

# A Preliminary Checklist of Avian Fauna from Raimona National Park of Assam, India

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Received September 22, 2022; Revised October 27, 2022; Accepted November 08, 2022

**Abstract** Birds play very essential ecological functions such as pest control, pollination, seed dispersal as well as nutrient dynamics and they are very good indicators of the ecosystem health in a landscape. Biodiversity inventory and their conservation including ecosystem restoration at landscape level has recently emerged as a global priority for effective management planning to ensure ecosystem stability and ecological functionality. This study aims to create a baseline database of avifaunal assemblages from the recently recognized Raimona National Park in the state of Assam, India. This new protected area is located in the *Bhabar* belt covering 422 km<sup>2</sup> area under the Kachugaon forest division of the state. The systematic grid-based line transect method was followed from November 2020 to April 2021 and confirmed the presence of total 227 avian species from the study area among which 7 species were globally threatened. The area also harbours the suitable habitat of critically endangered White-bellied heron (*Ardea insignis* Hume, 1878). Extensive research and long-term monitoring will be very crucial in the near future for the inventory of more avian fauna along with their conservation in the Raimona National Park.

**Keywords:** bird status, ripu reserve forest, kachugaon sal forest, raimona, avian conservation

**Cite This Article:** Nilutpal Mahanta, Nazrul Islam, Rathin Barman, Sanatan Deka, Uditya Borkataki, Tanisha Chhetri, Sanswring Basumatary, and Moklesur Rahman, "A Preliminary Checklist of Avian Fauna from Raimona National Park of Assam, India." *Applied Ecology and Environmental Sciences*, vol. 10, no. 11 (2022): 652-664. doi: 10.12691/aees-10-11-1.

## 1. Introduction

Birds play very essential ecological functions such as pest control, pollination, seed dispersal as well as nutrient dynamics and they are very good indicators of the ecosystem health in a landscape [1,2,3]. As north eastern part of India holds unique environmental conditions and diversified habitat types due to its geographical position have helped to flourish more than 950 avian species which around 77% of the avifauna recorded from India [4,5,6]. Assam harbours a total 850 avifauna including a few doubtful species which are likely to occur in the state [7,8]. But, at present our global avian diversity is under tremendous pressure of anthropogenic factors like encroachment, deforestation and over exploitation of biological resources that adversely affected the ecosystem functionalities [9,10,11,12,13]. Biodiversity inventory and their conservation including ecosystem restoration at landscape level has recently emerged as a global priority for effective management planning to ensure ecosystem stability and ecological functionality [14,15].

The Ripu Reserve Forest (RF) under Kachugaon forest division of Kokrajhar district in Assam was one of the best managed forests since the late 19<sup>th</sup> century in the country [16]. The area was well known for huge stretches of sal (*Shorea robusta*) forest, which were systematically extracted and transported by the colonial authority for making railway sleeper [17,18]. This landscape is one of the Important Bird and Biodiversity Areas (IBA Site; IN-AS-37) of the country [19]. The unsustainable trend of forest products extraction and exploitation in the late 20<sup>th</sup> century resulted severe deterioration of wildlife habitats and major part of the Ripu RF on its southern side has been decimated altogether converting to agricultural land and homestead settlement [20]. To arrest this trend of suicidal destruction of such century old managed natural forest, a larger part (422 km<sup>2</sup>) of Ripu RF has included in the protected area network and notified as "Raimona National Park" vide Govt. Notification No. FRW.02/2021/27 dated 9<sup>th</sup> June, 2021 for long term conservation of its wildlife and their habitats in the landscape [13]. No detailed study on the avifauna has been conducted in the landscape yet. The main aim of this inventory survey was to create the baseline of

avian fauna found in the Raimona National Park of Assam, India.

## 2. Materials and Methods

### 2.1. Study Area

The survey was carried out in the Raimona National Park (NP) spanning across 422 km<sup>2</sup> area that falls under Kachugaon forest division in the north-western most part of Assam, India (Figure 1). The Indo-Bhutan International border forms the northern boundary from the Sonkosh river on the west to Saralbhanga river on the east. The Buxa Tiger Reserve (TR) of West Bengal is located on the west and the Phipsoo Wild Life Sanctuary (WLS) of Bhutan is located on the north which are contiguous with the study area.

The study area falls under typical *Bhabar* belt intersected by numerous water courses. The ground is gently sloping towards south with elevation varies from 85-240m above mean sea level. The soil over the bulk of *Bhabar* area is dry sandy loam superimposed on a bed of pebbles with only a very thin humus layer. Surface stones are fairly frequent [13,21]. Climate of the study area is moist tropical monsoon type with temperature varies from 7°C to 34°C and with annual average rainfall ranges from 2000mm to 3000mm [19]. Due to its unique geographical location and geology, as many as twelve different types and sub-types from the very moist sal forests, sub-Himalayan high alluvial semi-evergreen forests, moist-mixed deciduous forests, savannah forests, riparian

fringing forests to khoir-sisoo forests including the wide river beds classified by Champion and Seth [22].

### 2.2. Methods

The study area was divided into 104 grids of size 4 km<sup>2</sup> each (2km x 2km). A total 85 sampling grids were selected randomly for the study those were accessible and representative of the entire landscape. In each grid three line transects of length 1km were laid for conducting the field survey [23]. The survey was carried out following the line transect method by a team consisting of two biologists and two local frontline staffs of forest department during day-time in two sessions i.e., in the morning (06h30-10h30) and in the afternoon (15h00-17h00) during winter and pre-monsoon season for six months from November 2020 to April 2021. Opportunistic observations were also taken into consideration so that every species sighted during the survey period had been well recorded. The birds were observed by the aid of binoculars (Vortex 8X42, Zeiss 8X42) and photographed using digital camera (Nikon Coolpix P900, Canon sx600) whenever possible. GPS data were collected with help of Garmin eTrex 30. For some shy and elusive birds call playback method was also used with help of standard sound recorders (Zoom H6). The recorded avian species were identified in field with the help of standard field guidebook [24]. The identifications of avian fauna were also confirmed with the help of guide book by Ali and Ripley [25]. Broad habitat types, migratory status and conservation status were assigned to the species' based on the field observation [26,27].

