



Avian diversity in the Naliya Grassland, Abdasa Taluka, Kachchh, India

Sandeep B. Munjpara¹ & Indra R. Gadhvi²

^{1,2} Department of Marine Sciences, Bhavnagar University, Bhavnagar, Gujarat 364001 India
Email: ¹ sandeepmunjpara@gmail.com (corresponding author), ² indragadhvi@gmail.com

Date of publication (online): 26 March 2012
Date of publication (print): 26 March 2012
ISSN 0974-7907 (online) | 0974-7893 (print)

Editor: Nishith A. Dharaiya

Manuscript details:

Ms # o2679
Received 24 January 2011
Final received 12 January 2012
Finally accepted 18 March 2012

Citation: Munjpara, S.B. & I.R. Gadhvi (2012). Avian diversity in the Naliya Grassland, Abdasa Taluka, Kachchh, India. *Journal of Threatened Taxa* 3(4): 2454–2463.

Copyright: © Sandeep B. Munjpara & Indra R. Gadhvi 2012. Creative Commons Attribution 3.0 Unported License. JoTT allows unrestricted use of this article in any medium for non-profit purposes, reproduction and distribution by providing adequate credit to the authors and the source of publication.

Author Details: SANDEEP B. MUNJPARA is a research scholar with Bhavnagar University and senior research fellow at Gujarat Ecological Education and Research (GEER) Foundation, Gandhinagar. INDRA R. GADHVI is an Associate Professor at department of Marine Sciences, Bhavnagar University, Bhavnagar.

Author Contribution: SBM has carried out the field data collection, data analysis and draft the manuscript. IRG has guided the overall research and analysis. He has also critically assessed the manuscript and finalized the draft.

Acknowledgements: The authors are grateful to the Additional Principal Chief Conservator of Forests and Ex Director GEER Foundation, Shri C.N. Pandey IFS, and Ex Dy. Director GEER Foundation, Shri. B.R. Rawal, GFS, for their kind help and constant encouragement and support. We are very thankful to Dr. Bharat Jethva, Coordinator, Wetlands International for his valuable support during fieldwork.

Abstract: Naliya Grassland is one of the significant grasslands of Gujarat. In this study the importance of the Naliya Grassland has been explored with special reference to avian diversity. Field work for the study was carried out throughout the year of 2007 on a monthly basis covering three distinct seasons to explore avian diversity. A total of 177 species belonging to 54 families were recorded wherein most species belonged to the family Accipitridae (20 species) followed by Alaudidae (11 species). Of the total families, five were represented by more than seven species, 18 families by 3–7 species and 31 families by one or two species respectively. Among the species observed, 16 species were globally threatened (three Critically Endangered, four Endangered and nine Near Threatened). Most of the species were chiefly terrestrial (68.2%), about 23.9% species were freshwater dependant and 7.9% utilized mixed habitats. Maximum species richness was recorded in the monsoons and minimum in summer. Constant turnover and fluctuation in species richness occurred because of seasonal immigration and emigration. Maximum emigration took place during February and March and maximum immigration occurred during June and July. Many water dependant birds attracted to the flooded grassland during the monsoons explained the high species richness during this season. In winter, the area was inhabited by resident species as well as many migratory species.

Keywords: Habitat, Naliya grassland, species richness, threatened species.

INTRODUCTION

Some of the most threatened species of wildlife of India like Blackbuck, Indian Gazelle, Wolf, Indian Bustard and Lesser Florican occur in grasslands and deserts (Geevan et al. 2003; Anonymous 2006). Grasslands are very fragile ecosystems; nowadays this ecosystem is facing major threats of decline due to industrialization, urbanization and agricultural development. Most of the grasslands are being converted into agricultural lands (Rahmani 2001, 2006; Anonymous 2006). The grassland that exists in Abdasa Taluka of Kachchh District in the state of Gujarat is one of the most important grasslands of the state because of its high biodiversity value (Geevan et al. 2003). Being a significant area for avifauna, BirdLife International (2009) has identified this area as an Important Bird Area (IBA). The area is well represented by resident and migratory species of terrestrial and wetland birds. Many of them are categorized as critically endangered as well as being globally threatened. It is also one of the rare breeding areas for the three globally endangered species of bustards i.e. Great Indian Bustard, Lesser Florican and the MacQueen (Geevan et al. 2003). The last surviving population of Indian Bustard of Gujarat is found in this grassland (Rahmani 2006; Pandey et al. 2009). Moreover, threatened wild animals like the Chinkara (Indian Gazelle) and Wolf extensively use this grassland (Geevan et al. 2003).

In spite of its global significance, detailed studies have not been



OPEN ACCESS | FREE DOWNLOAD



Image 1. Google Earth image of the study area

undertaken. A detailed checklist is not available for this area. We documented avian diversity and seasonal variation in bird species richness of the Naliya Grassland.

