

Birds of D'Ering Memorial Wildlife Sanctuary, Arunachal Pradesh: Summer Surveys

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ABSTRACT

D'Ering Memorial Wildlife Sanctuary, Arunachal Pradesh, India is one of the finest grassland sanctuaries of India, with perhaps the largest population of Critically Endangered Bengal Florican *Houbaropsis bengalensis*. It also has many globally threatened wet grassland species such as Black-breasted Parrotbill *Paradoxornis flavirostris*, Swamp Francolin *Francolinus gularis*, Swamp Grass-babbler *Liticilla cinerascens*, Jerdon's Babbler *Chrysomma altirostre griseigularis*, and Marsh Babbler *Pellorneum palustris*. During summer visits in 2015 and 2016, 131 bird species have been identified, but more are likely to occur. Detailed ecological and ornithological studies are required in this wonderful but neglected sanctuary.

Key words: D'Ering Memorial WLS, grassland birds, Arunachal Pradesh

INTRODUCTION

The D'Ering Memorial Wildlife Sanctuary in East Siang district of Arunachal Pradesh lies on the border of Assam and Arunachal Pradesh in the floodplains of the river Siang and its tributaries. It is located c. 20 km south-east of Pasighat town. It has been recognised as an Important Bird and Biodiversity Area (IBA) by Bombay Natural History Society (BNHS) and BirdLife International (Rahmani et al. 2016a). The Sanctuary was established in 1976 as Lali Wildlife Sanctuary (WLS) and renamed as D'Ering Memorial WLS (hereafter referred to as DWS) in 1986 after Dr Daying Ering, a politician and social reformer of Arunachal Pradesh. The Sanctuary is contiguous with Kobo Chapori of Assam, which in turn is linked to Dibru-Saikhowa National Park. All together they form a large and contiguous landscape, which is apposite for the conservation of riverine floodplains fauna of the Brahmaputra River.

Divided into three managerial ranges, Anchalghat, Sibiamukh and Borguli (=Borgoli), the Sanctuary has semi-evergreen forests, fast-flowing river channels

and river islands, marshes and extensive grasslands (Barman 1996). DWS is one of the few grassland sanctuaries of India and of Arunachal state. About 80% of the Sanctuary is covered with grassland while the rest is riverine forest patches with mixed bamboo and secondary forests. The main grass species are *Saccharum spontaneum*, *S. arundinaceum*, *Neyraudia reynaudiana* and sedges such as *Cyperus* sp. The common trees are *Terminalia myriocarpa*, *Dillenia indica*, *Bombax ceiba*, *Ficus dumosa*, *Lagerstroemia speciosa*, *Duabanga grandiflora*, *Dipterus wallichii* and *Albizia procera* (Barman 1996). Karnan and Rathinavel (2017) have done floristic survey of the Sanctuary. Streams and channels intersect the whole sanctuary, and there are small to medium waterbodies that provide good foraging sites for birds.

STUDY AREA

The D'Ering Sanctuary is spread over a total area of 190 km² including the aquatic area of Siang River, in Arunachal Pradesh, India. The area receives more than 2,000 mm rain annually, mainly in the four

months during the south-west monsoon season (June to September), but occasional rains may occur in any month. During monsoon, the low-lying areas of the DWS get flooded, thus restricting mobility of animals and human beings. The temperature varies from 7 to 40°C. The Sanctuary is located at the confluence of Siang and Sibia rivers and is contiguous with Pasighat Reserve Forest (RF) on the south-west side. Besides the large area under grassland, in the Borgoli Range, there is a large mixed nesting colony of cormorants and egrets.

SCIENTIFIC STUDIES

No detailed scientific study has been done in DWS, perhaps due to logistical constraints. In the late 1980s, Goutam Narayan of BNHS conducted surveys for the Bengal Florican and estimated a population of 20-25 individuals (Rahmani et al. 1990). Singh (1995) reported the presence of Swamp Francolin in the Sanctuary. In the winter of 1996, Rathim Barman conducted four-day bird surveys and recorded 113 species. Later, Anwaruddin Choudhury conducted surveys and noted about 200 species (A.U. Choudhury, *pers. comm.* 2014). Kaul (2000) conducted survey to look for pheasants in the Sanctuary. More recently Rohan Pandit conducted a four day surveys in November 2011 when he reported Swamp Francolin *Francolinus gularis*, Jerdon's Bushchat *Saxicola jerdoni*, Swamp Prinia (now named Swamp Grass-babbler *Liticilla cinerascens*) and Indian Grassbird *Graminicola bengalensis* (*pers. comm.*). Kumar (2011) reported two critically endangered species of vultures from the sanctuary. Subsequently, Ghosh (2014) conducted a brief survey in the sanctuary wherein 109 bird species were recorded. Recently, Lahiri (2021) conducted a brief survey on 15 April 2021 during which they noted 99 species of birds. According to the Arunachal Pradesh Forest Department, DWS has 29 species of mammals, 158 species of birds, 13 species of reptiles, and 91 species of plants.

METHODOLOGY

On 29-30 April 2015, we did a reconnaissance visit of the sanctuary, during which one adult territorial

male Bengal Florican was seen. In 2016, a much more detailed survey was conducted for 12 days in April-May, during which 29 male Bengal Floricans were seen, and about 130 species of birds were recorded. This paper is based on our surveys conducted in the summer (April-May) of 2015 and 2016. We spent a total of nearly 100 hours during day time, and also kept notes of calls of birds till late evening. Every bird sighted was noted in the field notebook, including habitat type, perch height, activity, number, male or female (in case of sexual dimorphic taxa), sighting distance of birds, and time. Extensive literature survey was done and people who have visited the area were consulted.

We visited Borgoli breeding colony of cormorants and egrets on May 20, 2016 when the birds had started building nests and some even had laid clutches. As the nesting colony was partially hidden in tall grass, we could not investigate it properly. The guards told us that this colony is active for many years, and during monsoon, many more birds are seen. As the colony is remote, surrounded by tall impenetrable grass and marshy landscape, perhaps a drone can be used to survey the colony.

GLOBALY THREATENED GRASSLAND BIRD SPECIES FOUND IN D'ERING SANCTUARY

The main purpose of our surveys was to study the distribution and status of globally threatened grassland bird species of DWS. Complete annotated checklist is given in Appendix I. Below is a brief description of globally threatened species listed by BirdLife International and the International Union for Conservation of Nature (IUCN) in the Red List.

