



9.0 Conservation of Galliformes in the Indian Himalaya

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Introduction

Galliformes, commonly called 'game birds' are represented by over 280 species worldwide, and comprise pheasants, partridge, quail, francolins, grouse, cracids and megapodes. In India, galliformes are represented by 45 species, the notable omissions being the Meleagridinae (turkeys), Tetraoninae (grouse), Cracinae (cracids and currasows) and Penelopinae (guans). Of the 44 species, 17 are Pheasants, 27 are Partridges, Quails and Francolins (PQF), and one is a Megapode. The species are spread across the country and apart from wetlands, are found in all habitats. The threats too, are wide spread and as a result, and have reportedly caused a steady decline in their numbers. In India, six species of Pheasant, four PQF, and the sole megapode species are globally threatened with extinction. Most galliformes in India are afforded legal protection by the Wildlife (Protection) Act, 1972..

The Himalayan region of India is rich in pheasants accounting for over 80 % of all species found in India. This is in contrast to the PQF in the Himalaya with just over 40% of all PQF found in India being found here. Although the distribution ranges of pheasants have not shown much decline, their contiguity has been lost due to fragmentation. Some small sub-populations might actually have been extirpated due to the combined influence of habitat loss and hunting.

This paper examines the present status and distribution of galliformes in the Himalaya and assesses their conservation status.

Distribution

Seventeen species of pheasants occur in India and of these, 14 are restricted to the Himalaya. In addition, two species - the Blue Peafowl (*Pavo cristatus*) and the Red Junglefowl (*Gallus gallus*) are also found in the central and peninsular India. In terms of pheasants, the eastern Himalaya is richer with 11 species compared to eight in the western Himalaya. The eastern Himalaya also has more species (seven) exclusive to it whereas; four species viz., Satyr Tragopan (*Tragopan satyra*), Himalayan Monal (*Lophophorus impejanus*), Kalij (*Lophura leucomelanos*), and Red Junglefowl (*Gallus gallus*) are common across

the two regions. Only three species of pheasants (Western Tragopan *Tragopan melanocephalus*, Cheer *Catreus wallichii*, and Koklass *Pucrasia macrolopha*) are exclusive to Western Himalaya.

Of the six species of pheasants that are threatened in India, five are found in the Himalaya. Cheer pheasant and Western Tragopan in the Western Himalaya and Sclater's Monal, Hume's Pheasant (*Symaticus humiae*) and Blyth's Tragopan (*Tragopan blythii*) in the eastern Himalaya. More details about the status and distribution can be found in the species accounts chapter of this edition (Also see Table 1).

Of the 27 PQF found in India, 11 (40%) are found in the Himalaya and the rest in the lowlands. Only one species, the Common Quail ranges across both the altitudes as it is a migrant. The Black Francolin (*Francolinus francolinus*) although predominant in the central India, also ranges in the fringe areas of some portions of the Himalaya. There is also little overlap across the western and eastern Himalayan species with only the Hill partridge and the Rufous-throated Partridge running across the Himalaya. In terms of PQF species, five are exclusive to the western Himalaya, while four are common across the entire Himalaya. Only two species are exclusive to the Eastern Himalaya.

Therefore, Himalayan galliformes show regional endemism. In the western Himalaya, most galliformes occur in the 2,500-3,000m altitude zone including threatened species such as the Cheer and Western Tragopan along with the commoner ones. Even in other regions, the 2,500-3,000 m altitude belt appears to be rich in galliformes (Table 2).

Conservation Issues

Despite over two decades of work on galliformes by several people in India, we still do not have population estimates available for most pheasants. Thus we are not able to examine impacts of various threats on galliformes in India. Fuller and Garson (2000) and Fuller *et al.* (2000) have listed several factors that may affect galliformes numbers. These are:



