Professor at the Dept. Wildlife Ecology and Management, University of Freiburg in Germany
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Brett Sandercock (USA)
Role: Nearctic Grouse, behavioural ecology
Brett is an Associate Professor of Wildlife Ecology at Kansas State University. Dr. Sandercock has over 20 years of field experience working with the population biology of terrestrial vertebrates, and has published 60 peer-reviewed research articles. He is currently Series Editor for Studies in Avian Biology, and an Associate Editor for the Journal of Animal Ecology. Current projects include studies of the effects of wind power development on prairie grouse, and the effects of experimental harvest on the survival of ptarmigan.
bsanderc@k-state.edu

Jeff Thompson (Argentina)
Role: Tinamous, South America
Jeffrey J. Thompson is originally from the state of New York, USA. He received a BSc in Environmental and Forest Biology from the State University of New York College of Environmental Science and Forestry at Syracuse, an MSc in biology from the University of Puerto Rico – Río Pieras and a PhD in forestry and natural resources from the University of Georiga. In 2004 he was a Fulbright student grantee to Argentina where he conducted his doctoral research on the spotted tinamou (*Nothura maculosa*). He is presently a research scientist in the Grupo Ecología y Gestión Ambiental de la Agro-Biodiversidad, Centro Nacional de Investigación Agropecuaria, Instituto Nacional de Tecnología Agropecuaria (INTA) in Argentina. His research interests are diverse but centre around the relationship between wildlife and land use, particularly exploited species, more specifically Neotropical fauna and especially gamebirds. He is dedicated to teaching quantitative ecology to Spanish speaking biologists, having taught classes in Costa Rica and Argentina, and is the co-author of the soon to be released Spanish language book *Conservación Cuantitativa de los Vertebrados*.
perdiz@uga.edu

Alain Hennache (France)
Role: Ex situ conservation
1973 to 2009: "Maître de Conférences" at the National Museum of Paris Department of Botanical and Zoological Parks. 1979 to 1997: Assistant Director at the Zoological Park of Clères. 1997 to 2009: scientific advisor in Zoological Park of Clères. Alain keeps rears and exhibits many bird species.
alain.hennache@wanadoo.fr

René Dekker (Netherlands)
Role: Megapodes
Director of Collections, Netherlands Centre for Biodiversity. Rene is one of the founder members of the Megapode Specialist Group and Co-author of "the Megapodes".
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Gilbert Ludwig (Finland)
Role: G@llinformed Co-Editor, Palearctic Grouse, population dynamics, monitoring
Gilbert has a PhD in Ecology & Environmental Science and has done population ecological research on boreal forest grouse, especially black grouse. Currently he is working as a researcher at the Finnish Forest Research Institute.
gilbert.ludwig@metla.fi

Gillian Baker (UK)
Role: G@llinformed Co-Editor
Gill has a PhD in Molecular Ecology and has conducted community conservation and ecology fieldwork on Indonesian Megapodes. She currently works in research management in the UK.
gallinformed@yahoo.co.uk

Michèle Loneux (Belgium)
Role: Webmaster
Michele LONEUX is a wildlife biologist and ornithologist from the University of Liège, where she has studied passerine migration (1985). Since 1995, she has been involved in the study and follow-up of the threatened and one of the last Black grouse populations in Belgium for the Behaviour Biology Unit of the University. Her PhD work (2000) analyzed the influence of climate fluctuations and climate change on various European Black Grouse population dynamics. She attended the International Grouse Symposium for the first time in 1999, and organized the first of the European Black Grouse Conferences in Liège in 2000. She joined the Grouse Specialist Group in 2000 and created the related website in December 2003. She created the lay-out of the second Grouse Action Plan and is currently preparing the new Galliformes Specialist Group website. Belgium has only two Grouse species which are both threatened and close to extinction in the country. Enlarging the interest from Grouse to Galliformes allows the continuation of the group. As researcher, she is now working on bird migration once again, analyzing changes of wintering grounds of migrant birds, using the bird ringing recoveries for the Belgian Ringing Scheme.
Michele.Loneux@naturalsciences.be

John Carroll (USA)
Role: Partridges, Quails & Fracolins; North America; in situ technical training
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Richard Fuller (Australia)
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Luis Fabio Silveira (Brazil)
Role: Cracids, South America
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Zhang Yanyun (China)
Role: China
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Eric Sande (Uganda)
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Rahul Kaul (India)
Role: South Asia
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5th International Galliformes Symposium – Chiang Mai, Thailand

5th International Galliformes Symposium
Chiang Mai, Thailand
7th to 14th November 2010

Sunday 7 November 2010

16:00 Registration open
19:00 Dinner

Monday 8 November 2010

08:30 Registration

Opening Session

Chair: Stephen Browne

09:00 **Sakarindr Bhumiratana**
Symposium opening speech
09:15 **Simon Dowell and Tommaso Savini**
Scientific Program Committee Chair's Introduction
09:25 **Philip J. K. McGowan**
Conserving Galliformes
09:45 **Peter J. Garson**
The Galliformes Specialist Group
10:00 Symposium Photograph
10:15 Coffee break

Session 1: Conservation in Thailand

Chair: Tommaso Savini

10:45 **Mattana Srikrajang**
Wildlife conservation status in Thailand
11:30 **Wina Meckvichai**
Galliformes study and research problems in Thailand
12:15 Lunch

Session 2: Galliformes research and conservation in Thailand

Chair: Wina Meckvichai

13:40 **Niti Sukumal, George A. Gale, Tommaso Savini**
Ranging ecology of Siamese fireback (*Lophura diardi*) in sub-montane forest
14:00 **Tiwa Ong-in, George A. Gale, Andrew J. Pierce, Philip D. Round, Stephen Browne, Tommaso Savini**
Roost site selection of scaly-breasted partridge in seasonally wet evergreen forest
14:20 **Jirapa Suwanrat, Taksin Artchawakom, Niti Sukumal, Dusit Ngoprasert, Tommaso Savini and Pongthep Suwanwaree**
Study of Siamese fireback (*Lophura diardi*) by using camera traps
14:40 **Tanwarat Pinthong and Wina Meckvichai**
Habitat utilization of green peafowl at Huai Tab Salou, Uthai Tani Province
15:00 **Amporn Wiwegweaw and Wina Meckvichai**
Genetic variation of captive green peafowl in Thailand base on D-loop sequences
15:20 **Tommaso Savini and Niti Sukumal**
Current and future of Galliformes research in Thailand
15:40 Coffee break

Session 3: Effectiveness of protected areas

Chair: Sun Yue-hua

16:10 **Simon Dowell, Dai Bo, Roger Wilkinson, Chen Benping and Zhu Min**
Achieving long-term protection for Galliformes habitat: A case study from China

16:30 **Natalie Clark, Elizabeth Boakes, Richard Fuller, Georgina Mace and Philip J. K. McGowan**
Coverage of the Galliformes within South Asia's protected area

16:50 **Hem Sagar Baral**
Galliformes conservation in Nepal through the priority sites for conservation

17:10 **Edmund Leo B. Rico, Ronald Allan Altamirano, Neil Aldrin D. Mallari and Rachel Austin**
Enhancing the conservation and scope of Puerto Princesa subterranean River National Park (PPSRNP) Palawan, Phillipines

17:30 **N.A.D. Mallari, S.M. Marsden, J.Mendoza, J. Wenceslao, N.Puna, J.Bactol and P.J.K. McGowan**
Bringing protected areas beyond conservation rhetoric: A case study in Palawan, Philippines

17:50 Close

Tuesday 9 November 2010

Session 4: Field research techniques

Chair: Niti Sukumal

08:30 **John P. Carroll**
Science, conservation and abundance estimation in Galliformes

09:10 **George A. Gale, Tiwa Ong-in and Tommaso Savini**
A test of distance sampling to estimate the abundance of scaly-breasted partridge in a tropical evergreen forest

09:30 **Poudyal K., Bhattacharya T., Bashir T., Sathyakumar S. and Saha G.K.**
Abundance, population structure and occupancy based modelling of three pheasants in the western part of Khangchendzonga Biosphere Reserve, Sikkim, India

09:50 **David Lee and Jeremy Lindsell**
Using camera traps to assess abundances and habitat associations of Galliformes in an Indonesian lowland forest

10:10 **Xingfeng Si and Ding Ping**
Monitoring population dynamic of threatened pheasants using camera traps: a case study in Gutianshan 24-ha plot

10:30 **Laxman Prasad Poudyal, Baburam Lamichhane, Heera B. Chhetri, Ramesh K., Philip J. K. McGowan**
Distribution of pheasants and partridges in the upper Setikhola forests of Annapurna Conservation Area, Nepal

10:50 Coffee break

Session 5: Conservation status of Galliformes

Chair: Simon Dowell

11:20 **Le Trong Trai**
Emerging concerns about the status of Vietnam’s Galliformes

11:40 **Rahul Kaul and S Sathyakumar**
Conservation of Galliformes in India: challenges and future needs

12:00 **Clive Bealey, Houssein Rayaleh, Zomo Fisher, Sam Cartwright, Geoff Welch and Philip J.K. McGowan**
Saving the critically endangered Djibouti francolin and its forest ecosystem: cause for optimism?

12:20 **Paras Bikram Singh and Laxman Poudyal**
Status, habitat and conservation of swamp francolin (*Francolinus gularis*) in Suklaphanta Wildlife Reserve

12:40 **Dahal Baghwan R.**
Re-assessment of population status, habitat use and threats to swamp francolin (*Francolinus gularis*) between 2004 and 2009 in Koshi Tappu Wildlife Reserve, Nepal

13:00 Lunch

Session 6: Behavioural and Population Ecology

Chair: Rahul Kaul

14:00 **Wu Yi-qun and Liu Nai-fa**
Diurnal behaviour of *Crossoptilon auritus* in winter in north west China

14:20 **Que Pinjia**
Habitat selection and group size change of Tibetan partridge in Daocheng, Sichuan, China.

14:40 **David Baines, Nicholas Aebischer and Allan MacLeod**
The roles of weather and predator abundance in determining breeding success of capercaillie in Scotland

15:00 **Susan N. Ellis-Felege, Jonathan S. Burnam, William E. Palmer, D. Clay Sisson, and John P. Carroll**
Parental decisions and predators: investment and risks to incubating northern bobwhites

15:20 **Ramesh N. and Sathyanarayana M.C.**
Breeding biology of grey junglefowl (*Gallus sonneratii*) in Theni Forest Division, Gudalur Range, Western Ghats, Tamilnadu, Southern India

15:40 **Kerrie T. Naranjit**
Reproductive ecology of the Trinidad piping-guan

16:00 Coffee break

16:30 Poster session (see under poster tab for list of contributors)

18:00 Close

Wednesday 10 November 2010

Session 7a: Spatial ecology

Chair: Zhang Zheng-wang

08:30 **Ji-Liang Xu, Xiao-Hui Zhang, Zheng-Wang Zhang, Guang-Mei Zheng and Yong Wang**
Spatial and temporal associations of male Reeves's pheasants to different forest edges in the Dabie Mountains of central China

08:50 **Merwyn Fernandes, Mukesh, S. Sathyakumar and K. Ramesh**
Ecogeographical determinants of range limit and distribution pattern of red junglefowl and grey junglefowl in India

09:10 **Poudyal K., Bashir T., Bhattacharya T., Sathyakumar S. and Saha G.K.**
Habitat use and activity pattern of Galliformes in western part of Khangchendzonga Biosphere Reserve, Sikkim, India

09:30 **Nan Yang, Kai Zhang, Jianghong Ran, Huw Lloyd, Yu Xu, Bisong Yue and Ying Wang**
Territory size and overlap of buff-throated partridge in tree-line habitats, Pamuling Mountains, China

09:50 **Yao Xiao-gang, Zhou Wei, Xu Wan-ji, Deng Zhong-jian and Zhang Ren-gong**
Habitat suitability assessment for Hume's pheasant (*Syrmaticus humiae*) in the Nanhua part of Ailaoshan Nature Reserve

Session 7b: Conservation Breeding

Chair: Keith Howman

08:30 **John Corder**
Conservation Breeding in WPA

08:50 **Alam Singh Chauhan and Sat Pal Dhiman**
Conservation breeding programme of western tragopan at Sarahan Pheasantry in Himachal Pradesh, India

09:10 **Zhang Jing, Zhang Jinguo and Liu Bin**
Introduction and breeding of blood pheasants in Beijing Zoo

09:30 **Naim Akhtar and Shri B.S. Bonal**
Conservation breeding of pheasants in India: the Central Zoo Authority perspective

09:50 **Sat Pal Dhiman**
Conservation breeding of cheer pheasants giving emphasis to enclosure designs in Himachal Pradesh, India

10:10 **Ashwanii Gulaati**
Taking the next step forward in conservation breeding of pheasants in Himachal Pradesh, India

10:30 Coffee break

Session 8: Galliformes-human interaction

Chair: Brig Mukhtar Ahmed

11:00 **Lowell J. Mills and Peter J. Garson**
Logical conservation: applying the state-pressure-response model to priorities work on the threatened Galliformes species

11:20 **Suman Sharma**
Present opportunities of ecotourism and its impact on Himalayan Pheasants in the Pipar Area, Nepal

11:40 **Jiang Chang, Ning Wang, De Chen and Zhengwang Zhang**
Genetic signature of anthropogenic population collapse in Reeves's pheasant (*Syrmaticus reevesii*)

12:00 **Wang Nan**
Grouping behaviour of white-eared pheasant

12:20 **David Baines, Philip Warren and Kathy Fletcher**
Factors limiting population size of grey partridge in upland agricultural landscapes in northern England

12:40 Lunch

Session 9: Taxonomy and ecology

Chair: Natalie Clark

14:00 **Mukesh, M. Fernandes, S. Sathyakumar, R.S. Kalsi, Rahul Kaul and R.P. Mandhan**
Evaluation of genetic diversity and admixture analysis of red junglefowl with domestic chicken in India: preliminary findings

14:20 **Lu Dong, Yanyun Zhang, Gerald Heckel and Guangmei Zheng**
Taxonomic clarification in a plumage polymorphic species, silver pheasant

14:40 **Chang Lina and Zhou Wei**
The spatial variation of plant food for *Syrmaticus humiae* in spring at Dazhongshan, Yunnan

15:00 **Sathyanarayana M.C. and Ramesh N.**
Seasonal variation in the diet of Grey Junglefowl (*Gallus sonneratii*) in Theni Forest Division, Gudalur range, western Ghats, Tamilnadu, Southern India

15:20 **Charles Santiapillai and Shanmugasundaram Wijeyamohan**
Observations on the Indian peafowl (*Pavo cristatus*) in the Mannar District, Sri Lanka

15:40 Coffee break

16:10 **Peter J. Garson**
Workshop: Future shape and role of the Galliformes Specialist Group

Closing Session

Chair: Philip McGowan

17:40 **John P. Carroll**
Summing up

19:30 Banquet hosted by the World Pheasant Association

Summing up of Symposium

By John P. Carroll

Before I get started we must thank those who have invested so much time in organizing this conference: Stephen Browne and Simon Dowell for putting the programme together and supported very capably by Laura Owens, Tommaso Savini and George Gale—and their team from KMUTT - who volunteered to take on this enormous task.

In 1989 I was finishing my PhD in the USA. During that time I began working with a few other young biologists from the UK who introduced me to the world of Galliformes in Europe. In that year I received an invitation from Mr. Keith Howman to attend a conference in China—he was involved with this rather sketchy outfit called the World Pheasant Association. So in October of that year—almost exactly 21 years ago I travelled to Beijing and spent the next three weeks being introduced to WPA and many of you attending here today.

That conference had a profound effect on my career. Not only did it mark the beginning of what is now several decades of professional and personal friendships, but it very much expanded my view of the world and how science and conservation can be integrated.

Now here we are in 2010 at the 5th rendition of the *International Galliformes Symposium*, following the original *Pheasants in Asia* series. I bring up the 1989 symposium for several reasons. First, it probably represents the awaking of China as a global power in economic terms, but also as a real partner in Galliform conservation, it also allows for some comparisons between that time and the present. I was going through the two programmes and I can see that the changes since then have been partly revolutionary with a great deal of evolution.

Programme-wise the revolution seems to be very much focused on a couple of important and topical areas that we need to understand to conserve our species. In 1989 we talked about genetics, but in essence we knew nothing about the genetic underpinnings of our species. The breakthroughs in genetic technology in the late 1980s and 1990s have revolutionized our ability to assess systematics of our species and clarify much about, for example, social behaviour and relatedness. The other break through has been in spatial analysis. Again this field existed before, but there is no doubt the sophistication of the analyses, linked to Geographical Information Systems, and applied to the ecology of our species has dramatically altered our thinking in many topical areas. Finally, something I will bring up again later is policy and evaluation. In 1989 we were just beginning to discuss issues of conservation policy and how this might be done at state and global levels.

The evolution has seen significant advances in research in established fields. Although many of the papers at this symposium discussed the same topics of ecology, distribution and abundance, they are now at a much more sophisticated level. In 1989 we saw many papers on techniques presented, but at a level of science that many of our Asian academic friends are now presenting to their undergraduate students: things have developed very quickly indeed.

More importantly we have had some other dramatic shifts that several presenters have noted during this conference:

1. We are seeing a handing over of the academic and research torch from Europeans and Americans to nationals throughout the range of Galliformes. Our relationships have become much less paternalistic and much more collegiate—exemplified by the significant contingent of outstanding groups of Chinese and Indian biologists at this conference. As a quantitative example of this, I went through the programmes from 1989 and today.

Excluding the sessions then and now devoted to the host country, in 1989 there were 48 presentations and the primary authors on 33 of them were Europeans or North Americans. This week there were 43 presentations, only 10 of these have the primary author from Europe or North America. I view this as significant and important in the development of WPA and Galliformes Conservation in general.

2. Thailand has for a long time had some work on Galliformes mainly as a result of the efforts of Professor Wina Mekvichai. We look at what is happening here now and I am very confident that the new generation of biologists in Thailand will continue to put the Galliformes here on the front burner.

3. Those Chinese students I met in 1989 are becoming senior professors and there is no doubt in my mind that the level of investment, training, and sophistication of Chinese Galliformes research will be the standard bearer for Asia.

4. In looking at South Asia, the record speaks for itself, and I believe that, as many of those young biologists that were training in the 1980s continue to move into senior positions, we have enormous opportunities to turn Galliformes, especially in the Himalaya, into flagships for conservation. This was pointed out eloquently by Rahul Kaul.

However, now I want to change focus a bit. As I review our history and the current time I see some significant structural weaknesses that we must address. The representation of scientific expertise from Asian countries is very uneven. There is no doubt that countries like China, India, Nepal and few others are very much at the cutting edge. However, there is no expertise present from Vietnam, Cambodia, Laos, Myanmar, and Malaysia—all countries adjacent to where we are today. At this conference we also have no representatives from Africa and only one from Central/South America. This is too important to continue to ignore. In addition, I am embarrassed to say that there are only 2 representatives here from the USA. We ignore these regions at our peril.

So where do we go from here? I believe that based on the number of presentations at this conference on the integration of research, monitoring, and management we are at the cusp of buying into modern Adaptive Resource Management and this must continue.

Now I am going to issue a series of challenges to all of us in this room. Despite major advances in our science one area has lagged behind significantly. This is the development of truly sustainable Galliformes Monitoring Systems. Here I challenge a number of you in this room like David Lee, Huw Lloyd and myself among others to develop methods and guidelines creatively so that we can provide the technical resources to monitor distribution and abundance of our birds over the long term in a cost effective and sustainable manner. We need to better support those field biologists working for state agencies who are charged, not with doing science but with looking after our species over the long term. They need technical help.

The second challenge I issue today is related to the area of conservation breeding. As John Corder rightfully pointed out this morning, the terminology used in the 1989 symposium - aviculture - does not represent what is being done today. However, although I think John was right in talking about the science foundation of modern animal husbandry, which is a credit to those involved in in-situ work on Galliformes (and I want to credit both groups) there those who work on captive Galliformes as a vocation and those who do it as an avocation.

I believe there is still a significant gap and gulf between conservation breeding and ex situ conservation—that is when we talk about conservation breeding leading to introductions or re-introductions for conservation purposes. Our track record is not outstanding. We have got to find a way to integrate expertise in a way that makes sure that conservation breeding is just that within the realm of our birds in the wild.

