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Avian diversity of Singhori Wildlife Sanctuary, Raisen District, Madhya Pradesh

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ABSTRACT: The present paper is based on observations and sighting records of birds were taken from whole Singhori Wildlife Sanctuary, Raisen District of Madhya Pradesh, India including agricultural fields of those villages in and around sanctuary area. The avian diversity of the sanctuary includes 173 species of birds belonging to 16 Orders, 49 families and 9 subfamilies.

Keywords: Singhori Wildlife Sanctuary, Madhya Pradesh, Avian diversity, Agricultural fields.

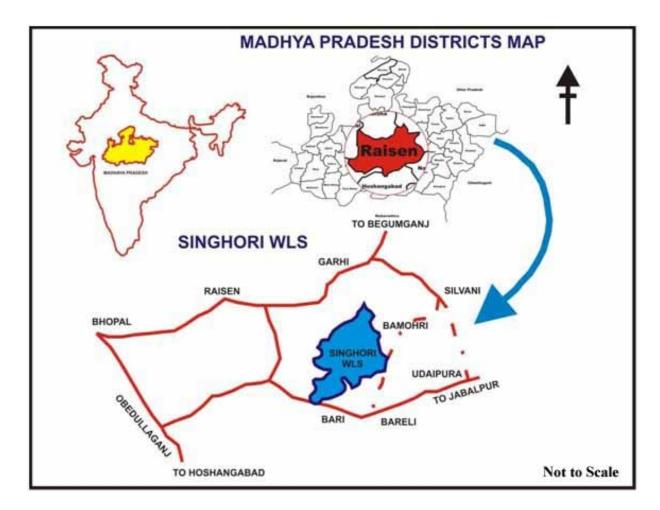
INTRODUCTION

Singhori Wildlife Sanctuary (SWLS) (Fig. 1) is situated in Bari Tehsil of Raisen district of Madhya Pradesh with headquarter at Bari which is situated on NH 12, 205 km away north from Jabalpur on the way to Bhopal. Geographically, the sanctuary spreads between 22° 45' and 22° 55' N latitudes and 77° 15' and 78 0' E longitudes. This WLS was created on 2nd July 1976 vide Govt. of Madhya Pradesh notification, with an area of 287.910 km² (Dwivedi, 2003). The entire area of the SWLS is hilly and consists of hills, plateau, valleys, forges and at places plains. Most of the streams are seasonal. There are two main streams in the sanctuary i.e. Ghoghara and Barna. Bhadaria Kund in Ghoghara River is permanent water source for the wildlife.

There is a dam on Barna River which is a permanent water source for the animals as well as irrigation to the agriculture area. Backwater attracts resident as well as migratory wetland birds. The forests in the SWLS are of Tropical Dry deciduous with Teak forests and Tropical Mixed deciduous forests include Daora (Anogeissus latifolia), Bija (Pterocarpus marsupium), Salai (Boswellia serrata), Khair (Acacia catechu), Saja (Terminalia alata), Tendu (Diospyros melanoxylon) also occur Bamboo (Dendrocalamus strictus) (Champion and Seth, 1968). The area also includes small villages with agricultural fields in and around SWLS. Main crop of these fields is wheat and also pulses like Chick pea (Cicer arietinum Linnaeus), Peas (Pisum sativum Linnaeus), pigeon pea (Cajanus cajan (Linnaeus).

Since Maries (1897), number of workers studied avifauna of Central India including Madhya Pradesh and Chhattisgarh. The comprehensive list of birds on Madhya Pradesh and Chhattisgarh published by Chandra and Singh (2004), reported 488 and 197 species respectively. Jayapal et al. (2005) reported some significant records of birds from Central Highlands of Madhya Pradesh. Ghosh et al. (2008) published detailed account, reports altogether 449 Madhya species from Pradesh (including Chhattisgarh). Avian fauna of protected areas of this area worked out by Newton et al., 1986 and Ghosal, 1995 (Kanha Tiger Reserve, 231 species), Rahamani, 1991(Karera Bustard Sanctuary, 258 species), Saha, 1995 (Indravati Tiger Reserve, 92 species), Sharma, 1995 (Madhav National Park, 222 species), Pasha et al., 2004; Sen and Dungriyal, 2004 (Pench National Park, 319), Ramakrishna et al., 2006 (Satpuda National Park, 301 species; Van Vihar National Park, 146 species), Chakraborty, 2008 (Kangerghati National Park, 129 species, Guru Ghasidas National Park, 123 species and Sanjay National Park, 117 species), Chandra and Gupta, 2009 (Bandhavgarh Tiger Reserve, 252 species), Chandra and Mahabal, 2009 (Pachmarhi Biosphere Reserve, 255 species).