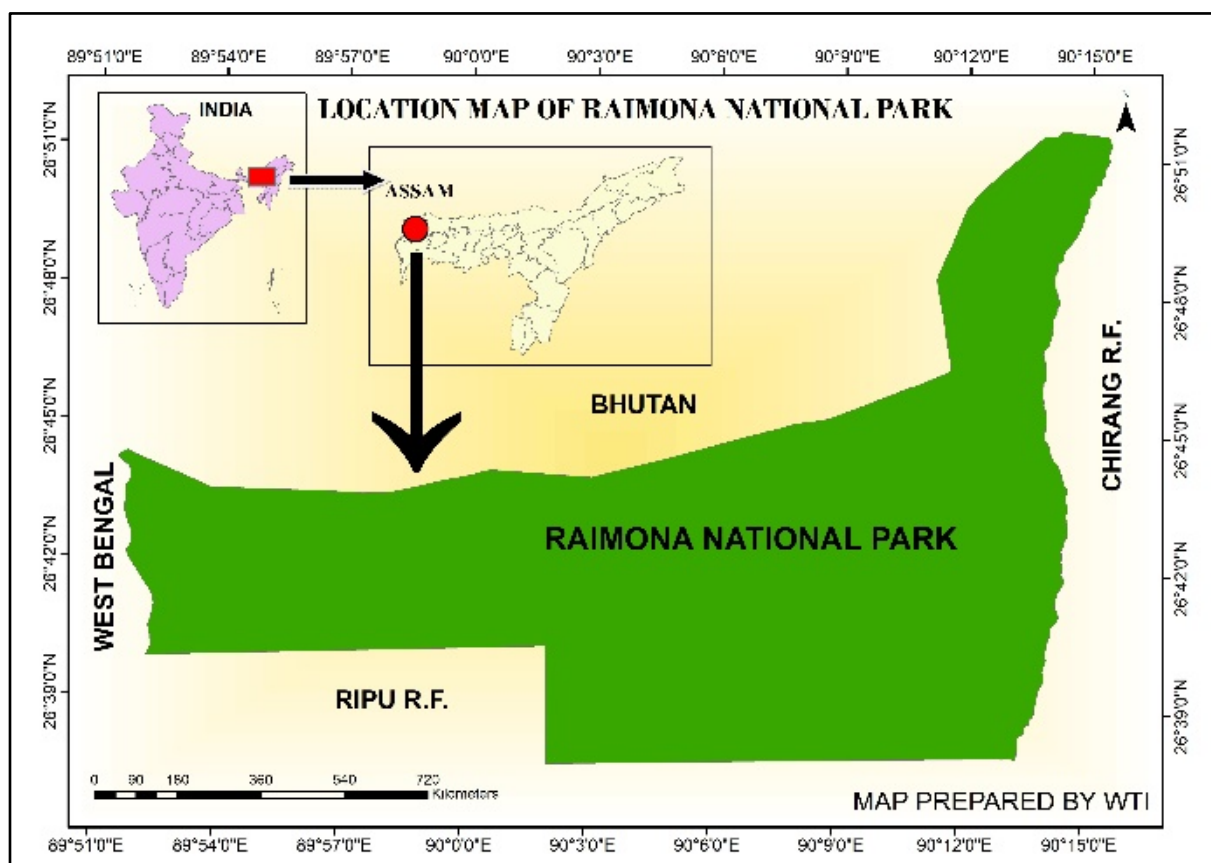


Figure 1. Location map of Raimona National Park in Assam, India

### 3. Results

During the six months period of survey in winter and pre-monsoon season, a total 267 km walked in transects following the existing forest paths and animal trails in 89 sampling grids in 11 forest blocks of the study area. This survey revealed the presence of total 227 avian species belonging to 19 orders and 58 families distributed throughout different habitat types of the Raimona National Park (Table 1). Out of all the orders, Passeriformes holds around 116 species (51%) making it the dominant

order in terms of species richness followed by order Accipitriformes (18 species), Piciformes (14 species), Coraciiformes (11 species), Columbiformes (9 species), Charadriiformes (9 species), Strigiformes (7 species), Cuculiformes (7 species), Bucerotiformes (5 species), Falconiformes (5 species), Pelecaniformes (5 species), Gruiformes (5 species), Galliformes (4 species), Psittaciformes (3 species), Anseriformes (3 species), Ciconiiformes (2 species), Suliformes (2 species), Caprimulgiformes, (1 species), and Trogoniformes (1 species) (Figure 2).

Table 1. Avian Fauna Recorded from November 2020 to April 2021 in Raimona NP, Assam

Order/Family/Common Name	Scientific Name	Ml	Jn	Rn	Rp	Pk	Gn	Pl	Hl	Sn	Bm	At	CS	MS	Ht
<b>Order: Anseriformes</b>															
<b>Family: Anatidae</b>															
Common Teal	<i>Anas crecca</i> (Linnaeus, 1758)	X	X	X	√	X	X	X	X	√	X	X	LC	M	Aq
Indian spot-billed Duck	<i>Anas poecilorhyncha</i> (Forster, 1781)	X	X	X	√	X	X	X	X	√	X	X	LC	R	Aq
Ruddy Shelduck	<i>Tadorna ferruginea</i> (Pallas, 1764)	√	X	√	X	X	X	X	X	X	X	X	LC	M	Aq
<b>Order: Suliformes</b>															
<b>Family: Phalacrocoracidae</b>															
Great Cormorant	<i>Phalacrocorax carbo</i> (Linnaeus, 1758)	√	X	X	X	X	X	X	X	√	X	X	LC	M	Aq
Little Cormorant	<i>Microcarbo niger</i> (Vieillot, 1817)	√	X	X	X	X	X	X	X	√	X	X	LC	R	Aq
<b>Order: Charadriiformes</b>															
<b>Family: Burhinidae</b>															
Indian Thick-nee	<i>Burhinus indicus</i> (Salvadori, 1865)	X	X	X	X	X	X	X	√	X	X	X	LC	R	Aq
Great Thick-nee	<i>Esacus recurvirostris</i> (Cuvier, 1829)	X	X	X	X	X	X	X	√	X	X	X	NT	M	Aq
<b>Family: Charadriidae</b>															
Little ringed Plover	<i>Charadrius dubius</i> (Scopoli, 1786)	X	X	X	X	X	X	X	√	X	X	X	LC	M	Aq
Long-billed Plover	<i>Charadrius placidus</i> (Gray & Gray, 1863)	X	X	X	X	X	X	X	√	X	X	X	LC	M	Aq
Red-wattled Lapwing	<i>Vanellus indicus</i> (Boddaert, 1783)	√	√	√	√	√	√	√	√	√	√	√	LC	R	Aq
River Lapwing	<i>Vanellus duvaucelii</i> (Lesson, 1826)												NT	M	Aq
<b>Family: Scolopacidae</b>															
Common Sandpiper	<i>Actitis hypoleucos</i> (Linnaeus, 1758)	√	√	X	X	√	X	X	X	√	X	X	LC	M	Aq
Green Sandpiper	<i>Tringa ochropus</i> (Linnaeus, 1758)	√	√	X	X	√	X	X	X	√	X	X	LC	M	Aq
Wood Sandpiper	<i>Tringa glareola</i> (Linnaeus, 1758)	√	√	X	X	√	X	X	X	√	X	X	LC	M	Aq
<b>Order: Ciconiiformes</b>															
<b>Family: Ciconiidae</b>															
Black Stork	<i>Ciconia nigra</i> (Linnaeus, 1758)	X	√	X	X	X	X	X	√	X	X	X	LC	R	Aq
Lesser Adjutant	<i>Leptoptilos javanicus</i> (Horsfield, 1821)	X	√	X	X	X	X	X	√	X	X	X	VU	R	Aq
<b>Order: Pelecaniformes</b>															
<b>Family: Ardeidae</b>															
Black Bittern	<i>Ixobrychus flavicollis</i> (Latham, 1790)	X	X	X	X	X	X	X	√	X	X	X	LC	R	Aq
Cattle Egret	<i>Bubulcus ibis</i> (Linnaeus, 1758)	√	√	√	√	√	√	√	√	√	√	√	LC	R	Aq
Indian Pond Heron	<i>Ardeola grayii</i> (Sykes, 1832)	√	√	√	√	√	√	√	√	√	√	√	LC	R	Aq
Interediate Egret	<i>Ardea intermedia</i> (Wagler, 1827)	√	X	X	X	X	X	X	√	√	X	X	LC	R	Aq