Swamp Francolin *Francolinus gularis* VU

In Arunachal Pradesh, it is recorded from DWS, Dibang RF and adjacent areas, and also in the *chaporis* of the Lohit River (Choudhury 1996, 2006). Singh (1995) has also recorded it from D'Ering. We found it all over, but especially in Pilomukh, Namsing and Borgoli areas which have tall wet grasslands. We also heard its characteristic calls a few times between Jeepghat and Namsing. This bird is likely to be present in all areas with wet and tall grassland. We also recorded it in Nizamghat grasslands.

Manipur Bush-quail CR

Although Manipur Bush-quail could be marginal to DWS as there is no record, we still recommend that a proper study be conducted to locate this enigmatic species.

Bengal Florican *Houbaropsis bengalensis* CR

According to BirdLife International (2001, 2022) the Bengal Florican has a very small and declining population, a trend that has recently become extremely rapid and is predicted to continue in the near future. The reasons are largely attributed to the widespread and ongoing conversion of its grassland habitat for agriculture and other land use practices, grassland degradation, and may also be due to hunting and collisions with power lines. It is, therefore, listed as 'Critically Endangered' by BirdLife International and IUCN.

This IBA is one of the most important grassland habitats of the Bengal Florican. Several individuals were observed in 2012–2013 (Tashi Mize and A.U. Choudhury, *pers. comm.* 2014). While Rahmani et al. (1990) estimated a population of 20 floricans, Choudhury (2002) put the number at 18–20.

In three visits to D'Ering in 2016, we saw a maximum of 29 different adult territorial male floricans, and we suspect that there could be many more as we could not survey all the grasslands at a proper time due to logistic reasons (for example, we reached some grasslands during mid-day on a hot day when it is not a good time for the bird to display). Looking at the spread of grasslands in the DWS, there could be 50-60 adult territorial male floricans in the Sanctuary and perhaps many more in the larger landscape consisting of DWS, Kobo-Chapori, Amarpur, Nizamghat, Dibru-Saikhowa, chaporis of Lohit and Dibang rivers, and Sadia plains. DWS is perhaps the finest area for this Critically Endangered bird in South Asia.

The following are our recommendations for the long-term conservation of this species:

- a) More intensive survey of DWS to locate and map territorial males
- b) Satellite tracking studies to know the post and pre-breeding movement of Bengal Florican
- c) Research on florican habitat utilisation and local movement by GPS-GSM tags, ringing and colour

marking

- d) Keeping Bengal Florican as an iconic species, long-term studies should be started on the impact of annual grassland burning. This should include time of burning, extent of burning, regularity of burning, pattern of burning, grass composition of unburnt and burnt patches, utilization of such patches by Bengal Florican and other grassland birds
- e) Development of literature on Bengal Florican in local languages and dialects
- f) Development of Florican-*mitre* or Florican friends network of forest guards, watchmen, youngsters, school children, fishermen, grazers, school teachers, researchers and interested people to spread the message of its conservation, and also to provide information about florican sightings.

Jerdon's Babbler *Chrysomma altirostre griseigularis* VU

The Jerdon's Babbler is found in India, Nepal, Pakistan and Myanmar in three subspecies based on minor plumage difference and allopatric ranges: *Chrysomma altirostre altirostre*, the nominate subspecies found in Myanmar; *Chrysomma altirostre griseigularis* or Hume's Babbler of the Brahmaputra and Gangetic floodplains (*terai*); and *Chrysomma altirostre scindicums* or Sind's Babbler of the Indus basin in Pakistan. BirdLife International (2001, 2022) consider it Vulnerable as it has a small and declining population as a result of the extensive loss of tall, wet grassland habitat and its conversion to cultivation and grazing by domestic stock.

In DWS, Hume's Babbler *Chrysomma altirostre griseigularis* is found mostly in tall wet dense grassland of *Phragmites-Saccharum-Typha* community, the so-called elephant grass. In DWS we found the bird in Pilomukh and Namsing areas but it is likely to occur all over the Sanctuary wherever suitable habitat is present. DWS is one of its finest extant habitats in the northeast India.

Jerdon's Babbler is very similar to Yellow-eyed Babbler *Chrysomma sinense* in size (16–17 cm) and colouration, with small variations: it has dark eyes, very faint yellow-greenish eye ring and grey lores and supercilium. Sometimes both species occur in the same area.

Slender-billed Babbler *Turdoides longirostris* VU

Based on the recommendations of BirdLife International, IUCN has listed the Slender-billed Babbler as 'Vulnerable'. This endemic bird is found in fragmented grasslands from the *terai* of central Nepal through northern West Bengal, Sikkim foothills through Brahmaputra floodplains to Arunachal Pradesh, Khasi Hills and Cachar, and Manipur. Historical records are given by BirdLife International (2001) and some latest records were added by Rahmani (2012). We did not find it in DWS but we are keeping it in our list as it is reported historically from Sadia plains of Assam (Hume 1888) which is not very far from DWS. Most of its historical and recent records are from central and lower Assam, Manipur, Meghalaya and one recent record from central Nepal (Chitwan NP). DWS appears to have suitable habitat for this species, and it may be found when more detailed surveys are conducted.

Marsh Babbler *Pellorneum palustrus* VU

In DWS we found it in Pilomukh and Borgoli areas, but it is likely to be present in many other parts of the Sanctuary wherever tall *Phragmites*, *Arundo* and other coarse grasses standing on water or damp soil, alongside swamps and rivers, are present. It is also reported in bushes and low tree-jungle on marshy ground. The bird is not easily sighted, but has a distinctive song, a harsh *krtr trr trr wi yi-yu; trr trr wi-you; trh-trh tu-tiu* and *trrh-ti trrh-ti trrh-ti*. It displays a variety of song types which have plenty of phrases and chattering. It responds well to tape playback but is difficult to see properly even when it is very close as it is a great skulker (Shashank Dalvi. *pers. comm.* 2010). It breeds from March onwards in summer before heavy rains begin but not much is known about its behaviour and ecology. DWS could be an important Sanctuary for this near-endemic species of India.