The faunal diversity of the SWLS is very rich. No authentic faunal record was available before the surveys of Zoological Survey of India. Some preliminary faunal reports published on the basis of observation and faunal collections were made by the survey parties. Talmale (2011) reported 26 species of odonates (Dragonflies and Damselflies).



Thilak (2011a,b) reported list of the fishes (22sps.) and zooplanktons found in the waterbodies of the sanctuary area respectively. Chandra and Gupta (2012) recorded 26 species of dung beetles (Scarabaeidae) from the sanctuary. Since there is no published bird checklist prior to this, the present work can form the baseline for further research.

The present paper includes 173 species of birds belonging to 16 Orders, 49 families & 9 subfamilies from SWLS (Table 1). Further extensive surveys of this area will undoubtedly reveal the existence of many more species than what is known today.

MATERIAL AND METHODS

Six faunistic surveys of Singhori Wildlife Sanctuary, Raisen district, Madhya Pradesh have been conducted by scientist of ZSI, CZRC during April, 2009 to March, 2012. The sanctuary area having small villages like Bajani, Bamhori, Belgaon, Bhagdehi, Bhajiya, Jaitgadh, Kartoli, Kesali, Kukwara, Panzirpa, Papalai, Pondri, Ramgadha,

Rampura, Ratanpur, Senkua, Sitapar and Siyalwada inside as well as in the periphery were also surveyed. Village Pondri is at highest elevation of 1801 ft above sea level. Observations and sighting records of birds were taken from whole sanctuary including agricultural fields of these villages in and around sanctuary area. Surveys were done four wheel vehicle driving on temporary roads going through these agricultural fields. Backwater of Barna River dam was also surveyed which is on the periphery of West of SWLS. A pair of Binoculars (10 x 50), Digital Camera (Nikon D70) and GPS (Garmin) were used for observations, photography as well as location record respectively. Ali and Ripley (1995, 1996), Grimmett et al (2000) were used for field identification and residential status. Arrangement of the species with common name given in the Table 1 are as per Mankandan and Pittie (2001). Abbreviations used in Table 1 for residential status: R- Resident; LM-Local Migrant; MV: Mansoon Visitor; PM: Passage Migrant; WV-Winter Visitor.

Abundance of the bird species is reported on the basis of species encountered in the sanctuary. Abundance of birds was classified as : VC- Very Common (Seen very commonly in most of the visited areas); C-Common (Seen commonly in the study areas); NR-Not Rare (Seen many times but not common); RA-Rare (Seen only once or twice). On the basis of observations taken (only two surveys : December, 2010 and February, 2012) of birds visiting agricultural fields, a preliminary list of birds (55 species) is prepared (Fig. 3; Table 1, *Marked Asterisks).

RESULTS AND DISCUSSION

A list of 173 bird species (Table 1) reported from Singhori Wildlife Sanctuary, Raisen District shown that order Passeriformes is very rich with 68 species and Ciconiiformes and Anseriformes with 17 and 14 species respectively (Fig. 2). Most of bird fauna are resident or local migratory to sanctuary area. Abundance of birds show that 32 species are very common, 97 are common, 35 are not rare and 9 are rarely observed to Singhori Wildlife Sanctuary area.