Study area

The study has been conducted in the Naliya grassland of Abdasa Taluka and it is situated in the south western province of Kachchh District (between 22°50'–23°15'N and 68°32'–69°01'E) in Gujarat (Image 1). This grassland is spread over more than 100km². The climate is very harsh; in summer the temperature reaches 40–45 °C and in winter it sometimes goes below 5°C. The area falls under the ecological zone 5A/DS 4-dry grassland with a few scattered patches of 5A/DS 2-dry savannah (Champion & Seth 1968). The major habitat types in the area are grassland, scrubland, open land, permanent and temporary water bodies. However, some patches of dense *Prosopis* and planted shrub-cover also exist. *Cymbopogon*, *Aristida* and *Dichanthium* are some of the major grass genera and *Acacia*, *Zizyphus*, *Prosopis* etc. are major shrub/trees (Anonymous 1999). Many water bodies also exist in the study area. These water bodies include flooded areas, waterlogged areas and small village ponds of Berachiya, Kunathia, Naliya,

Lala, Bhanada, Tera and Bara. This area supports a variety of vertebrate and invertebrate species. Important bird species include the Indian Bustard *Ardeotis nigriceps*, Lesser Florican *Sypheotides indica*, MacQueen's Bustard, *Chlamydotis macqueeni*, Stoliczka's Bushchat *Saxicola macrorhynchus*, Indian Courser *Cursorius coromandelicus*, Black Francolin *Francolinus francolinus*. The mammalian species occurring in the area include Chinkara *Gazella gazella*, Wolf *Canis lupus*, Caracal *Caracal caracal*, Honey Badger *Mellivora capensis*, Hyena *Hyaena hyaena*, Jackal *Canis aureus*, Jungle Cat *Felis chaus* and Indian Fox *Vulpus bengalensis*. Apart from the above mentioned birds and mammals, the area is also home to a variety of reptiles.

METHODS

Observations were made by conducting field visits at regular intervals. Fieldwork was conducted from January 2007 to December 2007. Field visits were made every month during the study period, to monitor three distinct seasons (i.e. winter, summer and monsoon). Observations were taken mainly from 0600hr (or sunrise) to 1200hr and 0300hr to 0630hr

(sunset). In addition, many time observations were also taken between the 1200hr and 0300hr time block. The area was explored travelling on vehicles as well as on foot. The observations were carried out with a pair of binoculars (Nikon 10x50) and the species were identified using recognized field guides like those of Ali & Ripley (1983), Grimmett et al. (1998), Rasmussen & Anderton (2005), etc. Data analysis for species richness, diversity and models were carried out in Microsoft Excel 2007.

RESULTS

A total of 177 species were recorded in the Naliya Grasslands belonging to 17 Orders, 54 families, and 117 genera (Appendix 1).

Family-wise species richness

Maximum species were recorded of family Accipitridae (20 spp.); which is composed of birds of prey (kites, eagles, vultures, buzzards, falcons), followed by Alaudidae [larks, (11 spp.)], Anatidae [ducks, teal, shoveler (10 spp.)], Muscicapidae [wheatear, chats, (9 spp.)] and Scolopacidae [sandpipers, godwit, shank (9 spp.)]. Of the remaining 49 families, 18 were represented by 3–7 species (Fig. 1) and 31 families were represented by one or two species (Table 1 & 2).

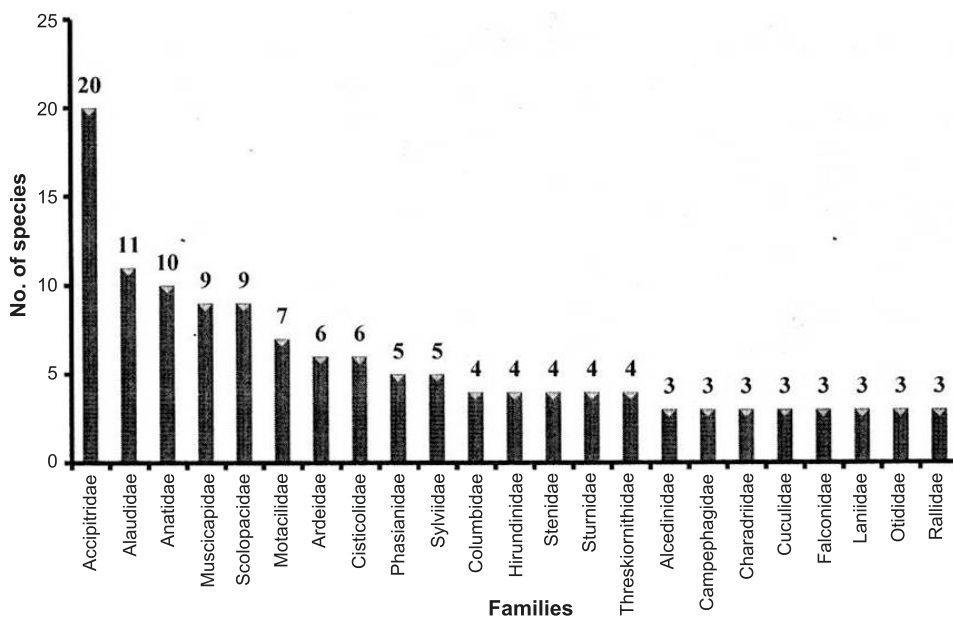


Figure 1. Family wise species richness

Threatened Species (as per IUCN 2010)