Order/Family/Common Name	Scientific Name	Ml	Jn	Rn	Rp	Pk	Gn	Pl	Hl	Sn	Bm	At	CS	MS	Ht
Striated Heron	<i>Butorides striata</i> (Linnaeus, 1758)	X	X	X	X	X	X	X	√	√	X	X	LC	R	Aq
<b>Order: Gruiformes</b>															
<b>Family: Rallidae</b>															
White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	X	X	X	X	X	√	X	X	X	X	X	LC	R	Aq
Slaty-breasted Rail	<i>Lewinia striata</i>	X	X	X	X	X	X	√	X	X	X	X	LC	M	Aq
Brown cheeked Rail	<i>Rallus indicus</i>	X	√	X	X	X	X	X	X	X	X	X	LC	R	Aq
Rudy breasted Crake	<i>Zapornia fusca</i>	X	X	X	X	X	X	X	√	X	X	X	LC	R	Aq
Black-tailed Crake	<i>Zapornia bicolor</i>	X	X	X	X	X	X	X	√	X	X	X	LC	R	Aq
<b>Order: Accipitriformes</b>															
<b>Family: Accipitridae</b>															
Back Eagle	<i>Ictinaetus malaiensis</i> (Temminck, 1822)	X	X	√	X	X	X	X	X	X	X	X	LC	R	Tr
Changeable Hawk-Eagle	<i>Nisaetus cirrhatus</i> (Gmelin, 1788)	X	X	X	√	X	X	X	X	X	X	X	LC	R	Tr
Crested Serpent Eagle	<i>Spilornis cheela</i> (Latham, 1790)	√	√	√	√	√	√	√	√	√	√	√	LC	R	Tr
Himalayan Griffon Vulture	<i>Gyps himalayensis</i> (Hume, 1869)	X	X	X	X	X	X	X	√	X	X	X	NT	R	Tr
White-rumped Vulture	<i>Gyps bengalensis</i> (Gmelin, 1788)	X	X	X	X	X	X	X	X	√	√	√	CR	R	Tr
Slender-billed Vulture	<i>Gyps tenuirostris</i> (Gray, 1844)	X	X	X	X	√	X	X	X	X	X	X	CR	R	Tr
Greater spotted Eagle	<i>Clanga clanga</i> (Pallas, 1811)	√	X	X	X	X	X	X	X	X	X	X	VU	M	Tr
Indian Spotted Eagle	<i>Clanga hastate</i> (Lesson, 1834)	√	X	√	√	X	X	X	X	X	X	X	LC	R	Tr
Oriental Honey Buzzard	<i>Pernis ptilorhynchus</i> (Temminck, 1821)	X	√	X	X	X	X	X	X	X	X	X	LC	R	Tr
Himalayan Buzzard	<i>Buteo refectus</i> (Portenko, 1935)	X	X	X	X	X	√	X	X	X	X	X	LC	R	Tr
Booted Eagle	<i>Hieraaetus pennatus</i> (Gmelin, 1788)	X	X	X	X	√	X	X	X	X	X	X	LC	M	Tr
Rufous-bellied Eagle	<i>Lophotriorchis kienerii</i> (G. de Sparre, 1835)	X	X	X	X	X	X	√	X	X	X	X	NT	R	Tr
Gray-headed Fish Eagle	<i>Haliaeetus ichthyaetus</i> (Horsfield, 1821)	X	X	X	X	X	X	X	√	X	X	X	NT	R	Tr
Hen Harrier	<i>Circus cyaneus</i> (Linnaeus, 1766)	X	√	X	X	X	√	X	X	X	X	X	LC	M	Tr
Eurasian Marsh-Harrier	<i>Circus aeruginosus</i> (Linnaeus, 1758)	X	X	X	X	X	X	X	√	X	X	X	LC	M	Tr
Black Kite	<i>Milvus migrans</i> (Boddaert, 1783)	√	X	√	√	X	X	X	X	X	X	X	LC	R	Tr
Black-winged Kite	<i>Elanus caeruleus</i> (Desfontaines, 1789)	X	√	X	X	X	√	X	X	√	X	X	LC	R	Tr
<b>Order: Falconiformes</b>															
<b>Family: Falconidae</b>															
Collared Falconet	<i>Microhierax caerulescens</i> (Linnaeus, 1758)	X	X	√	X	√	X	√	X	X	X	X	LC	R	Tr
Pied falconet	<i>Microhierax melanoleucos</i> (Blyth, 1843)	X	X	X	X	X	X	X	√	X	X	X	LC	R	Tr
Common Kestrel	<i>Falco tinnunculus</i> (Linnaeus, 1758)	X	√	X	X	√	X	√	X	X	X	X	LC	R	Tr
Red-necked Falcon	<i>Falco chicquera</i> (Daudin, 1800)	X	X	X	X	√	X	X	X	X	X	X	LC	M	Tr
Peregrine Falcon	<i>Falco peregrinus</i> (Tunstall, 1771)	X	X	√	X	√	X	X	X	X	X	X	LC	M	Tr
<b>Family: Pandionidae</b>															
Osprey	<i>Pandion haliaetus</i> (Linnaeus, 1758)	X	X	X	√	X	X	X	X	X	X	X	LC	M	Aq
<b>Order: Bucerotiformes</b>															
<b>Family: Bucerotidae</b>															
Great Indian Hornbill	<i>Buceros bicornis</i> (Linnaeus, 1758)	X	√	X	X	X	X	√	X	X	X	X	VU	R	Tr

Order/Family/Common Name	Scientific Name	Ml	Jn	Rn	Rp	Pk	Gn	Pl	Hl	Sn	Bm	At	CS	MS	Ht
Oriental Pied Hornbill	<i>Anthracoceros albirostris</i> (Shaw & Nodder, 1807)	X	√	X	X	√	X	√	X	X	X	X	LC	R	Tr
Wreathed Hornbill	<i>Rhyticeros undulates</i> (Shaw, 1811)	X	X	X	X	X	X	X	X	√	X	X	VU	R	Tr
Rufous-necked Hornbill	<i>Aceros nipalensis</i> (Hodgson, 1829)	X	X	√	X	X	X	√	X	X	X	X	VU	R	Tr
<b>Family: Upupidae</b>															
Eurasian Hoopoe	<i>Upupa epops</i> (Linnaeus, 1758)	√	X	√	√	X	X	X	X	X	X	√	LC	M	Tr
<b>Order: Caprimulgiformes</b>															
<b>Family: Caprimulgidae</b>															
Long Tailed Nightjar	<i>Caprimulgus climacurus</i> (Vieillot, 1825)	X	X	X	X	X	√	X	X	X	X	X	LC	R	Tr
<b>Order: Columbiformes</b>															
<b>Family: Columbidae</b>															
Emerald Dove	<i>Chalcophaps indica</i> (Linnaeus, 1758)	√	X	√	√	X	X	X	√	√	X	√	LC	R	Tr
Green Imperial Pigeon	<i>Ducula aenea</i> (Linnaeus, 1766)	X	X	X	X	X	X	X	X	√	X	X	LC	R	Tr
Mountain Imperial-Pigeon	<i>Ducula badia</i> (Raffles, 1822)	X	X	X	X	X	X	√	X	X	X	X	LC	R	Tr
Oriental Turtle Dove	<i>Streptopelia orientalis</i> (Latham, 1790)	√	X	√	√	√	X	X	√	√	X	√	LC	R	Tr
Spotted Dove	<i>Spilopelia chinensis</i> (Scopoli, 1768)	√	X	X	√	X	X	X	√	√	X	√	LC	R	Tr
Thick-billed Green-Pigeon	<i>Treron curvirostra</i> (Gmelin, 1789)	X	X	√	X	X	X	√	X	X	X	X	LC	R	Tr
Pin-tailed Green Pigeon	<i>Treron apicauda</i> (Blyth, 1846)	X	X	X	X	X	X	√	X	X	X	X	LC	R	Tr
Yellow Footed Green Pigeon	<i>Treron phoenicoptera</i> (Latham, 1790)	√	X	X	√	X	X	X	√	X	X	X	LC	R	Tr
Orange-breasted Green-Pigeon	<i>Treron bicinctus</i> (Jerdon, 1840)	X	X	√	X	X	X	X	X	√	X	X	LC	R	Tr
<b>Order: Coraciiformes</b>															
<b>Family: Alcedinidae</b>															
Common Kingfisher	<i>Alcedo atthis</i> (Linnaeus, 1758)	√	√	√	√	√	X	√	√	√	√	X	LC	R	Aq
Crested Kingfisher	<i>Megaceryle lugubris</i> (Temminck, 1834)	√	X	X	X	X	X	X	X	X	X	X	LC	R	Aq
White Throated Kingfisher	<i>Halcyon smyrnensis</i> (Linnaeus, 1758)	√	X	X	√	X	X	√	√	X	X	X	LC	R	Aq
Ruddy Kingfisher	<i>Halcyon coromanda</i> (Latham, 1790)	√	X	X	X	X	X	X	X	√	X	X	LC	R	Aq
Black-backed Dwarf-Kingfisher	<i>Ceyx erithaca</i> (Linnaeus, 1758)	√	X	X	X	√	X	X	√	X	X	X	LC	M	Aq
<b>Family: Coraciidae</b>															
Indochinese Roller	<i>Coracias affinis</i> (Horsfield, 1840)	√	√	√	√	√	X	√	√	X	√	X	LC	R	Tr
Oriental Dollar Bird	<i>Eurystomus orientalis</i> (Linnaeus, 1766)	√	X	X	X	X	X	X	X	X	X	X	LC	R	Tr
<b>Family: Meropidae</b>															
Blue-bearded Bee-eater	<i>Nyctyornis athertoni</i> (Jardine & Selby, 1830)	√	X	√	X	X	X	X	X	√	X	X	LC	R	Tr
Chestnut Headed Bee-Eater	<i>Merops leschenaultia</i> (Vieillot, 1817)	X	X	X	X	X	√	X	X	X	X	X	LC	R	Tr
Blue-tailed Bee-eater	<i>Merops philippinus</i> (Linnaeus, 1766)	X	X	X	√	X	X	X	√	X	X	X	LC	M	Tr
Green Bee-Eater	<i>Merops orientalis</i> (Latham, 1801)	√	X	X	X	√	X	X	X	X	X	√	LC	R	Tr
<b>Order: Cuculiformes</b>															
<b>Family: Cuculidae</b>															
Asian Emerald Cuckoo	<i>Chrysococcyx maculatus</i> (Gmelin, 1788)	√	X	X	X	X	X	X	X	X	X	X	LC	M	Tr
Violet Cuckoo	<i>Chrysococcyx xenorhynchus</i> (Horsfield, 1821)	X	X	√	X	X	X	X	X	X	X	X	LC	M	Tr
Common Hawk-Cuckoo	<i>Hierococcyx varius</i> (Vahl, 1797)	X	X	X	X	X	X	√	X	X	X	√	LC	R	Tr