My final challenge today is for all in this room to recognize what unique opportunities we have sitting in front of us. Here I will in part take my turn at embarrassing the rather self-effacing Dr. Phil McGowan. Looking back on this week, the three-legged stool analogy (research, management and monitoring) has come up a number of times. It is a foundation principle now for some of us involved in conservation science—and hopefully for a lot more of us after this week. In English there is another name for that stool—it is called a milking stool. The reason I mention that is because the analogy is incomplete when we look at Galliformes conservation on a global scale: this stool actually does not get us any milk from the cow. We actually need someone (or a group of someones) to get their hands dirty and start squeezing some udders. In this room that job has been taken on by Dr. Phil McGowan.

What I mean is he has worked very hard turning the WPA and the GSG into highly relevant conservation bodies on a global scale. This means that when we talk about conservation of Galliformes we have someone who now has the ear of policy makers and decision makers in the conservation world. Like I said the stool does us no good if we do not use it. Thank you very much to Phil—and I know this will carry on.

To finish up I want to quote the father of modern conservation in North America—Aldo Leopold. He said, "the key to successful tinkering is keep all the pieces."

a. Those of us in this room are joined by a passion for Galliformes;
b. We each represent the pieces of a jig saw puzzle; and
c. I urge you to remember Leopold's words and remember that you are important, but no more important than the other pieces in the puzzle.

Thank you!

Feedback from the Symposium

"The Galliformes Symposium was a great opportunity for me to meet so many Galliformes experts from all over the world at a single venue. The papers presented there not only broadened my vision on Galliformes research but also strengthened my ambition for Galliformes research and conservation in my part of the world. I had a good chance to discuss my ideas with experts who not only helped me to overcome the gaps in my research but also gave me guidance in writing research proposals utilising modern research techniques. This will be very helpful to my future research on Himalayan Galliformes and their conservation through the participation of stockholders and line departments. Last but not least, I am very thankful to World Pheasant Association for providing me with such a marvellous opportunity to attend the Galliformes Symposium in Chiang Mai, Thailand."

Muhammad Naeem Awan Azad Kashmir, Pakistan

G@llinformed letters & reports

Irish grey partridge population hits new highs with a world record in the making?

Dr Conor O'Gorman, c/o Irish Grey Partridge Conservation Trust. Email info@greypartridge.ie website www.greypartridge.ie

As a young field research scientist I vividly remember attending my first international conference, Perdix VIII in Sopron, Hungary over a decade ago. My interest was grey partridge and I was really looking forward to hear from my much more experienced peers in gamebird research. Those readers of *G@llinformed* that have been or are currently in the field may share my feeling that such events are as much a morale booster as they are a learning experience, as well as a break from the lonely and often soul destroying disappointments of field-work. That is especially so for those working with endangered and elusive species – a common scenario in the Galliformes family!

It has certainly been a largely gloomy 20 years for the grey partridge which has flirted with extinction as a wild breeding species in Ireland. However, through both the good and bad years a half dozen or so grey partridge enthusiasts have never lost faith in the possibility of recovery. An interest in the plight of the grey partridge started with Val Swan from the National Parks and Wildlife Service (NPWS) and Brendan Kavanagh a hunter and scientist. A national survey and some preliminary research was followed by government and EU funding for a conservation project, focussed on one of the last two remaining populations of grey partridge in Ireland. So it was in 1996 that Kieran Buckley was employed to increase partridge friendly habitats and reduce partridge predation levels at the project site called 'Boora', an industrially harvested series of bogs

interspersed with farmland in the Irish midlands. Around the same time I joined the project to do some field work and like Kieran I have been hooked on partridge ever since.

Local landowners, farmers, hunters and the wider community have played a hugely important role as the project has developed and expanded and early scepticism has been gradually replaced by passionate support. But for complex reasons related to the small size of the population, the availability of habitat in the right place at the right time and successive cold and wet summers the partridge were slow to respond to the early conservation efforts. Kieran stuck with the project during a depressing four years from 1998-2001 with only 4-6 pairs left, and an autumn population of 22-24 birds. A situation when lesser mortals would have packed their bags! Thankfully Kieran didn't, because things were about to change for the better.

In 2002, with great foresight, the Irish Grey Partridge Conservation Trust was founded by Brendan, and with that came a new lease of life and offers of help. A programme of captive breeding was initiated, using wild origin grey partridge from France and then Estonia and

incorporating a proportion of caught up Irish birds. The captive breeding was a controversial move for some people at the time, but using traditional gamebird rearing and releasing methods largely forgotten and unused for over a century, this work has proved instrumental in turning a corner for the population as a whole.

By 2004, things were starting to improve - with 24 spring pairs in the wild. But with an average chick survival rate of only 26%, breeding success was unsustainable in the long term. Better quality brood rearing habitats were needed, and lots of them, but required a major investment of money. In 2005 the NPWS asked for organisations to tender for a new phase in the grey partridge conservation effort. The Irish Grey Partridge Conservation Trust joined forces with the National Association of Regional Gun Councils (NARGC), Ireland's national hunters' organisation, to submit a tender. The submission was successful and with the extra pairs of hands and a new injection of funding, a plan was put into action to provide blocks of wintering habitat interspersed with a network of several km of nesting and brood rearing strips across a 12,000 hectare project site.

It has taken a few years for all the pieces of the partridge jigsaw to fall into place, but since 2008 the culmination of several key aspects of management have knitted together effectively. These factors are: predator control across the whole project site, plenty of quality nesting, brood rearing and winter habitats and a successful captive breeding project. The results speak for themselves. In 2008 there were 242 birds in the late autumn count, 473 in 2009, and 911 birds in 2010. Chick survival rates are high enough to sustain the population having exceeded 40% annually, and hit 54% this year.

This is a sea change from a period around 2001 when Kieran went 6 months at one point without seeing a single bird on the project site. Around that time he visited me in Prague in the Czech Republic, where I had been doing some field work on grey partridge. There was snow on the ground, and I showed him a field where against the snow, over 50 birds in various coveys could be seen around that field from our vantage point. Kieran went very quiet that evening! How things can change.

Project management for the current phase of the conservation effort has been carried out by Des Crofton and Simon Devereux of the NARGC, who have made sure that the people on the ground do not have to worry unduly about logistics, and can get on with the tasks at hand. It's an important aspect that is often overlooked.

John Walsh, one of the founding members of the Irish Grey Partridge Conservation Trust, has recently set up a website that tells the story not only of the work the Trust is carrying out on grey partridge, but also on red grouse. Check it out at www.greypartridge.ie.

And what about the world record in the making? The limelight belongs to Paddy Kelly. The captive breeding project initiated by Kieran and Brendan has become his labour of love and his success is unparalleled. It is a story for another time to explain the detail of how he does it, but using wild birds from the project site Paddy is able to get caught up birds in outdoor pens to pair naturally, nest and incubate naturally and brood their chicks naturally as a family unit. He then releases the family unit when he decides the time is right, into one of the many brood rearing habitats across the project site. Paddy has been hugely successful, and this year he had 32 pairs producing 510 chicks, of which 436 survived to juvenile stage in the late autumn counts. This is the holy grail for grey partridge conservation, producing chicks naturally, chicks that later have the ability to breed themselves in the wild. All very impressive, but what about the world record we are claiming? Well, one of those female grey partridge laid 27 eggs in her nest; she incubated all 27 eggs, and hatched off 27 chicks. I saw them myself. We believe this to be a world record for grey partridge and indeed perhaps for any bird species. We challenge you, the experts of the Galliformes world to come up with a better figure than that from your studies. Although we will feel rather deflated if you do! That ends this tale but hopefully one or two of us can make it Perdix XIII in Barcelona, Spain next year to tell a longer story about our conservation efforts and our vision for the future of the grey partridge in Ireland.

This Irish grey partridge covey, photographed in 2010, contains almost as many birds as the total autumn population of a decade ago. Photo by Tom Egan

An Irish grey partridge covey resting on one of the many fossilised bog oaks within the project site. Photo by Tom Egan

Paddy Kelly accompanied by research assistant Diane Armitage in 2008 at one of the captive rearing project sites. Photo by Kieran Buckley

DNA harvesting and analyses in Galliformes

Gernot Segelbacher, Department of Wildlife Ecology and Management, University of Freiburg

Molecular techniques have become widely used in conservation biology leading to the research field of conservation genetics. How isolated are populations and what is the population structure of a given population? Can we define a given population as a conservation unit? How many individuals can be recorded? What is the mating system of a species? Such questions are nowadays often addressed using genetic approaches. So-called non-invasive genetic sampling allows us to use material for genetic analyses without even catching the individuals, e.g. shed feathers, remaining egg shells or droppings. A variety of different molecular and analytical approaches are available, but the use of such non-invasive samples also has some strong limitations.
When planning a study and preparing to use using genetic methods a number of questions should be addressed **before** the start of the project:

1. What is the specific question to be addressed? Although this seems obvious, many studies using genetic markers are started without a clear hypothesis or research question.
2. Think about the sampling design. In some species you have to take what you get, especially when they are very rare or elusive. However, opportunistic sampling is often constrains further analysis. For example, estimating connectivity between populations requires a minimum sample size.
3. What material can be used? In many studies birds are ringed, measured and there is a possibility of taking blood samples. That will give you the opportunity to have a source of good DNA quality for a variety of genetic analysis. Feathers found in the field are another option for some studies, but are subject to degradation leading to low DNA quality and quantity. Success rates of moulted feathers depends on field conditions as well as on

feather size. The use of droppings sampled in the field is even more problematic and very labour and cost intensive.

4. What genetic markers do you want to apply? Microsatellites are today still the most common genetic markers to infer connectivity among population and estimate relatedness patterns. Although for many Galliformes microsatellite markers have been established, more species-specific markers have to be identified in target species. Several protocols using a variety of primers are also available for sexing birds using the CHD gene. Sequencing parts of specific mitochondrial or nuclear genes can be used to identify species or conservation units within species. Next generation sequencing techniques will definitely provide many more tools in the near future

Guidelines

Sampling and storage

Blood samples are the best option for harvesting DNA. Tissue samples from hunted species also provide a valuable source of DNA. Such samples can be stored in 95% ethanol at -20°. Currently there is a tendency for only some feathers to be plucked for DNA analysis when catching birds. However, this limits the amount of available DNA and further restricts analysis and so, blood samples should be used when possible.

In endangered species this is often not an option and therefore other material for DNA sources need to be considered. Most importantly feathers or droppings should be collected as fresh as possible and then stored accordingly. Labelling them in the field with exact GPS locations and study specific details is necessary. Feathers can be stored dry and away from light, but when storage capacity is available they can also be frozen at -20°C. DNA quality from droppings can be maximized if samples are collected in winter (for species outside the tropics) as soon as possible after defecation and frozen immediately after collecting. For samples like feathers and droppings sterile sampling techniques are crucial (make sure your bags and vials are sterile and use gloves if possible).

Laboratory processing

A number of different technical procedures during DNA extraction, PCR and data analysis can help to optimise processing samples. A review on different critical steps and how to address them can be found in Beja-Pereira et al. 2009. Some authors have also published guidelines on how to optimise the use of shed feathers for genetic analysis (e.g. Gebhart *et al.* 2009, Hogan *et al.* 2008).

Data analysis

A number of problems can arise when analysing DNA from non-invasive samples due to low DNA quality and quantity. Amplification success during the PCR can be reduced and genotyping errors are likely to occur, leading to false alleles or allelic drop out. Error rates need to be estimated carefully especially when trying to identify individuals in a given dataset. It is also important to estimate the exclusion power for a given set of microsatellite loci. Does the applied set of marker allow discriminating individuals and even siblings unambiguously?

Conclusion

Researchers should be aware of the serious limitations when using non-invasive material like shed feathers or droppings collected in the field. Do not expect all of your samples to yield enough DNA for genetic analysis. Several studies report that only about 20-50% of all sampled shed feathers can potentially be used for further genetic analyses. But even worse, you have to control for genotyping errors and invest a considerable amount of money and time to make sure that you reduce errors to a minimum. Therefore a pilot study should always be planned carefully to estimate the amplification success and genotyping error rates for your specific study. When evaluating the results of such a pilot study you can then decide if the study question can be addressed at all and how much material you need to collect. Although there has been a lot of progress in optimising non-invasive samples for ecological and conservation studies caution is still needed when analysing, processing and interpreting results.

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Re-introduction and re-enforcement as a conservation measure for Grouse?

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Introduction

Numerous species, including grouse, have been released into the wild for conservation purposes, either from captivity or translocated from areas where the species survives. The most common goal is either to reestablish an extinct population (re-introduction, IUCN 1998), or to stabilize a remnant population and prevent its extinction (re-enforcement, IUCN 1998). We exclude other contexts here. Many success stories of re-introduction and re-enforcement of threatened species are documented in literature, from the "classic" case of the Arabian Oryx *Oryx leucoryx* in the Middle East, to recent examples of Beaver *Castor fiber* across Europe and Gray Wolf *Canis lupus* in western North America. Experience suggests that species with high reproductive output, few predators and plenty of high-quality habitat at the release site make good candidates for successful reintroduction. In grouse conservation, such conditions are rare. Grouse have numerous predators, and despite considerable reproductive potential, their ground nests and precocial chicks are highly vulnerable. In addition, it seems that decisions for grouse reintroduction attempts are often based on wishful thinking rather than science. Grouse population declines are generally ascribed to deterioration of the habitat. It is naïve to hope that released birds will be more successful than native ones, where limited extent and quality of the remaining habitat no longer permits a viable population of grouse (compare Storch 2007). Therefore, a key requirement for justification of any reintroduction or restocking attempt is that the causes of decline or extinction of the native population have been recognized and are no longer acting (IUCN 1998).

For example: prairie grouse in the USA and capercaillie and black grouse in Germany

An order of 70 projects that moved grouse from one site to another is documented in the literature, including woodland grouse in Germany and prairie grouse in the United States. The number of unreported projects is unknown but it is believed to be substantial. In North America, translocations, especially of prairie grouse have been conducted already since the 1930s (Reese & Connelly 1997). Translocation is deliberate and mediated movement of wild individuals or populations from one part of their range to another (IUCN 1998) and different from the release of captive bred birds (mainly employed in Europe). In Germany, documentations of capercaillie and black grouse reintroduction attempts date back to 1978. In Germany up until 1999, ten projects with a median project length of eight years, released 2,672 black grouse, whereas 4,503 capercaillie were released up until 2006 in nine projects with a median duration of fourteen years (table 1). None of these projects has proved to establish a viable population.

Table 1: Past reintroduction/ restocking projects of woodland grouse in Germany and prairie grouse in the United States. The total number of released birds, median project length and considered time period are given. (*prairie chickens include greater-, Attwater's-, and lesser p.c.)

	N documented projects	N birds released	Median project duration	Time period
black grouse	10	2672	8	1978-1999
capercaillie	9	4503	14	1978-2006
sage grouse	22 (56 sites)	7372	2	1933-2005
*prairie chickens	15	2900	3	1967-1996
sharp tailed grouse	16	2577	3	1954-2007

Nevertheless, reintroduction attempts are ongoing throughout Europe. Since 2003, for black grouse in the lowlands of Europe, at least two reintroduction projects in each of the following countries have been reported to the GSG: UK, the Netherlands, Poland, Austria and Germany. In the biggest recent project, in Hoge Veluwe National Park in the Netherlands, there are plans to release 1,000 black grouse over a ten year period (H. Jansman pers. comm.). Also, capercaillie are still being released in two areas of Germany (S. Klaus pers. comm.) In many cases, feasibility according to the IUCN Guidelines for re-introductions has not been assessed and the chances of success are questionable.

Interestingly, median project duration in North American prairie grouse translocations has been much shorter than in European reintroductions of woodland grouse (table 1). Another trait is a high proportion of adults in the released populations, as a result of translocations of wild birds. In contrast, European capercaillie and black grouse reintroduction projects almost always released captive bred juveniles (see Siano 2008, Klaus 1998 for capercaillie projects; Wübbenhorst and Prüter 2007 for black grouse projects). Consequently, the common release season in Europe was autumn, whereas in North America releases were undertaken in spring. The latter procedure allows translocated adult grouse to get used to the lekking sites and to mate with individuals from the native population. It is unclear, as to how far these and other project traits can influence a project's outcome. For prairie grouse "soft" release techniques, where birds are allowed to accommodate to the release site in an aviary, were found to be three times more effective than direct "hard" releases, and all prairie grouse translocations that released birds in autumn, summer, and winter failed (N=9), whereas 50% of spring releases (N=20) were successful (Snyder et al. 1999). The authors however allude to the small sample size of their investigation and point out that subjective assessment of project success can blur the analysis. Their investigation was based on questionnaires, a method that probably suggests a higher success rate.

Criteria and rates of success

While different projects used different, often arbitrary, criteria, the only success criterion in agreement with the IUCN Guidelines is the re-establishment of a viable, self-sustaining population. It seems that North American grouse translocations yielded considerably better results than European releases of captive-bred grouse. Yet, success rates are low even in translocations. For prairie grouse translocations Snyder et al. (1999) determined a success rate of 32% and identified project duration and number of released birds as major factors of success. The same factors were found to affect the outcome of re-enforcement and re-introduction attempts with capercaillie and black grouse in Europe (Seiler et al. 2000). With hindsight however, all European projects must be regarded as unsuccessful, as none re-established a self-sustaining viable population. Both, long project duration and a high number of released birds contribute to a large release population that simply needs a longer time span to go extinct, compared to a small release population. To wait for a period of at least two generations after the last bird has been released, might be a reasonable period before evaluating any such project.

Essential: a feasibility study

Before the start of a reintroduction or restocking project a feasibility study is required and should be based on clearly defined objectives (IUCN 1998). The key factors to be assessed prior to any release are the availability of suitable habitat, the identification and elimination of previous causes of decline, and the genetic composition of individuals destined for release in relation to the wild population at the release site (WPA and IUCN/ SSC RSG 2009). During and after release, habitat use, survival and reproductive rates and causes of mortality are important to monitor, to allow evaluation of project results. In the end, any project to re-establish a viable population of grouse will be difficult, expensive and require a long-term commitment to be successful (WPA and IUCN/ SSC RSG 2009, IUCN 1998), while chances of success in most situations remain marginal. Unlike with other taxa, grouse populations are especially difficult to reestablish (Toepfer et al. 1990). This also holds for other Galliformes (compare Buner et al. 2010), and particularly for those that are mainly threatened by habitat loss, fragmentation, and deterioration, as are the grouse.

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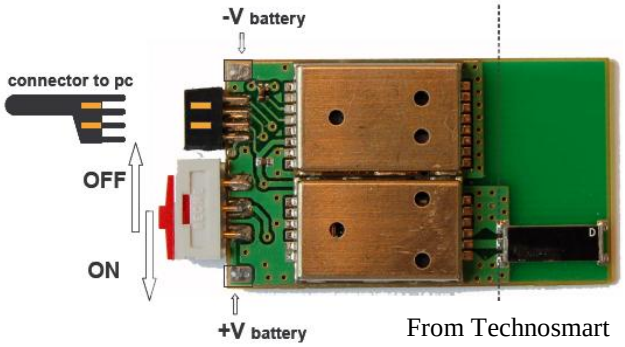
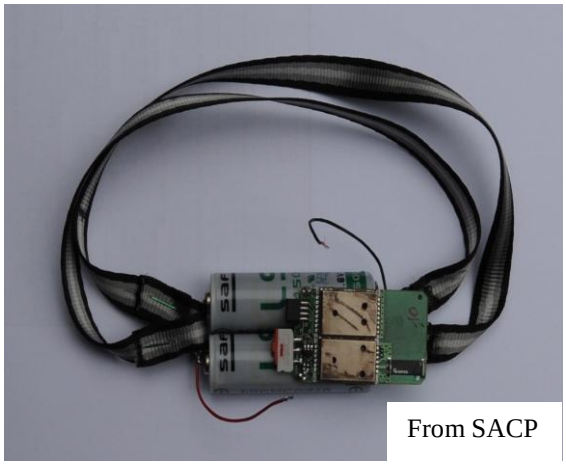
Using GPS technology in bird studies

Marc Cremades, Lai Hui Min, Ng Soon Chye and Geoffrey Davison

The Global Positioning System (GPS) is a global navigation satellite system that was created by the United States of America initially for military purposes. It consists of 24 to 32 satellites orbiting around earth that broadcasts GPS signals. These signals, received by GPS receivers on the ground, are used to calculate and provide a location that is three-dimensional (latitude, longitude and altitude) with a greatest accuracy of 2.5 metres radius for civilian applications. Before GPS was made available for civilian use, tracking studies relied on radio transmitters, which required one to be within a certain range of the animal, and fixing of locations had to be done manually by the user. Now, tracking of birds by GPS is more common and GPS chips have evolved to be much smaller, weighing 1.8g, or a size of 24 x 14.5 x 4 mm, widening its application to include smaller birds (for example using the model GiPSy 2, produced by TECHNOSMART s.r.l, Giacomo Dell'Omo). GPS trackers can be attached on animal body parts that are exposed for communication with the satellites. We have used GPS trackers on Oriental Pied Hornbills *Anthracoceros albirostris* in Singapore, the accuracy of location data being perfectly sufficient to monitor movements within the home range of an individual. We have also used them on Monitor lizards *Varanus salvator*. There have been numerous GPS studies on large birds such as albatrosses (Bonadonna *et al*., 2005) to study their navigation tools, and on smaller birds like pigeons (Steiner *et al*., 2000) to study their homing behaviour.