Of the total recorded species, 16 species of birds (about 9%) were globally threatened as per Red Data

Table 1. Each of other 14 families was represented by two species

SNo	Family	SNo	Family
1	Caprimulgidae	8	Passeridae
2	Ciconiidae	9	Pelecanidae
3	Coraciidae	10	Phalacrocoracidae
4	Emberizidae	11	Podicipedidae
5	Glareolidae	12	Pycnonotidae
6	Gruidae	13	Recurvirostridae
7	Meropidae	14	Tytonidae

Table 2. Each of 17 other families were represented by one species

SNo	Family	SNo	Family
1	Aegithinidae	10	Phoenicopteridae
2	Anhingidae	11	Ploceidae
3	Apodidae	12	Psittacidae
4	Burhinidae	13	Pteroclididae
5	Corvidae	14	Strigidae
6	Dicruridae	15	Timaliidae
7	Estrildidae	16	Turnicidae
8	Jacanidae	17	Upupidae
9	Nectariniidae		

Table 3. List of threatened species recorded in the Naliya grasslands

SNo	Common Name	Scientific Name	Status (IUCN 2010)
1	Black-tailed Godwit	<i>Limosa limosa</i>	NT
2	Black-headed Ibis	<i>Threskiornis melanocephalus</i>	NT
3	Painted Stork	<i>Mycteria leucocephala</i>	NT
4	Black-necked Stork	<i>Ephippiorhynchus asiaticus</i>	NT
5	Cinereous Vulture	<i>Aegypius monachus</i>	NT
6	Laggar Falcon	<i>Falco jugger</i>	NT
7	Darter	<i>Anhinga melanogaster</i>	NT
8	Pallid Harrier	<i>Circus macrourus</i>	NT
9	Lesser Flamingo	<i>Phoenicopterus minor</i>	NT
10	Egyptian Vulture	<i>Neophron percnopterus</i>	En
11	MacQueen Bustard	<i>Chlamydotis macqueeni</i>	En
12	Indian Bustard	<i>Ardeotis nigriceps</i>	En
13	Lesser Florican	<i>Sypheotides indica</i>	En
14	Long-billed Vulture	<i>Gyps indicus</i>	Cr
15	Red-headed Vulture	<i>Sarcogyps calvus</i>	Cr
16	White-rumped Vulture	<i>Gyps bengalensis</i>	Cr

NT - Near threatened; En - Endangered; Cr - Critically Endangered

Book (Bird Life International 2010; IUCN 2010). Of these 16 species of birds, three species were Critically Endangered, four species were Endangered and nine species were Near Threatened (Table 3). The details of the status of those species are given in Table 3.

Proportion of terrestrial and water-bird species: Of the total, the maximum species were terrestrial (68.2%) and about 23.9% species were observed to be freshwater dependent. The rest of the 7.9% species were found to be utilizing both types of habitats (Fig. 2).

Seasonal variation in species richness: Species richness was observed to fluctuate seasonally (Fig. 3). The maximum richness of birds was recorded in the mid-monsoon period, followed by winter. The minimum numbers of species were recorded in summer.

Immigration and emigration (local as well as seasonal) of species was observed to be a continuous phenomenon in the area. The Naliya Grasslands bear many local migratory as well seasonal migratory bird species. Although the total number of species did not vary monthly, there was a turnover in bird species richness (Fig. 4). The maximum emigration of the species was observed from February to March and

