

Status and conservation of Great Slaty Woodpecker *Mulleripicus pulverulentus* in Nepal

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Status and conservation of Great Slaty Woodpecker *Mulleripicus pulverulentus* in Nepal

Great Slaty Woodpecker, the largest living woodpecker of the world, has been listed as Vulnerable on the IUCN in 2010 Red List as it suffered a rapid population decline over the past 20 years (three generations) due to loss of primary forest cover throughout much of its range (BirdLife International 2010).

Great Slaty Woodpecker is associated with old-growth forests (Lammertink 2004). Between 1990 and 2005, total forest area in its global range was reduced by 15% and primary forest area by 32%. In this period, many range states lost forests including Nepal where the forest cover was reduced to 9446 km² in 2005 from 26236 km² in 1990 (Lammertink *et al.* 2009). This was a nearly 3-fold reduction in the forest types with which Great Slaty Woodpecker seems to be associated. As a consequence population decline of this species was estimated from 78,708 individuals originally to 6,051 individuals in 2005 in Nepal (Lammertink *et al.* 2009). In Nepal, this species is already listed as Endangered in the national red data book (Baral and Inskipp 2004, Inskipp *et al.* 2011).

Following recommendations by BirdLife International (2010) and Lammertink *et al.* (2009), the current study aims at finding out type and extent of their habitat and population in and outside four protected areas: Chitwan, Banke and Bardia National Parks and Sukla Phanta Wildlife Reserve of lowland Nepal. The information thus obtained is expected to help authorities at national and global level to make appropriate policy for their effective conservation. This study is the first of its kind in south Asia focusing on Great Slaty Woodpecker.

Study Areas

All study areas were situated in the lowland Nepal encompassing two physiographic zones: the terai and the Siwaliks. Except Chitwan National Park which was in the Siwaliks physiographic zone, rest of the sites were in the terai. The study area included seven distant locations of which four were within protected landscape and three outside protected area.

Protected Area

Sukla Phanta Wildlife Reserve (28°53'N/80°11'E, Sukla Phanta here onwards).

Sukla Phanta lies in the extreme southwest of the terai in Kanchanpur district. The international border between Nepal and India demarcates the western boundary and also the southern boundary, beyond which lies the Luggabugga Florican Reserve in India. The total area of the Reserve is 355 km². Some 54.7% of the reserve is covered by broadleaved forests of Sal *Shorea robusta* with forests of Sissoo

Dalbergia sissoo and Khair *Acacia catechu* along rivers, and grassland and marsh in the southwest where soils are of recent alluvium. The rest consists of forests of Sal, Sissoo and Khair and savannah, supported by better-drained soils on higher terrain in the northeast. The reserve possesses the largest grassland phantas in Nepal; these are of both national and international importance for birds and other wildlife. A total of 424 species of birds has been recorded in the Reserve (Baral and Inskipp 2009, Himalayan Nature press release 12 October 2010).

Bardia National Park (28°28'N/81°28'E, Bardia here onwards)

Bardia National Park is situated in southwest Nepal, 396 km west of Kathmandu in the Bardia district of Bheri Zone. It is the largest protected area of the lowland Nepal with a total area of 968 km². Much of the park is in the bhabar zone and consists of a broad alluvial plain that slopes gently away from the foothills of the Himalayan Churia Range in the northeast to India in the southwest. The Babai and Geruwa are two large rivers that flow into the park, the latter being a branch of the Karnali River. About 70% of the park is covered by sal *Shorea robusta* forest; there are also riverine forests of Khair *Acacia catechu* and Sissoo *Dalbergia sissoo* in the lowlands and *Terminalia-Anogeissus* deciduous forest and Chir Pine *Pinus roxburghii* forest in the hills. The other main habitats of the park are grassland and savannah. A total of 426 species of birds has been recorded from the park (Baral and Inskipp 2005).

Banke National Park (81° 39'29" to 82° 12'19" E and 27° 58'13" to 28° 21'26"N, Banke here onwards).

This National Park lies in Banke district and has an area of 550 Km². Its buffer zone covers parts of Banke, Bardia, Dang and Salyan districts of Mid Western Development Region and has an area of 343 km². The core area is delineated by Chisapani-Ovary section of east-west highway and cultivated land in the south, the Churia Hills in the north, Shiva khola in the east and Kohalpur- Surkhet road in the west. The core area of the Park (61.5%) entirely falls in Banke district and buffer zone (38.5%) falls in Banke district in the south and west, and Dang and Salyan districts in the north.