Order/Family/Common Name	Scientific Name	Ml	Jn	Rn	Rp	Pk	Gn	Pl	Hi	Sn	Bm	At	CS	MS	Ht
Common Cuckoo	<i>Cuculus canorus</i> (Linnaeus, 1758)	X	√	X	X	√	X	X	X	X	√	X	LC	M	Tr
Green Billed Malkoha	<i>Phaenicophaeus tristis</i> (Lesson, 1830)	√	X	X	√	X	X	X	X	√	X	√	LC	R	Tr
Greater Coucal	<i>Centropus sinensis</i> (Stephens, 1815)	X	X	√	X	X	X	X	X	X	X	X	LC	R	Tr
Lesser Coucal	<i>Centropus bengalensis</i> (Gmelin, 1788)	X	√	X	X	X	√	X	X	X	√	X	LC	R	Tr
<b>Order: Galliformes</b>															
<b>Family: Phasianidae</b>															
Indian Peafowl	<i>Pavo cristatus</i> (Linnaeus, 1758)	√	√	X	X	X	√	X	√	√	X	X	LC	R	Tr
Kalij Pheasant	<i>Lophura leucomelanos</i> (Latham, 1790)	√	√	√	√	√	√	√	√	√	√	√	LC	R	Tr
Red Jungle Fowl	<i>Gallus gallus</i> (Linnaeus, 1758)	√	√	√	√	√	√	√	√	√	√	√	LC	R	Tr
Gray Peacock-Pheasant	<i>Polyplectron bicalcaratum</i> (Linnaeus, 1758)	X	X	√	X	X	X	X	X	X	X	X	LC	R	Tr
<b>Order: Passeriformes</b>															
<b>Family: Aegithinidae</b>															
Common Iora	<i>Aegithina tiphia</i> (Linnaeus, 1758)	X	X	X	X	X	X	X	√	X	X	X	LC	R	Tr
<b>Family: Artamidae</b>															
Ashy Woodswallow	<i>Artamus fuscus</i> (Vieillot, 1817)	X	X	X	X	X	X	√	X	X	X	X	LC	R	Tr
<b>Family: Campephagidae</b>															
Black-winged Cuckooshrike	<i>Lalage melaschistos</i> (Hodgson, 1836)	X	X	X	√	X	X	X	X	X	X	X	LC	R	Tr
Large Cuckooshrike	<i>Coracina macei</i> (Lesson, 1830)	X	X	X	X	X	X	√	X	X	X	X	LC	R	Tr
Long Tailed Minivet	<i>Pericrocotus ethologus</i> (Bangs & Phillips, 1914)	X	√	X	X	√	X	X	X	X	X	X	LC	R	Tr
Scarlet Minivet	<i>Pericrocotus speciosus</i> (Latham, 1790)	√	X	X	√	X	X	X	√	X	X	X	LC	R	Tr
Rosy Minivet	<i>Pericrocotus roseus</i> (Vieillot, 1818)	X	X	X	X	√	X	X	X	X	X	X	LC	R	Tr
Small Minivet	<i>Pericrocotus cinnamomeus</i> (Linnaeus, 1766)	X	√	X	√	X	X	X	X	X	X	X	LC	R	Tr
<b>Family: Cettiidae</b>															
Chestnut Headed Tesia	<i>Cettia castaneocoronata</i> (Burton, 1836)	X	X	X	X	X	X	√	X	X	X	X	LC	R	Tr
Grey Bellied Tesia	<i>Tesia cyaniventer</i> (Hodgson, 1837)	X	X	X	X	√	X	X	X	X	X	X	LC	R	Tr
Slatty-Bellied Tesia	<i>Tesia olivea</i> (McClelland, 1840)	X	X	X	X	X	X	X	√	X	X	X	LC	R	Tr
<b>Family: Chloropseidae</b>															
Golden Fronted Leafbird	<i>Chloropsis aurifrons</i> (Temminck, 1829)	√	√	√	√	√	√	√	√	√	√	√	LC	R	Tr
Orange-bellied Leafbird	<i>Chloropsis hardwickii</i> (Jardine & Selby, 1830)	X	X	X	X	√	X	X	X	X	X	X	LC	R	Tr
Blue-winged Leafbird	<i>Chloropsis moluccensis</i> (Gray, 1831)	X	X	√	√	X	X	X	X	X	X	X	LC	R	Tr
<b>Family: Cisticolidae</b>															
Common Tailorbird	<i>Orthotomus sutorius</i> (Pennant, 1769)	√	X	X	√	X	√	X	X	√	X	√	LC	R	Tr
Dark necked Tailorbird	<i>Orthotomus atrogularis</i> (Temminck, 1836)	X	X	√	X	X	X	X	X	X	X	X	LC	R	Tr
Rufescent Prinia	<i>Prinia rufescens</i> (Blyth, 1847)	X	X	X	X	√	X	X	X	X	X	X	LC	R	Tr
<b>Family: Corvidae</b>															
Common Green Magpie	<i>Cissa chinensis</i> (Boddaert, 1783)	X	X	√	X	√	X	X	X	X	X	X	LC	R	Tr
Eastern Jungle Crow	<i>Corvus leucomelanos</i> (Lesson, 1831)	√	X	X	X	X	X	X	X	X	X	X	LC	R	Tr
Grey Treepie	<i>Dendrocitta formosae</i> (R. Swinhoe, 1863)	X	X	X	X	X	X	√	X	X	X	X	LC	R	Tr
Rufous Treepie	<i>Dendrocitta vagabunda</i> (Latham, 1790)	X	X	X	X	X	√	X	X	X	X	X	LC	R	Tr