From Technosmart


From SACP

How it stores data

The data from the GPS can be stored to the internal memory chip of the tracker or an additional memory card can be added to the tracker to increase its capacity.

How to transmit the data

There are various options for the transmission of GPS data depending on the needs of the application. If no transmission device is attached to it, the device has to be retrieved at the end of the tracking study in order to download the data from the memory.

A Bluetooth chip allows real-time wireless transmission of data from the GPS device on the animal to the user if they are within a range of 250 metres, with help of a Bluetooth amplifier and adapter connected to a computer. However, this method requires the animal to return to a known location regularly within a close range to the user for download to be possible. If the animal can be attracted to a very specific point on a regular basis like a feeding spot or nesting area, infra-red transmission is also possible.

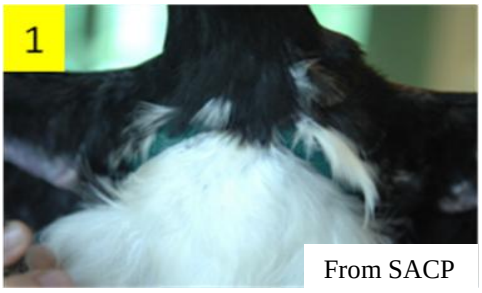
A more robust method will be to tap the Global System for Mobile Communications (GSM) network by including a SIM card to the device. The possibilities include sending the data to a mobile phone or to a server on the internet with GSM coverage.

The frequency of transmission of signals can be altered to suit a compromise between study requirements and battery lifespan. For Oriental Pied Hornbills we have used a frequency as often as one location per second, when studying a breeding male that was supplying food to a nest, because we wanted to capture nest visits that can be very quick.

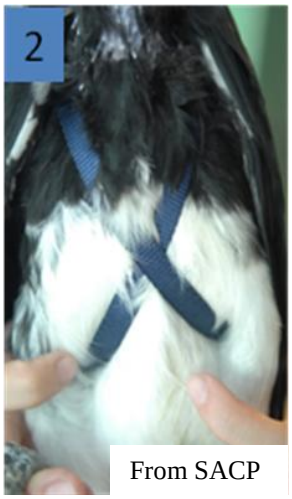
Fixing equipment to the bird

Three possible methods of attaching a GPS device with a nylon harness are:
Method 1: criss-cross over the upper breast before and behind the wings, so the device sits on the bird's back between the shoulders.
Method 2: criss-cross over the middle breast before the wings and behind the legs, so the device sits on the bird's back between the shoulders.
Method 3: criss-cross over the belly with the tapes before and behind the bird's thighs, so the device sits on the bird's rump.

For birds that fly, we prefer method 3 so as to keep the wings free for flight. For ground dwelling birds, methods 1 and 2 should be more suitable.



From SACP



From SACP

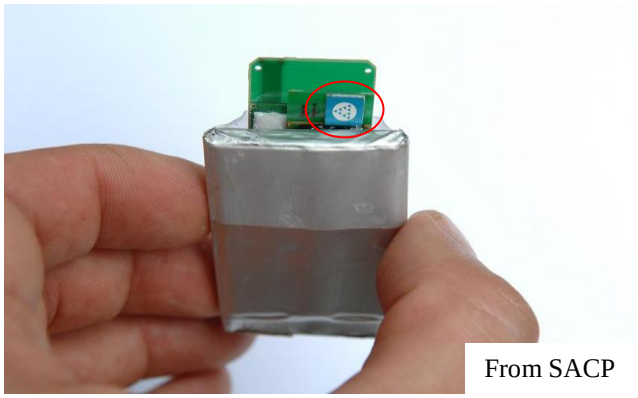
From SACP

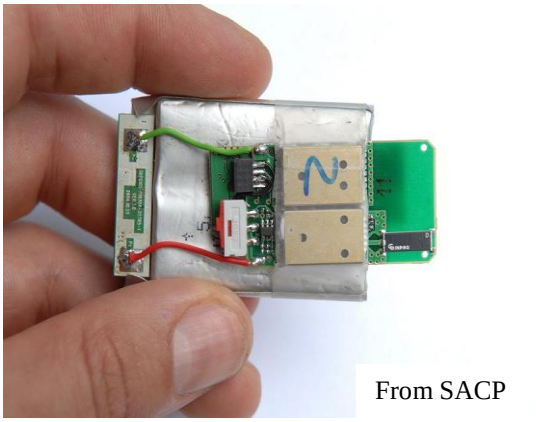

From Technosmart


From Technosmart

Alternative methods that do not require a harness
There are devices that may be glued directly on the contour feathers of the birds, as seen in this pigeons tracking study. In general, tail-mounting, suturing and gluing on feathers are suitable for larger species of birds.

Limitations depending on battery life
For large birds, devices that are less than 1% of the bird's weight have negligible effects (F. Bonadonna *et al.*). As a guideline, we keep the total weight of the tracking devices to less than 5 % of the weight of the birds (following Gaunt & Oring, 1999).
A low power consumption of the device can expand the duration of the survey and tracking possibilities of small animals with low weights for a desired period. With a lower weight of the tracking devices, the interference to the normal animal behaviour is kept to the minimum.


From SACP


From SACP

GPS System

Method 1		Method 2		Method 3	
GPS Chip	1.8g *	GPS Chip	1.8g*	GPS Chip	1.8g *
Internal memory	-	Internal memory	-	Internal memory	-
Antenna	-	Antenna	-	Antenna	-
Battery life (approximations based on 1 fix per 10 sec)	2.5g - 1 day (200 mAH) 26g - 6 days (1700mAH) 400g – 70 days (20 000mAH)	Battery life (approximations based on 1 fix per 10 sec)	2.5g - 1 day (200 mAH) 26g - 6 days (1700mAH) 400g – 70 days (20 000mAH)	Battery life (approximations based on 1 fix per 10 sec)	2.5g - 1 day (200 mAH) 26g - 6 days (1700mAH) 400g – 70 days (20 000mAH)
		Bluetooth Chip/ Infrared Chip	**1.2g**	**GSM Module**	**5g**
				SIM Card	**0.34g**
Optional: memory card		Optional: memory card		Optional: memory card, Bluetooth chip, Infrared chip	
Total weight:	4.3g <GPS<401.8g	Total weight:	5.5g <GPS<403g	Total weight:	7.84g <GPS<407.14g
Data acquisition:	1.Re-capture	Data acquisition:	1.Re-capture 2.Receiver	Data acquisition:	1. Re-capture 2.Under GSM coverage 3.Optional: Receiver

***Based on GiPSy 2 from Technosmart**

Applications today

Parameters that are recorded include time, date, longitude, latitude, altitude and instantaneous speed. This will allow an understanding of the frequency and speed of the animal's displacement, and general activity of each tracked animal. An automatic release mechanism is also possible to release the device on the animal at the end of the experiment. In the sky, on the ground, even on water, the investigation can be carried out on species from the dragonfly to the blue whale. The number of possible studies is very high. For various species of Galliformes, one could imagine studies that examine flock cohesiveness, the break-up and dispersal of flocks, or the break-up and dispersal of juveniles from a single brood. With monal and snowcock, some of the physical challenges to humans posed by following birds flying far up or downhill or across steep mountainous valleys, could be overcome. This would be in addition to the many standard opportunities to investigate home range and territory, and species variation with season, age and sex. Times such as departure from the roost and return to the roost can be detected automatically, as well as rather precise travel rates throughout the day.

Many of the problems inherent in using radio telemetry (with a hand-held antenna, and headphones) are eliminated when using GPS. Since data are collected and transmitted automatically, it is not necessary to first locate the approximate whereabouts of a bird before recording its location. It is unnecessary to triangulate positions using compass readings from several points. As data flows in at the desired intervals, the researcher is completely free to continue work on other topics, rather than following a bird within radio range to take repeat fixes. Data are collected even when a bird is not accessible to the researcher – for example, during days or weeks of bad weather when direct study would have to be suspended.

Depending on available funds and the number of birds that can be trapped safely and unharmed, many GPS data loggers can be operated simultaneously – in principle many more could be followed by radio telemetry. The key requirement of GPS technology is that the data must be retrieved, either by collecting the device at the end of the study, or preferably by using a Bluetooth amplifier to transmit real time data to a computer.

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G@llinformed news

Maleo continues to be helped by AlTO.

The NGO AlTo is still working hard on their community conservation programme in Sulawesi to conserve the Maleo and other local fauna and flora. For their latest newsletters see: www.tompotika.org

Currasow Conservation conducted by Armonia.

Armonia, a partner to the American Bird Conservancy are undertaking a number of bird conservation projects including two species of currasow. For more information see: www.armonia-bo.org

IUCN featured Species of the Day (29. December 2010): Gunnison sage-grouse

The Gunnison sage-grouse, *Centrocercus miminus*, is listed as 'Critically Endangered' on the IUCN Red List of Threatened species. This bird species was once found in the United States in shrubsteppe habitat in Colorado and Utah however, it is currently located in less than 9% of its historical range in eight populations, several of which have estimates of less than a hundred individuals remaining and with a global population of less than 5,000 in the wild.

Potential causes of the species decline are varied and numerous and include habitat loss, degradation and fragmentation, and may include loss of genetic diversity due to genetic drift from small population sizes and the species lek mating system. Current threats include continued conversion of sagebrush habitat for agricultural purposes, urbanization, and increased recreation, all of which may result in greater predation and habitat loss.

The species has been recognized by the American Ornithological Union as one of the ten most endangered species of birds in North America and has recently been listed as a candidate for consideration of future listing under the Endangered Species Act (ESA). Numerous local and range-wide groups have developed conservation plans and actions to recover the species however, the species continues to be at significant risk and lacks federal protection under the ESA. Please visit http://www.iucnredlist.org/species-of-the-day (29 December 2010).

Gunnison sage grouse *Centrocercus minimus (Photo: Noppadol Paothong)*

NEW PUBLICATIONS AND ARTICLES

Books and Book Chapters

Chávez-León, Gilberto. 2010. Long-tailed Wood-Partridge (*Dendrortyx macroura*), Neotropical Birds Online (T. S. Schulenberg, Editor). Ithaca: Cornell Lab of Ornithology. ; retrieved from Neotropical Birds Online : http://neotropical.birds.cornell.edu/portal/species/overview?p_p_spp=83911

Davison, G.W.H. and Yeap Chin Aik (2010): A Naturalist's Guide to the Birds of Malaysia and Singapore, including Sabah and Sarawak. Beaufoy Books, Oxford. Includes colour photos of 280 species by Malaysia-based photographers, with several wild galliforms including Great Argus and Red-breasted Partridge, and of captive Malaysian Peacock-pheasant by WPA stalwart John Corder.

Popatov, R.L. & Pavlova, E.A. (2010) The Caucasian Grouse: a history of studies and modern problems. This article reviews 128 studies of The Caucasian Black Grouse Lyrurus mlokosiewiczi. It provides information about range, population structure and behavioural ecology. This article, published in Russian, has been translated into English by the author and is available on his website at: http://sites.google.com/site/roaldpotapov/home/publications/Caucasian-grouse1.pdf

Sinclair, J.R., Lorima, T. & Opiang, M. (2010): What the Locals Know: Comparing Traditional and Scientific Knowledge of Megapodes in Melanesia. In: Tidemann, S. & Gosler, A. (Eds) (2010): Ethno-ornithology: Birds, Indigenous Peoples, Culture and Society (chapter 10). http://www.earthscan.co.uk/Portals/0/pdfs/Ethnoornithology.pdf

Some recent journal articles

Buner, F.D., Browne, S.J. & Aebischer, N.J. (2010):Experimental assessment of release methods for the re-establishment of a red-listed galliform, the grey partridge (*Perdix perdix*). *Biological Conservation,* in press.

Chávez-León, G. (2010): A new record of eggs and a domed nest of the Long-tailed Wood-Partridge (*Dendrortyx macroura*). Huitzil 11: 66-68. Online: www.huitzil.net.

Dong, L., Zhang, J., Sun, Y., Liu, Y., Zhang, Y. & Zheng, G. (2010): Phylogeographic patterns and conservation units of a vulnerable species, Cabot's tragopan (*Tragopan caboti*), endemic to southeast China. *Conservation Genetics 11: 2231–2242.*

Gavashelishvili, A. & Javakhishvili, Z. (2010): Combining radio-telemetry and random observations to model the habitat of Near Threatened Caucasian grouse *Tetrao mlokosiewiczi*. *Oryx 44: 491–500*

Upcoming events

7th National Quail Symposium – call for papers

The Arizona Game and Fish Department and the National Bobwhite Conservation Initiative (National Bobwhite Technical Committee) invite you to the Seventh National Quail Symposium in Tucson, Arizona, January 9-12, 2012. See http://www.azgfd.gov/quailvii/ for the latest information.

Gyrfalcons and Ptarmigan in a Changing World - International conference 1-3 February 2011 in Boise, Idaho, USA

This international conference will explore evidence for a range of environmental changes in arctic ecosystems affecting the Gyrfalcon, its competitors, and its prey, ptarmigan, waterfowl, seabirds and others, to predict effects and outcomes of global climate change, identify areas of uncertainty, and develop global strategies for measuring and mitigating them. We will publish conference proceedings in what we expect will be a landmark publication of information, ideas, and strategies.
The conference will take place in the Simplot Ballroom at Boise State University in Boise, Idaho, USA, beginning on Tuesday 1 February and running through Thursday 3 February 2011. It will feature three days of invited and contributed scientific papers and posters, as well as strategy workshops and tours of The Peregrine Fund's World Centre for Birds of Prey.
Convened by: The Peregrine Fund, Boise State University (the Raptor Research Centre and the Biological Sciences Department), and the US Geological Survey (Snake River Field Station).

Important dates: Early Registration Ends 1 November 2010. Abstract Submission Deadline 1 November 2010. Draft Paper Submission Deadline 1 January 2011. Final Paper Submission Deadline 1 March 2011.

Registration fees: Early registration $200 per person (on or before 1 November 2011). Regular registration $300 per person (after 1 November 2011 and throughout the conference, as long as space is available). Closing Banquet on 3 February 2011 (optional) $25 per person. For more information see the conference website at http://www.peregrinefund.org/gyr_conference/, or contact at the following e-mail tpf@peregrinefund.org.

12th International Grouse Symposium, Matsumoto, Nagano Prefecture, Japan, 19-23 July 2011

The Japan Rock Ptarmigan Meeting, the Institute of Mountain Science, Shinshu University, and Mountain city of Matsumoto are pleased to invite you to the 12th International Grouse Symposium to be held in Matsumoto, Nagano prefecture, Japan, 19-23 July 2011.This symposium, which is held every three years, brings together grouse specialists and biologists from many countries from Europe, North America and Asia. The conference will be held in M-Wing Matsumoto city central public hall. The official language will be English.

Scientific program

The congress will focus on all aspects of grouse biology, research and management. The Special themes will be:

Behavioural Ecology,
Grouse Genetics,
Population Dynamics and Monitoring,
Habitat and Landscape Ecology,
Conservation Biology and Wildlife Management,
Global Warming,
Grouse and their habitats.
On Saturday afternoon 23rd July a bus tour in Matsumoto City for sightseeing and shopping. The city is a small historic castle town located at the foot of the Japan Alps.

Post Conference Tour
The post conference field trip will start on Sunday morning 24th July and return on the evening of 26th July. One field trip is to the North Japan Alps to observe the rock ptarmigan *Lagopus mutus japonicus*. You can see the tame rock ptarmigan and their cute chicks at close range. Another field trip is to Hokkaido to observe hazel grouse *Tetrastes bonasia vicinitas*. For more information see the website and also second announcement.

Important dates

Second announcement: 30 April, 2010.
Deadline for intent to register: 30 December, 2010.
Deadline for abstract submission and Registration: 30 March, 2011.

Contact Persons

For general conference details contact: Hiroshi Nakamura, Faculty of Education Shinshu University, Nagano380-8544, Japan, hnakamu@shinshu-u.ac.jp and see the website http://cert.shinshu-u.ac.jp/eco_lab/modules/tinyD4/.

30th IUGB and 8th Perdix Congress

The Organizing Committee of the XXXth IUGB and Perdix XIII Congress to be held from 5th to 9th September 2011 in Barcelona with the topic:

"Human-wildlife conflicts and peace-building strategies"
In order to make the Perdix series even more attractive to gamebird biologists, we would like to welcome any other Galliform specialist, be it pheasant, cracid, megapode or grouse from anywhere in the world. This joint Congress will provide an excellent opportunity to share current developments in gamebird and other wildlife research and management, identify research gaps and conservation action needs, and encourage potential cross-country research projects.
For more information do not hesitate to contact with Aloha Congress or visit the conference official website: www.iugb2011.com

G@llinformed

Newsletter of the
IUCN-SSC/WPA Galliformes Specialist Group

Issue 5 ***July 2011***

Contents

From the Co-chairs

In this issue of G@llinformed, we continue our series of short articles on novel techniques with another piece on satellite tagging. Thanks to all those who have contributed these summaries in the last couple of issues and if you feel you have any more important lessons to share on your triumphs and troubles with techniques, please send in a piece to our Editors at gallinformed@yahoo.co.uk.

Meanwhile there has been much email traffic about the difficulties of live-trapping large Galliforms, in which members working on turkeys in USA have been advising on a green peafowl project in Cambodia. This kind of expert networking is one of the main things that make the GSG a useful organisation for its members. The Co-chairs cannot be the experts who solve your every problem, but we can act as nodes for our network of ca. 250 Gallinformers worldwide and put people in touch with each other. So if you have a problem that might be solved this way, please contact us: we have a searchable membership list with your particular species and research specialities listed, so it is easy to see if some of you match with any enquiry. And to repeat an earlier message from us, the reason why we do not publish the membership list on the website is that it opens your email address up to spammers and other troublemakers out there in the blogosphere.

Our network can also provide the World Pheasant Association with a wealth of global expertise. As an international NGO with staff, WPA raises funds with partners around the world in order to take projects forward on threatened species, their habitats and relationships with local human populations. Often partner staffs in these projects are GSG members, but the projects are co-led by WPA. As a not-for-profit organisation of its very modest size, WPA is extraordinarily successful in linking up with partners and raising funds to produce results and build local capacity. But only a few of our species can benefit from this work with our remarkable partner organisation, and at present the focus is on these ten: Trinidad Piping Guan and Djibouti Francolin (CR); Edwards's Pheasant, Green Peafowl, Polynesian Megapode and Red-billed Curassow (EN); Palawan Peacock-Pheasant, Reeves's Pheasant, Cabot's Tragopan and Brown-eared Pheasant (VU). If you want to see what WPA is currently doing, go to http://www.pheasant.org.uk/projects.aspx.

There are 64 other threatened species for us all to consider for treatment: given that we also have limited capacity they must surely be our priority. GSG members with opportunities to help them should consider working with any well-placed partner organisation, including WPA, in order to increase the likelihood of raising funds to achieve the priority objectives. The GSG can certainly consider any proposal you put forward for our endorsement, which may improve the proposal and will increase its chances of winning funding for your project. You can see our form and guidelines at http://www.galliformes-sg.org/proposal.html.

We now have just over a year to go before the end of the current IUCN quadrennium (2009-12), so we want to up our game at this point!