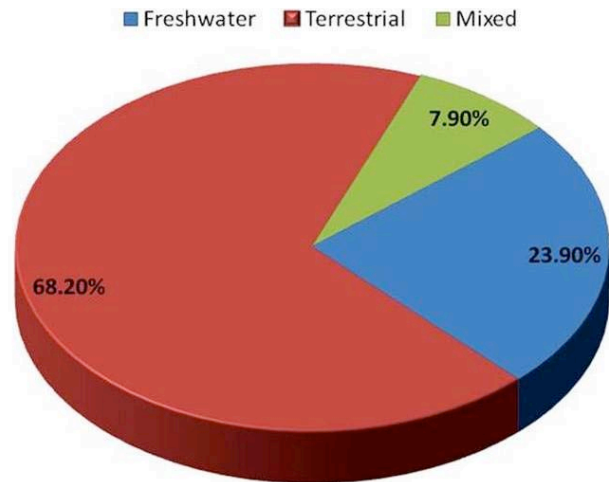


Figure 2. Proportion of bird species with their habitat preference

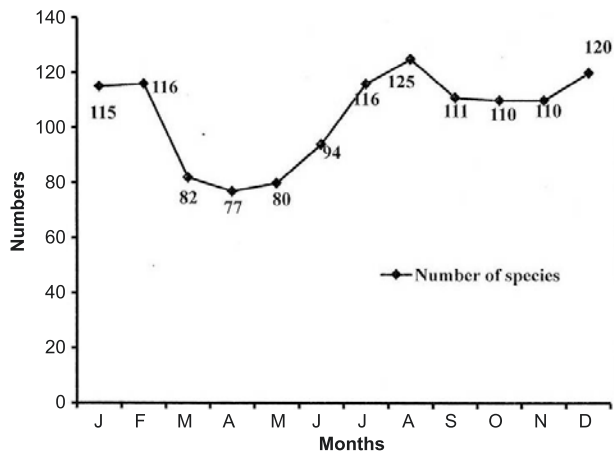


Figure 3. Seasonal variation in bird species diversity of Naliya

maximum immigration was seen from June to July. Immigration and emigration were seen in other months of the year also (Fig. 4).

DISCUSSION

The Naliya Grasslands is very rich in avifauna and holds almost 33% bird species of Gujarat (526 sp.) (Parasharya et al. 2004). Varieties of habitat (viz. scrubland, plantations, sparse grassland, dense grassland, open lands, flooded grasslands, temporary water bodies and permanent water bodies) attract many birds to the area. Moreover, some reptilian species like Spiny-tailed Lizard *Uromastyx hardwickii* are abundant in the area (Pandey et al. 2009) which attract

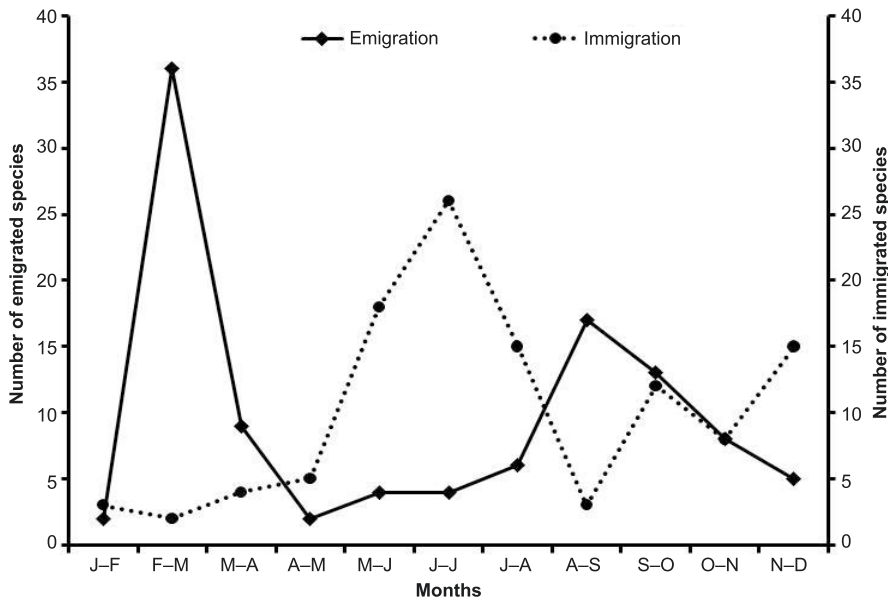


Figure 4. Local and seasonal annual immigration and emigration of birds.

a number of raptor species. The maximum species has been recorded in the mid-monsoon period, probably because of the flooded grasslands which attracts water dependant birds as well. In winter, the area has been observed to be inhabited by resident species as well as migratory species; hence, species richness was reported higher in winter. In summer most parts of area become dry, thus, fewer numbers of species were encountered. The species which were found throughout the year in the Naliya Grasslands are few, most are either passage migrants or migratory. The migration is inducted based on their breeding cycle, food abundance, temperature and day-length. It is evident that the maximum emigration of species is during February–March, which accounts for the end of winter and the start of summer with long and dry days. Immigration peak was observed during the period June–July, probably due to the abundance of food during this period as well as the arrival of some early monsoon showers for breeding birds (eg. Lesser Florican). Most of the birds immigrate to the area for feeding and breeding in the late monsoon period. The number of immigrating birds falls by August and is re-established in late September–October, the onset of winter. Thus, the migratory pattern of the birds in this particular habitat is mainly dependent on the breeding ecology and food abundance as well as due to the dynamic nature of habitats in the area. Another interesting fact that can be determined is most local migratory birds arriving at the grasslands during the

dry season of the year are diurnal, thus the longer days during this season provide them with long duration for feeding and dry land for roosting. Of the total, 16 species are threatened (Table 3), making Naliya Grasslands a very important area for bird conservation.