The following are our recommendations for long-term conservation of this species:

- Ecological studies using modern techniques of ringing, colour banding, call playback and capture-recapture methods to study its habitat requirements, population density and seasonal movement, if any
- Mapping of its distribution in DWS
- Impact of grass burning on its breeding success

Black-breasted Parrotbill *Paradoxornis*

***flavirostris* VU**

Black-breasted Parrotbill is an obligate to tall grasslands consisting *Arundo* and *Phragmites* species, popularly known as *Nal*. This is another near-endemic species found only in India, Nepal, Bangladesh (old records) and perhaps in Bhutan's *terai/duars*. In Arunachal Pradesh, it was historically reported from Mishmi Hills (presumably from adjacent lowland grasslands as it is not found in hills: BirdLife International 2001). A specimen is present in British Museum of Natural History, London (BMNH). Another specimen in BMNH collected in 1877 is from Noa Dihing River. Singh (1999) has also recorded a flock in DWS in March 1998. Other historical and recent records are given in BirdLife International (2001), Rahmani (2012) and Rahmani et al. (2016b). In this report, we give records of our surveys in DWS in 2016. In a two days' survey in Borgoli Range, we found it abundant in tall *Nal* grass growing along the Siang River and along streams flowing inside the Sanctuary. We detected about 30-40 individuals during our surveys. Our estimate is that a few hundred Black-breasted Parrotbill could be present in Borgoli area, making it perhaps the finest known site for this species in the world.

The following are our recommendations for long-term conservation of this species:

- A project to study the species' distribution, behaviour, habitat requirements and conservation needs
- Mapping of its distribution in DWS
- Impact of grassland burning on its breeding success
- Study of its movement within the Sanctuary through ringing/colour banding and geolocators
- Presently we know of only five sites where this bird is found: DWS in Arunachal Pradesh; Dibru-Saikhowa complex (National Park and few nearby *chaporis*), Kaziranga and Manas in Assam; and Kaibul Lamjao in Manipur. The minimum distance between any two such sites is 40-50 km (Dibru-Saikhowa and DWS) while other sites are located 200-250 km apart. Considering that the Black-breasted Parrotbill is resident in *Nal* grasslands and is a weak flier, fragmentation and genetic isolation of five known populations could also be a major issue, besides the low overall numbers. Genetic studies on the existing populations to know if there is any mixing of these

populations could be initiated.

- f) *Nal* grasses are extensively used by rural communities for thatching, fencing and other uses. It is possible that these are harvested unsustainably putting the existence of such microhabitats under grave threat outside PAs. A study should be done to determine if plantation of *Nal* in a few *chaporis* would help create additional habitat for this bird.

Bristled Grassbird *Chaetornis striata* VU

Bristled Grassbird is endemic to South Asia: Pakistan, India, Nepal, and Bangladesh. In its wide distribution, it is uncommon everywhere. Its movement is still not fully known as stray birds have been seen in peninsular India. It is a breeding visitor in north (mainly *terai*) and north-east India, Nepal *terai* and Bangladesh. In Assam, it is mainly seen in the summer when it comes for breeding. Historical records have been given by BirdLife International (2001) and more recent records from India were mentioned by Rahmani (2012). Although we did not see it during our summer surveys, we recommend that proper surveys in different seasons should be conducted in the Sanctuary.

Indian Grassbird or Rufous-rumped Grassbird *Graminicola bengalensis* NT

It is considered 'Near Threatened' by IUCN. It occurs in three subspecies in Nepal, India, Bangladesh, Myanmar, Vietnam and southern China. Indian Grassbird is found in tall, wet grasslands of the *terai* and flood plains of large rivers in north and north-east India. In Assam it is found in Kaziranga, Dibru-Saikhowa, Manas and Orang reserves, while in Arunachal Pradesh it is reported from DWS.

Swamp Prinia *Prinia cinerescens* (now termed Swamp Grass-babbler *Liticilla cinerascens*) EN

Till recently, Swamp Prinia *Prinia cinerescens* was considered as a subspecies of Rufous-vented Prinia *Prinia burnesii*. Rasmussen and Anderton (2005, 2012) elevated their status into two distinct species based on the difference in size of upper-tail coverts, eye rings, colour of vent and colour differences in body streaks. They also have a disjunct distribution. BirdLife International (2015) has listed Rufous-vented Prinia *Prinia burnesii* as 'Near Threatened'. On the recommendation of Rahmani et al. (2016b),

BirdLife International (2016) uplisted it to the 'Endangered' category in 2016.

Although the Swamp Prinia is reported from the plains of the Brahmaputra River, Assam and western Bihar (one record from Monghyr) and northern Bangladesh, recent surveys show that it is extremely rare. It has been specifically recorded from Kaziranga, Dibru-Saikhowa and Manas reserves in Assam; and DWS, Lower Dibang Valley, Lohit and East Siang districts, Dibang RF, Mebo RF and in the *chaporis* of Lohit River (Choudhury 2000) in Arunachal Pradesh.

In DWS it was reported near Jeepghat and we found it on a small island near Borgoli (Rahmani et al. 2016b). It appears to prefer tall grassland of *Chrysopogon zizanioides*. This grass is extensively used by villagers for their livelihood needs.

During our studies, it was found that the bird is quite rare with very few records and most of the records came from 2-3 sites. We suggest that detailed studies are urgently required.

- Detailed studies on its habitat requirement (grass species composition, grass height and grass density, and soil-moisture gradient) should be started urgently.
- Behavioural and ecological studies should be started in DWS where a fairly good population has been found.
- Ringling and colour marking to study its life history traits, survival rate, longevity and local movement.

Yellow Weaver *Ploceus megarhynchus* EN

The Yellow Weaver is also marginal to DWS, but we cannot exclude the possibility of its occurrence in DWS and surrounding areas with tall *semal* trees growing in grasslands. It has been reported to us from near Shantipur, Sadia. We recommend a detailed species-specific survey of the whole landscape.

White-throated Bushchat *Saxicola insignis* VU

It could be a marginal species to DWS, but we recommend dedicated surveys during winter months to especially look for this species in and around DWS.

White-winged Duck *Asarcornis scutulata* VU

A proper survey in the wetlands of DWS should be conducted where this bird is likely to be found.

Vultures

During the last 20 years, there has been a massive decline of 98 to 99 percent in Gyps species of vultures in South Asia, mainly due to the extensive use of diclofenac as a veterinary drug (Green et al. 2004). Vultures now survive in small numbers only in those places where diclofenac is used sparingly. We kept records of all vulture sightings. In DWS, we saw the White-rumped Vulture *Gyps bengalensis* (4), Slender-billed Vulture *Gyps tenuirostris* (4) and five juveniles on a cattle carcass near Jeepghat. In Borgoli, we saw two vultures in flight at a distance but the species could not be identified.