Table 1 : Status of Galliformes in the Himalaya

S. No	Name	Scientific name	Status IUCN
1	Sclaters Monal	<i>Lophophorus sclateri</i>	V
2	Himalayan Monal	<i>Lophophorus impejanus</i>	Lc
3	Western Tragopan	<i>Tragopan melanocephalus</i>	V
4	Temminck's Tragopan	<i>Tragopan temminckii</i>	Nt
5.	Satyr Tragopan	<i>Tragopan satyra</i>	Lc
6.	Blyth's Tragopan	<i>Tragopan blythii</i>	V
7.	Koklass Pheasant	<i>Pucrasia macrolopha</i>	Lc
8.	Cheer Pheasant	<i>Catreus wallichi</i>	V
9.	Kalij Pheasant	<i>Lophura leucomelanos</i>	Lc
10	Blood Pheasant	<i>Ithaginis cruentus</i>	Lc
11.	Hume's Pheasant	<i>Syrnaticus humiae</i>	V
12.	Red Junglefowl	<i>Gallus gallus</i>	Lc
13.	Tibetan Eared Pheasant	<i>Crossoptilon crossoptilon</i>	Nt
14	Tibetan Snowcock	<i>Tetraogallus thibetanus</i>	Lc
15.	Himalayan Snowcock	<i>Tetraogallus himalayensis</i>	Lc
16.	Buff-throated Partridge	<i>Tetraophasis szechenyii</i>	Nt
17.	Common Quail	<i>Coturnix coturnix</i>	Lc
18	Himalayan Quail	<i>Ophrysia superciliosa</i>	CE
19	Chestnut-breasted Partridge	<i>Arborophila mandellii</i>	V
20	Rufous-throated Partridge	<i>Arborophila rufogularis</i>	Lc
21.	Hill Partridge	<i>Arborophila torqueola</i>	Lc
22.	Snow Partridge	<i>Lerwa lerwa</i>	Lc
23.	Tibetan Partridge	<i>Perdix hodgsoniae</i>	Lc
24.	Chukar	<i>Alectoris chukar</i>	Lc

V= Vulnerable, Lc=least concern, Nt= near threatened, CE=Critically Endangered

Habitat loss

It does appear that actual loss of habitat (changes in land use) has declined to a great extent in the last few years in India and may not now be a cause for too much worry regarding galliformes survival in India. However, people still depend on forest resources for their sustenance and livelihood (Hilaluddin *et al.* 2005) and as a result the quality of habitats has been degraded. This has possibly affected galliformes numbers in some areas, especially Tragopans. Koklass appear to be more resilient to habitat degradation and may live in sub-optimal habitats albeit in lower abundance. Species thriving in secondary/open habitats such as cheer may benefit from habitat degradation through sustained interference (shifting cultivation, browsing, clearing etc.) as reported by Kaul (1989) and Garson *et al.* (1992).

Hunting

Galliformes, by virtue of their closeness to chicken have always been used for their meat. The introduction of the Wildlife (Protection) Act in India put an end to the legal hunting of galliformes, yet they continue to be hunted, both for subsistence and sale all across the country. Though trade in live birds is not large in quantity, trade in feathers (Grey Junglefowl *Gallus sonneratii* hackles and peafowl feathers) has been reported frequently. Although it is difficult to judge the impact of such extractions on wild populations, it is apparent that species that are threatened will face more severe impacts. Threatened species such as Ttragopans (Western and Blyth's) are sold in markets or covertly, other threatened species such as Cheer are consumed locally.



Human Disturbances

Humans enter forest for a variety of reasons ranging from collection of timber to NTFP and their presence is regarded as a factor causing disturbance to galliformes at critical times. The collection of *gucchi* or morrel mushroom (*Morchella*) in the western Himalaya coincides with the breeding season of Western Tragopan and often may cause hens to abandon nests or result in eggs being stolen by them. The people are also accompanied by dogs which also become potential source of disturbance. Similarly medicinal plants collectors, *ringal* or montane bamboo collectors, all are potential sources of disturbance. Although such threats have been reported (Ramesh *et al.* 1999), the impacts of these disturbances have however not been quantified in India to suggest how important they are. In China, Brown-eared Pheasant (*Crossoptilon Mantchuricum*) nesting has been reportedly disturbed by morrel collectors (Zhang Zheng-wang 1998).

Hybridization

The only galliformes threatened by hybridization with domestic stock in India is the Red Junglefowl. Investigations are on to see the extent of hybridization in the wild populations (Sathyakumar *et al.* 2002). A study based on physical examination of specimens held in Indian zoos showed that the majority examined showed physical attributes characterized by pure forms (Kaul *et al.* 2002).

Pesticides

The intensification of the agriculture in India has ushered in an era of increased use of organo-chlorides and organo-phosphates. Farmland birds such as the Indian peafowl, the grey francolin (*Francolinus pondicerianus*), the painted francolin (*Francolinus pictus*) and some quail species are probably affected adversely. Although peafowl mortalities have been attributed to pesticides, it has not been demonstrated empirically yet. Such studies are underway. Similar reports of species declines have also been reported from Europe especially in the United Kingdom where severe declines in the grey francolin were reported (Potts 1986). In the Himalaya however, use of pesticides is still not that prevalent and the Himalayan galliformes are relatively secure from this threat.

Relevance of Protected Areas

How important are Protected Areas (PA) for conservation of galliformes especially in India? An analysis seeking answers to this question has been conducted by McGowan *et al.* (1999). The analysis came up with a list of PAs considered vital for the survival of this species.