CONCLUSION

The grasslands of Naliya support many resident and migratory bird species, of which, some are threatened. Moreover, it is important especially for the birds of prey and larks. In addition, diversity of habitats such as temporary and permanent wetlands (viz., village ponds, flooded area and waterlogged), grassland, scrubland and human habitat supports divers groups of birds. Being an important area for a variety of avifauna it should receive immediate attention for conservation.

REFERENCES

- Anonymous (1999).** Report of an ecological study of Kachchh and its associated fauna with reference to its management and conservation. Gujarat Institute of Desert Ecology, Bhuj, India.
- Anonymous (2006).** Task Force on Grasslands and Deserts for the Environment and Forests Sector for the Eleventh Five-Year Plan (2007–2012), 34pp.
- BirdLife International (2009).** Important Bird Area factsheet:



Image 2. Northern Shoveler *Anas Clypeata*



Image 3. Yellow-wattled Lapwing *Vanellus malabaricus*



Image 4. Indian Silverbill *Lonchura malabarica*



Image 5. Cream-colored Courser *Cursorius cursor*



Image 6. Indian Courser *Cursorius coromandelicus*

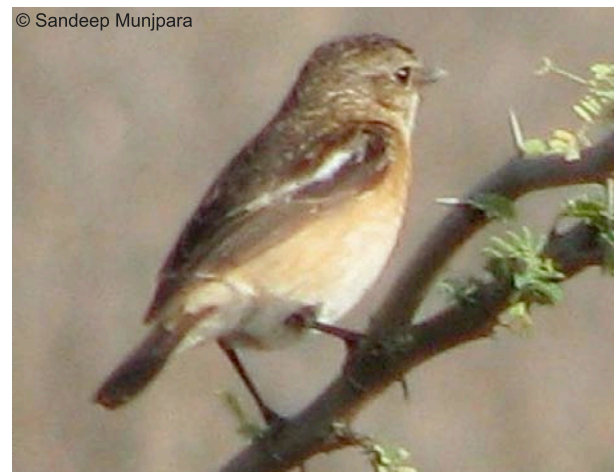


Image 7. Common Stonechat *Saxicola torquata*



Image 8. Black Francolin *Francolinus francolinus*



Image 9. Chestnut-bellied Sandgrouse *Pterocles exustus*

Naliya Grassland (Lala Bustard Wildlife Sanctuary), India. Downloaded from the Data Zone at <http://www.birdlife.org> on 18/10/2010.

- BirdLife International (2010).** *Threatened Birds of Asia*. CD-ROM, The BirdLife International Red Data Book. Cambridge, UK.
- Champion, H.G. & S.K. Seth (1968).** *A Revised Survey of Forest Types of India*. Government of India Publication, New Delhi, 404pp.
- Geevan, C.P., A.M. Dixit & C.S. Silori (2003).** *Ecological-Economic Analysis of Grassland Systems: Resource Dynamics and Management Challenges, Kachchh District (Gujarat)*. Gujarat Institute of Desert Ecology Bhuj (Kachchh) 8pp.
- Grimmett, R., C. Inskipp & T. Inskipp (1998).** *Birds of Indian Subcontinent*. Oxford University press, New Delhi, 384pp.

- IUCN (2010).** IUCN Red List of Threatened Species. Version 2010.4. www.iucnredlist.org. Downloaded on 01 January 2011.
- Pandey, C.N., B. Jethva & S. Munjpara (2009).** Report of Status, Distribution and Habitat survey of Great Indian Bustard (*Ardeotis nigriceps*) in Gujarat. Gujarat Ecological Education and Research Foundation, Gandhinagar.
- Parasharya, B.M., C.K. Borad & D.N. Rank (2004).** *A Checklist of the Birds of Gujarat*. Bird Conservation Society, Gujarat, 26pp.
- Rahmani, A.R. (2001).** The Godawan Saga: Great Indian Bustards in decline. *Sanctuary (Asia)* 21(1): 24–28.
- Rahmani, A.R. (2006).** *Need to Start Project Bustards*. Bombay Natural History, Mumbai, 20pp.
- Rasmussen, P.C. & J.C. Anderton (2005).** *Birds of South Asia. The Ripley Guide. Vols. 1 and 2*. Smithsonian Institution and Lynx Editions, Washington, D.C. and Barcelona, 683pp.