Riverine birds

Besides grassland birds, for which DWS should be famous, it is also an excellent habitat for riverine birds, thanks to the Siang River and its many tributaries and channels that anastomoses it from all directions. During our summer surveys, we found many species that live on the banks of rivers and/or small islands (*chaporis*). Notable species were River Lapwing *Vanellus duvaucelli*, Great Thick-knee *Esacus recurvirostris* and River Tern *Sterna aurantia*, all 'Near Threatened' species according to IUCN. Indian Skimmer *Rynchops albicollis*, a 'Vulnerable' species, is also reported from the Sanctuary but we did not see any. Besides these IUCN Red List species, a large number of Small Pratincole *Glareola lactea*, Large Cormorant *Phalacrocorax carbo*, Brahminy Duck *Tadorna ferruginea*, Black Stork *Ciconia nigra*, egrets, sandpipers, stints, plovers, and wagtails are reported, and several other species in winter only.

DISCUSSION

During two surveys in 2015 and 2016, a total 12-day work, 131 bird species were seen. It should be noted that this is only summer bird count as we did not visit the area during winter and monsoon. In winter, very large number of migratory birds of grasslands, forest and wetlands inhabit the area which is not included in our list, except for some species that were staying around till early May (e.g. Osprey *Pandion haliaetus*, Common Greenshank *Tringa nebularia*, Common Redshank *Tringa totanus*, Siberian Rubythroat *Luscinia calliope*). Barman (1996) has listed 113 species, including some species for which we need more information, such as the

Common Hill Partridge *Arborophila torqueola* that is found from 1500 to 4000 m (Rasmussen and Anderton 2012). He also reported Striped-breasted Pied Woodpecker *Dendrocopus atratus*, found mainly in East Manipur, mainly from 1000 to 2000 m in pine wood and edges of broadleaved evergreen forest and clearing. As Barman's survey was in winter, he was able to note 14 species of Anatidae. The list of birds of DWS by Ghosh (2014) is more or less similar to that of Barman (1996).

Lahiri (2021) noted 99 species during April 2021 survey, including some interesting species that we missed: Black Stork *Ciconia nigra*, Cinereous vulture *Aegypius monachus*, Blue-breasted Quail *Excalfactoria chinensis*, Square-tailed Drongocuckoo *Surniculus lugubris*, Brown Fish-owl *Ketupa zeylonensis*, Red-throated Flycatcher (Tiaga Flycatcher) *Ficedula albicilla*, Blue-throated Flycatcher *Cyornis rubeculoides* and a few more such species.

Combining the checklist of all the researchers who have visited the Sanctuary during different times of the year, we find that a total of 200 bird species are found in DWS. We are sure if more detailed studies are conducted in all seasons, the bird checklist would go beyond 250 species. The Sanctuary is not only important for grassland-obligate species but may be for many migratory species also as they could be using D'Ering as a passage to their wintering sites in Assam and beyond.

CHALLENGES AND RECOMMENDATIONS

Remoteness: DWS is located about 20 km from Pasighat town, on Arunachal –Assam border, and surrounded on three sides by rivers so it is not easy to reach, though this remoteness also has its benefits as it has helped retain the wilderness of the area intact.

Topography: The Sanctuary is riddled with rivers and channels. There is no direct road to reach it – one has to cross Siang River and its tributaries to reach the Sanctuary.

Poaching: Hunting is a way of life in Arunachal Pradesh. Although now modern guns and snares are used for hunting, it is still considered a part of tradition. Such type of hunting is certainly unsustainable and cannot be allowed. Although there

is no village inside the 190 sq. km extent of DWS, it is surrounded by villages across Siang River and its channels. Gangs of poachers cross the channels and regularly hunt inside the Sanctuary (Arunachal Times 2017). The Forest staff of DWS is doing an excellent job despite all odds.

Lack of basic facilities: The forest staff has only basic facilities and need to have access to modern infrastructure to overcome problems such as flooding in the area. Forest staff need good boats to patrol the boundary of the Sanctuary, and also to quickly reach remote areas.

Lack of research information: Except for short visits by researchers, no detailed work has been done on the biological values of this excellent Sanctuary.

Spread of invasive species:

Lantana camara and other invasive weeds seem to be spreading rapidly. If *Lantana* is not controlled now, it will gradually spread in the whole Sanctuary. We also recommend periodic removal of tree saplings in grassland areas.

General Grassland Bird studies: We recommend a general grassland bird survey in DWS in different seasons of the year to locate Jerdon's Babbler, Jerdon's Bushchat, Striated Grassbird, Bristled Grassbird, Indian Grassbird, Pallid Harrier and Yellow-breasted Bunting and also monitor their populations in the sanctuary. As most of the raptors are disappearing, DWS could be an important habitat for many grassland raptors. Along with other studies, raptor census should be done in different seasons.

Amur Falcon study: A dedicated study on the summer ecology of Amur Falcons may be a worthy topic of research.

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Appendix I: Annotated Checklist of the Birds of D'Ering Sanctuary (summer surveys)