S. No.	Order/Family/Scientific Name	Common Name	Residential	Abundance
			Status	
	Order : Podicipediformes			
	Family : Podicipedidae	Little Crehe	D	ND
1.	Tachybaptus ruficollis (Pallas)	Little Grebe	R	NR
	Order : Pelecaniformes			
2.	Family : PhalacrocoracidaePhalacrocorax niger (Vieillot)	Little Cormorant	R	VC
	e . ,			
3.	Phalacrocorax fuscicollis Stephens	Indian Shag /Cormorant	R	С
	Order : Ciconiiformes			
	Family : Ardeidae			
*4.	Egretta garzetta (Linnaeus)	Little Egret	R	VC
5.	Ardea cinerea Linnaeus	Grey Heron	R	С
6.	Ardea purpurea Linnaeus	Purple Heron	R	NR
7.	Casmerodius albus Linnaeus	Large Egret	R	С
8.	Mesophoyx intermedia (Wagler)	Median Egret	R	С
*9.	Bubulcus ibis (Linnaeus)	Cattle Egret	R	VC
*10.	Ardeola grayii (Sykes)	Indian Pond-Heron	R	VC
11.	Butorides striatus (Linnaeus)	Little Green Heron	R	RA
12.	Ixobrychus cinnamomeus (Gmelin)	Chestnut Bittern	R/LM	NR
L .	Family : Ciconiidae			
13.	Mycteria leucocephala (Pennant)	Painted Stork	R/LM	С
14.	Anastomus oscitans (Boddaert)	Asian Openbill-Stork	R/LM	С
15.	Ciconia nigra (Linnaeus)	Black Stork	WV/ PM	NR
*16.	Ciconia episcopus (Boddaert)	White-necked Stork	R	VC
17.	Leptoptilos javanicus (Horsfield)	Lesser Adjutant-Stork	R/LM	NR
	Family : Threskiornithidae			
18.	Plegadis falcinellus (Linnaeus)	Glossy Ibis	R/WV	NR
19.	Threskiornis melanocephalus	Oriental White Ibis	R	NR
	(Latham)			
20.	Pseudibis papillosa (Temminck)	Black Ibis	R	NR
	Order : Anseriformes Family : Anatidae			
21.	Dendrocygna javanica (Horsfield)	Lesser Whistling-Duck	R	С
22.	Anser indicus (Latham)	Bar-headed Goose	WV	C
23.	Tadorna ferruginea (Pallas)	Brahminy Shelduck	WV	VC
23.	Sarkidiornis melanotos (Pennant)	Comb Duck	R/LM	C

Table 1: Checklist of the birds of Singhori Wildlife Sanctuary, Raisen.

25.	Nettapus coromandelianus (Gmelin)	Cotton Teal	WV	С
26.	Anas platyrhynchos Linnaeus	Mallard	R/WV	NR
27.	Anas poecilorhyncha	Spot-billed Duck J.R. Forester	R/LM	NR
28.	Anas clypeata Linnaeus	Northern Shoveller	WV	С
29.	Anas acuta Linnaeus	Northern Pintail	WV	С
30.	Anas querquedula Linnaeus	Garganey	WV	С
31.	Anas crecca Linnaeus	Common Teal	WV	С
32	Rhodonessa rufina (Pallas)	Red-crested Pochard	WV	NR
33.	Aythya ferina (Linnaeus, 1758)	Common Pochard	WV	NR
34.	Aythya fuligula (Linnaeus, 1758)	Tufted Pochard	WV	NR
	Order : Falconiformes			
	Family : Accipitridae			
35.	Pernis ptilorhynchus (Temminck)	Oriental Honey-Buzzard	R/LM	NR
*36.	Elanus caeruleus (Desfontaines)	Black-shouldered Kite	R/LM	С
37.	Milvus migrans (Boddaert)	Black Kite	R/LM	NR
38.	Neophron percnopterus (Linnaeus)	Egyptian Vulture	R	С
39.	Spilornis cheela (Latham)	Crested Serpent-Eagle	R	С
40.	Accipiter badius (Gmelin)	Shikra	R	С
41.	Butaster teesa (Franklin)	White-eyed Buzzard	R/LM	RA
42.	Aquila rapax (Temminck)	Tawny Eagle	R/LM	RA
	Order : Galliformes			
	Family : Phasianidae			
43.	Francolinus pictus (Jardine & Selby)	Painted Francolin	R	С
44.	Francolinus pondicerianus (Gmelin)	Grey Francolin	R	С
45.	Coturnix coturnix (Linnaeus)	Common Quail	R	С
46.	Coturnix coromandelica (Gmelin)	Rain Quail	R/LM	С
47.	Perdicula asiatica (Latham)	Jungle Bush-Quail	R	С
48.	Gallus gallus (Linnaeus)	Red Junglefowl	R	С
49.	Pavo cristatus Linnaeus	Indian Peafowl	R	VC
	Order : Gruiformes			
	Family : Rallidae			
50.	Amaurornis phoenicurus (Pennant)	White-breasted Waterhen	R	С
51.	Porphyrio porphyrio (Linnaeus)	Purple Moorhen	R	С
52.	Fulica atra Linnaeus	Common Coot	R	С
	Order : Charadriiformes			
	Family : Jacanidae			
53.	Hydrophasianus chirurgus (Scopoli)	Pheasant-tailed Jacana	R	С
54.	Metopidius indicus (latham)	Bronze-winged Jacana	R	C
	Family : Rostratulidae			
55.	Rostratula benghalensis (Linnaeus)	Greater Painted-Snipe	R/LM	C
	Family : Charadriidae			
56.	Charadrius dubius Scopoli	Little Ringed Plover	R	C
57.	Vanellus malabaricus (Boddaert)	Yellow-wattled Lapwing	R/LM	RA
58.	Vanellus indicus (Boddaert)	Red-wattled Lapwing	R	VC
	Family : Scolopacidae			
59.	Gallinago stenura (Bonaparte)	Pintail Snipe	WV	NR
60.	Gallinago gallinago (Linnaeus)	Common Snipe	WV	NR
61.	Tringa glareola Linnaeus	Wood Sandpiper	WV	C
	Family : Recurvirostridae			
62.	Himantopus himantopus (Linnaeus)	Black-winged Stilt	R/LM	C
	Family : Burhinidae			