Banke contains an array of eight ecosystem types such as Sal forest, deciduous Riverine forest, savannahs and grasslands, mixed hardwood forest, flood plain community, Bhabar and foot hills of Chure range. It is a home to 124 plants, 34 mammals, more than 300 birds, 24 reptiles, 7 amphibians and 58 fish species. Banke has 90% natural forest coverage composed of mainly Sal, Karma *Adina cardifolia*, Khair and Sissoo.

<http://www.dnpwc.gov.np/protected-areas/national-parks/item/56-banke-national-park>

Chitwan National Park (27°28'N/84°20'E, Chitwan here onwards).

Chitwan was set up in 1973 as Nepal's first national park. Chitwan is an inner doon valley in the central terai of Nepal, between the Siwalik hills in the south and the Mahabharat hills to the north. In the east it is bordered by Parsa Wildlife Reserve. There are numerous small patches of grasslands varying in width from a few metres to 1500 m lying alongside the park's rivers. Now Chitwan has a total area of 932 km² which makes it second largest wilderness area in the lowland Nepal. Approximately 70% of the park is covered by Sal *Shorea robusta* forest; other lowland forest is riverine *Acacia catechu*/*Dalbergia sissoo* and a very small area is tropical evergreen forest. In the hills there is Chir Pine *Pinus roxburghii* and *Terminalia-Agoneissus* deciduous hill forest. The wetlands comprise the three major rivers of the park, the Narayani, Rapti and Reu, and their floodplains, which include several small lakes and pools and riverine forests. Chitwan has more than 550 species of birds recorded in the park and its fringes.

Outside Protected Area

Forests of Kailali District, far west Nepal (28°41'N/80°56'E Ghodaghodi Lake).

The forests of Kailali have been given special emphasis under the WWF's Terai Arc Landscape Programme as a dispersal ground and corridor for wildlife. This area is a key link between the Churia Hills and the terai plains, and also acts as a corridor connecting Royal Bardia National Park with the Royal Suklaphanta Wildlife Reserve. Basanta Corridor Forests that connects Nepal forests with Indian forests and Ghodaghodi Lake forests predominantly have Sal and Saj or Asna *Terminalia alata*. The forests are characterised by shallow depressions and small hillocks, in some places creating permanent water bodies and in others small jheels that dry up during winter months.

Forests of Kapilvastu District, West Nepal (centred at 27°42'N, 83°04'E).

Kapilvastu forests north of the East West Highway are important forests for several nationally threatened species of birds. Recently, Great Hornbills that depend on mature forest areas and Indian Courser, a nationally critically endangered species (Inskipp et al. 2011) have been recorded. The forest is dominated by Sal and Saj with numerous other large evergreen trees.

Tamaspur Forests, Nawalparasi District, Central Nepal (centred at 27°34'N, 83°56'E).

The Tamaspur forests lie on the eastern side of Daunne Hills of Nawalparasi District. On the western side of the hills lies the famous Nawalparasi forests IBA (Baral and Inskipp 2005). The forest is mainly Sal with Saj as the co-dominant species. Forests are highly disturbed and heavily used for household uses and managed under community forests management scheme.

Methods

All available published and unpublished literature was collected for review. A permission letter was obtained from the Department of National Parks and Wildlife Conservation for access to the protected areas. Three small workshops were held at Lumbini, Chitwan and Koshi for planning and training participants on data collection. Forms for bird and vegetation were prepared and tested in the field.

For surveys that involved outside the protected areas, knowledgeable people were consulted and reconnaissance survey to known/potential areas for woodpeckers was conducted in the beginning.

Two to five transects each 5 km long were laid out in Banke (2) and Bardia (4) and in Sukla Phanta (5) depending upon the logistics. In Chitwan, two transects were made, each 5km long. Outside PAs, two transects were made in following sites: Basanta Corridor/Ghodaghodi Lake Area, Kapilvastu forests and Tamaspur forests, Nawalparasi.

All transects, except the two in Chitwan were visited five times. Dominant tree species and five other co-dominant species, their girth size, height, physical structure and density were recorded. Birds were recorded on sight and sound. Specific places where Great Slaty was seen, vegetation was re-recorded.

All birds that were seen and heard outside the transect were logged separately. Information was collected from field ornithologists and knowledgeable persons on the occurrence and status of the woodpecker in different parts of Nepal. Old records were also collected for preparation of a comprehensive distribution map of the species in Nepal.