S.No.	Species	Annotations
1.	Little Grebe <i>Tachybaptus ruficollis</i>	One seen on 20 May 2016 near Borgoli on Siang
2.	Spot-billed Pelican <i>Pelecanus philippensis</i>	See main text
3.	Indian Shag <i>Phalacrocorax fuscicollis</i>	Suspected to be present in the heronry at Borgoli range.
4.	Great Cormorant <i>Phalacrocorax carbo</i>	Flocks numbering 60-100 birds regularly seen sitting on mounds, or in cooperative fishing on the islands of Siang and Dibang. Reported to be much more common in winter
5.	Little Cormorant <i>Microcarbo niger</i>	Several birds in a large heronry of egrets and cormorants near Borgoli on Siang. Scattered 2-3 individuals seen near rivers and channels during every visit
6.	Little Egret <i>Egretta garzetta</i>	In the mixed nesting colony found in Borgoli Range, we found it breeding in large numbers, along with Little Cormorant and other birds. Occasional birds were found in flight in other parts of the Sanctuary
7.	Intermediate Egret <i>Egretta intermedia</i>	It was seen on 20 May, 2016 in the Borgoli nesting colony
8.	Eastern Cattle Egret <i>Bubulcus coromandus</i>	The Cattle Egret has been divided into Western Cattle Egret <i>Bubulcus ibis</i> , not found in India, and Eastern Cattle Egret <i>Bubulcus coromandus</i> found in India, Nepal, Sri Lanka and eastward to South-east Asia (Rasmussen and Anderton 2012). In DWS, the Eastern Cattle Egret is very common in wet grasslands, accompanying domestic and wild ungulates. For example, ten birds were seen with livestock near Jeepghat It is largely solitary and is thus found in small numbers in <i>beels</i> and rivers. It may be breeding in the Borgoli heronry.
9.	Grey Heron <i>Ardea cinerea</i>	Like the previous species, it is also solitary and seen in shallow <i>beels</i> , marshes and alongside slow flowing rivers. We had only one sighting of this bird near Pilomukh but it could be much more common
10.	Purple Heron <i>Ardea purpurea</i>	Widespread in and around the Sanctuary
11.	Indian Pond-heron <i>Ardeola grayii</i>	Solitary birds were flushed from the edge of Siang River. One bird was seen near Pilomukh on April 27, 2016 while another was seen near Jeepghat on April 28, 2016
12.	Little Green Heron or Striated Heron <i>Butorides striata</i>	We flushed one bird from a stream on our way to Namsing on May 28, 2016. Good nesting habitat is present in the Sanctuary but nests are difficult to locate
13.	Cinnamon or Chestnut Bittern <i>Ixobrychus cinnamomeus</i>	We recorded it in Borgali range in May 2016.
14.	Black-crowned Night-heron <i>Nycticorax nycticorax</i>	Eleven birds were seen in Borgali range on 20 May, 2016. Its sighting in May is interesting. It could be breeding in the Sanctuary
15.	Glossy Ibis <i>Plegadis falcinellus</i>	More than 10 individuals were seen in flight in Jeepghat area on April 28, 2016 and 11 birds were seen in flight over Borgoli grassland on May 21, 2016.
16.	Asian Openbill <i>Anastomus oscitans</i>	In Borgoli, we saw two individuals in flight at a distance, probably this species.
17.	Fulvous Whistling-duck <i>Dendrocygna bicolor</i>	A flock of ten birds was seen between Jeepghat and Namsing on May 28, 2016
18.	Lesser Whistling-duck <i>Dendrocygna javanica</i>	First three and then two birds were seen in Jeepghat area on April 28, 2016
19.	Indian Spot-billed Duck <i>Anas poecilorhyncha</i>	Common around villages but infrequent inside DWS. Multiple sightings on every visit before entering the Sanctuary
20.	Black Kite <i>Milvus migrans/govinda</i>	Occasional. For example, one individual was seen on April 28, and another on May 23, 2016 in a grassland near Jeepghat
21.	Black-shouldered Kite <i>Elanus caeruleus</i>	We saw an Accipiter, possibly this species, in Jeepghat area on May 28, 2016
22.	Shikra <i>Accipiter badius</i>	We have few sightings of this species in Pilomukh, Jeepghat and Borgoli areas where we had spent the maximum time. For instance, a pair was seen in flight on way to Namsing from Jeepghat on 30 April, 2016
23.	Oriental Honey-buzzard <i>Pernis ptilorhynchus</i>	

S.No.	Species	Annotations
24.	Crested Serpent-eagle <i>Spilornis cheela</i>	It is one of the most common raptors of the Sanctuary, particularly common in forested areas. We had multiple sightings of the species during all our visits to the Sanctuary.
25.	Osprey <i>Pandion haliaetus</i>	This is a migratory species and does not breed in the Indian plains. It is mainly found from October to March-April, but sometimes a few birds may stay back. We saw one individual over a <i>beel</i> in Borgoli Range on May 21, 2016
26.	White-rumped Vulture <i>Gyps bengalensis</i> CR	On May 22, 2016, we saw a flock of 13 vultures on a cattle carcass in Jeepghat, out of which four were adult White-rumped Vulture, and five juveniles of two species.
27.	Slender-billed Vulture <i>Gyps tenuirostris</i> CR	The Slender-billed Vulture still breeds in some parts of Assam. On May 22, 2016, we saw a flock of 13 vultures on a cattle carcass, out of which four were adult Slender-billed Vulture, and five juveniles of two species.
28.	Himalayan Vulture <i>Gyps himalayensis</i> NT	We saw two birds on May 28, 2016 between Jeepghat and Namsing
29.	Pied Harrier <i>Circus melanoleucos</i>	We have multiple sightings of adult male, female and juvenile during our visits in 2015 and 2016 in many parts of the Sanctuary. We are certain that it breeds in DWS as grasslands in the Sanctuary seem a very good habitat for this species
30.	Amur Falcon <i>Falco amurensis</i>	In north-east India, Amur Falcon is a passage migrant during October and November, mainly over the hills, but occasionally large flocks are seen on the Assam Plains. We had multiple sightings of the Amur Falcon during our surveys in April and May, particularly near Jeepghat. For example, on May 23, 2016 we saw three birds in flight over Jeepghat at about 0440 hours. They were catching insects, possibly dragonflies, in flight and eating them.
31.	Peregrine Falcon <i>Falco peregrinitor</i>	We have at least ten sightings, each time a single individual was seen, in Jeepghat, Borgoli and Namsing. On May 21, 2016 in a large <i>Imperata cylindrica</i> -dominated grassland in Borgoli Range, at about 12 noon we saw three falcons, probably this species.
32.	Swamp Francolin <i>Francolinus gularis</i> VU	See above
33.	Red Junglefowl <i>Gallus gallus</i>	We heard its calls near Pilomukh, Jeepghat and Borgoli in the morning. As it is hunted, it is extremely shy. However, its call can be heard in the whole Sanctuary during early morning and late evening, even on cloudy days. It is widely distributed in the Sanctuary, particularly in bushy, shrubby and forested areas, less so in pure grassland. On a cloudy day we heard it all along from Jeepghat to Namsing, a distance of 11.5 km.
34.	Barred Buttonquail <i>Turnix suscitator</i>	It is also called Common Bustard-quail. This tiny bird is a great skulker and seen only when encountered at the edge of grassland. We flushed a button-quail, probably this species.
35.	Bengal Florican <i>Houbaropsis bengalensis</i> CR	See above
36.	Common Moorhen <i>Gallinula chloropus</i>	Another common waterbird of shallow <i>beels</i> and <i>jheels</i> , found all over the reserve in suitable habitat. It is a resident bird and breeds just before the monsoon.
37.	Small Pratincole <i>Glareola lactea</i>	We saw it frequently on Siang River. For example, on April 27, 2016 we saw 10-15 near Pilomukh, flying just above the surface of water, occasionally slightly higher. Two were seen on May 28, 2016 while crossing Siang River and seven were seen near Borgoli on May 19, 2016
38.	Great Thick-knee <i>Esacus recurvirostris</i> NT	On May 21, 2016, we saw a bird flying and circling the grassland, simultaneously calling all the time. It probably had a nest. We heard its call on April 27, 2016 near Pilomukh camp. During April 2015 visit also, we had seen this species.
39.	Red-wattled Lapwing <i>Vanellus indicus</i>	Pairs occasionally seen near rivers and large streams. For example, two pairs were seen on May 19, 2016 near Borgoli.