63.	Burhinus oedicnemus (Linnaeus)	Stone-Curlew	R/LM	NR
	Family : Glareolidae			
64.	<i>Glareola lactea</i> Temminck	Small Pratincole	R/LM	С
	Family : Laridae			
65.	Sterna aurantia Gray	River Tern	R	С
	Order : Columbiformes			
	Family : Pteroclididae			
66.	Pterocles exustus Temminck	Chestnut-bellied Sandgrouse	R	NR
67.	Pterocles indicus (Gmelin)	Painted Sandgrouse	R	С
	Family : Columbidae	<u> </u>		
*68.	Columba livia Gmelin	Blue Rock Pigeon	R	С
69.	Streptopelia orientalis (Latham)	Oriental Turtle-Dove	R	NR
*70.	Streptopelia senegalensis	Little Brown Dove	R	VC
	(Linnaeus)			
*71.	Streptopelia chinensis (Scopoli)	Spotted Dove	R	С
*72.	Streptopelia tranquebarica	Red Collared-Dove	R	NR
	(Hermann)			
*73.	Streptopelia decaocto (Frivaldszky)	Eurasian Collared-Dove	R	С
74.	Treron phoenicoptera (Latham)	Yellow-legged Green-Pigeon	R	С
	Order : Psittaciformes			
	Family : Psittacidae			
75.	Psittacula eupatria (Linnaeus)	Alexandrine Parakeet	R/LM	С
*76.	Psittacula krameri (Scopoli)	Rose-ringed Parakeet	R	VC
*77.	Psittacula cyanocephala (Linnaeus)	Plum-headed Parakeet	R	С
	Order : Cuculiformes			
	Family : Cuculidae			
78.	Clamator jacobinus (Boddaert)	Pied Crested Cuckoo	R/MV	RA
*79.	Hierococcyx varius (Vahl)	Brainfever Bird	R	С
80.	Cuculus micropterus Gould	Indian Cuckoo	R/LM	NR
81.	Cuculus canorus Linnaeus	Common Cuckoo	R/LM	NR
*82.	Eudynamys scolopacea (Linnaeus)	Asian Koel	R	С
*83.	Phaenicophaeus leschenaultii	Sirkeer Malkoha	R	RA
	(Lesson)			
*84.	Centropus sinensis (Stephens)	Greater Coucal	R	VC
	Order : Strigiformes			
	Family : Tytonidae			
85.	Tyto alba (Scopoli)	Barn Owl	R	С
	Family : Strigidae			
86.	Otus bakkamoena Pennant	Collared Scops-Owl	R	C
87.	Bubo bubo (Linnaeus)	Eurasian Eagle-Owl	R	C
88.	Strix ocellata (Lesson)	Mottled Wood-Owl	R	NR
*89.	Athene brama (Temminck)	Spotted Owlet	R	VC
	Order : Caprimulgiformes			
00	Family : Caprimulgidae	Y 1' Y 1 XY 1.'	D	ND
90. *01	Caprimulgus indicus Latham	Indian Jungle Nightjar	R	NR
*91.	Caprimulgus asiaticus Latham	Common Indian Nightjar	R	C
92.	Caprimulgus affinis Horsfield	Franklin's Nightjar	R	NR
	Order : Coraciiformes			
02	Family : Alcedinidae		D	NO
93.	Alcedo atthis (Linnaeus)	Small Blue Kingfisher	R	VC
94.	Halcyon capensis (Linnaeus)	Stork-billed Kingfisher	R	RA
95.	Halcyon smyrnensis (Linnaeus)	White breasted Kingfisher	R	VC