Peter Garson & Ilse Storch

Co-chairs Advisory Board Members

Peter Garson (UK)
Role: Co-Chair, Pheasants, project endorsement
Peter Garson is Director of Teaching in the School of Biology at Newcastle University in UK. He has been concerned with research relating to the conservation of pheasants in Asia since 1980. He has supervised PhD students and advised on numerous projects in India, Pakistan, Nepal, China and Indonesia. He was founding Chair of the Pheasant SG in 1993. He co-authored the 1995 and 2000 IUCN Action Plans for Pheasants and has helped to organise several of WPA's symposia on Galliformes in Asia.
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Ilse Storch (Germany)
Role: Co-Chair; European Grouse; Grouse Group
Ilse Storch is Professor at the Dept. Wildlife Ecology and Management, University of Freiburg in Germany
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Brett Sandercock (USA)
Role: Nearctic Grouse, behavioural ecology
Brett is an Associate Professor of Wildlife Ecology at Kansas State University. Dr. Sandercock has over 20 years of field experience working with the population biology of terrestrial vertebrates, and has published 60 peer-reviewed research articles. He is currently Series Editor for Studies in Avian Biology, and an Associate Editor for the Journal of Animal Ecology. Current projects include studies of the effects of wind power development on prairie grouse, and the effects of experimental harvest on survival of ptarmigan.
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Jeff Thompson (Argentina)
Role: Tinamous, South America
Jeffrey J. Thompson is originally from the state of New York, USA. He received a B.Sc. in environmental and forest biology from the State University of New York College of Environmental Science and Forestry at Syracuse, a M.Sc. in biology from the University of Puerto Rico – Río Pieras and a Ph.D. in forestry and natural resources from the University of Georiga. In 2004 he was a Fulbright student grantee to Argentina where he conducted his doctoral research on the spotted tinamou (*Nothura maculosa*). He is presently a research scientist in the Grupo Ecología y Gestión Ambiental de la Agro-Biodiversidad, Centro Nacional de Investigación Agropecuaria, Instituto Nacional de Tecnología Agropecuaria (INTA) in Argentina. His research interests are diverse but center around the relationship between wildlife and land use, particularly exploited species, more specifically Neotropical fauna and especially gamebirds. He is particularly dedicated to teaching quantitative ecology to Spanish speaking biologists, having taught classes in Costa Rica and Argentina, and is the co-author of the soon to be released Spanish language book *Conservación Cuantitativa de los Vertebrados*.
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Alain Hennache (France)
Role: Ex situ conservation
1973 to 2009: "Maître de Conférences" at the National Museum of Paris Department of Botanical and Zoological Parks. 1979 to 1997: assistant Director in Zoological Park of Clères. Keeping, rearing and exhibit of many birds species. 1997 to 2009: scientific advisor in Zoological Park of Clères
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René Dekker (Netherlands)
Role: Megapodes
Director of Collections, Netherlands Centre for Biodiversity. Rene is one of the founder members of the Megapode Specialist Group and Co-author of "the Megapodes".
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Gilbert Ludwig (Finland)
Role: G@llinformed Co-Editor, Palearctic Grouse, population dynamics, monitoring
Gilbert has a PhD in Ecology & Environmental Science and has done population ecological research on boreal forest grouse, especially black grouse. Currently he is working as a researcher at the Finnish Forest Research Institute.
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Gillian Baker (UK)
Role: G@llinformed Co-Editor
Gill has a PhD in Molecular Ecology and has conducted community conservation and ecology fieldwork on Indonesian Megapodes. She currently works in research management in the UK.
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Michèle Loneux (Belgium)
Role: Webmaster
Michele LONEUX is a wildlife biologist and ornithologist from the University of Liège, where she has studied passerine migration (1985). Since 1995, she is involved in the study and follow-up of the last and theathened Black grouse population in Belgium for the Behaviour Biology Unit of the University. Her PHD work (2000) analyzed the influence of climate fluctuations and climate change on various European Black Grouse population dynamics. She attended the International Grouse Symposium for the first time in 1999, and organized the first of the European Black grouse Conferences in Liège in 2000. She joined the Grouse Specialist Group in 2000 and created the related website in December 2003. She made the lay-out of the second Grouse Action Plan and is currently preparing the new Galliforme Specialist Group website. Belgium has only two Grouse species, both threathened and close to extinction in the country. Enlarging the interest from Grouse to Galliformes justifies to stay within the group. As researcher, she is now working on bird migration again, analyzing changes of wintering grounds of migrant birds, based on bird ringing recoveries for the Belgian Ringing Scheme.
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G@llinformed letters & reports

Training and capacity-building for surveying Himalayan Galliformes in Pakistan

David Lee, World Pheasant Association/The Royal Society for the Protection of Birds

The Western Himalayas Endemic Bird Area extends from western Nepal, across northern India and Pakistan to Afghanistan, covering around 130,000 km^2 of mainly temperate coniferous, broadleaf and mixed forests. These forests, like many others, suffer from fragmentation, degradation and clearance through the collection of fuel and timber, while infrastructure projects and overgrazing by livestock also pose serious threats to forest quality and coverage. The area is important for a number of restricted-range and threatened species, which include Western Tragopan and Cheer Pheasant, which are both listed as Vulnerable, and the Critically Endangered Himalayan Quail. A number of other Galliformes species are also found in the western Himalayas region, including Koklass Pheasant, Kalij Pheasant, Himalayan Monal, Himalayan Snowcock and Snow Partridge.

Coupled with continuing habitat loss and degradation, there is little current information on the distribution and status of Pakistan's Himalayan Galliformes; in some cases, no reliable fieldwork has been undertaken. In recognition of these two conservation challenges, Brigadier Mukhtar Ahmed, Chair of the World Pheasant Association-Pakistan (WPA-P), and Vice-president Emeritus World Wide Fund for Nature-Pakistan (WWF-P), met with Dr Philip McGowan, Director of WPA, at the 5th International Galliformes Symposium in Chiang Mai, Thailand, and proposed that the conservation knowledge of these species be updated. It was agreed that a 3-year survey would be instigated to help increase the current conservation understanding of these species.

The first step in developing this plan was to help train local conservation fieldworkers in designing and implementing surveys and, through this, develop the capacity of those individuals and institutions to conduct future survey work and inform others. In April 2011, with support from the Galliformes Specialist Group, WWF-P and WPA-P, a one-week training course was run in the hills of Ayubia National Park, around 60km north of Islamabad. The training was based at the Baragali summer camp of Peshawar University, formally an old British hill camp, which is situated in temperate mixed forests at an elevation of around 2,600m. The area itself has a high density of Koklass Pheasant, while Kalij Pheasant is found at slightly lower elevations in the national park.

The aims of the training course were to:

- Give all participants grounding in the basics of designing and carrying out a large-scale survey of Galliformes;
- Ensure on completing the training that the participants were all at the same standard in their ability to carry out the fieldwork;
- Work closely with the local project leaders on the overall design of the survey.

In total, 20 participants active in conservation across the Himalayan region of Pakistan were selected from the Wildlife Divisions and Universities of the four provinces covering this area (Khyber-Pakhtunkhwa, Gilgit-Baltistan, Punjab, and Azad Jammu and Kashmir). Three co-trainers assisted the training activities: Prof. Zahid Baig Mirza (Professor of Biodiversity and Ecology, Kinniard College, Lahore), Safdar Ali Shah (Pakistan Wildlife Department) and Hassan Ali (WWF-P).

Using a series of presentations developed by WPA, participants were trained in designing field studies for Galliformes, framing project aims and objectives, the general guidelines for study design, understanding biases and solutions for study design, observer bias, training and bird identification, and selecting census methods for Galliformes studies. These were supported by class and field-based group exercises that focused on designing surveys appropriate for the Himalayan terrain and species in question, as well as data collection, understanding observer differences, identifying species, and using Global Positioning System (GPS) receivers to map read and conduct surveys. Additional training provided by the co-trainers included an introduction to wider ecological concepts, including ecological linkages found in the different ecozones of Pakistan, a review of the status and distribution of Pakistan's Galliformes, the use of Geographical Information Systems (GIS) in supporting conservation field studies, and recent surveys of Western Tragopan. All this aimed to help enhance the current levels of experience and understanding in the trainees. The training especially emphasized the need for good planning and to standardise all surveys using agreed protocols, for example in terms of census method, observer ability, timing, and data recording, a crucial point in ensuring robust data are collected during the planned large-scale survey.

A resource CD was compiled for the trainees, and included the WPA training presentations, WPA's draft manual titled *Designing Field Studies for Galliformes*, additional presentations made by the co-trainers, a photo gallery, and additional information on the participants and Pakistan's Galliformes, including recordings, photos and distribution maps. On completing the training, each participant received a copy of the CD and training certificate.

There were a number of key outcomes from the training course:

- Staffing: The training activities provided the opportunity to identify those individuals who possessed the necessary interest, ability, including physical ability, and enthusiasm to conduct the survey. In total, eight individuals, representing the four provinces, were short-listed and they will support Mohammad Naeem Awan, the project coordinator, in all aspects of the coming survey.
- Sampling design and survey methods: Following discussions with the co-trainers and participants, and based on previous experiences of initiating large-scale surveys, a draft sampling design and survey methods have been proposed.

  Ideally, the initial site selection should be based on existing knowledge and agreed priority sites, for example Palas Valley, and the National Parks of Machiara and Ayubia, as well as predicted important sites with the use of geospatial techniques and habitat evaluation modelling, which has been developed for Western Tragopan. It is hoped this approach can be developed over the first 18 months of the project, with WWF-P providing the technical support.

  A systematic approach to surveying sites based on sampling individual watersheds, minimising or preventing spatial overlap between sampling units and maximising site coverage with resources available, is suitable for the general terrain, a key limiting factor to sampling design and method selection in the area, and many of the target species. This design has been used for surveying Western Tragopan in Palas Valley. A different systematic approach may be required for species occupying higher alpine elevations since the selection of optimum census method is made along broad altitudinal lines.

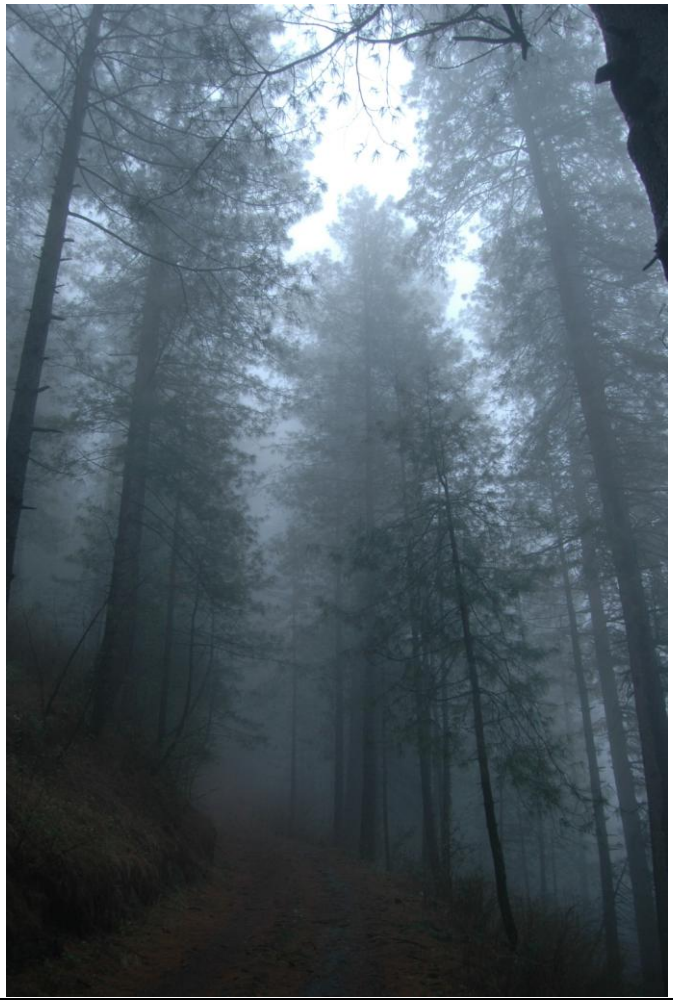
  Two census methods are proposed for the survey of Himalayan Galliformes: call/point counts and line transects. Both methods are relatively simple to implement and repeat, require few observers (compared to flushing techniques), have sources of bias that can be easily controlled for, and can be used for surveying a suite of species simultaneously. The former approach is suited to surveys of Western Tragopan, Himalayan Monal, Koklass Pheasant, Kalij Pheasant, Cheer Pheasant, Indian Peafowl and Red Junglefowl. It is recommended data be collected from call/point counts that support distance sampling analysis, which has not been done in the past and would greatly enhance the potential value of the abundance data collected. Line transects are more suited to surveys of those species occupying the higher elevations, namely Himalayan Snowcock and Snow Partridge. The best way to conduct these surveys may be to combine them with transect surveys of high elevation mammals. This would make good use of shared resources and maximise survey effort between field teams. With some training, and the presence of key Galliformes field staff, data could be effectively collected simultaneously for high elevation Galliformes and mammals.
- Steering committee: This needs to be put in to place to help facilitate an effective 3-year survey and should include Wildlife Department representatives from each of the provinces and, naturally, from both WPA-P and WWF-P.
- Press release: A press release outlining the training course was issued to the national press of Pakistan. This was published on 19 April 2011 in the newspaper Pakistan Today and helped highlight the importance of the training activities to a wide audience.
- Future training: To support the natural progression of the trainees and that of the survey, it is anticipated a second training course will be scheduled for 2012. It is anticipated this will focus on data management and analysis, and scientific report writing.

With the large-scale 3-year survey of Galliformes of the Pakistani Himalayas scheduled to start later this year, the training has provided those involved with the necessary skills to help design and undertake this important fieldwork, while the trainees' impressive grasp of a range of new concepts bodes well for the future conservation of Galliformes within the country. This extensive survey, a collaborative effort between WPA-P and WWF-P, will provide a valuable indication of the status and distribution of Galliformes and, crucially, identify key areas for the effective conservation of these species.

Training course participants and trainers

Group exercises in planning surveys of Galliformes (photos by David Lee)

Ayubia National Park (photos by David Lee)



Trainees receiving their training certificates and CDs from Mr Safdar Ali Shah (Lt. Col. Shams of WPA-P is to the left) (photos by David Lee)

Quick notes on the Plain Chacalaca *Ortalis vetula*

G.W.H. Davison,

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Since the agreement of the Bali Action Plan at the UN Framework Convention on Climate Change (UNFCCC) Conference of Parties in December 2007, signatory nations have been meeting frequently to negotiate a basis for continued actions to fight climate change. The meeting venues have varied from glacial to tropical, the most recent being in Cancun, Mexico, from 29 November to 10 December 2010.

Held within the confines of a luxury beach resort, which effectively became UN territory for the duration of the meeting, security was paramount and delegates met from dawn to dusk in windowless rooms where opportunities for watching wildlife were truly minimal.

The redeeming features were the hotel's golf course, where coatimundis and crocodiles roamed. Crocodiles *Crocodilus moreletii* possibly formed the largest vertebrate biomass component, with just a few – but very heavy – individuals living in lakes on the golf course. Coatimundis *Nasua nasua* are much more abundant but much smaller, with an average body weight of around 4.75 kg and a population of at least 38 within the 64 ha area. This comes to approximately 280 kg of coatimundis per square kilometer. The third largest vertebrate biomass component is probably the Plain Chachalaca *Ortalis vetula*.

Within 64 ha of the main golf course, there were not less than six groups of Plain Chachalaca, comprising at least 32 individuals – a mere 12 kg biomass per square kilometre. Group sizes were three (minimum count), four, five, six, seven and seven (thought to be complete counts). This gives a minimum density of 0.5 individuals per hectare, but in view of the areas that were not surveyed within the golf course (about 25 ha), and excluding built up areas and water bodies, density is likely to have been in the order of one individual per hectare (possibly up to 40 kg biomass per square kilometre). Including another group of seven birds just beyond the golf course boundary, mean group size in early December was 5.57, and the mean distance between the centres of activity of adjacent groups was 210 m. Within larger groups, there was some indication of the formation of pairs. For example, one group of 7 consisted of 2, 2 and 3 smaller groups of birds within a radius of about 40 m, and the association of 3 birds in this group contained 2 full-sized and one three-quarter grown individual (the only one noticed that was clearly not adult).

They fed predominantly off the ground. The following foods were seen to be eaten (Table 1).

Table 1. Food taken by *Ortalis vetula* at Cancun, Yucatan Peninsula, Mexico.

Family	Species	Part	Size (mm)	Colour (ripe)
Goodeniaceae	*Scaevola taccada*	Fruit	9 x 6 x 6	Green
Moraceae	*Ficus* sp.	Syconium	10 x 8 x 8	Dull purple
Polygonaceae	*Coccoloba diversifolia*	Fruit	8 x 7 x 7	Purple
Solanaceae	*Solanum arboreum*	Fruit	7 x 6 x 6	Red
Tiliaceae	*Muntingia calabura*	Fruit	12 x 14 x 14	Dull purple

In previous records of their diet, other species of *Solanum* and *Ficus* have been reported (Delacour & Amadon 1973; Peterson 2000), but all of the records in Table 1 appear to be new. Ten faeces were collected, and each contained between three and eight (mean five) undigested large, hard seeds of *Coccoloba* or *Scaevola* (Table 2). One of the faeces also contained six tiny unidentified seeds. The larger seeds appeared undamaged, except that the thin outer layer of flesh was digested or partially digested away. In the case of *Coccoloba*, this resulted in an oddly coloured and distinctive sage-green or blue-green paste. All seemed very moist and fresh, suggesting a very short gut passage time. Because of the few large seeds remaining within a moist, incoherent matrix, the faeces did not form the neat cylinders typical of Galliformes that have a more fibrous diet. Because the seeds themselves seemed undamaged, and were definitely not comminuted in the gizzard, they are likely to be viable and hence chachalacas may be an important short-range seed disperser.

Table 2. Contents of ten individual faeces from *Ortalis vetula* at Cancun.

1	*Coccoloba diversifolia*	5	
2	*Coccoloba diversifolia*	5	
	Sp. indet.	6	Size 1.5 x 1.0 x 0.5 mm
3	*Coccoloba diversifolia*	4	
4	*Coccoloba diversifolia*	4	
5	*Coccoloba diversifolia*	4	
6	*Coccoloba diversifolia*	3	
7	*Coccoloba diversifolia*	4	
8	*Coccoloba diversifolia*	8	
9	*Scaevola taccada*	7	
10	*Scaevola taccada*	6	

The habitat of these birds was the landward side of disturbed back-mangrove, modified by the insertion of the golf course. Wild areas between the fairways contained a wide diversity of small, branching trees to a canopy height of 5 – 8 m, with a dense tangle of creepers and fallen wood, on low-lying ground with occasional small swampy brackish and freshwater pools. The small back-mangrove tree *Conocarpus erectus* was a conspicuous member of the flora. The invasive leguminous tree *Leucaena* sp. was very common. Palms were abundant along edges and artificial planting of palms, Plumeria, Allamanda and other ornamental shrubs and trees increased diversity. *Scaevola* and *Solanum* were edge plants growing in pure stands close to paths or fairways on previously cleared ground. The chachalacas seemed to use all of this vegetation, roosting in groups in the crowns of trees and particularly on bare dead crowns projecting above the canopy layer. They flew over fairways from one forest patch to another, but were seldom seen on the mown grass of the fairways and apparently did not feed there. Their most remarkable feature was their tameness, some individuals allowing an approach to within 3 m. Presumably, this is related to the absence of any hunting within the golf course. Potential mammalian predators in the area included margay *Leopardus wiedii* and gray fox *Urocyon cinereoargenteus*, and as a proficient climber, coatimundi is a potential nest predator.

The purpose of this note, besides recording a few observations on foods and natural history, is to point out a good research site for anyone rich enough to stay in such a resort setting. The birds are tame, easily accessible, easily observed, and abundant. Though it is not a threatened species, it would make a good model for comparison with other chachalacas. Cancun is within the range of the subspecies *O. v. pallidiventris*, to which these observations refer. This is near the mid point of the species' range, whereas the previous intensive studies of this bird have been in the Rio Grande valley, Texas, at the extreme northern periphery of its range (e.g., Marion 1974). Vegetation types and plant species composition are likely to have significant effects on the species' biology at different locations.

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Experiences of satellite tags on rock ptarmigans

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Here we report our experiences by use of satellite telemetry on a subspecies of the rock ptarmigan *Lagopus muta*, the Svalbard rock ptarmigan *Lagopus muta hyperborea* from an ongoing pilot study (http://svalbardrype.npolar.no/en/).

Among many unknown aspects of the Svalbard rock ptarmigan's biology is whether the birds migrate seasonally within the Svalbard archipelago (Pedersen et al. 2005). No knowledge exists about their wintering areas and possible migration routes during the Arctic winter (October through March). Claims have been made that this species may undertake long-range migration, a behaviour that can allow them to track seasonal shifts of suitable feeding areas (Pedersen et al. 2005; Gudmundsson 1972).