S.No.	Species	Annotations
40.	River Lapwing <i>Vanellus duvaucelii</i> NT	Recorded near Pilomukh on April 27, 2016
41.	Common Redshank <i>Tringa tetanus</i>	It is a migratory species seen mainly from September to March-end, but some birds may linger on for longer. We heard its characteristic call on April 27, 2016 near Pilomukh
42.	Common Greenshank <i>Tringa nebularia</i>	Like the earlier species, it is a winter migrant but some birds can be seen even up to early April. For instance, on April 27, 2016, we saw one bird near Pilomukh
43.	Brown-headed Gull <i>Chroicocephalus brunnicephalus</i>	Earlier its scientific name was <i>Larus brunnicephalus</i> but now it has been shifted to <i>Chroicocephalus</i> genus. In the Indian plains, it is a migratory species, coming by October and leaving by March-end or early April. In April, we saw a flock of about 20 individuals in flight over a channel of Siang River. The characteristic dark-brown head was quite visible
44.	River Tern <i>Sterna aurantia</i> NT	It is a common resident of the Brahmaputra River. We had multiple sightings whenever we visited the riverside. For example, two were seen in Pilomukh area on April 27, 2016.
45.	Rock Pigeon <i>Columba livia</i>	A common bird around human habitations, but uncommon in the Sanctuary
46.	Oriental Turtle-Dove <i>Streptopelia orientalis meena</i>	Seen once on April 28, 2016 while walking from Jeepghat to Namsing
47.	Red Collared-dove <i>Streptopelia tranquebarica</i>	Occasionally seen in the Sanctuary in pairs. For instance, one pair was seen between Jeepghat and Namsing on April 28, 2016 in wooded grassland
48.	Spotted Dove <i>Streptopelia chinensis</i>	A common resident, more often seen in open woodland than in thick forest or grassland
49.	Red-breasted Parakeet <i>Psittacula alexandri</i> NT	This noisy bird cannot be missed by anyone. It is common both inside and outside the Sanctuary, particularly in Jeepghat and Borgoli areas
50.	Plaintive Cuckoo <i>Cacomantis merulinus</i>	Heard on April 28, 2016. It is a resident bird of the Assam valley and shows local movement.
51.	Asian Koel <i>Eudynamis scolopaceus</i>	Frequently seen/heard in the Sanctuary from April onwards.
52.	Indian Cuckoo <i>Cuculus micropterus</i>	This bird is a summer visitor to the Brahmaputra valley. It is chiefly arboreal, keeping singly to top canopy, seen flying hawk-like above the forest canopy. We heard its call all the time on April, 30 2015 near Jeepghat and on the way to Namsing. Similarly, during our visit in April-May 2016, its call was frequently heard in April, but by May, frequency of calling had decreased.
53.	Common Hawk-cuckoo <i>Hierococcyx varius</i>	From March onwards, it is seen/heard in almost all parts of the Sanctuary
54.	Lesser Coucal <i>Centropus bengalensis</i>	As it prefers tall wet grasslands, DWS is its perfect habitat. We either saw or heard it in every part of the Sanctuary wherever tall, wet grassland was present
55.	Greater Coucal <i>Centropus sinensis</i>	Unlike the previous species, it is mainly found in lightly-wooded country, mixed forest and agriculture areas. There appears to be an ecological segregation between Greater and Lesser coucals which will be interesting to study. We heard its call very early in the morning on May 23, 2016 from the Jeepghat camp
56.	Brown Hawk-owl <i>Ninox scutulata</i>	We heard it in Pasighat from Hotel Pane on May 21, 2016 at about 1930 hours. It was seen and heard in Jeepghat camp area on May 22, 2016.
57.	Spotted Owllet <i>Athene brama</i>	Heard/seen in Jeepghat camp on several occasions
58.	Asian Barred Owllet <i>Glaucidium cuculoides</i>	We heard its characteristic call near Borgoli Camp on the evening of May 20, 2016
59.	Large-tailed Nightjar <i>Caprimulgus macrurus</i>	Seen and heard in Jeepghat and Borgoli ranges. It starts calling by late evening and sometimes calls occasionally throughout the night
60.	Savanna Nightjar <i>Caprimulgus affinis</i>	Call heard or bird seen flying over at almost all grasslands during the summer months
61.	Asian Palm-swift <i>Cypsiurus balasensis</i> or Little or House Swift <i>Apus affinis</i>	We saw a swift species in Borgoli, possibly one of this species
62.	Black-billed' Roller <i>Coracias benghalensis affinis</i>	It is a resident bird of the north-east India and is commonly found in open cultivation, light deciduous forest, groves, often near human habitation. We found it in Jeepghat and Borgoli ranges.