The threatened species of galliformes in India are threatened mainly on account of their restricted range. Species such as

the Western Tragopan, that appear to be habitat specialists are thus confined to only a few patches of habitat in the western Himalaya. PAs would therefore play a greater role in conservation of such species for these would afford better protection against habitat changes and poaching. It may however be pertinent to add here that in Chamba region of Himachal Pradesh which arguably has the highest population of this species in India, all sites with Western Tragopan are outside the PA network (Jandrotia *et al.* 2000). Despite the hunting pressures, the Western Tragopan is surviving. The same can not be said about the Tragopans of northeast India for *jhumming* (shifting cultivation) is still prevalent there which causes considerable alterations in habitats and thus impacts the Tragopans directly.

On the other hand, species such as the Cheer is found, both within the PA network and outside. Cheer is also a habitat specialist thriving in subtropical or lower temperate grasslands/scrublands. Such habitats are small patchily distributed in the western Himalaya and thus are bound to occur outside the PA network. Thus Cheer thrives in such habitats as well and more Cheer sites outside the PA network are being discovered, (Ex. Pilang in Uttarakhand state). Rest of the species occur right across their historical ranges and in varying abundance, depending on the nature of protection afforded at each site.

Conservation initiatives

The main responsibility of wildlife conservation lies with the state governments with support of the central Ministry of Environment and Forests, the support being mainly in the form of financial allocations. The central ministry also issues guidelines which provide broad directions to the states in matters pertaining to wildlife conservation. The centre has also been proactive in promoting conservation of certain species – considered flagships of conservation of the areas of their distribution. The tiger (*Panthera tigris*) for instance is one species which has received considerable attention of the government, demonstrated by the establishment of the Project Tiger and the Tiger Reserves across the country and now the National Tiger Conservation Authority, an autonomous body with more teeth. The Asian Elephants (*Elephas maximus*) too have benefited from the Project Elephant dedicated for its conservation. The recent one added to the list has been the Project Snow Leopard, using the Snow Leopard (*Uncia uncia*) as a flag ship for the trans-Himalayan fauna. In this whole scheme of using flagships for conservation, the Himalayas seem to have slipped from the policy makers attention. The responsibility of conservation of galliformes thus wrests solely on the state governments.

The Central Zoo Authority on its part has taken initiatives – to undertake conservation breeding of threatened species



in some select zoos/pheasantries. Some states have benefited from this but most states have lacked the initiative of taking advantage of this scheme.

Much of the plans of different State Forest and Wildlife Departments have been discussed in this volume under state accounts, I would like to summarize my assessment here.

Jammu and Kashmir

Has two threatened species, the Cheer and the Western Tragopan. Pheasants were never on the main agenda, being over shadowed by the declining Kashmir Stag or *Hangul* (*Cervus elaphus hanglu*) although occasionally, some attempts to breed them in captivity did occur. With the proposed upgradation of Limber Wildlife Sanctuary (WS) to a National Park (NP), it is expected that these two species will receive better degree of protection. There are no studies to indicate that pheasant numbers have gone down, on the contrary unconfirmed reports suggest that during following the years of strife in the valley, the numbers have actually gone up. The Western Tragopan population certainly seems to be healthy in Limber but more surveys need to be taken up in the Kishtawar-Baderwah area and also along the Pir Panjal range to ascertain the distribution of this pheasant. Although hunting occurs locally, I do not think it is a major problem in the state to affect galliformes to that extent.

Himachal Pradesh

This is perhaps the only state which has recognized these birds as flagships of their forests and has shown intent to actively conserve them. Their initiatives have been occasional census exercises for and an ambitious conservation breeding project on Western Tragopan and Cheer. Though chicks have now been produced in *ex-situ* conditions, the main phase – re-introduction is a long way away. A simultaneous project to identify sites for such re-introductions must get underway quickly so that sites are made ready for release. Himachal Pradesh has taken the initiative and will need to be supported technically so that their endeavours bear fruit. Earlier, a study on the ecology of pheasants in the Great Himalayan NP was also financially assisted by the State Forest Department.

Hunting remains a problem in Himachal and galliformes too suffer as a result. Enforcement in remote areas is non-existent and perhaps not expected so local village committees should be made responsible for ensuring that illegal hunting is reduced.

Uttarakhand

The critically endangered Himalayan quail (*Ophrysia superciliosa*) was last sighted in Banog near Mussourie

which has now been declared into a Himalayan Quail Sanctuary, *i.e.*, Banog WS. Intensive surveys are required to confirm the presence of Himalayan Quail in this PA (Also see chapter 7.0 in this issue). The rich galliformes fauna of the state has been well protected through the network of PAs in the state, notably the Nanda Devi Biosphere Reserve and Kedarnath WS. Some captive breeding attempts for Galliformes in the Nainital Zoo have been undertaken.