The Svalbard rock ptarmigan is the only resident terrestrial bird in the high Arctic Svalbard archipelago, Norway (74-81°N, 10-30°E). Svalbard is a remote area approximately 62,700 km^2, with almost no people living there and no road connections between the few communities. And the ability, for retaining tagged ptarmigan is limited. Therefore, the most effective method for gathering reliable data about bird migrations and overwintering areas is satellite telemetry. Since we were able to capture birds in May only, the tags needed to last for more than 12 months.

Figure 1. Svalbard rock ptarmigan mounted with a 20 g satellite tag. Photo E. Fuglei

Figure 2. Svalbard rock ptarmigan flying with a satellite tag mounted on its back. Photo Å. Ø. Pedersen.

Figure 3. One of the methods used for capturing the Svalbard rock ptarmigan. Guiding of ptarmigans against the mist net mounted on two bamboo poles. Photo K. Lone.

We selected Argos- compatible bird tracking Platform Terminal Transmitters (PTT) designed and commercialized by NorthStar Sciences and Technology (http://www.northstarst.com/). We used 20 gram battery powered PTTs with a battery lifetime expectancy of up to 500 hours. For the tags to work for more than 12 months they were programmed with a duty cycle (i.e. pre-defined transmitting period) of 5 h every 5 day. It is important to note that the Svalbard rock ptarmigan are heavier than rock- and willow ptarmigan *Lagopus lagopus* living for instance in mainland Norway. Rock ptarmigan in Svalbard show large seasonal variations in body weight due to heavy fat deposition in autumn, and their bodyweight can vary from 500-550 g in summer to 900-1200 g in winter (Steen and Unander 1985). The weight of the tag should not exceed more than about 4 % of the birds body weight. We also based our selection of satellite tags on the experiences conducted on ivory gulls (Gilg et al. 2010). The transmitters were attached to the birds like a backpack that consisted of a plastic covered neck ring (4- 5 cm in diameter) with a flat "tail" to fasten the PTT on (Figure 1, Figure 2).

We captured and mounted eight ptarmigans with satellite tags in May 2009 (five hens and three males) and 10 in May 2010 (four hens and six males). Since the Svalbard rock ptarmigan is extremely tame and show very little marked fear behavior we were able to get close and capture them by using to different methods. (1) With a hand held Supertalon net gun (http://lawenforcementmall.com/ supertalon.html) where a net is shot from a distance of 7-10 m over the birds or (2) by using a mist net mounted on two long bamboo poles held by two people, while two other persons guided the ptarmigans against the net that was put over them (Figure 3).

All of the eight satellite tags deployed in May 2009 functioned satisfactorily (in 4586 positions) and 84 % were of good quality, with bearings that were good enough for us to estimate a location. In detail, after losing one bird during the hunt in September 2009, we lost contact with the first tag in March 2010, the second in late April, the third and fourth in mid-May, and the last three were still working in July 2010. Our experience with the 10 tags deployed in May 2010 is somewhat different. Here we also lost one bird during the hunt in September 2010, as well as loosing contact with the first six tags during the summer of 2010, the next in October 2010, while the last two tags are still working in February 2011. We are currently discussing with NorthStar Sciences and Technology the reason why we lost contact with almost all the tags we mounted in 2010. So far, we have not been able to solve the problem. In order to get more experience with the satellite tags we are planning to put out up to five more tags in May 2011.

Thanks to support from the Governor of Svalbard, Svalbard Environmental Protection Fund, Nansenfondet, Sparebanken Nord-Norges gavefond and Norwegian Polar Institute

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G@llinformed news

Some recent journal articles

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de Queiroz, S.A. & Cooper, R.G. 2011.Gender-based differences in stride and limb dimensions between healthy red-wing tinamou (*Rhynchotus rufescens*). Turkish Journal of Zoology, 35 (1): 103-108 2011 **DOI:** 10.3906/zoo-0904-21

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Upcoming events

The 12th International Grouse Symposium postponed 1 year

Hiroshi Nakamura

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IGS News No. 5 (4th April)

Dear Grouse Scientists,

Due to the unprecedented disasters and continued uncertainty about the nuclear situation in Japan, The Local Organizing Committee of IGS2011 regretfully announces that the IGS2011 must be canceled this year. However, The Local Committee proposes the following: **Postpone the IGS for a year.**

As we announced in IGS News No.4, we judged that it was possible to open the symposium in this July in Matsumoto as it was planned. We announced our decision because neither Tokyo nor Matsumoto had damage from the major earthquake and tsunami. We had hoped for the nuclear situation to be resolved in a short time. Unfortunately, the status of the damaged nuclear plant remains unforeseeable.

The reports of the IAEA http://www.iaea.org/newscenter/news/tsunamiupdate01.html and other sources indicate that this is a situation of great uncertainty and a significant risk of a sudden deterioration leading to serious large-scale radiation. This uncertainty will continue for weeks and perhaps months.

Thus, our Local Committee and the IGS Program Committee feel that we cannot carry forward the responsibility for the symposium and its participants because of the current situation. In addition, Japan is facing another new problem this summer, which is the shortage of electric power. The loss of the nuclear power plant has resulted in a regulated periodic reduction in power in Tokyo and its surrounding areas. These reductions have succeeded and the electrical problem may disappear in a short time. However, late June is the peak time of electric demand. We are afraid that we may need again the periodic reduction in power, which causes traffic problems.

For these reasons, our Local Committee decided to postpone the IGS for a year. We are sorry if this has caused anyone any inconvenience, but we feel under the circumstances that we have no choice in our decision. The Committee of the Grouse Group within the IUCN Galliformes Specialist Group is supportive of our decision. We all hope that the nuclear situation will be under control by the end of this summer.

All our symposium plans may be kept and adjustments can be made as needed. Current registrations will be cancelled and a new registration process will be started in the fall of 2011 as we did last year. Those who paid registration fees for 2011 will have a refund returned as soon as possible. We will also try to find a way to help those who should already have booked their flights. If you need our assistance with cancelling your flights, please contact us. My secretary, Yukiiri, and I will contact the people needing cancelation help. Our hope is that everyone who has already purchased a ticket can have a refund. We know some airlines are allowing refunds voluntarily, but if you encounter problems, we will try to help.

Our Local Committee will renew our symposium plans more attractively and, hopefully, allow more participants to attend more easily in 2012. The website will be continued and information updated regularly. We would like to continue announcements using the IGS News forum until the IGS2012. I have received a lot of get-well messages by e-mail. We really appreciate your kindness. We believe that we Japanese can rise again from this unprecedented disaster.

The reason that we accepted IGS in Japan is because many grouse scientists were interested in our presentation about the Japanese Rock Ptarmigan at the IGS2005 held in Luchon, France. The ptarmigan is extremely unique as I pointed out in my research reports in the Grouse News 40 (Nakamura 2010). We believe firmly that the IGS2012 held in Japan will contribute not only to the conservation of the ptarmigan but also to mark a new phase in IGS. Because we have a long history of its conservation and researches on the ptarmigan and unique ecological, cultural, and conservation status, we expect that many grouse scientists will want to participate in the IGS2012 to observe our work, the grouse, and the habitat of these isolated populations.

We are looking forward to see you next year in Matsumoto, Japan.

Reminder – 29th Prairie Grouse Technical Council (PGTC) Meetings October 4-6, 2011

The 29th Prairie Grouse Technical Council (PGTC) Meetings October 4 - 6, 2011 hosted by Kansas Dept. of Wildlife and Parks, Fort Hays State University, Hays, Kansas.

A conference announcement, call for abstracts, call for Hamerstrom Award nominations and other infoformation will be sent out through the PGTC listserv very soon. If you are not on that listserv and desire information, please contact David Dahlgren at dave.dahlgren@ksoutdoors.com. Any other questions can be directed to Dave as well. We look forward to an excellent conference. There will be a field trip to Lesser Prairie Chicken range, which is sympatric with Greater Prairie Chicken range in western Kansas.

Dave Dahlgren, Kansas Department of Wildlife and Parks, 1426 Hwy 183 Alt., PO Box 338, Hays, KS 67601-0338, USA, dave.dahlgren@ksoutdoors.com.

First announcement - 6th European Conference Black Grouse Endangered Species

Invitation
The first International Black Grouse Conference was organised in Belgium, in 2000. Since then the conferences have been organised in different countries to gather black grouse specialists from across Europe. The 6th meeting will be held in Sweden.

We are pleased to invite you to the 6th European Conference Black Grouse Endangered Species.

The conference will be held in Gysinge, Sweden, in September 2012. More information and possibilities to register on-line will added later. We hope that the conference will be a great opportunity to discuss the present situation of the black grouse in Europe and further initiatives concerning the protection of this species and its habitats.

Language of the conference: The official language will be English.

Contact person: Jacob Höglund (jacob.hoglund@ebc.uu.se)

Photo: Gilbert Ludwig

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Newsletter of the
IUCN-SSC/WPA Galliformes Specialist Group

Issue 6 ***January 2012***

Contents

From the Co-chairs

Apologies for this issue being a month overdue, and thanks to all contributors, Gill Baker (Editor) and Laura Owens (WPA) for bringing it to fruition.

Recently we have been advising on a proposal for work on predictive mapping on Cheer Pheasant distribution in Nepal and Green Peafowl status in NE India. We are also continuing to contribute to discussions about the 2012 revision of Red List classifications: Rock Partridge and Edwards's Pheasant are still being debated for possible uplisting to Near Threatened and Critically Endangered respectively. See the Threatened Galliformes Forum at http://www.birdlife.org/globally-threatened-bird-forums/category/species-group/threatened-galliformes/.

We go to the second four-yearly meeting of all Specialist Group Co-Chairs, and many other key players in the SSC and the IUCN Species Programme, at the end of February in Abu Dhabi. The first of these meetings, held in 2008, was where the GSG was founded as an amalgamation of its five predecessors. It also served as a melting pot for a number of important issues of concern to all SGs: how the Red List was to be managed being uppermost on that occasion (nearly destroying the meeting!). The 2012 meeting has a forward-looking agenda including sessions on finding funds, improving communication both within and beyond the SSC, and using the Red List to set priorities for action. And it is especially good to see a special focus on seeking greater synergies between the *in situ* and *ex situ* communities, as a good many of our species (especially pheasants) are held in captive collections all over the world. We have already contributed strongly to the SSC/EAZA working paper for this debate on how to bring these two, sometimes argumentative, factions closer together for the mutual benefit. The objective must be to work together in promoting and implementing conservation plans for threatened species, using the fullest possible range of advocacy opportunities, funding streams and action tools.

Whilst in Abu Dhabi, we also expect to meet with representatives of WPA, EAZA and AZA amongst other organisations, to discuss the related issue of finding some core support for the GSG. There is no doubt that we could do a great deal more for you, our members, and thereby for all our species, if we had a secretariat to handle enquiries and communication more effectively.

If you have queries, ideas or suggestions for us to take to this important meeting for the future of the GSG, please do email us soon.

Send anything you want to see included in the next issue of *G@llinformed* to Gill Baker (gallinformed@yahoo.co.uk) by 1 June 2012.

And meanwhile, please keep up all your good work on our birds, and enjoy helping them through 2012!

Peter Garson & Ilse Storch

Co-chairs Advisory Board Members

Peter Garson (UK)
Role: Co-Chair, Pheasants, project endorsement
Peter Garson is Director of Teaching in the School of Biology at Newcastle University in UK. He has been concerned with research relating to the conservation of pheasants in Asia since 1980. He has supervised PhD students and advised on numerous projects in India, Pakistan, Nepal, China and Indonesia. He was founding Chair of the Pheasant SG in 1993. He co-authored the 1995 and 2000 IUCN Action Plans for Pheasants and has helped to organise several of WPA's symposia on Galliformes in Asia.
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G@llinformed letters & reports

Conservation priority-setting in the Greater Himalaya and beyond

Jonathon C Dunn (PhD student), Newcastle University

The Greater Himalaya is a special place for Galliformes, providing habitat for a large number of species, some of which are range-restricted and highly threatened. As such, the region has been the focus of the GSG and the World Pheasant Association's (WPA) continued efforts to conduct, stimulate and support research across the region. In the last newsletter David Lee highlighted some of the excellent training and capacity building that has been undertaken in the Western Himalaya in Pakistan. To complement such work being carried out on the ground in individual countries, WPA is also involved in attempts to co-ordinate a regional strategy for future galliform research across the Greater Himalaya. My own PhD project was set up to help provide an analytical basis for this regional strategy. Those of you who attended the 5th International Galliformes Symposium in Chiang Mai will have been briefly introduced to this project, which seeks to look at the declines and conservation of Galliformes at the regional scale across the Greater Himalaya. Much of the work relies on historical locality records contained within WPA's database.

When working with a region as large as the Greater Himalaya, one fact becomes immediately obvious: both its biodiversity and its human populations are distributed very unevenly. Human influences are overwhelmingly responsible for most of the current threats to biodiversity and yet paradoxically, humanity is also responsible for any conservation action to mitigate these effects. As a result, a conservation investment in one place may not have the same effects in another. So a crucial component of modern-day conservation science is determining how to make good decisions:

(i) What to conserve?
(ii) Where to conserve?
(iii) How best to conserve?

These three crucial questions are dealt with by NGOs and policy-makers alike on a daily basis. Obtaining robust answers is not a trivial exercise, especially given that conservation resources such as money, labour and expertise are all finite and often limiting. Get it wrong and you might simply help a species towards extinction, but you also risking wasting your resources and damaging the name of conservation in the process. Tackling these questions in the context of the Greater Himalaya in order to best prioritise limited conservation resources for Himalayan Galliformes is therefore an important objective of my research. Although preventing extinctions is the ultimate aim of the game, we need to choose how to go about it. For example, do we want to focus on species or sub-populations, or adopt proactive versus reactive approaches? It is only once we have a clear idea of what we value that we can start to prioritise between approaches.

Conservation priority-setting can be broadly split into practices that look at species and those that look at sites (Brooks *et al.* 2006). Both require reliable baseline data. These data usually allow us to say which species occur where and possibly how many of them there are. Traditionally, biologists carry out long term monitoring to track changes in species distributions and populations. In an increasingly changeable world (Balmford *et al.* 2003), providing a sound quantitative basis of this sort upon which to base conservation decisions is obviously paramount.

The greater the temporal range and spatial resolution of our baseline data, the better we can understand the conservation status of a species (Willis *et al.* 2007). For example, knowing whether our focal species has been declining sharply for some time or has always been scarce has important conservation implications. Unsurprisingly, the baseline data for Himalayan galliform species is variable in both quality and quantity. Understanding how best to use it has become one of the challenges of my project. Ultimately, a key outcome of this research will be a map of priority areas within the Himalaya where we should focus our monitoring efforts in the future.

Some undergraduates at Newcastle University have been investigating different prioritisation techniques for us. One question that we have been grappling is: which sites in South East Asia are in the greatest need of baseline surveys? Charlotte Kirton used a decision-tree framework that allowed her to come up with a subset of localities that were billed as top priority sites for new surveys (see Fig. 1). The use of decision theory (Possingham *et al*. 2001) to decide when

and where it is optimal to monitor populations has already been implemented for other taxa (McDonald-Madden *et al*. 2010).

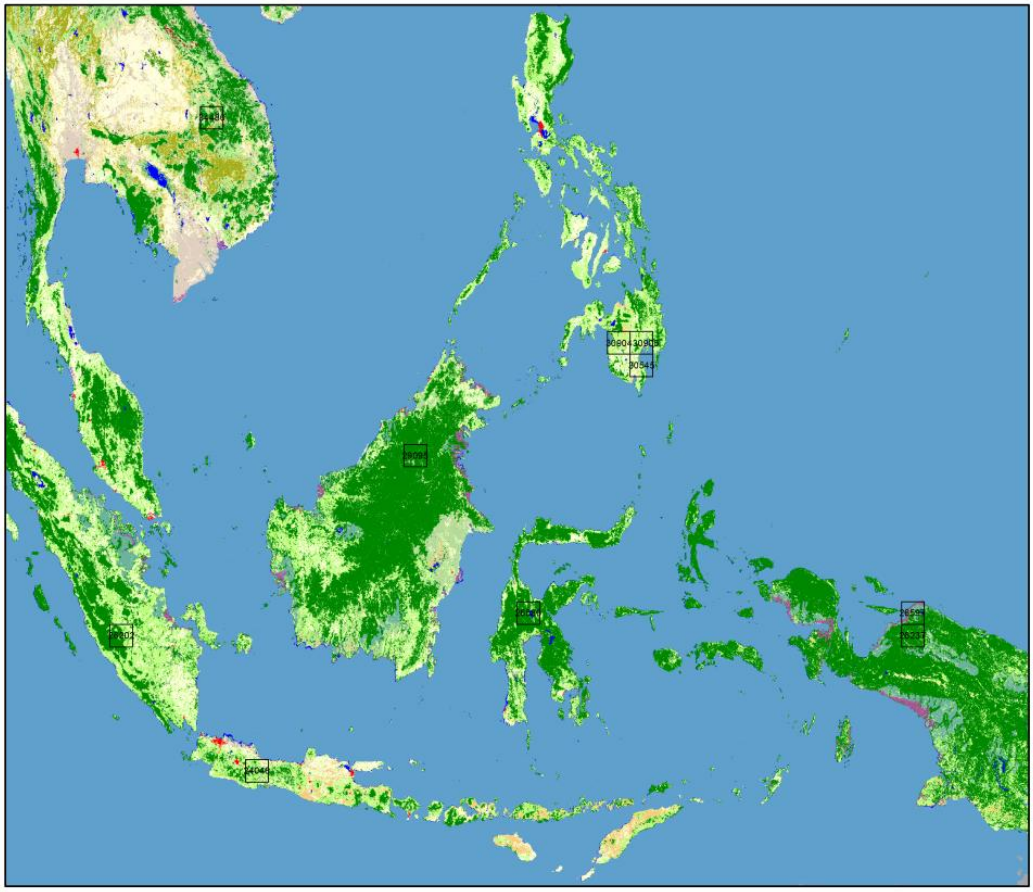

Fig. 1. Priority sites for re-surveying in SE Asia. NOTE: grid cells shown are for illustrative purposes only and are not the results of the analysis.

Decision-trees work by using a series of simple questions to guide decision-makers towards an explicit outcome that is clearly justified. Key variables that she incorporated in her analysis were: species richness, species detectability, species vulnerability, time since last sighting and the availability of suitable habitat. Because this technique explicitly considers the value of information in a parsimonious and transparent way, it avoids the complexity and specificity of procedures that tend to defeat most conservation managers and policy-makers (McDonald-Madden *et al*. 2010).

Using this approach, it was possible to rank predefined grid cells as priority localities. For example, sites with lots of suitable habitat that had high numbers of threatened Galliformes with low detection probabilities that had not been recorded for a long time came out as clear priorities for new surveys. WPA is looking to publish the full results from this study, which will have clear practical relevance for conservation practitioners in SE Asia. It should be possible to to refine and automate the procedure so that it can be applied in other places and for other taxa.

My own work thus far has been focused on assessing the data quality/quantity of the records contained within the WPA database and researching and developing analytical methods and modelling approaches for its use. Something that I am keen to try out and will embark upon shortly is making greater use of local expert knowledge. This will help to refine the current distribution maps that are available for Galliformes in the Himalaya. Getting the best distribution maps that I can is crucial as the rest of my analyses will depend heavily on these data. Once this has been completed, it will be very much full steam ahead and the modelling will start in earnest! In summary, I hope I have given you a brief taster on some of this work. The WPA has a long history of working with and supporting young researchers: so I want to emphasise the use of undergraduate project work here. It all helps in adding to our understanding of Himalayan Galliformes. Hopefully some of them will be seen in the journal literature soon!

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Pyrenean Network for the Mountain Pyrenean Galliformes - GALLIPYR Project

POCTEFA 2007 -2013 –01/12/2008 to 30/11/2011

Céline Claustre (Forespir)

Partners:

- FORESPIR – Lead partner
- Govern de ANDORRA
- Office National des Forêts-ONF
- Office National de la Chasse et de la Faune Sauvage-ONCFS
- Fédération Régional des Chasseurs de Midi-Pyrénées-FRC MP
- Generalitat de Catalunya-GENCAT-DMAH
- Centre Tecnológic Forestal de Catalunya-CTFC
- Conselh Generau del Val d'Aran
- Gestión Ambiental Viveros y Repoblaciones de Navarra-GAVRN
- Diputación Foral de Alava
- Observatoire des Galliformes de Montagne - OGM
- Fédérations Départementales des Chasseurs

Co-financing:

DREAL Midi-Pyrénées, Conseil Régional Aquitaine, Conseil Régional Midi-Pyrénées, Conseil Général Pyrénées-Atlantiques, Conseil Général Hautes-Pyrénées, Communautés de Communes des 3 Vallées, Communautés de Communes du Canton de Saint-Béat, la Généralité de Catalogne, le Gouvernement de Navarre et la Diputation Foral de Alava, Andorre.