Order/Family/Common Name	Scientific Name	Ml	Jn	Rn	Rp	Pk	Gn	Pl	Hl	Sn	Bm	At	CS	MS	Ht
<b>Family: Dicaeidae</b>															
Scarlet-backed Flowerpecker	<i>Dicaeum cruentatum</i> (Linnaeus, 1758)	X	X	X	X	X	X	√	X	X	X	X	LC	R	Tr
<b>Family: Dicruridae</b>															
Ashy Drongo	<i>Dicrurus leucophaeus</i> (Vieillot, 1817)	X	X	√	X	√	X	X	X	√	X	X	LC	R	Tr
Black Drongo	<i>Dicrurus macrocercus</i> (Vieillot, 1817)	X	√	X	X	√	X	X	√	X	X	√	LC	R	Tr
Bronzed Drongo	<i>Dicrurus aeneus</i> (Vieillot, 1817)	√	X	X	√	X	X	√	X	√	X	X	LC	R	Tr
Greater Racket-tailed Drongo	<i>Dicrurus paradiseus</i> (Linnaeus, 1766)	√	X	X	X	√	X	X	X	X	X	√	LC	R	Tr
Lesser Racket-tailed Drongo	<i>Dicrurus remifer</i> (Temminck, 1823)	X	√	X	X	√	X	X	X	X	√	X	LC	R	Tr
Spangled Drongo	<i>Dicrurus bracteatus</i> (Gould, 1843)	X	X	√	X	X	X	X	√	X	X	X	LC	R	Tr
<b>Family: Estrildidae</b>															
Scaly-breasted Munia	<i>Lonchura punctulata</i> (Linnaeus, 1758)	X	X	X	X	X	√	X	X	X	X	X	LC	R	Tr
<b>Family: Hirundinidae</b>															
Barn Swallow	<i>Hirundo rustica</i> (Linnaeus, 1758)	X	√	X	X	X	X	X	√	X	X	X	LC	R	Aq
Striated Swallow	<i>Cecropis striolata</i> (Temminck & Schlegel, 1847)	X	X	X	X	X	√	X	X	X	X	X	LC	R	Aq
Grey-throated Martin	<i>Riparia chinensis</i> (J. E. Gray, 1830)	X	X	X	√	X	X	X	X	X	X	X	LC	R	Aq
<b>Family: Irenidae</b>															
Asian Fairy Bluebird	<i>Irena puella</i> (Latham, 1790)	X	X	X	√	√	X	X	X	X	X	X	LC	R	Tr
<b>Family: Laniidae</b>															
Brown Shrike	<i>Lanius cristatus</i> (Linnaeus, 1758)	X	X	√	√	X	X	X	X	X	X	X	LC	M	Tr
Grey-backed Shrike	<i>Lanius tephronotus</i> (Vigors, 1831)	X	X	X	X	√	X	X	X	X	X	X	LC	R	Tr
Long Tailed Shrike	<i>Lanius schach</i> (Linnaeus, 1758)	X	√	X	X	X	X	X	X	X	X	X	LC	M	Tr
<b>Family: Leiothrichidae</b>															
Blue-winged Minla	<i>Actinodura cyanouroptera</i> (Hodgson, 1837)	X	X	X	√	X	X	X	X	X	X	X	LC	R	Tr
Greater Necklaced Laughing thrush	<i>Pterorhinus pectoralis</i> (Gould, 1836)	X	X	X	X	√	X	X	X	X	X	X	LC	R	Tr
Lesser Necklaced Laughing Thrush	<i>Garrulax monileger</i> (Hodgson, 1836)	X	X	√	X	X	X	X	X	X	X	X	LC	R	Tr
Jungle Babbler	<i>Argya striata</i> (Dumont, 1823)	√	√	X	X	√	X	X	√	X	X	√	LC	R	Tr
Striated Babbler	<i>Argya earlei</i> (Blyth, 1844)	X	√	X	X	√	X	X	X	X	√	X	LC	R	Tr
Red Tailed Minla	<i>Minla ignotincta</i> (Hodgson, 1837)	X	X	X	X	X	X	√	X	X	X	X	LC	R	Tr
Silver Eared Mesia	<i>Leiothrix argentauris</i> (Hodgson, 1837)	X	X	X	√	X	X	X	X	X	X	X	LC	R	Tr
<b>Family: Monarchidae</b>															
Black Naped Monarch	<i>Hypothymis azurea</i> (Boddaert, 1783)	X	X	X	X	X	X	X	X	√	X	X	LC	R	Tr
<b>Family: Motacillidae</b>															
Olive Backed Pipit	<i>Anthus hodgsoni</i> (Blackwelder, 1907)	X	X	X	X	X	X	√	X	X	X	X	LC	M	Tr
Paddy-field Pipit	<i>Anthus rufulus</i> (Vieillot, 1818)	X	X	X	X	X	√	X	X	X	X	X	LC	M	Aq
White Wagtail	<i>Motacilla alba</i> (Linnaeus, 1758)	X	√	X	X	√	X	X	X	√	X	X	LC	M	Aq
Citrine Wagtail	<i>Motacilla citreola</i> (Pallas, 1776)	√	X	X	X	√	X	√	X	√	X	X	LC	M	Aq
Eastern Yellow Wagtail	<i>Motacilla tschutschensis</i> (JF Gmelin, 1789)	X	X	X	X	X	√	X	X	X	X	X	LC	M	Aq

Order/Family/Common Name	Scientific Name	Ml	Jn	Rn	Rp	Pk	Gn	Pl	Hl	Sn	Bm	At	CS	MS	Ht
<b>Family: Muscipidae</b>															
Black-backed Forktail	<i>Enicurus immaculatus</i> (Hodgson, 1836)	X	X	X	X	X	X	X	X	√	X	X	LC	R	Aq
Slaty-Backed Forktail	<i>Enicurus schistaceus</i> (Hodgson, 1836)	X	X	X	X	X	X	X	√	√	X	X	LC	R	Aq
Blue Rock Thrush	<i>Monticola solitaries</i> (Linnaeus, 1758)	X	X	X	X	X	X	X	√	X	X	LC	M	Tr	
Blue Whistling Thrush	<i>Myophonus caeruleus</i> (Scopoli, 1786)	X	X	X	X	X	X	X	√	X	X	LC	M	Tr	
Black-breasted Thrush	<i>Turdus dissimilis</i> (Blyth, 1847)	X	X	X	X	X	X	√	X	X	X	LC	M	Tr	
Scaly Thrush	<i>Zoothera dauma</i> (Latham, 1790)	X	X	X	X	X	√	√	X	X	X	LC	M	Tr	
Little Pied Flycatcher	<i>Ficedula westermanni</i> (Sharpe, 1888)	X	√	X	X	√	X	X	X	X	X	LC	R	Tr	
Oriental Magpie Robin	<i>Copsychus saularis</i> (Linnaeus, 1758)	√	X	√	X	X	X	X	√	X	X	√	LC	R	Tr
Pale Blue Flycatcher	<i>Cyornis unicolor</i> (Blyth, 1843)	X	X	X	√	X	X	X	X	X	√	X	LC	R	Tr
Pale-Chinned Blue-Flycatcher	<i>Cyornis poliogenys</i> (Brooks, 1879)	X	√	X	X	√	X	X	X	X	X	LC	R	Tr	
Plumbeous Water Redstart	<i>Phoenicurus fuliginosus</i> (Vigors, 1831)	X	X	X	X	X	X	X	√	X	X	LC	R	Aq	
Daurian Redstart	<i>Phoenicurus auroreus</i> (Pallas, 1776)	X	X	√	X	X	X	X	X	X	X	LC	M	Aq	
Hodgson's Redstart	<i>Phoenicurus hodgsoni</i> (Moore, F, 1854)	X	X	X	X	√	X	X	X	X	X	LC	M	Aq	
White-capped Redstart	<i>Phoenicurus leucocephalus</i> (Vigors, 1831)	X	X	X	X	X	X	√	X	√	X	LC	R	Aq	
Rufous Bellied Niltava	<i>Niltava sundara</i> (Hodgson, 1837)	X	X	X	√	X	X	X	X	X	X	LC	R	Tr	
Small Niltava	<i>Niltava macgrigoriae</i> (Burton, 1836)	√	X	√	X	X	X	X	X	X	X	LC	R	Tr	
Grey Bushchat	<i>Saxicola ferreus</i> (Gray & Gray, 1847)	X	√	X	X	√	X	X	X	√	X	LC	M	Tr	
Siberian Stonechat	<i>Saxicola maurus</i> (Pallas, 1773)	X	X	X	X	√	X	X	X	X	X	LC	M	Tr	
Pied Bushchat	<i>Saxicola caprata</i> (Linnaeus, 1766)	X	X	√	X	X	X	X	X	X	X	LC	M	Tr	
Taiga Flycatcher	<i>Ficedula albicilla</i> (Pallas, 1811)	X	X	X	X	X	X	√	X	X	X	LC	M	Tr	
Verditer Flycatcher	<i>Eumyias thalassinus</i> (Swainson, 1838)	X	X	X	√	X	X	X	X	X	X	LC	R	Tr	
Asian Brown Flycatcher	<i>Muscicapa dauurica</i> (Pallas, 1811)	X	√	X	X	X	X	X	X	X	X	LC	M	Tr	
Dark-sided Flycatcher	<i>Muscicapa sibirica</i> (Gmelin, 1789)	X	X	X	X	X	X	√	X	√	X	LC	M	Tr	
White-rumped Shama	<i>Copsychus malabaricus</i> (Scopoli, 1788)	X	√	X	X	√	X	X	√	X	X	LC	R	Tr	
Lesser Shortwing	<i>Brachypteryx leucophris</i> (Temminck, 1827)	X	X	X	X	X	X	√	X	X	√	LC	R	Tr	
<b>Family: Pnoepyidae</b>															
Pygmy Cupwing	<i>Pnoepyga pusilla</i> (Hodgson, 1845)	X	X	X	X	X	X	√	X	X	X	LC	R	Tr	
<b>Family: Nectariniidae</b>															
Crimson Sunbird	<i>Aethopyga siparaja</i> (Raffles, 1822)	√	X	X	X	X	X	X	X	X	X	LC	R	Tr	
Purple Sunbird	<i>Cinnyris asiaticus</i> (Latham, 1790)	X	√	X	X	X	X	X	X	X	X	LC	R	Tr	
Ruby-cheeked Sunbird	<i>Chalcoparia singalensis</i> (Gmelin, 1788)	X	X	X	X	X	X	√	X	X	X	LC	R	Tr	
Little Spiderhunter	<i>Arachnothera longirostra</i> (Latham, 1790)	X	X	X	X	√	X	X	X	X	X	LC	R	Tr	
Streaked Spiderhunter	<i>Arachnothera magna</i> (Hodgson, 1837)	√	√	√	√	√	√	√	√	√	√	LC	R	Tr	
<b>Family: Oriolidae</b>															
Black Hooded Oriole	<i>Oriolus xanthornus</i> (Linnaeus, 1758)	X	√	X	X	√	X	X	X	√	X	LC	R	Tr	