A fairly comprehensive mapping exercise has been undertaken recently (Ramesh *et al.* 2008) to identify 'galliformes hotspots' within the state and also to see the relevance of the PA system for conservation of galliformes within the state. Hopefully, the state will take some of the recommendations expected to come out of the study on board and take initiatives to conserve these birds.

Hunting is quite prevalent in Uttarakhand and does take good toll of galliformes. Steps need to be taken to see that loss due to hunting is reduced and using local grassroots institutions could play a role (Virdi, 2008).

Sikkim

There have been no specific initiatives taken by Sikkim government to conserve galliformes in the state. Efforts have mostly remained confined to development of PAs within the state and some efforts to establish captive breeding populations of some species..

The state does not possess any species of major conservation concern but areas for each species need to be identified which can be monitored periodically. As in other parts of the Himalaya, hunting is prevalent and its prevention requires better enforcement. Some local level groups in the form of *Himal Rakshaks* have been formed which can be used in lowering hunting.

West Bengal (North Bengal)

Most of the initiatives in the state of west Bengal have been confined to largely captive breeding although in around 1995, the West Bengal Forest Department funded a study on the Satyr Tragopan in Singhalila National Park, which also has the threatened Chestnut-breasted Partridge (*Arborophilla mandellii*).

Arunachal Pradesh

This state is the richest in terms of galliformes which include three species of threatened pheasants and two of Partridge/Francolin. The government initiatives have not been many however, apart from affording protection to animals, largely within the PA network. Given the hunting pressures on wild animals in this state, it is imperative that the government comes out with a clear plan to secure the future of pheasants of this area.



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Table 2 : Distribution of Galliformes in the Indian Himalayas

Elevation (m)	Western	West-Central	Central-eastern	Eastern
4,000	Himalayan Snowcock, Tibetan Snowcock, Chukar, Tibetan Partridge	Himalayan Snowcock, Tibetan Snowcock, Chukar	Tibetan Snowcock	Scalers Monal, Himalayan Monal, Buff- throated Partridge,
3,500	Himalayan Snowcock, Chukar, Himalayan Monal, Western Tragopan, Koklass	Himalayan Monal, Satyr Tragopan, Koklass, Blood Pheasant, Snow partridge, Tibetan Snowcock, Chukar,	Himalayan Monal, Blood pheasant	Himalayan Monal, Tibetan Eared pheasant, Sclater's Monal
3,000	Chukar, Western Tragopan, Koklass, Himalayan Monal, Kalij,	Satyr Tragopan, Himalayan Monal, Chukar, Kalij, Koklass, Cheer, Hill Partridge	Blood Pheasant, Himalayan Monal, Satyr tragopan	Temmincks Tragopan, Himalayan Monal, Blood Pheasant,
2,500	Koklass, Cheer, Himalayan Monal, Kalij, Chukar, Red Junglefowl, Hill Partridge, Western Tragopan	Himalayan Monal, Chukar, Hill Partridge, Rufous-throated Partridge, Himalayan Quail, Common Quail, Satyr Tragopan	Himalayan Monal, Satyr Tragopan, Hill Partridge, Chestnut -breasted Partridge, Hill Partridge	Temmincks Tragopan, Himalayan Monal, Blyth's Tragopan, Red -breasted Partridge, Hill Partridge
2,000	Red Junglefowl, Kalij, Cheer, Koklass. Hill Partridge	Red Junglefowl, Kalij, Cheer, Koklas, Hill Partridge, Rufous-throated Partridge	Hill Partridge, Chestnut-breasted Partridge, Kalij, Rufous-throated Partridge	Blyth's Tragopan, Hill Partridge, Red-breasted Partridge, Kalij, Grey Peacock Pheasant, Rufous-throated Partridge
1,500	Red Junglefowl, Blue Peafowl, Kalij, Black Francolin	Red Junglefowl, Kalij, Black Francolin, Cheer, Koklass, Himalayan Quail	Kalij, Red Junglefowl, Black Francolin	Kalij, Red Junglefowl, Grey Peacock Pheasant, Red-breasted Partridge, Hume's Pheasant, Blyth's Tragopan, Black Francolin
1,000	Red Junglefowl, Kalij, Blue Peafowl, Black Francolin	Red Junglefowl, Kalij, Blue Peafowl, Black Francolin	Kalij, Red Junglefowl, Black Francolin	White-cheeked Hill partridge, Red Junglefowl, Grey Peacock Pheasant, Kalij, Black Francolin
500	Red Junglefowl, Blue Peafowl, Black Francolin	Red Junglefowl, Kalij, Blue Peafowl, Black Francolin	Kalij, Red Junglefowl, Grey Peacock Pheasant, Manipur Bush Quail, Black Francolin	Kalij, Red Junglefowl, Grey Peacock Pheasant, White-cheeked Partridge, Black Francolin