Total Cost: 2 446 940 €

European Funding: 1 534 119 €

Contact: Virginie Fabre - Director of FORESPIR and GALLIPYR Lead Partner - 64 rue Raymond IV - 31000 Toulouse, France ***Phone**:* + 33 (0)5 34 41 43 20 ***E-Mail**:* geieforespir@forespir.com

Context:

The GALLIPYR project is designed to harmonise the methods of monitoring and management of 3 species of mountain Galliformes between 3 States that make up the Pyrenean Massif (Spain-France-Andorra): the Capercaillie (*Tetrao urogallus*), the Rock ptarmigan (*Lagopus mutus*) and the mountain Grey partridge (*Perdix perdix hispaniensis*). Actions are also conducted to encourage the return of Hazel Grouse (*Bonasa bonasia*), extinct species of the Pyrenees following due to human activity pressure. On the French side of the Pyrenees, methods of monitoring of these populations exist across the Mountain Galliform Observatory (OGM), the GALLIPYR project will expand and develop expertise between French-Spanish-Andorran specialists for the mountain game fowl, in the whole of the Pyrenean range for a better cross-border balance.

GALLIPYR Project work lines:

The project provides for:

- the creation of a network of Pyrenean mountain Galliformes;
- creation of a database of Pyrenees accessible (with restricted access) from the website of the project about these species; and
- implementation of actions for the species and their habitats, in particular:
    - **Actions concerning the three species**: realisation of inventories of cables and lethal fences and visualization of a part of it; canalisation of human movements on pilot areas of high strategic value for their preservation to diminish disturbance; monitoring of populations of this species and modeling the potential habitats for ptarmigan and grey partridge and breeding habitat mapping.

    - **Specific work lines for Capercaillie**: improvement of breeding and wintering habitats in strategic areas (core areas, corridors), on significant surfaces in regard to the present range; realization of a guide for forest management adapted at the

important diversity of Pyrenean forests, and study to test the influence of terrestrial predators and the wild boar on Capercaillie populations.

- **Specific work lines for Rock Ptarmigan:** a program of translocation of individuals, from a strong population toward a population genetically weak, with long-term monitoring the participation in the reproduction of released birds, the evolution of the reproductive success, and an update of the data on the causes of mortality of Rock Ptarmigan will be also performed.

- **Specific work lines for Grey partridge**: a practical guide of the mountain and subalpine meadows and shrublands management modes will be performed, actions to improve the habitat and recovery of populations in Navarre and the Basque country, where the species disappeared historically, by translocation of wild birds from strong populations of central Pyrenees.

- **Specific work lines for Hazel Grouse (Bonasa bonasia):** drafting of a plan to reintroduce it, and if the conditions are met, tests of reintroduction of hazel grouse can be realised in Val of Aran (Spain).

Expected results and perspectives:

The actions of visualization of a big number of cables and fences should have a positive impact on the mortality rate of the mountain Galliformes, but also have beneficial effects on a large number of bird's species, including some rare species (owls, raptors). For the Rock ptarmigan: improve the efficiency of the reproduction and try to reduce a loss of genetic diversity found in a important but marginal population of this species in the East of the Pyrenees. The methodology of translocation could be transposed to other species. An increase of the carrying capacity of the habitats of the Capercaillie and the Grey partridge is expected from their improvement, and consequently we hope an positive effect in their demography.

Les partenaires / Los socios:

GEIE FORESPIR · Govern d'Andorra · Office National des Forêts · Office National de la Chasse et de la Faune Sauvage · Fédération Régionale des Chasseurs de Midi-Pyrénées · Generalitat de Catalunya Departament de Medi Ambient i Habitatge · Centre Tecnològic Forestal de Catalunya · Conselh Generau d'Aran · Gestion Ambiental Viveros y Repoblaciones de Navarra S.A. · Arabako Foru Aldundia Diputación Foral de Álava · OGM Observatoire des Galliformes de Montagne

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New publications

Genetic Differentiation of the Western Capercaillie Highlights the Importance of South-Eastern Europe for Understanding the Species Phylogeography.

Read the open-access, full-text article here: http://dx.plos.org/10.1371/journal.pone.0023602

Grouse News 42 is available at http://www.tetrao.org/descargas/categoria6/4153068.pdf

G@llinformed news

New Bird Conservation Fund Welcomes Applications

Do you know of any bird conservation projects that could do with a little financial help to get them going?

A new conservation funding initiative, the Sound Approach Bird Fund, offers grants of up to GBP £10,000 (c. US$15,800 equivalent) to bird conservation projects around the world. We are looking for projects that will have a significant conservation benefit, making a real impact on the survival of globally or nationally threatened species or globally important sites. We are particularly looking for small, grassroots groups, rather than large national or international organisations, and projects which are difficult to raise funds for. There are no deadlines; applications are reviewed on a rolling basis. For further details, guidelines for applicants including eligibility criteria, and a downloadable application form, please either:- visit:

http://www.soundapproach.co.uk/funding.php.

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Upcoming events

The 12th International Grouse Symposium (IGS2012) 20-24 July 2012 Matsumoto, Japan.

1. Online registration system starts from: 15 December, 2011
2. Early registration deadline: 29 Feb. 2012.
3. Abstract deadline: 31 March, 2012.
4. Late registration deadline: 30 Apr. 2012

Registration Web Site URL: https://mice.jtbgmt.com/igs2012/

Event reports

XXXth IUGB Congress and Perdix XIII

This autumn, between 5 - 9 September, the XXXth Congress of the International Union of Game Biologists (IUGB) and Perdix XIII was held in the "Hotel Juan Carlos I" in Barcelona, Spain. The event was organised by the University of Barcelona, the Department of Agriculture, Farming, Fish, Food and Environment (Regional Government of Catalonia), the Spanish Institute of Game Resources Research (IREC) and the British Game and Wildlife Conservation Trust.

Every two years since the mid-1950's, the International Union of Game Biologists (IUGB) has brought together international wildlife biologists, forestry scientists, veterinarians, game managers, hunters and others with an interest in game or wildlife biology. The IUGB encourages the exchange of scientific and practical knowledge in the field of game and wildlife management, the broad field of game biology and international co-operation in game and wildlife management. The aim of the conference is to create a bridge among scientists, wildlife managers and authorities and those studying the human dimensions of wildlife management.

Perdix XIII, after Limassol (Cyprus) in 2001 and Braga (Portugal) in 2003, joint the IUGB Congress series for the third time in its history. Founded in the 1960s, the Perdix series has traditionally attracted Partridge, Quail and Francolin researchers and conservationists across Europe and North America. In order to make the Perdix series even more attractive to gamebird biologists, any Galliform specialist, no matter whether for pheasants, cracids, megapodes or grouse was welcomed.

This joint Congress provided a forum for sharing current developments in gamebird and mammal wildlife research and management , hence offering an excellent opportunity to identify research gaps, conservation action needs and to co-ordinate research projects.

Almost 400 researchers and wildlife managers (397 to be precise) of 37 different countries belonging to the five continents attended the Conference, including many of the word's leading wildlife biologists.

The general topic of the congress was entitled "Human-wildlife conflicts and peace-building strategies", summarising the general philosophy of the organising and scientific committees of trying to overcome the simple collection of problems derived from humans-wildlife interactions by proposing their solutions on the basis of the scientific knowledge of wildlife and management.

In total 260 contributions were presented during the Conference; 68 Perdix XIII communications were related to Galliformes species (38 oral communications and 30 posters). Additionally, keynote plenary lectures were given by renowned experts of whom each opened one of the eight main topics of the Conference:

- First plenary session ("Veterinary aspects of wildlife and conservation"):."Bushmeat hunting regulates ebola emergence". Speaker: Dr. Peter D. Walsh.

- Second plenary session ("Species extinctions and population dynamics"): "Galliformes species and species extinctions: what we know and what we need to know". Speaker: Dr. Philip K.J. McGowan.

- Third plenary session ("Wildlife law and policy"): "Policy responses to human-wildlife conflicts. A perspective from the convention of migratory species (CMS)". Speaker: Dr. Borja Heredia.

- Fourth plenary session ("Conservation and management of migratory species"): "Conservation and management of the Common quail (*Coturnix coturnix)* in Europe: past, present and future". Speaker: Dr. Manel Puigcerver.

- Fifth plenary session ("Wildlife biology, behaviour and game species management"): "The Grey partridge in the UK: population status, research, policy and prospects". Speaker: Dr. Nicholas Aebischer.

- Sixth plenary session ("Interactions humans-wildlife"): "Managing conflicts between conservation and gamebird management". Speaker: Dr. Steve Redpath.

- Seventh plenary session ("Methodologies, models and techniques"): "Molecular genetic tools and techniques for improving management of wildlife and game species". Speaker: Dr. Lisette Waits.

- Eighth plenary session ("Human dimensions of game wildlife management"): "Sustainable hunting: an exploration along ecological and social dimensions". Speaker: Dr. John Linnell.

Of these eight lectures, four were clearly focused on galliform species and another three were of the general interest to the audience.

Moreover, six specific workshops were developed during the conference, and three of them were of the particular interest for Perdix attendees:

- "Sustainable management of migratory birds - What may hunters and game biologists expect from each other?" promoted by Dr. Yves Lecocq (ylecocq@face.eu) and Dr. Conor O'Gorman.

- "GALLIPYR: Pyrenean Network for the mountain game fowl", promoted by Dr. Virginie Fabre (geieforespir@forespir.com) and sponsored by GALLIPYR INTERREG Project.

- "Reconciling agricultural management, small game production and biodiversity conservation: recommendations for the CAP reform", promoted by Drs. J. Viñuela (Javier.Vinuela@uclm.es), F. Casas, F. Ros, D. Villanúa, P. Ferreras, J. Torres, I. Leranoz, J. Ardaiz, V. Alzaga, A. Cormenzana and E. Castién.

More information can be found on the Conference web page (www.iugb2011.com) where the final programme and the abstracts book (in pdf format) can be downloaded. By the end of this year an electronic format of the extended abstracts (3 pages) of the scientific contributions will be uploaded; a selection of the best papers (20 of Perdix and 40 of non-Galliformes species) will be published in a special issue of the international scientific journal "Animal Biodiversity and Conservation", which will be published in June 2012.

For Galliform experts and enthusiasts the Conference presented an excellent opportunity to discuss current game and wildlife management issues in general and game birds in particular; notably Grey partridge, Red-legged partridge and Common quail.

We wish to thank the scientific and organising committees, the sponsors of the Conference and the attendants for making this meeting such an interesting, friendly and highly valuable event.

Francis Buner
Chair of Perdix XIII

Manel Puigcerver
Chair of the XXXth IUGB Congress

G@llinformed

Newsletter of the
IUCN-SSC/WPA Galliformes Specialist Group
http://www.galliformes-sg.org/

Issue 7 ***July 2012***

Contents

From the Co-chairs

First, our gratitude goes to Gillian Baker and Laura Owens for putting this issue together, as well as to the authors of the featured articles.

Thanks to the generosity of the Mohamed bin Zayed Species Conservation Fund, the IUCN Species Survival Commission (SSC) was able to gather together the chairs of most of the 130 or so Specialist Groups in the world and a number of other significant species conservation players (including the Director of WPA) for this five day meeting in February. The central themes were to reflect on the 2009-12 quadrennium and look forward to the next one, which starts after the World Conservation Congress taking place in Jeju, South Korea in September this year.

We all now know that we are in the midst of the sixth mass extinction event on earth, and that it is largely of our own making, but we still got some wake-up sessions in Abu Dhabi, alerting us to the incredible pace of this crisis. The SSC's new 'Action Asia' Programme, led by Will Duckworth, was perhaps the most dramatic of these. Focused on SE Asia, South Asia and China, its starting point is stark: tropical Asian primates are twice as threatened as they are anywhere else, and every single deer and wild cattle species native to this region is on the Red List. Extinction is imminent for many of these animals unless decisive action is taken immediately. Bushmeat hunting for trade is the undoubted major cause, so protection of key sites is essential whilst solutions are found that are both economically and socially realistic. Many Galliformes are also thought to be over-hunted in this region and once the primates and ungulates are gone, the hunters' attention will turn to them…and so on… to produce more 'empty forests'. Conservation scientists and advocates must join forces immediately to influence managers and politicians in a dramatic fashion if a major regional extinction catastrophe is to be avoided. The Galliformes Specialist Group (GSG) and WPA have offered to do whatever we can.

At present WPA is driving forward a number of campaigns and projects in collaboration with GSG members and others worldwide, whilst the GSG itself is maintaining (and where possible expanding) its expert network. As a volunteer organisation, we are not alone in being severely constrained, and therefore welcomed several sessions at this meeting about what makes a Specialist Group really go places for its members and the species it aims to conserve. With some additional help, the GSG would be better able to prioritise global priorities for all threatened Galliformes, and to catalyse action via our 250-strong expert membership. We had especially constructive discussions with Dr Lesley Dickie (Executive Director, European Association of Zoos & Aquaria). She is now taking up our cause with EAZA member institutions, which have significant Galliformes collections, in the hope that with WPA, they can increase our capacity for action. In terms of spreading the word and generating funds, it is worth noting that EAZA's 300 member institutions currently host 140 million visits per year (and that is not website hits, it is people paying to see animals in these collections).

This kind of support mechanism for GSG activity will also encourages the closer integration of intensive (*ex situ*) and extensive (*in situ*) conservation efforts for threatened species, which was the subject of a workshop that Leslie helped to lead in Abu Dhabi. The aim, in being more joined up, is to share our collective expertise and workload for the good of our threatened species, and to build the human capacity available regionally and nationally to enable problems to be solved more locally and economically.

In the spirit of this, it is excellent to report that Jan Dams (Vogelpark Walsrode, Germany), the new EAZA GalliTAG Co-Chair, has asked for our help prioritising their *ex situ* activities in a revised Regional Collection Plan for Europe. We have agreed that Alain Hennache (France) will act as an Advisor to the TAG through being the GSG Focal Point for them.

Another current link to intensive conservation comes via Phil McGowan as a member of the drafting committee for a new set of *ex situ* management guidelines from IUCN-SSC. These will emphasise the fullest possible integration of intensive and extensive objectives for conservation within a strategic species conservation framework: being sensible about it, what other way is there to save species from extinction? – it requires a huge collective effort, often by people with many different and complementary skills.

Peter Garson & Ilse Storch

Co-chairs Advisory Board Members

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Peter Garson is Director of Teaching in the School of Biology at Newcastle University in UK. He has been concerned with research relating to the conservation of pheasants in Asia since 1980. He has supervised PhD students and advised on numerous projects in India, Pakistan, Nepal, China and Indonesia. He was founding Chair of the Pheasant SG in 1993. He co-authored the 1995 and 2000 IUCN Action Plans for Pheasants and has helped to organise several of WPA's symposia on Galliformes in Asia.
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Michele LONEUX is a wildlife biologist and ornithologist from the University of Liège, where she has studied passerine migration (1985). Since 1995, she is involved in the study and follow-up of the last and theathened Black grouse population in Belgium for the Behaviour Biology Unit of the University. Her PHD work (2000) analyzed the influence of climate fluctuations and climate change on various European Black Grouse population dynamics. She attended the International Grouse Symposium for the first time in 1999, and organized the first of the European Black grouse Conferences in Liège in 2000. She joined the Grouse Specialist Group in 2000 and created the related website in December 2003. She made the lay-out of the second Grouse Action Plan and is currently preparing the new Galliforme Specialist Group website. Belgium has only two Grouse species, both threathened and close to extinction in the country. Enlarging the interest from Grouse to Galliformes justifies to stay within the group. As researcher, she is now working on bird migration again, analyzing changes of wintering grounds of migrant birds, based on bird ringing recoveries for the Belgian Ringing Scheme.
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G@llinformed letters & reports

How to catch a Green Peafowl

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The Green Peafowl *Pavo muticus* is a spectacular galliform that was once abundant and widespread in Southeast Asia, but following catastrophic declines the species has largely disappeared from much of its previous range (BirdLife International 2001, Brickle et al. 2008, BirdLife International 2012). Ongoing intense pressures, such as widespread hunting for meat and the males' train feathers, collection of eggs and chicks, human disturbance, habitat loss and fragmentation, have left many small populations isolated, increasing their susceptibility to local extinction (McGowan et al. 1998, Fuller et al. 2000, Brickle 2002, Brickle et al. 2008, BirdLife International 2012). Therefore, the Green Peafowl is currently listed as globally Endangered on the IUCN Red List of threatened species (BirdLife International 2012). At present, key populations of global importance remain in northern and eastern Cambodia (McGowan et al. 1998, BirdLife International 2001, Brickle et al. 2008, Goes 2009, BirdLife International 2012).

How to capture a Green Peafowl for radio-tagging? This was the question we were faced with in 2011, at the beginning of a previously planned PhD study on the ecology and conservation of Green Peafowl in Cambodia. One of the study aims was to capture and fit with necklace radio transmitters 10 adult males and 10 adult females.

Green Peafowl are large and where they are not hunted excessively are quite obvious birds, so one would think to catch them should not be very difficult, apart from concerns about stress-related death or capture myopathy. However, in Cambodia, peafowl have probably been hunted for centuries and thus are extremely cautious and clever.

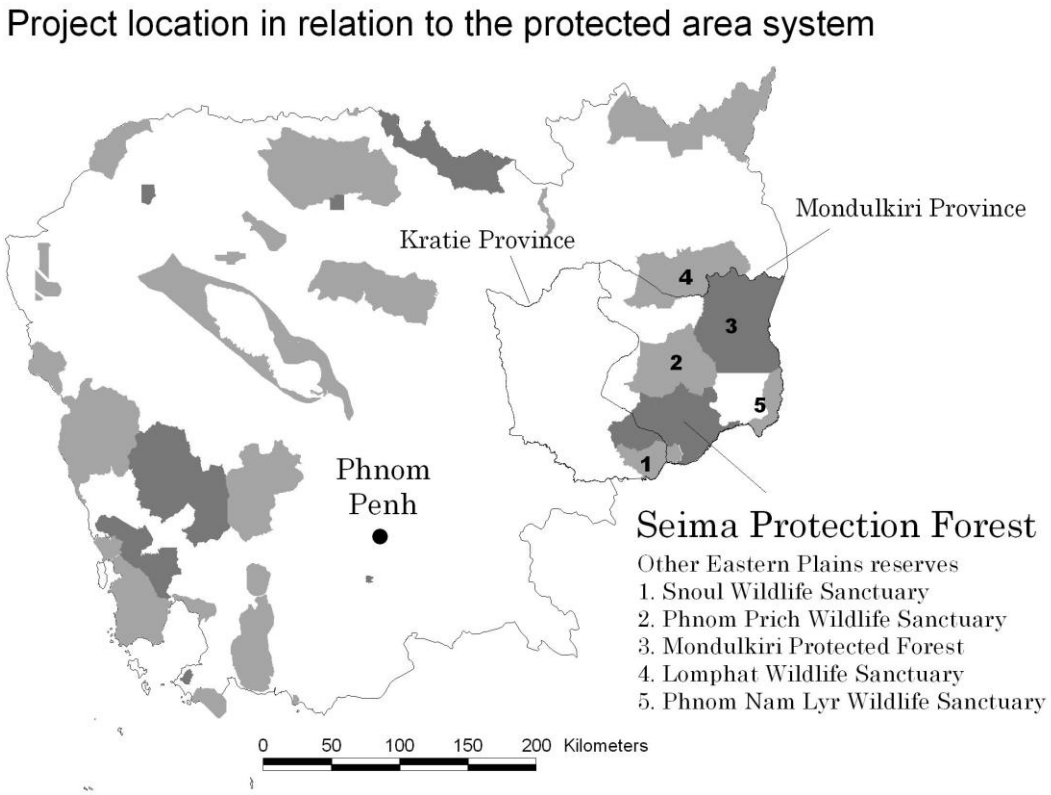

Figure 1. Map of the Seima Protection Forest in eastern Cambodia (© WCS Cambodia).

Our capture trials were carried out in the Seima Protection Forest (SPF) in Mondulkiri Province, eastern Cambodia (Figure 1). The 292,690 ha protected area is jointly managed by the Forestry Administration and the Wildlife Conservation Society Cambodia Program, and is one of the best areas for Green Peafowl in Cambodia (Evans & Clements 2004, Goes 2009).