Annexure 1. Checklist of birds recorded in Naliya grassland, Kachchh

SNo	Common Name	Scientific Name
Accipitridae (Raptors)		
1	Black-shouldered Kite	<i>Elanus caeruleus</i>
2	Brahminy Kite	<i>Haliastur indus</i>
3	Egyptian Vulture	<i>Neophron percnopterus</i>
4	Cinereous Vulture	<i>Aegypius monachus</i>
5	White-rumped Vulture	<i>Gyps bengalensis</i>
6	Indian Vulture Long	<i>Gyps indicus</i>
7	Red-headed Vulture	<i>Sarcogyps calvus</i>
8	Eurasian Griffon Vulture	<i>Gyps fulvus</i>
9	Long-legged Buzzard	<i>Buteo rufinus</i>
10	Oriental Honey-buzzard	<i>Pernis ptilorhyncus</i>
11	White-eyed Buzzard	<i>Butastur teesa</i>
12	Shikra	<i>Accipiter badius</i>
13	Bonelli's Eagle	<i>Hieraaetus fasciatus</i>
14	Booted Eagle	<i>Hieraaetus pennatus</i>
15	Short-toed Snake Eagle	<i>Circaetus gallicus</i>
16	Steppe Eagle	<i>Aquila nipalensis</i>
17	Tawny Eagle	<i>Aquila rapax</i>
18	Eurasian Marsh Harrier	<i>Circus aeruginosus</i>
19	Montagu's Harrier	<i>Circus pygargus</i>
20	Pallid Harrier	<i>Circus macrourus</i>
Alaudidae (Larks) Alcedinidae		
21	Black-crown sparrow Lark	<i>Eremopterix nigriceps</i>
22	Ashy-crowned Sparrow Lark	<i>Eremopterix grisea</i>
23	Bimaculated Lark	<i>Melanocorypha bimaculata</i>
24	Crested Lark	<i>Galerida cristata</i>
25	Greater Short-toed Lark	<i>Calandrella brachydactyla</i>
26	Indian Bushlark	<i>Mirafra erythroptera</i>
27	Rufous-tailed Lark	<i>Ammomanes phoenicurus</i>
28	Sand Lark	<i>Calandrella raytal</i>
29	Singing Bushlark	<i>Mirafra cantillans</i>
30	Sykes's Lark	<i>Galerida deva</i>
31	Oriental Skylark	<i>Alauda gulgula</i>
Alcedinidae (Kingfishers)		
32	Common Kingfisher	<i>Alcedo atthis</i>
33	White-throated Kingfisher	<i>Halcyon smyrnensis</i>
34	Pied Kingfisher	<i>Ceryle rudis</i>
Anatidae (Ducks, Teal, Wigeon)		
35	Spot-billed Duck	<i>Anas poecilorhyncha</i>
36	Comb Duck	<i>Sarkidiornis melanotos</i>
37	Common Pochard	<i>Aythya ferina</i>
38	Common Teal	<i>Anas crecca</i>
39	Northern Shoveler (Image 2)	<i>Anas clypeata</i>
40	Lesser Whistling-duck	<i>Dendrocygna javanica</i>

SNo	Common Name	Scientific Name
41	Ruddy Shelduck	<i>Tadorna ferruginea</i>
42	Gadwall	<i>Anas strepera</i>
43	Garganey	<i>Anas querquedula</i>
44	Eurasian Wigeon	<i>Anas penelope</i>
Apodidae (Swifts)		
45	House Swift	<i>Apus affinis</i>
Ardeidae (Egrets & Herons)		
46	Cattle Egret	<i>Bubulcus ibis</i>
47	Great Egret	<i>Casmerodius albus</i>
48	Intermediate Egret	<i>Mesophoyx intermedia</i>
49	Little Egret	<i>Egretta garzetta</i>
50	Indian Pond Heron	<i>Ardeola grayii</i>
51	Grey Heron	<i>Ardea cinerea</i>
Burhinidae (Thick-knee)		
52	Eurasian Thick-knee	<i>Burhinus oediconemus</i>
Camephagidae (Minivets)		
53	Small Minivet	<i>Pericrocotus cinnamomeus</i>
54	White-bellied Minivet	<i>Pericrocotus erythropygus</i>
Caprimulgidae (Nightjar)		
55	Indian Nightjar	<i>Caprimulgus asiaticus</i>
56	Savanna Nightjar	<i>Caprimulgus affinis</i>
Scolopacidae (Sandpiper)		
57	Marsh Sandpiper	<i>Tringa stagnatilis</i>
58	Common Sandpiper	<i>Actitis hypoleucos</i>
59	Green Sandpiper	<i>Tringa ochropus</i>
60	Wood Sandpiper	<i>Tringa glareola</i>
Charadriidae (Lapwing)		
61	Red-wattled Lapwing	<i>Vanellus indicus</i>
62	Yellow-wattled Lapwing (Image 3)	<i>Vanellus malabaricus</i>
63	Little Ringed Plover	<i>Charadrius dubius</i>
Ciconiidae (Storks)		
64	Painted Stork	<i>Mycteria leucocephala</i>
65	Black-necked Stork	<i>Ephippiorhynchus asiaticus</i>
Cisticolidae (Prinias)		
66	Grey-breasted Prinia	<i>Prinia hodgsonii</i>
67	Jungle Prinia	<i>Prinia sylvatica</i>
68	Plain Prinia	<i>Prinia inornata</i>
69	Rufous Fronted Prinia	<i>Prinia buehneri</i>
70	Tailorbird	<i>Orthotomus sutorius</i>
71	Zitting Cisticola	<i>Cisticola juncidis</i>
Columbidae (Doves)		
72	Laughing Dove	<i>Streptopelia senegalensis</i>
73	Red Collared Dove	<i>Streptopelia tranquebarica</i>
74	Eurasian Collared Dove	<i>Streptopelia decaocto</i>