Order/Family/Common Name	Scientific Name	Ml	Jn	Rn	Rp	Pk	Gn	Pl	Hl	Sn	Bm	At	CS	MS	Ht
Black-naped Oriole	<i>Oriolus chinensis</i> (Linnaeus, 1766)	X	X	X	X	√	X	X	X	X	X	X	LC	M	Tr
Maroon Oriole	<i>Oriolus traillii</i> (Vigors, 1832)	X	√	X	X	X	X	X	X	X	X	X	LC	R	Tr
<b>Family: Paridae</b>															
Great Tit	<i>Parus major</i> (Linnaeus, 1758)	X	X	X	X	X	X	√	X	X	√	X	LC	R	Tr
Sultan Tit	<i>Melanochlora sultanea</i> (Hodgson, 1837)	√	X	X	X	X	X	X	X	X	X	X	LC	R	Tr
<b>Family: Passeridae</b>															
Eurasian Tree Sparrow	<i>Passer montanus</i> (Linnaeus, 1758)	X	X	X	X	√	X	X	X	X	X	√	LC	R	Tr
House Sparrow	<i>Passer domesticus</i> (Linnaeus, 1758)	X	X	√	X	X	√	X	X	X	X	X	LC	R	Tr
<b>Family: Pellorneidae</b>															
Abbott's Babbler	<i>Malacocincla abbotti</i> (Blyth, 1845)	X	X	X	√	X	X	X	√	X	X	X	LC	R	Tr
Puff-Throated Babbler	<i>Pellorneum ruficeps</i> (Swainson, 1832)	X	X	X	X	X	√	X	√	X	X	X	LC	R	Tr
Gray-throated Babbler	<i>Stachyris nigriceps</i> (Blyth, 1844)	X	X	X	X	√	X	X	X	X	X	X	LC	R	Tr
<b>Family: Phylloscopidae</b>															
Blyth's Leaf Warbler	<i>Phylloscopus reguloides</i> (Blyth, 1842)	X	X	X	X	X	X	√	X	X	X	X	LC	R	Tr
Dusky Warbler	<i>Phylloscopus fuscatus</i> (Blyth, 1842)	X	X	X	X	X	X	X	X	√	X	X	LC	R	Tr
Greenish Warbler	<i>Phylloscopus trochiloides</i> (Sundevall, 1837)	X	X	√	X	X	X	X	√	X	X	X	LC	R	Tr
Tickell's Leaf Warbler	<i>Phylloscopus affinis</i> (Tickell, 1833)	X	X	X	√	X	X	X	√	X	X	X	LC	R	Tr
Whistler's Warbler	<i>Phylloscopus whistleri</i> (Ticehurst, 1925)	X	X	X	X	√	X	X	X	X	√	X	LC	R	Tr
Ashy-throated Warbler	<i>Phylloscopus maculipennis</i> (Blyth, 1867)	X	X	X	X	X	X	√	X	X	X	X	LC	R	Tr
Gray-hooded Warbler	<i>Phylloscopus xanthoschistos</i> (Gray & Gray, 1846)	X	X	X	√	X	X	X	X	X	√	X	LC	R	Tr
<b>Family: Pycnonotidae</b>															
Ashy Bulbul	<i>Hemixos flava</i> (Blyth, 1845)	√	X	X	√	X	X	√	X	X	X	X	LC	R	Tr
Black-crested Bulbul	<i>Rubigula flaviventris</i> (Tickell, 1833)	X	X	X	X	√	X	X	X	X	X	X	LC	R	Tr
Red-vented Bulbul	<i>Pycnonotus cafer</i> (Linnaeus, 1766)	√	√	√	√	√	√	√	√	√	X	√	LC	R	Tr
Red-whiskered Bulbul	<i>Pycnonotus jocosus</i> (Linnaeus, 1758)	X	√	X	X	√	X	X	√	X	X	X	LC	R	Tr
White-throated Bulbul	<i>Alophoixus flaveolus</i> (Gould, 1836)	√	X	X	√	X	X	√	X	X	X	√	LC	R	Tr
<b>Family: Rhipiduridae</b>															
White-browed Fantail	<i>Rhipidura aureola</i> (Lesson, 1830)	X	X	√	X	X	X	X	X	X	X	X	LC	R	Tr
<b>Family: Sittidae</b>															
Chestnut-bellied Nuthatch	<i>Sitta cinnamoventris</i> (Blyth, 1842)	X	X	X	X	√	X	X	X	X	X	X	LC	R	Tr
<b>Family: Stenostiridae</b>															
Grey-headed Canary Flycatcher	<i>Culicicapa ceylonensis</i> (Swainson, 1820)	X	X	X	X	X	X	√	X	X	X	X	LC	R	Tr
<b>Family: Sturnidae</b>															
Asian Pied Starling	<i>Gracupica contra</i> (Linnaeus, 1758)	√	X	X	√	X	√	√	X	X	X	√	LC	R	Tr
Chestnut-tailed Starling	<i>Sturnia malabarica</i> (Gmelin, 1789)	X	√	X	X	√	X	√	X	X	X	√	LC	R	Tr
Common Hill Myna	<i>Gracula religiosa</i> (Linnaeus, 1758)	X	X	X	√	X	X	X	√	X	X	X	LC	R	Tr
Common Myna	<i>Acridotheres tristis</i> (Linnaeus, 1766)	X	X	√	X	√	√	X	X	X	X	X	LC	R	Tr
Great Myna	<i>Acridotheres grandis</i> (Moore, F, 1858)	X	X	X	√	X	X	X	X	X	X	X	LC	R	Tr