Figure 2 & 3. : Aspects of Green Peafowl habitat at a former quarry site and surrounding open forests in the Seima Protection Forest, August 2011.

Capture sites in SPF were located around an old quarry site with a relatively high peafowl density and easy access (Figures 2 & 3). Five adult male peafowl territories were located around the quarry and adjacent areas of open forest, and at least as many adult females used the area (Figures 4 & 5).

The capture team always consisted of two people, one to hold the bird and one to fit the transmitter.

Figure 4. Adult male Green Peafowl in roosting tree in the Seima Protection Forest, November 2011.

Figure 5: Adult male Green Peafowl displaying to a group of first year youngsters and adult females in the Seima Protection Forest, November 2011.

Initially, we considered walk-in nets that are set low above the ground suitable and the easiest method to capture peafowl. Such walk-in nets have been used successfully e.g. on Capercaillie *Tetrao urogallus* (I. Storch pers. comm.; pers. obs.) and Bengal Florican *Houbaropsis bengalensis*, a medium-sized bustard species (C. Packman pers. comm.; pers. obs.). Four 50m x 2.5m, two 50m x 3m (10cm mesh size, respectively), and two 20m x 3m (15cm mesh size) mist net type, single-shelved (bottom shelf string removed) nets were purchased.

During two capture trips (2 weeks in total) all net types were set on their own and in combination in dense and open habitat, in flat and steep terrain, and with and without unpeeled rice as bait, in locations frequented by peafowl. The nets were set along the middle of 0.5m-1m wide, 50m-200m long, thoroughly cleared net rides (so that the net would easily slide along with the bird and thus allow easy entangling), with the top net string c. 1.3m above the ground and the rest of the netting lying loosely on the ground, or with middle sections of netting ("bags") attached to the top string with paper clips or sticky tape, so that they would fall onto birds that tried to cross the net line. The nets usually stayed in place for several days and nights. To set up and remove the nets every day would have been too time consuming and would have caused too much disturbance. The nets were checked every 1-2 hours, depending on the weather conditions and ambient temperature. Some nets were set in open locations that allowed constant monitoring from a distance. The first and last check was done well before dawn and after dusk, when the peafowl were roosting in tall trees.

Foot prints as well as direct observations proved that the birds used the very vicinity of the nets and walked along them feeding on the bait, but thoroughly avoided walking onto or trying to get through the nets, even in dense vegetation and when numerous corners and even mazes were created, and even when we tried to push them. The birds also made large detours to get to the other side of the nets. No non-target animal was captured. Therefore, walk-in nets are not suitable to capture Green Peafowl and these attempts were abandoned.

We decided to try snare lines and single snares made out of different types of fishing line, set in different locations in one male territory, with and without bait and also with and without scrub fences as obstacles to guide the birds. Snares were set only in locations that could be monitored constantly from a distance and were removed after dusk and re-set before dawn.

Snares are often used by hunters in Cambodia to capture various animals, and we had previously found old snares around the quarry site, too.

Therefore, probably not too surprisingly, the peafowl, especially the old target male, avoided the snares, often under amazingly great effort, e.g. by flying and hopping over rocks in a large pond to approach from behind a food patch set up near the water's edge, by cautiously avoiding or stepping over the snares, or by climbing over or creeping through the scrub fence rather than walking through gaps with single or multiple snares. Eventually, after a nerve-wrecking cat and mouse game, we captured the target male by pushing it over a snare line, but after getting one leg stuck the bird almost immediately ripped the 71kg (!) breakage line and ran off with the snare attached to its leg. A few hours later, we re-sighted it at the same food patch without the snare attached to its leg, so it must have pulled it off.

Figure 6. Dummy whoosh net set up with food patch to capture Green Peafowl in the Seima Protection Forest, August 2011. The bird hide from where the whoosh net was triggered was hidden in the dense patch of bamboo in the background. The peafowl approached the food patch from the right of the photo.

Figure 7. Whoosh net set up with food patch to capture Green Peafowl in the Seima Protection Forest, August 2011. The peafowl mostly approached the food patch from the top of the track, walking along the vegetation on the right side. The bird hide from where the whoosh net was triggered was located c. 30m further down the track.

Subsequently, trials on captive semi-wild chickens were carried out with different types of spring snares and modifications of these. During the trials it became apparent that there might be safety issues when capturing peafowl, thus such traps were not used in the field. Spring snares used by local hunters were not suitable either because they are dangerous for the birds – for hunters it is not important to avoid injuries.

So we looked into potentially suitable capture methods and consulted more specialists, and decided that a whoosh net would be the next best option to try. The largest available whoosh net (6.5m wide x 4.5m long with 5cm x 5cm mesh size) was purchased. Such whoosh nets had been

used successfully to capture a large range of birds, including large birds such as wild turkeys and even cranes (P. Doherty pers. comm.).

For the whoosh netting, various food patches with unpeeled rice were set up in suitable capture locations in different male territories. Once peafowl started using a food patch, dummy nets, launching ropes and launching poles were introduced (Figure 6). The birds seemed relatively naïve to the dummy set up, probably because previously such set ups have not been used for hunting in Cambodia. Therefore, later on, we introduced the dummy set up immediately when a food patch was established. The whoosh net was triggered from a bird hide, either conventionally with a thin wire rope or by remote wireless trigger. At an ideal capture location the area was open so that we had a good oversight from the small windows of bird hide (but still relatively close to cover which the birds seemed to prefer) and the direction from which the birds approached was predictable (so that e.g. no bird could suddenly appear in an unsafe zone of the net), the peafowl were able to approach the open side of the set up without having to cross the launching bungees (they obviously avoided this – perhaps because of their fear of snare lines?), and that there was a suitable location for the bird hide, ideally in dense vegetation and importantly to the side of the net, so that with the help of markers (twigs, clumps of grass or small stones) set in different key spots it was clearly visible when birds were in the net safety zone or outside of it (Figures 6 & 7).

Capture attempts were made when at least one adult bird used a food patch regularly over several days. Usually, once birds had found a bait station, they returned frequently to this easy food source, mostly in the morning and in the afternoon. The net was only fired when the birds were busy feeding and had their heads down (Figure 9), ideally just after they lowered the head after having scanned the area with outstretched neck which they did frequently between rapid feeding bouts. Also, because it was impossible to remove all very small debris from the capture area that could cause tangling of the net when it is launched, we folded the thoroughly cleaned net back onto and launched it from a narrow green tarp laid out at the fixed end of the net.

Very soon we captured 7-8 peafowl (2-3 adult females with half grown chicks) together, but the adult birds escaped by running and struggling under the net towards the thrown edge of the net where the bungee tension was not strong enough to hold them down. The 5 chicks got heavily entangled and captured. All of them were released because only adults were targeted. Although extraction only took seven minutes and all of the birds survived (regular re-sightings later on), they were highly stressed and a couple of them already 'wobbly' on their feet upon release, so it was decided not to capture families anymore and to fire the net only when there are one or two birds in the capture zone.

Figure 8. Adult male and adult female Green Peafowl approaching the whoosh net and food patch located a few metres to the right of the photo. Seima Protection Forest, November 2011.

Figure 9. Adult female Green Peafowl with three this year's offspring and a Red Junglefowl feeding within the capture zone of the whoosh net. Seima Protection Forest, December 2011.

During the following sessions we captured two adult females together as well as an adult male and an adult female (Figure 8) together, but all of the birds escaped because each time the net was either not fast or not strong enough to cover the birds (or 'scoop' them out of the air) and then hold them down. Several Red Junglefowl *Gallus gallus* were safely captured as by-catch – often they seemed not to even have realised what had happened when they were already covered by the net, while the peafowl always reacted very fast. Further adjustments were made to the set up (e.g. only a c. 1m x 0.5m food patch far within the capture zone of the net, angle of the launching poles reduced from 30 degrees to 25 degrees, bungees stretched to the very maximum, net set bowed at the fixed end with a resulting larger bag at the thrown end after firing, net set in

locations where the terrain was not flat, but slightly bowed up at the thrown end) and it was decided to only target singles of these extremely fast and powerful birds, which was a limitation as mostly more than one bird came to feed, especially before the youngsters from the same year started to disperse (Figure 9). After these adjustments we captured another adult female, but still it escaped almost immediately.

Therefore, we built a new, longer whoosh net (5m x 6m – the length was limited by the available bungees and launching poles), with a 1.5m double layer of large-meshed (15cm) netting along shortened edge strings to create a bag at the thrown end (which the birds always flew or ran towards when the net was fired) in which the birds should get entangled rather than only covered (while not being able to rip the netting, thus a double layer).

With the new net we captured an adult male (the same bird as before in the whoosh net), but again it escaped – although this time only because the net got slightly tangled (which is a problem with long whoosh nets), so that there was no proper bag at the thrown end.

However, soon afterwards an adult female was captured safely and fitted with a tag. Immediately after capture, while still in the net, we hooded the bird with a long washing cloth (or we would have covered it with a large cloth if excessive tangling had prevented immediate hooding). The bird lost some feathers on the neck from struggling in the net. Handling time was less than 5 minutes and upon release the bird fled normally on foot and then in flight. It was located a few hours later on the same day and on the next day and moved and behaved normally.

So, after months of trying, finally we had found a suitable method to capture Green Peafowl: A long enough, large-meshed whoosh net in combination with bait stations.

In general, to try and minimize 'spooking', we fired the net when there was ideally one or at least only few birds nearby, and when birds had escaped from the net we did not leave our hide immediately, but let the birds 'calm down' a bit first (usually they stayed around for a while and warned and looked at the fired net, including birds that had been outside the capture zone, before they walked or rarely flew away). Also, we noticed that when we captured at the same site for more than two days, the birds became warier, probably because somehow they felt our presence. Therefore, usually we only captured for one or two days at the same bait station and then left the birds alone for a few days while still keeping the bait replenished and with the dummy set up in place before returning to the same site.

Unfortunately, due to unforeseen events, the peafowl study had to be cancelled. However, the tagged bird was located again two months after capture when it still moved and behaved normally.

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Use of motion detector cameras (gamecams) in quail release programs

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Populations of Galliformes have declined in many areas due to a multitude of factors. Therefore, it should not be surprising that re-establishing populations in these areas is often part of a comprehensive conservation strategy. In most situations the obvious place to start is in determining and eliminating factors limiting population growth and expansion. This may be as simple as changing hunting season bag limits or as complex as restoring vast expanses of habitat. In many situations simply enriching the habitat to promote population growth, hence range expansion, would take too long. If habitats exist suitable for extirpated species, re-introducing translocated or captive bred clusters of birds (often family units) may be the only choice. However, one must consider that survival rates for such Galliformes are often frustratingly low . This is due, in part, to the fact that captive bred individuals often have physical and behavioral deficits that result in increased mortality. However, success has been achieved in translocating ptarmigan and in re-introducing captive bred cracids, so examples do exist of the effective use of these techniques.

While the management of predators is often integrated into release plans, their overall effectiveness depends on an accurate assessment of the size of predator populations. In a survey of recent literature food resources and predators appeared to be the two most significant factors in predicting the survival of released birds. While habitat can be surveyed and enriched to increase food resources, one can also augment natural food resource levels with supplemental feeding. Predators are often another matter. Projects must contend with predators able to kill adult birds during the release phase and often a more expansive suite of predators that predate eggs and chicks. For example, in North America white-tailed deer *Odocoileus virginianus* (Ellis-Felege et al. 2008) and nine-banded armadillos *Dasypus novemcinctus* (Staller et al. 2005) have been shown to be nest predators but not significant predators of adult birds. With these considerations in mind we recently began a pilot project to re-introduce Montezuma Quail *Cyrtonyx montezumae* (Figure.1) into the eastern Edwards Plateau of Texas.

Figure 1. Adult male Montezuma Quail. (Photo J. C. Eitniear)

Historical background

Prior to 1950, Montezuma Quail inhabited areas of suitable habitat throughout the Edwards plateau of Texas. Due to its need for tall bunchgrasses for cover, overgrazing of the eastern portions of the plateau resulted in the species being extirpated. It is currently estimated that the population has been reduced to about 126 coveys on about 131,580 hectares (325,000 acres) or 1,050 hectares (2,600 acres) per covey on 47 ranches. Due to the lack of familiarity with this species by many ranchers, no precise estimate exists (Brennan and Armstrong 2006). However, its presence has been only verified in five counties (Edwards, Uvalde, Val Verde, Kinney, Real). Historical records exist of its presence in 18 counties.(Fig.2) (Oberholser and Kincaid 1975). According to Lockwood and Freeman (2004) there have been attempts at reintroduction into the

Guadalupe and Chisos Mountains but with minimal success. These attempts were likely hard releases of birds translocated from Arizona.

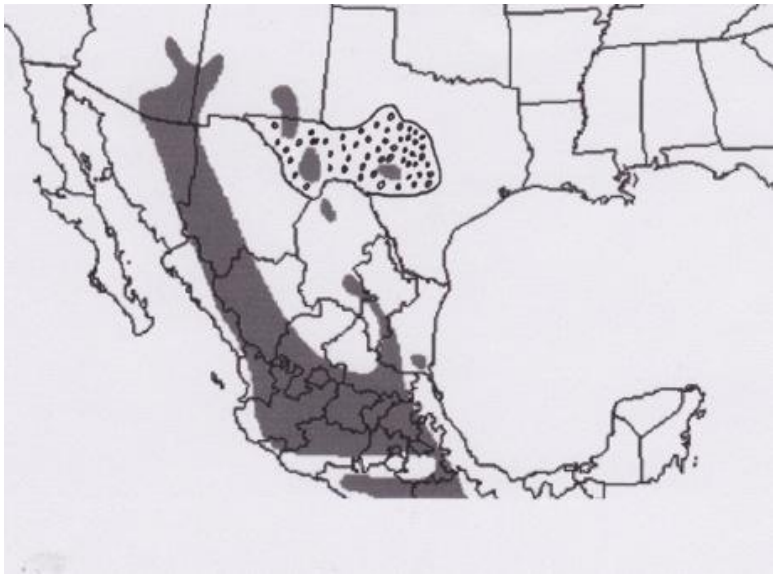

Figure 2. Range of Montezuma Quail.

Current range - solid colour, pre-1950 Texas range - dotted.

Use of motion detector cameras

Use of remote photographic equipment has a long history in wildlife studies (Swann, et al. 2004,. Rader et al. 2007). One of the early applications involved use of a trigger wire attached to a single frame camera with an automatic advance mechanism (Liebezeit, and George. 2003.). A further application involved the use of movie cameras and a timer. The benefit of this application is that movie film contains thousands of single frames that if exposed on a singular basis can last extended periods of time. Recent advances in home protection technology has produced a variety of motion detection and infrared triggered equipment. Such technology has been placed in game cameras used to record wildlife being particularly marketable to hunters to monitor deer populations. While initially these units were expensive, mass production has reduced these units to as low as $120.00 USD, putting them within the range of moderately budgeted game bird release projects. Camera traps have not only proven to be valuable in determining presence/absence but also have been utilized to create abundance indices (Bengsen et al. 2011).

Quail release project

Guidelines for the reintroduction of Galliformes were recently published by the WPA and are available online at: http://www.pheasant.org.uk/uploads/design/pdfs/GalliformReintroGlines.pdf

Reviewing the publications, we considered the following:

- soft vs. hard release
- acclimatization of release stock to release area
- numbers of birds per release
- group size of birds and composition
- predator control
- supplementary feeding and
- set criteria for supplementary releases to avoid open-ended release programs with not set end-point.

Most decisions were based on floral inventories and a review of the literature on the species. Large predators were removed from the release area (which is surrounded by a predator proof fence). However, we had no baseline as to the diversity and density of smaller predators, many of which were nocturnal. To gather this baseline data we placed two quail in a smaller cage within the release enclosure (Figure 3.) and positioned an infrared motion sensor camera along one side of the enclosure. For three weeks the quail were maintained in the enclosure and photos downloaded and analyzed of any predator approaching the enclosure. After three weeks two quail were placed in the larger enclosure allowing them to move into and out of the enclosure through a large mesh panel in the door. At this time the camera was moved to face the door. We then monitored predators approaching the enclosure as well as the movements of the quail outside the enclosure.

Figure 3. Release enclosure showing lure cage and location of camera.

Results and considerations

The following vertebrates were captured with the camera . Captions include whether they are a threat to the quail (chicks or adults) as determined by Davis and Schmidky (1994.).

- **Porcupine** *Erethizon dorsatum;* a vegetarian of little threat.
- **Ringtail** *Bassariscus astutus;* consumes eggs and small chicks (9.9% stomachs analyzed contained small birds).
- **Common Raccoon** *Procyon lotor*; consumes eggs and small chicks.
- **White-tailed Deer** *Odocoileus virginianus;* eggs on occasion but normally not a threat
- **Nine-Banded Armadillo** *Dasypus novemcinctus;* eggs and small birds (5 of 281 stomachs contained birds eggs)
- **Eastern Fox Squirrel** *Sciurus niger;* eggs and possibly chicks
- **Bobcat** *Lynx rufus;* chicks and adults
- **Feral Pig** *Sus scrofa;* opportunistically feed on eggs and chicks
- **Striped Skunk** *Mephitis mephitis;* eggs and chicks
- **Cooper's Hawk** *Accipiter cooperii;* chicks and adults

Not documented but of concern:

- **Coyotes** *Canis latrans,*
- **Red Fox** *Vulpes vulpes* and
- **Gray Fox** *Urocyon cinereoargenteus*

These species are all found in the area but were not recorded on the cameras. Due to this we concluded they would not be a major threat to the quail.

- **Baird's Rat Snake** *Pantherophis bairdi;* eggs, chicks and adults.

Snakes are a major predator of adult quail as well as chicks and eggs. Two snakes were documented at the release enclosure but neither were photographed b~~u~~y the cameras.

One was discovered inside the enclosure having killed a lure bird. The second was captured in a live trap set along the perimeter for bobcats. Further testing is needed to determine if our new, more sensitive, camera will capture snakes.

Conclusion and considerations

The success of reintroduction programs are often determined by the number of predators present. Visual surveys during daylight hours may prove sufficient to determine diurnal predator diversity and densities. Determining the variety and numerical status of the nocturnal predator community is more challenging. We determined such by placing an infrared motion detector triggered game cameras at the perimeter of our released enclosure for a 30 days period. Quail inside the enclosure served as lures to potential predators whose visits to the enclosure was photographed. While our initial concerns were over canids and birds of prey,

we discovered that their numbers were low, with only a single record of a hawk and no canids being photographed. Other predators, most of which would be a threat to quail eggs and young not adults, were recorded and of concern. Of these, ringtails, bobcats, and skunks likely pose the greatest risk. Overall density as determined by the number of visits of these predators was only significant with the Nine-banded armadillo and Eastern Fox Squirrel.

We encourage the use of game cameras in determining predator diversity and densities. However, we are not convinced that snakes can be detected with most cameras

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How populations of ring-necked pheasant *Phasanius colchicus* are adapted to the world's coldest areas in Mongolia

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Introduction

The Ring-necked Pheasant *Phasanius colchicus* is a resident breeder (*P. c. hagenbecki* in western and *P. c. pallasi)* in eastern Mongolia. In February 2011, a field team from the Mongolian Ornithological Society, National University of Mongolia and Uvs Lake protected area administration conducted the field survey along Buhmurun and Khovd river valleys of Uvs and Khovd provinces (western Mongolia) where the pheasant winter and breed, to gather scientific data on habitats, distribution and number of the species in the area; and to determine threats to the species in these areas.

Results

Number and occurrence

A total of 19 (11 females and 8 males) individuals of the species were observed and documented for 150 km long transect line during the trip. There is no population estimation for Mongolia, however, Bold (1972) estimated that density of the species in Khovd river valley was 1-2 individuals per km^2. Buyant (1998) found one individual per km.

Wintering habitats

Wintering habitats are islands or the land isolated from mountains and surrounded by the river in Uvs lake Depression. In winter, temperatures of -40°C are common, and temperatures as low as -58°C have been recorded. In summer, the basin heats up, reaching temperatures as high as 40°C.

Mongolian subspecies are located at the most northern limit of pheasant distribution of the world. Therefore, the western Mongolian population *Phasianus colchicus hagenbecki* is the most cold-adapted population of pheasant in the world. Pheasants rest and roost in these sites covered with dense *Caragana* sp.bushes inaccessible for humans,cattle and predators, like Red Fox *Vulpes vulpes*. In the harsh winter, they prefer to stay near winter campsites of local herders following thin snow areas.