96.	Ceryle rudis (Linnaeus)	Lesser Pied Kingfisher	R	С
	Family : Meropidae			
*97.	Merops orientalis Latham	Small Bee-eater	R	VC
	Family : Coraciidae			
*98.	Coracias benghalensis (Linnaeus)	Indian Roller	R	VC
	Family : Upupidae			
*99.	Upupa epops Linnaeus	Common Hoopoe	R	С
	Family : Bucerotidae			
*100.	Ocyceros birostris (Scopoli)	Indian Grey Hornbill	R	С
	Order : Piciformes	•		
	Family : Capitonidae			
101.	Megalaima zeylanica (Gmelin)	Brown-headed Barbet	R	NR
102.	Megalaima haemacephala (Muller)	Coppersmith Barbet	R	С
	Family : Picidae			
103.	Dendrocopos nanus (Vigors)	Brown-capped Pygmy Woodpecker	R	С
104.	Dendrocopos mahrattensis (Latham)	Yellow-fronted Pied Woodpecker	R	С
105.	Dinopium benghalense (Linnaeus)	Lesser Golden-backed Woodpecker	R	VC
	Order : Passeriformes	•		
	Family : Alaudidae			
106.	Mirafra cantillans Blyth	Singing Bush-Lark	R	С
107.	Mirafra erythroptera Blyth	Red-winged bush-Lark	R	С
*108.	Eremopterix grisea (Scopoli)	Ashy-crowned Sparrow-Lark	R	С
*109.	Ammomanes phoenicurus (Franklin)	Rufous-tailed Finch-Lark	R	VC
110.	Galerida cristata (Linnaeus)	Common Crested Lark	R/LM	С
111.	Galerida dava (Sykes)	Sykes's Crested Lark	R	С
	Family : Hirundinidae			
112.	Riparia paludicola (Vieillot)	Plain Martin	R/LM	С
113.	Hirundo rustica Linnaeus	Common Swallow	R/WV	С
114.	Hirundo smithii Leach	Wire-tailed Swallow	R	С
	Family : Motacillidae			
115.	Dendronanthus indicus (Gmelin)	Forest Wagtail	WV	RA
116.	Motacilla alba Linnaeus	White Wagtail	WV	С
117.	Motacilla maderaspatensis Gmelin	Large Pied Wagtail	R	С
118.	Motacilla flava Linaeus	Yellow Wagtail	WV	С
119.	Motacilla cinerea Tunstall	Grey Wagtail	WV	С
*120.	Anthus rufulus Vieillot	Paddyfield Pipit	R	NR
121.	Anthus trivialis (Linnaeus)	Eurasian Tree Pipit	WV	С
	Family : Campephagidae			
122.	Coracina macei (Lesson)	Large Cuckoo-Shrike	R	С
123.	Pericrocotus roseus (Vieillot)	Rosy Minivet	PM	NR
124.	Pericrocotus cinnamomeus	Small Minivet	R	С
	(Linnaeus)			
125.	Tephrodornis pondicerianus (Gmelin)	Common Woodshrike	R	С
	Family : Pycnonotidae			
*126.	Pycnonotus cafer (Linnaeus)	Red-vented Bulbul	R	VC
	Family : Irenidae			
127.	Aegithina tiphia (Linnaeus)	Common Iora	R	С
128.	Chloropsis cochinchinensis (Gmelin)	Jerdon's Chloropsis	R	NR
	Family : Laniidae			
129.	Lanius vittatus Valenciennes	Bay-backed Shrike	R	С
*130.	Lanius schach Linnaeus	Rufous-backed Shrike	WV	С