Order/Family/Common Name	Scientific Name	Ml	Jn	Rn	Rp	Pk	Gn	Pl	Hl	Sn	Bm	At	CS	MS	Ht
Jungle Myna	<i>Acridotheres fuscus</i> (Wagler, 1827)	X	√	X	X	√	X	X	√	X	X	X	LC	R	Tr
<b>Family: Timaliidae</b>															
Pin-striped Tit-Babbler	<i>Mixornis gularis</i> (Horsfield, 1822)	X	X	X	X	X	X	√	X	X	√	X	LC	R	Tr
<b>Family: Vangidae</b>															
Common Woodshrike	<i>Tephrodornis pondicerianus</i> (Gmelin, 1789)	X	√	X	X	X	X	X	X	X	X	X	LC	R	Tr
Large Woodshrike	<i>Tephrodornis virgatus</i> (Temminck, 1824)	X	X	X	X	√	X	X	X	√	X	X	LC	R	Tr
<b>Family: Vireonidae</b>															
White-bellied Erpornis	<i>Erpornis zantholeuca</i> (Blyth, 1844)	X	X	√	X	X	X	X	X	X	X	X	LC	R	Tr
<b>Family: Zosteropidae</b>															
Indian White-eye	<i>Zosterops palpebrosus</i> (Temminck, 1824)	X	X	X	X	X	√	X	X	X	√	X	LC	R	Tr
<b>Order: Piciformes</b>															
<b>Family: Megalaimidae</b>															
Blue-throated Barbet	<i>Psilopogon asiaticus</i> (Latham, 1790)	X	X	√	X	√	√	X	X	√	X	X	LC	R	Tr
Coppersmith Barbet	<i>Psilopogon haemacephalus</i> (Statius Müller, 1776)	√	X	X	√	X	√	√	X	X	X	√	LC	R	Tr
Great Barbet	<i>Psilopogon virens</i> (Boddaert, 1783)	X	X	X	X	X	X	√	X	X	X	X	LC	R	Tr
Lineated Barbet	<i>Psilopogon lineatus</i> (Vieillot, 1816)	√	X	X	√	X	√	√	X	X	X	√	LC	R	Tr
<b>Family: Picidae</b>															
Fulvous-breasted Woodpecker	<i>Dendrocopos macei</i> (Vieillot, 1818)	X	X	√	X	X	X	X	X	X	X	X	LC	R	Tr
Great Slaty Woodpecker	<i>Mulleripicus pulverulentus</i> (Temminck, 1826)	X	X	X	X	X	√	X	X	X	X	X	LC	R	Tr
Greater Flameback	<i>Chrysocolaptes guttacristatus</i> (Tickell, 1833)	X	X	X	√	X	√	X	X	X	X	X	LC	R	Tr
Greater Yellownape	<i>Chrysophlegma flavinucha</i> (Gould, 1834)	X	√	X	X	X	X	X	X	X	X	X	LC	R	Tr
Grey-headed Woodpecker	<i>Picus canus</i> (Gmelin, 1788)	X	X	X	X	√	X	X	X	X	X	X	LC	R	Tr
Grey-capped Pigmy Woodpecker	<i>Yungipicus canicapillus</i> (Blyth, 1845)	X	X	X	X	X	X	√	X	X	X	X	LC	R	Tr
Lesser Goldenback	<i>Dinopium benghalense</i> (Linnaeus, 1758)	X	X	X	X	√	X	X	X	X	X	√	LC	R	Tr
Lesser Yellownape	<i>Picus chlorolophus</i> (Vieillot, 1818)	X	X	√	X	X	X	X	X	X	X	X	LC	R	Tr
Rufous Woodpecker	<i>Micropternus brachyurus</i> (Vieillot, 1818)	X	X	X	X	X	√	X	X	X	X	X	LC	R	Tr
Streak-breasted Woodpecker	<i>Picus viridanus</i> (Blyth, 1843)	X	X	X	√	X	X	X	X	√	X	X	LC	R	Tr
<b>Order: Psittaciformes</b>															
<b>Family: Psittaculidae</b>															
Alexandrine Parakeet	<i>Psittacula eupatria</i> (Linnaeus, 1766)	√	√	X	X	X	X	X	X	X	X	X	NT	R	Tr
Red-breasted Parakeet	<i>Psittacula alexandri</i> (Linnaeus, 1758)	X	X	X	√	X	X	X	X	X	X	X	NT	R	Tr
Rose-ringed Parakeet	<i>Psittacula krameri</i> (Scopoli, 1769)	X	X	√	X	X	X	√	X	X	X	X	LC	R	Tr
<b>Order: Strigiformes</b>															
<b>Family: Strigidae</b>															
Asian Barred-Owlet	<i>Glaucidium cuculoides</i> (Vigors, 1831)	X	X	√	X	X	X	X	X	X	X	X	LC	R	Tr
Brown Hawk-Owl	<i>Ninox scutulata</i>	X	X	X	X	√	X	X	X	X	X	X	LC	R	Tr
Barn Owl	<i>Tyto alba</i> (Scopoli, 1769)	X	√	X	X	X	X	√	X	X	X	X	LC	R	Tr
Collared Owlet	<i>Taenioptynx brodiei</i> (Burton, 1836)	X	X	X	X	X	√	X	X	X	X	X	LC	R	Tr
Collared Scops-Owl	<i>Otus lettia</i> (Hodgson, 1836)	X	X	X	√	X	X	X	X	X	X	X	LC	R	Tr
Mountain Scops-Owl	<i>Otus spilocephalus</i> (Blyth, 1846)	X	X	X	X	X	X	X	X	X	√	√	LC	R	Tr

Order/Family/Common Name	Scientific Name	Ml	Jn	Rn	Rp	Pk	Gn	Pl	Hi	Sn	Bm	At	CS	MS	Ht
Spotted Owllet	<i>Athene brama</i> (Temminck, 1821)	√	X	X	√	X	√	√	X	X	X	√	LC	R	Tr
<b>Order: Trogoniformes</b>															
<b>Family: Trogonidae</b>															
Red-headed Trogon	<i>Harpactes erythrocephalus</i> (Gould, 1834)	X	X	X	X	√	X	X	X	X	X	X	LC	R	Tr

Abbreviations: FB=Forest Block, Maula=Ml, Janali=Jn, Ranga=Rn, Ripu=Rp, Pekua=Pk, =Gn=Gangia, Pl=Polo, Hi=Hel, Sn=Singimajuli, Bm=Bamba, At=Athiabari, CS=Conservation Status, LC=Least Concern, NT=Near Threatened, VU=Vulnerable, CR= Critically Endangered, MS=Migratory Status, M=Migratory, R=Resident, H=Habitat, Aq=Aquatic, Tr=Terrestrial, √=Recorded, ×=Not Recorded.