Breeding and Wintering Habitats

According to personal communication with herders and rangers from a local nature conservation community, pheasants are distributed in Buhmurun river valley from Tsagaan Buraa to Achit Lake. Mass mortality of pheasants occurred in 2004 due to harsh cold winter and thick snowdrift in the area. Human disturbance, wintering and breeding habitat degradation, overgrazing and habitat loss are higher in spring, autumn and winter than in the summer. Goats, sheep, horses and cows graze grasses in dense bushes and leaves of willow, poplar and other trees and bushes that are the main wintering habitats of the species all year around except for summer. Local people cut these trees in winter, spring, and autumn for fuel and fences. All of these human disturbances, habitat degradation and loss, and poaching are potential threats to the species for the western population of Mongolia.

Recommendations

If habitat loss and degradation by overgrazing, tree cutting and poaching continues in the next few years, breeding and wintering habitats of the species will be completely destroyed. As such, it is urgent to publish a leaflet or brochure for local people to persuade them to stop illegal hunting, to manage the use of trees and thorny bushes, and to promote the significance of its conservation.

In order to conserve the species in the country, we need to survey the population size, habitats in winter and summer, movement, breeding and wintering ecology of the species.

The following field surveys are important to understand and conserve this species:

1. A spring field survey is essential to know the number of breeding pairs and density in two river valleys.
2. Autumn and wintering surveys will focus on catching individuals and putting radio or satellite telemetries on their back to monitor seasonal movement, habitat use and mortality.
3. A summer field survey is important to understand breeding ecology of the species.
4. Genetic analyses of the samples that we have collected during this trip are significant to understand more of the taxonomy, origin and phylogeny of the species not only for Mongolia (Mongolian population is the wild or introduced some hundred years ago, how it [*hagenbecki*] has been genetically isolated from neighbouring populations etc.) but also the world, to know why this species inhabits the coldest areas of Mongolia (-58°C) within the world distribution, to learn the coexistence of livestock and pheasants in summer and winter seasons, and other scientific questions.

In order to study in detail and conserve the species in the wild, we need scientific collaboration to exchange information, share knowledge and experiences, conduct collaborative field surveys, especially radio and satellite telemetry surveys, train and educate students from France and Mongolian researchers, and establish a breeding centre for the species.

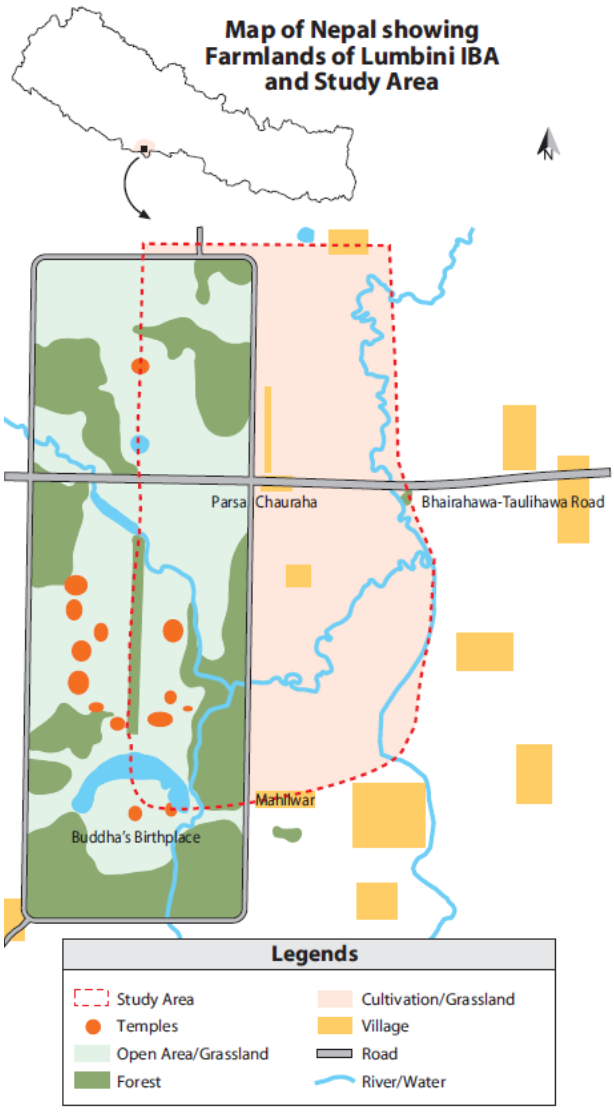
The wild pheasant lives in very limited and unique habitats compared to other birds. They are very sensitive to habitat loss and changes in Mongolia. Continuing habitat degradation and loss and poaching are potential threats to the species potentially leading to the extinction of the species in Mongolia. In order to support the growth of its population and density, we need to establish a breeding centre near wild habitats. However, one breeding centre in Khovd town and Ulaanbaatar city was established but then collapsed later due to financial difficulties in the 90's.

Status and distribution of black francolin *Francolinus francolinus* and grey francolin *F. pondicerianus* in Lumbini farmlands Important Bird Area, Central Lowland, Nepal

Hem Baral, Himalayan Nature, Nepal

Introduction

Three species of francolins are found in Nepal: black francolin *Francolinus francolinus*, grey francolin *F. pondicerianus* and swamp francolin *F. gularis* (Grimmett *et al*. 2000). The swamp francolin is a globally threatened species because of habitat fragmentation, deterioration and loss of habitat (BirdLife International 2012). It is endemic to the Indian subcontinent and found only in Nepal, India and Bangladesh (Rasmussen and Anderton 2005). A number of studies have been conducted on swamp francolin to find out its status, distribution and population in the country (Baral 1998, Shakya *et al*. 1999, Dahal 2002ab, Singh 2004, 2007, Dahal *et al*. 2007). These studies have firmly established that swamp francolin occurs only in two protected areas of lowland Nepal and have contributed greatly to its conservation. As the other two francolins had not been considered threatened until recently both at national and global scale, there has not been any specific study done on these to find out their status and population in Nepal.



Grey francolin, however, is now listed as Vulnerable on the State of Nepal's birds 2010 (Inskipp *et al*. 2011). While black francolin is widely distributed in the country well up to a height of 2000m east to west Nepal (Grimmett *et al*. 2000), grey francolin is a scarce resident restricted to the lowlands (Inskipp and Inskipp 1991). Grey francolin lies on the northern edge of its distribution in Nepal (Ali and Ripley 1987, Grimmett *et al.* 1998) and has been recorded from Mahakali to Koshi Zone. In the east it is rare but has now been recorded from Siraha, Saptari, near the Kosi Bird Observatory in Sunsari District and from the Koshi Tappu Wildlife Reserve (Baral 2005). Although both species are widely distributed in different parts of lowlands, Lumbini Important Bird Area (IBA) is one of the very few places in the country where both francolins co-exist in good numbers. This study attempts to find out their distribution and population in a farmland environment.

Study Area

The farmlands of Rupandehi and Kapilvastu districts encompass a large rural area (141,367ha) where agriculture is the main land use (68%) followed by forests which cover 21.6% of the area (Baral and Inskipp 2005). There are plains in the south and dry bhabar and Churia hills to the north. A number of perennial and seasonal rivers and streams including the Telar, Tinau, Sundi and Dano river systems flow through the area. The forest, scrub, wetlands and grasslands surrounding Lumbini (the birthplace of Lord Buddha) are an important refuge for wildlife.

This area has the best-known population of the globally threatened sarus crane *Grus antigone* in Nepal and is the only known IBA in the country where the species breeds regularly. The resident and migrant populations of sarus and their breeding are regularly monitored (e.g. Suwal 2002). Eleven globally threatened birds have been recorded here (Baral *et al.* in prep.). These include white-rumped vulture and Indian spotted eagle *Aquila hastata*, as well as the slender-billed vulture, cinereous vulture and lesser adjutant that are all seen regularly (Suwal 2002). The Telar and Dano floodplains are recognised as important habitats for birdlife (Bhandari 1998). A number of mammal species are found in the area (Baral and Inskipp 2005, Baral and Shah 2007) but a detailed study is yet to be carried out.

This study was carried out in a small area of Lumbini Farmland IBAs covering approximately 6 x 2 km² of riverine scrubs, grasslands and farmlands along the Telar River including the Lumbini Development Trust (LDT) area (Figure 1.). The centre point of study was located at Parsa Chauraha. The area also included the Lumbini Crane Sanctuary, land covering approximately 100ha. In the entire area, LDT has created wetlands and patches of unmanaged shrubs/grasslands within the core monastic zone.

Telar vegetation was farmlands with scrubs and grasses and sparsely dotted trees. LDT was mainly Dalbergia sissoo tree plantation with *Imperata* and *Saccharum* grasses growing (Siwakoti 2008).

Figure 1. Habitat types of grey francolin in the Lumbini area, 2007.

Methods

Three transects each approximately 3 km long, in a north-south direction were walked in February 2007 and 2008. Two transects were along the Telar River with center point 800m north of LBG, and one in LDT starting from the birth place of Buddha ending at the Peace Pagoda. Each transect was walked 10 times to come up with locations where francolins had established territories. If birds were recorded calling in five or more visits, then it was assumed that they had established territories in the area. These established territories were marked on a map. Birds seen elsewhere but did not call (transient) were excluded from analysis.

It was assumed that each calling male contained at least one breeding condition female. A call therefore was treated as a breeding pair. We acknowledge that this may be an underestimate of the total population present in the area, especially with regard to grey francolin where covey sizes tend to normally larger than black francolin.

Results

A total of 5 pairs of black francolins (BF) along the Telar River, and 7 pairs in the LDT transects were recorded. Similarly, 12 pairs of grey francolins (GF) were recorded along the Telar river transect and 3 pairs recorded within the LDT.

The distance in between the two territories ranged from 50m to 1000m. The BF to BF territory distance was at least 100m and GF was at least 150m. The calling spot of the bird was noted as distance from one another.

GF preferred farmlands and riverine scrubs compared to the BF which preferred lightly forested sissoo plantations with grasses and bushes. There was no significant correlations with water distance for BF but positive correlations was noted with GF and water.

GF was seen in larger family parties compared to BF which was seen either singly or in pairs.

Discussion

Lumbini farmlands are considered to be rich in terms of avian fauna they hold (Baral and Inskipp 2005, Hanlon and Giri 2007, Paudel 2009). The rich assemblage of birds and particularly higher number of these two fancolins in Lumbini is noteworthy. There are very few reported places in the country where these two species occur in such a large numbers and high density. Because of agricultural intensification, farmland birds are in decline in many developed countries (BirdLife International 2008). Bird populations have been affected by changes in the pattern of crop productions and conversion of natural areas for agriculture. With the spread of modernization, demand on the remaining land for development and for agricultural intensification is increasing

and many potential impacts of such changes in Nepal have been already discussed (Inskipp and Baral 2011).

Black francolin is fairly common resident in several areas of Nepal (Fleming *et al*. 1984, Inskipp and Inskipp 1991). Its breeding has been proved in several places of Nepal, in the months of April/May; Fircape (Inskipp and Inskipp 1991), Koshi Tappu Wildlife Reserve, Parsa Wildlife Reserve, Dhunche (Langtang National Park), Chitwan National Park, Kurintar (Chitwan District), Lumbini, Banke and Bardia National Parks, Sukla Phanta Wildlife Reserve. This species is relatively safe inside protected areas, however there too, natural succession of vegetation and invasive alien species eg *Mikania micrantha* are affecting characteristics of its habitat. Outside the protected areas, hunting and habitat loss are the two major threats to this species.

Grey francolin is unique as it likes dry, semi-arid habitats and is restricted to very few isolated parts of the country (Inskipp and Inskipp 1991). It has bred in Lumbini (Rupandehi District) and Tilaurakot (Kapilvastu District, Inskipp and Inskipp 1991). Changes brought about in its habitat and loss of the traditional farmland habitats have brought significant decline in its population. It is not clear if the water and riverine scrubs were closely related and if the GF was more related with riverine scrubs habitat than water. A recent assessment of Nepal's birds, the species has been listed as Vulnerable (Inskipp *et al*. 2011).

Changes are already taking place in Lumbini farmlands, which are the only representative sample of Nepal's agricultural landscape that existed throughout lowland areas nearly 50 years ago. In this area intensification of agriculture is leading to a decrease in the area of fallow land, excessive use of agro-chemicals, and development of housing areas close to Lumbini Master Plan. Potential impacts of agricultural intensification on Nepal birds have been highlighted including Lumbini Farmlands IBA (Inskipp and Baral 2011) which are likely to experience the biggest changes gauging the ongoing development activities taking place in the area.

Industrial and associated haphazard development in Lumbini IBA is a serious threat to wildlife in the area (Paudel 2009). A cement factory, paper mill and distillery discharge effluents to the Dano River causing water pollution. The Dano River is regarded by far the most important lotic ecosystem of Rupandehi district, and provides resting place for more than 100 sarus cranes during Spring time (Hanlon and Giri 2007). Sarus crane is a globally threatened species that is heavily dependent on farmlands like Lumbini (Inskipp and Baral 2011). Wildlife in the area face threats also from hunting and persecution, nest vandalizing, chick stealing, and the use of agricultural pesticides and fertilizers (Suwal 2002, Hanlon and Giri 2007, Paudel 2009). The gradual spread of these activities towards the Lumbini Development Trust is visible (Hanlon and Giri 2007) and currently there is no active mechanism in place to stop this.

Lumbini Crane Conservation Centre carried out several education and awareness campaigns during the 90s and early 2000 with an aim to protect farmlands of Lumbini as a prime habitat for threatened sarus crane (Suwal 2002). Bird Conservation Nepal has successfully conducted a wetland project in Jagadishpur Reservoir with some activities of awareness in Lumbini farmlands (Baral and Thapa 2008). Himalayan Nature has worked in Lumbini farmlands for protecting biodiversity of the farmlands (Singh 2007). Currently, Himalayan Nature is archiving landscape images to see the changes in parts of Lumbini IBA mainly using Google Earth satellite images taken in different intervals of time. Already some changes can be seen that have damaged much of the habitat within this IBA and more are likely to continue. Himalayan Nature with its permanent base in Lumbini is seeking support for the conservation of farmland birds through its Special Conservation Site program and other innovative initiations for safeguarding important habitats for birds in Lumbini area.

Although, World Heritage Sites like Lumbini are said to be protected from haphazard development (UNESCO 2006), many factories are currently contributing to pollute the general environment. No work seems to be in progress to tackle these threats except preparation of filing a lawsuit against these polluters by Pro-Public (Prakash Mani Sharma *verbally* 2011). Pro-Public is a Kathmandu-based charity that specialises in filing cases against environmental and social defaulters (http://www.propublic.org accessed on 14 April 2012). Amongst the deteriorating condition of farmland biodiversity and perhaps the quality of life of the people living around Lumbini, the government is now celebrating the year 2012 as Visit Lumbini Year. It is unlikely that the tourist numbers will increase because of such declaration, but if it does, unplanned tourism in the area is undoubtedly going to harm to the overall environment and wildlife of Lumbini.

WWF has recently collaborated with Lumbini Development Trust for conservation work mainly involving tree plantations in the area (http://wwfnepal.org/?203886/Leading-banks-of-the-country-to-invest-in-Lumbini accessed on 14 April 2012). Larger and influential organisations like WWF have the power to give positive results to the overall environment. A partnership with three districts, Kapilvastu, Rupandehi and Nawalparasi by larger NGOs can help save the entire farmland and its biodiversity. For saving farmlands of Lumbini, which still represent what was much of lowland Nepal and northern India 50 years ago, there is a clear need for expanding nature

conservation activities with balanced development activities, coordination with local development bodies and policy changes at the ministerial level including National Planning Commission is urgently needed.

These activities only can save the farmland birds of Lumbini including the two species of francolins found here.

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New publications

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Some recent journal articles *(Jan to June 2012)*

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Upcoming events

Capacity Building for Conservation : An international exchange of opportunity & best practice. Villa de Leyva, Colombia, 12-15 February 2013

The conservation of biodiversity requires individuals and organisations with the skills and knowledge to undertake a wide range of tasks. The ability to develop and maintain this conservation capacity is a major issue for many organisations. In February 2013 a unique international conference will take place to discuss and exchange best practice in key areas of building conservation capacity.

Further details about the meeting are provided on the conference website:
http://www.ert-conservation.co.uk/Conf_Aims2.htm

The 12th International Grouse Symposium (IGS2012) 20-24 July 2012 Matsumoto, Japan.

The 12th International Grouse Symposium (IGS2012) is available for online registration now.
IGS2012 Conference Web site: http://cert.shinshu-u.ac.jp/eco_lab/modules/tinyD4
Registration Website: https://mice.jtbgmt.com/igs2012

One year has passed since the significant damage from earthquake and its tsunami, and nuclear disaster in Japan. The damage caused by those unfortunate events is being reconstructed by the people and by the government. None of this reconstruction will affect the conference. The Conference Committee of the IGS2012 hopes that more foreign scientists will be register to the conference. Small travel awards are available, so please apply if you can use this money, which will be matched to the money provided by your employer. We believe that a successful conference with foreign participation will be very helpful to the reconstruction of Japan.

The conference will be held at M-wing near Masumoto train Station. There are some wonderful sites near the M-wing such as cultural places like Matsumoto Castles, shopping sites and hot springs. Please also see details on the following web sites:
http://www.matsumoto-tca.or.jp/en
http://welcome.city.matsumoto.nagano.jp
http://welcome.city.matsumoto.nagano.jp/contents07+index.htm

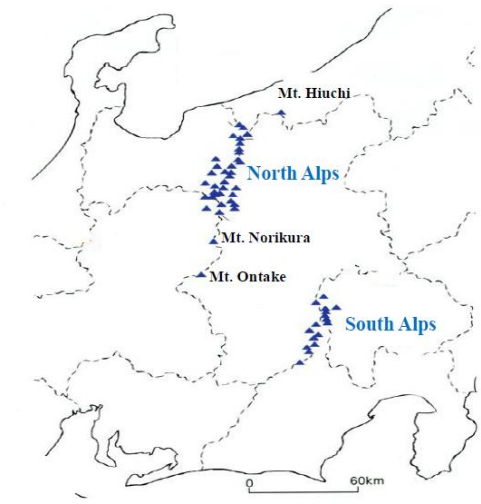

Fig. 1 Distribution of the Japanese Rock Ptarmigan

One of the projects to be presented during the IGS2012 will focus on the mtDNA control region of the Japanese Rock Ptarmigan. A total of 240 blood samples were collected from each population (Figure. 1). It appears the Japanese population is most close related to populations in Eastern Russia. These populations diverged about 50,000 years ago and then evolved six unique haplotypes (Figure.2). Haplotype compositions of each population is shown in Table 1. The oldest haplotype (LmAk1) was observed across a a wide range. The old or original haplotype was found mainly in the South Alps population. This oldest haplotype (LmAk1) was replaced by a new haplotype (LmHi1) in the North Alps and its surrounding populations (Mt. Hiuchi, Mt. Norikura and Mt. Ontake). Genetic Distances (Fst) among populations is shown in Table 2. Japanese
Rock Ptarmigan populations are divided into two major genetic groups (South Alps population and North Alps and its surrounding populations). Microsatellite DNA was also analysed. The results will be present in the later IGS News.

Table 1 Haplotypes of each population

Haplotypes	Hiuchi	North-Alps			Norikura	Ontake	South-Alps		Total
		Hakuba	Tateyama	Jonen			northern	southern	
LmAk1	3	6	0	3	11	0	55	14	92
LmAk2	0	0	0	0	0	0	1	0	1
LmHu	2	0	0	0	0	0	0	0	2
LmHi1	15	30	14	20	46	18	0	0	143
LmHi2	0	1	0	0	0	0	0	0	1
LmHi3	0	1	0	0	0	0	0	0	1
Total	20	38	14	23	57	18	56	14	240

Table 2 Genetic distances (*Fst*) among populations

		Hiuchi	North-Alps			Norikura	Ontake	South-Alps	
			Hakuba	Tateyama	Jonen			Northern	Southern
	Hiuchi								
North-Alps	Hakuba	0.006							
	Tateyama	0.129	0.043						
	Jonen	0.014	−0.029	0.054					
	Norikura	0.001	−0.014	0.091	−0.018				
	Ontake	0.154	0.057	0.000	0.072	0.104			
South-Alps	Northern	0.763	0.803	0.972	0.890	0.785	0.973		
	Southern	0.629	0.722	1.000	0.842	0.719	1.000	−0.030	

Japanese Rock Ptarmigan divided into two major genetic groups

Blue letter indicate statistically significant differences between populations (P<0.05)