Training and Capacity Building

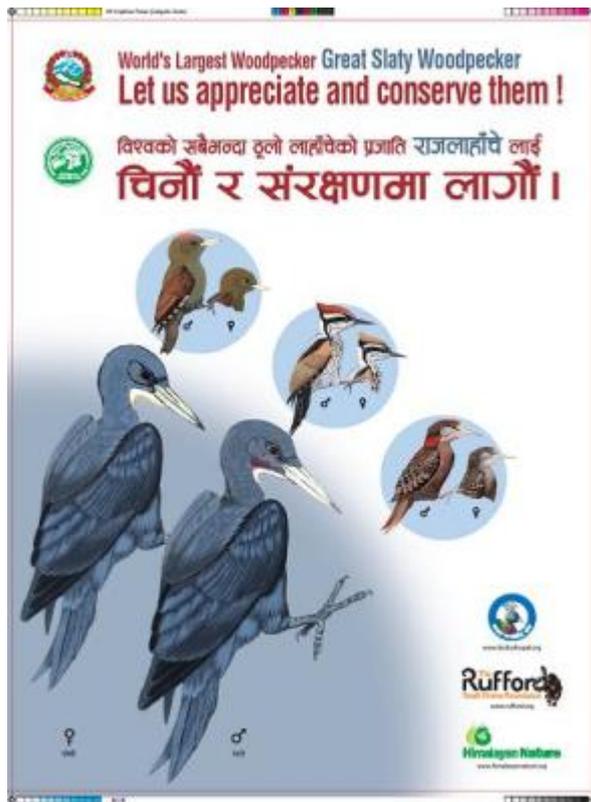
As the area covered and the amount of data collection was aimed high, selected participants were given training focusing on Great Slaty Woodpecker. This enables a relatively low cost and effective way of generating information on the species. As the Great Slaty was quite large bird and easily identifiable, same may not apply for more skulking and difficult to identify species. A total of 10 participants including myself took part in the data collection.

- Dhiraj Chaudhary, trained in Koshi, for covering Sukla Phanta
- Dilli Singh Sawod, trained in Lumbini covering forests in Kailali
- Ram Bahadur Shahi, trained in Lumbini covering Bardia

- Sanjib Acharya, trained in Koshi covering Banke and partially to Kapilvastu
- Dinesh Giri, trained in Lumbini covering partially Kapilvastu and Nawalparasi
- Ram Din Mahato and Dhan Bahadur Chaudhary, both trained at Chitwan to cover western part of the Chitwan park
- Hem Subedi and Basu Bidari, trained in Chitwan to yield occasional data from field visits to Chitwan and other lowland areas

Education and Awareness

Field personnel trained on the data collection have been instrumental in disseminating the knowledge and threats the Great Slaty is facing in Nepal. Moreover a poster is being designed to be circulated from Chitwan west to Sukla Phanta in PAs and outside PAs aiming to raise additional conservation awareness and to promote public appreciation of these magnificent birds. First draft of the poster is pasted below.



Analysis

Analysis will be done to deduce vegetation types and to check within habitat types recorded any features that relate to different densities/abundance of the woodpecker. Population will be presented in a range based on actual observations and extrapolation. Within transect and outside transect information will be also used to estimate total Nepal population. A

distribution map with extent of occurrence and area of occupancy will be produced.

Currently data are being compiled in excel sheet. Consultation with three referees who originally recommended and backed up this study is also being made regarding data analysis, interpretation of the results and final report preparation.

Results

This work generated most up-to-date information on the status and population of Great Slaty Woodpecker inside protected areas vs. outside protected areas. A total of 435 km distance was walked on transect survey. Bird counters covered double this length on a to-and-fro process during the survey. In addition, several hours were spent on reconnaissance and on training the participants.

In all PAs, except Chitwan, all transects were visited five times. In Chitwan National Park, two transects 5 km long were laid but could not be complete on time because of threats and disturbance mainly from a stray wild elephant which stayed in the survey area for the entire survey period. Only one transect could be visited twice.

Great Slaty Woodpeckers were recorded in Banke, Bardia, Sukla Phanta and Tamaspur. Because of reduced survey efforts and coverage in Chitwan, this species was not recorded from the transect survey. Forests surveyed outside protected area were in good condition but both in Kailali and Kapilvastu, Great Slaty was not recorded. Most birds were seen in small groups, but in case of Banke National Park and Tamaspur, two birds each on the same transects were noted indicating a possible pair.

Table 1. Summary of Great Slaty Records from transect survey (Total population for Nepal yet to be worked on).

Place	Frequency of record	Total Birds	Total transect covered	No of transect showing Great Slaty	Outside transect observation	Total estimated Population (tb verified do not quote)
Sukla Phanta	4	18	5	2		50
Bardia	1	5	4	1		60
Banke	1	2	2	1		10
Nawalparasi	1	2	2	1		10
Kailali	0	0	2	0	1	10
Kapilvastu	0	0	2	0		
Chitwan	0	0	1	0		50
Total						190

Discussion

Protected Areas

Bardia and Sukla Phanta are well-known protected areas for Great Slaty Woodpecker so records from here further confirm their presence in these two PAs. There are several records from Chitwan although our short duration survey failed to find their presence. The record from Banke is a new locality record for the species. With declaration of the area as protected, it is likely that the habitat condition will further improve. This national park is connected with forest corridor to Bardia so populations in Bardia and Banke could form one subpopulation thus members/flocks considered interchangeable.