Subfamily : Turdinae Image: Subfamily : Turdinae 131. Zoothera citrina (Latham) Orange-headed Thrush R NR *132. Copsychus saularis (Linnaeus) Oriental Magpie-Robin R VC *133. Saxicolatorguata (Linnaeus) Indian Robin R VC *134. Phoenicurus ochruros (Gmelin) Black Redstart R/WV VC *135. Saxicola torguata (Linnaeus) Common Stonechat WV C *135. Saxicola torguata (Linnaeus) Pied Bushchat R C *136. Saxicola corprata (Linnaeus) Pied Bushchat R C *137. Cercomela fusca (Blyth) Indian Chat R/LM VC *138. Chrysomma sinense (Gmelin) Yellow-eyed Babbler R C *140. Turdoides caudatus (Dumont) Jungle Babbler R C *141. Prinia socialis Sykes Ashy Prinia R C *141. Prinia inormata Sykes Plain Prinia R C *141. Prinia	
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157 Longhung numetulata (Linneque) Spotted Munic	
Family : Passeridae	
Subfamily : Passerinae	
*158. <i>Passer domesticus</i> (Linnaeus) House Sparrow R VC	
*159. <i>Petronia xanthocollis</i> (Burton) Yellow-Throated Sparrow R C	
Subfamily : Ploceinae	
*160. <i>Ploceus Philippinus</i> (Linnaeus) Baya Weaver R C	
Family : Sturnidae	
*161. <i>Sturnus pagodarum</i> (Gmelin) Brahminy Starling R C	
*162. <i>Sturnus roseus</i> (Linnaeus) Rosy Starling WV NR	
*163. <i>Sturnus contra</i> Linnaeus Asian Pied Starling R C	
*164. Acridotheres tristis (Linnaeus) Common Myna R VC	
165.Acridotheres fuscus (Wagler)Jungle MynaRC	
Family : Oriolidae	

*166.	Oriolus oriolus (Linnaeus)	Eurasian Golden Oriole	R	С
*167.	Oriolus xanthornus (Linnaeus)	Black-headed Oriole	R	С
	Family : Dicruridae			
*168.	Dicrurus macrocercus Vieillot	Black Drongo	R	VC
*169.	Dicrurus caerulescens (Linnaeus)	White-bellied Drongo	R	С
170.	Dicrurus paradiseus (Linnaeus)	Greater Racket-tailed Drongo	R	NR
	Family : Corvidae			
*171.	Dendrocitta vagabunda (Latham)	Indian Treepie	R	С
*172.	Corvus splendens Vieillot	House Crow	R	VC
*173.	Corvus macrorhynchos Wagler	Jungle Crow	R	VC

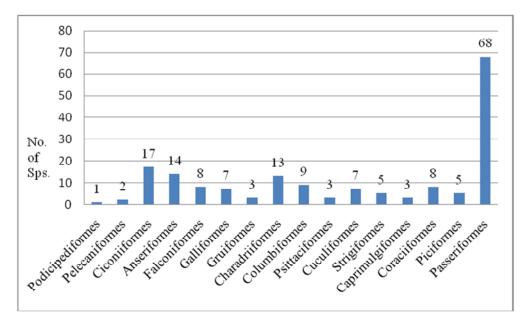


Fig. 2. Order wise bird diversity in Singhori Wildlife Sanctuary, Raisen.

It is noted that only 55 species as against 173 species reported from whole sanctuary area were observed or attracted to feed on grains, insects as well as fruits, berries at in agricultural area (Fig. 3). It is a preliminary data; further surveys with aim to study agricultural landscape in and around sanctuary area with respect to bird fauna may gain the additional knowledge.





Plum-headed Parakeet Psittacula cyanocephala (Linnacus)



Rufous-backed Shrike Lanius schach Linnaeus



Common Tailorbird Dicrurus caerulescens (Linnaeus)



Asian Pied Starling Sturnus contra Linnaeus



Rufous-tailed Finch-Lark Ammomanes phoenicurus (Franklin)



Common Stonechat Saxicola torquata (Linnaeus)



Crested Bunting Melophus lathami (Gray)



White-bellied Drongo Orthotomus sutorius (Pennant)

Fig. 3. Some bird species attracted to agriculture fields in and around Singhori Wildlife Sanctuary

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