S.No.	Species	Annotations
63.	Common Hoopoe <i>Upupa epops epops</i>	Often seen in over-grazed grasslands, both within and outside the Sanctuary
64.	White-breasted Kingfisher <i>Halcyon smyrnensis</i>	We came across this species in the Sanctuary. For instance, one was seen on the channel of Siang River near Pilomukh on April 27, 2016.
65.	Lesser Pied Kingfisher <i>Ceryle rudis</i>	One seen while crossing Siang River near Borgoli
66.	Common Kingfisher <i>Alcedo atthis</i>	On April 28, 2016, one found while crossing Siang River from Anchalghat to Jeepghat.
67.	Chestnut-headed Bee-eater <i>Merops leschenaulti</i>	It is a summer visitor to the Assam valley but a few individuals are also found in winter. We saw it near Jeepghat during our first visit to the Sanctuary on 30 April, 2015 and again on 28 April, 2016 between Jeepghat and Namsing forest camps.
68.	Little Green Bee-eater <i>Merops orientalis</i>	We had occasional sightings of this species in the Sanctuary, not as common as we had expected. For instance, we sighted a few birds in April, 2016 between Jeepghat and Namsing
69.	Blue-throated Barbet <i>Megalaima asiatica</i>	It can be heard everywhere. We had multiple sightings/detections
70.	Lineated Barbet <i>Megalaima lineata</i>	No one can miss the call of this species in the Sanctuary, actually in the whole of north-east India
71.	Fulvous-breasted Woodpecker <i>Dendrocopos macei</i>	We found one bird in the forested area of Borgoli
72.	Greater Flameback <i>Chrysocolaptes guttacristatus</i>	Multiple sightings. For instance, one seen on 28 April, 2016 between Jeepghat and Namsing.
73.	Bengal Bushlark <i>Mirafra assamica</i>	Found in heavily-grazed grasslands near Jeepghat. It is also known as Rufous-winged Bushlark
74.	Oriental Skylark <i>Alauda gulgula</i>	Like the earlier species, it is very common on heavily grazed grasslands, roads and <i>chaporis</i> but sometimes also seen in moderately tall grassland. On 30 April, 2015, we saw many Oriental Skylarks displaying over the grasslands.
75.	Sand Lark <i>Calandrella raytal</i>	It is an uncommon bird of <i>chaporis</i> , heavily-grazed grasslands and fallow fields.
76.	Grey-throated Sand-martin <i>Riparia chinensis</i>	We saw lots of martins flying over the grasslands but could identify only this species which appears to be dominant. It is a resident bird of north and north-west India.
77.	Barn Swallow <i>Hirundo rustica</i>	Common resident
78.	White Wagtail <i>Motacilla alba</i>	Four subspecies, <i>M. a. dukhunensis</i> , <i>M. a. personata</i> , <i>M. a. alboides</i> and <i>M. a. leucopsis</i> are found in the northeast. We found only <i>personata</i> subspecies.
79.	Citrine Wagtail <i>Motacilla cinerea citreola</i>	One was seen on 20 May, 2016 in Borgoli area. It is a winter migrant but some stay back till June.
80.	Paddyfield Pipit <i>Anthus rufifus</i>	This pipit species is a widespread resident of India. Although we did not find any nest, we suspect that it breeds in the Sanctuary.
81.	Large Cuckooshrike <i>Coracina macei</i>	One individual was seen on 28 April, 2016 between Jeepghat and Namsing.
82.	Long-tailed Minivet <i>Pericrocotus ethologus</i>	We had multiple sightings of this species in the Sanctuary.
83.	Rosy Minivet <i>Pericrocotus roseus</i>	A male in Borgoli forest area on May 19, 2016.
84.	Small Minivet <i>Pericrocotus cinnamomeus</i>	A pair near Jeepghat forested areas on 30 April 2015.
85.	Red-vented Bulbul <i>Pycnonotus cafer bengalensis</i>	This is a widespread resident bulbul species in India. In and around D'Ering, only the <i>P. c. bengalensis</i> subspecies is found. It is common in forested areas, tea plantations as well as human dominated habitation. It was seen on all survey days. It could be spreading in the Sanctuary due to spread of <i>Lantana camara</i> .
86.	Red-whiskered Bulbul <i>Pycnonotus jocosus</i>	We found it common in Jeepghat and Pilomukh areas where this weed is widespread
87.	Common Iora <i>Aegithina tiphia</i>	This is a widespread resident species of bulbul, found open forests, scrub jungle, tea estates and human habitation. We found it common in front of Pilomukh camp on shrubbery, along with Red-vented Bulbul. We also found 8-10 individuals in Borgoli Range. We heard its characteristic song in the Borgoli camp.

S.No. Species	Annotations
88. 'Black-headed' Long-tailed Shrike <i>Lanius schach tricolor</i> group	This race <i>tricolor</i> of the Long-tailed Shrike is found in east and north-east India. It has a black hood and long black tail. It prefers open dry scrub and also is seen regularly in cultivation (tea plantation) and grasslands. We had a couple of sightings of this bird in the Sanctuary.
89. Grey-backed Shrike <i>Lanius tephronotus</i>	It breeds in the Himalayas and winters in adjacent plains in north and north-east India and Bangladesh. It prefers bushes in cultivation, scrub and secondary growth. We found it on 28 April, 2016 between Jeepghat and Namsing forest camps.
90. Oriental Magpie-robin <i>Copsychus saularis</i>	Very common in human-dominated landscape and lightly wooded country, but not so much in forested areas where it is replaced by the White-rumped Shama. Nonetheless, it was regularly heard/seen in Jeepghat area.
91. Bluethroat <i>Luscinia svecica svecica</i>	It is a fairly common winter visitor to damp areas in the Sanctuary. We have multiple sightings of this species during the April survey.
92. Himalayan Rubythroat <i>Calliope pectoralis</i>	It is an uncommon winter visitor to DWS, but some individuals can be seen even in May. The subspecies <i>tschebataewi</i> is seen
93. Siberian Rubythroat <i>Calliope calliope</i>	Like the earlier species it is an uncommon winter visitor to that Sanctuary. Interestingly, we saw an individual on 20 May, 2016 in a damp tall grass area in Borgoli Range
94. Black Redstart <i>Phoenicurus ochruros rufiventris</i>	Common winter visitor to DWS, sometimes arriving in September and may stay back till late April.
95. Siberian Stonechat <i>Saxicola m. maurus/indicus</i>	Winter migrant in the Sanctuary but sometimes few individuals stay back till May. For example, we saw one on 28 April, 2016 between Jeepghat and Namsing, and another on 20 May, 2016 in Borgoli grassland
96. White-tailed Stonechat <i>Saxicola leucurus</i>	May be common, but perhaps overlooked. It is always found in damp grasslands and drying <i>beels</i> with few cm of water. For example, on May 20, 2016, we found it in a tall damp grassland in Borgoli
97. Brown Bush-warbler <i>Locustella luteoventris</i>	We suspect that we heard calls of this species in the Borgoli Range on May 20, 2016. As the bird breeds from 2,000 to 3,300 m (Rasmussen and Anderton 2012), its potential presence so low in summer needs further confirmation.
98. Rufous-necked Laughingthrush <i>Dryonastes ruficollis</i>	Call heard often and seen occasionally in tall grasses near Pilomukh and Borgoli. Appears to be more common in a mixture of bushes, shrubs and dense grass, than in pure grassland.
99. Jerdon's Babbler <i>Chrysomma altiloqure</i> VU	As it is a globally threatened species, we gave special attention to find this bird. It appears to be common in tall dense grass in Pilomukh area as we heard it very frequently at many places on April 27-28, 2016. It was also seen in Borgoli Range. We heard its call and also saw few individuals in very tall damp grasses in Borgoli on May 20-21, 2016.
100. Yellow-eyed Babbler <i>Chrysomma sinense</i>	It is fairly common in open shrubland and grassy forested patches in the Sanctuary. We had multiple sightings in almost all ranges, but particularly in Anchalghat and Borgoli Range.
101. Chestnut-capped Babbler <i>Timalia pileata</i>	Not easy to see but heard frequently in grass patches, particularly in Pilomukh area on April 27-28, and in Borgoli Range on May 20-21, 2016.
102. Pin-striped Tit-babbler <i>Mixornis gularis</i>	Its <i>chunk chunk chunk</i> call, much like the Common Tailorbird can be heard everywhere, although the bird itself is not easy to see. Its call was heard near Jeepghat on 30 April, 2015 and during visits in 2016 also.
103. Striated Babbler <i>Turdoides earlei</i>	Common in tall grasses near Siang River and large streams passing through the Sanctuary
104. Jungle Babbler <i>Turdoides striata</i>	Common everywhere, particularly in secondary forests, forest edges and outside the Sanctuary. Recorded in the Jeepghat range and many other areas.