Outside Protected Areas

Tamaspur is a known locality for this species (Inskipp 1988, Inskipp 1991) and current sighting confirms the continued presence of the species. Various types of pressures to forest land and disturbance to the area indicate that species population here may be very small. Unlike Bardia and Sukla where flocks of this species are found, Tamaspur and Banke have shown only two birds at most. It is likely that what is left now is the remnant population of a much bigger populations present in the area in the past. However now this

subpopulation is perhaps surviving because of better conditions across the Narayani River in Chitwan National Park.

Kailali forests and Kapilvastu forests have been important for their recent sightings of Great Hornbill *Buceros bicornis*, a globally near-threatened species (Himalayan Nature unpublished data). The current woodpecker survey in these areas has been based on the sighting of this species. Although, this survey failed to find presence of Great Slaty from these forests, the habitat remains very suitable for species that love mature trees and relatively undisturbed forests.

Nepal status

Current survey shows a distribution of Great Slaty Woodpecker west from Sukla Phanta Wildlife Reserve east to Chitwan National Park. In Chitwan National Park, the distribution is mostly in the westerly edge of the park, west of Hattimara Khola.

In between Sukla Phanta and Chitwan protected areas, Bardia and Banke National Park hold some populations of the species, former having a much bigger population compared to the latter park.

Tamaspur in Nawalparasi district is a former stronghold of the species (Inskipp 1988, Inskipp and Inskipp 1991) and current survey has confirmed their continued occurrence in the area. This population is part of the west Chitwan population. The forest contiguity for birds joining with main part of Chitwan National Park exists but the protection afforded here are very weak.

Although not covered by current survey, there is a record of Great Slaty Woodpecker from Tikapur Park, Kailali District along the Karnali River (Baral 2009). These birds could be part of the Bardia National Park population which is only a few kilometres away from here.

Based on the present study, three subpopulations of Great Slaty Woodpeckers have been identified in Nepal. Suklaphanta, Bardia (Kailali/Banke) and Chitwan subpopulations (Tamaspur forests in Nawalparasi).

The 2005 population given above for Nepal has been inferred on the extent of forest cover (Lammertink *et al.* 2009). Forest losses and deterioration, especially in the lowland Nepal, have occurred in much greater rate and in area compared to other physiographic zones (Inskipp 1989). A crude population estimate of 500 was provided for Great Slaty in The State of Nepal's Birds 2010 (Inskipp *et al.* 2011). Current study reveals that the real scenario may be far worse and Nepal population could be significantly lower.

A detailed analysis is intended of the data collected and population estimate will be presented for the same in the final report.

Literature collected/consulted

Baral, H. S. and Inskipp, C. (2004) *The state of Nepal's birds 2004*. Bird Conservation Nepal and Department of National Parks and Wildlife Conservation, Kathmandu.

Baral, H. S. and Inskipp, C. (2009) The birds of Sukla Phanta Wildlife Reserve, Nepal. *Our Nature* 7: 56-81.

BirdLife International (2010) Species factsheet: *Mulleripicus pulverulentus*. Downloaded from <http://www.birdlife.org> on 21/6/2010

Inskipp, C. (1988) *A birdwatcher's guide to Nepal*. Prion Ltd, Sandy.

Inskipp, C. (1989) *Forest birds of Nepal: their status and conservation*. International Council for Bird Preservation, Cambridge.

Inskipp, C., Baral, H. S. and Inskipp, T. (2011) *The state of Nepal's birds 2010: indicators of our changing world*. Bird Conservation Nepal and BirdLife International, Kathmandu and Cambridge.

Inskipp, C. and Inskipp, T. (1991) *A guide to the birds of Nepal*. Second edition. Christopher Helm, London.

Lammertink, M., (2004a) A multiple-site comparison of woodpecker communities in Bornean lowland and hill forests. *Conservation Biology* 18: 746–757.

Lammertink, M., (2004b) Grouping and cooperative breeding in the Great Slaty Woodpecker. *Condor* 106: 309–319.

Lammertink, M., (2007) Community ecology and logging responses of Southeast Asian woodpeckers (Picidae, Aves). PhD thesis, Universiteit van Amsterdam.

Lammertink, M., Prawiradilaga, D. M., Setiorini, U., Naing, T. Z., Duckworth, J.W., Menken, S. B.J. (2009) Global population decline of the Great Slaty Woodpecker (*Mulleripicus pulverulentus*). *Biological Conservation* 142: 166 –179.