SNo	Common Name	Scientific Name
75	Rock pigeon	<i>Columba livia</i>
Coraciidae (Rollers)		
76	European Roller	<i>Coracias garrulus</i>
77	Indian Roller	<i>Coracias benghalensis</i>
Corvidae (Crow)		
78	House Crow	<i>Corvus splendens</i>
Cuculidae (Koels)		
79	Asian Koel	<i>Eudynamys scolopacea</i>
80	Common Cuckoo	<i>Cuculus canorus</i>
81	Greater Coucal	<i>Centropus sinensis</i>
Dicruridae (Drongos)		
82	Black Drongo	<i>Dicrurus macrocercus</i>
Emberizidae (Buntings)		
83	Grey-necked Bunting	<i>Emberiza buchanani</i>
84	House Bunting	<i>Emberiza striolata</i>
Estrildidae (Silverbills)		
85	Indian Silverbill (Image 4)	<i>Lonchura malabarica</i>
Falconidae (Falcons)		
86	Laggar Falcon	<i>Falco jugger</i>
87	Red-necked Falcon	<i>Falco chicquera</i>
88	Common Kestrel	<i>Falco tinnunculus</i>
Glareolidae (Coursers)		
89	Cream-coloured Courser (Image 5)	<i>Cursorius cursor</i>
90	Indian Courser (Image 6)	<i>Cursorius coromandelicus</i>
Gruidae (Crane)		
91	Common Crane	<i>Grus grus</i>
92	Demoiselle Crane	<i>Grus virgo</i>
Hirundinidae (Swallow, Martin)		
93	Barn Swallow	<i>Hirundo rustica</i>
94	Red-rumped Swallow	<i>Hirundo daurica</i>
95	Wire-tailed Swallow	<i>Hirundo smithii</i>
96	Dusky Crag Martin	<i>Hirundo concolor</i>
Aegithinidae (Iora)		
97	Marshall's Iora	<i>Aegithina nigrolutea</i>
Jacanidae (Jacanas)		
98	Pheasant-tailed Jacana	<i>Hydrophasianus chirurgus</i>
Laniidae (Shrike)		
99	Bay-backed Shrike	<i>Lanius vittatus</i>
100	Rufous-tailed Shrike	<i>Lanius isabellinus</i>
101	Southern Grey Shrike	<i>Lanius meridionalis</i>
Sternidae (Tern)		
102	Caspian Tern	<i>Sterna caspia</i>
103	Gull-billed Tern	<i>Gelochelidon nilotica</i>
104	River Tern	<i>Sterna aurantia</i>
105	Whiskered Tern	<i>Chidonias hybridus</i>