S.No. Species	Annotations
105. Marsh Babbler <i>Pellorneum palustre</i> VU	It is a bird of tall, dense grasses mostly standing on shallow water or swampy ground. We found it in a few areas in the Borgoli Range during our visit from 19-21 May, 2016.
106. Abbott's Babbler <i>Malacocincla abbotti</i>	It is a common resident as it was heard many times during our visits.
107. Black-breasted Parrotbill <i>Paradoxornis flavirostris</i> VU	Details are given elsewhere in the article.
108. Bright-capped Cisticola <i>Cisticola exilis</i>	This species was also known as Golden-headed Cisticola. It is a grassland obligate species and prefers moderately tall grasslands where Bengal Florican is also found. It was common in tall grassland patches in the Sanctuary. We had multiple sightings of this bird during surveys of Bengal Florican. It appears to be more common than Zitting Cisticola
109. Zitting Cisticola <i>Cisticola juncidis</i>	Like the earlier species, it too is a typically grassland bird, and sometimes both species occur in the same area.
110. Indian (Rufous-rumped) Grassbird <i>Graminicola bengalensis</i>	We saw it in tall wet grassland in Borgoli range, although it is likely to be found in many parts of the Sanctuary
111. Striated Grassbird <i>Megalurus palustris</i>	Common resident of the wet grasslands. We saw/heard it many times in and outside the Sanctuary, particularly near rivers and streams. In May, 2016, we heard it many times near the Borgoli camp.
112. Ashy Prinia <i>Prinia socialis</i>	Widespread in grasslands as well as paddy fields and in and around human habitations. We saw it around Pilomukh camp on 27 April, 2016 and other areas.
113. Grey-breasted Prinia <i>Prinia hodgsonii</i>	Found in grasslands and scrubland, and frequently seen sitting and calling from moderately tall trees. We saw a few individuals displaying on 28 April, 2016 in Jeepghat and Namsing areas.
114. Plain Prinia <i>Prinia inornata</i>	Multiple sightings of this species mainly in tall grasslands in Jeepghat and Borgoli ranges.
115. Yellow-bellied Prinia <i>Prinia flaviventris</i>	Fairly common in suitable tall wet grasslands, particularly in Borgoli range. On May 20, 2016 we found a juvenile indicating that this bird breeds in the Sanctuary. Occasional birds were seen between Jeepghat and Namsing.
116. Swamp Prinia <i>Prinia cinerascens</i> or Swamp Grass-babbler <i>Liticilla cinerascens</i> EN	We found it in Borgoli although it has been reported near Jeepghat. More details are given elsewhere.
117. Common Tailorbird <i>Orthotomus sutorius</i>	It was also regularly seen in orchards, gardens and roadside shrubbery. We saw it in Jeepghat forest camp on 30 April, 2015 and on subsequent visits in 2016.
118. Scaly-breasted Munia <i>Lonchura punctulata</i>	It is seen in good numbers in paddy fields and in human dominated landscapes. We found it in Jeepghat shrubbery and grassland.
119. House Sparrow <i>Passer domesticus</i>	House Sparrow is common in villages and in cultivation in and around DWS. The House Sparrow stays more in the human dominated landscape. We did not find it in forested areas inside the Sanctuary.
120. Eurasian Tree Sparrow <i>Passer montanus</i>	Seen near forest rest houses in DWS. It replaces the House Sparrow in these parts. The House Sparrow stays more in the human dominated landscape.
121. Black-hooded Oriole <i>Oriolus xanthurus</i>	It is the commonest oriole in DWS and was seen and heard on almost all days during our surveys. It is seen in open broadleaved forest and well-wooded areas
122. Black Drongo <i>Edolius macrocerus</i>	Common in open areas, around human habitation and in and around agricultural fields. Seen on the fringe of the Sanctuary, not deep inside.
123. Hair-crested (Spangled) Drongo <i>Dicrurus hottentottus</i>	We detected its near Jeepghat forest camp.
124. Grey-headed Starling <i>Sturnia malabarica</i>	A small flock seen in Jeepghat area on 28 April, 2016, and later in May in Borgoli Range
125. Asian Pied Starling <i>Gracupica contra</i>	This is a common starling seen mostly around human habitation and near <i>beels</i> . It was seen almost on all days of our bird surveys. For example, we found it near Jeepghat forest camp on 28 April, 2016.

S.No. Species	Annotations
126. Common Myna <i>Acridotheres tristis</i>	Resident in and around DWS and was seen around all forest camps.
127. Jungle Myna <i>Acridotheres fuscus</i>	Often seen foraging on garbage dumps with Common Mynas and crows. For example, we found it around the Borgoli camp.
128. White-vented Myna <i>Acridotheres grandis</i>	A resident species of the north-east India (including Assam, Nagaland, Manipur) and south-east Asia. We found it on way to the Sanctuary and also in Jeepghat area on 28 April, 2016.
129. House Crow <i>Corvus splendens</i>	A common species mostly seen congregating around human habitation and on garbage dumps along the roads. Not seen inside forest and in grasslands.
130. Large-billed Crow or Eastern Jungle Crow <i>Corvus [macrorhynchos] japonensis</i>	Few birds are seen in congregations of House Crows around human habitation and on garbage dumps along the roads. Often seen inside the forest, away from any human habitation.
131. Rufous Treepie <i>Dendrocitta vagabunda</i>	Noted in the Jeepghat forest camp on 28 April, 2016.