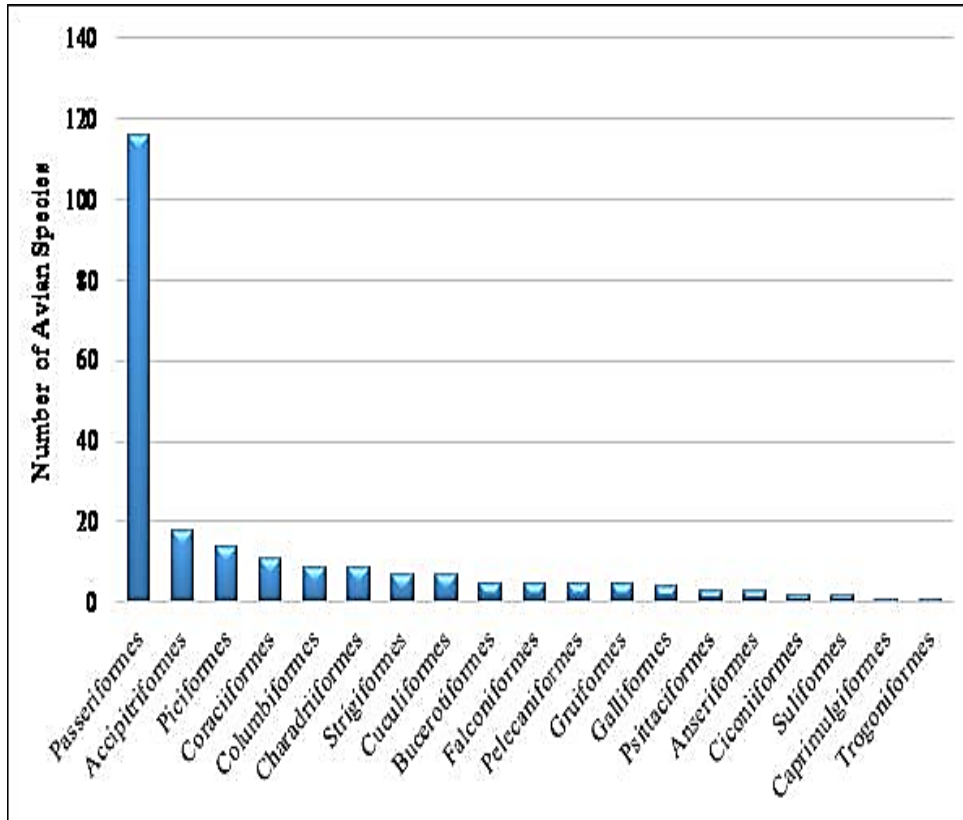


Figure 2. Order wise distribution of avian fauna in Raimona NP

Among all the recorded avian fauna, Black-crested bulbul (*Rubigula flaviventris* Tickell, 1833), Black drongo (*Dicrurus macrocercus* Vieillot, 1817) and Golden-fronted leafbird (*Chloropsis aurifrons* Temminck, 1829) were respectively three highly dominant species found in all the habitat types of Raimona National Park. There were total 7 globally threatened avian species found in the study area, out of which two species were critically endangered such as White-rumped vulture (*Gyps bengalensis* Gmelin, 1788) and Slender-billed vulture (*Gyps tenuirostris* Gray, 1844); five vulnerable viz., Greater spotted eagle (*Clanga clanga* Pallas, 1811), Great hornbill (*Buceros bicornis* Linn, 1758), Wreathed hornbill (*Rhyticeros undulates* Shaw, 1811), Rufous-necked hornbill (*Aceros nipalensis* Hodgson, 1829), Lesser adjutant (*Leptoptilos javanicus* Horsfield, 1821) as well as seven near threatened species. Amongst these, there were a total 43 migratory bird species and 184 were residential bird species as per Choudhury (2000). These includes a total 45 species of aquatic birds and 182 species of terrestrial birds as observed in the field and described by Grimmett et al. (2016) (Figure 3).

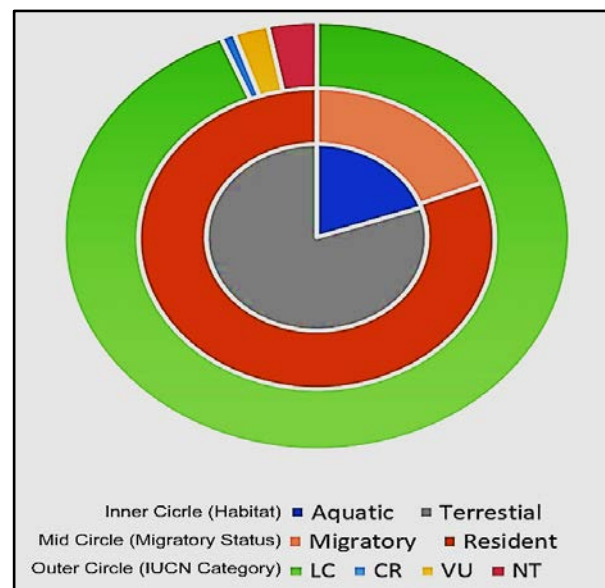


Figure 3. Composite pie diagram for habitat types, migratory status and IUCN category of recorded avian fauna of Raimona NP (LC: Least Concern, CR: Critically Endangered, VU: Vulnerable, NT: Near Threatened)

## 4. Discussion

This short-term inventory survey revealed the presence of total 227 species of avian fauna in the Raimona National Park of Assam which signifies the conservation importance and shows equally important like Buxa Tiger Reserve of West Bengal on its west and Phipsoo Wildlife Sanctuaries of Bhutan on its north. A total 284 species of avian fauna recorded from the Buxa Tiger Reserve [28] and total 177 species of avian fauna from the Phipsoo Wildlife Sanctuary [29]. A preliminary survey conducted between Sankosh river in the west and Aie river in the east

had recorded a total 270 avian species from the area which was slightly more than our findings [30]. A few notable woodlands avian fauna viz., Pygmy flycatcher (*Ficedula hodgsoni*), Bay woodpecker (*Blythipicus pyrrhotis*), Short-billed minivet (*Pericrocotus brevirostris*), Rufous-necked laughingthrush (*Pterorhinus ruficollis*) and Greater adjutant (*Leptoptilos dubius*) were also reported to be present in this IBA site [19]; but our survey couldn't record their presence in the study area. Short survey period and detection difficulty in dense vegetation cover including some inaccessible locations or terrain like Bamba Forest block along with the northernmost part of Pekua and Polo Forest blocks may have partly resulted the slightly lower number of avian species in the study area. Extensive research and long-term monitoring will be very crucial in near future for the inventory of more avian fauna along with their conservation in the Raimona National Park.

The dominance of order Passeriformes having 116 species of avian fauna indicates the presence of heterogeneous habitat types in the study area [30]. The avian fauna of Passeriformes are also known as songbirds because of their excellent singing abilities. The area is a home for around 30 species of predatory bird which include diurnal raptors belonging to order Accipitriformes and Falconiformes and nocturnal predatory birds of order Strigiformes. Raptors play significant roles as apex predators of an ecosystem and their presence indicates a healthy ecosystem health [31]. The presence of 7 globally threatened avian fauna is an indication that the area needs utmost protection for the conservation of these threatened species. The largest frugivorous forest birds such as Great Indian hornbill, Wreathed hornbill and Rufous-necked hornbill were recorded from the deep forest habitats in the study area which proves that the forest is still pristine at least in some parts but they are sensitive too to the selective logging especially their roosting and nesting trees along with other human disturbances [32]. Presence of Swamp francolin (*Francolinus gularis*) and Bengal florican (*Houbaropsis bengalensis*) are also suspected to be present in the grassland habitats, but we couldn't record these birds during our survey period. The recent records of critically endangered White-bellied heron (*Ardea insignis* Hume, 1878) from Phipsoo Wildlife Sanctuary of Bhutan as well as from Jamduar and Pepsu area of Raimona is an important indication of the fact that the study area holds suitable habitat for this highly threatened bird species [29].

## 5. Conclusion

The present study is the first of its kind and forms the baseline data in terms of avian fauna in the Raimona National Park of Assam, India. Confirmed presence of minimum 227 avian species that includes 7 globally threatened avian fauna is very significant for the area. Extensive research and long-term monitoring in all the habitat types covering all the seasons of the year will be very crucial in near future for the inventory of more avian fauna along with their conservation in the Raimona National Park of Assam, India.

## Acknowledgements

The authors take this opportunity to thank the Department of Environment and Forest-Government of Assam and Bodoland Territorial Council for their co-operation and collaboration with Wildlife Trust of India (WTI). We also acknowledge the major funding support of the International Fund for Animal Welfare-IFAW in restoration and conservation of Greater Manas landscape. We are also very thankful to CHD Forest of BTC and DFO Kachugaon Forest Division for providing necessary permission and other logistic supports during the survey period. We specially acknowledge Dr. Rahul Kaul and Dr. Samir K. Sinha for their valuable suggestions and constant support provided at all the time. We are also indebted to all the Range Officers and frontline forest staffs including NGO members of Raimona National Park for their constant support and kind help during the survey. The authors are also thankful to the reviewers for their constructive comments and suggestions in improving this document.

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