SNo	Common Name	Scientific Name
Meropidae (Bee-eater)		
106	Green Bee-eater	<i>Merops orientalis</i>
107	Blue Chicked Bee-eater	<i>Merops persicus</i>
Motacillidae (Pipits, Wagtails)		
108	Citrine Wagtail	<i>Motacilla citreola</i>
109	Grey Wagtail	<i>Motacilla cinerea</i>
110	Yellow Wagtail	<i>Motacilla flava</i>
111	Tree Pipit	<i>Anthus trivialis</i>
112	Tawny Pipit	<i>Anthus campetris</i>
113	Long-billed Pipit	<i>Anthus similis</i>
114	Paddyfield Pipit	<i>Anthus rufulus</i>
Muscicapidae (Chats, Wheatears)		
115	Black Redstart	<i>Phoenicurus ochruros</i>
116	Common Stonechat (Image 7)	<i>Saxicola torquata</i>
117	Isabelline Wheatear	<i>Oenanthe isabellina</i>
118	Variable Wheatear	<i>Oenanthe picata</i>
119	Desert Wheatear	<i>Oenanthe deserti</i>
120	Indian Robin	<i>Saxicoloides fulicata</i>
121	Pied Bushchat	<i>Saxicola caprata</i>
122	Stoliczka's Bushchat	<i>Saxicola macrorhyncha</i>
123	Spotted Flycatcher	<i>Muscicapa striata</i>
Nectariniidae (Sunbirds)		
124	Purple Sunbird	<i>Nectarinia asiatica</i>
Otididae (Bustards)		
125	MacQueen Bustard	<i>Chlamydotis macqueeni</i>
126	Indian Bustard	<i>Ardeotis nigriceps</i>
127	Lesser Florican	<i>Sypheotides indica</i>
Passeridae (Sparrow)		
128	House Sparrow	<i>Passer domesticus</i>
129	Yellow-throated Sparrow	<i>Petronia xanthocollis</i>
Pelecanidae (Pelicans)		
130	Dalmatian Pelican	<i>Pelecanus crispus</i>
131	Great White Pelican	<i>Pelecanus onocrotalus</i>
Anhingidae (Darters)		
132	Darter	<i>Anhinga melanogaster</i>
Phalacrocoracidae (Cormorants)		
133	Great Cormorant	<i>Phalacrocorax carbo</i>
134	Little Cormorant	<i>Phalacrocorax niger</i>
Phasianidae (Francolins)		
135	Black Francolin (Image 8)	<i>Francolinus francolinus</i>
136	Grey Francolin	<i>Francolinus pondicerianus</i>
137	Common Quail	<i>Coturnix coturnix</i>
138	Rain Quail	<i>Coturnix coromandelica</i>
139	Indian Peafowl	<i>Pavo cristatus</i>

SNo	Common Name	Scientific Name
Phoenicopteridae (Flamingos)		
140	Greater Flamingo	<i>Phoenicopterus ruber</i>
Sylviidae (Chiffchaff)		
141	Common Chiffchaff	<i>Phylloscopus collybita</i>
142	Lesser Whitethroat	<i>Sylvia curruca</i>
143	Common Whitethroat	<i>Sylvia communis</i>
144	Desert Warbler	<i>Sylvia nana</i>
145	Orphean Warbler	<i>Sylvia hortensis</i>
Ploceidae (Weaver)		
146	Baya Weaver	<i>Ploceus philippinus</i>
Podicipedidae (Grebes)		
147	Little Grebe	<i>Tachybaptus ruficollis</i>
148	Great Crested Grebe	<i>Podiceps cristatus</i>
Campephagidae (Woodshrike)		
149	Common Woodshrike	<i>Tephrodornis pondicerianus</i>
Psittacidae (Parakeet)		
150	Rose-ringed Parakeet	<i>Psittacula krameri</i>
Pteroclididae (Sandgrouse)		
151	Chestnut-bellied Sandgrouse (Image 9)	<i>Pterocles exustus</i>
Pycnonotidae (Bulbul)		
152	Red-vented Bulbul	<i>Pycnonotus cafer</i>
153	White-eared Bulbul	<i>Pycnonotus leucotis</i>
Rallidae (Coots)		
154	Common Coot	<i>Fulica atra</i>
155	Purple Swamphen	<i>Porphyrio porphyrio</i>
156	Common Moorhen	<i>Gallinula chloropus</i>
Recurvirostridae (Stilts)		
157	Black-winged Stilt	<i>Himantopus himantopus</i>

SNo	Common Name	Scientific Name
158	Pied Avocet	<i>Recurvirostra avosetta</i>
Scolopacidae (Godwit, Shanks)		
159	Black-tailed Godwit	<i>Limosa limosa</i>
160	Common Greenshank	<i>Tringa nebularia</i>
161	Common Redshank	<i>Tringa totanus</i>
162	Eurasian Curlew	<i>Numenius arquata</i>
163	Ruff	<i>Philomachus pugnax</i>
Strigidae (Owlets)		
164	Spotted Owlet	<i>Athene brama</i>
Sturnidae (Starling)		
165	Bank Myna	<i>Acridotheres ginginianus</i>
166	Common Myna	<i>Acridotheres tristis</i>
167	Brahminy Starling	<i>Sturnus pagodarum</i>
168	Rosy Starling	<i>Sturnus roseus</i>
Threskiornithidae (Ibis, Spoonbills)		
169	Black Ibis	<i>Pseudibis papillosa</i>
170	Glossy Ibis	<i>Plegadis falcinellus</i>
171	Black-headed Ibis	<i>Threskiornis melanocephalus</i>
172	Eurasian Spoonbill	<i>Platalea leucorodia</i>
Timaliidae (Babblers)		
173	Common Babbler	<i>Turdoides caudatus</i>
Turnicidae (Buttonquail)		
174	Small Buttonquail	<i>Turnix sylvatica</i>
Tytonidae (Owls)		
175	Eurasian Eagle Owl	<i>Bubo bubo</i>
176	Short-eared Owl	<i>Asio flammeus</i>
Upupidae (Hoopoe)		
177	Hoopoe	<i>Upupa epops</i>

